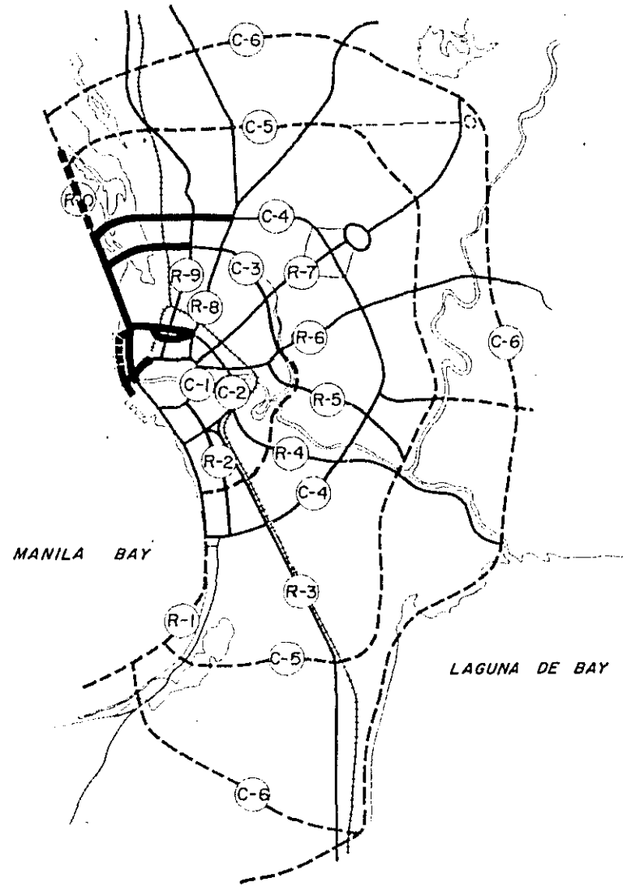
REPUBLIC OF THE PHILIPPINES

METROPOLITAN MANILA TRANSPORT

RADIAL ROAD R–10 FEASIBILITY STUDY

DRAWINGS



AUGUST, 1975

JAPAN INTERNATIONAL COOPERATION AGENCY

REPUBLIC OF THE PHILIPPINES

METROPOLITAN MANILA TRANSPORT

RADIAL ROAD R–10 FEASIBILITY STUDY

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JAPAN INTERNATIONAL COOPERATION AGENCY

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REPOUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R – 10 FEASIBILITY STUDY

ROUTE MAP

SCALE : 1:25 000 | DATE : | SHEET NO. 1/

JAPAN INTERNATIONAL COOPERATION AGENCY

ROAD ELEMENTS

ROUTE	SECTION	NUMBER OF LANES	RIGHT OF WAY(m)	LENGTH(m)
R-10	SOUTH SIDE OF ROXAS BR ~ C-1	6(4)	40	765
	C-1 ~ ZARAGOSA ST	6	40	400
	ZARAGOSA ST~IS OF NEW HARBOR ROAD	6	40	1 585
	IS OF NEW HARBOR ROAD ~ C-2	8	60	636
	C-2 ~ C-3	6	60	1 888
L=6886m	C-3 ~ C-4	6	60	1 612
C-4	BALINTAWAK IC ~ R-9	6	50	1 747
	R-9 ~ WEST SIDE OF FISH POND	6	65	2 003
L=5851m	WEST SIDE OF FISH POND ~ R-10	6	80	2 101
C-3	R-9 ~ WEST SIDE OF FISH POND	6	50	1 240
L=3215m	WEST SIDE OF FISH POND ~ R-10	6	±0	1 975
C-2	ONE WAY NORTH ROUTE GOV FORBES-ESTERO DE VITAS	3	17~20	2 083
	SOUTH ROUTE GOV FORBES-ESTERO DE VITAS	3	17~20	2 136
L=2959m	Tw-Way ESTERO DE VITAS ~ R-10	6	50	823
C-1	EL CANO ST ~ R-10	6	40	508
	R-10 ~ IS OF NEW HARBOR ROAD	6	40	335
L=843m				
NEW HARBOR ROAD L=1083m	2ND ST(PORT AREA)-ZARAGOSA ST	4	25	1 083

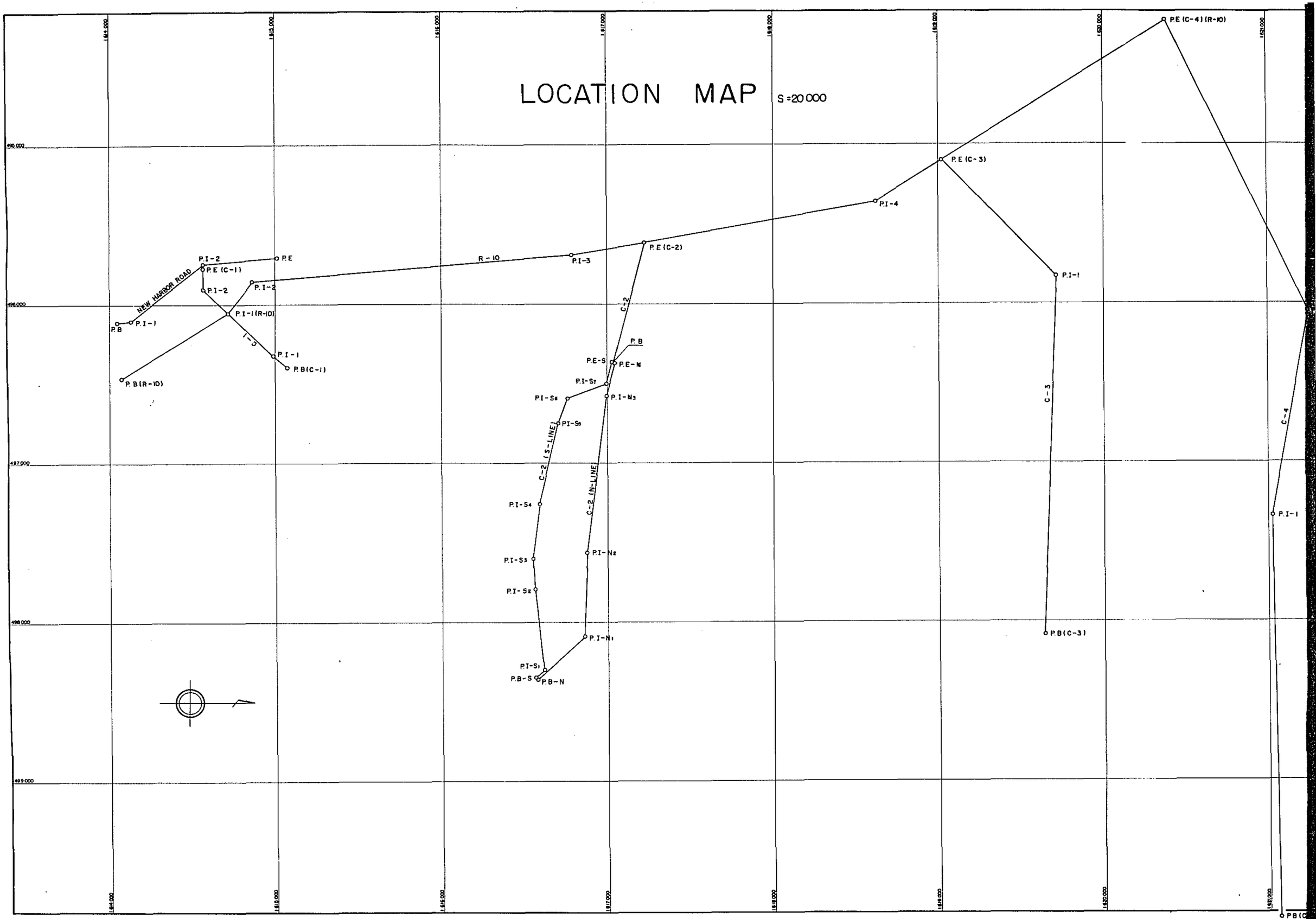
BRIDGE

BRIDGE NO	ROUTE	RIVER	BRIDGE WIDTH	BRIDGE LENGTH	BRIDGE AREA
Br-1	R-10	Fishermen's Creek	43 0	60 0	2580 0
Br-2	R-10	Estero de Vitas	36 3	60 0	2178 0
Br-3	R-10	Malaca River	29 6	100 0	2960 0
Br-4	C-4	Malabon	29 6	120 0	3552 0
Br-5	C-4	Navotas	29 6	60 0	1 776 0
Br-6	C-3	Creek	29 6	90 0	2664 0
Br-7	C-3	Malabon	29 6	60 0	1 776 0
Br-8	C-3	Navotas	29 6	70 0	2072 0
Br-9	C-2	Estero de Vitas	29 6	40 0	1 184 0
Br-10	C-2	Fishermen's Creek	29 6	60 0	1 776 0
Br-11	H-R	Pasig River	19 9	250 0	4 975 0

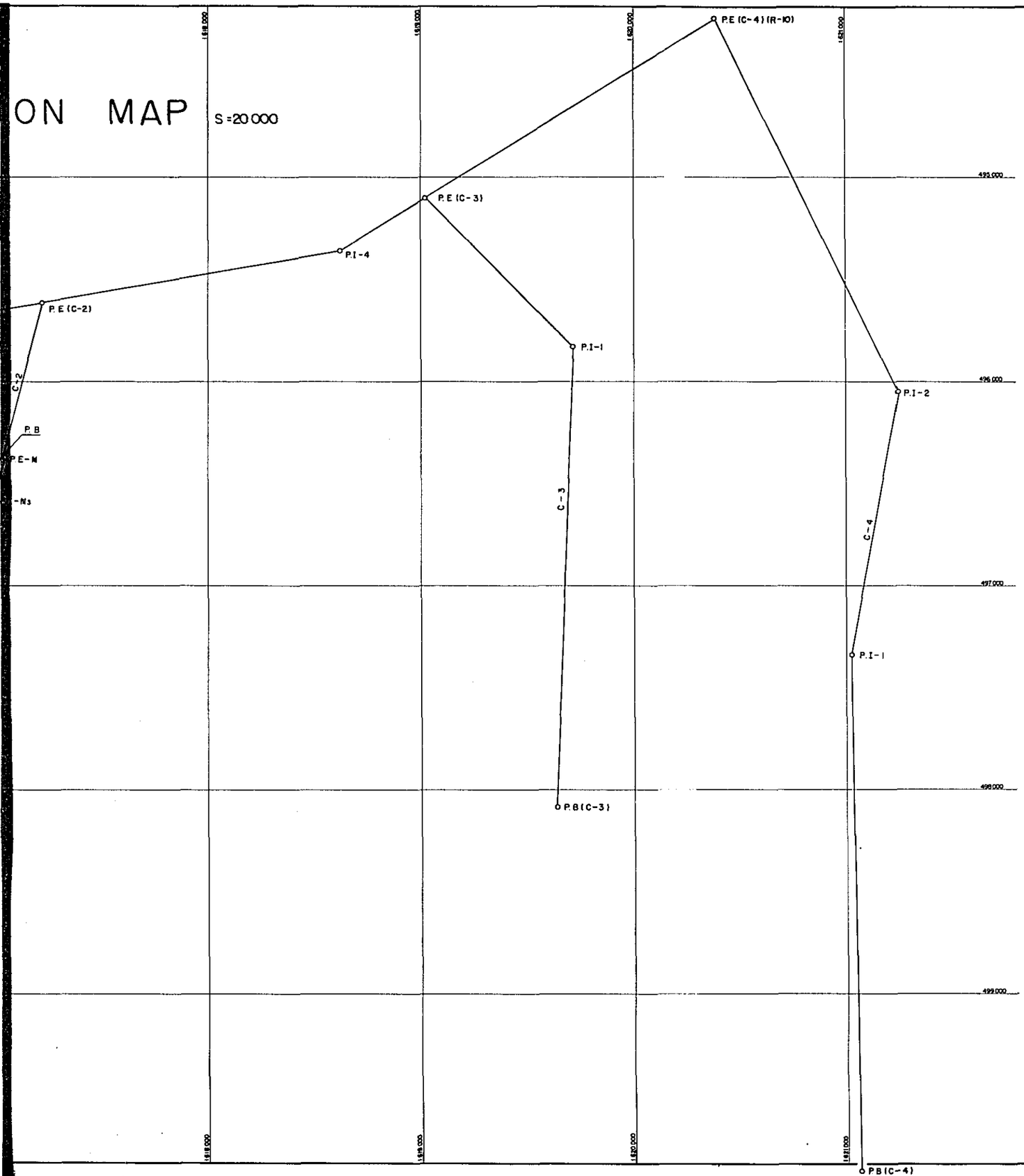
OVER PASSING BRIDGE

BRIDGE NO	ROUTE	CROSS ROAD	BRIDGE WIDTH	BRIDGE LENGTH	BRIDGE AREA
Ov-1	R-10	C-1	14 9	90.0	1 341 0
Ov-2	R-10	C-2	21 6	90 0	1 944 0
Ov-3	R-10	C-3	14 9	90 0	1 341 0

LOCATION MAP S=20000



ON MAP S=20 000



REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

LOCATION MAP

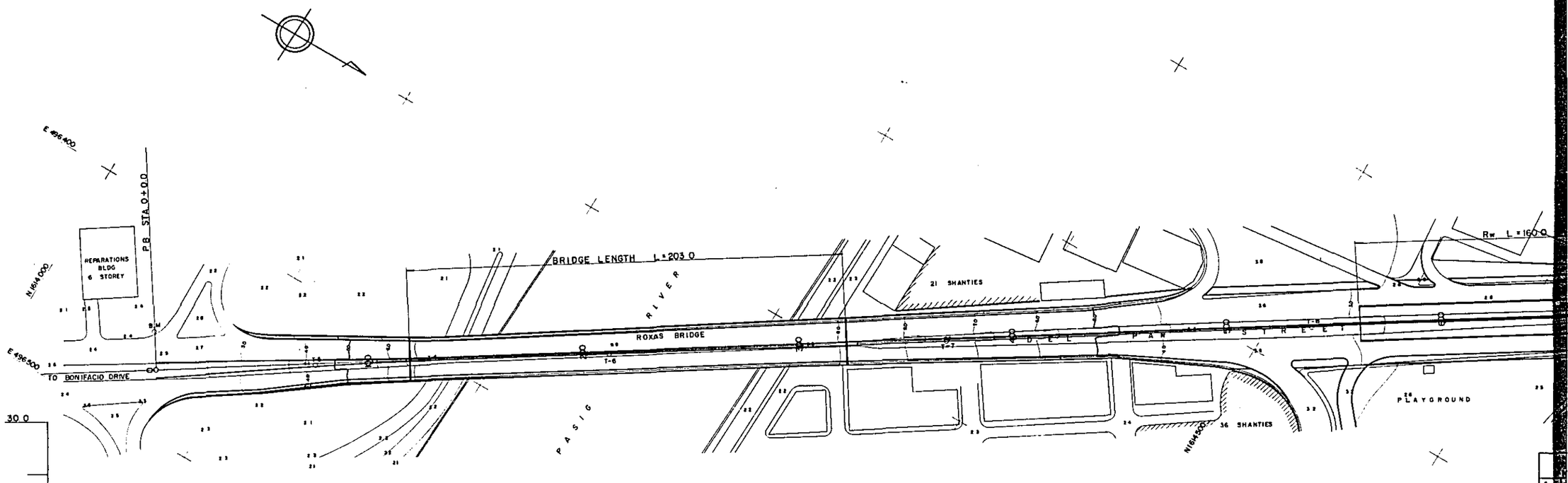
DATE: SHEET NO 2

JAPAN INTERNATIONAL COOPERATION AGENCY

ELEMENTS OF CURVE AND COOADINATES

ROUTE		POINT	COOADINATES N (X)	COOADINATES E (Y)	DISTANCE(L)	DIRECTION ANGLE (∠)	INTERSECTION ANGLE (θ)	RADIUS OF CURVATURE(R)	PARAMETER OF CLOTHOIDE(A)	TOTAL LENGTH OF ROUTE
R-10		P. B	1614 068. 00	496 471. 50						6 886. 14
		PI-1	1614 708. 50	496 051. 00	766. 20	326° 42' 52"	20° 45' 14"	350	140	
		PI-2	1614 856. 50	495 847. 00	252. 03	305° 57' 38"	49° 18' 59"	250	130	
		PI-3	1616 787. 00	495 687. 50	1 937. 08	355° 16' 37"	5° 26' 14"	4 000	—	
		PI-4	1618 620. 00	495 359. 00	1 862. 20	349° 50' 23"	22° 42' 26"	2 000	—	
		P. E	1620380. 50	494 221. 50	2 096. 01	327° 07' 57"				
C-1		P. B	1615 069. 00	496 400. 50						843. 48
		PI-1	1614 981. 50	496 324. 00	116. 23	221° 09' 46"	3° 50' 14"	1 500	—	
		PI-2	1614 564. 20	495 906. 70	590. 15	225° 00' 00"	43° 19' 31"	250	120	
		P. E	1614 559. 90	495 759. 64	147. 12	268° 19' 31"				
C-2	TAYABAS (N-LINE)	P.B-N	1616 569. 45	498 364. 75						2 083. 26
		P.I-N1	1616 855. 50	498 095. 50	392. 84	316° 43' 54"	45° 23' 04"	200	100	
		P.I-N2	1616 868. 00	497 564. 00	531. 65	271° 20' 50"	6° 00' 12"	800	—	
		P.I-N3	1616 995. 00	496 579. 50	992. 66	277° 21' 02"	6° 41' 31"	2 000	—	
		P.E-N	1617 037. 61	496 409. 06	175. 70	284° 02' 33"				
	TAYUMAN (S-LINE)	P.B-S	1616 555. 75	498 350. 18						2 136. 39
		P.I-S1	1616 610. 27	498 298. 86	74. 88	316° 43' 54"	53° 03' 59"	100	70	
		P.I-S2	1616 554. 00	497 792. 00	509. 97	263° 39' 55"	4° 22' 13"	1 000	—	
		P.I-S3	1616 547. 50	497 602. 50	189. 61	268° 02' 08"	8° 10' 37"	600	—	
		P.I-S4	1616 585. 00	497 256. 00	346. 53	276° 12' 45"	5° 44' 17"	800	—	
		P.I-S5	1616 688. 92	496 767. 00	501. 88	281° 57' 02"	8° 23' 27"	600	—	
		P.I-S6	1616 752. 50	496 595. 50	182. 91	290° 20' 28"	49° 36' 37"	150	90	
		P.E-S1	1616 992. 27	496 508. 00	255. 24	339° 57' 05"	55° 54' 32"	150	90	
		P.E-S	1617 018. 23	496 404. 20	107. 00	284° 02' 33"				
	TWO-WAY	P. B	1617 027. 92	496 406. 63	822. 65	284° 02' 33"				822. 67
		P. E	1617 227. 55	495 608. 55						
C-3		P. B	1619 641. 50	498 081. 50						3 214. 77
		PI-1	1619 718. 00	495 832. 50	2 250. 30	271° 56' 53"	45° 11' 19"	1 000	500	
		P. E	1619 026. 02	496 096. 66	1 010. 10	226° 45' 34"				
C-4		P. B	1621 060. 50	499 873. 00						5 851. 22
		PI-1	1621 024. 00	497 346. 50	2 526. 76	269° 10' 20"	10° 33' 06"	2 000	—	
		PI-2	1621 246. 00	496 051. 00	1 314. 38	279° 43' 26"	35° 02' 30"	600	300	
		P. E	1620 380. 50	494 221. 50	2 023. 90	244° 40' 56"				
NEW HARBOR ROAD		P. B	1614 047. 00	496 107. 00						1 082. 72
		PI-1	1614 125. 50	496 105. 50	78. 51	356° 54' 19"	38° 32' 30"	100	70	
		PI-2	1614 559. 50	495 746. 00	563. 56	320° 21' 49"	34° 43' 09"	250	130	
		P. E	1615 007. 00	495 707. 50	449. 15	355° 04' 58"				

PLAN



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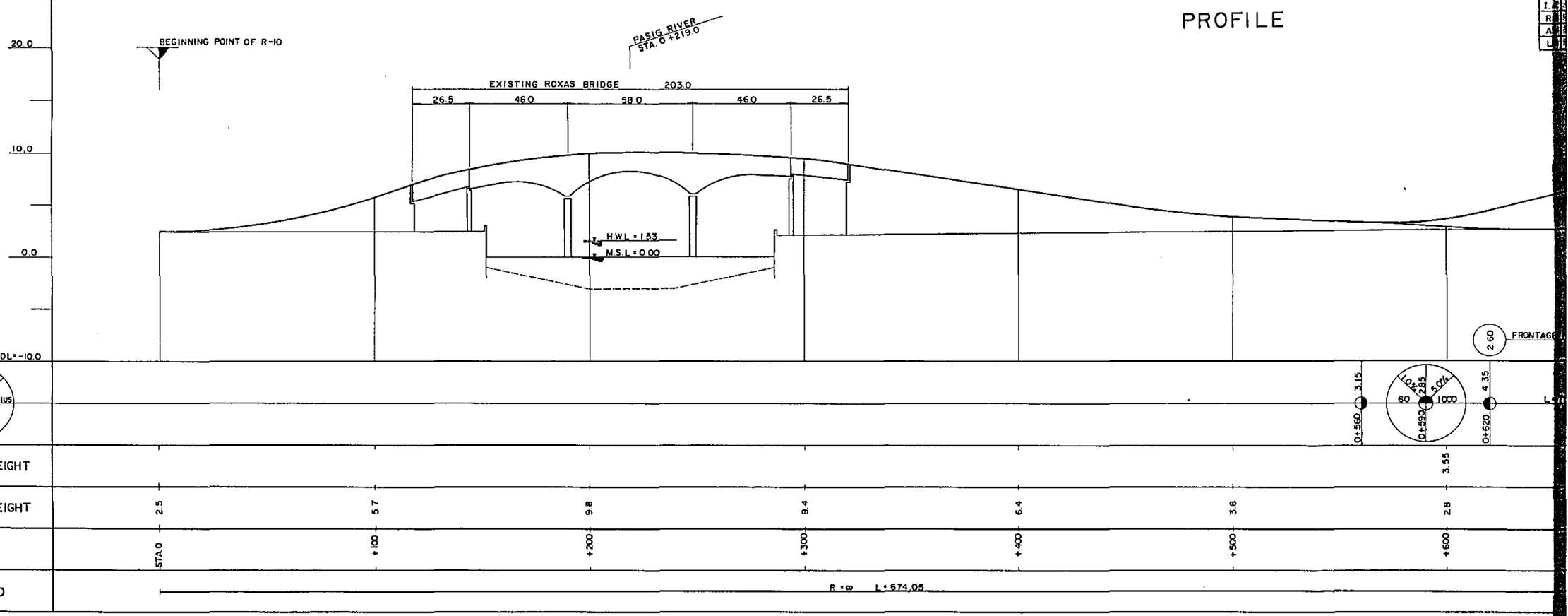

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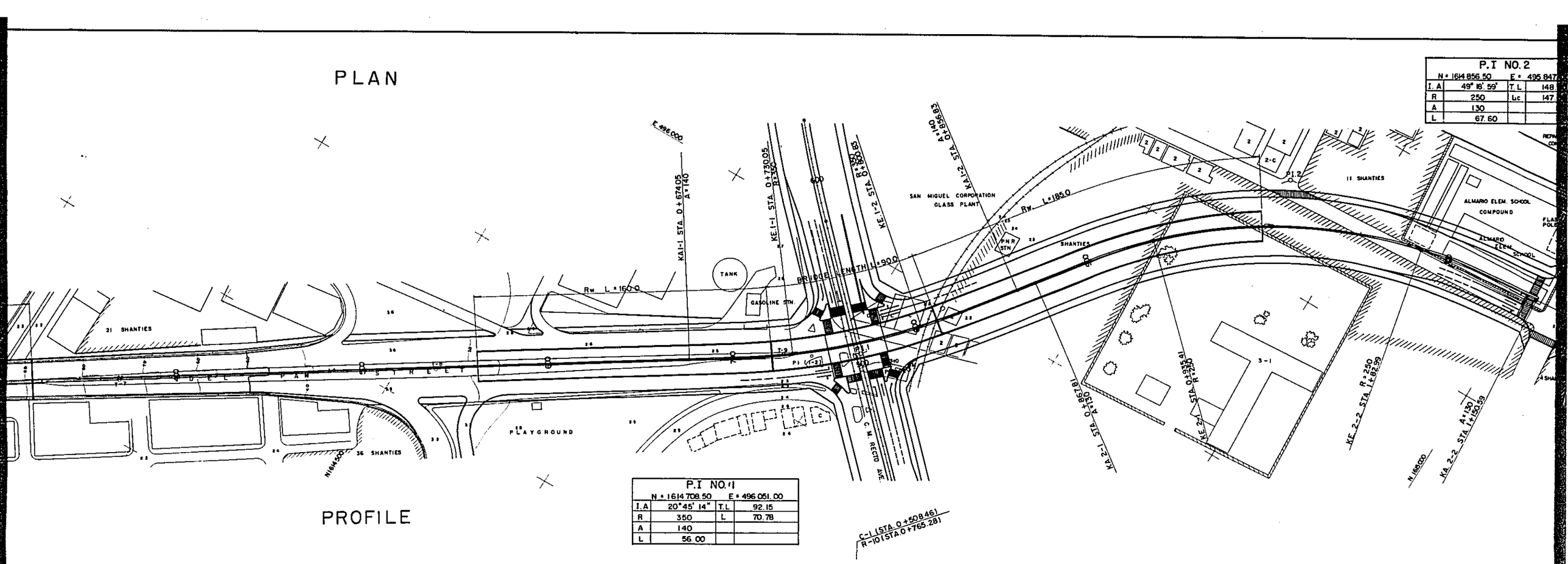
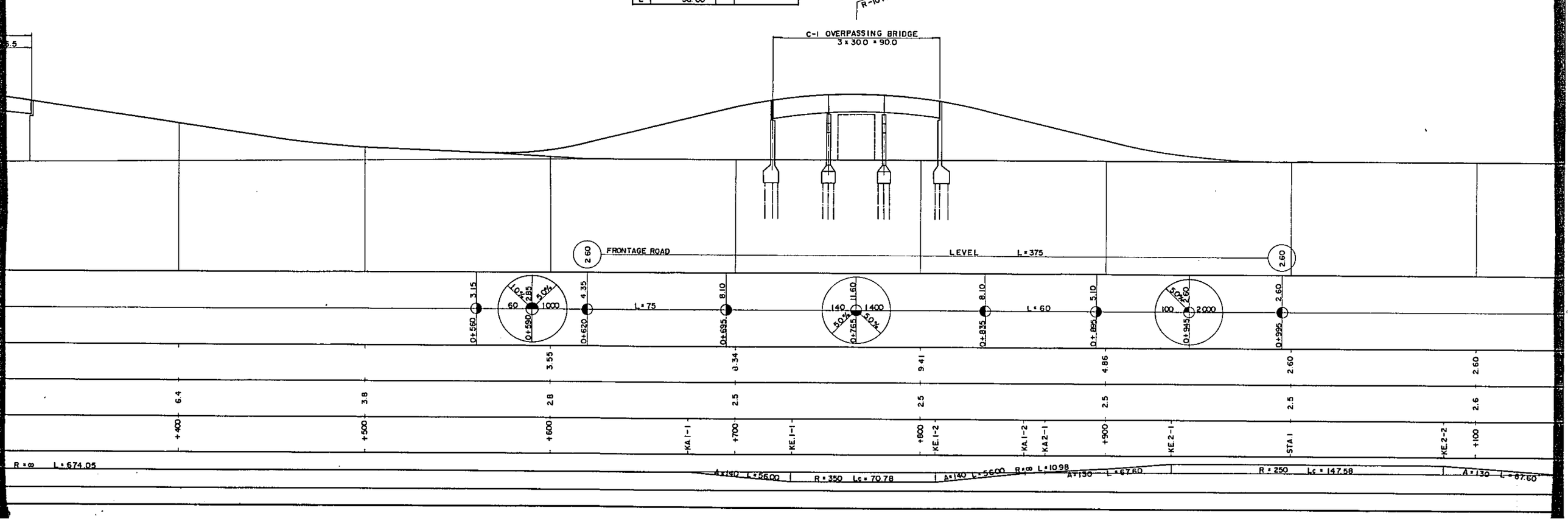


P.I NO. 2			
N = 1614 856.50		E = 495 847	
I. A	49° 18' 59"	T. L	148
R	250	Lc	147
A	130		
L	67.60		

P.I NO. 1			
N = 1614 708.50		E = 496 051.00	
I.A	20° 45' 14"	T.L	92.15
R	350	L	70.78
A	140		
L	56.00		

C-1 (STA. 0+508.46)
R-10 (STA 0+765.28)

PROFILE



P.I NO. 2			
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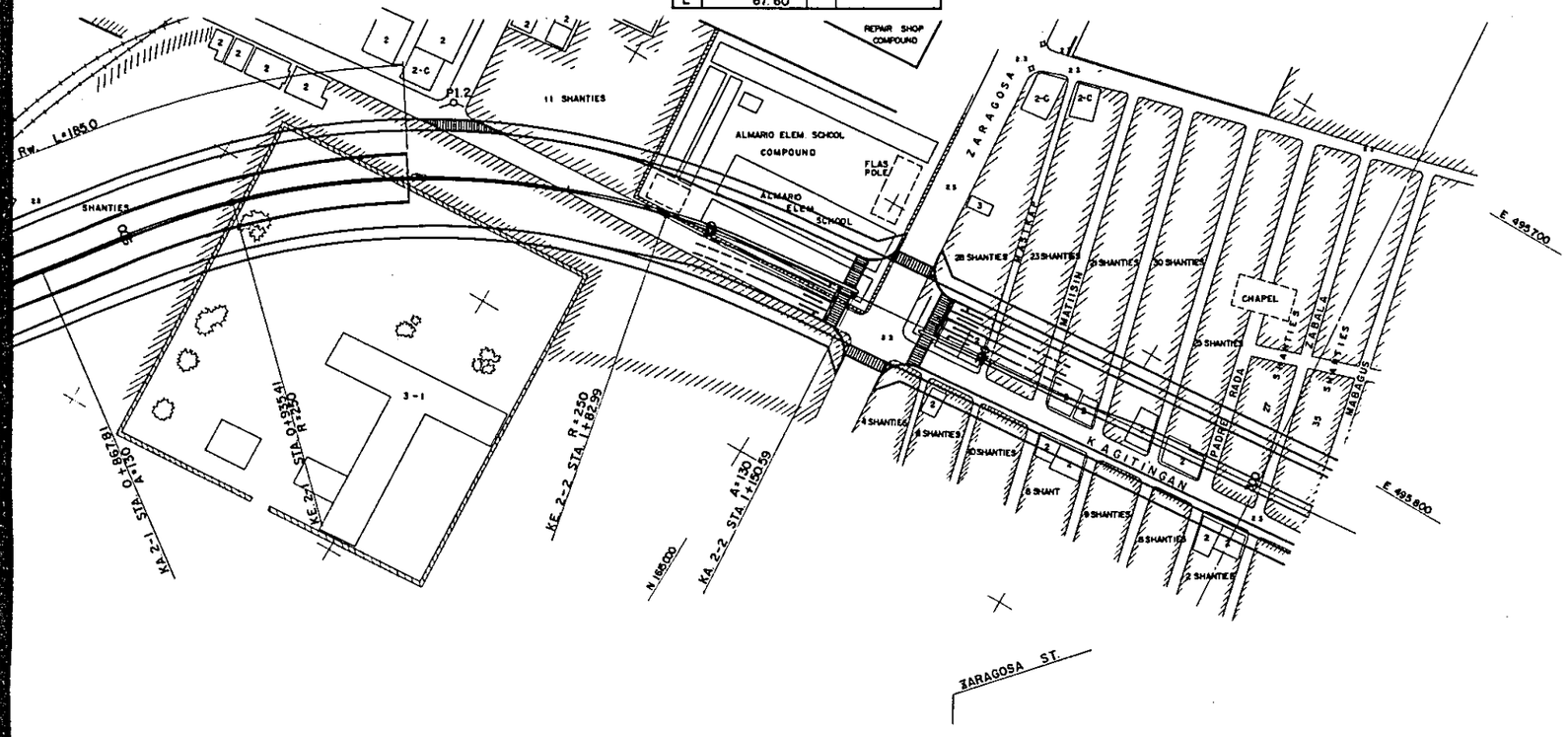
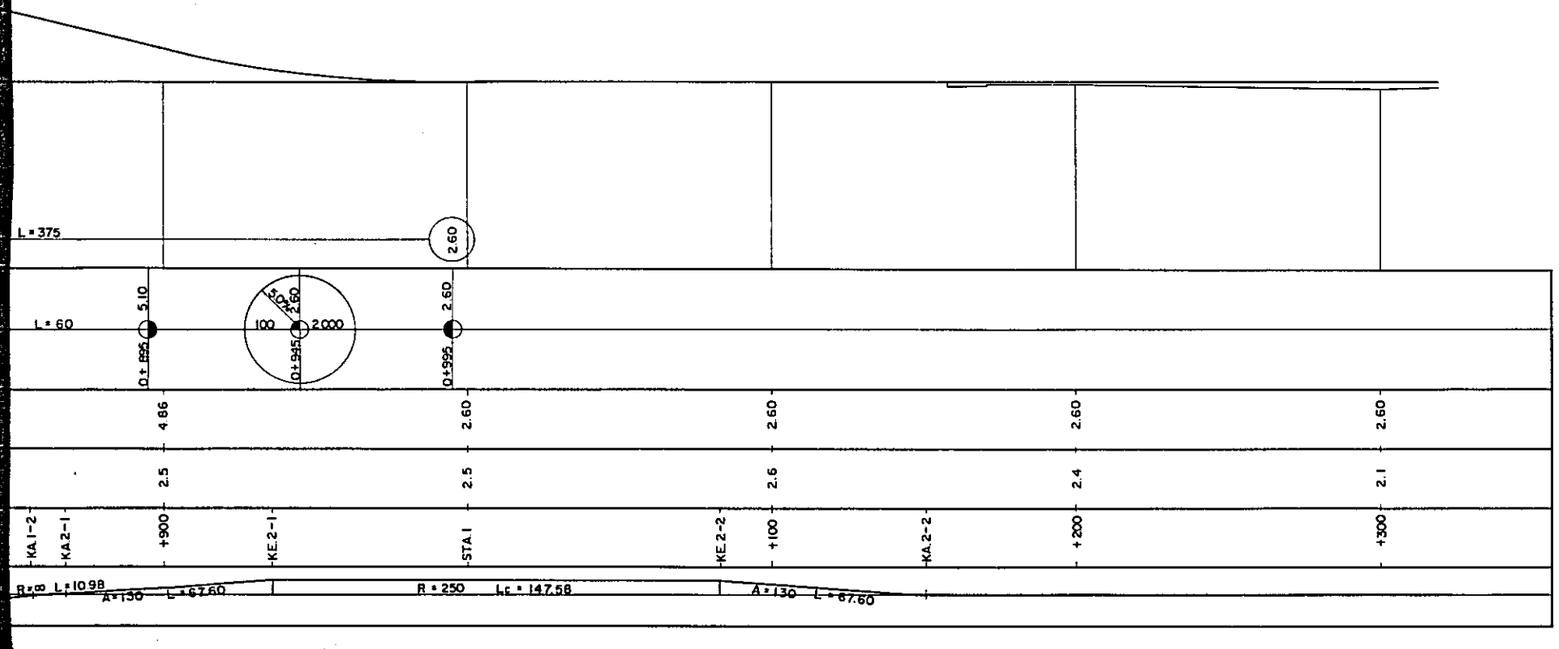
I. A	49° 18' 59"	T.L	148.90
R	250	Lc	147.58
A	130		
L	67.60		



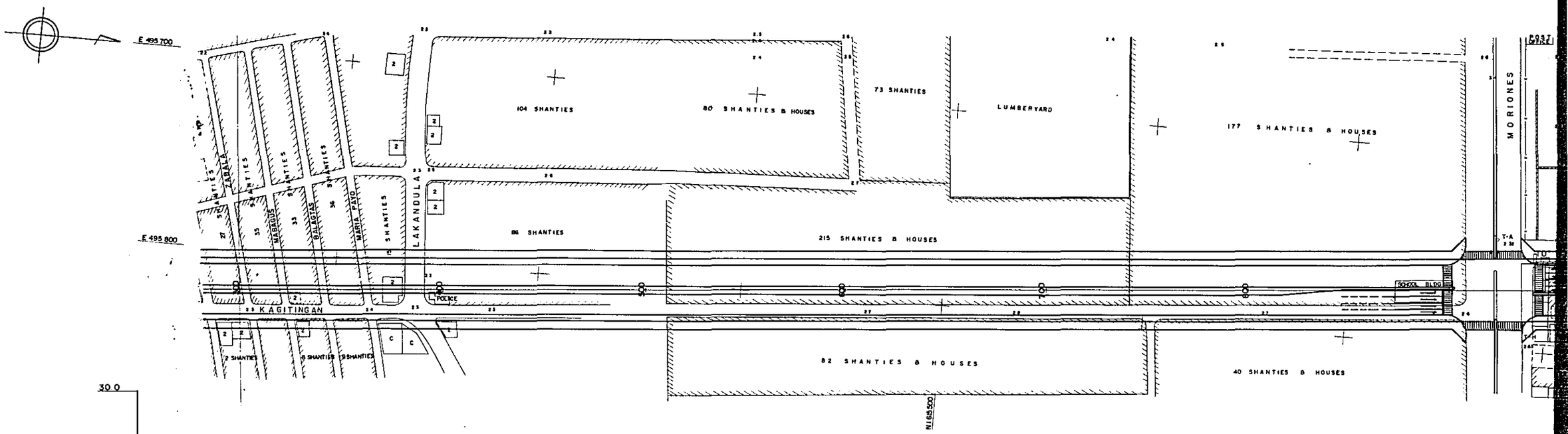


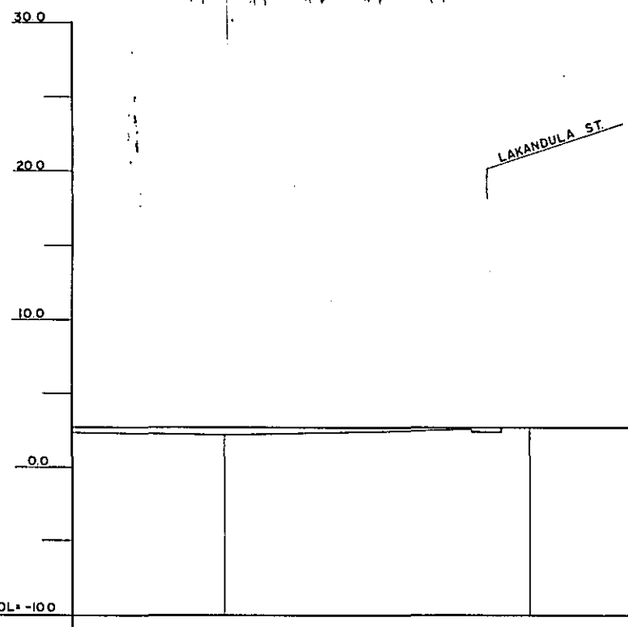
REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

R – 10 1/5

SCALE : AS SHOWN	DATE	SHEET NO. 3

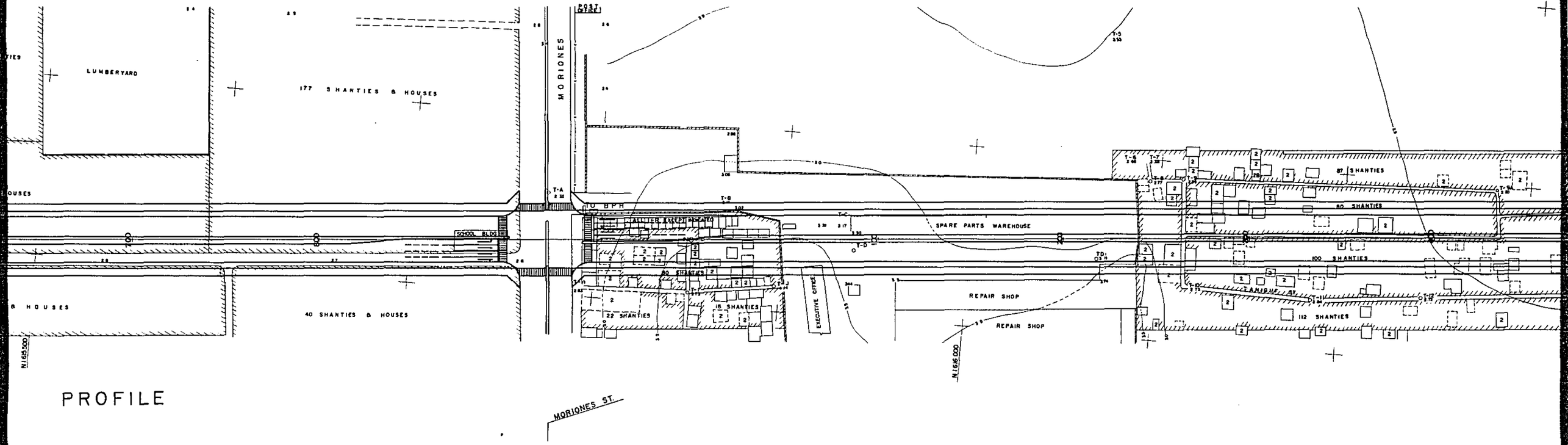
JAPAN INTERNATIONAL COOPERATION AGENCY



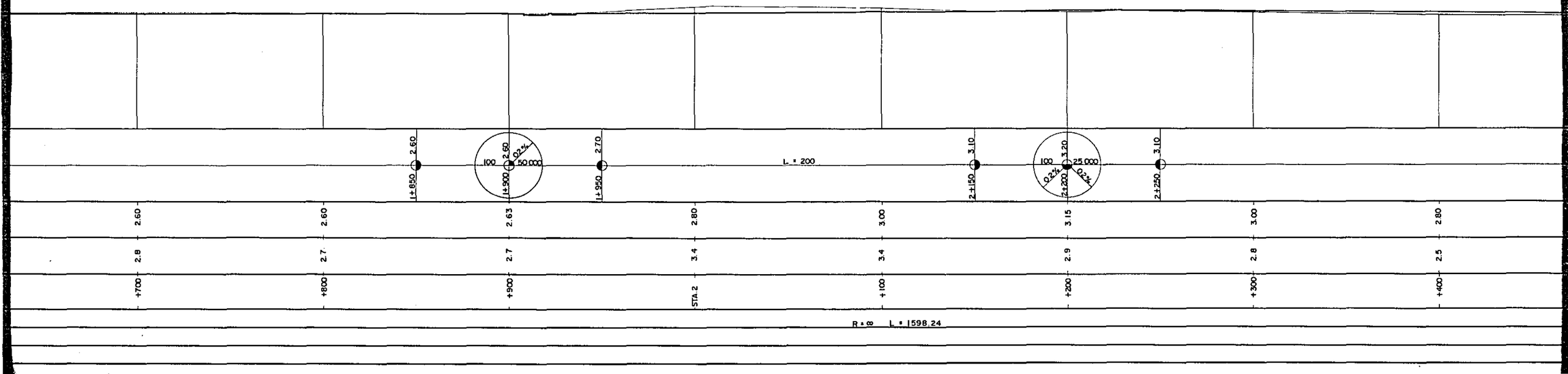


PROPOSED HEIGHT	2.60	2.60	2.60	2.60	2.60	2.60	2.63
GROUND HEIGHT	2.1	2.6	2.6	2.7	2.8	2.7	2.7
STATION	+300	+400	+500	+600	+700	+800	+900
CURVE BAND							

PLAN



PROFILE



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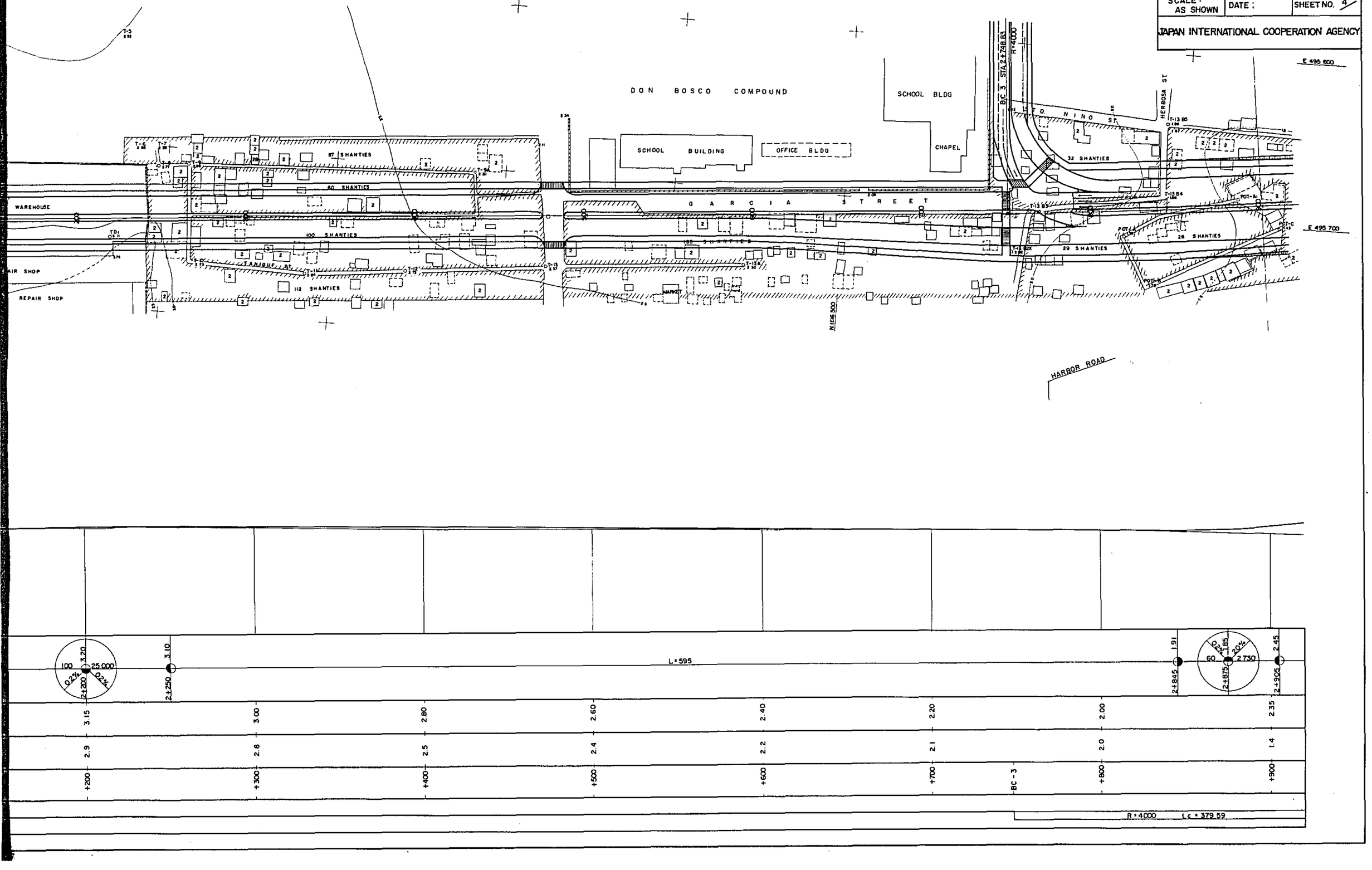
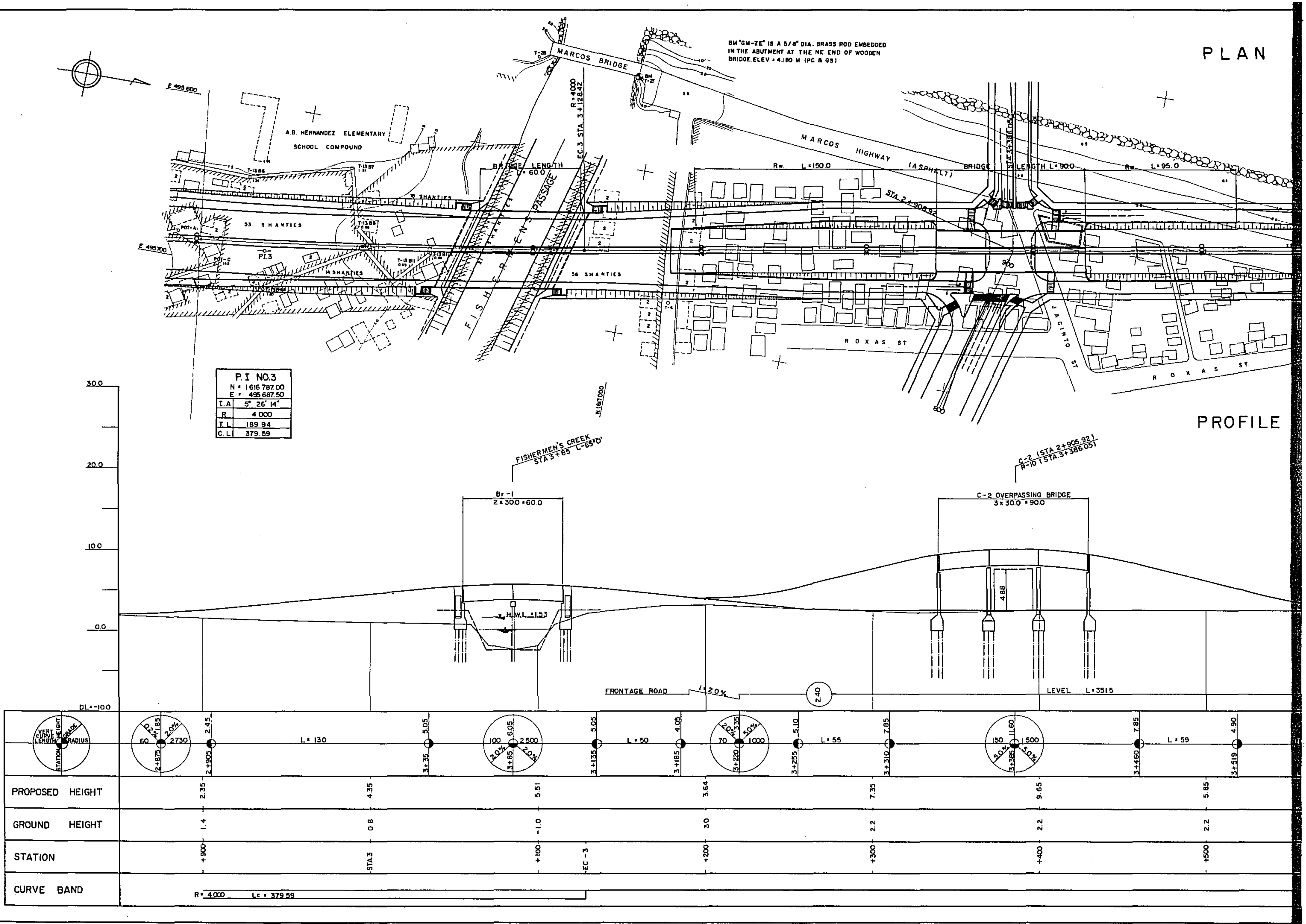
R 10 FEASIBILITY STUDY

R – 10 2/5

SCALE: AS SHOWN	DATE :	SHEET NO. 4

JAPAN INTERNATIONAL COOPERATION AGENCY

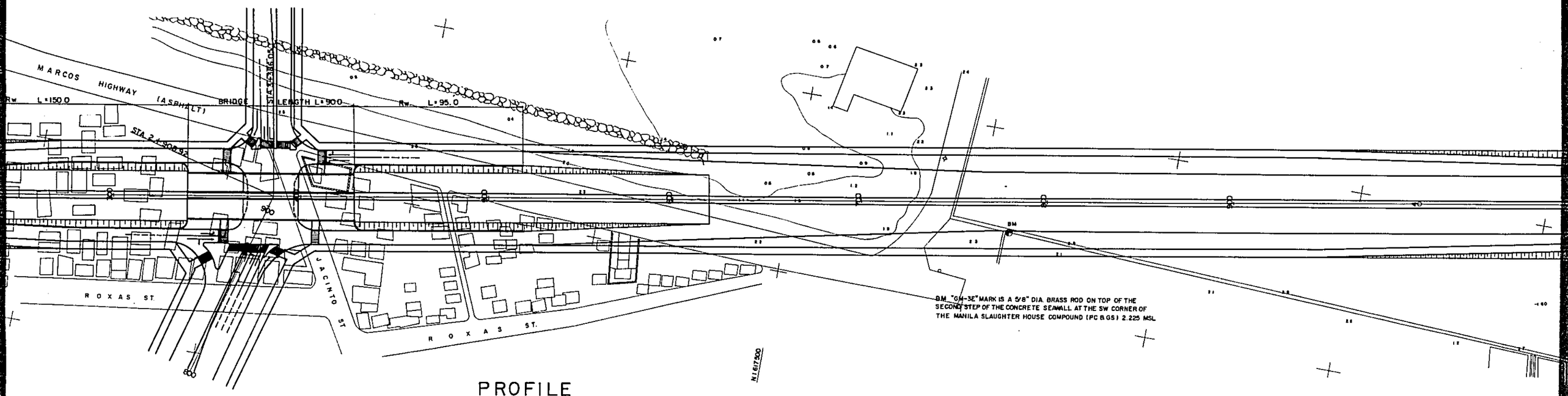



PLAN
PROFILE
BM "GM-ZE" IS A 5/8" DIA. BRASS ROD EMBEDDED IN THE ABUTMENT AT THE NE END OF WOODEN BRIDGE. ELEV. = 4.180 M (PC & GS)
MARCOS BRIDGE
MARCOS HIGHWAY (ASPHALT)
A.B. HERNANDEZ ELEMENTARY SCHOOL COMPOUND
33 SHANTIES
14 SHANTIES
56 SHANTIES
FISHERMEN'S PASSAGE
BRIDGE LENGTH L= 60.0
R = 4000
EC.3 STA 3+128.42
Rw. L=150.0
BRIDGE LENGTH L=90.0
Rw. L=95.0
STA 2+905.92
JACINTO ST
ROXAS ST
P.I NO.3
N = 1616 787.00
E = 495 687.50
I.A 5° 26' 14"
R 4 000
T.L 189.94
C.L 379.59
E 495 600
E 495 700
N 1617 000
FISHERMEN'S CREEK STA 3+85 L=65°0'
C-2 (STA 2+905.92)
R-10 (STA 3+386.05)
Br-1
2 x 30.0 = 60.0
C-2 OVERPASSING BRIDGE
3 x 30.0 = 90.0
H.W.L = 1.53
4.88
30.0
20.0
10.0
0.0
DL=-10.0
FRONTAGE ROAD
1=2.0%
2.40
LEVEL L=351.5
VERT CURVE LENGTH
HEIGHT
GRADE
RADIUS
STATION
L = 130
L = 50
L = 55
L = 59
PROPOSED HEIGHT
GROUND HEIGHT
STATION
CURVE BAND
R = 4000 Lc = 379.59

	+900	STA 3	+100	+200	+300	+400	+500
PROPOSED HEIGHT	2.35	4.35	5.51	3.64	7.35	9.65	5.85
GROUND HEIGHT	1.4	0.8	-1.0	3.0	2.2	2.2	2.2

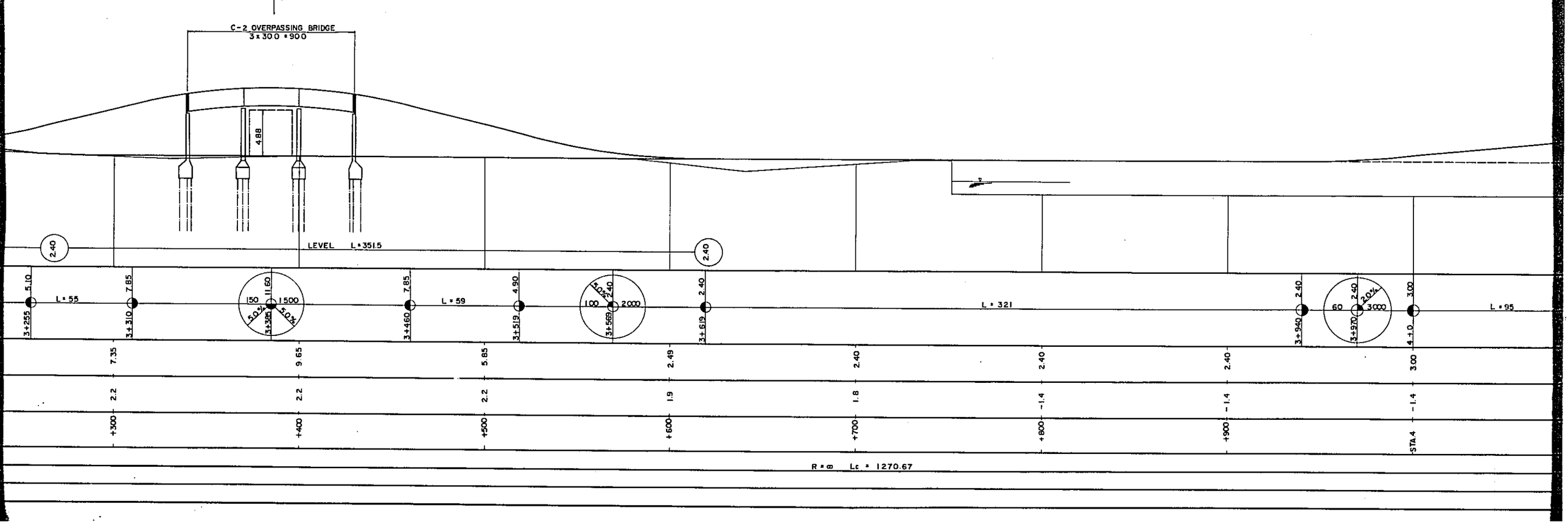
A 5/8" DIA. BRASS ROD EMBEDDED
ENT AT THE NE END OF WOODEN
4.180 M (PC & GS)

PLAN



BM "GM-3E" MARK IS A 5/8" DIA. BRASS ROD ON TOP OF THE SECOND STEP OF THE CONCRETE SEAWALL AT THE SW CORNER OF THE MANILA SLAUGHTER HOUSE COMPOUND (PC & GS) 2.225 MSL

PROFILE



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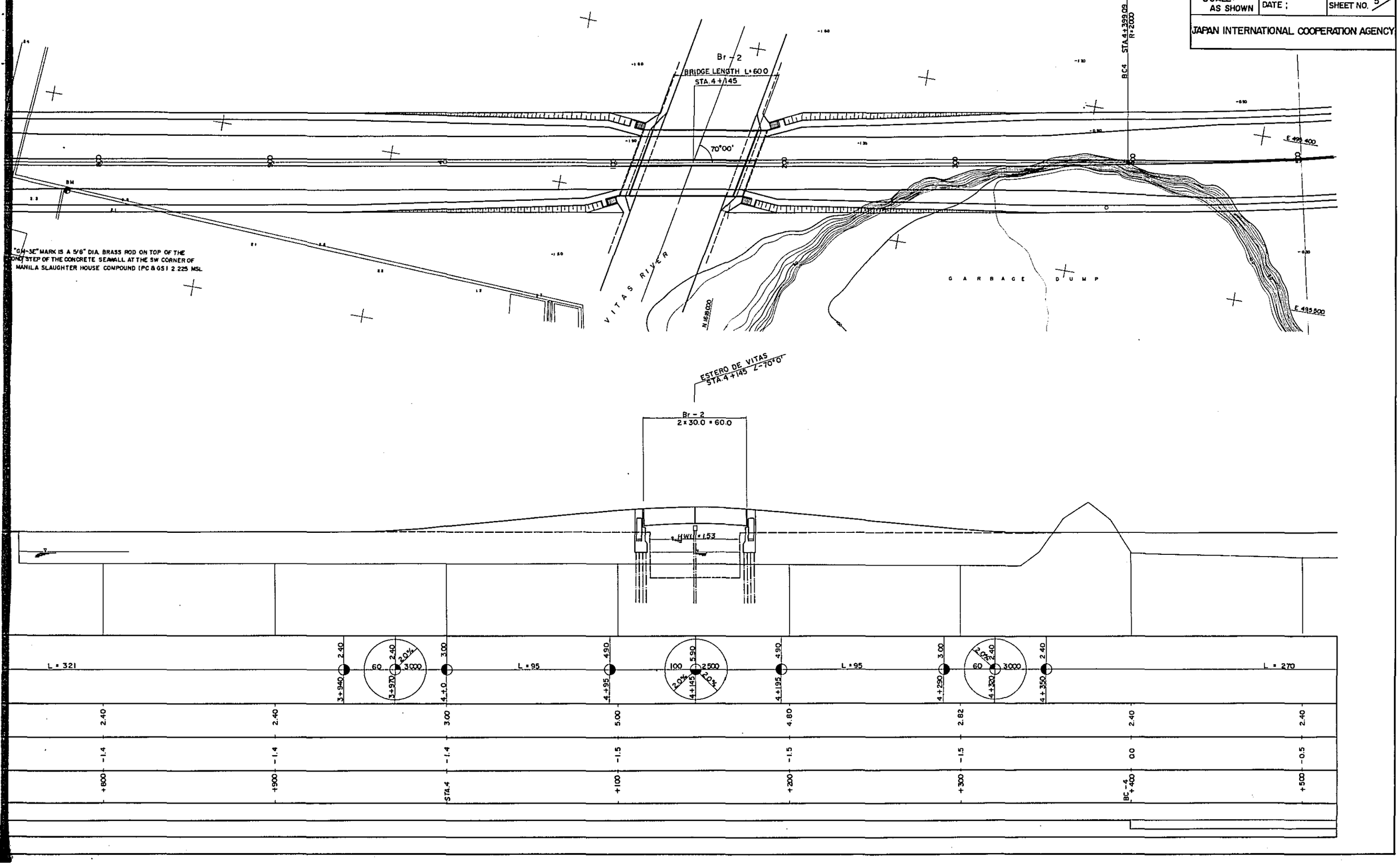
R-10 FEASIBILITY STUDY

R – 10 3/5

SCALE: AS SHOWN	DATE :	SHEET NO. 5

JAPAN INTERNATIONAL COOPERATION AGENCY



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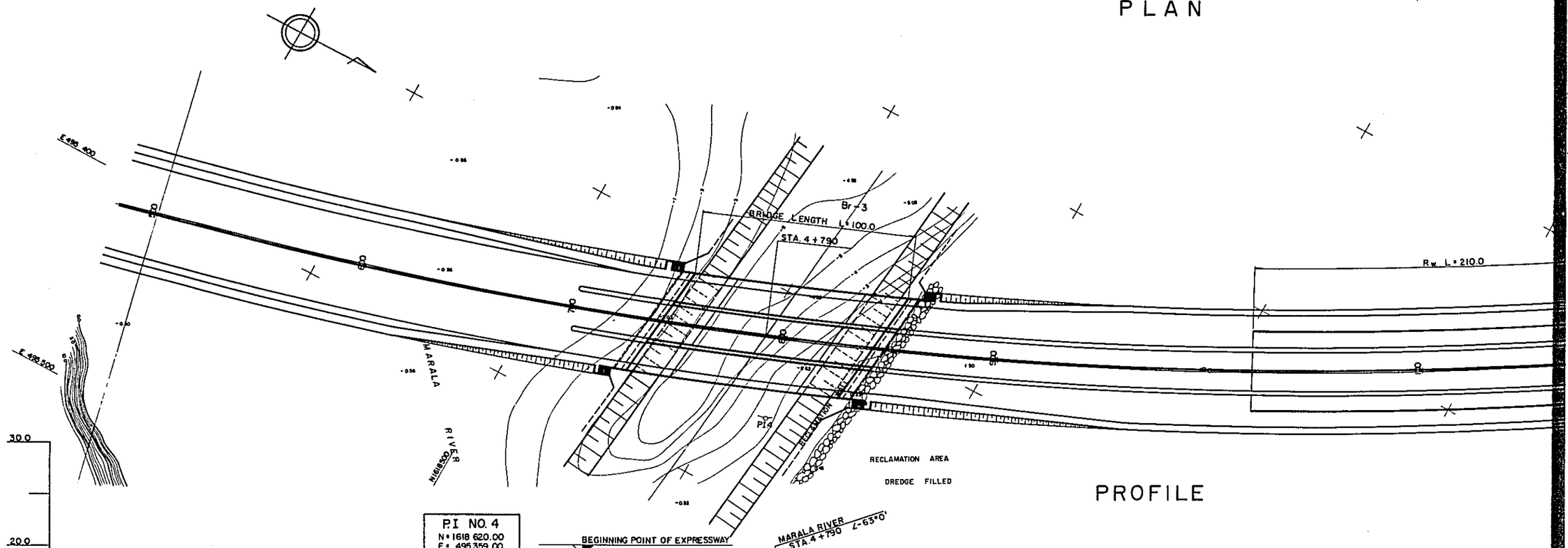
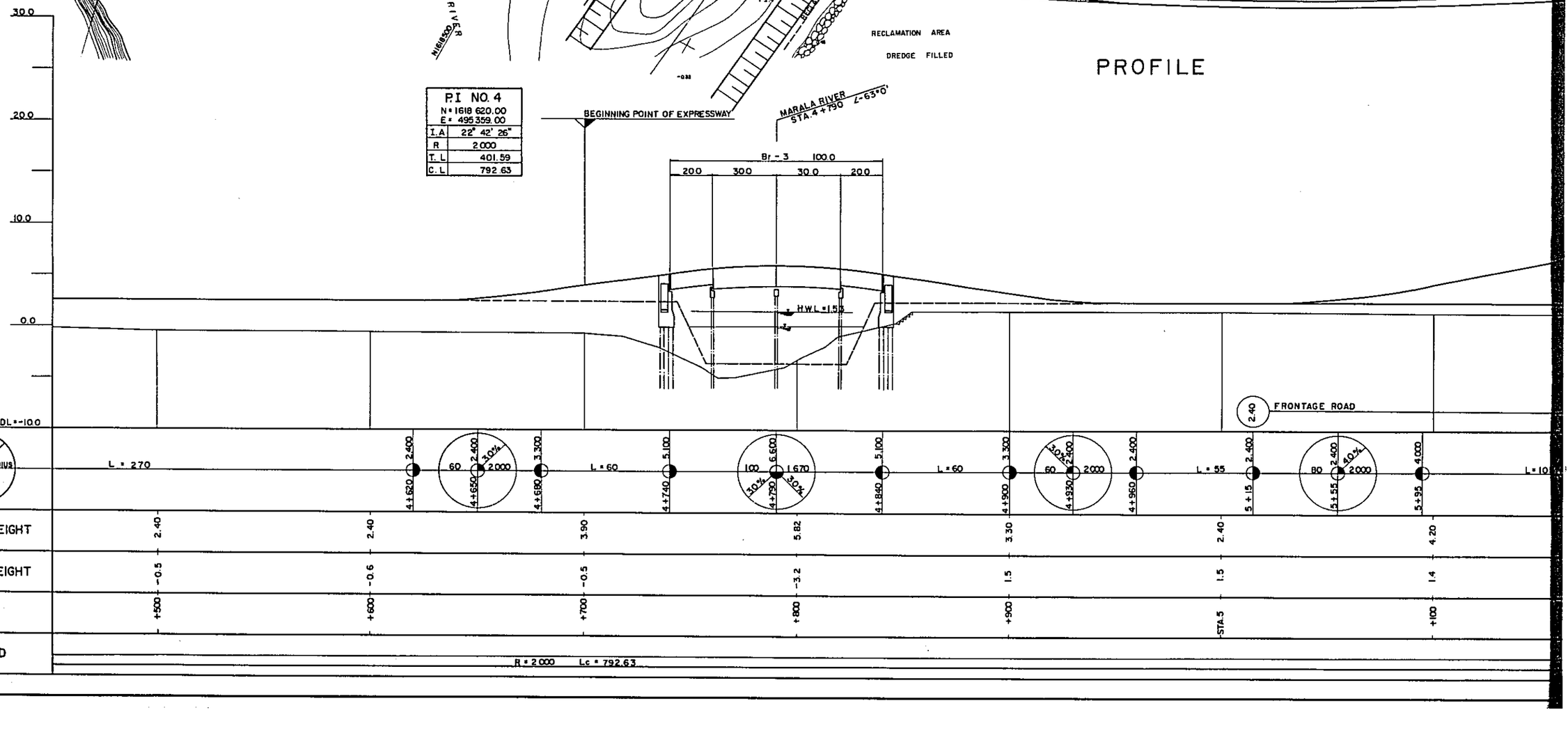


P.I NO. 4	
N = 1618 620.00	
E = 495 359.00	
I.A	22° 42' 26"
R	2000
T. L	401.59
C. L	792.63

BEGINNING POINT OF EXPRESSWAY

MARALA RIVER STA. 4 + 790 L-63°0'

PROFILE



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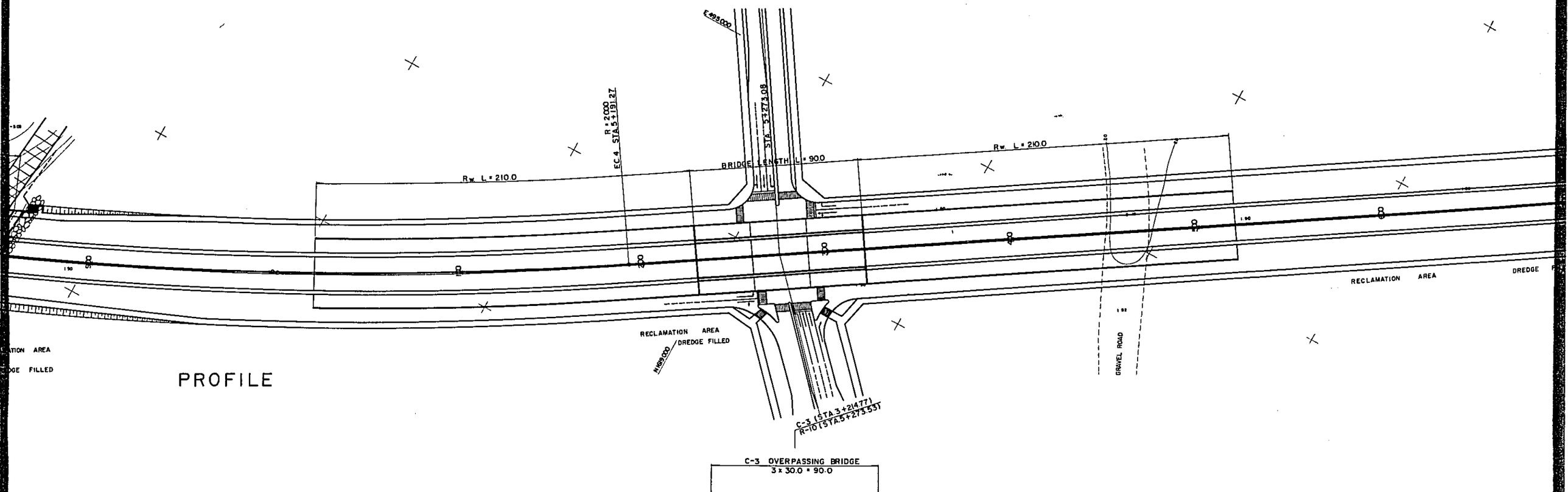

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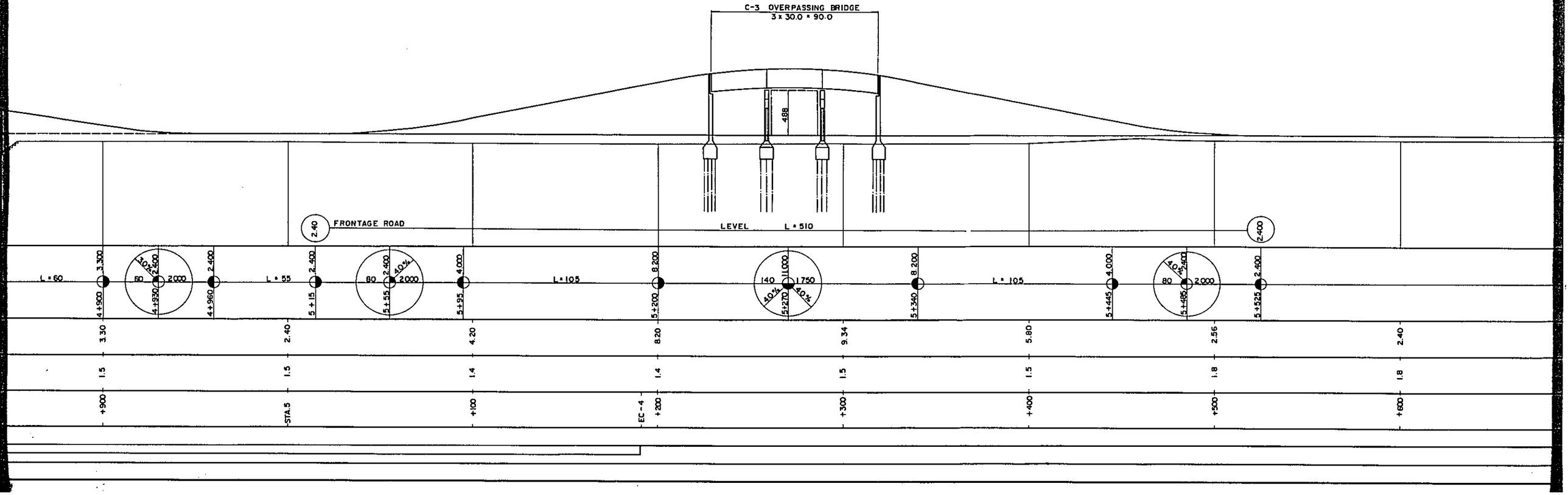

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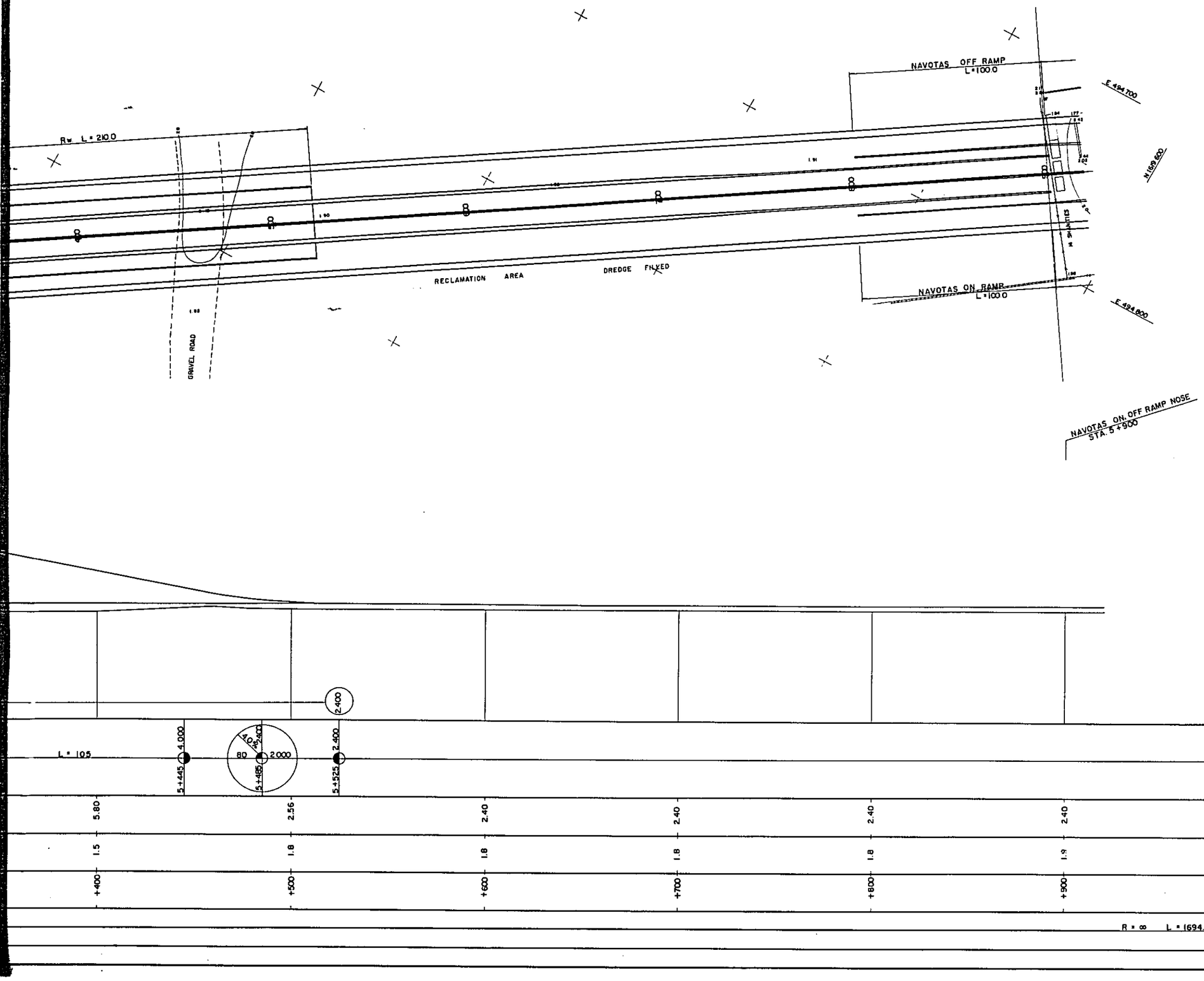
R - 10 4/5

SCALE: AS SHOWN	DATE:	SHEET NO. 6

JAPAN INTERNATIONAL COOPERATION AGENCY



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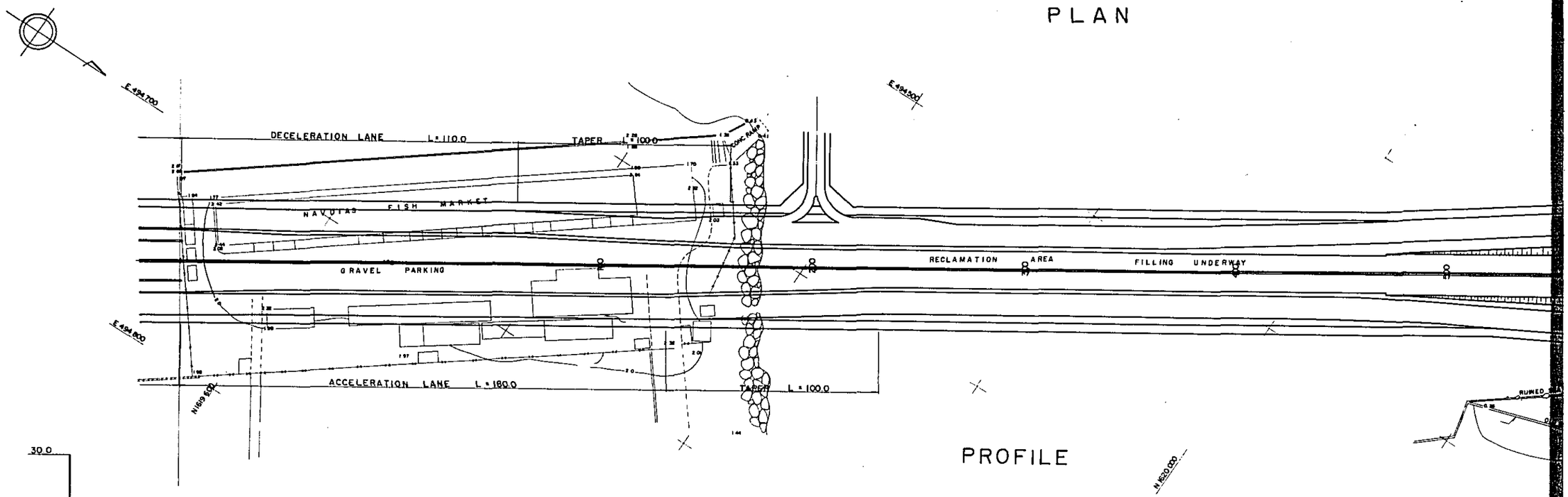

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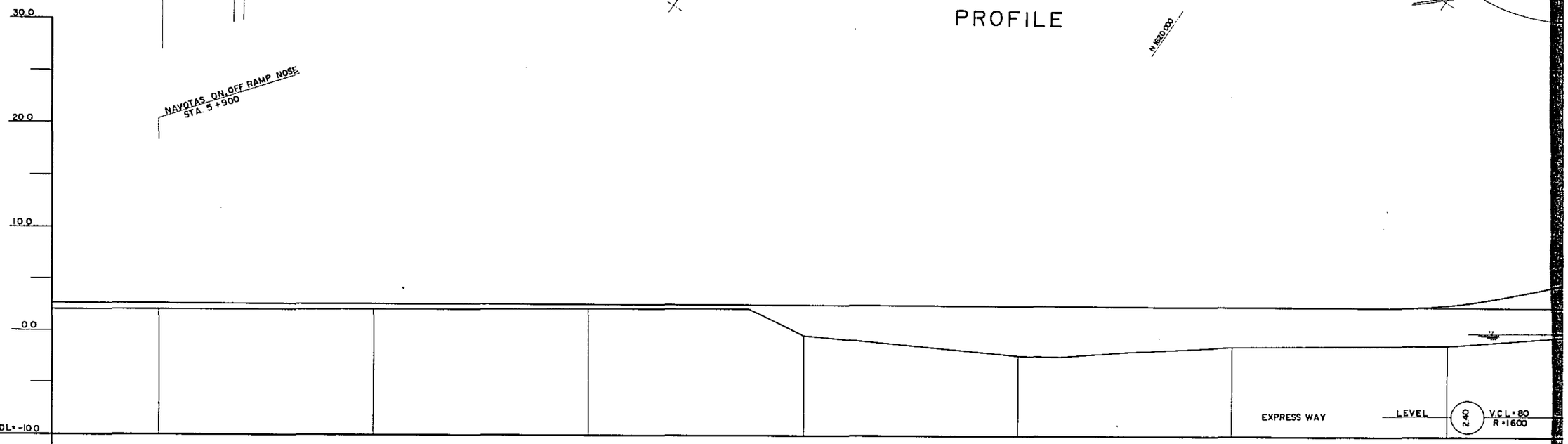
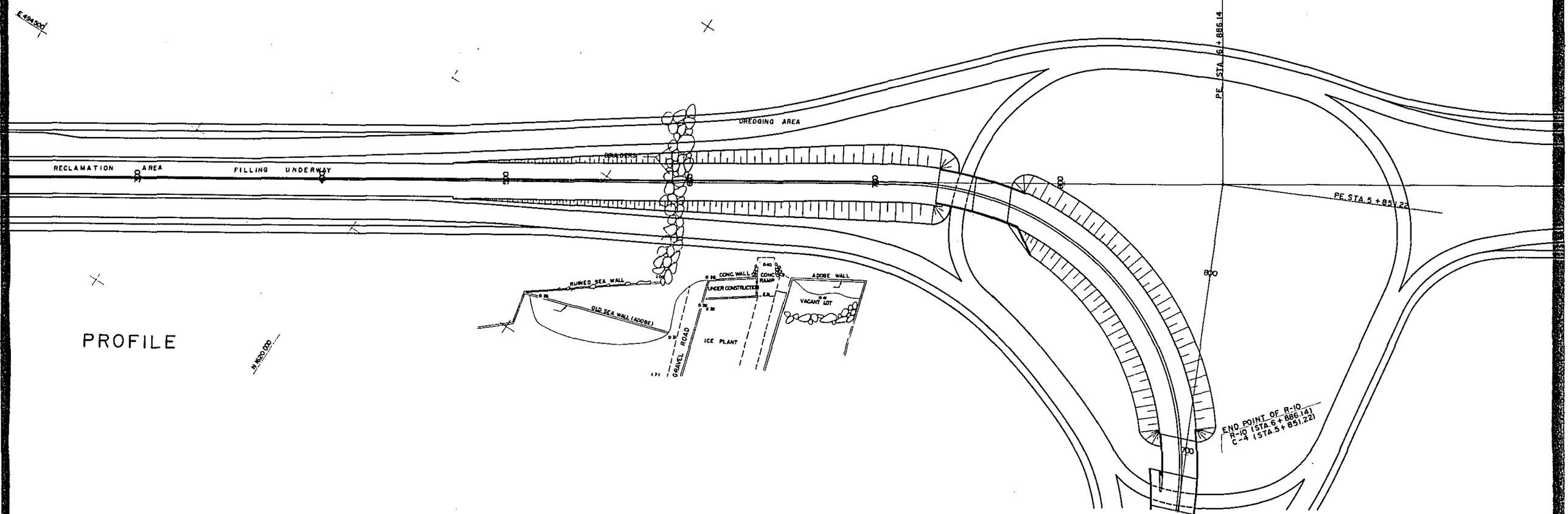


VERT. CURVE LENGTH / HEIGHT / GRADE / STATION / RADIUS							
PROPOSED HEIGHT	2.40	2.40	2.40	2.40	2.40	2.40	2.40
GROUND HEIGHT	1.9	2.0	2.1	-0.5	-0.4	-1.3	-1.3
STATION	+900	STA. 6	+100	+200	+300	+400	+500
CURVE BAND	R = ∞ L = 1694.42						

PLAN



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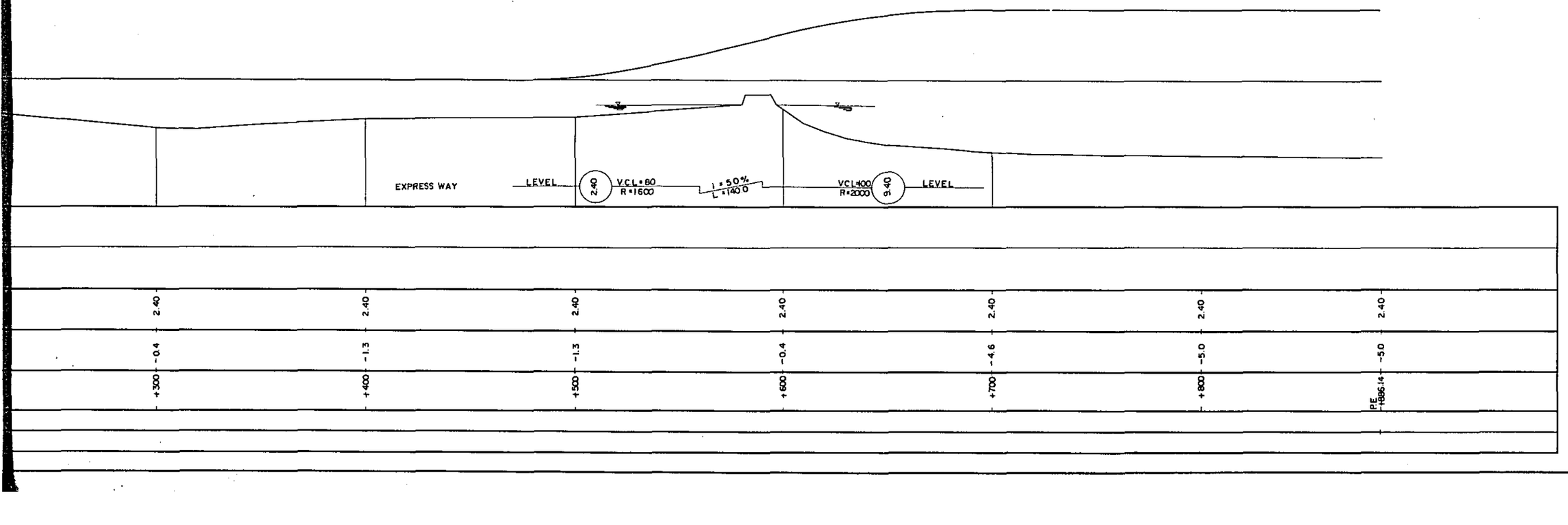

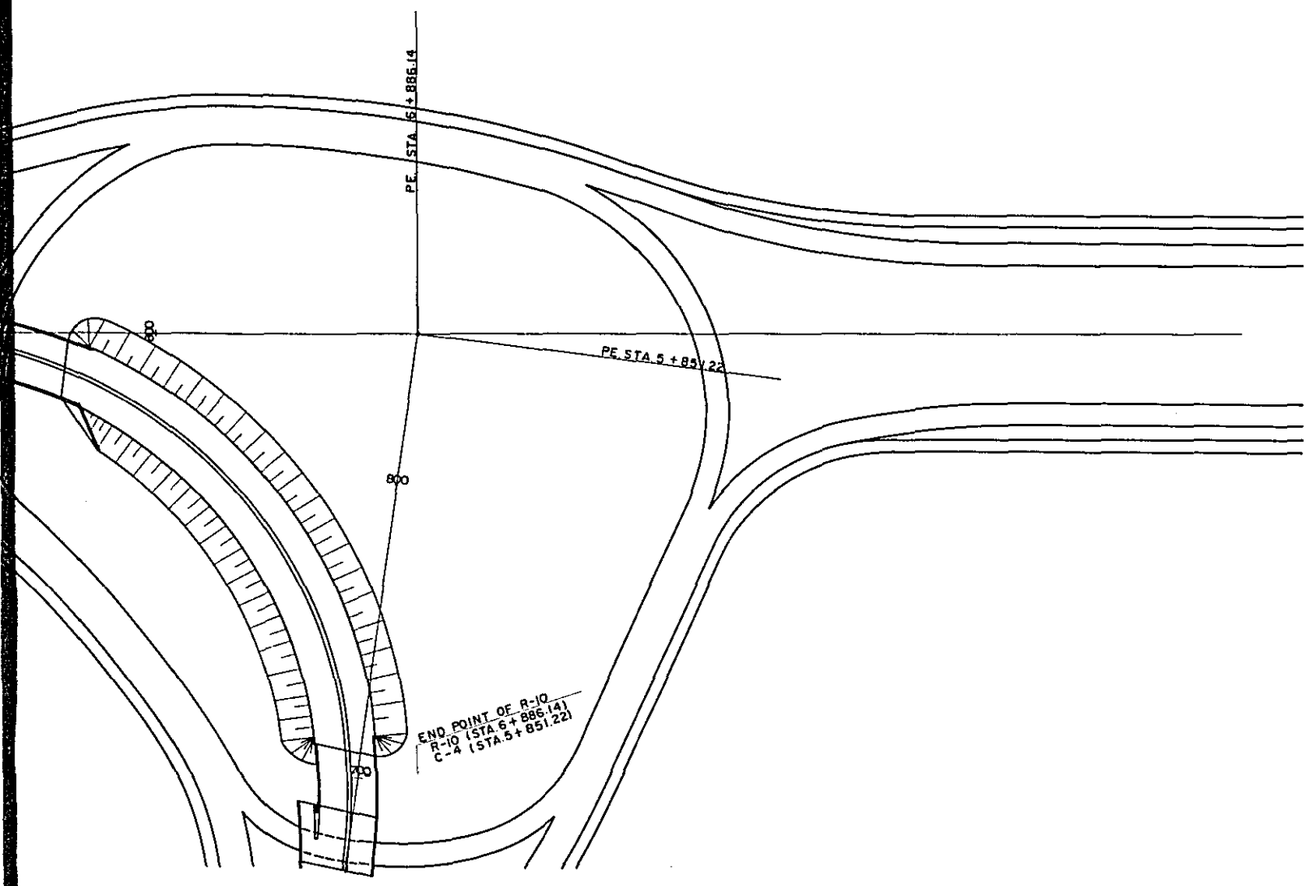

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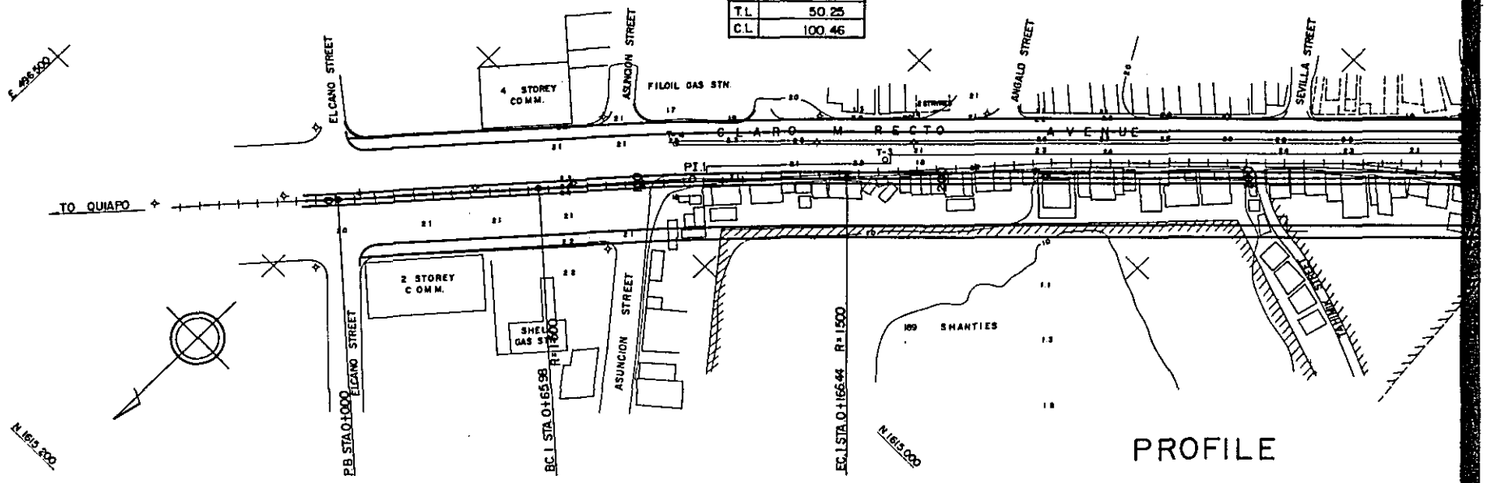
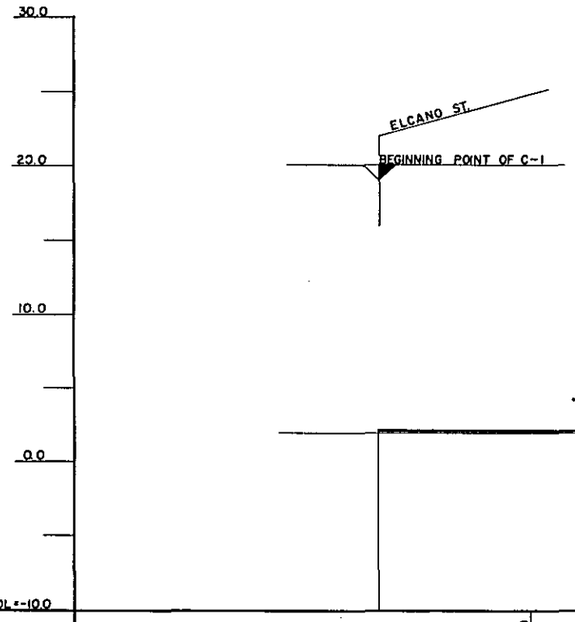
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

R - 10 5/5

SCALE : AS SHOWN	DATE :	SHEET NO. 7/

JAPAN INTERNATIONAL COOPERATION AGENCY



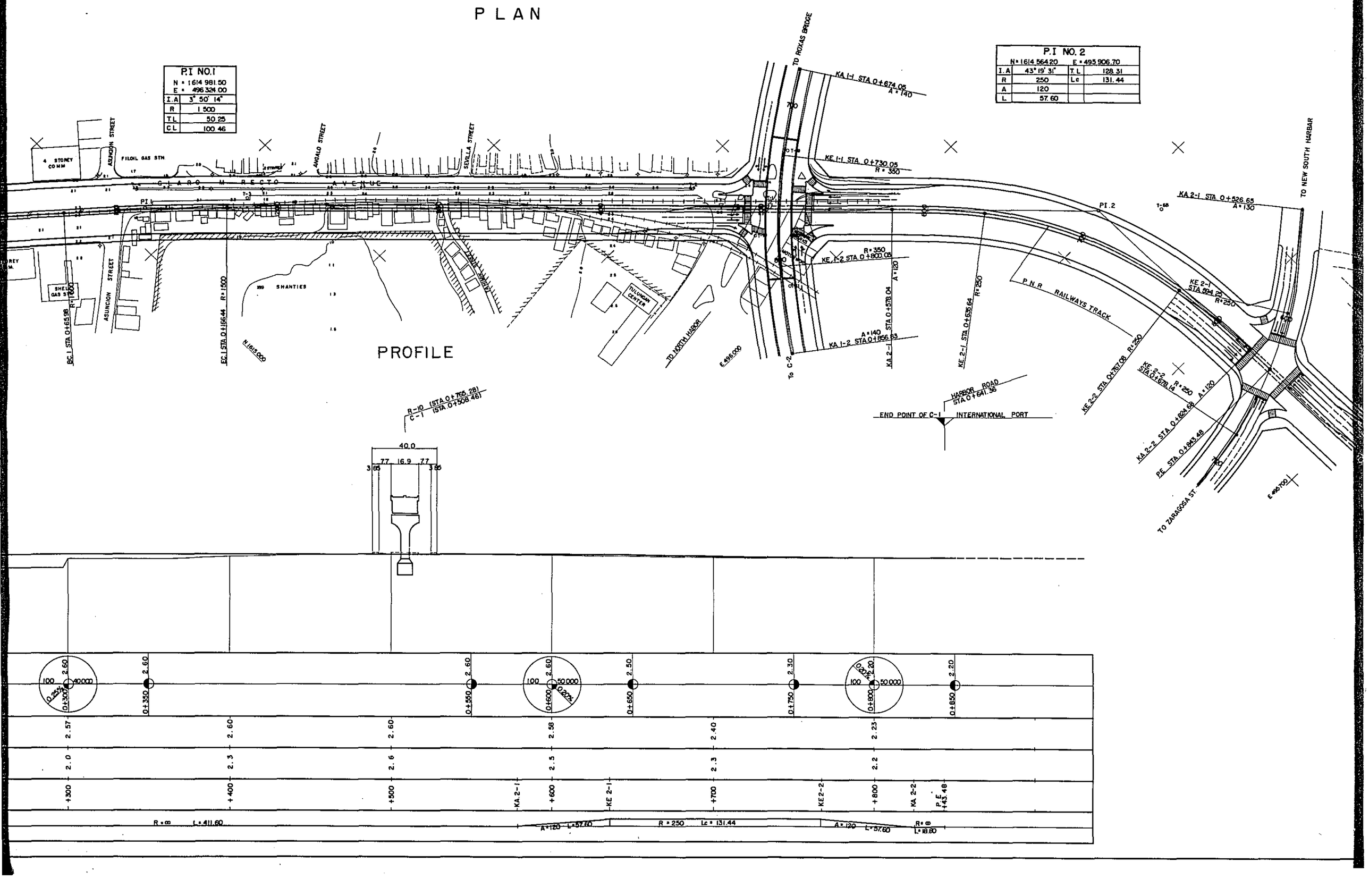


PLAN
P.I NO.1
N = 1614 981.50
E = 496 324.00
I.A 3° 50' 14"
R 1 500
T.L 50.25
C.L 100.46
E 496,500
N 1615,200
N 1615,000
TO QUIAPO
ELCANO STREET
ASUNCION STREET
ANGALO STREET
SEVILLA STREET
4 STOREY COMM.
2 STOREY COMM.
FILOIL GAS STN
SHELL GAS STN
CLARO M. RECTO AVENUE
SHANTIES
P.I
P.B STA 0+000
BC.1 STA 0+65.98 R=1500
EC.1 STA 0+166.44 R=1500
PROFILE
ELCANO ST.
BEGINNING POINT OF C-1
R-10 (STA.0+765.28)
C-1 (STA.0+508.46)
40.0
3.85 7.7 16.9 7.7 3.85
30.0
20.0
10.0
0.0
DL=-10.0
VERT CURVE LENGTH
HEIGHT
GRADE
RADIUS
STATION
2.10 0+50
2.10 0+100 100 0.25% 40000
2.23 0+150
2.48 0+250
2.60 0+300 100 0.25% 40000
2.60 0+350
2.60 0+550
2.60 0+600 100
PROPOSED HEIGHT 2.10 2.13 2.35 2.57 2.60 2.60
GROUND HEIGHT 2.0 2.0 0.8 2.0 2.3 2.6
STATION P.B STA. 0 BC-1 +100 EC-1 +200 +300 +400 +500 KA.2-1
CURVE BAND R=∞ L=65.98 R=1500 Lc=100.46 R=∞ L=411.60

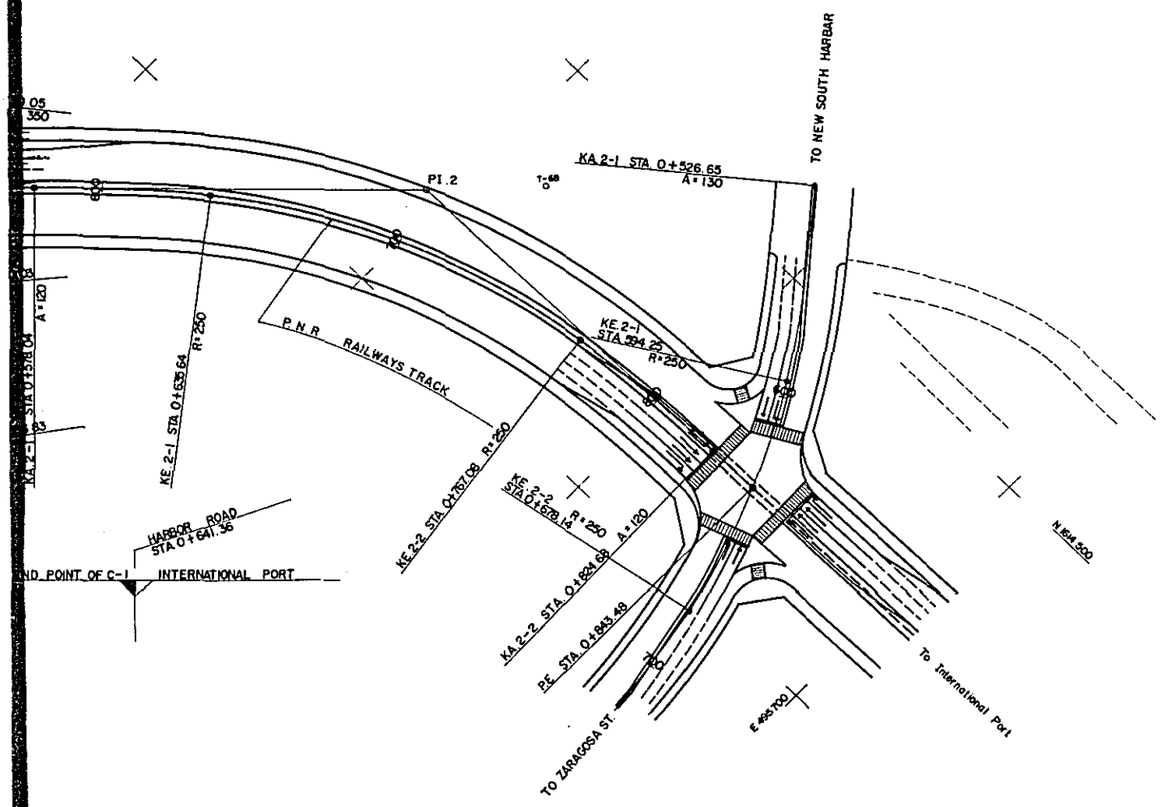
PLAN

P.I NO.1	
N = 1614 981.50	
E = 496 324.00	
I.A	3° 50' 14"
R	1 500
T.L	50.25
C.L	100.46

P.I NO. 2			
N = 1614 564.20		E = 495 906.70	
I.A	43° 19' 31"	T.L	128.31
R	250	Lc	131.44
A	120		
L	57.60		



P.I NO. 2			
N=1614 564.20		E=495 906.70	
I.A	43° 19' 31"	T.L	128.31
R	250	Lc	131.44
A	120		
L	57.60		



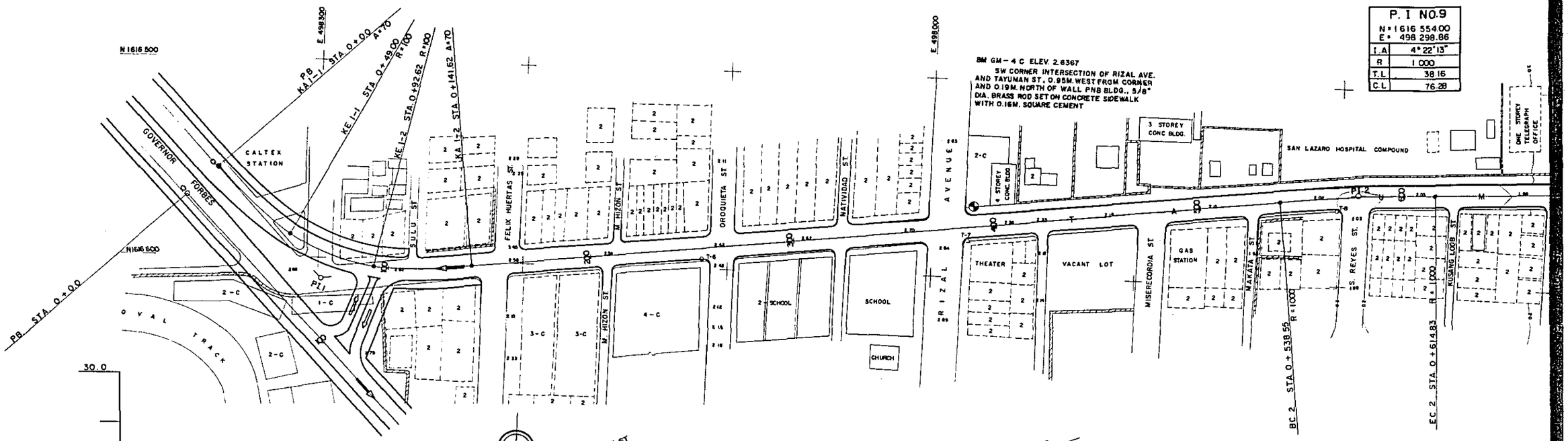
REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

C – 1

SCALE: AS SHOWN	DATE:	SHEET NO. 8

JAPAN INTERNATIONAL COOPERATION AGENCY

PLAN (TAYUMAN STREET)



P. I NO.9	
N = 1616 554.00	
E = 498 298.86	
I.A	4° 22' 13"
R	1 000
T.L	38.16
C.L	76.28

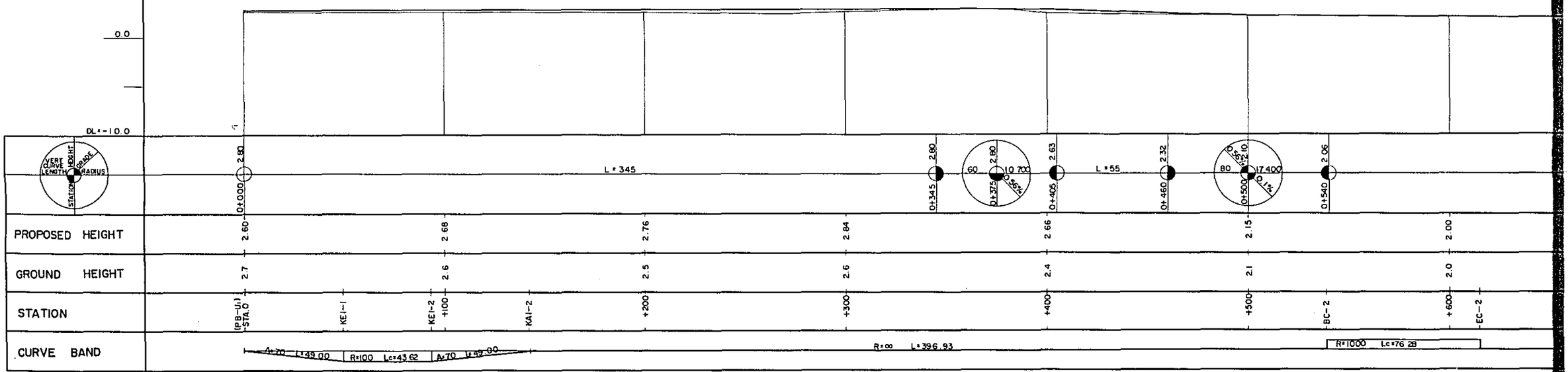
GOV FORBES BEGINNING POINT OF C-2 (TAYUMAN ST)

FELIX HUERTAS ST STA. 0+160

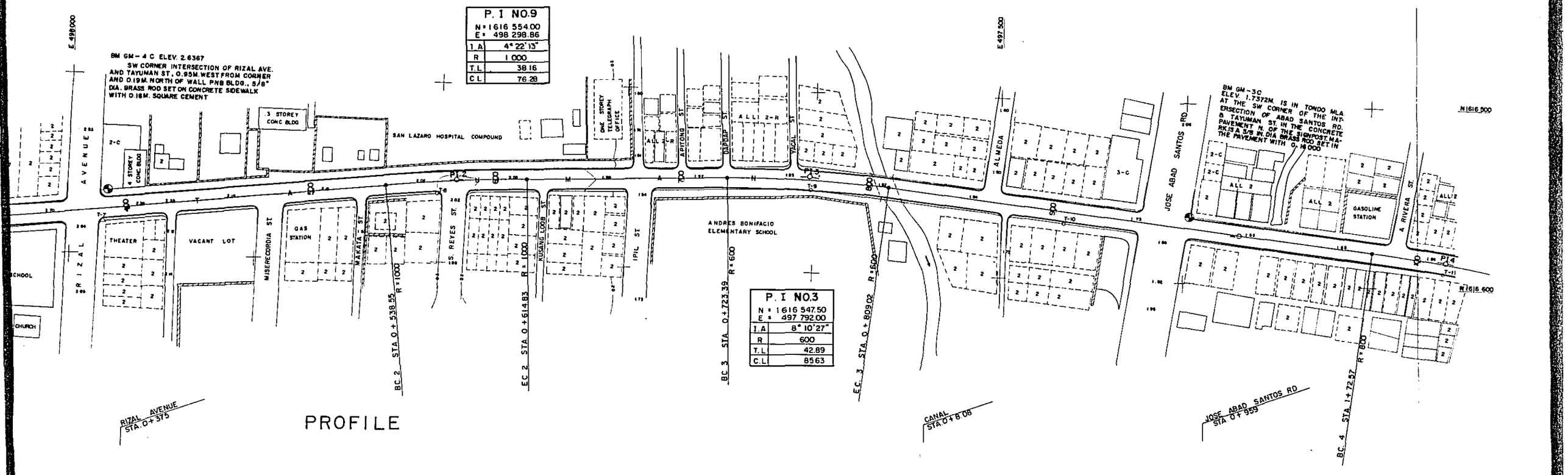
RIZAL AVENUE STA. 0+375

P. I NO. 9			
N = 1616 610.27		E = 498 298.86	
I.A	53° 3' 59"	T.L	74.88
R	100	L.C	43.62
A	70		
L	49.00		

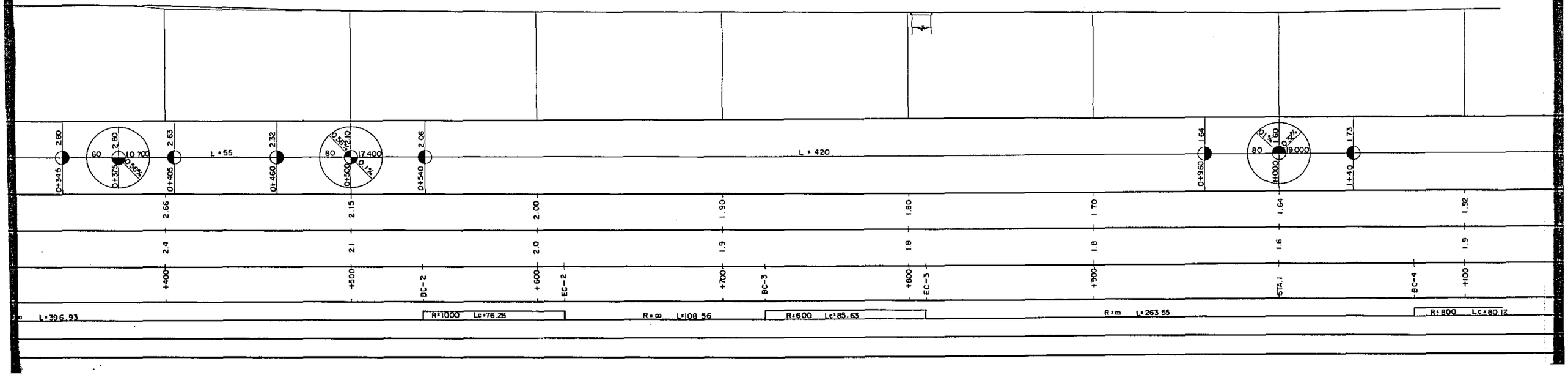
PROFILE



PLAN (TAYUMAN STREET)



PROFILE

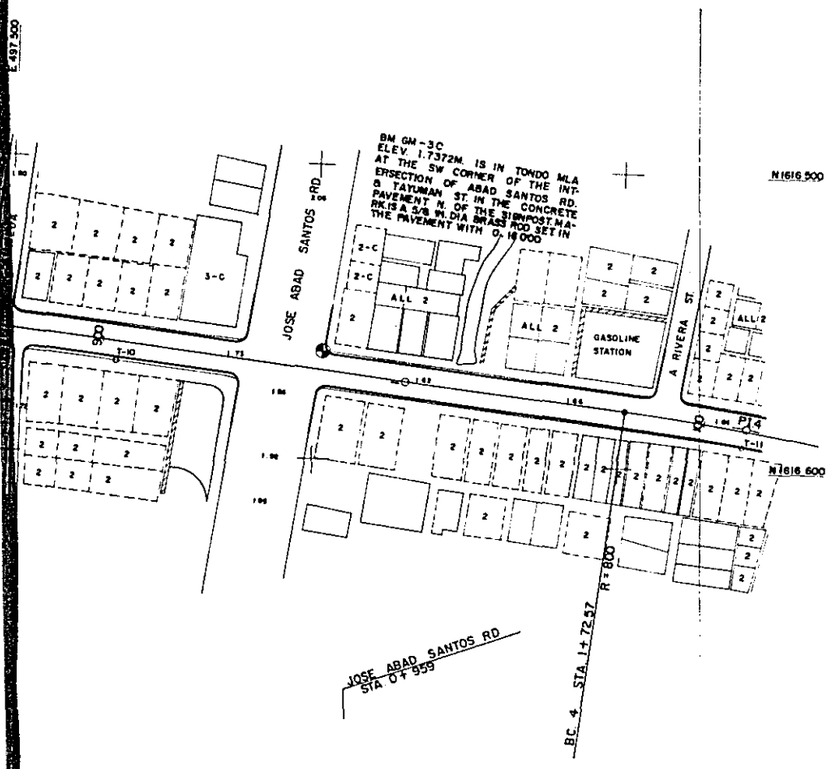


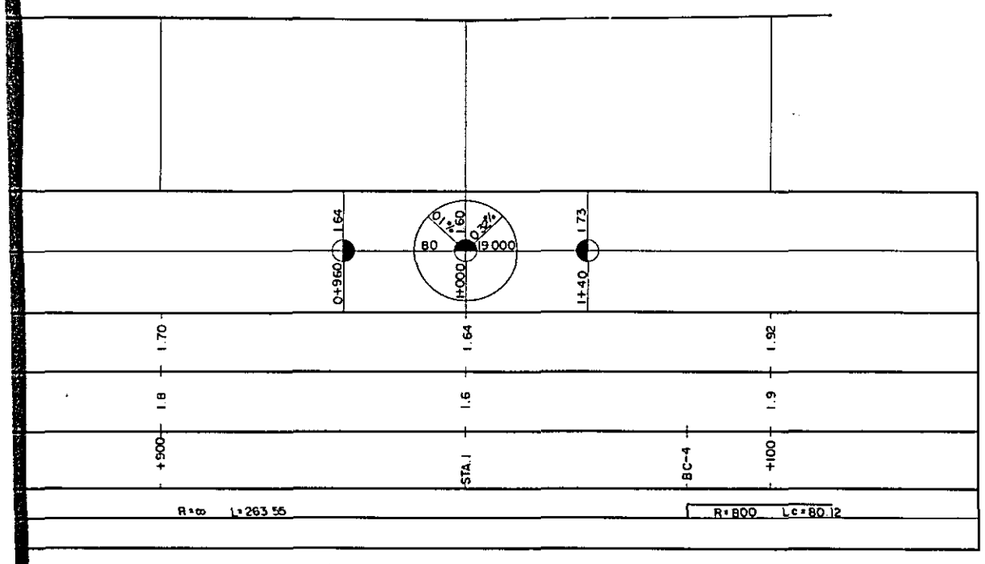
REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

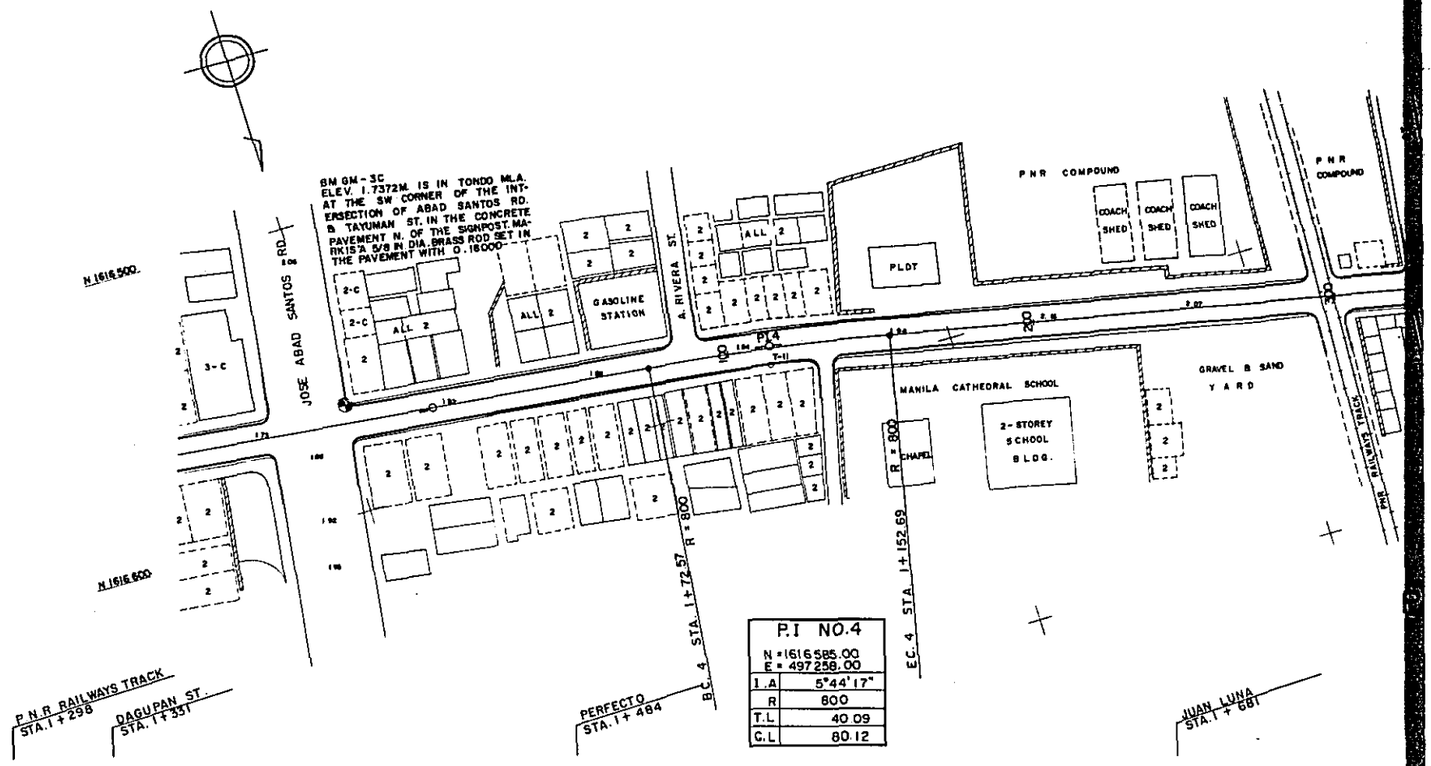
C - 2 1/5

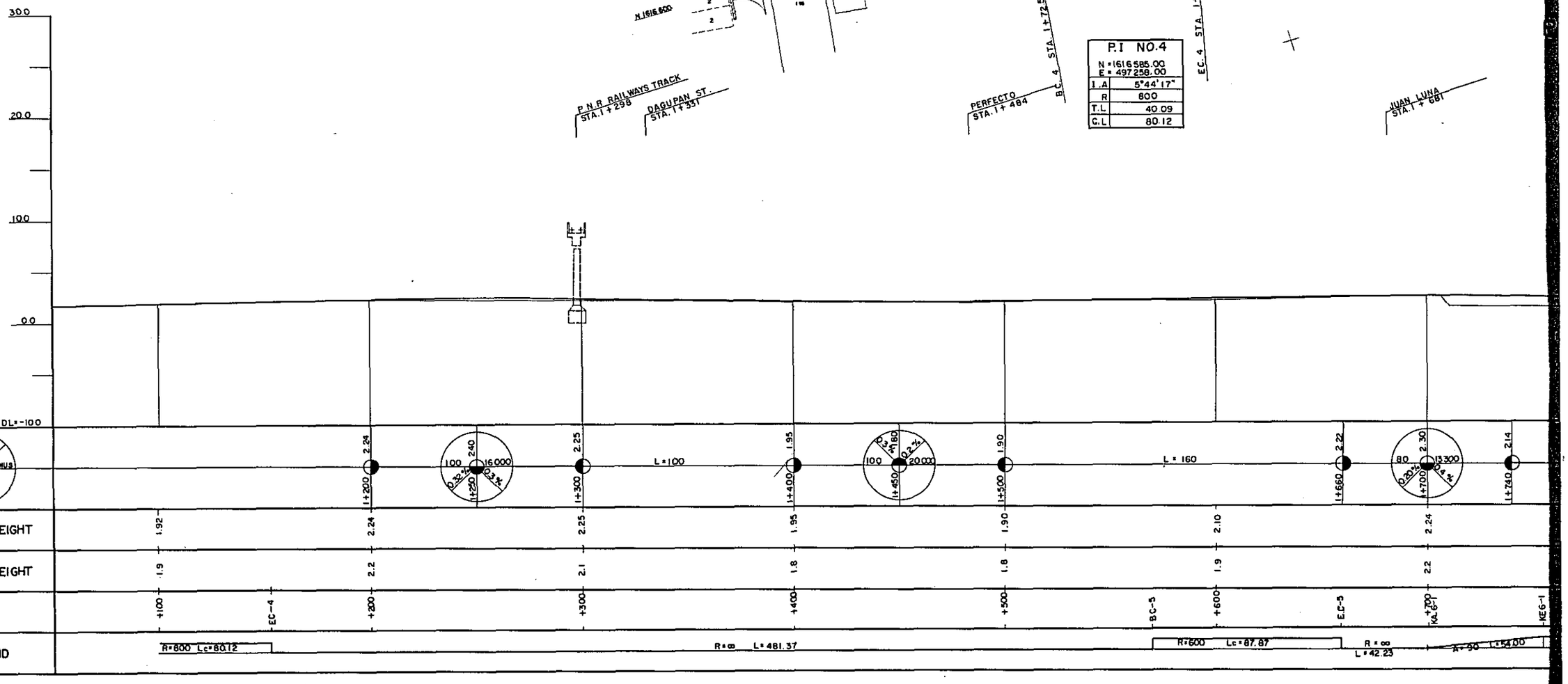
SCALE: AS SHOWN	DATE:	SHEET NO 9

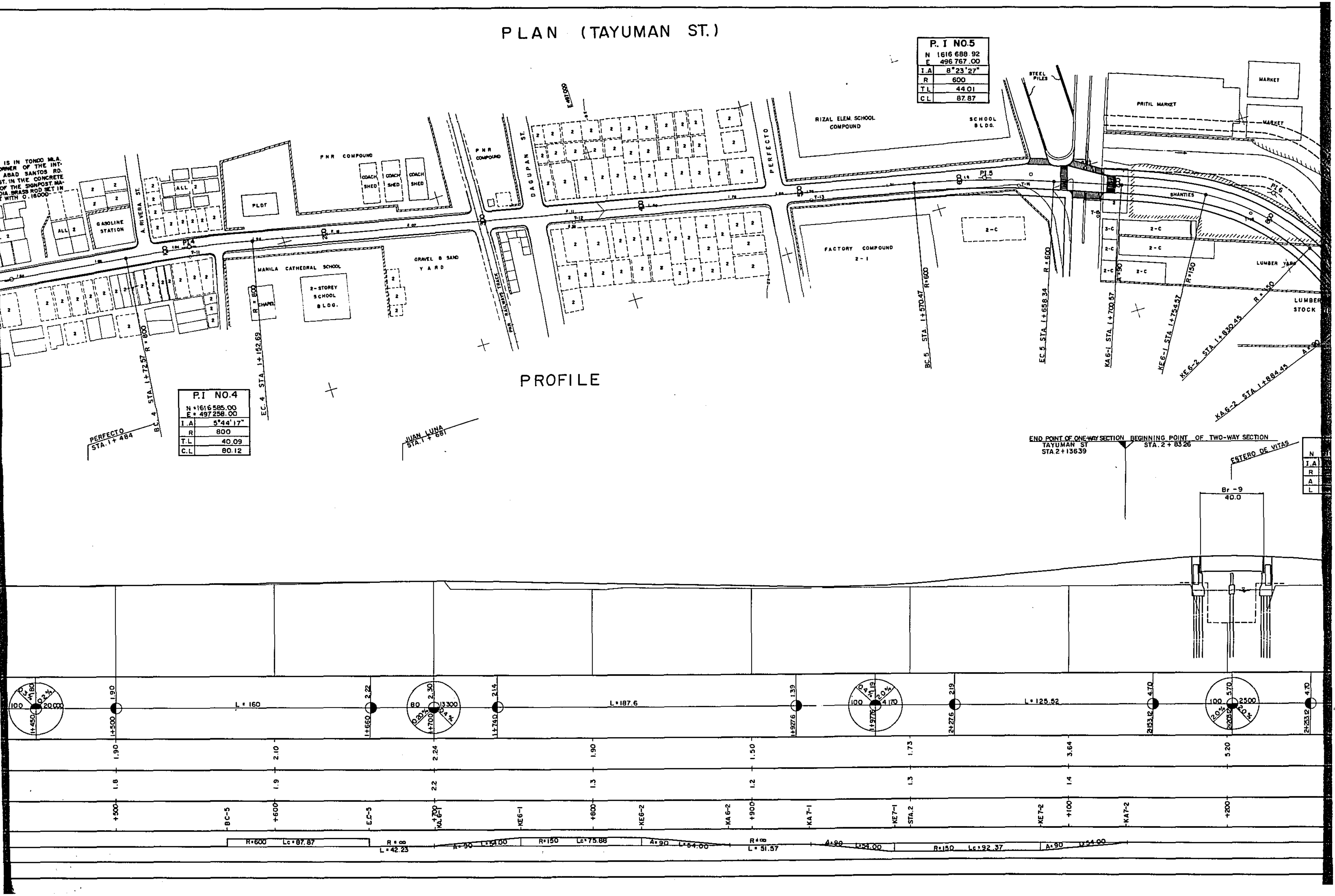
JAPAN INTERNATIONAL COOPERATION AGENCY






BM GM-3C
ELEV. 1.7372M. IS IN TONDO MLA.
AT THE SW CORNER OF THE INT-
ERSECTION OF ABAD SANTOS RD.
& TAYUMAN ST. IN THE CONCRETE
PAVEMENT N. OF THE SIGNPOST. MA-
RK IS A 5/8 IN. DIA. BRASS ROD SET IN
THE PAVEMENT WITH O.18000
N 1616 500
E 497 400
N 1616 600
JOSE ABAD SANTOS RD.
A. RIVERA ST.
GASOLINE STATION
PLOT
PNR COMPOUND
COACH SHED
COACH SHED
COACH SHED
PNR COMPOUND
MANILA CATHEDRAL SCHOOL
2-STOREY SCHOOL BLDG.
CHAPEL
GRAVEL & SAND YARD
PNR RAILWAYS TRACK
P.I NO.4
N = 1616585.00
E = 497258.00
I.A 5°44'17"
R 800
T.L 40.09
C.L 80.12
EC-4 STA. 1+152.69
R = 800
BC-4 STA. 1+72.57
PNR RAILWAYS TRACK
STA. 1+298
DAGUPAN ST
STA. 1+351
PERFECTO
STA. 1+484
JUAN LUNA
STA. 1+681


300
200
100
00
DL=100
VERT CURVE LENGTH
GRADE
RADIUS
STATION
PROPOSED HEIGHT
GROUND HEIGHT
STATION
CURVE BAND
1+100
1+200
1+300
1+400
1+450
1+500
1+600
1+660
1+700
1+740
EC-4
BC-5
EC-5
KE6-1
1.92
1.9
2.24
2.2
2.25
2.1
1.95
1.8
1.90
1.8
2.10
1.9
2.22
2.30
2.24
2.2
2.14
L=100
L=160
R=800 Lc=80.12
R=∞ L=481.37
R=600 Lc=87.87
R=∞ L=42.23
A=50 L=54.00



PLAN (TAYUMAN ST.)
P. I NO.5
N 1616 688.92
E 496 767.00
I.A 8°23'27"
R 600
T.L 44.01
C.L 87.87
STEEL PILES
MARKET
PRITIL MARKET
RIZAL ELEM. SCHOOL COMPOUND
SCHOOL BLDG.
PNR COMPOUND
COACH SHED
DAGUPAN ST.
PERFECTO
A. RIVERA ST.
GASOLINE STATION
MANILA CATHEDRAL SCHOOL
2-STOREY SCHOOL BLDG.
CHAPEL
GRAVEL & SAND YARD
FACTORY COMPOUND
SHANTIES
LUMBER YARD
LUMBER STOCK
PNR RAILWAYS TRACK
BC 5 STA 1+570.47
R=600
EC 5 STA 1+658.34
KA 6-1 STA 1+700.57
KE 6-1 STA 1+754.57
KE 6-2 STA 1+830.45
KA 6-2 STA 1+884.45
R=150
BC 4 STA 1+72.57
R=800
EC 4 STA 1+152.69
PERFECTO STA.1+484
JUAN LUNA STA.1+681
P.I NO.4
N=1616 585.00
E=497 258.00
I.A 5°44'17"
R 800
T.L 40.09
C.L 80.12
PROFILE
END POINT OF ONE-WAY SECTION TAYUMAN ST STA.2+13639
BEGINNING POINT OF TWO-WAY SECTION STA.2+8326
ESTERO DE VITAS
Br-9
40.0
L=160
L=187.6
L=125.52
R=600 Lc=87.87
R=∞ L=42.23
A=90 L=54.00
R=150 Lc=75.88
A=90 L=54.00
R=∞ L=51.57
A=90 L=54.00
R=150 Lc=92.37
A=90 L=54.00
BC-5
EC-5
KA6-1
KE6-1
KE6-2
KA6-2
KA7-1
KE7-1
STA.2
KE7-2
KA7-2
+500
+600
+700
+800
+900
+100
+200

REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
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C — 2 2/5

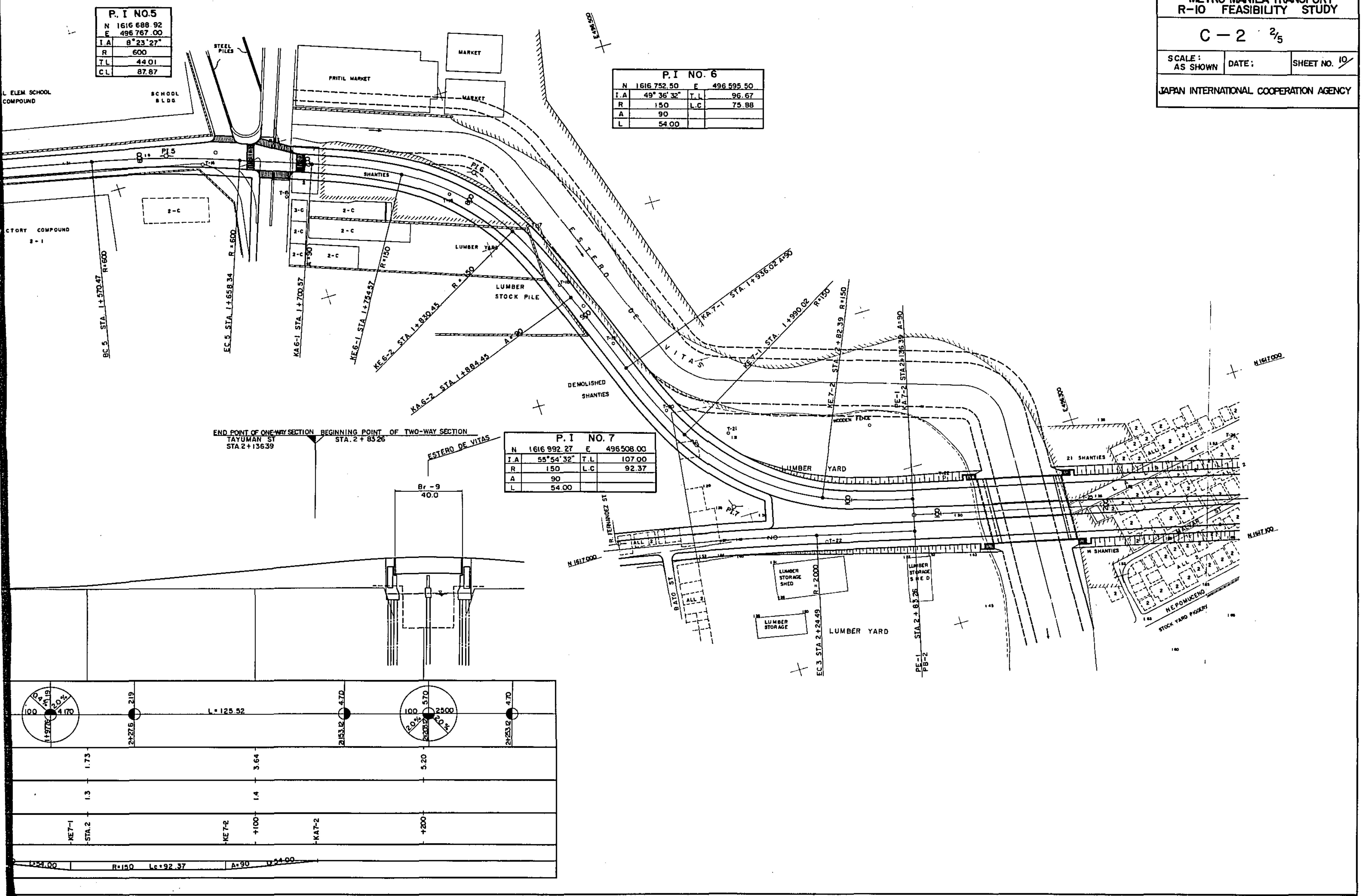
SCALE : AS SHOWN	DATE :	SHEET NO. 10/

JAPAN INTERNATIONAL COOPERATION AGENCY

P. I NO.5	
N	1616 688.92
E	496 767.00
I.A	8°23'27"
R	600
TL	44.01
CL	87.87

P.I NO. 6			
N	1616 752.50	E	496 595.50
I.A	49° 36' 32"	T.L	96.67
R	150	L.C	75.88
A	90		
L	54.00		

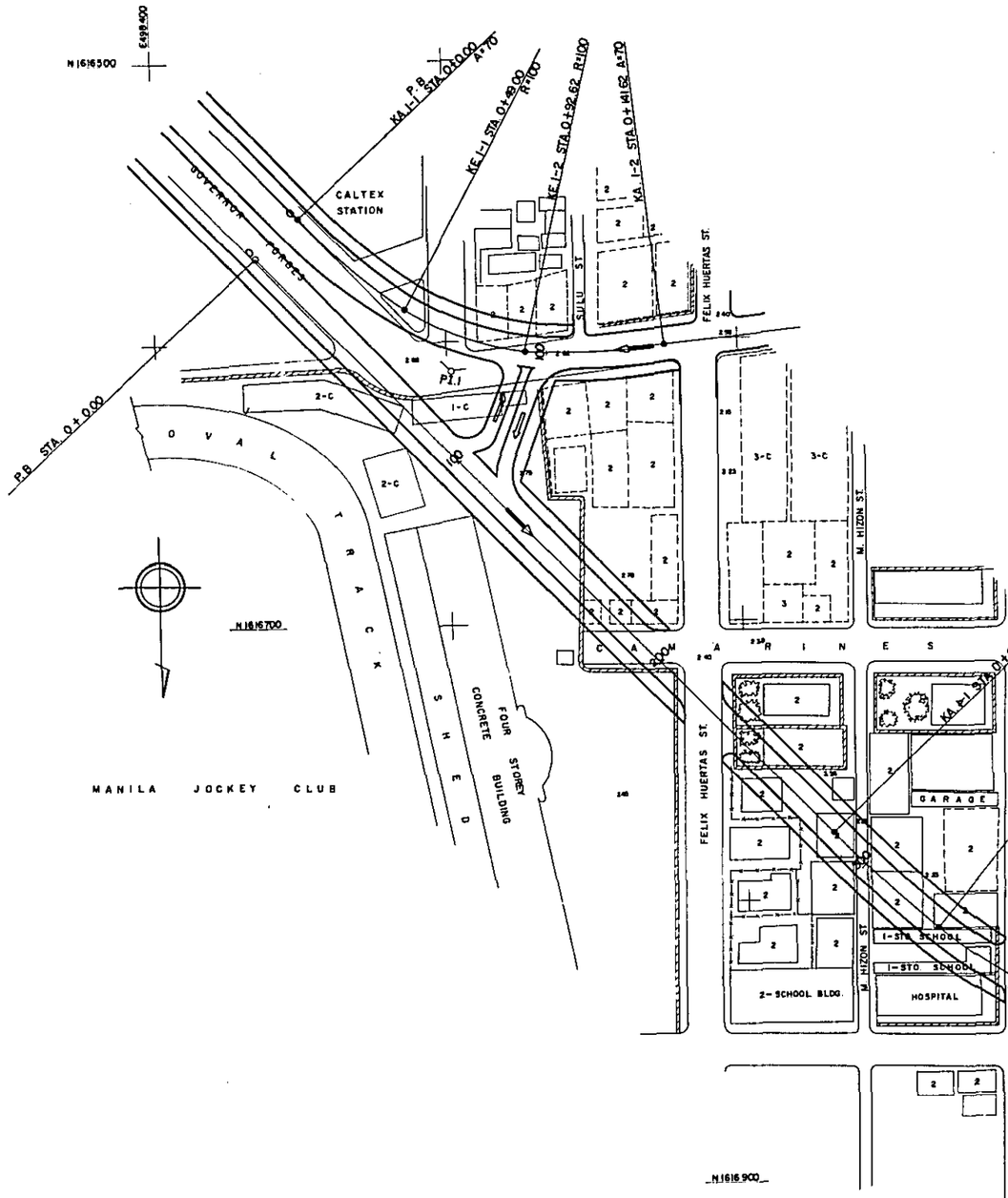
P.I NO. 7			
N	1616 992.27	E	496508.00
I.A	55°54'32"	T.L	107.00
R	150	L.C	92.37
A	90		
L	54.00		



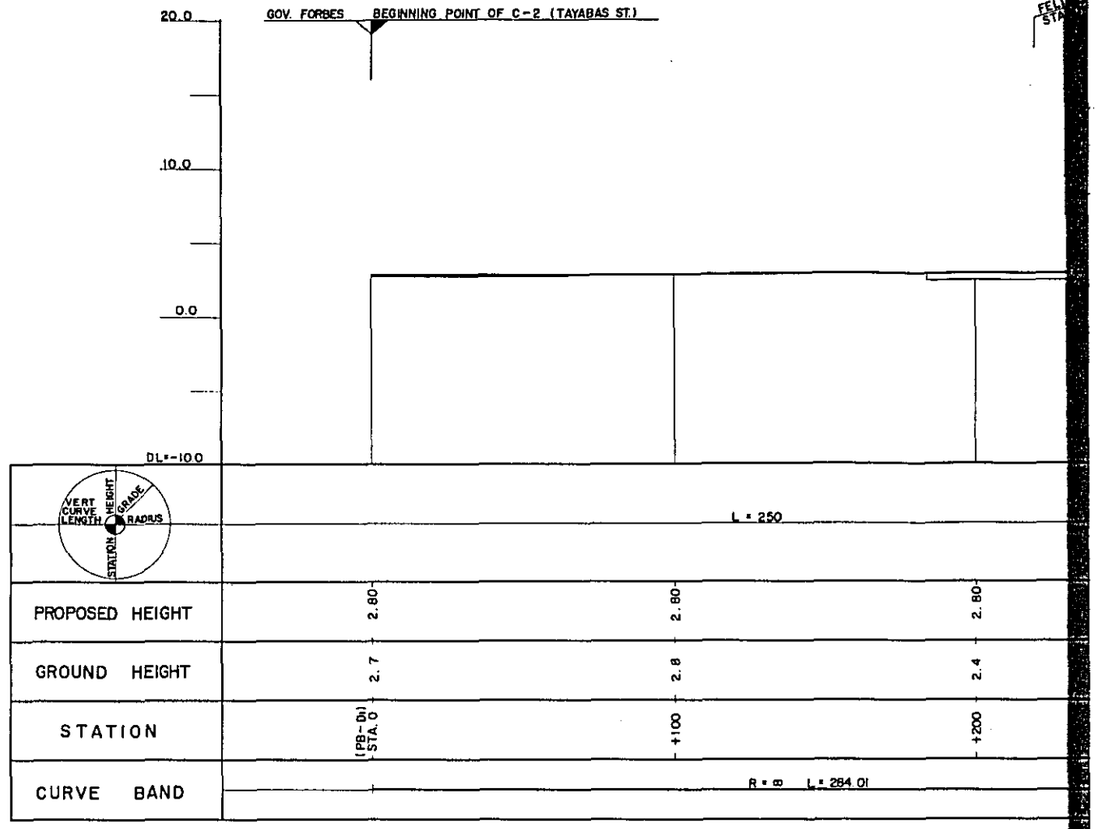
STEEL PILES
MARKET
FRITIL MARKET
L ELEM SCHOOL COMPOUND
SCHOOL BLDG
CTORY COMPOUND
SHANTIES
LUMBER YARD
LUMBER STOCK PILE
ESTERO DE VITAS
DEMOLISHED SHANTIES
WOODEN FENCE
LUMBER YARD
21 SHANTIES
R. FERNANDEZ ST
BATO ST
LUMBER STORAGE SHED
LUMBER STORAGE
NEPOMUCENO
STOCK YARD PIGGERY
BC.5 STA 1+570.47
R=600
EC.5 STA 1+658.34
KA 6-1 STA 1+700.57
KE 6-1 STA 1+754.57
KE 6-2 STA 1+830.45
KA 6-2 STA 1+884.45
R=150
A=90
KA 7-1 STA 1+936.02 A=90
KE 7-1 STA 1+990.02
KE 7-2 STA 2+82.39
R=150
PE-1 KA 7-2 STA 2+136.39 A=90
EC.3 STA 2+24.49
R=2000
STA 2+83.26
PE-1 PB-2
N 1617 000
N 1617 100
E 496 500
E 496 300
END POINT OF ONE-WAY SECTION TAYUMAN ST STA 2+136.39
BEGINNING POINT OF TWO-WAY SECTION STA. 2+83.26
ESTERO DE VITAS
Br-9
40.0
L=125.52
2+27.6
2+153.12
2+253.12
1.73
3.64
5.20
1.3
1.4
KE7-1
STA.2
KE 7-2
+100
KA7-2
+200
L=54.00
R=150 Lc=92.37
A=90
L=54.00

PLAN (TAYABAS ST.)

P.I NO.1			
N=1616610.27		E=498298.86	
I.A	53°3'59"	T.L	74.88
R	100	LC	43.62
A	70		
L	49.00		



PI NO.1			
N=1616855.50		E=498095.50	
I.A	45°23'04"	T.L	108.83
R	200	L.C	108.42
A	100		
L	50.00		

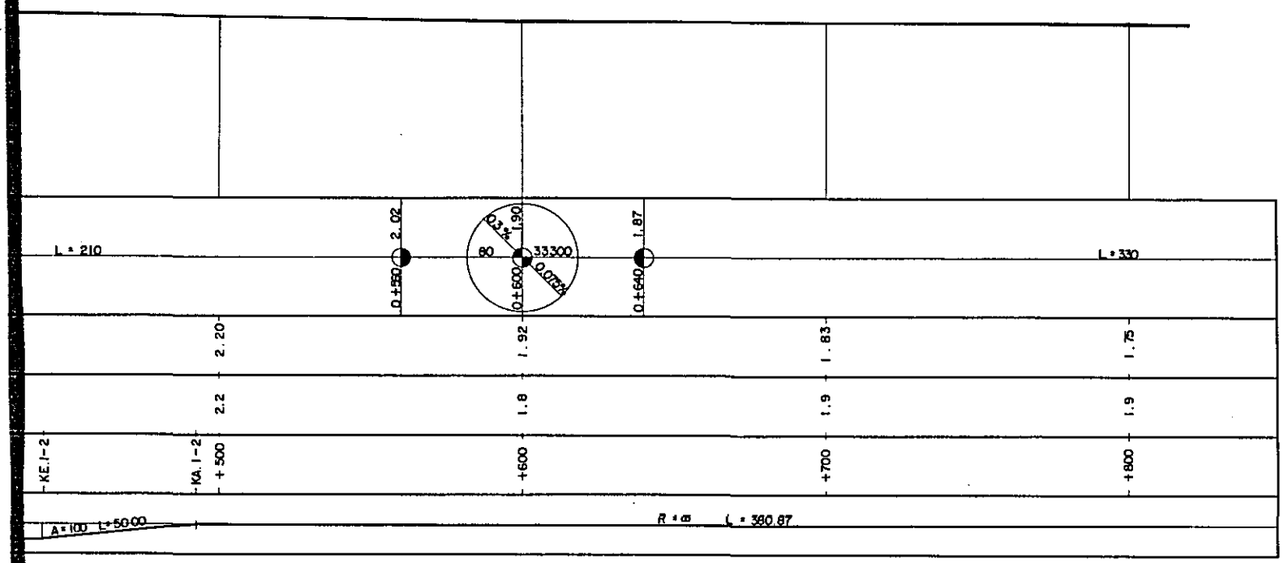


PROFILE

FELIX HUERTAS ST. STA. 0+220
RIZAL AVENUE STA. 0+480
20.0
GOV. FORBES
BEGINNING POINT OF C-2 (TAYABAS ST.)
10.0
0.0
DL=-10.0
GRADE
RADIUS
L = 250
2.80
0+250
100
2.80
33 300
0+300
0.3%
2.65
0+350
L = 210
2.02
0+550
0.3%
1.90
80
33300
0+600
0.075%
1.87
0+640
HEIGHT
2.80
2.80
2.80
2.76
2.50
2.20
1.92
1.83
HEIGHT
2.7
2.8
2.4
2.2
2.3
2.2
1.8
1.9
ION
(PB-D1) STA. 0
+100
+200
KA.1-1
+300
KE.1-1
+400
KE.1-2
KA.1-2
+500
+600
+700
BAND
R = ∞ L = 284.01
A=100 L=50.00
R= 200 Lc = 108.42
A= 100 L=50.00
R = ∞ L = 380.87

E498000
KA.1-2 STA. 0+492.43 A=100
N1616 600
N1616 900
AVENUE
RIZAL
ANACLETO ST.
MISERICORDIA ST.
MAKATA ST.
S. REYES ST.
KUSANG LOOB ST.
IPIL ST.
ILUSTRE ST.
500
600
700
800
2-C

RIZAL AVENUE
STA 0+480



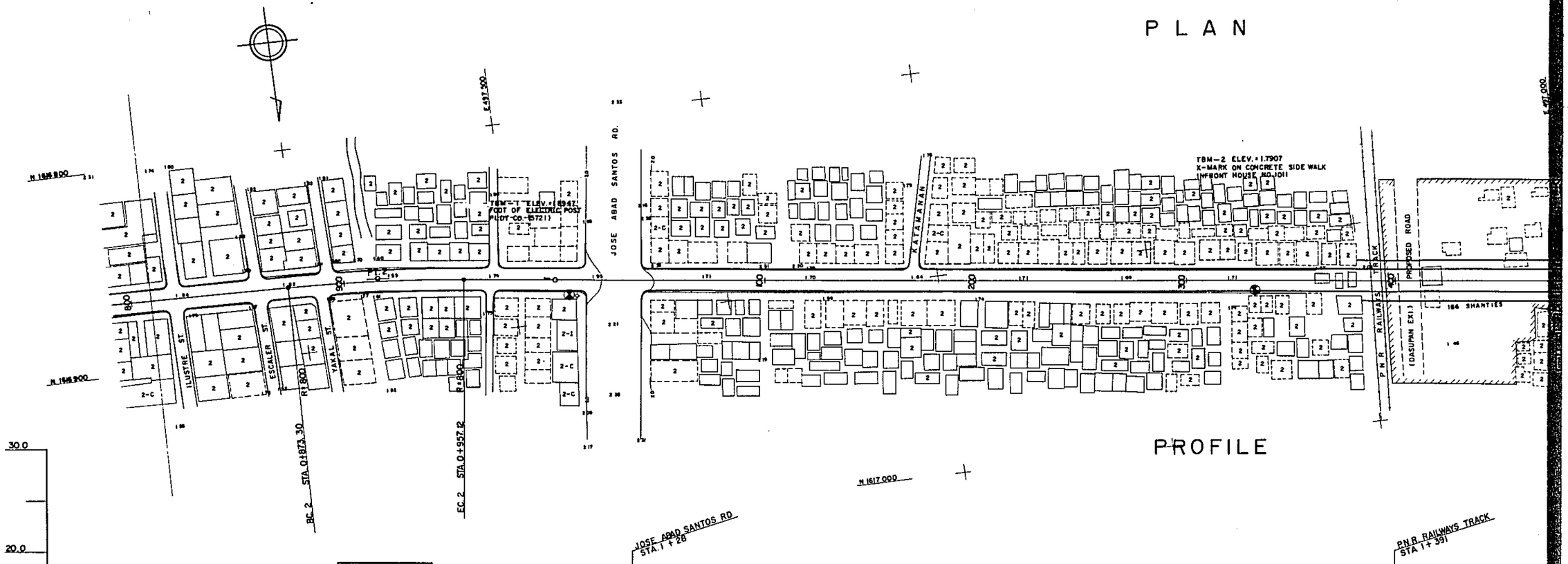
REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

C - 2 3/5

SCALE: AS SHOWN	DATE:	SHEET NO 11

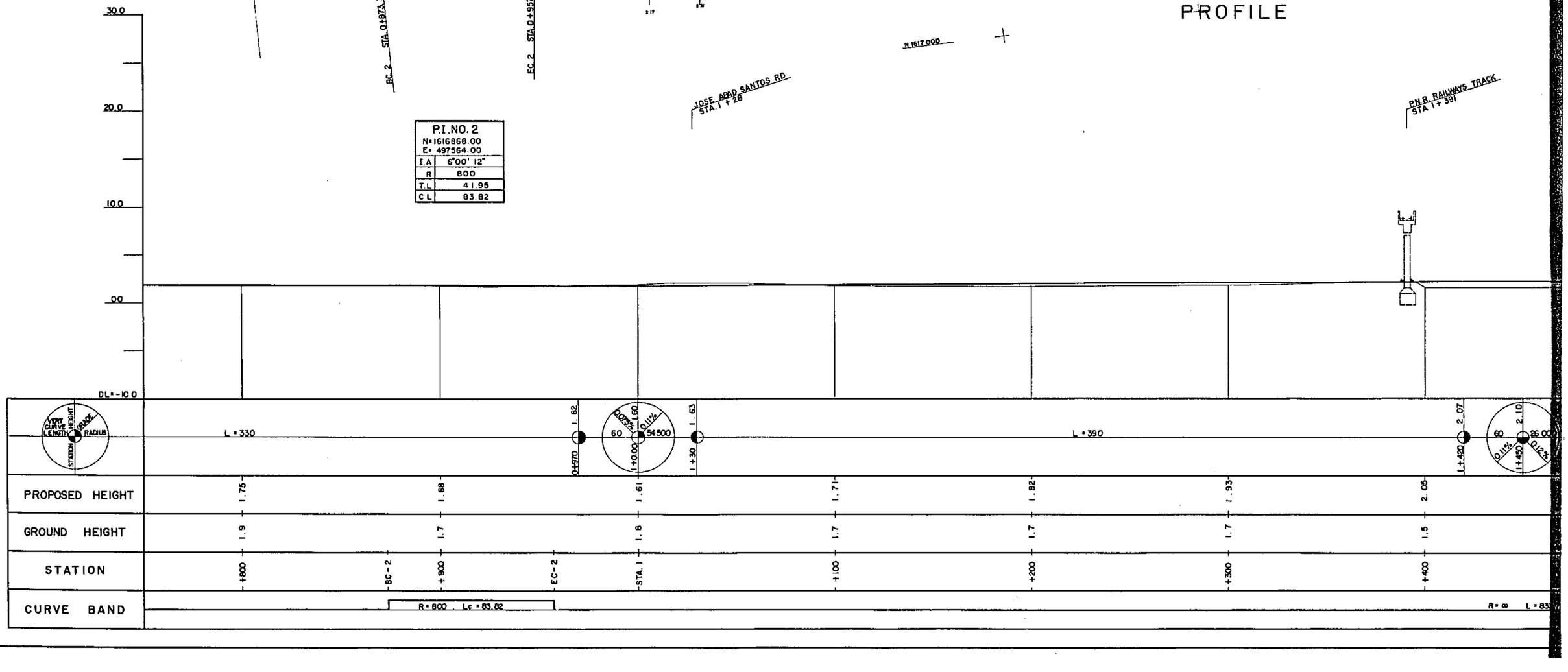
JAPAN INTERNATIONAL COOPERATION AGENCY

PLAN



P.I.NO. 2	
N=1616868.00	
E= 497564.00	
I.A	6°00' 12"
R	800
T.L	41.95
C.L	83.82

PROFILE



PLAN

P.I NO.3	
N=1616995.00	
E= 496579.50	
I A	6°41'31"
R	2.000
T.L	116.93
C.L	233.59

TBM-2 ELEV.=1.7907
X-MARK ON CONCRETE SIDE WALK
INFRONT HOUSE NO.1011

KATAMARAN

P N R RAILWAYS TRACK

PROPOSED ROAD

(OASUPAN EXT.)

186 SHANTIES

CANAL

6- SHANTIES

84 SHANTIES

GASOLINE STATION

ALL 2-R

JUAN LUNA

LUKBAN ST

ANGAT ST.

FERNANDEZ ST

BATO ST

E.497,000

E.496000

N 1617,000

R=2.000

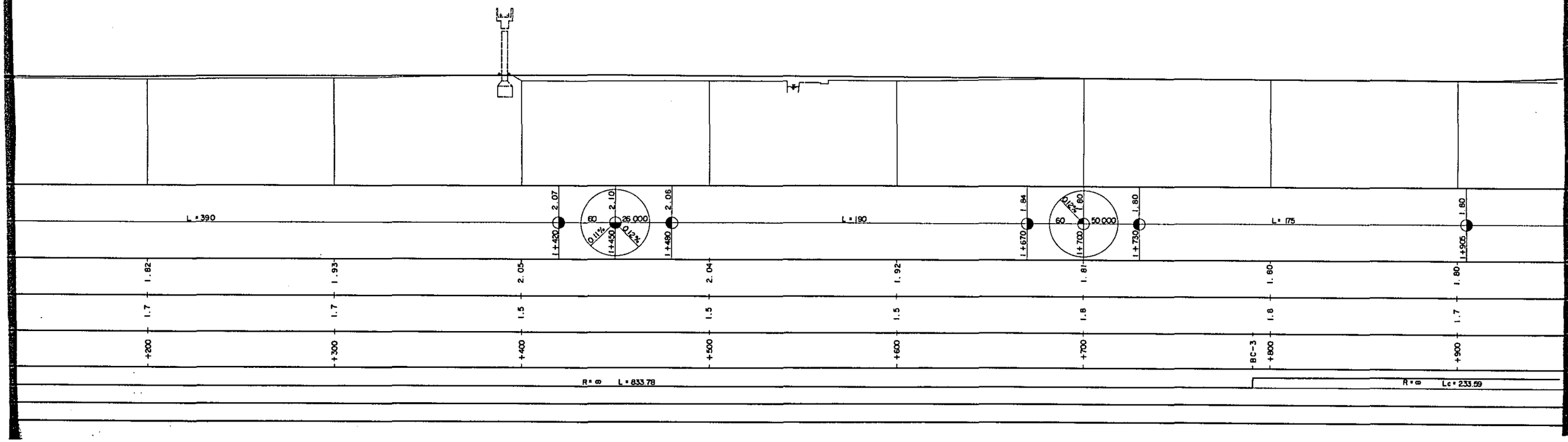
BC-3 STA. 1+790.90

P N R RAILWAYS TRACK
STA 1+391

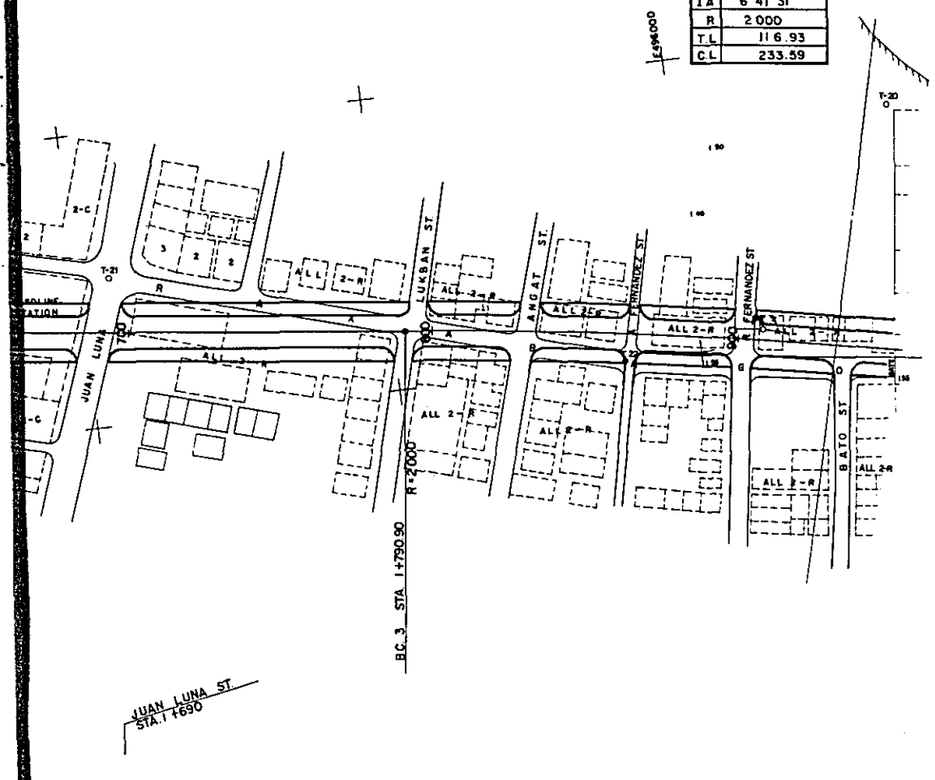
CANAL

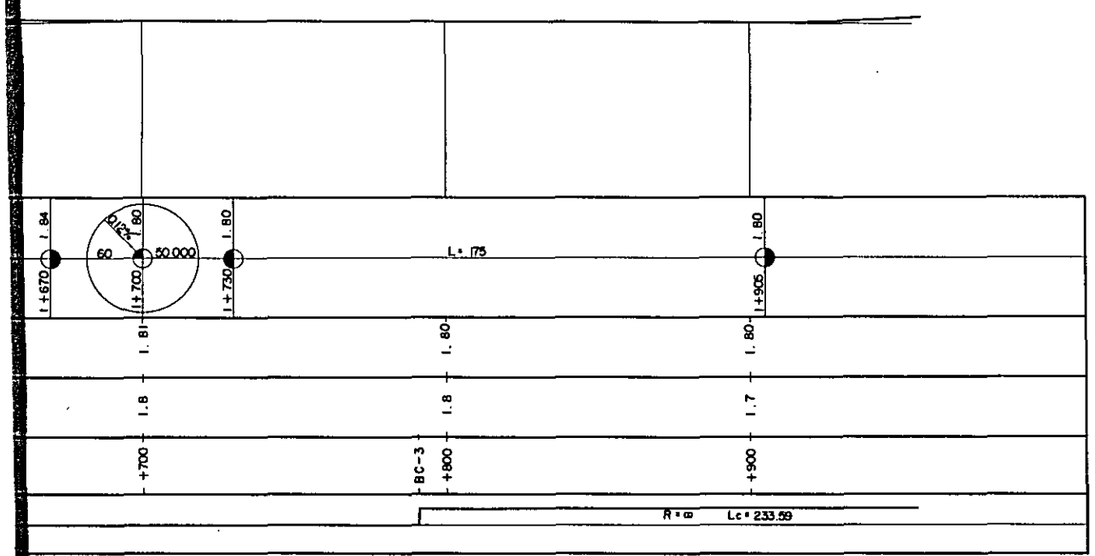
JUAN LUNA ST.
STA.1+690

PROFILE



P.I NO.3	
N=1616995.00	
E= 496579.50	
I A	6°41' 31"
R	2 000
T.L	116.93
C.L	233.59



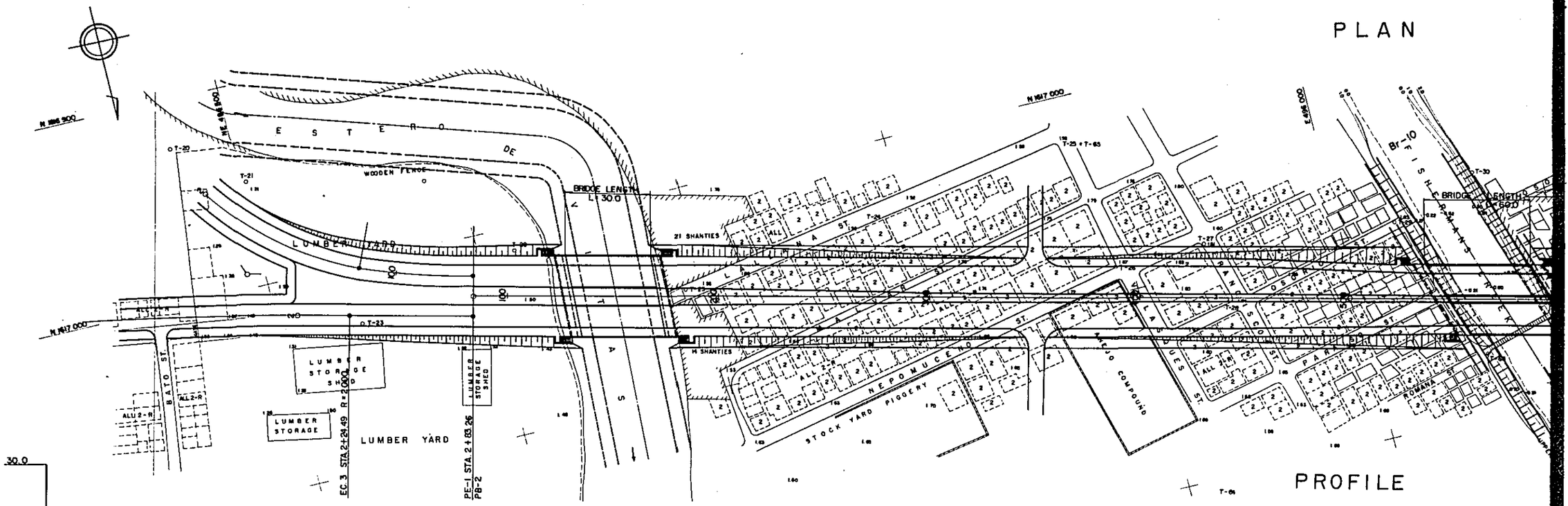


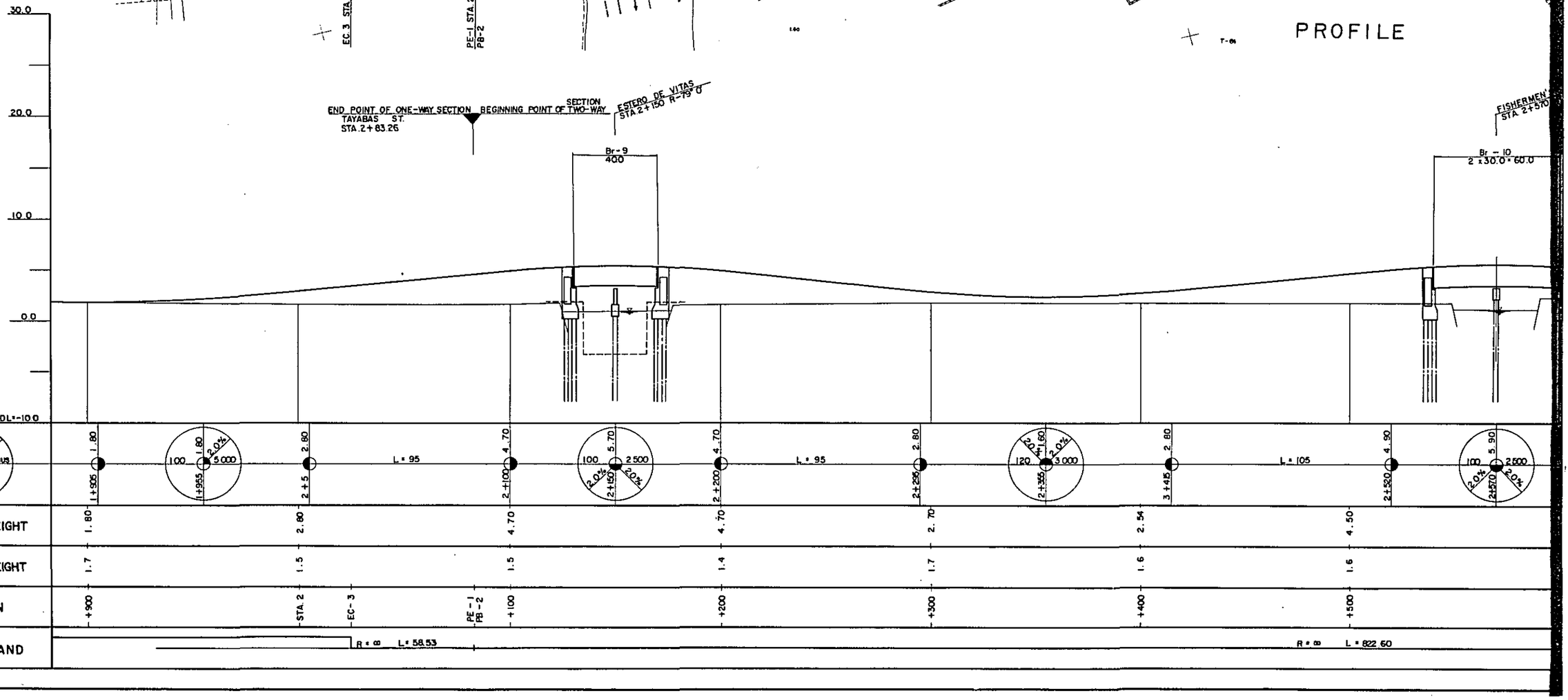
REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

C - 2 4/5

SCALE: AS SHOWN	DATE:	SHEET NO 12

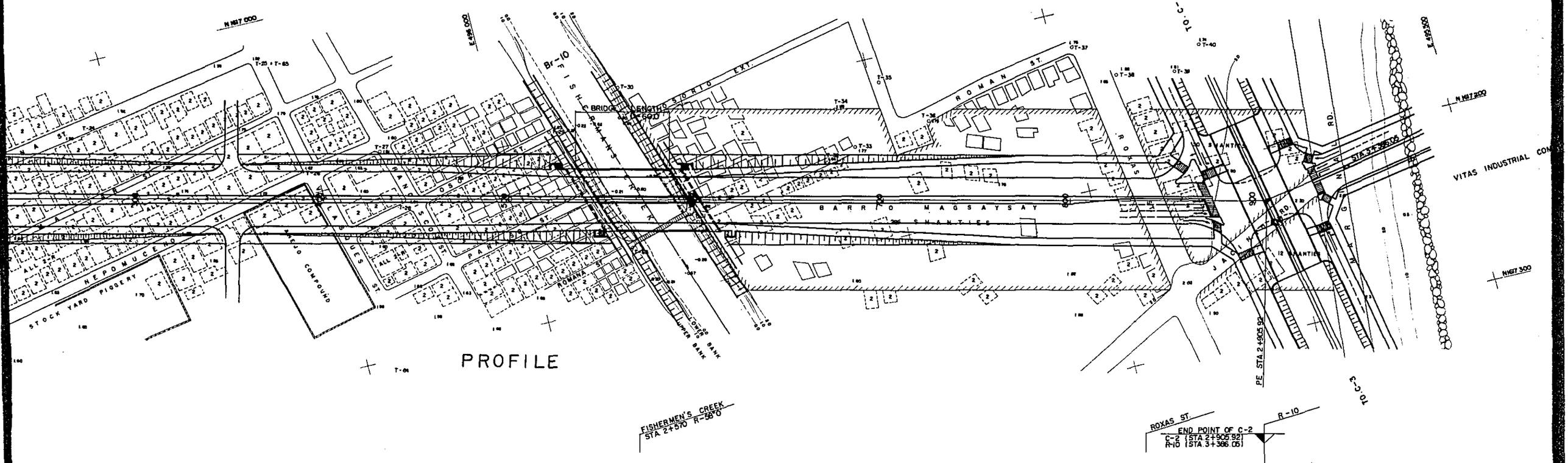
JAPAN INTERNATIONAL COOPERATION AGENCY



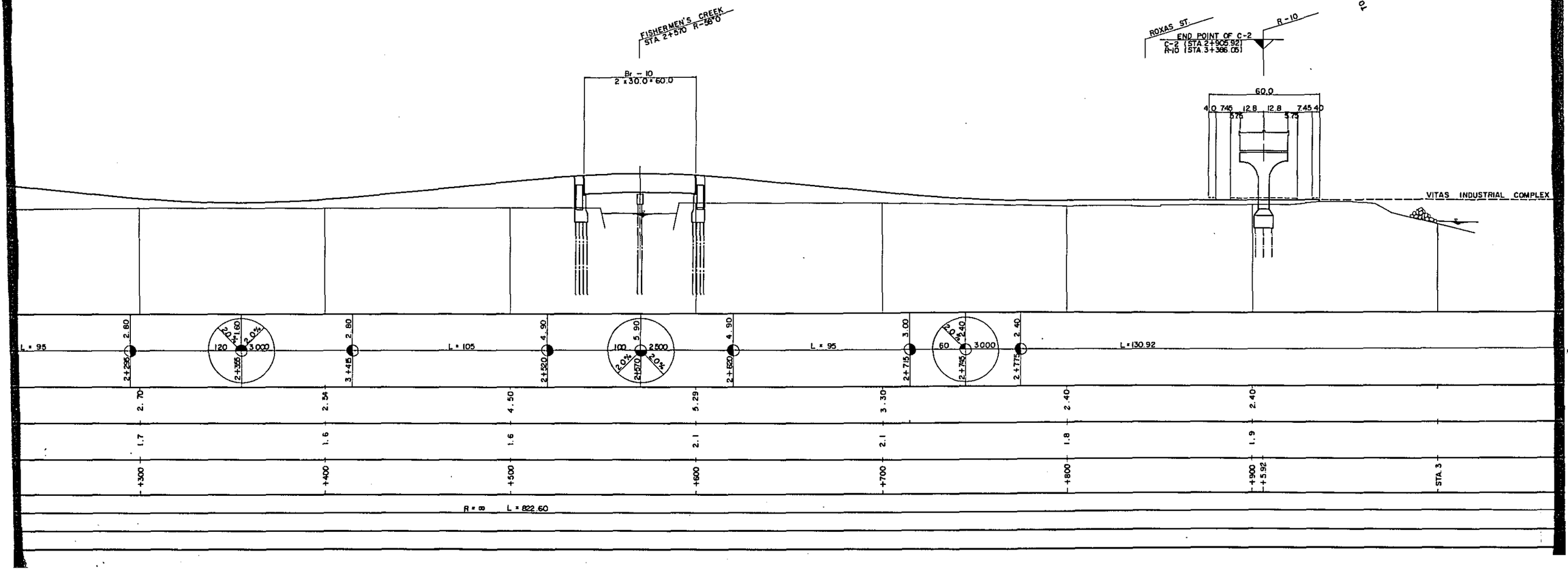


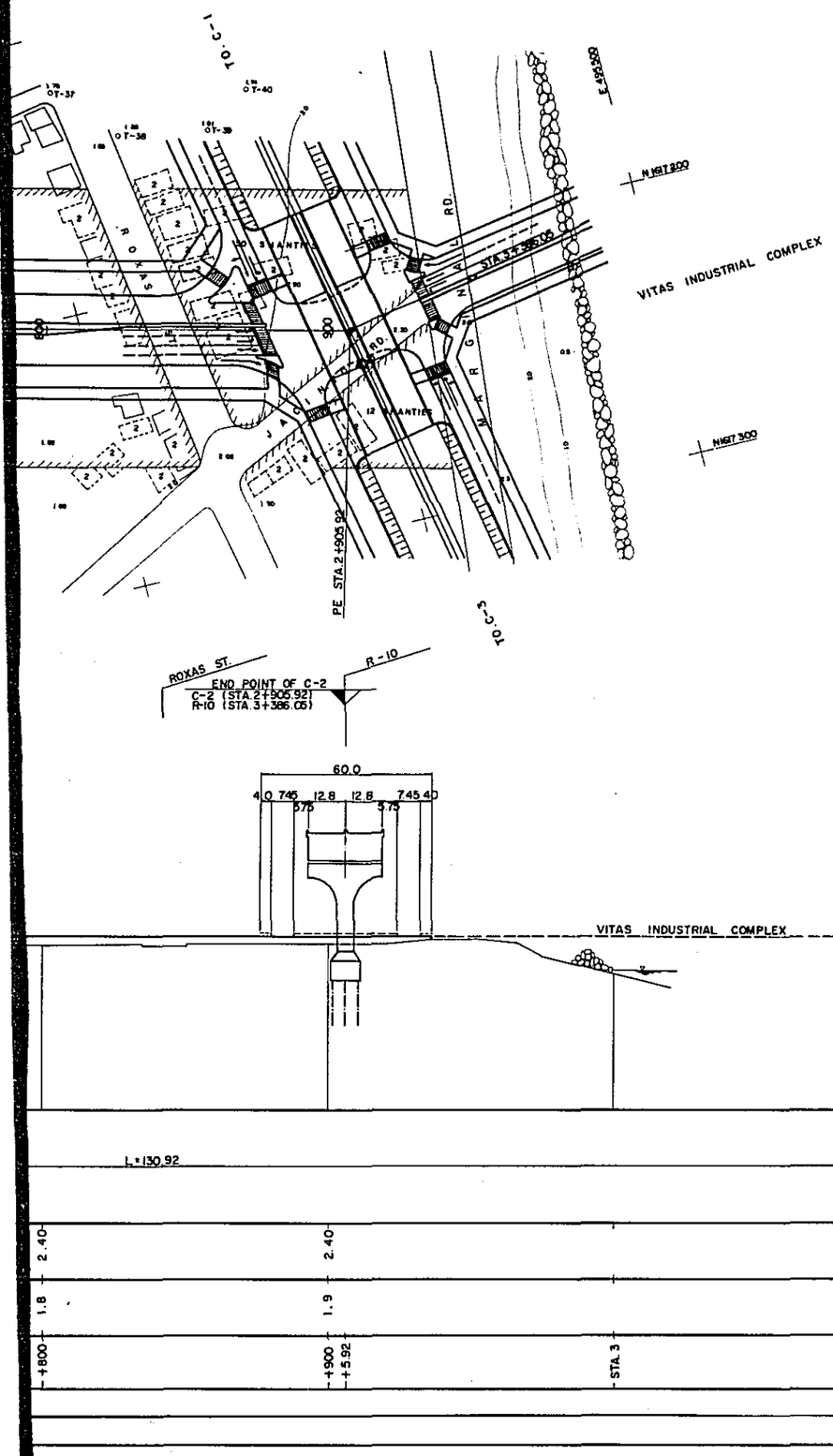
PLAN
PROFILE
ESTERO DE VITAS
LUMBER YARD
WOODEN FENCE
BRIDGE LENGTH L 30.0
21 SHANTIES
14 SHANTIES
LUMBER STORAGE SHED
LUMBER STORAGE
EC 3 STA 2+24.49 R=2000
PE-1 STA 2+83.26 PB-2
BATO ST.
STOCK YARD PIGGERY
NEPOMUCENO ST.
COMPOUND
FISHERMANS CREEK
Br-10
BRIDGE LENGTH L 60.0
N 1617 000
N 1616 900
E 496 000
T-20
T-21
T-23
T-25 + T-65
T-27
T-30
END POINT OF ONE-WAY SECTION BEGINNING POINT OF TWO-WAY SECTION
TAYABAS ST.
STA.2+83.26
ESTERO DE VITAS STA 2+150 R-79°0
FISHERMEN'S STA 2+570
Br-9 400
Br-10 2 x 30.0 = 60.0
30.0
20.0
10.0
0.0
DL=-10.0
VERT CURVE LENGTH
HEIGHT
GRADE
RADIUS
STATION
1.80
1+905
1.80
100
5000
2.0%
1+955
2.80
2+5
L = 95
4.70
2+100
5.70
100
2500
2.0%
2+150
4.70
2+200
L = 95
2.80
2+255
1.60
120
3000
2.0%
2+355
2.80
3+415
L = 105
4.90
2+520
5.90
100
2500
2.0%
2+570
PROPOSED HEIGHT
1.80
2.80
4.70
4.70
2.70
2.54
4.50
GROUND HEIGHT
1.7
1.5
1.5
1.4
1.7
1.6
1.6
STATION
+900
STA. 2
EC-3
PE-1 PB-2
+100
+200
+300
+400
+500
CURVE BAND
R = ∞ L = 58.53
R = ∞ L = 822.60

PLAN



PROFILE





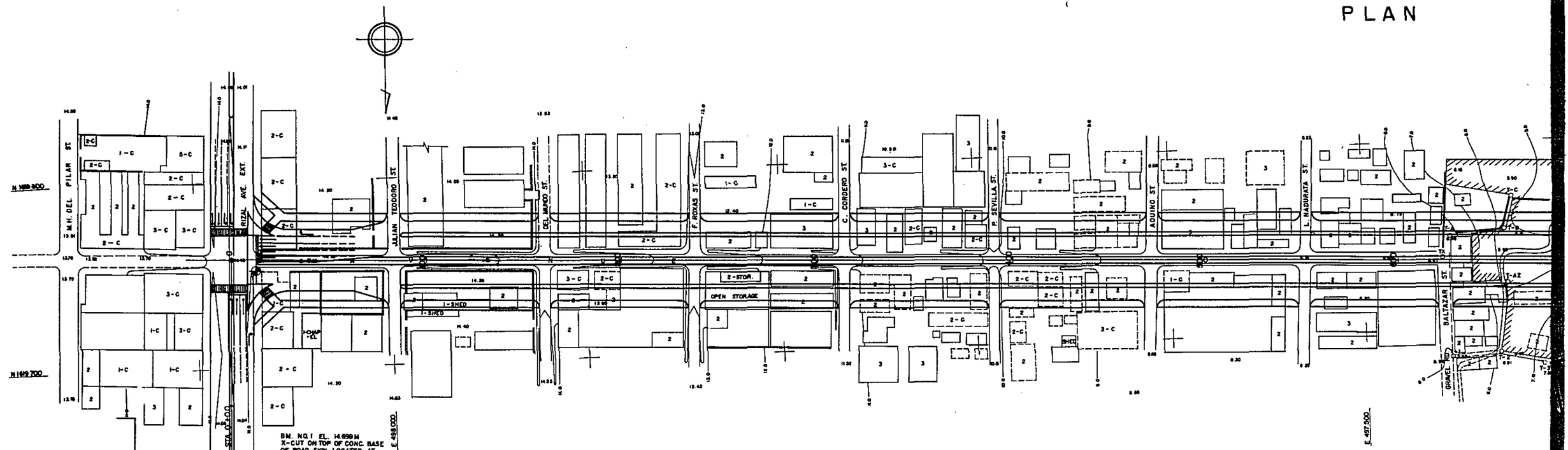
REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

C - 2 5/5

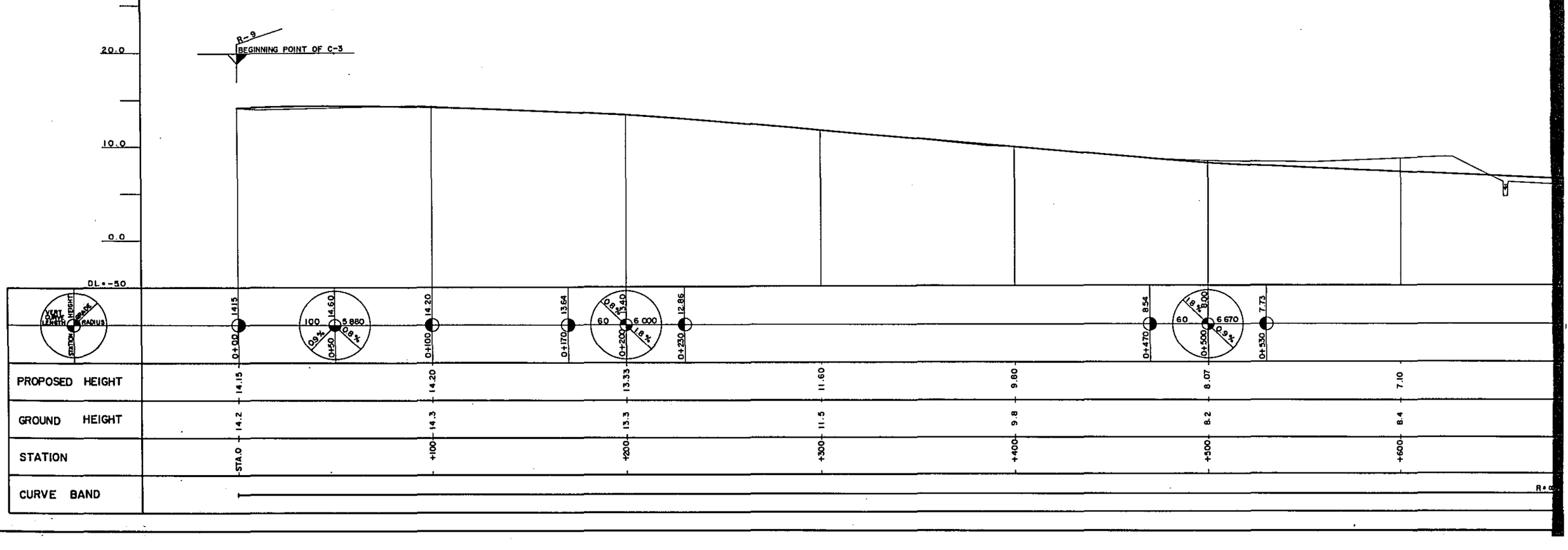
SCALE: AS SHOWN	DATE:	SHEET NO 13

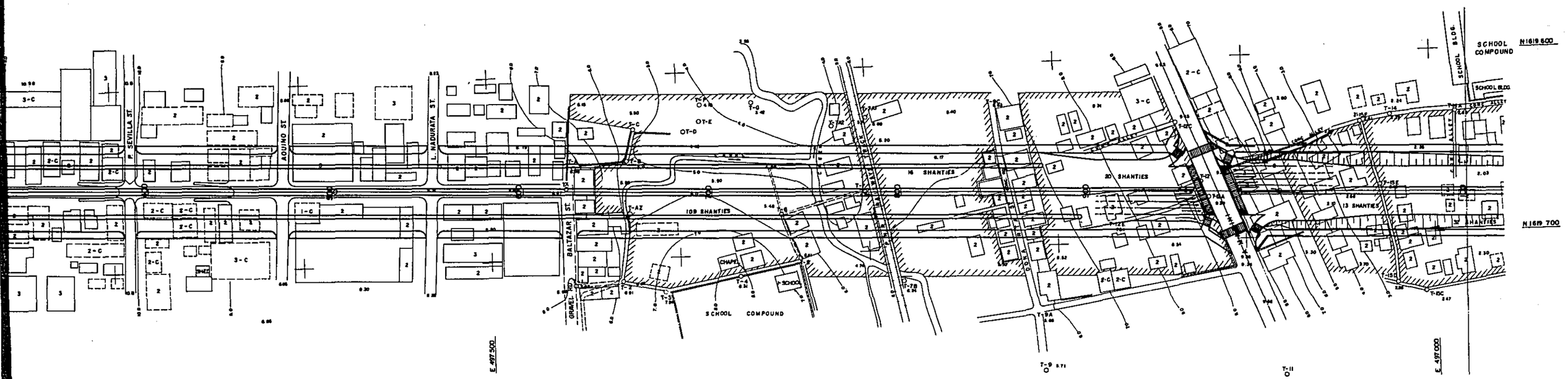
JAPAN INTERNATIONAL COOPERATION AGENCY

PLAN



PROFILE





PLAN

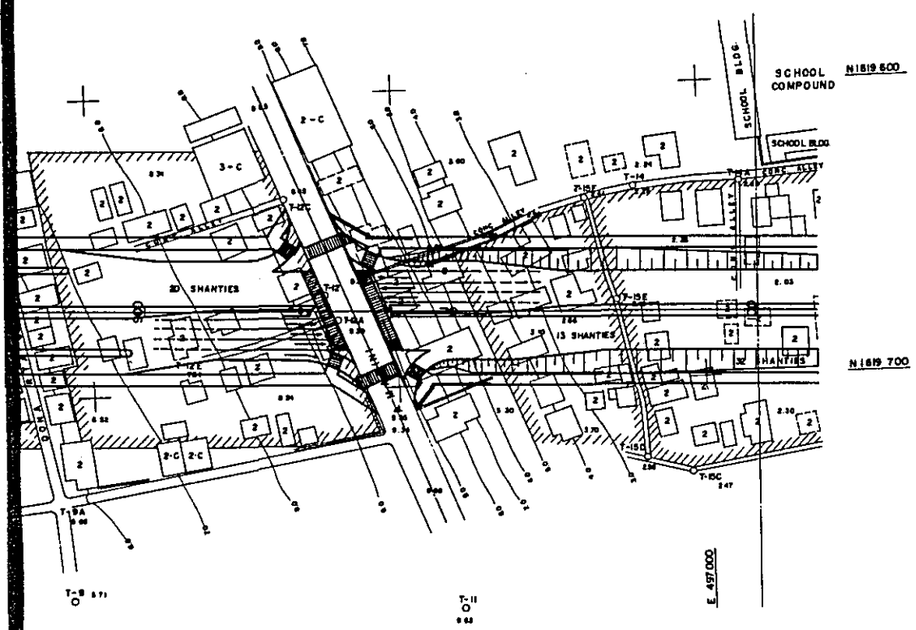
PROFILE

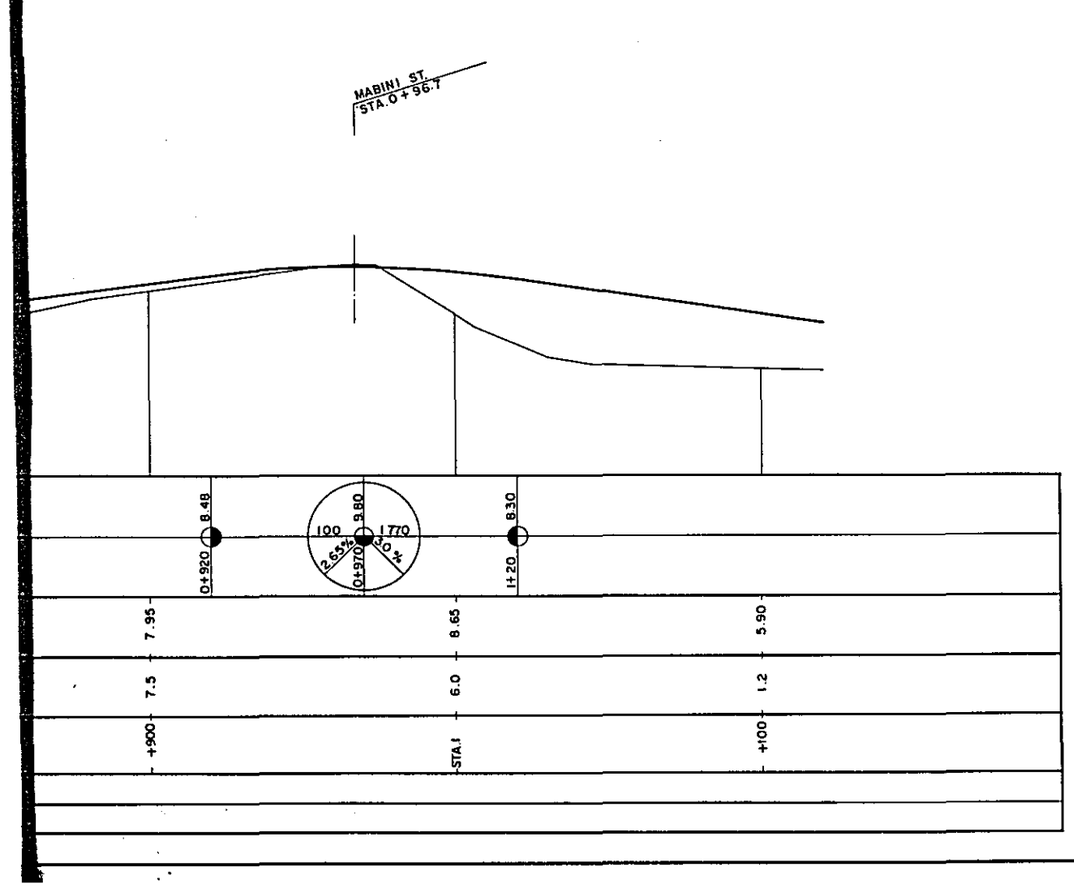
REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

C – 3 1/3

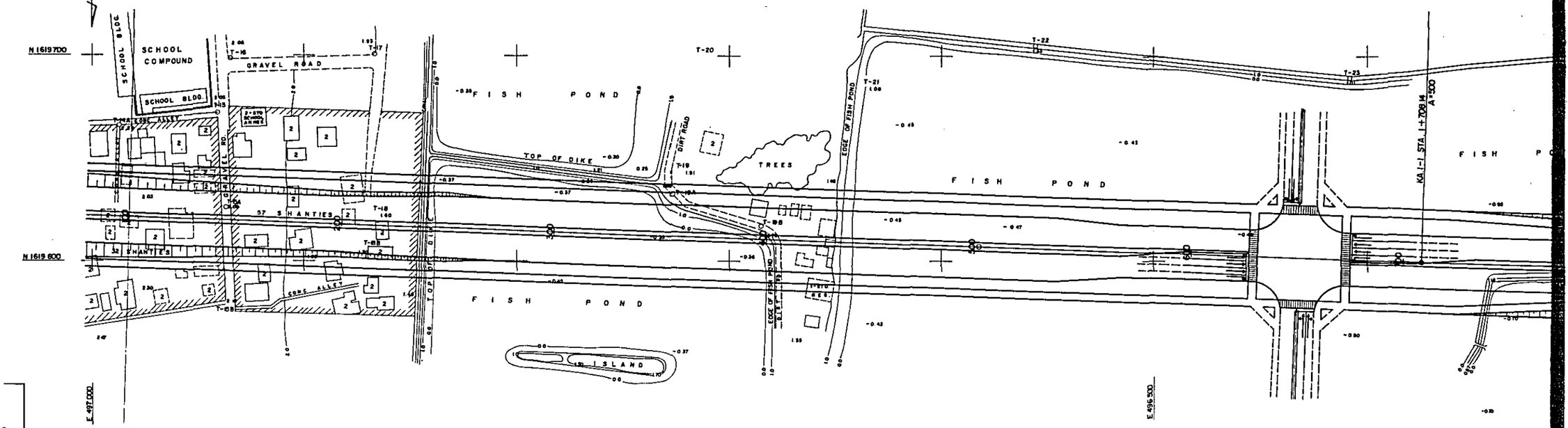
SCALE : AS SHOWN	DATE ;	SHEET NO. 14

JAPAN INTERNATIONAL COOPERATION AGENCY

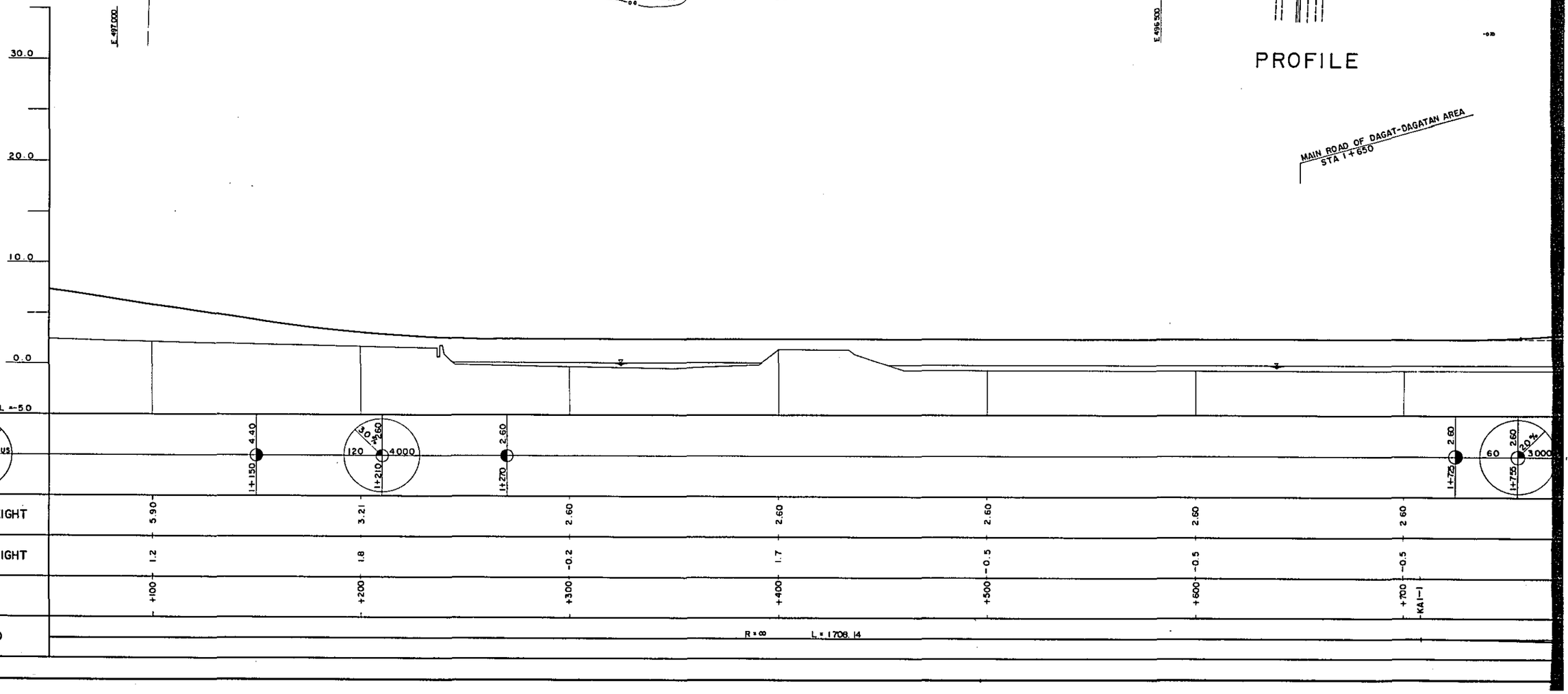




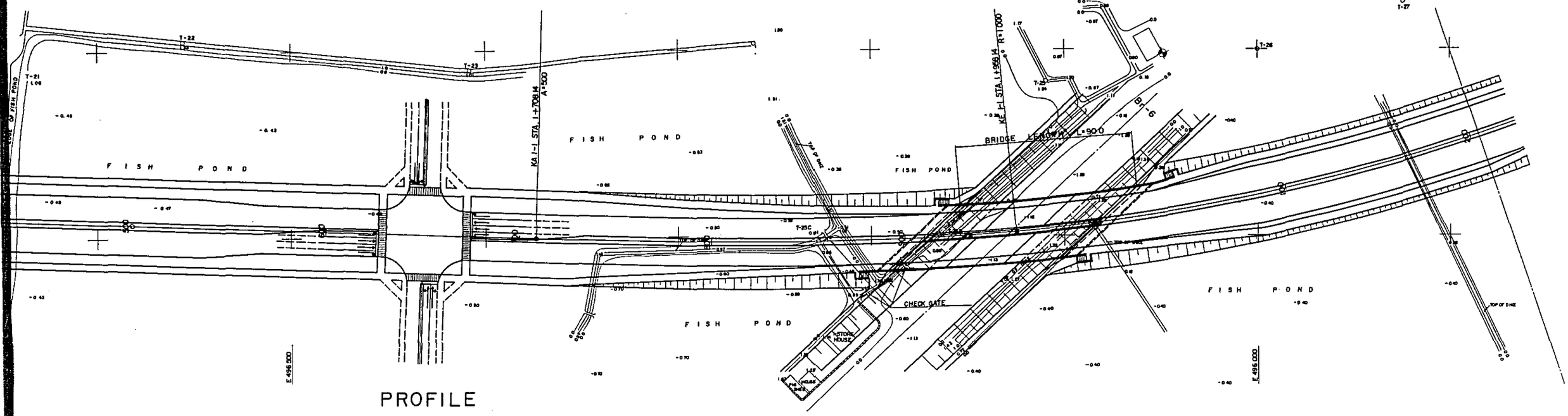
PLAN



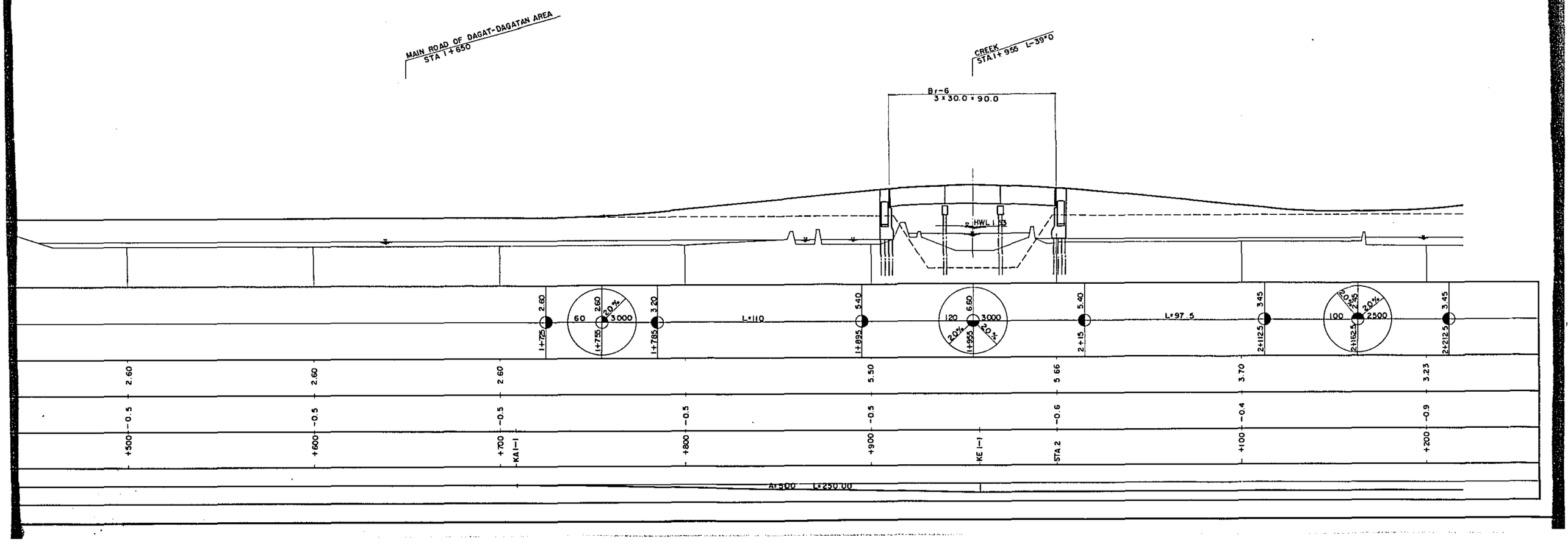
PROFILE

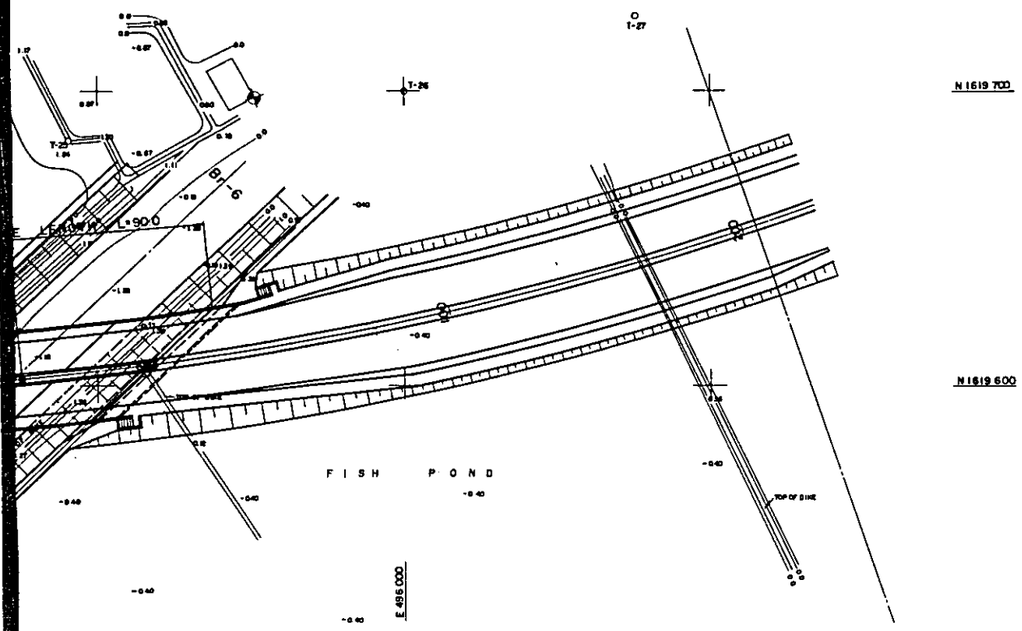


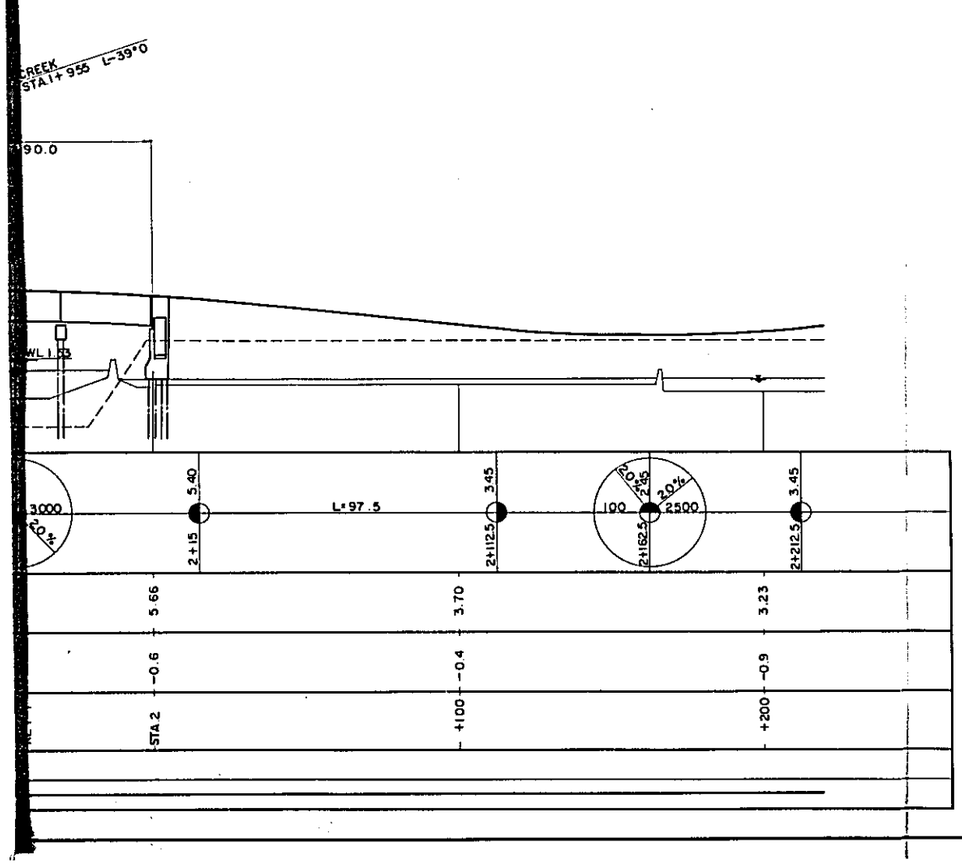
PLAN



PROFILE







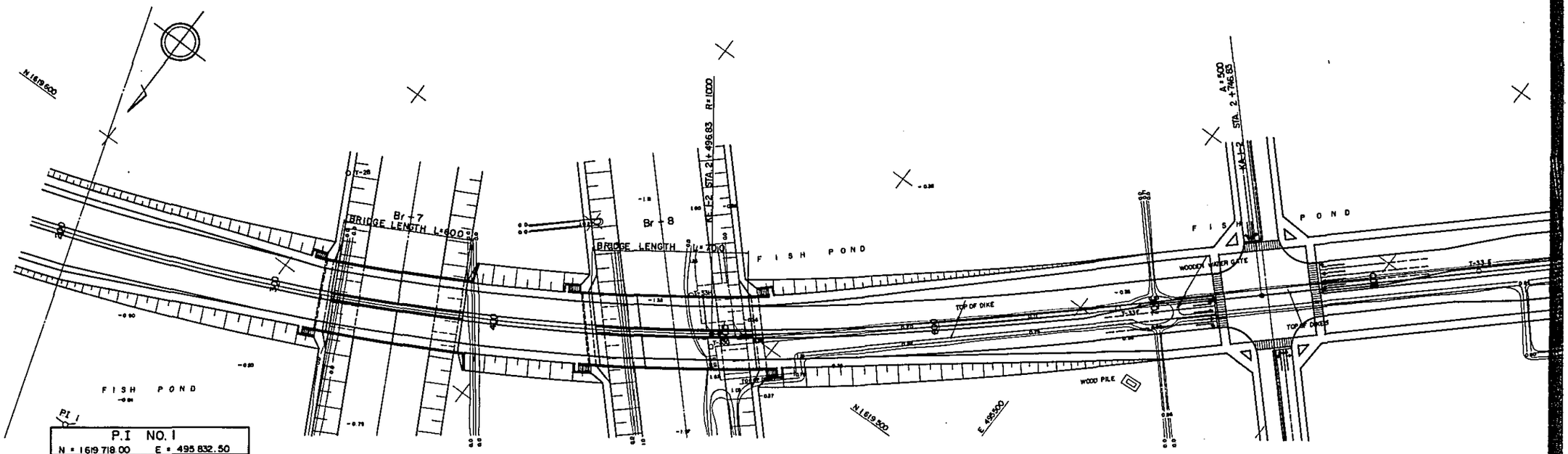
REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

C-3 2/3

SCALE: AS SHOWN	DATE:	SHEET NO. 15

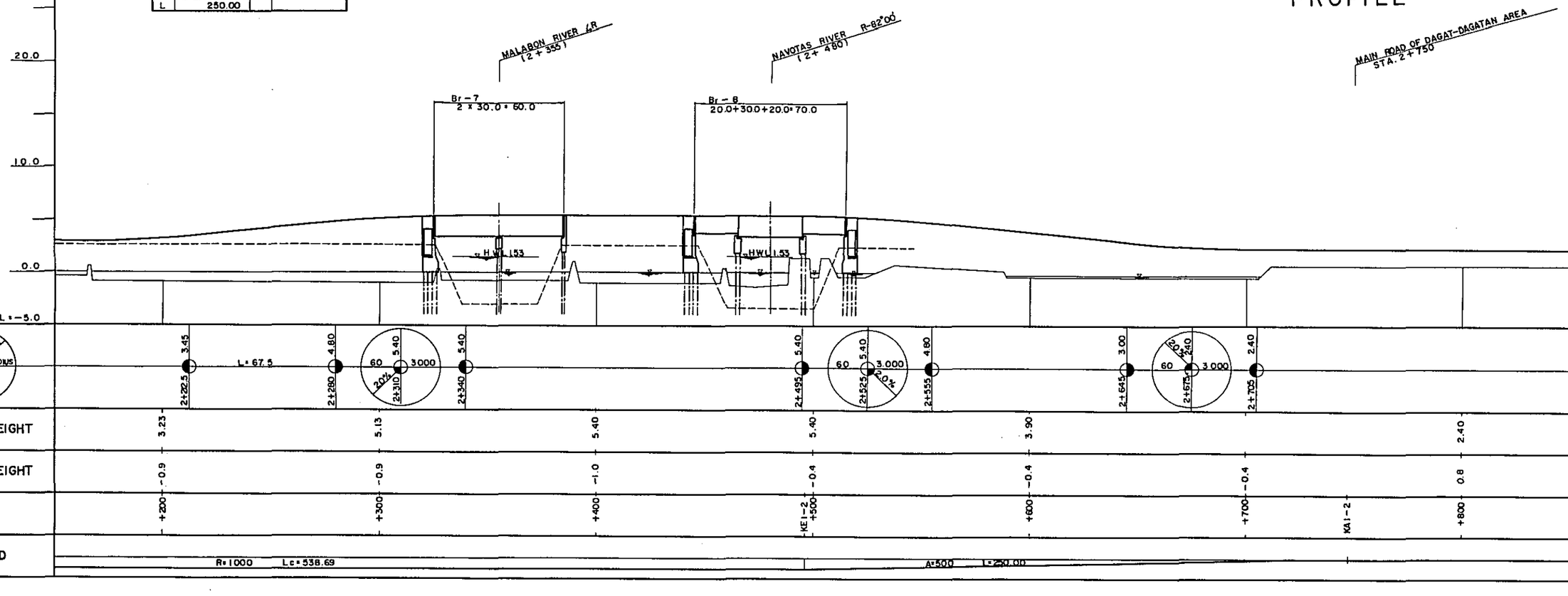
JAPAN INTERNATIONAL COOPERATION AGENCY

PLAN

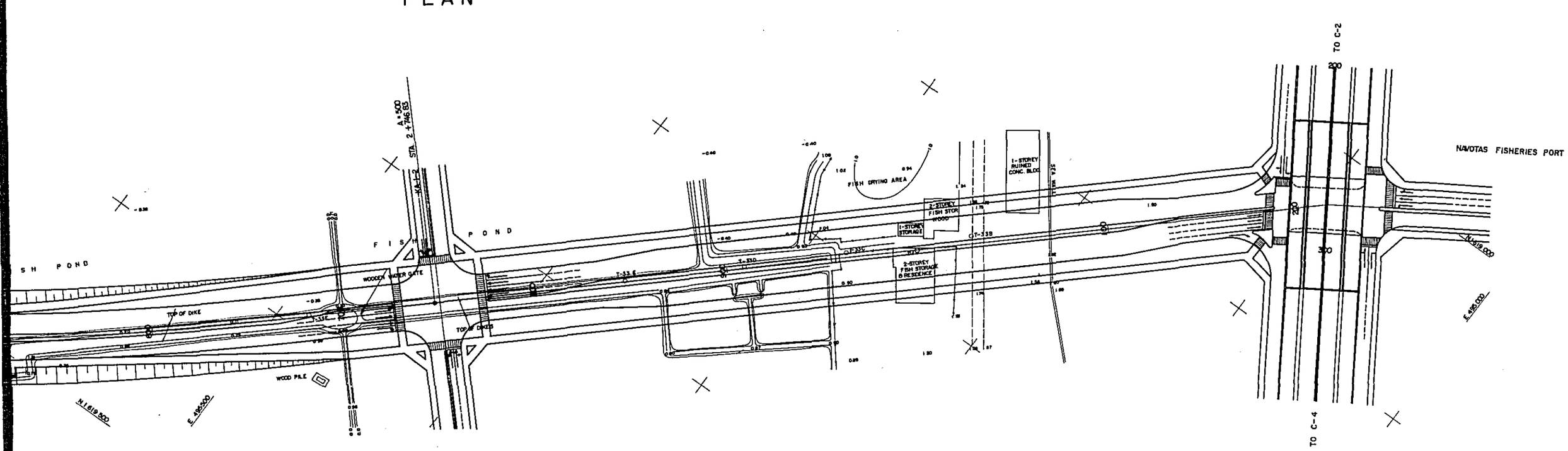


P.I NO. 1			
N = 1619 718.00		E = 495 832.50	
I. A	45° 11' 19"	T. L	542.16
R	1000	Lc	538.69
A	500		
L	250.00		

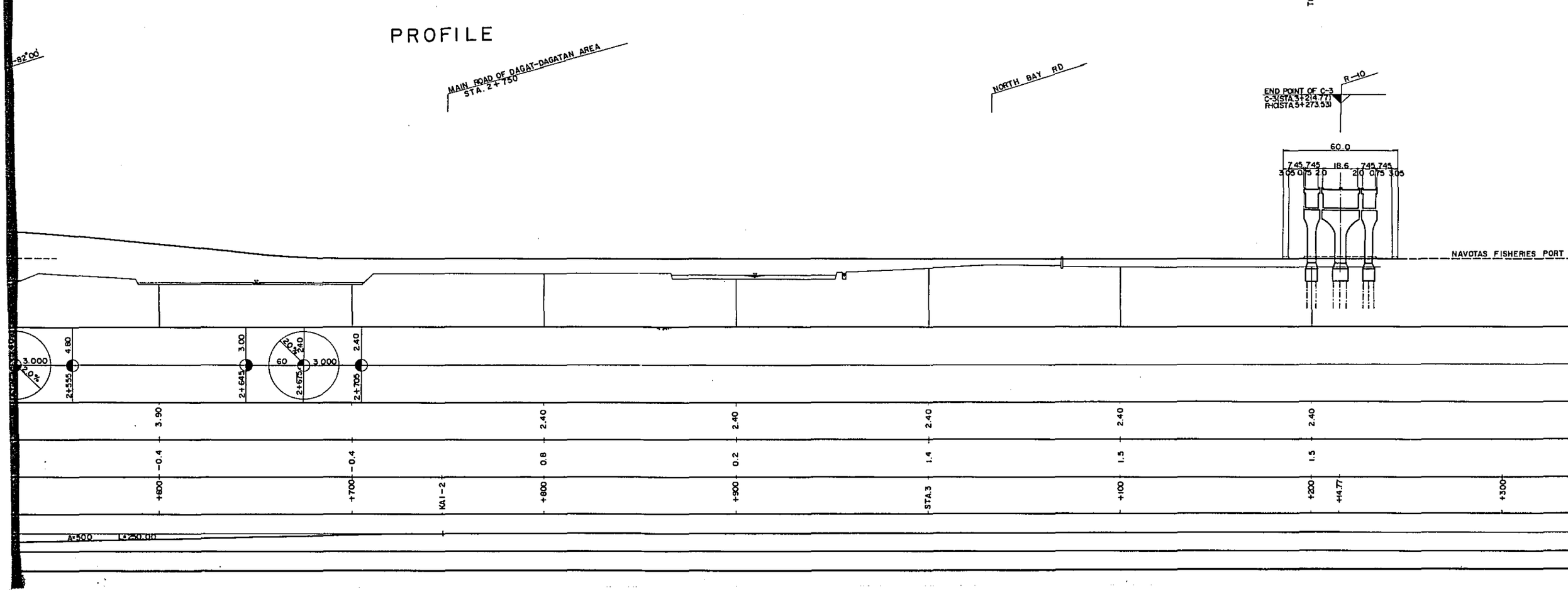
PROFILE



PLAN



PROFILE

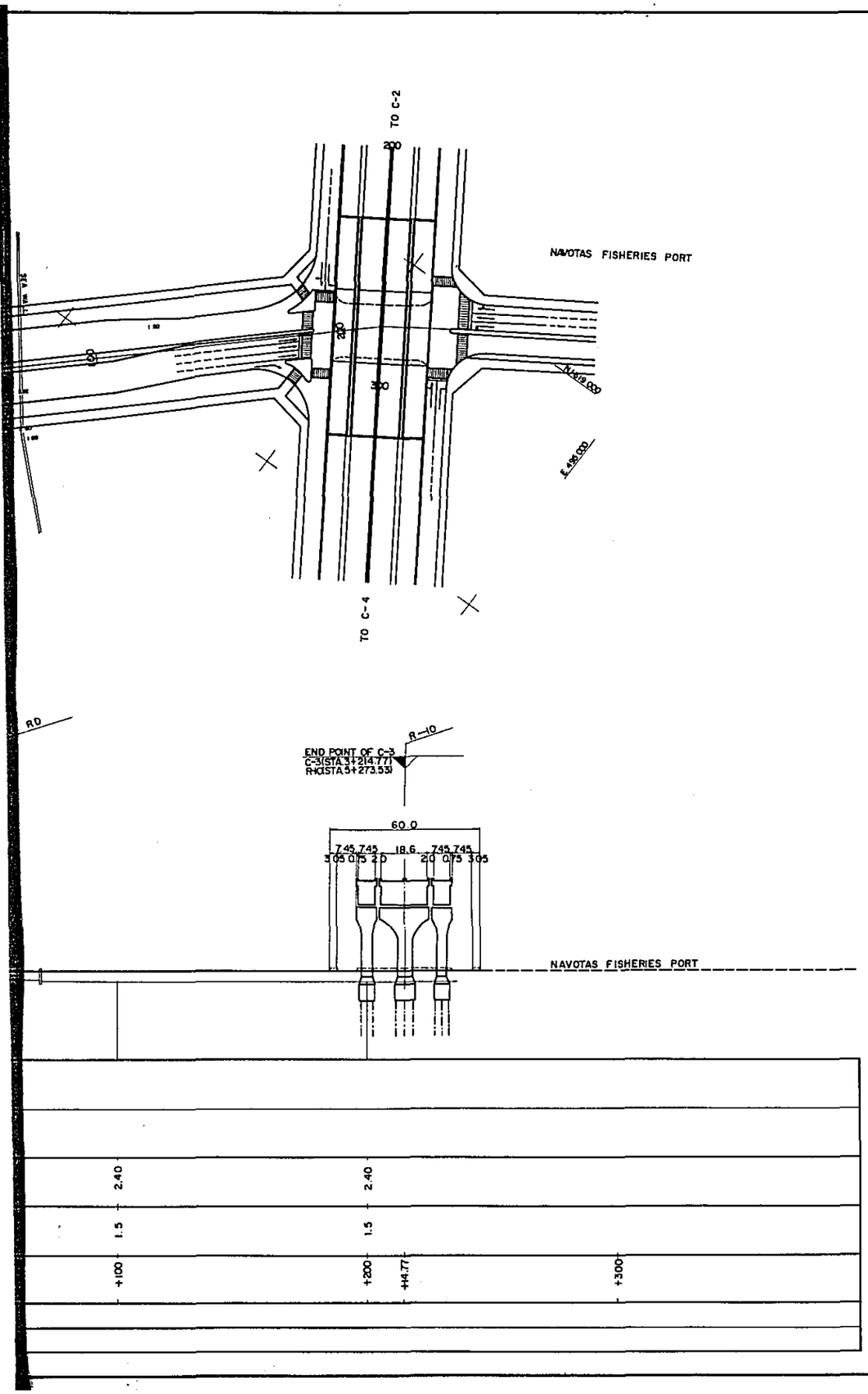


REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

C - 3 3/3

SCALE : AS SHOWN	DATE :	SHEET NO. 16

JAPAN INTERNATIONAL COOPERATION AGENCY



BM ON 3 G, EL. 23.952 IS ON THE CONC. SIDEWALK NEAR THE W END OF THE BANISTER OF THE OVERPASS–UNDERPASS INTERCHANGE. MARK IS A 5/8 in dia. BRASS ROD EMBEDDED IN THE SIDE PROTRUDING ABOUT 4 mm. FROM ITS SURFACE.

N1621000

N1621100

E 499 500

UNANG SIGAW SA BALINTAWAK

BALINTAWAK INTERCHANGE

SCHOOL COMPOUND

KATIPUNAN ST.

AGUILAR ST.

G. DE JESUS ST.

16 UNIT 2-C

FILOIL

GEN. VICENTEANG ST.

GEN. EVANGELISTA ST.

MANILA PRESS INC. COMPOUND

GEN. NASCARDO ST.

BIGLANG AWA ST.

FIRE DEPT

WARE HOUSE

ROUGH SERVICE ROAD

PEDESTRIAN OVERPASS

OFF RAMP L = 235.0

DECELERATION LANE L=1100

TAP

P A V E M

T-13

R-8

BEGINNING POINT OF C-4

BALINTAWAK OFF RAMP NOSE STA 0 + 530

45.0

35.0

25.0

15.0

EXISTING BALINTAWAK BRIDGE 67.54

15.0 | 18.77 | 18.77 | 15.0

EXPRESS WAY 32.50

OFF RAMP

i = 0.30 %
L = 500

i = 0.80 %

22.90 VCL = 40 R = 770

i = 6.00 %
L = 185

34.00 VCL = 100 R = 12 500

34.00 VCL = 60 R = 920

i = 0.50 %

DL = 5.0

VERT. CURVE LENGTH / GRADE / RADIUS / STATION / HEIGHT							
PROPOSED HEIGHT							
GROUND HEIGHT	24.3	21.8	22.0	22.8	22.8	23.0	22.5
STATION	STA. 0	+100	+200	+300	+400	+500	+600
CURVE BAND							

PLAN

E 499 500

OFF RAMP L = 235.0

DECELERATION LANE L=110.00

BIGUANG AWA ST.

TAPER L = 100.0

E 499 000

U PLATA ST.

A. DE JESUS ST

WARE HOUSE

FIRE DEPT

CALTEX

PETRON

FILOIL

MOBIL

ASPHALT PAVEMENT RD.

SERVICE ROAD

T-13 T-12 T-11 T-10 T-9 T-8

FILOIL

GEN. VICENTEANG ST.

GEN. EVANGELISTA ST.

MANILA PRESS INC. COMPOUND

GEN. MASCARDO ST.

TANDANG SORA ST.

GEN. MALVAR ST.

D. ARELLANO ST.

ON RAMP L = 240.0

M. PONCE ST.

GEN. TINIO ST.

ACCELERATI

BALINTAWAK OFF RAMP NOSE
STA. 0 + 530

BALINTAWAK ON RAMP NOSE
STA. 1+30

PROFILE

VCL = 40
R = 770

i = 6.00%
L = 185

34.00 34.00

VCL = 100
R = 12500

VCL = 60
R = 920

i = 0.50 %

ON RAMP

i = 1.00%

20.40

VCL = 50
R = 710

i = 6.00%
L = 185

31.50

VCL = 60
R = 920

i = 0.50 %

i = 0.50 %
L = 1000

22.8 23.0 22.5 21.3 20.6 20.2 19.9 19.8

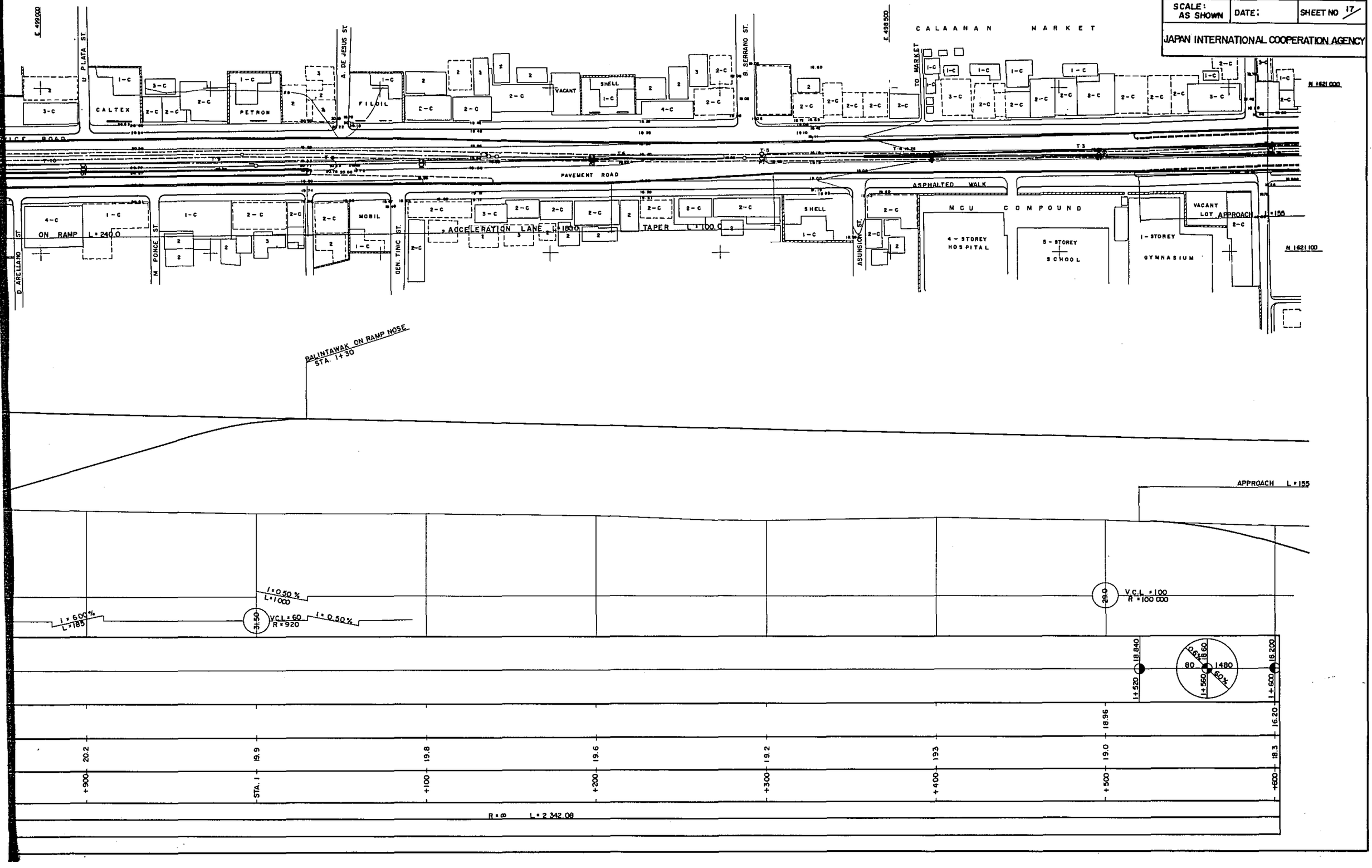
+400 +500 +600 +700 +800 +900 STA. 1 +100

REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

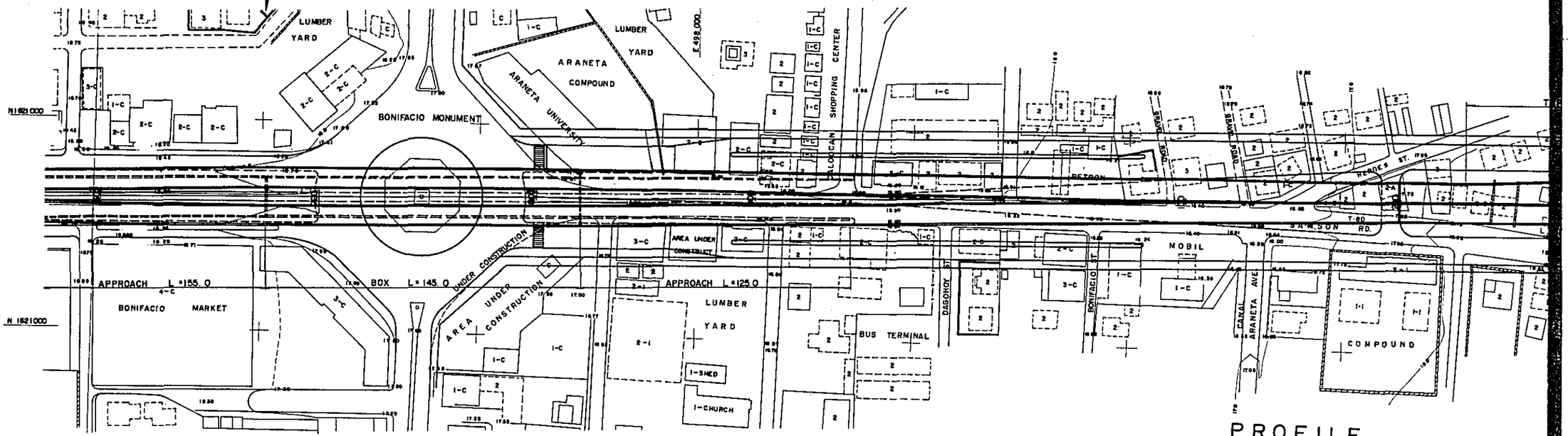
C – 4 1/5

SCALE: AS SHOWN	DATE:	SHEET NO 17

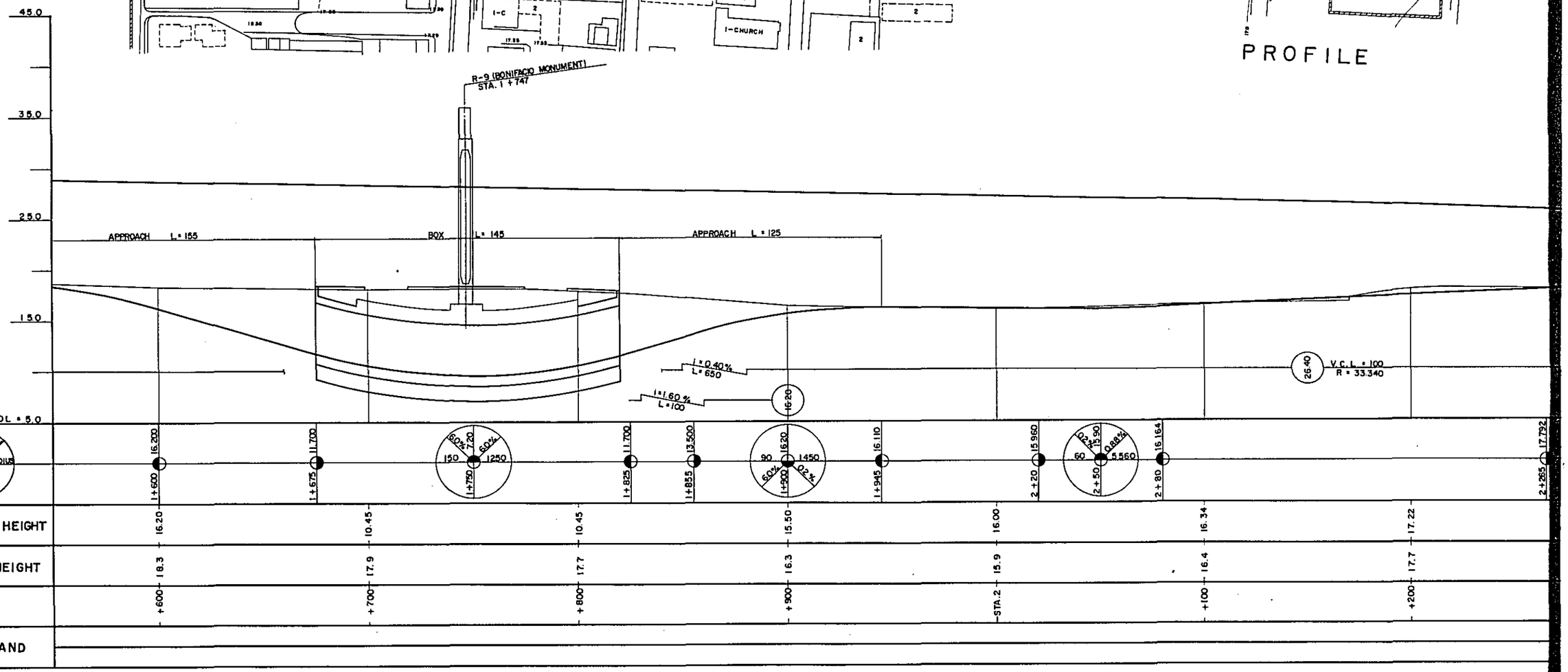
JAPAN INTERNATIONAL COOPERATION AGENCY



PLAN

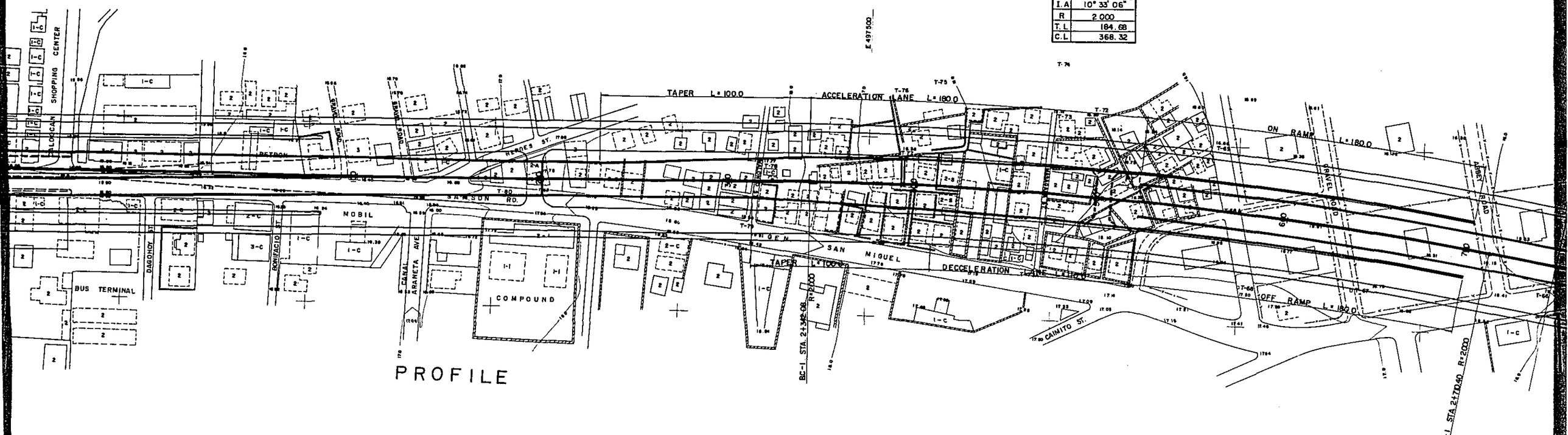


PROFILE

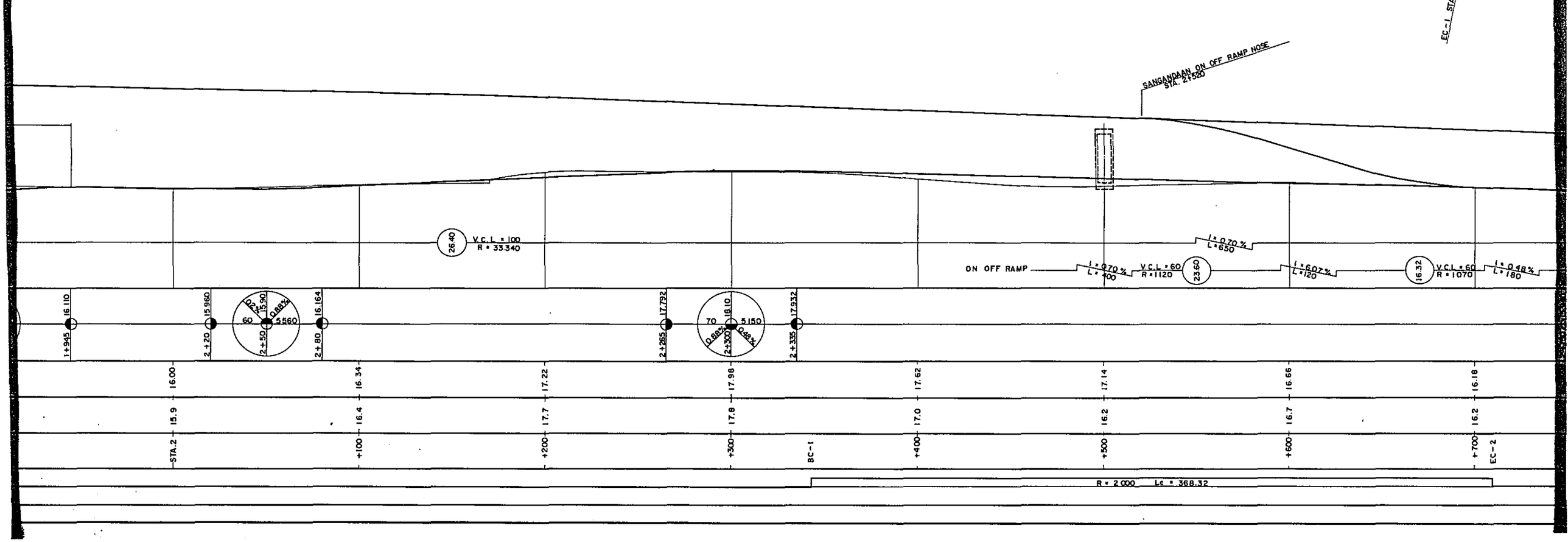


PLAN

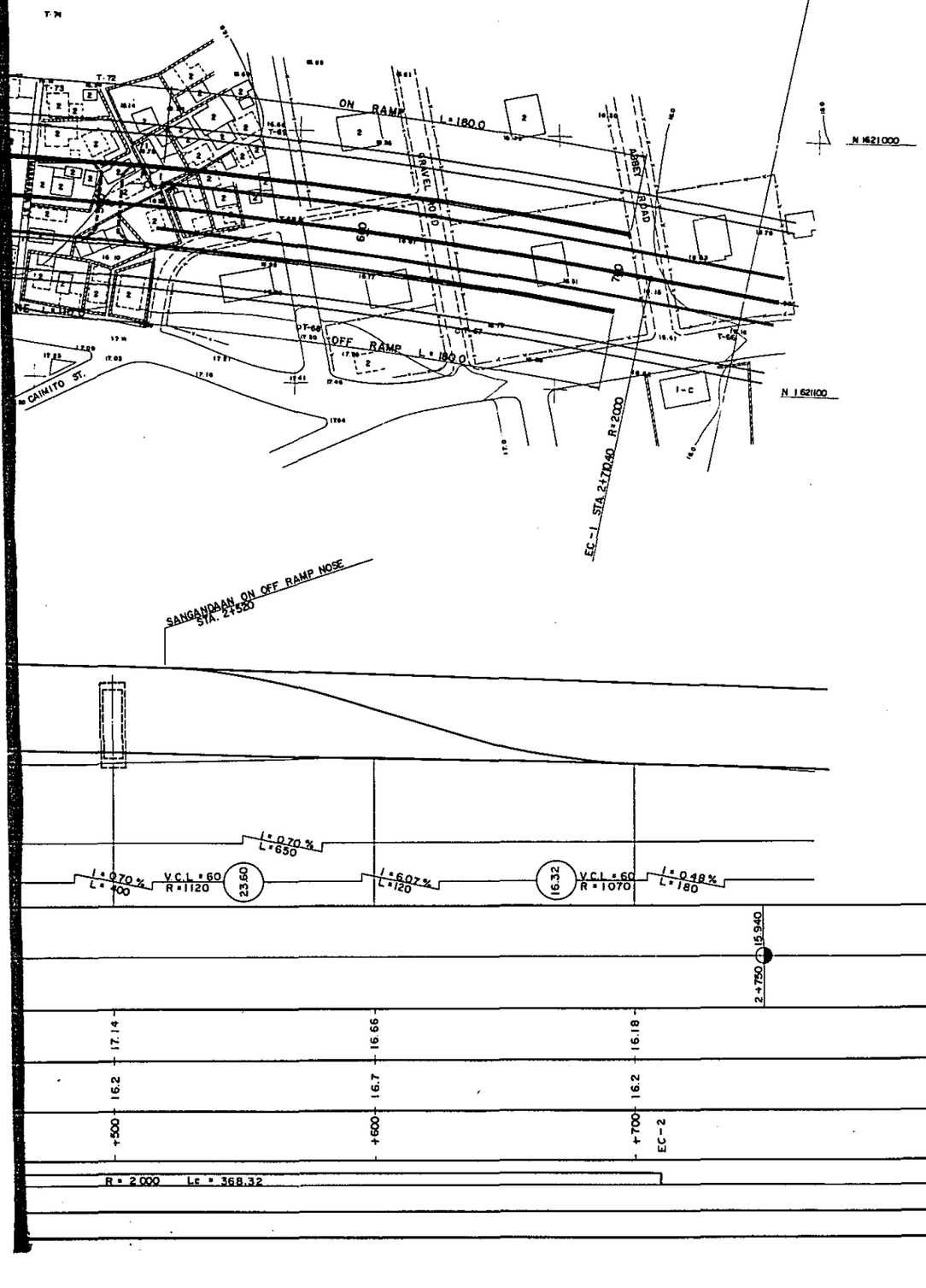
P.I NO. 1	
N = 1 621 024.00	
E = 497 346.50	
I.A	10° 33' 06"
R	2 000
T.L	184.68
C.L	368.32



PROFILE



P.I NO. 1	
N= 1 621 024.00 E= 497 346.50	
I.A	10° 33' 06"
R	2 000
T.L	184. 68
C.L	368. 32



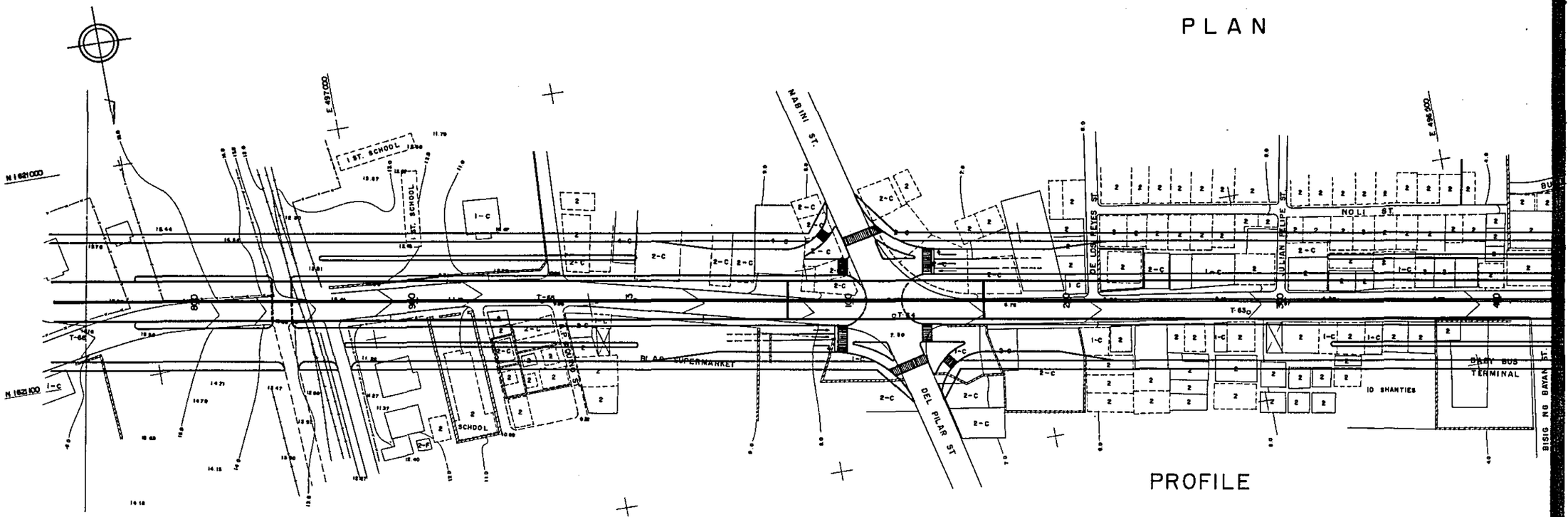
REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

C-4 2/5

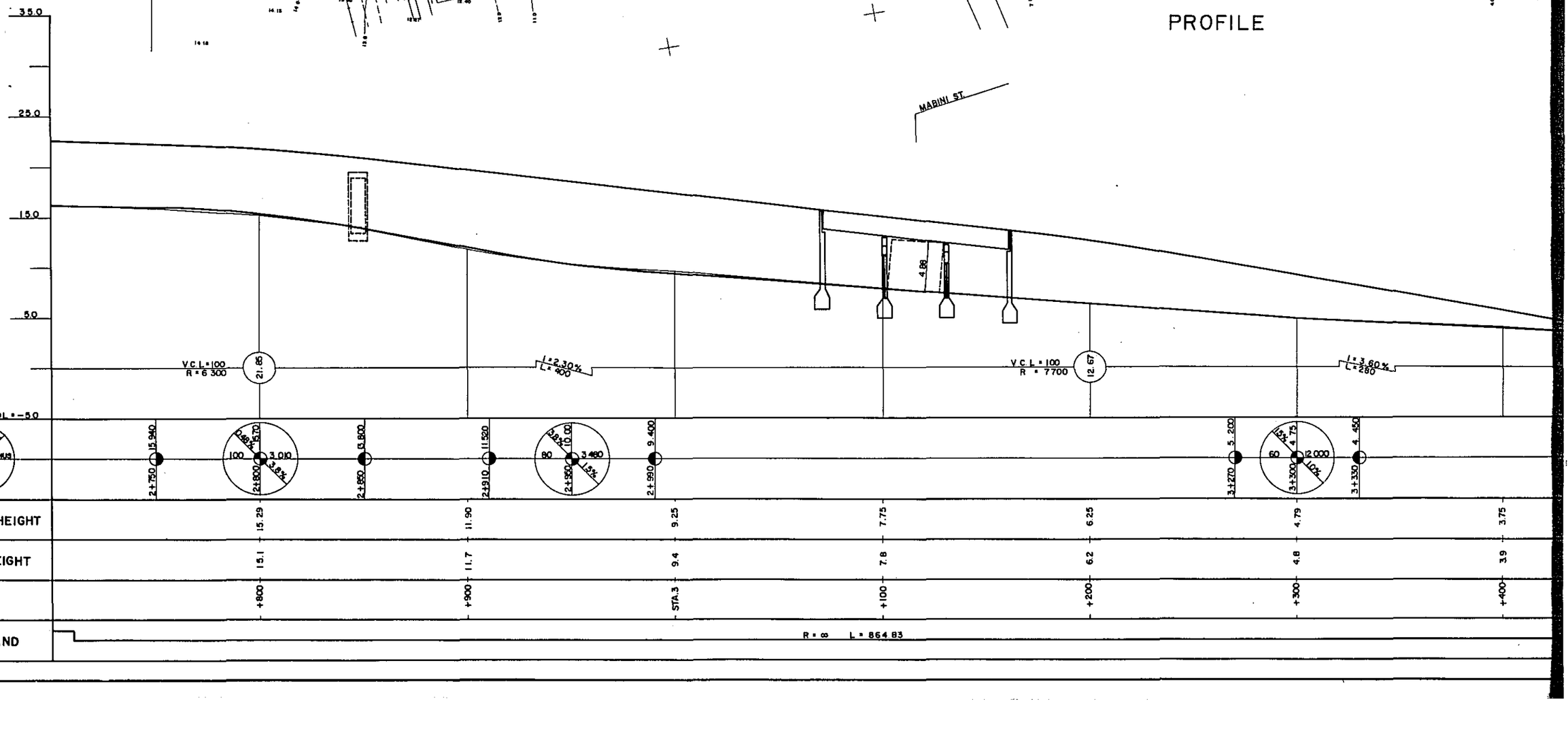
SCALE : AS SHOWN	DATE :	SHEET NO. 18

JAPAN INTERNATIONAL COOPERERATION AGENCY

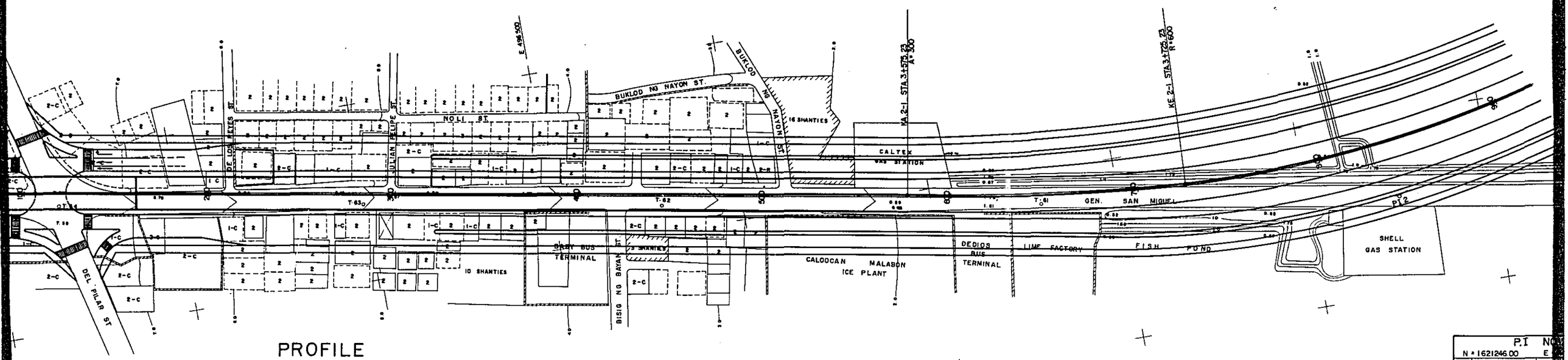
PLAN



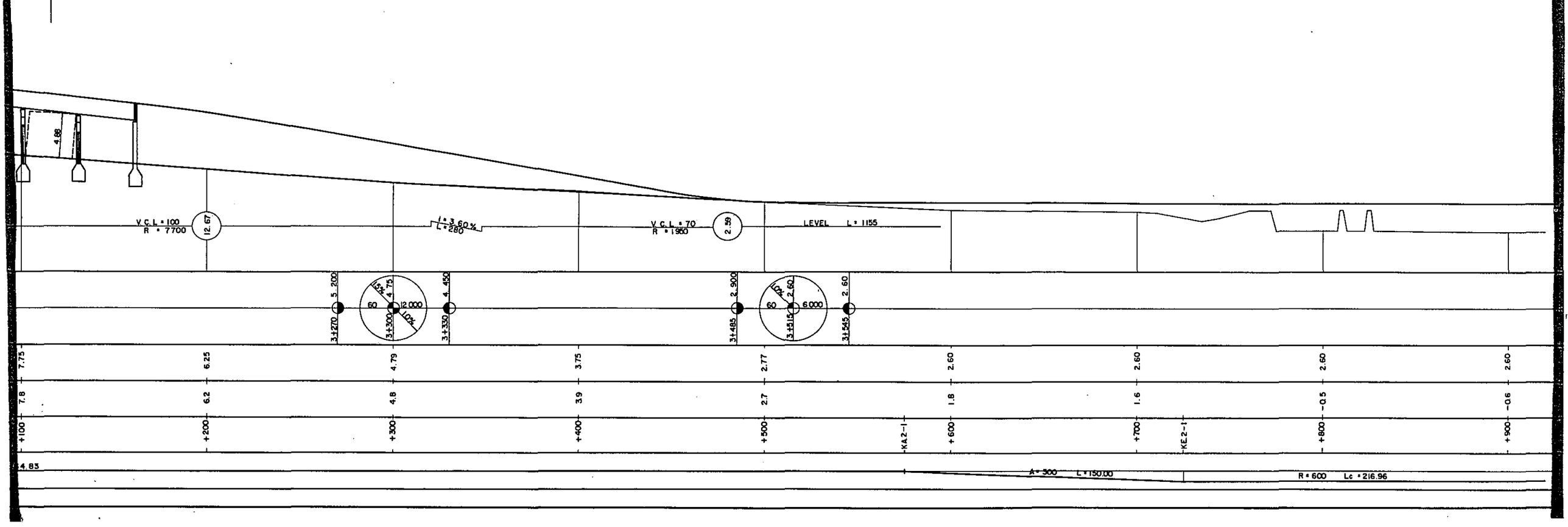
PROFILE



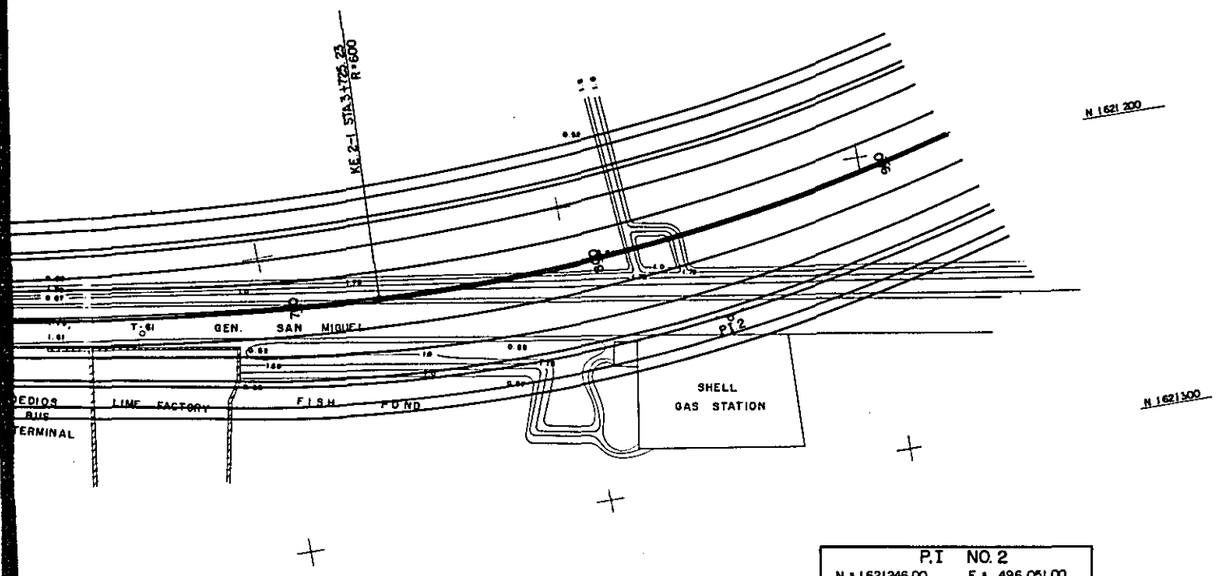
PLAN



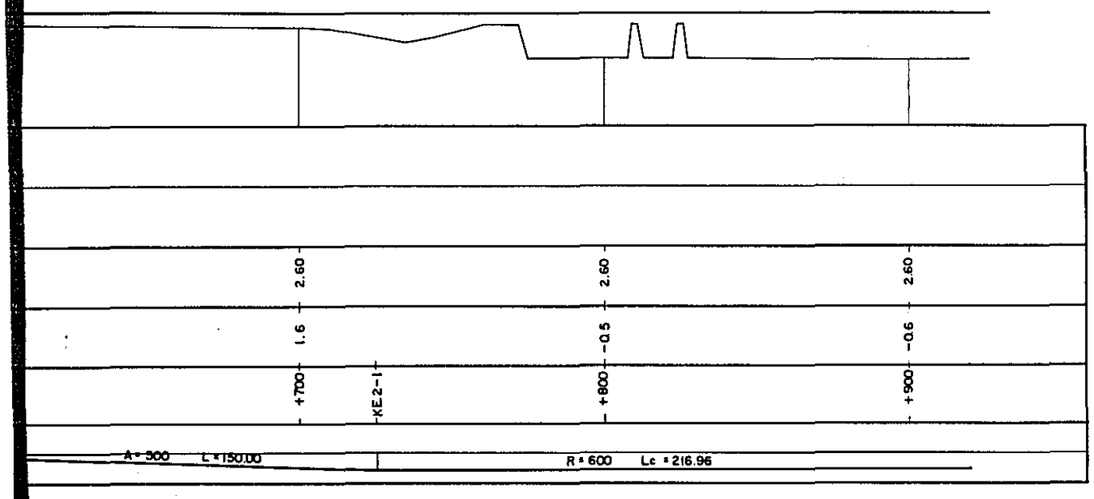
PROFILE



P.I	N
N = 1621246.00	E
I.A	35° 02' 30"	T.L
R	600	Lc
A	300	
L	150.00	



P.I NO. 2			
N = 1621246.00		E = 496 051.00	
I. A	35° 02' 30"	T.L	264.87
R	600	Lc	216.96
A	300		
L	150.00		



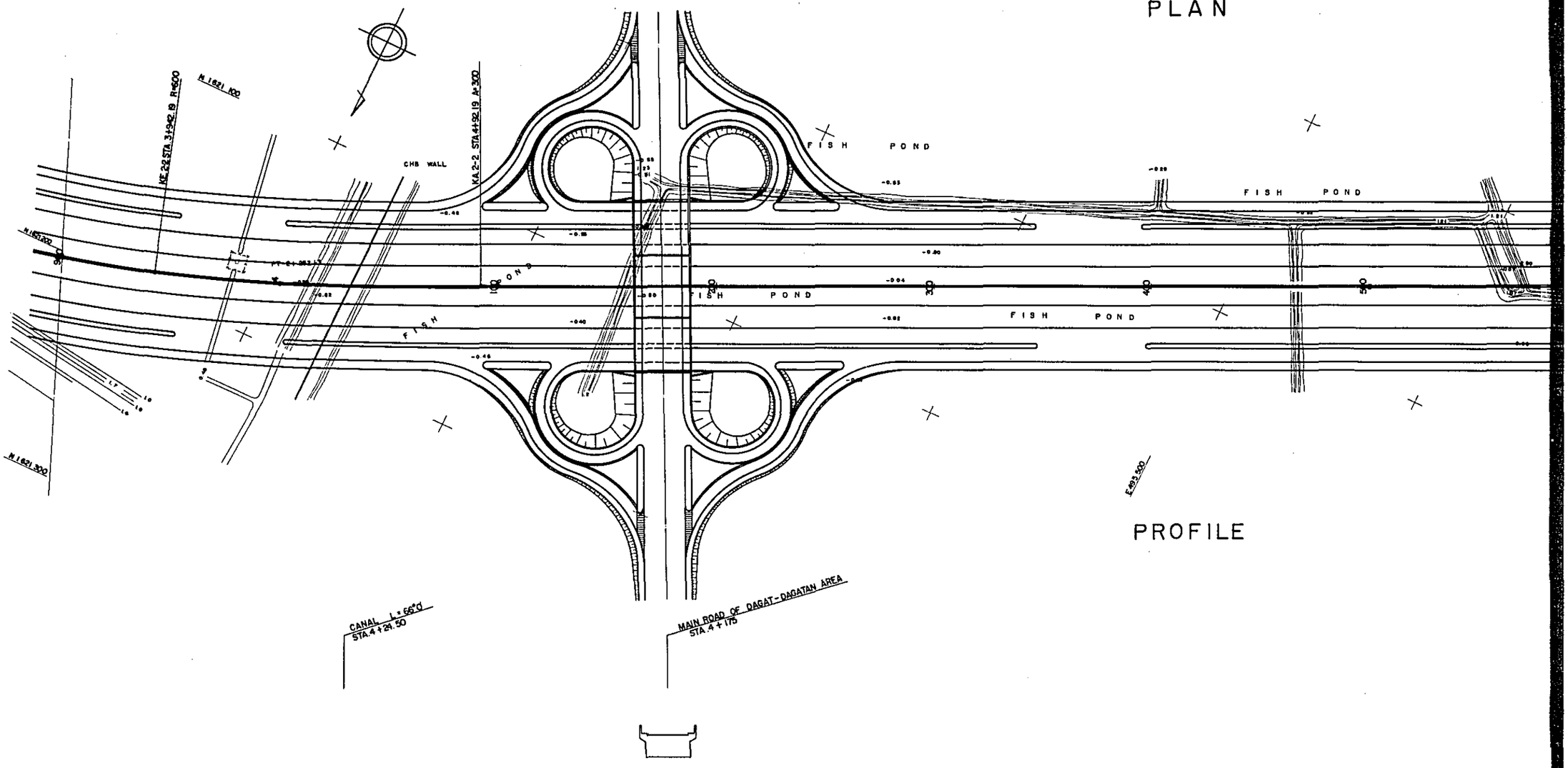
REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

C - 4 3/5

SCALE: AS SHOWN	DATE:	SHEET NO 19

JAPAN INTERNATIONAL COOPERATION AGENCY

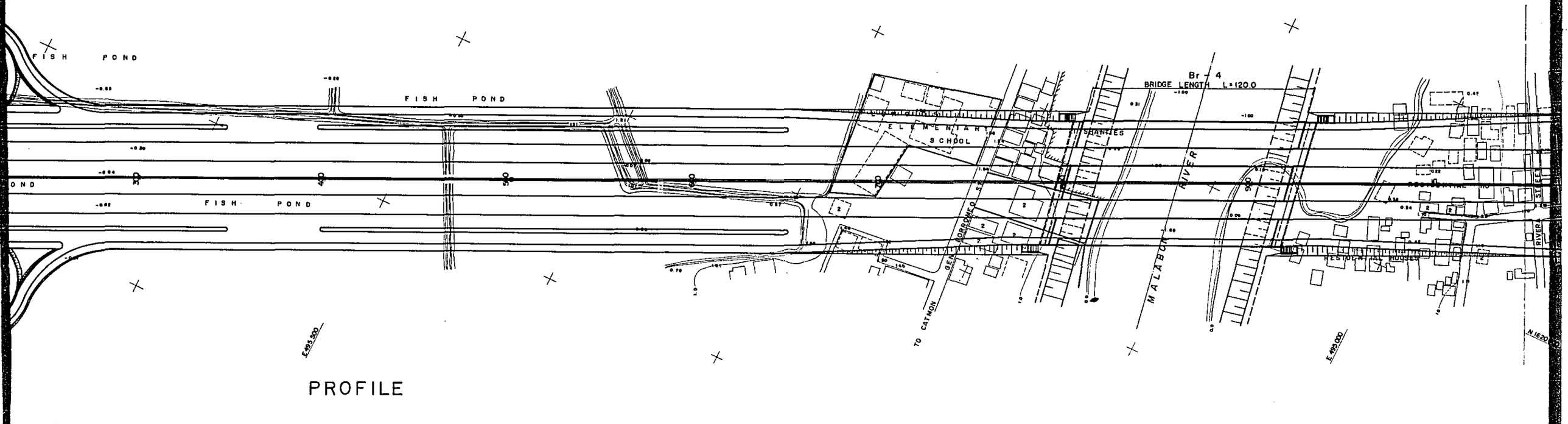
PLAN



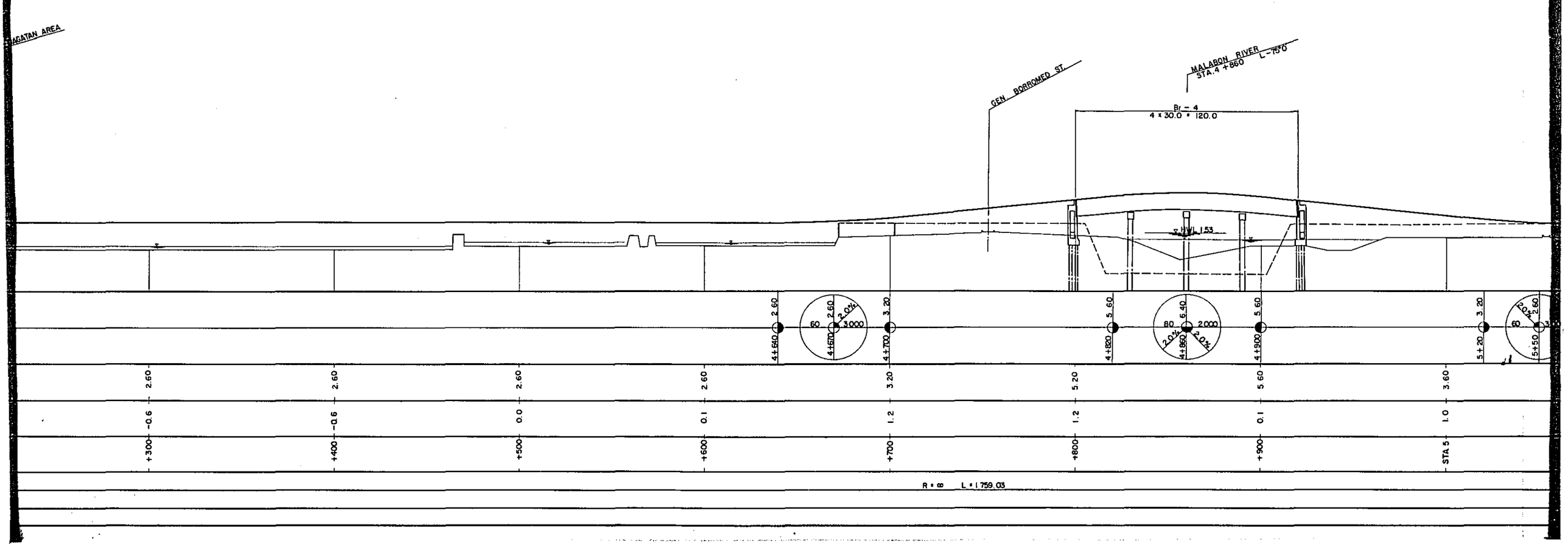
PROFILE

VERT CURVE LENGTH / STATION / GRADE / HEIGHT / RADIUS							
PROPOSED HEIGHT	2.60	2.60	2.60	2.60	2.60	2.60	2.60
GROUND HEIGHT	-0.6	-0.6	-0.5	-0.6	-0.6	-0.6	0.0
STATION	+900	KE 2-2	STA. 4	KA 2-2 +100	+200	+300	+400	+500
CURVE BAND				A=300 L=100.00				

PLAN



PROFILE

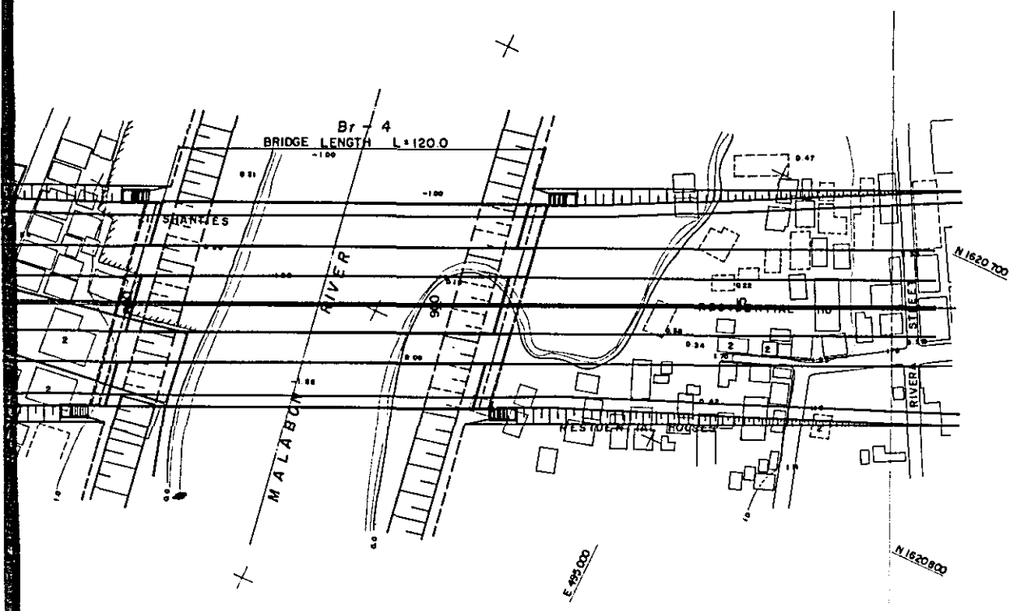


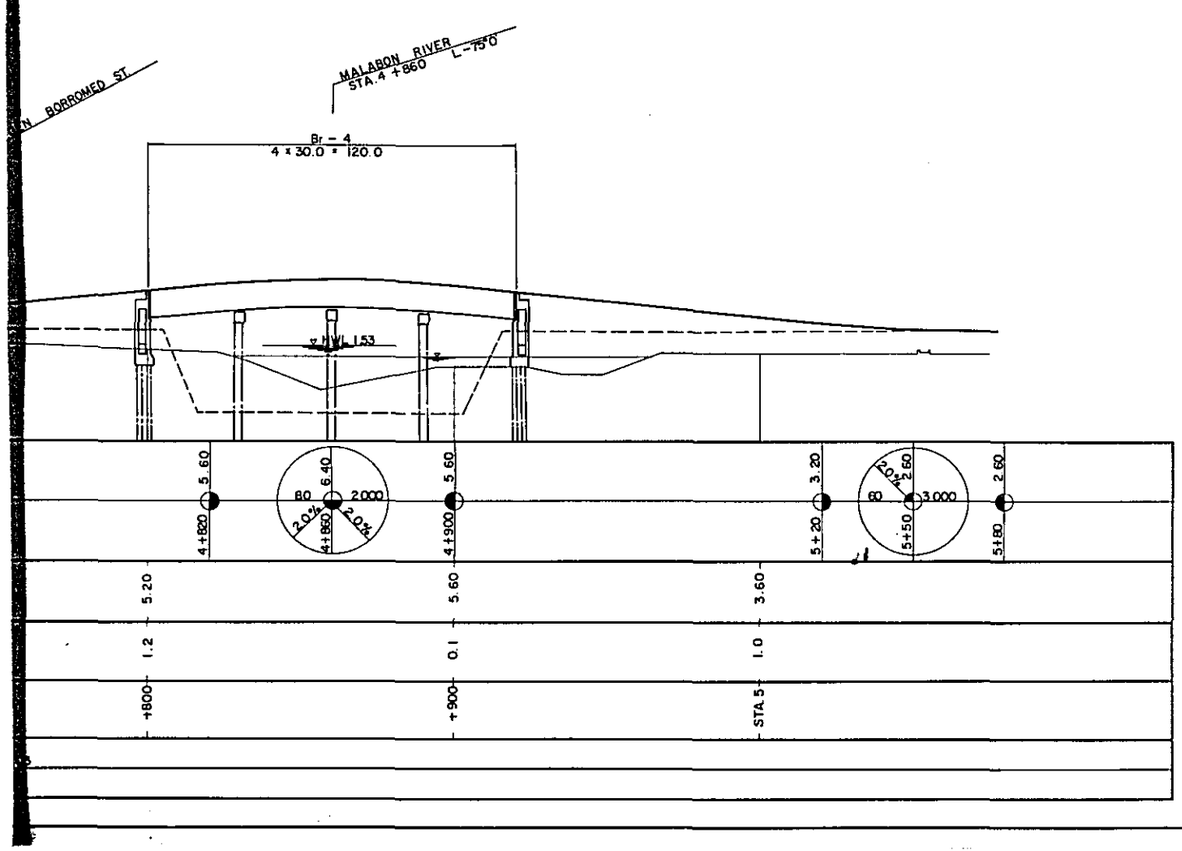
REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

C - 4 4/5

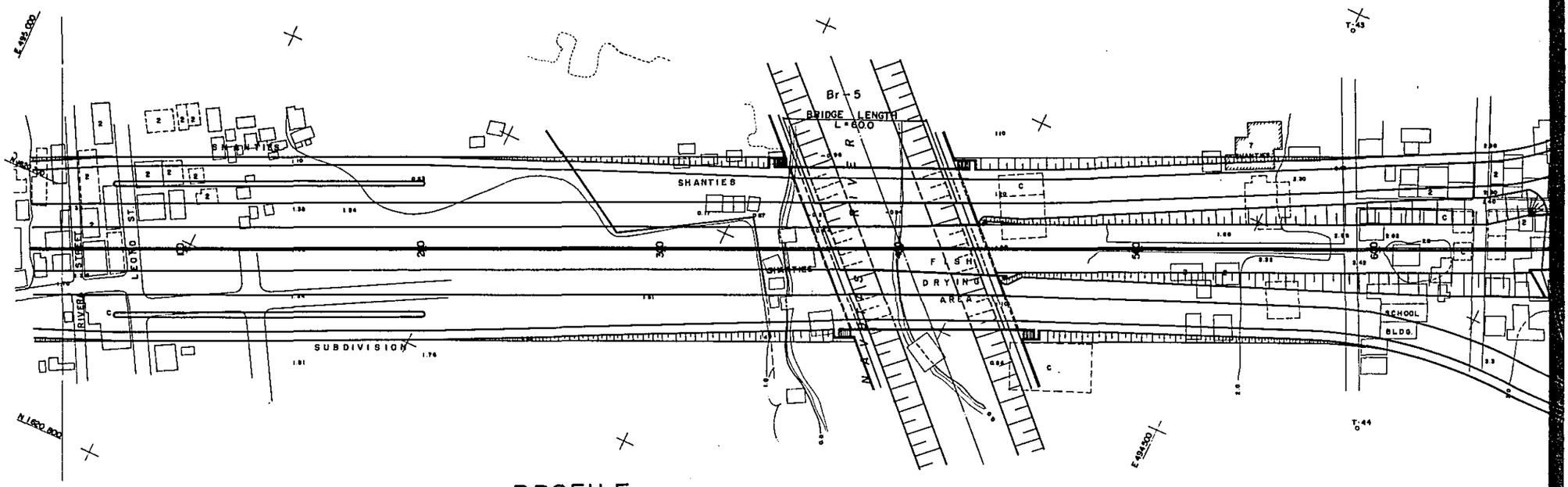
SCALE : AS SHOWN	DATE :	SHEET NO 20

JAPAN INTERNATIONAL COOPERATION AGENCY

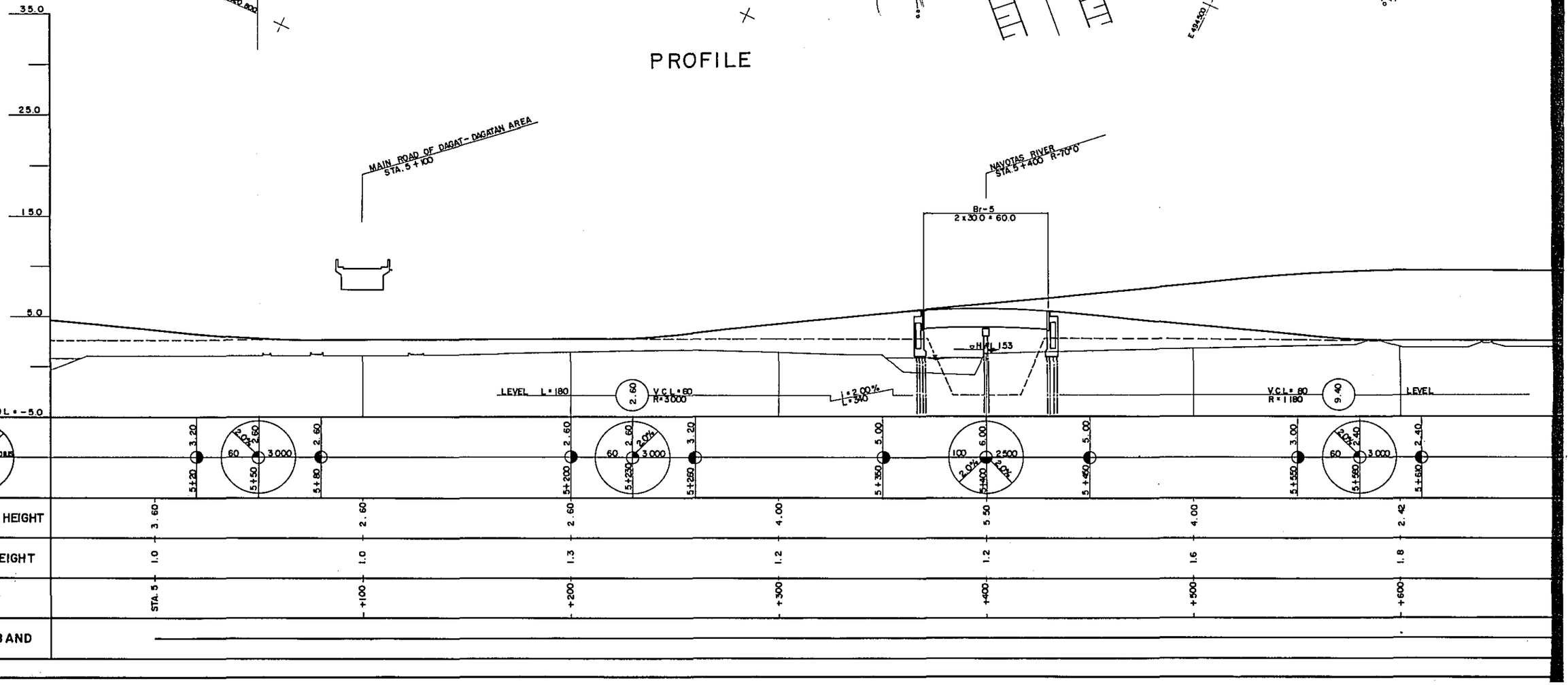


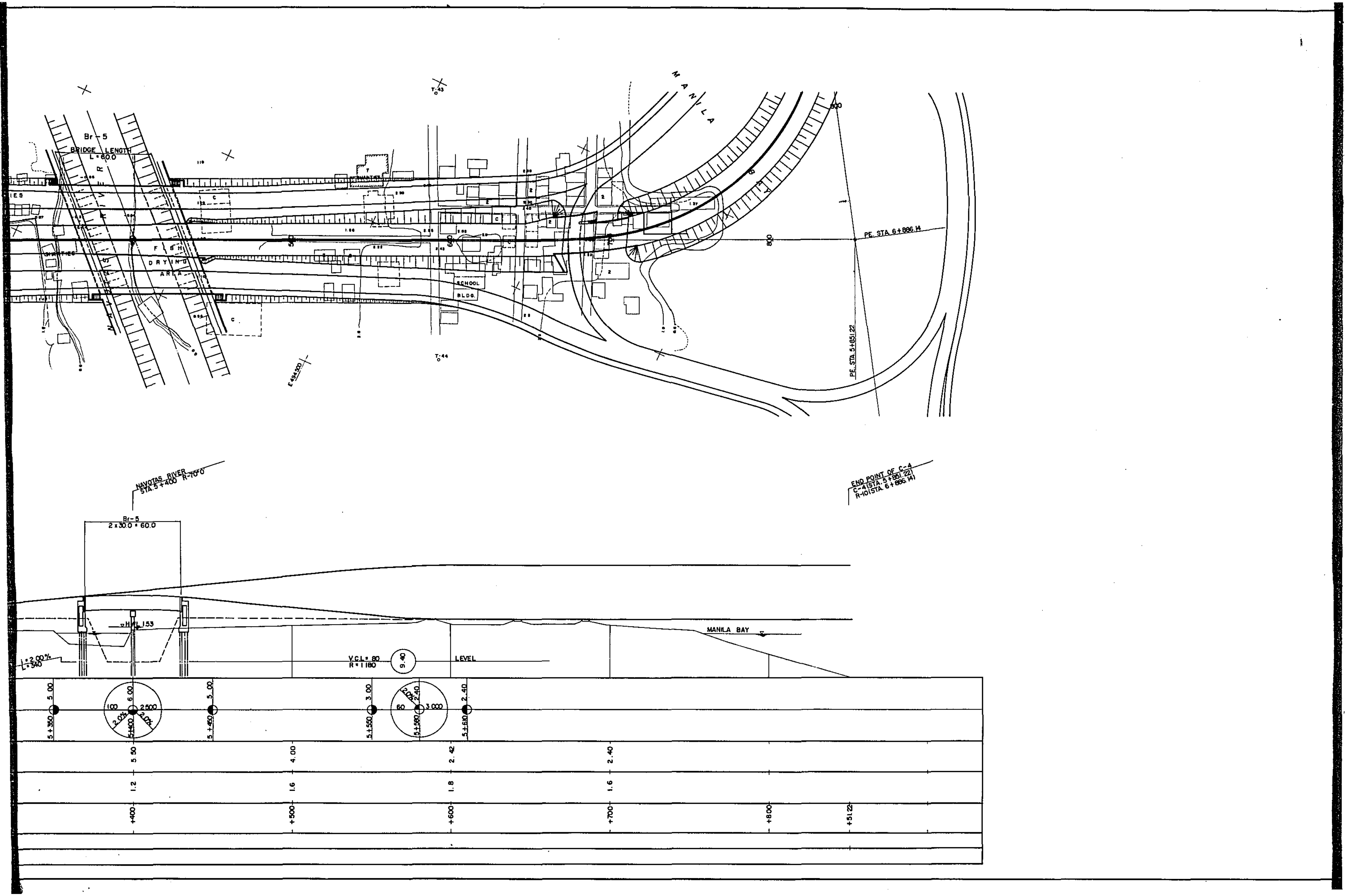


PLAN



PROFILE





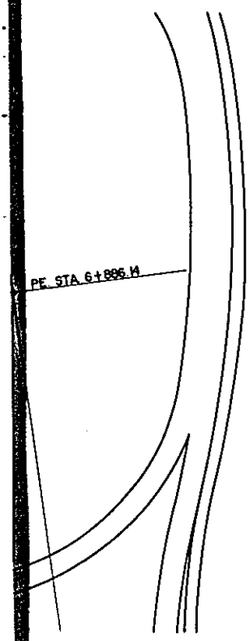
Br - 5
BRIDGE LENGTH
L = 60.0
FISH
DRYING
AREA
SCHOOL
BLDG.
MANILA
PE. STA. 6+886.14
PE. STA. 5+851.22
NAVOTAS RIVER
STA. 5+400 R-70°0'
END POINT OF C-4
C-4 (STA. 5+851.22)
R-10 (STA. 6+886.14)
Br - 5
2 x 30.0 = 60.0
HWL 1.53
MANILA BAY
V.C.L = 80
R = 1180
LEVEL
L = 2.00%
L = 340
+400
+500
+600
+700
+800
+51.22

REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

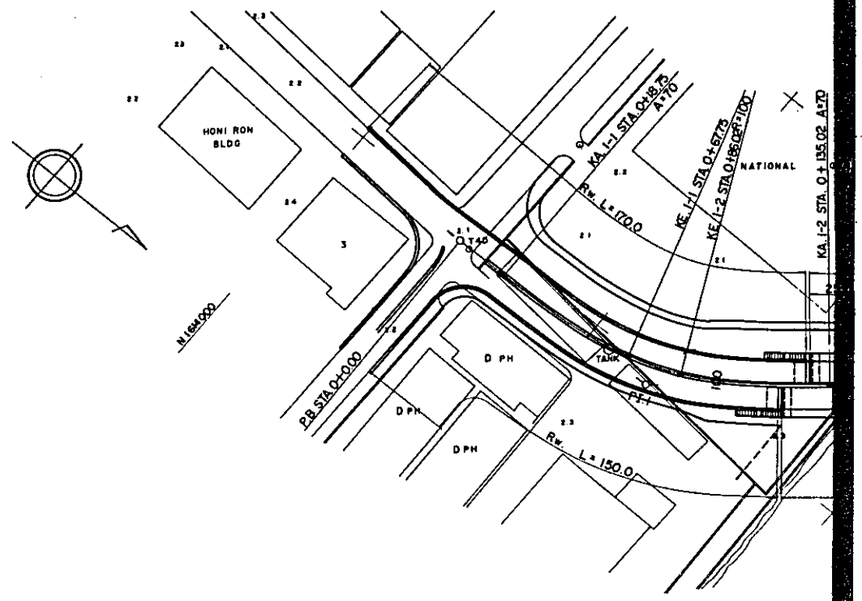
C - 4 5/5

SCALE : AS SHOWN	DATE:	SHEET NO 21

JAPAN INTERNATIONAL COOPERATION AGENCY

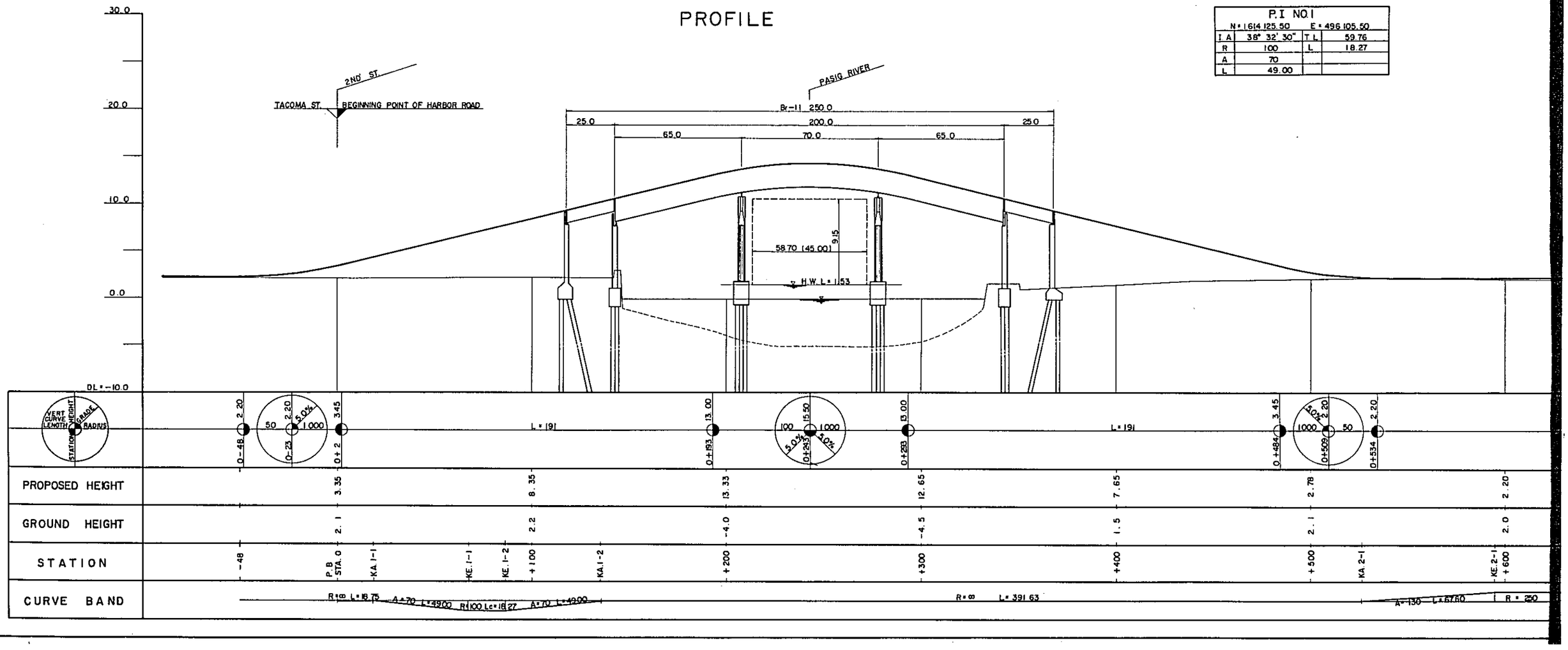


POINT OF C-4
(STA. 5+851.22)
(STA. 6+886.14)

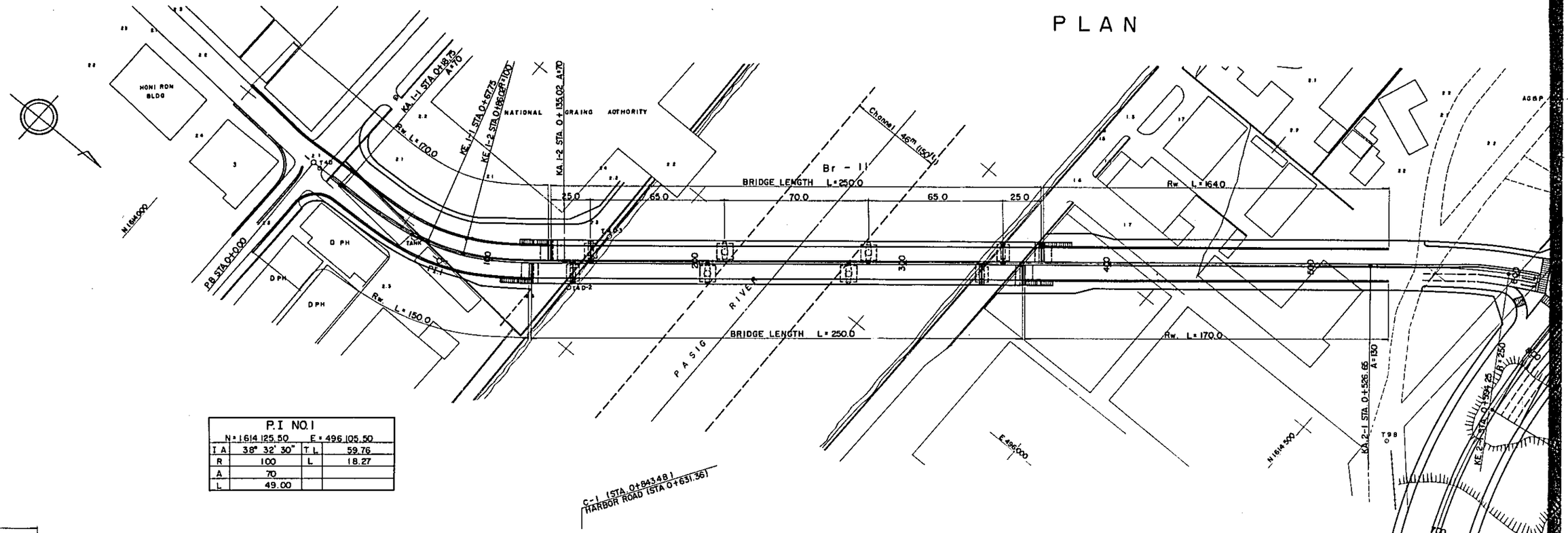


P.I NO.1			
N = 1614 125.50		E = 496 105.50	
I A	38° 32' 30"	T L	59.76
R	100	L	18.27
A	70		
L	49.00		

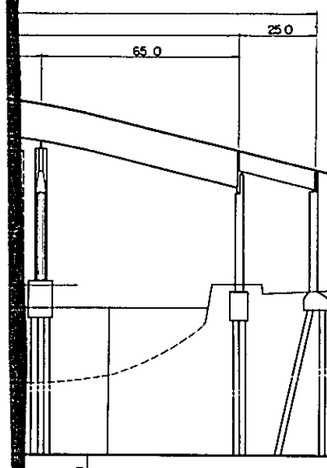
PROFILE

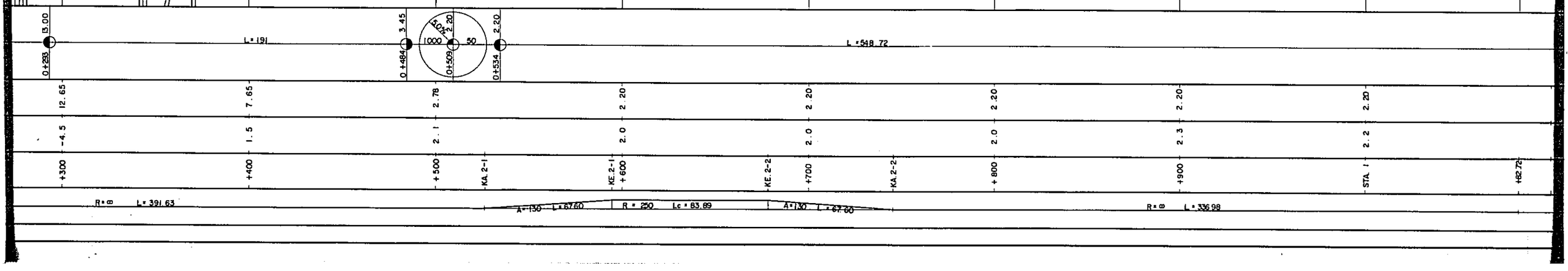


PLAN



P.I NO.1			
N = 1614 125.50		E = 496 105.50	
I A	38° 32' 30"	T L.	59.76
R	100	L	18.27
A	70		
L	49.00		





REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

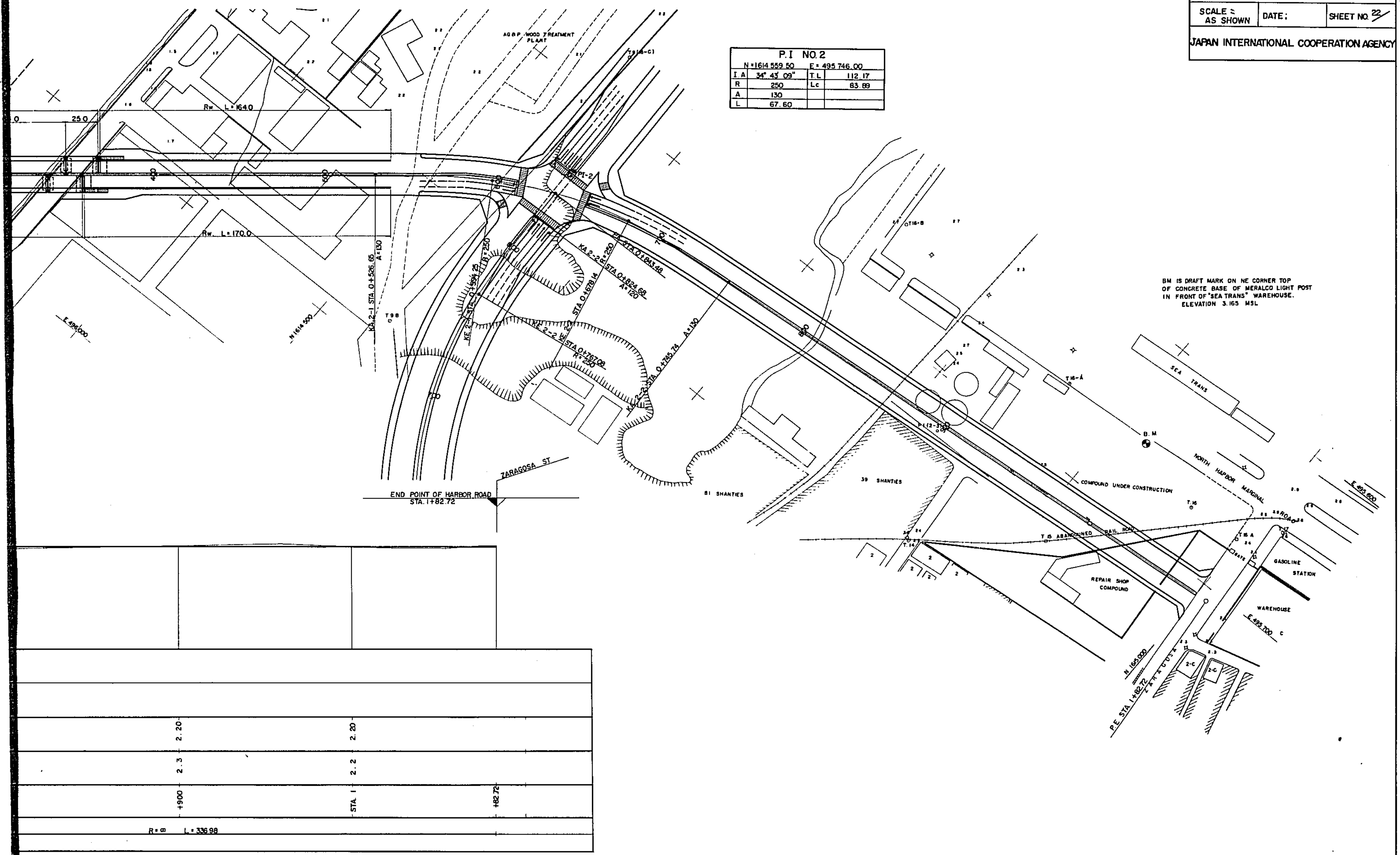
NEW HARBOR ROAD

SCALE : AS SHOWN	DATE ;	SHEET NO. 22/

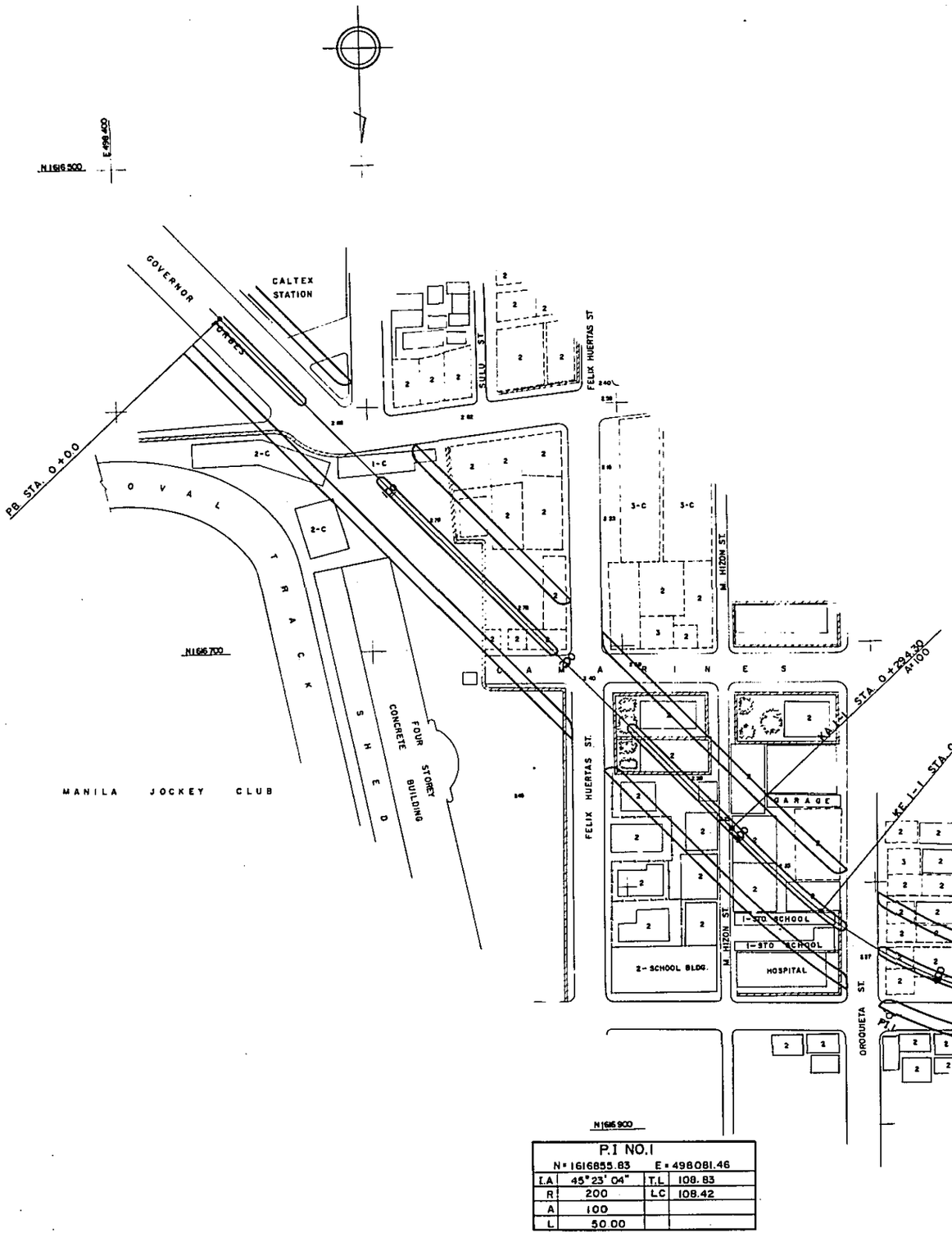
JAPAN INTERNATIONAL COOPERATION AGENCY

PLAN

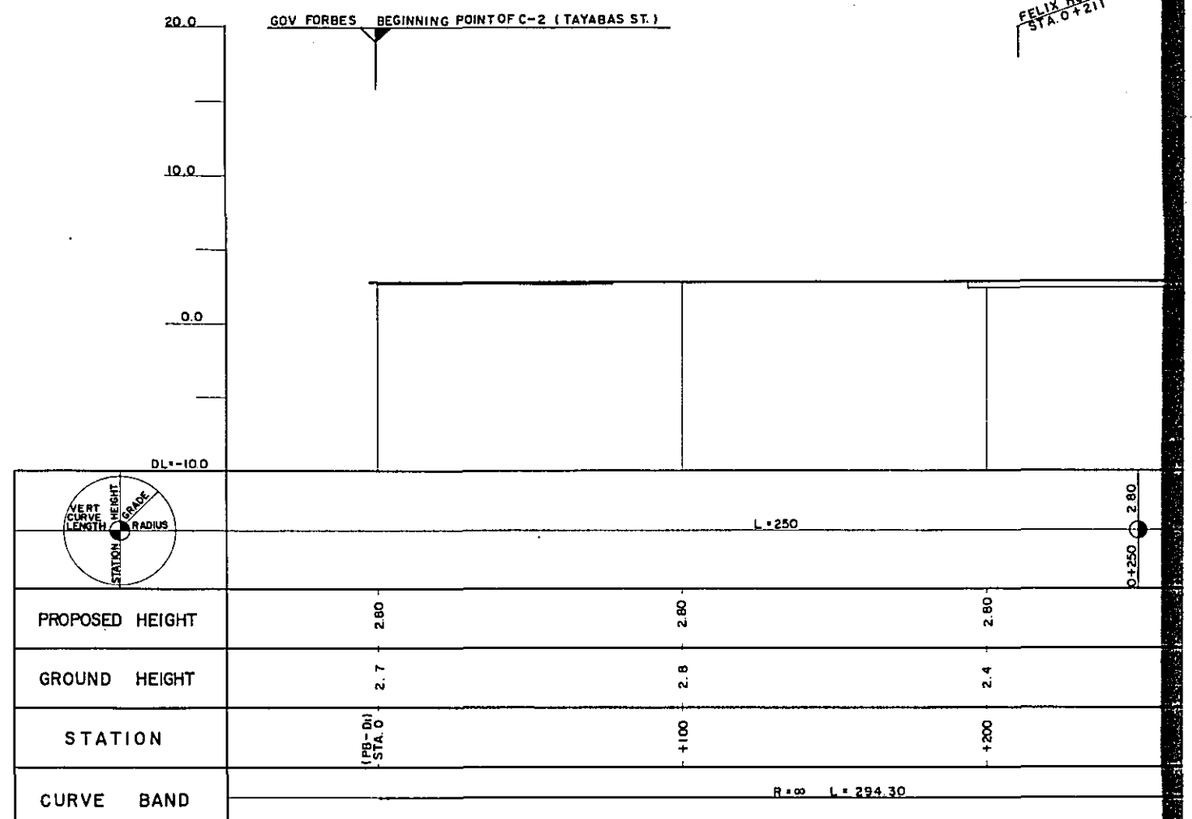
P.I NO. 2			
N = 1614 559.50		E = 495 746.00	
I A	34° 43' 09"	T.L	112.17
R	250	Lc	83.89
A	130		
L	67.60		



Rw L = 164.0
Rw L = 170.0
KA 2-1 STA 0+526.65 A=130
KE 2-1 STA 0+594.25 R=250
STA 0+678.14
KE 2-2 STA 0+767.08 R=250
KA 2-2 STA 0+824.68 A=120
PI-2
P.E. STA 0+843.48
KE 2-3 STA 0+745.74 A=130
AGBP WOOD TREATMENT PLANT
END POINT OF HARBOR ROAD STA. 1+82.72
ZARAGOSA ST
81 SHANTIES
39 SHANTIES
COMPOUND UNDER CONSTRUCTION
REPAIR SHOP COMPOUND
GASOLINE STATION
WAREHOUSE
SEA TRANS
NORTH HARBOR MARGINAL ROAD
T.15 ABANDONED RAIL ROAD
B.M
BM IS DRAFT MARK ON NE CORNER TOP OF CONCRETE BASE OF MERALCO LIGHT POST IN FRONT OF "SEA TRANS" WAREHOUSE. ELEVATION 3.165 MSL
P.E. STA 1+82.72
N 165,000
E 495 700
E 495 800
E 496,000
N 1614 500
2.20
2.20
2.3
2.2
+900
STA 1
+82.72
R = ∞ L = 336.98

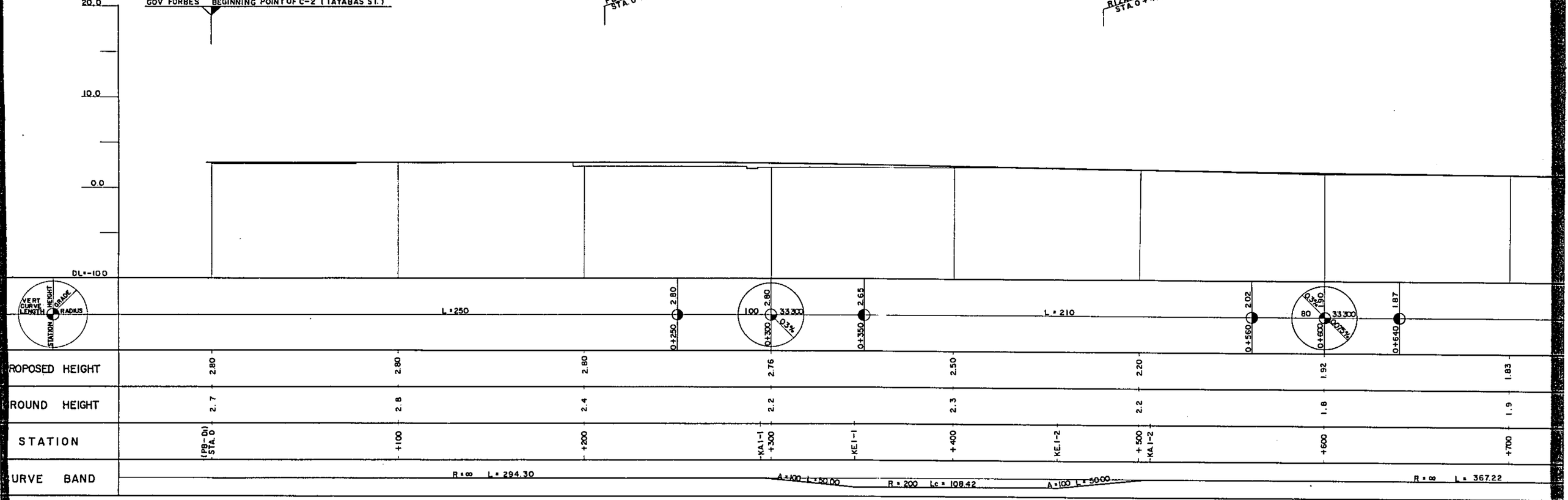


P.I NO.1			
N = 1616855.83		E = 498081.46	
I.A	45°23' 04"	T.L	108.83
R	200	LC	108.42
A	100		
L	50.00		

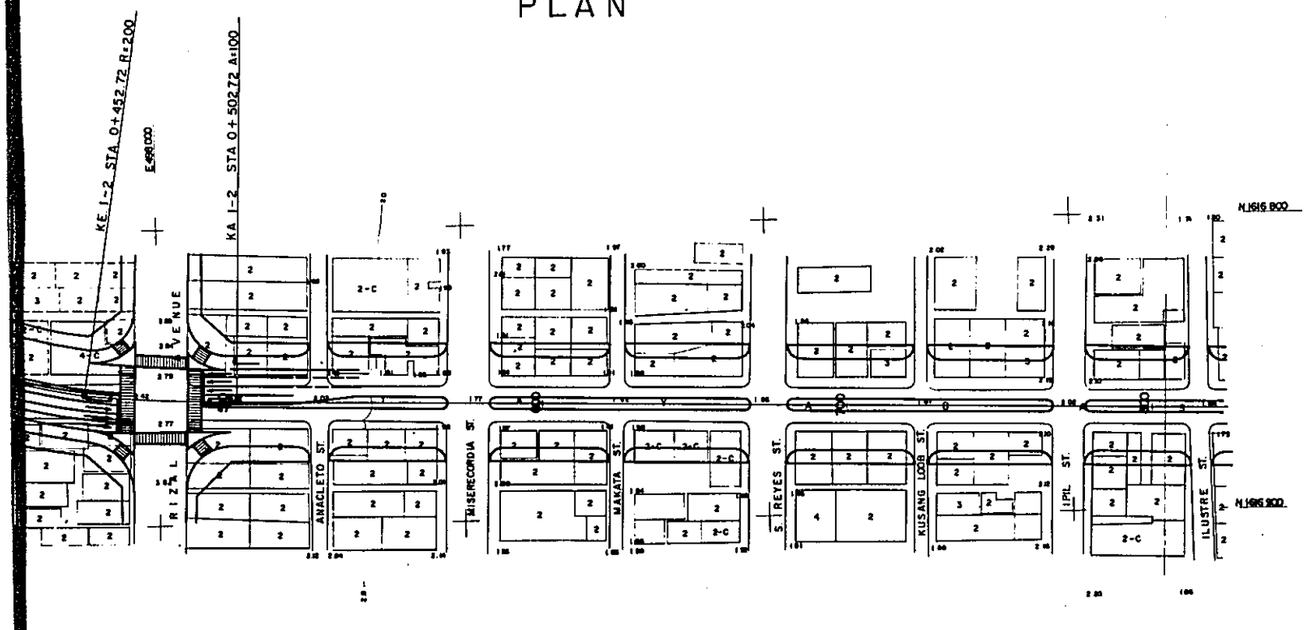


PLAN

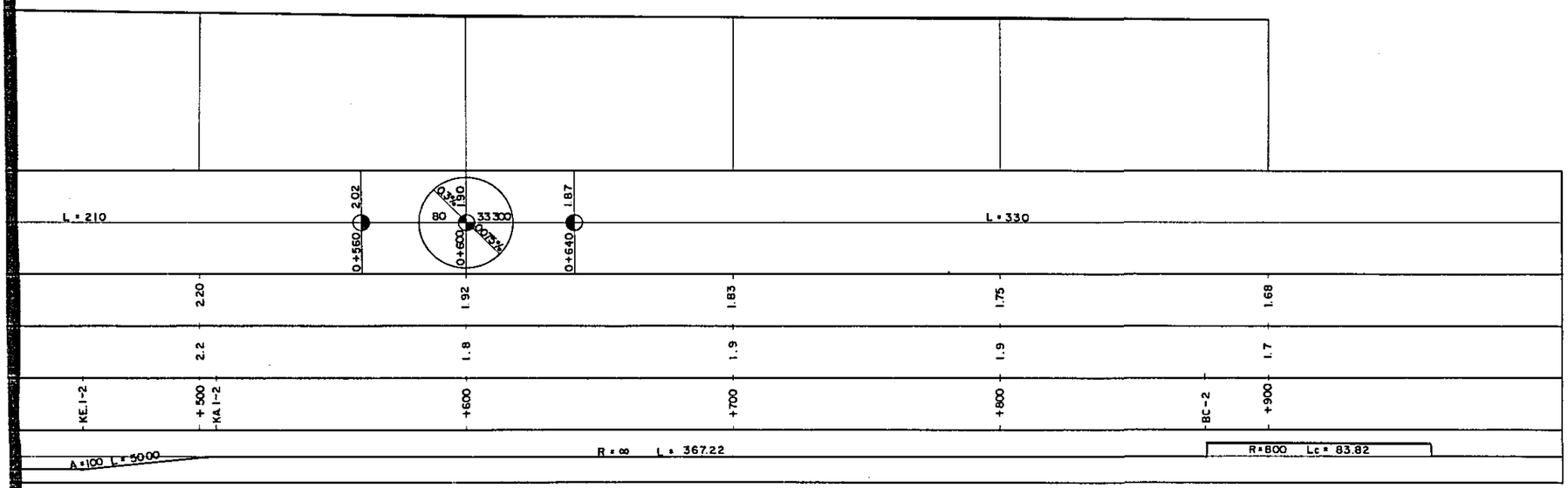
PROFILE



PLAN



RIZAL AVENUE
STA 0+477



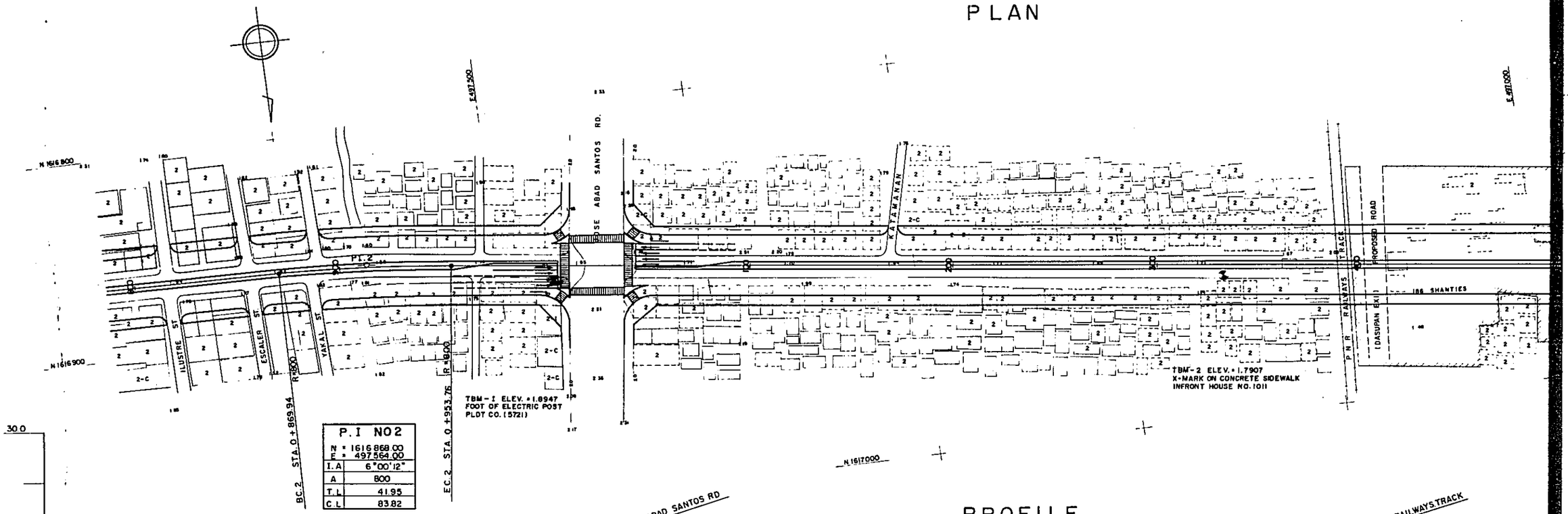
REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

C-2 ALTERNATIVE 1/3

SCALE : AS SHOWN	DATE;	SHEET NO. 23

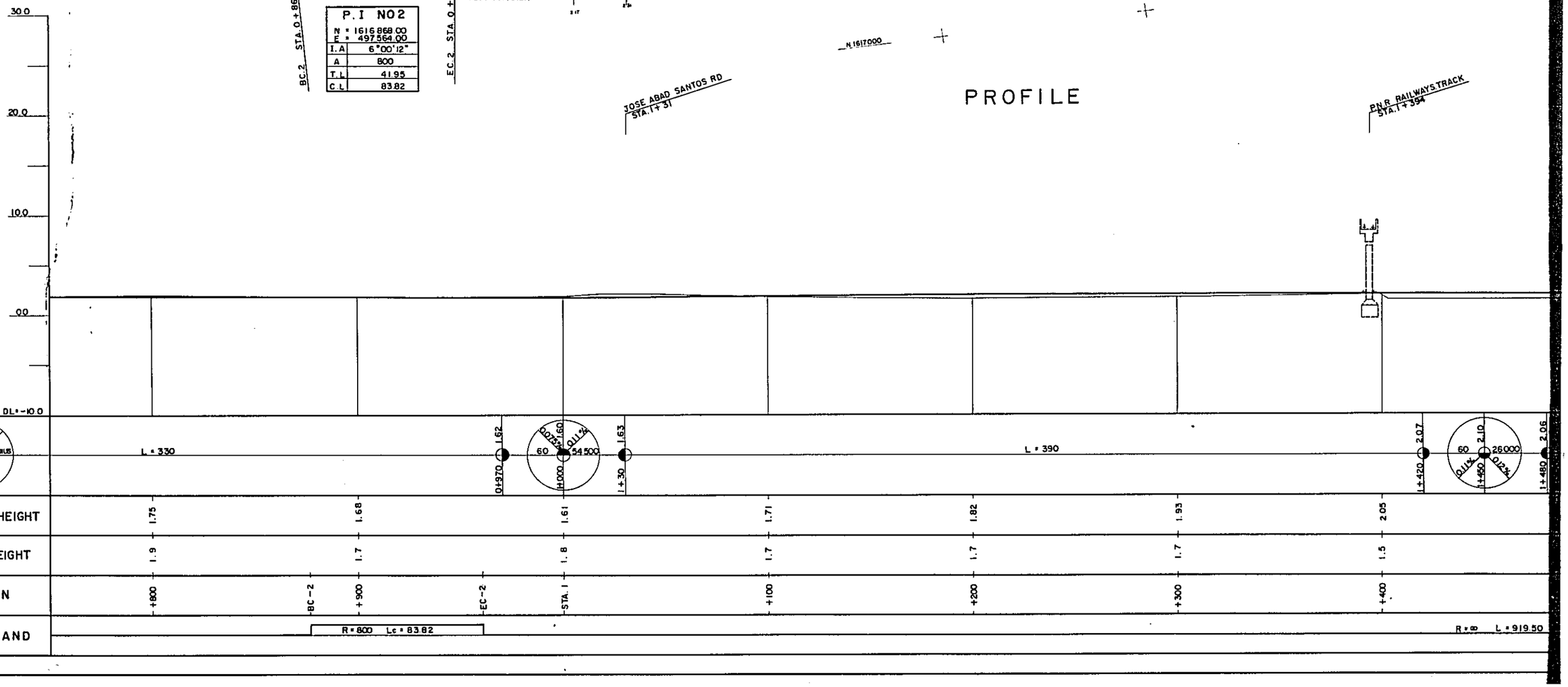
JAPAN INTERNATIONAL COOPERATION AGENCY

PLAN

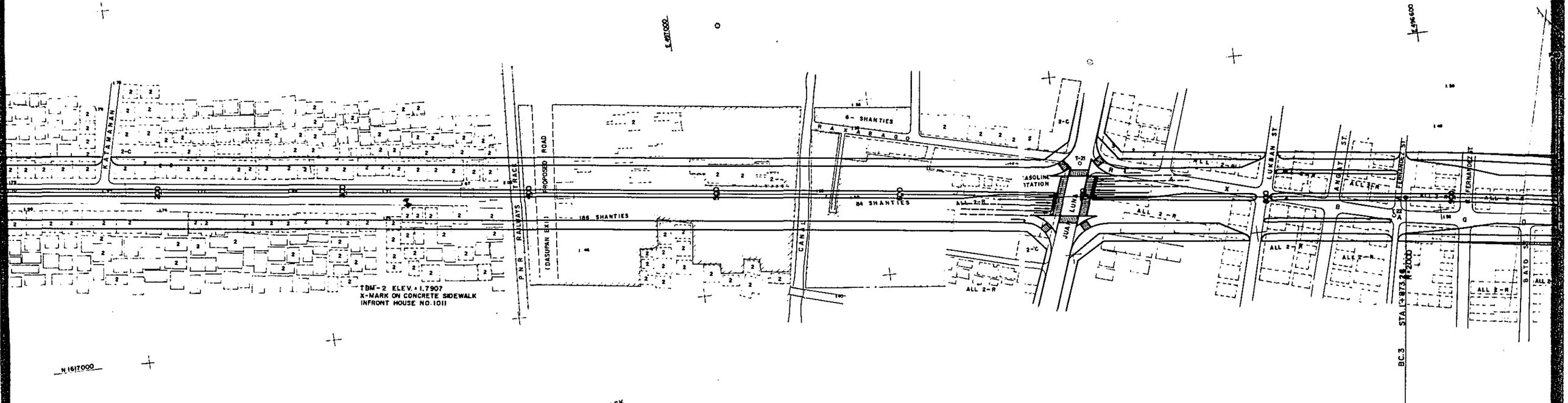


P.I NO2	
N = 1616 868.00	
E = 497 564.00	
I.A	6°00'12"
A	800
T.L	41.95
C.L	83.82

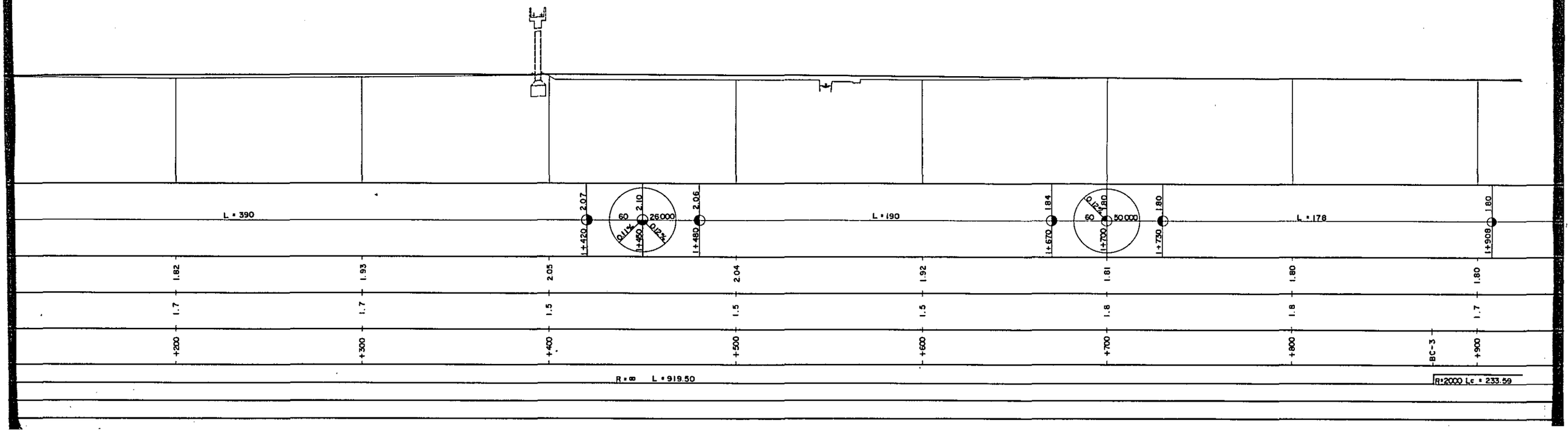
PROFILE



PLAN



PROFILE

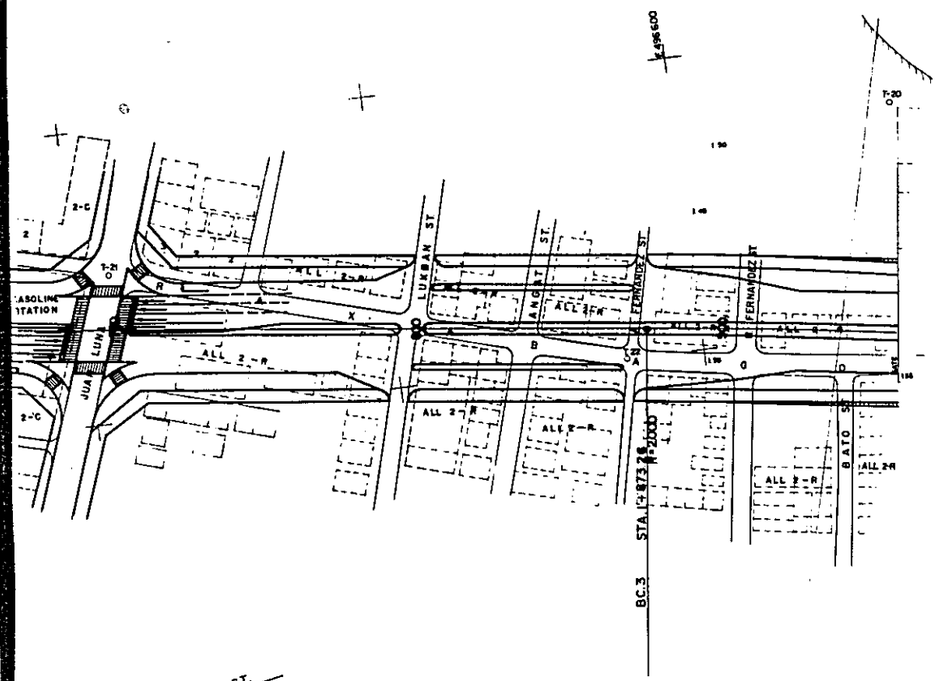


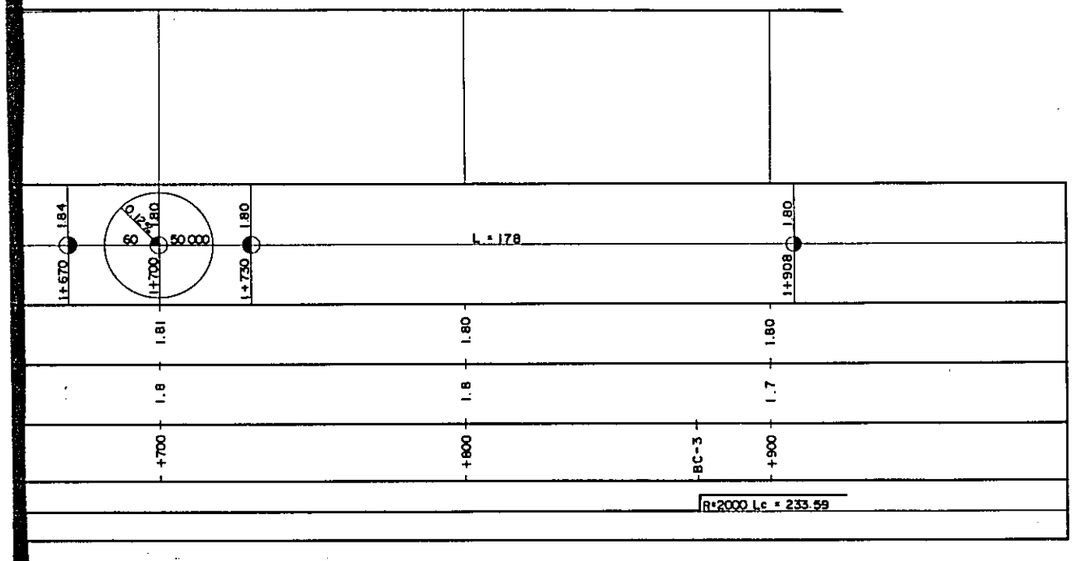
REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

C-2 ALTERNATIVE 2/3

SCALE : AS SHOWN	DATE:	SHEET NO. 24

JAPAN INTERNATIONAL COOPERATION AGENCY



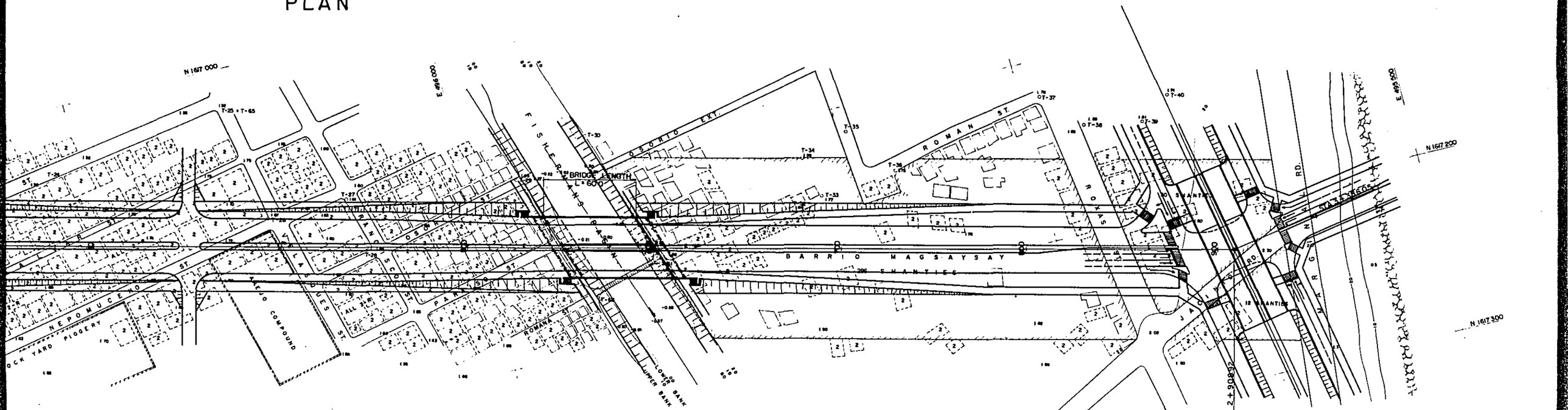


PLAN

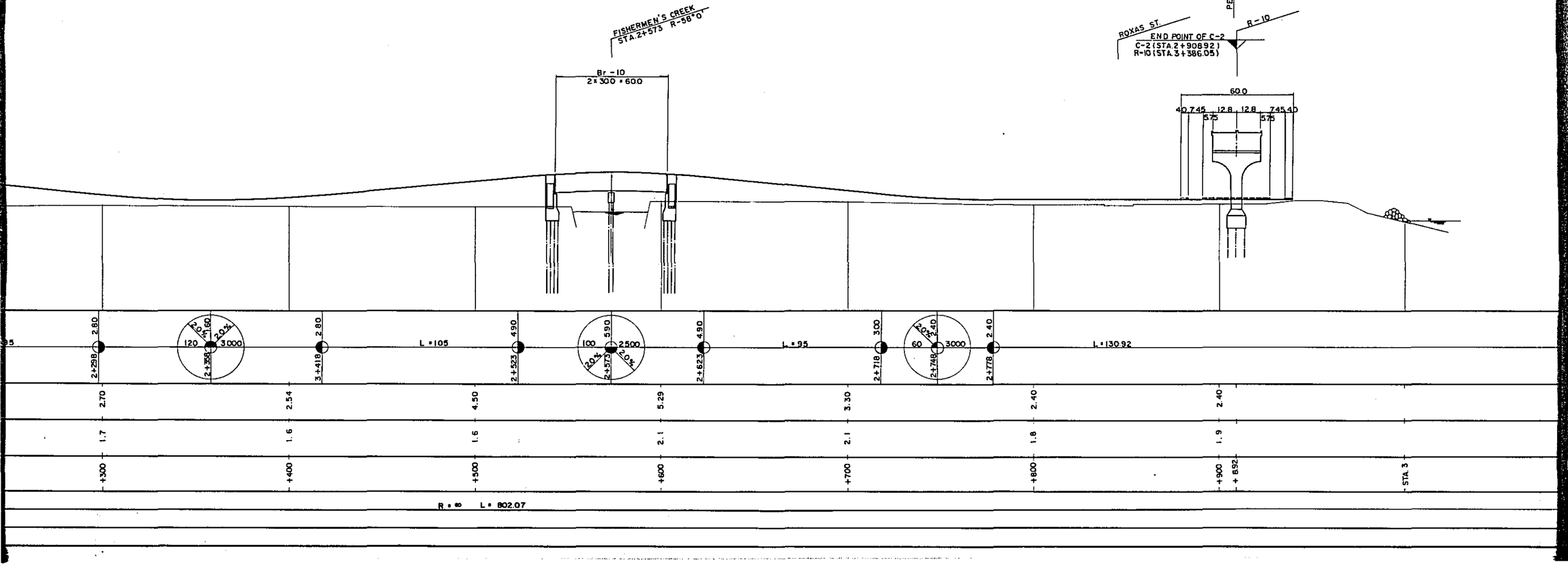
PROFILE

PROPOSED HEIGHT	1.80	2.65	4.64	4.76	2.70	2.54	4.50	5.29
GROUND HEIGHT	1.7	1.5	1.5	1.4	1.7	1.6	1.6	2.1
STATION	+900	STA. 2	+100 EC-3	+200	+300	+400	+500	+600
CURVE BAND	R = 2000 Lc = 233.59			R = ∞ L = 802.07				

PLAN



PROFILE

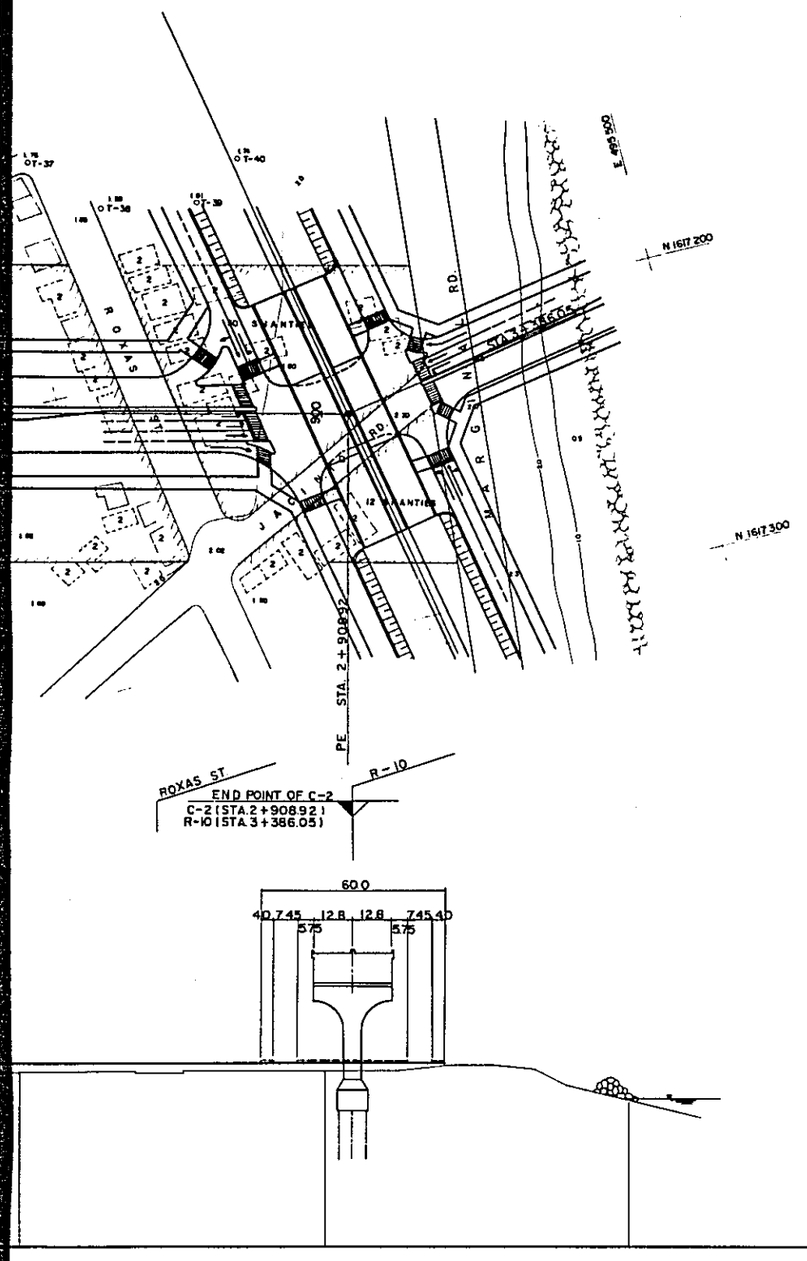


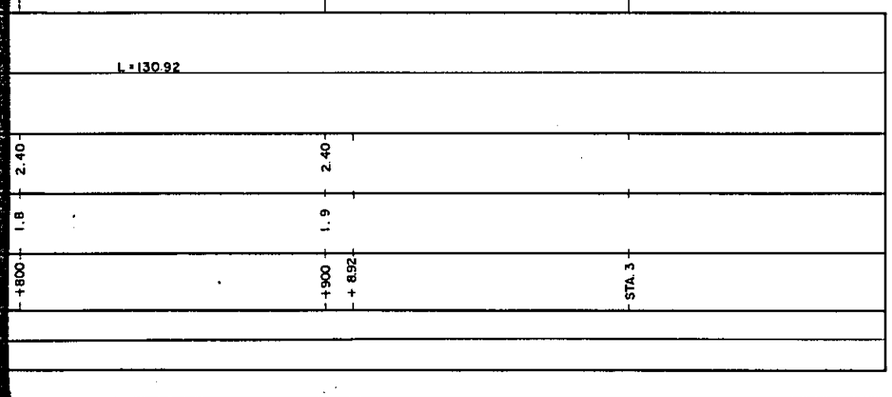
REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

C-2 ALTERNATIVE 3/3

SCALE : AS SHOWN	DATE:	SHEET NO 25

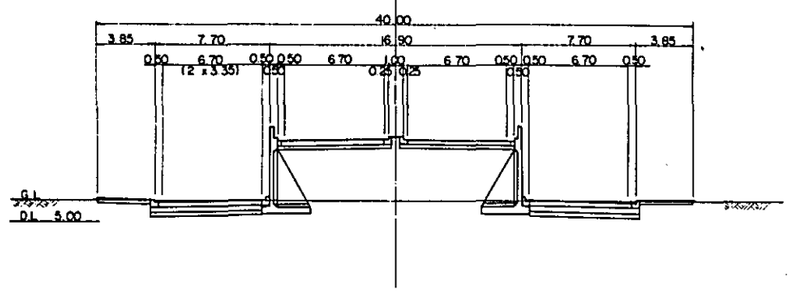
JAPAN INTERNATIONAL COOPERATION AGENCY



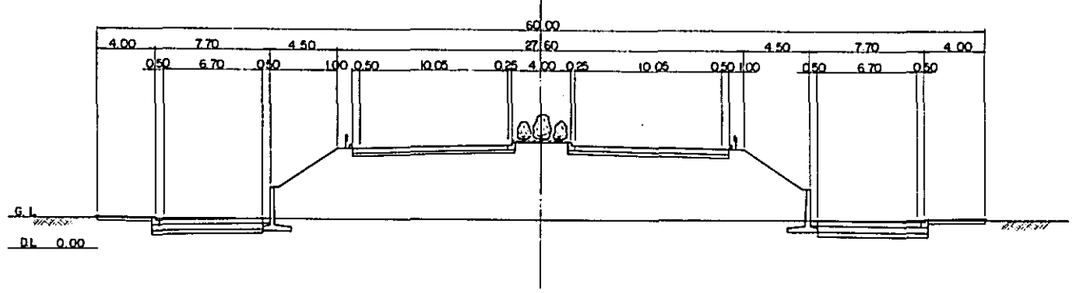


R-10 TYPICAL CROSS SECTION

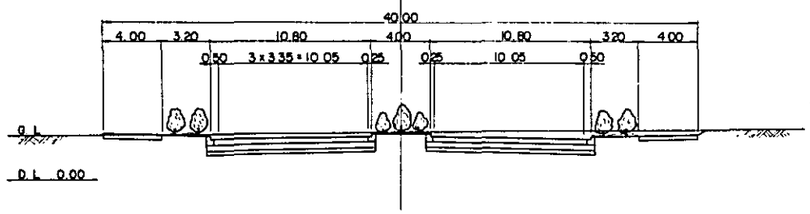
STA. 0+400
(C-1 INTERSECTION)



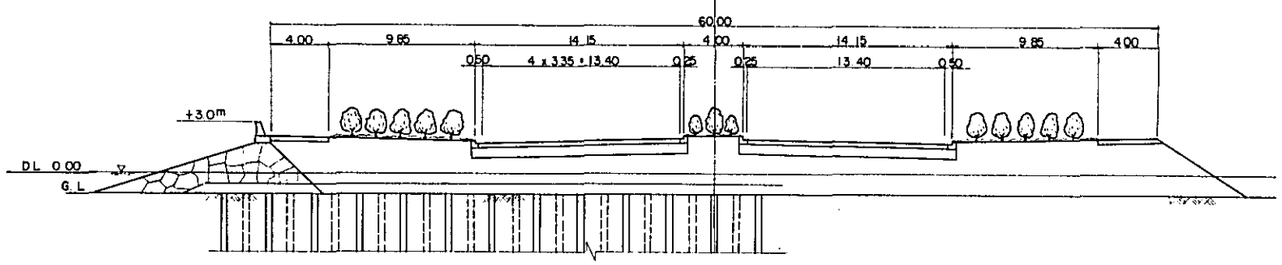
STA. 3+300
(C-2 INTERSECTION)



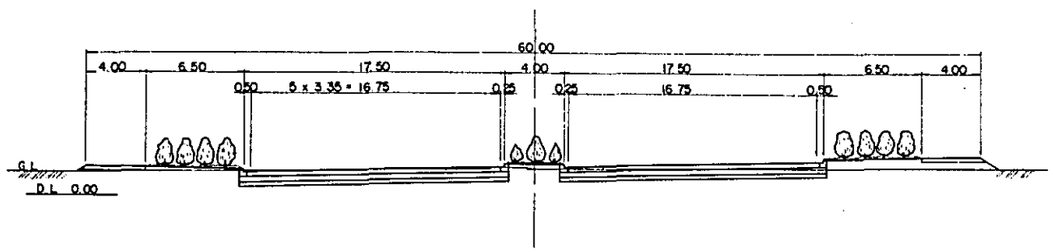
STA. 2+100
(TONDO RENEWAL AREA)



STA. 3+900
(C-2 ~ C-3)



STA. 2+850
(INTERSECTION OF NEW HARBOR ROAD~C-2)



REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

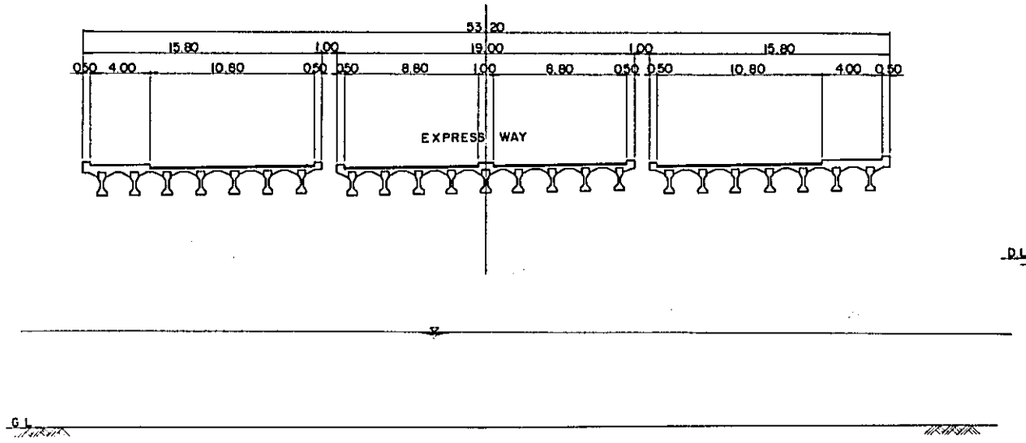
TYPICAL CROSS SECTION 1/6

SCALE:	DATE:	SHEET NO. 26

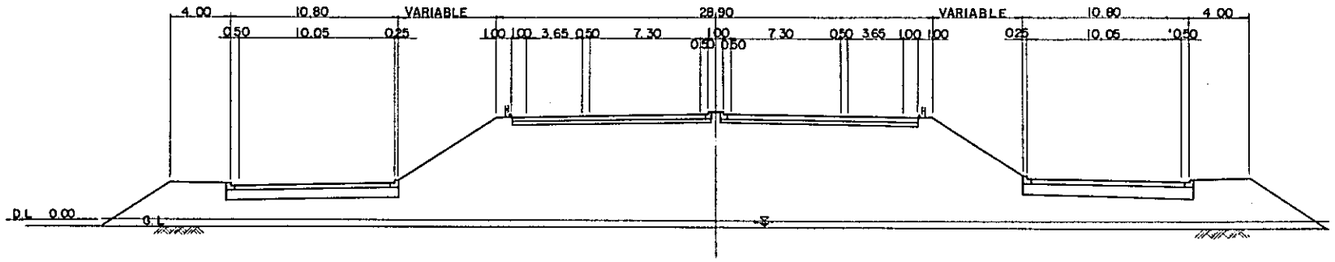
JAPAN INTERNATIONAL COOPERATION AGENCY

R-10 TYPICAL CROSS SECTION

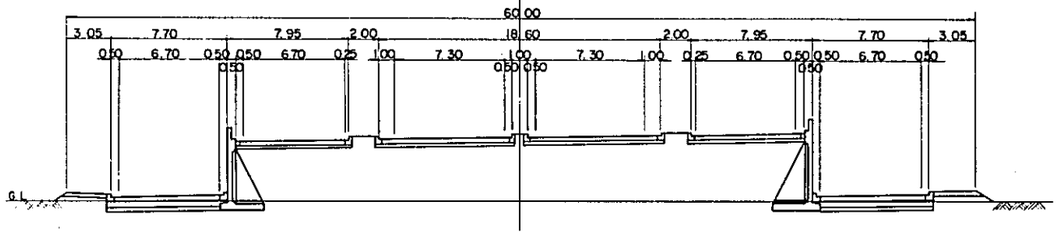
STA. 4 + 800
(MALARA RIVER)



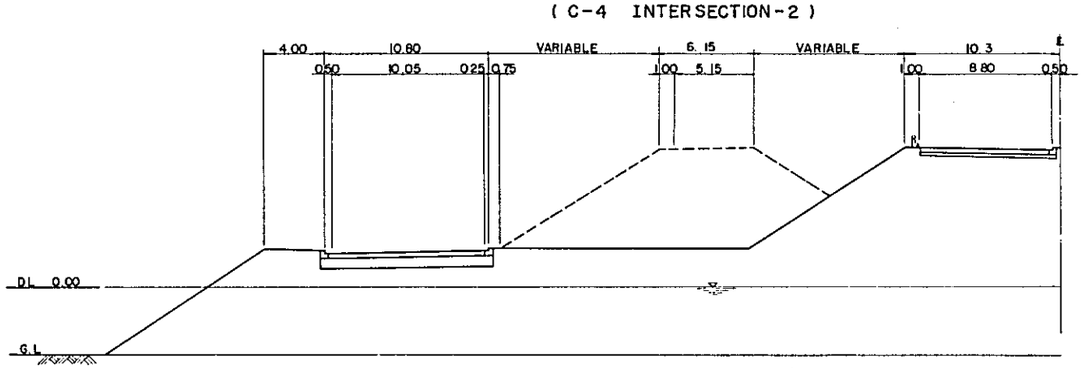
STA. 6 + 600
(C-4 INTERSECTION - 1)



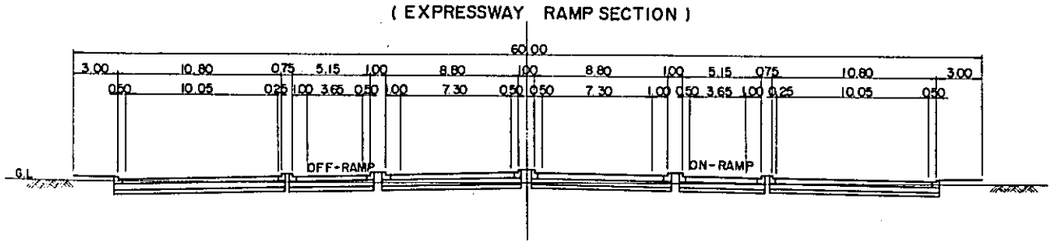
STA. 5 + 400
(C-3 INTERSECTION)



STA. 6+700
(C-4 INTERSECTION-2)



STA. 5 + 850
(EXPRESSWAY RAMP SECTION)



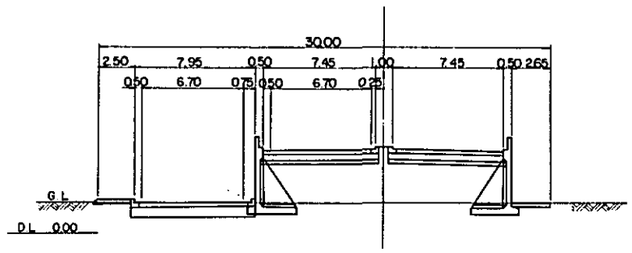
Note ; Expressway estimates not included in this study

REPUBLIC OF THE PHILIPPINES METRO MANILA TRANSPORT R-10 FEASIBILITY STUDY		
TYPICAL CROSS SECTION 2/6		
SCALE : AS SHOWN	DATE :	SHEET NO. 27
JAPAN INTERNATIONAL COOPERATION AGENCY		

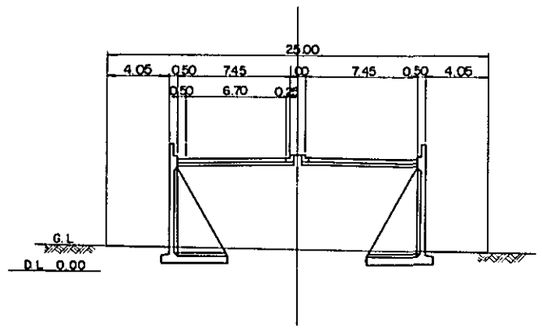
TYPICAL CROSS SECTION

NEW HARBOR ROAD

STA. 0 + 50
(APPROACH SECTION – 1)

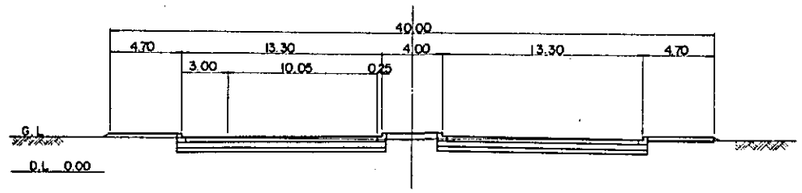


STA. 0 + 400
(APPROACH SECTION - 2)

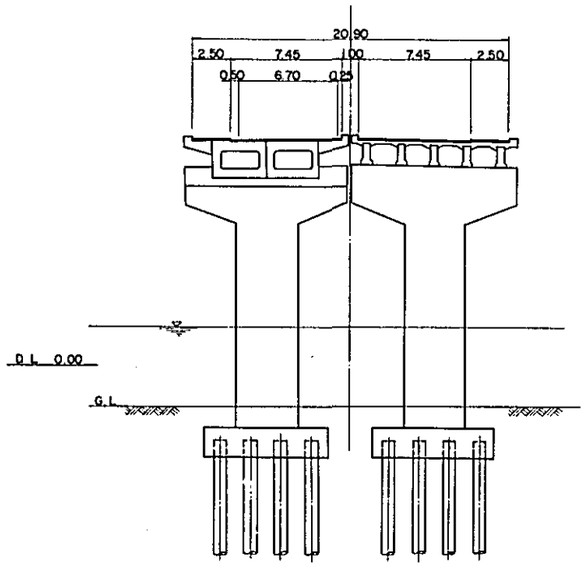


C – 1

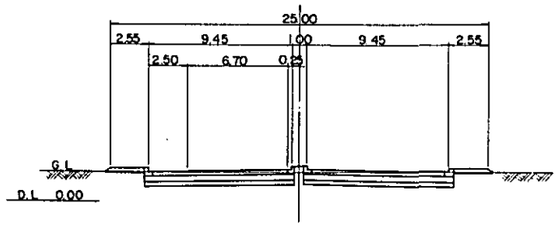
STA. 0 + 400



STA. 0 + 243
(BRIDGE SECTION)



STA. 0 + 800
(TONDO RENEWAL AREA)



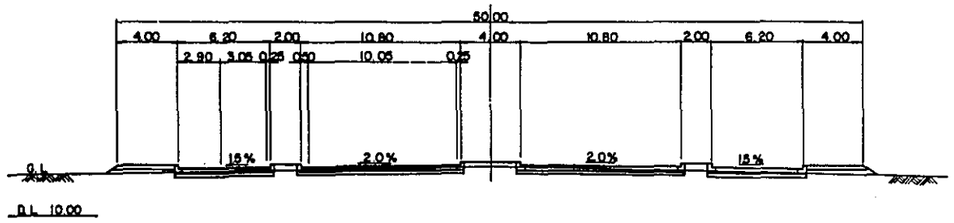
Note : Expressway estimates not included in this study

REPUBLIC OF THE PHILIPPINES METRO MANILA TRANSPORT R-10 FEASIBILITY STUDY		
TYPICAL CROSS SECTION 3/6		
SCALE : AS SHOWN	DATE;	SHEET NO. 28
JAPAN INTERNATIONAL COOPERATION AGENCY		

TYPICAL CROSS SECTION

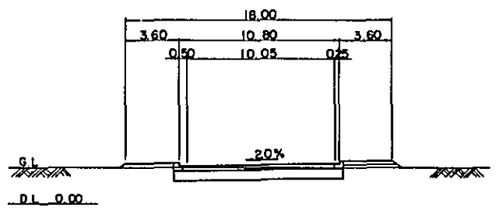
C - 3

STA. 0 + 200
(R9 ~ MABINI ST.)

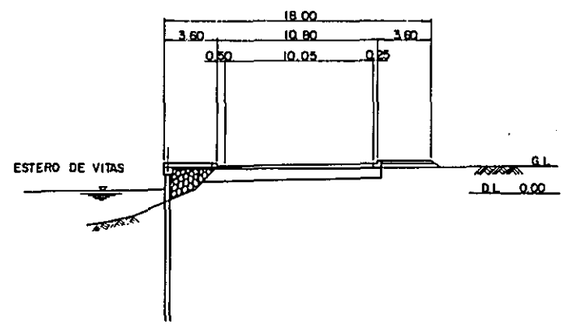


C - 2

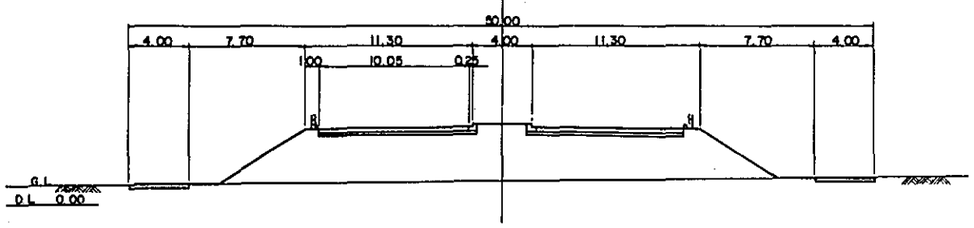
STA. 0 + 300
(ONE WAY SECTION - 1)



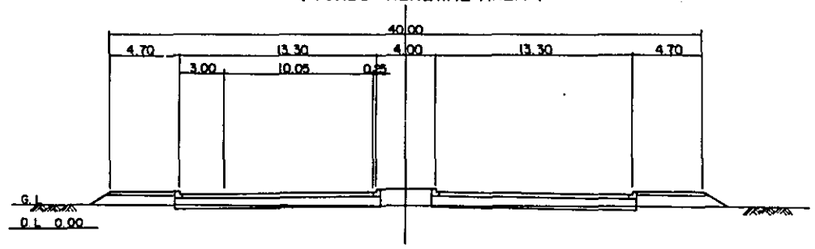
STA. 1 + 900
(ONE WAY SECTION - 2)



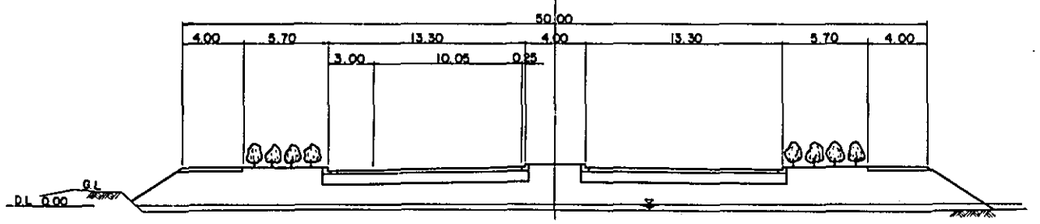
STA. 1 + 50
(WEST SIDE OF MABINI ST.)



STA. 2 + 400
(TONDO RENEWAL AREA)



STA. 1 + 300
(DAGAT - DAGATAN RESETTLEMENT AREA)



REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

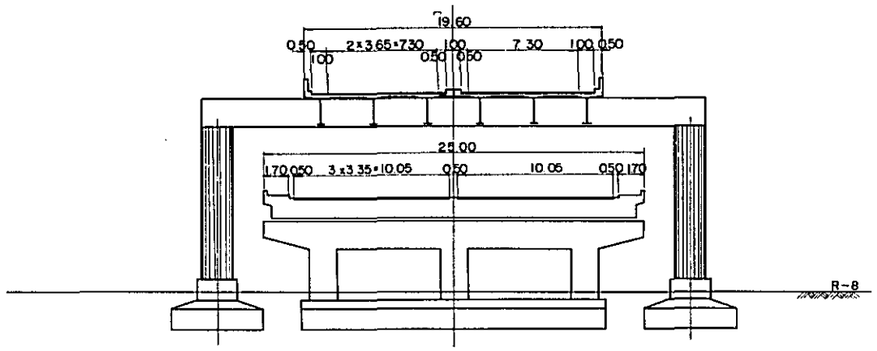
TYPICAL CROSS SECTION 4/6

SCALE:	DATE:	SHEET NO. 29

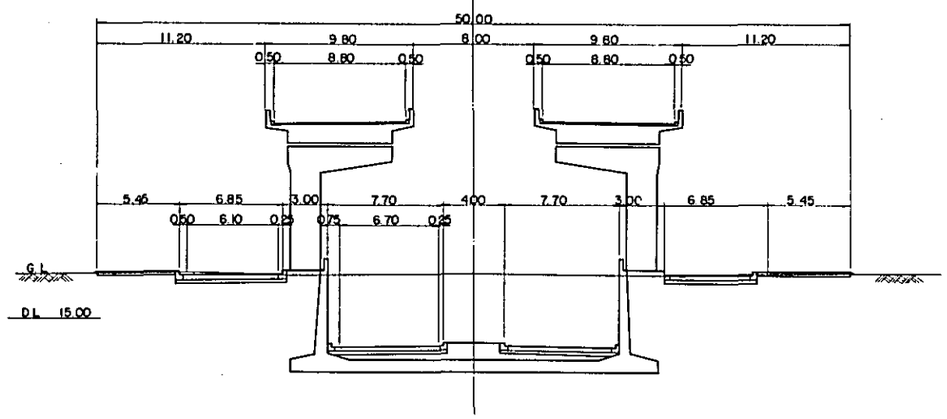
JAPAN INTERNATIONAL COOPERATION AGENCY

C-4 TYPICAL CROSS SECTION

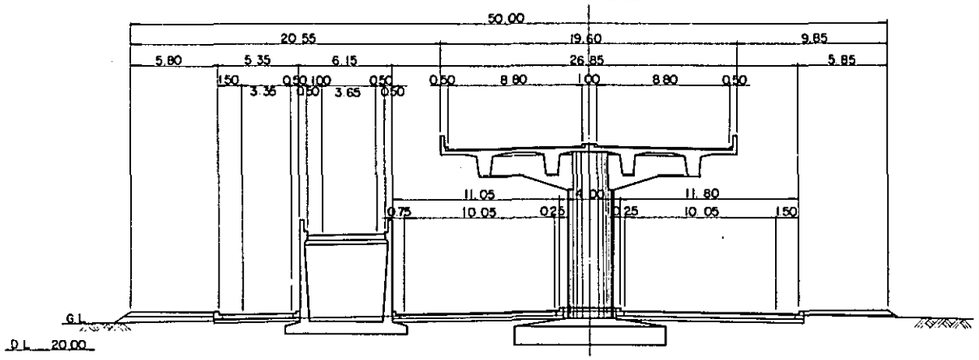
STA. 0 + 0
(BALINTAWAK INTERCHANGE)



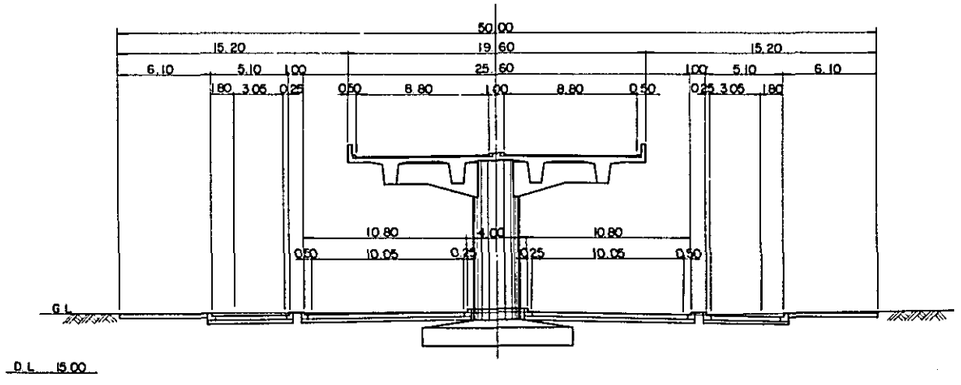
STA. 1 + 650
(APPROACH OF DEPRESSED WAY)



STA. 0 + 400
(EXPRESSWAY RAMP SECTION)



STA. 1 + 350



STA. 1 + 747
(DEPRESSED WAY)

Note : Expressway estimates not included in this study

REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

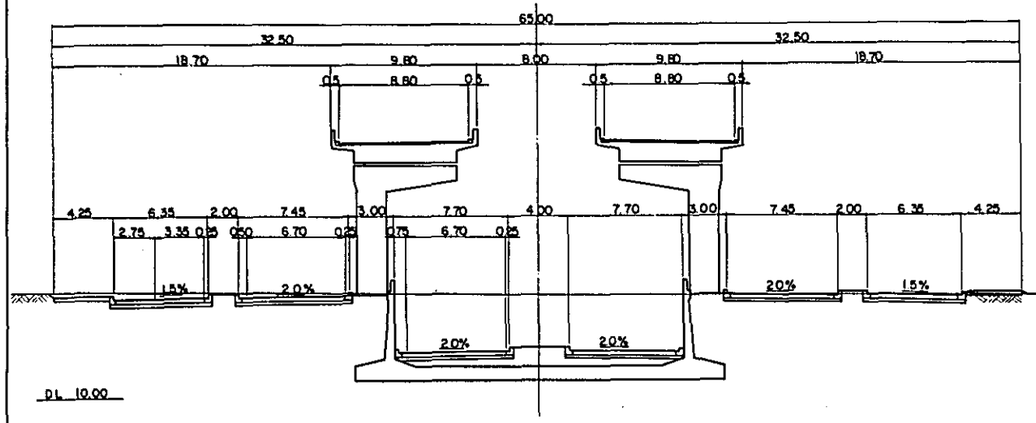
TYPICAL CROSS SECTION 5/6

SCALE : AS SHOWN	DATE :	SHEET NO. 30/

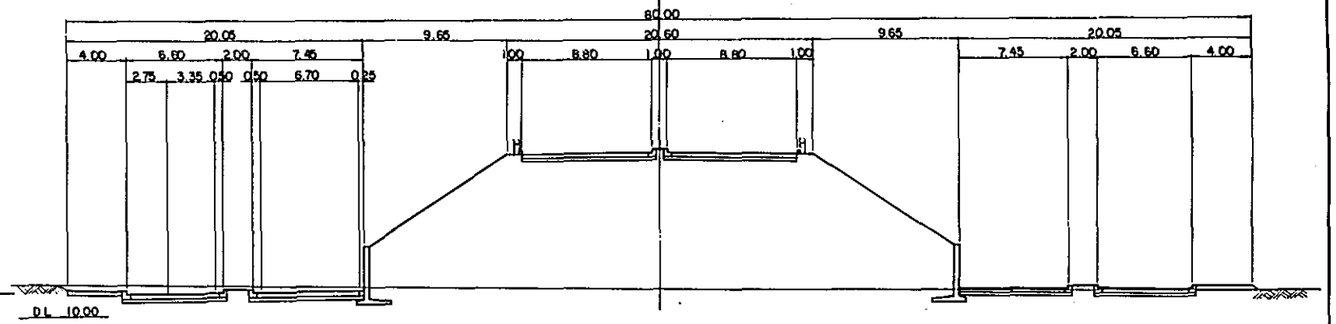
JAPAN INTERNATIONAL COOPERATION AGENCY

C-4 TYPICAL CROSS SECTION

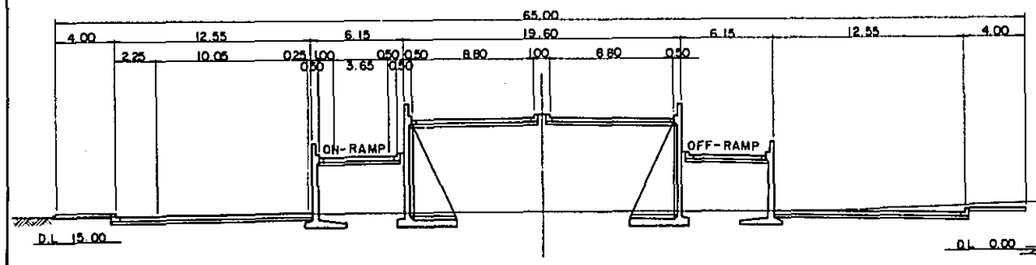
STA. 1 + 850
(APPROACH OF DEPRESS WAY)



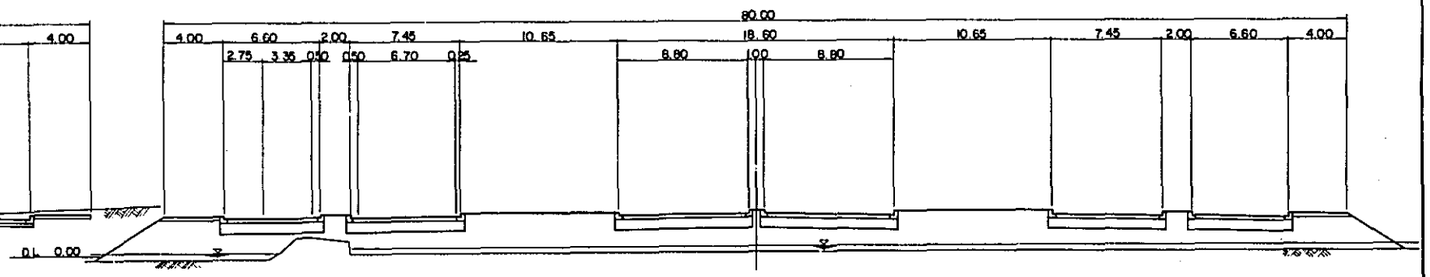
STA. 2 + 900
(ALTERNATIVE PLAN, R9 ~ MABINI ST.)



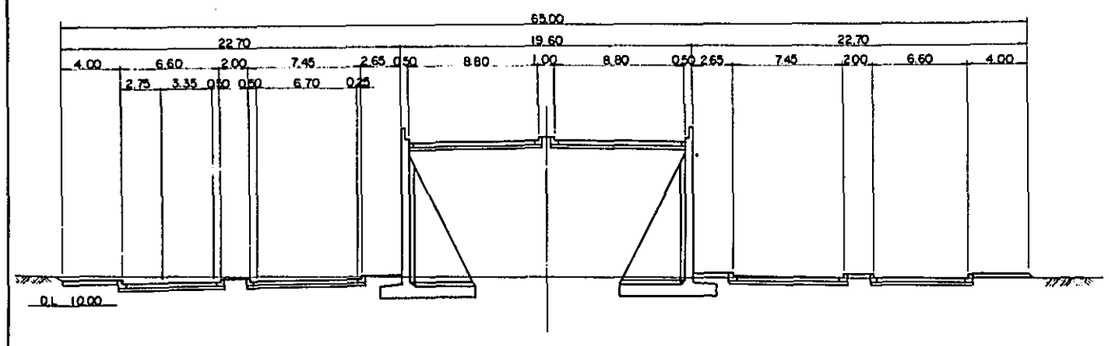
STA. 2 + 600
(EXPRESSWAY RAMP)



STA. 4 + 500
(DAGAT-DAGATAN RESETTLEMENT AREA)



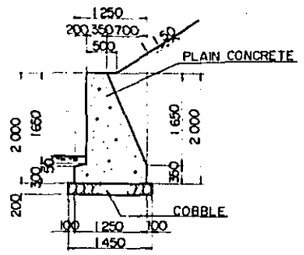
STA. 2 + 900
(R9 ~ MABINI ST.)



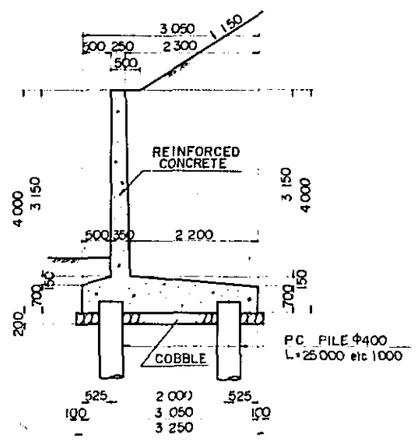
Note ; Express way estimates
not included in this study

REPUBLIC OF THE PHILIPPINES METRO MANILA TRANSPORT R-10 FEASIBILITY STUDY		
TYPICAL CROSS SECTION 6/6		
SCALE:	DATE:	SHEET NO. 31/
JAPAN INTERNATIONAL COOPERATION AGENCY		

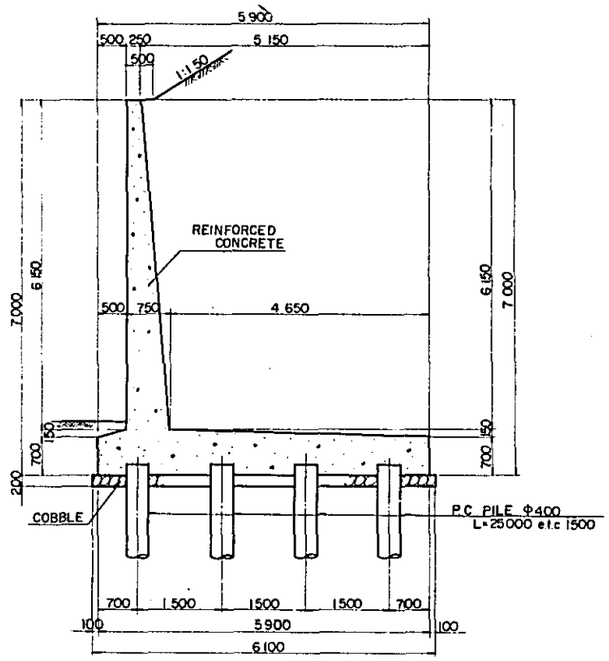
GRAVITY-TYPE RETAINING WALL
H = 2000 SCALE 1:100



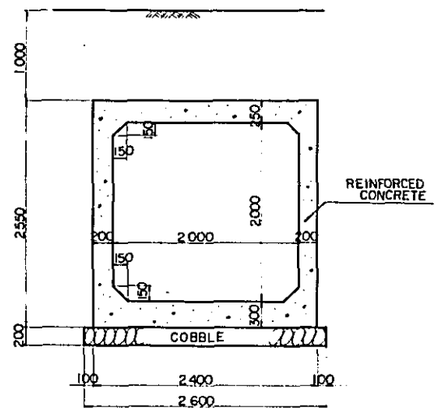
REINFORCED CONCRETE RETAINING WALL
H = 4000 SCALE 1:100



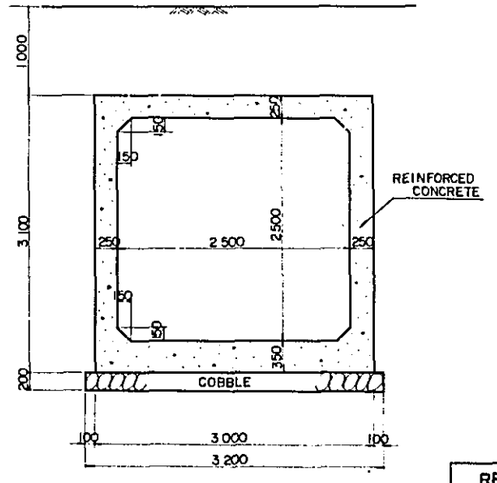
REINFORCED CONCRETE RETAINING WALL
H = 7000 SCALE 1:100



BOX CULVERT B=2000 H=2000 SCALE 1:60



BOX CULVERT B=2500 H=2500 SCALE 1:60



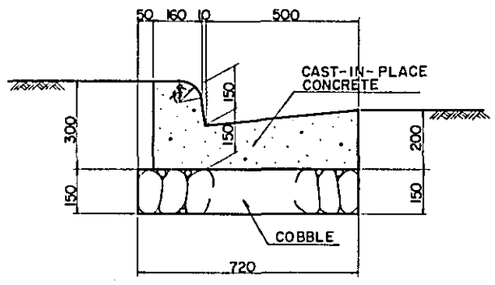
REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

MISCELLANEOUS WORK (1)

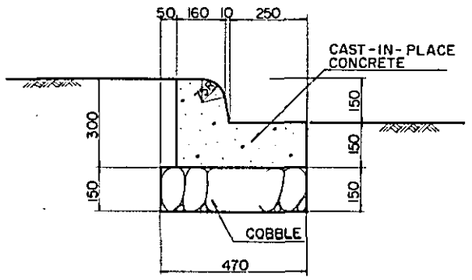
SCALE: | DATE: | SHEET NO 32

JAPAN INTERNATIONAL COOPERATION AGENCY

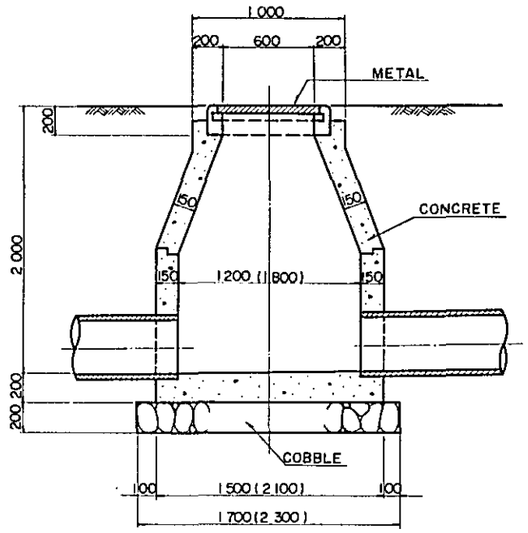
L-TYPE GUTTER B=500 SCALE 1:20



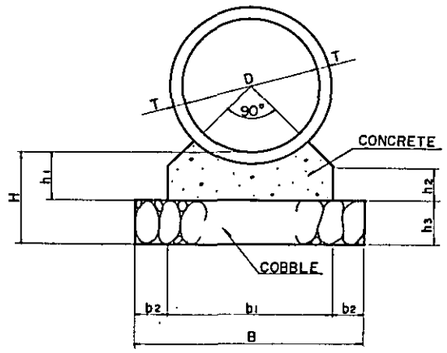
CONCRETE CURB B=250 SCALE 1:20



CONCRETE MANHOLE SCALE 1:40

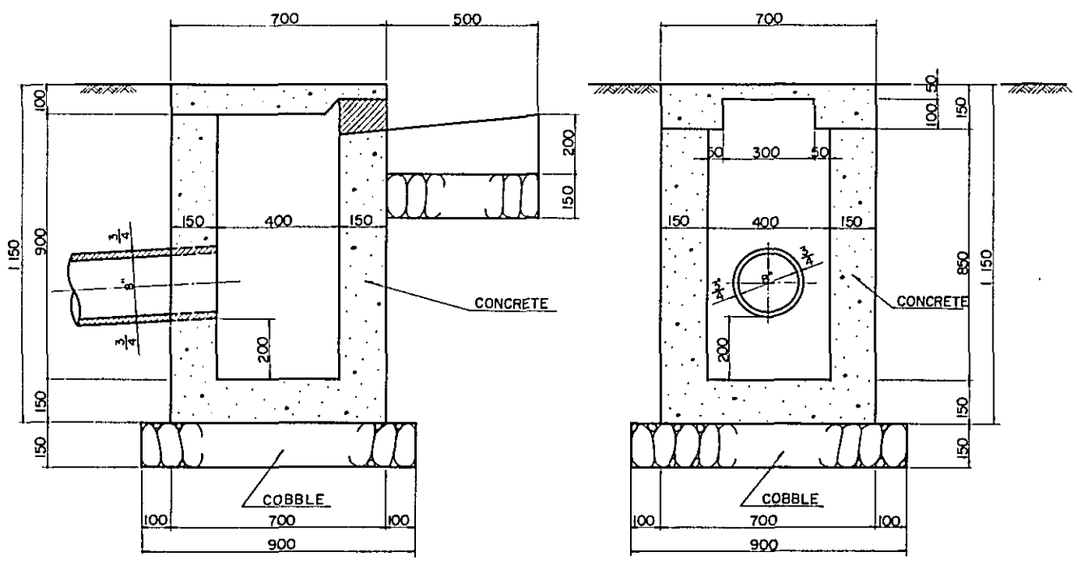


DRAIN PIPE SCALE 1:20



D in	T	H	h1	h2	h3	B	b1	b2
12 in	1 in	260 mm	110 mm	80 mm	150 mm	560 mm	360 mm	100 mm
18	2 1/2	298	148	110	150	760	540	110
20	3	360	210	160	150	950	730	110
36	4	435	285	210	150	1300	1070	115
48	5	505	355	260	150	1650	1410	120

CATCH BASINS SCALE 1:20



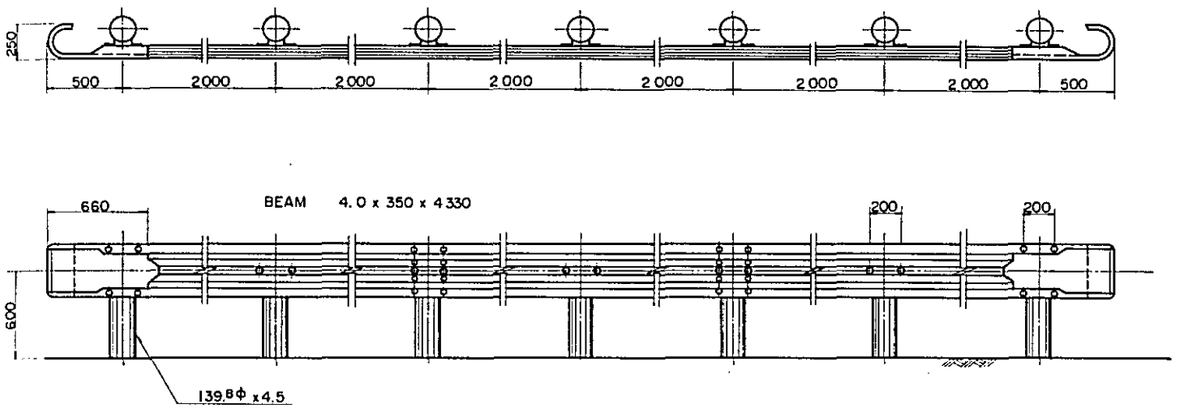
REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

MISCELLANEOUS WORK (2)

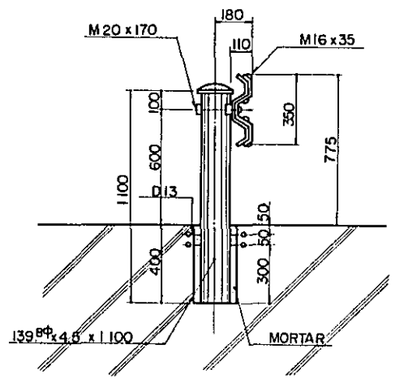
SCALE: AS SHOWN | DATE: | SHEET NO. 33

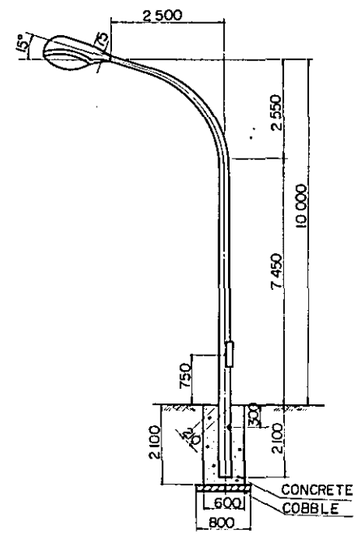
JAPAN INTERNATIONAL COOPERATION AGENCY

GUARD RAIL SCALE 1:40

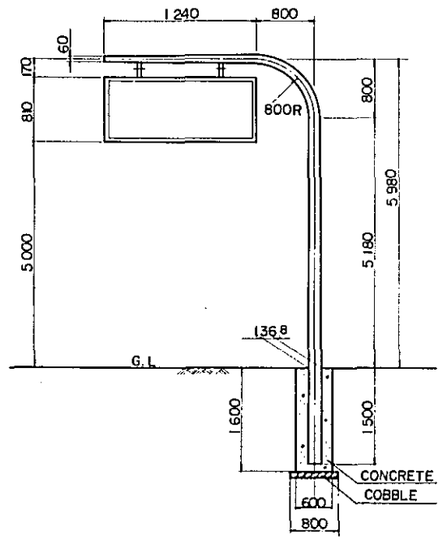


LIGHTNING

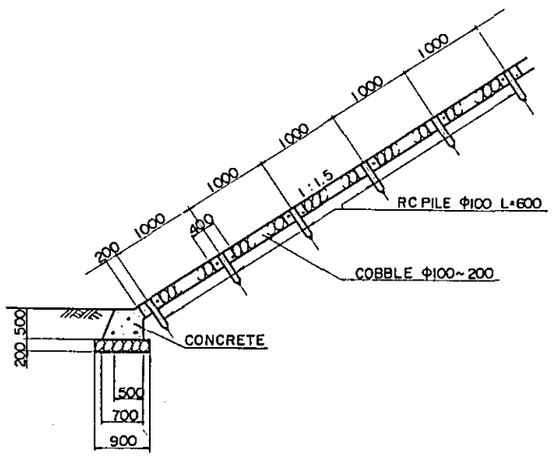


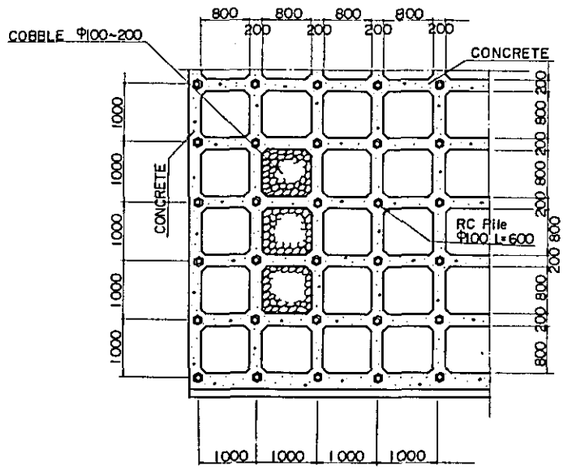


TRAFFIC SIGN



SLOPE GUARD SCALE 1:100





REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

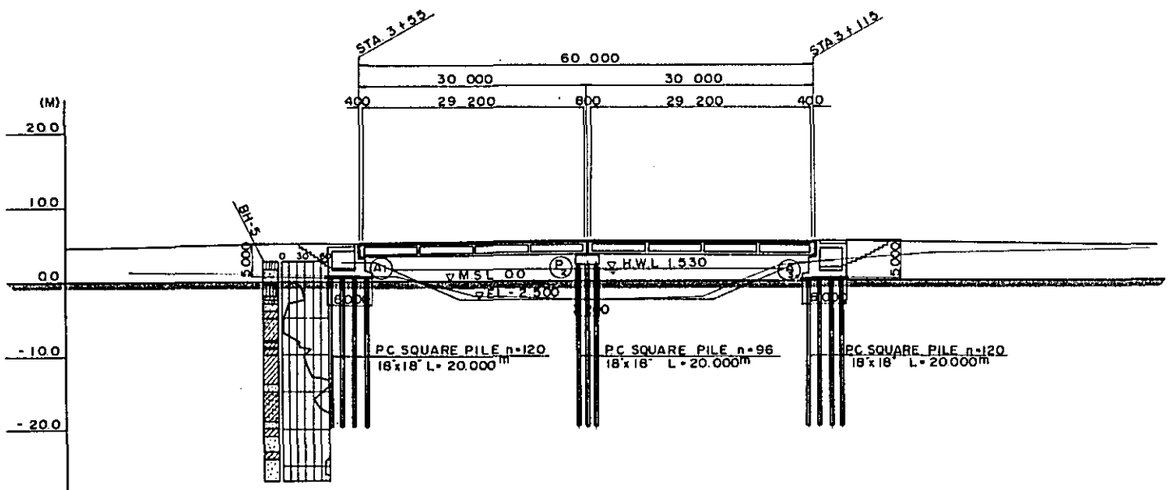
MISCELLANEOUS WORK (3)

SCALE : AS SHOWN	DATE :	SHEET NO. 34

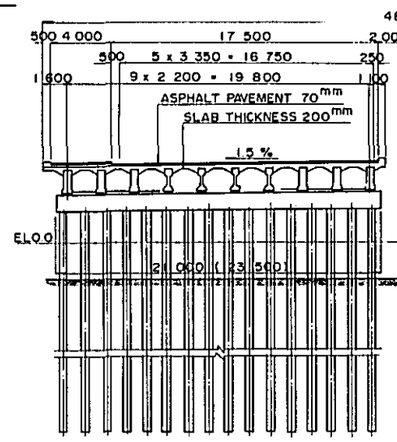
JAPAN INTERNATIONAL COOPERATION AGENCY

R-10 Br-1 FISHERMEN'S CREEK

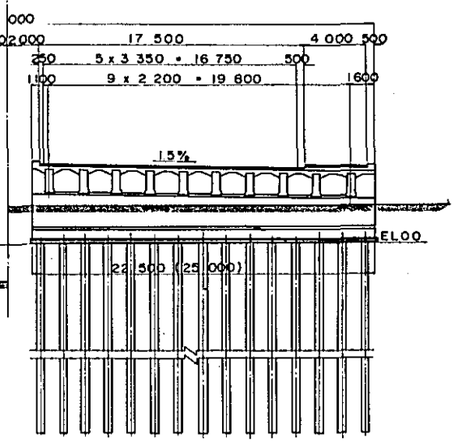
PROFILE S = 1 : 800



P2 SECTION S = 1 : 400

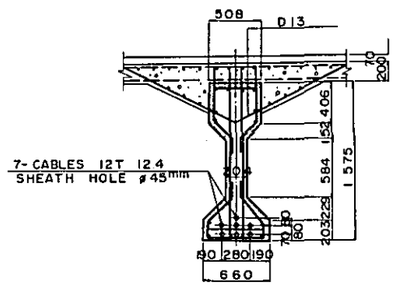


A1 A3 SECTION S = 1 : 400



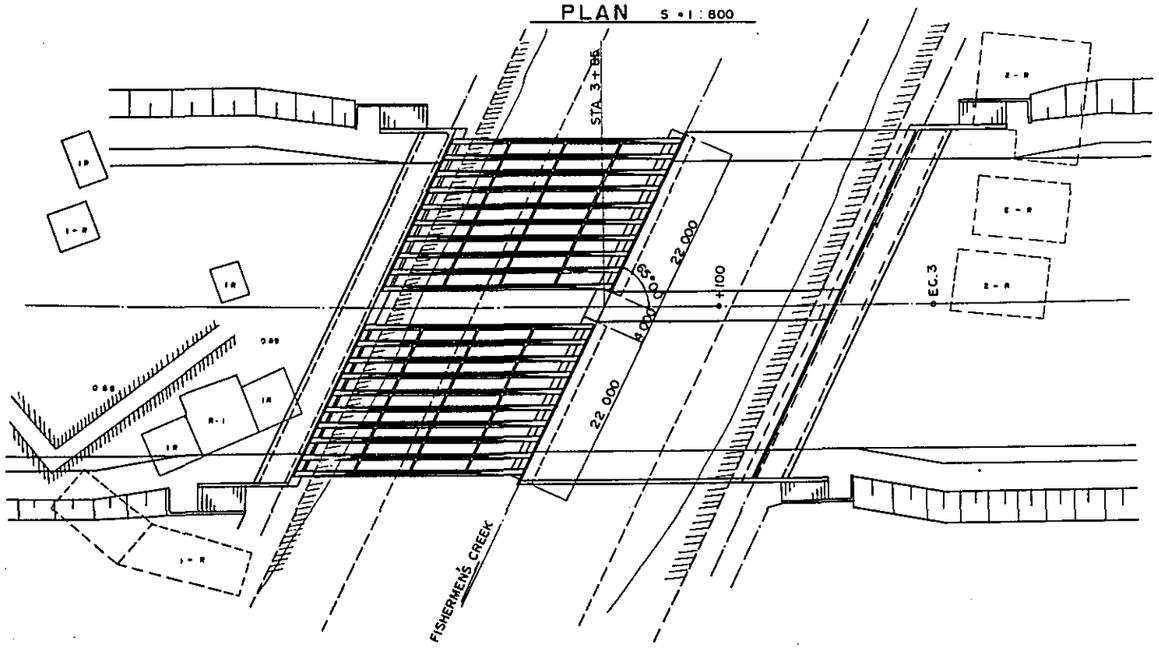
VERT CURVE LENGTH / RADIUS / STATION	
PROPOSED HEIGHT	5.000 — 5.320 — 5.500 — 5.455 — 5.320 — 5.000
GROUND HEIGHT	1.0
STATION	3+35 — +55 — +85 — +100 — +115 — +135
CURVE BAND	R = 4 000 Lc = 379.59

SECTION S = 1 : 60

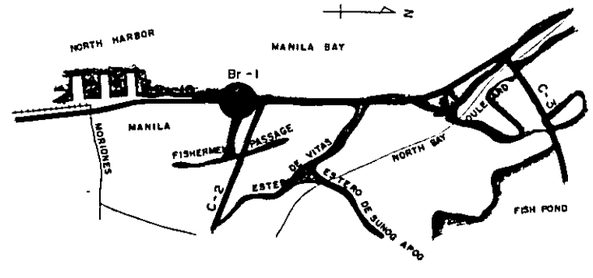


STANDARD AASHO-PC I-GIRDER
TYPE IV-B BEAM

PLAN S = 1 : 800



MARKING S = 1 : 50,000



R-10 <Br-1 FISHERMEN'S CREEK> (UNIT : ₱)

ITEM	UNIT	QUANTITY	UNIT COST	FINANCIAL COST
(A) SUPER STRUCTURE				
P.S CONCRETE	M^3	849	500	424 500
CLASS "A" CONCRETE	M^3	958	450	431 100
PAVEMENT	M^2	2 100	35	73 500
R.C RAILING				
REINF. STEEL	T	305	6 500	1 982 500
STRAND	T	88	19 500	1 716 000
SUM (A)				4 627 600
(B) SUB STRUCTURE				
EXCAVATION FOR STRUCT	M^3	1 119	20	22 380
PILES (CONCRETE)	M	6 720	550	3 696 000
GLASS "A" CONCRETE	M^3	1 493	450	671 850
REINF. STEEL	T	143	6 500	929 500
SUM (B)				5 319 730
TOTAL SUM (A) + SUM (B)				9 947 330
FOREIGN CURRENCY				4 456 440

REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

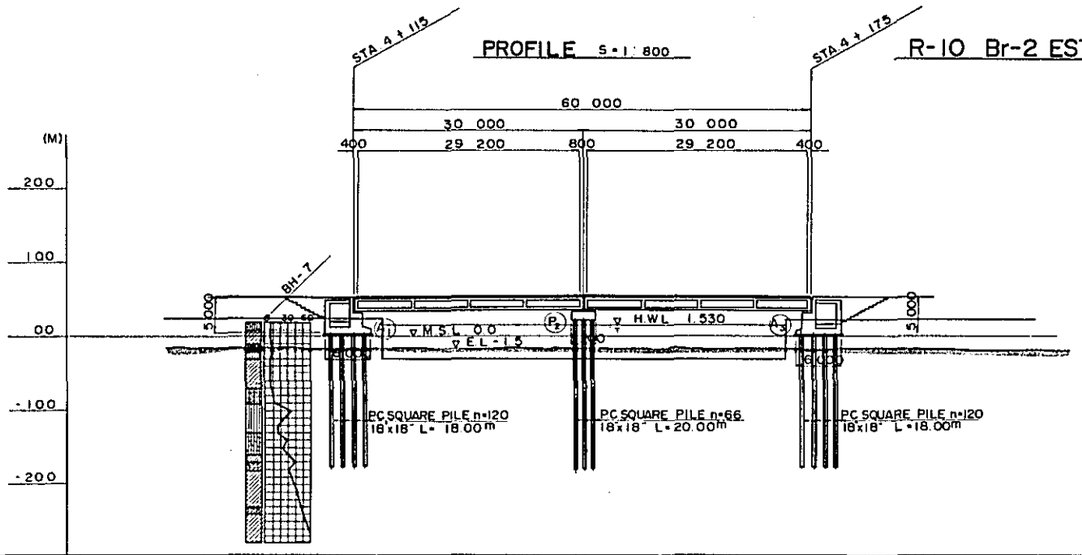
BRIDGE (Br-1)

SCALE : AS SHOWN	DATE;	SHEET. No. 35

JAPAN INTERNATIONAL COOPERATION AGENCY

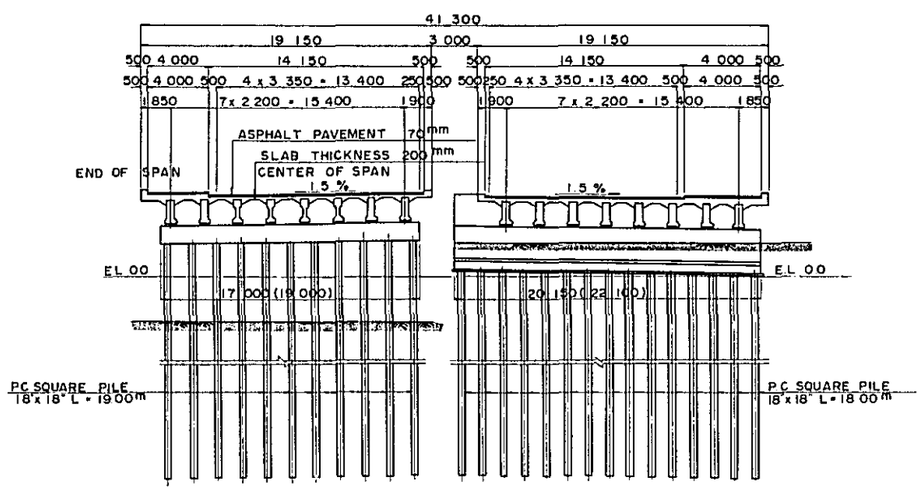
R-10 Br-2 ESTERO DE VITAS

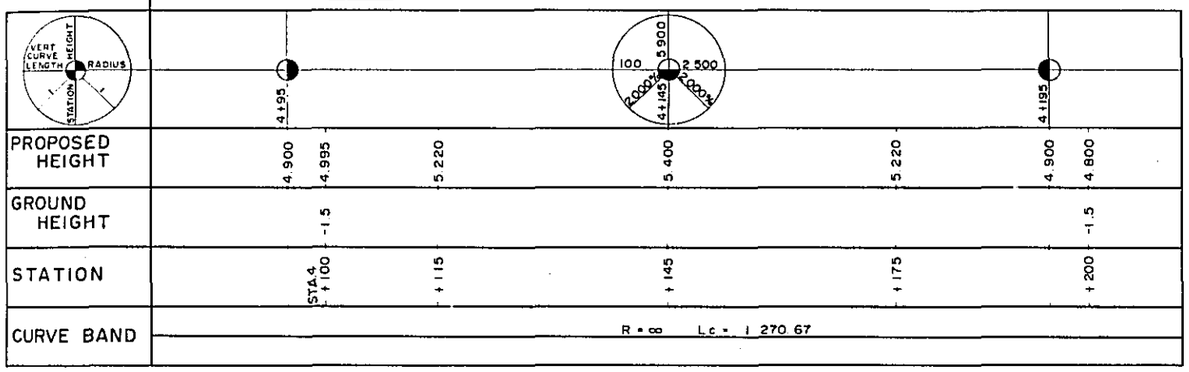
PROFILE S = 1 : 800



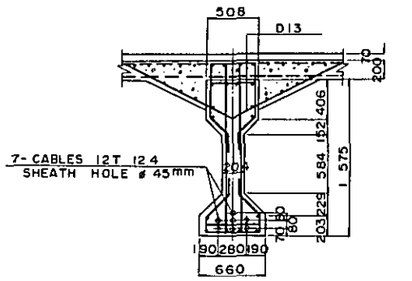
P2 SECTION S = 1 : 400

A1 A3 SECTION S = 1 : 400





SECTION S = 1 : 60

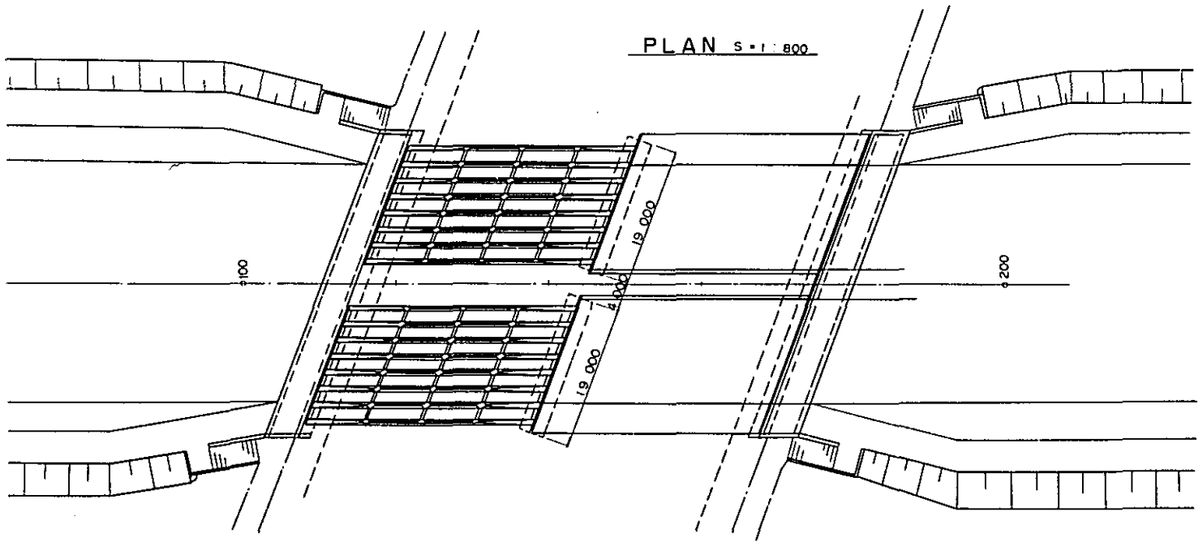


STANDARD AASHO-PC I-GIRDER
TYPE IV - B BEAM

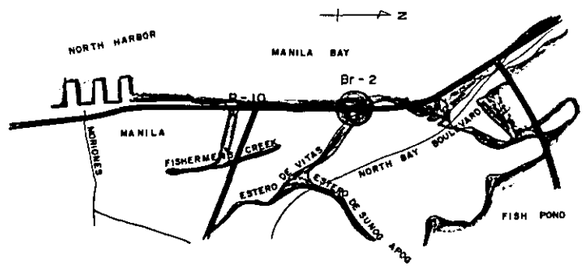
R-10 <Br-2 ESTERO DE VITAS>				(UNIT: P)
ITEM	UNIT	QUANTITY	UNIT COST	FINANCIAL COST
(A) SUPER STRUCTURE				
P.S CONCRETE	M^3	768	500	384 000
CLASS "A" CONCRETE	M^3	803	450	361 350
PAVEMENT	M^2	1 698	35	59 430
R.C RAILING				
REINF. STEEL	T	263	6 500	1 709 500
STRAND	T	79	19 500	1 540 500
SUM (A)				4 054 780
(B) SUB STRUCTURE				
EXCAVATION FOR STRUCT.	M^3	—	—	—
PILES (CONCRETE)	M	5 640	550	3 102 000
CLASS "A" CONCRETE	M^3	1 306	450	587 700
REINF. STEEL	T	126	6 500	819 000
SUM (B)				4 508 700
TOTAL = SUM (A) + SUM (B)				8 563 480
FOREIGN CURRENCY				3 835 005

Note : Expressway estimates not included in this study

PLAN S = 1 : 800



MARKING S = 1 : 50,000



REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

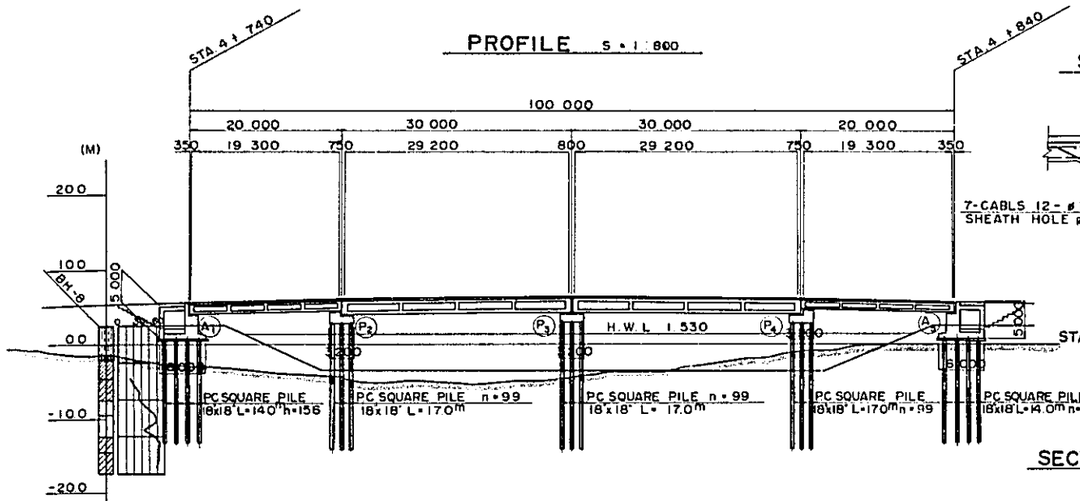
BRIDGE (Br-2)

SCALE: AS SHOWN	DATE:	SHEET No. 36/

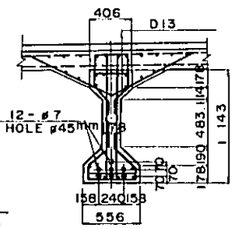
JAPAN INTERNATIONAL COOPERATION AGENCY

R-10 Br-3 MARALA RIVER

PROFILE S = 1:800

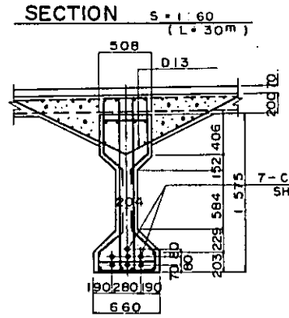


SECTION S = 1:60 (L = 20m)



STANDARD AASHO-PCI GIRDER TYPE III BEAM

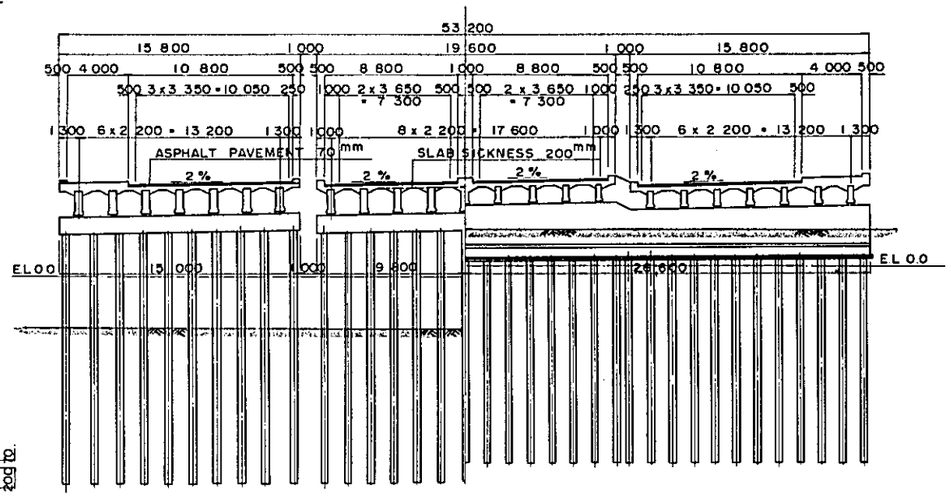
SECTION S = 1:60 (L = 30m)



STANDARD AASHO-PCI-GIRDER TYPE IV-B BEAM

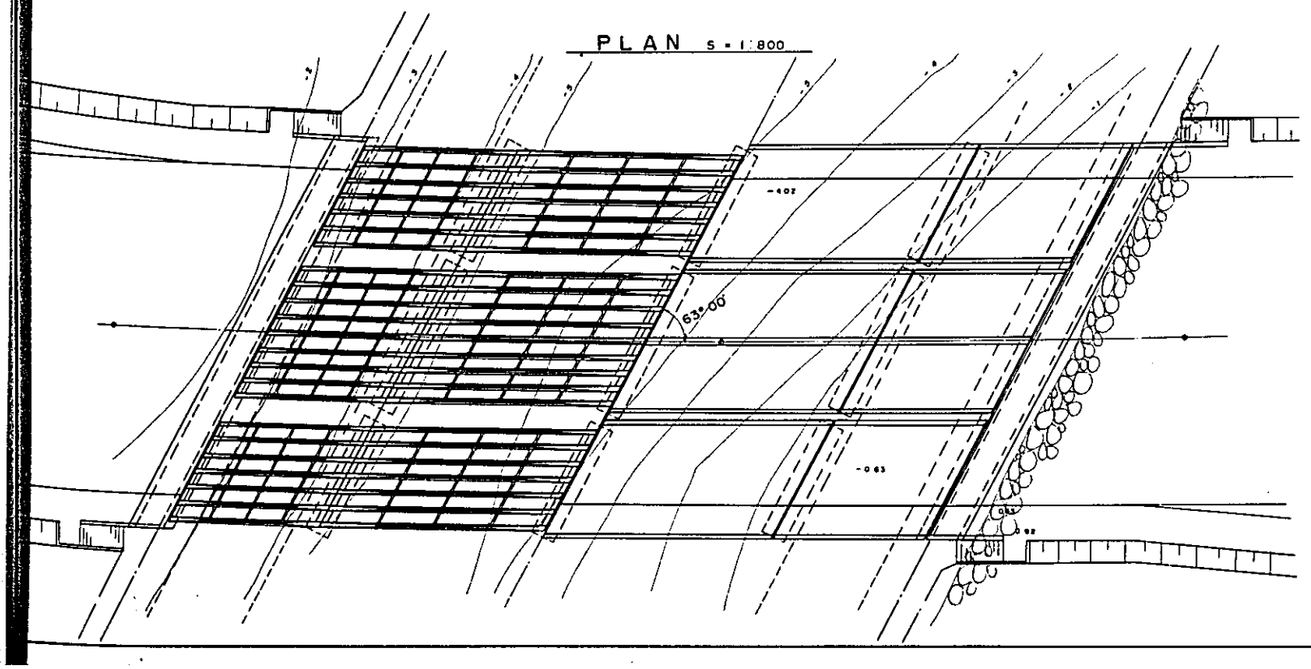
(P3) SECTION S = 1:400

(A1)(A5) SECTION S = 1:400

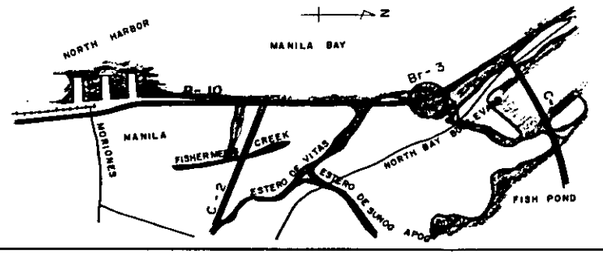


VERT CURVE LENGTH / RADIUS / STATION / WEIGHT		4+740	100 · 6.600 · 1.670 · 3.00% · 4+790 · 3.00%	4+840
PROPOSED HEIGHT		5.100	5.580	5.850	5.580	5.100
GROUND HEIGHT						
STATION		+740	+760	+790	+820	+840
CURVE BAND	R = 2.000 Lc = 792.63					

PLAN S = 1:800



MARKING S = 1:50,000



R-10 < Br-3 MARALA RIVER > (UNIT: ₱)

ITEM	UNIT	QUANTITY	UNIT COST	FINANCIAL COST
(A) SUPER STRUCTURE				
RS CONCRETE	M³	859	500	429 500
CLASS "A" CONCRETE	M³	1 100	450	495 000
PAVEMENT	M²	2 160	35	75 600
R.C RAILING				
REINF. STEEL	T	330	6 500	2 145 000
STRAND	T	83	19 500	1 618 500
SUM (A)				4 763 600
(B) SUB STRUCTURE				
EXCAVATION FOR STRUCT	M³	—	—	—
PILES (CONCRETE)	M	5 748	550	3 161 400
CLASS "A" CONCRETE	M³	1 249	450	562 050
REINF. STEEL	T	114	6 500	741 000
SUM (B)				4 464 450
TOTAL SUM (A) + SUM (B)				9 228 050
FOREIGN CURRENCY				4 108 800

Note : Expressway estimates not included in this study

REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

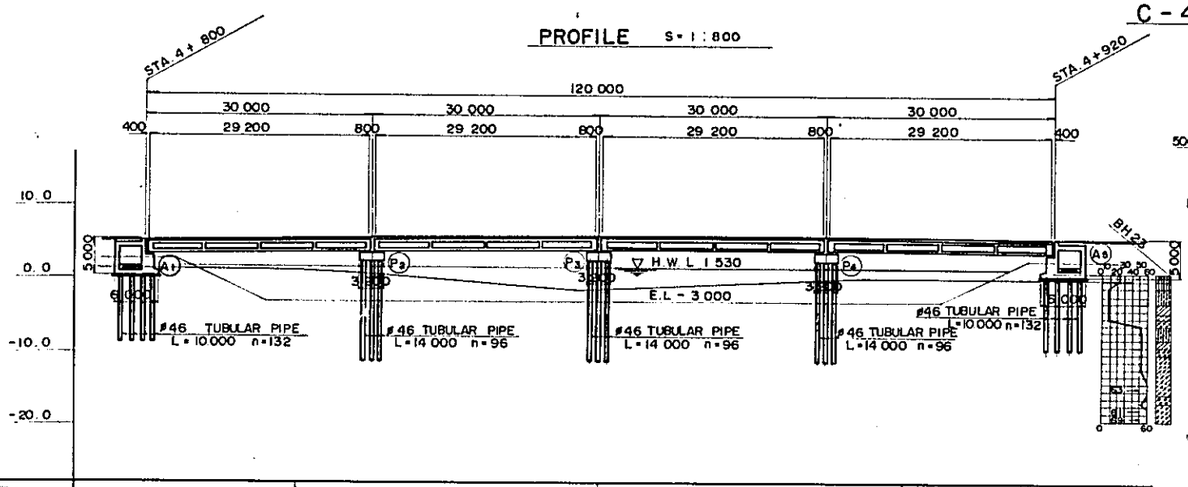
BRIDGE (Br-3)

SCALE : AS SHOWN | DATE; | SHEET. No. 37/

JAPAN INTERNATIONAL COOPERATION AGENCY

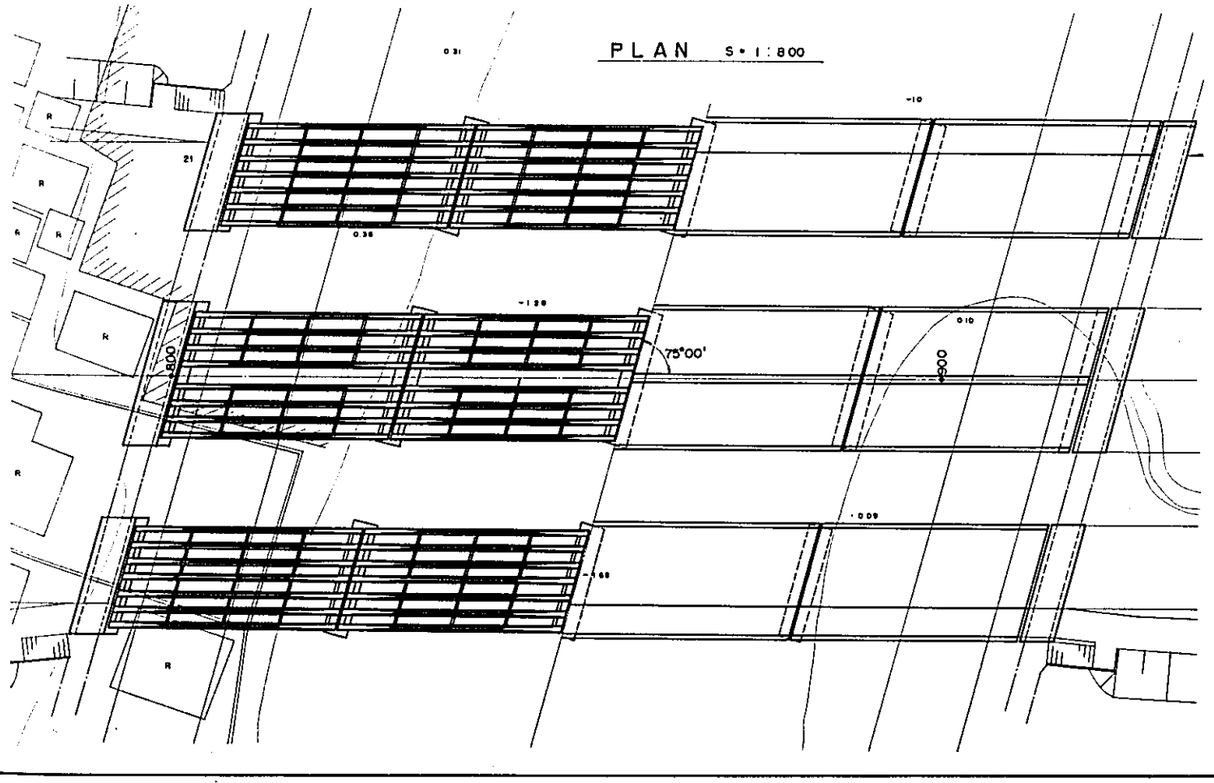
C - 4 Br - 4 - MALABOM

PROFILE S = 1 : 800

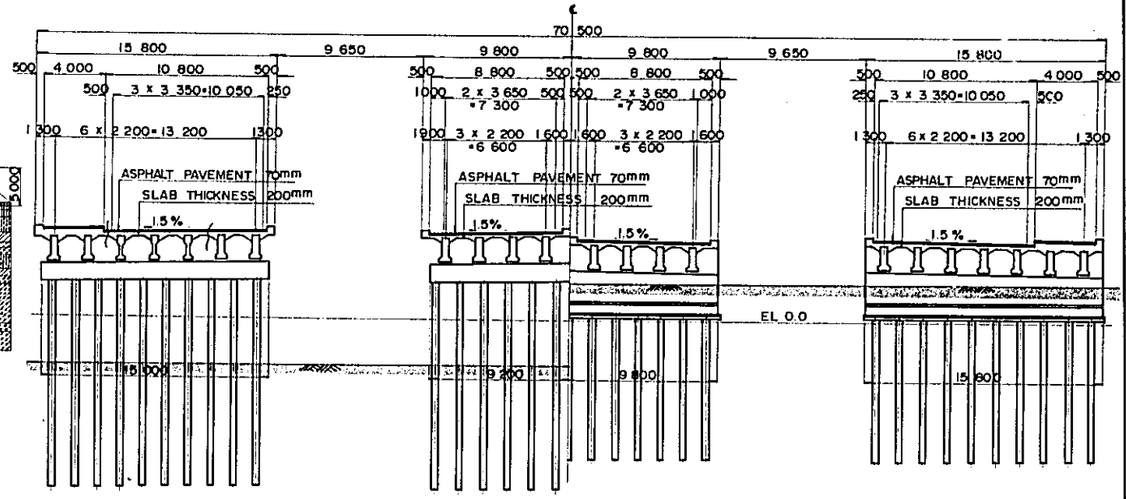


PROPOSED HEIGHT	5.200	5.600	5.775	6.000	5.775	5.600	5.200
GROUND HEIGHT							
STATION	+ 800	+ 820	+ 830	+ 860	+ 890	+ 900	+ 920
CURVE BAND	R = ∞ L = 1 759.03						

PLAN S = 1 : 800

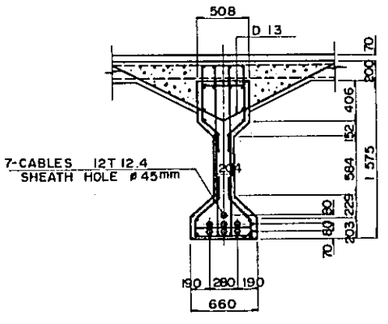


P2 P3 P4 SECTION S = 1 : 400

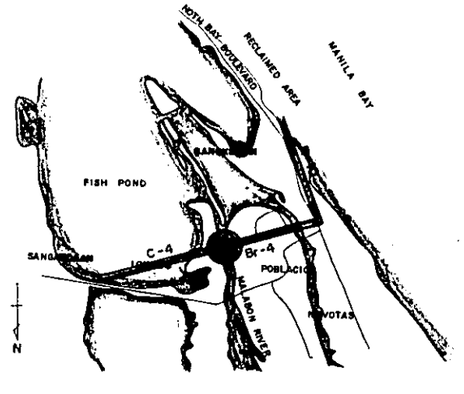


A1 A5 SECTION S = 1 : 400

SECTION S = 1 : 60



MARKING S = 1 : 50,000



C - 4 < Br - 4 MALABOM >				(UNIT; ₱)
ITEM	UNIT	QUANTITY	UNIT COST	FINANCIAL COST
(A) SUPER STRUCTURE				
P.S. CONCRETE	M³	1 147	500	573 500
CLASS "A" CONCRETE	M³	1 368	450	615 600
PAVEMENT	M²	2 903	35	101 610
R.C. RAILING				
REINF, STEEL	T	430	6 500	2 795 000
STRAND	T	119	19 500	2 310 640
SUM (A)				
(B) SUB STRUCTURE				
EXCAVATION FOR STRUCT	M³	348	20	6 960
PILES (CONCRETE)	M	4 118	720	2 964 960
CLASS "A" CONCRETE	M³	1 187	450	534 150
REINF, STEEL	T	107	6 500	695 500
SUM (B)				4 201 570
TOTAL = SUM (A) + SUM (B)				10 607 775
FOREIGN CURRENCY				4 738 525

Note : Expressway estimates not included in this study

REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

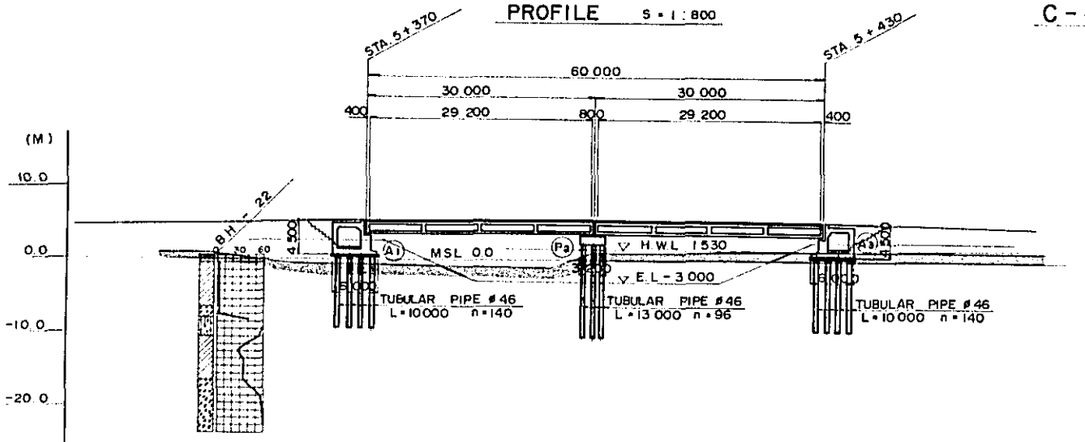
BRIDGE (Br-4)

SCALE : AS SHOWN	DATE;	SHEET. No. 38/

JAPAN INTERNATIONAL COOPERATION AGENCY

C-4 Br-5 NAVOTAS

PROFILE S = 1 : 800

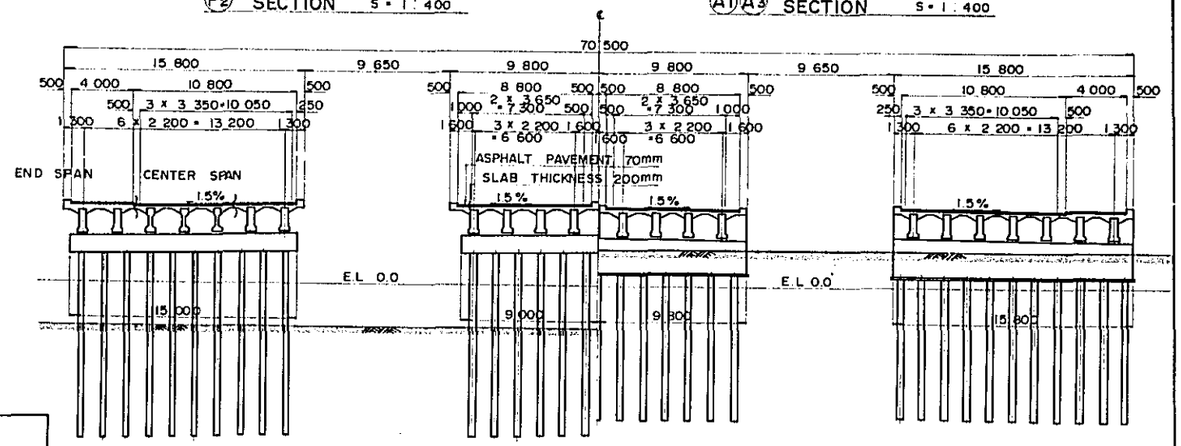


PROPOSED HEIGHT	5.000	5.320	5.500	5.320	5.000
GROUND HEIGHT			1.2		
STATION	+ 350	+ 370	+ 400	+ 430	+ 450
CURVE BAND					

VERT. CURV. LENGTH, HEIGHT, RADIUS, STATION

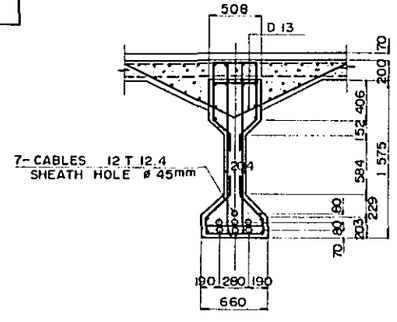
5+350 | 5+400 (100, 6.000, 2 500, 2.00%, 2.00%) | 5+450

P2 SECTION S = 1 : 400

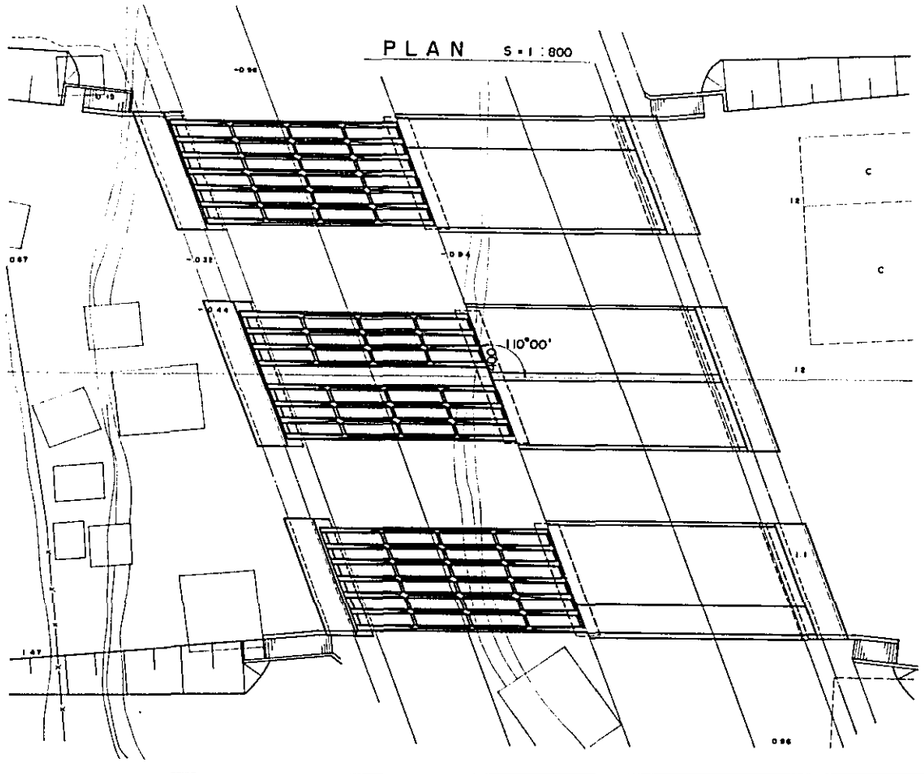


A1 A3 SECTION S = 1 : 400

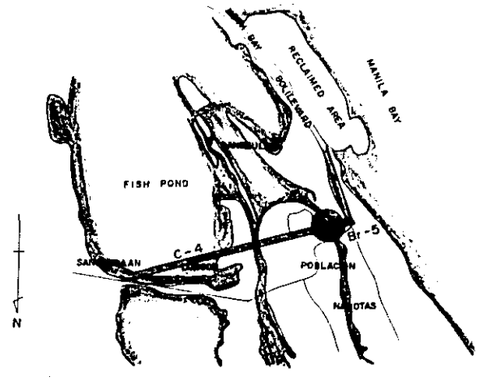
SECTION S = 1 : 60



PLAN S = 1 : 800



MARKING S = 1 : 50,000



C-4 < Br-5 NAVOTAS >				(UNIT; ₱)
ITEM	UNIT	QUANTITY	UNIT COST	FINANCIAL COST
(A) SUPER STRUCTURE				
P.S. CONCRETE	M³	573	500	286 500
CLASS "A" CONCRETE	M³	686	450	308 700
PAVEMENT	M²	1 452	35	50 820
R.C RAILING				
REINF, STEEL	T	214	6 500	1 391 000
STRAND	T	59	19 500	1 150 500
SUM(A)				3 187 520
(B) SUBSTRUCTURE				
EXCAVATION FOR STRUCT	M³	253	20	5 060
PILES (CONCRETE)	M	2 498	720	1 798 560
CLASS "A" CONCRETE	M³	931	450	418 950
REINF, STEEL	T	89	6 500	578 500
SUM (B)				2 801 070
TOTAL = SUM (A) + SUM (B)				5 990 160
FOREIGN CURRENCY				P 2 659 665

Note : Expressway estimates not included in this study

REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

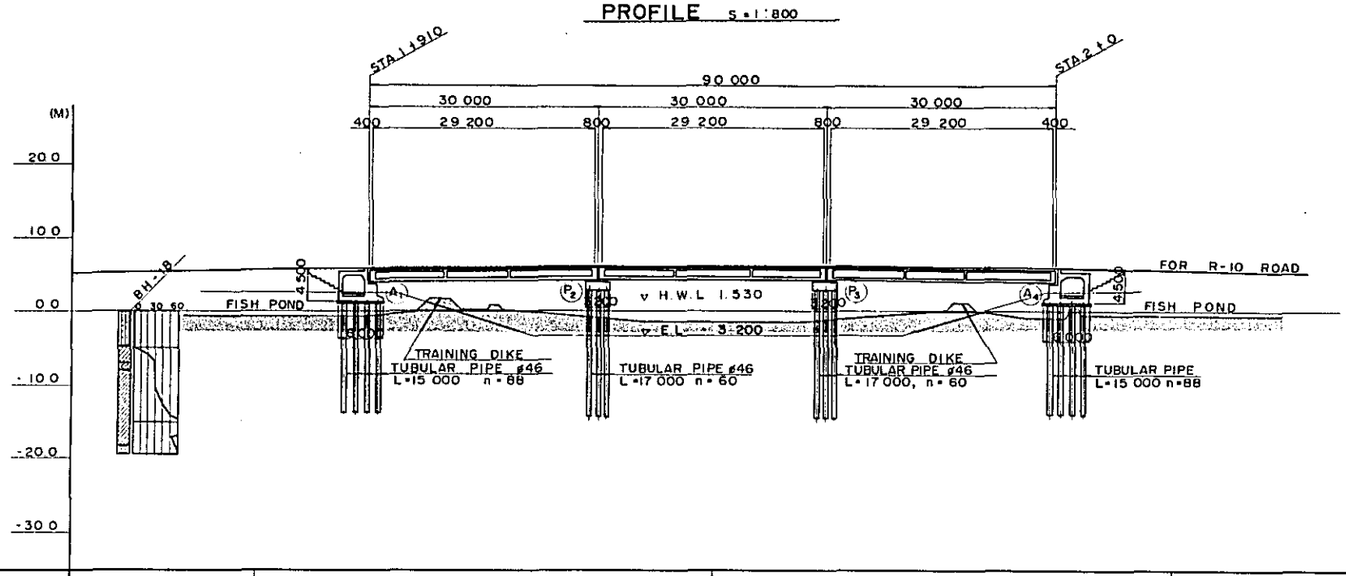
BRIDGE (Br-5)

SCALE : AS SHOWN	DATE;	SHEET. No 39/

JAPAN INTERNATIONAL COOPERATION AGENCY

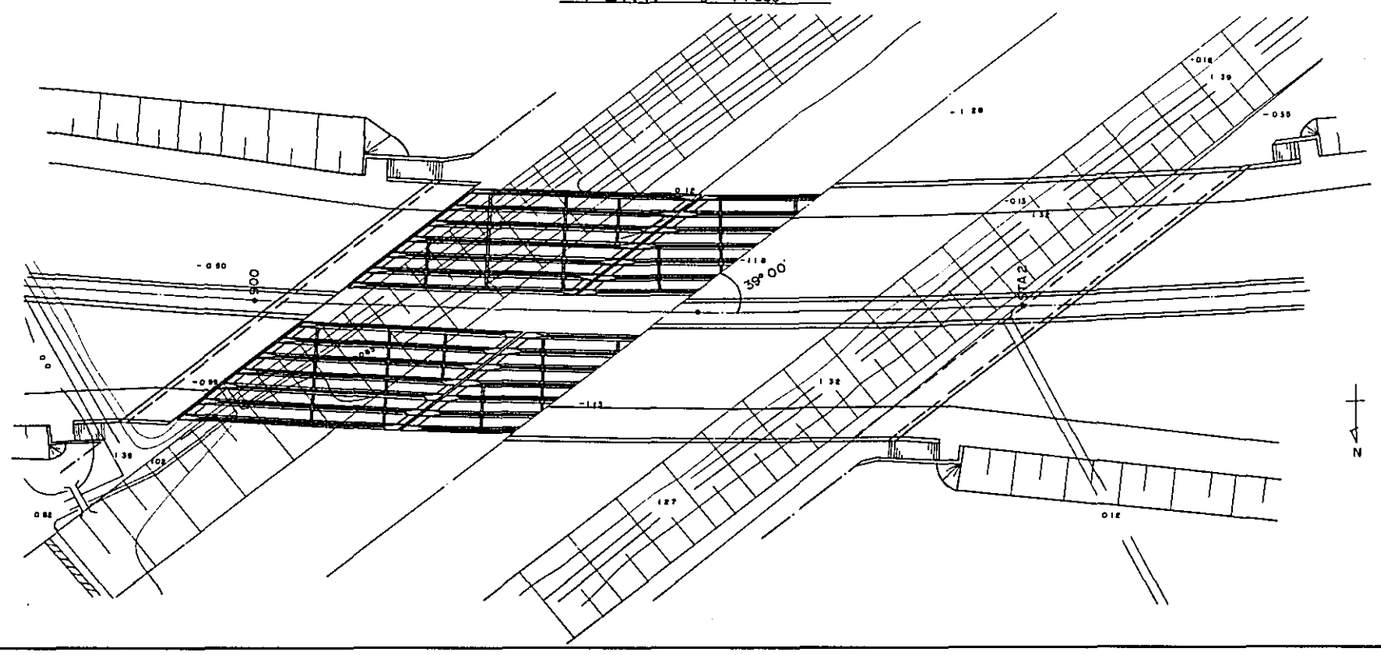
C-3 Br-6 CREEK

PROFILE S = 1 : 800



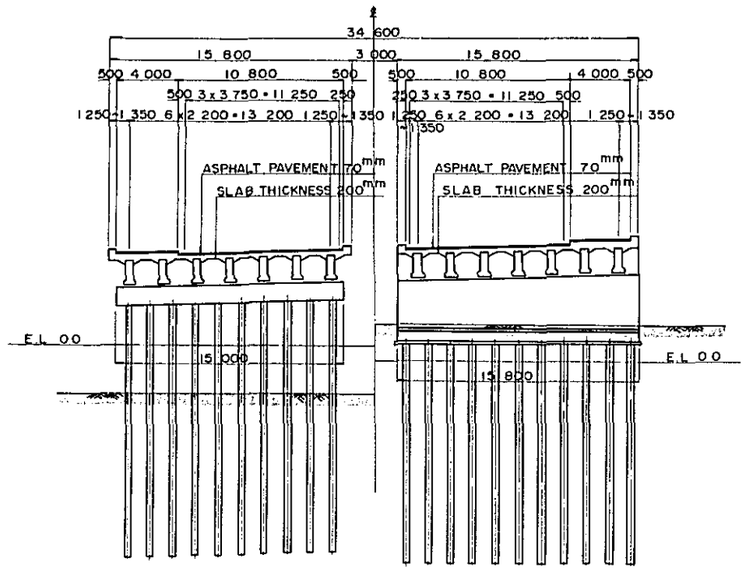
VERT CURVE LENGTH / RADIUS / STATION		1+895		120 / 6 600 / 3 000 / 2.00% / 2.00% / 1+955		2+15	
PROPOSED HEIGHT		5.400	5.662	5.962	6.200	5.962	5.662	5.400
GROUND HEIGHT								
STATION		+ 895	+ 900	+ 910	+ 940	+ 955	KE 1-1	+ 970	STA 2	+ 15
CURVE BAND	A = 500 L = 250				R = 1 000			

PLAN S = 1 : 800

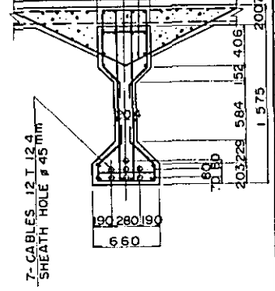


(2P)(3P) SECTION S = 1 : 400

(1A)(4A) SECTION S = 1 : 400

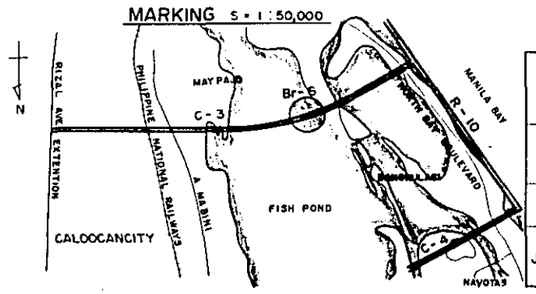


SECTION S = 1 : 60



C-3 <Br-6 CREEK>				(UNIT ; ₱)
ITEM	UNIT	QUANTITY	UNIT COST	FINANCIAL COST
(A) SUPER STRUCTURE				
P.S CONCRETE	M³	912	500	456 000
CLASS "A" CONCRETE	M³	1 101	450	495 450
PAVEMENT	M²	1 944	35	68 040
R.C RAILING				
REINF. STEEL	T	339	6 500	2 203 500
STRAND	T	93	19 500	1 813 500
SUM (A)				5 036 490
(B) SUB STRUCTURE				
EXCAVATION FOR STRUCT	M³			
PILES (CONCRETE)	M	3 660	720	2 635 200
CONCRETE	M³	1 608	450	723 600
REINF. STEEL	T	149	6 500	968 500
SUM (B)				4 327 300
TOTAL = SUM(A)+ SUM(B)				9 363 790
FOREIGN CURRENCY				₱ 4 141 200

MARKING S = 1 : 50,000



REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

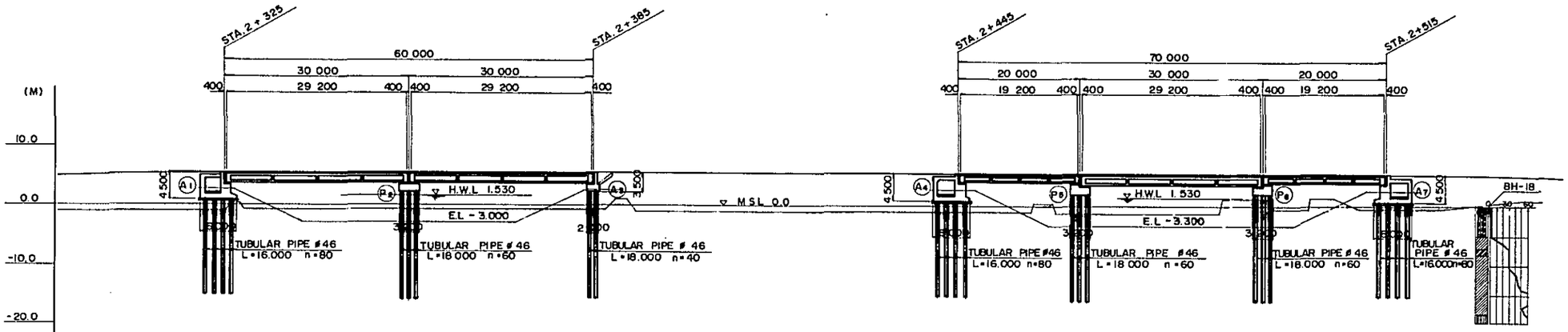
BRIDGE (Br-6)

SCALE: AS SHOWN	DATE;	SHEET No. 40/

JAPAN INTERNATIONAL COOPERATION AGENCY

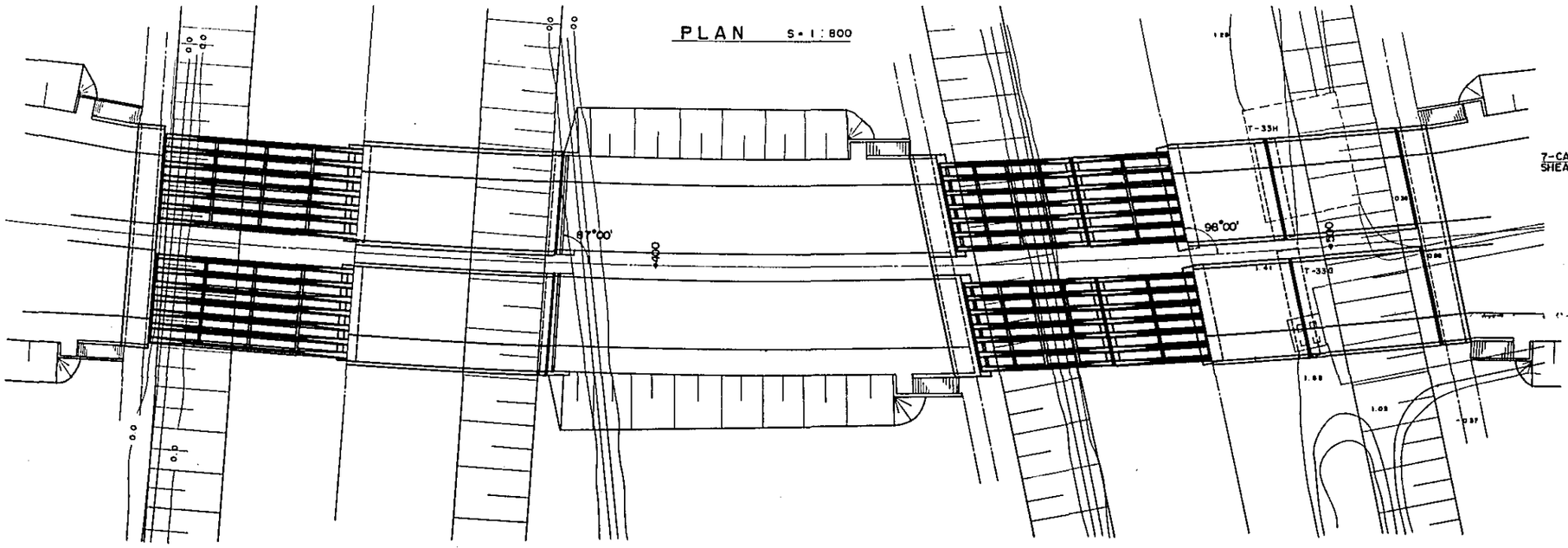
C-3 Br-7 MALABOM, Br-8 NAVOTAS

PROFILE S = 1 : 800

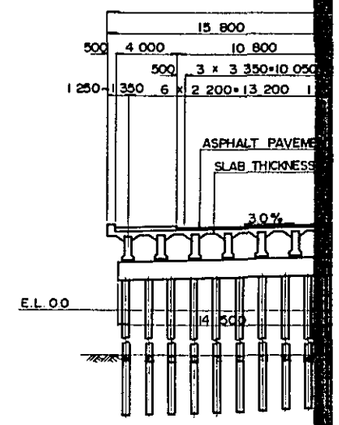


PROPOSED HEIGHT	5.050 5.250 5.333 5.400 5.400 5.400 5.400 5.400 5.400 5.400 5.400 5.400 5.398 5.295 5.250
GROUND HEIGHT	
STATION	2+300 +310 +320 +340 +360 +380 +400 +420 +440 +460 +480 +495 +500 +520 +525
CURVE BAND	R = 1000 L = A = 500 L = 250

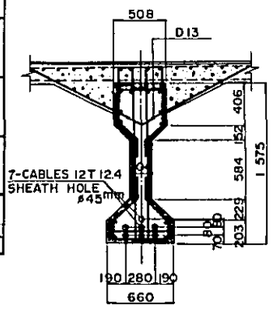
PLAN S = 1 : 800



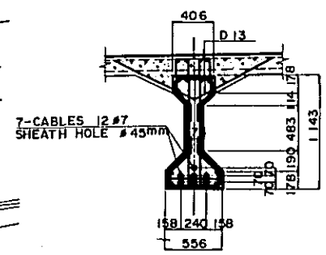
P2 SECTION S = 1



SECTION S = 1 : 60 (L = 30 m)



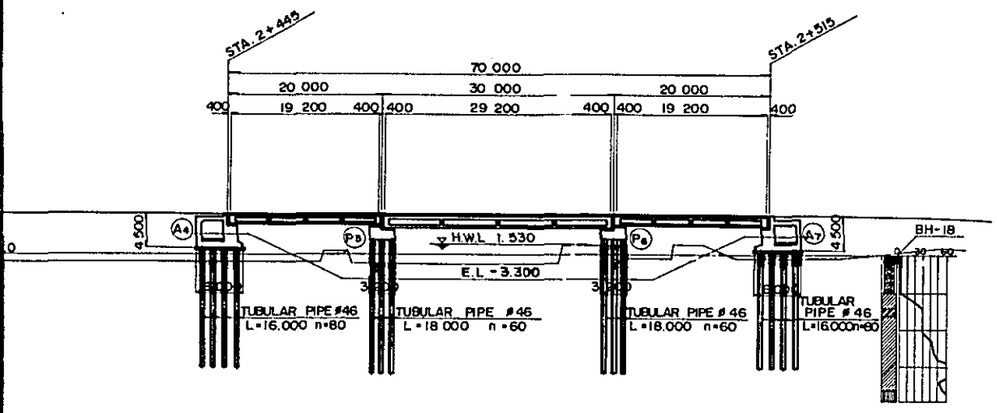
(L = 20 m)

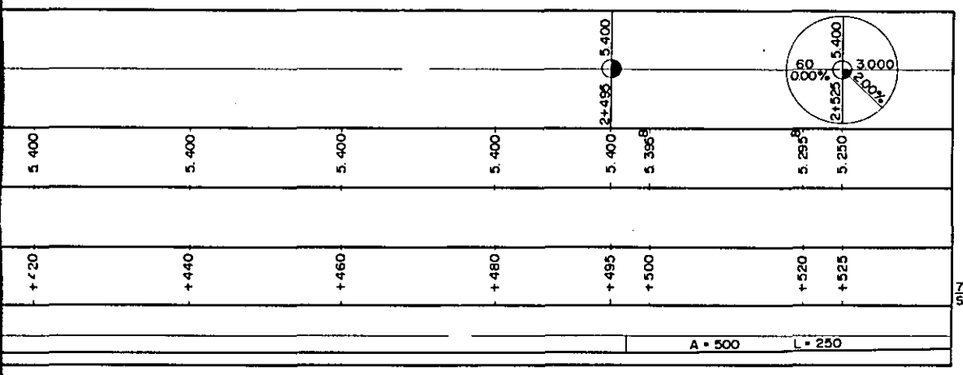


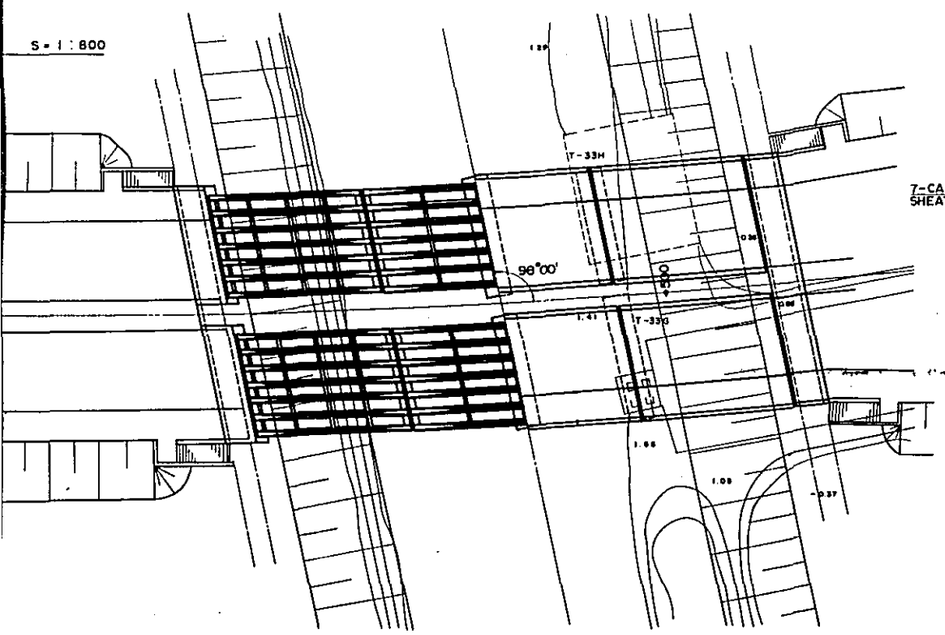
(A) SUPER	
P.S. CO	
CLASS	
PAVEM	
RC. RA	
REINF.	
STRAN	
SUM (A	
(B) SUB S	
EXCAVAT	
PILES	
CLASS	
REINF	
SUM (B	
TOTAL S	
FOR	

-3 Br-7 MALABOM, Br-8 NAVOTAS

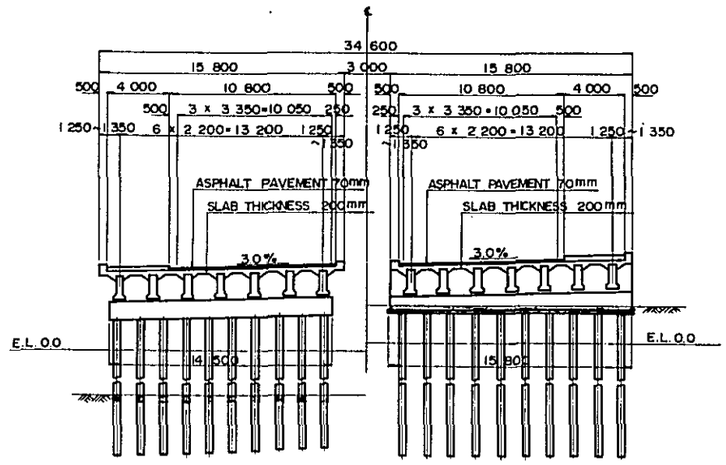
LE S = 1 : 800



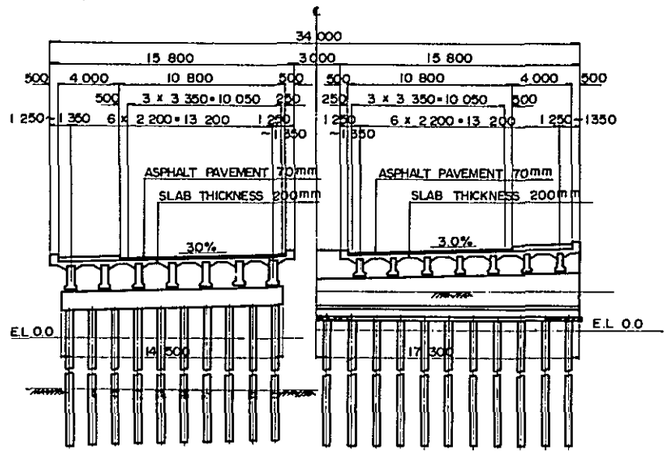




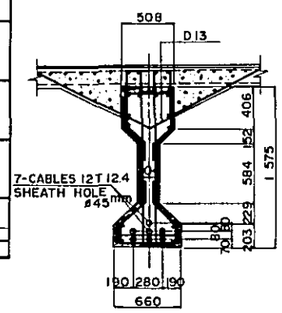
P2 SECTION S = 1 : 400 — A1 A3 SECTION S = 1 : 400



P5 P6 SECTION S = 1 : 400 — A4 A7 SECTION S = 1 : 400



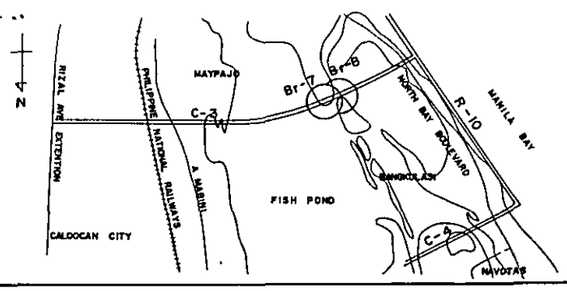
SECTION S = 1 : 60 (L = 30 m)



C-3 <Br-7 MALABON>				(UNIT ; ₱)
ITEM	UNIT	QUANTITY	UNIT COST	FINANCIAL COST
(A) SUPER STRUCTURE				
P.S. CONCRETE	M	608	500	304 000
CLASS "A" CONCRETE	M	707	450	318 150
PAVEMENT	M	1 296	35	45 360
R.C. RAILING				
REINF, STEEL	T	221	6 500	1 436 500
STRAND	T	62	19 500	1 209 000
SUM (A)				3 313 010
(B) SUB STRUCTURE				
EXCAVATION FOR STRUCT.	M			
PILES (CONCRETE)	M	3 080	720	2 217 600
CLASS "A" CONCRETE	M	638	450	287 100
REINF, STEEL	T	57	6 500	370 500
SUM (B)				2 875 200
TOTAL SUM(A)+SUM(B)				6 188 210
FOREIGN CURRENCY				2 786 320

C-3 <Br-8 NAVOTAS>				(UNIT ; ₱)
ITEM	UNIT	QUANTITY	UNIT COST	FINANCIAL COST
(A) SUPER STRUCTURE				
P.S. CONCRETE	M	558	500	279 000
CLASS "A" CONCRETE	M	769	450	346 050
PAVEMENT	M	1 512	35	52 920
R.C. RAILING				
REINF, STEEL	T	224	6 500	1 456 000
STRAND	T	51	19 500	994 500
SUM (A)				3 128 470
(B) SUB STRUCTURE				
EXCAVATION FOR STRUCT.	M			
PILES (CONCRETE)	M	4 976	720	3 582 720
CLASS "A" CONCRETE	M	1 163	450	523 350
REINF, STEEL	T	107	6 500	695 500
SUM (B)				4 801 570
TOTAL SUM(A)+SUM(B)				7 930 040
FOREIGN CURRENCY				₱ 3 547 740

MARKING S = 1 : 50,000



REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

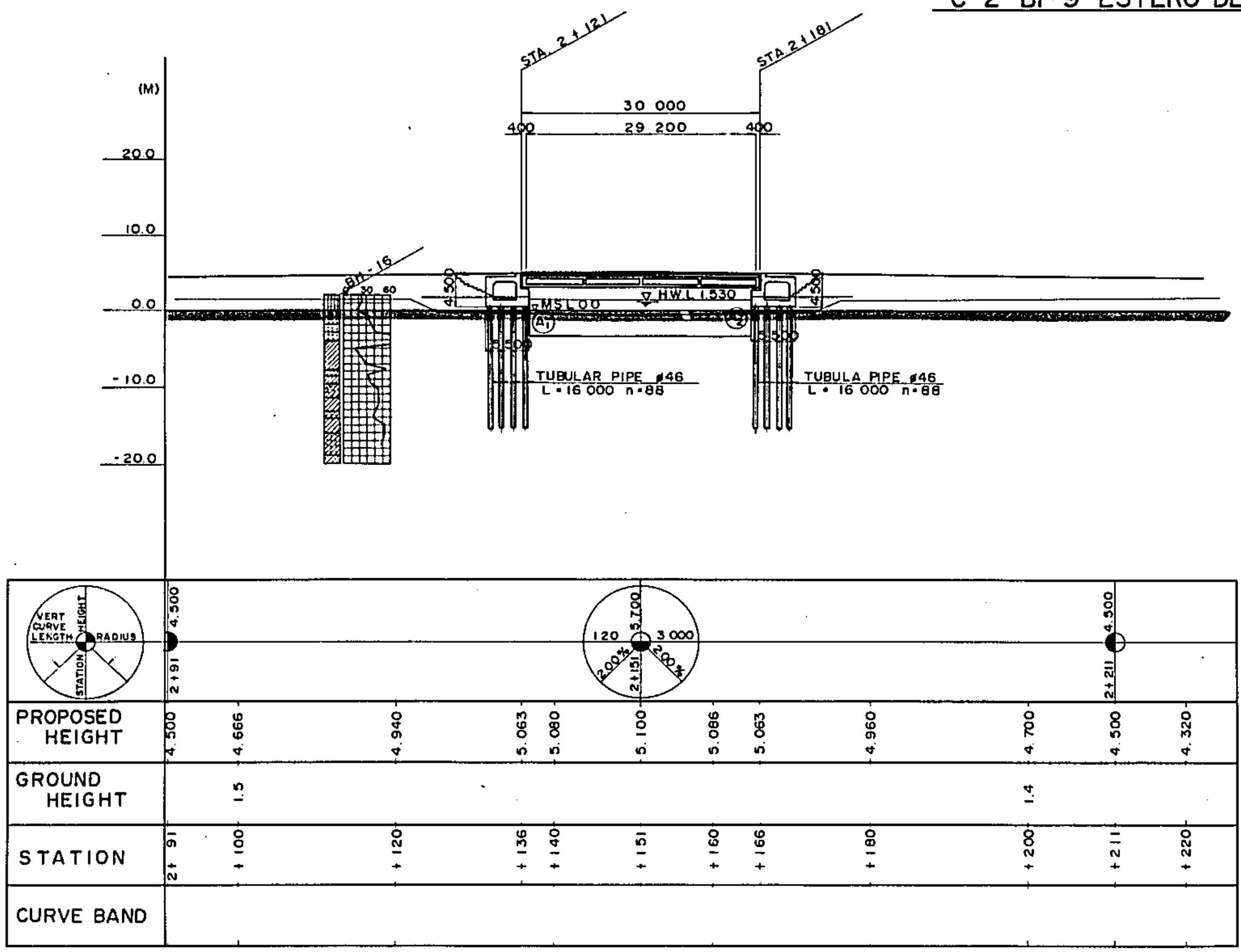
BRIDGE (Br-7, 8)

SCALE : AS SHOWN	DATE;	SHEET. No. 41/

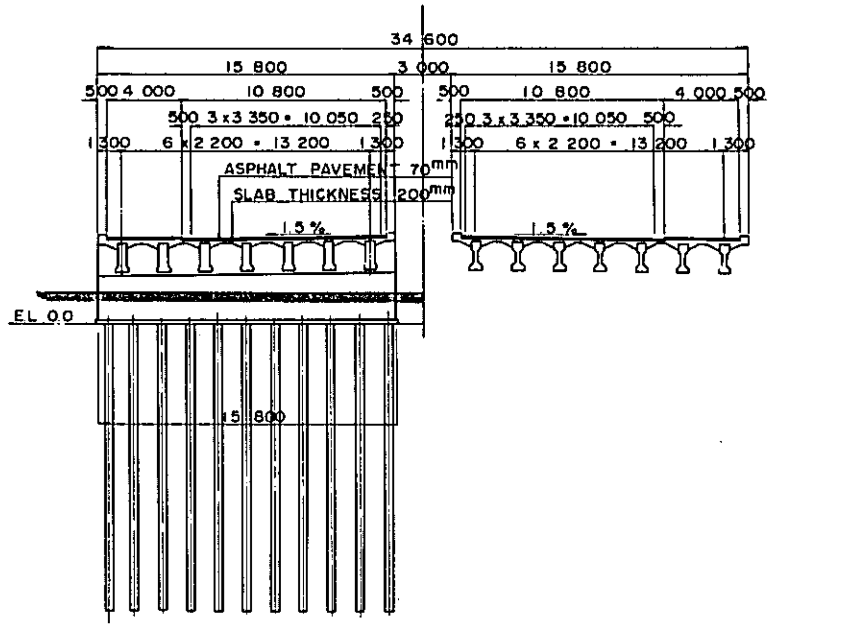
JAPAN INTERNATIONAL COOPERATION AGENCY

C-2 Br-9 ESTERO DE VITAS

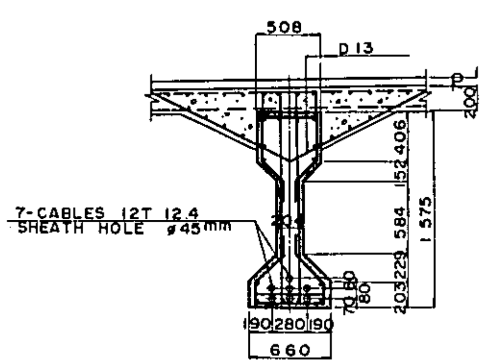
PROFILE S = 1:800



A1 A2 SECTION S = 1:400 CENTER SECTION S = 1:400

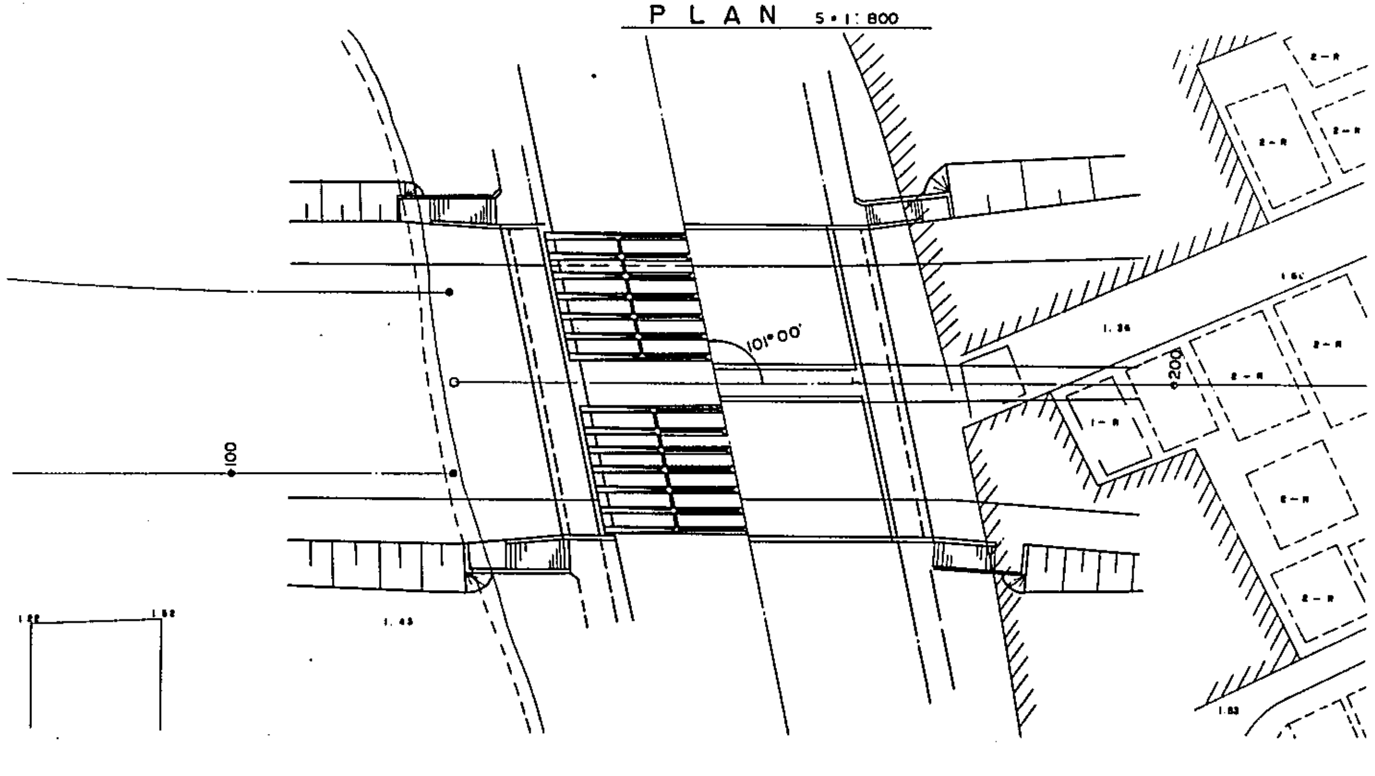


SECTION S = 1:60

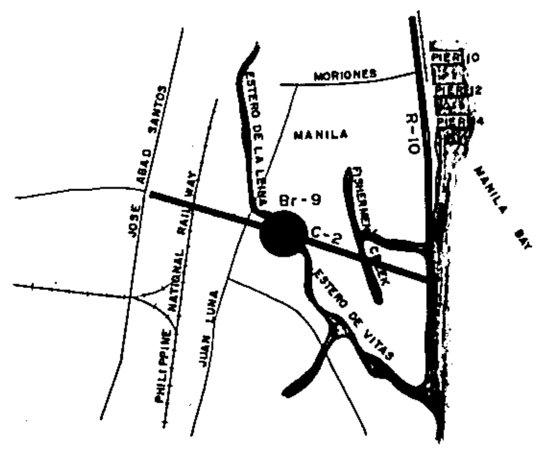


C-2 <Br-9 ESTERO DE VITAS>				(UNIT, ₱)
ITEM	UNIT	QUANTITY	UNIT COST	FINANCIAL COST
(A) SUPER STRUCTURE				
P.S CONCRETE	M^3	304	500	152 000
CLASS "A" CONCRETE	M^3	355	450	159 750
PAVEMENT	M^2	648	35	22 680
R.C RAILING				
REINF. STEEL	T	111	6 500	721 500
STRAND	T	31	19 500	604 500
SUM (A)				1 660 430
(B) SUB STRUCTURE				
EXCAVATION FOR STRUCT.	M^3	—	—	—
PILES (CONCRETE)	M	2 816	720	2 027 520
CLASS "A" CONCRETE	M^3	846	450	380 700
REINF. STEEL	T	85	6 500	552 500
SUM (B)				2 960 720
TOTAL = SUM(A) + SUM(B)				4 621 150
FOREIGN CURRENCY				₱ 2 065 585

PLAN S = 1:800



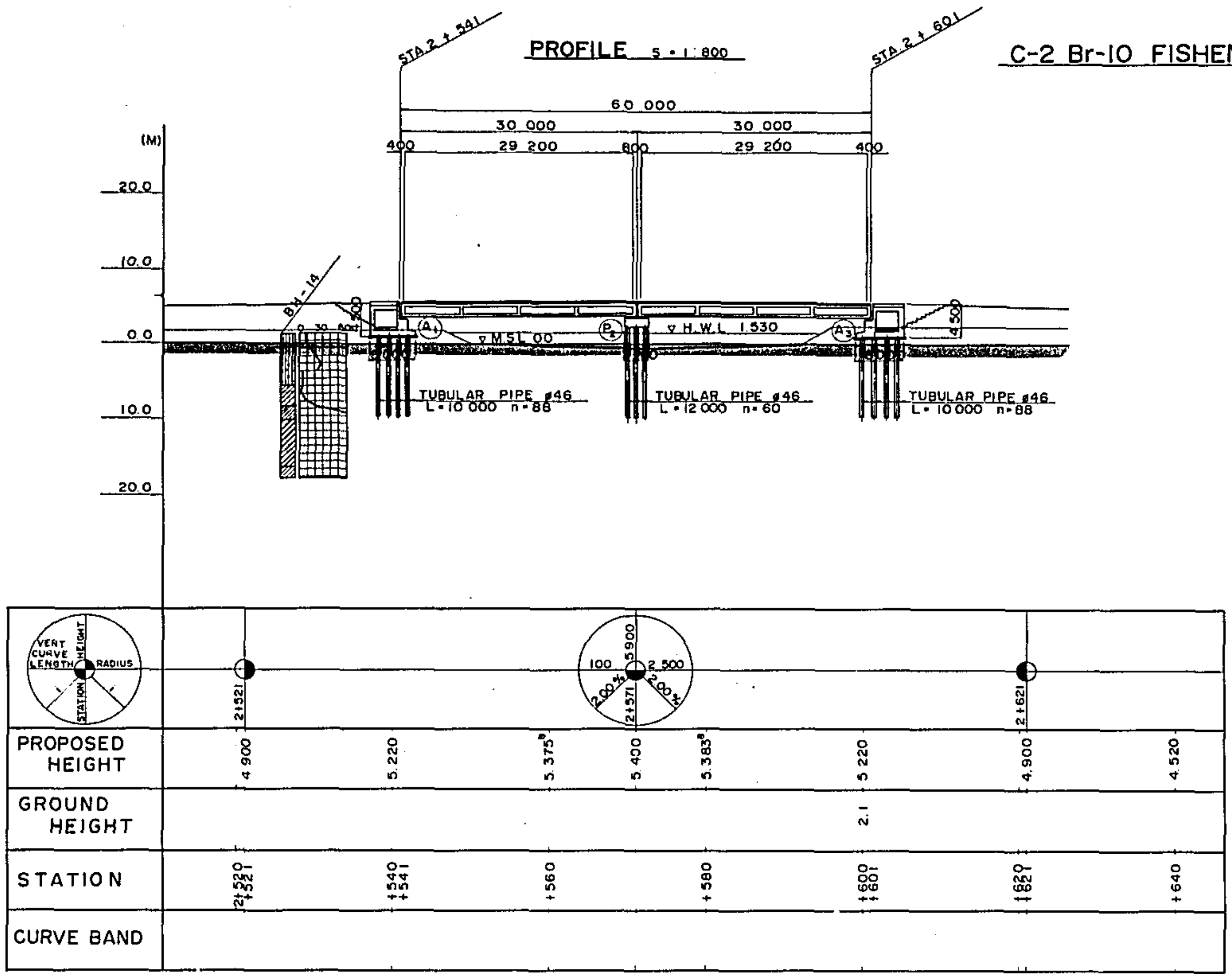
MARKING S = 1:50,000



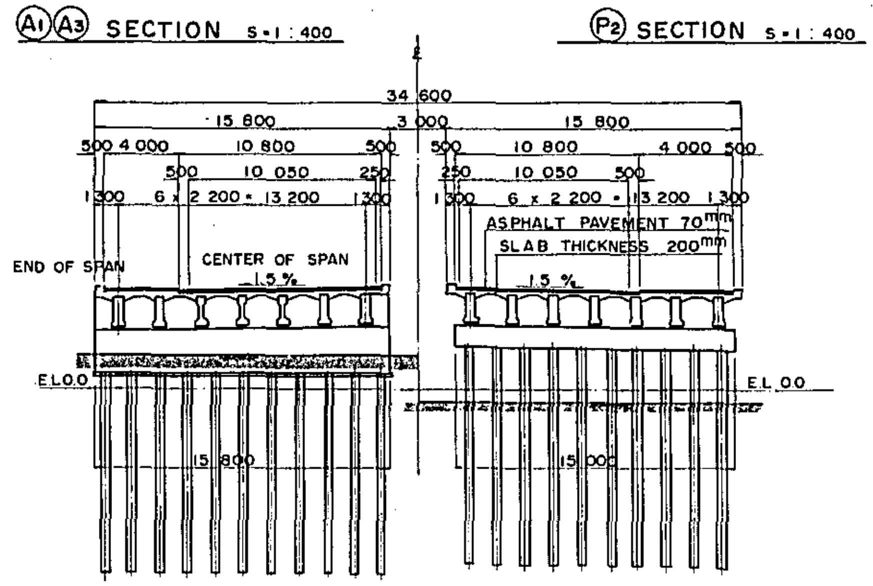
REPUBLIC OF THE PHILIPPINES METRO MANILA TRANSPORT R-10 FEASIBILITY STUDY		
BRIDGE (Br-9)		
SCALE: AS SHOWN	DATE;	SHEET No. 42/
JAPAN INTERNATIONAL COOPERATION AGENCY		

C-2 Br-10 FISHEMEN'S CREEK

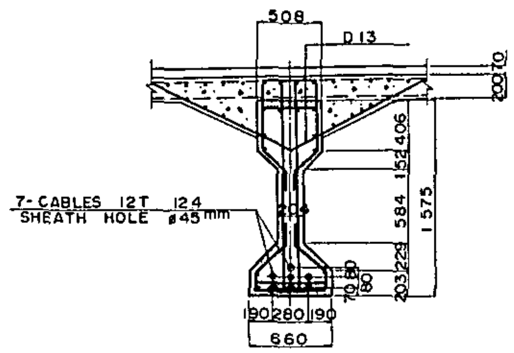
PROFILE S = 1:800



(A1)(A3) SECTION S = 1:400 / (P2) SECTION S = 1:400

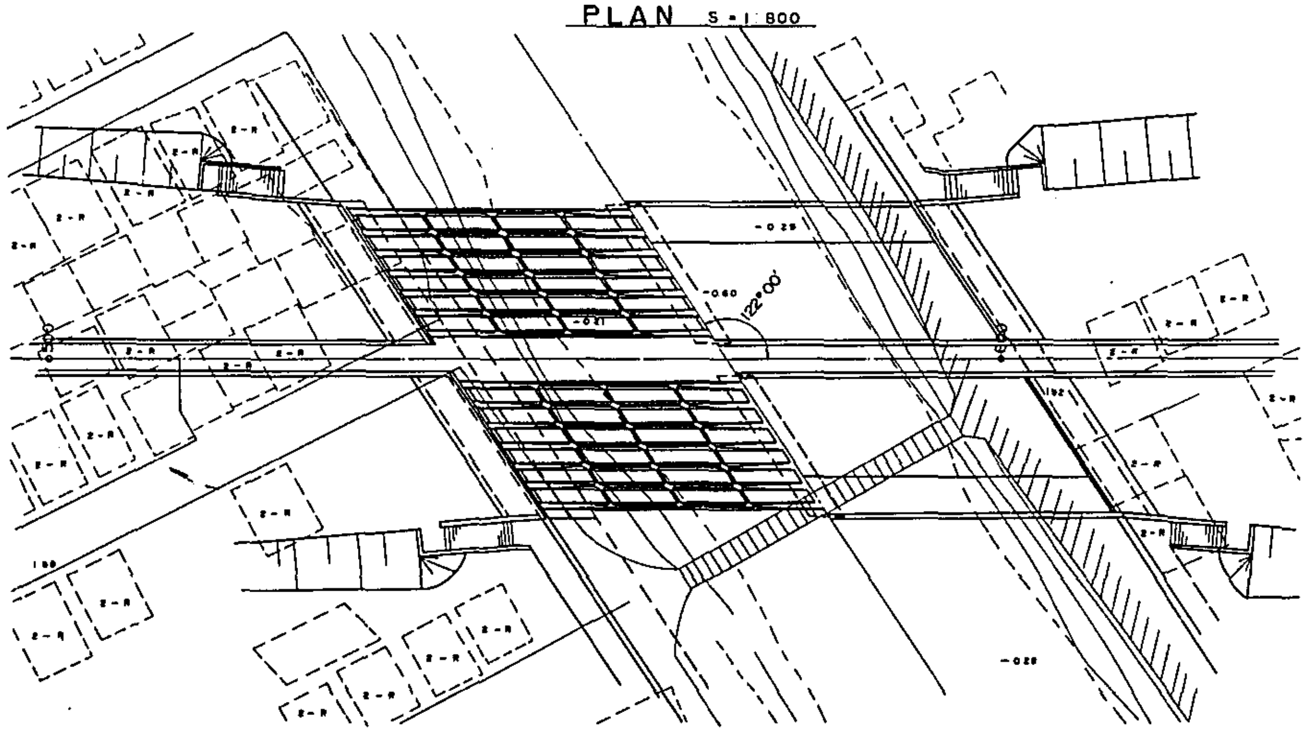


SECTION S = 1:60

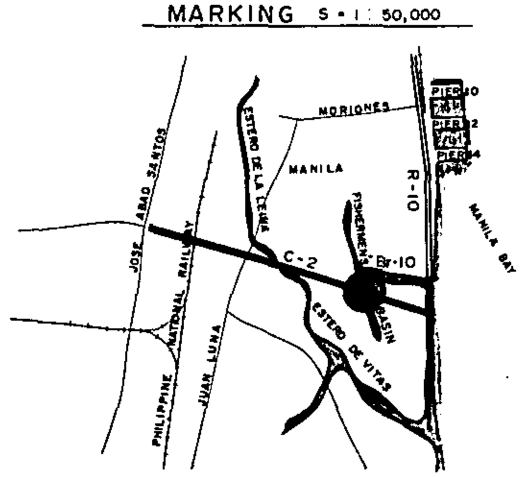


C-2 <Br-10 FISHERMEN'S CREEK>				(UNIT ; ₱)
ITEM	UNIT	QUANTITY	UINT COST	FINANCIAL COST
(A) SUPER STRUCTURE				
P.S CONCRETE	M^3	608	500	304 000
CLASS "A" CONCRETE	M^3	722	450	324 900
PAVEMENT	M^2	1 296	35	45 360
R.C RAILING				
REINF. STEEL	T	224	6 500	1 456 000
STRAND	T	63	19 500	1 228 500
SUM (A)				3 358 760
(B) SUB STRUCTURE				
EXCAVATION FOR STRUCT	M^3	826	20	16 520
PILES (CONCRETE)	M	2 480	720	1 785 600
CLASS "A" CONCRETE	M^3	1 024	450	460 800
REINF. STEEL	T	98	6 500	637 000
SUM (B)				2 899 920
TOTAL = SUM(A) + SUM(B)				6 258 680
FOREIGN CURRENCY				₱ 2 777 140

PLAN S = 1:800



MARKING S = 1:50,000

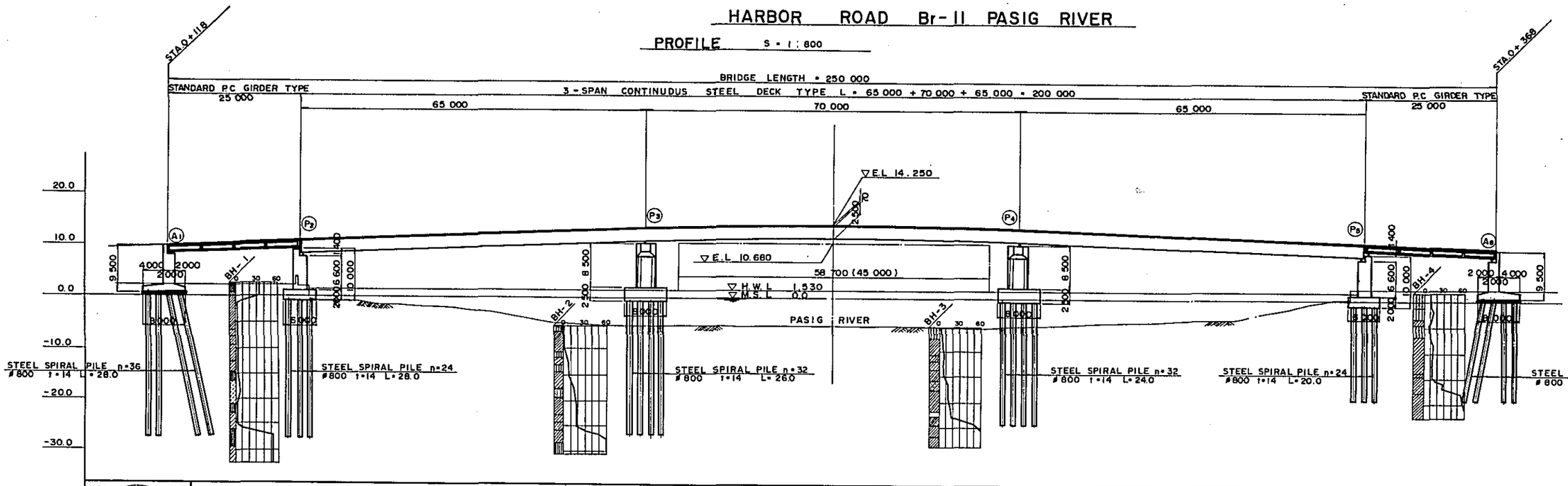


REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

BRIDGE (Br-10)

SCALE: AS SHOWN	DATE;	SHEET. No.43 /

JAPAN INTERNATIONAL COOPERATION AGENCY



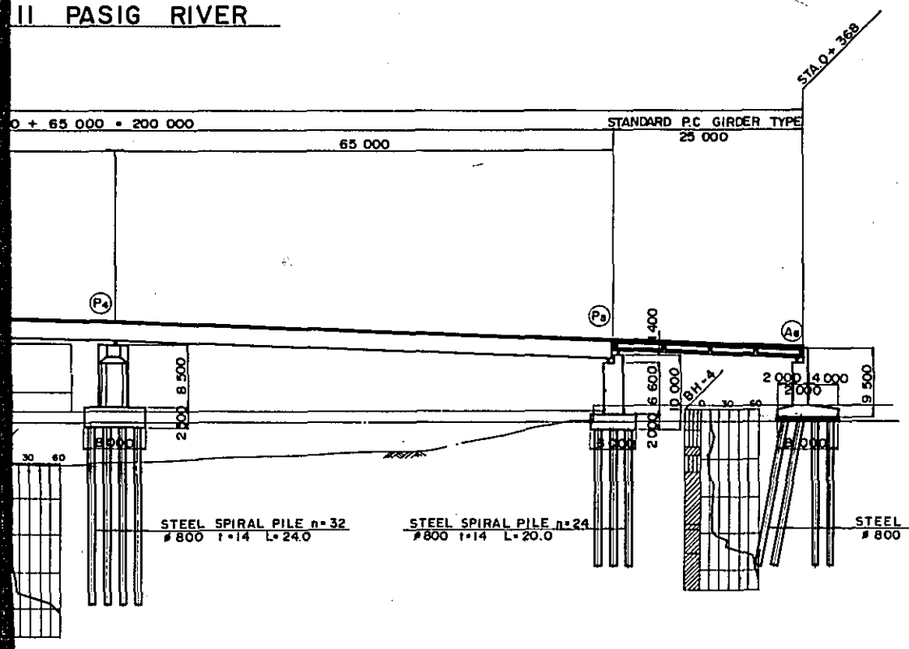
HARBOR ROAD Br- II PASIG RIVER

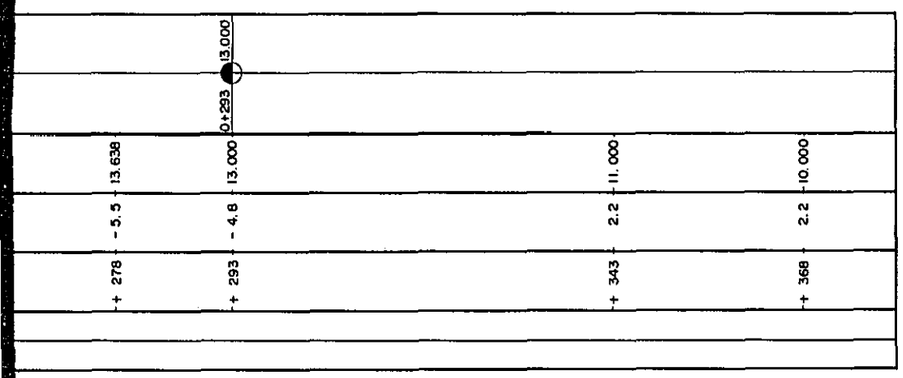
PROFILE S = 1 : 800

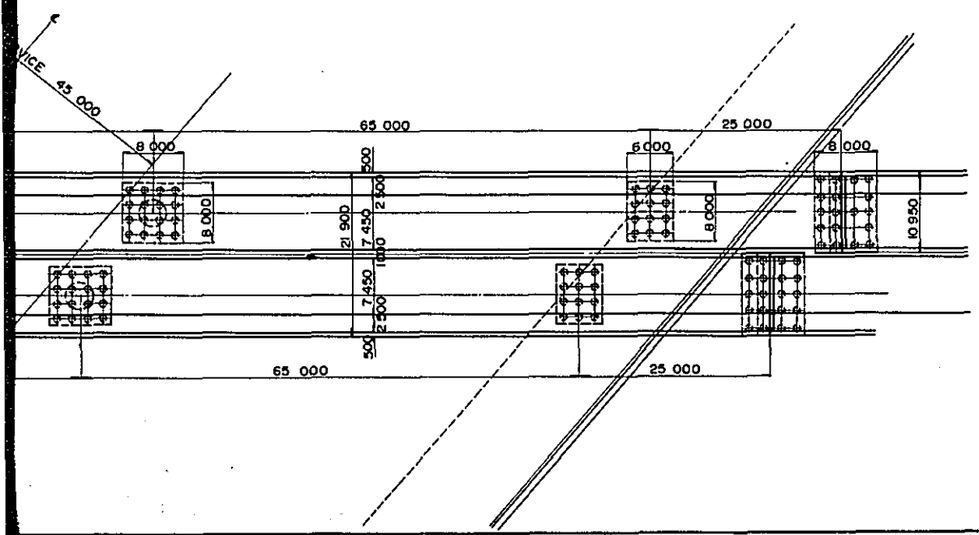
VERT. CURVE LENGTH / HEIGHT / RADIUS / STATION		13.000 0+193		100 5.500 1 000 5.00% 3.00% 0+243		13.000 0+293		
PROPOSED HEIGHT	11.000	13.000	13.638	14.250	13.638	13.000	11.000	10.000
GROUND HEIGHT	2.1	- 5.0	- 5.3	- 5.3	- 5.5	- 4.8	2.2	2.2
STATION	KAI-2 + 143	+ 193	+ 208	+ 243	+ 278	+ 293	+ 343	+ 368
CURVE BAND	R = 100 Lc = 18.27 A = 70 L = 49.00							

PLAN S = 1 : 800

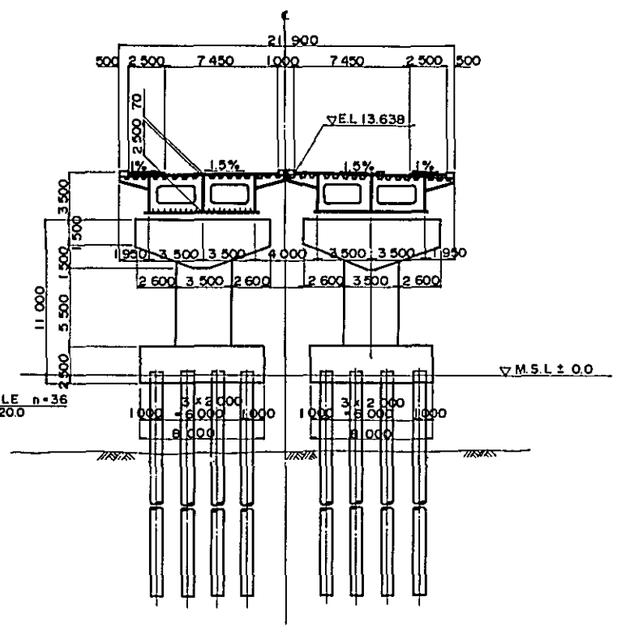
II PASIG RIVER



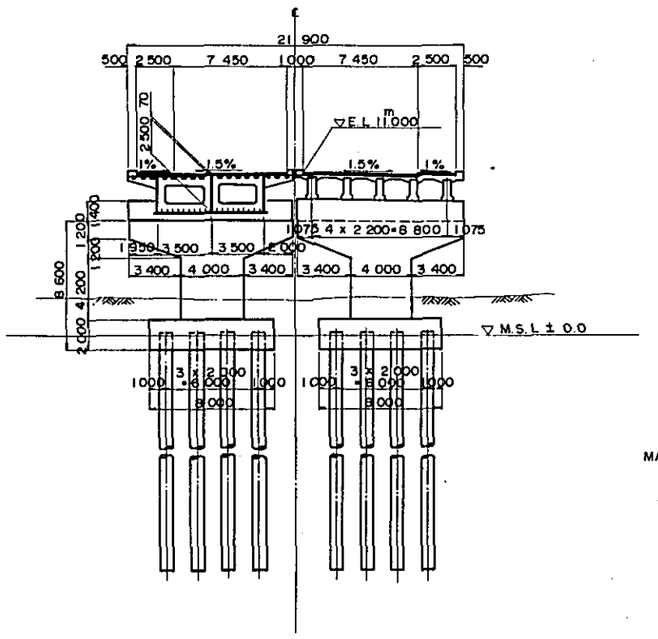




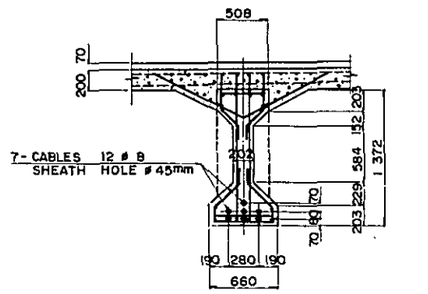
P3 P4 SECTION S = 1 : 400



P2 P5 SECTION S = 1 : 400

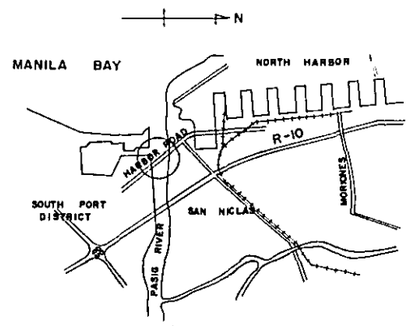


SECTION S = 1 : 60



STANDARD AASHO - PC. I-GIRDER
TYPE IV BEAM

MARKING S = 1 : 50,000



HARBOUR ROAD < Br - II PASIG RIVER > (UNIT ; ₱)

ITEM	UNIT	QUANTITY	UNIT COST	FINANCIAL COST
(A) SUPER STRUCTURE				
DECK AND GIRDER	T	1 592	16 400	26 108 800
PAVEMENT	M²	2 980	35	104 300
HAND RAIL	M	800	125	100 000
CURB CONCRETE	M³	120	450	54 000
P.S. CONCRETE	M³	358	500	179 000
CLASS "A" CONCRETE	M³	375	450	168 750
PAVEMENT	M²	745	35	24 075
REINF. STEEL	T	118	6 500	767 000
STRAND	T	25	19 500	487 500
SUM (A)				27 995 425
(B) SUB STRUCTURE				
EXCAVATION FOR STRUCT	M³	920	20	18 400
STEEL SPIRAL PILES	M	4 480	1 700	7 616 000
CLASS "A" CONCRETE	M³	2 941	450	1 323 450
REINF. STEEL	T	205	6 500	1 332 500
SUM (B)				10 290 350
TOTAL = SUM (A) + SUM (B)				38 285 775
FOREIGN CURRENCY				₱ 17 327 225

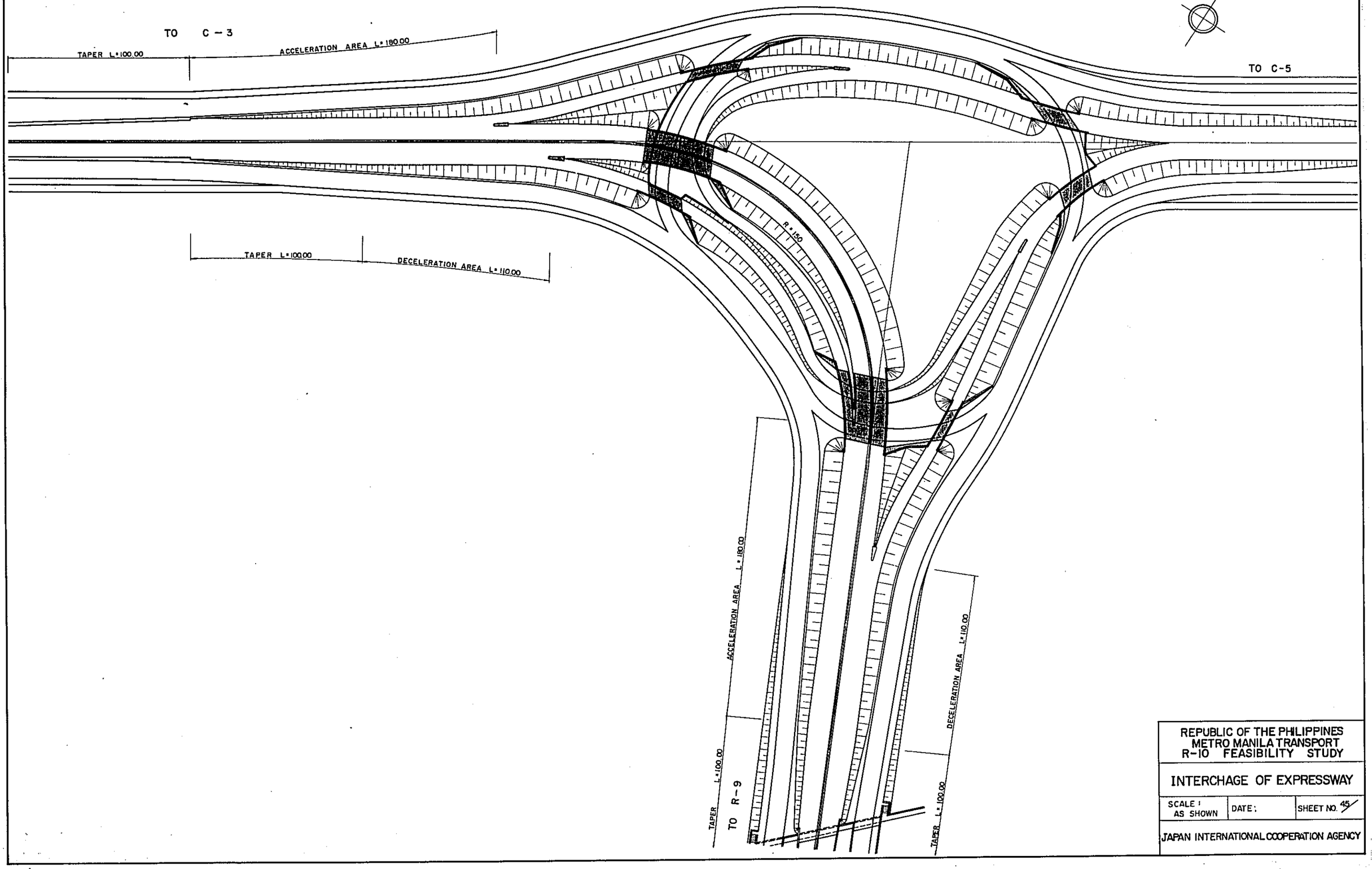
REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

BRIDGE (Br-II)

SCALE : AS SHOWN	DATE;	SHEET No. 44/

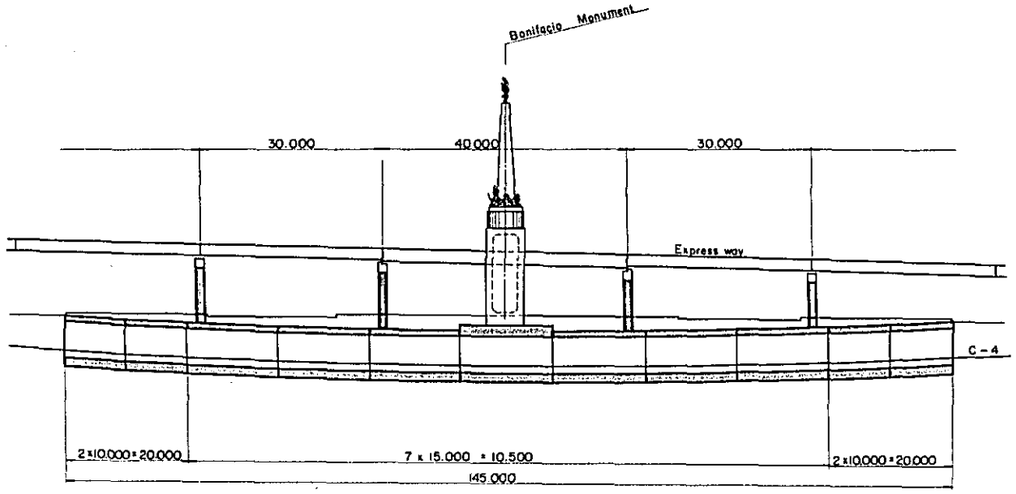
JAPAN INTERNATIONAL COOPERATION AGENCY

INTERCHANGE OF R-10 & C-4 SCALE 1:2000
PLAN - 1

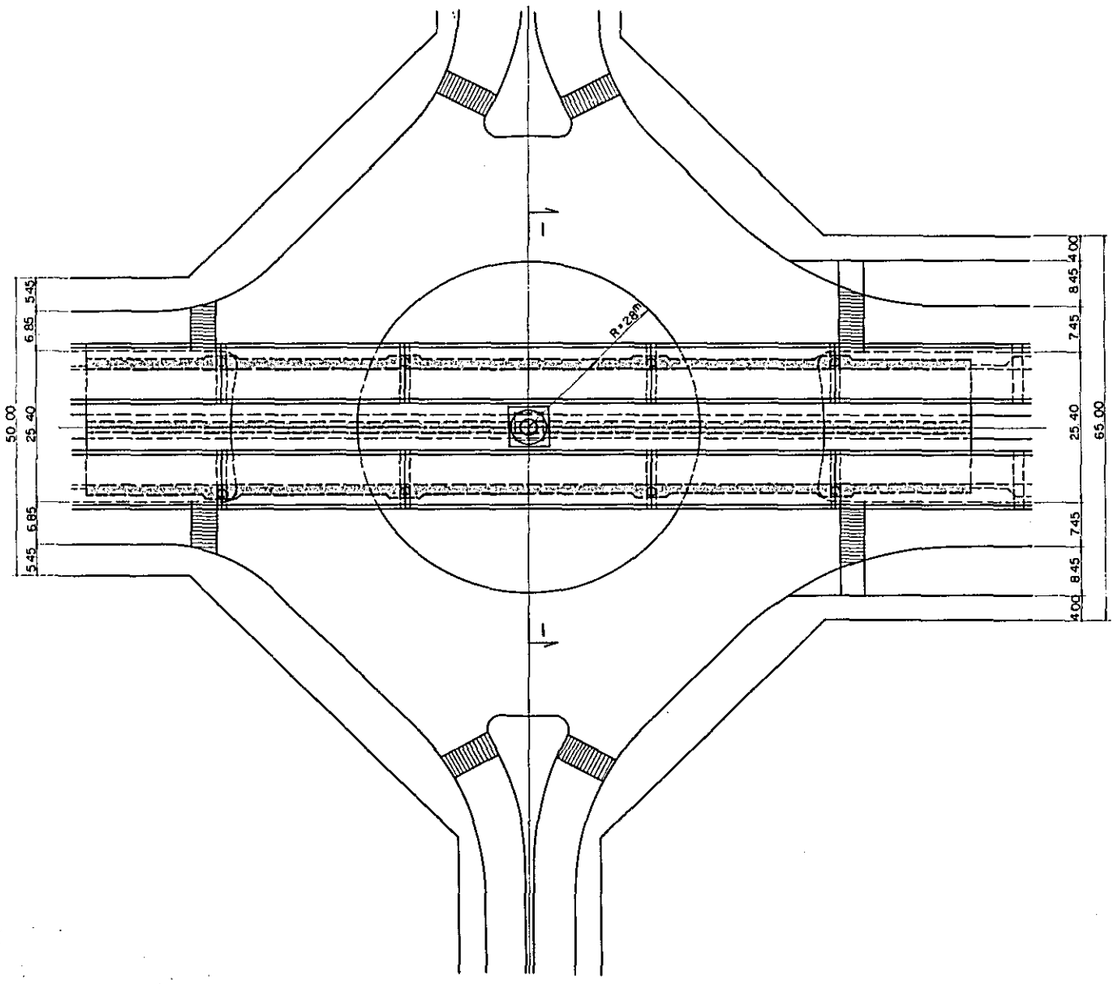


REPUBLIC OF THE PHILIPPINES METRO MANILA TRANSPORT R-10 FEASIBILITY STUDY		
INTERCHAGE OF EXPRESSWAY		
SCALE : AS SHOWN	DATE :	SHEET NO. 45
JAPAN INTERNATIONAL COOPERATION AGENCY		

PROFILE SCALE 1:1000

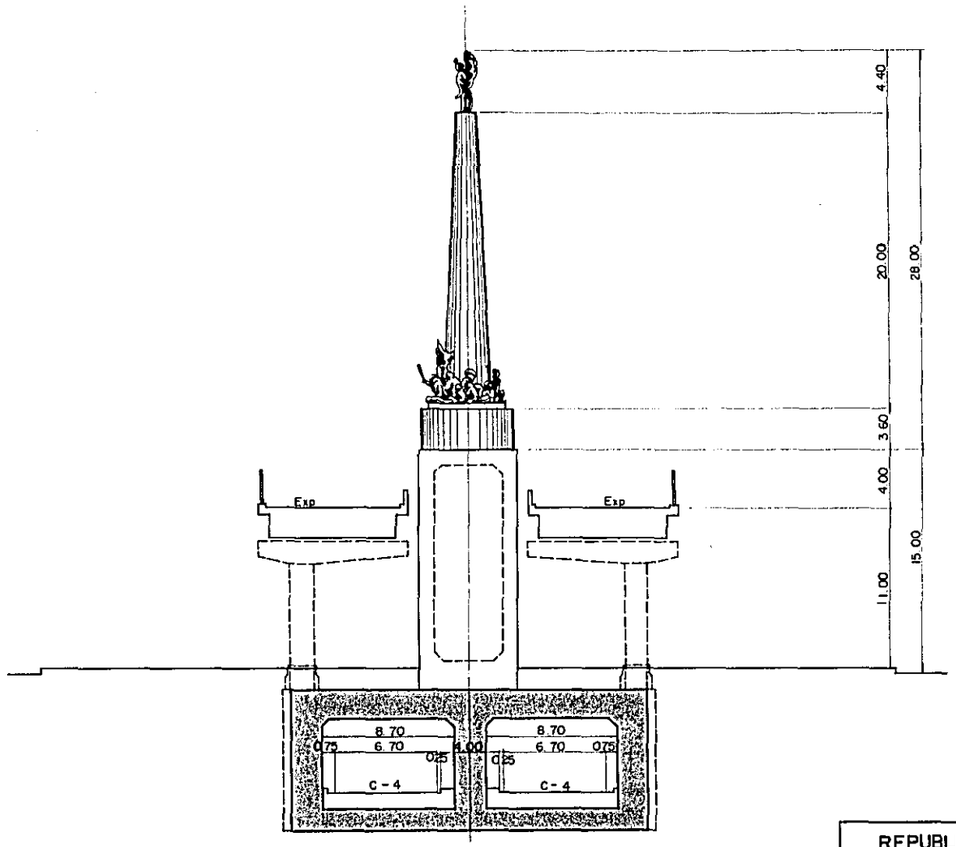


PLAN SCALE 1:1000



CROSS SECTION SCALE 1:400

I – I



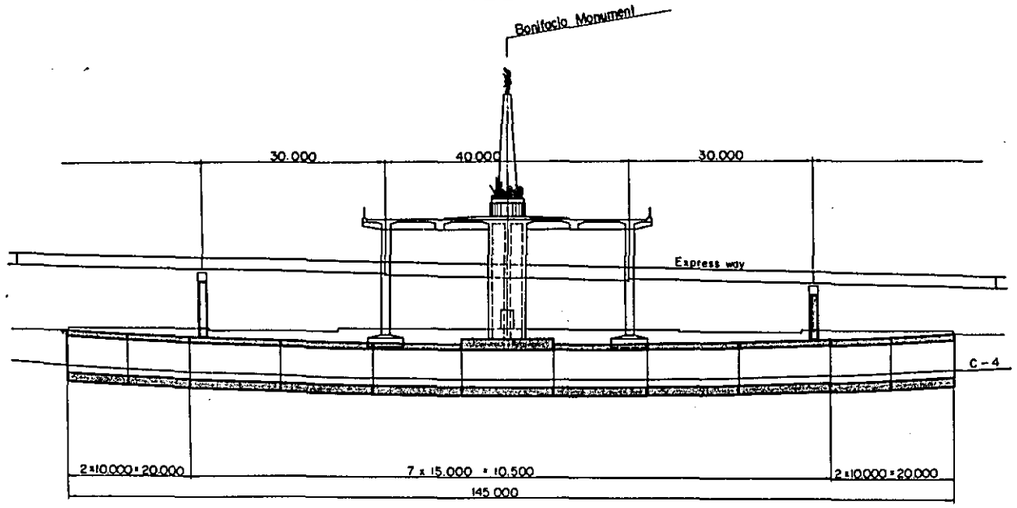
REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

BONIFACIO MONUMENT PLAN-I

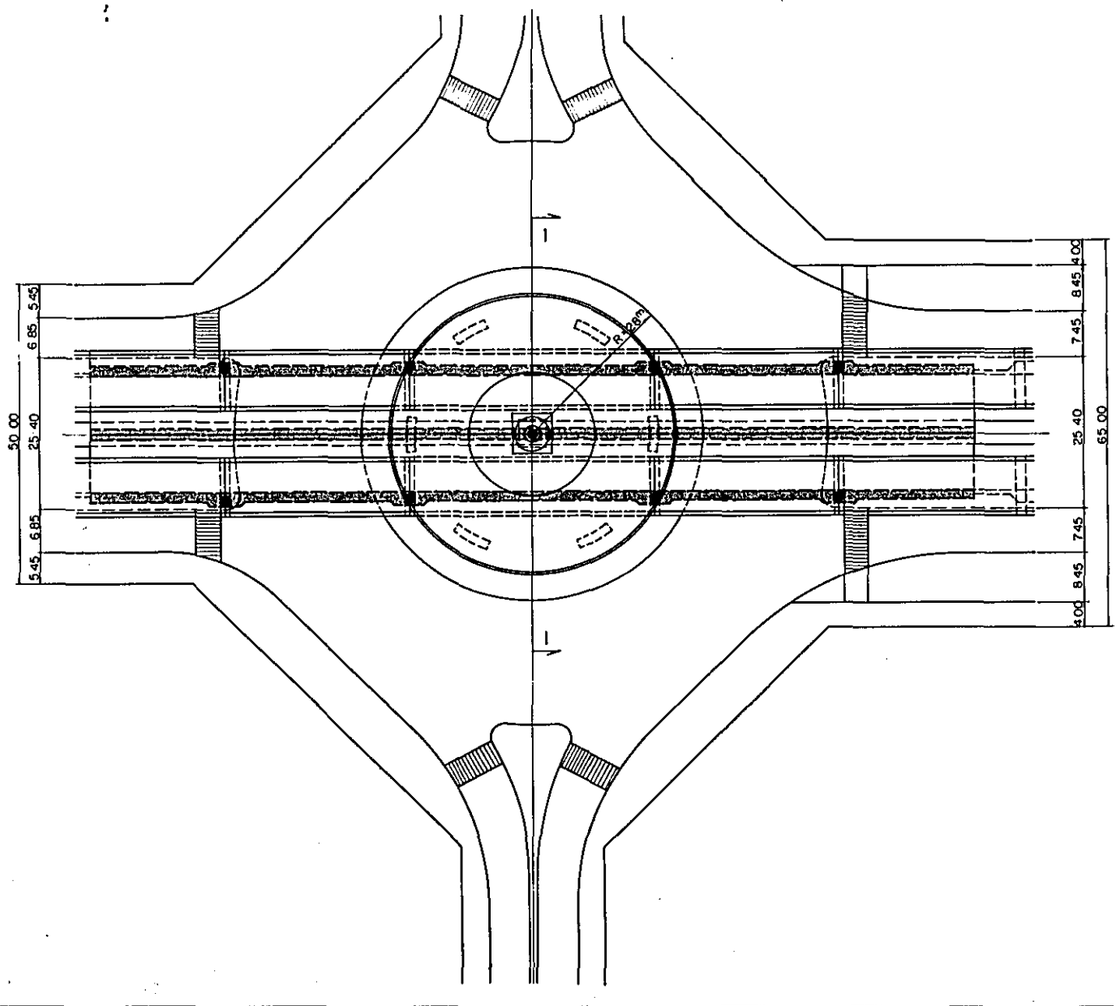
SCALE : AS SHOWN	DATE :	SHEET NO. 46

JAPAN INTERNATIONAL COOPRATION AGENCY

PROFILE SCALE 1:1000

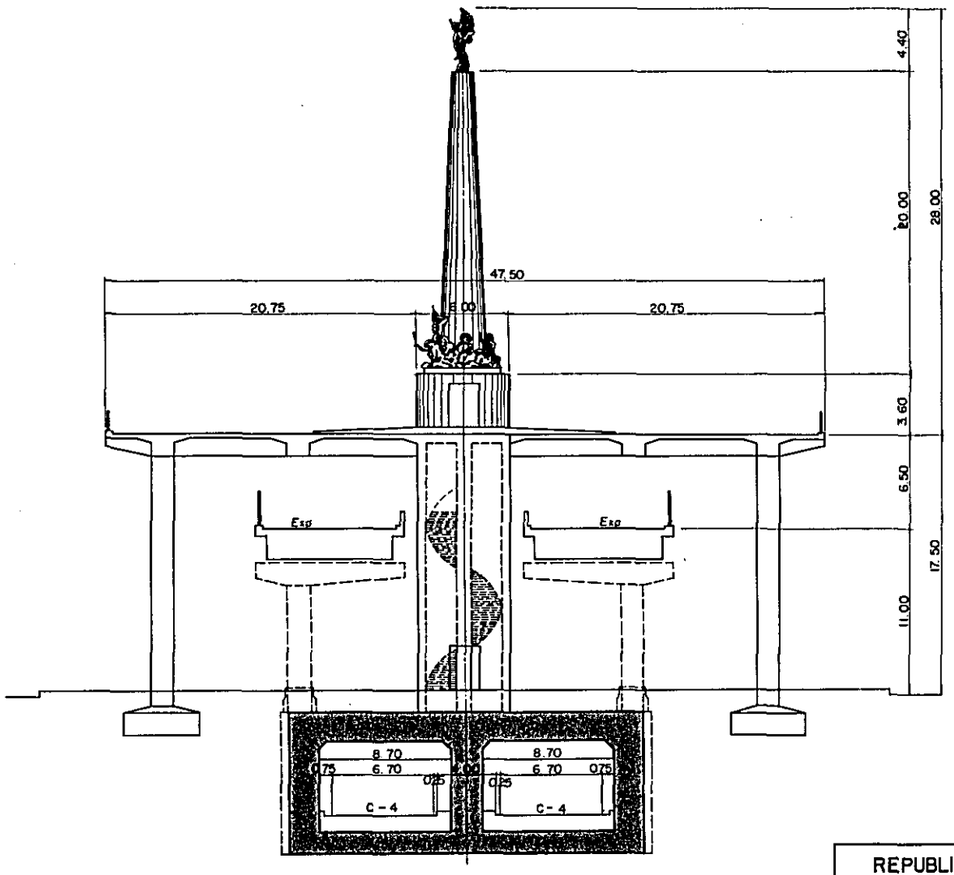


PLAN SCALE 1:1000



CROSS SECTION SCALE 1:400

I – I



REPUBLIC OF THE PHILIPPINES
METRO MANILA TRANSPORT
R-10 FEASIBILITY STUDY

BONIFACIO MONUMENT PLAN-2

SCALE : AS SHOWN	DATE :	SHEET NO. 47

JAPAN INTERNATIONAL COOPERATION AGENCY