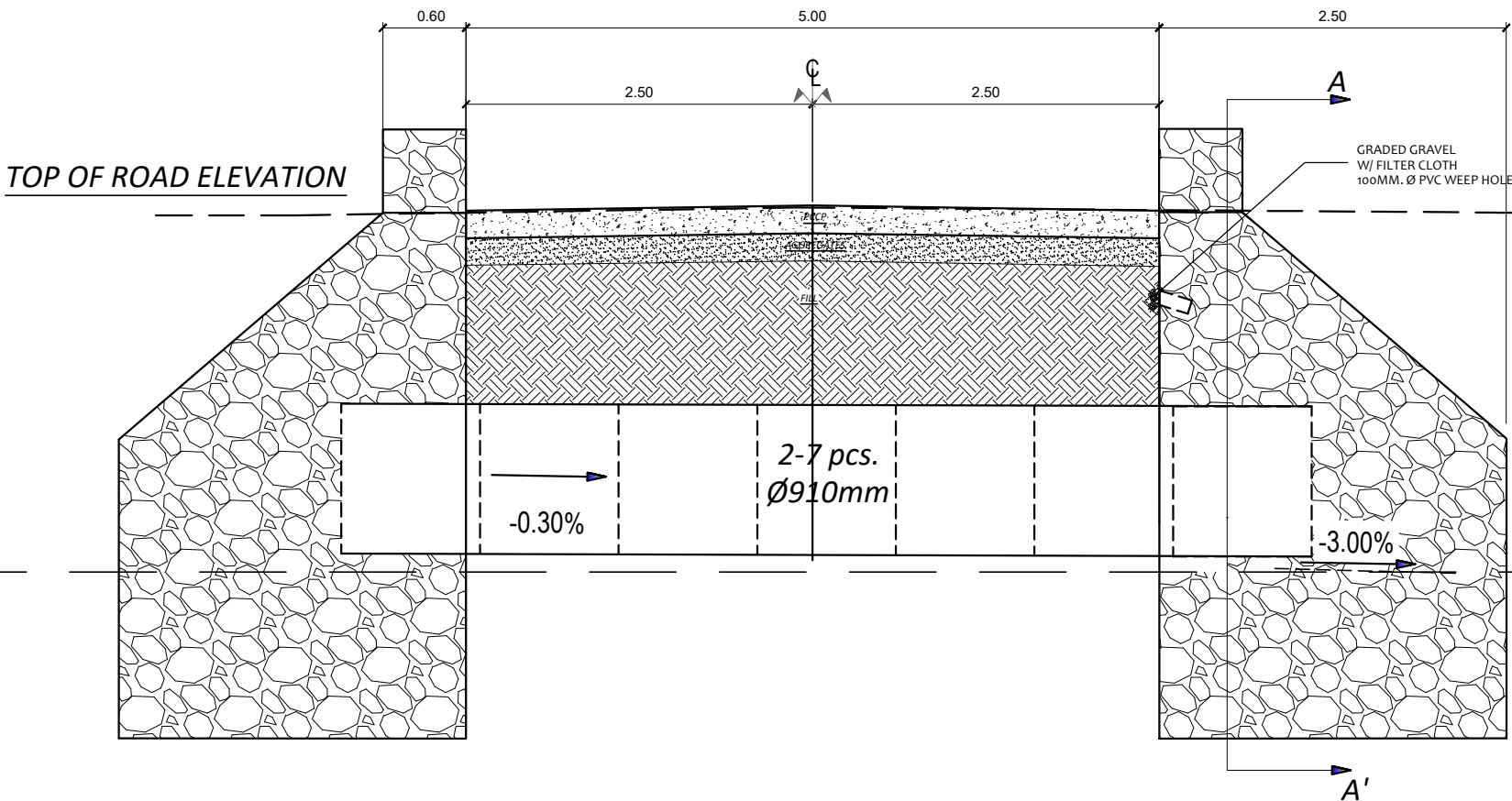
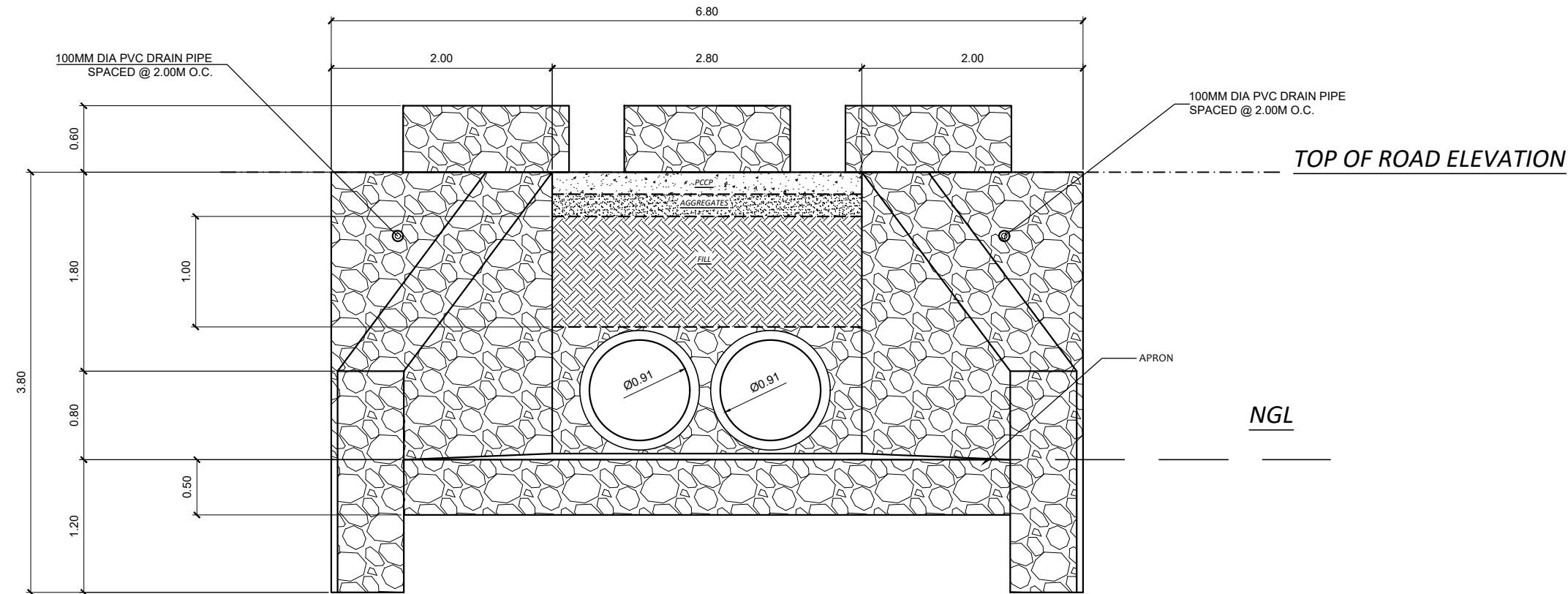
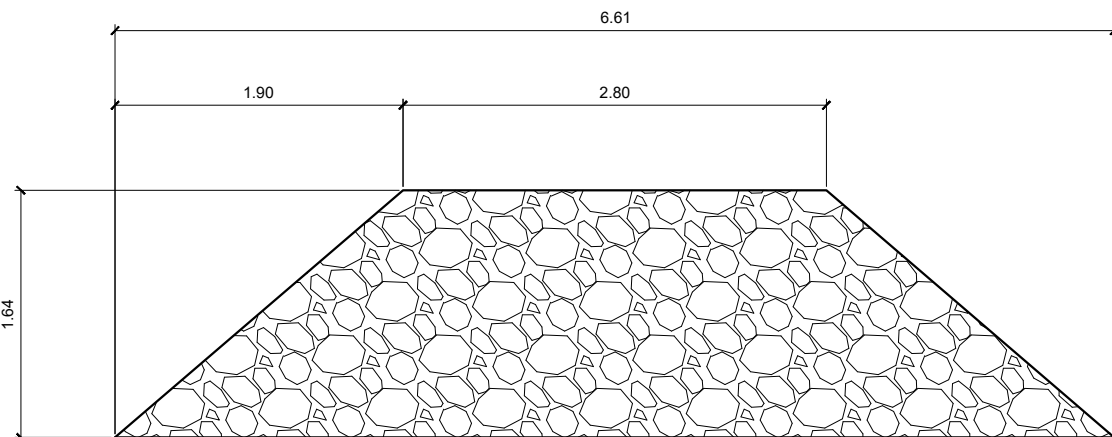




CROSS DRAIN DETAIL
SCALE: 1:50

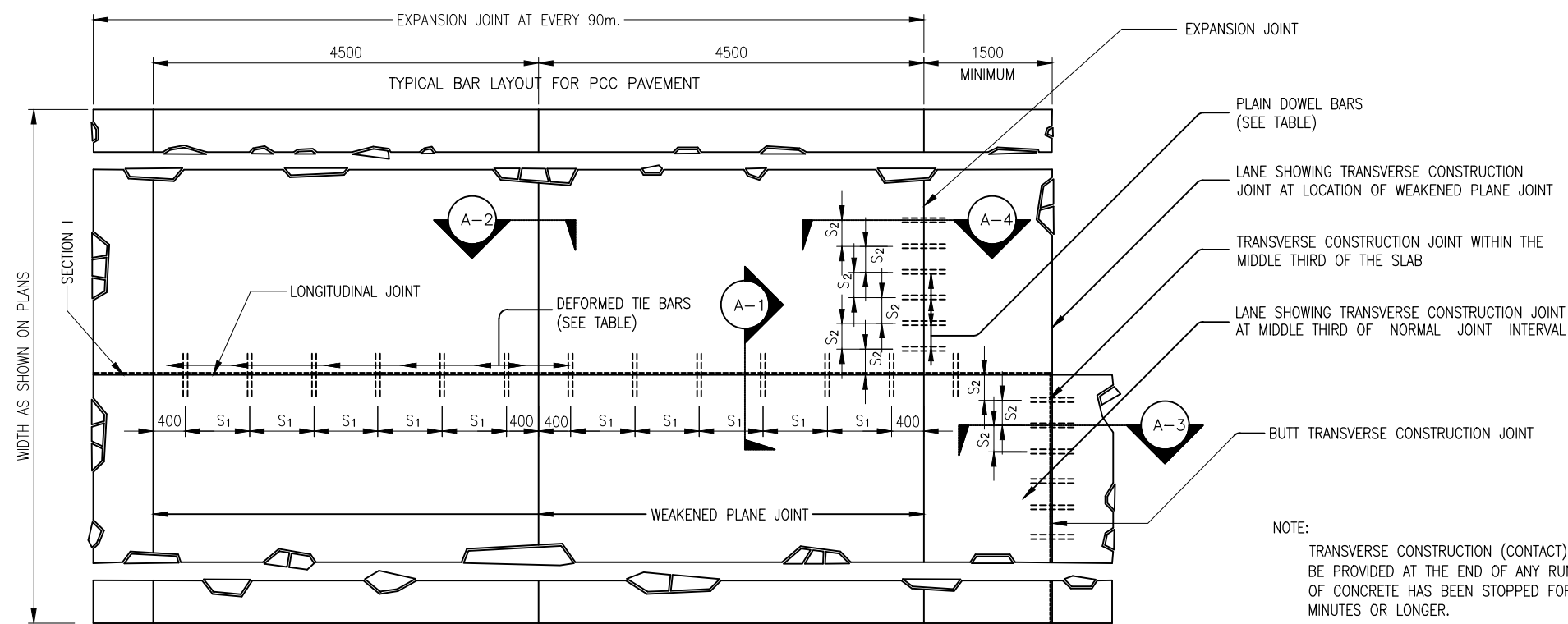


SECTION A - A'
SCALE: 1:50

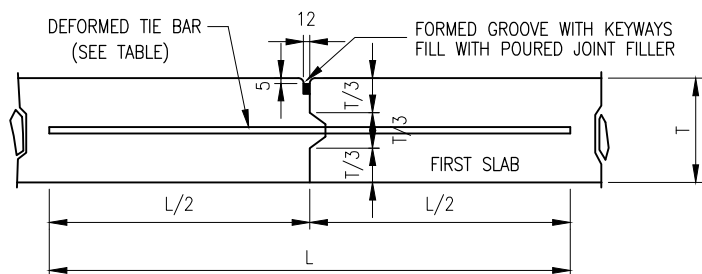


APRON (TOP VIEW)
SCALE: 1:50

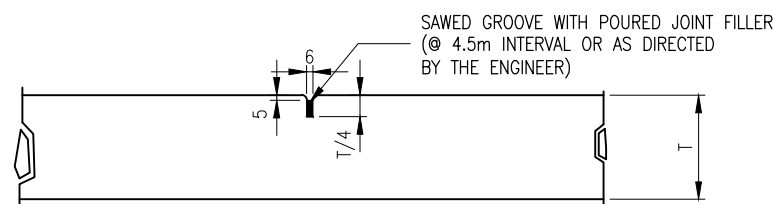
 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS REGIONAL OFFICE No. IV-A BATANGAS 2ND DISTRICT ENGINEERING OFFICE KUMINTANG ILAYA, BATANGAS CITY	PROJECT NAME AND LOCATION:	SHEET CONTENT:	DRAFTED:	REVIEWED:	SUBMITTED:	RECOMMENDED:	APPROVED:	SET NO.	SHEET NO.
	CONCRETING OF BRGY. NAGTOCTOC FMR, BRGY. NAGTOCTOC, LOBO, BATANGAS	CROSS DRAIN DETAILS SECTION A-A' APRON (TOP VIEW)	CHARLIE M. PEREZ ENGINEER II	BRYAN EDWARD R. ANDAL ENGINEER II	GEMMA L. OLAN CHIEF - PLANNING AND DESIGN SECTION	ARIEL V. ARMEDILLA ASSISTANT DISTRICT ENGINEER	SONIA D. PAGLICAUAN DISTRICT ENGINEER	R 3 12	11 20
	LOBO, BATANGAS		CHRISTIAN S. BAGSIT ENGINEER II	DATE:	DATE:	DATE:	DATE:		



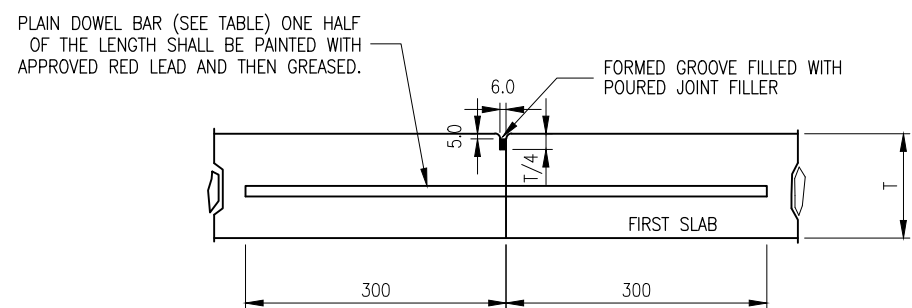
A TYPICAL PLAN OF A TWO – LANE UNDOWELED PAVEMENT
SCALE 1:50



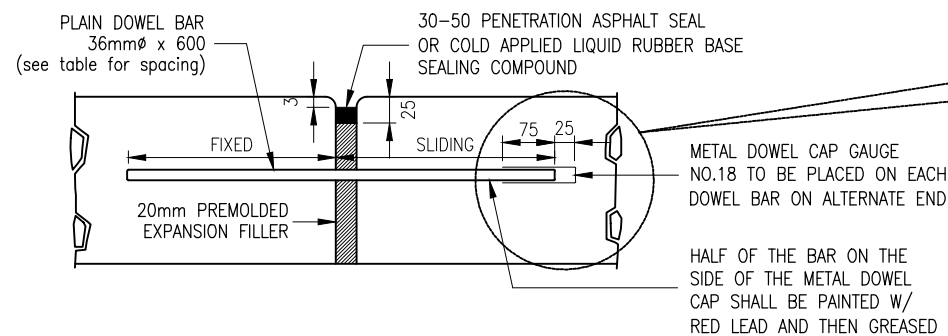
A-1 DETAIL 'A' (LONGITUDINAL CONSTRUCTION JOINT)
SCALE 1:10



A-2 DETAIL 'B' (WEAKENED PLANE JOINT OR CONSTRUCTION JOINT)
SCALE 1:10



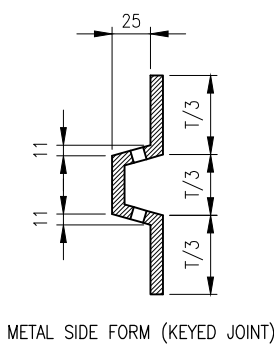
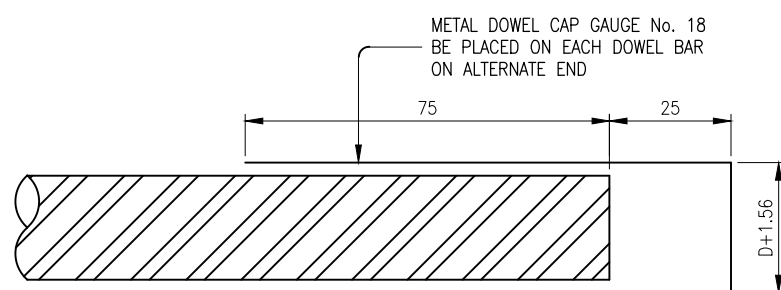
A-3 DETAIL 'C' (BUTT TRANSVERSE CONSTRUCTION JOINT)
SCALE 1:10



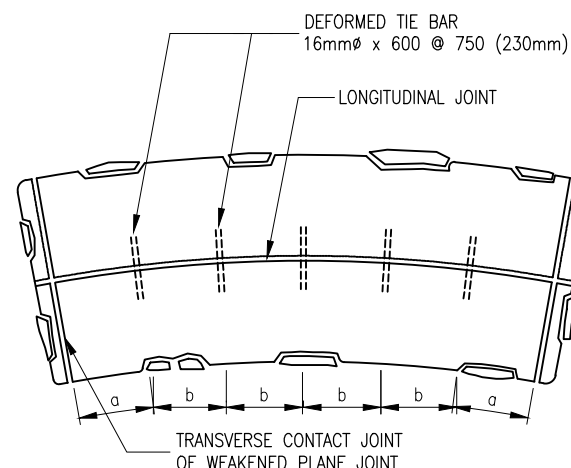
A-4 SECTION OF EXPANSION JOINT
SCALE NTS

SLAB THICKNESS (mm)	TIE BAR SIZE X LENGTH(L), mm	TIE BAR SPACING mm(S ₁)
130	12mm x 600	760
150	12mm x 600	760
180	12mm x 600	760
200	12mm x 600	760
230	16mm x 760	900
250	16mm x 760	900
280	16mm x 760	900
310	16mm x 760	900

BASED ON DESIGN GUIDELINES, CRITERIA AND STANDARDS 2015, VOLUME 4/ AMERICAN CONCRETE INSTITUTE.



B DETAIL OF SIDE FORMS
SCALE 1:10

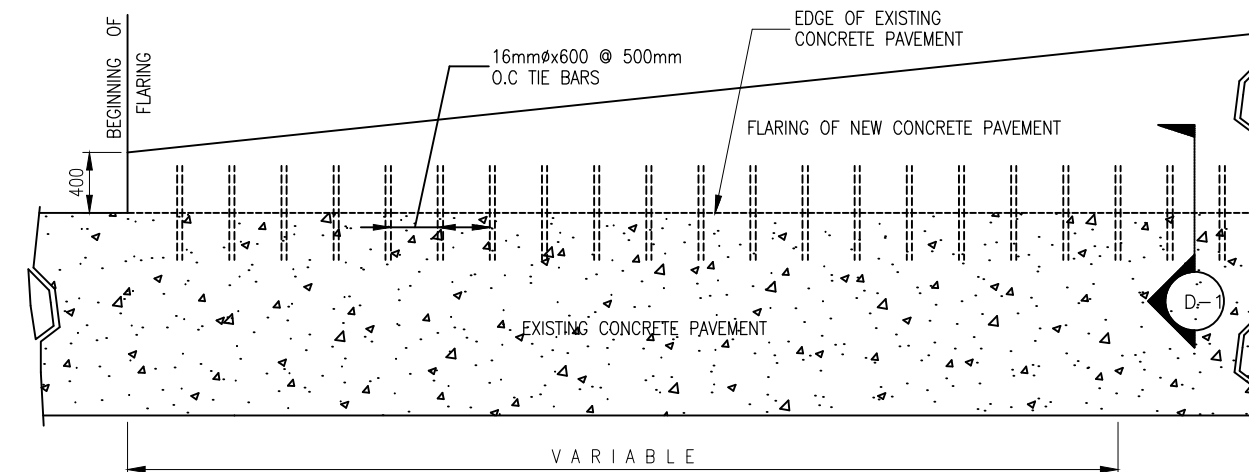


T	a	b
280	150	600
230	375	750

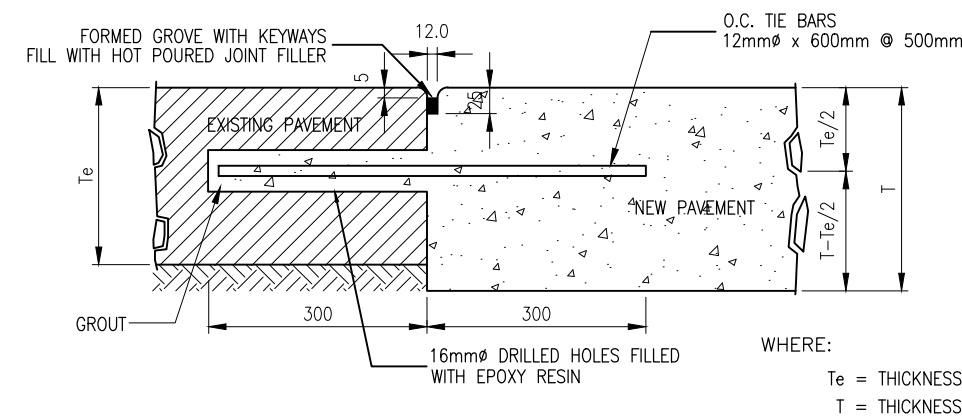
C DETAIL OF BAR SPACING ALONG CURVES
SCALE NTS

SPACING OF DOWEL BARS DIAMETER=36mm/LENGTH=600mm		SUBSTITUTE	
SLAB DEPTH, T (mm)	SPACING, S (mm)	SIZE OF DOWEL BAR (mm)	SPACING, S (mm)
280	300	32	250
		28	190
		25	150
290	295	32	230
		28	170
		25	140
300	274	32	210
		28	160
		25	130
310	255	32	200
		28	150
		25	120
320	238	32	190
		28	140
		25	110
330	223	32	180
		28	130
		25	110
340	209	32	170
		28	130
		25	100

NOTE:
IN CASE THE REQUIRED DIAMETER OF 36mm IS NOT COMMERCIALY AVAILABLE, SMALLER DOWEL BAR CAN BE USED WITH ADJUSTMENT IN BAR SPACING AS SHOWN IN THE TABLE ABOVE.



D PLAN OF EXISTING CONCRETE PAVEMENT
SCALE 1:10



D-1 CONSTRUCTION JOINT TO BE USED FOR FLARING EXISTING CONCRETE PAVEMENT
SCALE 1:10

- GENERAL NOTES:
- MATERIALS AND WORKMANSHIP SHALL CONFORM WITH THE "DPWH STANDARD SPECIFICATIONS FOR HIGHWAYS, BRIDGES 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.
 - EXPANSION JOINTS AT EVERY 90m SHALL BE PROVIDED WITH DOWELS.
 - TIE BARS SHOULD BE DEFORMED STEEL BARS, ALL DOWEL BARS SHALL BE SMOOTH ROUND STEEL BAR FREE FROM RUST AND OTHER DEFECTS WHICH MIGHT RESTRICT THEIR MOVEMENT.
 - TYPE OF WEAKENED PLANE JOINT TO BE USED SHALL BE AS SPECIFIED IN THE PLANS AND ONLY ONE TYPE SHALL BE USED FOR THE WHOLE PROJECT.
 - 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 DOWELED 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 HAD BEEN CURED AND BEFORE OPENING PAVEMENT TO TRAFFIC. ASPHALT SEAL SHOULD BE POURED IN SUCH MANNER THAT SPILLING SHALL PREVENTED/ELIMINATED THIS, PROVIDE A SMOOTH RIDING SURFACE.
 - ALL TRANSVERSE JOINTS, EXCEPT CONSTRUCTION JOINT, SHALL BE CONTINUOUS FROM EDGE TO EDGE.
 - ALL LONGITUDINAL JOINTS SHALL MEET AT INTERSECTIONS WITH NO GAPS OR OFFSET.
 - ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
 - AVOID STOPPAGE OF FORMWORKS ALONG CURVES.

STD-H STANDARD PORTLAND CEMENT CONCRETE PAVEMENT DETAILS
SCALE AS SHOWN



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGIONAL OFFICE No. IV-A
BATANGAS 2ND DISTRICT
ENGINEERING OFFICE
KUMINTANG ILAYA, BATANGAS CITY

PROJECT NAME AND LOCATION:

CONCRETING OF BRGY. NAGTOCTOC FMR, BRGY. NAGTOCTOC, LOBO, BATANGAS

LOBO, BATANGAS

SHEET CONTENT:

STANDARD PORTLAND CEMENT CONCRETE PAVEMENT

DRAFTED:

CHARLIE M. PEREZ
ENGINEER II

PREPARED:

CHRISTIAN S. BAGSIT
ENGINEER II

REVIEWED:

BRYAN EDWARD R. ANDAL
ENGINEER II

DATE:

SUBMITTED:

GEMMA L. OLAN
CHIEF - PLANNING AND DESIGN SECTION

DATE:

RECOMMENDED:

ARIEL V. ARMEDILLA
ASSISTANT DISTRICT ENGINEER

DATE:

APPROVED:

SONIA D. PAGLICAUAN
DISTRICT ENGINEER

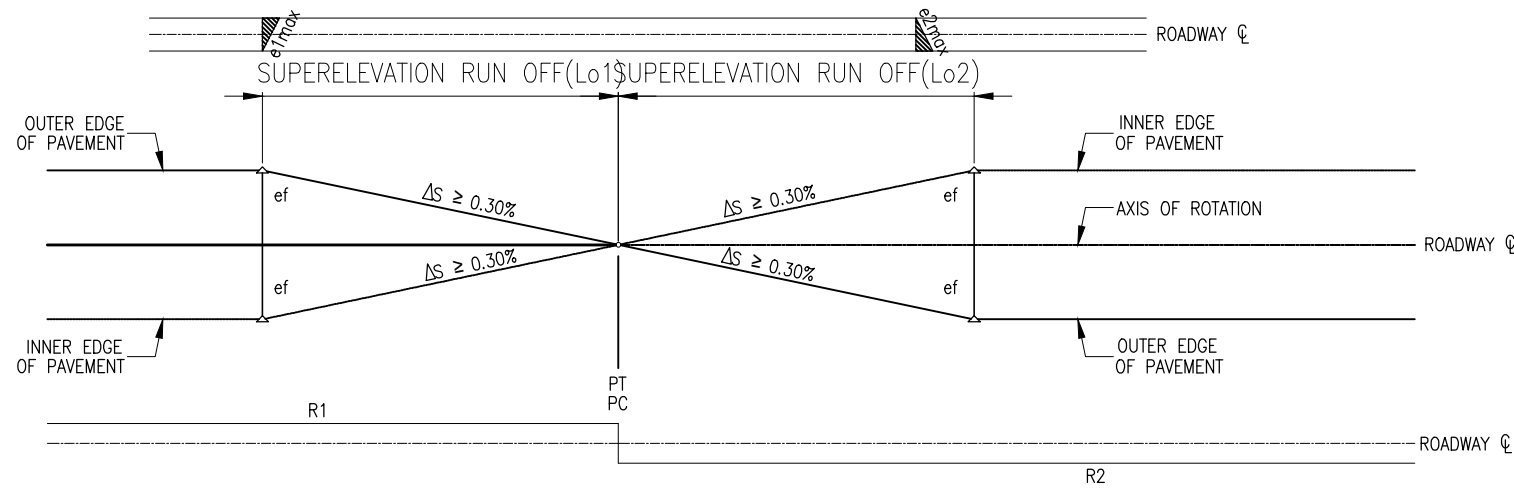
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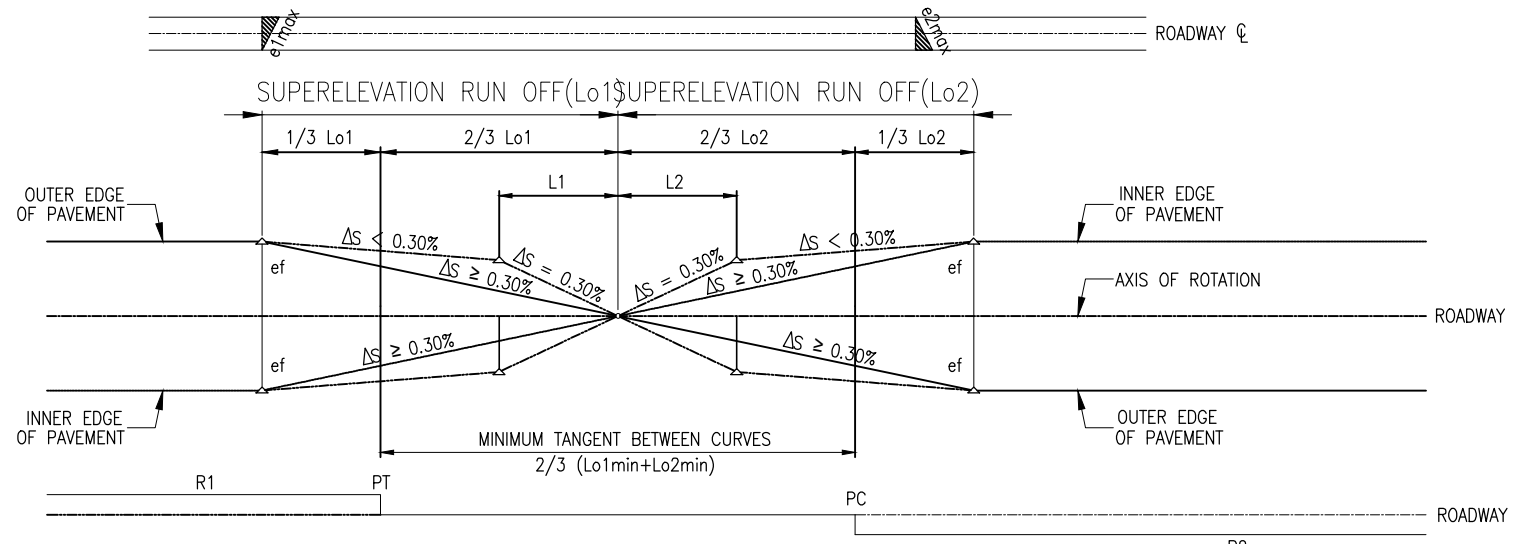
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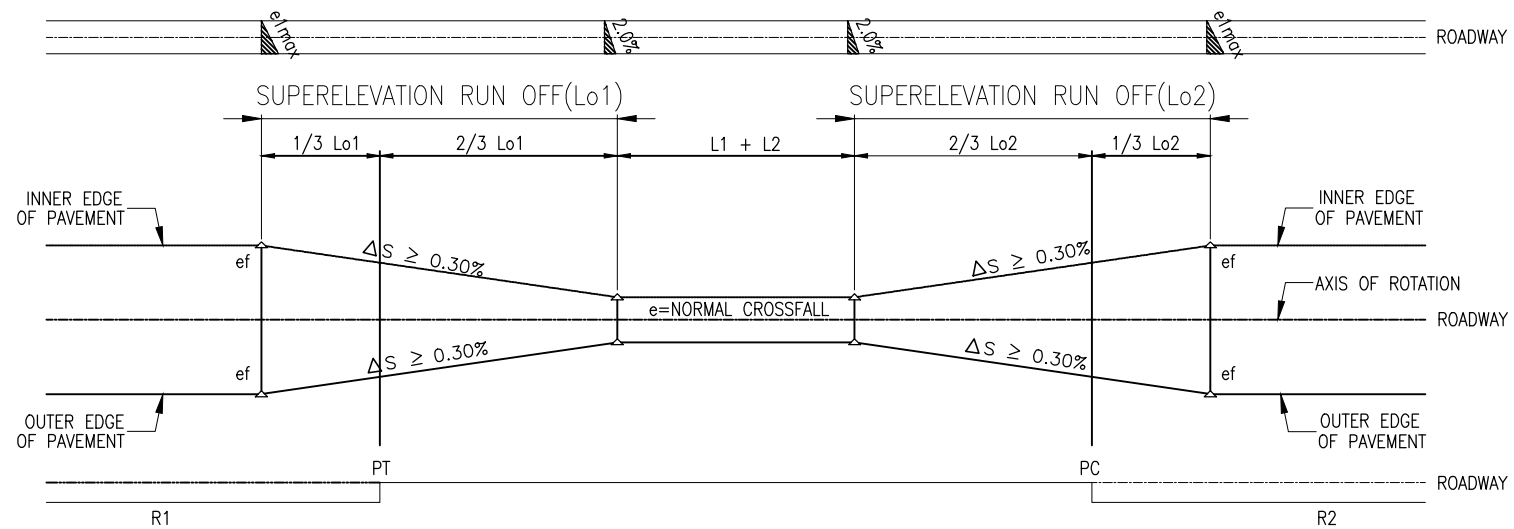
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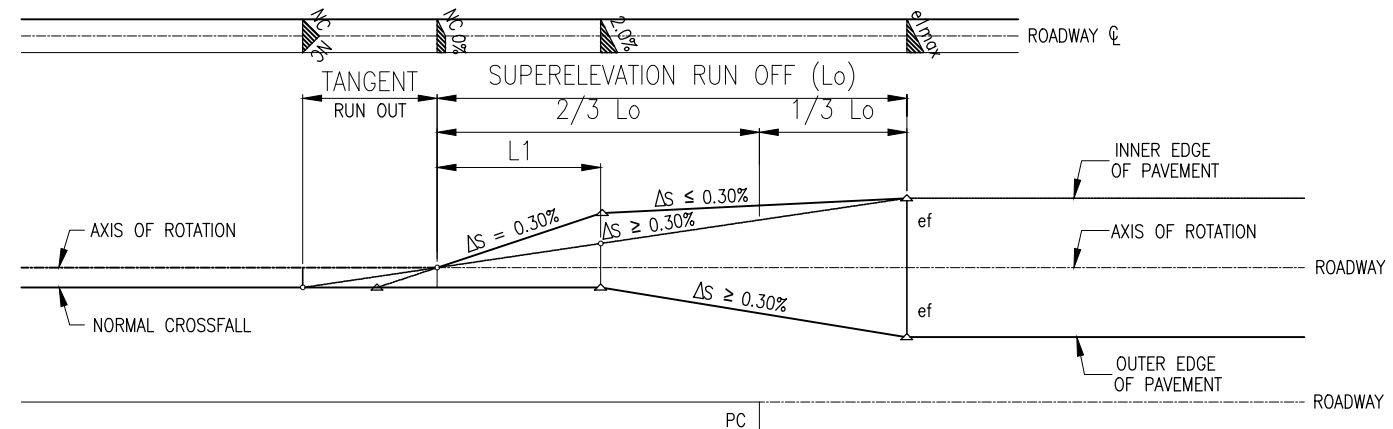
TRANSITION : CIRCULAR CURVE – CIRCULAR CURVE CASE 4



TRANSITION : CIRCULAR CURVE – MINIMUM STRAIGHT – CIRCULAR CURVE CASE 3



TRANSITION : CIRCULAR CURVE – STRAIGHT – CIRCULAR CURVE CASE 2



TRANSITION : STRAIGHT – CIRCULAR CURVE CASE 1

A LONGITUDINAL SECTION
SCALE NTS

STD-H SUPERELEVATION AND PAVEMENT WIDENING
SCALE AS SHOWN

RATE OF SUPERELEVATION

AASHTO GEOMETRIC DESIGN OF HIGHWAYS AND STREETS

Design Speed e %	30kph 8% (max)	40kph 8% (max)	50kph 8% (max)	60kph 8% (max)	70kph 8% (max)
	RADIUS				
NC	443	784	1090	1490	1970
RC	322	571	791	1090	1450
2.2	288	512	711	976	1300
2.4	261	463	644	885	1190
2.6	237	421	587	808	1080
2.8	216	385	539	742	992
3.0	199	354	496	684	916
3.2	183	326	458	633	849
3.4	169	302	425	588	790
3.6	156	279	395	548	738
3.8	144	259	368	512	690
4.0	134	241	344	479	648
4.2	124	224	321	449	608
4.4	115	208	301	421	573
4.6	106	192	281	395	540
4.8	96	178	263	371	509
5.0	87	163	246	349	480
5.2	78	148	229	328	454
5.4	71	136	213	307	429
5.6	65	125	198	288	405
5.8	59	115	185	270	382
6.0	55	106	172	253	360
6.2	50	98	161	238	340
6.4	46	91	151	224	322
6.6	43	85	141	210	304
6.8	40	79	132	198	287
7.0	37	73	123	185	270
7.2	34	68	115	174	254
7.4	31	62	107	162	237
7.6	29	57	99	150	221
7.8	26	52	90	137	202
8.0	20	41	73	113	168

NOTES:

e max = 8.0%

NC = normal crown section

RC = remove adverse crown

RELATIVE SLOPE OF PAVEMENT EDGE

DESIGN SPEED (KPH)	20	30	40	50	60	70	80	90	100
MAXIMUM ΔS (%)	0.80	0.75	0.70	0.65	0.60	0.55	0.50	0.47	0.44

NOTES:

- ΔS SHOULD NOT BE LESS THAN 0.30% FOR EFFECTIVE DRAINAGE
- WHEN THE SUPERELEVATION IS GREATER THAN 3% THEN THE SLOPE OF THE LOWER SHOULDER SHALL BE THE SAME AS FOR THE TRAVELED WAY.
- SUPERELEVATION CAN BE ATTAINED BY REVOLVING THE PAVEMENT ABOUT THE ROADWAY CENTERLINE
- IN ORDER TO DISTINGUISH WHICH EDGE OF THE CURVE IS TO BE SUPERELEVATED OR TILTED, THE FULL LINE (—) REPRESENTS OUTER EDGE, AND THE BROKEN LINES (---) REPRESENTS INNER EDGE.

SHOULDER CROSS SLOPE ALONG SUPERELEVATED SECTION AT THE OUTER SIDE OF THE CURVE

2%	-3%
3%	-3%
4%	-3%
5%	-2%
6%	-1%
7%	0%
8%	+1%

LEGEND:

- KPH – KILOMETER PER HOUR
Lo – SUPERELEVATION RUN-OFF
ef – FULL SUPERELEVATION
RC – REMOVE ADVERSE CROWN, SUPERELEVATE AT NORMAL CROWN SLOPE
PC – POINT OF CURVATURE
PT – POINT OF TANGENCY
℄ – CENTERLINE
R – RADIUS
ef – FULL SUPERELEVATION IN %
L1orL2 – LENGTH BETWEEN SUPERELEVATION 0% AND 2.0% FOR PCCP.
NC – NORMAL CROWN (2.0% FOR PCCP)
ΔS – RELATIVE SLOPE OF PAVEMENT EDGE %
V – DESIGN SPEED

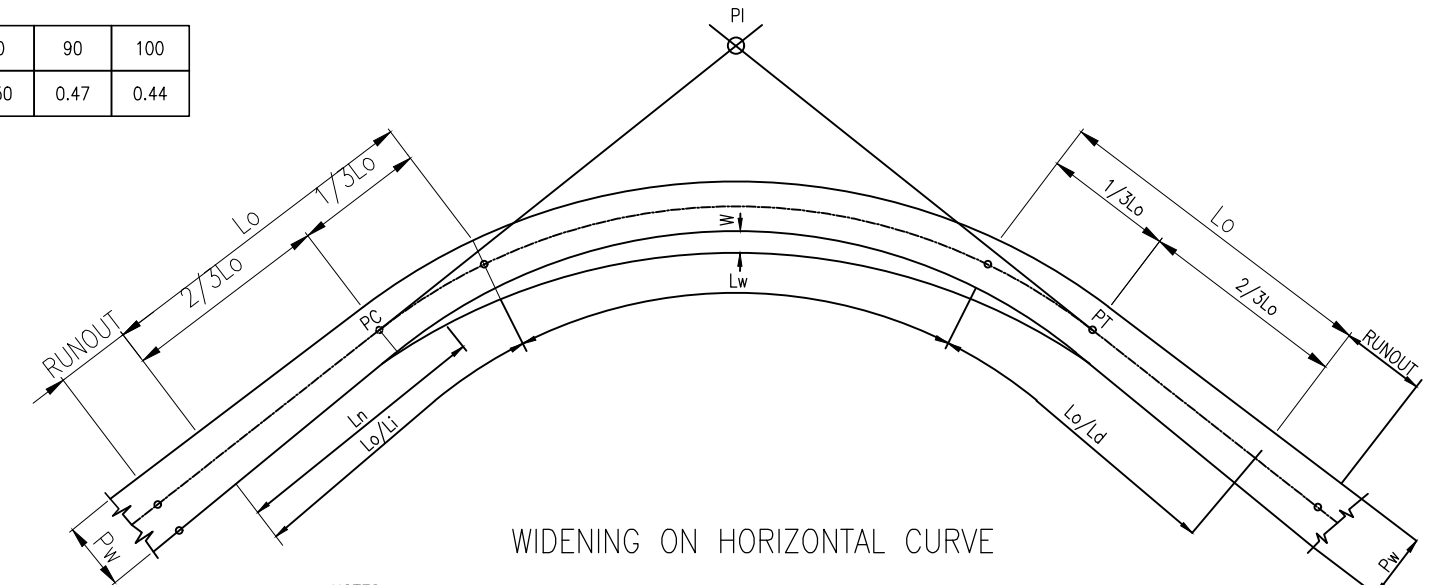
WIDENING OF PAVEMENT ON CURVES

DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

R	DESIGN SPEED (km/hr)				
(m)	30	40	50	60	70
30	1.50				
40	1.50				
50	1.20	1.50			
60	1.20	1.50			
70	1.20	1.50			
80	1.20	1.20	1.30		
90	1.00	1.20	1.20		
100	1.00	1.20	1.00		
110	1.00	1.00	1.00		
120	0.80	0.90	0.90	1.00	
130	0.80	0.80	0.90	1.00	
140	0.70	0.80	0.80	0.90	
150	0.60	0.70	0.80	0.80	
160	0.60	0.60	0.70	0.80	0.90
170	0.60	0.60	0.70	0.80	0.90
190	0.60	0.60	0.70	0.80	0.80
200		0.60	0.60	0.60	0.70
220			0.60	0.60	0.70
230			0.60	0.60	0.60
250			0.60	0.60	0.60
260			0.60	0.60	0.60
280				0.60	0.60
290				0.60	0.60
300				0.60	0.60
340					0.60
370					
400					
460					
500					
600					
700					
800					

NOTES:

- VALUES LESS THAN 0.60m. MAY BE DISREGARDED.
- FOR 3-LANE PAVEMENTS, MULTIPLY VALUES DERIVED BY 1.5.
- FOR 4-LANE PAVEMENTS, MULTIPLY VALUES DERIVED BY 2.0.
- WHERE SEMITRAILERS ARE SIGNIFICANT, INCREASE TABULAR VALUES OF WIDENING BY: 0.15m. FOR CURVES OF 7.0 TO 10.5 DEGREES AND BY 0.30m. FOR CURVES SHARPER THAN 10.5 DEGREES.



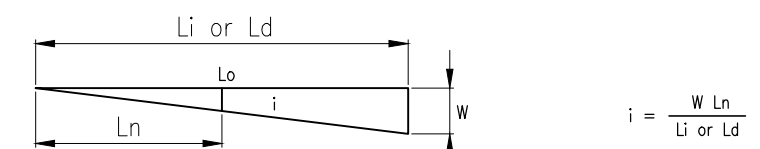
WIDENING ON HORIZONTAL CURVE

NOTES:

- WIDENING SHALL BE APPLIED ON THE INNER SIDE OF THE CURVE AND SHALL BE ATTAINED LINEARLY ALONG THE REQUIRED SUPERELEVATION RUN-OFF
- WIDENING SHALL BE APPLIED ON TWO-LANE PAVEMENT.

LEGEND:

- W = WIDENING WIDTH
Lo = LENGTH OF SUPERELEVATION RUN-OFF
Lw = LENGTH WIDTH OF FULL WIDENING
Lo/Li = SUPERELEVATION RUNOFF/TRANSITION LENGTH OF WIDENING (INCREASING SECTION)
Lo/Ld = SUPERELEVATION RUNOFF/TRANSITION LENGTH OF WIDENING (DECREASING SECTION)
Pw = NORMAL PAVEMENT WIDTH



METHODS OF WIDENING ON TRANSITION LENGTH

B LONGITUDINAL SECTION
SCALE NTS



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DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGIONAL OFFICE No. IV-A
BATANGAS 2ND DISTRICT
ENGINEERING OFFICE
KUMINTANG ILAYA, BATANGAS CITY

PROJECT NAME AND LOCATION:

CONCRETING OF BRGY. NAGTOCTOC FMR, BRGY.
NAGTOCTOC, LOBO, BATANGAS

LOBO, BATANGAS

SHEET CONTENT:

GEOMETRIC DESIGN STANDARD
SUPER ELEVATION AND PAVEMENT WIDENING

DRAFTED:

CHARLIE M. PEREZ
ENGINEER II

PREPARED:

CHRISTIAN S. BAGSIT
ENGINEER II

REVIEWED:

BRYAN EDWARD R. ANDAL
ENGINEER II

DATE:

SUBMITTED:

GEMMA L. OLAN
CHIEF - PLANNING AND DESIGN SECTION

DATE:

RECOMMENDED:

ARIEL V. ARMEDILLA
ASSISTANT DISTRICT ENGINEER

DATE:

APPROVED:

SONIA D. PAGLICAUAN
DISTRICT ENGINEER

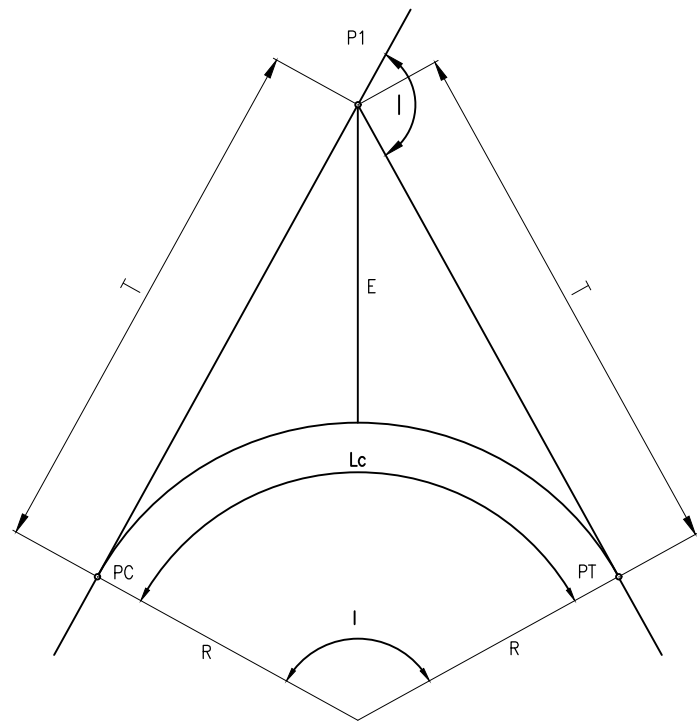
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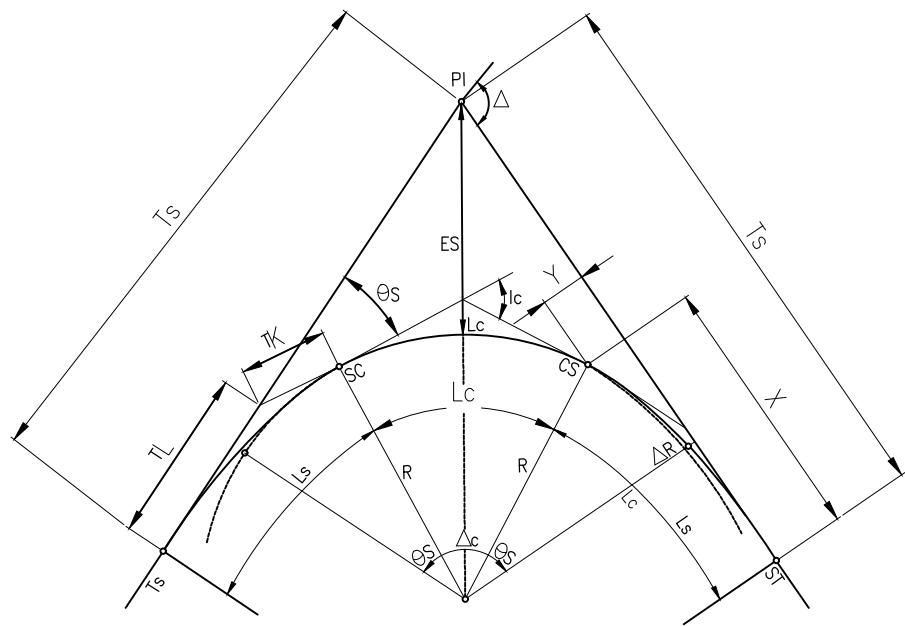
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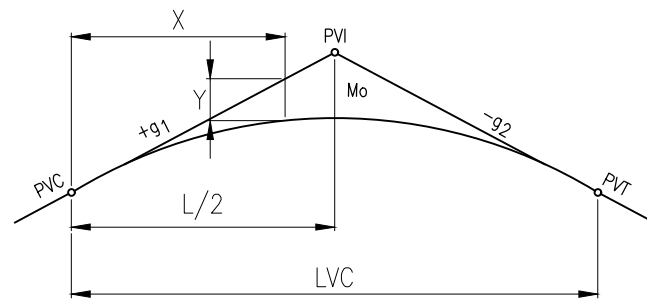
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A SIMPLE CURVE (CIRCULAR)
3 SCALE NTS



B HORIZONTAL CURVE W/ (CLOTHOID SPIRAL)
3 SCALE NTS

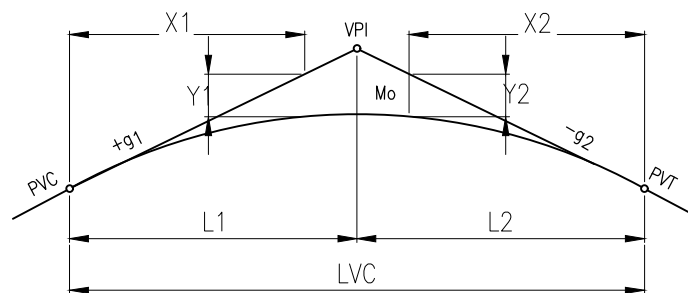


B-1 SYMMETRICAL
3 SCALE NTS

FORMULA:

$$Mo = \frac{LVC(g_2 - g_1)}{800}$$

$$Y = \frac{X^2 (Mo)}{(L/2)^2}$$



B-2 UNSYMMETRICAL
3 SCALE NTS

FORMULA:

$$Mo = \frac{L1L2(g_2 - g_1)}{200LVC}$$

$$Y1 = \frac{(Mo)(X1)^2}{(L1)^2}$$

$$Y2 = \frac{(Mo)(X2)^2}{(L2)^2}$$

WHERE:

VPI = POINT OF VERTICAL INTERSECTION

PVC = POINT OF VERTICAL CURVE

PVT = POINT OF VERTICAL TANGENCY

LVC = LENGTH OF VERTICAL TANGENCY

g1, g2 = GRADIENT

Mo = MIDDLE ORDINATE

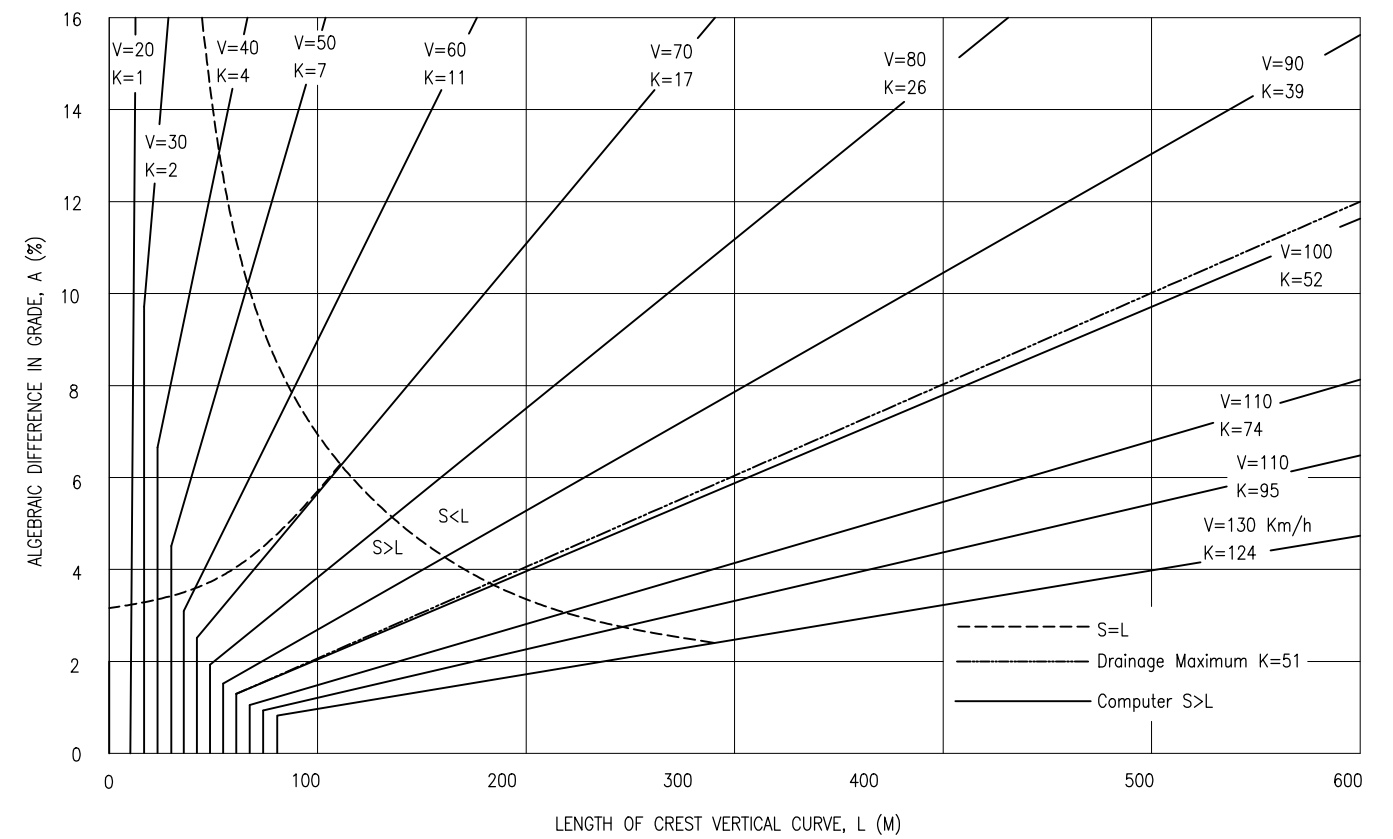
X1, X2 = DISTANCE FROM PVC OR PVT TO ANY POINT OF CURVE

Y1, Y2 = VERTICAL OFFSET W/ RESPECT TO DISTANCE X

NOTE:

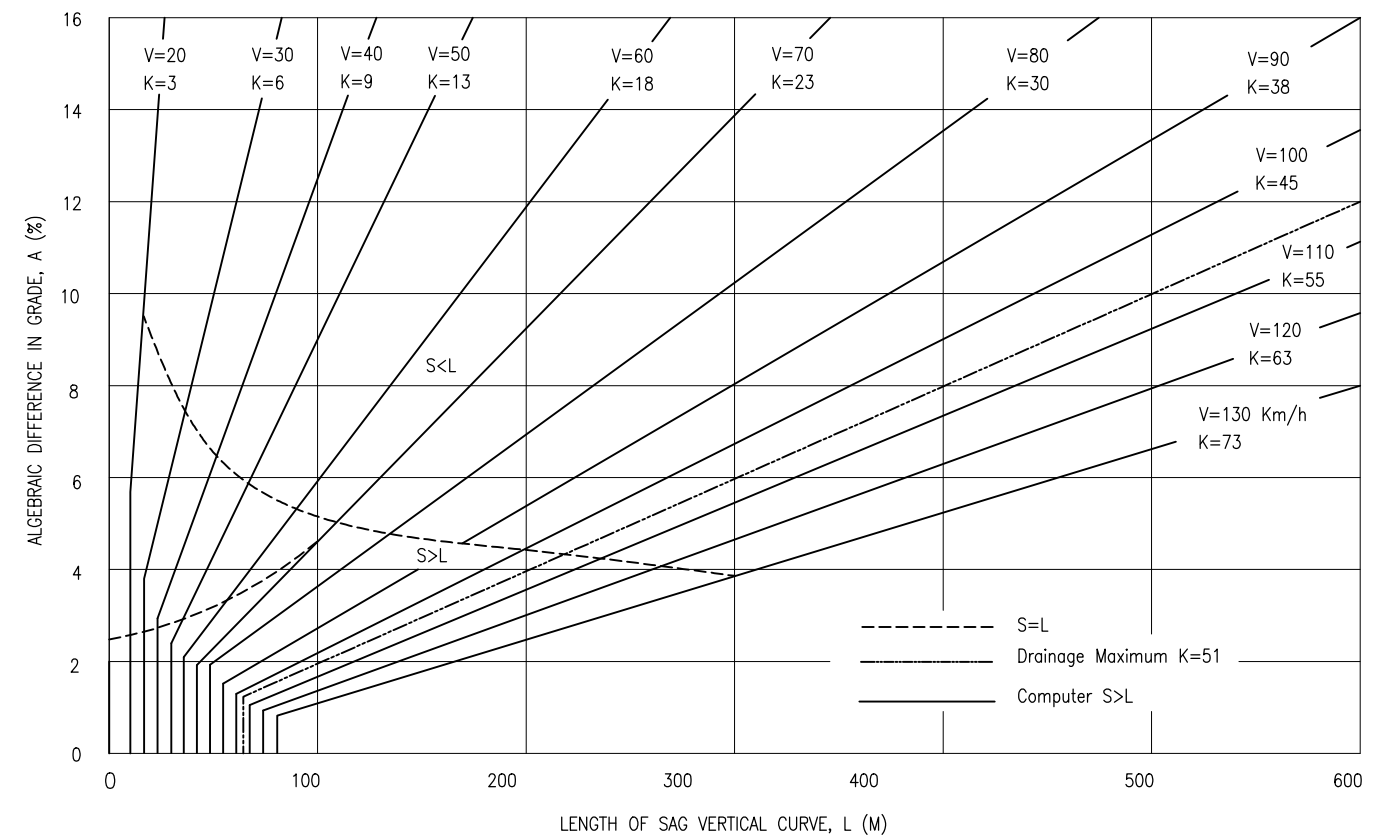
NO VERTICAL CURVE IS REQUIRED WHEN THE ALGEBRAIC DIFFERENCE IN GRADES IS LESS THAN 0.50 %

D VERTICAL CURVE
3 SCALE NTS



CREST VERTICAL CURVES

BASED ON MINIMUM STOPPING SIGHT DISTANCE (HEADLIGHT DISTANCE)



SAG VERTICAL CURVES

BASED ON MINIMUM STOPPING SIGHT DISTANCE (HEADLIGHT DISTANCE)

FORMULA:

$$LVC = KA$$

$$A = G_2 - G_1$$

LEGEND:

A - ALGEBRAIC DIFFERENCE OF GRADIENTS (%)
K - RATE OF VERTICAL CURVATURE

E DESIGN CONTROLS VERTICAL CURVES
3 SCALE NTS

1.0 SPECIFICATIONS & REFERENCE

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

1.2 DPWH DESIGN GUIDELINES AND CRITERIA STANDARDS 2015 EDITION AS REFERENCE.

STD-H ROAD GEOMETRIC DESIGN, HOR. AND VERT. CURVES
SCALE AS SHOWN



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGIONAL OFFICE No. IV-A
BATANGAS 2ND DISTRICT
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KUMINTANG ILAYA, BATANGAS CITY

PROJECT NAME AND LOCATION:

CONCRETING OF BRGY. NAGTOCTOC FMR, BRGY.
NAGTOCTOC, LOBO, BATANGAS

LOBO, BATANGAS

SHEET CONTENT:

GEOMETRIC DESIGN STANDARD
HORIZONTAL AND VERTICAL

DRAFTED:

CHARLIE M. PEREZ
ENGINEER II

PREPARED:

CHRISTIAN S. BAGSIT
ENGINEER II

REVIEWED:

BRYAN EDWARD R. ANDAL
ENGINEER II

DATE:

SUBMITTED:

GEMMA L. OLAN
CHIEF, PLANNING AND DESIGN SECTION

DATE:

RECOMMENDED:

ARIEL V. ARMEDILLA
ASSISTANT DISTRICT ENGINEER

DATE:

APPROVED:

SONIA D. PAGLICAUAN
DISTRICT ENGINEER

DATE:

SET NO.

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SHEET NO.

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SCHEDULE OF EMBANKMENT FROM ROADWAY EXCAVATION						
STATION	LENGTH	AREA	AVE. AREA	VOLUME		
STA. 0+000.00	0.00	0.01	0.00	0.00		
STA. 0+020.00	20.00	4.11	2.06	41.20		
STA. 0+040.00	20.00	7.46	5.79	115.70		
STA. 0+060.00	20.00	0.00	3.73	74.60		
STA. 0+080.00	20.00	0.01	0.01	0.10		
STA. 0+100.00	20.00	0.09	0.05	1.00		
STA. 0+120.00	20.00	1.71	0.90	18.00		
STA. 0+140.00	20.00	0.99	1.35	27.00		
STA. 0+160.00	20.00	0.00	0.50	9.90		
STA. 0+180.00	20.00	0.00	0.00	0.00		
STA. 0+200.00	20.00	0.00	0.00	0.00		
STA. 0+220.00	20.00	0.00	0.00	0.00		
STA. 0+240.00	20.00	0.00	0.00	0.00		
STA. 0+260.00	20.00	0.00	0.00	0.00		
Volume Fill =				287.50 cu.m.		
Cross Drain	LENGTH	WIDTH	THICKNESS		VOLUME	
STA. 0+040.00	2.80	x 5.00	x 1.00	=	14.00	
Volume Fill =				14.00 cu.m.		
Total Volume Fill =				301.50 cu.m.		

Schedule of Aggregate Subbase Course (Two-Lane Roadway)				
STATION	LENGTH	WIDTH	THK	VOLUME
STA. 0+000.00	0.00	0.00	0.00	0.00
STA. 0+020.00	20.00	5.00	0.20	20.00
STA. 0+040.00	20.00	5.00	0.20	20.00
STA. 0+060.00	20.00	5.00	0.20	20.00
STA. 0+080.00	20.00	5.00	0.20	20.00
STA. 0+100.00	20.00	5.00	0.20	20.00
STA. 0+120.00	20.00	5.00	0.20	20.00
STA. 0+140.00	20.00	5.00	0.20	20.00
STA. 0+160.00	20.00	5.00	0.20	20.00
STA. 0+180.00	20.00	5.00	0.20	20.00
STA. 0+200.00	20.00	5.00	0.20	20.00
STA. 0+220.00	20.00	5.00	0.20	20.00
STA. 0+240.00	20.00	5.00	0.20	20.00
STA. 0+260.00	20.00	5.00	0.20	20.00

Volume = 260.00 cu.m.

ELEMENTS OF VERTICAL CURVE									
No.	Profile Curve Type	PVI Station	PVI Elevation (m)	Grade In	Grade Out	A (Grade Change)	Profile Curve Length (m)	K Value	Curve Radius (m)
PVI START		0+000.00	154.023		-6.00%				
PVI 1	Crest	0+043.17	151.433	-6.00%	-14.50%	8.50%	60.00	7.059	705.882
PVI 2	Crest	0+160.83	134.372	-14.50%	-18.00%	3.50%	62.43	17.836	1783.621
PVI 3	Sag	0+279.26	113.055	-18.00%	-14.56%	3.44%	60.00	17.444	1744.425
PVI END		0+368.16	100.111	-14.56%					

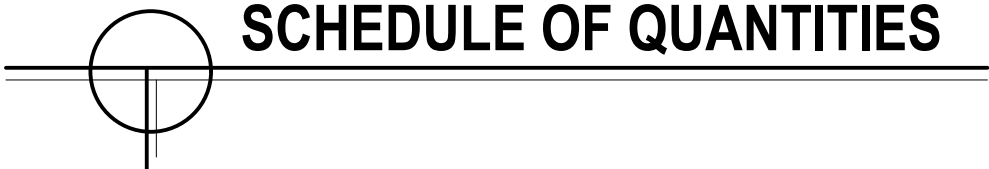
ELEMENTS OF HORIZONTAL CURVE															
PI No.	PI Station	Coordinates		Azimuth	Distance (m)	Radius (m)	Included Angle	T (External Tangent)	Es (External Secant)	Chord Length (m)	Chord Direction	PC	PT	Lc (m)	D
		Northing	Easting												
POT				208° 56' 00"	14.44										
PI-1	0+014.44m	1,512,688.46	527,688.41	222° 15' 36"	29.08	80.80	13°19'36"	9.44	0.55	18.75	N35° 35' 48"E	0+005.00	0+023.79	18.79	14°10'57"
PI-2	0+043.43m	1,512,709.98	527,707.97	111° 25' 54"	28.95	10.84	110°49'42"	15.71	8.25	17.84	N13° 09' 15"W	0+027.72	0+048.68	20.96	105°45'38"
PI-3	0+061.91m	1,512,720.56	527,681.02	96° 06' 33"	36.23	21.75	15°19'21"	2.93	0.20	5.80	N76° 13' 46"W	0+058.98	0+064.80	5.82	52°41'52"
PI-4	0+098.10m	1,512,724.41	527,645.00	82° 47' 01"	34.67	173.71	13°19'32"	20.29	1.18	40.31	S89° 26' 47"W	0+077.81	0+118.21	40.40	06°35'48"
PI-5	0+142.73m	1,512,718.78	527,600.54	123° 03' 17"	37.43	50.37	40°16'16"	18.47	3.28	34.68	N77° 04' 51"W	0+124.26	0+159.67	35.41	22°44'55"
PI-6	0+190.86m	1,512,745.87	527,558.92	96° 02' 10"	14.53	50.91	27°01'07"	12.23	1.45	23.79	N70° 27' 16"W	0+178.62	0+202.63	24.01	22°30'26"
PI-7	0+211.14m	1,512,748.05	527,538.30	107° 19' 36"	20.18	62.83	11°17'26"	6.21	0.31	12.36	N78° 19' 07"W	0+204.93	0+217.31	12.38	18°14'19"
PI-8	0+234.92m	1,512,755.14	527,515.55	177° 54' 30"	17.00	5.14	70°34'54"	3.64	1.16	5.94	N37° 22' 57"W	0+231.28	0+237.62	6.34	222°46'03"
PI-9	0+264.18m	1,512,785.33	527,514.45	107° 44' 15"	42.12	18.80	70°10'15"	13.21	4.18	21.62	N37° 10' 38"W	0+250.98	0+274.00	23.03	60°56'47"
PI-10	0+311.24m	1,512,800.70	527,466.40	132° 52' 22"	27.05	37.35	25°08'08"	8.33	0.92	16.26	N59° 41' 41"W	0+302.92	0+319.30	16.39	30°40'47"

Schedule of Aggregate Subbase Course Two-Lane Roadway - (Shoulder)				
STATION	LENGTH	Area	No. of Sides	VOLUME
STA. 0+000.00	0.00	0.200	0.00	0.00
STA. 0+020.00	20.00	0.200	2.00	8.00
STA. 0+040.00	20.00	0.200	1.00	4.00
STA. 0+060.00	13.20	0.200	2.00	5.28
STA. 0+080.00	20.00	0.200	2.00	8.00
STA. 0+100.00	20.00	0.200	2.00	8.00
STA. 0+120.00	20.00	0.200	2.00	8.00
STA. 0+140.00	20.00	0.200	1.00	4.00
STA. 0+160.00	20.00	0.200	2.00	8.00
STA. 0+180.00	20.00	0.200	2.00	8.00
STA. 0+200.00	20.00	0.200	2.00	8.00
STA. 0+220.00	20.00	0.200	2.00	8.00
STA. 0+240.00	20.00	0.200	2.00	8.00
STA. 0+260.00	20.00	0.200	2.00	8.00
Volume		= 93.28 cu.m.		

Schedule of Portland Cement Concrete Pavement (Unreinforced), 0.20m thk, 14 days				
STATION	LENGTH	Width	Area	Remarks
STA. 0+000.00	0.00	5.000	0.00	
STA. 0+020.00	20.00	5.000	100.00	
STA. 0+040.00	20.00	5.000	100.00	
STA. 0+060.00	20.00	5.000	100.00	
STA. 0+080.00	20.00	5.000	100.00	
STA. 0+100.00	20.00	5.000	100.00	
STA. 0+120.00	20.00	5.000	100.00	
STA. 0+140.00	20.00	5.000	100.00	
STA. 0+160.00	20.00	5.000	100.00	
STA. 0+180.00	20.00	5.000	100.00	
STA. 0+200.00	20.00	5.000	100.00	
STA. 0+220.00	20.00	5.000	100.00	
STA. 0+240.00	20.00	5.000	100.00	
STA. 0+260.00	20.00	5.000	100.00	

Total Area = 1,300.00 sq.m

TABLE OF EXISTING BENCHMARKS				
BM	NORTHING	EASTING	ELEVATION	REMARKS
1	1,512,675.82	527,691.66	155.58	BM1



SCHEDULE OF QUANTITIES



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGIONAL OFFICE No. IV-A
BATANGAS 2ND DISTRICT
ENGINEERING OFFICE
KUMINTANG ILAYA, BATANGAS CITY

PROJECT NAME AND LOCATION:

CONCRETING OF BRGY. NAGTOCTOC FMR, BRGY.
NAGTOCTOC, LOBO, BATANGAS

LOBO, BATANGAS

SHEET CONTENT:

SCHEDULE OF QUANTITIES

DRAFTED:

CHARLIE M. PEREZ
ENGINEER II

PREPARED:

CHRISTIAN S. BAGSIT
ENGINEER II

REVIEWED:

BRYAN EDWARD R. ANDAL
ENGINEER II

DATE:

SUBMITTED:

GEMMA L. OLAN
CHIEF - PLANNING AND DESIGN SECTION

DATE:

RECOMMENDED:

ARIEL V. ARMEDILLA
ASSISTANT DISTRICT ENGINEER

DATE:

APPROVED:

SONIA D. PAGLICAUAN
DISTRICT ENGINEER

DATE:

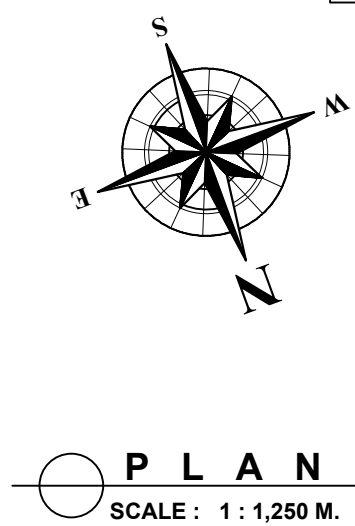
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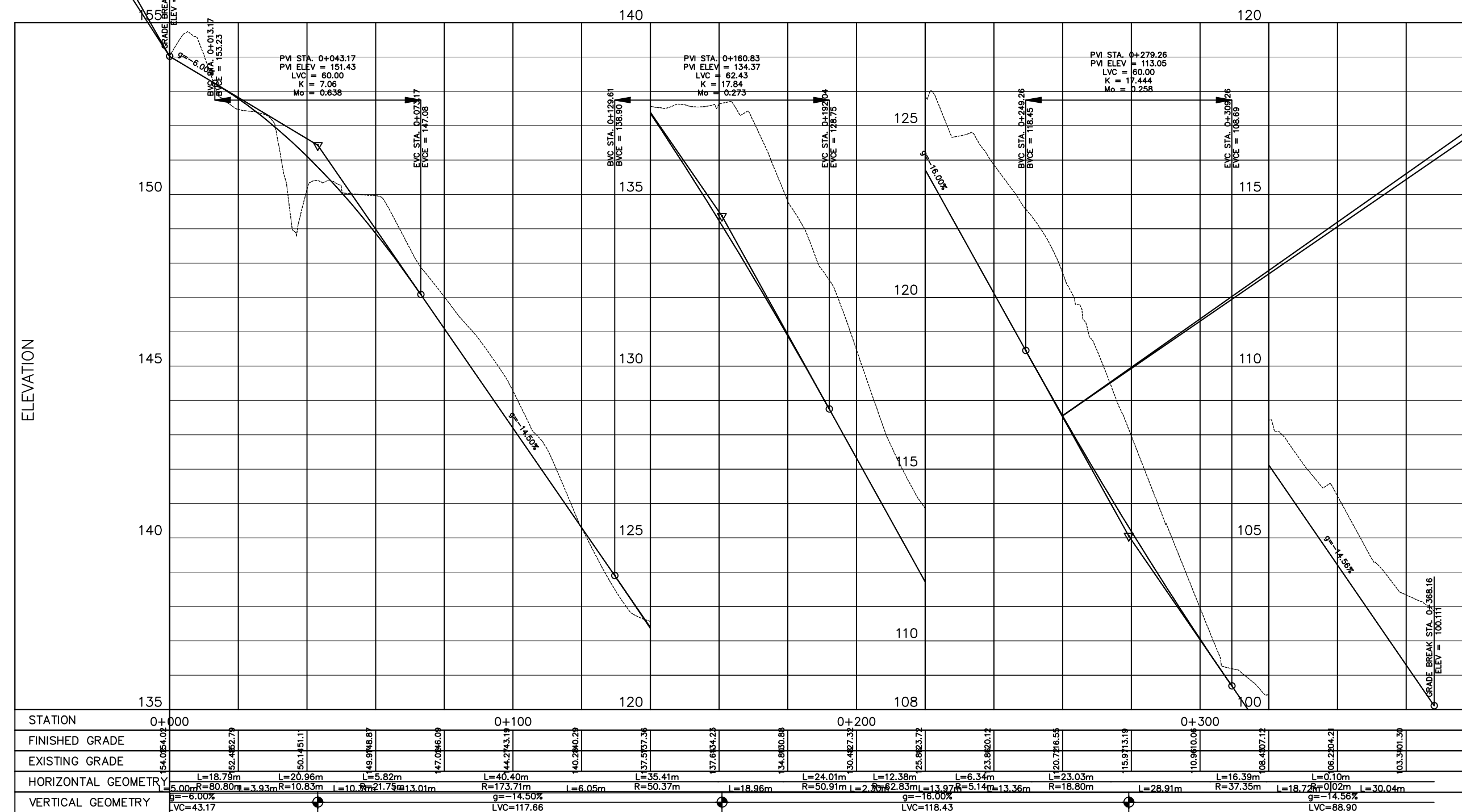
BENCHMARK 1:
BM1
N : 1,512,675.82
E : 527,691.66
ELEV : 155.58 m.



PLAN
SCALE : 1 : 1,250 M.

BEGINNING OF PROJECT
STA. 0+000.00

END OF PROJECT
STA. 0+260.00



PROFILE
SCALE : HOR. 1 : 1,250 M.
VERT. 1 : 250 M.



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PROJECT NAME AND LOCATION:
CONCRETING OF BRGY. NAGTOCTOC FMR, BRGY. NAGTOCTOC, LOBO, BATANGAS

SHEET CONTENT:
PLAN AND PROFILE
STA. 0+000.00 - STA. 0+260.00

DRAFTED:
CHARLIE M. PEREZ
ENGINEER II

PREPARED:
CHRISTIAN S. BAGSIT
ENGINEER II

REVIEWED:
BRYAN EDWARD R. ANDAL
ENGINEER II

DATE:

SUBMITTED:
GEMMA L. OLAN
CHIEF, PLANNING AND DESIGN SECTION

DATE:

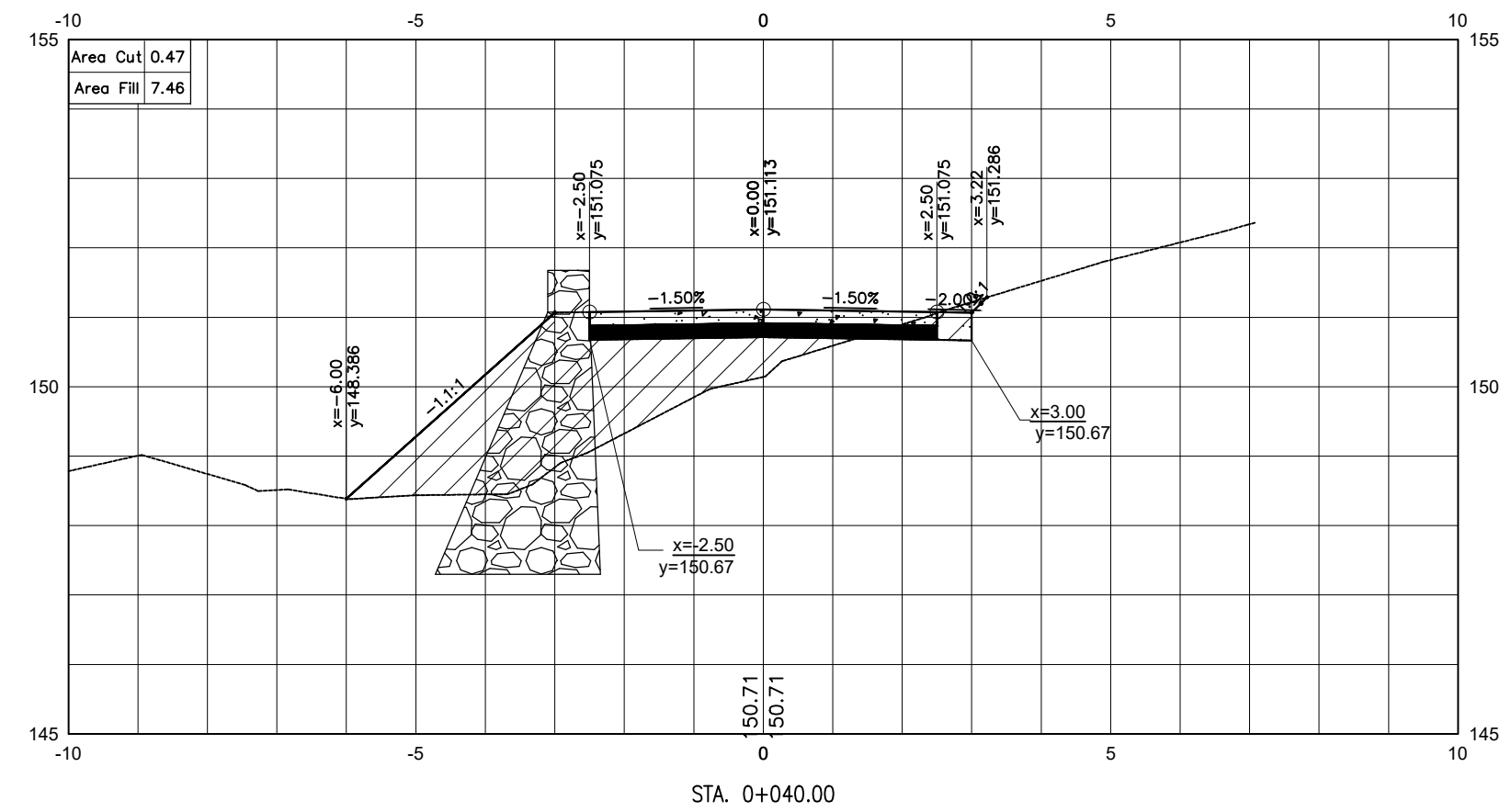
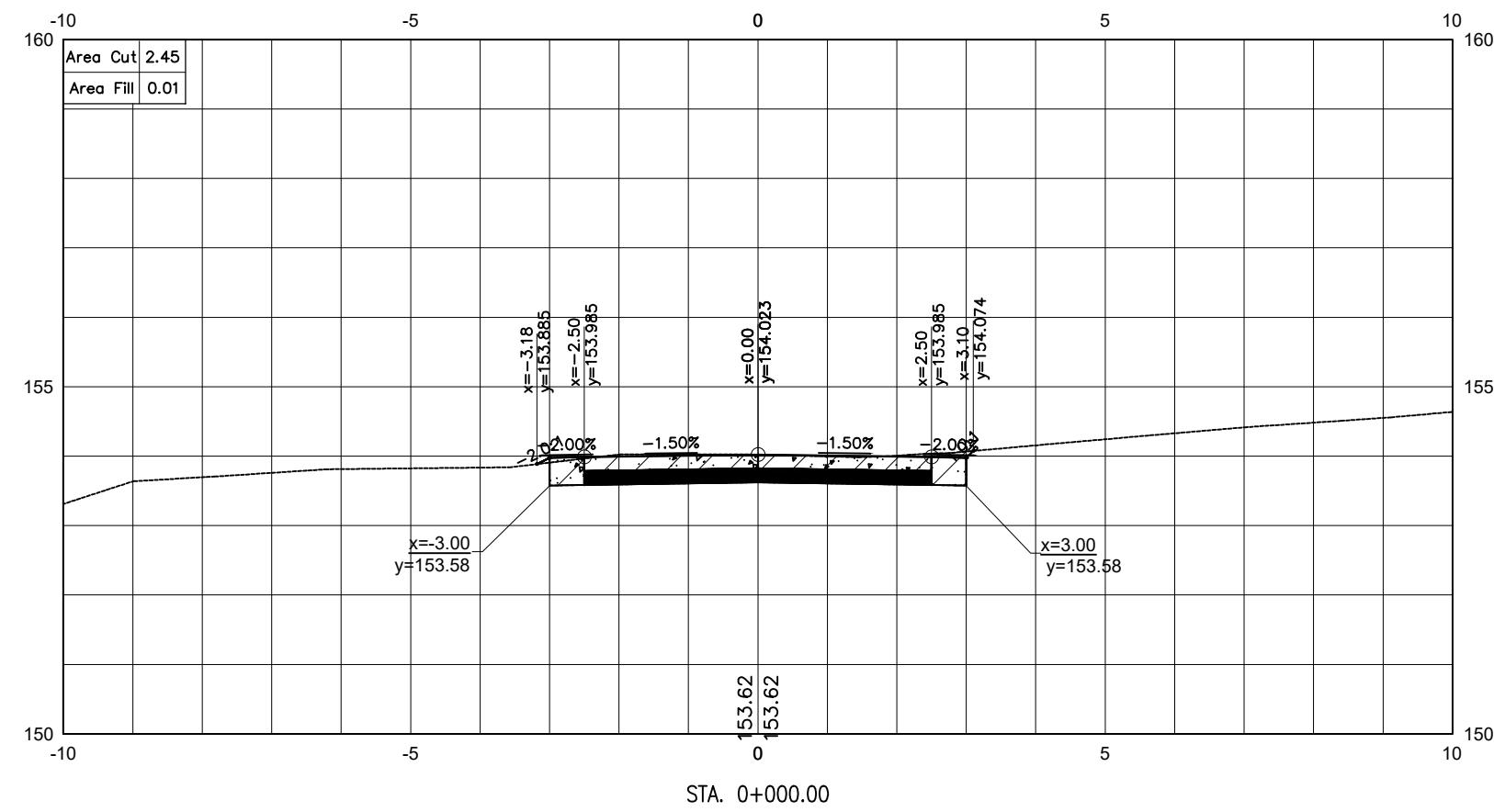
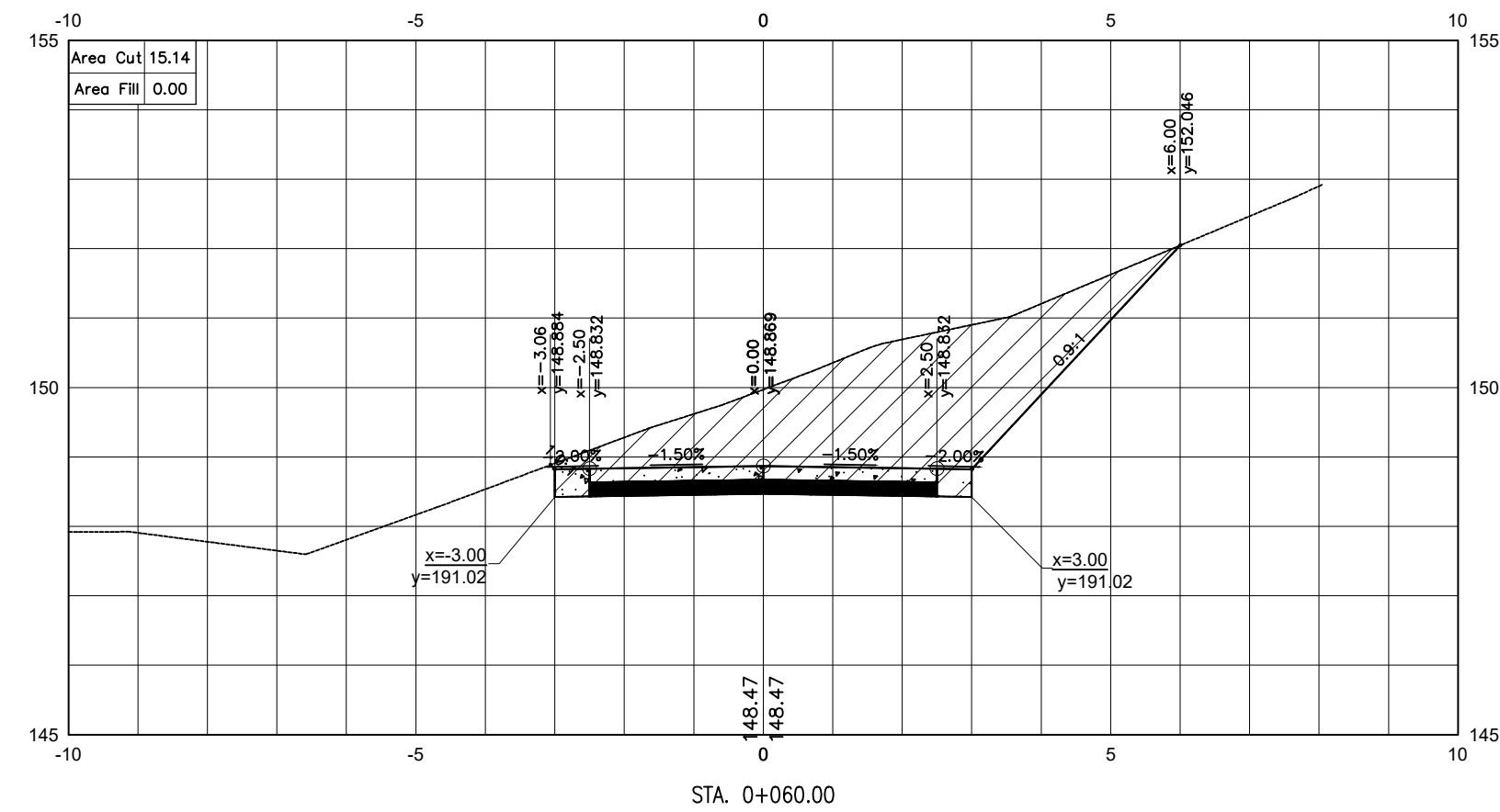
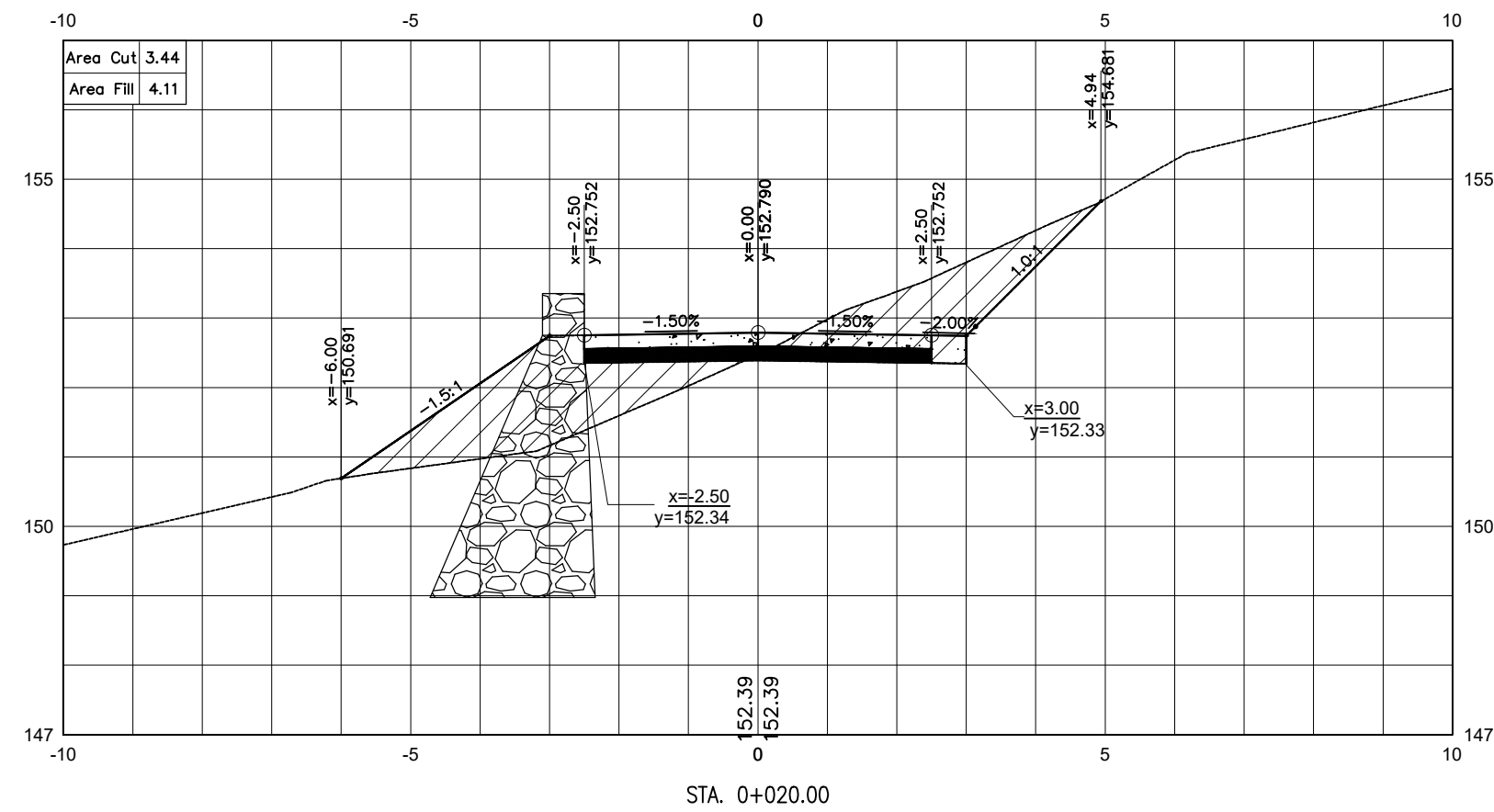
RECOMMENDED:
ARIEL V. ARMEDILLA
ASSISTANT DISTRICT ENGINEER

DATE:

APPROVED:
SONIA D. PAGLICAUAN
DISTRICT ENGINEER

DATE:

SET NO. 8 12 SHEET NO. 16 20



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KUMINTANG ILAYA, BATANGAS CITY

PROJECT NAME AND LOCATION:
CONCRETING OF BRGY. NAGTOCTOC FMR, BRGY.
NAGTOCTOC, LOBO, BATANGAS
LOBO, BATANGAS

SHEET CONTENT:
CROSS SECTION
STA. 0+000.00 - STA. 0+060.00

DRAFTED:
CHARLIE M. PEREZ
ENGINEER II
PREPARED:
CHRISTIAN S. BAGSIT
ENGINEER II

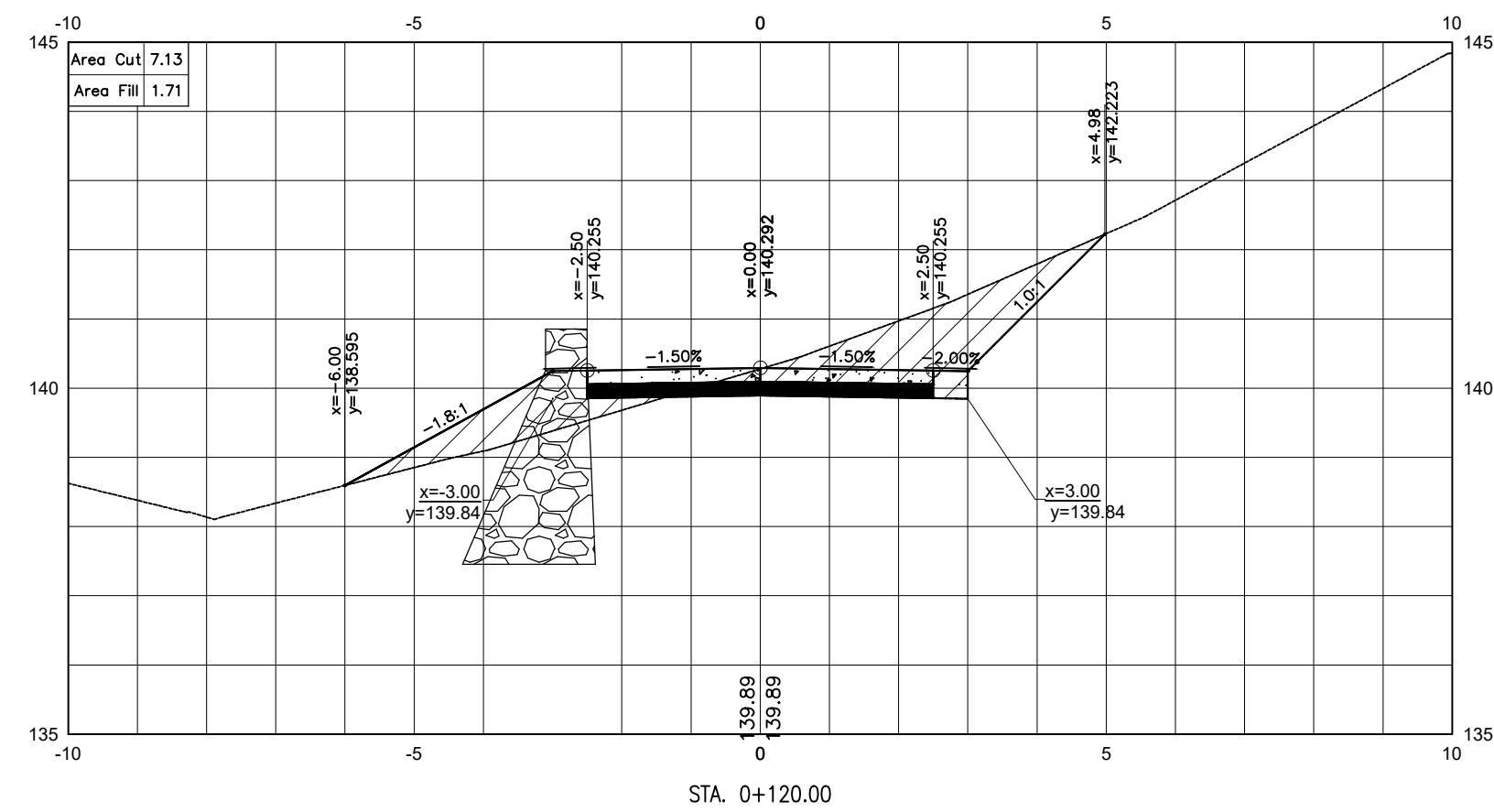
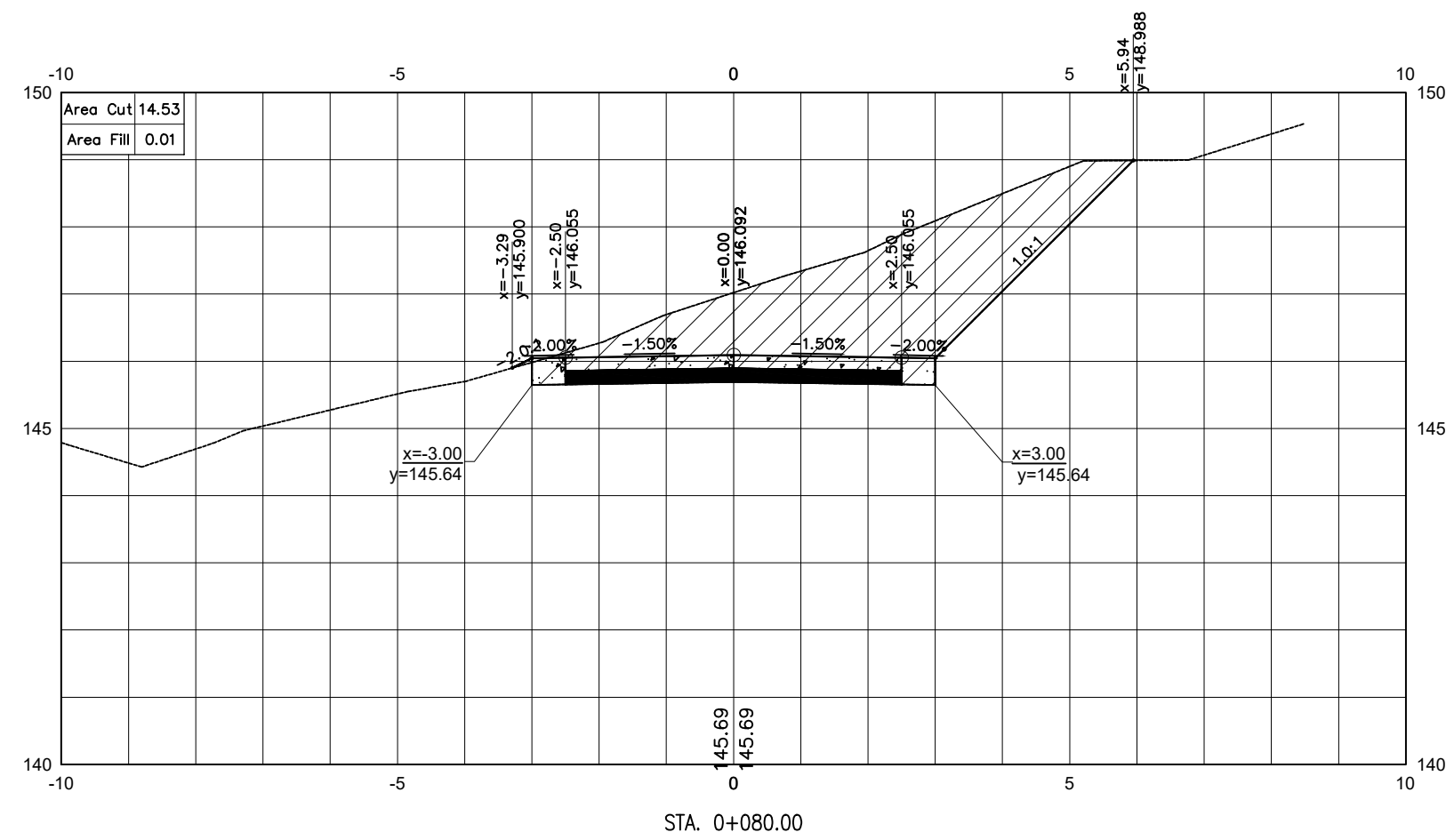
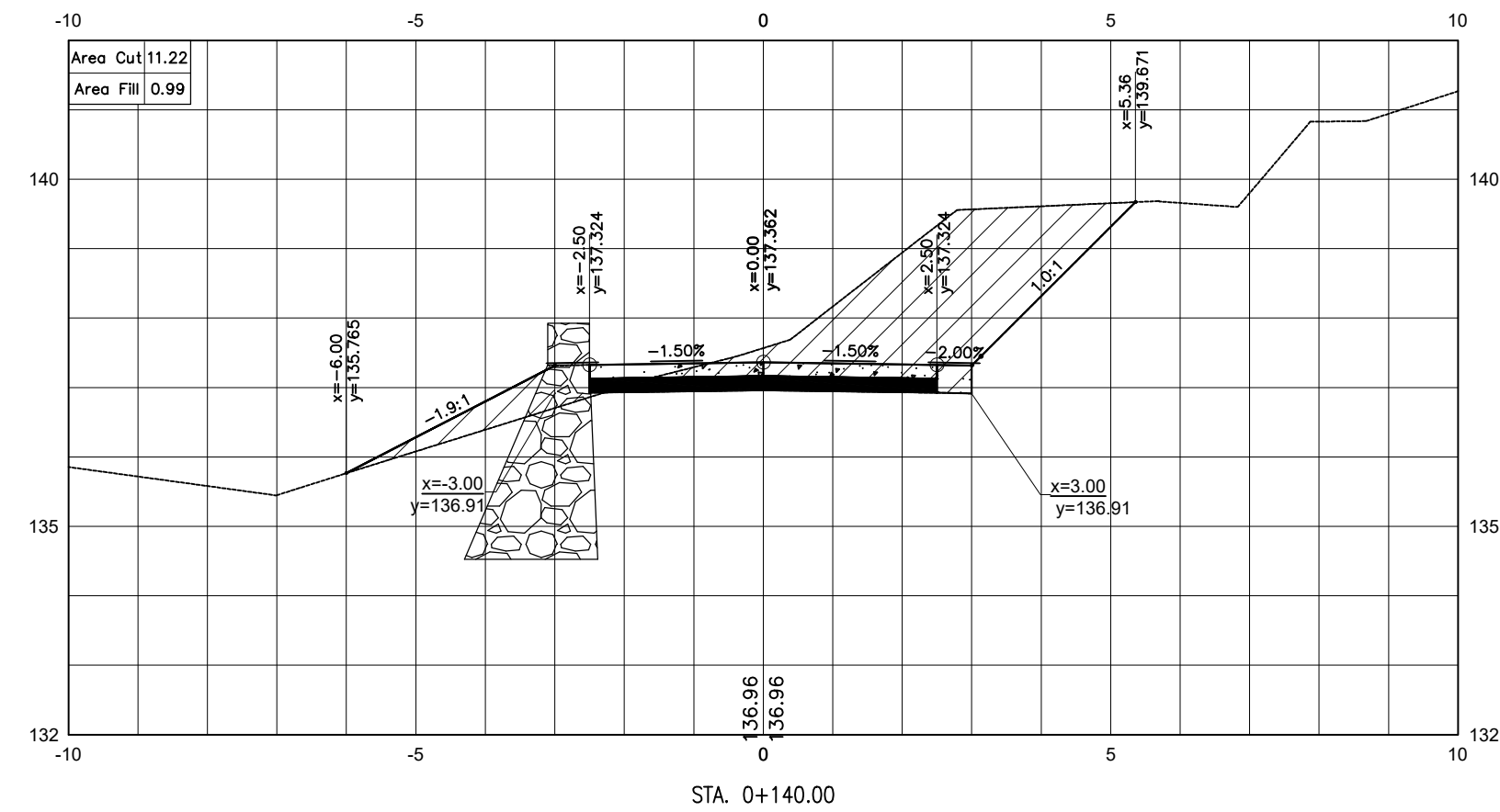
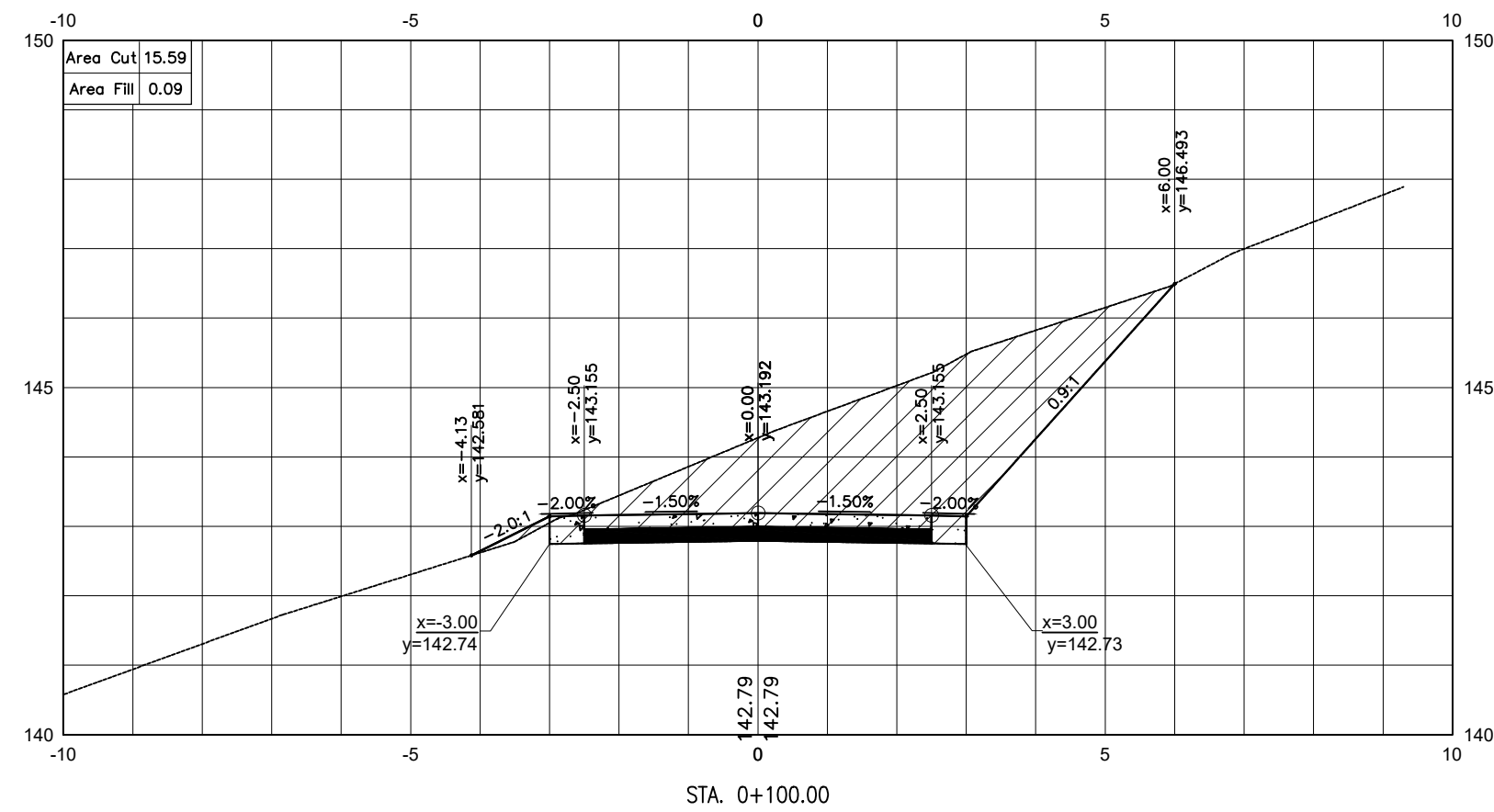
REVIEWED:
BRYAN EDWARD R. ANDAL
ENGINEER II
DATE:

SUBMITTED:
GEMMA L. OLAN
CHIEF, PLANNING AND DESIGN SECTION
DATE:

RECOMMENDED:
ARIEL V. ARMEDILLA
ASSISTANT DISTRICT ENGINEER
DATE:

APPROVED:
SONIA D. PAGLICAUAN
DISTRICT ENGINEER
DATE:

SET NO. SHEET NO.
R 17
9 12 20



REPUBLIC OF THE PHILIPPINES
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ENGINEERING OFFICE
KUMINTANG ILAYA, BATANGAS CITY

PROJECT NAME AND LOCATION:
CONCRETING OF BRGY. NAGTOCTOC FMR, BRGY.
NAGTOCTOC, LOBO, BATANGAS
LOBO, BATANGAS

SHEET CONTENT:
CROSS SECTION
STA. 0+080.00 - STA. 0+140.00

DRAFTED:
CHARLIE M. PEREZ
ENGINEER II
PREPARED:
CHRISTIAN S. BAGSIT
ENGINEER II

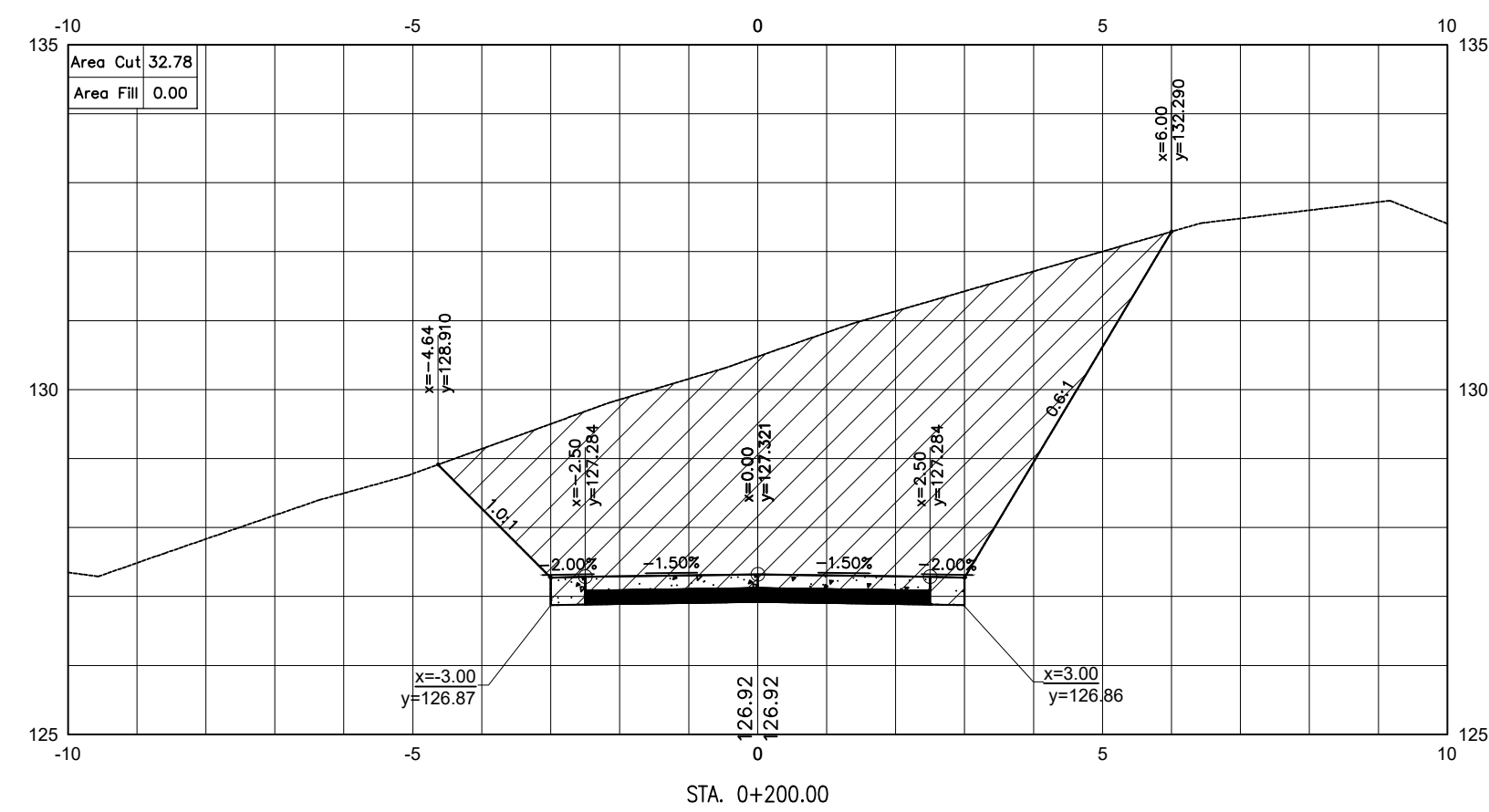
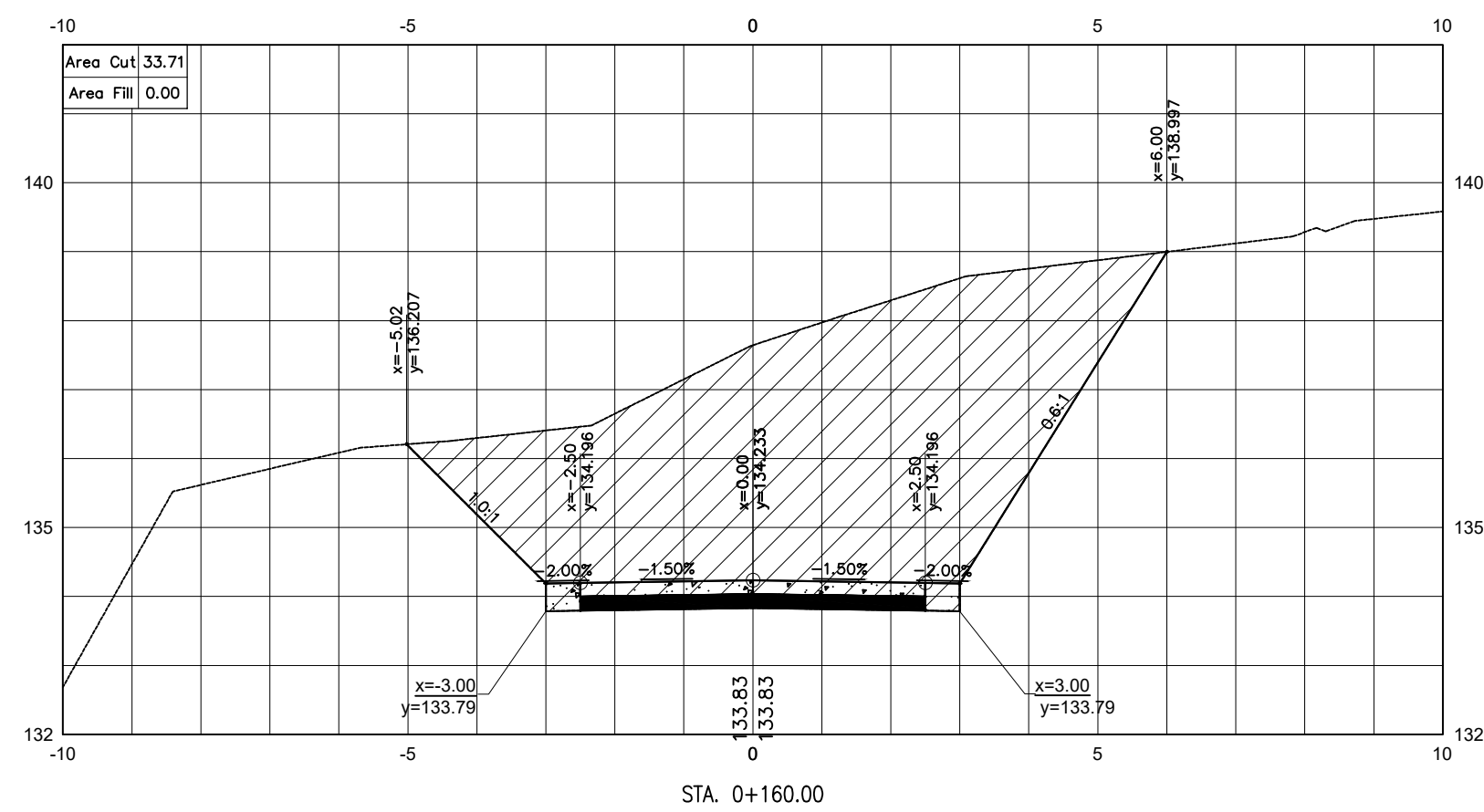
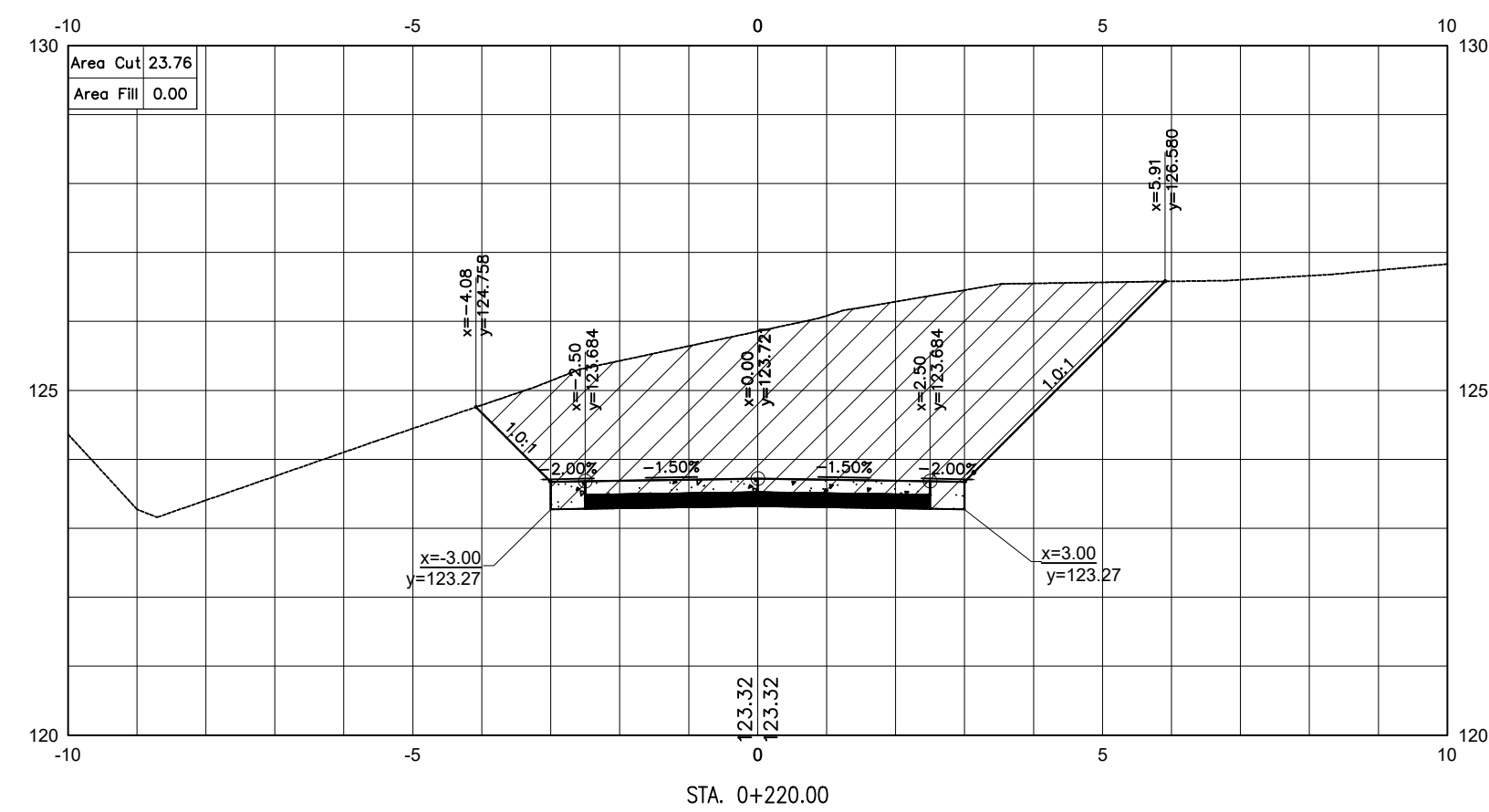
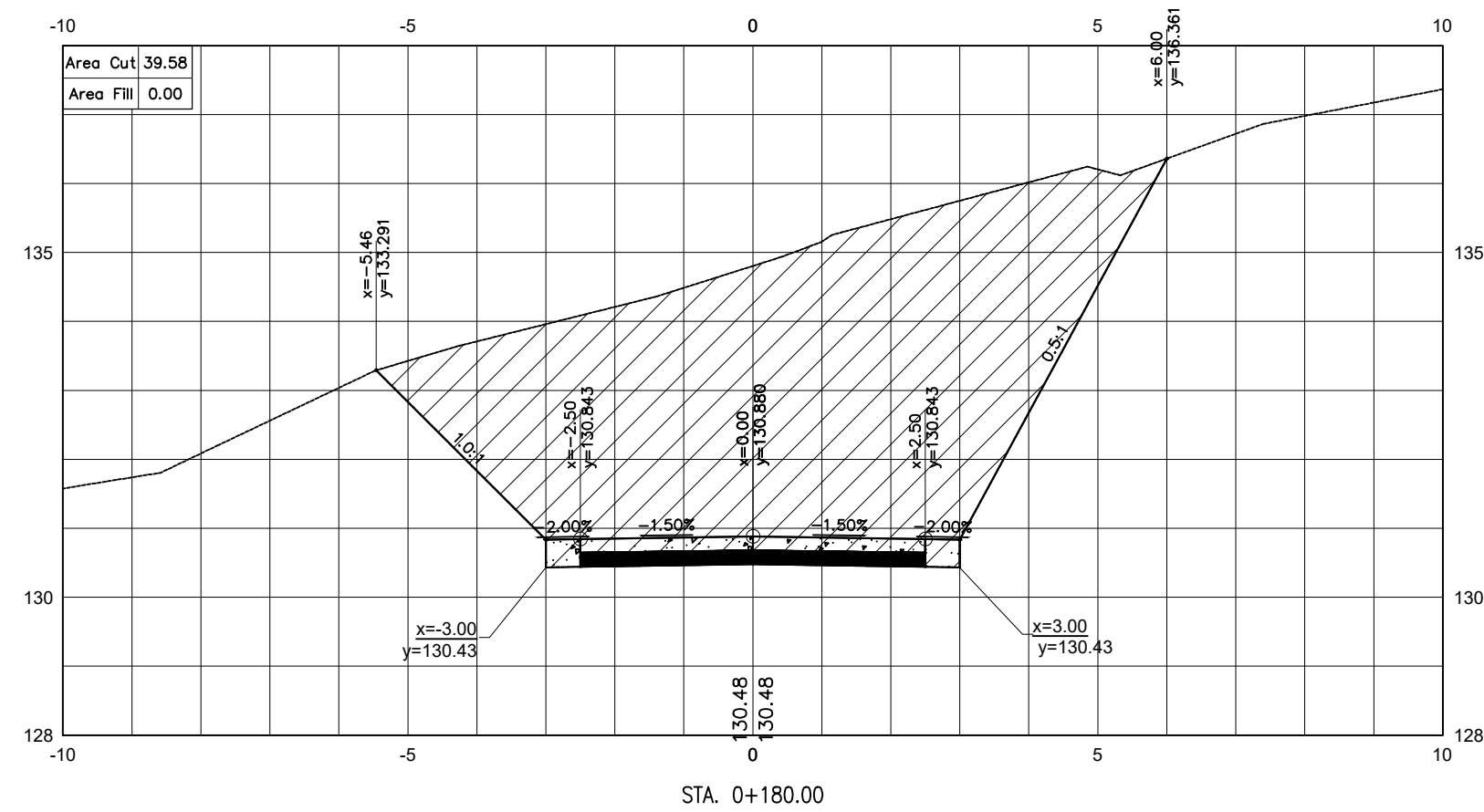
REVIEWED:
BRYAN EDWARD R. ANDAL
ENGINEER II
DATE:

SUBMITTED:
GEMMA L. OLAN
CHIEF, PLANNING AND DESIGN SECTION
DATE:

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ARIEL V. ARMEDILLA
ASSISTANT DISTRICT ENGINEER
DATE:

APPROVED:
SONIA D. PAGLICAUAN
DISTRICT ENGINEER
DATE:

SET NO. SHEET NO.
R 18
10 12 20



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGIONAL OFFICE No. IV-A
BATANGAS 2ND DISTRICT
ENGINEERING OFFICE
KUMINTANG ILAYA, BATANGAS CITY

PROJECT NAME AND LOCATION:
CONCRETING OF BRGY. NAGTOCTOC FMR, BRGY.
NAGTOCTOC, LOBO, BATANGAS
LOBO, BATANGAS

SHEET CONTENT:
CROSS SECTION
STA. 0+160.00 - STA. 0+220.00

DRAFTED:
CHARLIE M. PEREZ
ENGINEER II
PREPARED:
CHRISTIAN S. BAGSIT
ENGINEER II

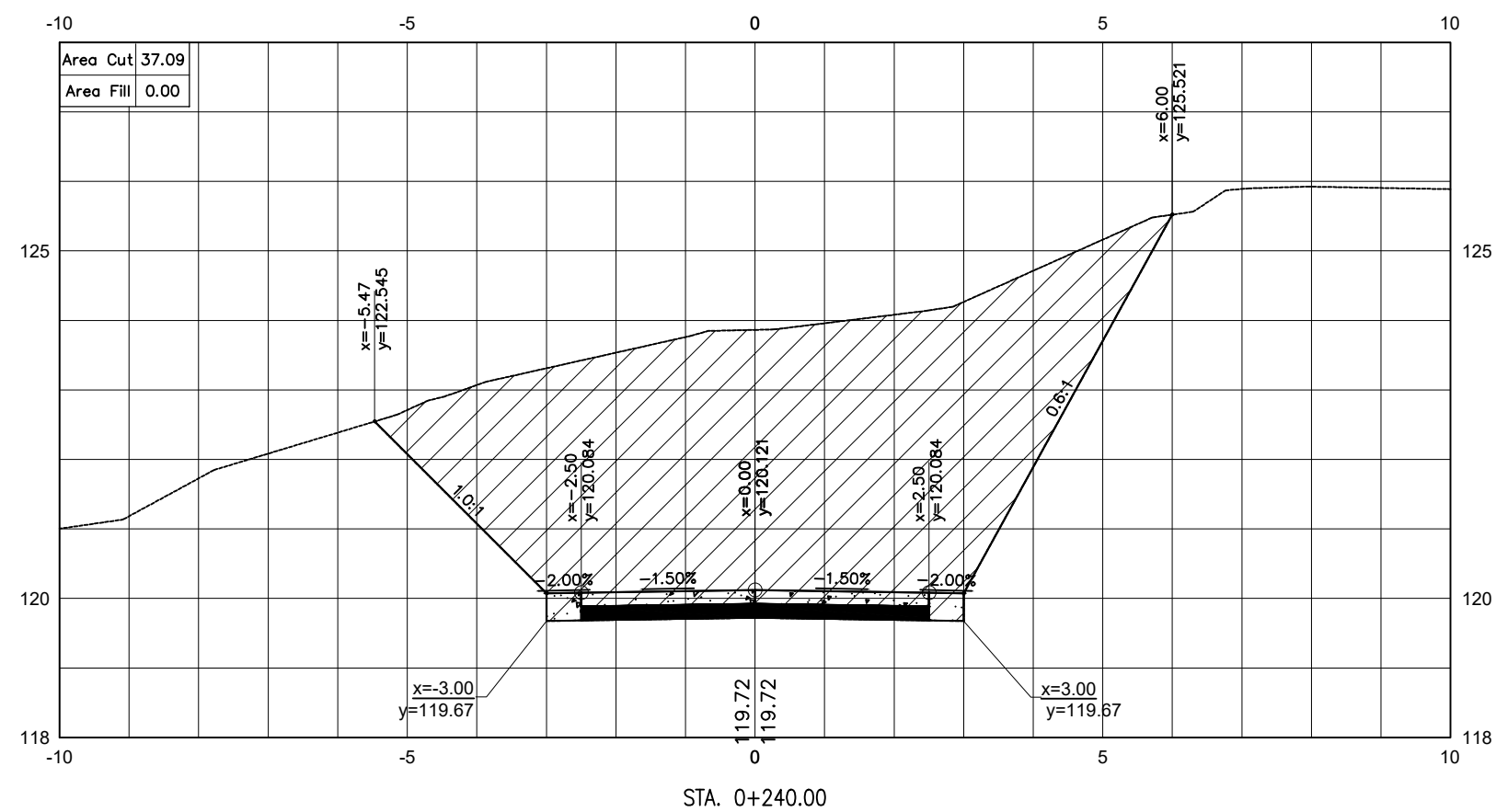
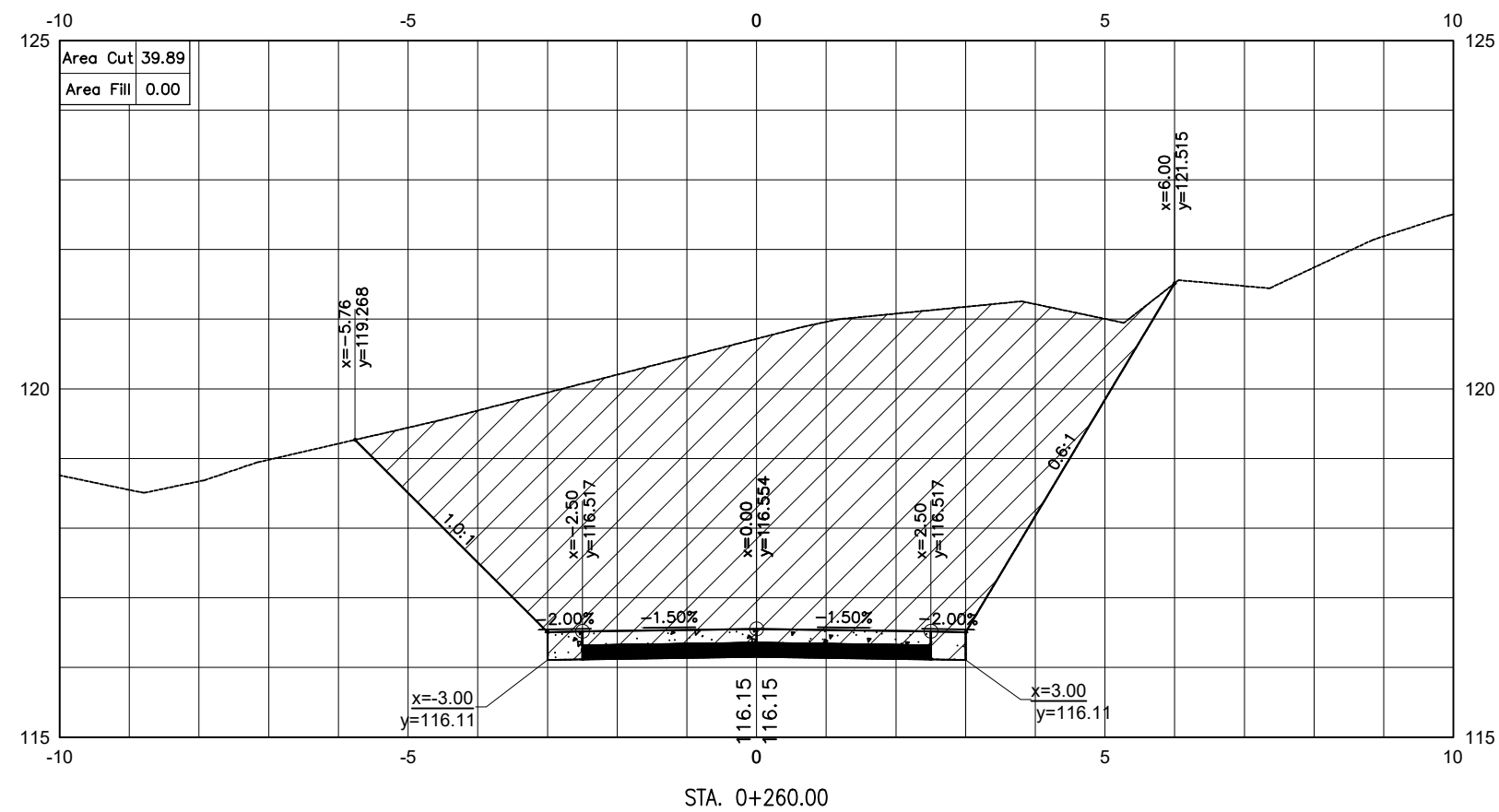
REVIEWED:
BRYAN EDWARD R. ANDAL
ENGINEER II
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GEMMA L. OLAN
CHIEF, PLANNING AND DESIGN SECTION
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DATE:

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SONIA D. PAGLICAUAN
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SET NO. SHEET NO.
R 19
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REPUBLIC OF THE PHILIPPINES
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KUMINTANG ILAYA, BATANGAS CITY

PROJECT NAME AND LOCATION:

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NAGTOCTOC, LOBO, BATANGAS

LOBO, BATANGAS

SHEET CONTENT:

CROSS SECTION
STA. 0+240.00 - STA. 0+260.00

DRAFTED:

CHARLIE M. PEREZ
ENGINEER II

PREPARED:

CHRISTIAN S. BAGSIT
ENGINEER II

REVIEWED:

BRYAN EDWARD R. ANDAL
ENGINEER II

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DATE:

SET NO.

R
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SHEET NO.

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