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KATAHIRA & ENGINEERS
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JAPAN INTERNATIONAL
COOPERATION AGENCY

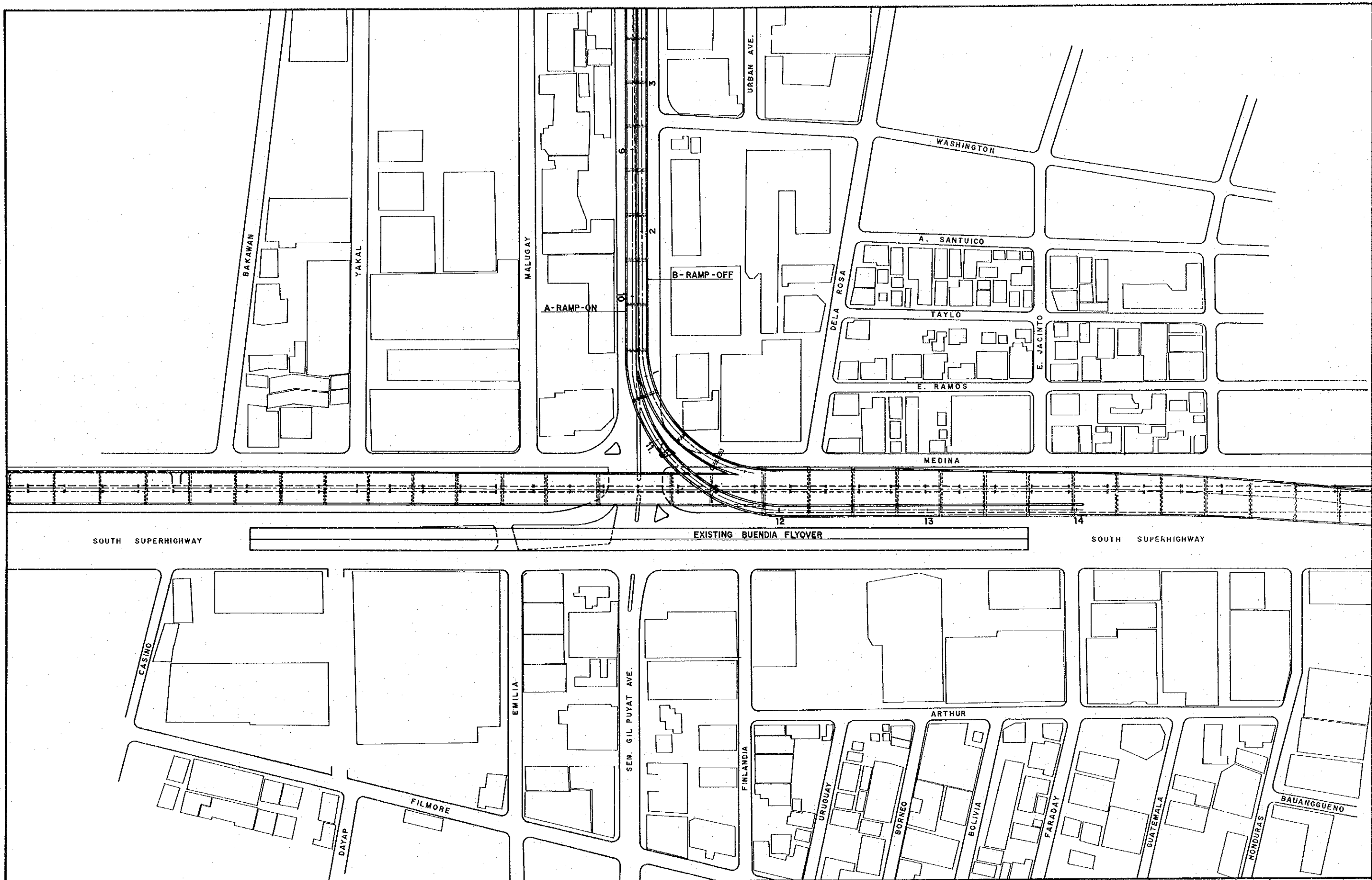

DEPARTMENT OF PUBLIC
WORKS AND HIGHWAYS
Republic of the Philippines

**FEASIBILITY STUDY ON METRO MANILA
URBAN EXPRESSWAY SYSTEM**

**BUENDIA ACCESS RAMP
PROFILE**


SCALE
HORIZONTAL : 1 : 2,500
VERTICAL : 1 : 500

DWG. No.
2-18



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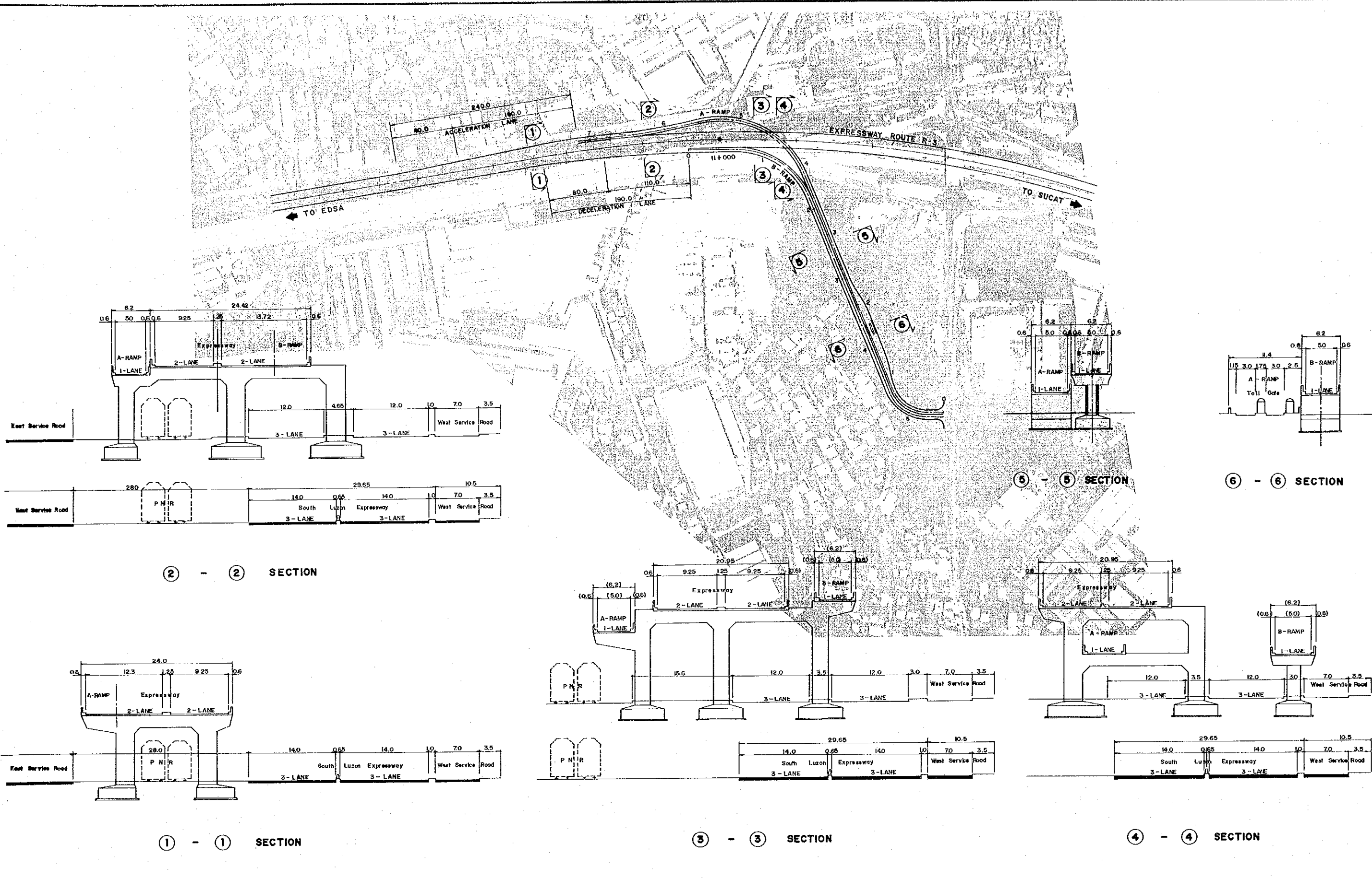

DEPARTMENT OF PUBLIC
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 Republic of the Philippines

FEASIBILITY STUDY ON METRO MANILA
URBAN EXPRESSWAY SYSTEM

BUENDIA ACCESS RAMP

SCALE
 1 : 1,250

DWG. No.
 2-19



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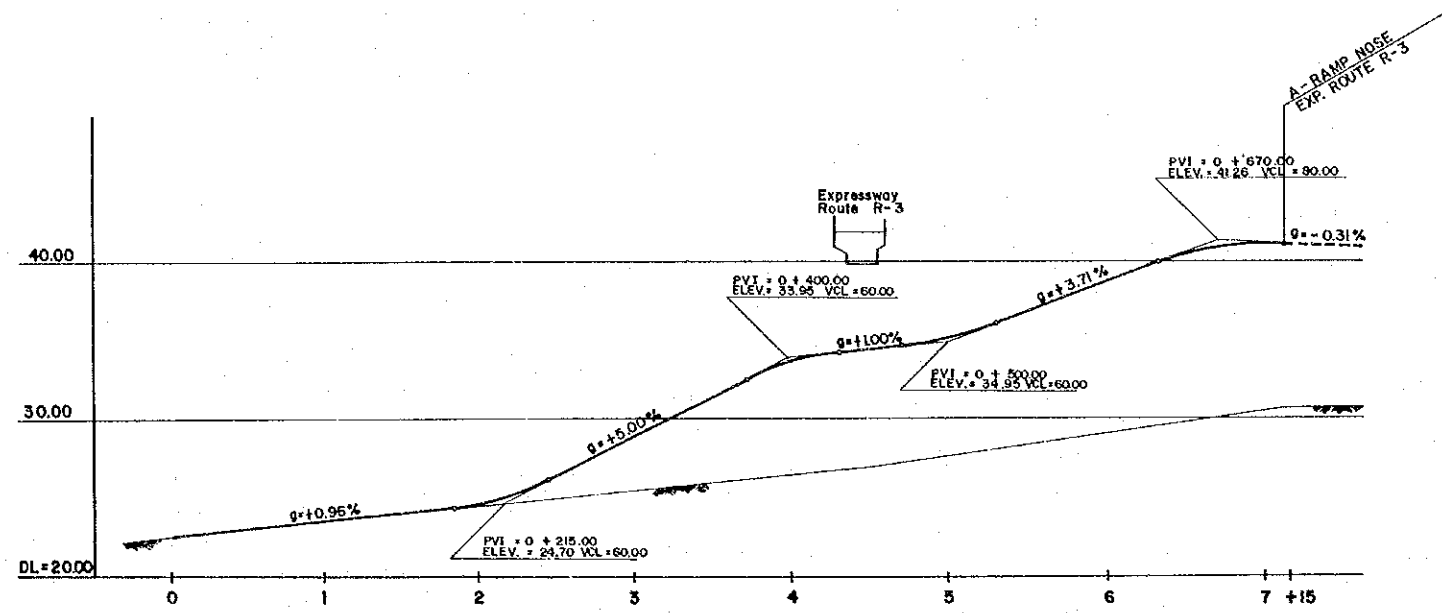
DPWH
DEPARTMENT OF PUBLIC
WORKS AND HIGHWAYS
Republic of the Philippines

FEASIBILITY STUDY ON METRO MANILA
URBAN EXPRESSWAY SYSTEM

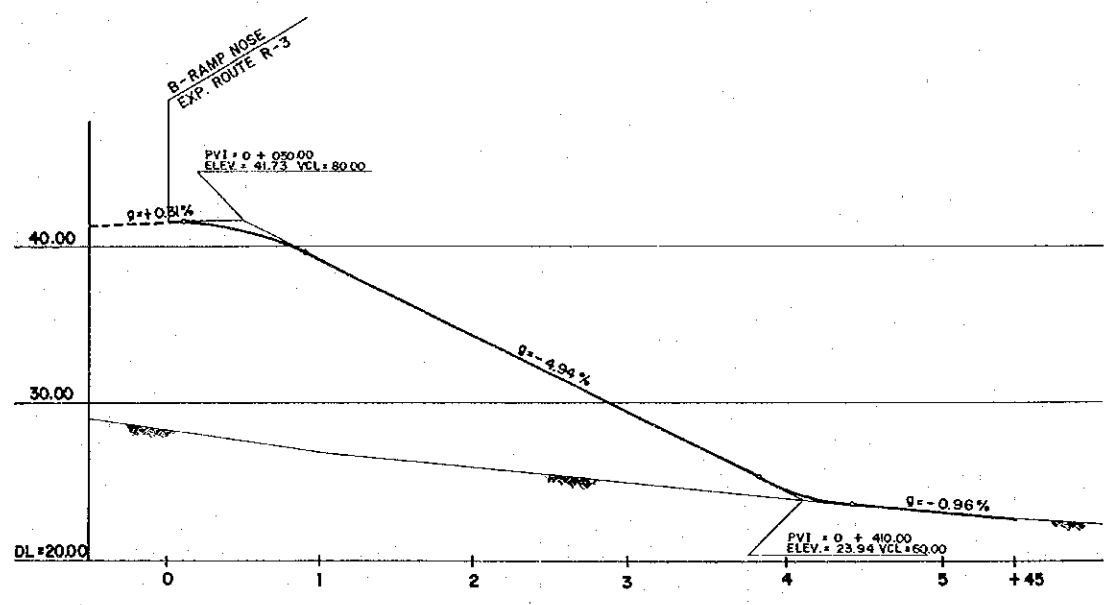
BICUTAN ACCESS RAMP
PLAN AND CROSS SECTION

SCALE
 1: 2,500
 1: 300

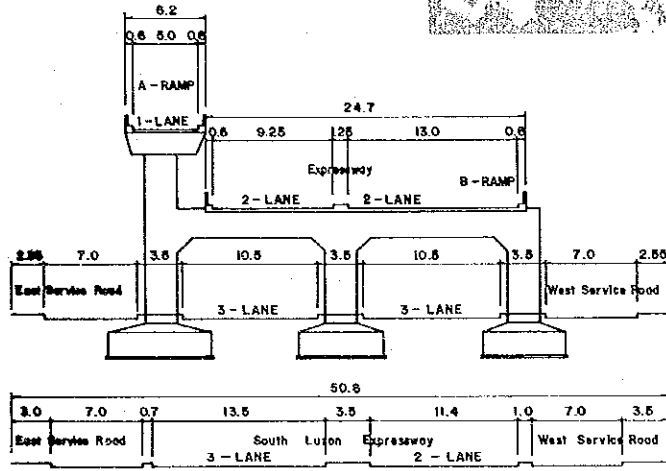
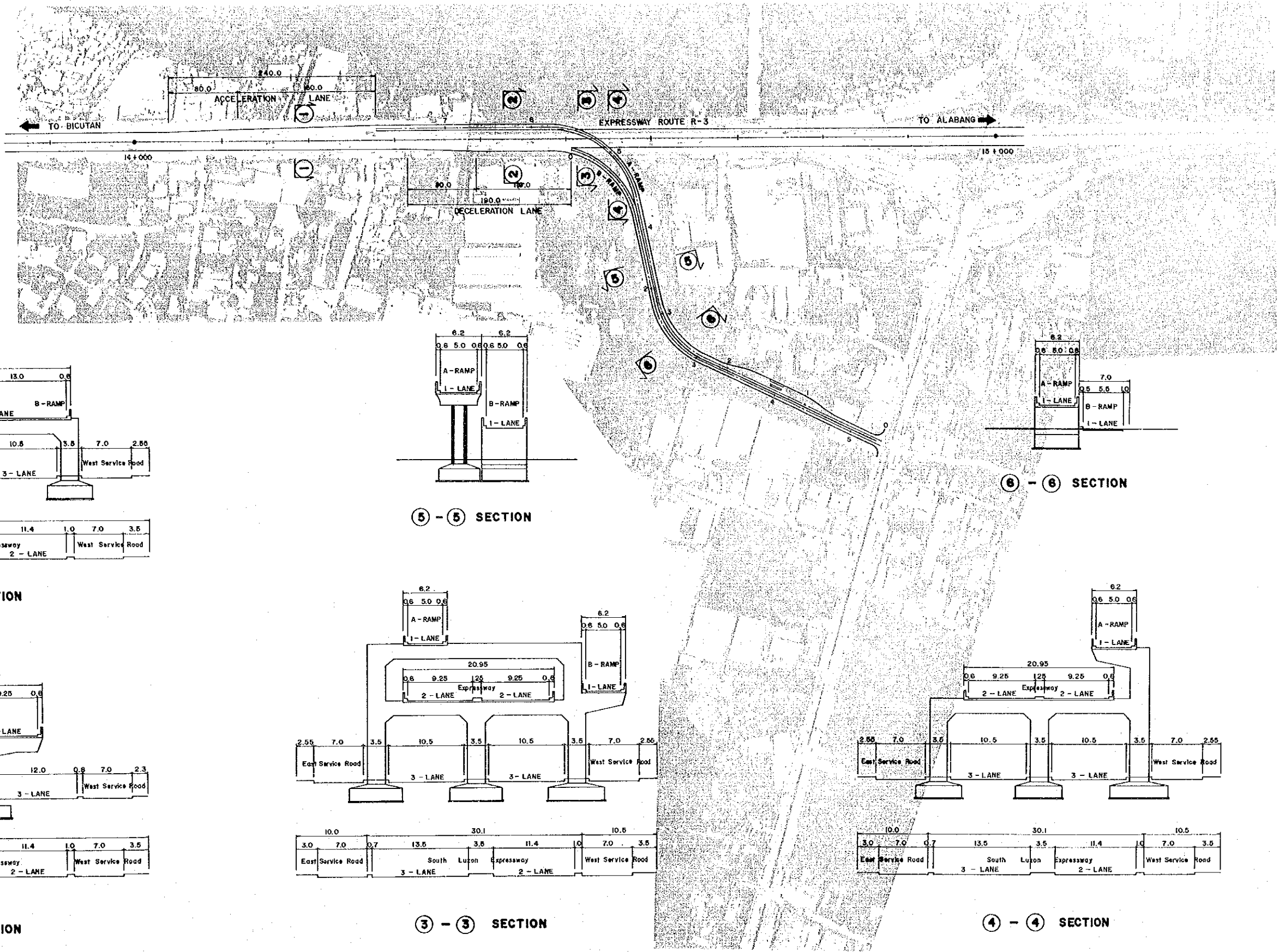
DWG. No.
2 - 20



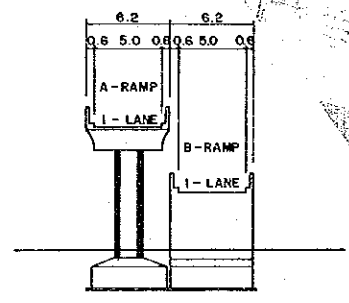
A - RAMP



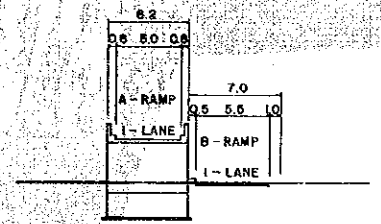
B - RAMP



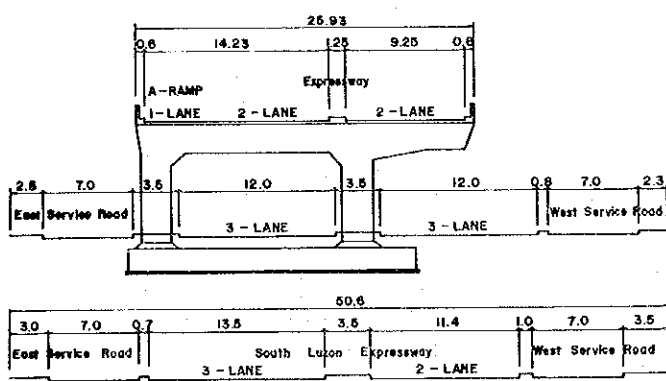
2 - 2 SECTION



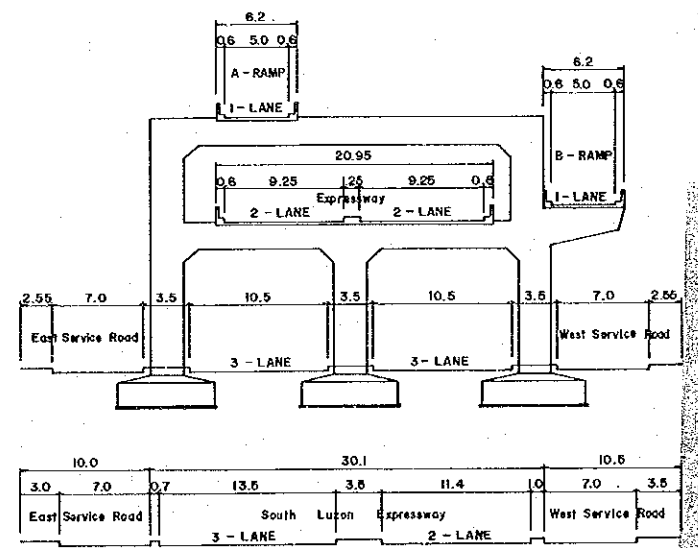
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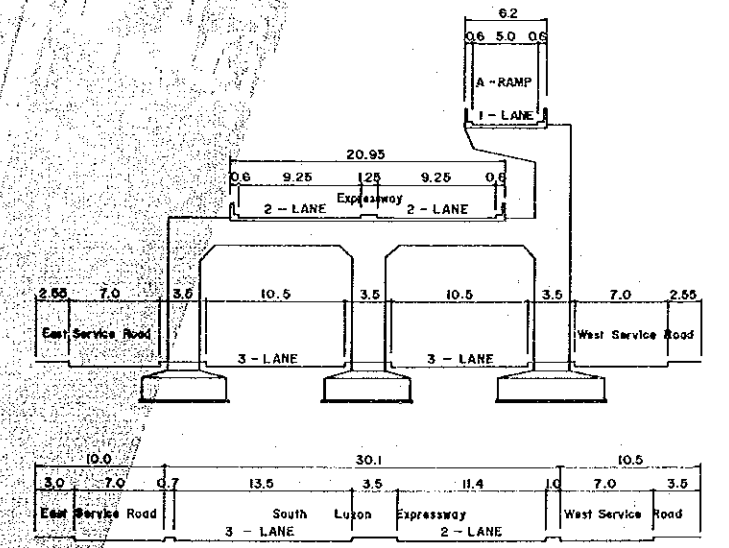
6 - 6 SECTION



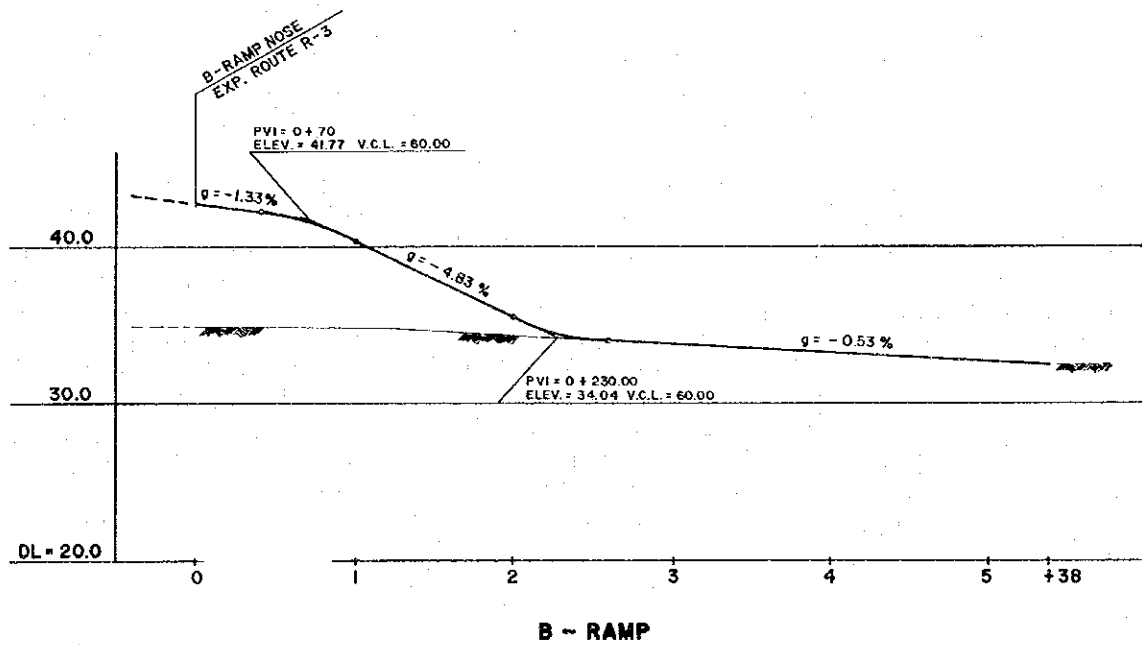
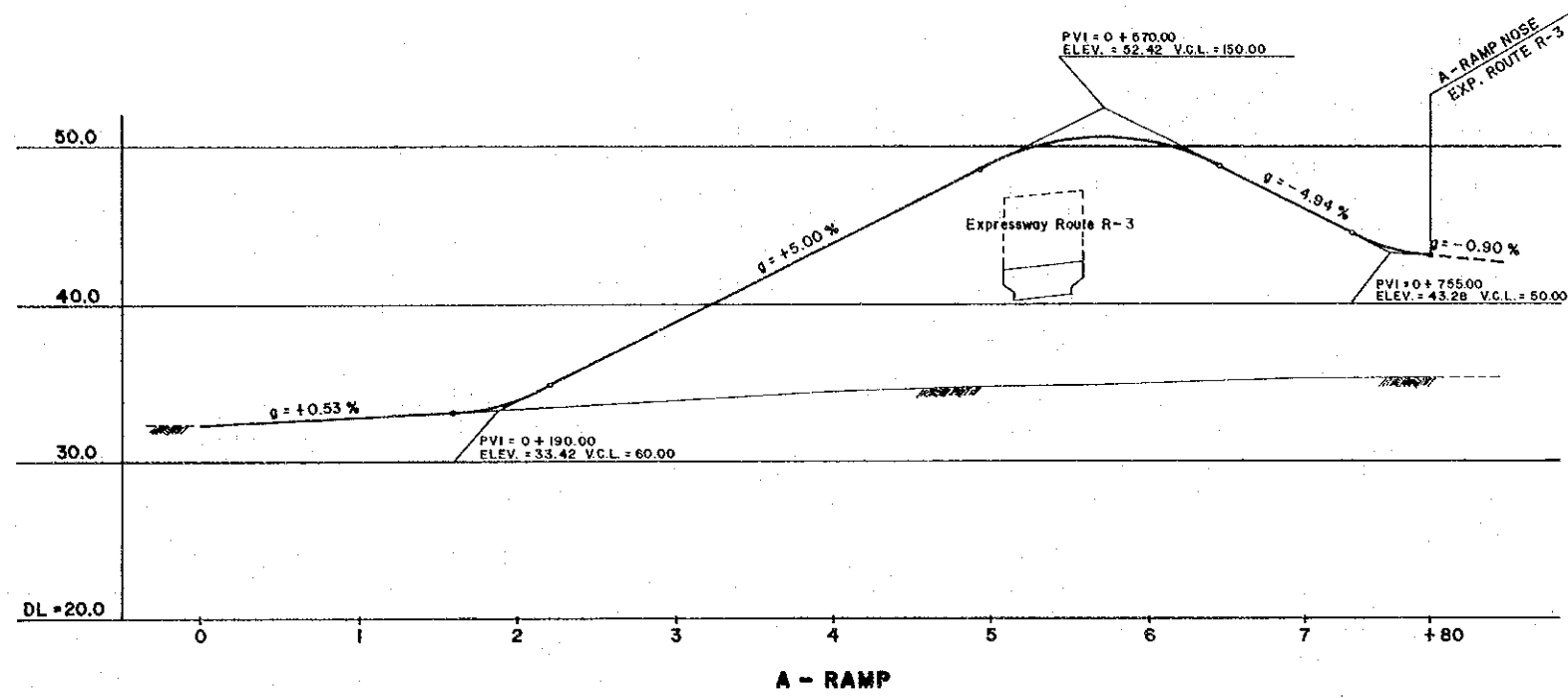
1 - 1 SECTION

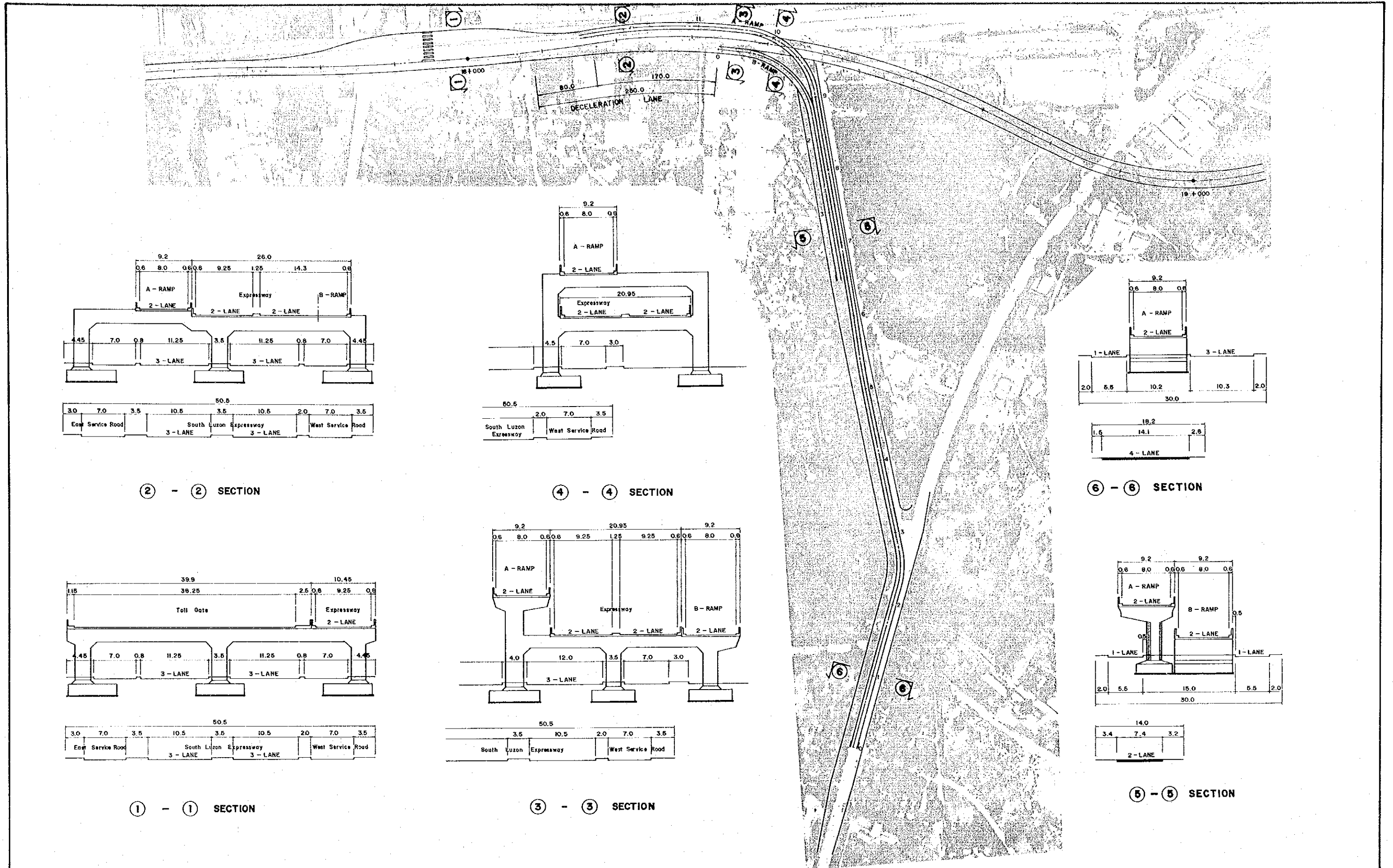


3 - 3 SECTION



4 - 4 SECTION





② - ② SECTION

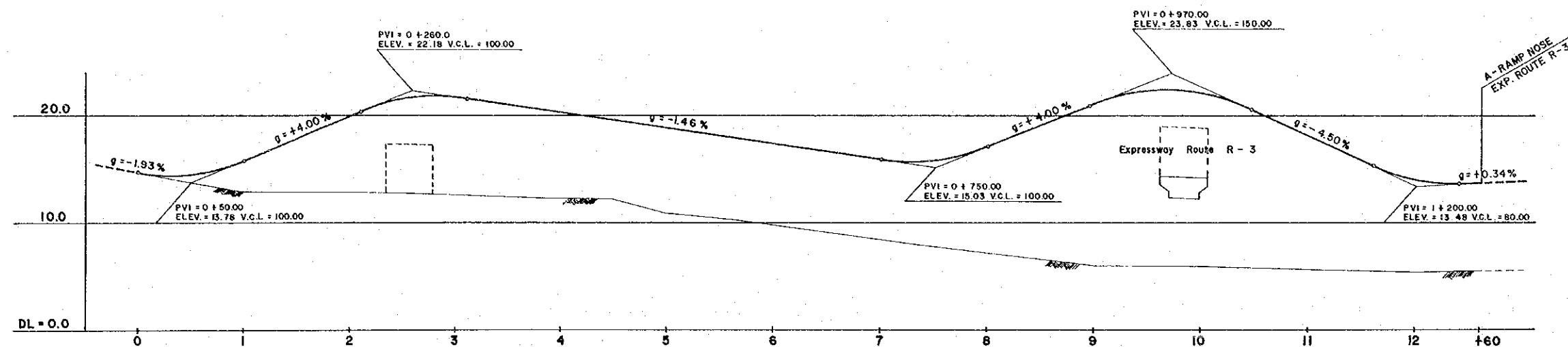
④ - ④ SECTION

⑥ - ⑥ SECTION

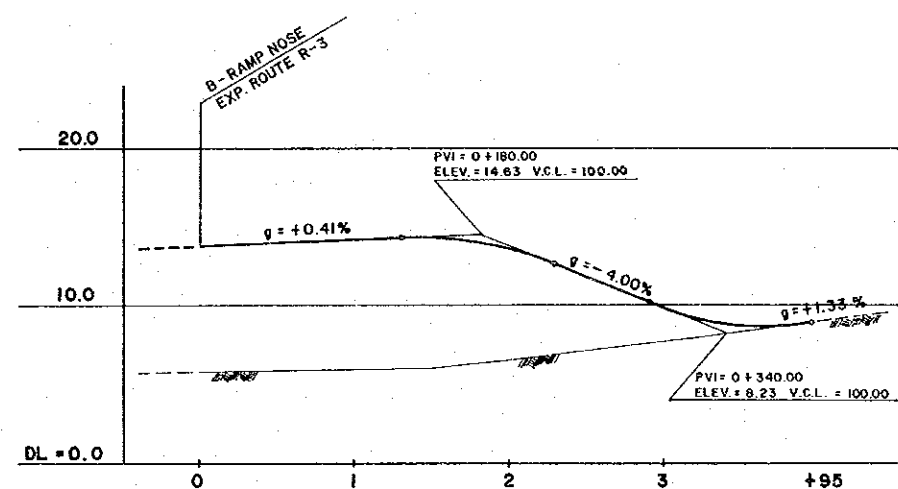
① - ① SECTION

③ - ③ SECTION

⑤ - ⑤ SECTION



A - RAMP



B - RAMP



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FEASIBILITY STUDY ON METRO MANILA
URBAN EXPRESSWAY SYSTEM

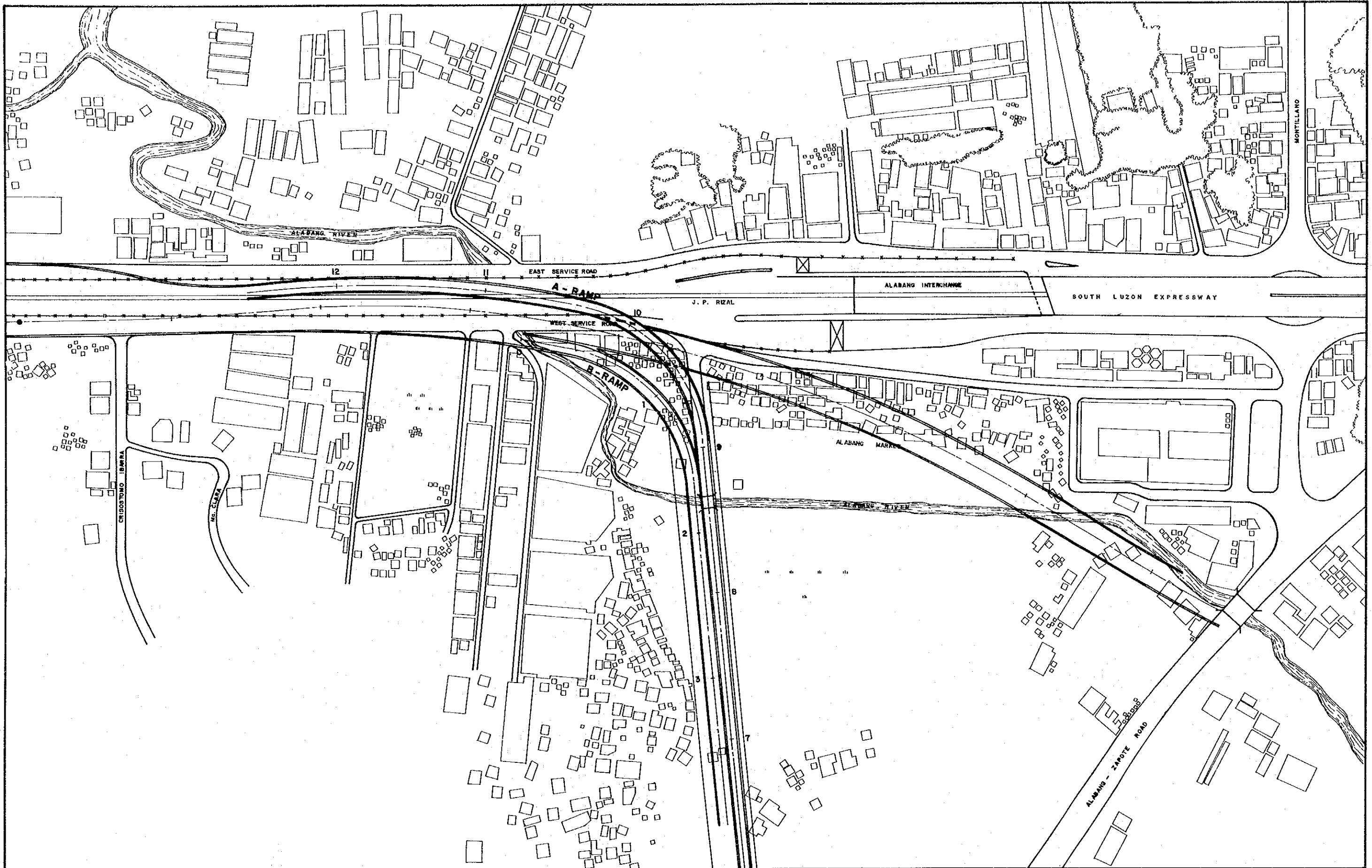
ALABANG ACCESS RAMP
PROFILE

SCALE

HORIZONTAL : 1 : 2,500
VERTICAL : 1 : 500


DWG. No.

2-25



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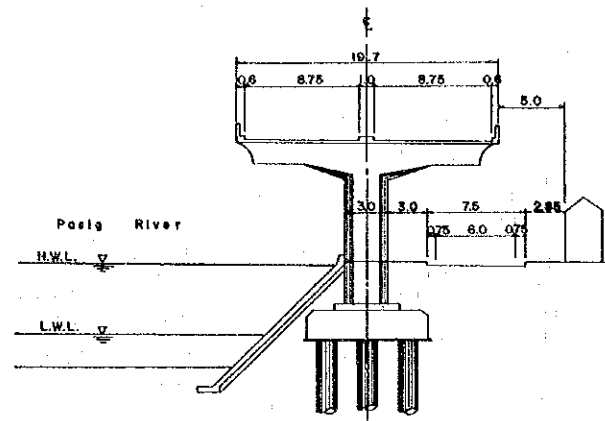
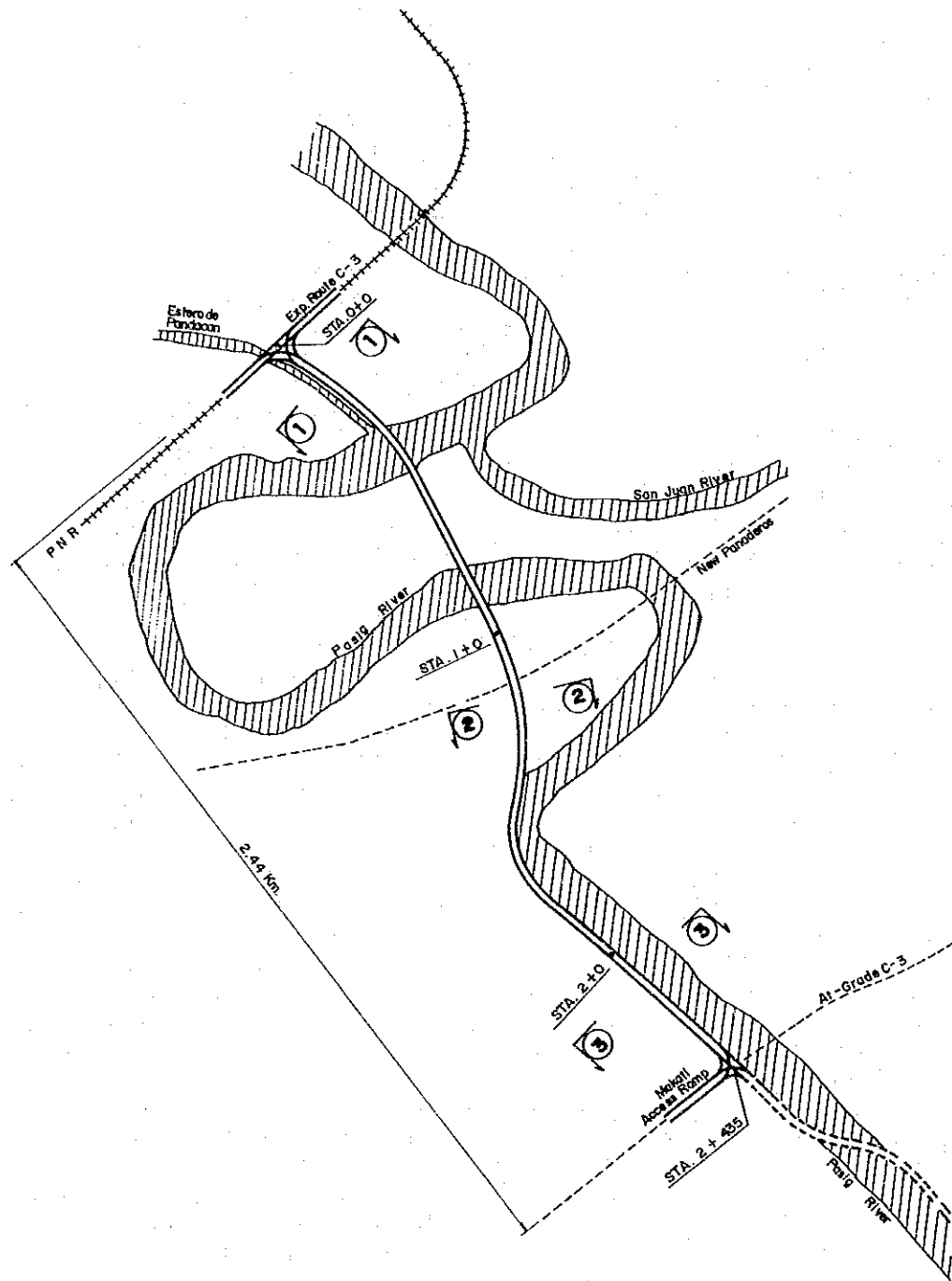
**FEASIBILITY STUDY ON METRO MANILA
 URBAN EXPRESSWAY SYSTEM**

ALABANG ACCESS RAMP

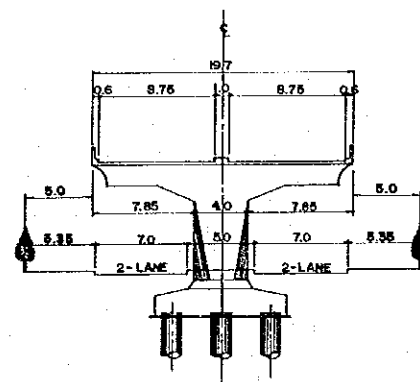
SCALE

DWG. No.
2-26

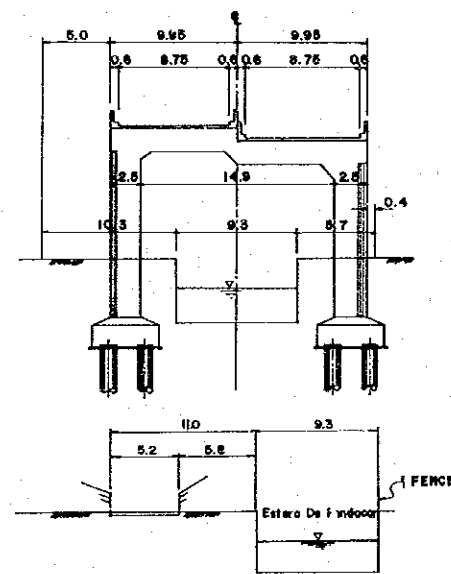
VICINITY MAP
SCALE 1 : 10,000



3 - 3 SECTION

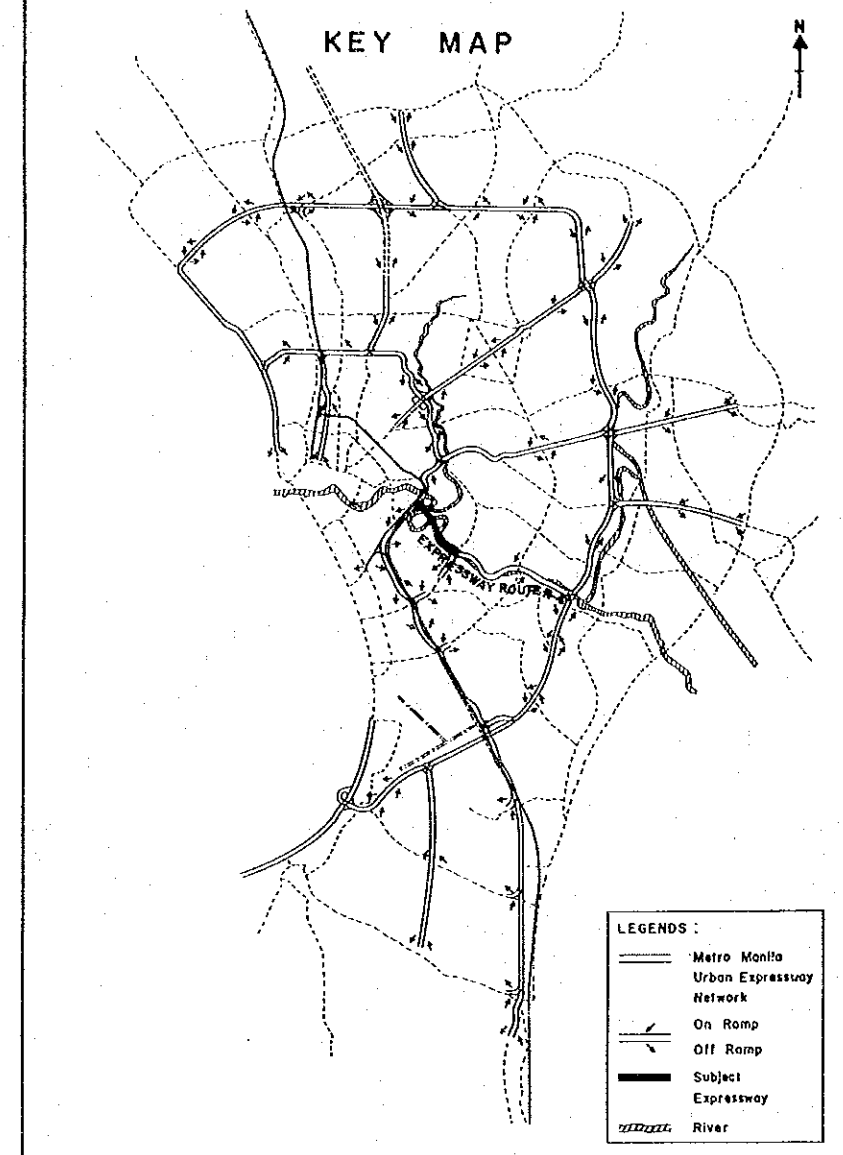


2 - 2 SECTION



1 - 1 SECTION

KEY MAP



- LEGENDS :
- Metro Manila Urban Expressway Network
 - ↘ On Ramp
 - ↙ Off Ramp
 - Subject Expressway
 - ~~~~~ River



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FEASIBILITY STUDY ON METRO MANILA
URBAN EXPRESSWAY SYSTEM

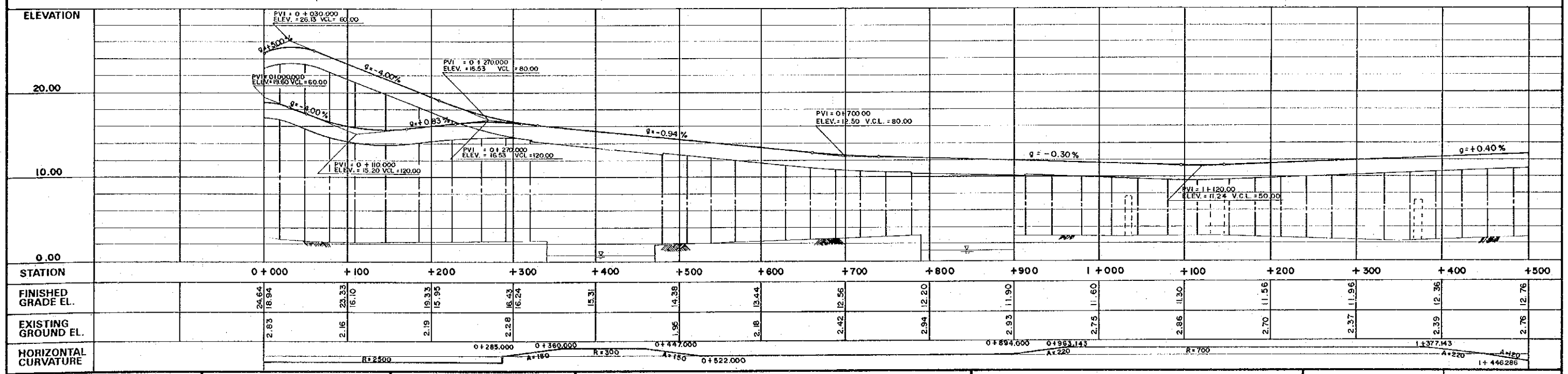
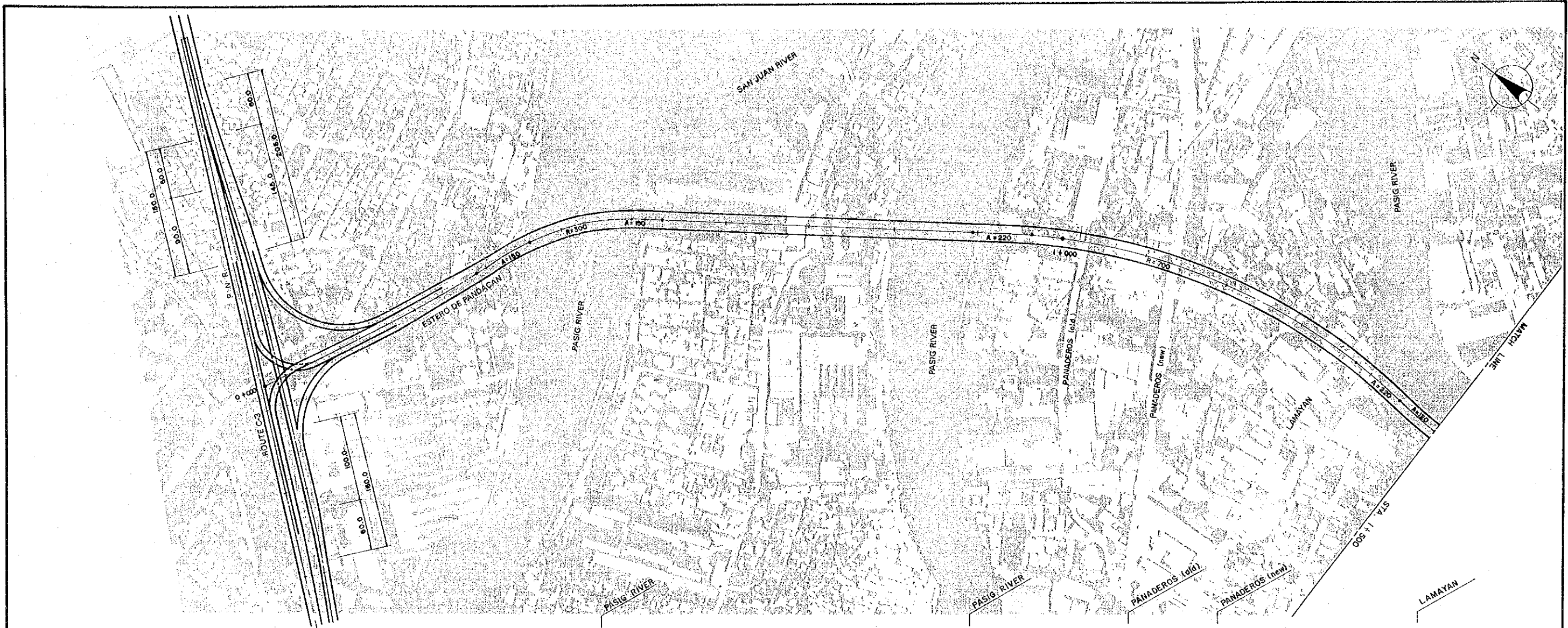
EXPRESSWAY ROUTE R-4
TYPICAL CROSS SECTION

SCALE

1 : 300

DWG. No.

3 - 1



| ELEVATION | Profile Data | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|------|-------|
| 20.00 | [Profile Data Points] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10.00 | [Profile Data Points] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0.00 | [Profile Data Points] | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| STATION | 0+000 | +100 | +200 | +300 | +400 | +500 | +600 | +700 | +800 | +900 | 1+000 | +100 | +200 | +300 | +400 | +500 | | | | | | | | | | | | | |
| FINISHED GRADE EL. | 24.64 | 16.94 | 23.33 | 16.10 | 19.33 | 15.95 | 16.43 | 16.24 | 15.31 | 14.38 | 13.44 | 2.42 | 12.56 | 2.94 | 12.20 | 2.93 | 11.90 | 2.75 | 11.60 | 2.86 | 11.30 | 2.70 | 11.56 | 2.37 | 11.96 | 2.39 | 12.36 | 2.76 | 12.76 |
| EXISTING GROUND EL. | 2.83 | | 2.16 | | 2.19 | | 2.28 | | 1.96 | | 2.18 | | 2.42 | | 2.94 | | 2.93 | | 2.75 | | 2.86 | | 2.70 | | 2.37 | | 2.39 | | 2.76 |
| HORIZONTAL CURVATURE | R=2500, A=180, R=300, A=150, 0+285.000, 0+380.000, 0+447.000, 0+522.000, R=700, A=220, 0+894.000, 0+963.143, R=700, 1+377.143, A=220, A=180, 1+446.286 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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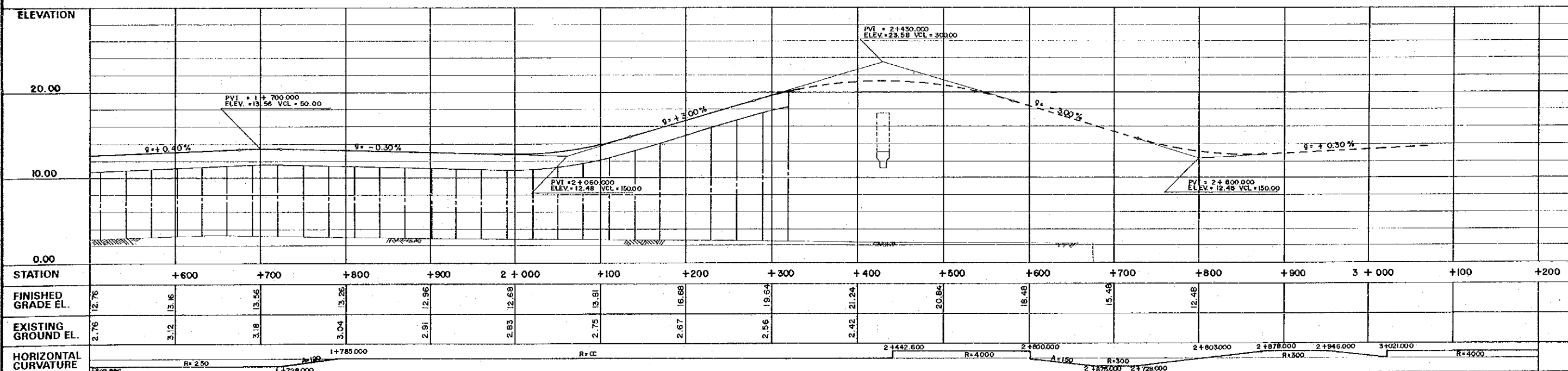
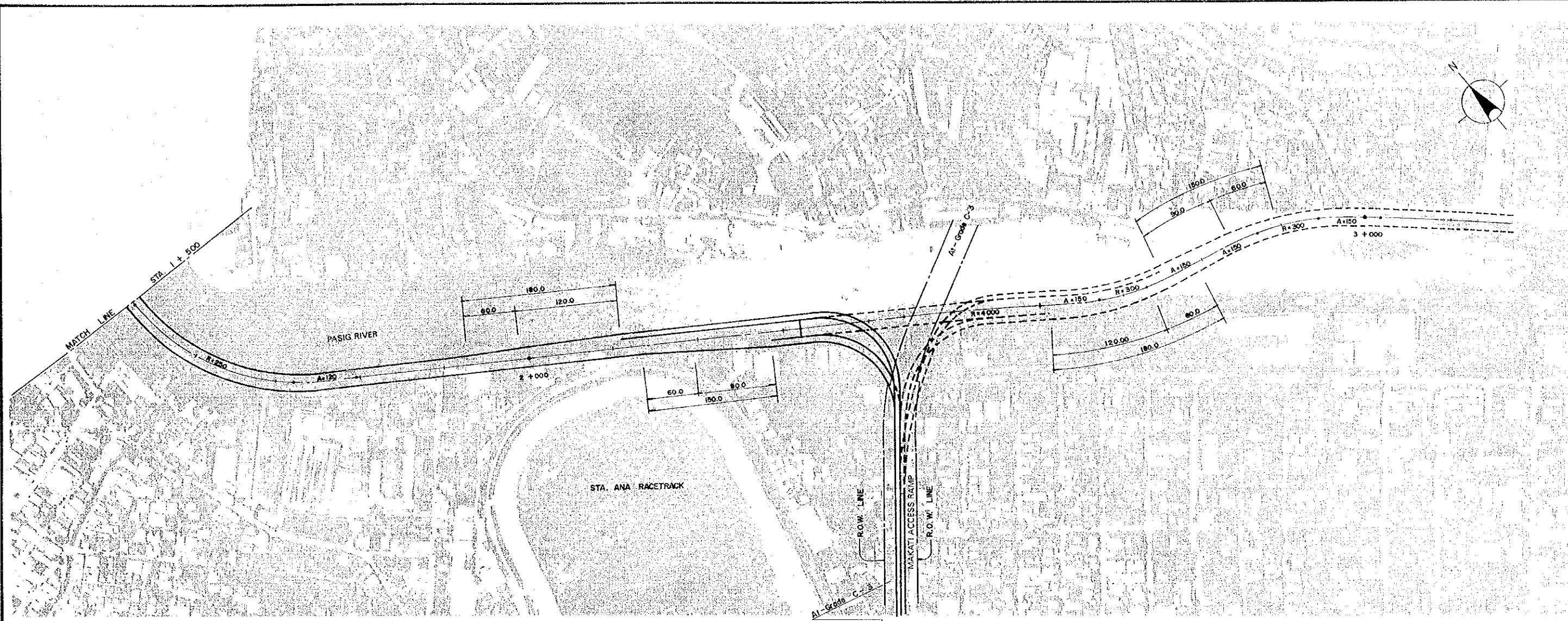
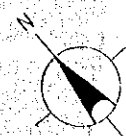
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Republic of the Philippines

**FEASIBILITY STUDY ON METRO MANILA
URBAN EXPRESSWAY SYSTEM**

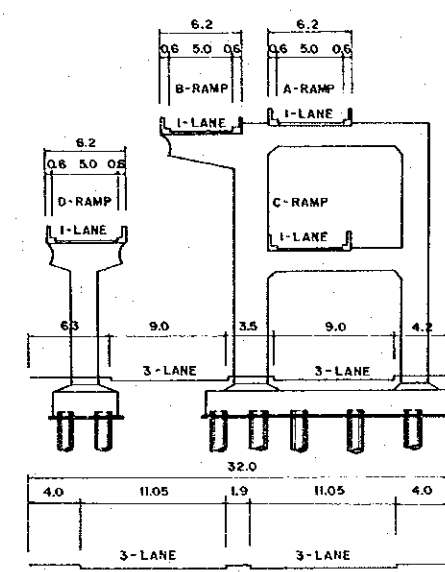
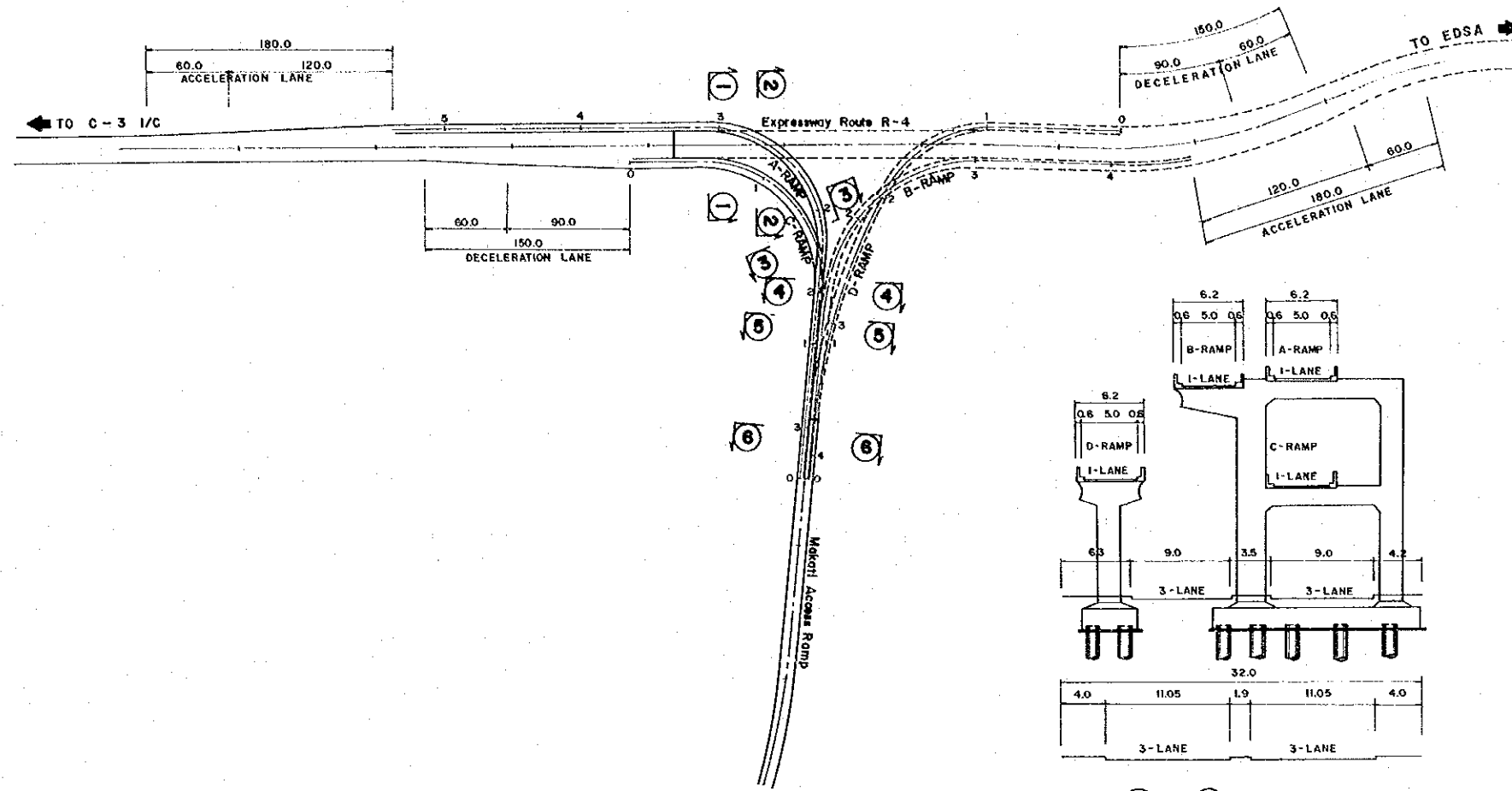
PLAN AND PROFILE
ROUTE NAME STA. 0+000 - STA. 1+500
R - 4

SCALE
HORIZONTAL : 1 : 2,500
VERTICAL : 1 : 250

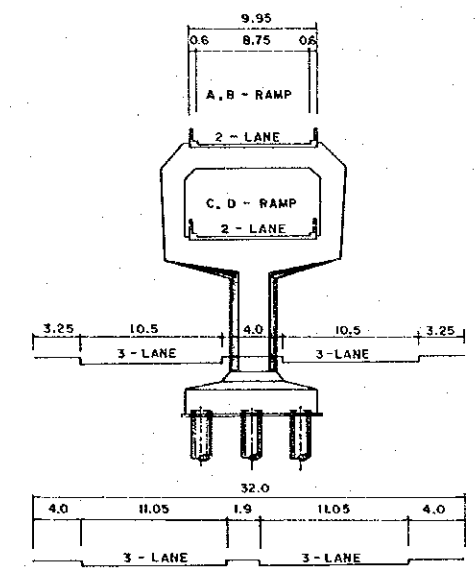
DWG. No.
3 - 2



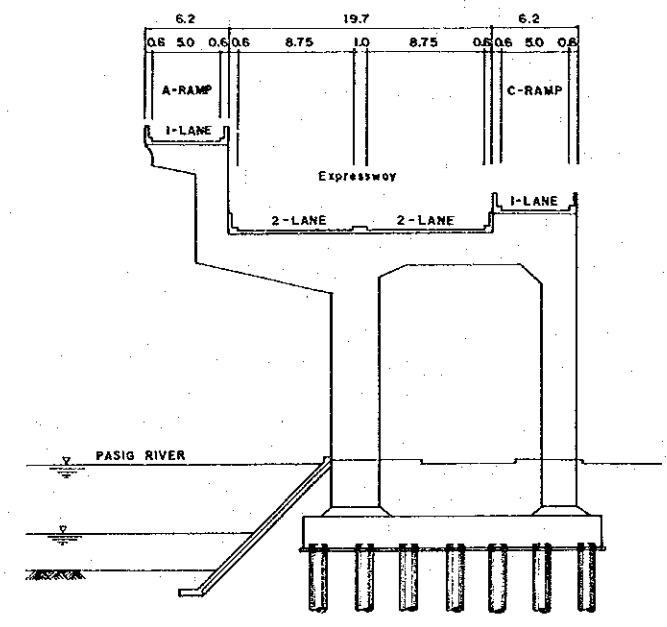
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|---|---|---|--|---|--|--------------|
| KATAHIRA & ENGINEERS INTERNATIONAL | JAPAN INTERNATIONAL COOPERATION AGENCY | DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS Republic of the Philippines | FEASIBILITY STUDY ON METRO MANILA URBAN EXPRESSWAY SYSTEM | PLAN AND PROFILE ROUTE NAME STA. 1 + 500 - STA. 3 + 000 R - 4 | SCALE | DWG. No. |
| | | | | | HORIZONTAL : 1 : 2,500 VERTICAL : 1 : 250 | 3 - 3 |



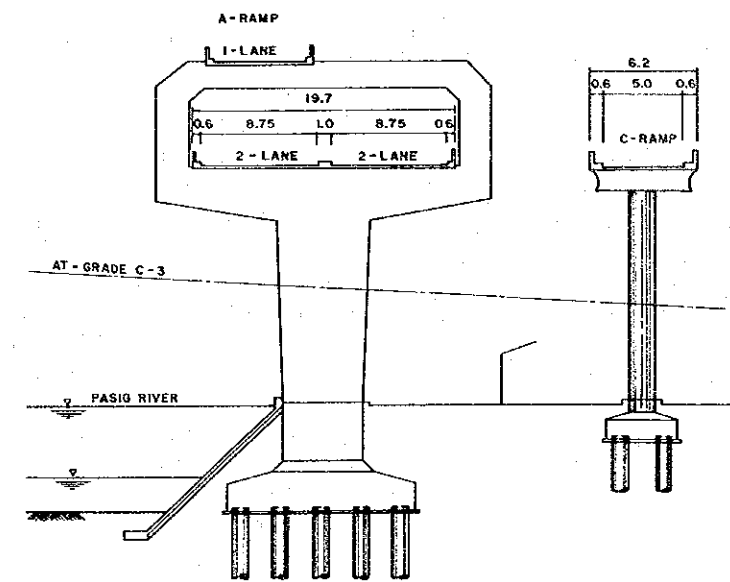
④ - ④ SECTION



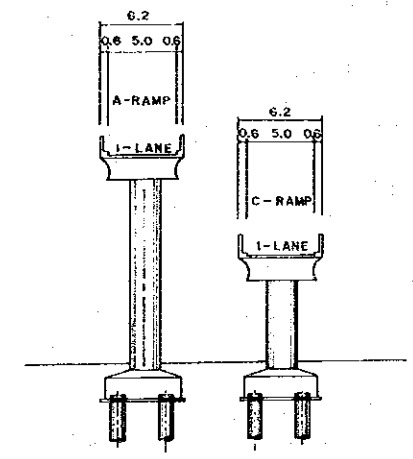
⑥ - ⑥ SECTION



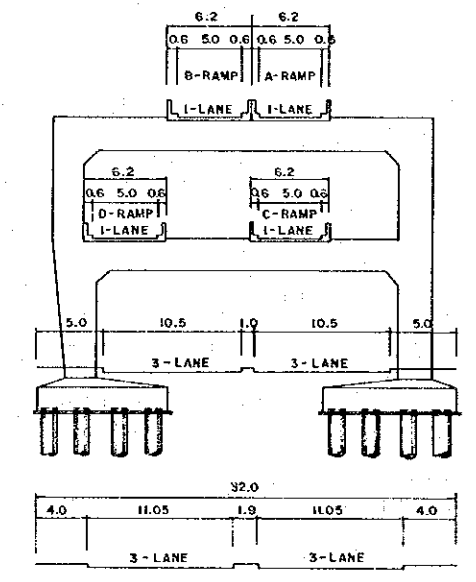
① - ① SECTION



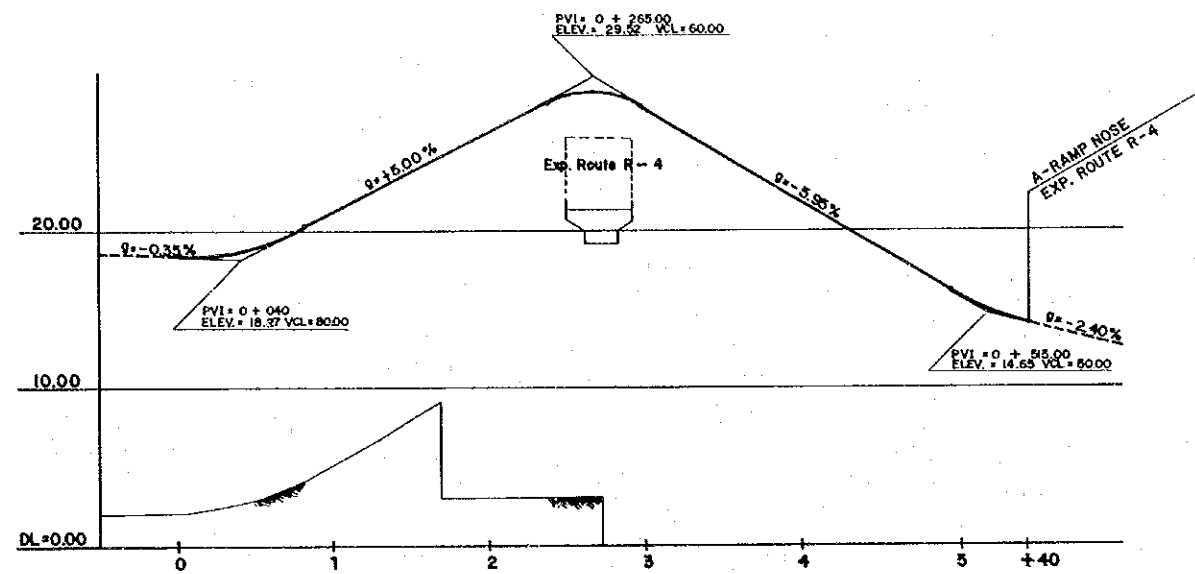
② - ② SECTION



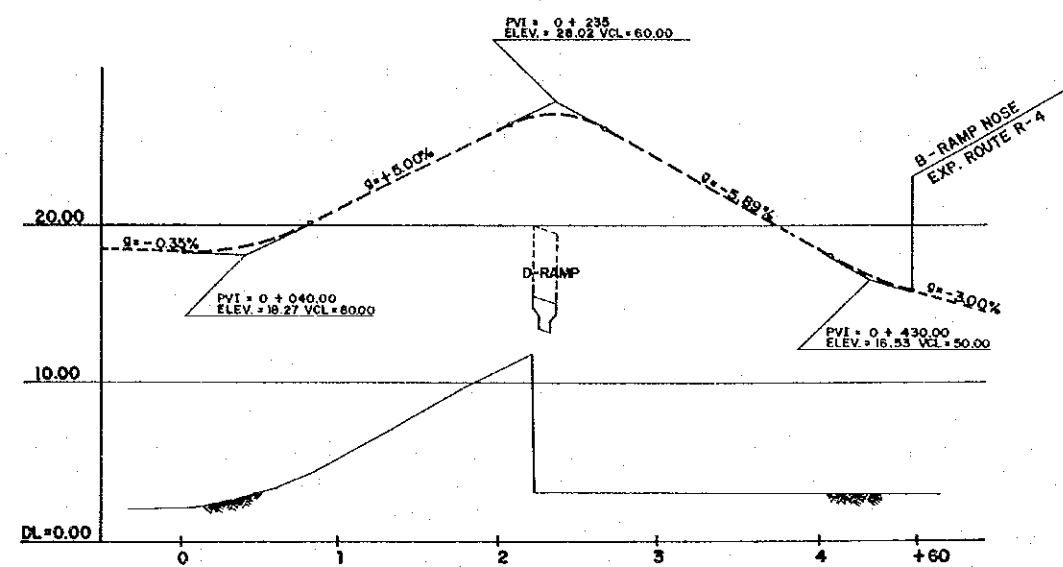
③ - ③ SECTION



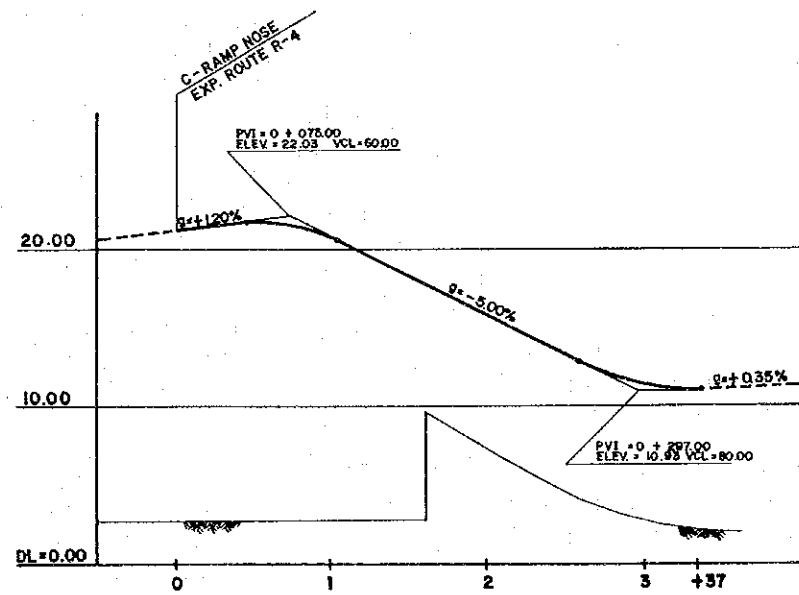
⑤ - ⑤ SECTION



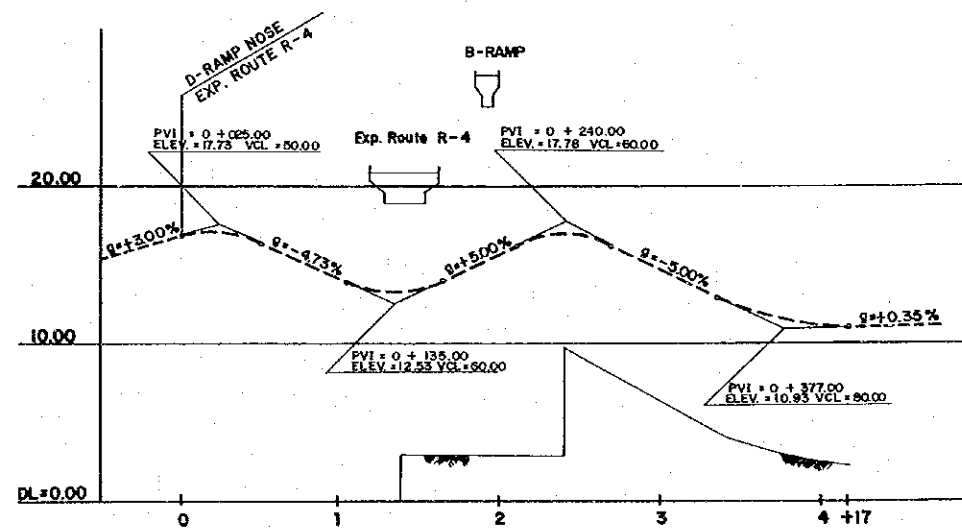
A - RAMP



B - RAMP



C - RAMP



D - RAMP



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FEASIBILITY STUDY ON METRO MANILA
URBAN EXPRESSWAY SYSTEM

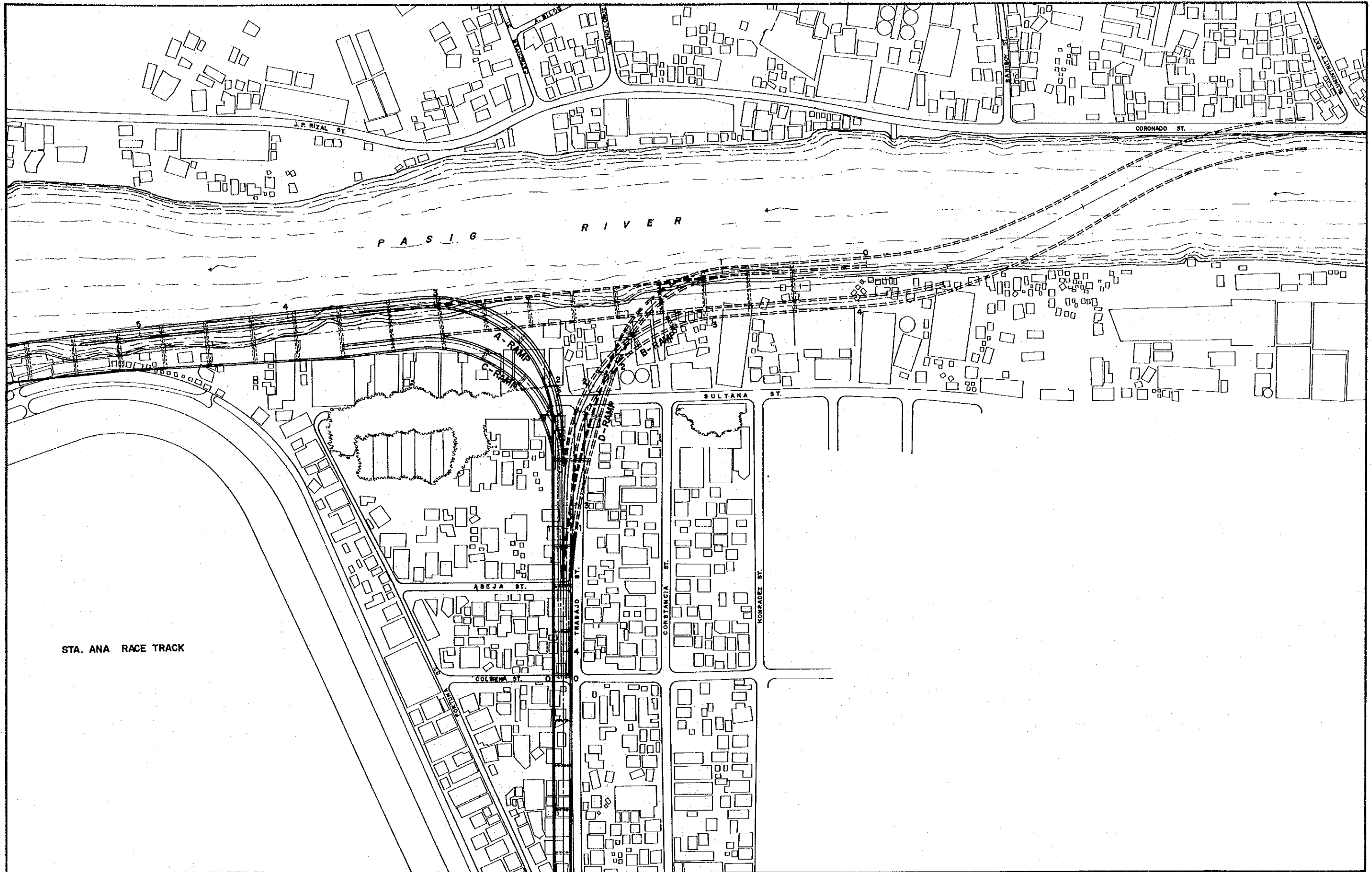
R-4/MAKATI ACCESS RAMP INTERCHANGE
PROFILE




SCALE

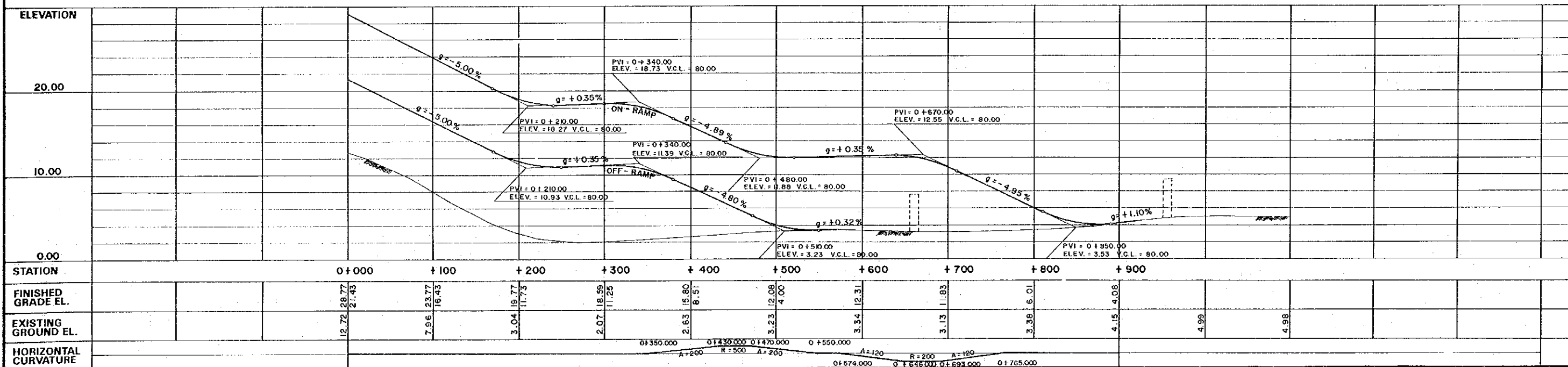
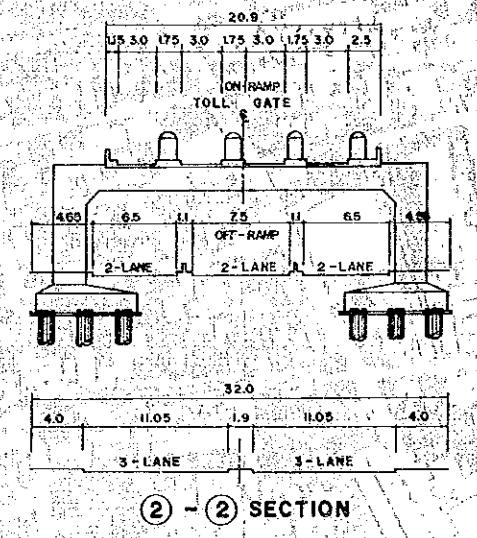
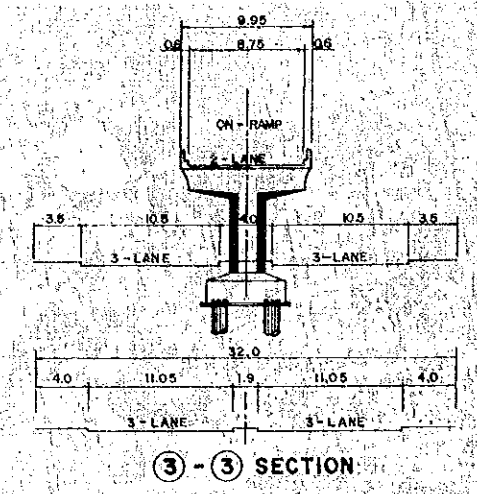
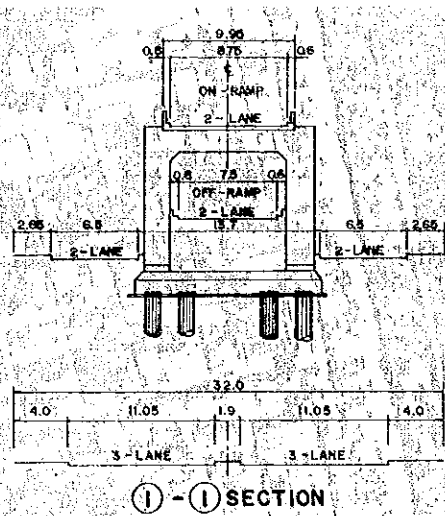
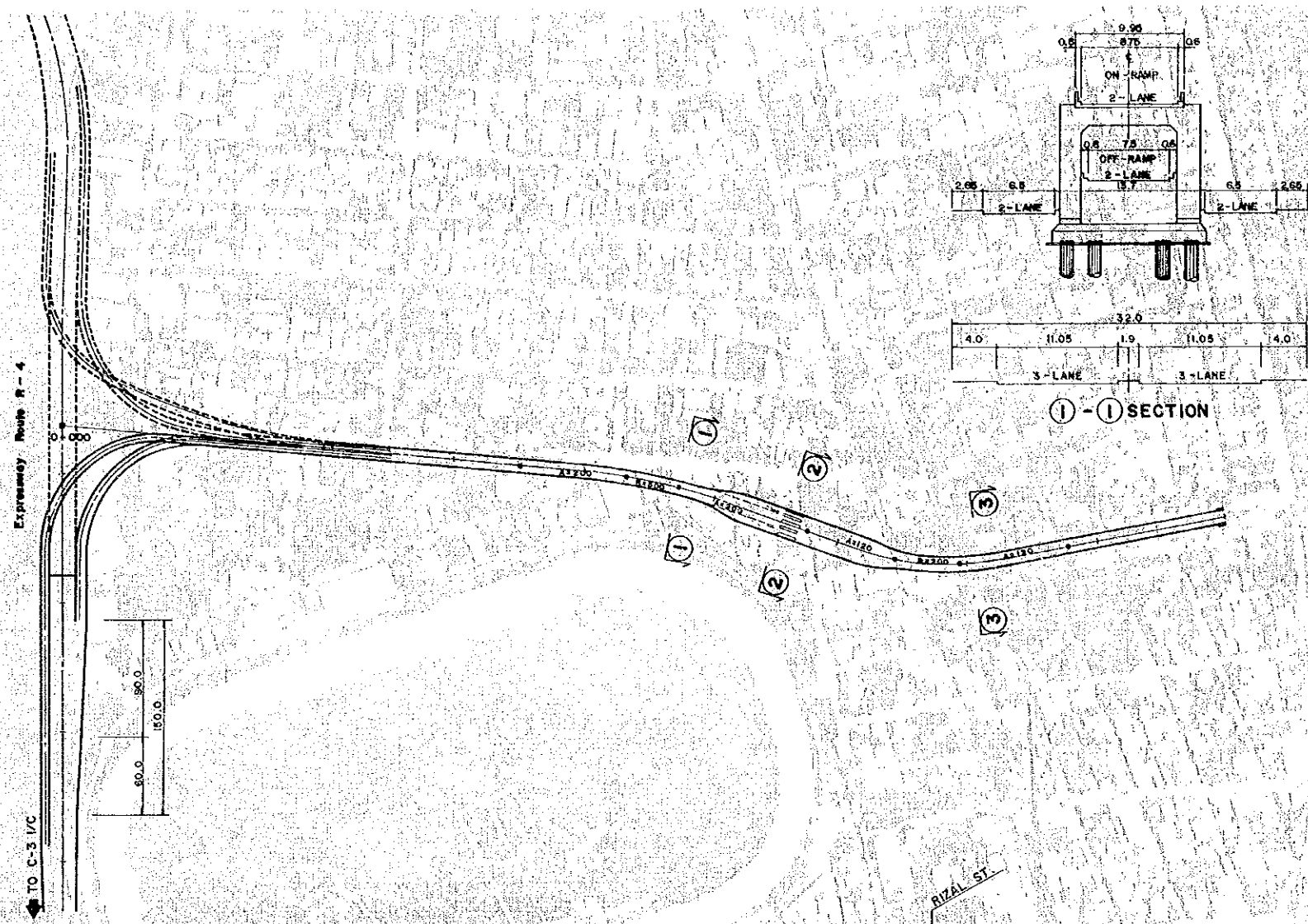
HORIZONTAL : 1 : 2,500
VERTICAL : 1 : 500

DWG. No.

3-5

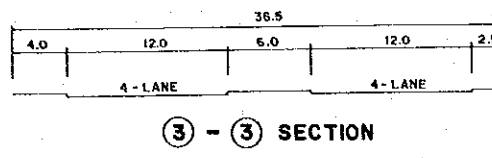
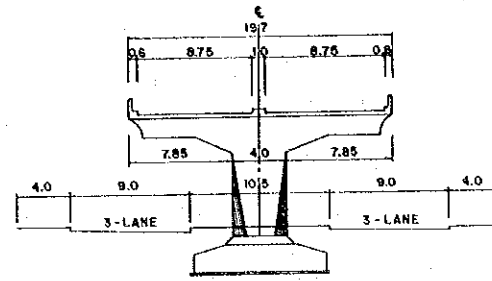
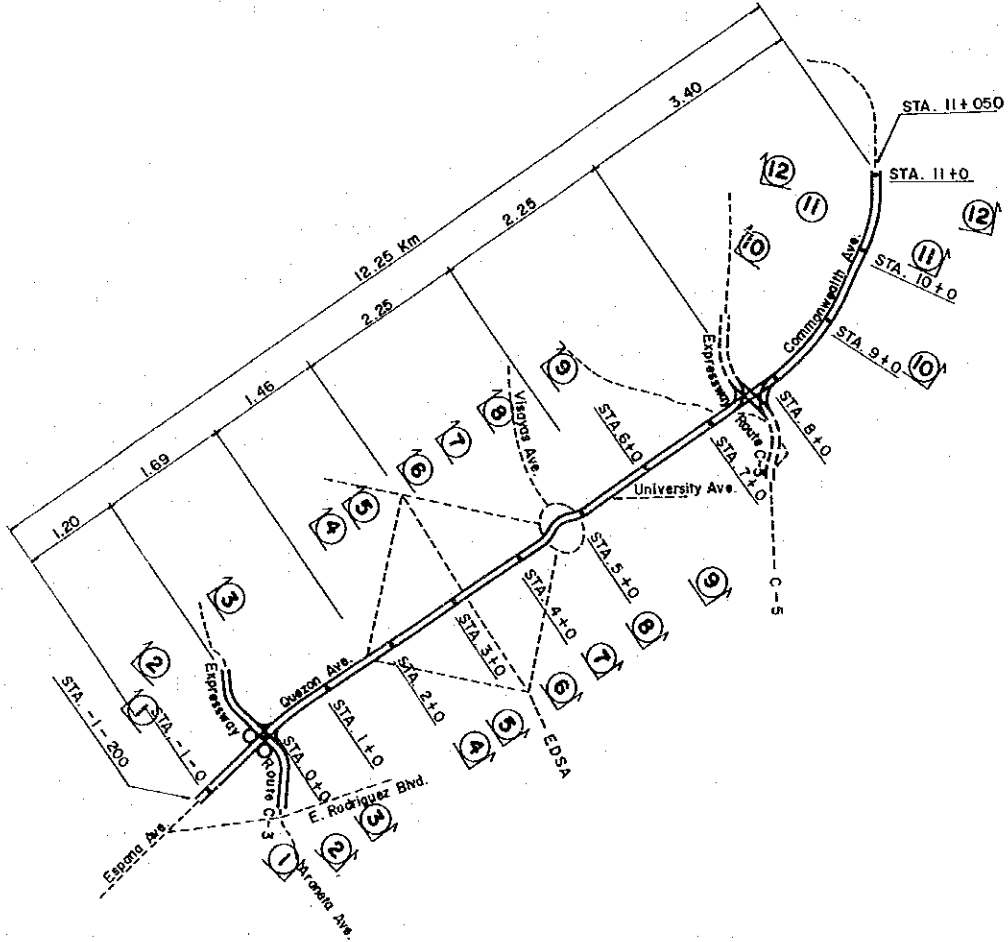


| | | | | | | |
|--|--|--|--|---|------------------|-----------------|
|  KATAHIRA & ENGINEERS INTERNATIONAL |  JAPAN INTERNATIONAL COOPERATION AGENCY |  DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS Republic of the Philippines | FEASIBILITY STUDY ON METRO MANILA URBAN EXPRESSWAY SYSTEM | R - 4 / MAKATI ACCESS RAMP INTERCHANGE | SCALE | DWG. No. |
| | | | | | 1 : 1,250 | 3 - 6 |

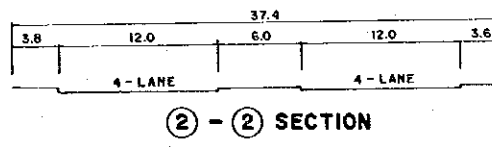
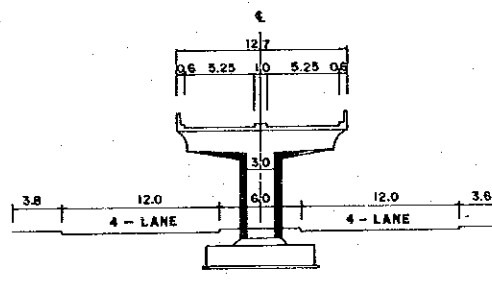


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|--|--|--|--|--|--|------------|
| KATAHIRA & ENGINEERS INTERNATIONAL | JAPAN INTERNATIONAL COOPERATION AGENCY | DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS Republic of the Philippines | FEASIBILITY STUDY ON METRO MANILA URBAN EXPRESSWAY SYSTEM | PLAN AND PROFILE ROUTE NAME STA. 0+000 - STA. 0+900 MAKATI ACCESS RAMP | SCALE | DWG. No. |
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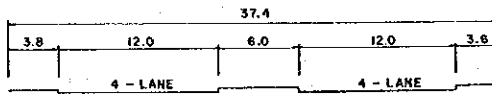
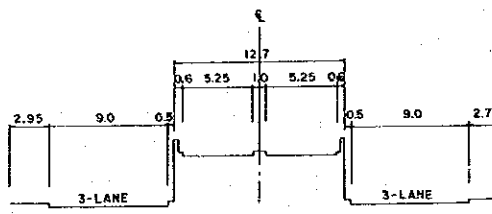
VICINITY MAP
SCALE 50,000



③ - ③ SECTION

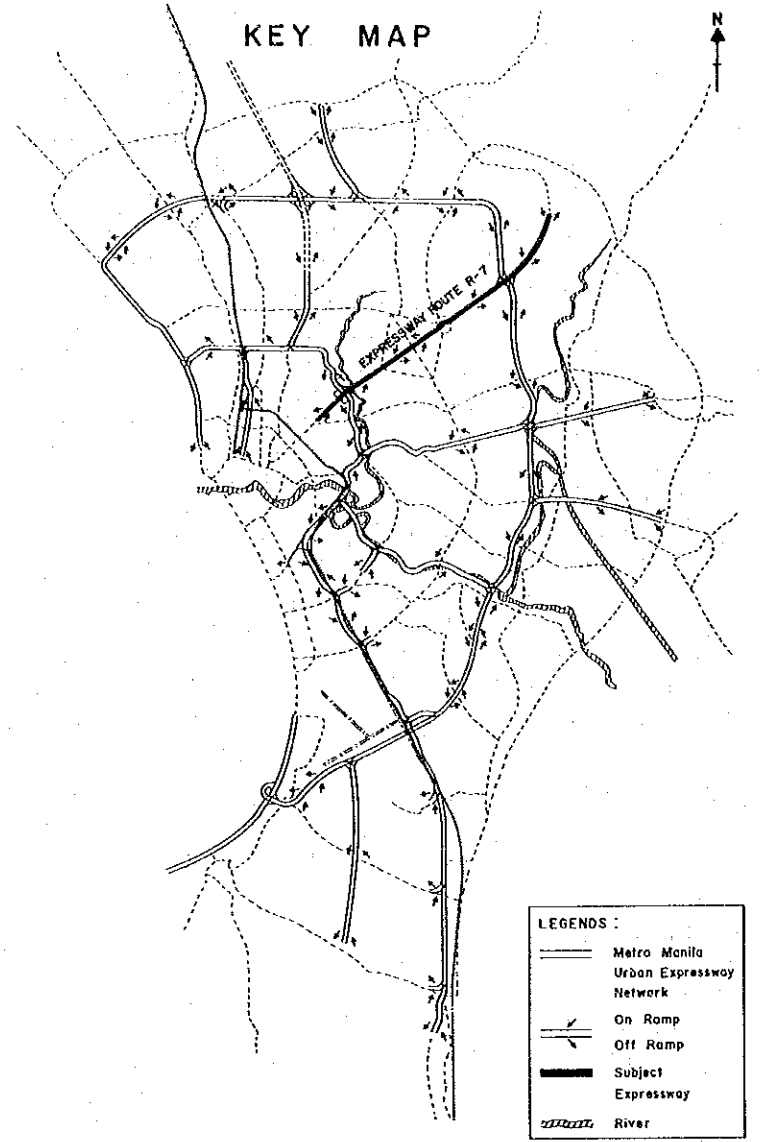


② - ② SECTION

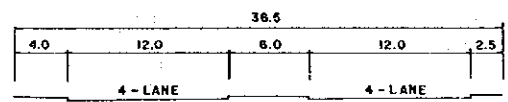
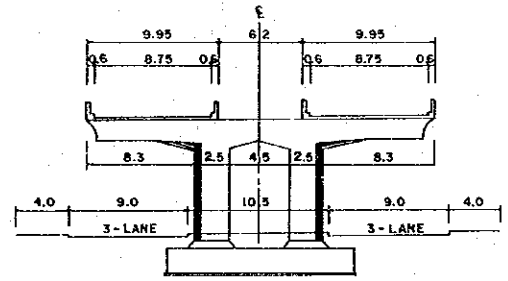


① - ① SECTION

KEY MAP



LEGENDS:
 Metro Manila Urban Expressway Network
 On Ramp
 Off Ramp
 Subject Expressway
 River



④ - ④ SECTION

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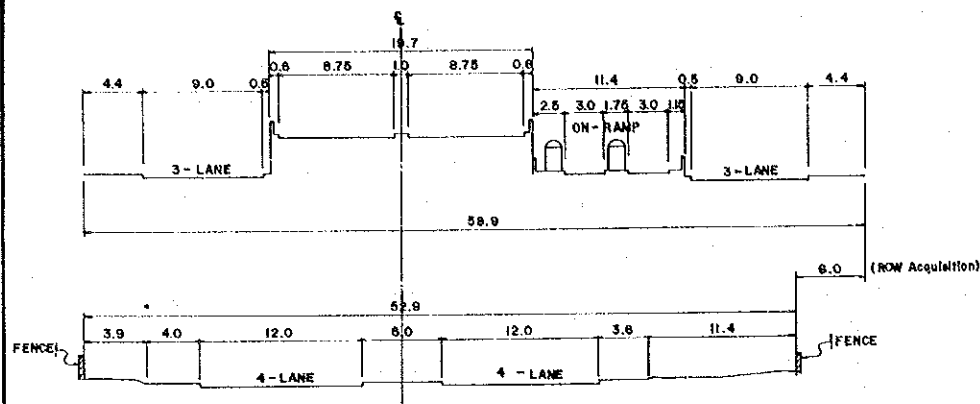
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Republic of the Philippines

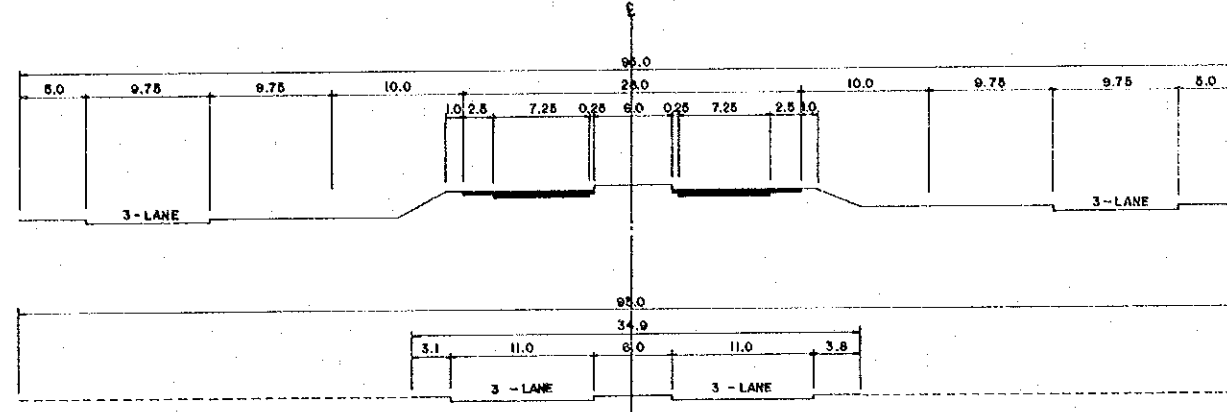
FEASIBILITY STUDY ON METRO MANILA
URBAN EXPRESSWAY SYSTEM

EXPRESSWAY ROUTE R - 7
TYPICAL CROSS SECTION - I

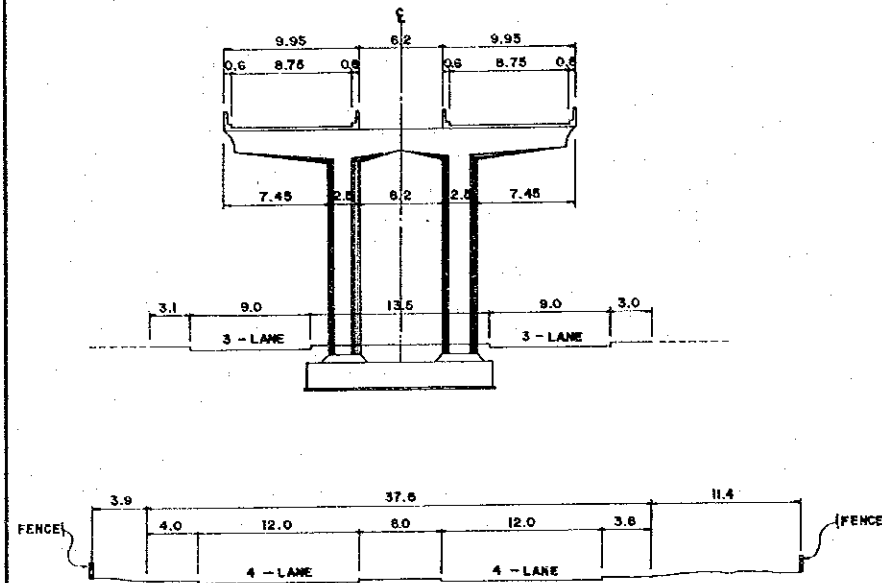
| | |
|---------|----------|
| SCALE | DWG. No. |
| 1 : 300 | 4 - 1 |



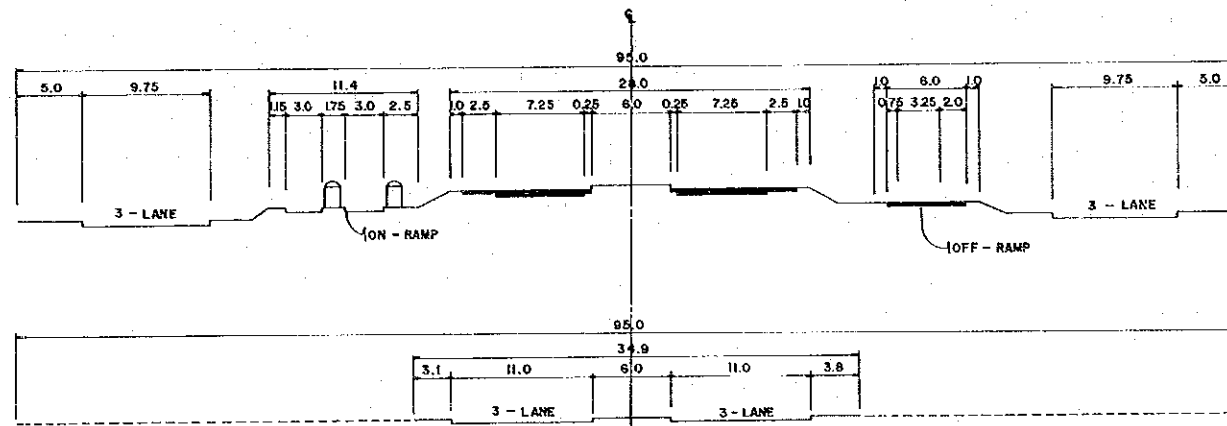
7 - 7 SECTION



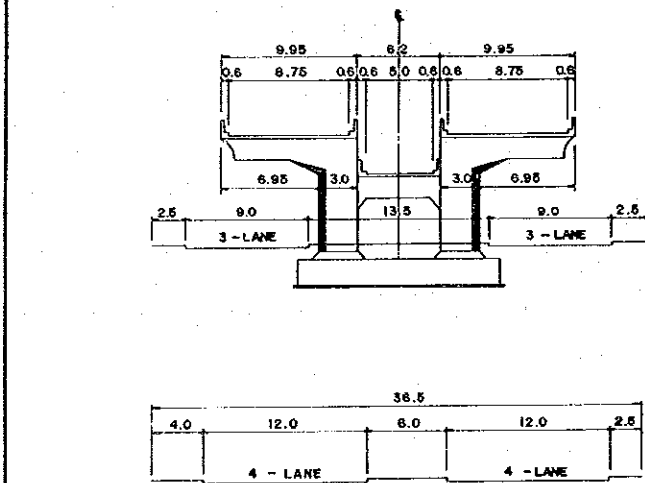
12 - 12 SECTION



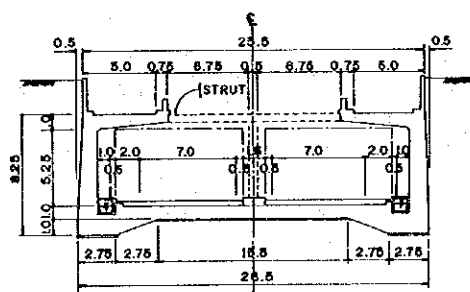
6 - 6 SECTION



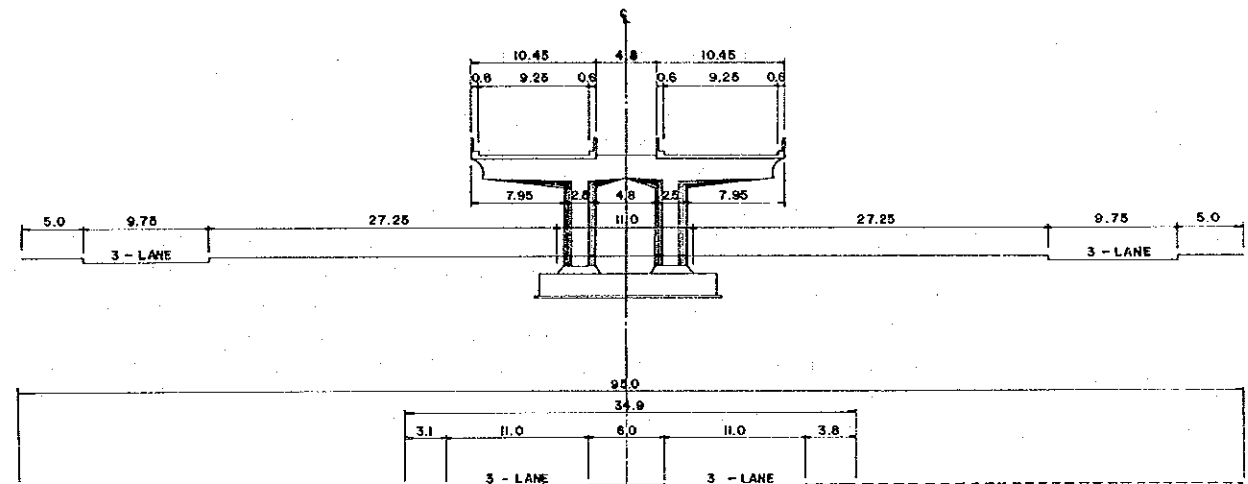
10 - 10 SECTION



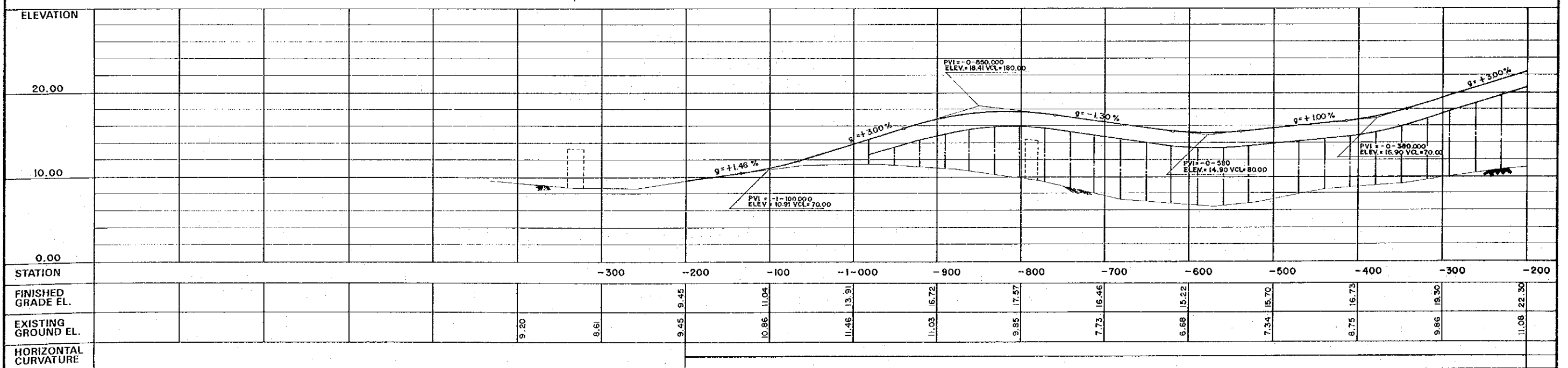
5 - 5 SECTION



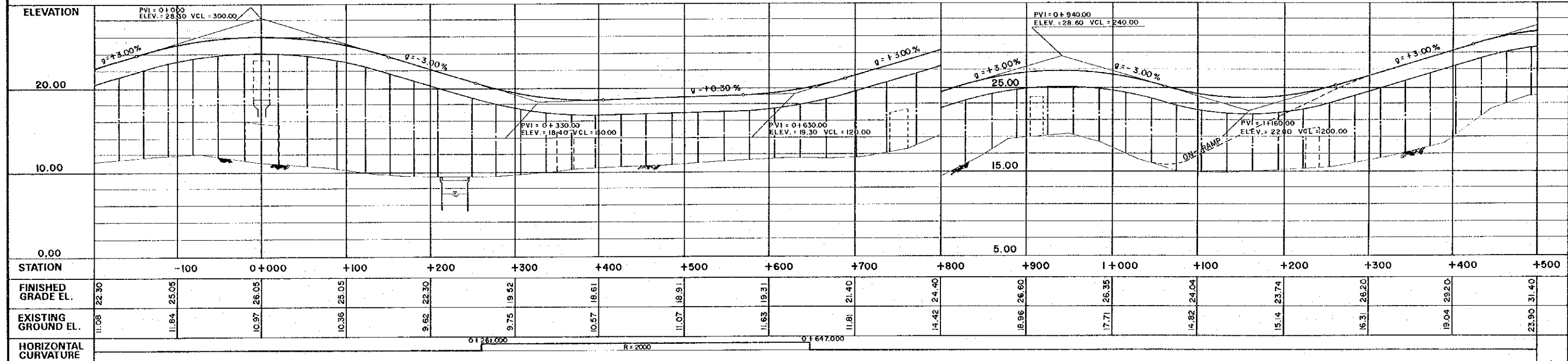
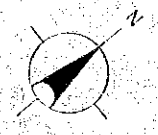
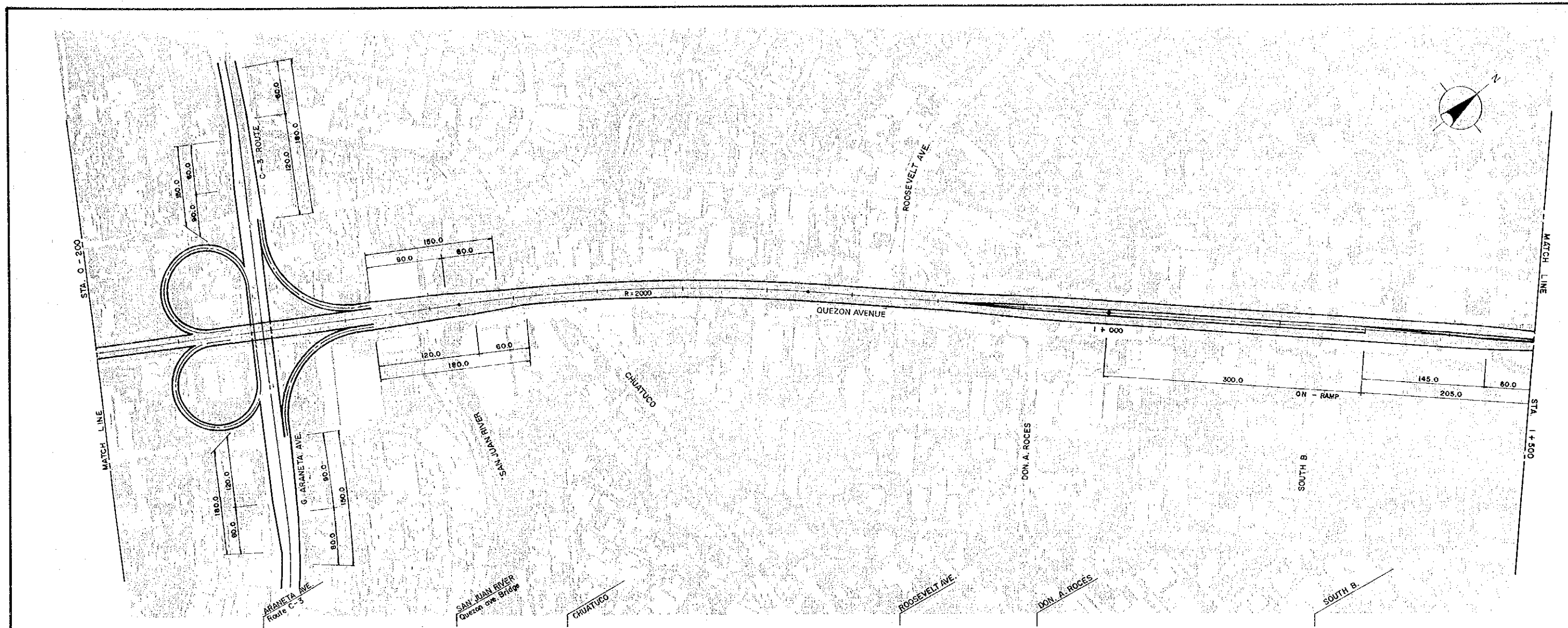
8 - 8 SECTION



9 - 9, 11 - 11 SECTION



| | | | | | | |
|--|--|--|--|---|--|--------------|
| KATAHIRA & ENGINEERS INTERNATIONAL | JAPAN INTERNATIONAL COOPERATION AGENCY | DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS Republic of the Philippines | FEASIBILITY STUDY ON METRO MANILA URBAN EXPRESSWAY SYSTEM | PLAN AND PROFILE ROUTE NAME STA. -1-200 - STA. -0-200 R - 7 | SCALE | DWG. No. |
| | | | | | HORIZONTAL : 1 : 2,500 VERTICAL : 1 : 250 | 4 - 3 |



| STATION | -100 | 0+000 | +100 | +200 | +300 | +400 | +500 | +600 | +700 | +800 | +900 | 1+000 | +100 | +200 | +300 | +400 | +500 | |
|----------------------|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| FINISHED GRADE EL. | 22.30 | 25.05 | 26.05 | 25.05 | 22.30 | 19.52 | 18.61 | 18.91 | 19.31 | 21.40 | 24.40 | 26.60 | 26.35 | 24.04 | 23.74 | 26.20 | 29.20 | 31.40 |
| EXISTING GROUND EL. | 11.08 | 11.84 | 10.97 | 10.36 | 9.62 | 9.75 | 10.57 | 11.07 | 11.63 | 11.81 | 14.42 | 18.98 | 17.71 | 14.82 | 15.14 | 16.31 | 19.04 | 23.90 |
| HORIZONTAL CURVATURE | <div style="display: flex; justify-content: space-between;"> 0+261.000 R=2000 0+647.000 </div> | | | | | | | | | | | | | | | | | |

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COOPERATION AGENCY

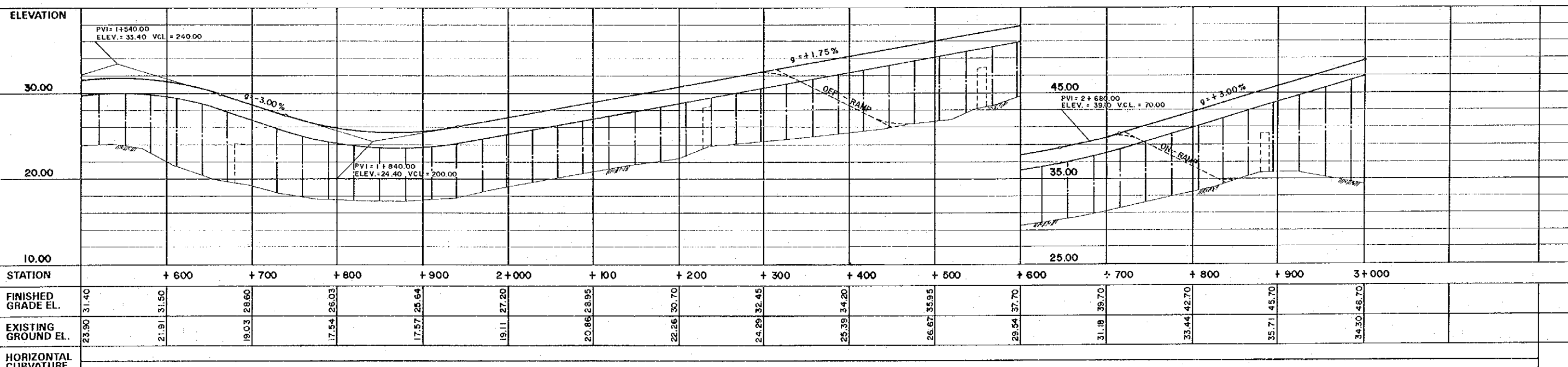
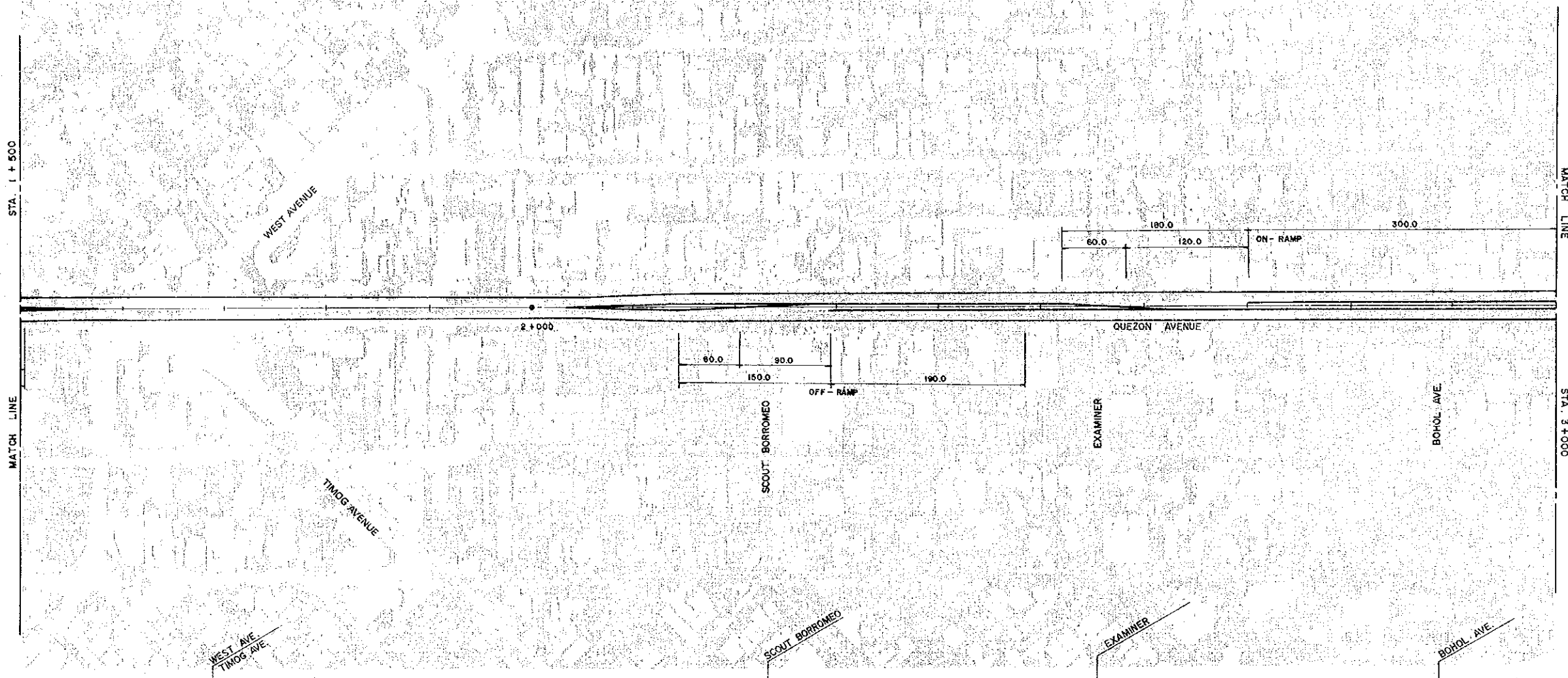
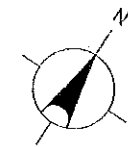
DEPARTMENT OF PUBLIC
WORKS AND HIGHWAYS
Republic of the Philippines

**FEASIBILITY STUDY ON METRO MANILA
URBAN EXPRESSWAY SYSTEM**

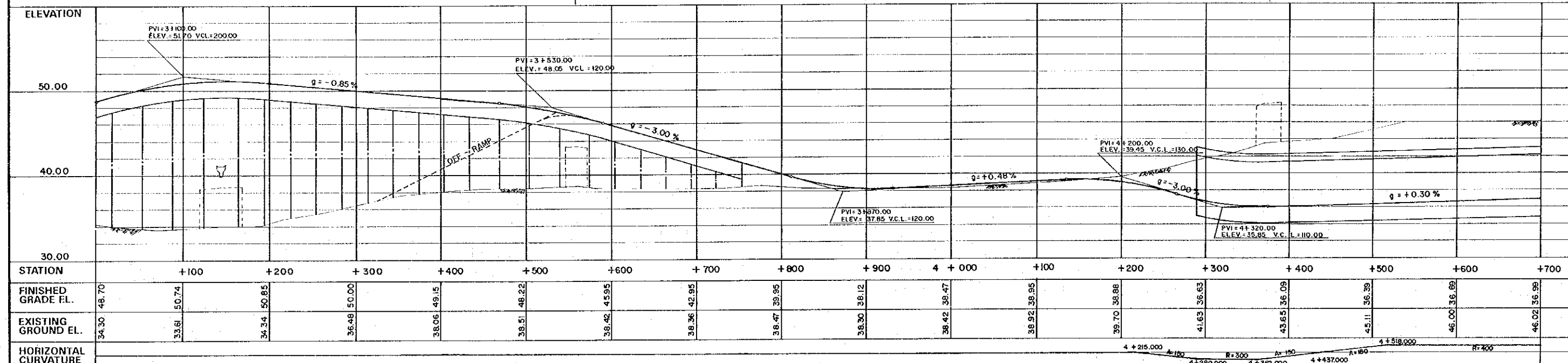
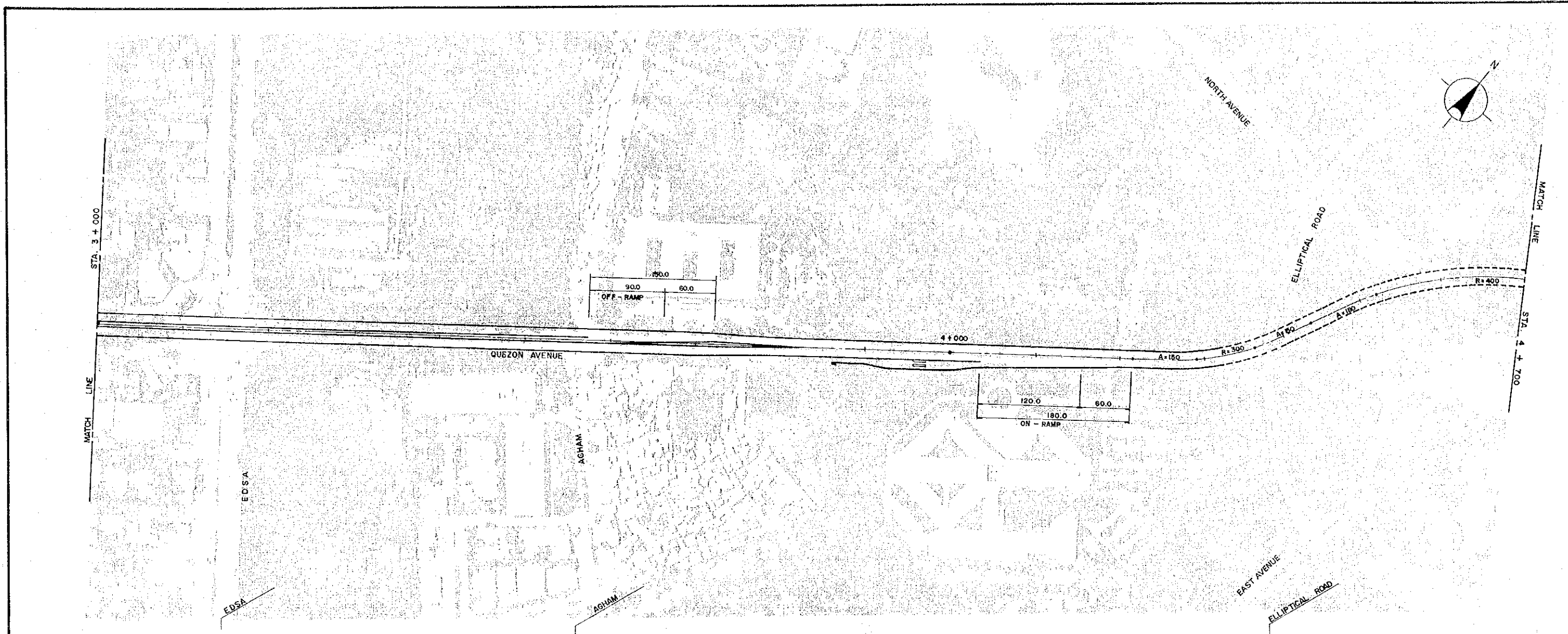
PLAN AND PROFILE
ROUTE NAME STA. -0-200 - STA. 1+500
R - 7

SCALE
HORIZONTAL : 1 : 2,500
VERTICAL : 1 : 250

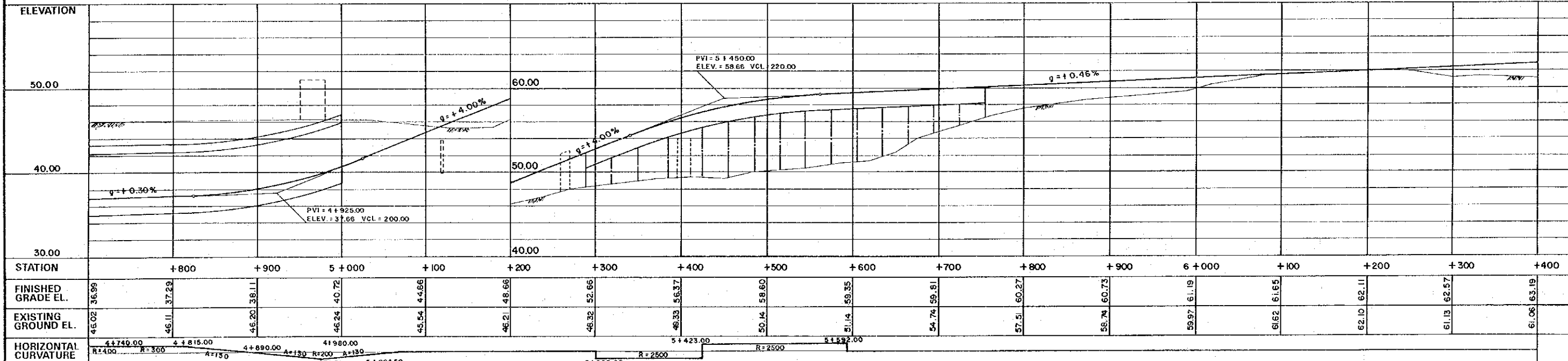
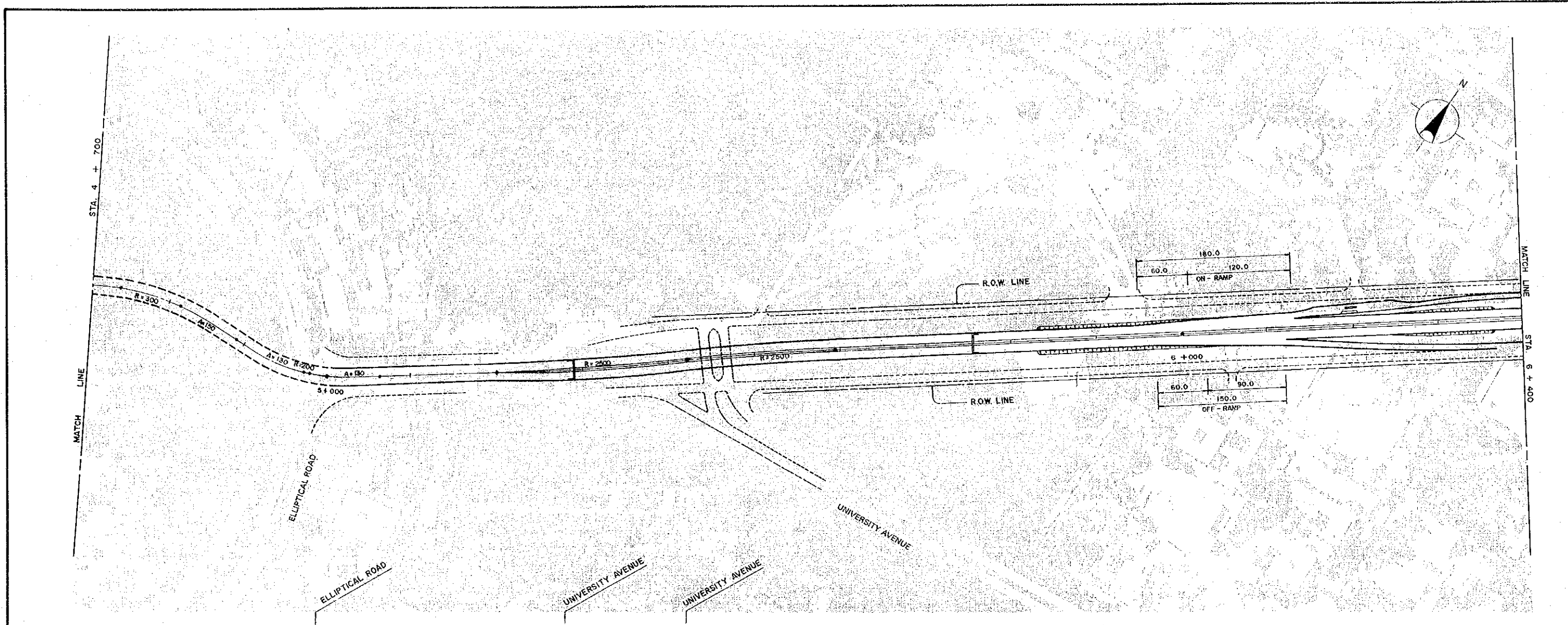
DWG. No.
4 - 4



| | | | | | | |
|--|--|--|--|--|--|--------------|
| KATAHIRA & ENGINEERS INTERNATIONAL | JAPAN INTERNATIONAL COOPERATION AGENCY | DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS Republic of the Philippines | FEASIBILITY STUDY ON METRO MANILA URBAN EXPRESSWAY SYSTEM | PLAN AND PROFILE ROUTE NAME STA. 1+500 - STA. 3+000 R - 7 | SCALE | DWG. No. |
| | | | | | HORIZONTAL : 1 : 2,500 VERTICAL : 1 : 250 | 4 - 5 |



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|--|--|--|--|---|--|--------------|
| KATAHIRA & ENGINEERS INTERNATIONAL | JAPAN INTERNATIONAL COOPERATION AGENCY | DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS Republic of the Philippines | FEASIBILITY STUDY ON METRO MANILA URBAN EXPRESSWAY SYSTEM | PLAN AND PROFILE ROUTE NAME STA. 3 + 000 -- STA. 4 + 700 R - 7 | SCALE | DWG. No. |
| | | | | | HORIZONTAL : 1 : 2,500 VERTICAL : 1 : 250 | 4 - 6 |



| ELEVATION | | | | | | | | | | | | | | | | | | |
|----------------------|--|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50.00 | | | | | | | | | | | | | | | | | | |
| 40.00 | | | | | | | | | | | | | | | | | | |
| 30.00 | | | | | | | | | | | | | | | | | | |
| STATION | +800 | +900 | 5+000 | +100 | +200 | +300 | +400 | +500 | +600 | +700 | +800 | +900 | 6+000 | +100 | +200 | +300 | +400 | |
| FINISHED GRADE EL. | 36.99 | 37.29 | 38.11 | 40.72 | 44.66 | 48.66 | 52.66 | 56.37 | 58.60 | 59.35 | 59.81 | 60.27 | 60.73 | 61.19 | 61.65 | 62.11 | 62.57 | 63.19 |
| EXISTING GROUND EL. | 45.02 | 46.11 | 46.20 | 46.24 | 45.54 | 46.21 | 46.32 | 46.33 | 50.14 | 51.14 | 54.74 | 57.51 | 58.74 | 59.97 | 61.62 | 62.10 | 61.13 | 61.06 |
| HORIZONTAL CURVATURE | $R=400$ $R=300$ $A=150$ $R=200$ $A=130$ $R=2500$ $R=2500$ $R=2500$ | | | | | | | | | | | | | | | | | |

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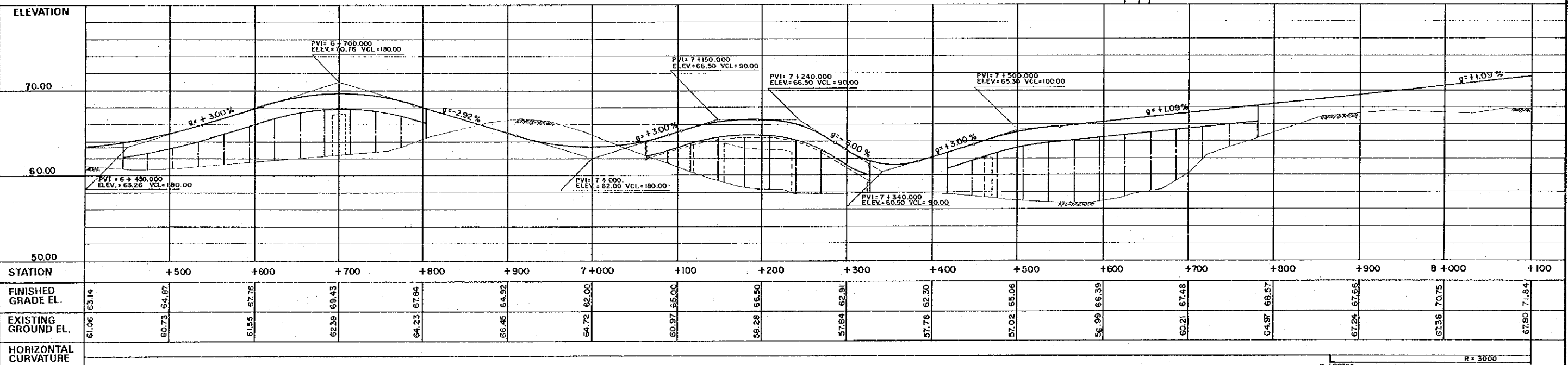
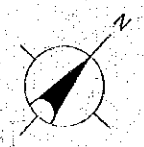
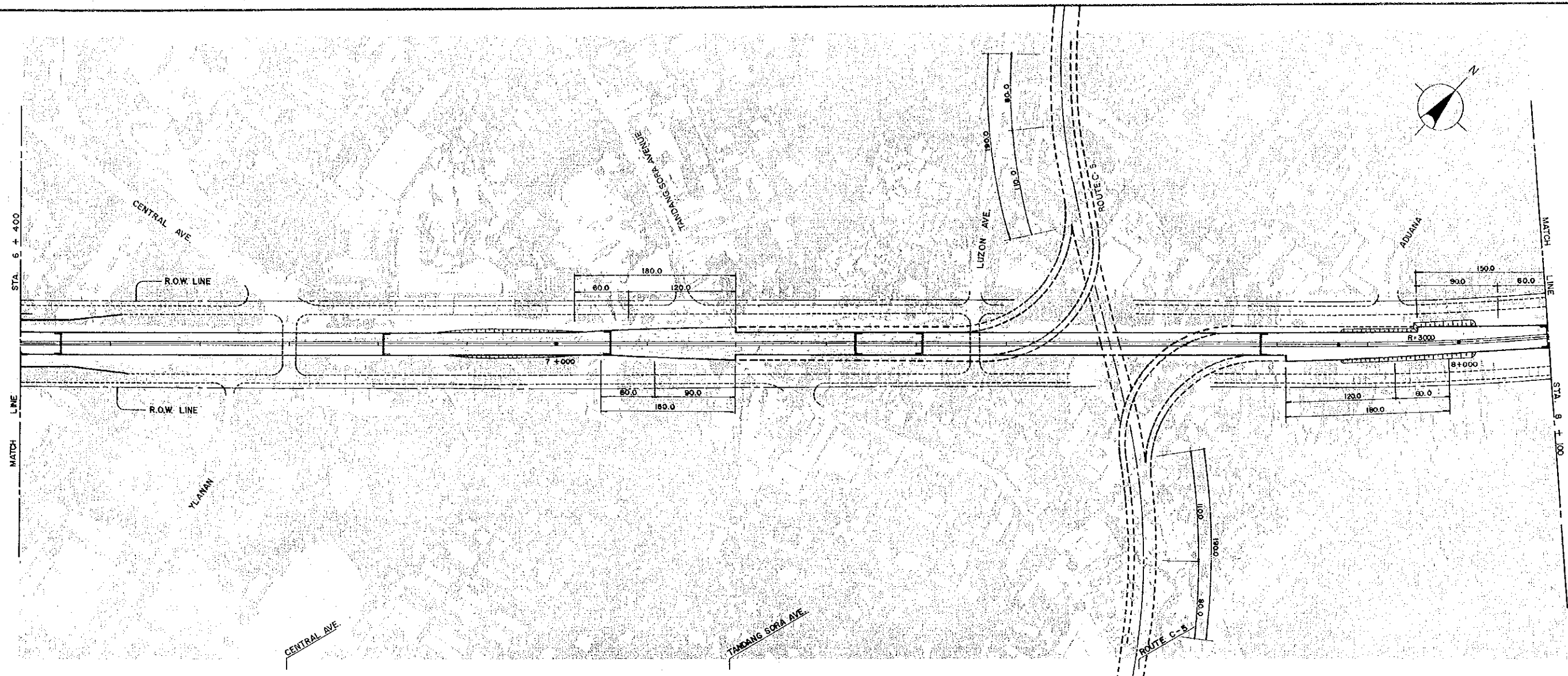
DEPARTMENT OF PUBLIC
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Republic of the Philippines

**FEASIBILITY STUDY ON METRO MANILA
URBAN EXPRESSWAY SYSTEM**

PLAN AND PROFILE
ROUTE NAME STA. 4+700 - STA. 6+400
R-7

SCALE
HORIZONTAL : 1 : 2,500
VERTICAL : 1 : 250

DWG. No.
4-7



| | | | | | | |
|--|--|--|--|--|---|------------------------|
| KATAHIRA & ENGINEERS INTERNATIONAL | JAPAN INTERNATIONAL COOPERATION AGENCY | DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS Republic of the Philippines | FEASIBILITY STUDY ON METRO MANILA URBAN EXPRESSWAY SYSTEM | PLAN AND PROFILE ROUTE NAME STA. 6+400 - STA. 8+100 R-7 | SCALE HORIZONTAL : 1 : 2,500 VERTICAL : 1 : 250 | DWG. No. 4-8 |
| | | | | | 7+957.00 R=3000 | |