

REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS REGION VIII TACLOBAN CITY DISTRICT ENGINEERING OFFICE NEW BUS TERMINAL, BRGY. 91, ABUCAY, TACLOBAN CITY

CY 2025 PROJECT

DETAILED ENGINEERING DESIGN PLAN FOR

REPAIR/ MAINTENANCE

OF

DAMAGED PAVED ROAD - K0907+220.53 - K0907+252.8, K0907+270.8 - K0907+291.9, K0907+317.5 - K0907+321.5

ALONG TIGBAO- STA.FE- SAN MIGUEL ROAD (S00033LT)

LENGTH: 75.37 LINEAR METER

SUBMITTED:

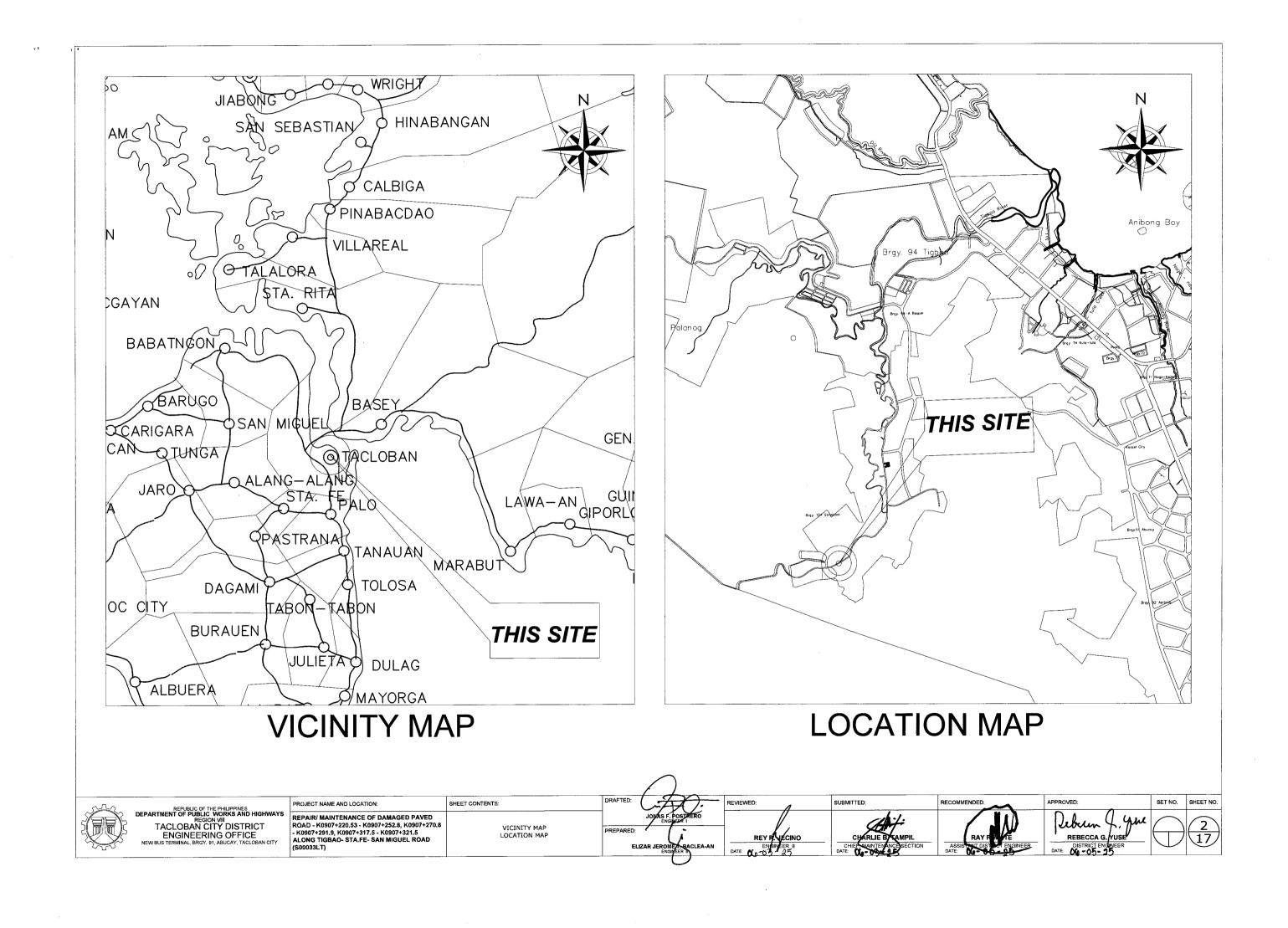
CHARLIE B TAMPIL
CHIEF, MAINTENANCE SECTION
DATE: 6/3/125

RECOMMENDED:

ATE CLENGINEER

APPROVED:

REBECCA Q YUSE DISTRICT ENGINEER DATE: 00-05-25



Index of Sheets

Sheet 1. Title Page

Sheet 2. Vicinity Map, and Location Plan

Sheet 3. Index of Sheets and Summary of Quantities

Sheet 4. General Notes

Sheet 5. Construction Requirement

Sheet 6. Standard Geometric Design

Sheet 7. Typical Plan of a Four Lane Pavement

Sheet 8. Keyed transverse construction or contract joint

Detailed of dowelled expansion joint at PCCP and Existing Structures

SHEET CONTENTS:

INDEX OF SHEETS
SUMMARY OF QUANTITIES

Sheet 9. Roadway Section 'A'
Roadway Section 'B'
Roadway Section 'C'

Sheet 10. Plan and Profile

Sheet 11. Straight Line Diagram

Sheet 12. Cross Section A

Sheet 13. Cross Section B

Sheet 14. Cross Section C

Sheet 15. Scheduled of Traffic Management Signs
Details of Traffic Management Signs

Sheet 16. Standard DPWH Project Billboard

Sheet 17. COA Billboard

ITEM NO.	DESCRIPTION	UNIT	QTY.	REMARKS
B.5	Project Billboard/Signboard	ea.	4.00	
B.7(2)	Occupational Safety and Health Program	l.s.	1.00	
B.8(1)	Traffic Management	l.s.	1.00	
B.9	Mobilization / Demobilization	l.s.	1.00	
101(3)b5	Removal of Actual Structures/Obstruction, 0.28m thick, PCCP(Unreinforced)	sq.m.	120.60	
105(1)b	Subgrade Preparation (Existing Pavement)	sq.m.	120.60	
200(1)	Aggregate Subbase Course	cu.m.	24.12	
311(1)e3	Portland Cement Concrete Pavement (Unreinforced), 0.28m thick, 3 days	sq.m.	120.60	

SUMMARY OF QUANTITIES

~~	REPUBLIC OF THE PHILIPPINES	F
	DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS REGION VIII TACLOBAN CITY DISTRICT ENGINEERING OFFICE NEW BUS TERMINAL, BRGY. 91, ABUCAY, TACLOBAN CITY	R R . 4 ()

PROJECT NAME AND LOCATION:

REPAIR/ MAINTENANCE OF DAMAGED PAVED
ROAD - K0907+220.53 - K0907+252.8, K0907+270.8

- K0907+291.9, K0907+317.5 - K0907+321.5
ALONG TIGBAO- STA.FE- SAN MIGUEL ROAD
(S00033LT)

JONES F. POSTDERO
ENGINEER

PREPARED:

ELIZAR JEROME BACLEA-A
ENGINEER

REY RAZCINO

REY RAZCINO

ENGINEER II

DATE: 06 - 07 - 25

CHARLIE D.TAMPIL
CHIEF MATURE OF THE DATE

RECOMMENDED

RIGHTE

ASSISTANT DIS RICT ENGINEER

DATE

Pubern J. Mu REBECCA G. VUSE DISTRICT EN SINEER DATE: 76 - 05 - 25

SET NO. SHEET NO.

GENERAL NOTES

I. DESIGN

A.) THE REHABILITATION/ CONSTRUCTION PROJECT FOLLOWS THE EXISTING TRAVERSE AND GROUND ELEVATION

II. DESIGN STANDARDS

- A.) DPWH DESIGN GUIDELINES, CRITERIA AND STANDARDS (DGCS), VOLUME 4, 2015 FDITION
- B.) AASHTO A POLICY ON GEOMETRIC DEIGN STANDARDS OF HIGHWAYS AND STREETS, 2011,
- 6TH EDITION
- C.) AASHTO GUIDE ON PAVEMENT DESIGN, 1993 EDITION
- D.) HIGHWAY SAFETY DESIGN STANDARDS: PART 1 ROAD SAFETY DESIGN, AND PART 2 ROAD SIGNS AND PAVEMENT MARKINGS, 2012 EDITION

III. STANDARD SPECIFICATIONS

- A.) ALL WORKS SHALL COMPLY WITH THE DPWH STANDARD SPECIFICATIONS FOR HIGHWAYS, BRIDGES AND AIRPORTS, 2013 EDITION VOLUME 2.
- B.) SPECIAL PROVISIONS AND SUPPLEMENTAL SPECIFICATIONS PERTAINING TO THE PROJECT.

IV DIMENSIONS

A.) UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS WHICH INCLUDES STATIONING, DISTANCE BETWEEN CONTROL POINTS AND AS SHOWN IN THE PLAN ARE IN METER AND THE UNIT OF MEASURE AS SHOWN IN DETAILS OF STRUCTURE ARE IN MILLIMETERS.

V. TOPOGRAPHIC SURVEY

A.) SHALL BE DONE AS PER TERMS OF REFERENCE

V.1.) STATIONING

- A.) THE ROAD STATIONING AND ELEMENTS OF ELEMENTS OF HORIZONTAL AND VERTICAL CURVES SHOWN ON THE PLAN AND PROFILE SHEETS ARE RECKONED FROM THE ROADWAY CENTERLINE.
- B.) STATIONING OF THE BRIDGES, RCPC, RCBC, AND OTHER STRUCTURES ARE RECKONED FROM THE STATIONING OF THE ROADWAY CENTERLINE SHOWN ON THE PLAN.

VI. ELEVATIONS AND GRADES

- A.) FINISHED GRADE ELEVATION SHOWN ON PLAN AND PROFILE SHEETS REFERS TO THE FINISHED PAVEMENT LEVEL SHOWN ON THE TYPICAL ROADWAY SECTION.
- B.) GROUND GRADE SHOWN ON THE PLAN AND PROFILE SHEET REFERS TO THE ELEVATION OF THE ORIGINAL GROUND ALONG THE CENTERLINE OF THE PROJECT ROAD.
- C.) FINISHED GRADE FOR THIS PROJECT ARE SUBJECT TO CHANGE TO SUIT EXISTING FIELD CONDITION HOWEVER THAT IT IS MORE ADVANTAGEOUS AND MORE ECONOMICAL ON THE PART OF THE GOVERNMENT AND THE DESIGN STANDARD FOR HIGHWAYS PER REQUIREMENT OF AASHTO ARE PROPERLY FOLLOWED.
- D.) WIDENING IN CURVES IS SUBJECTED TO ADJUSTMENT TO SUIT EXISTING FIELD CONDITION AND SHALL BE BACKFIELD WITH APPROVED MATERIALS.
- E.) PROPER ROAD CONNECTION AT THE BEGINNING AND END OF THE PROJECT SHALL BE PROVIDED TO ENSURE SMOOTH RIDING SURFACE.

VII. REMOVAL OF EXISTING STRUCTURES AND OBSTRUCTIONS

- A.) ALL WORKS SHALL COMPLY WITH CLAUSE 39 REQUIREMENTS AND CONDITIONS OF CONTRACTS VOLUME-1 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS AND HIGHWAYS
- B.) PORTIONS OF EXISTING UTILITIES SUCH AS WATER MAINS, IRRIGATION CHANNELS, TELEPHONE POSTS AND TRUNK LINE, ETC. THAT MAY CAUSE OBSTRUCTION TO THE CONSTRUCTIONS OWNER CONCERNED, EXTREME PRECAUTION SHALL BE EXERCISED BY THE CONTRACTOR NOT TO DAMAGE ANY SECTION OF THE EXISTING PUBLIC UTILITIES DURING CONSTRUCTION, ANY REPAIR OF DAMAGE HEREOF SHALL BE ON THE ACCOUNT OF THE CONTRACTOR, ANY REMOVAL OF THE MISCELLANEOUS STRUCTURES THAT MAY BE REQUIRED SHALL BE SUBSIDIARY WORK PERTAINING TO OTHER CONTRACT ITEM. NO DIRECT PAYMENT SHALL BE MADE FOR THIS EXCEPT FOR SPECIFIC ITEMS EXPLICITLY IDENTIFIED FOR PAYMENT IN THE BID SCHEDULE.

VIII. ROAD CONNECTIONS AND PRIVATE ENTRANCES

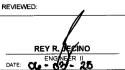
- A.) APPROACHES AND PRIVATE ENTRANCES SHALL BE CONSIDERED BY THE CONTRACTOR AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER IN SUCH A MANNER TO ENSURE SMOOTH CONNECTIONS AND RIDING QUALITY.
- B.) NO OPENING FOR DRIVEWAYS OR PRIVATE ENTRANCES SHALL BE ALLOWED EXCEPT WITH THE PRIOR APPROVAL FROM THE PROPER AUTHORITIES.
- IX. THE IMPLEMENTING OFFICE SHALL IDENTIFY THE LOCATIONS OF AND PROVIDE ACCESSIBILITY FACILITIES FOR PERSONS WITH DISABILITY IN ACCORDANCE WITH D.O. 37 SERIES OF 2009

DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS REGION VIII TACLOBAN CITY DISTRICT ENGINEERING OFFICE NEW BUS TERMINAL, BRGY. 91, ABUCAY, TACLOBAN CITY

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GENERAL NOTES

JONAS F. POSTRERO
ENGINEER





RAY BATE ASSISTANT DIS RICT ENGINEER

REBECCA G.

DISTRICT ENGIN

SET NO. SHEET NO.

DESIGN SPECIFICATIONS

1.) PAVEMENT DESIGN CRITERIA
A.) PAVEMENT DESIGN PARAMETER:

DESIGN REQUIREMENTS

DEGIGIT (EQUITED IN C	
A. PERFORMANCE PERIOD FOR PCCP	20 YEARS (FOR PCCP)
B. DESIGN TRAFFIC: ESAL	3.81E+06
C. DESIGN RELIABILITY: R	0.85
D. STANDARD DEVIATION:S _O	0.35
E. DESIGN SERVICEABILITY LOSS: APSI	2.00
F. PCCP MODULUS OF RUPTURE: S _C	635.55
G. PCCP MODULUS OF ELASTICITY: E _C	3.37E+06
H. SUBGRADE DESIGN CBR	25.06
I. EFFECTIVE ROADBED RESILIENT MODULUS: MR	37,585.79
J. SUBBASE ELASTIC MODULUS: ESB	15,000.00
K. SUBBASE THICKNESS	200.00 MM
L. EFFECTIVE MODULUS AT SUBGRADE REACTION: K (pci)	900.00
M. DRAINAGE COEFFICIENT: J	1.00
N. LOAD TRANSFER COEFFICIENT: J	4.10
O. LOSS OF SUPPORT: Ls	1.00
P. K (corrected):	230.00

COORDINATE REFERENCE SYSTEM	PRS92 / PHILIPPINE ZONE V
PROJECTION:	TRANSVERSE MERCATOR (TM) IN ZONE OF 2' NET WIDTH
DATUM:	PHILIPPINE REFERENCE SYSTEM 1992/WGS84
EPSG CODE:	3125

REFERENCE BENCHMARK DETAILS

1.) THE POSITION OF PROJECT CONTROL POINTS SHALL BE DEFINED AND MARKED ON THE GROUND BY MONUMENT IF PERMANENT NATURE

2.) CRITERIA FOR LOCATION MONUMENTS

- ACCESIBILITY
- GROUND STABILITY
- SECURITY FROM POSSIBLE ACTS OF DISTRUBANCE

3.) INTERVAL OF MONUMENTS

- PRIMARY GPS CONTROLS (GPS): 3KM INTERVAL
- PRIMARY PROJECT CONTROL (BM): 500M INTERVAL
- INTERMEDIATE CONTROL (IBM): EVERY 250M INTERVAL IN BETWEEN IBM'S

EQUIPMENT USED: TOPCON / RTK GR5 - BASE SER.NO.1118-23692, ROVER SER.NO.1118-23953, CONTROLLER NO. 224852

CONSTRUCTION REQUIREMENT

1. ALL CONSTRUCTION SHALL CONFORM TO:

A. CONDITIONS OF CONTRACT

B THE SPECIAL PROVISIONS

C. THE SPECIFICATIONS OF ITEMS OF WORK FOR THIS PROJECT SHALL BE THE DPWH STANDARD SPECIFICATIONS FOR PUBLIC WORKS & HIGHWAYS 2013 EDITION, PRESENTED IN THE TENDER DOCUMENTS OF THE PROJECT.

2. SETTING OUT

A. THE SETTING OUT AND ELEVATION OF THE DIFFERENT COMPONENTS OF THE STRUCTURE SHALL BE APPROVED BY THE ENGINEER PRIOR TO THE START OF ANY CONSTRUCTION WORK.

A. EXCAVATION FOR STRUCTURES SHALL BE NEAT LINES AS SHOWN IN THE PLANS AND THE SOIL UNDERNEATH STRUCTURE FOUNDATION SHALL NOT BE DISTURBED.

4. REINFORCED CONCRETE

A. CONCRETE MIX AND PLACING

- 1. DESIGN OF CONCRETE MIX SHALL MEET THE DESIGN CONCRETE STRENGTH GIVEN UNDER ITEM 1 OF MATERIALS
- 2. CONCRETE SHALL BE DEPOSITED, VIBRATED AND CURED IN ACCORDANCE WITH THE SPECIFICATIONS.
- 3. FOR CONCRETE DEPOSITED AGAINST THE GROUND, LEAN CONCRETE WITH A MINIMUM THICKNESS OF 50 MM SHALL BE LAID FIRST BEFORE INSTALLING THE REINFORCING, THIS

LEAN CONCRETE SHALL NOT BE CONSIDERED IN MEASURING THE STRUCTURAL DEPTH OF CONCRETE SECTION.

B CONSTRUCTION JOINT

1. THE POSITION AND FORM OF ANY CONSTRUCTION JOINT SHALL AS SHOWN ON DRAWINGS OR AS AGREED WITH THE ENGINEERS.

1. ALL FALSEWORK SHALL BE DESIGN BY THE CONTRACTOR SUBJECT TO THE APPROVAL BY THE ENGINEER.

5. EMBANKMENT

A. PRIOR TO CONSTRUCTION OF EMBANKMENT, ALL NECESSARY CLEARING & GRUBBING IN THE AREA SHALL BE PERFORMED IN CONFORMITY WITH ITEM 100. B. ALL UNSUITABLE MATERIALS, OTHER THAN DELIVERED SUITABLE MATERIALS, SHALL BE DISPOSED OF IN THE MANNER SPECIFIED IN THIS ITEM OR AS DIRECTED BY THE ENGINEED

C. CONSTRUCTION OF ROADWAY EMBANKMENTS INCLUDES PREPARATION OF THE AREAS UPON WHICH SELECTED MATERIALS ARE TO BE PLACED, PLACING AND COMPACTING EMBANKMENT MATERIALS IN HOLES, PITS AND OTHER DEPRESSION WITHIN THE ROADWAY AREA.

6. ALIGNMENT AND GRADE

A. FINISHED GRADE FOR THIS PROJECT ARE SUBJECT TO CHANGE TO SUIT EXISTING FIELD CONDITION HOWEVER THAT IT IS MORE ADVANTAGEOUS AND MORE ECONOMICAL ON THE PART OF THE GOVERNMENT AND THE DESIGN STANDARD FOR HIGHWAYS PER REQUIREMENT OF AASHTO AREA PROPERLY FOLLOWED. B. WIDENING IN CURVES IS SUBJECTED TO ADJUSTMENT TO SUIT EXISTING FIELD CONDITION AND SHALL BE BACKFIELD WITH APPROVED MATERIALS. C. PROPER ROAD CONNECTION AT THE BEGINNING AND END OF THE PROJECT SHALL BE PROVIDED TO ENSURE SMOOTH RIDING SURFACE.

7. SUB-GRADE, SUB-BASE AND BASE

A. UNSUITABLE SUB-GRADE MATERIALS SHALL BE EXCAVATED BELOW THE GROUND SURFACE TO THE REQUIRED WIDTH AND DEPTH, THE AREA EXCAVATED SHALL BE BACKFILLED WITH THE APPROVED MATERIALS.

B. NO EMBANKMENT MATERIALS SHALL BE PLACED UNTIL THE FOUNDATION IS STABLE.

8. CONCRETE AND CONCRETE PAVEMENT

A. TRAFFIC SHALL BE REQUIRED TO REDUCE SPEED WHEN PASSING THE VICINITY OF THE NEWLY LAID CONCRETE PAVEMENT UNTIL SUCH TIME THAT IT HAS OBTAINED THE FOURTEEN (14) DAYS REQUIRED CURING PERIOD.

B. NO ADMIXTURES OR ADDITIVES WILL BE ALLOWED FOR ALL CONCRETE WORKS WITHOUT PRIOR APPROVAL FROM THE SECRETARY OF DPWH OR HIS DULY APPOINTED REPRESENTATIVES. C. WHEN CONCRETING OF PAVEMENT PROGRESSES TRAFFIC SHALL BE MADE TO PASS OUTSIDE THE EMBANKMENT PRISM IN ORDER TO MINIMIZE THE EFFECT OF VIBRATION TO THE SETTING CONCRETE.

D. THE EXISTING CONCRETE CURB AND GUTTER THAT INTERFERES IN THE CONSTRUCTION SHALL BE REMOVED.

E. THE CONTRACTOR SHALL SUBMIT A SUPERSTRUCTURE PLACING SEQUENCE FOR THE ENGINEER'S APPROVAL

E CONCRETE STRENGTH BY CLASS

	28 DAYS	CYLINDER	MAX. SIZE OF COARSE		
CLASS	STRENGTH		AGGREGATES		
	MPa	PSi	mm (in)		
Α	20.7	3,000	38 (1-1/2)		
В	16.5	2,400	50 (2)		
С	20.7	3,000	12.50		
Р	37.7	5,000	19 (3/4)		
LEAN	9.9	1,400			

G. THE CONTRACTOR SHALL SUBMIT A SUPERSTRUCTURE PLACING SEQUENCE FOR THE ENGINEER'S APPROVAL

H. TRAFFIC SHALL BE REQUIRED TO REDUCE SPEED WHEN PASSING THE VICINITY OF THE NEWLY LAID CONCRETE PAVEMENT UNTIL SUCH TIME THAT IT HAS OBTAINED THE FOURTEEN (14) DAYS REQUIRED CURING PERIOD.

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K. THE EXISTING CONCRETE CURB AND GUTTER THAT TO MINIMIZE THE EFFECT OF VIBRATION TO THE SETTING CONCRETE

L. THE EXISTING CONCRETE CURB AND GUTTER THAT INTERFERES IN THE CONSTRUCTION SHALL BE REMOVED

9, DRAINAGE STRUCTURES

A. EXACT LOCATIONS, SLOPES, OUTFALL, AND INVERT ELEVATIONS OF DRAINAGE STRUCTURES SHALL BE CHECKED IN THE FIELD, ADJUSTMENT MAY BE MADE TO SUIT ACTUAL FIELD CONDITIONS WITH APPROVAL OF THE ENGINEER.

B. EXISTING DRAINAGE STRUCTURES OR PARTS THEREOF REMOVED BY THE CONTRACTOR WHICH ARE STILL SERVICEABLE SHALL BE DEPOSITED AT A PLACE DESIGNATED BY THE ENGINEER WITHIN THE PROJECT SITE WITHOUT ANY COMPENSATION. EXTREME PRECAUTIONS SHALL BE EXERCISED BY THE CONTRACTOR SO AS NOT TO DAMAGE THESE MATERIALS DURING THE REMOVAL AND HANDLING.

C. PORTIONS OF EXISTING UTILITIES SUCH AS WATER MAINS, IRRIGATION CHANNELS, TELEPHONE POSTS AND TRUNK LINE ETC. THAT MAY CAUSE OBSTRUCTION TO THE CONSTRUCTIONS OWNER CONCERNED, EXTREME PRECAUTION SHALL BE EXERCISED BY THE CONTRACTOR NOT TO DAMAGE ANY SECTION OF THE EXISTING PUBLIC UTILITIES DURING CONSTRUCTION, ANY REPAIR OF DAMAGE HEREOF SHALL BE ON THE ACCOUNT OF THE CONTRACTOR ANY REMOVAL OF THE MISCELLANEOUS STRUCTURES THAT MAY BE REQUIRED SHALL BE MADE FOR THIS EXCEPT FOR SPECIFIC ITEMS EXPLICITLY IDENTIFIED FOR PAYMENT IN THE BID SCHEDULE.

10. MISCELLANEOUS STRUCTURES

A. LOCATION AND LENGTH OF SLOPE PROTECTIONS, GUARDRAILS, STONE MASONRY RETAINING WALLS AND OTHER STRUCTURES MAY BE ADJUSTED BY THE CONTRACTOR TO SUIT ACTUAL FIELD CONDITIONS WITH THE APPROVAL OF THE ENGINEER

11. REINFORCING STEEL

A. THE CONTRACTOR/BIDDER SHALL SUBMIT SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO FABRICATION. SHOP DRAWING SHOULD SHOW DETAILS FOR FABRICATION AND FOR PLACING REINFORCING STEEL ONLY THOSE NECESSARY FOR THE PROPER LOCATION OF THE STEEL ARE REQUIRED ON THE DRAWINGS. BENDING DETAILS MAY BE SHOWN ON A SEPARATE SHEET.

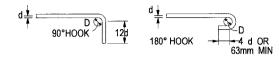
B. NO MORE THAN ONE BAR IN THERE SHALL BE SPLICED AT THE SAME SECTION UNLESS OTHERWISE SHOWN.

SPLICING SHALL BE KEPT TO A MINIMUM AND SHOULD BE STAGGERED AND LAPPED NOT LESS THAN 40 BAR DIAMETER UNLESS OTHERWISE SHOWN ON DRAWING. WHERE THE CLEAR DISTANCE BETWEEN LAPPED BARS DO NOT MEET THE REQUIREMENTS IN ITEM 12.4 THE CONTRACTOR SHALL USED CRANKED SPLICES AS DETAILED BELOW.



C. BAR SHALL BE BENT COLD. NO BAR PARTIALLY EMBEDDED IN CONCRETE SHALL BE FIELD BENT, UNLESS SHOWN ON THE DRAWN SPECIALLY PERMITTED BY THE ENGINEER. HOOKS SHALL BE FABRICATED AS SHOWN BELOW UNLESS OTHERWISE INDICATED ON THE DRAWING. BAR SHALL BE BENT AROUND A PIN WITH MINIMUM DIAMETER D.

DIMENSIONS OF 90 - DEGREE AND 180 - DEGREE HOOKS



PIN DIAMETER:

D=6d FOR Ø10 THRU Ø25 D=8d FOR Ø28, Ø32 AND Ø36

DIMENSIONS FOR STIRRUPS AND TIE HOOKS



D. UNLESS OTHERWISE SHOWN IN THE 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 ABOVED THOSE IN THE BOTTOM LAYER. E. EXCEPT OTHERWISE SHOWN ON THE DRAWINGS. MINIMUM CONCRETE COVER SHALL

BE PROVIDED FOR REINFORCEMENT AS FOLLOWS.

	MINIMUM CLEAR COVER mm (in)
CONCRETE IN A MARINE ENVIRONMENT OF CONCRETE	
CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	75 (3)
CONCRETE EXPOSED TO EARTH OR WEATHER	
PRIMARY REINFORCEMENT	50 (2)
STIRRUPS, TIES & SPIRAL	40 (1-1/2)
CONCRETE NOT EXPOSED TO WEATHER OR IN	
CONTACT WITH GROUND	
PRIMARY REINFORCEMENT	40 (1-1/2)
STIRRUPS, TIES & SPIRAL	25 (1)
CONCRETE DECK SLABS	
TOP REINFORCEMENT	50 (2)
BOTTOM REINFORCEMENT	25 (1)

THIS PLAN SHALL ONLY BE USED AS A GUIDE, SPECIFICALLY IN THE PRE-CONSTRUCTION STAGE, THE ACTUAL IMPLEMENTATION FOR THE PROJECT, ON THE HAND, WILL BE BASED ON THE "AS-STAKED" WHICH WILL BE DONE JOINTLY BY THE CONTRACTOR, THE IMPLEMENTING OFFICE, AND THE PLANNING AND DESIGN DIVISION, FOR THE ADDITIONAL REVIEW AND APPROVAL OF THE REGIONAL DIRECTOR.

REVISE THE TEMPLATE AND/OR STAKE OUT THE LOCATION OF LINED CANAL AND OTHER STRUCTURES AS PER TYPICAL ROADWAY SECTION BEFORE COMMENCING CONSTRUCTION. ADDITIONALLY, ANY CHANGES IN THE QUANTITY OF WORKS ITEM INVOLVED AS A RESULT OF REVISION MUST BE COMPUTED AND RE-CONSIDERED IN THE "AS-STAKED PLAN"



TACLOBAN CITY DISTRICT **ENGINEERING OFFICE**

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CONSTRUCTION REQUIREMENT

DDEDARED.

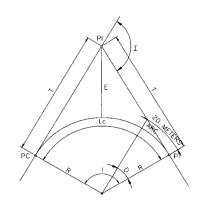
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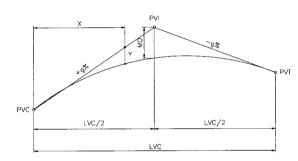
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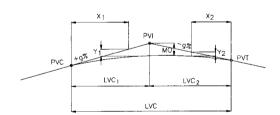
SET NO. SHEET NO

REPUBLIC OF THE PHILIPPINES

DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS







FORMULA:

 $T = R (TAN\frac{1}{2})$

 $Lc = \frac{\pi}{180}IR$

 $D = \frac{1145.916}{R}$

E = T (TAN1/4)

LEGEND:

PI - POINT OF HORIZONTAL INTERSECTION

I - FXTERNAL ANGLE

T - LENGTH OF TANGENT

R - HORIZONTAL RADIUS Lc - LENGTH OF CIRCULAR CURVE

D - DEGREE OF CURVE (ARC DEFINITION)

PC - POINT OF CURVATURE

PT - POINT OF TANGENCY

E - EXTERNAL DISTANCE

LEGEND:

PVI - POINT OF VERTICAL INTERSECTION
PVC - POINT OF VERTICAL CURVATURE
PVT - POINT OF VERTICAL TANGENCY
LVC, LVC1, LVC2 - LENGTH OF VERTICAL CURVES
9 - GRADE IN PERCENT
MO - MIDDLE ORDINATE

X, X₁, X₂ - DISTANCE FROM PVC OR PVT TO ANY POINT ON CURVE

Y, Y₁, Y₂ - VERTICAL OFFSET

A - ALGEBRAIC DIFFERENCE OF GRADES IN %

NOTE:

NO VERTICAL CURVE IS REQUIRED WHEN THE ALGEBRAIC DIFFERENCE IN GRADE IS LESS THAN 0.5%

IN ANY SYMMETRICAL VERTICAL PARABOLIC CURVE

$$MO = \frac{ALVC}{800}$$

FORMULA:

LEGEND:

A - ALGEBRAIC DIFFERENCE OF GRADIENTS (%)

K - RATE OF VERTICAL CURVATURE (m)

IN ANY UNSYMMETRICAL VERTICAL PARABOLIC CURVE

$$MO = \frac{(LVC_1)(LVC_2)(A)}{200LVC}$$

$$Y_1 = \frac{MO(X_1)^2}{(LVC_1)^2}$$

 $\frac{MO(X_2)^2}{(LVC_2)^2}$

FORMULA:

LVC = KA

LEGEND:

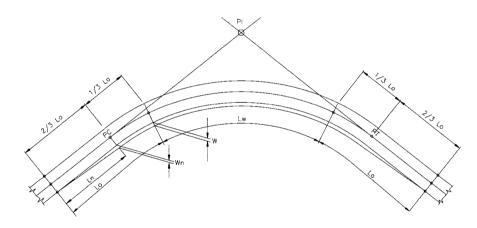
A - ALGEBRAIC DIFFERENCE OF GRADIENTS (%)

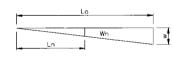
K - RATE OF VERTICAL CURVATURE (m)

DESIGN SPEED (Km/h) 30 KPH 40 KPH 50 KPH MIN. K FOR CREST VERTICAL CURVE 10 25 MIN. K FOR SAG VERTICAL CURVE 8.5 11 16 18.5

WIDENING OF PAVEMENT ON CURVE

	54405	V=30 (Km/h)	V=40 (Km/h)	V=50 (Km/h)	V=60 (Km/h)
WIDENING	RANGE	RADIUS	RADIUS	RADIUS	RADIUS
(m)	0.549	ABOVE 90	ABOVE 105	ABOVE 123	ABOVE 143
0.6	0.550 0.699	89 ~ 73	104 ~ 84	122 ~ 97	142 ~ 112
0.8	0.700 0.899	⁷² ~ ₅₈	83 ~ 66	96 ~ 76	111 ~ 86
1.0	0.900 1.099	57 ~ 48	65 ~ 54	75 ~ 61	85 ~ 69
1.2	1.100 1.299	47 ~ 41	53 ~ 46	60 ~ 51	68 ~ 58
1.5	1.300	BELOW 41	BELOW 46	BELOW 51	BELOW 58





LEGEND :

W = WIDENING WIDTH
Lo = LENGTH OF SUPERELEVATION RUN-OFF
Lw = LENGTH OF FULL WIDENING WIDTH

Ln = LENGTH FROM THE BEGINNING OF RUN-OFF

WITH A WIDENING OF Wn Wn = WIDENING OF LENGTH Ln



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DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGION VIII
TACLOBAN CITY DISTRICT
ENGINEERING OFFICE
NEW BUS TERMINAL, BRGY. 91, ABUCAY, TACLOBAN CITY

PROJECT NAME AND LOCATION:

REPAIR/ MAINTENANCE OF DAMAGED PAVED ROAD - K0907+220.53 - K0907+252.8, K0907+270.8 - K0907+291.9, K0907+317.5 - K0907+321.5 ALONG TIGBAO- STA.FE- SAN MIGUEL ROAD (S00033LT)

STANDARD GEOMETRIC DESIGN

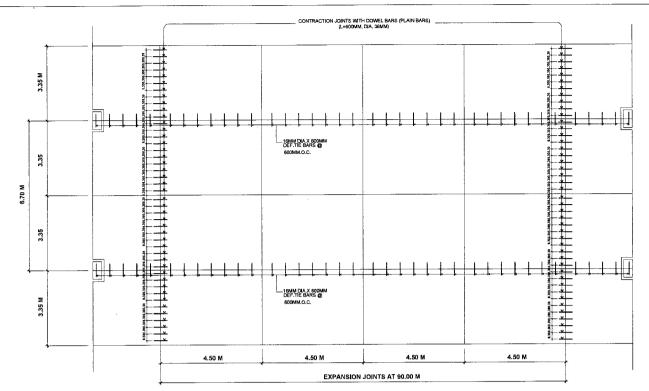
SHEET CONTENTS:

DATE: CO -03-25

SUBMITTED:

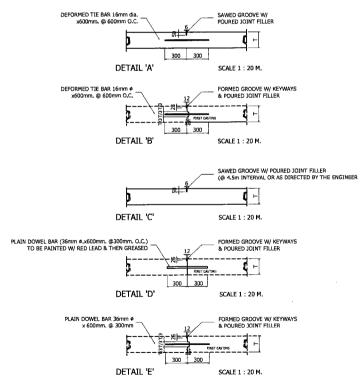
REBECCA G. YUSE

SET NO. SHEET NO. 6 17



PAVEMENT LAYOUT PLAN

TYPICAL PLAN OF A FOUR LANE PAVEMENT



KEYED TRANSVERSE CONSTRUCTION OR CONTRACT JOINT (TO BE PLACED ONLY IN MIDDLE THIRD OF NORMAL JOINT INTERVAL)

SHEET CONTENTS:

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS TACLOBAN CITY DISTRICT ENGINEERING OFFICE

REPAIR/ MAINTENANCE OF DAMAGED PAVED ROAD - K0907+220.53 - K0907+252.8, K0907+270.8 - K0907+291.9, K0907+317.5 - K0907+321.5 ALONG TIGBAO- STA.FE- SAN MIGUEL ROAD (S00033LT)

PROJECT NAME AND LOCATION:

TYPICAL PLAN OF A FOUR LANE PAVEMENT

PREPARED:

REY DATE: 0(- 09

NOTE:

THE BARS IS USED,

THE FLARE IS LESS 1000mm.

TRANSVERSE CONSTRUCTION (CONTACT) JOINT WERE

PROVIDED AT THE OF ANY RUN WHERE LAYING OF CONCRETE WERE STOPPED FOR THIRTY (30) MINUTES

USED, JOINTS OCCURS IN THE MIDDLE THIRD OF THE WEAKENED PLANE (1500 - 3000 mm.), KAYED JOINT WITH

DRILLING OF HOLES ON EXISTING PCCP AND OTHER STRUCTURES WERE PERFORMED USING POWER TOOLS THE HOLES WERE PROPERLY CLEANED BEFORE GROUT/EPOXY

INJECTION AND INSTALLATION OF DOWELS/THE BARS.

THE SIDE OF EXISTING CONCRETE PAVEMENT WERE CHIPPED OFF THE ROUGHEN THE SURFACE DOWEL BARS.

WITH THE EXISTING PAVEMENT UP TO IN DISTANCE WHERE

PERFORMED USING POWER TOOLS THE HOLES WERE
THOROUGHLY CLEANED BEFORE GROUT/EPOXY INJECTION

IT WAS PROVIDED TO CONNECT THE NEW PAVEMENT

DRILLING ON HOLES ON EXISTING PCCP WERE

AND INSTALLATION OF DOWEL BARS.

TRANVERSE CONSTRUCTION JOINTS WHICH OCCUR AT LOCATION OF WEAKENED PLANE, BUT JOINTS WITH DOWELS ARE

SUBMITTED:

RECOMMENDED APPROVED:

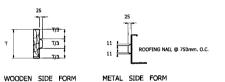
REBECCA G. YUSE DISTRICT ENGINEER SHEET NO

17

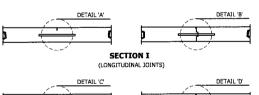
SET NO.

GENERAL NOTES:

- 1. MATERIALS AND WORKMANSHIP WERE CORFORMED WITH THE DPWH STANDARD SPECIFICATIONS FOR HIGHWAYS, BRIDGES AND AIRPORTS 2013 AND SPECIALS PROVISIONS.
- 2, CONSTRUCTION (CONTACT) JOINTS ARE FORMED WHEN CONCRETE ON ONE SIDE OF THE JOINT IS POURED AHEAD AND ALLOWED TO SET BEFORE POURING ON THE OTHER SIDE.
- 3, AT CONSTRUCTION JOINTS (LONGITUDINAL OR TRANSVERSE) WERE NO CONCRETE FROM THE LAST SLAB PLACED OVERHANGS ANY PORTION OF THE FIRST SLAB.
- 4. THE BARS ARE DEFORMED STEEL BARS, ALL THE DOWEL BARS BE SMOOTH ROUND STEEL BARS FREE FROM THE RUST AND OTHER THE DEFECTS WHICH MIGHT RESTRICT THIER MOVEMENT.
- 5. TYPED OF WEAKENED PLAIN JOINT TO ARE USED SPECIFIED IN THE PLANS AND ONLY ONE TYPE IS USED FOR THE WHOLE PROJECT.
- 6. MATERIAL FOR THE METAL SIDE ARE BRAND NEW SHEET METAL GAUGE No. 18 OF BLOCK IRON FREE FROM THE RUST AND KINKS.
- 7. SIX (6) SUCCESSIVE DOWELLED BUTT JOINTS AT NORMAL JOINT ARE PROVIDED BEFORE ON AFTER IN EXPANSION JOINT.
- 8. THE GROOVE OR CRACK ABOVE JOINTS (LONGITUDINAL OR TRANVERSE) ARE SEALED WITH 30 - 50 PENETRATION ASPHALT SEAL OR COLD APPLIED LIQUID RUBBER COMPOUND AFTER THE CONCRETE IS CURED AND BEFORE OPENING THE PAVEMENT TO TRAFFIC. ASPHALT SEAL WERE POURED IN SUCH MANNER THAT SPILLING IS PREVENTED/ELIMINATED.THIS PROVIDE A SMOOTH RIDING SURFACE.
- 9. ALL TRANVERSE JOINTS, EXCEPT CONTRUCTION JOINT CONTINUOUS FROM THE EDGE TO EDGE
- 10. ALL LONGITUDINAL JOINTS ARE AT INTERSECTIONS WITH NO GAPS OR
- 11. ALL DIMENSIONS ARE IN MIIMETERS. UNLESS OTHERWISE SPECIFIED.
- 12. AVOID STOPPAGE OF FORMWORKS ALONG CURVES.



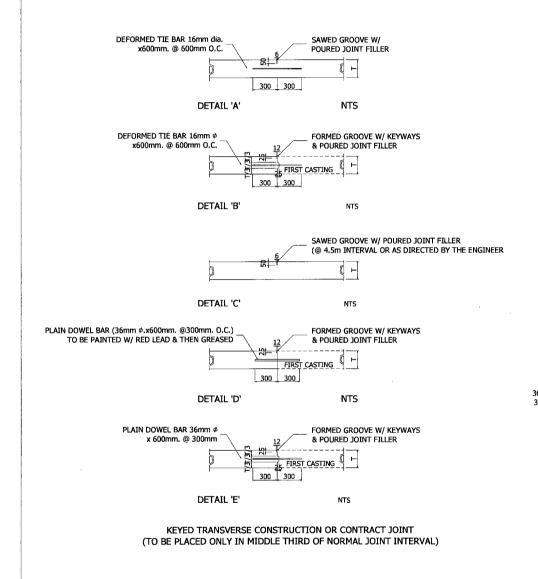
DETAIL OF SIDE FORM

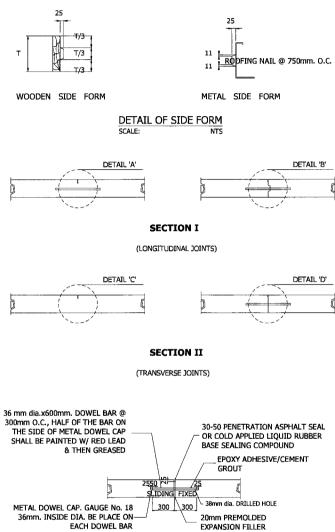


SECTION II

50 PENETRATION ASPHALT SEA COLD APPLIED LIQUID RUBBER SE SEALING COMPOUND 20mm PREMOLDED

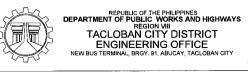
> DETAILED OF DOWELLED EXPANSION JOINT AT PCCP AND EXISTING STRUCTURES





DETAILED OF DOWELLED EXPANSION JOINT AT PCCP AND EXISTING STRUCTURES

AS PER D.O. 40, S. 2014			SUBSTITUTE		
THICKNESS OF PCCP (MM)	SIZE OF DOWEL BAR (MM)	SPACING (MM)	SIZE OF DOWEL BAR (MM)	SPACING (MM)	
			32	250	
280	36	300	28	190	
			25	150	
			32	230	
290	36	295	28	170	
			25	140	
			32	210	
300	36	274	28	150	
			25	130	
			32	200	
310	36	255	28	150	
			25	120	
			32	190	
320	36	238	28	140	
			25	110	
			32	180	
330	36	223	28	130	
			25	110	
			32	170	
340	40 36 209	209	28	130	
1			25	100	



PROJECT NAME AND LOCATION: REPAIR/ MAINTENANCE OF DAMAGED PAVED ROAD - K0907+220.53 - K0907+252.8, K0907+270.8 - K0907+291.8, K0907+317.5 - K0907+321.5 ALONG TIGBAO- STA.FE- SAN MIGUEL ROAD (S00033LT)

KEYED TRANSVERSE CONSTRUCTION OR CONTRACT JOINT DETAILED OF DOWELLED EXPANSION JOINT AT PCCP AND EXISTING STRUCTURES

SHEET CONTENTS:



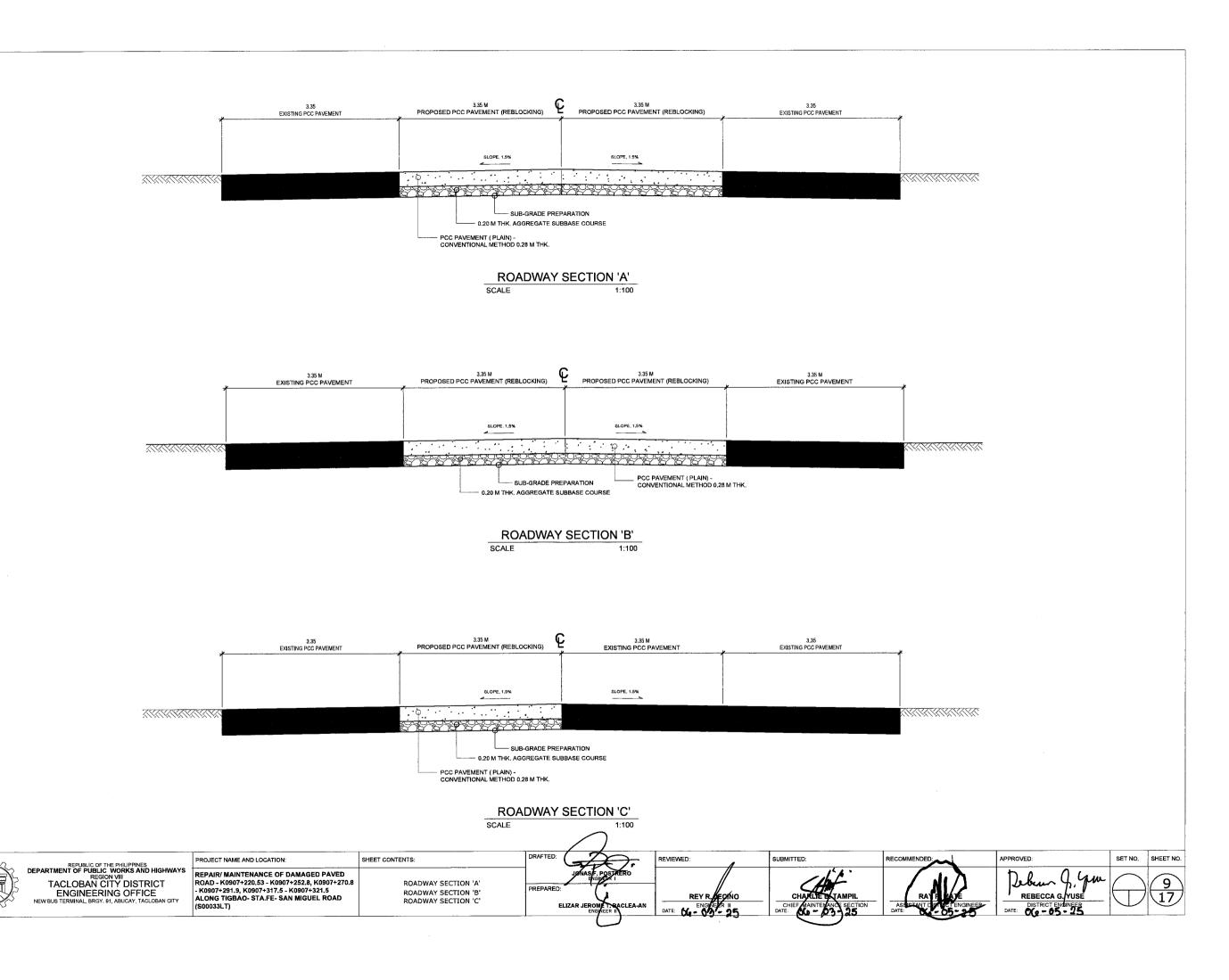
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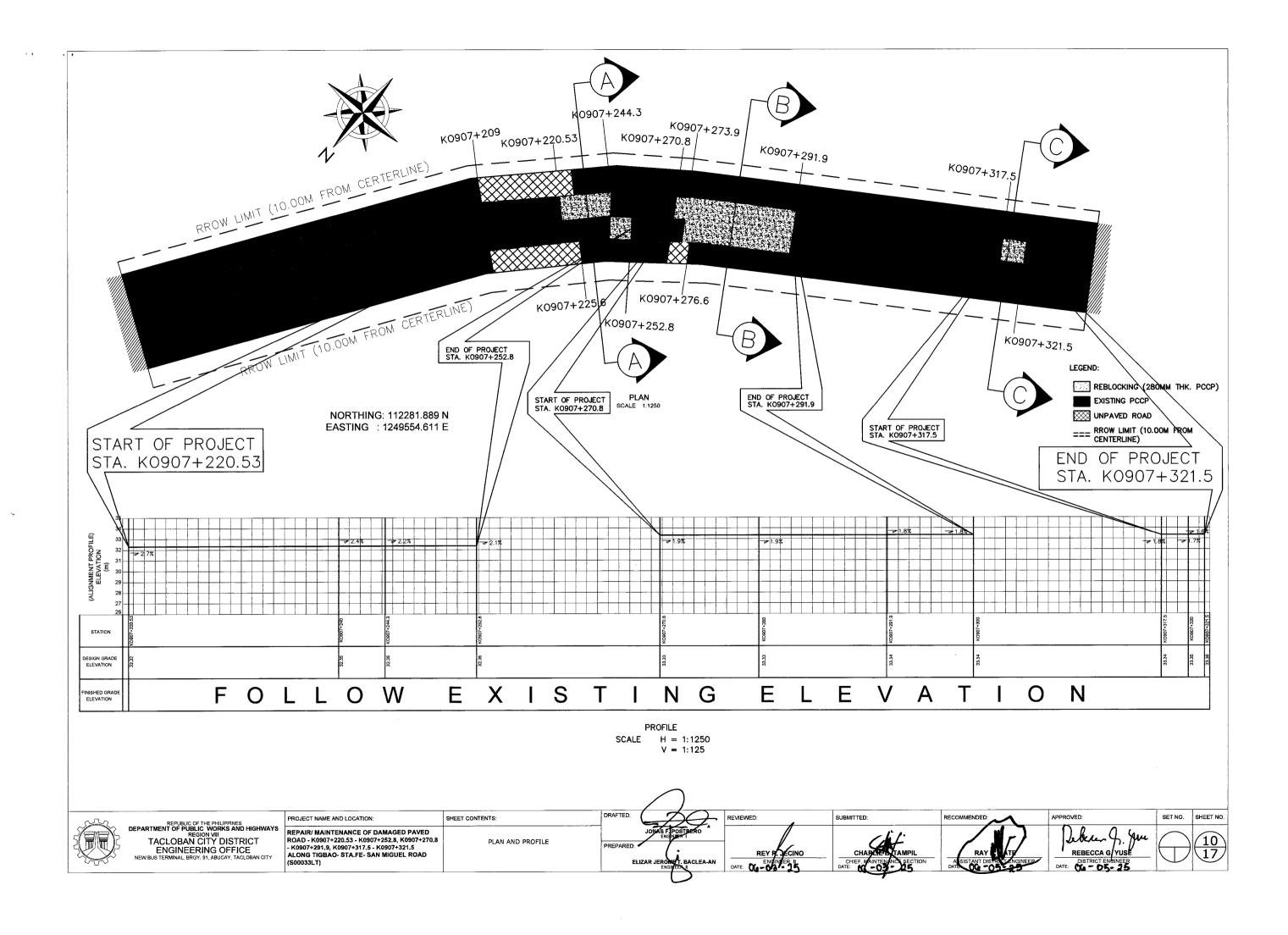
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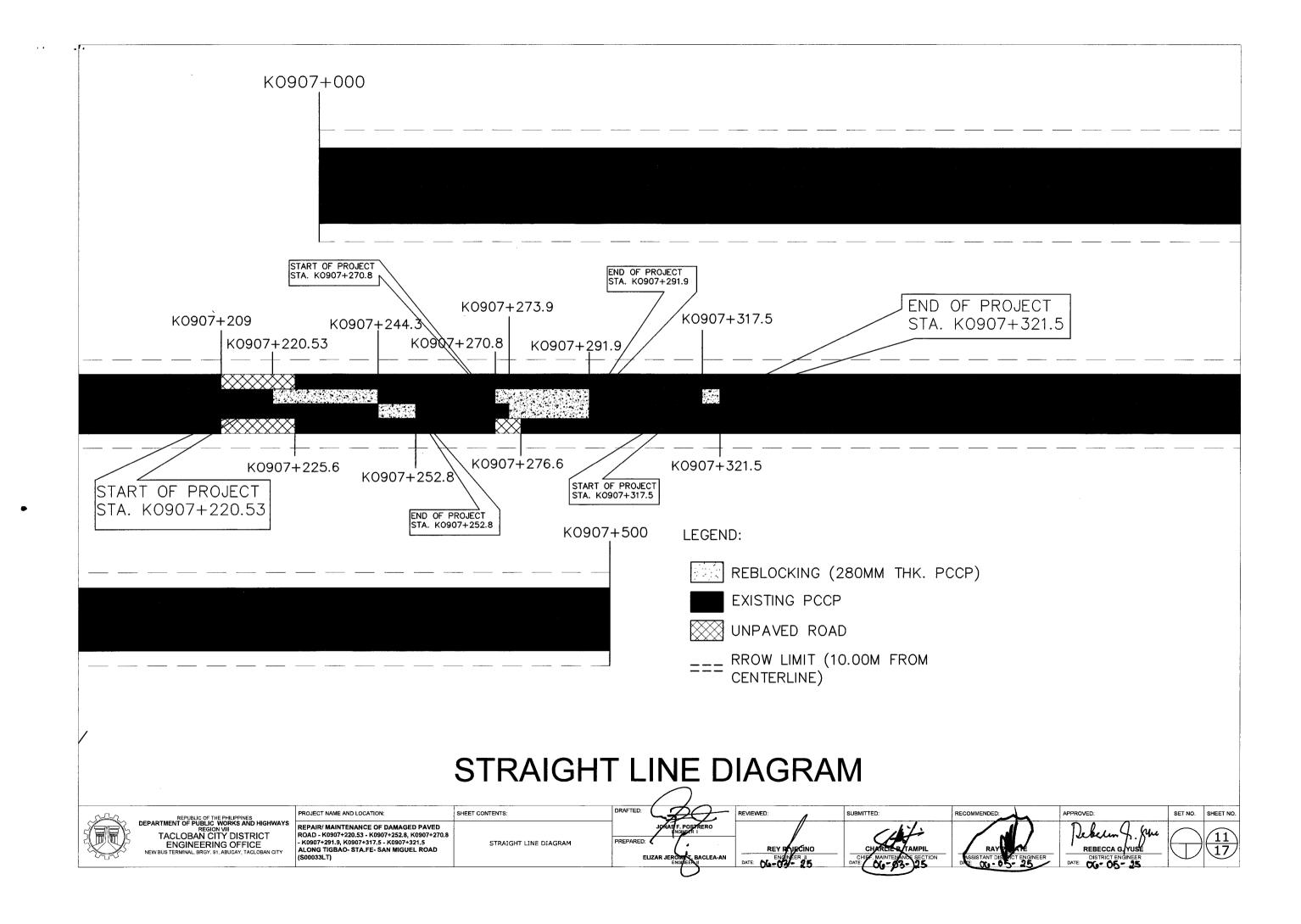


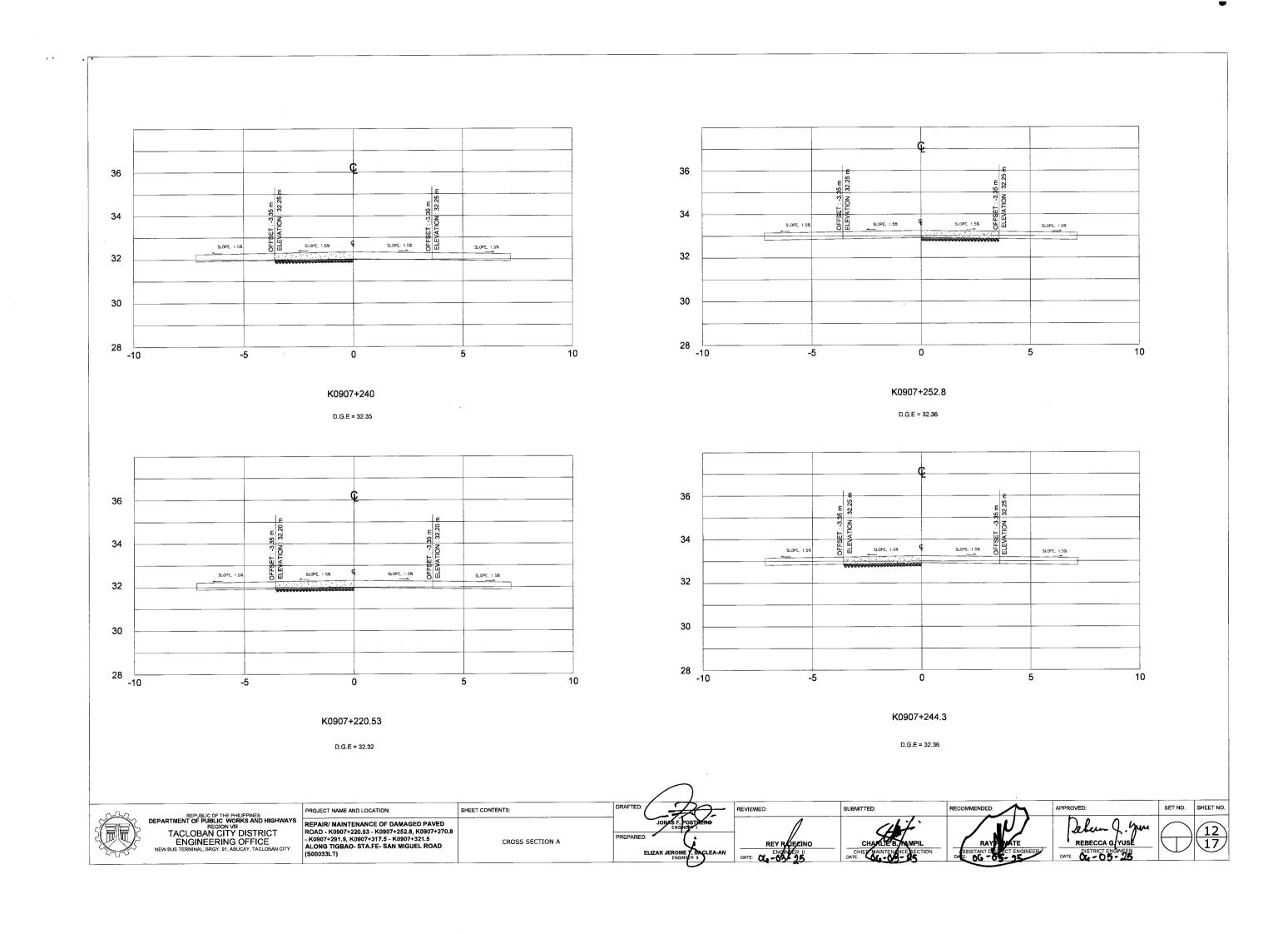
REBECCA G. YUSE

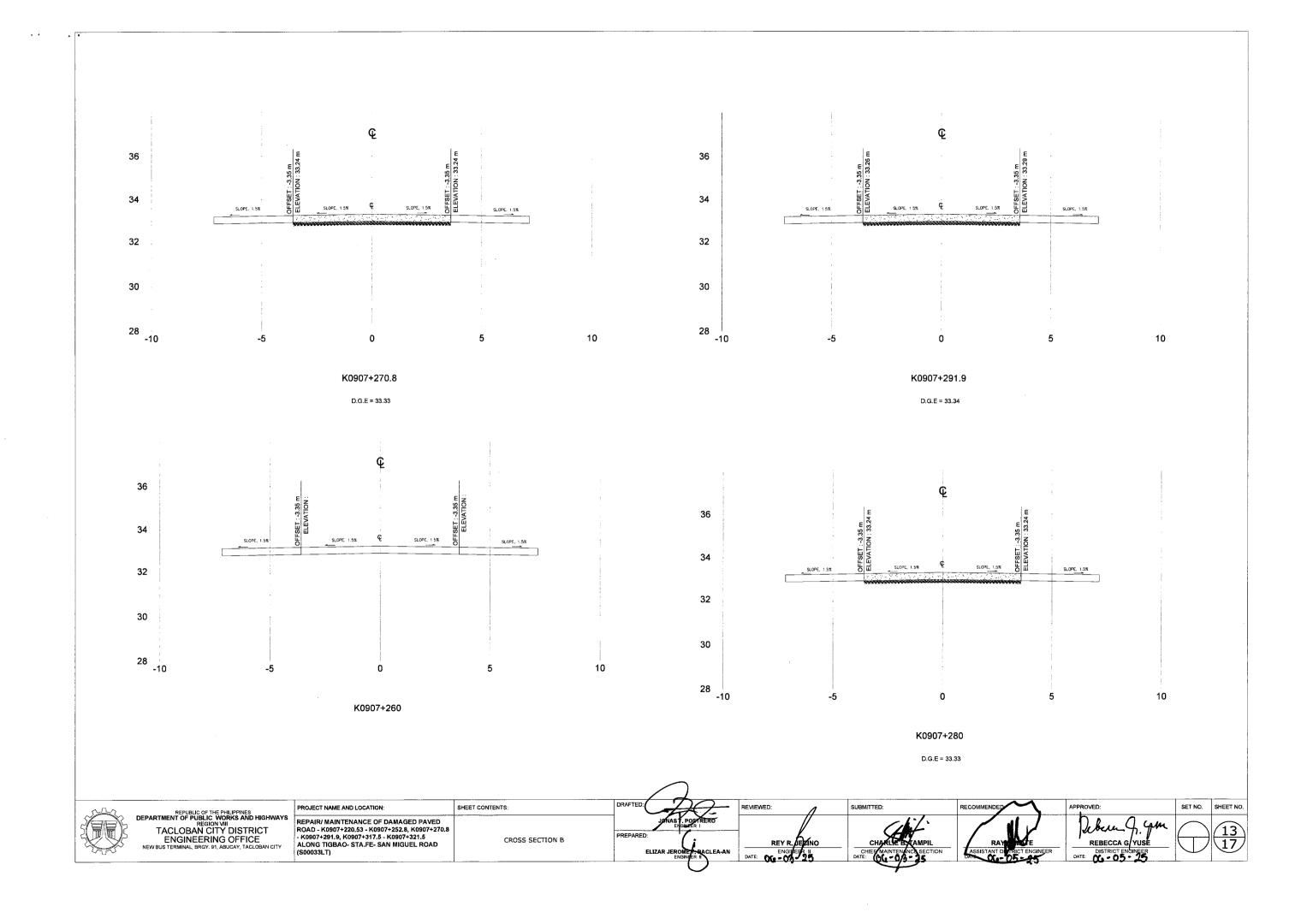
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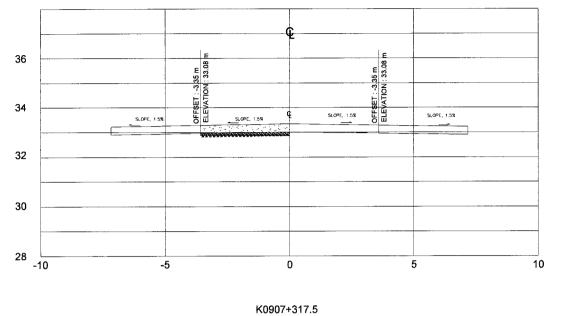




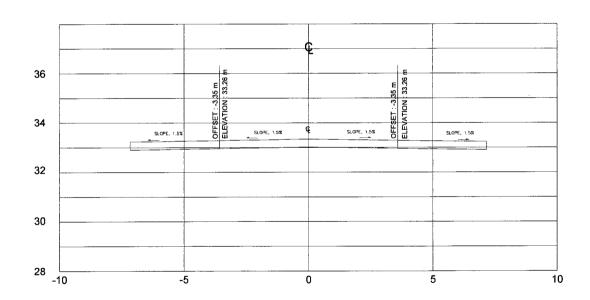






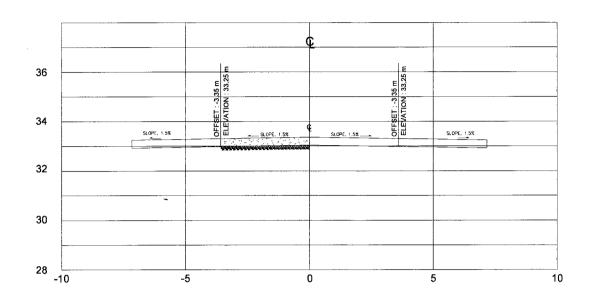


D.G.E = 33.34



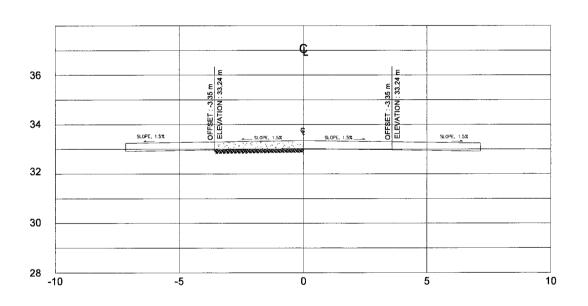
K0907+300

D.G.E = 33.34



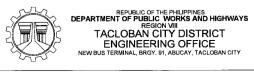
K0907+321.5

D.G.E = 33.36



K0907+320

D.G.E = 33.35



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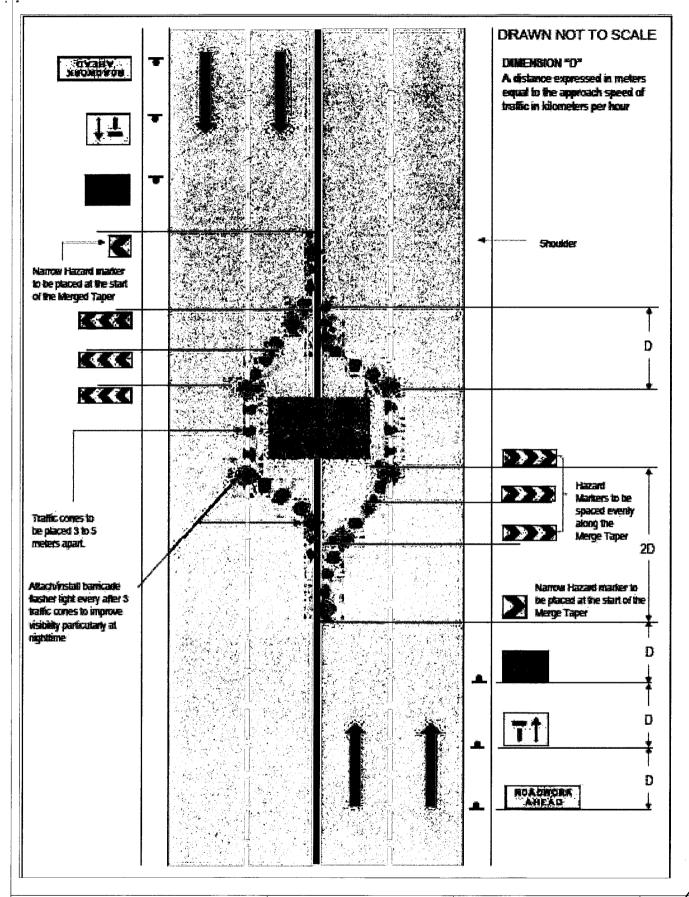
CROSS SECTION C

SHEET CONTENTS:

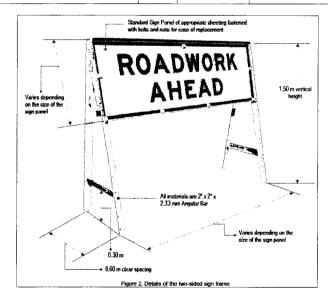
REVIEWED:

REBECCA G. YUS DISTRICT ENGINEER

SET NO. SHEET NO.



SCHEDULE OF TRAFFIC MANAGEMENT SIGNS						
	Sign No.	Size (mm) (Width X Height)	Letters/Symbols	Background		
ROADWORK ROADWORK AHEAD (T1-1, T1-31)	T1-1	1800 X 600	Line 1 - White 200 DM Line 2 - White 160 DM	Yellow Reflectorized		
WORKMEN AHEAD (Symbolic) (T1-5)	T1-5	900 X 600	Black	Red / Orange -Fluorescent for day use (Short Term) -Reflectorized for nigh use (Long Term)		
END ROADWORK (T2-16, T2-17)	T2-16	1800 X 600	Line 1 - White 200 DM Line 2 - White 160 DM	Yellow Reflectorized		
PREPARE PREPARE TO STOP TO (T1-18) STOP	T1-18	900 X 600	Line 1 - White 120 DM Line 2 - White 120 DM Line 3 - White 120 EM Reflectorized	Red Reflectorized		
TEMPORARY HAZARD MARKER (T5-5)	T5-5	600 X 600 Type B-3	Chevrons Black 194 wide at 45°	Yellow Reflectorized		
ROAD (T1-3) MACHINERY AHEAD AHEAD	T1-3	900 X 600	Line 1 - Black 100 EM Line 2 - Black 120 DM Line 3 - Black 100 EM	Yellow Reflectorized		
PEDESTRIANS → PEDESTRIANS (T8-2 L or R)	T8-2 L or R	1200 X 300	BLACK 100 CM ARROW 140	Yellow Reflectorized		
			Traffic Cones			
			Traffic Bollards with Barricade Flasher Light			



DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGION VIII
TACLOBAN CITY DISTRICT
ENGINEERING OFFICE
NEW BUS TERMINAL, BRGY. 91, ABUCAY, TACLOBAN CITY

PROJECT NAME AND LOCATION:

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SHEET CONTENTS:

SCHEDULE OF TRAFFIC MANAGEMENT SIGNS
DETAILS OF TRAFFIC MANAGEMENT SIGNS

JONAS F POSTRERO

EPARED:

ELIZAR JEROME T. SACLEA-AN

ENGINEER II

DATE: OG

REVIEWED: SUBMITTED:

REV R SECINO

CHAP

CHIEF AND
DATE: 10
DATE: 16
DATE:

CHARTISE TAMPIL

CHIEF MAINTENANCE SECTION

DATE: 09-03-35

RAY COTE

SSISTANT DISTRICT ENGINEER

DE: 06 - 07 - 35

Pebeur J. Yuu REBECCA B. YUSE

DISTRICT ENGINEER

DATE: 06-05-25

SET NO. SHEET NO.

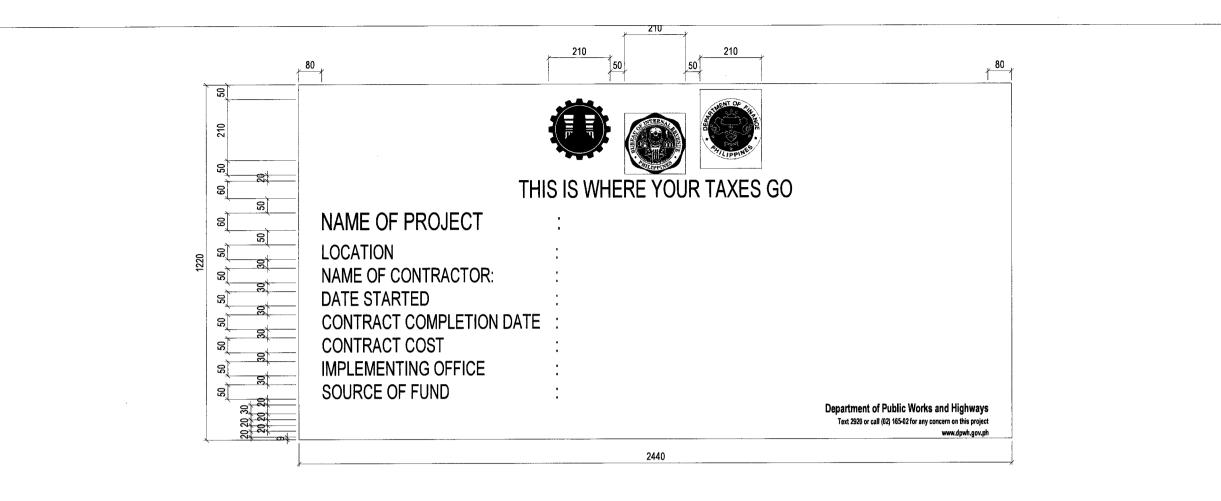
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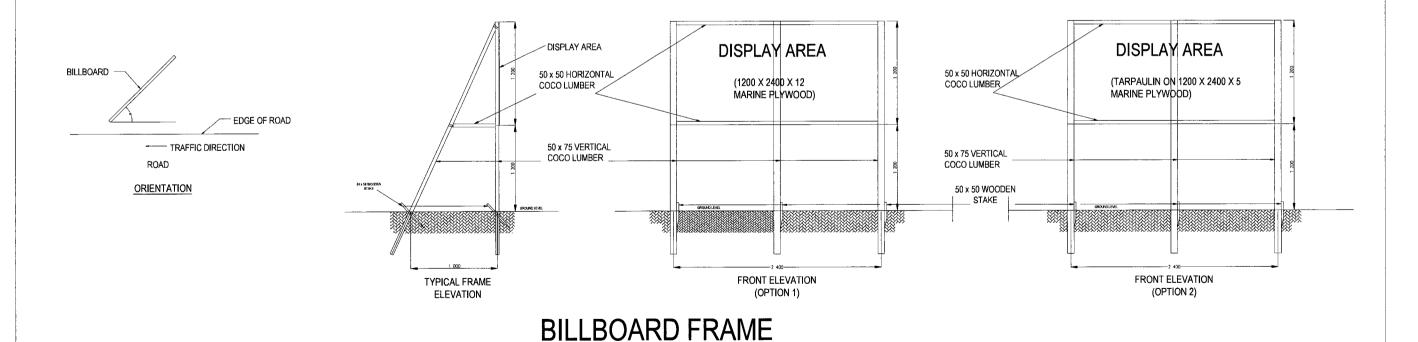
SHEET NO.

SHEET NO.

15

17





REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGION VIII
TACLOBAN CITY DISTRICT
ENGINEERING OFFICE
NEW BUS TERMINAL, BRGY. 91, ABUCAY, TACLOBAN CITY

REPAIR/ MAINTENANCE OF DAMAGED PAVED ROAD - K0907+220.53 - K0907+252.8, K0907+270.8 - K0907+291.9, K0907+317.5 -K0907+321.5 ALONG TIGBAO- STA.FE- SAN MIGUEL ROAD (S00033LT)

PROJECT NAME AND LOCATION:

STANDARD DPWH PROJECT BILLBOARD

SHEET CONTENTS:

(NOT TO SCALE, ALL DIMENSIONS ARE IN MILLIMETERS)

REY R JECINO

REBECCA G. YUSE

SET NO. SHEET NO.

16

		2.40 M		2.4	D.M
	.20 M	(1200 X 2400 X 12 MARINE PLYWOOD)			
Government Center Candahug, Palo,		DISPLAY AREA	50 x 50 HORIZONTAL	DISPL	Y AREA
Leyte	×		COCO LUMBER	(TARPAULIN 8 ft x 12 MARINE	8 ft ON 2-1200 X 2400 PLYWOOD)
Location : Fund Source/s :	1.20 N	(1200 X 2400 X 12 MARINE PLYWOOD)			
Implementing Agency/ies: Development Partner/s:	×	.	50 x 75 VERTICAL		
Contractor/Supplier: Brief Description of Project:	2.40 M		COCO LUMBER 50 x 50 WOODEN		
Project Details :		GROUND LEVEU	STAKE		GROUND LEVE
Project Date Project Status Target Percentage As of Cost Date Completed Remarks					
Duration Started Date of of (Date) Incurred Completed Remarks Completion Completion (Date) to Date					
				1.16 M	1.16 M
		2.40 M	FRONT ELEVATION	2.3	3 M
For particulars or complaints about this project, please contact the Regional Office or Cluster which has audit jurisdiction on this project:		•	(OPTION 1)	/	n <u> </u>
COA Regional Office No./Cluster : Address : or Text COA Citizen's Desk at 0915-5391957					!
G TEXT COX CALLERY S SESSION OF S			50 x 50 HORIZONT AL COCO LUMBER		- DISPLAY AR
		BILLBOAR			
2.40 M	•	45° EDGE OF ROAD	50 x 75 VERTICAL COCO LUMBER	#	
COA STANDARD PROJECT BILLBOARD		ROAD \triangleleft TRAFFIC DIRECTION	50 x 50 HORIZONT AL COCO LUMBER		
SPECIFICATIONS:	·	TRAFFIC DIRECTION		//	
1. TARPAULIN, WHITE, 8 FT X 8 FT			50 x 50 WOODEN	//	

2. RESOLUTION: 70 DPI

3. FONT: HELVETICA

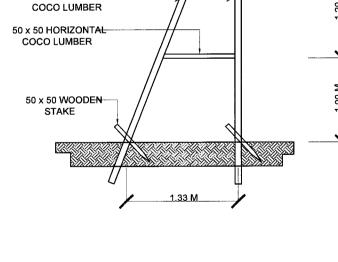
4. FONT SIZE: MAIN INFORMATION - 3"

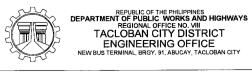
SUB-INFORMATION - 1"

5. FONT COLOR: BLACK

6. BACKGROUND COLOR: WHITE

COA BILLBOARD FRAME





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SHEET CONTENTS:

COA BILLBOARD

REY RAJECINO

REBECCA & YUSE

DISTRICT ENGINEERS

DATE: 05-25

2.40 M

- DISPLAY AREA

SET NO. SHEET NO. 17