



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGIONAL OFFICE No. XI
GOV. CHAVEZ COR. R. MAGSAYSAY ST. DAVAO CITY

C.Y. 2025 PROJECT
DETAILED ENGINEERING DESIGN PLAN FOR

**PREVENTIVE MAINTENANCE OF ROAD: ASPHALT OVERLAY -
MAHARLIKA HIGHWAY - DAVAO COTABATO ROAD (DAVAO CITY-JCT
DIGOS SECTION) - K1551+695 - K1553+000, DAVAO DEL SUR**

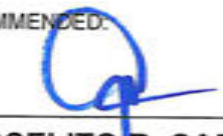
SECTION	:	BRGY. TUBAN - BRGY. TAGABULI
LOCATION	:	SANTA CRUZ, DAVAO DEL SUR
STATION LIMITS (AS PER RBIA)	:	K1551+695 TO K1553+000
STATION LIMITS (AS PER PLAN)	:	STA. 1551+714.218 TO STA. 1553+059.425 (W/ EQUATIONS)
NET LENGTH	:	1.344061 KM. / 5.376244 LANE-KM.
ROAD SECTION ID	:	(S00162MN)

SUBMITTED:


JUDY ANN T. BERNARDINO
CHIEF, PLANNING AND DESIGN DIVISION

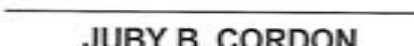
DATE:

RECOMMENDED:


JOSELITO B. CABALLERO
ASSISTANT REGIONAL DIRECTOR

DATE:

APPROVED:


JUBY B. CORDON
REGIONAL DIRECTOR

DATE:

A. GENERAL INFORMATION AND DETAILS

PROJECT LIMITS

ASPHALT OVERLAY (4 - LANES)

BEGINNING OF PROJECT : STA. 1551 + 714.218 (AS PER PLAN)
K1551 + 695 (AS PER RBIA)

END OF PROJECT : STA. 1553 + 059.425 (AS PER PLAN)
K1553 + 000 (AS PER RBIA)

LENGTH = 1,345.207 LN.M

PLUSMINUS EQUATIONS :

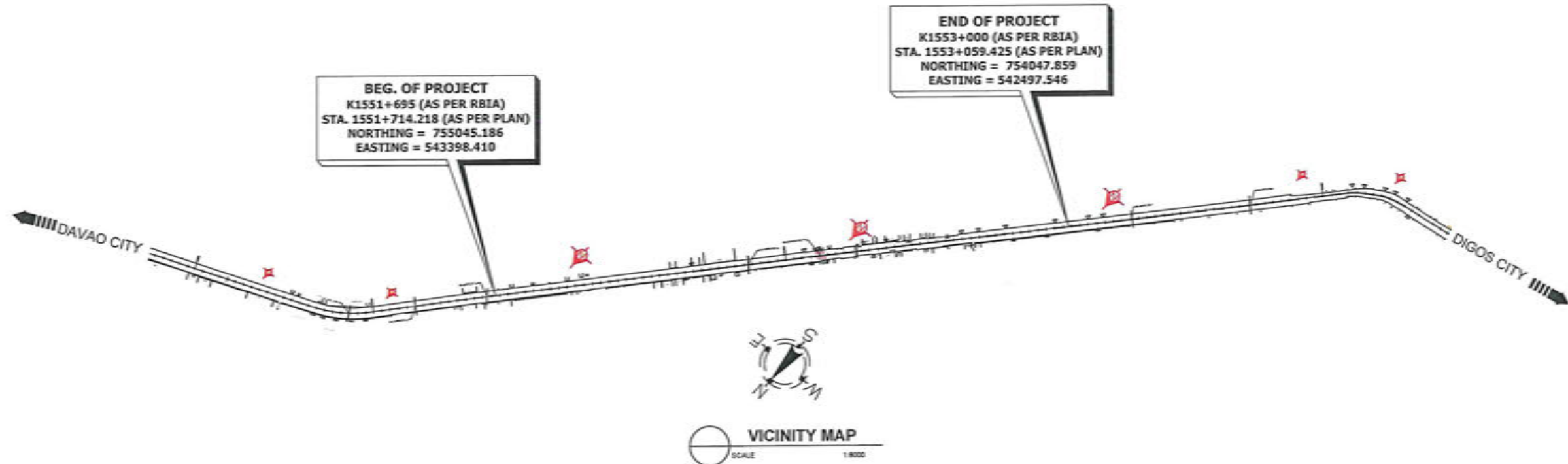
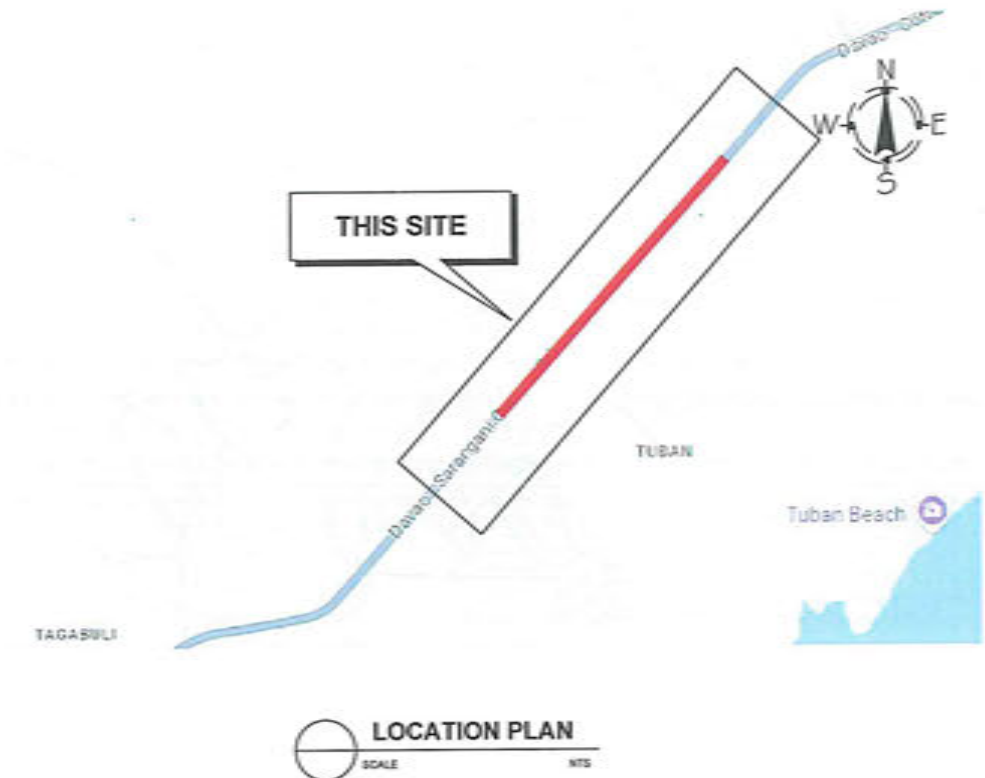
STA. 1552 + 398.854 BK
STA. 1552 + 400.000 AH = (1.146)

TOTAL EQUATION = (1.146)

NET LENGTH = 1,344.061 LN.M

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REGIONAL OFFICE NO. XI
GOV. CHAVEZ COR. R. MAGSAYSAY AVENUE, DAVAO CITY

PROJECT NAME AND LOCATION
PREVENTIVE MAINTENANCE OF ROAD:
ASPHALT OVERLAY - MAHARILKA
HIGHWAY - DAVAO COTABATO ROAD
(DAVAO CITY-JCT DIGOS SECTION) -
K1551+695 - K1553+000, DAVAO DEL SUR

SHEET CONTENTS
PROJECT LIMITS
INDEX OF SHEETS
VICINITY MAP
LOCATION PLAN

DRAFTED AND PREPARED
NEIL ERIC L. TOMALE
ENGINEER I
DATE: _____

REVIEWED
DENNIS ARNOLD A. SEMPIO
ENGINEER II, OIC - SECTION CHIEF
DATE: _____

SUBMITTED
JUDY ANN T. BERNARDINO
CHIEF, TRAINING AND DESIGN DIVISION
DATE: _____

RECOMMENDING APPROVAL
JOSELO B. CABALLERO
ASSISTANT REGIONAL DIRECTOR
DATE: _____

APPROVED
JUDY B. CORDON
REGIONAL DIRECTOR
DATE: _____

SET NO. 1/14
SHEET NO. 1/29

GENERAL NOTES (ROADS, DRAINAGE, AND STRUCTURES)

SPECIFICATIONS

- ALL WORKS SHALL COMPLY WITH THE "DPWH STANDARD SPECIFICATIONS VOLUME II, HIGHWAYS, BRIDGES AND AIRPORTS 2013", SPECIAL PROVISIONS AND SUPPLEMENTAL SPECIFICATIONS PERTAINING TO THIS PROJECT.

DIMENSIONS

- DISTANCES BETWEEN THE HORIZONTAL CONTROL POINTS INCLUDING REFERENCE POINTS ARE MEASURED AND EXPRESSED IN METERS.
- UNLESS OTHERWISE SPECIFIED, DIMENSIONS OF PIPES, BOX CULVERTS, BRIDGES AND OTHER STRUCTURES ARE MEASURED AND EXPRESSED IN MILLIMETERS.
- ALL OTHER DIMENSIONS ARE EXPRESSED IN METERS.

ELEVATIONS AND GRADES

- FINISHED GRADE ELEVATION SHOWN ON PLAN AND PROFILE SHEETS REFERS TO FINISHED PAVEMENT LEVEL AS INDICATED IN THE TYPICAL ROADWAY SECTION.
- EXISTING ELEVATION SHOWN ON THE PLAN AND PROFILE SHEETS REFERS TO THE ELEVATION OF THE ORIGINAL GROUND ALONG THE CENTERLINE OF THE PROJECT ROAD.

GRADING AND OTHER GENERAL REQUIREMENTS

- ALIGNMENT AND GRADES ARE SUBJECT TO ADJUSTMENT TO SUIT ACTUAL FIELD CONDITION.
- DISTANCES AND ELEVATIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
- GRADE SHOWN ARE TOP OF FINISHED PAVEMENT.
- ALL WORKS SHALL COMPLY WITH THE STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES, REVISED 2013 AND "A POLICY ON GEOMETRIC DESIGN", AASHTO 2011.
- WHERE NO DETOURS ARE AVAILABLE, TRAFFIC SHALL BE HANDLED IN ACCORDANCE TO PROVISIONS OF CLAUSE 75 OF THE DPWH STANDARD SPECIFICATIONS, VOLUME 1, REQUIREMENTS AND CONDITIONS OF CONTRACT (2013).
- THE APPARENT SILENCE OF SPECIFICATIONS, PLANS, SPECIAL PROVISIONS AND SUPPLEMENTARY SPECIFICATIONS, AS TO ANY DETAIL OR THE APPARENT OMISSION FROM THEM OF DETAILED DESCRIPTION CONCERNING ANY POINT SHALL BE REGARDED AS MEANING THAT ONLY THE BEST GENERAL PRACTICE IS TO PREVAIL AND THAT ONLY MATERIAL AND WORKMANSHIP OF FIRST CLASS QUALITY ARE TO BE USED.
- ROADS CLOSED TO TRAFFIC SHALL BE PROTECTED BY EFFECTIVE BARRICADES, AND OBSTRUCTIONS SHALL BE ILLUMINATED AT NIGHT, SUITABLE WARNING SIGNS, ILLUMINATED AT NIGHT BY LANTERNS OR FLARES, SHALL BE PROVIDED, ALL LIGHTS FOR THIS PURPOSE SHALL BE KEPT BURNING FROM SUNSET TO SUNRISE.
- THE CONTRACTOR WILL BE REQUIRED TO ERECT WARNING SIGNS OUTSIDE OF, AND 150M FROM, EACH END OF THE PROJECT, AND 150M IN ADVANCE AT ANY PLACE ON THE PROJECT WHERE OPERATIONS INTERFERE WITH THE USE OF THE ROAD BY TRAFFIC, AND AT ALL INTERMEDIATE POINTS WHERE THE NEW WORK CROSSES OR COINCIDES WITH AN EXISTING ROAD.
- BEFORE THE START OF ACTUAL CONSTRUCTION, THE AS-STAKED PLAN SHOULD BE SUBMITTED TO THE REGIONAL OFFICE IN ORDER THAT IMMEDIATE STEPS MAY BE TAKEN TO CORRECT OR ADJUST WHATEVER APPRECIABLE DEVIATION THERE MAY BE FROM THE ORIGINAL PLAN.
- THE IMPLEMENTING OFFICE SHALL IDENTIFY THE LOCATIONS OF AND PROVIDE ACCESSIBILITY FACILITIES FOR PERSONS WITH DISABILITIES IN ACCORDANCE WITH DO NO. 37, S. 2009.
- QUARRY SITE IS LOCATED AT BALATUKAN RIVER QUARRY. DISPOSAL SITE IS TWELVE (12.00) KMS. WITHIN PROJECT LIMIT. ASPHALT BATCHING PLANT IS LOCATED AT CARMEN, DAVAO DEL NORTE.
- DESIGN WAS BASED ON SURVEY DATA SUBMITTED BY THE SURVEY AND INVESTIGATION SECTION OF PLANNING AND DESIGN DIVISION OF THE DPWH-REGIONAL OFFICE XI.

EARTHWORKS

- ALL CONCRETE PAVEMENT, BASE COURSE, SIDEWALKS, CURBS, GUTTERS, ETC., DESIGNATED FOR REMOVAL SHALL BE BROKEN INTO PIECES, THE SIZE OF WHICH SHALL NOT EXCEED 300mm (12in) IN ANY

DIMENSION AND STOCKPILED AT DESIGNATED LOCATIONS ON THE PROJECT OR AS DIRECTED BY THE ENGINEER.

- ALL EXCAVATIONS SHALL BE FINISHED TO REASONABLY SMOOTH AND UNIFORM SURFACES. NO MATERIALS SHALL BE WASTED WITHOUT AUTHORITY OF THE ENGINEER. EXCAVATION OPERATIONS SHALL BE CONDUCTED SO THAT MATERIAL OUTSIDE OF THE LIMIT OF SLOPES WILL NOT BE DISTURBED.
- SPOILS FROM DEMOLISHED/EXCAVATED MATERIALS SHALL NOT BE ALLOWED TO BE STOCKPILED AT THE SHOULDER OR PART OF THE TRAVELED ROADWAY AND SHALL BE REMOVED IMMEDIATELY TO PREVENT OBSTRUCTION. SPOILS REMOVED SHALL BE DISPOSED OFF IN DESIGNATED AREAS APPROVED BY THE ENGINEER.
- APPROACHES AND ROAD CONNECTIONS SHALL BE CONSTRUCTED AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER IN SUCH MANNER AS TO ENSURE PROPER CONNECTIONS TO THE RIDING SURFACES.

SURFACE COURSE

- APPLICATION OF BITUMINOUS MATERIALS SHALL BE MADE ONLY WHEN THE AGGREGATE IS DRY AND ATMOSPHERIC TEMPERATURE IN THE SHADE IS 15 DEGREES OR ABOVE AND WHEN THE WEATHER IS NOT FOGGY OR RAINY. THE PROPORTION OF BITUMINOUS MATERIAL ON THE BASIS OF TOTAL DRY AGGREGATE SHALL BE FROM 5.0 TO 6.0 MASS PERCENT. THE EXACT PERCENTAGE TO BE USED SHALL BE IN ACCORDANCE WITH THE JOB-MIX FORMULA AND OTHER QUALITY CONTROL REQUIREMENTS.
- ALL JOINTS SHALL BE SUFFICIENTLY SEALED WITH ASPHALT SEALANT PRIOR TO OPENING TO VEHICULAR TRAFFIC.
- THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO CONTROL TRAFFIC OVER NEWLY-LAID BITUMINOUS SURFACE TREATMENT SO THAT THE SURFACE IS NOT DAMAGED IN ANY WAY. TRAFFIC SHALL BE PROHIBITED FROM TRAVELING AT SPEEDS IN EXCESS OF 40KPH UNTIL THE ASPHALTIC MATERIAL HAS SET. NO VEHICLES, INCLUDING THOSE DELIVERING AGGREGATES SHALL BE PERMITTED TO TURN AROUND ON NEWLY-LAID MATERIAL.
- WHEN RAIN APPEARS IMMINENT, ALL PAVING OPERATIONS SHALL STOP.
- EXISTING PAVEMENTS WITH DEFECTS (OTHER THAN SHATTERED SLABS) AND JOINTS SHALL BE SEALED REPAIRED BEFORE OVERLAYING THE ASPHALT.
- CRACKS TO BE FILLED WITH ASPHALT SEALANT SHALL BE APPLIED WITH WASHED SAND. EXCESS SAND SHALL BE BROOMED AFTER 2-4 HOURS.
- IN ASPHALT OVERLAYING AT CURVES, SUPERELEVATION OF THE EXISTING PAVEMENT SHALL BE MAINTAINED OR IMPROVED. APPROPRIATE CROSS SLOPES (NORMAL CROWN) SHALL BE APPLIED TO DRAIN THE PAVEMENT.
- PURSUANT TO DEPARTMENT ORDER NO. 137, SERIES OF 2016, FOR NEWLY CONSTRUCTED CONCRETE AND ASPHALT ROAD PROJECTS, AN IRI VALUE OF NOT MORE THAN 3.00/MKM IS PRESCRIBED. NON-COMPLIANCE WITH THE SAID DO SHALL BE SUBJECT TO PAY ADJUSTMENTS CORRESPONDING TO THE ACQUIRED IRI VALUE. COMPLIANCE OF THE CONTRACTORS TO THE IRI REQUIREMENT AND STRICT IMPLEMENTATION OF PROPER BASE AND SUBBASE PREPARATION IS EMPHASIZED PRIOR TO CONCRETE POURING, PREPARATORY WORKS IN EXISTING SURFACES/ROADBED PRIOR TO ASPHALT LAYING AND PAVING AND FINISHING FOR CONCRETE PAVEMENT.

REMOVAL OF EXISTING STRUCTURES AND OBSTRUCTIONS

- NO PAYMENT SHALL BE MADE FOR REMOVAL OF OTHER MISCELLANEOUS STRUCTURES THAT MAY BE REQUIRED AS SUBSIDIARY WORK PERTAINING TO OTHER CONTRACT ITEMS EXCEPT FOR SPECIFIC ITEMS EXPRESSLY IDENTIFIED FOR PAYMENT.
- REMOVAL OF EXISTING ASPHALT OVERLAY SHALL BE THROUGH ROTO-MILLING TO SYSTEMATICALLY REMOVE THE SPECIFIED THICKNESS OF EXISTING ASPHALT OVERLAY.
- ROTO-MILLING OR COLD MILLING, SHALL BE CONDUCTED USING A ROTO-MILLING MACHINE OR COLD MILLING ASPHALT PAVEMENT MACHINE WITH ROTATING CUTTING DRUMS WITH TEETH THAT WILL GRIND AND REMOVE THE ASPHALT SURFACE. THE DEPTH OF MILLING SHALL BE CLOSELY MONITORED BY THE PROJECT ENGINEER TO ENSURE COMPLIANCE TO APPROVED PLANS AND SPECIFICATIONS.
- PROPER TRAFFIC CONTROL MEASURES SHALL BE IMPLEMENTED DURING THE MILLING OPERATION TO ENSURE THE SAFETY OF WORKERS AND THE TRAVELLING PUBLIC. TRAFFIC LANES MAY BE TEMPORARILY SHIFTED OR CLOSED AS NECESSARY TO FACILITATE THE MILLING PROCESS AND PROTECT WORKERS

FROM VEHICULAR TRAFFIC.

- FOLLOWING THE COMPLETION OF THE MILLING PROCESS, THE MILLED ASPHALT SHALL BE COLLECTED AND TRANSPORTED TO THE CONCERNED DISTRICT ENGINEERING OFFICE FOR STOCKPILING AND FUTURE CYCLING OR DISPOSAL. THE STOCKPILED MILLED ASPHALT SHALL BE COVERED WITH TARPULIN OR ANY EQUIVALENT MATERIAL TO PREVENT EXPOSURE FROM THE ELEMENTS.

REMOVAL OF EXISTING PAVEMENT MARKINGS

- PAVEMENT GRINDER OR SCARIFYING MACHINE EQUIPPED WITH CARBIDE-TIPPED OR DIAMOND-TIPPED BLADES OR GRINDING HEADS WITH ADJUSTABLE DEPTH CONTROLS TO AVOID EXCESSIVE REMOVAL OF THE PAVEMENT SURFACE.
- A TEST GRIND SHALL BE PERFORMED ON A SMALL SECTION TO ENSURE THE PROPER DEPTH. GRINDING SHALL COMMENCE AT A LOW SPEED, GRADUALLY INCREASING AS NECESSARY TO REMOVE THE MARKINGS WHILE AVOIDING EXCESSIVE WEAR TO THE PAVEMENT SURFACE.
- CONTINUOUSLY VACUUM OR SWEEP THE WORK AREA TO PREVENT DEBRIS ACCUMULATION. DUST SUPPRESSION MEASURES SHALL BE APPLIED AS NEEDED SUCH AS WATER SPRAYING OR VACUUM ATTACHMENTS, ESPECIALLY IN HIGH-TRAFFIC AREAS.
- IF GRINDING RESULTS IN SURFACE DAMAGE OR GROOVES, APPLY APPROPRIATE SURFACE TREATMENTS SUCH AS MICRO-SURFACING OR OVERLAYS TO RESTORE A SMOOTH DRIVING SURFACE. THE PROJECT ENGINEER SHALL DETERMINE IF ADDITIONAL REPAIRS OR RESURFACING ARE REQUIRED BASED ON THE EXTENT OF GRINDING.

MISCELLANEOUS STRUCTURES

- OBSTRUCTIONS WITHIN THE ROADWAY, IF NOT ILLUMINATED, SHALL BE MARKED WITH REFLECTORIZED HAZARD MARKERS (REFER TO SECTION 7 OF THE HIGHWAY SAFETY DESIGN STANDARDS PART 2 MAY 2012 EDITION). FOR ADDITIONAL EMPHASIS, IT IS ADVISABLE TO MARK OBSTRUCTIONS WITH NO LESS THAN FIVE ALTERNATING REFLECTORIZED BLACK AND WHITE STRIPES.
- THE APPLICATION OF PAINT FOR PAVEMENT MARKINGS SHALL BE PREFERABLY CARRIED OUT BY A MACHINE SPECIALLY MADE FOR THIS PURPOSE BUT WHERE BRUSHES ARE USED, ONLY ROUND OR OVAL BRUSHES NOT EXCEEDING 100mm IN WIDTH WILL BE PERMITTED. THE PAINT SHALL BE SO APPLIED AS TO PRODUCE A UNIFORM, EVEN COATING IN CLOSE CONTACT WITH THE SURFACE BEING PAINTED.
- THE APPLIED THERMOPLASTIC PAVEMENT MARKINGS SHALL HAVE A MINIMUM OF 2 YEARS OF LONGEVITY/DURABILITY. PAVEMENT MARKINGS SHALL NOT BE APPLIED DURING RAIN OR WET WEATHER OR WHEN THE AIR IS MISTY. PAINT SHALL NOT BE APPLIED UPON DAMP PAVEMENT SURFACES, OR UPON PAVEMENT WHICH HAS ABSORBED HEAT SUFFICIENT TO CAUSE THE PAINT TO BUSTLE AND PRODUCE A POROUS FILM OF PAINT.
- MATERIALS WHICH ARE DEFECTIVE OR HAVE BEEN APPLIED IN AN UNSATISFACTORY MANNER OR TO INCORRECT DIMENSIONS OR IN A WRONG LOCATION SHALL BE REMOVED. THE ROAD PAVEMENT SHALL BE MADE GOOD AND MATERIALS REPLACED, RECONSTRUCTED AND/OR PROPERLY LOCATED, ALL AT THE CONTRACTOR'S EXPENSE AND TO THE SATISFACTION OF THE ENGINEER.

FACILITIES FOR THE ENGINEER

- THE CONTRACTOR SHALL CONSTRUCT FIELD OFFICES, LABORATORIES AND LIVING QUARTERS, INCLUDING ALL THE NECESSARY AIR CONDITIONING, ELECTRICITY, WATER, DRAINAGE AND SECURITY SERVICES FOR THE USE OF THE ENGINEER AND HIS STAFF FOR 24 HOURS A DAY OR PROVIDE THE SAME ON RENTAL BASIS UNTIL END OF CONTRACT. ON COMPLETION OF CONTRACT, THE FACILITIES INCLUDING UTILITIES SHALL REVERT TO THE GOVERNMENT UNLESS OTHERWISE SPECIFIED IN THE CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL AT ALL TIMES DURING THE DURATION OF THE CONTACT PROVIDE FOR THE USE OF ENGINEER ALL EQUIPMENT, INSTRUMENTS AND APPARATUS, ALL INFORMATION AND RECORDS AND QUALIFIED CHAIRMEN AND LABORERS REQUIRED BY THE ENGINEER FOR INSPECTING AND MEASURING THE WORKS. SUCH EQUIPMENT, INSTRUMENTS AND APPARATUS SHALL INCLUDE THOSE LISTED IN THE SPECIAL PROVISIONS.

 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS REGIONAL OFFICE NO. XI GOV. CHAVEZ COR. R. WAGSAY AVENUE, DAVAO CITY	PROJECT NAME AND LOCATION	SHEET CONTENTS	DRAWN AND PREPARED	REVIEWED	SUBMITTED	RECOMMENDING APPROVAL	APPROVED	SET NO.	SHEET NO.
	PREVENTIVE MAINTENANCE OF ROAD: ASPHALT OVERLAY - MAHARLIKA HIGHWAY - DAVAO COTABATO ROAD (DAVAO CITY-JCT DIGOS SECTION) - K1551+895 - K1553+000, DAVAO DEL SUR	GENERAL NOTES (ROADS, DRAINAGE, AND STRUCTURES)	NEIL ERIC L. TOMALE ENGINEER 8 DATE:	DENISE A. SEMPIO ENGINEER 1, C.E. - SECTION CHIEF DATE:	JUDY ANN T. BERNARDINO CHIEF, PLANNING AND DESIGN DIVISION DATE:	JOSE TO B. CABALLERO ASSISTANT REGIONAL DIRECTOR DATE:	JUBY B. CORDON REGIONAL DIRECTOR DATE:	A 214	2 29

GENERAL NOTES (ROADS, DRAINAGE, AND STRUCTURES)

REFERENCES

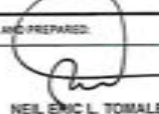
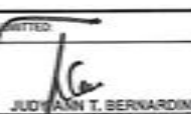
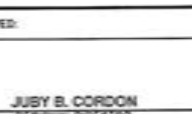
1. REVISED DPWH MANUAL ON HIGHWAY SAFETY DESIGN STANDARDS, MAY 2013 EDITION
 - 1.1. FOR ROAD SAFETY PLANNING AND DESIGN ACTIVITIES AS WELL AS ROAD SAFETY MAINTENANCE ACTIVITIES SUCH AS THE PROPER WAY OF INSTALLING/APPLYING ROAD SIGNS, ROAD SAFETY DEVICES AND PAVEMENT MARKINGS - DO 41, s.2012
2. LABOR CODE OF THE PHILIPPINES AND ITS IMPLEMENTING RULES AND REGULATIONS DOLE DO NO. 13, s.1998, OCCUPATIONAL SAFETY AND HEALTH STANDARDS AND ITS PROCEDURAL GUIDELINES
 - 2.1. FOR MONITORING, ENFORCEMENT AND IMPLEMENTATION OF CONSTRUCTION SAFETY AND HEALTH - DO 56, s.2005
3. DESIGN REFERENCES
 - 3.1. DPWH DESIGN GUIDELINES, CRITERIA, AND STANDARDS (DGCS), VOLUME 4, 2015 EDITION
 - 3.2. GUIDELINES FOR THE PREPARATION OF COST ESTIMATES FOR TRAFFIC MANAGEMENT AND SAFETY & HEALTH REQUIREMENTS FOR THE CONSTRUCTION AND MAINTENANCE OF ROADS, BRIDGES AND SAFETY & HEALTH REQUIREMENTS FOR SCHOOL BUILDINGS, 2018
 - 3.3. AASHTO A POLICY ON GEOMETRIC DESIGN STANDARD OF HIGHWAYS AND STREETS, 2018 7TH EDITION
 - 3.4. AASHTO GUIDE ON PAVEMENT DESIGN, 1993 EDITION
 - 3.5. HIGHWAY SAFETY DESIGN STANDARDS: PART 1 - ROAD SAFETY DESIGN, AND PART 2 - ROAD SIGNS AND PAVEMENT MARKINGS, 2012 EDITION

SURVEY SPECIFICATION

1. ALL PROJECT CONTROL POINTS ARE PROJECTED IN PRS '92 GRID COORDINATE SYSTEM (ZONE 5)
2. SURVEY INSTRUMENT USED, ROVER-CHC (70+) SN1049126, BASE - CHC (70+) SN1049127.
3. DATE SURVEYED: JANUARY 9 - 21, 2023
4. PROJECT CONTROL POINTS, REFER TO PLAN AND PROFILE.

BENCHMARKS AND DESCRIPTION

BENCHMARKS	NORTHING	EASTING	ELEVATION (METERS)	DESCRIPTION
BM NO. 16	755002.454	543375.301	23.777	NO. 1" CONCRETE NAIL WITH BOTTLE CAP DRIVEN ON EDGE OF CONCRETE PAVEMENT AT RP-2 OF S-10, LEFT SIDE
BM NO. 17	754890.542	543367.982	18.194	NO. 1" CONCRETE NAIL WITH BOTTLE CAP DRIVEN ON EDGE OF CONCRETE PAVEMENT AT RP-2 OF S-11, LEFT SIDE
BM NO. 18	754379.218	542717.161	18.464	NO. 1" CONCRETE NAIL WITH BOTTLE CAP DRIVEN ON EDGE OF CONCRETE PAVEMENT AT RP-2 OF S-12, LEFT SIDE
BM NO. 19	754258.062	542485.210	17.293	ON TOP OF KM POST 1553 AT STA. 1553+000.000; DIST ±14.90M, RIGHT SIDE

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ABBREVIATIONS

ABUTMENT	ABUT	EXTERNAL DISTANCE / EASTING	E	RIGHT OF WAY	ROW
AHEAD STATIONING	AH STA	FINISHED	FINL	ROAD	RD
AND	&	FINISHED GRADE	FG	SOUTH	S
AREA	A	FINISHED PAVEMENT LEVEL	FPL	SIDEWALK	SDWK
ASPHALT CONCRETE PAVEMENT	ACP	GENERAL	GEN	SUBDIVISION OF UNDECREASED PROPERTY	Csd
AT	@	GROUND LEVEL	GL	SQUARE	SQ
AZMUTH	AZIM	HEAD WALL(H)	H/W / HWS	SQUARE METER	sq. m. / m2
BACK STATION	BK STA	HIGH FLOOD LEVEL	HFL	STANDARD	STD.
BARANGAY	BRGY.	HIGH TIDE LEVEL	HTL	STATION	STA
BEGINNING OF CIRCULAR CURVE	BCC	HIGH WATER LEVEL	HWL	STRAIGHT	STR.
BEARING	BRG.	HORIZONTAL	HOR.	STREET	ST.
BEGINNING	BEG.	INCHES	IN.	STRUCTURE	STRUCT.
BELOW MEAN SEA LEVEL	BMSL	INTERSECTION ANGLE	I	TANGENT DISTANCE	T
BENCHMARK	BM	INSIDE DIAMETER	ID	TEMPERATURE	TEMP.
BETWEEN	BET.	INTERIOR	INT.	TEMPORARY BENCH MARK	TBM
BORE HOLE	BH	KILOGRAM	KG.	VERTICAL	VERT
BOTH SIDES	BS	KILOMETER	km.	WIDTH	w
BOTH WAYS	BW	KILOMETER PER HOUR	KPH	WITH	w/
BOTTOM	BOT.	LEFT	LT.		
BRIDGE	BR.	LENGTH OF CIRCULAR CURVE	LC		
SUBDIVISION OF DECREASED PROPERTY	BSO.	LENGTH OF VERTICAL CURVE	VC		
BY BUREAU OF LANDS SURVEYORS		LONGITUDINAL	LONGIT.		
BUREAU OF LANDS LOCATION MONUMENT	BLLM	MAXIMUM	MAX.		
CENTER	CTR.	MAXIMUM FLOOD LEVEL	MFL		
CENTERLINE	CL	MEAN SEA LEVEL	MSL		
CENTIMETER	cm	METER	m		
CONCRETE HOLLOW BLOCK	CHB	MILLIMETER	mm		
CLEAR	CLR	MINIMUM	MIN.		
COLUMN	COL	MONUMENT	MON		
CONCRETE	CONC.	NORTHING	N		
CONCRETE HOLLOW BLOCK	CHB	NOT APPLICABLE	NA		
CONCRETE MONUMENT	CONC. MON.	NUMBER	NO.		
CONSTRUCTION	CONST.	ORDINARY WATER LEVEL	OWL		
CORNER	COR.	ORIGINAL GROUND LEVEL	OGL		
COVER	COV.	OUTSIDE DIAMETER	OD		
CROSS PIPE	CP	PAVEMENT WIDTH	PW		
CUBIC METER	cu. m. / m3	PERCENT	%		
CYLINDRICAL	CYL.	PHILIPPINES	PHIL.		
DEGREE OF CURVE	D	PIECES	PCS.		
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	DPWH	PLUS / MINUS	+ / -		
DETAIL	DET.	PUBLIC LAND SUBDIVISION	PLS		
DIAMETER	DIA. / Ø	POINT OF INTERSECTION	PI		
DIAPHRAGM	DIAF.	POINT OF CURVATURE	PC		
DISTANCE	DIST.	POINT OF VERTICAL CURVE	PVC		
DRAWING	DRWG.	POINT OF VERTICAL INTERSECTION	PVI		
EAST	E	POINT OF VERTICAL TANGENT	PVT		
ELEVATION	ELEV. / EL.	POINT OF TANGENT	POT		
END OF CIRCULAR CURVE	ECC	PORTLAND CEMENT CONCRETE PAVEMENT	PCCP		
END OF PAVEMENT	EOP	PROJECT	PROJ.		
ENGINEER	ENGR.	PROJECT ROAD	PROJ. RD		
EQUATION	EQ.	PRIVATE SURVEY	P.S.		
EXCAVATION	EXCA.	RADIUS	R		
EXISTING	EXIST. / EXTG.	REFERENCE POINT	RP		
EXPANSION	EXPN.	REINFORCED CONCRETE BOX CULVERT	RCBC		
EXTENSION	EXTN.	REINFORCED CONCRETE PIPE CULVERT	RCPC		
EXTERIOR	EXTR.	RETAINING WALL	RET. WALL		



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGIONAL OFFICE NO. XI
GOV. CHAVEZ COR. R. RINGDAYSAI AVENUE, DAVAO CITY

PROJECT NAME AND LOCATION:
PREVENTIVE MAINTENANCE OF ROAD:
ASPHALT OVERLAY - MAHARLIKA
HIGHWAY - DAVAO COTABATO ROAD
(DAVAO CITY-JCT DIGOS SECTION) -
K1551+895 - K1553+000, DAVAO DEL SUR

SHEET CONTENTS:
ABBREVIATIONS

DRAFTED AND PREPARED:
NEIL ERIC L. TOMALE
ENGINEER
DATE:

REVIEWED:
DENYSE L. CORDON
ENGINEER IN CHARGE
DATE:

SUBMITTED:
JUDY ANN T. BERNARDINO
CHIEF, TRAINING AND DESIGN DIVISION
DATE:

RECOMMENDING APPROVAL:
JOSE LITO B. CABALLERO
ASSISTANT REGIONAL DIRECTOR
DATE:

APPROVED:
JUSY B. CORDON
REGIONAL DIRECTOR
DATE:

SET NO. 4
SHEET NO. 29

LEGENDS AND SYMBOLS

DRAWING SYMBOLS			TOPOGRAPHIC FEATURES, INFRASTRUCTURE AND UTILITIES			TOPOGRAPHIC FEATURES, INFRASTRUCTURE AND UTILITIES			DRAWING SYMBOLS		
SYMBOL	ABBREVIATION	DESCRIPTION	SYMBOL	ABBREVIATION	DESCRIPTION	SYMBOL	ABBREVIATION	DESCRIPTION	SYMBOL	ABBREVIATION	DESCRIPTION
	CL	ROADWAY CENTERLINE			MAJOR CONTOUR			TREES		BH	BORE HOLE
		NORTH ARROW			MINOR CONTOUR			COCONUT			CROSS SECTION MONUMENT
	ELEV	ELEVATION CALLOUT			EDGE OF ROAD (EXISTING)			BANANA PLANTATION		BM	BENCHMARK
		WATER LEVEL			EDGE OF ROAD (PROPOSED)			SCHOOL		IBM	INTERMEDIATE BENCHMARK
	FLOW	WATER FLOW			ASPHALT CONCRETE PAVEMENT			CHURCH		PBM	PERMANENT BENCHMARK
		POINT OF INTERSECTION		PCDP	PORTLAND CEMENT CONCRETE PAVEMENT			AMAKAN HOUSE		TP	TEST PIT
	STA. 0+00	MATCH LINE			CHISGROUDED CONCRETE/ EARTH CANAL			CONCRETE HOUSE		GPS	GLOBAL POSITIONING SYSTEM
		GRID COORDINATES			NATIONAL HIGHWAY			WOODEN STORE			TRAVERSE POINT
	AZIM	AZIMUTH			EXISTING CANAL (PLAN)			COMBINATION OF CONCRETE AND WOODEN HOUSE			TRAVERSE STATION AND LINE
		PLAN AND PROFILE CALLOUT			EXISTING CANAL (PROFILE)			STORE			
		RPC INVERSE ELEVATION PROFILE CALLOUT		BR	BRIDGE		SB	SIGN BOARD			
		DIRECTION			CROSS DRAIN		SP	STEEL POST			
		MAIN DRAWING TITLE			LATERAL PIPE		SEP	STEEL ELECTRIC POST			
		SECONDARY DRAWING TITLE			RCSC		CP	CONCRETE POST			
		CROSS SECTION SYMBOL (COMPLEX)			MANHOLE		CEP	CONCRETE ELECTRIC POST			
		CROSS SECTION SYMBOL (COMPLEX)			GUARDRAIL		WEP	WOODEN ELECTRIC POST			
		DETAIL CALLOUT			CHAIN WALL FENCE		LP	LAMP POST			
					WOOD OR BARBED WIRE FENCE						
					CYCLONE FENCE						
					CONCRETE SLOPE PROTECTION						
					GRouted RIPRAP SLOPE PROTECTION						
					RIVER / CREEK						



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGIONAL OFFICE NO. XI
GOV. CHAVEZ COR. R. MAGSAYSAY AVENUE, DAVAO CITY

PROJECT NAME AND LOCATION:
PREVENTIVE MAINTENANCE OF ROAD:
ASPHALT OVERLAY - MAHARLIKA
HIGHWAY - DAVAO COTABATO ROAD
(DAVAO CITY-JCT DIGOS SECTION) -
K1551+695 - K1553+000, DAVAO DEL SUR

SHEET CONTENTS:
LEGENDS AND SYMBOLS

DRAFTED AND PREPARED:
NEIL ERIC L. TOMALE
ENGINEER II
DATE:

REVIEWED:
DENVER L. SEMPIO
ENGINEER II, OIC - SECTION CHIEF
DATE:

SUBMITTED:
JUDY B. CORDON
CHIEF PLANNING AND DESIGN DIVISION
DATE:

RECOMMENDING APPROVAL:
JOSELYN B. CABALLERO
ASSISTANT REGIONAL DIRECTOR
DATE:

APPROVED:
JUDY B. CORDON
REGIONAL DIRECTOR
DATE:

SET NO. 5
SHEET NO. 29

SUMMARY OF QUANTITIES

ITEM No.	DESCRIPTION OF WORK	UNIT	QUANTITY	REMARKS
PART A. FACILITIES FOR ENGINEER				
A.1.1(3)	CONSTRUCTION OF FIELD OFFICE FOR THE ENGINEER	LS	1.00	BAHAY KUBO
A.1.1(16)	OPERATION AND MAINTENANCE OF FIELD OFFICE FOR THE ENGINEER	MONTH	5.00	
PART B. OTHER GENERAL REQUIREMENT				
B.4(1)	CONSTRUCTION SURVEY AND STAKING	KM	1.34	
B.5	PROJECT BILLBOARD / SIGNBOARD (2-DPWH)	EACH	2.00	
B.5	PROJECT BILLBOARD / SIGNBOARD (2-DENR EMB)	EACH	2.00	
B.5	PROJECT BILLBOARD / SIGNBOARD (2-COA)	EACH	2.00	
B.7(2)	OCCUPATIONAL SAFETY AND HEALTH PROGRAM	LS	1.00	
B.8(1)	TRAFFIC MANAGEMENT	MONTH	5.00	USE APPROPRIATE TRAFFIC SCHEME LAYOUT PER D.O. 13 s. 2018
B.9	MOBILIZATION / DEMOBILIZATION	LS	1.00	
PART C. EARTHWORK				
101(1)	REMOVAL OF STRUCTURES AND OBSTRUCTION	LS	1.00	REMOVAL OF 316 STUDS TO BE VERIFIED IN ACTUAL WITH THE DISCRETION OF PROJECT ENGINEER REMOVED STUDS TO BE TURNED OVER TO DISTRICT ENGINEERING OFFICE
101(3)b7	REMOVAL OF ACTUAL STRUCTURES/OBSTRUCTION, 0.33m THICK PCCP (UNREINFORCED)	SQ.M	331.65	TO BE VERIFIED ON-SITE WITH THE DISCRETION OF PROJECT ENGINEER
PART D. SUBBASE AND BASE COURSE				
200(1)	AGGREGATE SUBBASE COURSE	CU.M	33.17	LEVELING COURSE FOR REBLOCKING TO BE VERIFIED IN ACTUAL WITH THE DISCRETION OF PROJECT ENGINEER
PART E. SURFACE COURSE				
302(2)	EMULSIFIED ASPHALT	SQ.M	42,420.00	
310(1)c	BITUMINOUS CONCRETE SURFACE WEARING COURSE (HOT LAID), 50MM THICK	SQ.M	21,210.00	
310(2)c	BITUMINOUS CONCRETE SURFACE BINDER COURSE (HOT LAID), 50MM THICK	SQ.M	21,215.00	INCLUDING REPLACEMENT/FILLING FOR THE AREAS WHERE THE STUDS HAVE BEEN REMOVED
311(1)g1	PORTLAND CEMENT CONCRETE PAVEMENT (UNREINFORCED), 0.33M THICK, 14 DAYS	SQ.M	331.65	FOR REBLOCKING TO BE VERIFIED IN ACTUAL WITH THE DISCRETION OF PROJECT ENGINEER
PART H. MISCELLANEOUS STRUCTURE				
605(1)j3	WARNING SIGNS, 750MM, W2-8C, INTERSECTION AND JUNCTION SIGNS SIDE ROAD JUNCTION L OR R	EACH	4.00	
605(1)u3	WARNING SIGNS, 750MM, W4-2C, ROAD WIDTH SIGN ROAD NARROWS	EACH	2.00	
605(1)aj2	WARNING SIGNS, 750MMx750MM, W6-2C, PEDESTRIAN AND SCHOOL SIGNS CHILDREN CROSSING AHEAD	EACH	2.00	
605(2)aj3	REGULATORY SIGNS, 750MM, R6-9C, MISCELLANEOUS SIGNS SCHOOL CHILDREN CROSSING	EACH	2.00	
612(1)	REFLECTORIZED THERMOPLASTIC PAVEMENT MARKINGS WHITE	SQ.M	932.65	FOR ROADWAY CENTERLINE, LANE LINES, EDGE LINES, PEDESTRIAN LANES, AND TRANSITION LINES
612(2)	REFLECTORIZED THERMOPLASTIC PAVEMENT MARKINGS YELLOW	SQ.M	121.73	FOR ROADWAY CENTERLINE
612(3)	REMOVAL OF EXISTING REFLECTORIZED THERMOPLASTIC PAVEMENT MARKINGS	SQ.M	1,106.02	
613(1)	CONCRETE JOINT SEALANT (HOT-POURED ELASTIC TYPE)	KG	267.47	FOR CONCRETE JOINTS

NOTE: QUANTITIES ARE SUBJECT TO INCREASE/DECREASE DEPENDING ON THE ACTUAL FIELD CONDITIONS.



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGIONAL OFFICE NO. XI
GOV. CHAVEZ COR. R. MAGSAYSAY AVENUE, DAVAO CITY

PROJECT NAME AND LOCATION:
PREVENTIVE MAINTENANCE OF ROAD:
ASPHALT OVERLAY - MAHARLIKA
HIGHWAY - DAVAO COTABATO ROAD
(DAVAO CITY-JCT DIGOS SECTION) -
K1551+695 - K1553+000, DAVAO DEL SUR

SHEET CONTENTS:
SUMMARY OF QUANTITIES

DRAFTED AND PREPARED:
NEIL ERIC L. TOMALE
ENGINEER I
DATE: _____

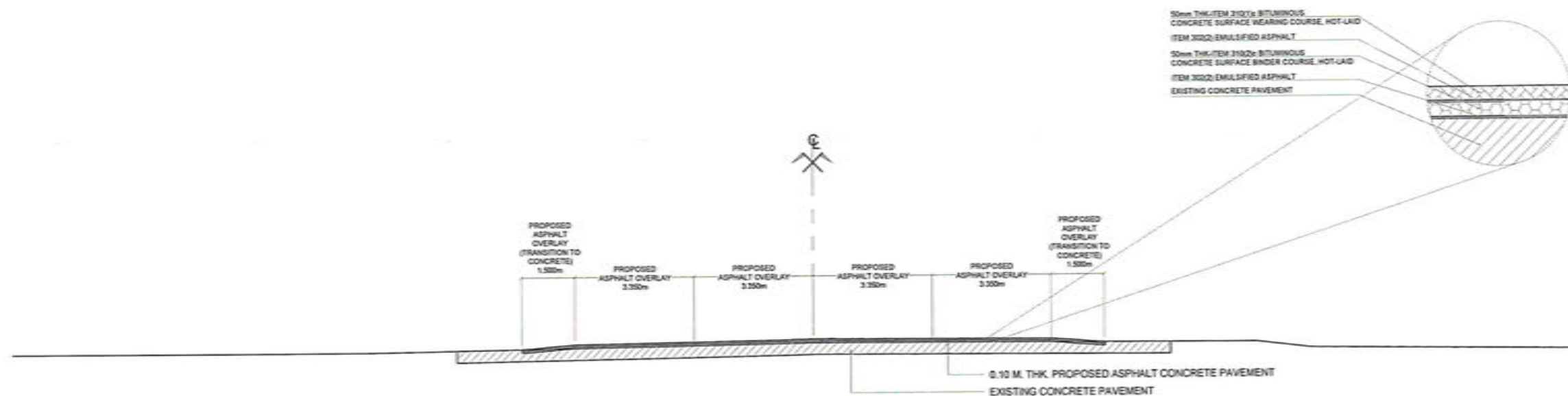
REVIEWED:
DENNIS AZORIN A. SEMPIO
ENGINEER I, DEC - SECTION CHIEF
DATE: _____

SUBMITTED:
JUDY B. BERNARDINO
CHIEF, PLANNING AND DESIGN DIVISION
DATE: _____

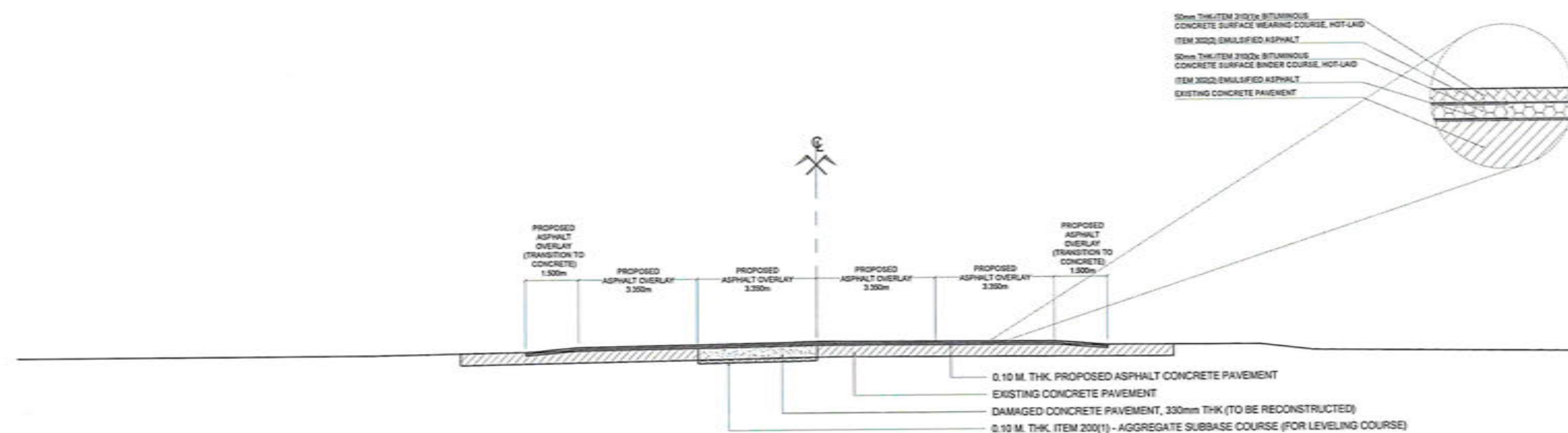
RECOMMENDING APPROVAL:
JOSELO B. CABALLERO
ASSISTANT REGIONAL DIRECTOR
DATE: _____

APPROVED:
JUBY B. CORDON
REGIONAL DIRECTOR
DATE: _____

SET NO. 6
SHEET NO. 29



1
a PROPOSED 4-LANE ASPHALT OVERLAY WITH 1.5METER RAMP ON BOTH SIDES 1:100



1
b PROPOSED 4-LANE ASPHALT OVERLAY WITH 1.5METER RAMP ON BOTH SIDES AND REBLOCKING 1:100

1
c TYPICAL ROADWAY CROSS SECTIONS 1:100



REPUBLIC OF THE PHILIPPINES
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REGIONAL OFFICE NO. XI
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PREVENTIVE MAINTENANCE OF ROAD:
ASPHALT OVERLAY - MAHARLIKA
HIGHWAY - DAVAO COTABATO ROAD
(DAVAO CITY-JCT DIGOS SECTION) -
K1551+695 - K1553+000, DAVAO DEL SUR

SHEET CONTENTS:
TYPICAL ROADWAY CROSS SECTIONS

DRAFTED AND PREPARED:
NEIL ERIC L. TOMALE
ENGINEER I
DATE:

REVIEWED:
DENVER L. SEMPIO
ENGINEER I, SEC. SECTION CHIEF
DATE:

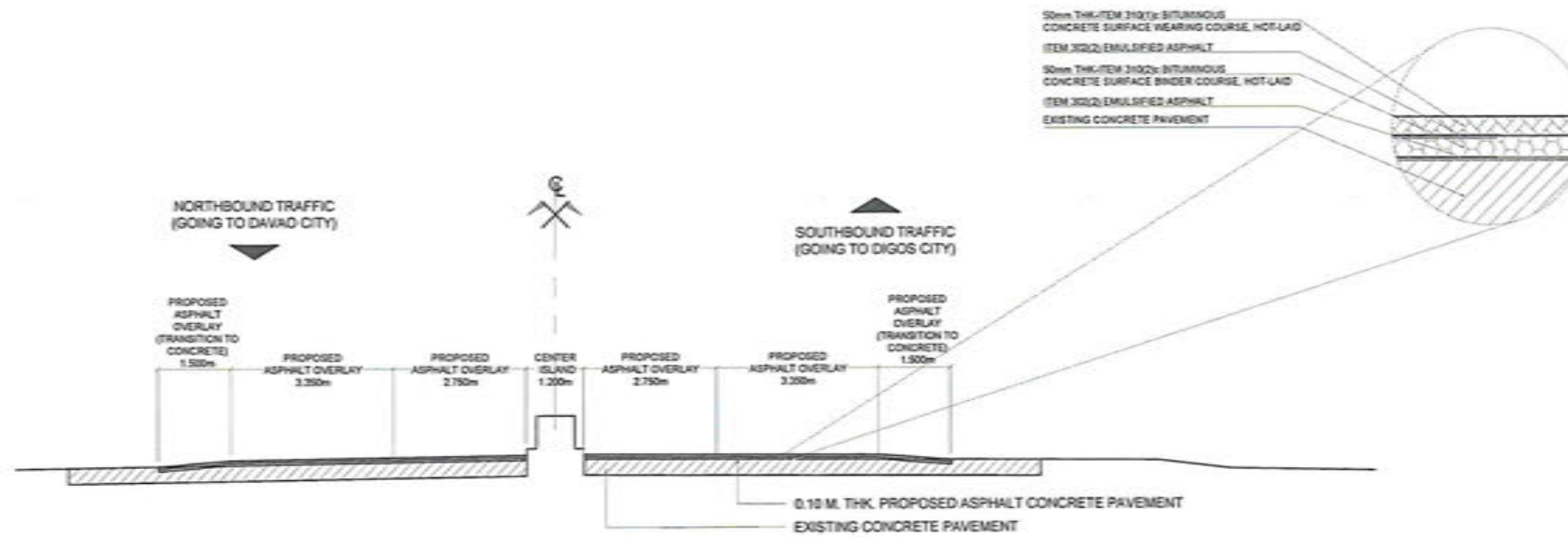
SUBMITTED:
JUDY ANN T. BERNARDINO
CHIEF PLANNING AND DESIGN DIVISION
DATE:

RECOMMENDING APPROVAL:
JOSEITO B. CABALLERO
ASSISTANT REGIONAL DIRECTOR
DATE:

APPROVED:
JUDY B. CORDON
REGIONAL DIRECTOR
DATE:

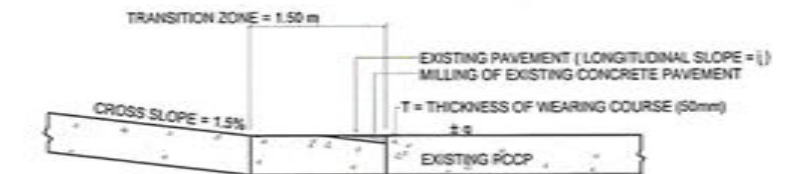
SET NO. 7/14
SHEET NO. 7/29

JOINING ASPHALT ROAD WITH PCCP (AT TRANSITION TO CONCRETE)



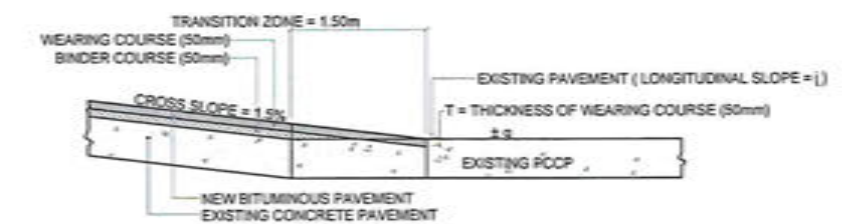
2
c SCALE PROPOSED 4-LANE ASPHALT OVERLAY WITH ISLAND AND 1.5METER RAMP ON BOTH SIDES 1:100

1st STEP: MILLING OF EXISTING SLAB

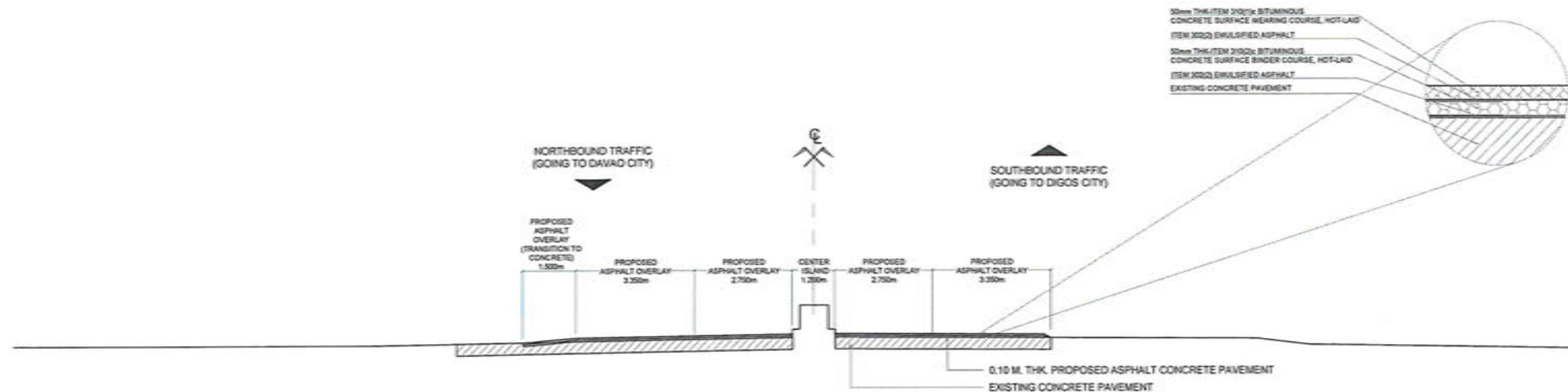


3
a SCALE FIGURE 3a: TRANSITION PROFILE, EXISTING 1:100

2nd STEP: LAYING OF REMAINING ASPHALT COURSES



3
b SCALE FIGURE 3a: TRANSITION PROFILE, EXISTING 1:100



2
d SCALE PROPOSED 4-LANE ASPHALT OVERLAY WITH ISLAND AND 1.5METER RAMP ON ONE SIDE 1:100

2
e SCALE TYPICAL ROADWAY CROSS SECTIONS 1:100

REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS REGIONAL OFFICE NO. XI GOV. CIRVEZ COR. R. MAGSAYSAY AVENUE, DAVAO CITY	PROJECT NAME AND LOCATION: PREVENTIVE MAINTENANCE OF ROAD: ASPHALT OVERLAY - MAHARLIKA HIGHWAY - DAVAO COTABATO ROAD (DAVAO CITY-JCT DIGOS SECTION) - K1551+595 - K1553+000, DAVAO DEL SUR	SHEET CONTENTS: TYPICAL ROADWAY CROSS SECTIONS	DRAFTED AND PREPARED: NEIL ERIC L. TOMALE ENGINEER I DATE: _____	REVIEWED: DENNIS M. LORINA / SEMPIO ENGINEER II, CIVIL - SECTION CHIEF DATE: _____	SUBMITTED: JUDY B. BERNARDINO CHIEF, PLANNING AND DESIGN DIVISION DATE: _____	RECOMMENDING APPROVAL: JOSEITO B. CABALLERO REGIONAL DIRECTOR DATE: _____	APPROVED: JUSY B. CORDON REGIONAL DIRECTOR DATE: _____	SET NO. 8 SHEET NO. 29
--	---	---	---	---	--	--	---	-----------------------------------

JOINING ROAD WITH PCCP (ALONG THRU - ROAD)



- NOTE:
1. THE MILLING OF EXISTING SLAB SHOULD END AT THE NEXT WEAKENED PLANE JOINT
 2. THE ALGEBRAIC DIFFERENCE OF GRADIENT AT JOINING ROAD SHOULD NOT EXCEED 0.50%. OTHERWISE APPROPRIATE VERTICAL PARABOLIC CURVE SHALL BE PROVIDED IF THE ALGEBRAIC DIFFERENCE OF GRADIENT IS MORE THAN 0.50%.

FIGURE 2: SCHEMATIC PLAN

1st STEP: MILLING OF EXISTING SLAB

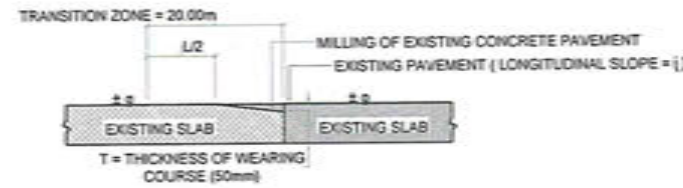


FIGURE 2a: TRANSITION PROFILE, EXISTING

2nd STEP: LAYING OF REMAINING ASPHALT COURSES

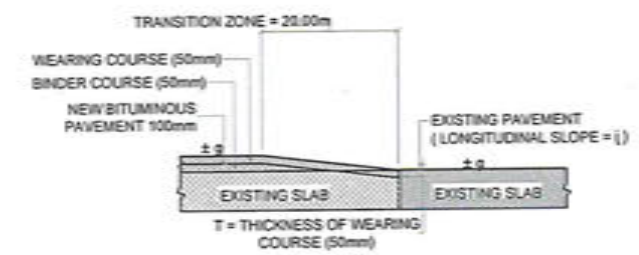
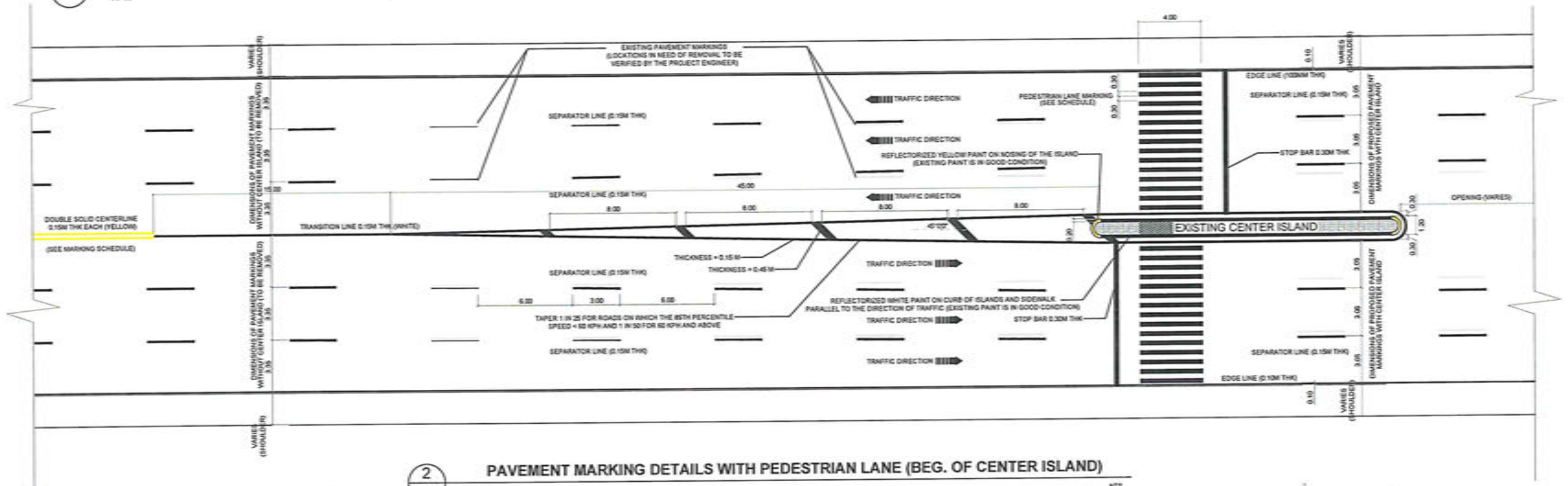
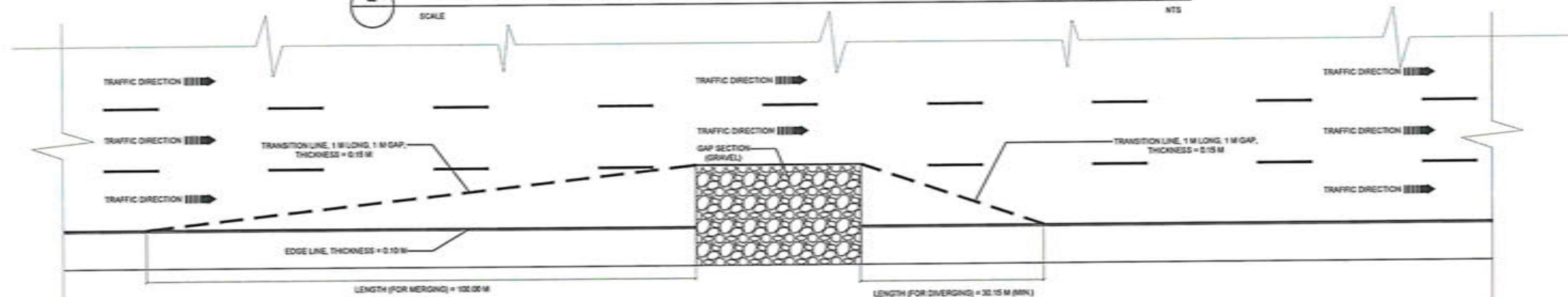


FIGURE 2b: TRANSITION PROFILE, AC OVERLAY



PAVEMENT MARKING DETAILS WITH PEDESTRIAN LANE (BEG. OF CENTER ISLAND)



TRANSITION LINE DETAILS



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGIONAL OFFICE NO. XI
GOV. CHAVEZ COR. R. NAGSAYSAY AVENUE, DAVAO CITY

PROJECT NAME AND LOCATION:
PREVENTIVE MAINTENANCE OF ROAD:
ASPHALT OVERLAY - MAHARLIKA
HIGHWAY - DAVAO COTABATO ROAD
(DAVAO CITY-JCT DIGOS SECTION) -
K1551+895 - K1553+000, DAVAO DEL SUR

SHEET CONTENTS:
ASPHALT OVERLAY JOINING ROAD WITH PCCP
(ALONG THRU - ROAD)
TYPICAL PAVEMENT MARKINGS
TRANSITION LINE DETAILS

DRAFTED AND PREPARED:
NEILERIC L. TOMALE
ENGINEER
DATE:

REVIEWED:
DENVER ALDRIN S. SEMPIO
ENGINEER, E.C. - SECTION CHIEF
DATE:

SUBMITTED:
JUDY ANN T. BERNARDINO
CHIEF, PLANNING AND DESIGN DIVISION
DATE:

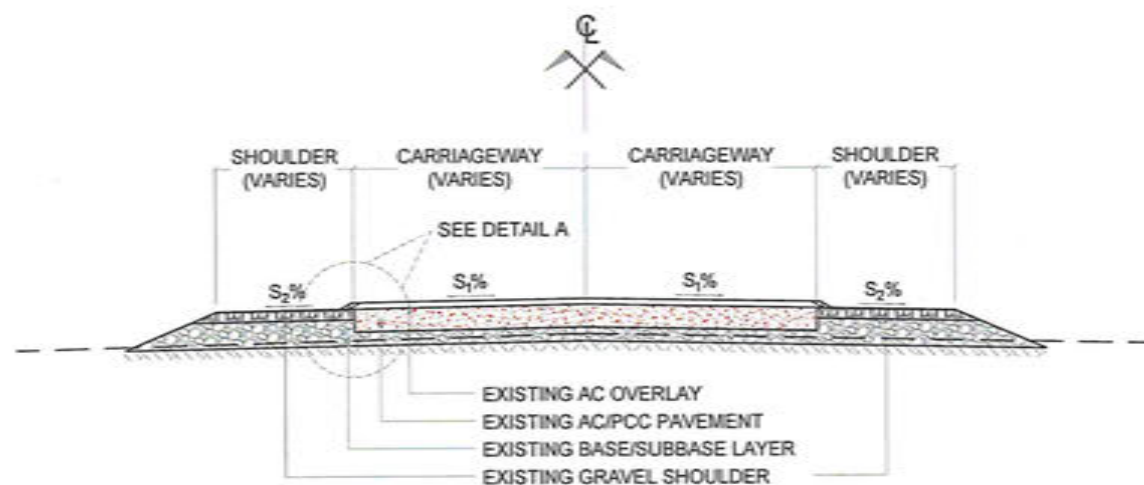
RECOMMENDING APPROVAL:
JOSE LITO S. CABALLERO
ASSISTANT REGIONAL DIRECTOR
DATE:

APPROVED:
JUDY B. CORDON
REGIONAL DIRECTOR
DATE:

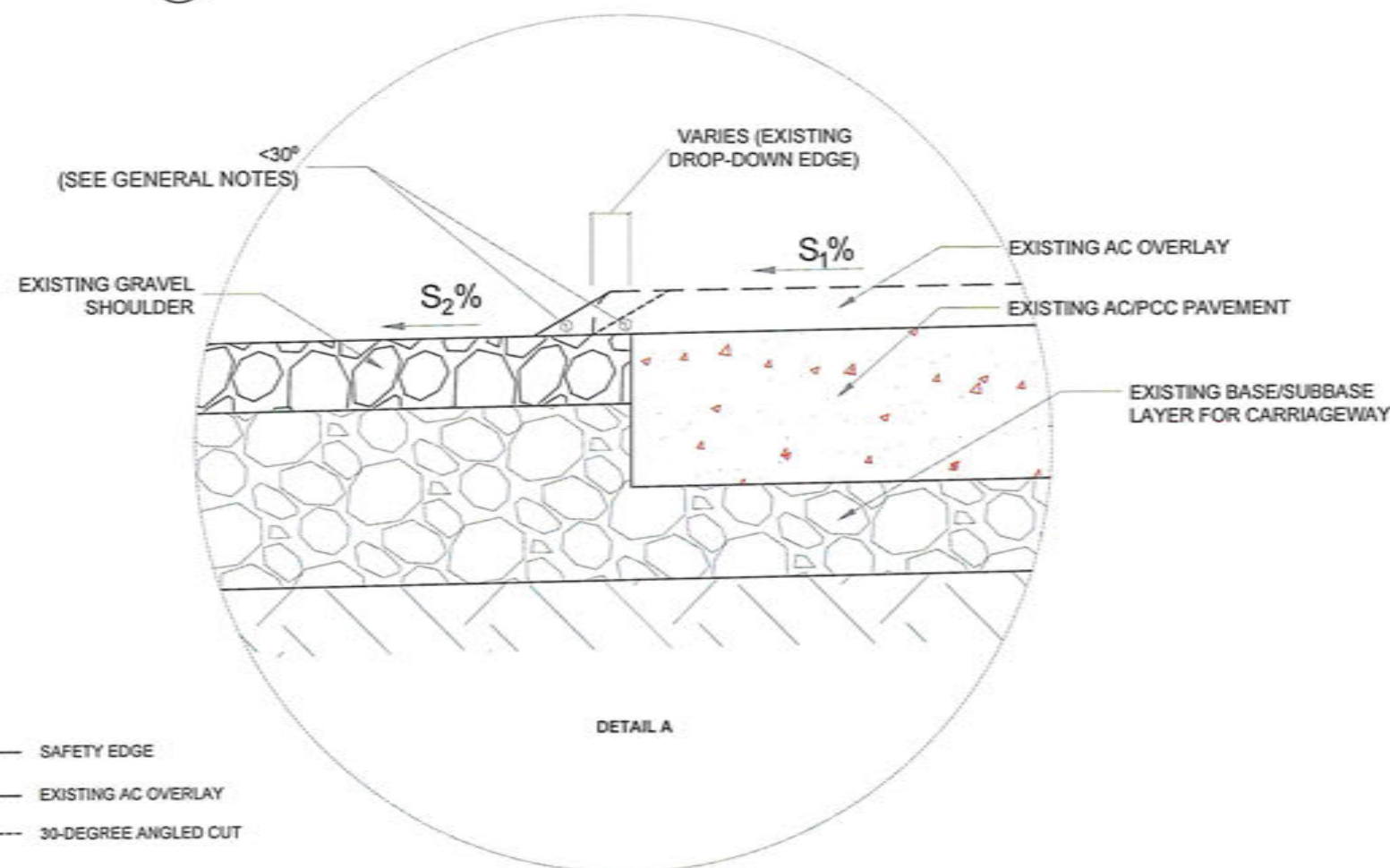
SET NO. A
9/14
SHEET NO. 9
29

GENERAL NOTES

1. ALL WORK AFFECTED BY THE IMPLEMENTATION OF THE SAFETY EDGE DROP-OFF MUST BE ADJUSTED AS NECESSARY AND IN COMPLIANCE WITH THE DPWH STANDARD SPECIFICATIONS FOR HIGHWAYS, BRIDGES, AND AIRPORTS, 2013, OR THE LATEST APPLICABLE ISSUANCES.
2. SAFETY EDGE TREATMENT SHOULD BE DESIGNED TO CREATE A 30-DEGREE ANGLED SHAPE RELATIVE TO THE EDGE OF THE PAVEMENT, EXTENDING UP TO THE UNPAVED SHOULDER.
3. THE MATERIALS SHOULD PROVIDE DURABILITY AND STABILITY TO WITHSTAND TRAFFIC LOADS AND ENVIRONMENTAL CONDITIONS. IF THE GRAVEL SHOULDER IS FOUND TO BE ERODIBLE, THE PROJECT ENGINEER SHOULD TAKE CORRECTIVE MEASURES SUCH AS COMPACTING THE GRAVEL OR REPLACING IT WITH SUITABLE MATERIALS.
4. USE APPROPRIATE EQUIPMENT FOR SHAPING AND COMPACTING THE SAFETY EDGE. THE CONTRACTOR MAY USE A SHOEWEDGE MAKER OR ANY SIMILAR EQUIPMENT THAT PRODUCES THE SAME COMPACTION RESULTS. SHORT SECTIONS OF HANDWORK WILL BE ALLOWED WHEN NECESSARY FOR TRANSITIONS/ TURNOUTS.
5. THE DESIGNER SHALL VERIFY THE SUITABILITY OF SAFETY EDGE TREATMENT AT INTERSECTIONS, TRANSITION ZONES, TURNOUTS, DRIVEWAYS/ RAMPS, PEDESTRIAN CROSSINGS, AND AREAS WITH MULTIPLE OVERLAYS, AMONG OTHER CRITICAL AREAS. THE DESIGN APPROACH FOR THE ABOVE SCENARIOS SHOULD BE ADJUSTED BY THE DESIGNER ON A CASE-BY-CASE BASIS.
6. TO CONSTRUCT A SAFETY EDGE ALONG EXISTING OVERLAY WITH AN INAPPROPRIATE DEGREE DROP-OFF EDGE, THE FOLLOWING STEPS SHOULD BE FOLLOWED:
 - CONDUCT A DETAILED ASSESSMENT OF THE EXISTING ASPHALT OVERLAY TO IDENTIFY SURFACE IRREGULARITIES, DAMAGE LAYERS, AND ANY AREAS REQUIRING MILLING.
 - MILL THE EXISTING OVERLAY ALONG THE EDGE TO CREATE A 30-DEGREE TAPERED SLOPE. THIS ANGLE MAY BE ADJUSTED BASED IN PAVEMENT CONDITIONS, SUCH AS SURFACE IRREGULARITIES AND DAMAGE LAYERS.
 - SELECT MILLING EQUIPMENT AND TECHNIQUES CAPABLE OF ACHIEVING THE DESIRED SLOPE ANGLE AND TRANSITION LENGTH.
 - AFTER MILLING, PREPARE THE MILLED SURFACE BY ADDRESSING ANY SURFACE IRREGULARITIES OR DEBRIS. ENSURE THAT THE MILLED EDGE IS SMOOTH AND FREE FROM DEFECTS THAT COULD AFFECT THE CONSTRUCTION OF THE SAFETY EDGE TREATMENT.
 - CONSTRUCT THE SAFETY EDGE TREATMENT AFTER MILLING ACCORDING TO GUIDELINES TO ACHIEVE THE DESIRED SLOPE, PROVIDING A GRADUAL TRANSITION FROM THE ROADWAY SURFACE. ENSURE THAT THE SAFETY EDGE THICKNESS AND PROFILE MEET DESIGN STANDARDS AND FACILITATE A SMOOTH TRANSITION FOR VEHICLES.



1 SAFETY EDGE DROP-OFF ON EXISTING AC OVERLAY WITH GRAVEL SHOULDERS



LEGEND:

- SAFETY EDGE
- - - EXISTING AC OVERLAY
- - - 30-DEGREE ANGLED CUT



REPUBLIC OF THE PHILIPPINES
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REGIONAL OFFICE NO. XI
GOV. CHAVEZ COR. R. MAGSAYSAY AVENUE, DAVAO CITY

PROJECT NAME AND LOCATION:
PREVENTIVE MAINTENANCE OF ROAD:
ASPHALT OVERLAY - MAHARLIKA
HIGHWAY - DAVAO COTABATO ROAD
(DAVAO CITY-JCT DIGOS SECTION) -
K1551+695 - K1553+000, DAVAO DEL SUR

SHEET CONTENTS:
SAFETY EDGE DROP-OFF ON EXISTING AC OVERLAY
WITH GRAVEL SHOULDER

DRAFTED AND PREPARED:
NEIL ERIC L. TOMALE
ENGINEER II
DATE:

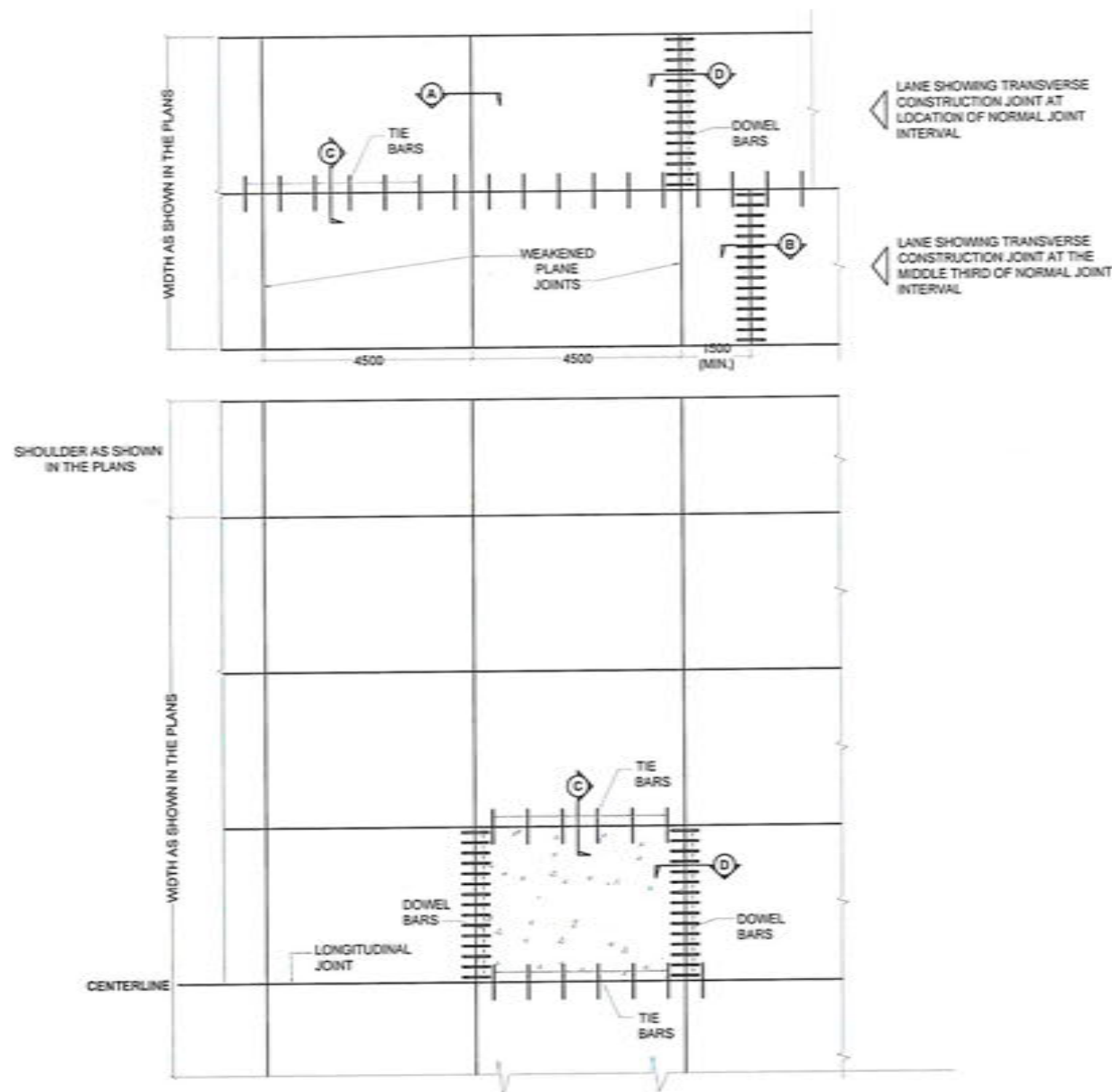
REVIEWED:
DENYSE ALDRIN A. SEMPIO
ENGINEER II, OIC - SECTION CHIEF
DATE:

DESIGNED:
JUDY ANN T. BERNARDINO
CHIEF, PLANNING AND DESIGN DIVISION
DATE:

RECOMMENDING APPROVAL:
JOSE LITO B. CABALLERO
ASSISTANT REGIONAL DIRECTOR
DATE:

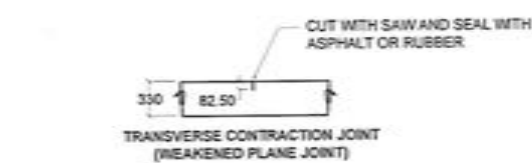
APPROVED:
JUBY B. CORDON
REGIONAL DIRECTOR
DATE:

SET NO. 10
SHEET NO. 29



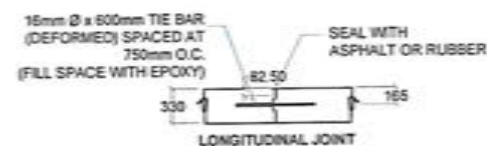
TYPICAL PLAN OF PAVEMENT (FOR REBLOCKING)

SCALE NTS



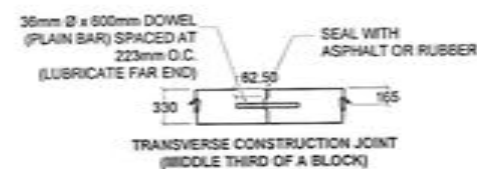
SECTION A

SCALE 1:50



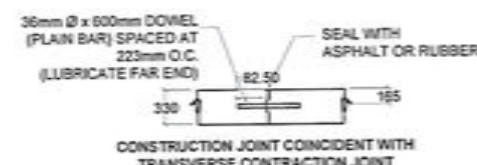
SECTION C

SCALE 1:50



SECTION B

SCALE 1:50



SECTION D

SCALE 1:50

MINIMUM STANDARDS (AS PER D.O. 401, 2014)			SUBSTITUTE	
SLAB THICKNESS (mm)	DOWEL SIZE (mm)	SPACING (mm)	DOWEL SIZE (mm)	SPACING (mm)
280	36	300	32	250
			28	180
			25	150
290	36	295	32	230
			28	170
			25	140
300	36	274	32	210
			28	160
			25	130
310	36	255	32	200
			28	150
			25	120
320	36	238	32	190
			28	140
			25	110
330	36	223	32	180
			28	130
			25	110
340	36	209	32	170
			28	130
			25	100

NOTE:
IF IN CASE THE REQUIRED DIAMETER OF 36mm IS NOT COMMERCIALY AVAILABLE, SMALLER DOWEL BARS

TABLE FOR SPACING OF TIE BARS (L=600mm)		
SLAB THICKNESS (mm)	SPACING, S _t (mm)	
	12mm Ø	16mm Ø
230	600	750
240	600	750
250	600	750
260	500	750
270	500	750
280	500	750
290	500	750
300	500	750
310	400	750
320	400	750
330	400	750
340	400	750

BASES ON AASHTO GUIDE FOR THE DESIGN OF PAVEMENT STRUCTURES 1993

DESIGN CONDITIONS	
DESIGN PERIOD	YEARS
ACTUAL LOADING	(INCLUDING OVERLOADED TRUCKS)
DESIGN ESAL	ONE DIRECTION
CONCRETE STRENGTH	PSI @ 28 DAYS

DESIGN CBR = MEAN CBR - $\frac{1}{3}S$
 where: $S = \sqrt{(n-1) \sum (x_i - \bar{x})^2}$
 MEAN CBR = $\frac{\sum CBR}{n}$
 Resilient Modulus of Subgrade: $M_R = CBR \times 1500$

PAVEMENT DESIGN PARAMETERS	
DESIGN LIFE	YEARS
TGR	ASSUMED TRAFFIC GROWTH
R	
Z _e	
S _e	OVERALL STANDARD DEVIATION x 10 ⁶ (18 KIP ESAL)
W _e	
PT	
ΔPSI	PRESENT SERVICEABILITY INDEX
S _c	PSI
C _d	
J	
E _c	x 10 ⁶ psi
k	psi

TABLE FOR SPACING OF PLAIN DOWEL (L=600mm)		
SLAB THICKNESS (mm)	DIAMETER, D (mm)	SPACING, S _t (mm)
280	36	300
290	36	295
300	36	274
310	36	255
320	36	238
330	36	223
340	36	209

NOTE:
DIAMETER AND SPACING OF PLAIN DOWEL BARS MAY BE MODIFIED AS LONG AS THE EQUIVALENT STEEL AREA IS SUSTAINED.

NOTE:

- MATERIALS AND WORKMANSHIP SHALL CONFORM WITH THE "DPWH STANDARD SPECIFICATION FOR HIGHWAYS, BRIDGE AND AIRPORTS 2013".
- 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, NO CONSTRUCTION JOINT SHALL BE PLACED WITHIN 1.50m FROM THE WEAKENED PLANE JOINT.
- AT CONSTRUCTION JOINTS (LONGITUDINAL OR TRANSVERSE) CARE SHOULD BE TAKEN THAT NO CONCRETE FROM THE LAST SLAB PLACED OVERHANGS ANY PORTION OF THE FIRST SLAB.
- TIE BARS SHOULD BE DEFORMED STEEL BARS, ALL DOWEL BARS SHALL BE SMOOTH AROUND STEEL BAR FREE FROM RUST AND OTHER DEFECTS (REFER TO CLAUSE 3.1, 3.12 THE STANDARD SPECIFICATION FOR ROADS AND BRIDGES 1995).
- TYPE OF WEAKENED PLANE JOINT TO BE USED SHALL BE SPECIFIED IN THE PLANS AND ONLY ONE TYPE SHALL BE USED FOR THE WHOLE PROJECT.
- MATERIAL FOR THE METAL SIDE FORM SHALL BE BRAND NEW SHEET METAL GAUGE NO. 18 OF BLACK IRON FREE FROM RUST AND LINKS.
- AT LEAST SIX (6) SUCCESSIVE DOWELLED BUTT JOINTS AT NORMAL JOINT SPACING SHALL BE PROVIDED BEFORE OR AFTER AN EXPANSION JOINT.
- THE GROOVE OR CRACK ABOVE JOINTS (LONGITUDINAL OR TRANSVERSE) SHALL BE SEALED WITH 30-50 PENETRATION ASPHALT SEAL OR COLD APPLIED LIQUID RUBBER COMPOUND AFTER THE CONCRETE HARDENS AND BEFORE OPENING THE PAVEMENT TO THE TRAFFIC. PENETRATION ASPHALT SEAL ON CONCRETE PAVEMENT JOINT SHALL BE POURED IN SUCH MANNER THAT SPILLING WILL BE ELIMINATED / PREVENTED. THUS, PROVIDING A SMOOTH LEVELING / RIDING SURFACE.



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGIONAL OFFICE NO. XI
GOV. CHARLES C. R. NAGSAYSAN AVENUE, DAVAO CITY

PROJECT NAME AND LOCATION:
PREVENTIVE MAINTENANCE OF ROAD: ASPHALT OVERLAY - MAHARLIKA HIGHWAY - DAVAO COTABATO ROAD (DAVAO CITY-JCT DIGOS SECTION) - K1551+895 - K1553+000, DAVAO DEL SUR

SHEET CONTENTS:
JOINT DETAILS (FOR REBLOCKING)

DRAFTED AND PREPARED:
NEIL ERIC L. TOMALE
ENGINEER I
DATE:

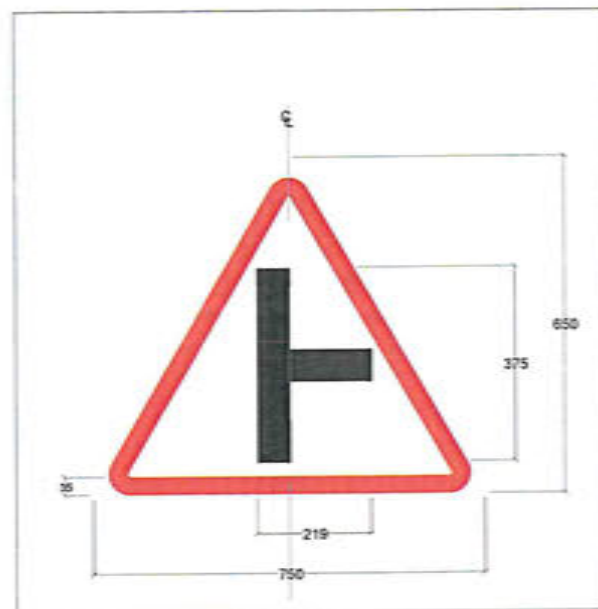
REVIEWED:
DENNIS R. SEMPIO
ENGINEER I, D.C. - SECTION CHIEF
DATE:

SUBMITTED:
JUDY ANN T. BERNARDINO
CHIEF PLANNING AND DESIGN DIVISION
DATE:

RECOMMENDING APPROVAL:
JOSELO B. CABALLERO
ASSISTANT REGIONAL DIRECTOR
DATE:

APPROVED:
JUSY B. CORDON
REGIONAL DIRECTOR
DATE:

SET NO. 11
SHEET NO. 29



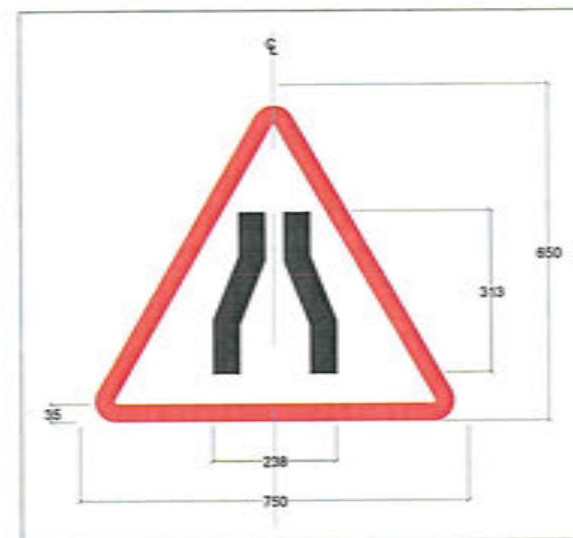
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WARNING SIGN (W2-6C)



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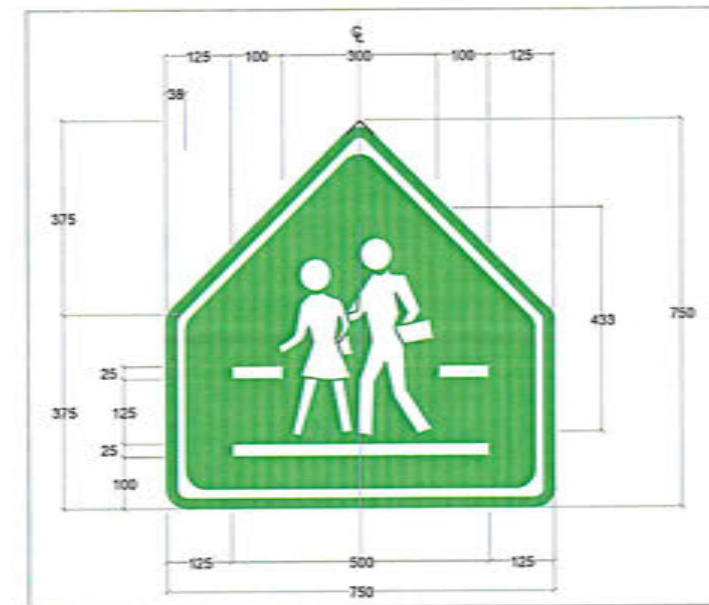
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WARNING SIGN (W4-2C)



SCALE

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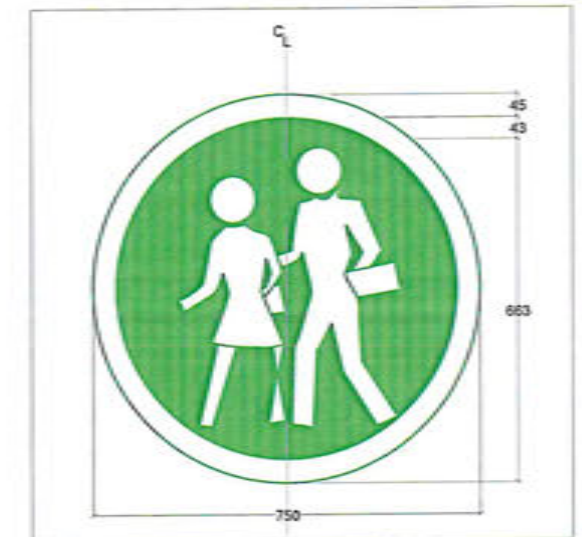
W6-2

WARNING SIGN (W6-2C)



SCALE

1:10



W6-9

REGULATORY SIGN (R6-9C)



SCALE

1:10



ROAD SIGN FACE DETAIL

SCALE

1:10



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGIONAL OFFICE NO. XI
GOV. CHAVEZ COR. R. MAGSAYSAY AVENUE, DAVAO CITY

PROJECT NAME AND LOCATION:

PREVENTIVE MAINTENANCE OF ROAD:
ASPHALT OVERLAY - MAHARLIKA
HIGHWAY - DAVAO COTABATO ROAD
(DAVAO CITY-JCT DIGOS SECTION) -
K1551+695 - K1553+000, DAVAO DEL SUR

SHEET CONTENTS:

ROAD SIGN FACE DETAIL
(WARNING SIGNS & REGULATORY SIGNS)

DRAFTED AND PREPARED:

NEIL ERIC L. TOMALE
ENGINEER I

DATE:

REVIEWED:

DENVER ALON A. SEMPIO
ENGINEER I, D.C. - SECTION CHIEF

DATE:

DESIGNED:

JUDY B. BERNARDINO
CHIEF, PLANNING AND DESIGN DIVISION

DATE:

RECOMMENDING APPROVAL:

JOSELYN B. CABALLERO
ASSISTANT REGIONAL DIRECTOR

DATE:

APPROVED:

JUDY B. CORDON
REGIONAL DIRECTOR

DATE:

SET NO.

A
13/14

SHEET NO.

13
29

SCHEDULE FOR REMOVAL OF PCCP, 330mm THK					
STATION		STATION EQUATION		LENGTH	AREA
BK	AH	LENGTH	WIDTH	AREA	
Sta. 1551+720.000	- Sta. 1551+729.000	9.00	3.35	30.15	
Sta. 1551+860.000	- Sta. 1551+882.500	40.50	3.35	135.68	
Sta. 1551+987.218	- Sta. 1552+023.218	36.00	3.35	120.60	
Sta. 1552+056.000	- Sta. 1552+069.500	13.5	3.35	45.23	

SCHEDULE FOR REMOVAL OF PCCP, 330mm THK

SCALE

NTS

SCHEDULE FOR REMOVAL OF MARKINGS					
STATION	LENGTH	WIDTH	NO. OF STRIPS	AREA	REMARKS
Sta. 1551+714.218 - Sta. 1552+069.425	1,344.06	0.15	2.00	403.22	CENTERLINE/ISLAND EDGELINE
Sta. 1551+714.218 - Sta. 1552+648.175	3.00	0.15	412.00	185.40	LANE SEPARATOR
Sta. 1551+714.218 - Sta. 1553+059.425	1,344.06	0.10	2.00	268.81	EDGELINE
Sta. 1552+120.000 - Sta. 1552+180.000	60.00	0.15		15.86	APPROACH MARKING
Sta. 1552+120.000	4.00	0.30	32.00	38.40	PEDESTRIAN LANE
Sta. 1552+120.000	9.45	0.30	2.00	5.67	STOP BAR
Sta. 1552+630.000	4.00	0.30	34.00	40.80	PEDESTRIAN LANE
Sta. 1552+630.000	10.05	0.30	2.00	6.03	STOP BAR
Sta. 1552+648.175 - Sta. 1552+659.798	3.00	0.15	3.00	1.35	LANE SEPARATOR
Sta. 1552+659.798 - Sta. 1552+688.175	3.00	0.15	12.00	5.40	LANE SEPARATOR
Sta. 1552+688.175 - Sta. 1552+700.000	3.00	0.15	3.00	1.35	LANE SEPARATOR
Sta. 1552+700.000 - Sta. 1552+781.000	3.00	0.15	36.00	16.20	LANE SEPARATOR
Sta. 1552+781.000 - Sta. 1552+790.000	3.00	0.15	3.00	1.35	LANE SEPARATOR
Sta. 1552+790.000 - Sta. 1553+059.425	3.00	0.15	120.00	54.00	LANE SEPARATOR
Sta. 1552+830.000	4.00	0.30	32.00	38.40	PEDESTRIAN LANE
Sta. 1552+830.000	9.45	0.30	2.00	5.67	STOP BAR
Sta. 1552+905.000 - Sta. 1552+965.000	60.00	0.15		18.11	APPROACH MARKING

SCHEDULE FOR REMOVAL OF PCCP, 330mm THK

SCALE

NTS

REMOVAL OF SOLAR STUDS					
STATION		STATION EQUATION		NO. OF STUDS	REMARKS
BK	AH	NO. OF STUDS	REMARKS		
Sta. 1551+714.218 - Sta. 1552+180.000		70.00	No island; including 23 studs in approaching island markings		
Sta. 1552+180.000 - Sta. 1552+230.000		16.00	With island		
Sta. 1552+230.000 - Sta. 1552+245.000		2.00	Island gap		
Sta. 1552+245.000 - Sta. 1552+300.000		40.00	With island; 20 studs including studs along lane line		
Sta. 1552+300.000 - Sta. 1552+315.000		6.00	Island gap; 4 studs including studs along lane line		
Sta. 1552+315.000 - Sta. 1552+445.000	Sta. 1552+398.854 Sta. 1552+400.000	60.00	With island; 28 studs including studs along lane line		
Sta. 1552+445.000 - Sta. 1552+470.000		2.00	Island gap		
Sta. 1552+470.000 - Sta. 1552+600.000		38.00	With island		
Sta. 1552+600.000 - Sta. 1552+630.000		3.00	Island gap		
Sta. 1552+630.000 - Sta. 1552+830.000		58.00	With island		
Sta. 1552+830.000 - Sta. 1552+860.000		3.00	Island gap		
Sta. 1552+860.000 - Sta. 1552+925.000		18.00	With island		
Sta. 1552+925.000 - Sta. 1553+059.425		-	Island gap		
Sta. 1553+059.425 - Sta. 1553+059.425		-	With island		

SCHEDULE FOR REMOVAL OF SOLAR STUDS

SCALE

NTS

SCHEDULE FOR PCCP, 330mm THK					
STATION		STATION EQUATION		LENGTH	AREA
BK	AH	LENGTH	WIDTH	AREA	
Sta. 1551+720.000 - Sta. 1551+729.000		9.00	3.35	30.15	
Sta. 1551+860.000 - Sta. 1551+882.500		40.50	3.35	135.68	
Sta. 1551+987.218 - Sta. 1552+023.218		36.00	3.35	120.60	
Sta. 1552+056.000 - Sta. 1552+069.500		13.50	3.35	45.23	

SCHEDULE FOR PCCP, 330MM THK (REBLOCKING)

SCALE

NTS

APPROACH TO MEDIAN ISLAND MARKING SCHEDULE				
STATION LIMITS	TOTAL LENGTH OF DIAGONAL STRIPS (0.15M THK)	AREA	TOTAL LENGTH OF TRANSITION LINES (0.15M THK)	AREA
Sta. 1552+120.000 - Sta. 1552+180.000	5.24	2.359	90.02	13.50

APPROACH TO MEDIAN ISLAND MARKING SCHEDULE

SCALE

NTS

PAVEMENT MARKINGS SCHEDULE												
STATION LIMITS		STATION EQUATIONS		LENGTH (EDGE LINE) SINGLE SOLID WHITE 0.10M THK	LENGTH (CENTER LINE) DOUBLE SOLID YELLOW 0.15M THK	LENGTH (CENTER LINE) SINGLE SOLID WHITE 0.15M THK	LENGTH (ISLAND EDGE LINE) WHITE 0.15M THK (1 EDGELINE PER SIDE)	NO. OF LANES (FOR LANE LINES)	TOTAL LANE LINES (MULTIPLIED WITH NO. OF LANES LINES) BROKEN WHITE 0.15M THK	AREA SQ.M. (WHITE)	AREA SQ.M. (YELLOW)	
		BACK	AHEAD									
Sta. 1551+714.218	-	Sta. 1552+120.000	Sta. 0+000.000	Sta. 0+000.000	405.782	405.78	-	-	4.00	180.00	162.16	121.73
Sta. 1552+120.000	-	Sta. 1552+180.000	Sta. 0+000.000	Sta. 0+000.000	60.000		15.000	-	4.00	24.00	25.05	-
Sta. 1552+180.000	-	Sta. 1552+230.000	Sta. 0+000.000	Sta. 0+000.000	50.000		-	50.00	4.00	20.00	34.57	-
Sta. 1552+230.000	-	Sta. 1552+245.000	Sta. 0+000.000	Sta. 0+000.000	15.000		15.000	-	4.00	4.00	7.05	-
Sta. 1552+245.000	-	Sta. 1552+300.000	Sta. 0+000.000	Sta. 0+000.000	55.000		-	55.00	4.00	24.00	38.87	-
Sta. 1552+300.000	-	Sta. 1552+315.000	Sta. 0+000.000	Sta. 0+000.000	15.000		15.000	-	4.00	4.00	7.05	-
Sta. 1552+315.000	-	Sta. 1552+445.000	Sta. 1552+398.854	Sta. 1552+400.000	128.854		-	128.85	4.00	56.00	90.19	-
Sta. 1552+445.000	-	Sta. 1552+470.000	Sta. 0+000.000	Sta. 0+000.000	25.000		25.000	-	4.00	12.00	14.15	-
Sta. 1552+470.000	-	Sta. 1552+600.000	Sta. 0+000.000	Sta. 0+000.000	130.000		-	130.00	4.00	56.00	90.77	-
Sta. 1552+600.000	-	Sta. 1552+630.000	Sta. 0+000.000	Sta. 0+000.000	30.000		30.000	-	4.00	12.00	15.90	-
Sta. 1552+630.000	-	Sta. 1552+648.298	Sta. 0+000.000	Sta. 0+000.000	18.298		-	18.30	4.00	8.00	13.03	-
Sta. 1552+648.298	-	Sta. 1552+659.798	Sta. 0+000.000	Sta. 0+000.000	11.500		-	11.50	3.00	3.00	7.10	-
Sta. 1552+659.798	-	Sta. 1552+688.175	Sta. 0+000.000	Sta. 0+000.000	28.377		-	28.38	4.00	12.00	19.59	-
Sta. 1552+688.175	-	Sta. 1552+700.000	Sta. 0+000.000	Sta. 0+000.000	11.825		-	11.82	3.00	3.00	7.26	-
Sta. 1552+700.000	-	Sta. 1552+781.000	Sta. 0+000.000	Sta. 0+000.000	81.000		-	81.00	4.00	36.00	56.70	-
Sta. 1552+781.000	-	Sta. 1552+790.000	Sta. 0+000.000	Sta. 0+000.000	9.000		-	9.00	3.00	3.00	5.85	-
Sta. 1552+790.000	-	Sta. 1552+830.000	Sta. 0+000.000	Sta. 0+000.000	40.000		-	40.00	4.00	16.00	27.48	-
Sta. 1552+830.000	-	Sta. 1552+860.000	Sta. 0+000.000	Sta. 0+000.000	30.000		30.000	-	4.00	12.00	15.90	-
Sta. 1552+860.000	-	Sta. 1552+925.000	Sta. 0+000.000	Sta. 0+000.000	65.000		-	65.00	4.00	28.00	45.67	-
Sta. 1552+925.000	-	Sta. 1553+059.425	Sta. 0+000.000	Sta. 0+000.000	110.000		110.000	-	4.00	48.00	60.10	-
Sta. 1553+059.425	-	Sta. 1553+059.425	Sta. 0+000.000	Sta. 0+000.000	24.425		-	24.43	4.00	12.00	17.90	-

PAVEMENT MARKINGS SCHEDULE

SCALE

NTS

PEDESTRIAN SCHEDULE				
STATION LIMITS	WIDTH OF STRIPS	LENGTH OF STRIPS	NO. OF STRIPS	AREA
Sta. 1552+200.000	0.30	4.00	32.00	38.40
Sta. 1552+630.000	0.30	4.00	34.00	40.80
Sta. 1552+830.000	0.30	4.00	32.00	38.40

PEDESTRIAN SCHEDULE

SCALE

NTS

STOP BAR SCHEDULE				
STATION LIMITS	WIDTH OF STRIPS	LENGTH OF STRIPS	NO. OF STRIPS	AREA
Sta. 1552+200.000	0.30	9.45	2.00	5.67
Sta. 1552+630.000	0.30	10.05	2.00	6.03
Sta. 1552+830.000	0.30	9.45	2.00	5.67

STOP BAR SCHEDULE

SCALE

NTS

TRANSITION LINE SCHEDULE (FOR MERGING/DIVERGING DUE TO REDUCTION OF NO. OF LANE)						
STATION LIMITS	WIDTH OF STRIPS	LENGTH OF STRIPS	NO. OF STRIPS	AREA	SIDE	
Sta. 1552+548.298 - Sta. 1552+648.298	0.15	1.00	50.00	7.50	RIGHT	
Sta. 1552+659.798 - Sta. 1552+688.948	0.15	1.00	15.00	2.25	RIGHT	
Sta. 1552+688.025 - Sta. 1552+688.175	0.15	1.00	15.00	2.25	LEFT	
Sta. 1552+790.000 - Sta. 1552+890.000	0.15	1.00	50.00	7.50	LEFT	

TRANSITION LINE SCHEDULE

SCALE

NTS

ROAD SIGN SCHEDULE								
STATION	W2-6		W4-2		W5-2		R5-9	
	NO. OF PIECE/S	SIDE	NO. OF PIECE/S	SIDE	NO. OF PIECE/S	SIDE	NO. OF PIECE/S	SIDE
Sta. 1552+590.000	1.00	RIGHT			-		1.00	RIGHT
Sta. 1552+620.000	-		1.00	RIGHT	2.00	BOTH		
Sta. 1552+650.000	1.00	LEFT			-		1.00	LEFT
Sta. 1552+810.000	1.00	RIGHT			-		-	
Sta. 1552+830.000	-		1.00	LEFT	-		-	
Sta. 1552+870.000	1.00	LEFT			-		-	

ROAD SIGN SCHEDULE

SCALE

NTS



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGIONAL OFFICE NO. XI
GOV. CHAVEZ COR. R. MAGSAYSAY AVENUE, DAVAO CITY

PROJECT NAME AND LOCATION:
PREVENTIVE MAINTENANCE OF ROAD:
ASPHALT OVERLAY - MAHARLIKA
HIGHWAY - DAVAO COTABATO ROAD
(DAVAO CITY-JCT DIGOS SECTION) -
K1551+695 - K1553+000, DAVAO DEL SUR

SHEET CONTENTS:
SCHEDULES

DRAFTED AND PREPARED:
NEIL ERIC L. TOMALE
ENGINEER II
DATE:

REVIEWED:
DENNIS ALDRIN A. SEMPIO
ENGINEER I, D.C. - SECTION CHIEF
DATE:

SUBMITTED:
JUDY ANN T. BERNARDINO
CHIEF, PLANNING AND DESIGN DIVISION
DATE:

RECOMMENDING APPROVAL:
JOSE LITO B. CABALLERO
ASSISTANT REGIONAL DIRECTOR
DATE:

APPROVED:
JUDY B. CORDON
REGIONAL DIRECTOR
DATE:

SET NO.

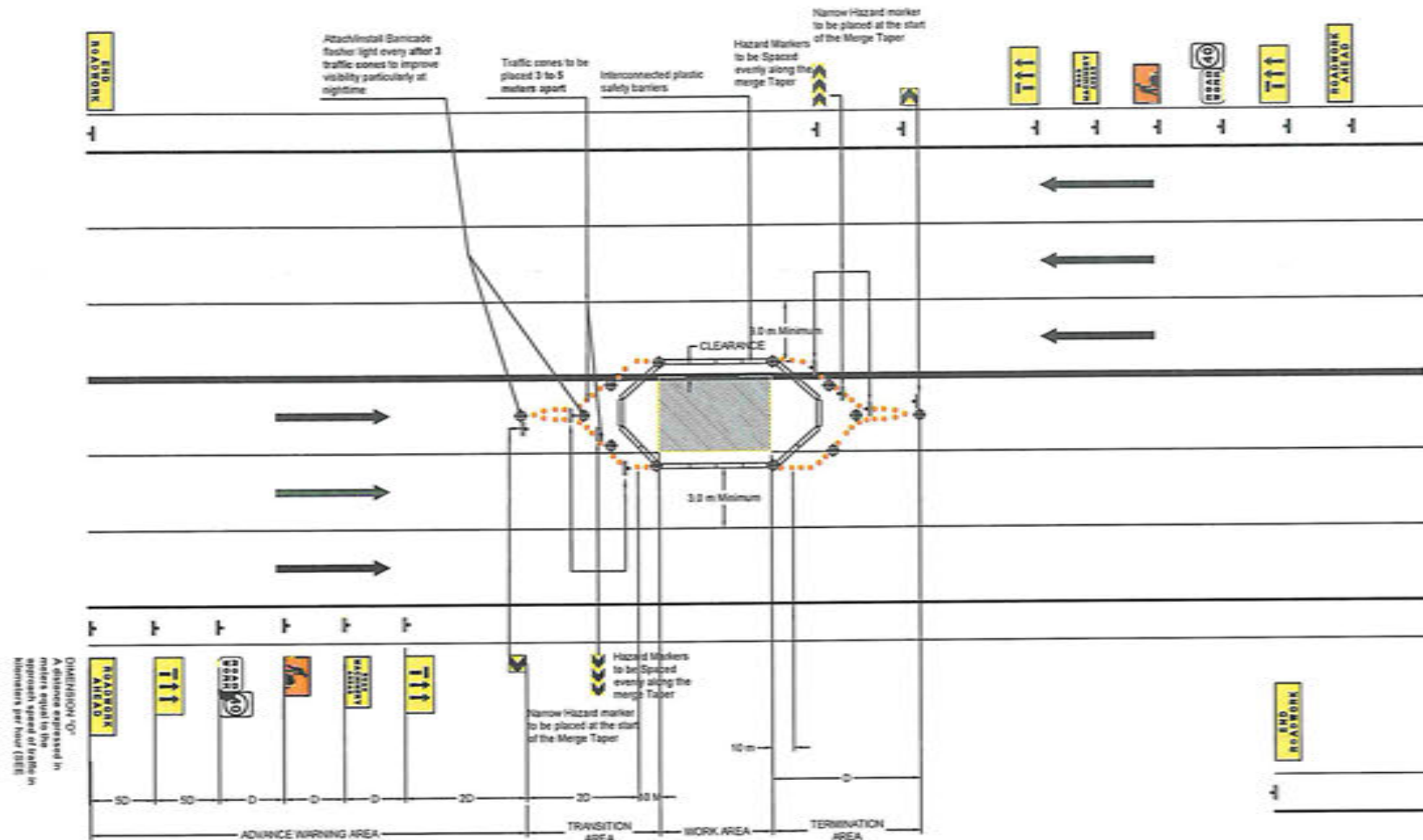
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SHEET NO.

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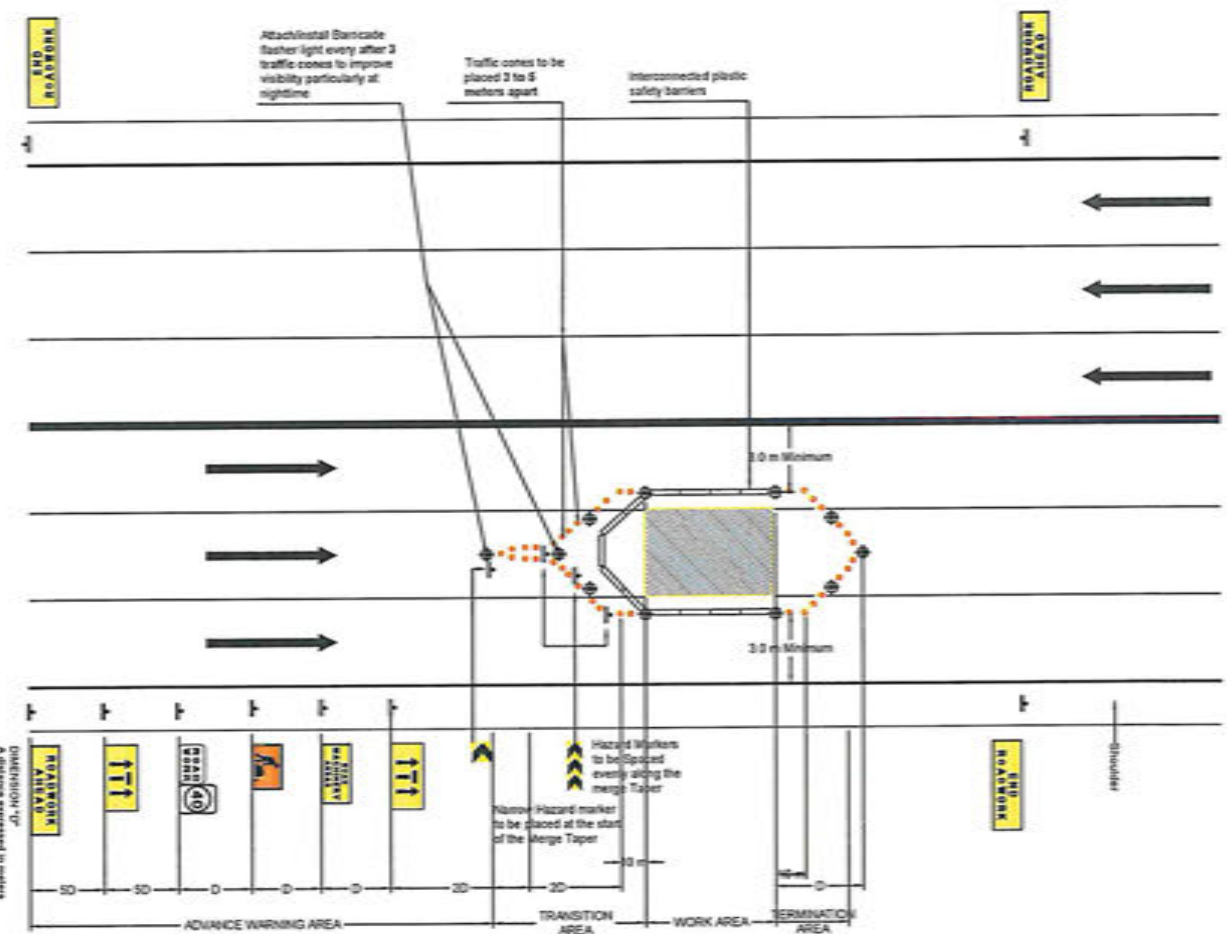
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B. TRAFFIC MANAGEMENT DETAILS



SCHEME 1: REMOVAL OF DAMAGED PCCP FOR REBLOCKING

TRAFFIC MANAGEMENT STAGES		DESCRIPTION	QUANTITY
SCHEME 2: LAYING OF ASPHALT: INNERLANE (WITHOUT ISLAND)		ROADWORK AHEAD (71-1)	2
		LANE STATUS (70-4.2)	2
		ROAD WORK (84-2)	1
		SPEED RESTRICTION (84-1)	1
		WORKMEN AHEAD (SYMBOLIC) (71-2)	1
		ROADWORK MACHINERY AHEAD (71-3)	1
		TEMPORARY HAZARD MARKER (75-5)	1
		TEMPORARY HAZARD MARKER (75-4)	3
		END ROADWORK (73-16)	2
		TRAFFIC CONES	36
		BARRICADE FLASHER LIGHT	13
		PLASTIC SAFETY BARRIER (200 meters - Working Area Closed)	84



SCHEME 2: LAYING OF ASPHALT: INNERLANE (WITHOUT ISLAND)

1 TRAFFIC MANAGEMENT LAYOUT



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGIONAL OFFICE NO. XI
GOV. CIRVEL COR. R. MAGSAYSAY AVENUE, DAVAO CITY

PROJECT NAME AND LOCATION:
PREVENTIVE MAINTENANCE OF ROAD:
ASPHALT OVERLAY - MAHARLIKA
HIGHWAY - DAVAO COTABATO ROAD
(DAVAO CITY-JCT DIGOS SECTION) -
K1551+895 - K1553+000, DAVAO DEL SUR

TRAFFIC MANAGEMENT LAYOUT

DRAFTED AND PREPARED:

NEIL ERIC L. TOMALE
ENGINEER I
DATE:

REVIEWED:

DENWIN ALDRIN A. SEMPIO
ENGINEER II, OIC - DESIGN CHIEF
DATE:

SUBMITTED:

JULIAN T. BERNARDINO
CHIEF PLANNING AND DESIGN DIVISION
DATE:

RECOMMENDING APPROVAL:

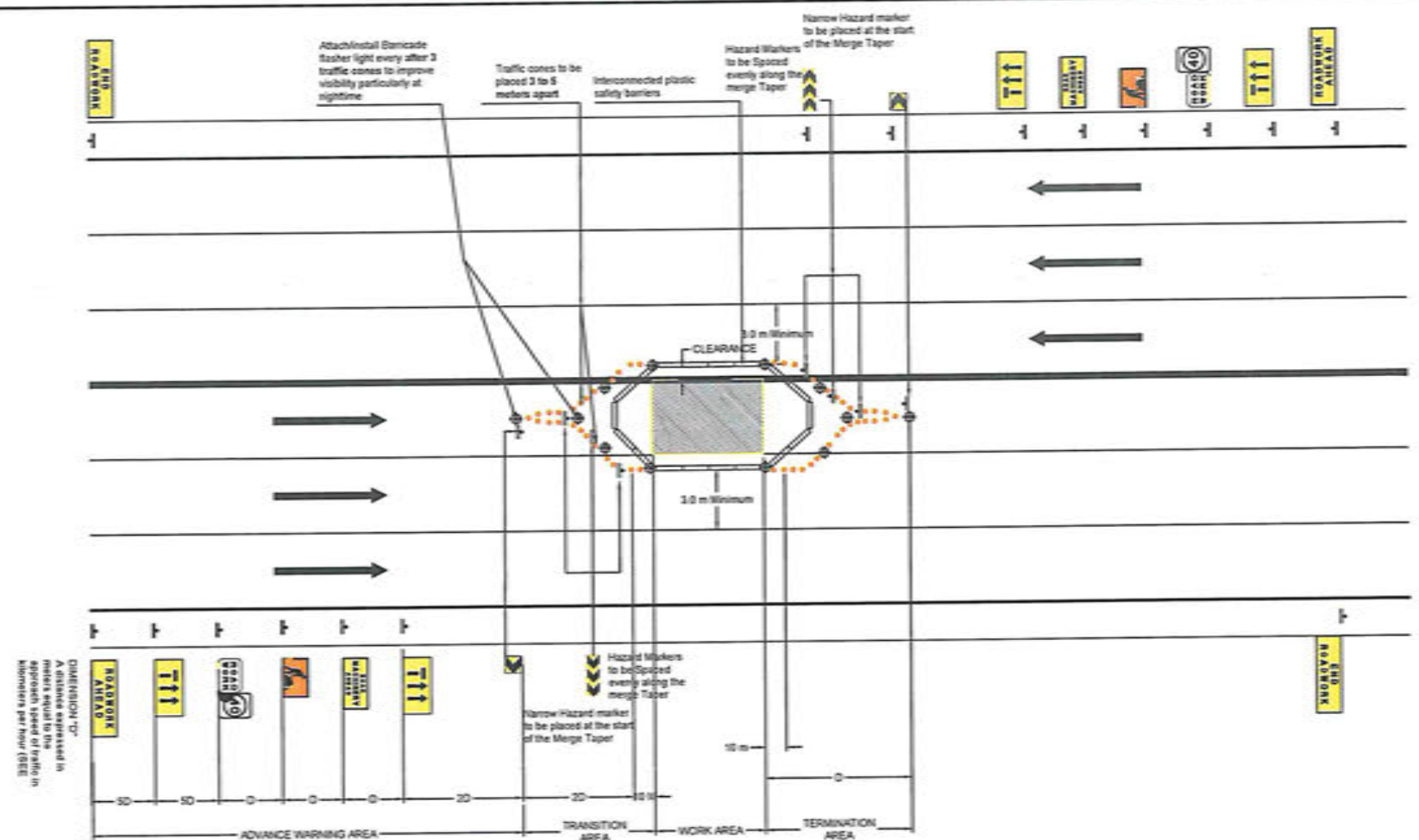
JOSEITO B. CABALLERO
ASSISTANT REGIONAL DIRECTOR
DATE:

APPROVED:

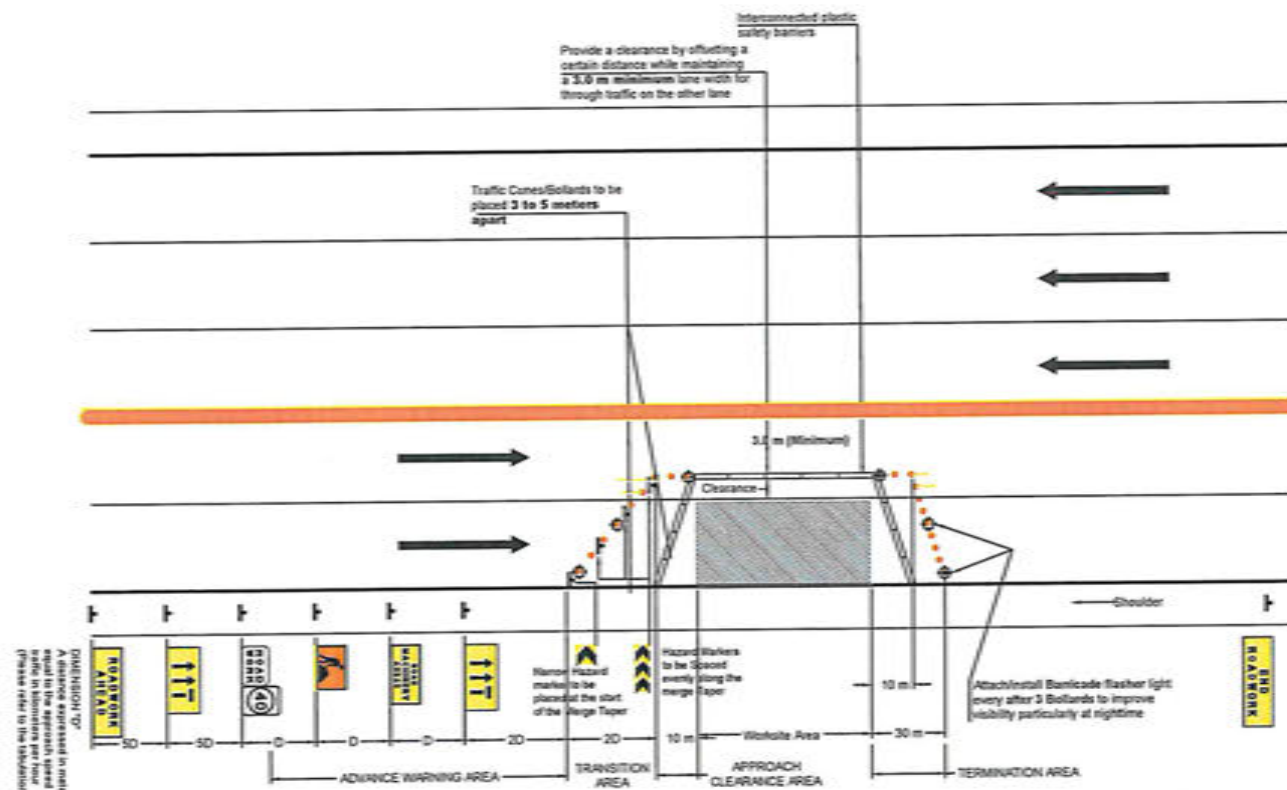
JUBY B. CORDON
REGIONAL DIRECTOR
DATE:

SET NO. **B**
1/11
SHEET NO. **15**
29

TRAFFIC MANAGEMENT STAGES		DESCRIPTION	QUANTITY
SCHEME 3: LAYING OF ASPHALT: INNERMOST (WITHOUT ISLAND)		ROADWORK AHEAD (T1-1)	2
		LANE STATUS (T2-2)	4
		ROAD WORK (R4-2)	2
		SPEED RESTRICTION (R4-1)	2
		WORKMEN AHEAD (T1-2)	2
		ROADWORK MACHINERY AHEAD (T1-3)	2
		TEMPORARY HAZARD MARKER (T3-1)	2
		TEMPORARY HAZARD MARKER (T3-2)	6
		END ROADWORK (T3-1B)	2
		TRAFFIC CONES	36
		BARRICADE FLASHER LIGHT	13
		PLASTIC SAFETY BARRIER (200 meters - Working Area Considered)	66



SCHEME 3: LAYING OF ASPHALT: INNERMOST (WITHOUT ISLAND)



SCHEME 4: LAYING OF ASPHALT: OUTERMOST (WITH ISLAND)

TRAFFIC MANAGEMENT STAGES		DESCRIPTION	QUANTITY
SCHEME 4: LAYING OF ASPHALT: OUTERMOST (WITH ISLAND)		ROADWORK AHEAD (T1-1)	1
		LANE STATUS (T2-2)	2
		ROAD WORK (R4-2)	1
		SPEED RESTRICTION (R4-1)	1
		WORKMEN AHEAD (T1-2)	1
		ROADWORK MACHINERY AHEAD (T1-3)	1
		TEMPORARY HAZARD MARKER (T3-1)	1
		TEMPORARY HAZARD MARKER (T3-2)	3
		END ROADWORK (T3-1B)	1
		TRAFFIC CONES	17
		BARRICADE FLASHER LIGHT	10
		PLASTIC SAFETY BARRIER (200 meters - Working Area Considered)	44

1 TRAFFIC MANAGEMENT LAYOUT



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGIONAL OFFICE NO. XI
GOV. CHAVEZ COR. R. MAGSAYSAY AVENUE, DAVAO CITY

PROJECT NAME AND LOCATION:
PREVENTIVE MAINTENANCE OF ROAD:
ASPHALT OVERLAY - MAHARLIKA
HIGHWAY - DAVAO COTABATO ROAD
(DAVAO CITY-JCT DIGOS SECTION) -
K1551+695 - K1553+000, DAVAO DEL SUR

SHEET CONTENTS:
TRAFFIC MANAGEMENT LAYOUT

DRAFTED AND PREPARED:
NEIL ERIC L. TOMALE
ENGINEER I
DATE:

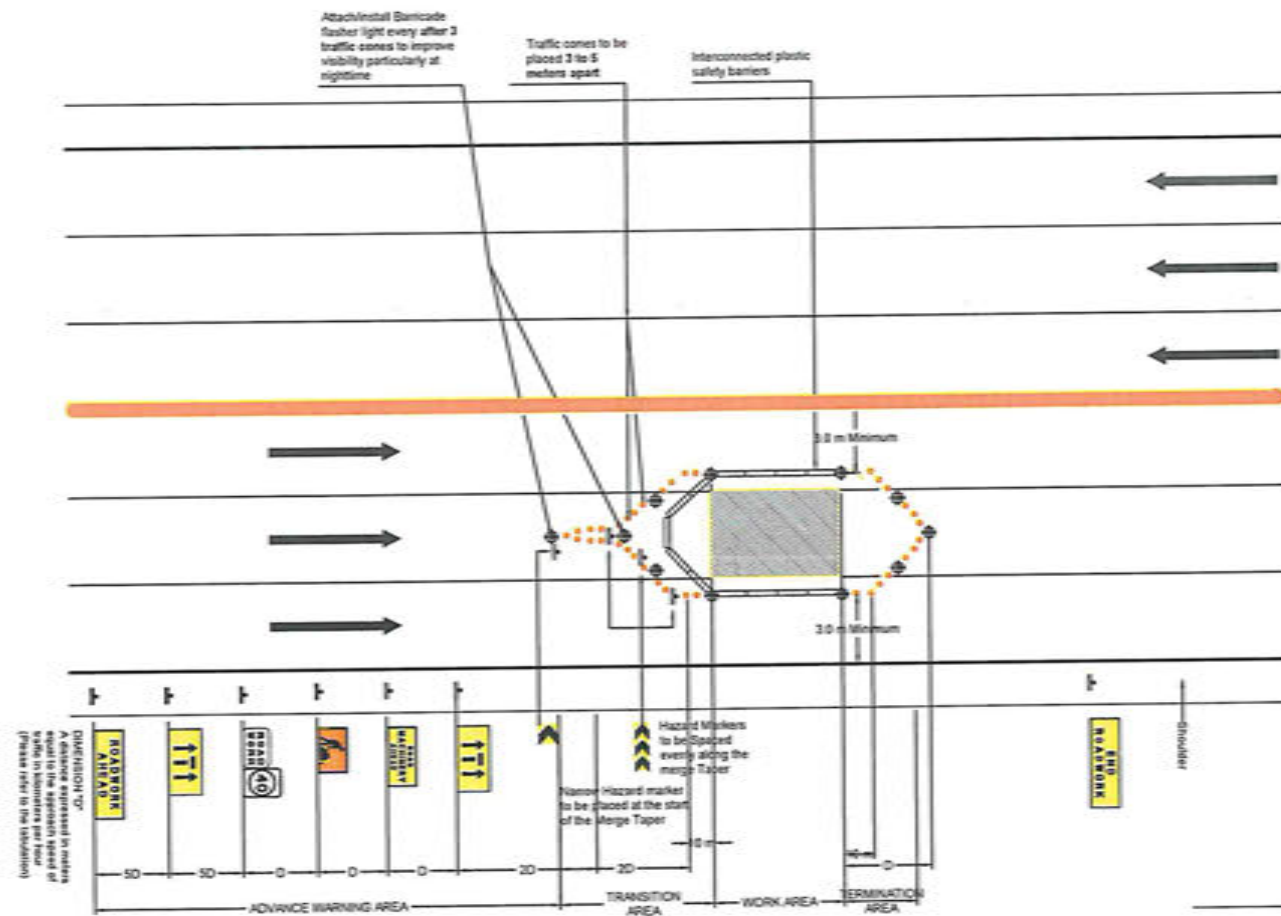
REVIEWED:
DENNIS ALDRIN A. SEMPIO
ENGINEER I, OIC - SECTION CHIEF
DATE:

SUBMITTED:
JUDY ANN T. BERNARDINO
CHIEF PLANNING AND DESIGN DIVISION
DATE:

RECOMMENDING APPROVAL:
JOSELO B. CABALLERO
ASSISTANT REGIONAL DIRECTOR
DATE:

APPROVED:
JUDY B. CORDON
REGIONAL DIRECTOR
DATE:

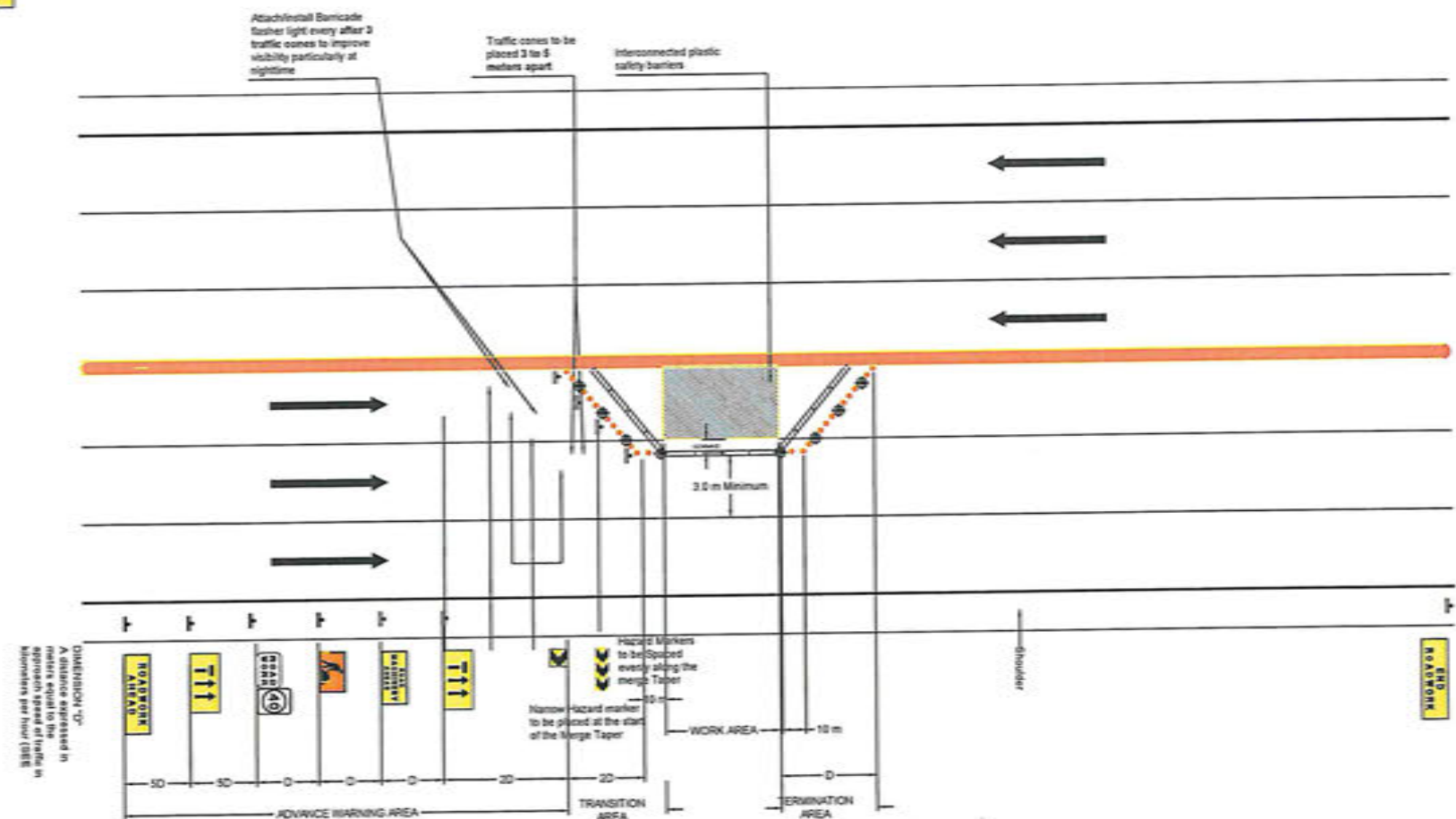
SET NO. 211
SHEET NO. 1629



SCHEME 5: LAYING OF ASPHALT: INNERLANE (WITH ISLAND)

TRAFFIC MANAGEMENT STAGES	DESCRIPTION	QUANTITY
SCHEME 5. LAYING OF ASPHALT: INNERLANE (WITH ISLAND)	ROADWORK AHEAD (71-1)	1
	LANE STATUS (72-4.2)	2
	ROAD WORK (84-3)	1
	SPEED RESTRICTION (84-1)	1
	WORKMEN AHEAD (SYMBOLIC) (71-2)	1
	ROADWORK MACHINERY AHEAD (71-3)	1
	TEMPORARY HAZARD MARKER (73-4)	1
	TEMPORARY HAZARD MARKER (73-4)	3
	END ROADWORK (72-16)	1
	TRAFFIC CONES	17
	BARRICADE FLASHER LIGHT	10
	PLASTIC SAFETY BARRIER (200 meters - Working Area Condition)	44

TRAFFIC MANAGEMENT STAGES	DESCRIPTION	QUANTITY
SCHEME 5. LAYING OF ASPHALT: INNERLANE (WITH ISLAND)	ROADWORK AHEAD (71-1)	1
	LANE STATUS (72-4.2)	2
	ROAD WORK (84-3)	1
	SPEED RESTRICTION (84-1)	1
	WORKMEN AHEAD (SYMBOLIC) (71-2)	1
	ROADWORK MACHINERY AHEAD (71-3)	1
	TEMPORARY HAZARD MARKER (73-4)	1
	TEMPORARY HAZARD MARKER (73-4)	3
	END ROADWORK (72-16)	1
	TRAFFIC CONES	26
	BARRICADE FLASHER LIGHT	10
	PLASTIC SAFETY BARRIER (200 meters - Working Area Condition)	64

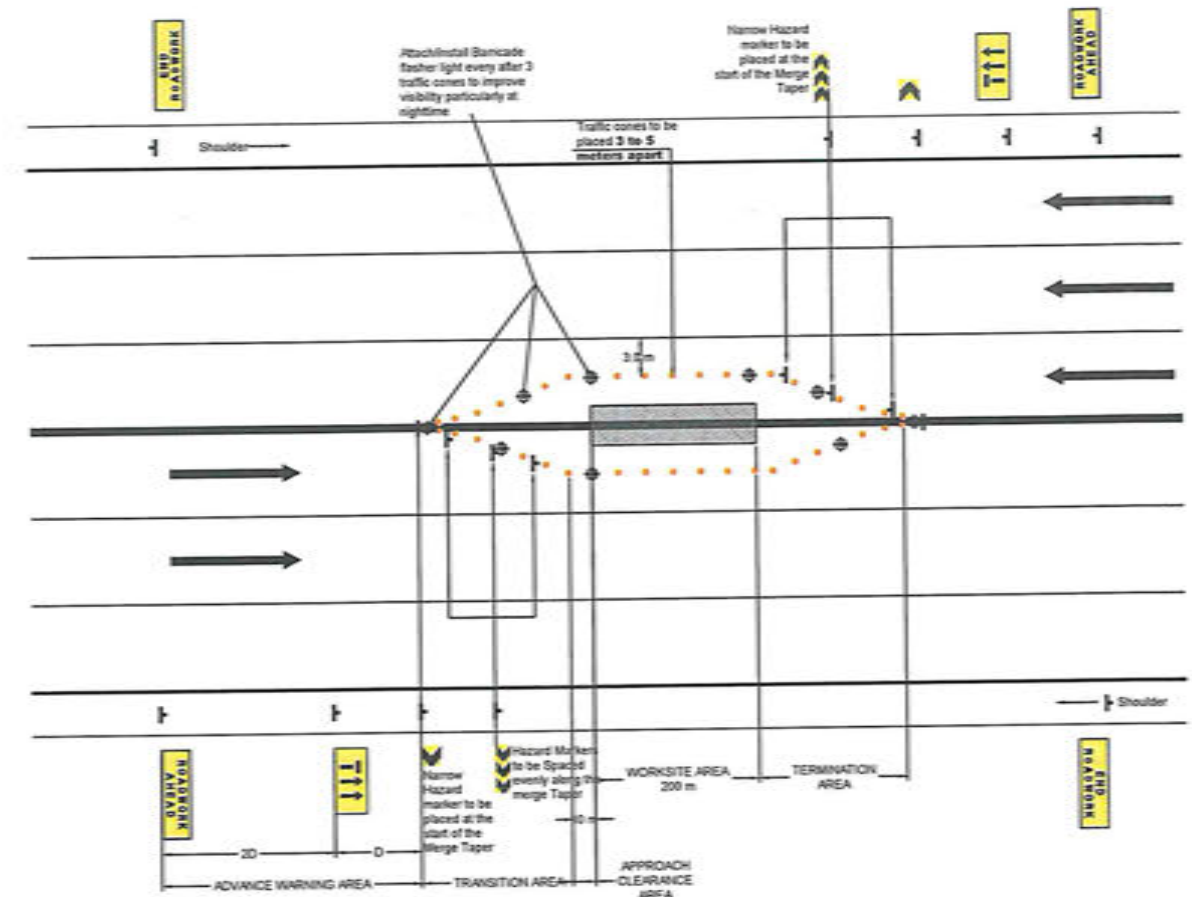


SCHEME 6: LAYING OF ASPHALT: INNERMOST (WITH ISLAND)

1 TRAFFIC MANAGEMENT LAYOUT

REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS REGIONAL OFFICE NO. XI GOV. CHAVEZ COR. R. MIGSAYSAY AVENUE, DAVAO CITY	PROJECT NAME AND LOCATION:	SHEET CONTENTS:	DRAFTED AND PREPARED:	REVIEWED:	SUBMITTED:	RECOMMENDING APPROVAL:	APPROVED:	SET NO.	SHEET NO.
	PREVENTIVE MAINTENANCE OF ROAD: ASPHALT OVERLAY - MAHARLIKA HIGHWAY - DAVAO COTABATO ROAD (DAVAO CITY-JCT DIGOS SECTION) - K1551+695 - K1553+000, DAVAO DEL SUR	TRAFFIC MANAGEMENT LAYOUT	NEIL ERIC L. TOMALE ENGINEER I/B	DENVER L. CORDON ENGINEER I/C - SECTION CHIEF	JUDY ANN T. BERNARDINO CHIEF PLANNING AND DESIGN DIVISION	JOSELYN B. CABALLERO ASSISTANT REGIONAL DIRECTOR	JUDY B. CORDON REGIONAL DIRECTOR	B 3 11	17 29

TRAFFIC MANAGEMENT STAGES		DESCRIPTION	QUANTITY
SCHEME 7: APPLICATION OF REFLECTORIZED THERMOPLASTIC PAVEMENT MARKINGS		ROADWORK AHEAD (71-1)	2
		LANE STATUS (71-4.2)	2
		TEMPORARY HAZARD MARKER (73-8)	2
		TEMPORARY HAZARD MARKER (73-4)	6
		END ROADWORK (71-10)	2
		TRAFFIC CONES	128



SCHEME 7: APPLICATION OF REFLECTORIZED THERMOPLASTIC PAVEMENT MARKINGS

TRAFFIC MANAGEMENT STAGES		DESCRIPTION	QUANTITY
TOTAL QUANTITIES		ROADWORK AHEAD (71-1)	2
		LANE STATUS (71-4.2)	4
		ROAD WORK (84-1)	2
		SPEED RESTRICTION (84-1)	2
		WORKMEN AHEAD (SYMBOLIC) (71-4)	2
		ROADWORK AHEAD (SYMBOLIC) (71-1)	2
		TEMPORARY HAZARD MARKER (73-8)	2
		TEMPORARY HAZARD MARKER (73-4)	6
		END ROADWORK (71-10)	2
		TRAFFIC CONES	128
		BARRICADE FLASHER LIGHT	10
		PLASTIC SAFETY BARRIER (200 meters - Working Area Condition)	88

TOTAL QUANTITIES FOR TRAFFIC MANAGEMENT

1 TRAFFIC MANAGEMENT LAYOUT

REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS REGIONAL OFFICE NO. XI GOV. CHAVEZ COR. R. MAGSAYSAY AVENUE, DAVAO CITY	PROJECT NAME AND LOCATION:	SHEET CONTENTS:	DRAFTED AND PREPARED:	REVIEWED:	SUBMITTED:	RECOMMENDING APPROVAL:	APPROVED:	SET NO.	SHEET NO.
	PREVENTIVE MAINTENANCE OF ROAD: ASPHALT OVERLAY - MAHARLIKA HIGHWAY - DAVAO COTABATO ROAD (DAVAO CITY-JCT DIGOS SECTION) - K1551+695 - K1553+000, DAVAO DEL SUR	TRAFFIC MANAGEMENT LAYOUT	NEIL ERIC L. TOMALE ENGINEER I DATE:	DENVER ALDRIN A. SEMPIO ENGINEER II, DEC - SECTION CHIEF DATE:	JUDY ANN T. BERNARDINO CHIEF, TRAINING AND DESIGN DIVISION DATE:	JOSEPH B. CABALLERO ASSISTANT REGIONAL DIRECTOR DATE:	JUSY B. CORDON REGIONAL DIRECTOR DATE:	B 4/11	18 29

C:\USERS\PUBLIC\2025\INFRA\PREVENTIVE MAINTENANCE\DAV COTB K1552+000 - K1553+000\TYPICAL\TPM\NEW TRAFFIC MANAGEMENT PROGRAM_Ongoing_RECOVER.DWG

USE OF TRAFFIC CONTROLLERS (FLAGMEN)

1. THE TRAFFIC CONTROLLER USES A POTABLE STOP/SLOW HAND HELD SIGN OR RED AND GREEN STOP/GO FLAG TO CONTROL THE TRAFFIC.
2. WHEN CONTROLLING TRAFFIC, A TRAFFIC CONTROLLER SHOULD ENSURE THAT A SYMBOLIC WORKMAN SIGN AND PREPARE TO STOP SIGN AND ADDITIONAL SIGNS AND DEVICES REQUIRED FOR THE OVERALL WORKSITE TRAFFIC MANAGEMENT SCHEME, ARE IN PLACE TO PROVIDE ADVANCE WARNING AND INFORMATION TO ROAD USERS.
3. THE TRAFFIC CONTROLLER SHOULD STAND APPROXIMATELY 30 METERS IN ADVANCE OF WORK AREA.
4. THE TRAFFIC CONTROLLER SHOULD BE VISIBLE TO THE APPROACHING ROAD USER AND STAND ON THE CURB SIDE OR SHOULDER CLEAR OF THE TRAVELLED PATH TO VIEW BOTH THE WORKSITE AND ONCOMING TRAFFIC.
5. TRAFFIC CONTROLLER WILL NEED TO USE TWO-WAY RADIOS TO ENSURE ADEQUATE COMMUNICATION OVER LONG DISTANCE OR WHERE THERE IS LIMITED VISIBILITY.

NOTE:

1. ROADWORK AHEAD - THE FIRST ADVANCE WARNING SIGN SEEN BY DRIVERS, SHOULD BE LOCATED AT MINIMUM DISTANCE *2D* METERS (D IS THE APPROACHED SPEED OF TRAFFIC) BEFORE THE START OF THE WORKS, OR IF THERE IS A TRANSITION AREA, THE START OF THE TAPER.
2. OTHER SIGN IN ADVANCE WARNING AREA SHOULD BE SPACE *D* METERS APART.
3. LONGITUDINAL BUFFER SPACE SHOULD BE 20 TO 30 METERS LONG BUT CAN BE EXTENDED IF THE WORK AREA IS HIDDEN FROM APPROACHING ROAD USER, e.g. BY A CURVE OR CREST.
4. LATERAL BUFFER SPACE SHOULD BE A MINIMUM OF 1.2 METERS IN SLOW SPEED AREAS, OR IN HIGH SPEED AND HIGH VOLUME AREAS, A LARGE ADJACENT CLEARANCE IN DESIRABLE WITH SAFETY BARRIERS ADJACENT TO THE WORK AREA.
5. LOCATION OF TRAFFIC CONTROLLER SHOULD BE 30 METERS IN ADVANCE OF WORK AREA, WITH GOOD SITE DISTANCE OF ONCOMING TRAFFIC, WITH AN ESCAPE PATH IN AN EMERGENCY, WHERE THE OTHER TRAFFIC CONTROLLER IS VISIBLE, AND CAN BE SEEN BY THE ROAD USER.

REFERENCES:

- D.O. NO.13, SERIES 2018 - GUIDELINE FOR THE PREPARATION OF COST ESTIMATES FOR THE TRAFFIC MANAGEMENT AND SAFETY AND HEALTH REQUIREMENTS FOR THE CONSTRUCTION AND MAINTENANCE OF ROADS, BRIDGES AND SAFETY AND HEALTH.
- ROAD SAFETY MANUAL 2004
- PART 2: ROAD SAFETY AND PAVEMENT DESIGN MANUAL 2012

PROJECT PARAMETERS	COMMENTS
1. ROAD LAYOUT	THE ENTIRE OVERLAYING OF ASPHALT PROJECT WILL COMMENCE AT DAANG MAHARLIKA (MABUNTURAN), NEAR CASANGAY BRIDGE. THE UPCOMING 2024 PROJECT MIGHT DISRUPT ADJACENT WORK AREAS CLOSE TO DAANG MAHARLIKA IN BRGY. MASSAYSAY.
2. ROAD GEOMETRY	THE PROJECT INVOLVES OVERLAYING OF ASPHALT, APPLICATION OF REFLECTORIZED PAVEMENT MARKING AND INSTALLATION OF ROAD SIGNS.
3. SIGHT DISTANCE	THERE IS AN ADEQUATE AND CLEAR SIGHT DISTANCE SINCE THE PROPOSED PROJECT IS IN FLAT TERRAIN.
4. VULNERABLE ROAD USER FACILITIES	THERE ARE DESIGNATED CROSSWALKS IN THE AREA DESIGNED FOR PEDESTRIANS.
5. PAVEMENT CONDITION	THE CURRENT DAMAGED ASPHALT WILL BE REPLACED WITH A NEW ONE UPON COMPLETION OF THE PROJECT.
6. EXISTING SIGNS	WHILE THERE ARE ALREADY ROAD SIGNS IN PLACE, THE PROJECT AIMS TO ENHANCE SAFETY FOR BOTH PEDESTRIANS AND DRIVERS BY ADDING ADDITIONAL SIGNAGE.
7. LIGHTING FACILITIES	EXISTING STREETLIGHTS WERE OBSERVED IN SOME SECTIONS ALONG DAANG MAHARLIKA (MEDIAN ISLAND)
8. ABUTTING ACCESSES	NONE
9. ADJOINING ROAD NETWORKS	THERE ARE ROADS ADJOINING THE PROJECT
10. OTHER POSSIBLE CONSTRAINTS	NONE

TRANSITION AREA			
SPEED OF TRAFFIC (KPH)	LENGTH OF DIVERGELATERAL SHIFT TAPER (m)	LENGTH OF MERGE TAPER (m)	LENGTH OF STRAIGHT SECTION BETWEEN MULTI-LANE CLOSURES (m)
≤ 40	40	80	60
50	50	100	75
60	60	120	90
70	70	140	105
80	80	160	120
90	90	180	135
100	100	200	150
110	110	220	165

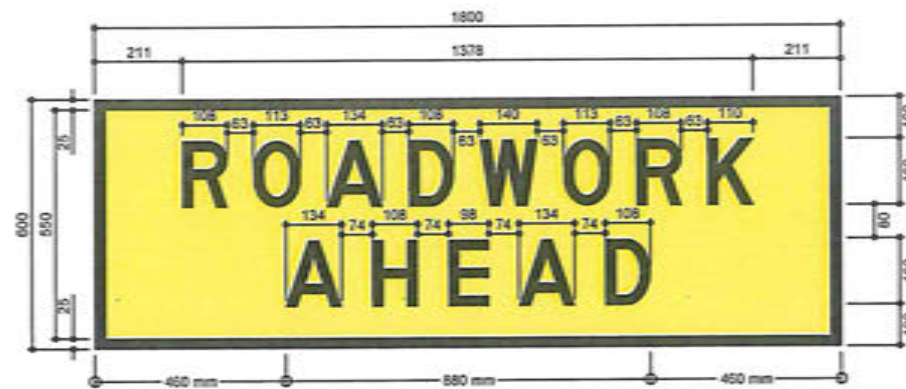
APPROACH CLEARANCE AREA	
SPEED OF TRAFFIC (KPH)	BUFFER LENGTH (m)
≤ 40	0
50	0
60	20 - 30
70	20 - 30
80	20 - 30
90	20 - 30
100	20 - 30
110	20 - 30

ADVANCE WARNING AREA	
SPEED OF TRAFFIC (KPH)	SIGNAGE SPACING ("D" VALUE) (m)
≤ 40	0 - 5
50	15
60	45
70	70
80	80
90	90
100	100
110	110

TERMINATION AREA			
SPEED OF TRAFFIC (KPH)	LENGTH OF DIVERGELATERAL SHIFT TAPER (m)	LENGTH OF MERGE TAPER (m)	LENGTH OF STRAIGHT SECTION BETWEEN MULTI-LANE CLOSURES (m)
≤ 40	40	80	% OF LEAD TAPER LENGTH
50	50	100	
60	60	120	
70	70	140	
80	80	160	
90	90	180	
100	100	200	
110	110	220	

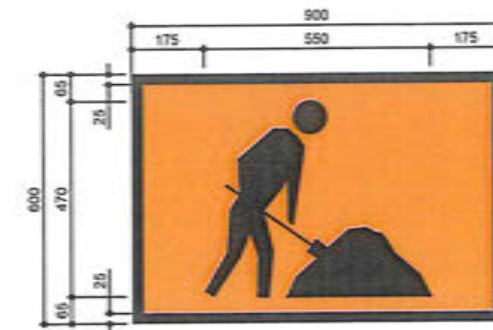
1 TRAFFIC MANAGEMENT LAYOUT GENERAL NOTES

 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS REGIONAL OFFICE NO. XI GOV. CHAVEZ COR. R. NAGSAYSAY AVENUE, DAVAO CITY	PROJECT NAME AND LOCATION:	SHEET CONTENTS:	DRAFTED AND PREPARED:	REVIEWED:	SUBMITTED:	RECOMMENDING APPROVAL:	APPROVED:	SET NO.	SHEET NO.
	PREVENTIVE MAINTENANCE OF ROAD: ASPHALT OVERLAY - MAHARLIKA HIGHWAY - DAVAO COTABATO ROAD (DAVAO CITY-JCT DIGOS SECTION) - K1551+895 - K1553+000, DAVAO DEL SUR	TRAFFIC MANAGEMENT LAYOUT GENERAL NOTES	NEIL ERIC L. TOMALE ENGINEER DATE:	DENVER ALDRIN A. SEMPIO ENGINEER, REG. - SECTION CHIEF DATE:	JUDY A. T. BERNARDINO CHIEF, PLANNING AND DESIGN DIVISION DATE:	JOSELO B. CABALLERO ASSISTANT REGIONAL DIRECTOR DATE:	JUBY B. CORDON REGIONAL DIRECTOR DATE:	B 5/11	19 29



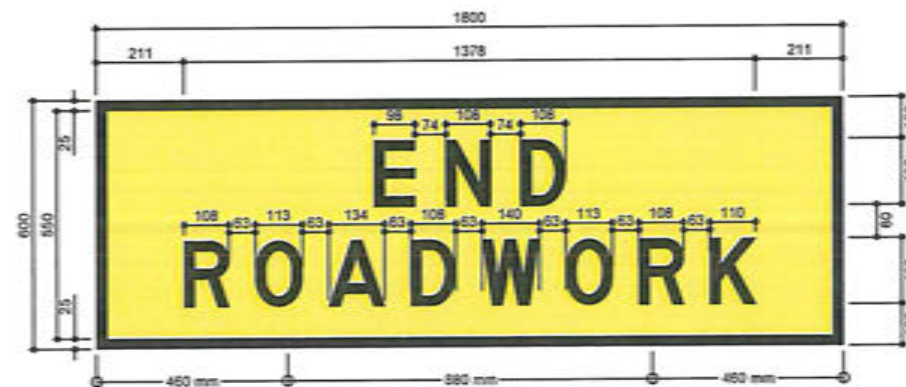
ROADWORK AHEAD DETAILS

SIGN NO.	SIZE (mm)	LETTERS/SYMBOLS	BACKGROUND	TYPE OF SIGNS
T1-1	1800 X 600	LINE 1 - BLACK 200 DM LINE 2 - BLACK 160 DM	YELLOW REFLECTORIZED	ADVANCE WARNING SIGNS



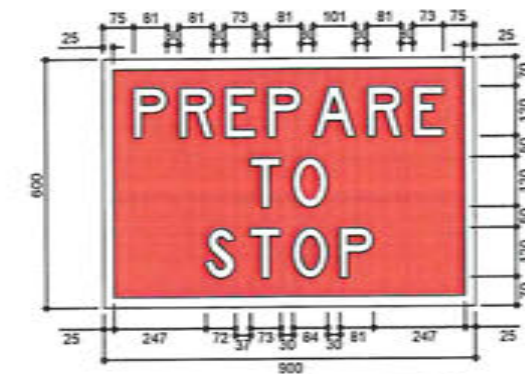
WORKMEN AHEAD (SYMBOLIC) DETAILS

SIGN NO.	SIZE (mm)	LETTERS/SYMBOLS	BACKGROUND	TYPE OF SIGNS
T1-5	900 X 600	BLACK	RED/ORANGE - FLUORESCENT FOR DAY USE - REFLECTORIZED FOR NIGHT	ADVANCE WARNING SIGNS



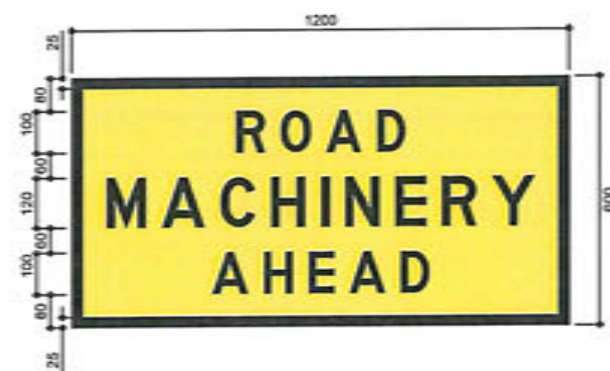
END ROADWORK DETAILS

SIGN NO.	SIZE (mm)	LETTERS/SYMBOLS	BACKGROUND	TYPE OF SIGNS
T2-16	1800 X 600	LINE 1 - BLACK 200 DM LINE 2 - BLACK 160 DM	YELLOW REFLECTORIZED	ADVANCE WARNING SIGNS



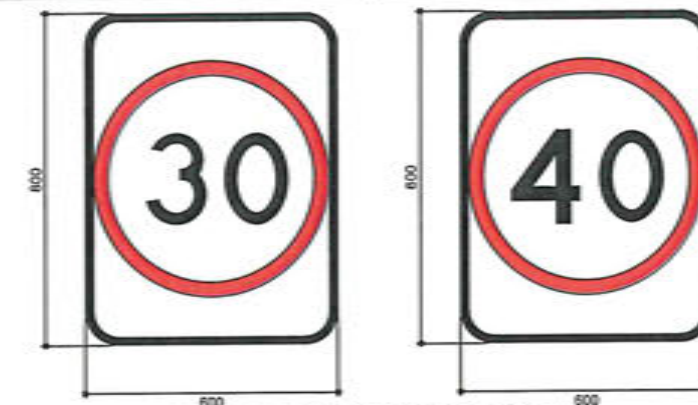
PREPARED TO STOP DETAILS

SIGN NO.	SIZE (mm)	LETTERS/SYMBOLS	BACKGROUND	TYPE OF SIGNS
T1-18	900 X 600	LINE 1 - WHITE 120 DM LINE 2 - WHITE 120 DM LINE 3 - WHITE 120 DM REFLECTORIZED	RED REFLECTORIZED	REGULATORY SIGNS



ROAD MACHINERY AHEAD DETAILS

SIGN NO.	SIZE (mm)	LETTERS/SYMBOLS	BACKGROUND	TYPE OF SIGNS
T1-3	1200 X 600	LINE 1 - BLACK 100 DM LINE 2 - BLACK 120 DM LINE 3 - BLACK 100 DM	YELLOW REFLECTORIZED	ADVANCE WARNING SIGNS



SPEED RESTRICTION DETAILS

NOTE: THE SPEED LIMIT WILL BE DETERMINED BY THE PROJECT ENGINEER

SIGN NO.	SIZE (mm)	LETTERS/SYMBOLS	BACKGROUND	TYPE OF SIGNS
R4-1	600 X 800 (SIZE B)	BLACK 240 DM CIRCLE - 600 DIA. RED	WHITE REFLECTORIZED RED CIRCLE - REFLECTORIZED	REGULATORY SIGNS



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(DAVAO CITY-JCT DIGOS SECTION) -
K1551+895 - K1553+000, DAVAO DEL SUR

SHEET CONTENTS:
TRAFFIC MANAGEMENT PROGRAM SIGNAGE

DRAFTED AND PREPARED:
NEIL ERIC L. TOMALE
ENGINEER
DATE:

REVIEWED:
DENNIS ALDRIN A. SEMPIO
ENGINEER, P.E. - SECTION CHIEF
DATE:

SUBMITTED:
JUDY B. BERNARDINO
CHIEF, PLANNING AND DESIGN DIVISION
DATE:

RECOMMENDING APPROVAL:
JOSELYN B. CABALLERO
ASSISTANT REGIONAL DIRECTOR
DATE:

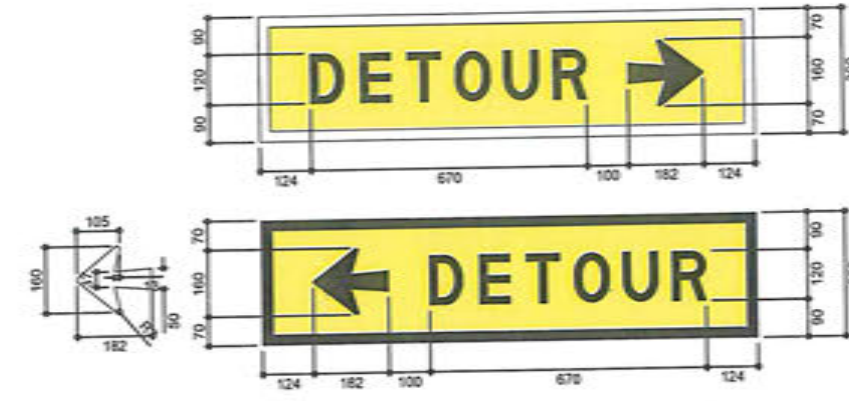
APPROVED:
JUSY B. CORDON
REGIONAL DIRECTOR
DATE:

SET NO. 6 11
SHEET NO. 20 29



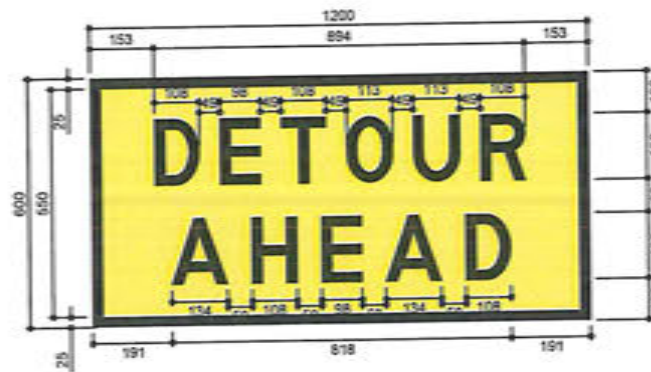
END SPEED RESTRICTION DETAILS

SIGN NO.	SIZE (mm)	LETTERS/SYMBOLS	BACKGROUND	TYPE OF SIGNS
R4-12	600 X 600 (SIZE B)	SYMBOL - 600 DIA. BLACK	WHITE REFLECTORIZED	REGULATORY SIGNS



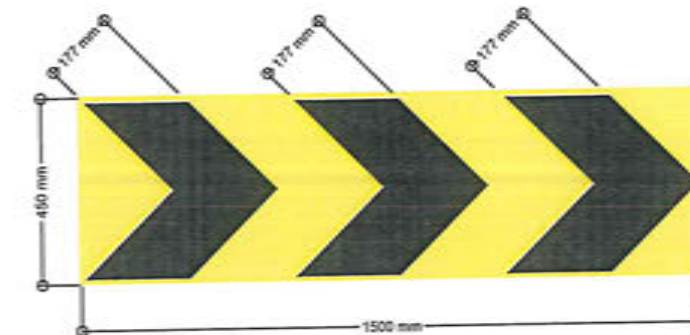
DETOUR (LEFT OR RIGHT) DETAILS

SIGN NO.	SIZE (mm)	LETTERS/SYMBOLS	BACKGROUND	TYPE OF SIGNS
TS-1	1200 X 300	BLACK 120 EN	YELLOW REFLECTORIZED	DETOUR SIGNS



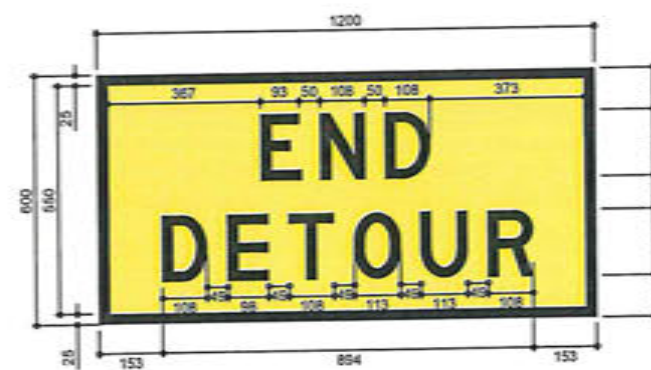
DETOUR AHEAD DETAILS

SIGN NO.	SIZE (mm)	LETTERS/SYMBOLS	BACKGROUND	TYPE OF SIGNS
T1-6	1200 X 600	LINE 1 - BLACK 160 EN LINE 2 - BLACK 160 EM	YELLOW REFLECTORIZED	DETOUR SIGNS



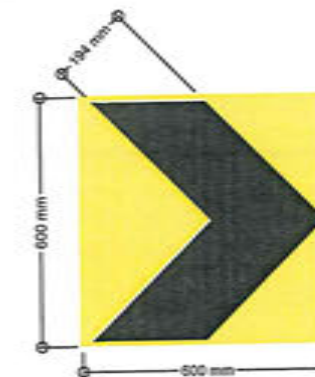
TEMPORARY HAZARD MARKER DETAILS

SIGN NO.	SIZE (mm)	LETTERS/SYMBOLS	BACKGROUND	TYPE OF SIGNS
TS-4	1500 X 450 TYPE B-1	BLACK 177 WIDE AT 45°	YELLOW REFLECTORIZED	TEMPORARY HAZARD MARKER



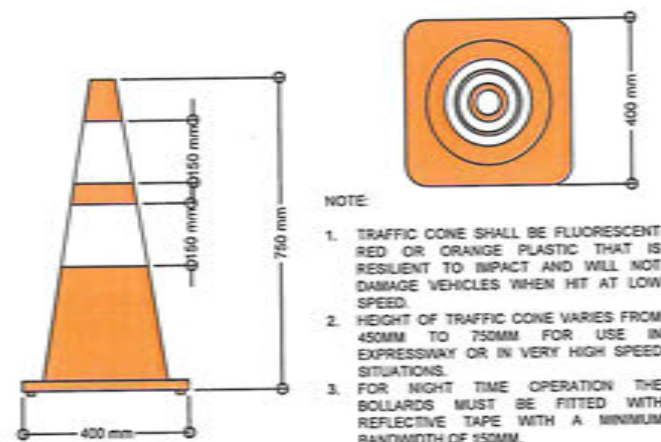
END DETOUR DETAILS

SIGN NO.	SIZE (mm)	LETTERS/SYMBOLS	BACKGROUND	TYPE OF SIGNS
T2-23	1200 X 600	LINE 1 - BLACK 160 DM LINE 2 - BLACK 160 DM	YELLOW REFLECTORIZED	DETOUR SIGNS



SPEED RESTRICTION DETAILS

SIGN NO.	SIZE (mm)	LETTERS/SYMBOLS	BACKGROUND	TYPE OF SIGNS
TS-5	600 X 600 TYPE B-1	BLACK 194 WIDE AT 45°	YELLOW REFLECTORIZED	TEMPORARY HAZARD MARKER

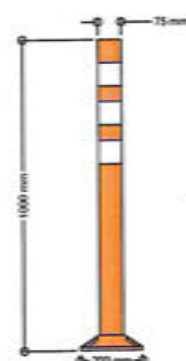


NOTE:

1. TRAFFIC CONE SHALL BE FLUORESCENT RED OR ORANGE PLASTIC THAT IS RESILIENT TO IMPACT AND WILL NOT DAMAGE VEHICLES WHEN HIT AT LOW SPEED.
2. HEIGHT OF TRAFFIC CONE VARIES FROM 450MM TO 750MM FOR USE IN EXPRESSWAY OR IN VERY HIGH SPEED SITUATIONS.
3. FOR NIGHT TIME OPERATION THE BOLLARDS MUST BE FITTED WITH REFLECTIVE TAPE WITH A MINIMUM BANDWIDTH OF 150MM.

SPACING	CONDITION
5 - 10 METERS	ON TAPER WHEN USED AROUND SMALL WORK SITES (MAY BE REDUCED TO 3m TO GUIDE PEDESTRIANS OR TO PREVENT TRAFFIC TAKING A WRONG TURN THROUGH A GAP IN THE LINE OF BOLLARDS)
10 - 20 METERS	WHEN USED AS LONGITUDINAL SEPARATION BETWEEN OPPOSING TRAFFIC FLOWS WHEN USED AS LONGITUDINAL SEPARATION OF TRAFFIC FROM THE WORKSITE OR CLOSED LANE (MAY BE INCREASED TO 50m WHERE THE LENGTH OF BOLLARDS EXCEEDS 1KM)

1 TRAFFIC CONE
SCALE NTS



2 SECTION
b



2 ISOMETRIC VIEW
c

SPECIFICATION	
REFLECTIVE:	ROAD SAFETY POLE
COLOR:	ORANGE
MATERIAL:	PU MATERIAL, ELASTIC, FLEXIBLE
REFLECTIVE FILM:	CRYSTAL LATTICE

NOTE:

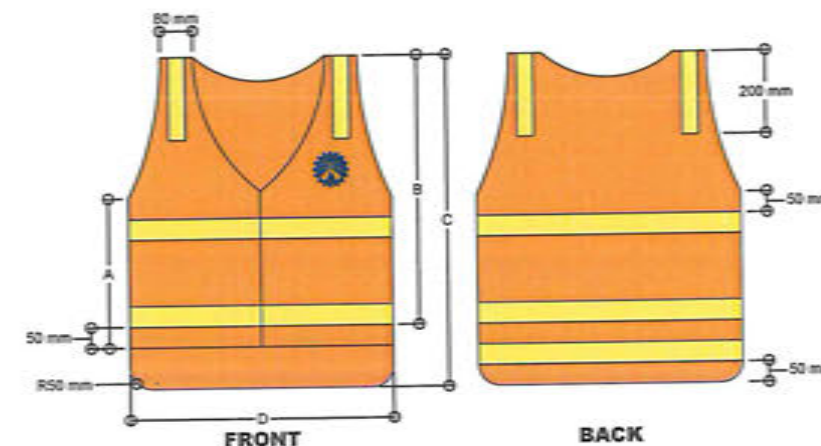
1. BOLLARDS SHALL BE FLUORESCENT RED OR ORANGE PLASTIC THAT IS RESILIENT TO IMPACT AND WILL NOT DAMAGE VEHICLES WHEN HIT AT LOW SPEED.
2. HEIGHT OF BOLLARDS MUST BE UP TO 1.5 METER.
3. FOR NIGHT TIME OPERATION THE BOLLARDS MUST BE FITTED WITH REFLECTIVE TAPE WITH A MINIMUM BANDWIDTH OF 250MM.
4. SPACING @ 2.50 M. O.C.

SPACING	CONDITION
5 - 10 METERS	ON TAPER WHEN USED AROUND SMALL WORK SITES (MAY BE REDUCED TO 3m TO GUIDE PEDESTRIANS OR TO PREVENT TRAFFIC TAKING A WRONG TURN THROUGH A GAP IN THE LINE OF BOLLARDS)
10 - 20 METERS	WHEN USED AS LONGITUDINAL SEPARATION BETWEEN OPPOSING TRAFFIC FLOWS WHEN USED AS LONGITUDINAL SEPARATION OF TRAFFIC FROM THE WORKSITE OR CLOSED LANE (MAY BE INCREASED TO 50m WHERE THE LENGTH OF BOLLARDS EXCEEDS 1KM)

2 FLEXIBLE BOLLARD DETAIL
SCALE NTS

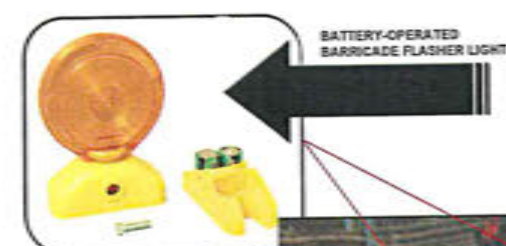
NOTE:

1. ALL PERSONNEL WORKING ON OR ADJACENT TO A ROADWORK SITE SHALL WEAR APPROPRIATE ROAD SAFETY MATERIALS SUCH AS HIGH VISIBILITY VEST (MADE FROM FLUORESCENT RED/ORANGE MATERIAL), HARD HAT AND SAFETY SHOES.
2. THE VEST SHALL BE WORN OVER NORMAL CLOTHING AND PROPERLY FASTENED SO THAT THE ENTIRE AVAILABLE AREA OF HIGH VISIBILITY MATERIAL CAN BE SEEN IN ANY DIRECTION. TO MAXIMIZE EFFECTIVENESS THE VEST SHOULD BE KEPT CLEAN AND IN GOOD CONDITION.
3. THE TRAFFIC SAFETY VEST SHALL BE MADE FROM FLUORESCENT RED OR ORANGE MATERIAL. THE VEST SHALL ALSO HAVE TWO (2) STRIPS OF YELLOW RETRO-REFLECTIVE MATERIAL AT THE FRONT AND THREE (3) STRIPS AT THE BACK. REFLECTIVE MATERIALS SHALL BE 50mm WIDE. DPWH LOGO SHALL BE 80mm DIAMETER. THE SAFETY VEST SHOULD HAVE A SECURE FASTENING PREFERABLY A ZIP.
4. THE JACKET MAY BE WORN OVER WET WEATHER CLOTHING. ALTERNATIVELY, WET WEATHER HIGH VISIBILITY CLOTHING SHALL BE MADE FROM WATER PROOF MATERIAL MATCHING THOSE PROPERTIES ABOVE FOR COLOR AND RETRO REFLECTIVITY.



SIZE	A (mm)	B (mm)	C (mm)	D (mm)
MEDIUM	280	600	750	580
LARGE	295	625	775	610
EXTRA LARGE	310	650	800	640

3 TRAFFIC SAFETY VEST DETAILS
SCALE NTS



4 BARRICADE FLASHER LIGHT
SCALE NTS



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGIONAL OFFICE NO. XI
GOV. CHAVEZ COR. R. NINGSAY AVENUE, DAVAO CITY

PROJECT NAME AND LOCATION
PREVENTIVE MAINTENANCE OF ROAD:
ASPHALT OVERLAY - MAHARLIKA
HIGHWAY - DAVAO COTABATO ROAD
(DAVAO CITY-JCT DIGOS SECTION) -
K1551+695 - K1553+000, DAVAO DEL SUR

SHEET CONTENTS:
TRAFFIC CONE
FLEXIBLE BOLLARD DETAIL
TRAFFIC SAFETY VEST DETAIL
BARRICADE FLASHER LIGHT

DRAFTED AND PREPARED:
NEIL ERIC L. TOMALE
ENGINEER
DATE:

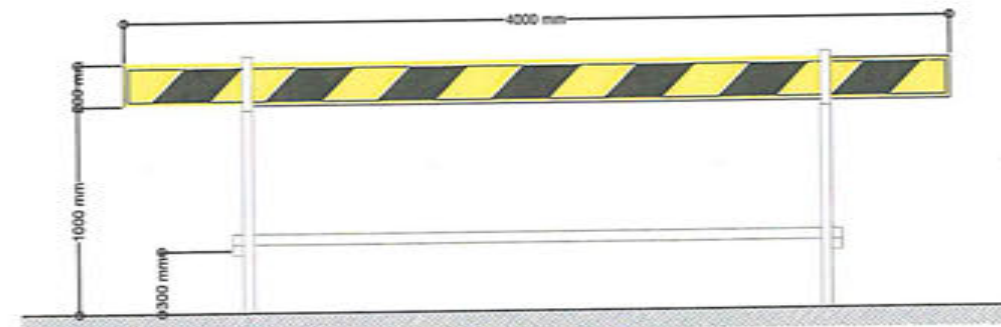
REVIEWED:
DENYRA L. SEMPIO
ENGINEER I, C/C - SECTION CHIEF
DATE:

SUBMITTED:
JUDY ANN T. BERNARDINO
CHIEF, PLANNING AND DESIGN DIVISION
DATE:

RECOMMENDING APPROVAL:
JOSE LITO B. CABALLERO
ASSISTANT REGIONAL DIRECTOR
DATE:

APPROVED:
JUBY B. CORDON
REGIONAL DIRECTOR
DATE:

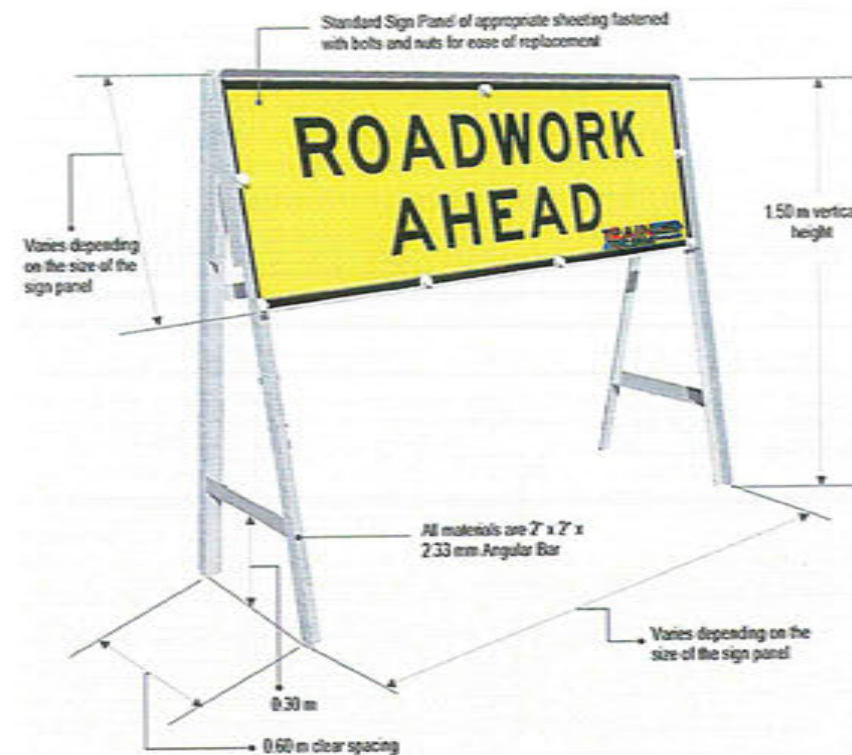
SET NO.
B
8 11
SHEET NO.
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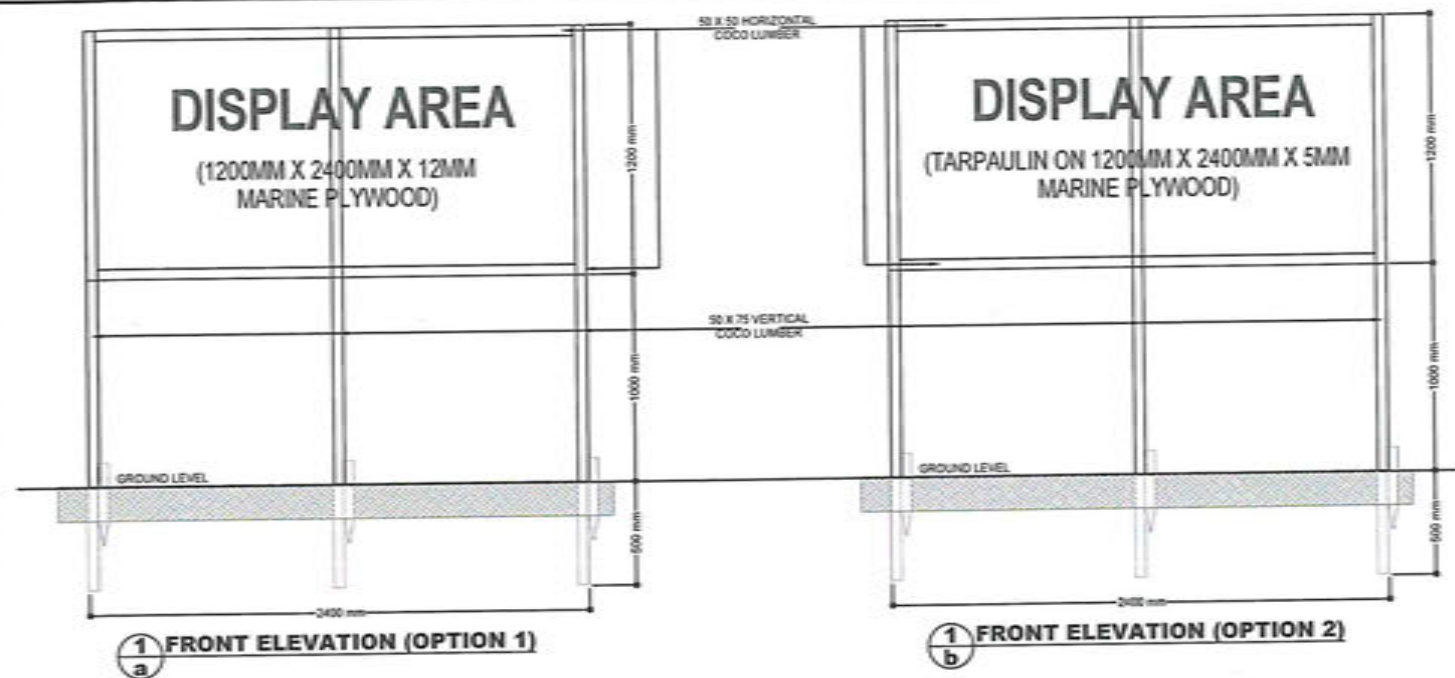
NOTE:

1. BOARD DIMENSIONS: (4M X 0.15M X 0.20M) WITH DIAGONAL BLACK AND REFLECTIVE YELLOW STRIPES PREFERABLY TERMINATING IN YELLOW AT EACH END.
2. MOUNTING HEIGHT: APPROXIMATELY 1 METER USING TRESTLES (SHOULD BE ERECTED PERPENDICULAR TO THE DIRECTION OF TRAFFIC FLOW).
3. BARRIER BOARD SHALL NOT BE USED FOR DELINEATION PURPOSES OR INSTALLED PARALLEL TO VEHICULAR TRAFFIC UNLESS THERE IS AN OFFSET OF AT LEAST FOUR (4) METERS FROM THE TRAVELLED PATH.

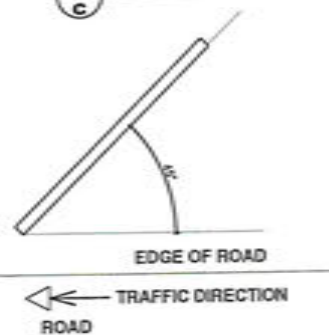
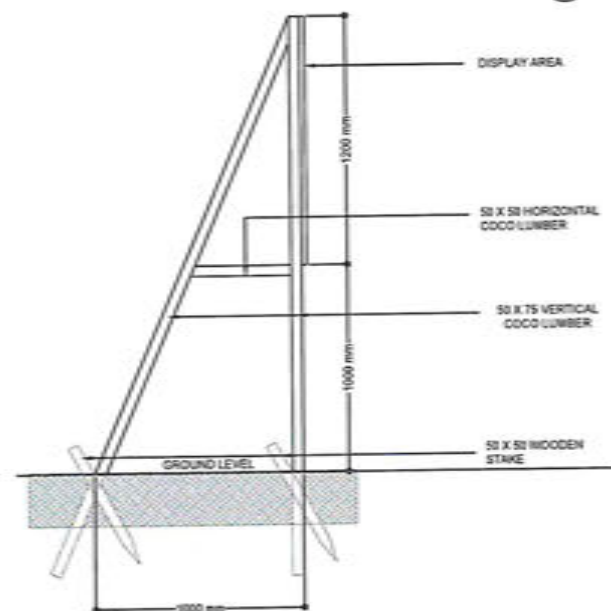
1 BARRIER BOARD DETAIL



2 ROAD SIGN DETAILS



1 BILLBOARD DETAILS
SCALE 1:40



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 Highway
Text 250 or call (02) 165-02 for any concern on this project
www.dpwh.gov.ph

NOTE:
For source of Fund, state if DPWH Regular Budget, Priority Development Assistance Fund, DepEd/DA/DAR Budget, Calamity Fund, MVUC Fund etc.

Republic of the Philippines
Department of Environment and Natural Resources

NOTICE TO THE PUBLIC

This _____ (PROJECT NAME) _____
of the Department of Public Works and Highways XI has been issued an
ECC/CNC (Control Number) by Environmental Management
Bureau of the Department of Environment and Natural Resources, Region XI, on
(Date Issued). _____

Warning: Do not remove or damage this billboard as installed pursuant to the ECC/CNC issued under Presidential Decree No. 1585.

Republic of the Philippines
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
Regional Office No. XI
Gov. Chavez Cor. R. Magsaysay Avenue, Davao City

Project: _____ Cost: _____
Location: _____ Fund Sources: _____

Implementing Agency/ies: _____
Development Partners: _____
Contractor/Supplier: _____
Brief Description of Project: _____

Project Details:

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

For Particular of complaints about this project, please contact the Regional Office or Cluster which has audit jurisdiction on this project.

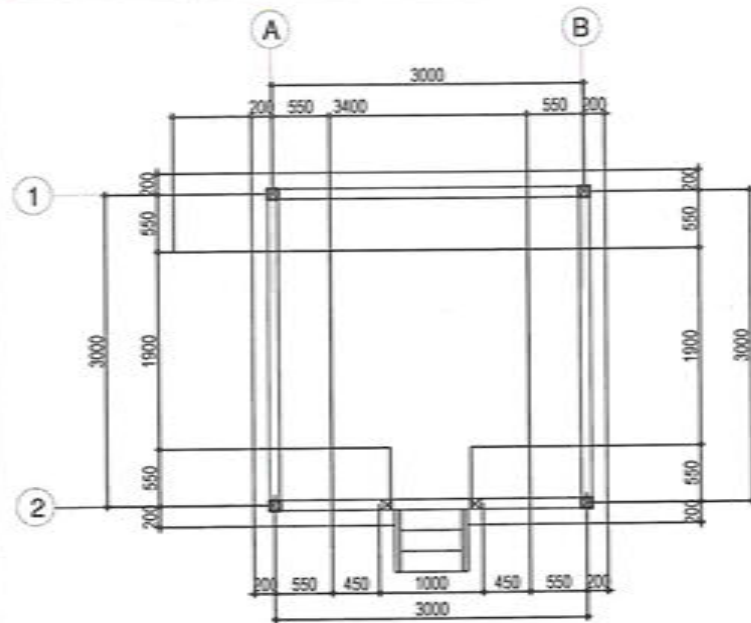
COA Regional Office No./Cluster : XI
Address : Buhangin, Davao City
Contact No. : (082) 241-2941 or Text COA Citizens Desk (0915-5391-957)

NOTES FOR COA BILLBOARD:

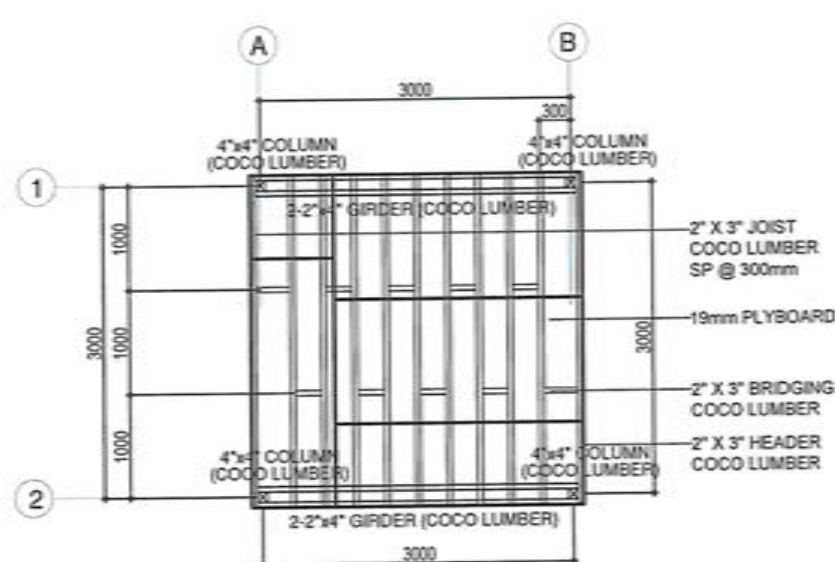
- TARPULIN, WHITE, 8FT x 8 FT
- RESOLUTION: 700PI
- FONT: HELVETICA
- FONT SIZE : MAIN INFORMATION - 3"
- SUB-INFORMATION - 1"
- FONT COLOR: BLACK

REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS REGIONAL OFFICE NO. XI GOV. CHAVEZ COR. R. MAGSAYSAY AVENUE, DAVAO CITY	PROJECT NAME AND LOCATION: PREVENTIVE MAINTENANCE OF ROAD: ASPHALT OVERLAY - MAHARLIKA HIGHWAY - DAVAO COTABATO ROAD (DAVAO CITY-JCT DIGOS SECTION) - K1551+695 - K1553+000, DAVAO DEL SUR	SHEET CONTENTS: BILLBOARDS DETAIL	DRAFTED AND PREPARED: NEIL ERIC L. TOMALE ENGINEER I/C DATE: _____	REVIEWED: DENNIS ALDRIN A. SEMPIO ENGINEER I/C - SECTION CHIEF DATE: _____	SUBMITTED: JUDY ANN T. BERNARDINO CHIEF PLANNING AND DESIGN DIVISION DATE: _____	RECOMMENDING APPROVAL: JOSELO B. CABALLERO ASSISTANT REGIONAL DIRECTOR DATE: _____	APPROVED: JUDY B. CORDON REGIONAL DIRECTOR DATE: _____	SET NO. B 11/11	SHEET NO. 25 29
	C:\USERS\PUBLIC\2025 INFRA\PREVENTIVE MAINTENANCE\DAW COTTS K1552+000 - K1553+000\TYPICAL\TMP\TRAFFIC MANAGEMENT PROGRAM NEW_RECOVER_RECOVER.DWG								

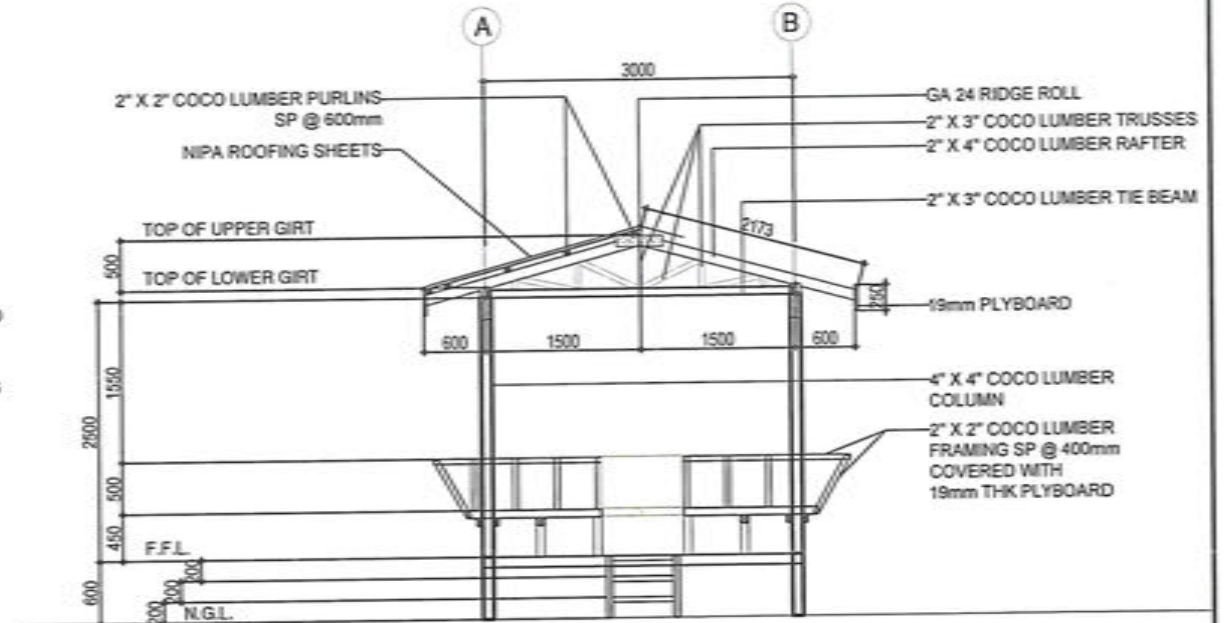
C. FACILITIES FOR THE FIELD ENGINEER



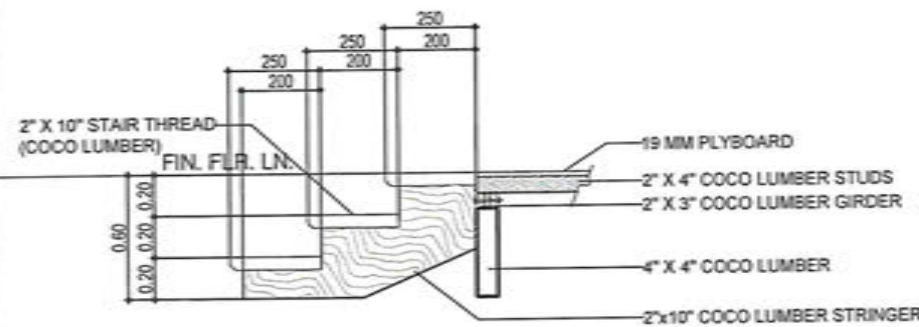
1 FLOOR PLAN



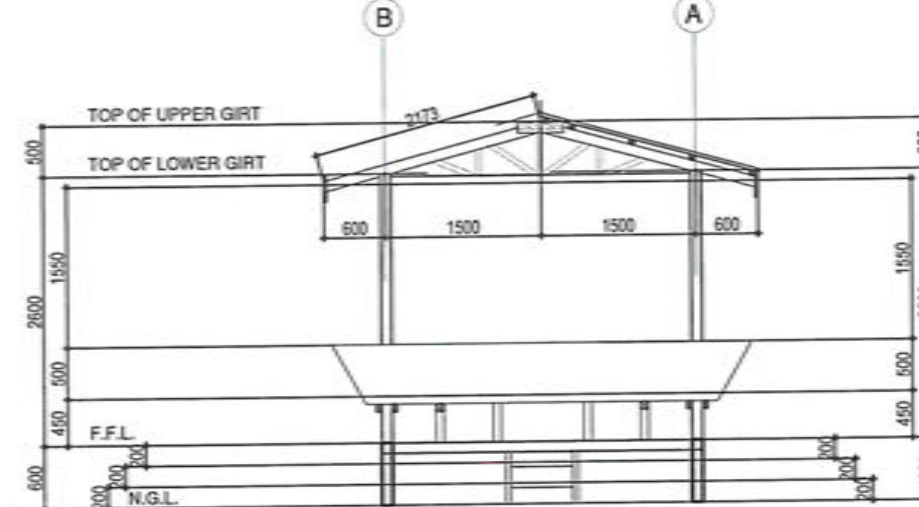
2 FLOOR FRAMING



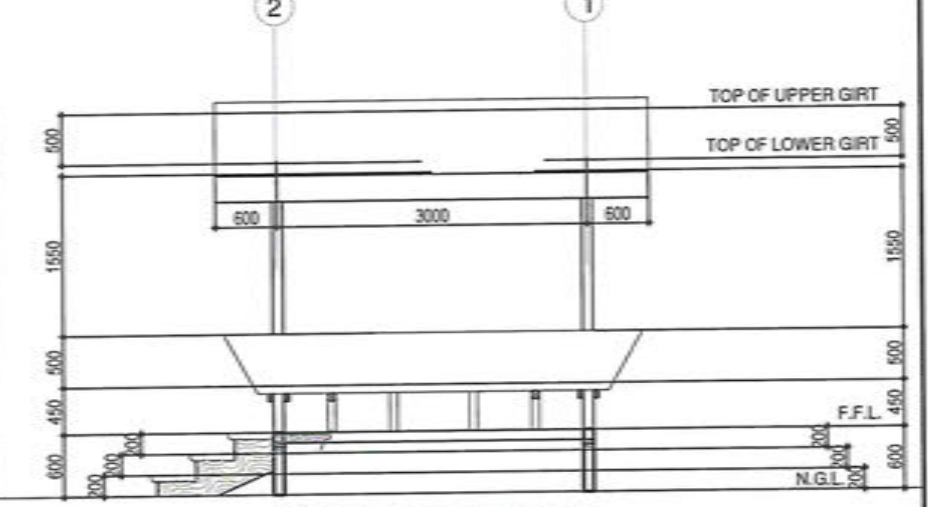
3 SECTION



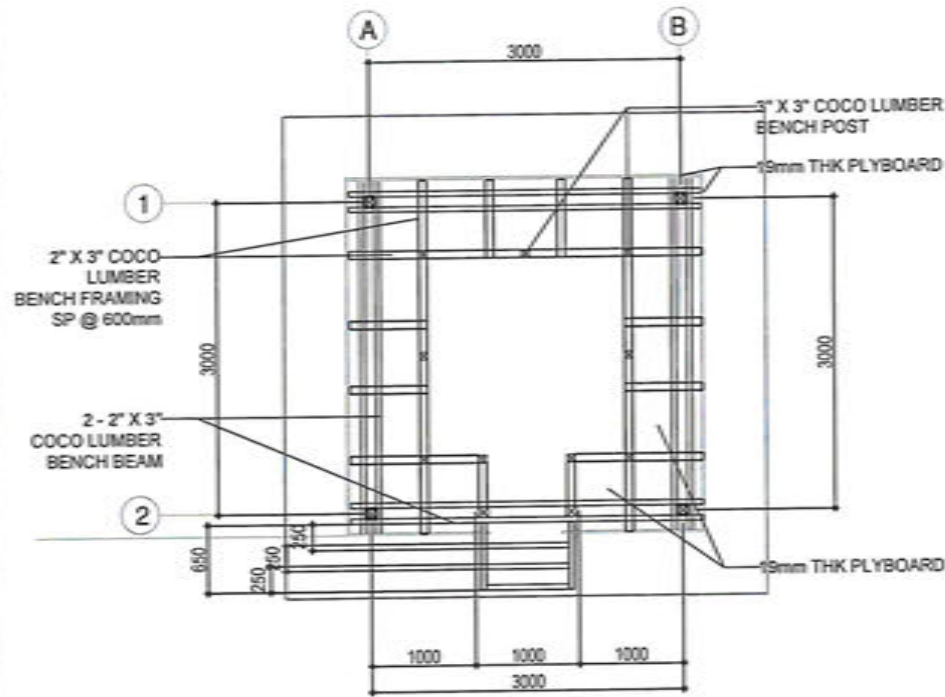
4 STAIR DETAIL



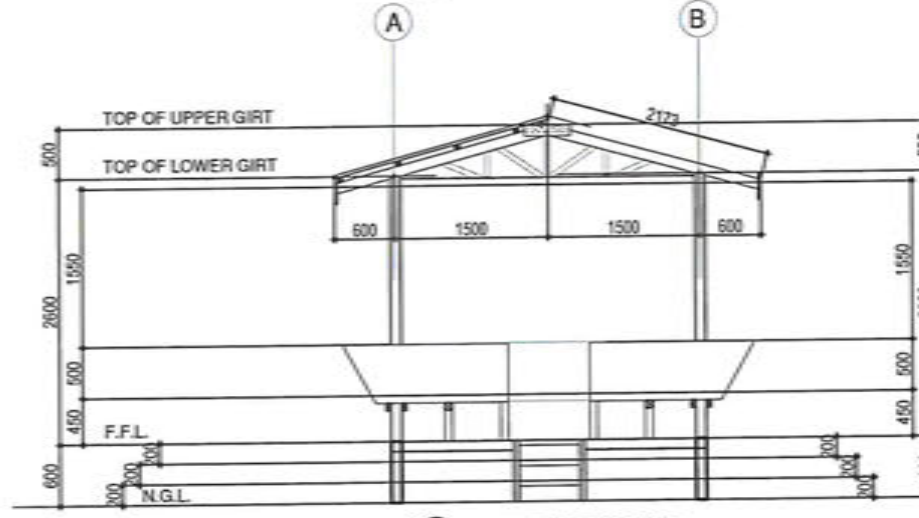
6 REAR ELEVATION



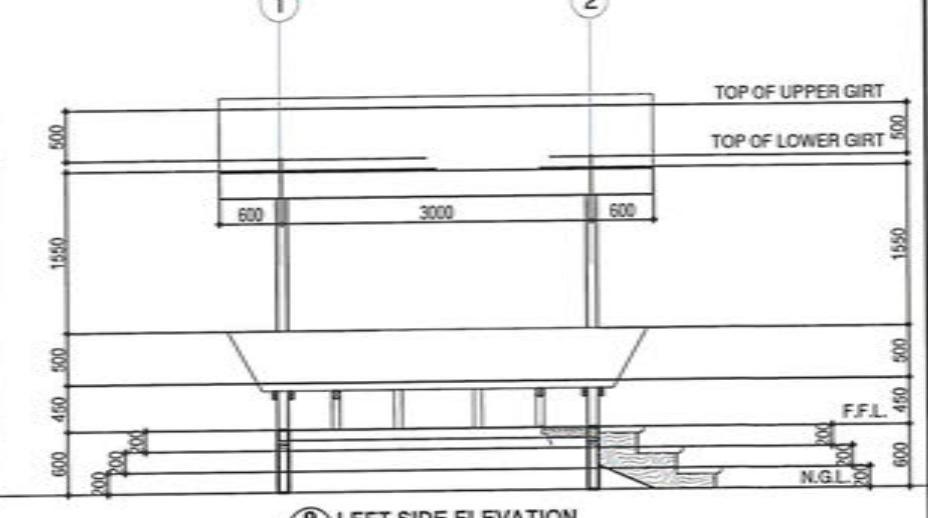
7 RIGHT SIDE ELEVATION



5 BENCH FRAMING



8 FRONT ELEVATION



9 LEFT SIDE ELEVATION

REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS REGIONAL OFFICE NO. XI GOV. CORRAL, R. MAGSAYSAY AVENUE, DAVAO CITY	PROJECT NAME AND LOCATION: PREVENTIVE MAINTENANCE OF ROAD: ASPHALT OVERLAY - MAHARLIKA HIGHWAY - DAVAO COTABATO ROAD (DAVAO CITY-JCT DIGOS SECTION) - K1551+685 - K1553+000, DAVAO DEL SUR	SHEET CONTENTS: TYPICAL DETAILS OF BAHAY KUBO	DRAFTED AND PREPARED: FERDINAND M. BAÑOSA ARCHITECT II	REVIEWED: ALGIN A. GINGRIP ENGINEER	DESIGNED: JUDITH T. BERNARDINO CHIEF PLANNING AND DESIGN DIVISION	RECOMMENDED: JOSE LITO B. CABALLERO ASSISTANT REGIONAL DIRECTOR	APPROVED: JUDY B. CORDON REGIONAL DIRECTOR	SET NO. 1 SHEET NO. 26
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D. PLAN

LEGEND:

- WOODEN HOUSE
- CONCRETE HOUSE
- STORE
- ELECTRIC POST
- CONCRETE FENCE
- CHB LINE CANAL
- ISLAND
- ASPHALT OVERLAY FOR CY 2025

PI-#	AZIMUTH	DISTANCE
T-29 TO T-30	41°45'17"	140.129 M.
T-30 TO T-31	41°58'12"	240.163 M.
T-31 TO PI-56	42°04'37"	158.365 M.
PI-56 TO PI-57	40°25'22"	19.389 M.
PI-57 TO T-32	41°55'05"	53.704 M.
T-32 TO T-33	41°56'40"	67.745 M.

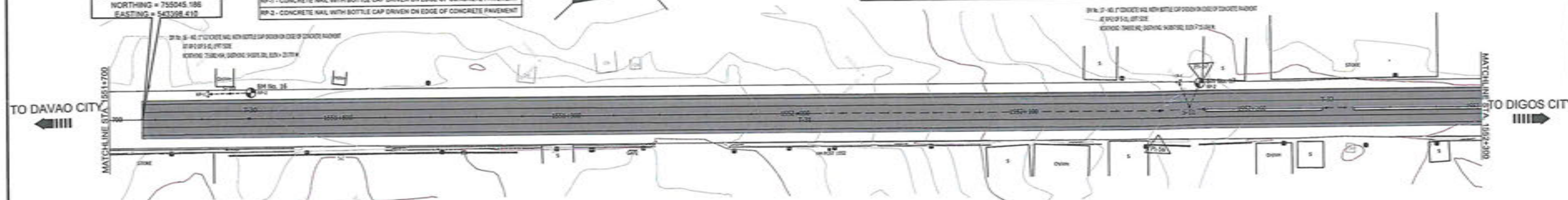
PI-#	PI STATION	NORTHING	EASTING	I	D	R	T	E	Lc	Pc	Pt	e	w	V (kph)
PI-57	1552+178.305	754889.875	543086.358	01°30'13"	02°17'31"	500.000	6.561	0.543	13.121	1552+171.745	1552+184.866			

POINT	STATION	NORTHING	EASTING
T-30	1551+780.389	755010.742	543267.662
T-31	1552+000.552	754832.182	543207.055
T-32	1552+232.809	754658.919	543052.475

PI-#	AZIMUTH	DISTANCE
T-30 TO S-10	274°48'31"	13.770 M.
RP-1	330°50'35"	9.108 M.
RP-2	40°24'48"	9.085 M.

PI-#	AZIMUTH	DISTANCE
PI-57 TO S-11	200°47'0"	8.416 M.
RP-1	269°32'52"	11.610 M.
RP-2	329°52'31"	11.384 M.

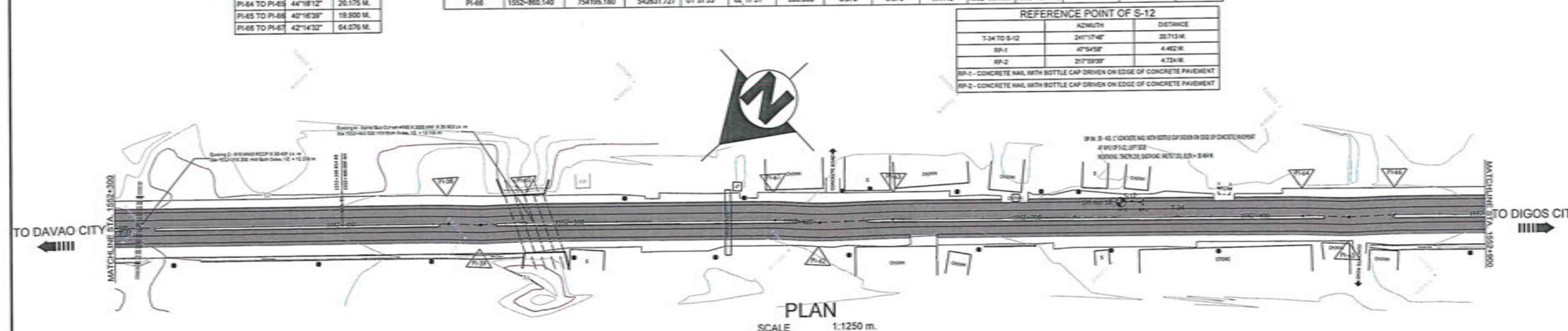
BEGINNING OF PROJECT
K1551+695 (AS PER RSIA)
STA. 1551+714.218 (AS PER PLAN)
NORTHING = 755045.186
EASTING = 543208.410



PI-#	AZIMUTH	DISTANCE
T-33 TO PI-58	41°58'40"	145.856 M.
PI-58 TO PI-59	44°34'03"	14.116 M.
PI-59 TO PI-60	40°00'45"	18.982 M.
PI-60 TO PI-61	42°13'11"	108.481 M.
PI-61 TO PI-62	43°40'23"	18.623 M.
PI-62 TO PI-63	40°13'43"	32.017 M.
PI-63 TO T-34	42°11'37"	124.830 M.
T-34 TO PI-64	42°32'57"	55.309 M.
PI-64 TO PI-65	44°18'12"	20.175 M.
PI-65 TO PI-66	40°16'39"	18.800 M.
PI-66 TO PI-67	42°14'32"	54.876 M.

PI-#	PI STATION	NORTHING	EASTING	I	D	R	T	E	Lc	Pc	Pt	e	w	V (kph)
PI-58	1552+448.556	754501.277	542909.741	02°34'23"	02°17'31"	500.000	11.229	0.126	22.453	1552+405.307	1552+457.781			
PI-59	1552+460.668	754491.221	542899.805	04°33'15"	22°55'06"	50.000	1.988	0.040	3.974	1552+458.680	1552+462.654			
PI-60	1552+480.648	754475.917	542886.967	02°12'34"	11°27'33"	100.000	1.926	0.019	3.851	1552+478.722	1552+482.573			
PI-61	1552+589.108	754395.593	542814.104	02°27'16"	09°43'46"	200.000	6.031	0.091	12.058	1552+583.078	1552+595.136			
PI-62	1552+608.728	754381.882	542800.266	09°28'44"	09°43'46"	200.000	9.511	0.226	18.008	1552+589.216	1552+618.225			
PI-63	1552+640.731	754357.438	542779.388	01°57'54"	02°17'31"	500.000	8.575	0.074	17.148	1552+632.156	1552+648.304			
PI-64	1552+820.088	754224.801	542658.584	01°45'15"	11°27'33"	100.000	1.531	0.012	3.061	1552+818.517	1552+821.599			
PI-65	1552+840.243	754210.362	542644.582	04°18'33"	11°27'33"	100.000	3.515	0.062	7.026	1552+836.728	1552+843.755			
PI-66	1552+860.140	754195.180	542631.727	01°57'53"	02°17'31"	500.000	8.573	0.073	17.145	1552+851.567	1552+868.712			

POINT	STATION	NORTHING	EASTING
T-34	1552+764.758	754265.547	542690.085



PLAN
SCALE 1:1250 m.



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGIONAL OFFICE NO. XI
GOV. CHAVEZ COR. R. MAGSAYSAY AVENUE, DAVAO CITY

PROJECT NAME AND LOCATION
PREVENTIVE MAINTENANCE OF ROAD:
ASPHALT OVERLAY - MAHARLIKA
HIGHWAY - DAVAO COTABATO ROAD
(DAVAO CITY-JCT DIGOS SECTION)
K1551+695 - K1553+000, DAVAO DEL SUR

SHEET CONTENTS
PLAN

SURVEYED
JAY H. MARCOJOS
ENGINEER I
REVIEWED
DANILLO M. CARAGA
ENGINEER II, SECTION CHIEF

PREPARED
NEIL ERIC L. TOMALE
ENGINEER I
REVIEWED
DENVER SEMPIONA
ENGINEER I, OIC - SECTION CHIEF

SUBMITTED
JUDY B. BERNARDINO
CHIEF, PLANNING AND DESIGN DIVISION
DATE: _____

RECOMMENDING APPROVAL
JOSEPH B. CABALLERO
ASSISTANT REGIONAL DIRECTOR
DATE: _____

APPROVED
JUBY B. CORDON
REGIONAL DIRECTOR
DATE: _____

SET NO.
D
1 2
SHEET NO.
27
29

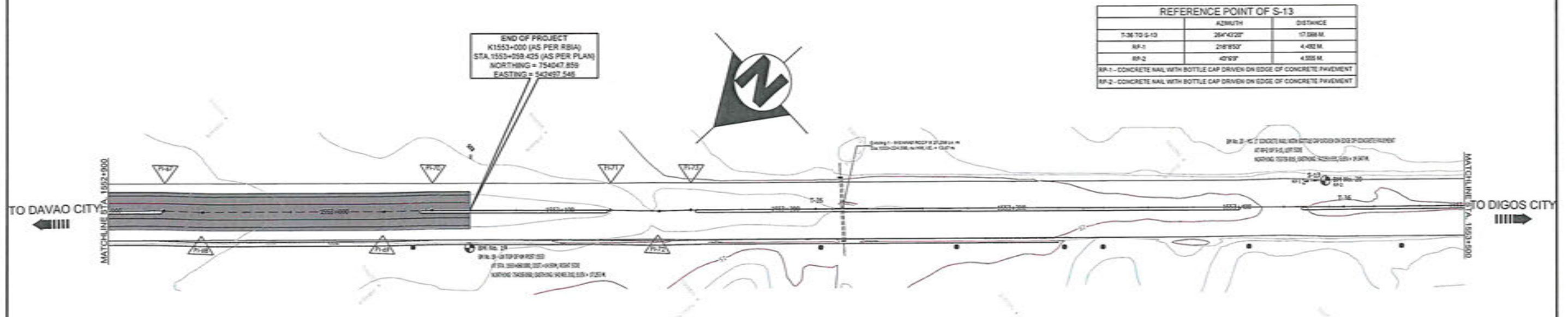
LEGEND:

- ⊕ ELECTRIC POST
- LIGHT POST
- RIPRAP LINE CANAL
- ISLAND
- GUARD RAILS
- ASPHALT OVERLAY FOR CY 2025

ELEMENTS OF CURVE													
PI-No.	PI STATION	NORTHING	EASTING	I	D	R	T	E	Lc	Pc	Pt	e	w
PI-67	1552+924.215	754147.744	542588.850	02°32'17"	02°17'31"	300.000	11.076	0.123	22.148	1552+913.139	1552+935.287		
PI-68	1552+941.330	754135.582	542576.582	02°31'43"	02°43'45"	200.000	4.414	0.049	8.827	1552+906.916	1552+945.743		
PI-69	1553+021.333	754076.374	542522.789	01°27'33"	03°49'11"	300.000	3.820	0.024	7.640	1553+017.512	1553+025.152		
PI-70	1553+042.715	754065.185	542508.829	01°40'42"	03°49'11"	300.000	4.394	0.032	8.787	1553+038.321	1553+047.108		
PI-71	1553+121.509	754002.064	542455.626	01°17'32"	02°17'31"	300.000	5.839	0.032	11.278	1553+115.870	1553+127.148		
PI-72	1553+143.131	753986.448	542440.670	03°25'31"	03°49'11"	300.000	8.963	0.134	17.921	1553+134.169	1553+152.088		
PI-73	1553+157.253	753975.880	542431.525	01°45'45"	03°49'11"	300.000	4.615	0.035	9.229	1553+152.638	1553+161.867		

STATION COORDINATES			
POINT	STATION	NORTHING	EASTING
T-35	1553+212.578	753934.631	542394.431
T-36	1553+446.444	753761.570	542237.132

TRAVERSE LINE		
PI-#	AZIMUTH	DISTANCE
PI-66 TO PI-67	42°14'32"	64.076 M.
PI-67 TO PI-68	44°46'48"	17.519 M.
PI-68 TO PI-69	42°15'05"	60.004 M.
PI-69 TO PI-70	40°47'52"	21.383 M.
PI-70 TO PI-71	42°28'14"	78.795 M.
PI-71 TO PI-72	43°45'45"	21.822 M.
PI-72 TO PI-73	40°20'25"	14.128 M.
PI-73 TO T-35	42°06'10"	55.326 M.
T-35 TO T-36	42°18'08"	233.866 M.
T-36 TO B-1	42°00'08"	133.556 M.



REFERENCE POINT OF S-13		
	AZIMUTH	DISTANCE
T-36 TO S-13	254°47'20"	107.589 M.
RP-1	218°19'52"	4.482 M.
RP-2	40°18'08"	4.555 M.
RP-1 - CONCRETE NAIL WITH BOTTLE CAP DRIVEN ON EDGE OF CONCRETE PAVEMENT		
RP-2 - CONCRETE NAIL WITH BOTTLE CAP DRIVEN ON EDGE OF CONCRETE PAVEMENT		

PLAN
SCALE 1:1250 m.

REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS REGIONAL OFFICE NO. XI GOV. CHAVEZ COR. R. KINGSAYAN AVENUE, DAVAO CITY	PROJECT NAME AND LOCATION:	SHEET CONTENTS:	SURVEYED:	PREPARED:	SUBMITTED:	RECOMMENDING APPROVAL:	APPROVED:	SET NO.	SHEET NO.
	PREVENTIVE MAINTENANCE OF ROAD: ASPHALT OVERLAY - MAHARLIKA HIGHWAY - DAVAO COTABATO ROAD (DAVAO CITY-JCT DIGOS SECTION) - K1551+895 - K1553+000, DAVAO DEL SUR	PLAN	JAY H. MARSIGLIA ENGINEER I REVIEWED: DANIELA M. CARRIAGA ENGINEER II, SECTION CHIEF	NEIL ERIC L. TOMALE ENGINEER I REVIEWED: DENNIS J. JEMPIO ENGINEER I, QC - SECTION CHIEF	VICTOR T. BERNARDINO CHIEF, PLANNING AND DESIGN DIVISION DATE:	JOSELO B. CABALLERO ASSISTANT REGIONAL DIRECTOR DATE:	JUBY B. CORDON REGIONAL DIRECTOR DATE:	D 2 2	28 29

E. SOIL PROFILE
