

SECRETARIA DEL METRO DE PANAMA



JAPAN INTERNATIONAL COOPERATION AGENCY

THE FEASIBILITY STUDY ON PANAMA CITY URBAN TRANSPORTATION LINE-3 PROJECT

DRAWN:
DESIGNED:

DATE: August 2014
SCALE(A3): Plan 1:5,000
Profile 1:5,000(X) and 1:1,000(Y)

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TEAM LEADER/URBAN RAILWAY PLANNING

SUBMITTED BY:
CIVIL AND FACILITY PLANNING

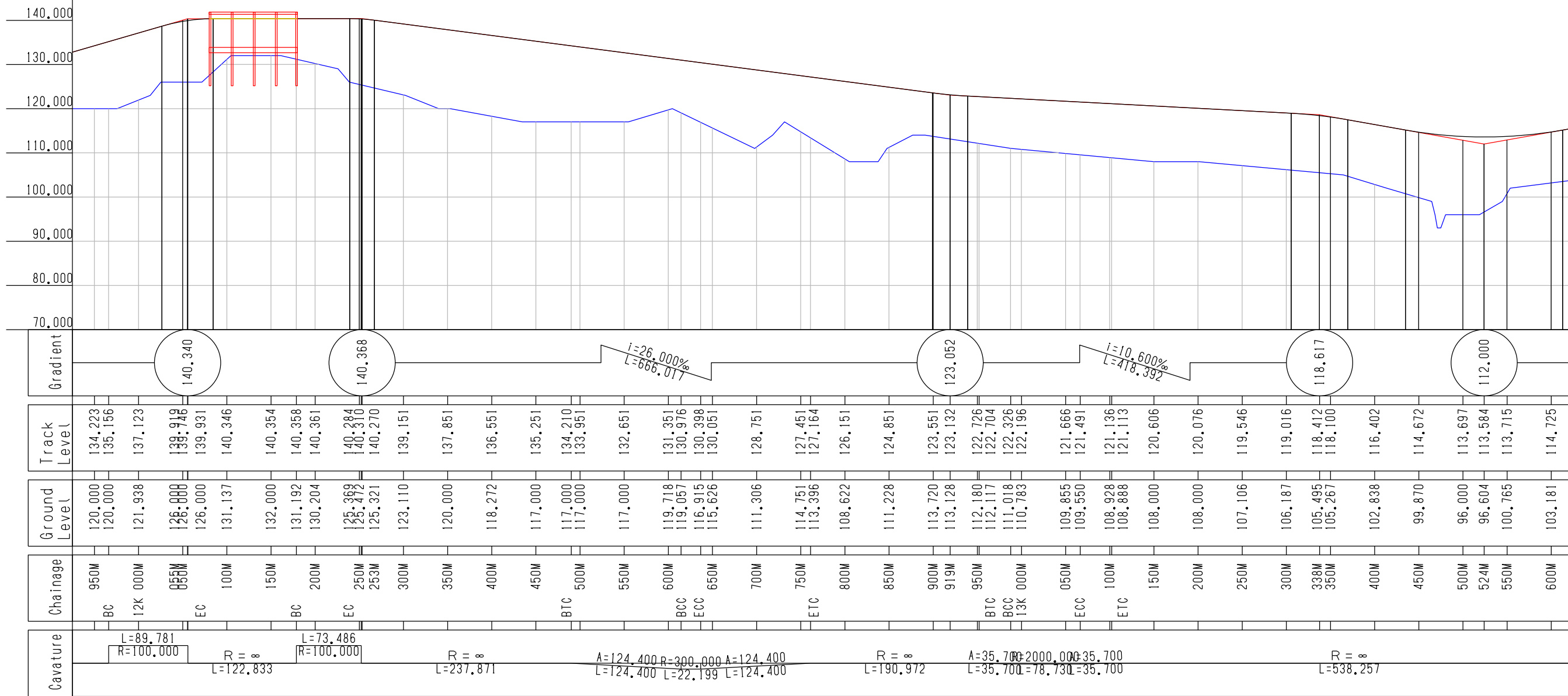
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PAGE: 8

REMARKS:
Alignment Plan(FR)
(10K500M000 ~ 12K000M000)



Est. Loma Coba



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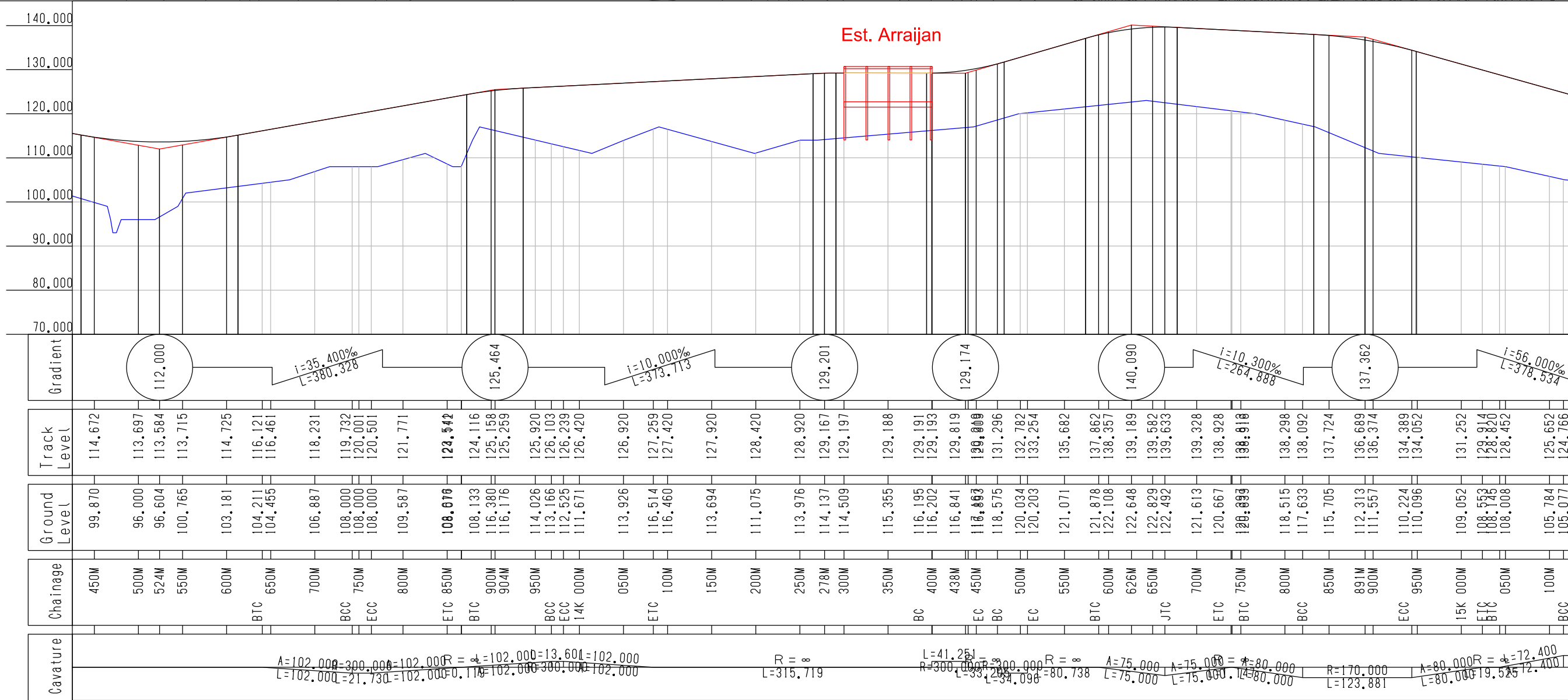
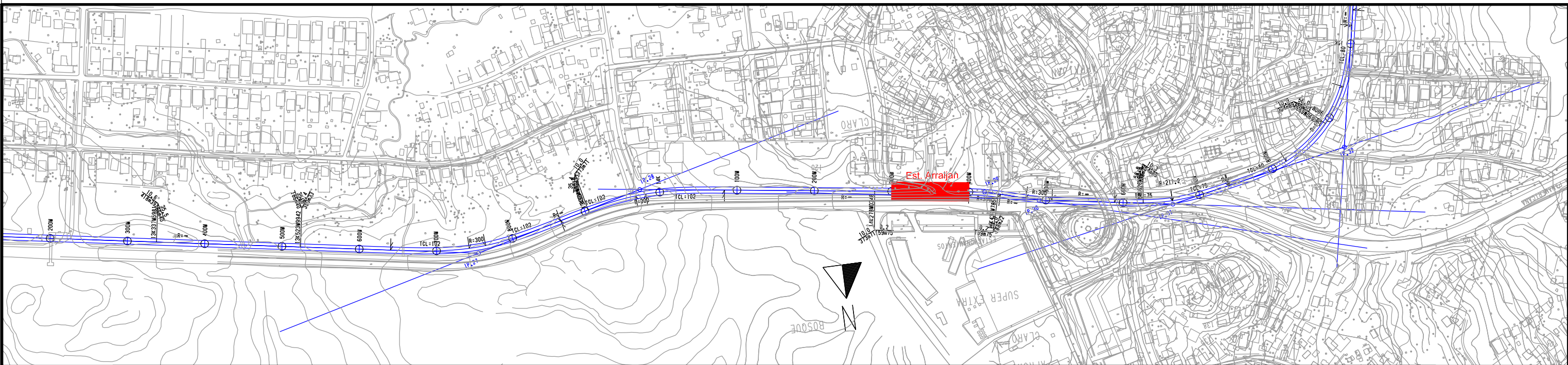
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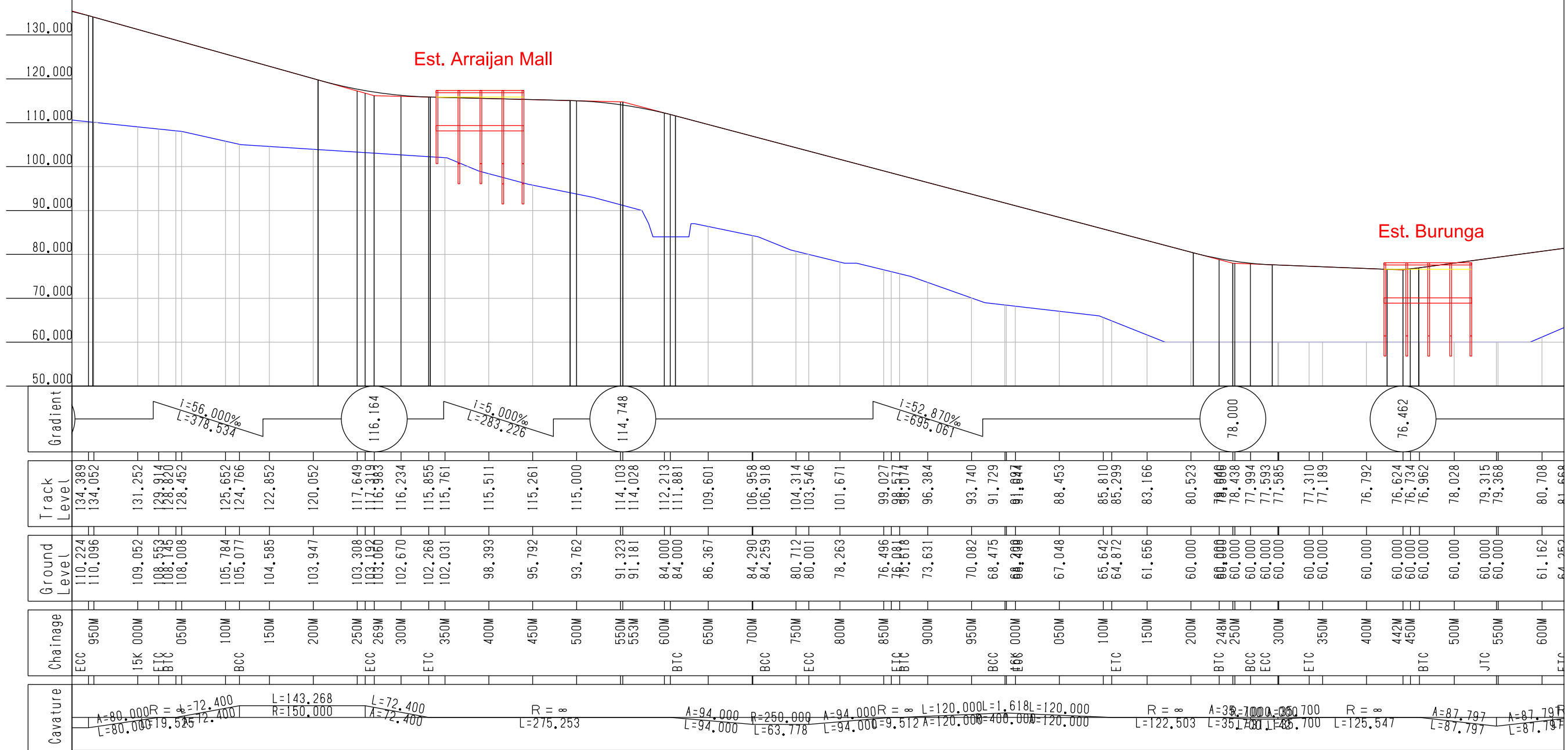
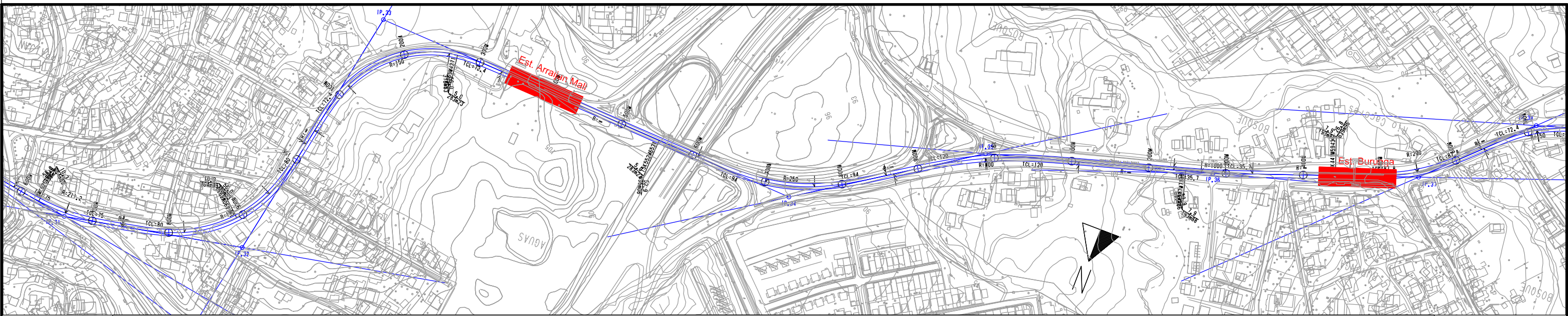
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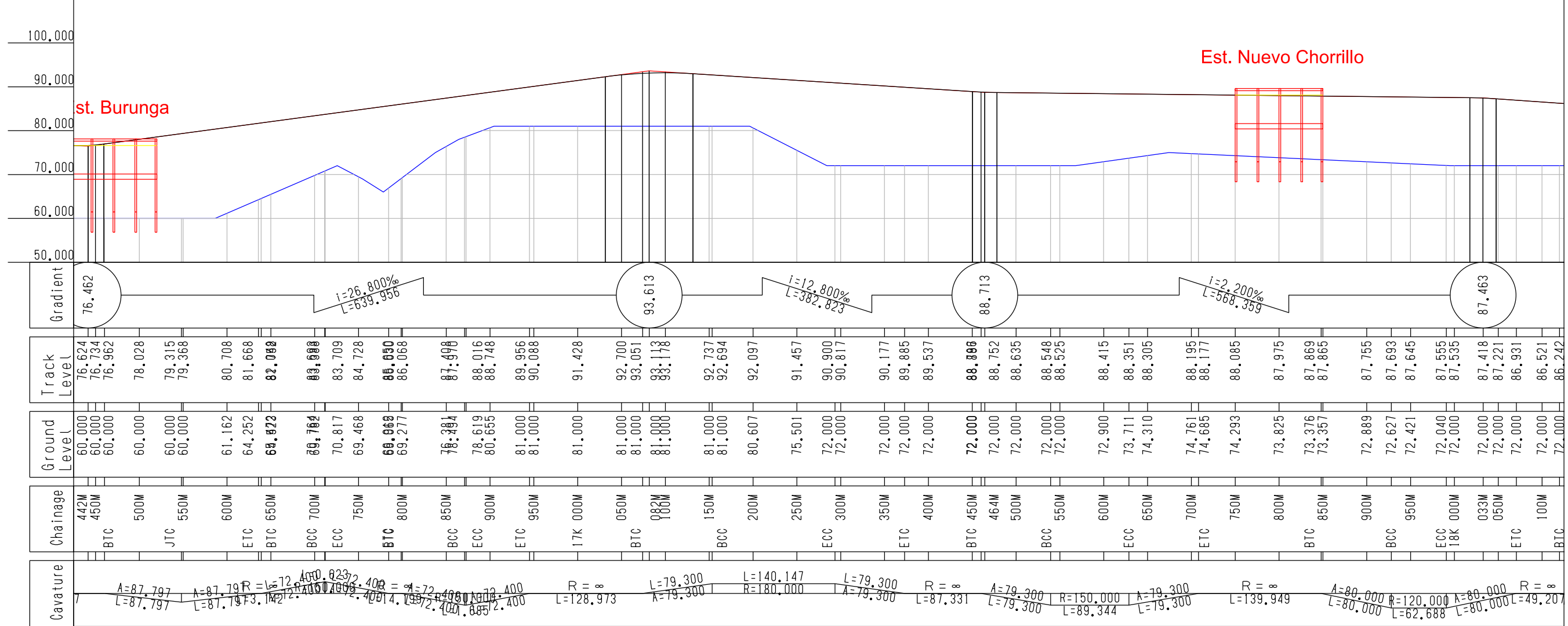
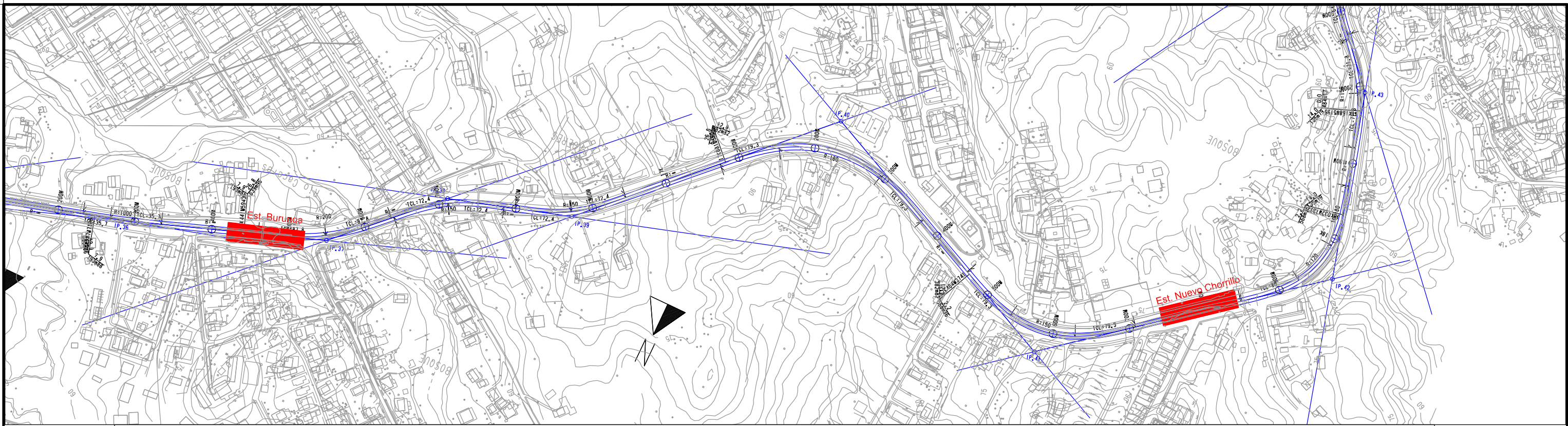
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PAGE: 9
18

REMARKS:
Alignment Plan(FR)
(12K000M000 ~ 13K500M000)







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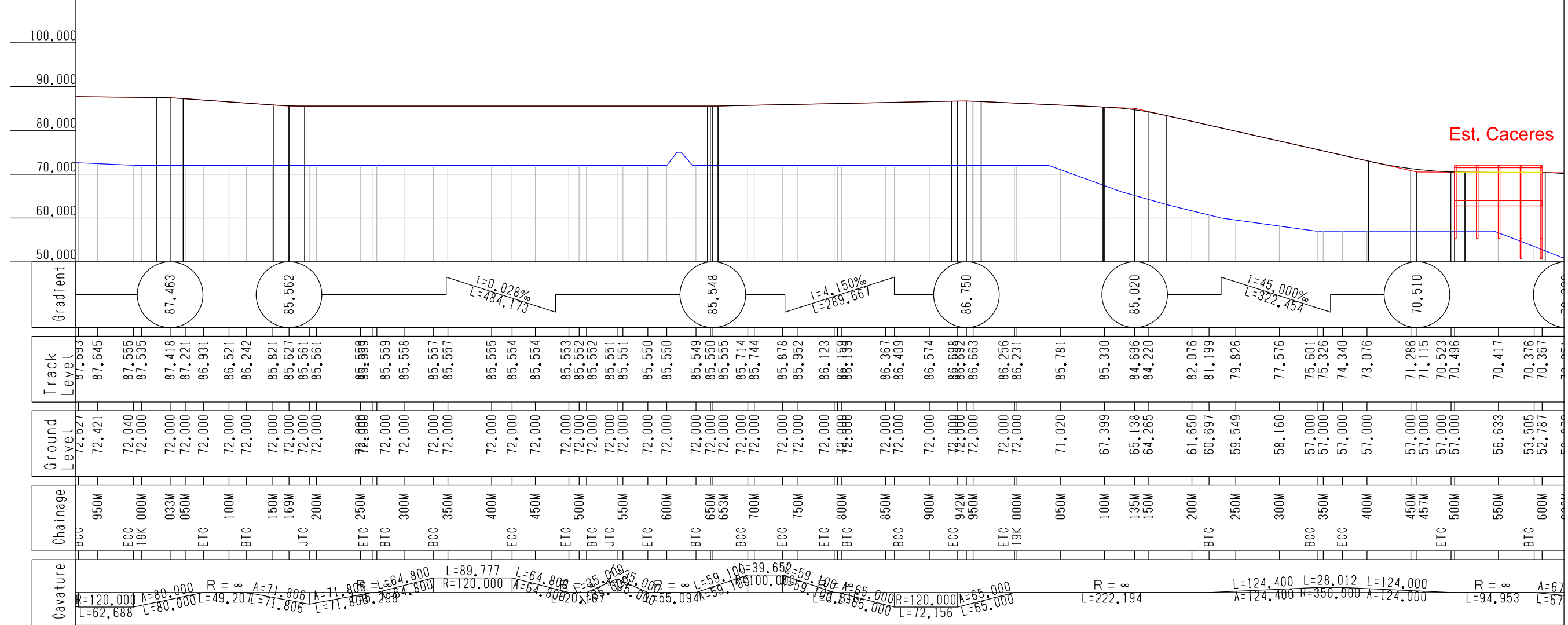
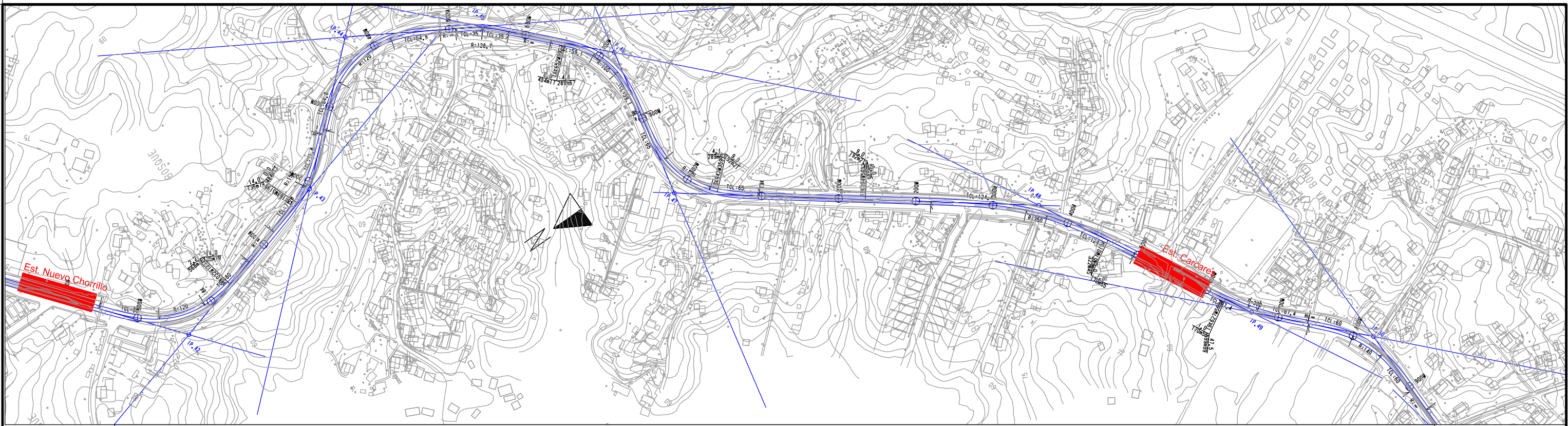
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CIVIL AND FACILITY PLANNING

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PAGE: 12
18

REMARKS:

Alignment Plan(FR)
(16K500M000 ~ 18K000M000)



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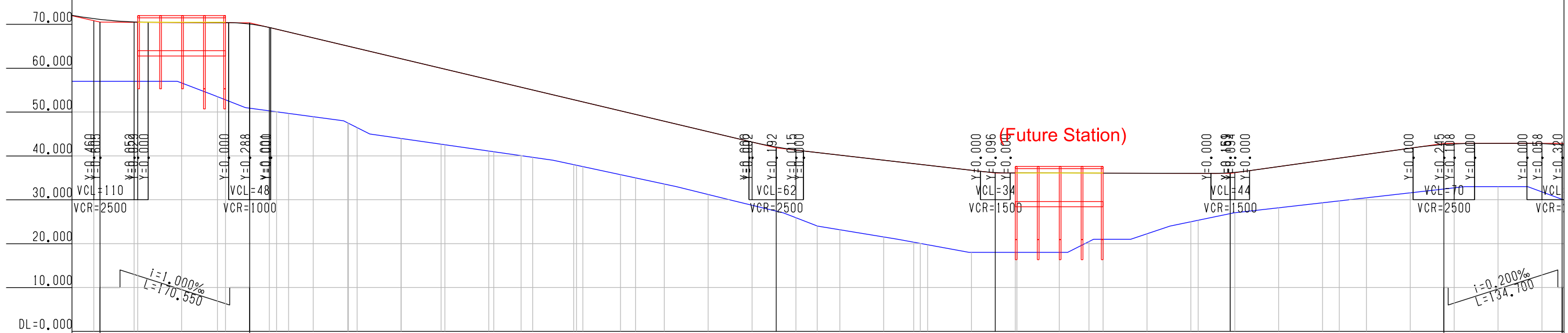
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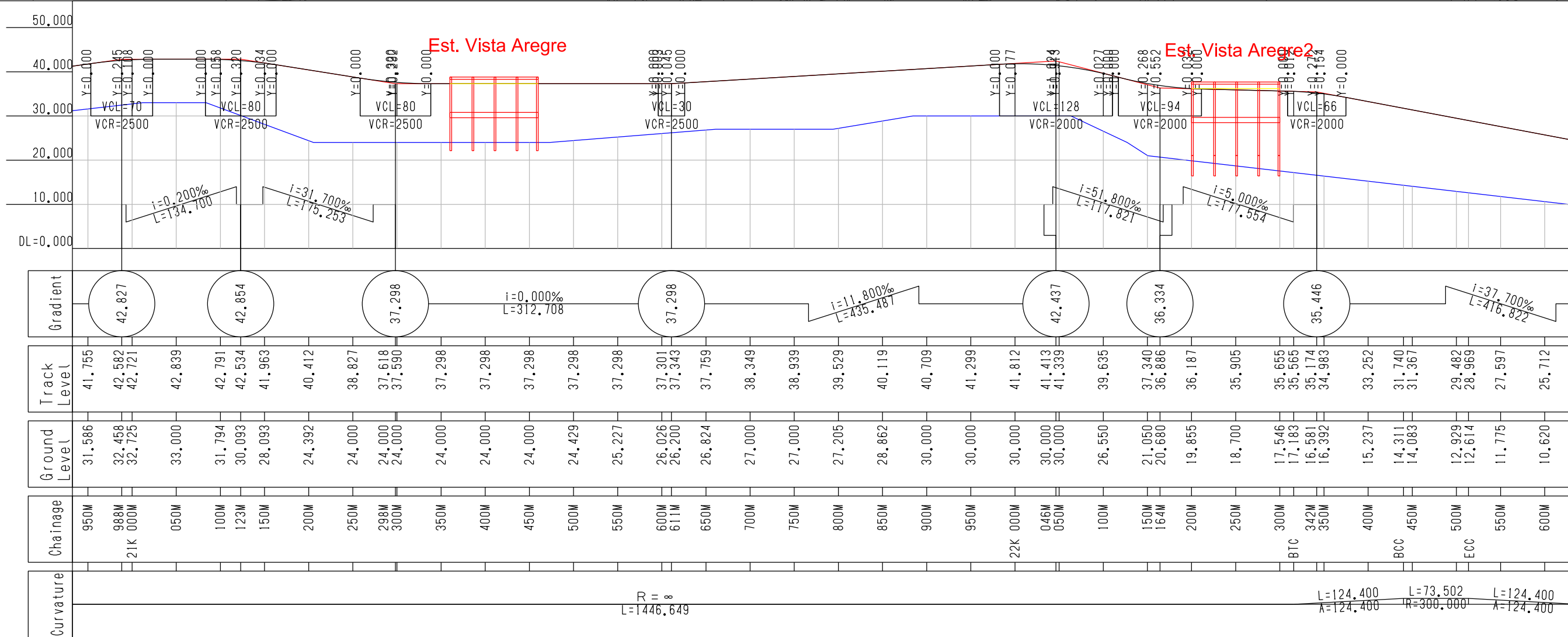
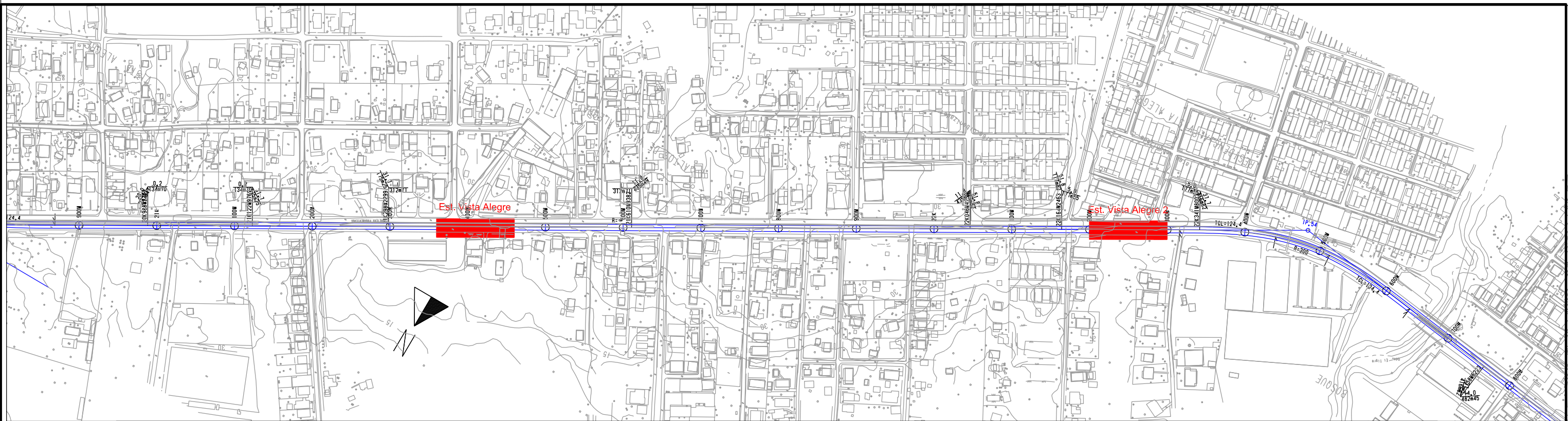
REMARKS:
Alignment Plan(FR)
(18K000M000 ~ 19K500M000)



Est. Carcares



| Curvature | Chainage | Ground Level | Track Level | Gradient |
|-----------|----------|--------------|-------------|----------|
| 24.000 | 450M | 57.000 | 71.286 | 70.510 |
| 24.000 | 457M | 57.000 | 71.115 | |
| | ETC | 57.000 | 70.523 | |
| | | 57.000 | 70.496 | |
| | 550M | 56.633 | 70.417 | |
| | BTC | 53.505 | 70.376 | |
| | | 52.787 | 70.367 | |
| | 628M | 50.870 | 70.051 | |
| | 650M | 50.268 | 69.273 | |
| | BCC | 49.642 | 68.882 | |
| | | 48.927 | 66.899 | |
| | 700M | 47.524 | 65.034 | |
| | ETC | 46.426 | 64.586 | |
| | BTC | 43.978 | 62.149 | |
| | | 43.972 | 62.138 | |
| | 800M | 42.666 | 59.977 | |
| | ECC | 42.543 | 59.774 | |
| | ETC | 41.108 | 57.399 | |
| | BTC | 40.944 | 57.127 | |
| | | 40.051 | 55.651 | |
| | 950M | 39.672 | 55.024 | |
| | BCC | 38.001 | 52.801 | |
| | 20K | 37.864 | 52.649 | |
| | ECC | 37.554 | 52.305 | |
| | ETC | 35.725 | 50.274 | |
| | BTC | 34.988 | 49.455 | |
| | | 33.587 | 47.899 | |
| | 100M | 31.197 | 45.524 | |
| | 150M | 28.740 | 43.151 | |
| | 200M | 27.402 | 42.032 | |
| | 228M | 25.903 | 41.339 | |
| | 250M | 24.030 | 40.767 | |
| | BTC | 23.167 | 40.174 | |
| | 300M | 21.528 | 39.024 | |
| | 350M | 20.332 | 38.237 | |
| | BCC | 19.088 | 38.884 | |
| | ECC | 18.000 | 36.724 | |
| | ETC | 18.000 | 36.196 | |
| | BTC | 18.000 | 36.092 | |
| | | 18.000 | 36.092 | |
| | 500M | 18.000 | 36.075 | |
| | ETC | 20.477 | 36.064 | |
| | BTC | 21.000 | 36.059 | |
| | | 22.245 | 36.042 | |
| | 650M | 24.985 | 36.025 | |
| | 700M | 25.329 | 36.022 | |
| | BCC | 26.834 | 36.169 | |
| | ECC | 27.030 | 36.249 | |
| | 750M | 28.169 | 37.555 | |
| | 800M | 29.308 | 38.955 | |
| | 850M | 29.743 | 39.489 | |
| | ETC | 30.447 | 40.355 | |
| | BTC | 31.586 | 41.755 | |
| | 950M | 32.458 | 42.582 | |
| | 988M | 32.725 | 42.721 | |
| | 000M | 33.000 | 42.839 | |
| | 050M | 31.794 | 42.791 | |
| | 100M | 30.092 | 42.534 | |



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Plan 1:5,000
Profile 1:5,000(X) and 1:1,000(Y)

TEAM LEADER/URBAN RAILWAY PLANNING

CIVIL AND FACILITY PLANNING

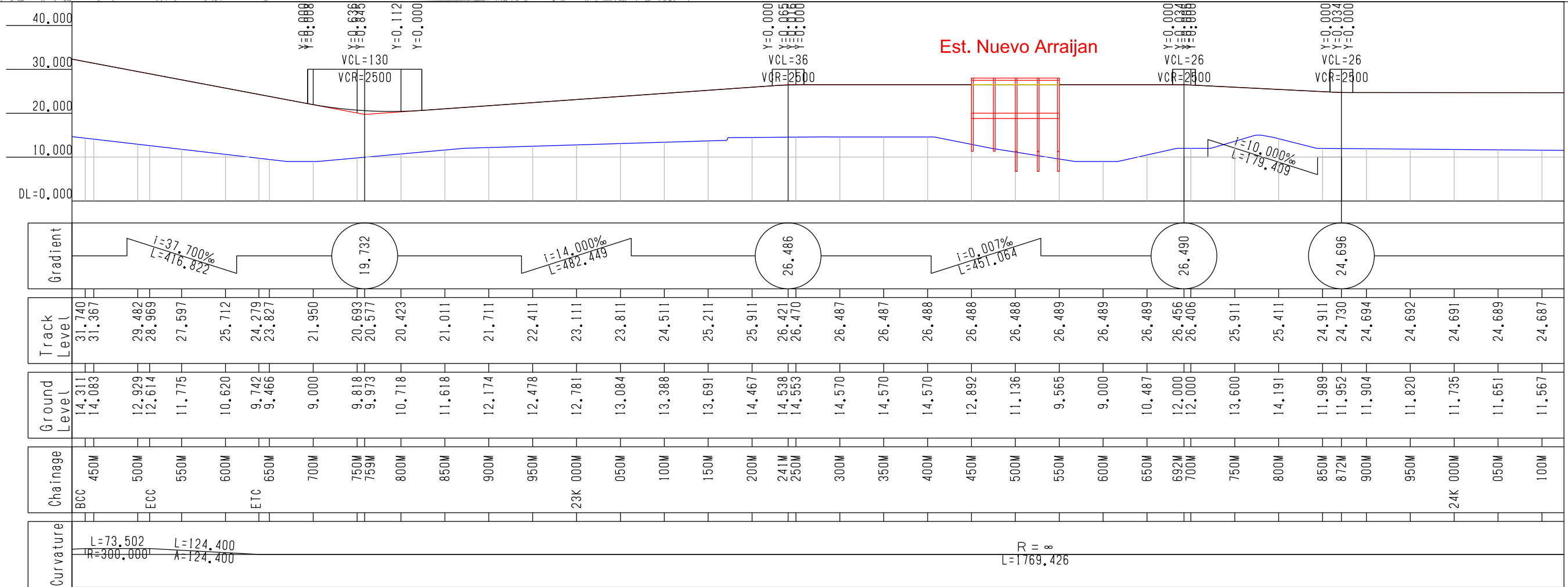
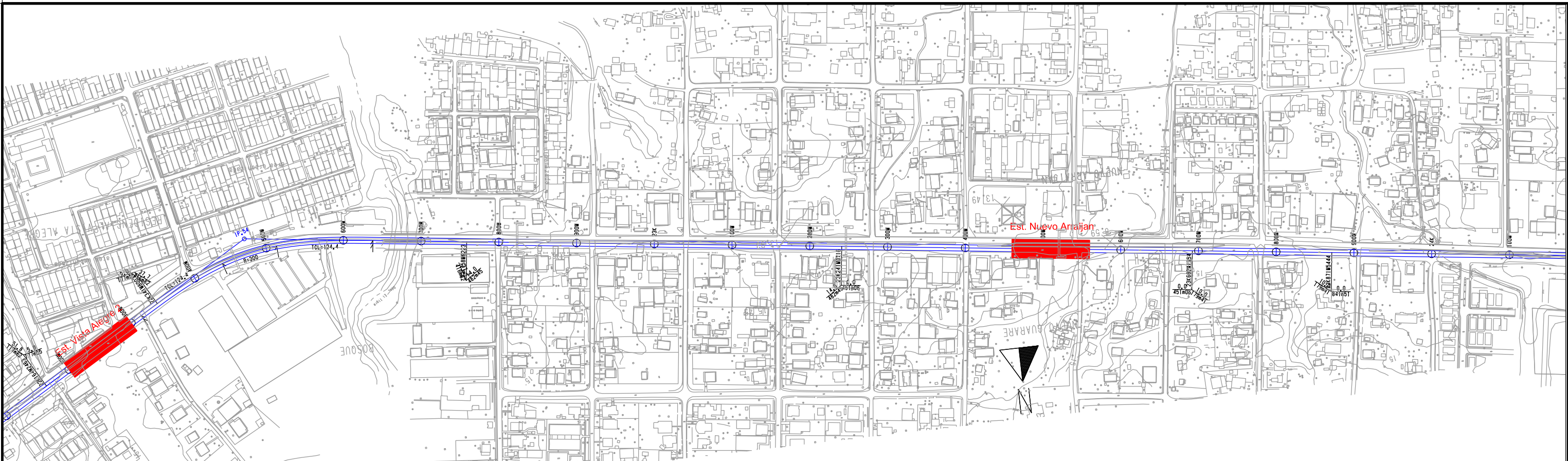
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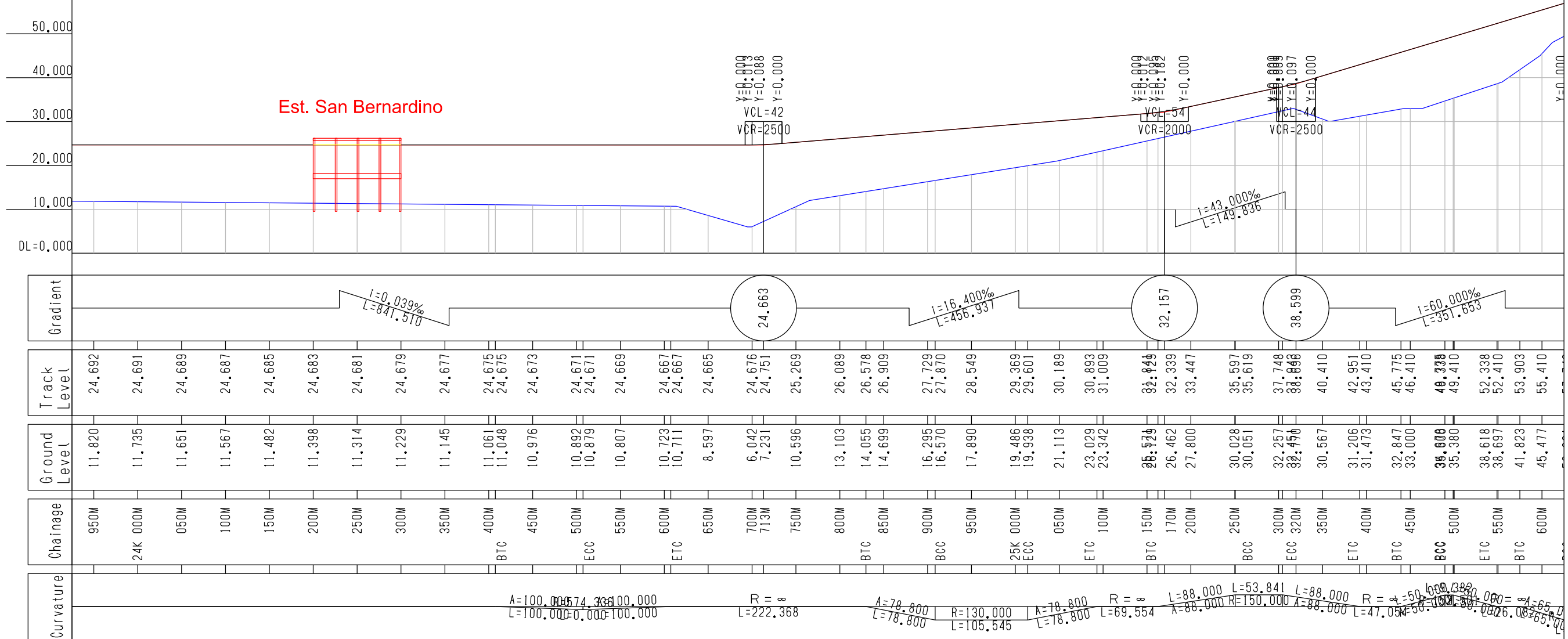
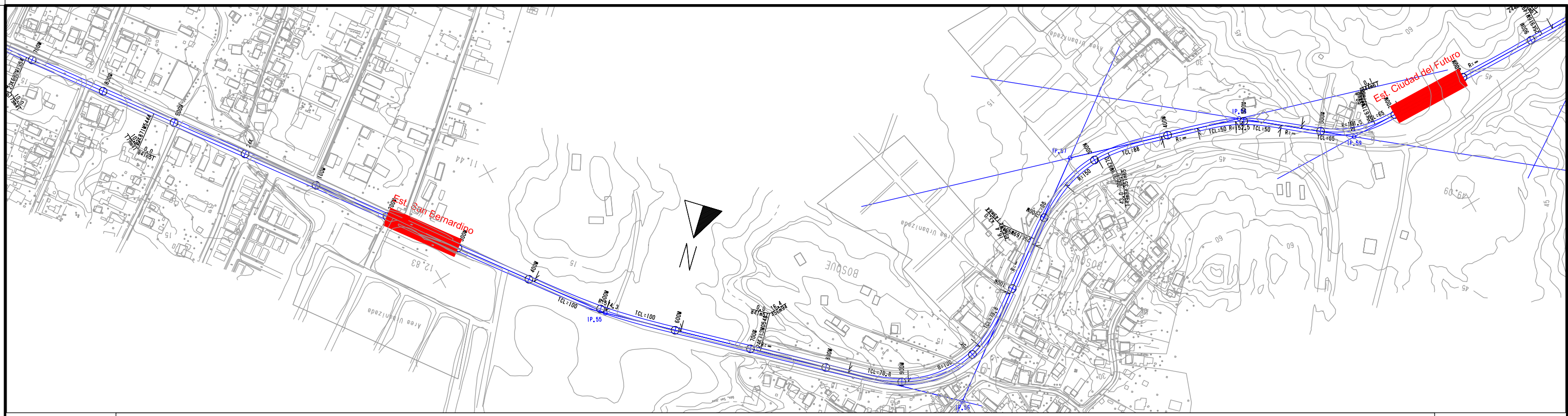
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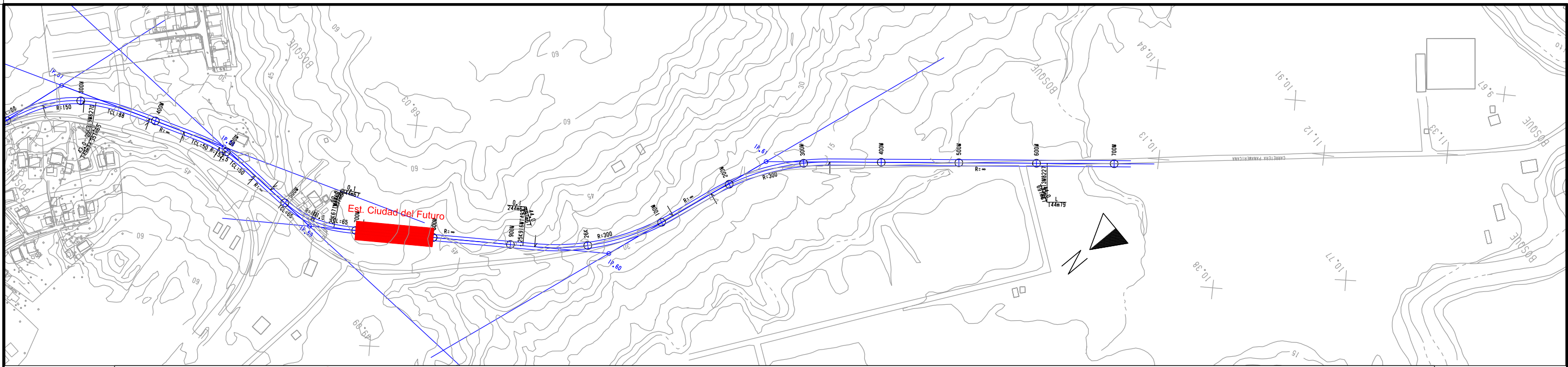
REMARKS:

Alignment Plan(FR)
(21K000M000 ~ 22K500M000)

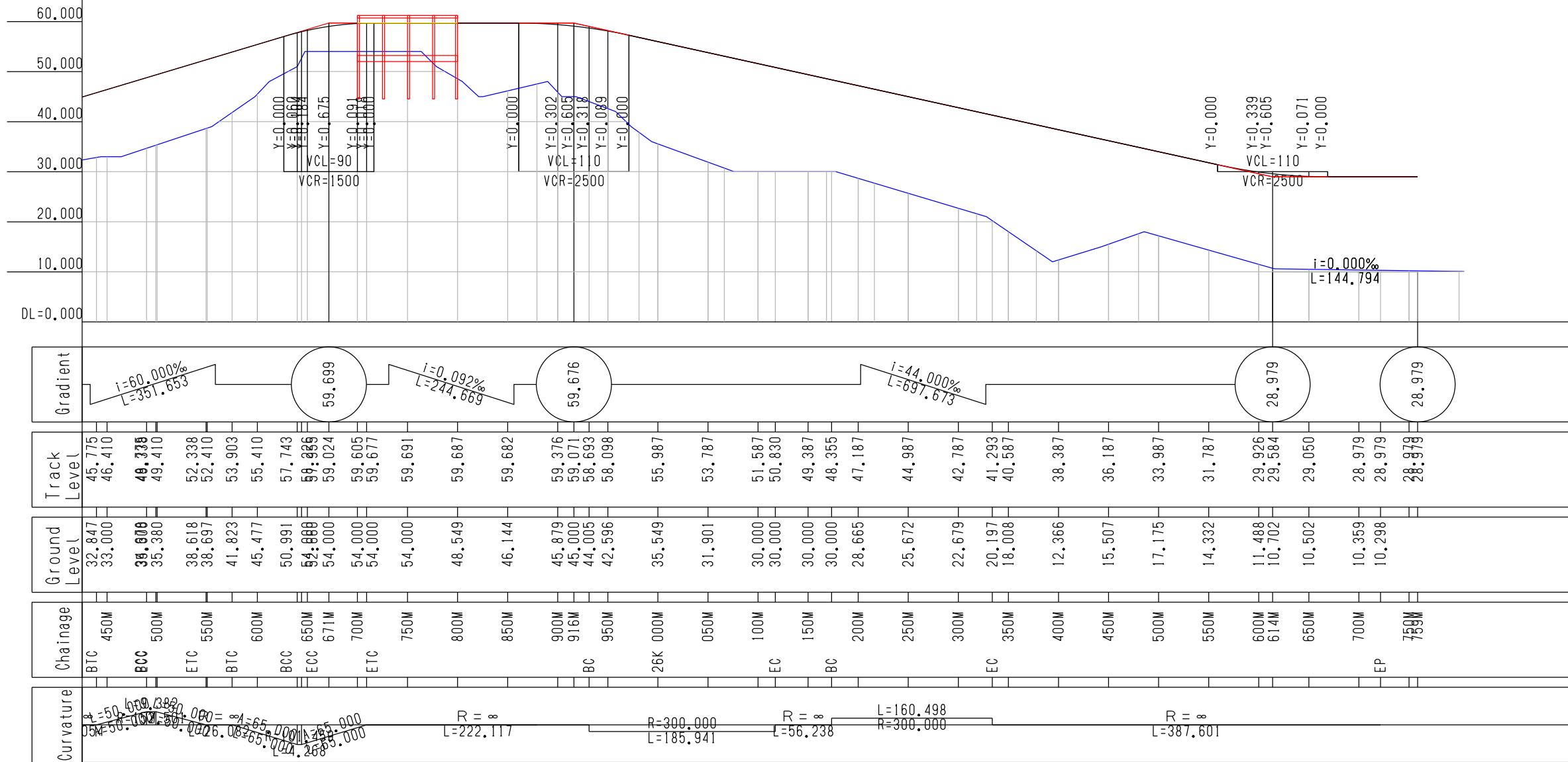
18







Est. Ciudad del Futuro



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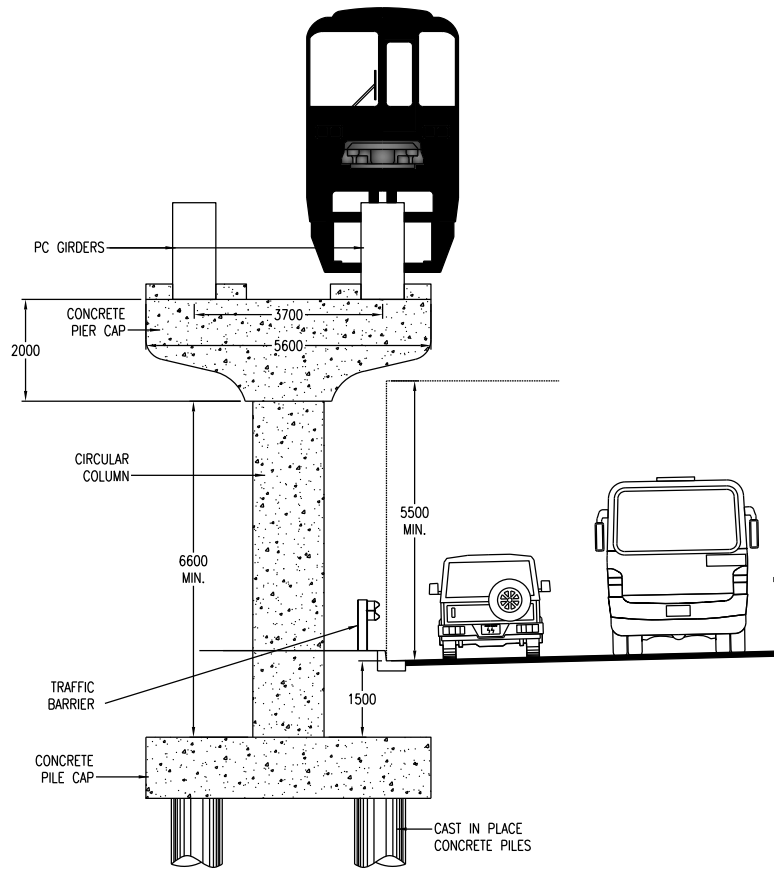
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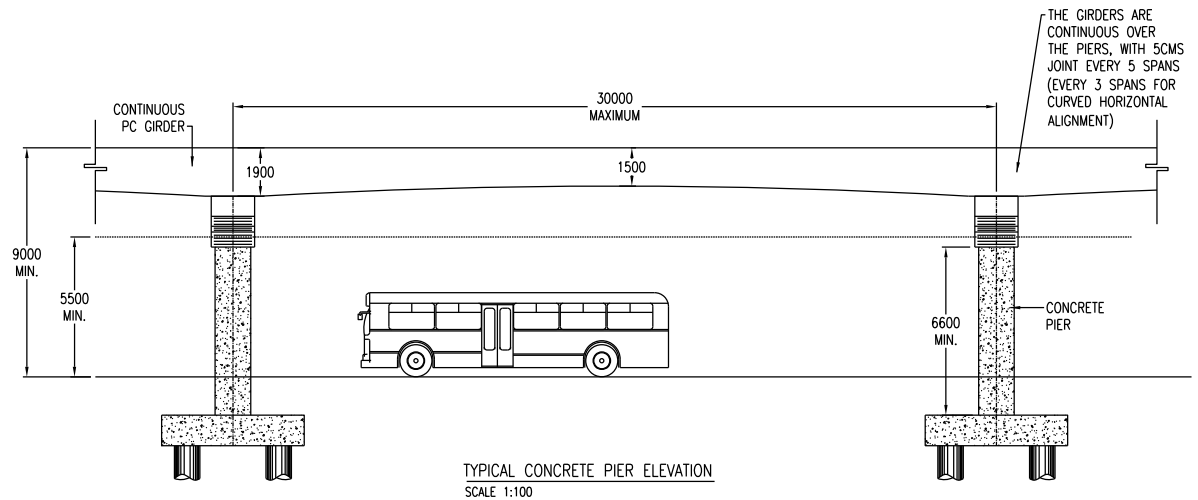
REMARKS:

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(25K500M000 ~ 26K800M000)

4-2: Drawings of Structures



TYPICAL CONCRETE PIER ELEVATION
SCALE 1:100



TYPICAL CONCRETE PIER ELEVATION
SCALE 1:100

GENERAL NOTES

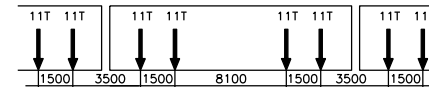
1.0 DESIGN

DESIGN CODES

- * AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, THIRD EDITION 2004
- * TECHNICAL STANDARD FOR SEISMIC DESIGN IN PANAMA

LIVE LOAD

- * 6 CARS OF 44 TONS EACH.



DEAD LOAD

- * REINFORCED CONCRETE 2,400 kg/m³
- * COMPACTED EARTH FILL 1,600 kg/m³
- * STRUCTURAL STEEL 7,850 kg/m³

SEISMIC LOAD

- * ACCELERATION COEFFICIENT A=0.20 (PANAMA CITY)
- * SITE COEFFICIENTS, SOIL PROFILE S2, S=1.20

MATERIALS PROPERTIES

CONCRETE

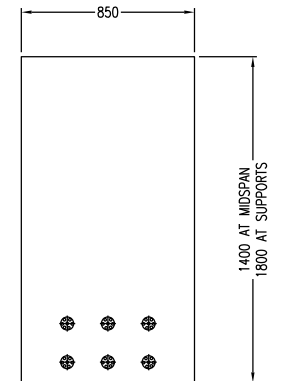
- * PRESTRESSED CONCRETE 420 kg/cm²
- * PIER CONCRETE 280 kg/cm²
- * PILES CONCRETE 280 kg/cm²

PRESTRESSING STEEL

- * LOW RELAXATION SEVEN WIRE CABLES GRADE 270K
- FPU = 18,900 KG/CM²

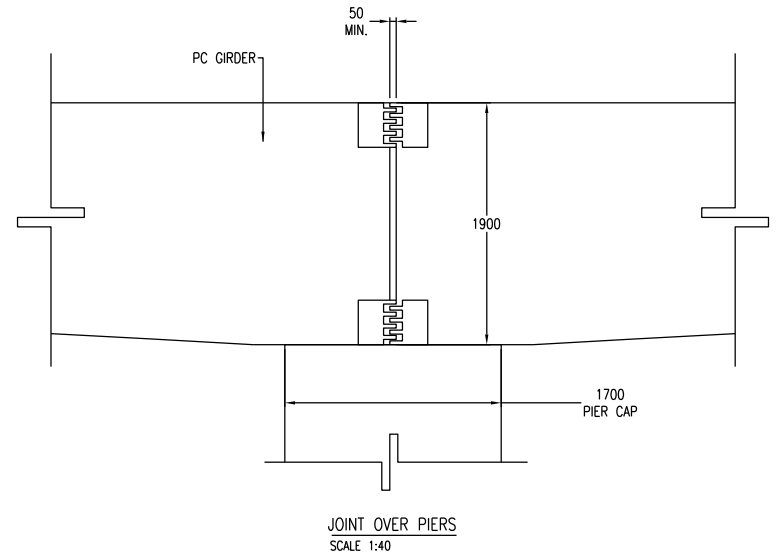
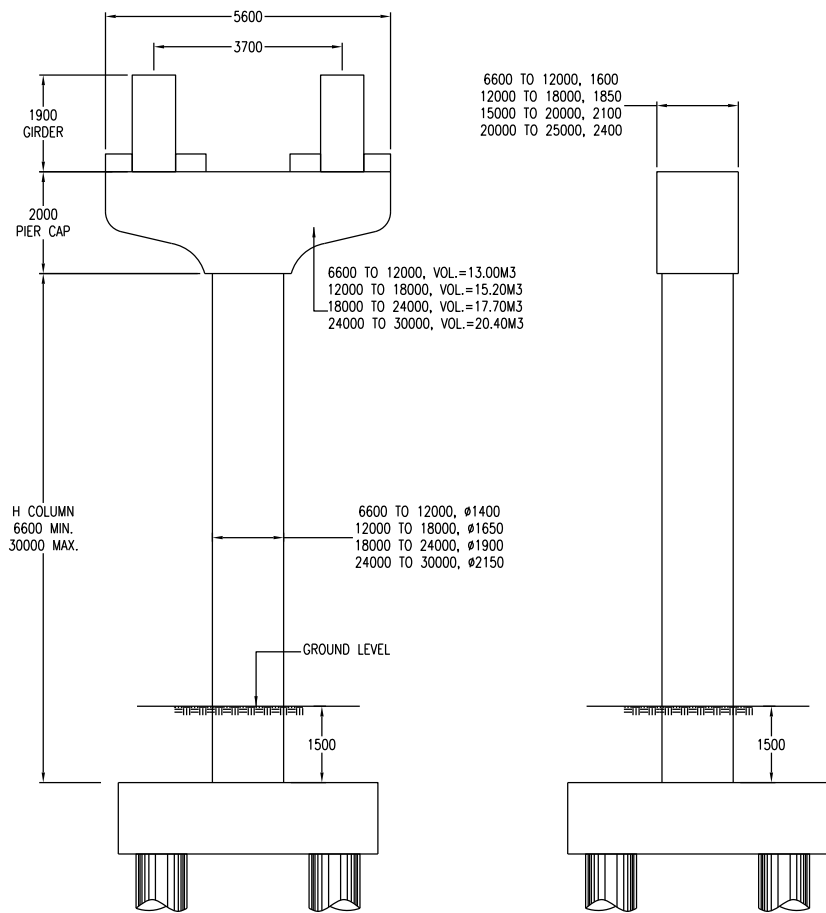
REINFORCEMENT STEEL

- * CORRUGATED BARS GRADE 60 ASTM A-615, fy=4200 Kg/cm²



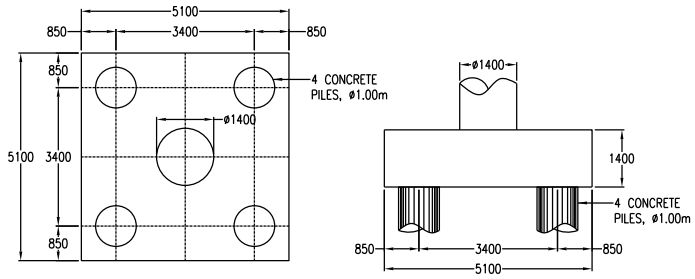
POST-TENSIONED GIRDER SECTION
SCALE 1:25

| | | |
|---|-----------------------|-----------------|
| PROJECT: THE FEASIBILITY STUDY OF PANAMA CITY URBAN TRANSPORTATION LINE-3 PROJECT | | |
| CONTENTS: TYPICAL DETAILS | | |
| DESIGNED: R.M.G. | DATE: JANUARY-2013 | |
| DRAWN: E.A.D.C. | SCALE: INDICATED | SHEET: 1 / 3 |

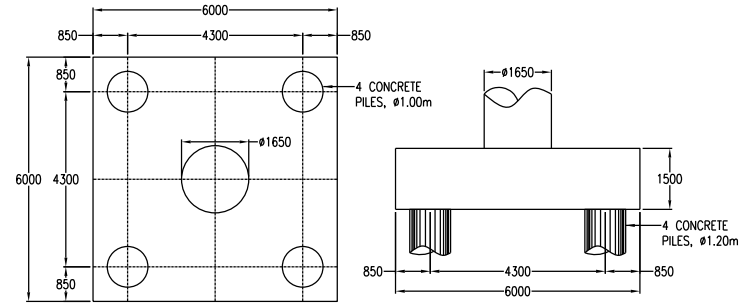


GEOMETRY OF PIER CAP AND COLUMNS
SCALE 1:100

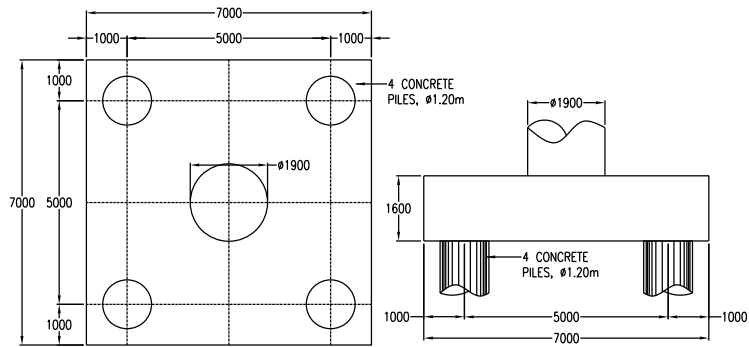
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| PROJECT: THE FEASIBILITY STUDY OF PANAMA CITY URBAN TRANSPORTATION LINE-3 PROJECT | | |
| CONTENTS: PIER DETAILS | | |
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| DRAWN: E.A.D.C. | SCALE: INDICATED | SHEET: 2 / 3 |



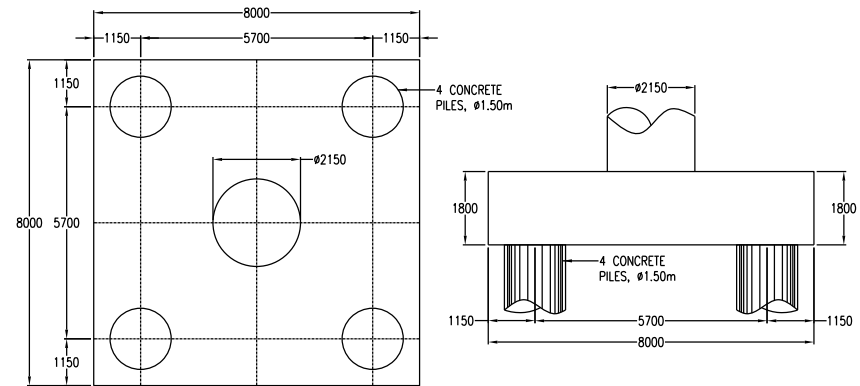
PILE CAP FOR COLUMNS OF H=6.60m TO H=12.00m



PILE CAP FOR COLUMNS OF H=12.00m TO H=18.00m



PILE CAP FOR COLUMNS OF H=18.00m TO H=24.00m



PILE CAP FOR COLUMNS OF H=24.00m TO H=30.00m

| | | |
|---|--------------|--------|
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| CONTENTS: | | |
| FOOTING DETAILS | | |
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| R.M.G. | OCTOBER-2013 | |
| DRAWN: | SCALE: | SHEET: |
| E.A.D.C. | INDICATED | 3 / 3 |