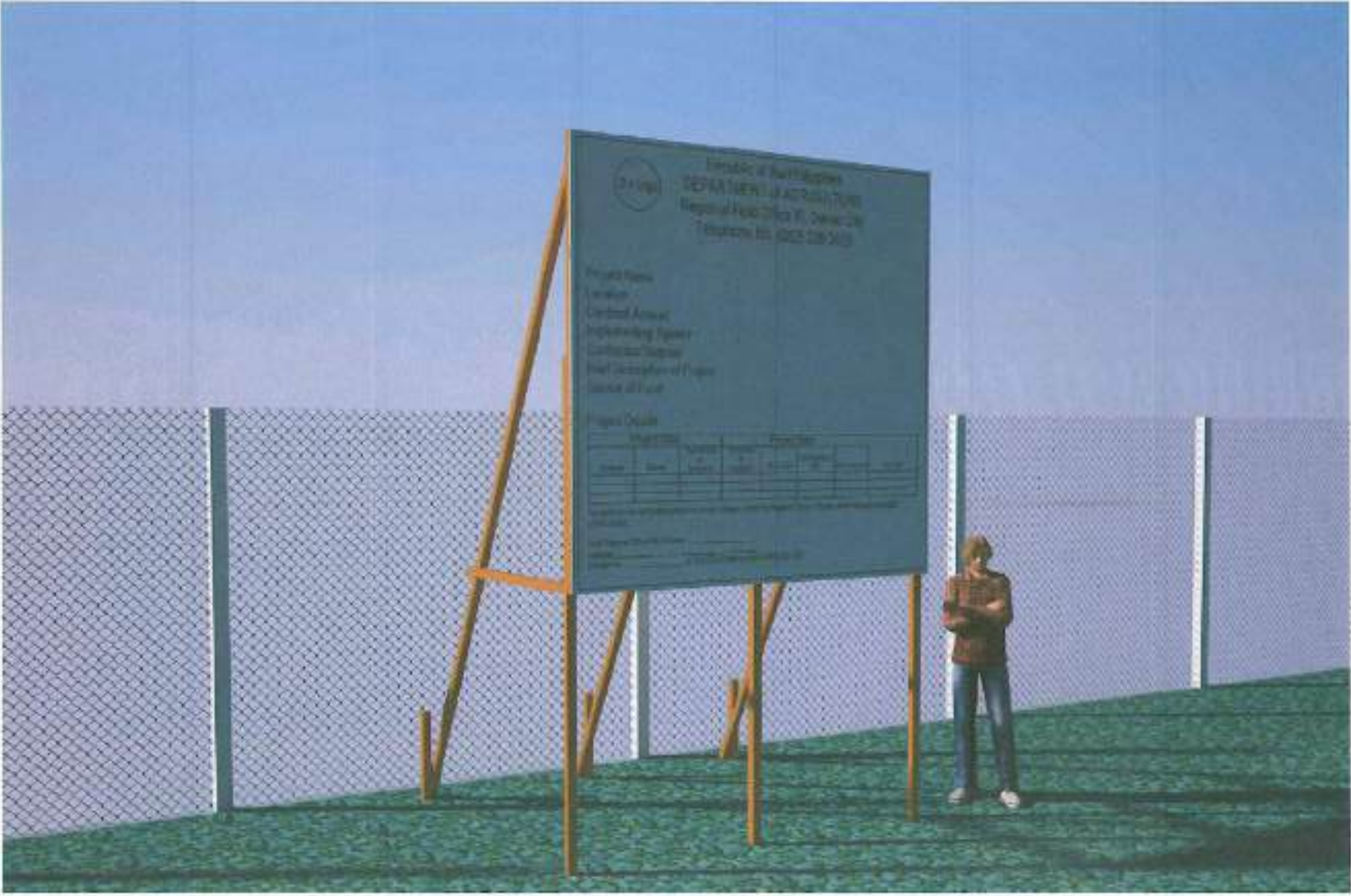
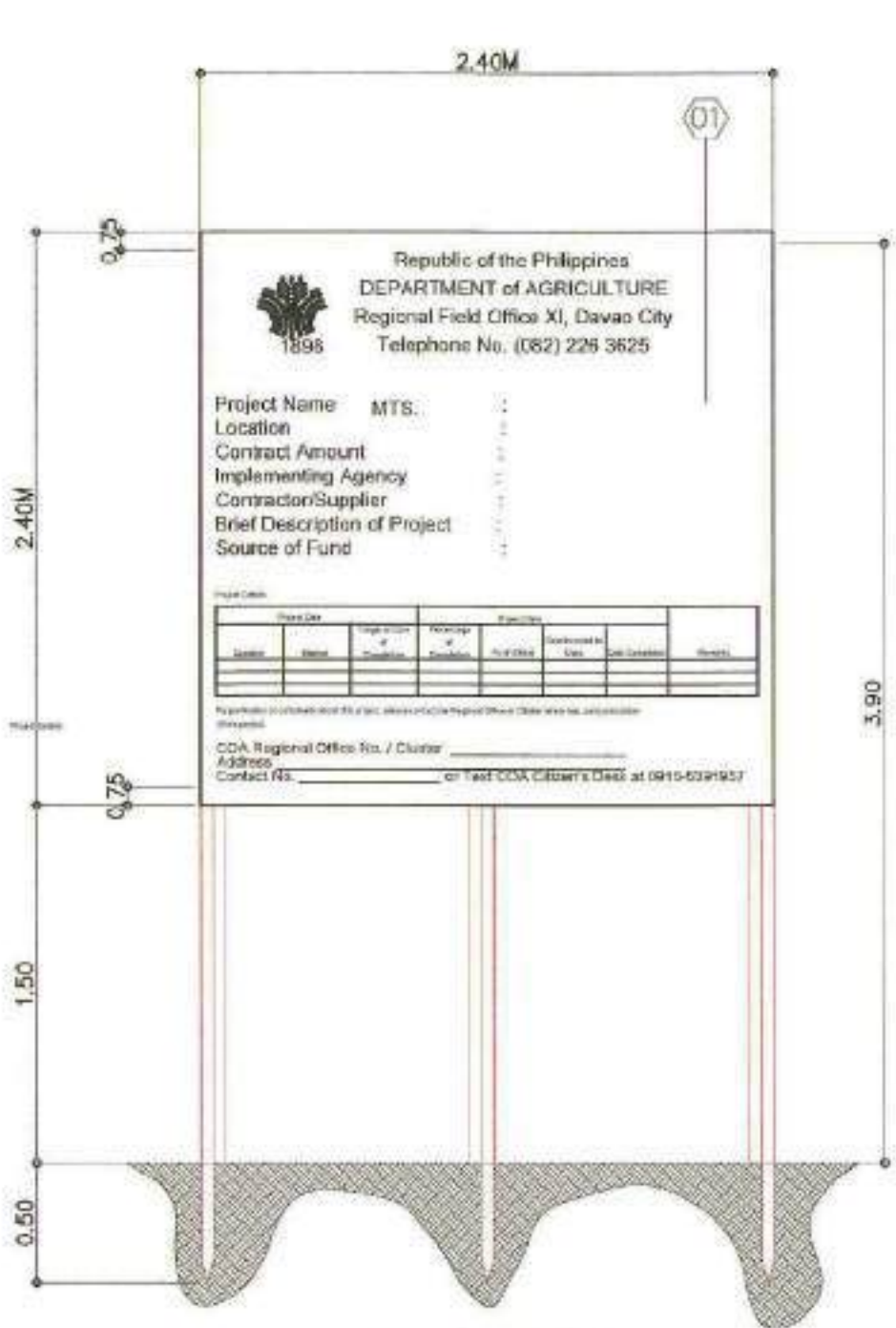


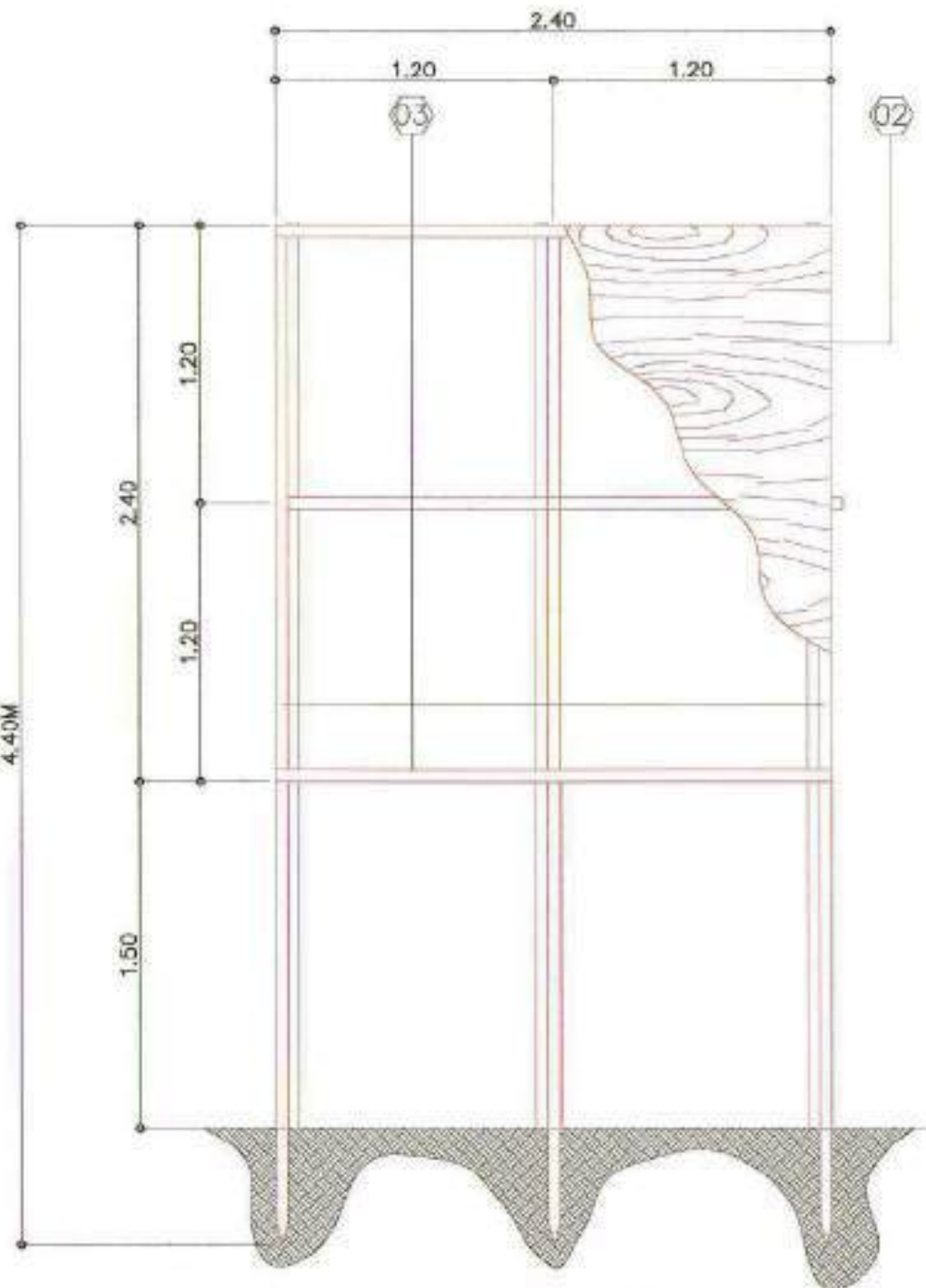


PERSPECTIVE

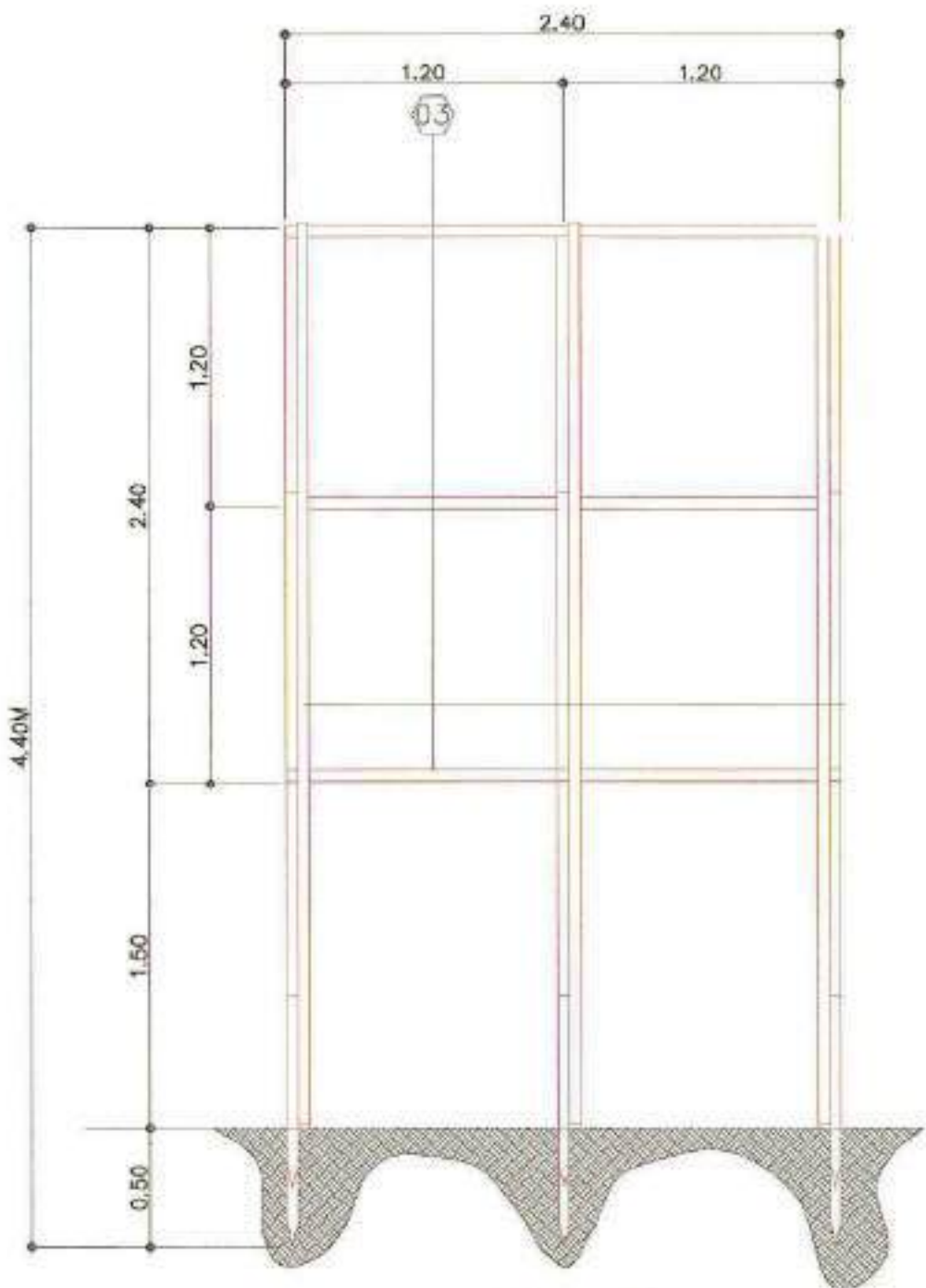
MARK	DESCRIPTION
01	8' x 8' TARPULIN WHITE WITH COMPLETE LOGO PRINTED ON 1/2" THK. ORDINARY PLYWOOD FRAMED WITH 2" X 3" GOOD LUMBER SPACED 800MM O.C. BOTHWAYS, 70dpi RESOLUTION, HELVENTICA FONT, 3" MAIN INFORMATION FONT SIZE, 1" SUB INFORMATION FONT SIZE, AND BLACK FONT COLOR
02	1/2" THK. x 1.20 x 2.40m ORDINARY PLYWOOD
03	2" x 3" x 12' GOOD LUMBER VERTICAL FRAME AND STAND
04	2" x 2" x 12' GOOD LUMBER HORIZONTAL AND DIAGONAL BRACING



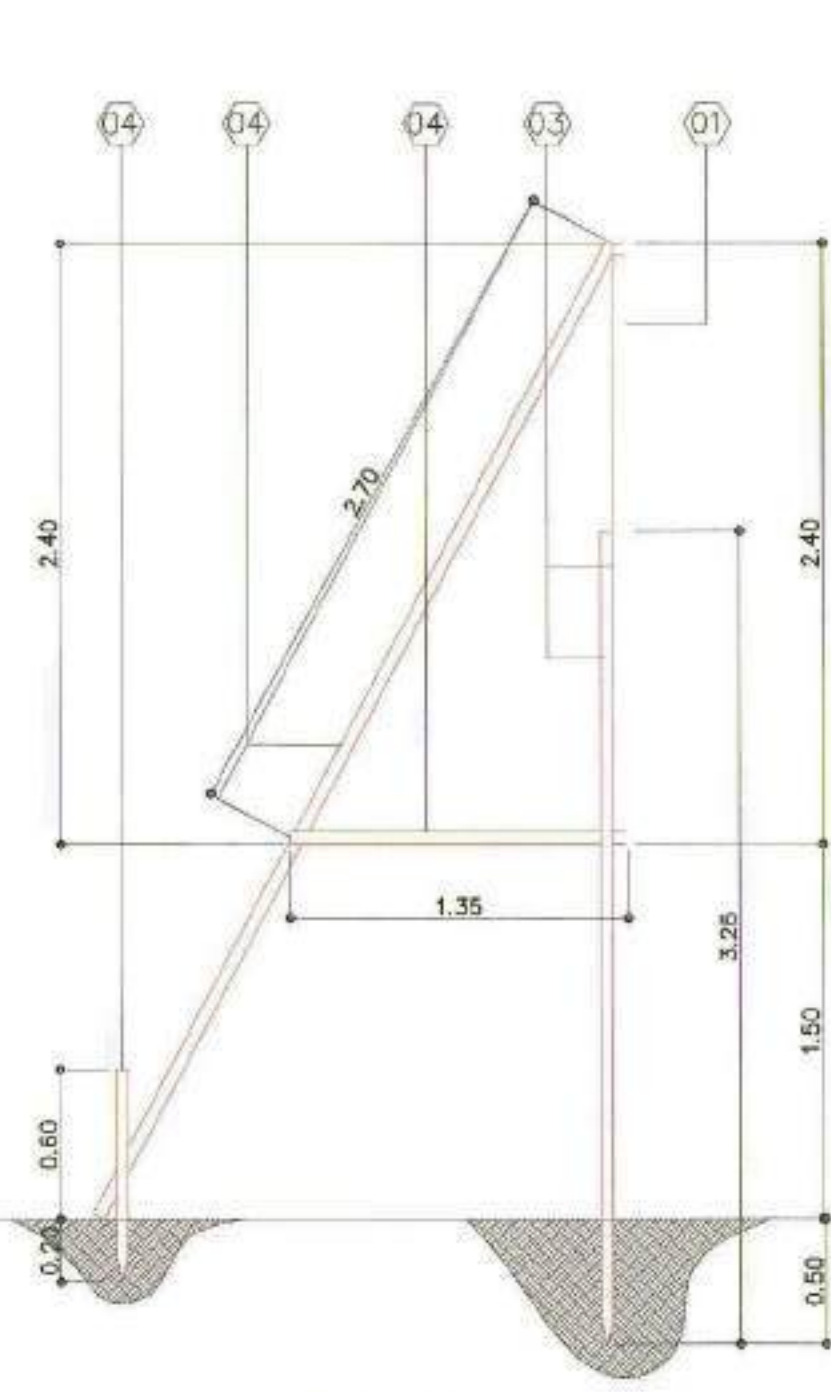
FRONT VIEW



FRONT FRAME



REAR VIEW



SIDE VIEW

BILLBOARD DETAILS
SCALE 1:80 MTS.

RPCO XI
NO OBJECTION

SIGNATURE:

ENCL. MARK ADRIAN L. SANCHEZ
I-BUILD Component Head

SHEET NO.

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REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF AGRICULTURE
"PHILIPPINE RURAL DEVELOPMENT
PROJECT SCALE UP"
PROVINCE OF DAVAO DE ORO
MUNICIPALITY OF LAAK

PROJECT NO.:
SUBPROJECT TITLE:
LOCATION:

PRDP-SU-IB-R011-DDO-003-000-000-2023-FMB
REHABILITATION OF FMR FROM KILAGDING RECENIA -
KIBAGIOU ROAD, LAAK WITH BRIDGE COMPONENT
LAAK, DAVAO DE ORO

PREPARED BY:
DOMINADOR R. ALMEDILLA
OIC DIVISION HEAD - PDD

DESIGNED BY:
RONNIE S. APARRI
ENGINEER II

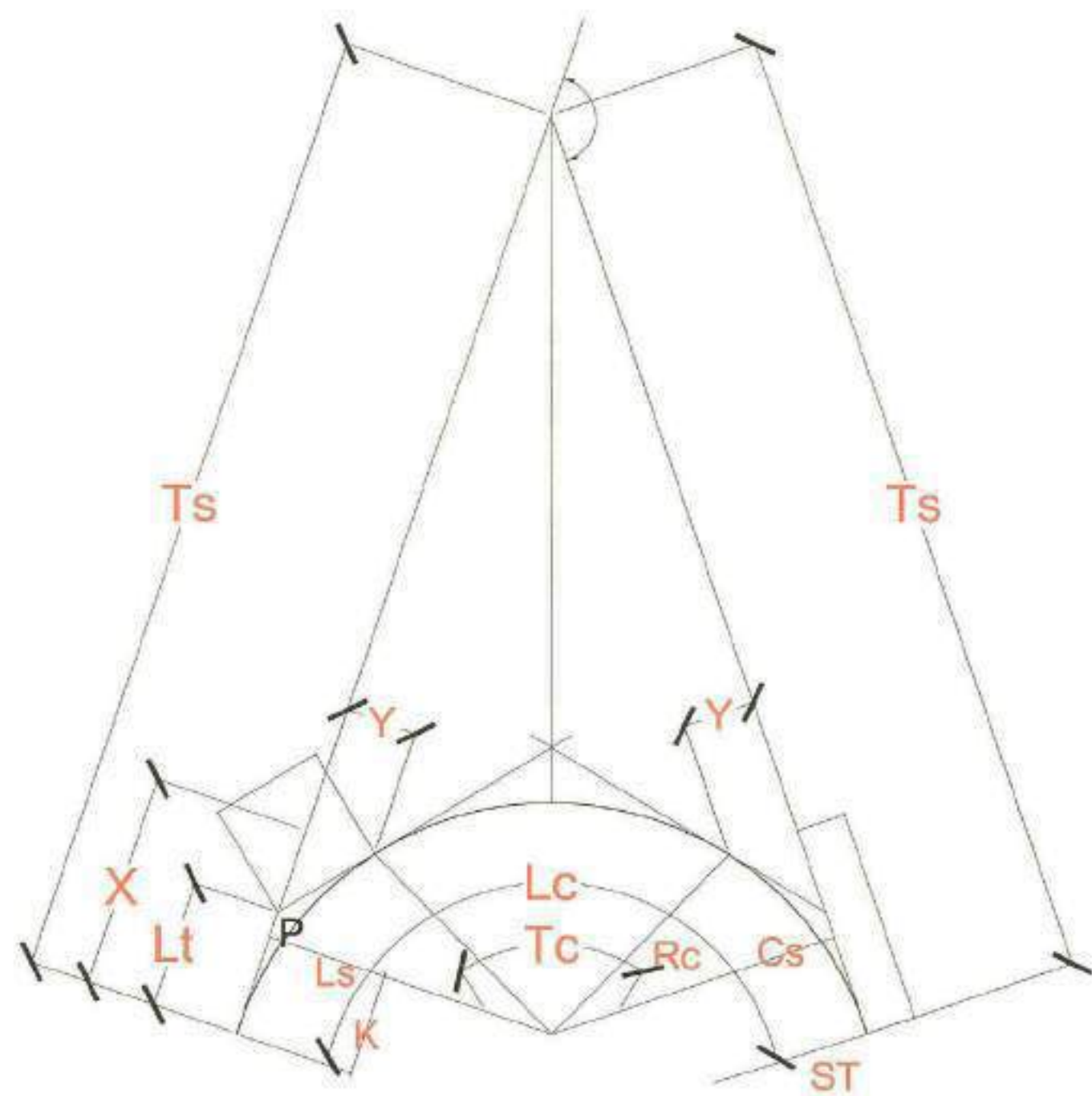
CHECKED & REVIEWED BY:
RODERICK M. DIGAMON
PROVINCIAL ENGINEER

RECOMMENDING APPROVAL:
ALICIA M. GRACIADAS
OO - PPMIU

APPROVED:
DOROTHY P. MONTEJO-GONZAGA
GOVERNOR

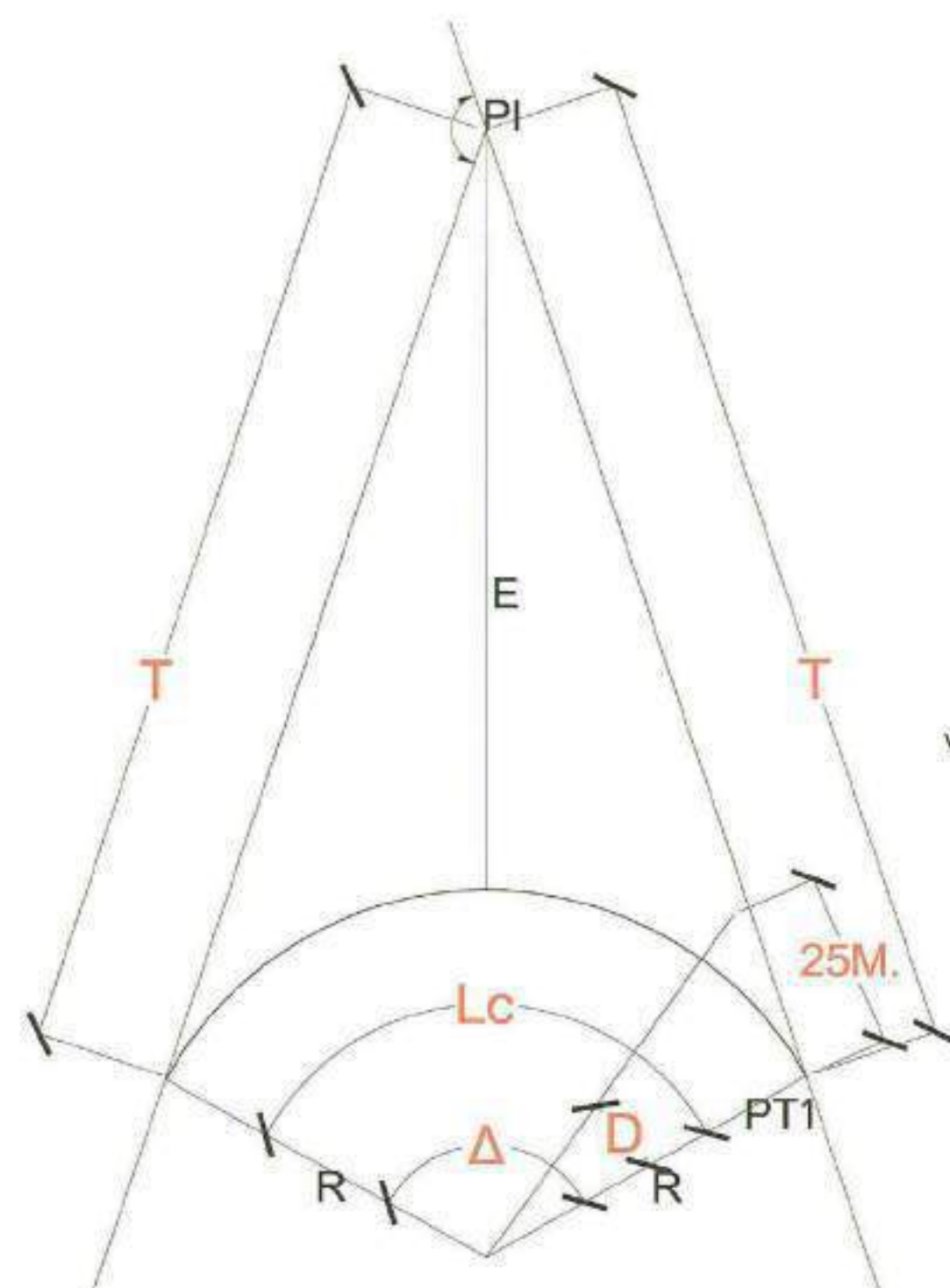
SHEET CONTENTS:
BILLBOARD DETAIL

HORIZONTAL AND VERTICAL CURVE DETAIL



HORIZONTAL CURVE WITH TRANSITION
SCALE N DTS

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



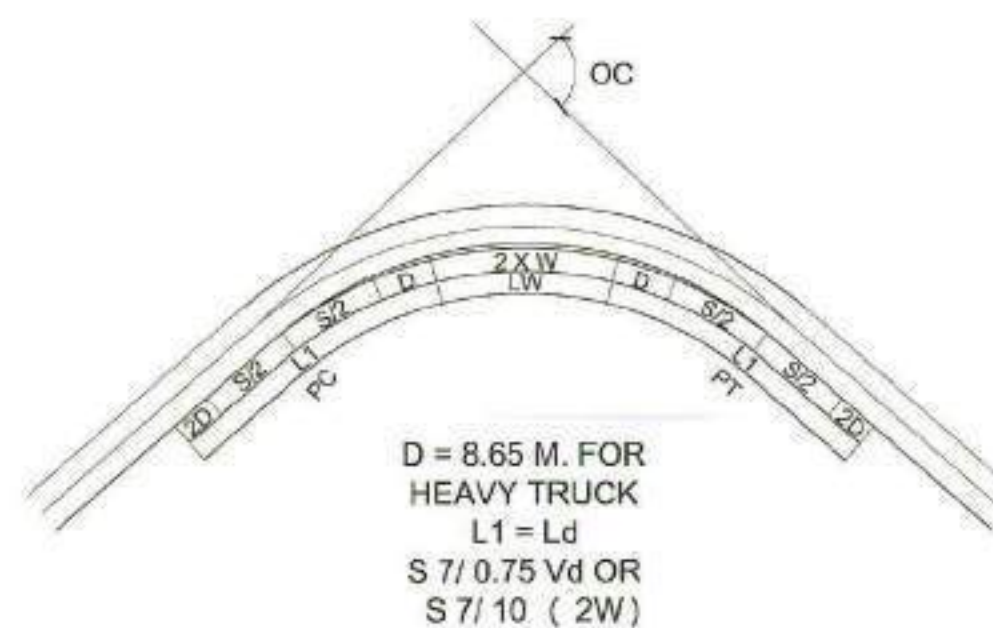
HORIZONTAL CURVE (CIRCULAR)
SCALE N DTS

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

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

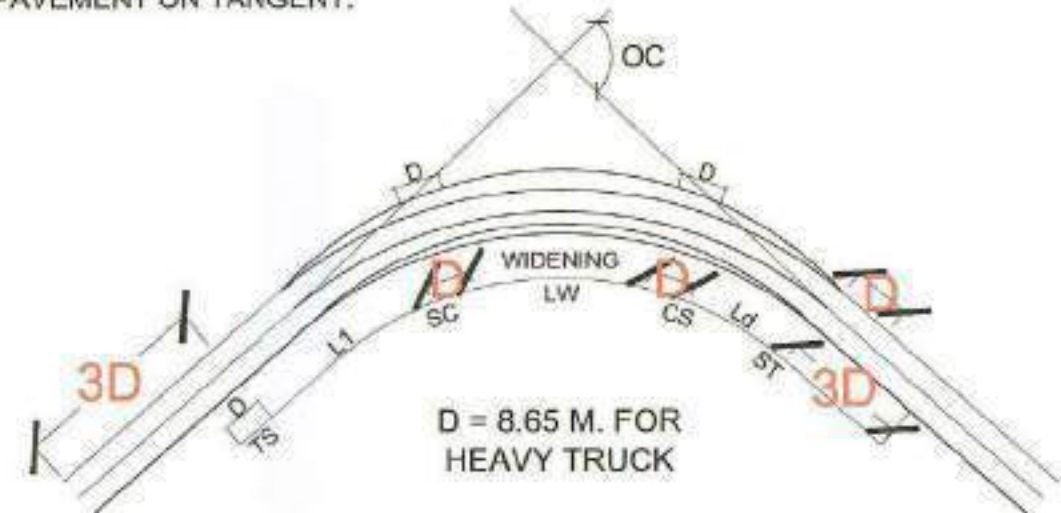
LEGEND :

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



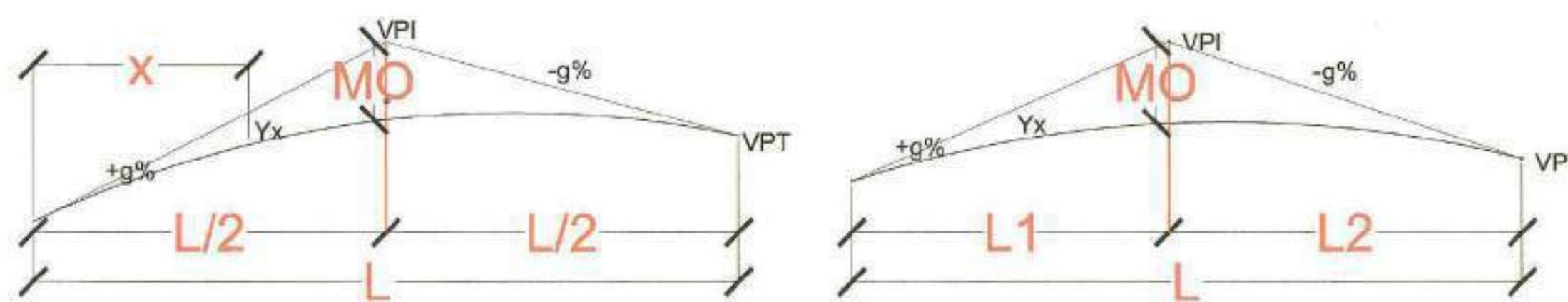
WIDENING WHEN TRANSITIONS NOT USED
SCALE N DTS

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



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

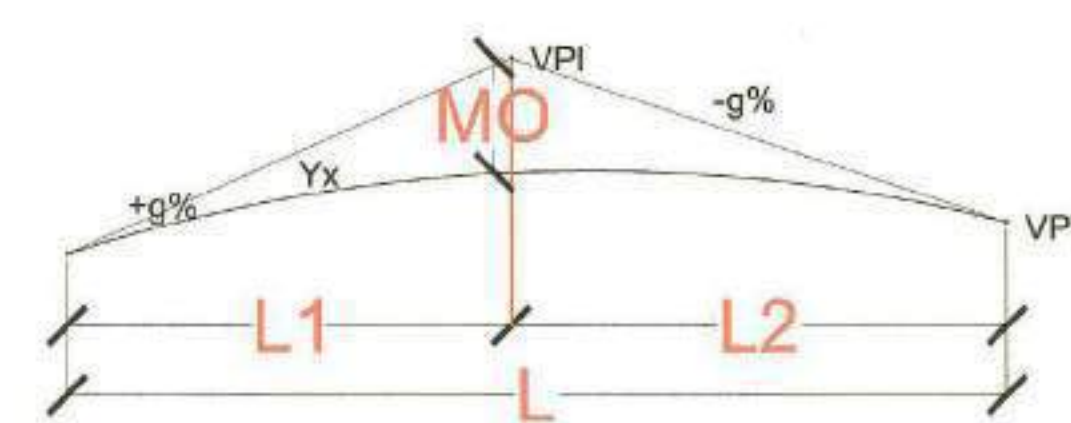
WIDENING WHEN TRANSITIONS ARE USED
SCALE N DTS



SYMMETRICAL VERTICAL CURVE

VERTICAL PARABOLIC CURVE

SCALE N DTS



UNSYMMETRICAL VERTICAL CURVE

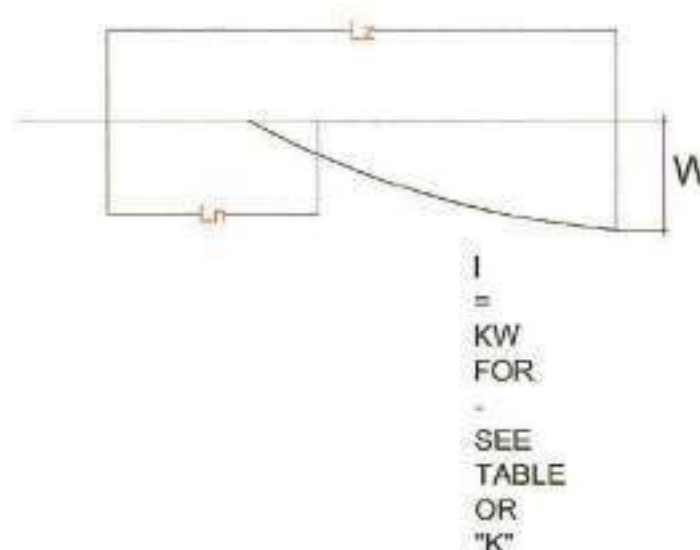
NOTE:
NO VERTICAL CURVE IS REQUIRED WHEN THE
ALGEBRAIC DIFFERENCE IN GRADES IS LESS THAN
0.50% ANY VERTICAL PARABOLIC CURVE

$$MO = \frac{AL}{8.00} \quad MO = \frac{AL \cdot L_1}{8.00}$$
$$Y_x = \frac{X^2 - (MO)}{(L/2)^2} \quad Y_x = \frac{X^2 - (MO)}{(L/2)^2 \text{ OR } (L^2)}$$

DESIGN VALUES

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

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



INCREASING			DECREASING		
Ln/Lx	K		Ln/Lz	K	
0.000	0.0000	5.0	0.000	1.0000	18.0
0.020	0.0010	5.0	0.020	0.9964	29.5
0.040	0.0020	13.5	0.040	0.9905	47.5
0.060	0.0047	15.0	0.060	0.9810	75.0
0.080	0.0077	18.5	0.080	0.9660	111.0
0.100	0.0114	21.0	0.100	0.9438	119.0
0.120	0.0158	30.0	0.120	0.9200	140.0
0.140	0.0217	41.5	0.140	0.8920	159.0
0.160	0.0300	45.0	0.160	0.8602	182.0
0.180	0.3900	54.5	0.180	0.8238	221.0
0.200	0.0499	56.5	0.200	0.7816	246.0
0.220	0.0612	74.0	0.220	0.7374	251.0
0.240	0.0760	74.0	0.240	0.6822	241.0
0.260	0.0908	101.0	0.260	0.6340	246.0
0.280	0.1110	102.5	0.280	0.5848	241.5
0.300	0.1315	129.5	0.300	0.5365	226.5
0.320	0.1574	137.5	0.320	0.4912	217.0
0.340	0.1849	156.0	0.340	0.4478	193.0
0.360	0.2161	167.5	0.360	0.4092	172.0
0.380	0.2496	179.0	0.380	0.3748	152.5
0.400	0.2846	184.5	0.400	0.3443	149.5
0.420	0.3215	185.5	0.420	0.3144	138.0
0.440	0.3586	189.5	0.440	0.2888	129.0
0.460	0.3965	189.5	0.460	0.2610	118.5
0.480	0.4344	190.0	0.480	0.2373	105.0
0.500	0.4724	189.5	0.500	0.2163	98.0
0.520	0.5103	183.5	0.520	0.1967	91.5
0.540	0.5470	183.0	0.540	0.1784	85.5
0.560	0.5836	179.0	0.560	0.1613	80.0
0.580	0.6194	177.0	0.580	0.1453	74.5
0.600	0.6548	170.0	0.600	0.1304	71.0
0.620	0.6888	164.5	0.620	0.1162	64.0
0.640	0.7217	152.8	0.640	0.1034	59.0
0.660	0.7522	133.8	0.660	0.0916	54.5
0.680	0.7789	130.8	0.680	0.0807	49.5
0.700	0.8050	118.0	0.700	0.0708	43.0
0.720	0.8286	117.5	0.720	0.0622	39.5
0.740	0.8521	110.0	0.740	0.0543	35.0
0.760	0.8741	103.0	0.760	0.0473	33.0
0.780	0.8947	90.5	0.780	0.0471	29.5
0.800	0.9128	82.5	0.800	0.0348	30.0
0.820	0.9293	73.5	0.820	0.0288	26.0
0.840	0.9440	70.0	0.840	0.0236	23.0
0.860	0.9580	55.0	0.860	0.0190	20.0
0.880	0.9691	42.0	0.880	0.0150	17.0
0.900	0.9775	37.0	0.900	0.0116	17.0
0.920	0.9849	27.0	0.920	0.0082	15.0
0.940	0.9903	24.5	0.940	0.0052	12.0
0.960	0.9952	15.0	0.960	0.0028	8.0
0.980	0.9982	9.0	0.980	0.0012	8.0
1.000	1.0000		1.000	0.0000	6.0



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

PROVINCE OF DAVAO DE ORO
MUNICIPALITY OF LAAK

PROJECT NO.:

PRDP-SU-IB-R011-DDO-003-000-000-2023-FMB

SUBPROJECT TITLE:

REHABILITATION OF FMR FROM KILAGDING RECENIA -
KIBAGIOU ROAD, LAAK WITH BRIDGE COMPONENT

LOCATION:

LAAK, DAVAO DE ORO

PREPARED BY:

DOMINADOR R. ALMEDILLA
OIC DIVISION HEAD - PDD

DESIGNED BY:

RONNIE S. APARRI
ENGINEER II

CHECKED & REVIEWED BY:

RODERICK M. DIGAMON
PROVINCIAL ENGINEER

RECOMMENDING APPROVAL:

ALICIA M. GRACIADAS
CO - PPMU

APPROVED:

DOROTHY P. MONTEJO GONZAGA
GOVERNOR

SHEET CONTENTS:

HORIZONTAL AND VERTICAL
CURVED DETAIL
RPO XI
NO OBJECTION

SHEET NO.

19
102



Standard Sign Panel of appropriate sheeting fastened with bolts and nuts for ease of replacement

Varies depending on the size of the sign panel

1.50 m vertical height

PRDP LOGO

WORLD BANK LOGO

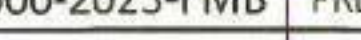
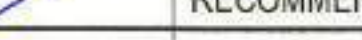
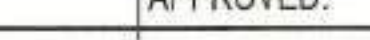
All materials are 2" x 2" x 2.33 mm Angular Bar

Varies depending on the size of the sign panel

0.30 m

0.60 m clear spacing

		QUANTITY
a.	Roadwork Ahead	4.00
b.	Bridgework Ahead	2.00
c.	Road Machinery Ahead	4.00
d.	Workmen Ahead	6.00
e.	End Roadwork	2.00

	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF AGRICULTURE "PHILIPPINE RURAL DEVELOPMENT PROJECT SCALE UP"	PROJECT NO.:	PRDP-SU-IB-R011-DDO-003-000-000-2023-FMB	PREPARED BY:	DESIGNED BY:	CHECKED & REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED:	SHEET CONTENTS:	SHEET NO.
	PROVINCE OF DAVAO DE ORO MUNICIPALITY OF LAAK	SUBPROJECT TITLE:	REHABILITATION OF FMR FROM KILAGDING RECENIA - KIBAGIOU ROAD, LAAK WITH BRIDGE COMPONENT	 DOMINADOR R. ALMEDILLA OIC DIVISION HEAD - PDD	 RONNIE S. APARRI ENGINEER II	 RODERICK M. DIGAMON PROVINCIAL ENGINEER	 ALICIA M. GRACIADAS CO - PPMU	 DOROTHY P. MONTEJO GONZAGA GOVERNOR	PEDESTRIAN CROSSING AND SIGNAGE DETAIL	21
		LOCATION:	LAAK, DAVAO DE ORO							

8000MM

5500MM

365.24 M. TOP ELEVATION

355.24 M. BOTTOM ELEV.

12MM DIA. BARS SPC. @ 200MM

10MM DIA. BARS SPC. @ 200MM

LEAN CONCRETE

COMPACTED GRAVEL BASE

SINGLE BARREL SECTIONAL ELEVATION

SCALE 1:50M

