

Plan (4 of 5) S=1:4,000



KE 7-1 4K576.290
R=700 L=1224.901

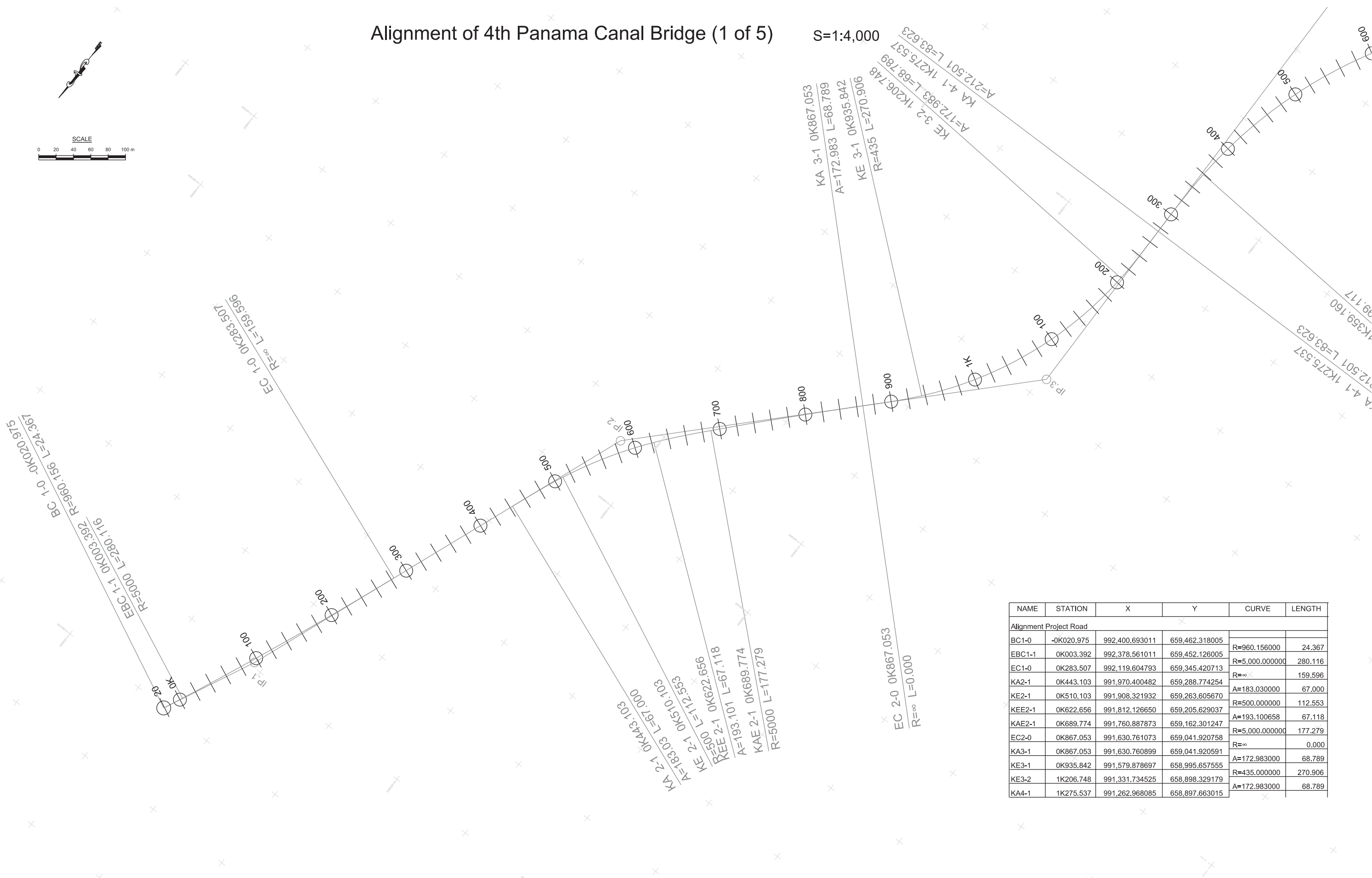
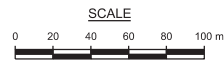


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|--|------------------|------------------------------------|-----------------------------|--------------|---------|
| THE FEASIBILITY STUDY ON PANAMA CITY URBAN TRANSPORTATION LINE-3 PROJECT | | | | REMARKS: | |
| DRAWN: | DATE: May 2014 | RECEIVED BY: | SUBMITTED BY: | CHECKED BY: | PAGE: 5 |
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Plan (4 of 5)

Alignment of 4th Panama Canal Bridge (1 of 5)

S=1:4,000



| NAME | STATION | X | Y | CURVE | LENGTH |
|------------------------|------------|----------------|----------------|----------------|---------|
| Alignment Project Road | | | | | |
| BC1-0 | -0K020.975 | 992,400.693011 | 659,462.318005 | R=960.156000 | 24.367 |
| EBC1-1 | 0K003.392 | 992,378.561011 | 659,452.126005 | R=5,000.000000 | 280.116 |
| EC1-0 | 0K283.507 | 992,119.604793 | 659,345.420713 | R=∞ | 159.596 |
| KA2-1 | 0K443.103 | 991,970.400482 | 659,288.774254 | A=183.030000 | 67.000 |
| KE2-1 | 0K510.103 | 991,908.321932 | 659,263.605670 | R=500.000000 | 112.553 |
| KEE2-1 | 0K622.656 | 991,812.126650 | 659,205.629037 | A=193.100658 | 67.118 |
| KAE2-1 | 0K689.774 | 991,760.887873 | 659,162.301247 | R=5,000.000000 | 177.279 |
| EC2-0 | 0K867.053 | 991,630.761073 | 659,041.920758 | R=∞ | 0.000 |
| KA3-1 | 0K867.053 | 991,630.760899 | 659,041.920591 | A=172.983000 | 68.789 |
| KE3-1 | 0K935.842 | 991,579.878697 | 658,995.657555 | R=435.000000 | 270.906 |
| KE3-2 | 1K206.748 | 991,331.734525 | 658,898.329179 | A=172.983000 | 68.789 |
| KA4-1 | 1K275.537 | 991,262.968085 | 658,897.663015 | | |

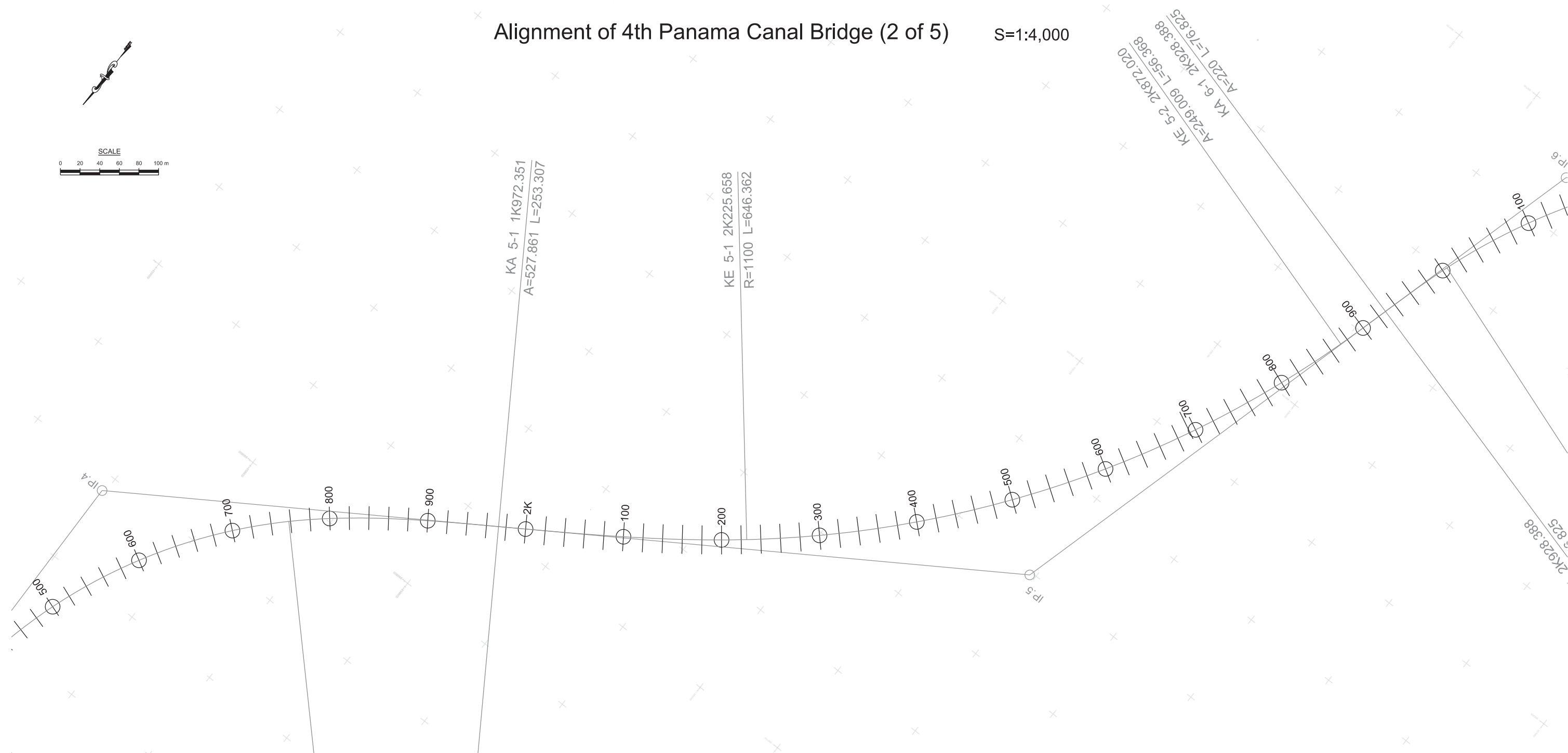
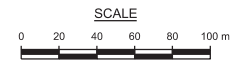


| THE FEASIBILITY STUDY ON PANAMA CITY URBAN TRANSPORTATION LINE-3 PROJECT | | | | | |
|--|--------|-----------|------------------------------------|-----------------------------|--------------|
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| | | | | | PAGE: 7 / 15 |

REMARKS:
Alignment of 4th Panama Canal Bridge (1 of 5)

Alignment of 4th Panama Canal Bridge (2 of 5)

S=1:4,000



| NAME | STATION | X | Y | CURVE | LENGTH |
|-------|-----------|----------------|----------------|----------------|---------|
| KE4-1 | 1K359.160 | 991,179.370386 | 658,896.898827 | A=212.501000 | 83.623 |
| KE4-2 | 1K758.277 | 990,824.838986 | 658,734.168187 | R=540.000000 | 399.117 |
| KA5-1 | 1K972.351 | 990,697.430323 | 658,562.602074 | A=340.000000 | 214.074 |
| KE5-1 | 2K225.658 | 990,552.179014 | 658,355.259721 | A=527.861300 | 253.307 |
| KE5-2 | 2K872.020 | 990,022.481039 | 658,001.253609 | R=1,100.000000 | 646.362 |
| KA6-1 | 2K928.388 | 989,968.282476 | 657,985.770514 | A=249.008500 | 56.368 |

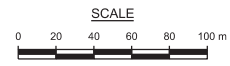


| THE FEASIBILITY STUDY ON PANAMA CITY URBAN TRANSPORTATION LINE-3 PROJECT | | | | | |
|--|--------|------------------------------------|-----------------------------|--------------|--------|
| DRAWN: | DATE: | RECEIVED BY: | SUBMITTED BY: | CHECKED BY: | PAGE: |
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REMARKS:
Alignment of 4th Panama Canal Bridge (2 of 5)

Alignment of 4th Panama Canal Bridge (3 of 5) S=1:4,000

| NAME | STATION | X | Y | CURVE | LENGTH |
|-------|-----------|----------------|----------------|--------------|-----------|
| KE6-1 | 3K005.214 | 989,894.678160 | 657,963.802445 | R=630.000000 | 293.069 |
| KE6-2 | 3K298.283 | 989,649.115259 | 657,808.719611 | A=220.000000 | 76.825 |
| KA6-2 | 3K375.109 | 989,597.647590 | 657,751.699698 | R=∞ | 1,091.182 |
| KA7-1 | 4K466.290 | 988,883.123222 | 656,926.998466 | A=277.489000 | 110.000 |
| KE7-1 | 4K576.290 | 988,813.314094 | 656,842.027337 | | |



SECRETARIA DEL METRO DE PANAMÁ



JAPAN INTERNATIONAL COOPERATION AGENCY

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

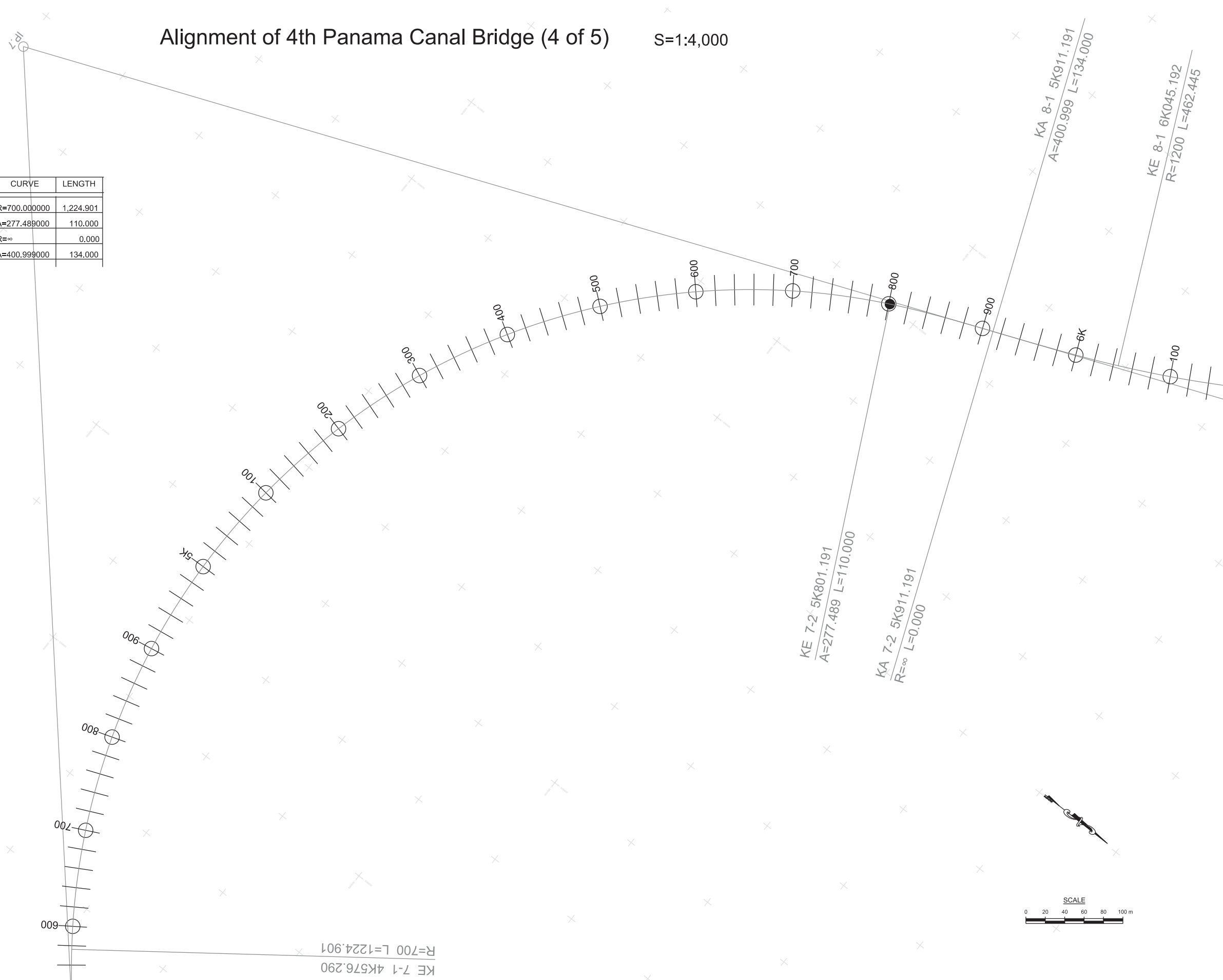
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| DRAWN: | DATE: May 2014 | RECEIVED BY: | SUBMITTED BY: | CHECKED BY: | PAGE: 9 |
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REMARKS:
Alignment of 4th Panama Canal Bridge (3 of 5)

Alignment of 4th Panama Canal Bridge (4 of 5)

S=1:4,000

| NAME | STATION | X | Y | CURVE | LENGTH |
|-------|-----------|----------------|----------------|--------------|-----------|
| KE7-1 | 4K576.290 | 988,813.314094 | 656,842.027337 | R=700.000000 | 1,224.901 |
| KE7-2 | 5K801.191 | 989,068.265953 | 655,798.214949 | A=277.489000 | 110.000 |
| KA7-2 | 5K911.191 | 989,169.386219 | 655,754.993436 | R=∞ | 0.000 |
| KA8-1 | 5K911.191 | 989,169.386219 | 655,754.993436 | A=400.999000 | 134.000 |
| KE8-1 | 6K045.192 | 989,292.981275 | 655,703.269829 | | |



SECRETARIA DEL METRO DE PANAMA



JAPAN INTERNATIONAL COOPERATION AGENCY

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

DRAWN:
DESIGNED:

DATE: May 2014
SCALE: S=1:4,000

RECEIVED BY:
TEAM LEADER/URBAN RAILWAY PLANNING

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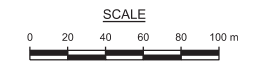
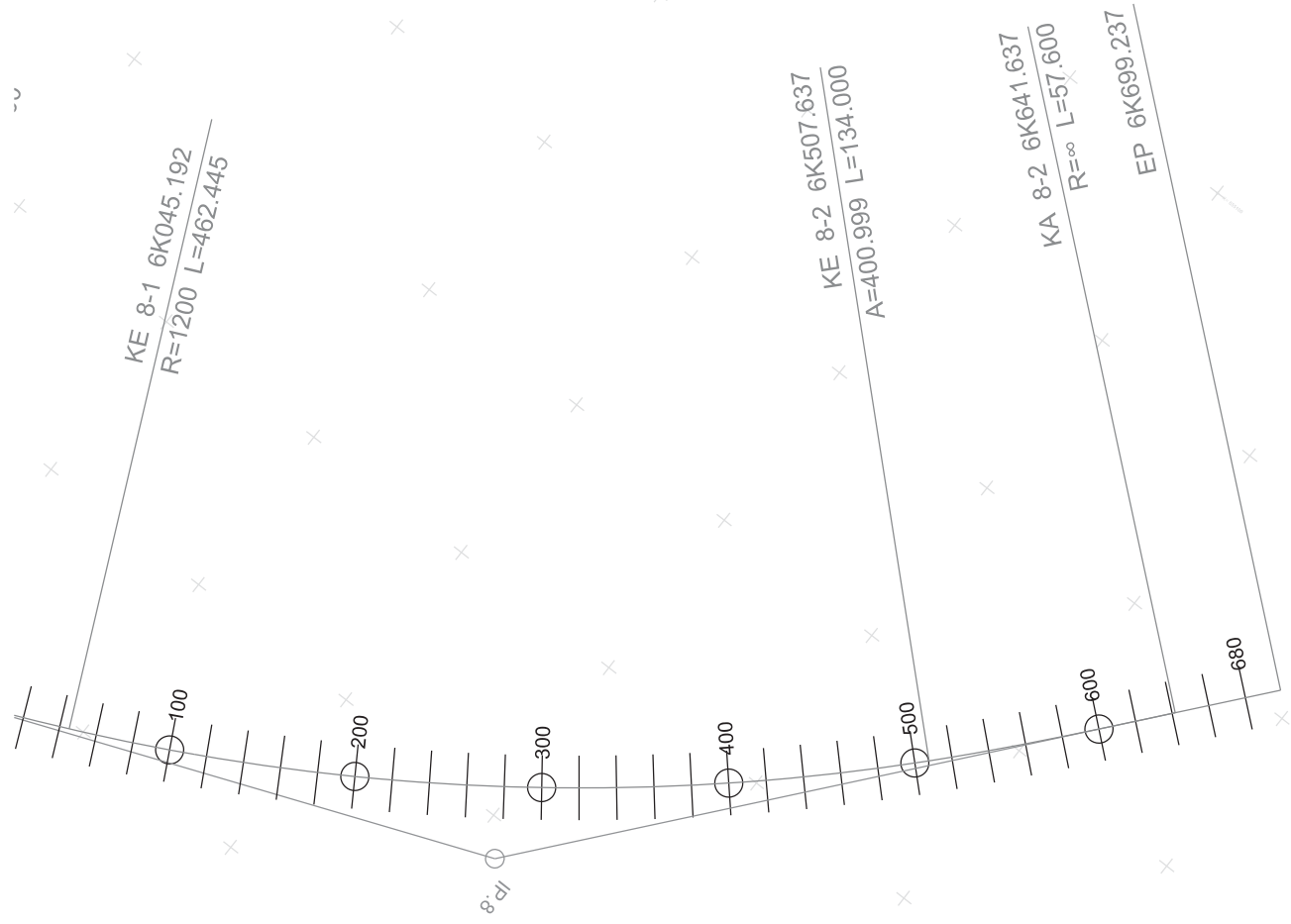
PAGE: 10 / 15

REMARKS:

Alignment of 4th Panama Canal Bridge (4 of 5)

Alignment of 4th Panama Canal Bridge (5 of 5) S=1:4,000

| NAME | STATION | X | Y | CURVE | LENGTH |
|-------|-----------|----------------|----------------|----------------|---------|
| KE8-1 | 6K045.192 | 989,292.981275 | 655,703.269829 | R=1,200.000000 | 462.445 |
| KE8-2 | 6K507.637 | 989,665.353268 | 655,433.898538 | | |
| KA8-2 | 6K641.637 | 989,753.156916 | 655,332.697804 | A=400.999000 | 134.000 |
| EP | 6K699.237 | 989,790.088376 | 655,288.495685 | R=∞ | 57.600 |

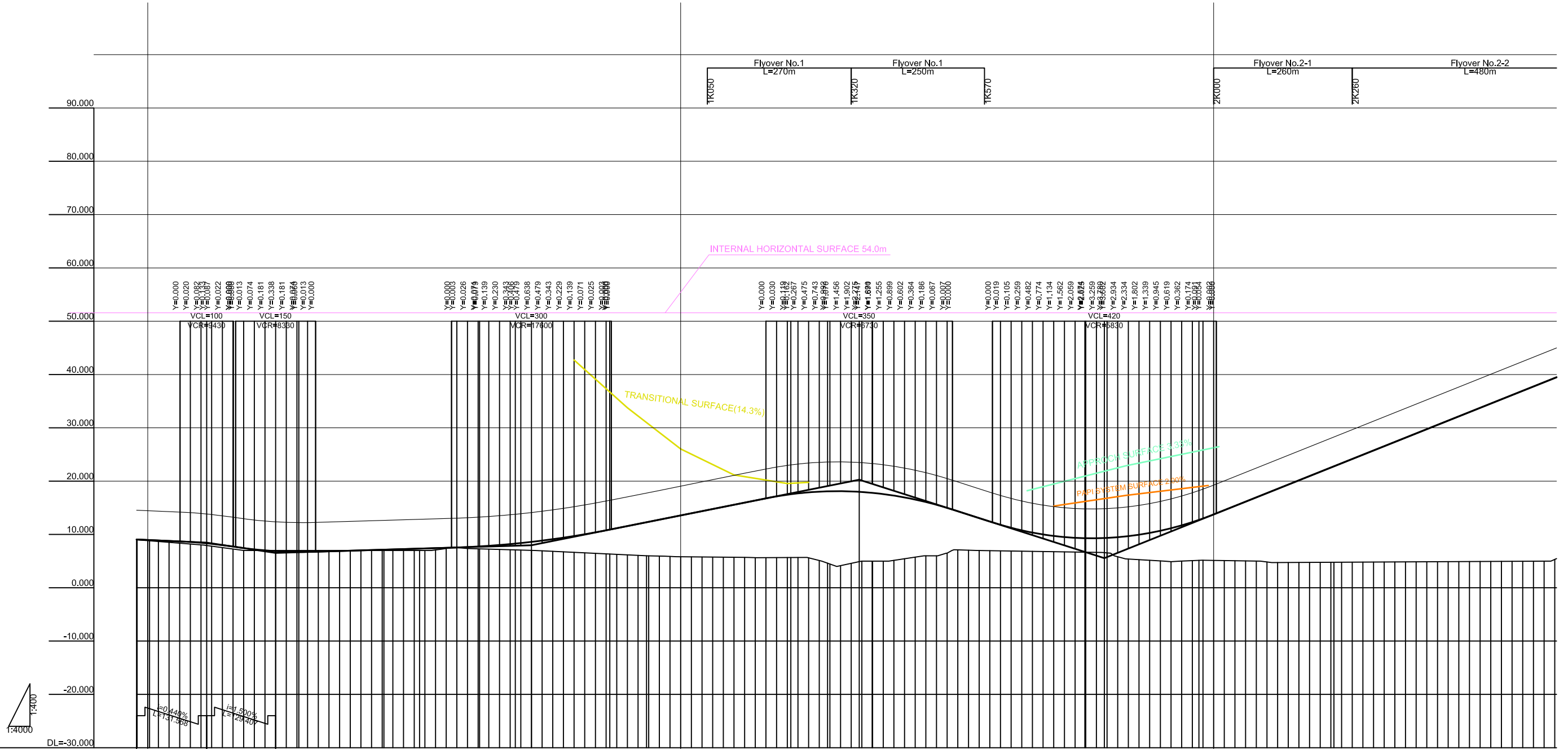


| THE FEASIBILITY STUDY ON PANAMA CITY URBAN TRANSPORTATION LINE-3 PROJECT | | | | | |
|--|------------------|------------------------------------|-----------------------------|--------------|-------|
| DRAWN: | DATE: May 2014 | RECEIVED BY: | SUBMITTED BY: | CHECKED BY: | PAGE: |
| DESIGNED: | SCALE: S=1:4,000 | TEAM LEADER/URBAN RAILWAY PLANNING | CIVIL AND FACILITY PLANNING | APPROVED BY: | 11/15 |

REMARKS:
Alignment of 4th Panama Canal Bridge (5 of 5)

Profile of 4th Panama Canal Bridge (1 of 3)

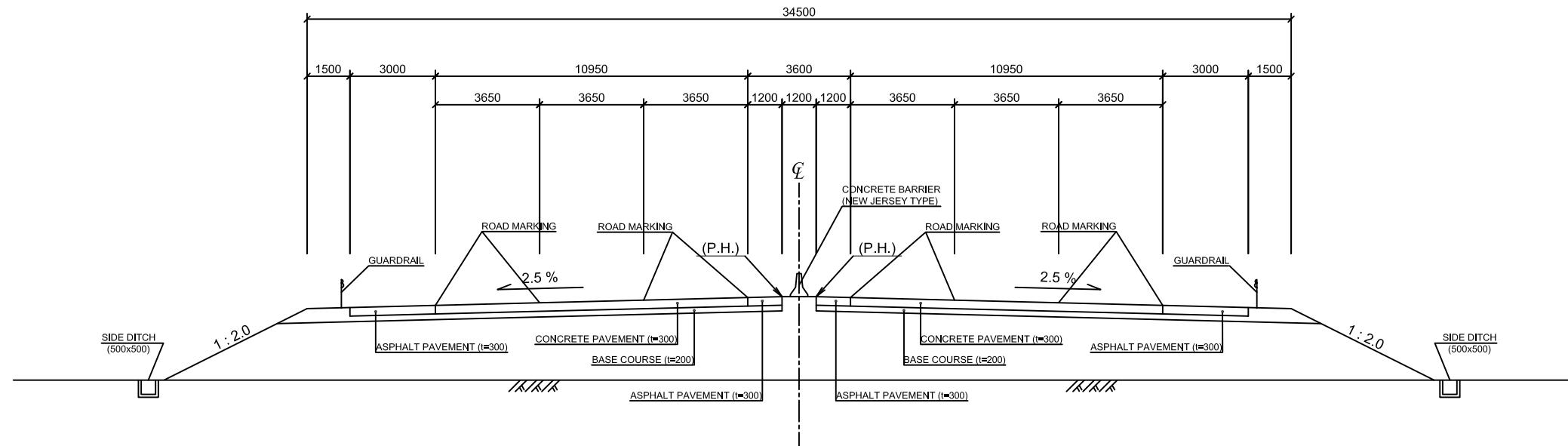
V=1:400
H=1:4000



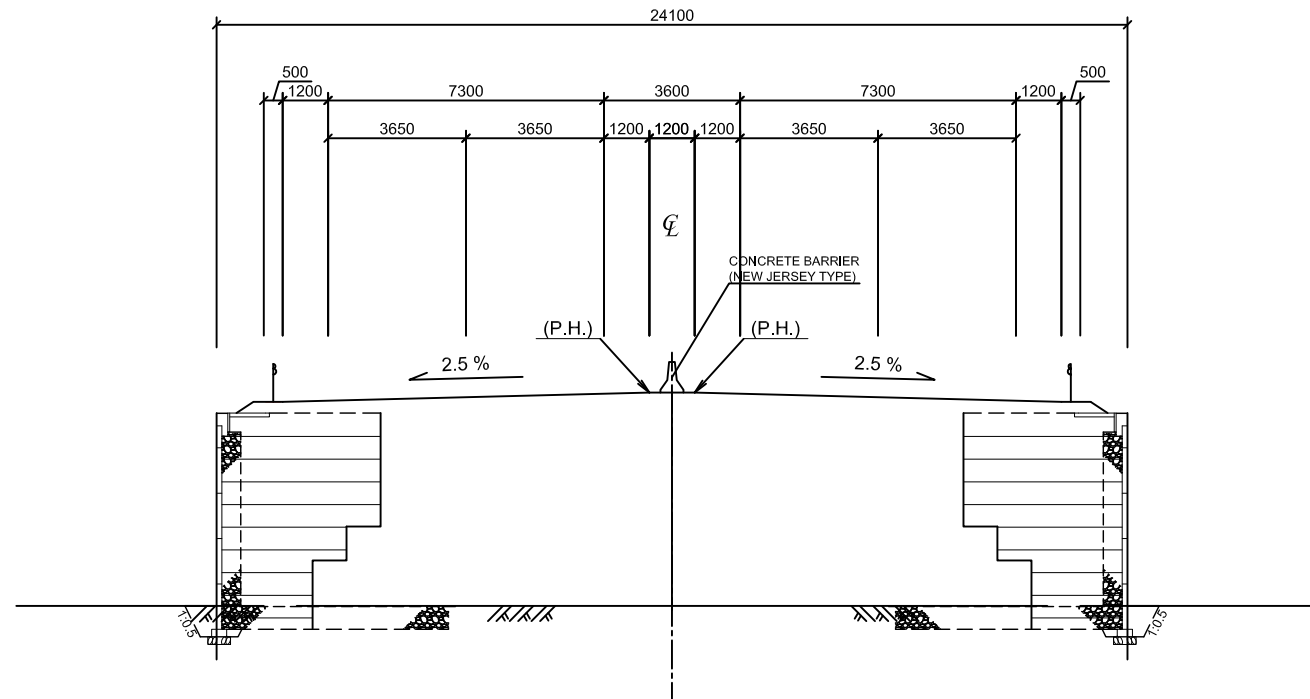
| Gradient | Proposed Height | Ground Height | Station | Curve | Superelevation |
|----------|-----------------|---------------|-----------|-------------------------|----------------|
| 9.050 | 9.046 | 8.662 | E+026.000 | R=160.000 L=241.367 | 2.000 |
| 8.471 | 8.876 | 8.876 | E+026.000 | R=5000.000 L=280.116 | 2.000 |
| 6.530 | 8.694 | 8.514 | 060.000 | R=∞ L=159.596 | 2.000 |
| | 8.596 | 8.355 | 080.000 | L=67.000 R=500.000 | 2.000 |
| | 8.436 | 8.196 | 100.000 | L=112.553 R=500.000 | 2.000 |
| | 8.243 | 8.036 | 120.000 | L=67.118 R=500.000 | 2.000 |
| | 8.006 | 7.797 | 140.000 | L=177.279 R=3000.000 | 2.000 |
| | 7.730 | 7.523 | 160.000 | R=63.472 L=66.789 | 2.000 |
| | 7.444 | 7.237 | 180.000 | L=172.983 R=330.000 | 2.000 |
| | 7.204 | 7.000 | 200.000 | L=83.623 R=212.501 | 2.000 |
| | 7.012 | 6.808 | 220.000 | L=399.117 R=540.000 | 2.000 |
| | 6.868 | 6.668 | 240.000 | L=214.074 R=330.000 | 2.000 |
| | 6.772 | 6.572 | 260.000 | A=527.861 L=253.307 | 2.000 |
| | 6.720 | 6.520 | 280.000 | R=1100.000 L=646.362 | 2.000 |
| | 6.770 | 6.570 | 300.000 | | 2.000 |
| | 6.830 | 6.630 | 320.000 | | 2.000 |
| | 6.890 | 6.690 | 340.000 | | 2.000 |
| | 6.950 | 6.750 | 360.000 | | 2.000 |
| | 7.010 | 6.810 | 380.000 | | 2.000 |
| | 7.070 | 6.870 | 400.000 | | 2.000 |
| | 7.130 | 6.930 | 420.000 | | 2.000 |
| | 7.188 | 6.988 | 440.000 | | 2.000 |
| | 7.250 | 7.050 | 460.000 | | 2.000 |
| | 7.318 | 7.118 | 480.000 | | 2.000 |
| | 7.370 | 7.170 | 500.000 | | 2.000 |
| | 7.430 | 7.230 | 520.000 | | 2.000 |
| | 7.490 | 7.290 | 540.000 | | 2.000 |
| | 7.553 | 7.353 | 560.000 | | 2.000 |
| | 7.617 | 7.417 | 580.000 | | 2.000 |
| | 7.682 | 7.482 | 600.000 | | 2.000 |
| | 7.747 | 7.547 | 620.000 | | 2.000 |
| | 7.811 | 7.611 | 640.000 | | 2.000 |
| | 7.876 | 7.676 | 660.000 | | 2.000 |
| | 7.940 | 7.740 | 680.000 | | 2.000 |
| | 8.004 | 7.804 | 700.000 | | 2.000 |
| | 8.068 | 7.868 | 720.000 | | 2.000 |
| | 8.132 | 7.932 | 740.000 | | 2.000 |
| | 8.196 | 7.996 | 760.000 | | 2.000 |
| | 8.260 | 8.060 | 780.000 | | 2.000 |
| | 8.324 | 8.124 | 800.000 | | 2.000 |
| | 8.388 | 8.188 | 820.000 | | 2.000 |
| | 8.452 | 8.252 | 840.000 | | 2.000 |
| | 8.516 | 8.316 | 860.000 | | 2.000 |
| | 8.580 | 8.380 | 880.000 | | 2.000 |
| | 8.644 | 8.444 | 900.000 | | 2.000 |
| | 8.708 | 8.508 | 920.000 | | 2.000 |
| | 8.772 | 8.572 | 940.000 | | 2.000 |
| | 8.836 | 8.636 | 960.000 | | 2.000 |
| | 8.900 | 8.700 | 980.000 | | 2.000 |
| | 8.964 | 8.764 | 1000.000 | | 2.000 |
| | 9.028 | 8.828 | 1020.000 | | 2.000 |
| | 9.092 | 8.892 | 1040.000 | | 2.000 |
| | 9.156 | 8.956 | 1060.000 | | 2.000 |
| | 9.220 | 9.020 | 1080.000 | | 2.000 |
| | 9.284 | 9.084 | 1100.000 | | 2.000 |
| | 9.348 | 9.148 | 1120.000 | | 2.000 |
| | 9.412 | 9.212 | 1140.000 | | 2.000 |
| | 9.476 | 9.276 | 1160.000 | | 2.000 |
| | 9.540 | 9.340 | 1180.000 | | 2.000 |
| | 9.604 | 9.404 | 1200.000 | | 2.000 |
| | 9.668 | 9.468 | 1220.000 | | 2.000 |
| | 9.732 | 9.532 | 1240.000 | | 2.000 |
| | 9.796 | 9.596 | 1260.000 | | 2.000 |
| | 9.860 | 9.660 | 1280.000 | | 2.000 |
| | 9.924 | 9.724 | 1300.000 | | 2.000 |
| | 9.988 | 9.788 | 1320.000 | | 2.000 |
| | 10.052 | 9.852 | 1340.000 | | 2.000 |
| | 10.116 | 9.916 | 1360.000 | | 2.000 |
| | 10.180 | 9.980 | 1380.000 | | 2.000 |
| | 10.244 | 10.044 | 1400.000 | | 2.000 |
| | 10.308 | 10.108 | 1420.000 | | 2.000 |
| | 10.372 | 10.172 | 1440.000 | | 2.000 |
| | 10.436 | 10.236 | 1460.000 | | 2.000 |
| | 10.500 | 10.300 | 1480.000 | | 2.000 |
| | 10.564 | 10.364 | 1500.000 | | 2.000 |
| | 10.628 | 10.428 | 1520.000 | | 2.000 |
| | 10.692 | 10.492 | 1540.000 | | 2.000 |
| | 10.756 | 10.556 | 1560.000 | | 2.000 |
| | 10.820 | 10.620 | 1580.000 | | 2.000 |
| | 10.884 | 10.684 | 1600.000 | | 2.000 |
| | 10.948 | 10.748 | 1620.000 | | 2.000 |
| | 11.012 | 10.812 | 1640.000 | | 2.000 |
| | 11.076 | 10.876 | 1660.000 | | 2.000 |
| | 11.140 | 10.940 | 1680.000 | | 2.000 |
| | 11.204 | 11.004 | 1700.000 | | 2.000 |
| | 11.268 | 11.068 | 1720.000 | | 2.000 |
| | 11.332 | 11.132 | 1740.000 | | 2.000 |
| | 11.396 | 11.196 | 1760.000 | | 2.000 |
| | 11.460 | 11.260 | 1780.000 | | 2.000 |
| | 11.524 | 11.324 | 1800.000 | | 2.000 |
| | 11.588 | 11.388 | 1820.000 | | 2.000 |
| | 11.652 | 11.452 | 1840.000 | | 2.000 |
| | 11.716 | 11.516 | 1860.000 | | 2.000 |
| | 11.780 | 11.580 | 1880.000 | | 2.000 |
| | 11.844 | 11.644 | 1900.000 | | 2.000 |
| | 11.908 | 11.708 | 1920.000 | | 2.000 |
| | 11.972 | 11.772 | 1940.000 | | 2.000 |
| | 12.036 | 11.836 | 1960.000 | | 2.000 |
| | 12.100 | 11.900 | 1980.000 | | 2.000 |
| | 12.164 | 11.964 | 2000.000 | | 2.000 |
| | 12.228 | 12.028 | 2020.000 | | 2.000 |
| | 12.292 | 12.092 | 2040.000 | | 2.000 |
| | 12.356 | 12.156 | 2060.000 | | 2.000 |
| | 12.420 | 12.220 | 2080.000 | | 2.000 |
| | 12.484 | 12.284 | 2100.000 | | 2.000 |
| | 12.548 | 12.348 | 2120.000 | | 2.000 |
| | 12.612 | 12.412 | 2140.000 | | 2.000 |
| | 12.676 | 12.476 | 2160.000 | | 2.000 |
| | 12.740 | 12.540 | 2180.000 | | 2.000 |
| | 12.804 | 12.604 | 2200.000 | | 2.000 |
| | 12.868 | 12.668 | 2220.000 | | 2.000 |
| | 12.932 | 12.732 | 2240.000 | | 2.000 |
| | 12.996 | 12.796 | 2260.000 | | 2.000 |
| | 13.060 | 12.860 | 2280.000 | | 2.000 |
| | 13.124 | 12.924 | 2300.000 | | 2.000 |
| | 13.188 | 12.988 | 2320.000 | | 2.000 |
| | 13.252 | 13.052 | 2340.000 | | 2.000 |
| | 13.316 | 13.116 | 2360.000 | | 2.000 |
| | 13.380 | 13.180 | 2380.000 | | 2.000 |
| | 13.444 | 13.244 | 2400.000 | | 2.000 |
| | 13.508 | 13.308 | 2420.000 | | 2.000 |
| | 13.572 | 13.372 | 2440.000 | | 2.000 |
| | 13.636 | 13.436 | 2460.000 | | 2.000 |
| | 13.700 | 13.500 | 2480.000 | | 2.000 |
| | 13.764 | 13.564 | 2500.000 | | 2.000 |
| | 13.828 | 13.628 | 2520.000 | | 2.000 |
| | 13.892 | 13.692 | 2540.000 | | 2.000 |
| | 13.956 | 13.756 | 2560.000 | | 2.000 |
| | 14.020 | 13.820 | 2580.000 | | 2.000 |
| | 14.084 | 13.884 | 2600.000 | | 2.000 |
| | 14.148 | 13.948 | 2620.000 | | 2.000 |
| | 14.212 | 14.012 | 2640.000 | | 2.000 |
| | 14.276 | 14.076 | 2660.000 | | 2.000 |
| | 14.340 | 14.140 | 2680.000 | | 2.000 |
| | 14.404 | 14.204 | 2700.000 | | 2.000 |
| | 14.468 | 14.268 | 2720.000 | | 2.000 |
| | 14.532 | 14.332 | 2740.000 | | 2.000 |
| | 14.596 | 14.396 | 2760.000 | | 2.000 |
| | 14.660 | 14.460 | 2780.000 | | 2.000 |
| | 14.724 | 14.524 | 2800.000 | | 2.000 |
| | 14.788 | 14.588 | 2820.000 | | 2.000 |
| | 14.852 | 14.652 | 2840.000 | | 2.000 |
| | 14.916 | 14.716 | 2860.000 | | 2.000 |
| | 14.980 | 14.780 | 2880.000 | | 2.000 |
| | 15.044 | 14.844 | 2900.000 | | 2.000 |
| | 15.108 | 14.908 | 2920.000 | | 2.000 |
| | 15.172 | 14.972 | 2940.000 | | 2.000 |
| | 15.236 | 15.036 | 2960.000 | | 2.000 |
| | 15.300 | 15.100 | 2980.000 | | 2.000 |
| | 15.364 | 15.164 | 3000.000 | | 2.000 |
| | 15.428 | 15.228 | 3020.000 | | 2.000 |
| | 15.492 | 15.292 | 3040.000 | | 2.000 |
| | 15.556 | 15.356 | 3060.000 | | 2.000 |
| | 15.620 | 15.420 | 3080.000 | | 2.000 |
| | 15.684 | 15.484 | 3100.000 | | 2.000 |
| | 15.748 | 15.548 | 3120.000 | | 2.000 |
| | 15.812 | 15.612 | 3140.000 | | 2.000 |
| | 15.876 | 15.676 | 3160.000 | | 2.000 |
| | 15.940 | 15.740 | 3180.000 | | 2.000 |
| | 16.004 | 15.804 | 3200.000 | | 2.000 |
| | 16.068 | 15.868 | 3220.000 | | 2.000 |
| | 16.132 | 15.932 | 3240.000 | | 2.000 |
| | 16.196 | 15.996 | 3260.000 | | 2.000 |
| | 16.260 | 16.060 | 3280.000 | | 2.000 |
| | 16.324 | 16.124 | 3300.000 | | 2.000 |
| | 16.388 | 16.188 | 3320.000 | | 2.000 |
| | 16.452 | 16.252 | 3340.000 | | 2.000 |
| | 16.516 | 16.316 | 3360.000 | | 2.000 |
| | 16.580 | 16.380 | 3380.000 | | 2.000 |
| | 16.644 | 16.444 | 3400.000 | | 2.000 |
| | 16.708 | 16.508 | 3420.000 | | 2.000 |
| | 16.772 | 16.572 | 3440.000 | | 2.000 |
| | 16.836 | 16.636 | 3460.000 | | 2.000 |
| | 16.900 | 16.700 | 3480.000 | | 2.000 |
| | 16.964 | 16.764 | 3500.000 | | 2.000 |
| | 17.028 | 16.828 | 3520.000 | | 2.000 |
| | 17.092 | 16.892 | 3540.000 | | 2.000 |
| | 17.156 | 16.956 | 3560.000 | | 2.000 |
| | 17.220 | 17.020 | 3580.000 | | 2.000 |
| | 17.284 | 17.084 | 3600.000 | | 2.000 |
| | 17.348 | | | | |

Typical Cross Sections S=1:200

EARTH WORK (6 LANE WITHOUT SIDE WALK)



REINFORCED EARTH (4 LANE WITHOUT SIDE WALK)



SECRETARIA DEL METRO DE PANAMA



JAPAN INTERNATIONAL COOPERATION AGENCY

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

DRAWN:
DESIGNED:

DATE: May 2014
SCALE: S=1:200

RECEIVED BY:
TEAM LEADER/URBAN RAILWAY PLANNING

SUBMITTED BY:
CIVIL AND FACILITY PLANNING

CHECKED BY:
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PAGE: 15/15

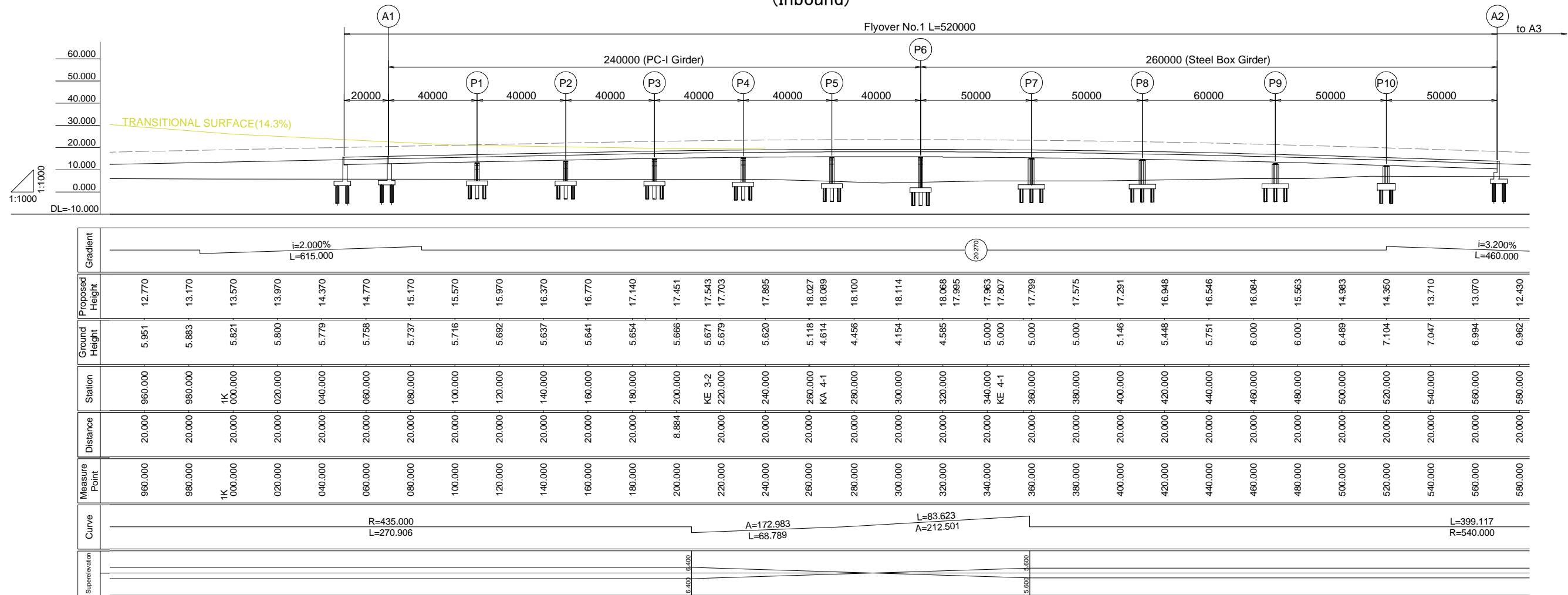
REMARKS:

Typical Cross Sections

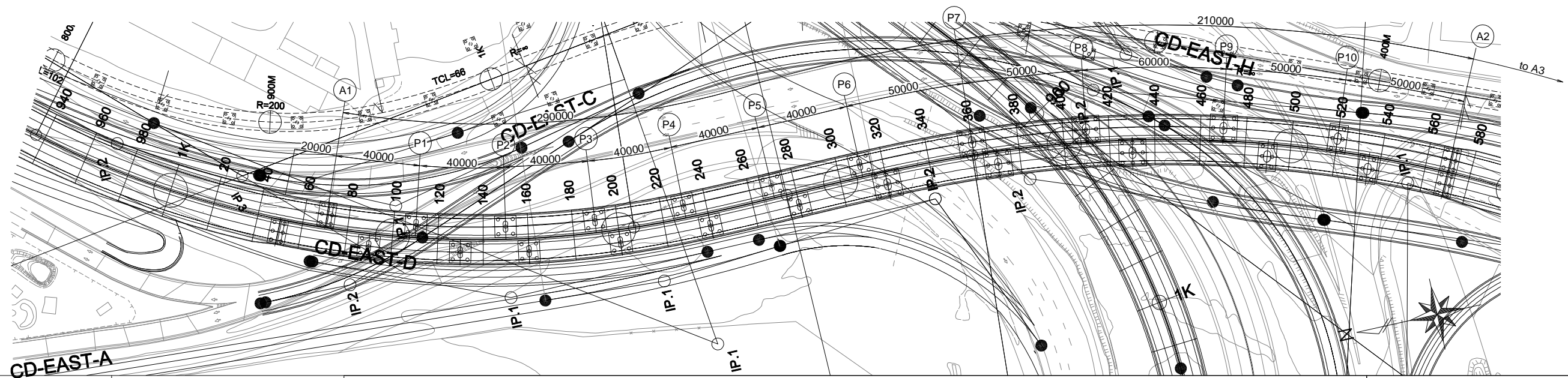
Appendix 5-1-3: Bridge Drawings

Flyover No.1 (1 of 4) (KM1+050.000 ~ KM1+570.000)

Profile
(Inbound) S=1:1000

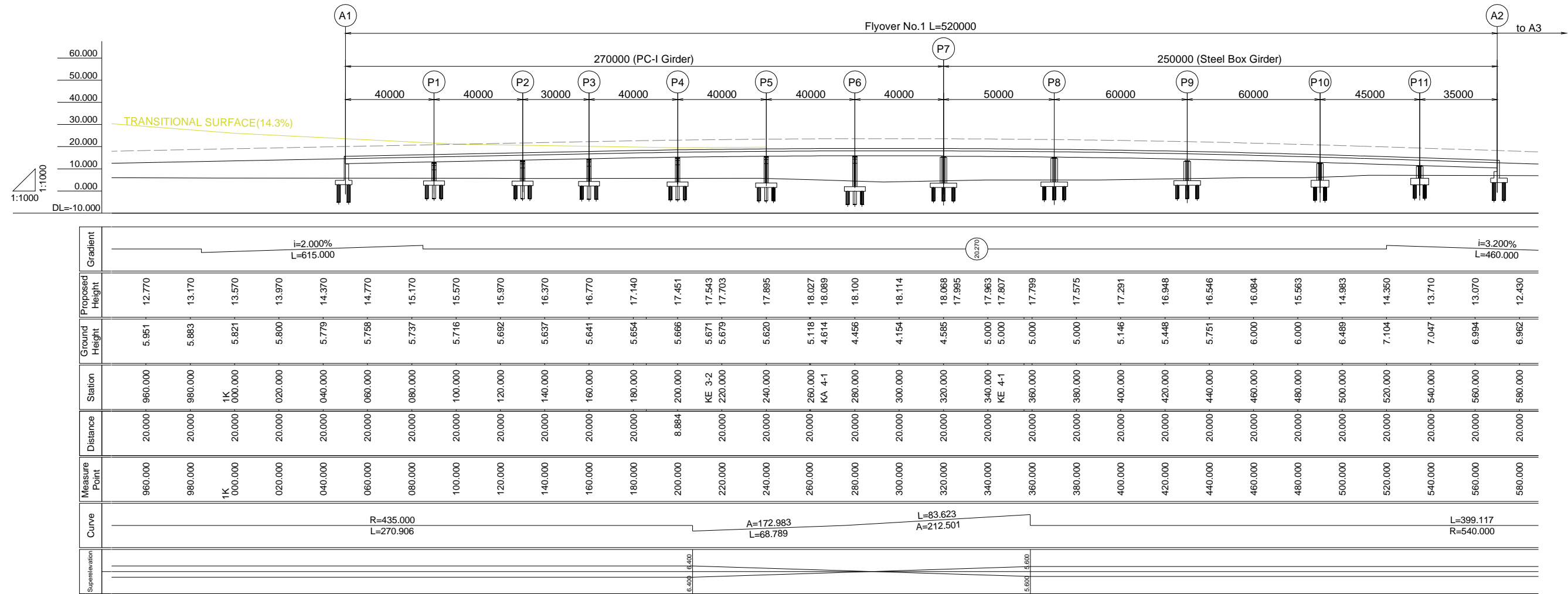


Plan S=1:1000

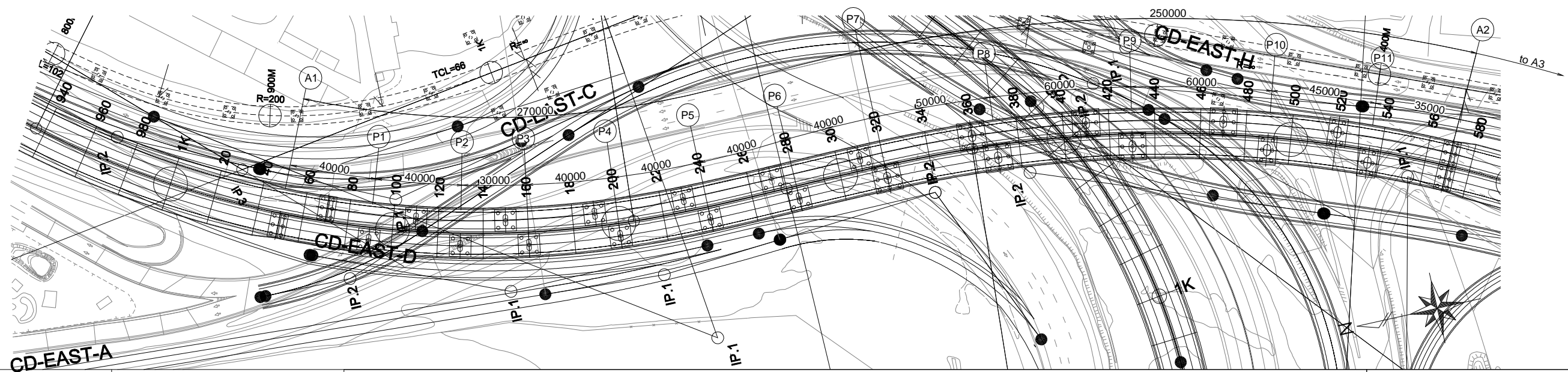


Flyover No.1 (2 of 4) (KM1+050.000 ~ KM1+570.000)

Profile
(Outbound) S=1:1000



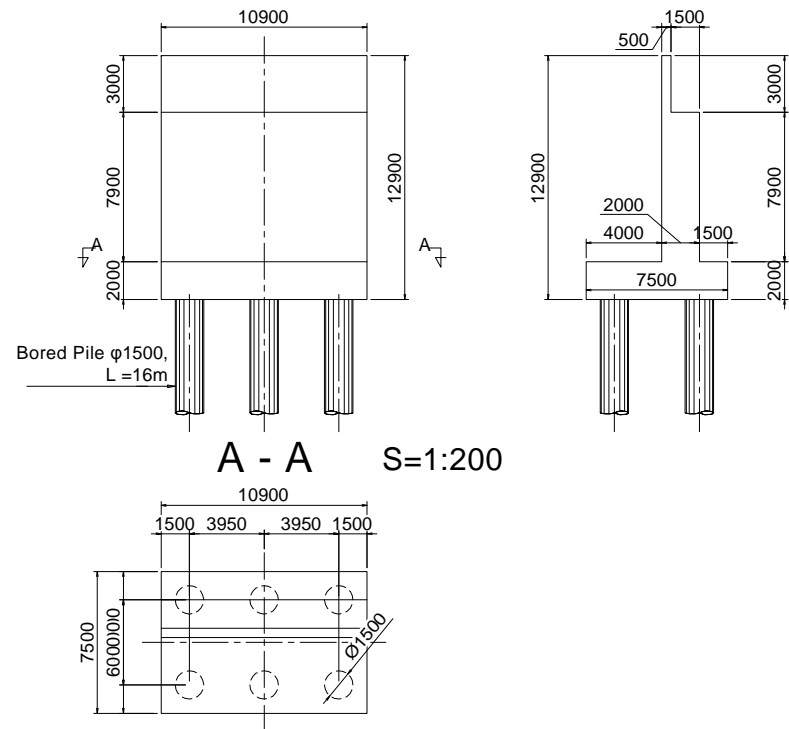
Plan S=1:1000



Flyover No.1 (3 of 4)

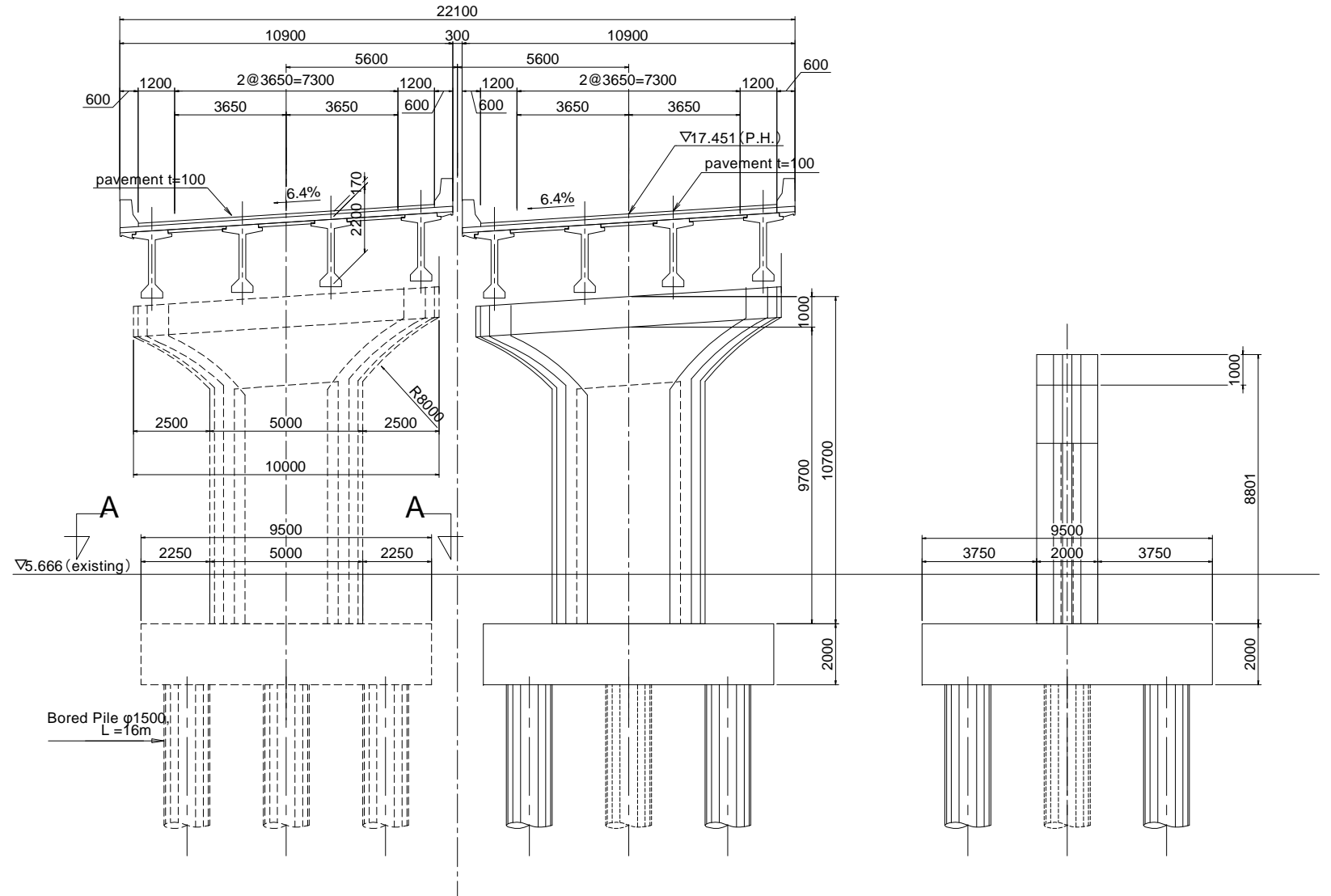
(KM1+050.000 ~ KM1+570.000)

(A1) Cross Section S=1:200

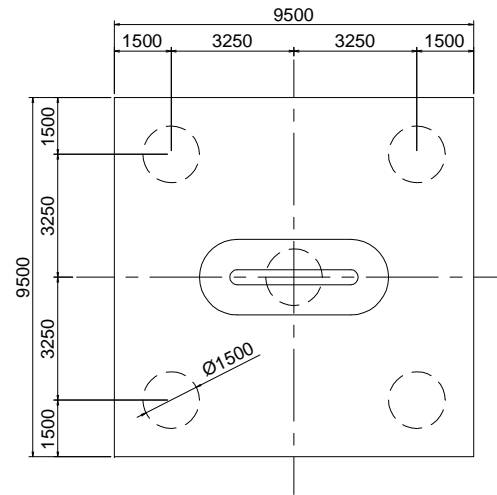


A - A S=1:200

(P4) Cross Section S=1:100



A - A S=1:100



SECRETARIA DEL
METRO DE PANAMA



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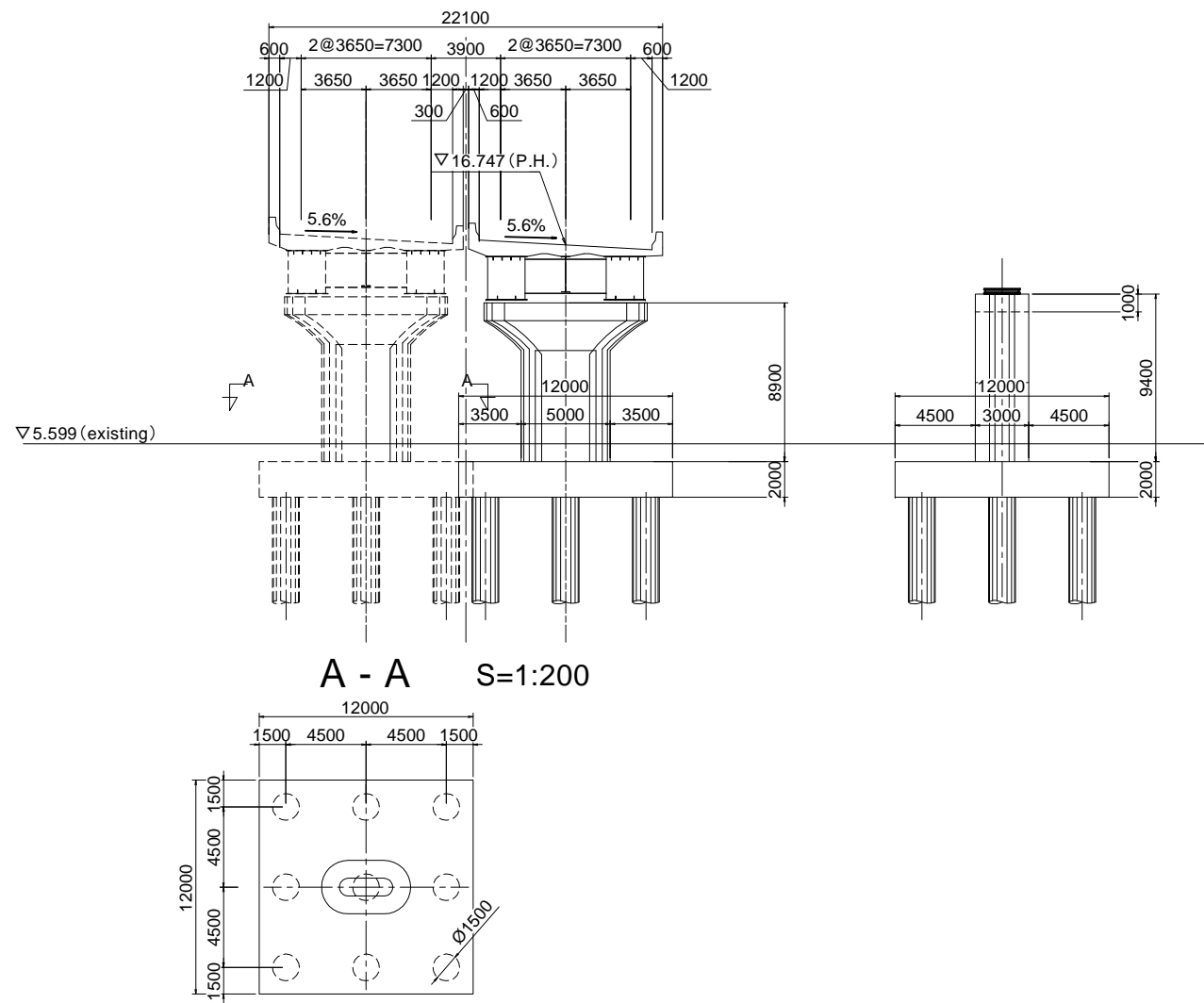
THE FEASIBILITY STUDY ON PANAMA CITY URBAN TRANSPORTATION LINE-3 PROJECT

| | | | |
|-----------|---------------------------|------------------------------------|-----------------------------|
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| DESIGNED: | SCALE: S=1:100 S=1:200 | TEAM LEADER/URBAN RAILWAY PLANNING | CIVIL AND FACILITY PLANNING |
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| | | | APPROVED BY: |
| | | | PAGE: 3 / 25 |

REMARKS:
Flyover No.1 (3 of 4)
(KM1+050.000~KM1+570.000)

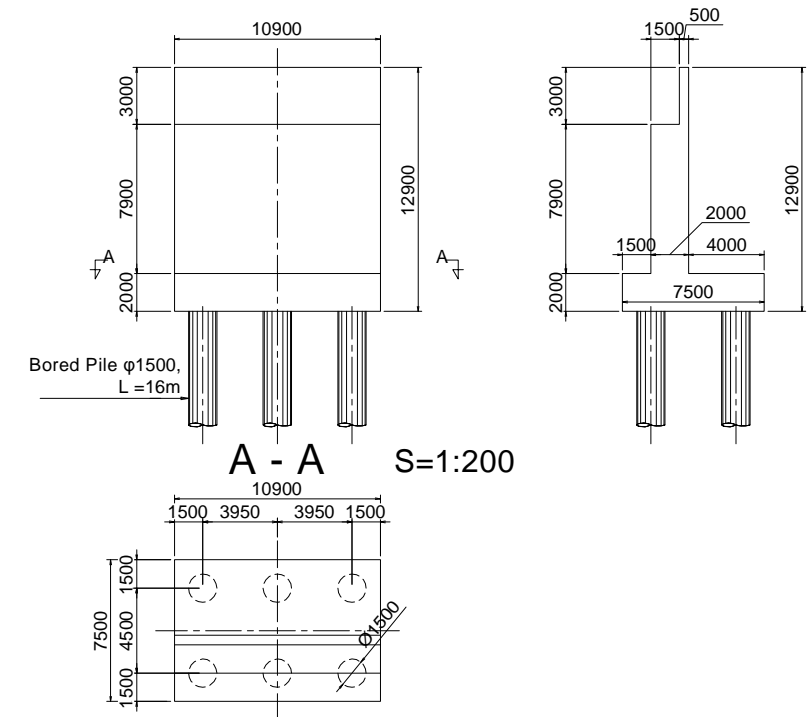
Flyover No.1 (4 of 4)
(KM1+050.000 ~ KM1+570.000)

P9 Cross Section S=1:200



A - A S=1:200

A2 Cross Section S=1:200



A - A S=1:200



SECRETARIA DEL METRO DE PANAMA



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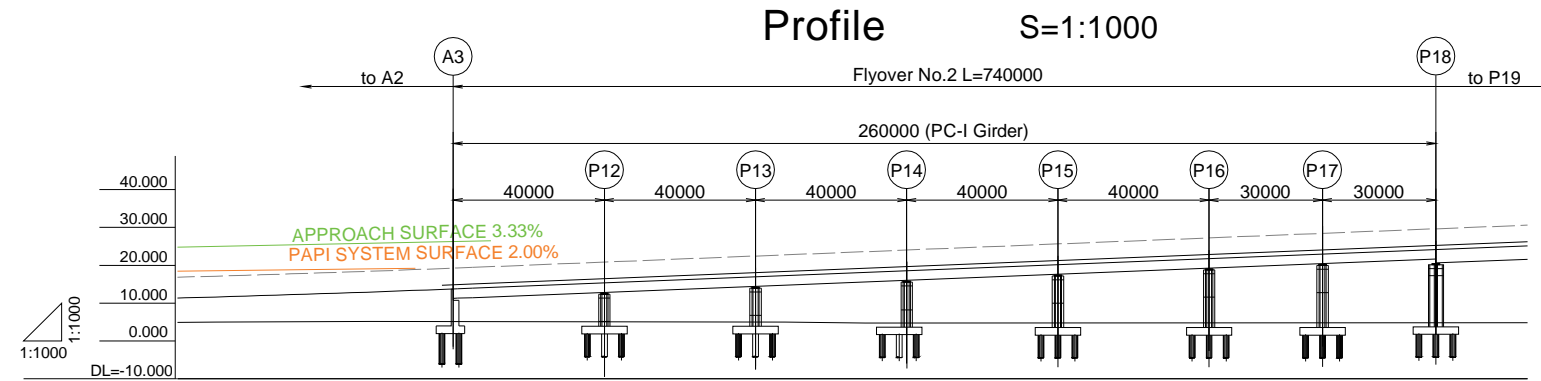
THE FEASIBILITY STUDY ON PANAMA CITY URBAN TRANSPORTATION LINE-3 PROJECT

| | | | | | |
|-----------|----------------|------------------------------------|-----------------------------|--------------|---------|
| DRAWN: | DATE: May 2014 | RECEIVED BY: | SUBMITTED BY: | CHECKED BY: | PAGE: 4 |
| DESIGNED: | SCALE: S=1:200 | TEAM LEADER/URBAN RAILWAY PLANNING | CIVIL AND FACILITY PLANNING | APPROVED BY: | 25 |

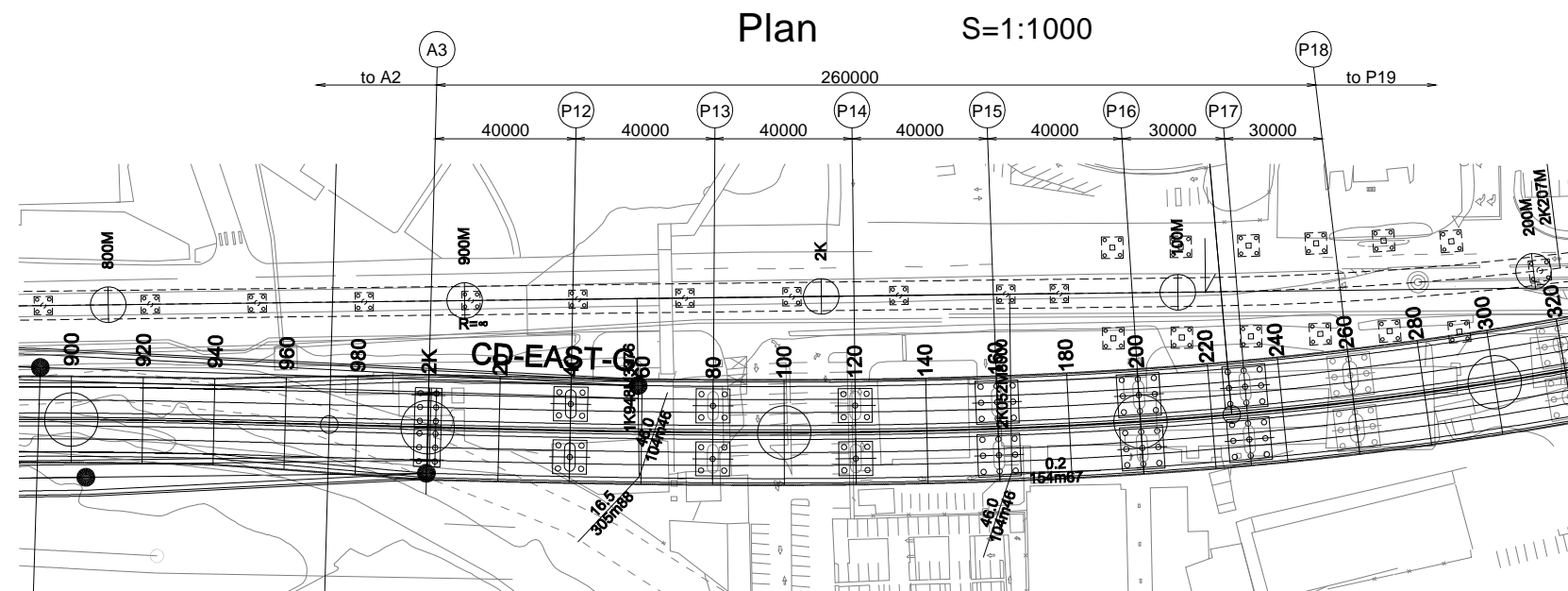
REMARKS:
Flyover No.1 (4 of 4)
(KM1+050.000~KM1+570.000)

Flyover No.2 (1 of 5)

(KM2+000.000~KM2+740.000)



| Station | Distance | Measure Point | Curve | Superelevation | Ground Height | Proposed Height | Gradient |
|---------|----------|---------------|------------------------|----------------|---------------|-----------------|----------|
| 940.000 | 20.000 | 940.000 | | | 5.012 | 11.712 | |
| 960.000 | 20.000 | 960.000 | | | 5.095 | 12.324 | |
| KA 5-1 | | | | | 5.146 | 12.735 | |
| 980.000 | 20.000 | 980.000 | | | 5.167 | 13.004 | |
| 2K | | | | | 2K 5.136 | 13.752 | |
| 020.000 | 20.000 | 020.000 | | | 5.105 | 14.550 | |
| 040.000 | 20.000 | 040.000 | | | 5.074 | 15.350 | |
| 060.000 | 20.000 | 060.000 | | | 5.043 | 16.150 | |
| 080.000 | 20.000 | 080.000 | | | 5.012 | 16.950 | |
| 100.000 | 20.000 | 100.000 | A=527.861 L=253.307 | | 4.844 | 17.750 | |
| 120.000 | 20.000 | 120.000 | | | 4.736 | 18.550 | |
| 140.000 | 20.000 | 140.000 | | | 4.746 | 19.350 | |
| 160.000 | 20.000 | 160.000 | | | 4.757 | 20.150 | |
| 180.000 | 20.000 | 180.000 | | | 4.767 | 20.950 | |
| 200.000 | 20.000 | 200.000 | | | 4.778 | 21.750 | |
| 220.000 | 20.000 | 220.000 | | | 4.788 | 22.550 | |
| KE 5-1 | | | | | 4.791 | 22.776 | |
| 240.000 | 20.000 | 240.000 | | | 4.799 | 23.350 | |
| 260.000 | 20.000 | 260.000 | | | 4.809 | 24.150 | |
| 280.000 | 20.000 | 280.000 | | | 4.820 | 24.950 | |



SECRETARIA DEL METRO DE PANAMA



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

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SCALE: S=1:1000

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5

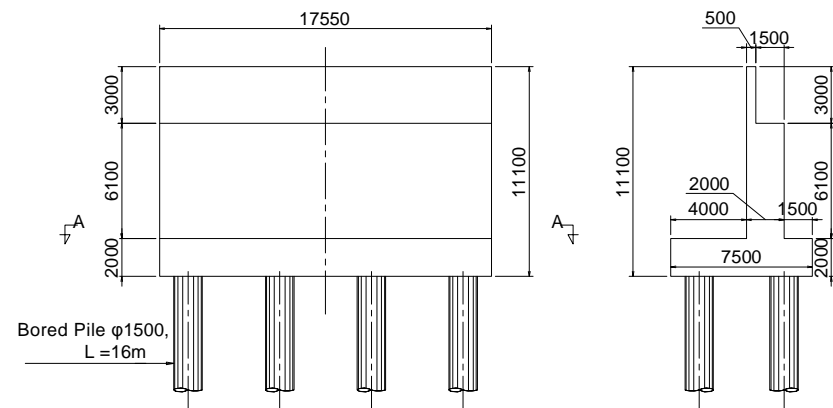
REMARKS:

Flyover No.2 (1 of 5)
(KM2+000.000~KM2+740.000)

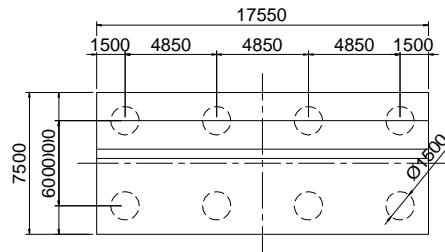
25

Flyover No.2 (2 of 5)
(KM2+000.000~KM2+740.000)

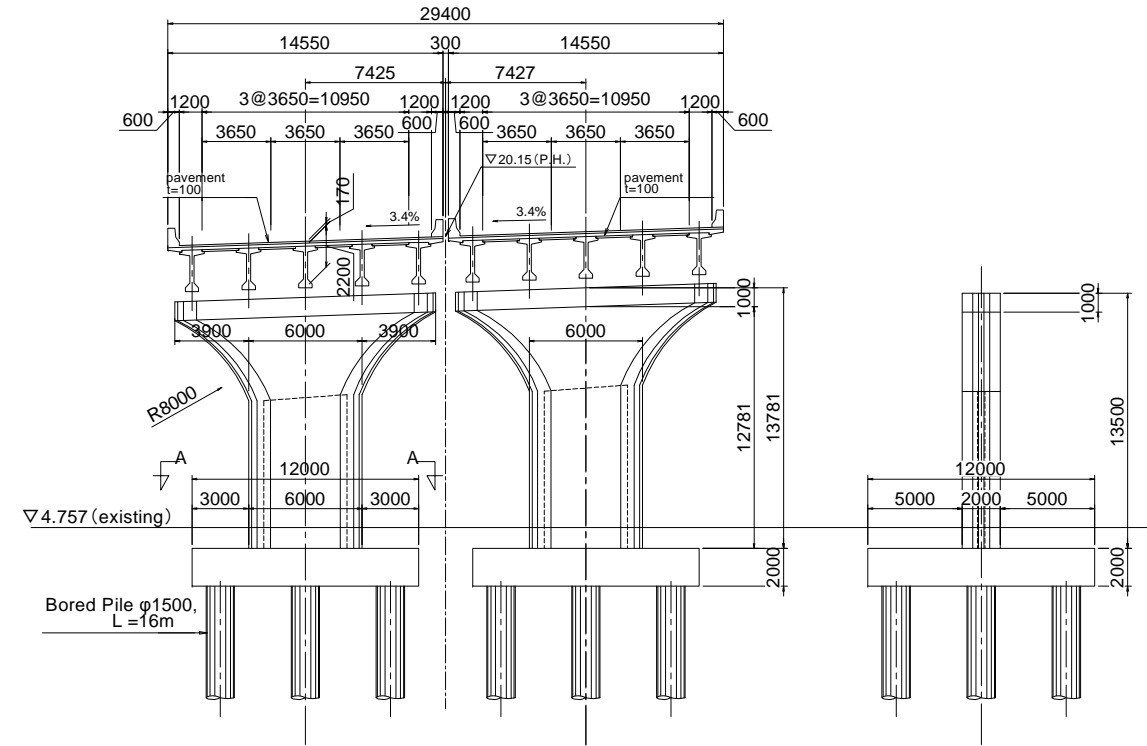
A3 Cross Section S=1:200



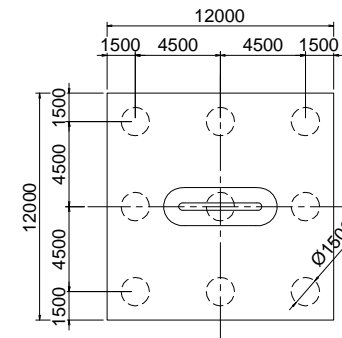
A - A S=1:200



P15 Cross Section S=1:200



A - A S=1:200



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

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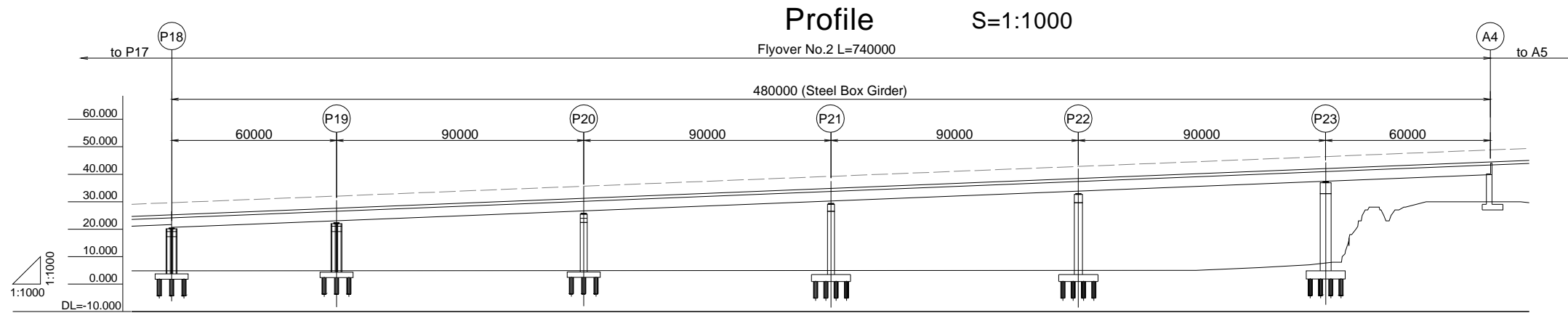
PAGE:
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REMARKS:

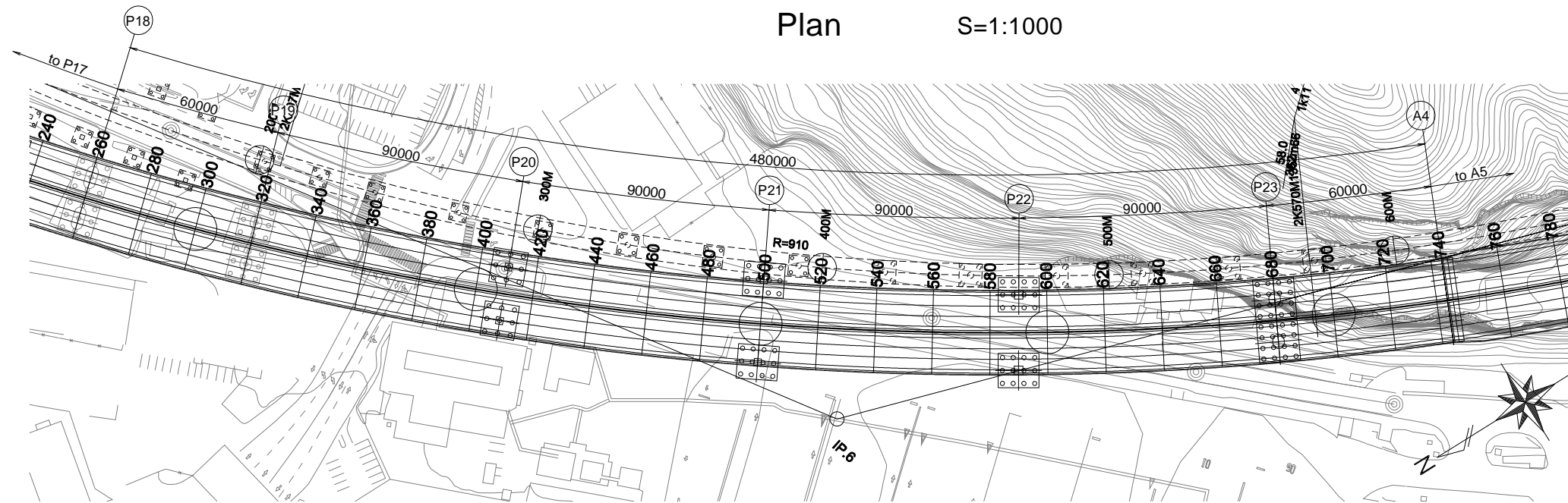
Flyover No.2 (2 of 5)
(KM2+000.000~KM2+740.000)

Flyover No.2 (3 of 5)

(KM2+000.000 ~ KM2+740.000)



| Station | Distance | Measure Point | Ground Height | Proposed Height | Gradient | Curve | Superelevation |
|---------|----------|---------------|---------------|-----------------|------------------------|-------------------------|----------------|
| 260.000 | 20.000 | 260.000 | 4.809 | 24.150 | i=4.000% L=2005.000 | R=1100.000 L=646.362 | |
| 280.000 | 20.000 | 280.000 | 4.820 | 24.950 | | | |
| 300.000 | 20.000 | 300.000 | 4.830 | 25.750 | | | |
| 320.000 | 20.000 | 320.000 | 4.841 | 26.550 | | | |
| 340.000 | 20.000 | 340.000 | 4.851 | 27.350 | | | |
| 360.000 | 20.000 | 360.000 | 4.862 | 28.150 | | | |
| 380.000 | 20.000 | 380.000 | 4.872 | 28.950 | | | |
| 400.000 | 20.000 | 400.000 | 4.883 | 29.750 | | | |
| 420.000 | 20.000 | 420.000 | 4.893 | 30.550 | | | |
| 440.000 | 20.000 | 440.000 | 4.903 | 31.350 | | | |
| 460.000 | 20.000 | 460.000 | 4.914 | 32.150 | | | |
| 480.000 | 20.000 | 480.000 | 4.924 | 32.950 | | | |
| 500.000 | 20.000 | 500.000 | 4.935 | 33.750 | | | |
| 520.000 | 20.000 | 520.000 | 4.945 | 34.550 | | | |
| 540.000 | 20.000 | 540.000 | 4.956 | 35.350 | | | |
| 560.000 | 20.000 | 560.000 | 4.966 | 36.150 | | | |
| 580.000 | 20.000 | 580.000 | 4.977 | 36.950 | | | |
| 600.000 | 20.000 | 600.000 | 4.987 | 37.750 | | | |
| 620.000 | 20.000 | 620.000 | 4.998 | 38.550 | | | |
| 640.000 | 20.000 | 640.000 | 5.313 | 39.350 | | | |
| 660.000 | 20.000 | 660.000 | 6.223 | 40.150 | | | |
| 680.000 | 20.000 | 680.000 | 7.706 | 40.950 | | | |
| 700.000 | 20.000 | 700.000 | 27.000 | 41.750 | | | |
| 720.000 | 20.000 | 720.000 | 30.000 | 42.550 | | | |
| 740.000 | 20.000 | 740.000 | 30.000 | 43.350 | | | |



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

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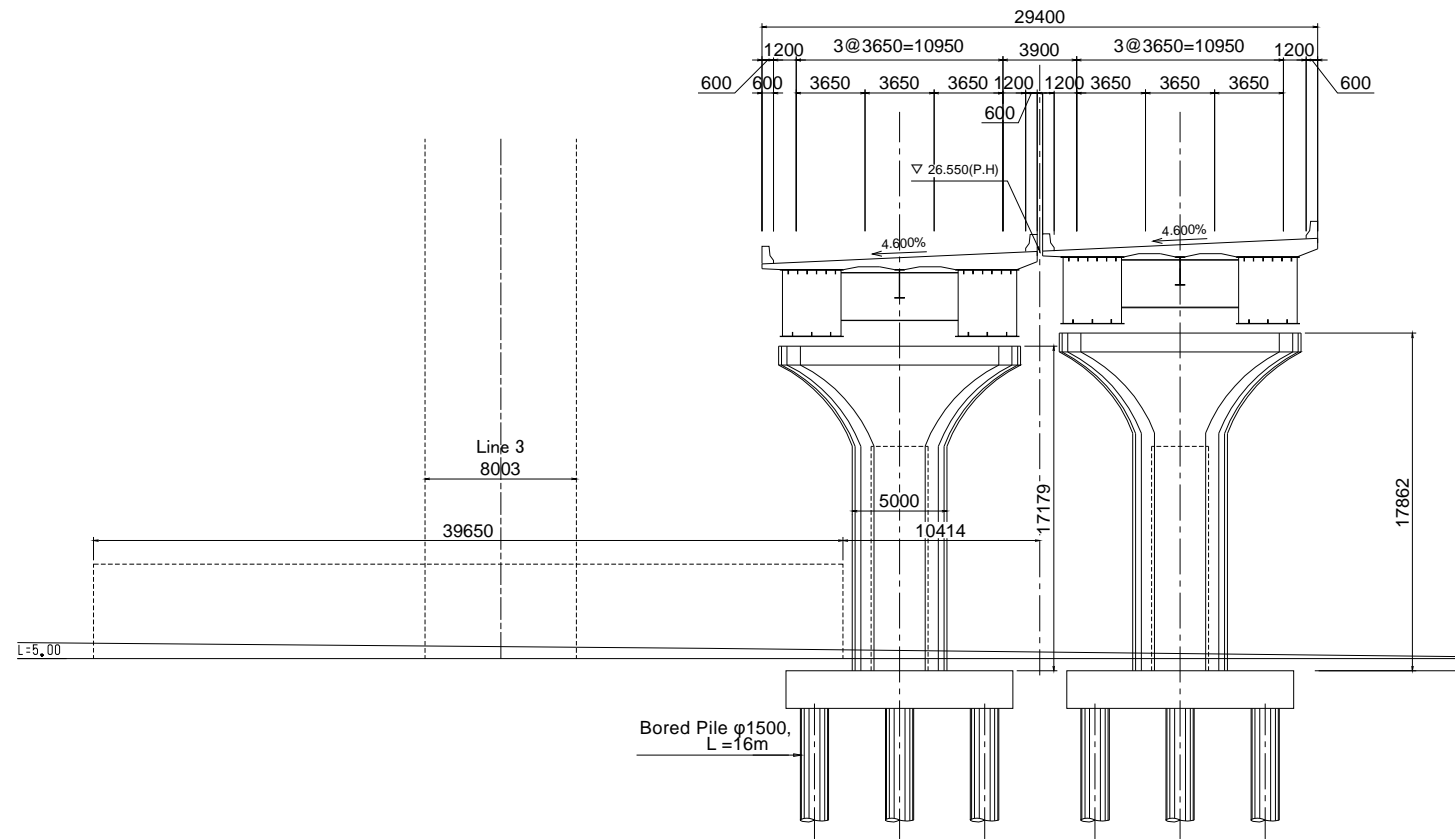
7/25

REMARKS:

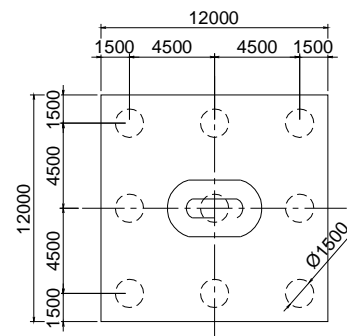
Flyover No.2 (3 of 5)
(KM2+000.000~KM2+740.000)

Flyover No.2 (4 of 5)
(KM2+000.000 ~ KM2+740.000)

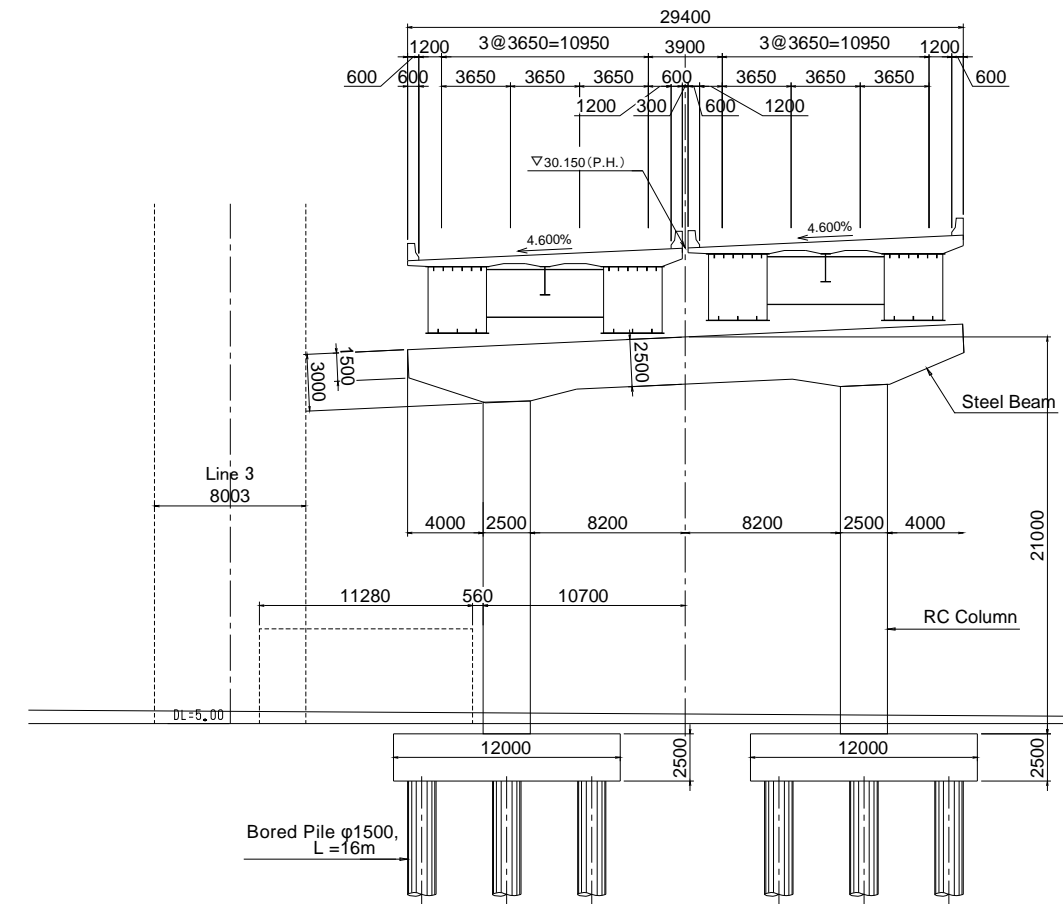
P19 Cross Section S=1:200



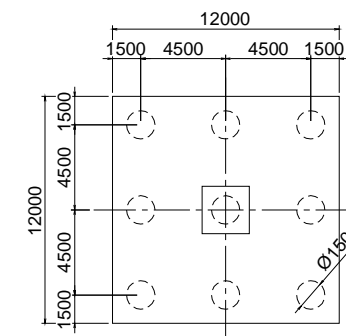
A - A S=1:200



P20 Cross Section S=1:200



A - A S=1:200



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REMARKS:

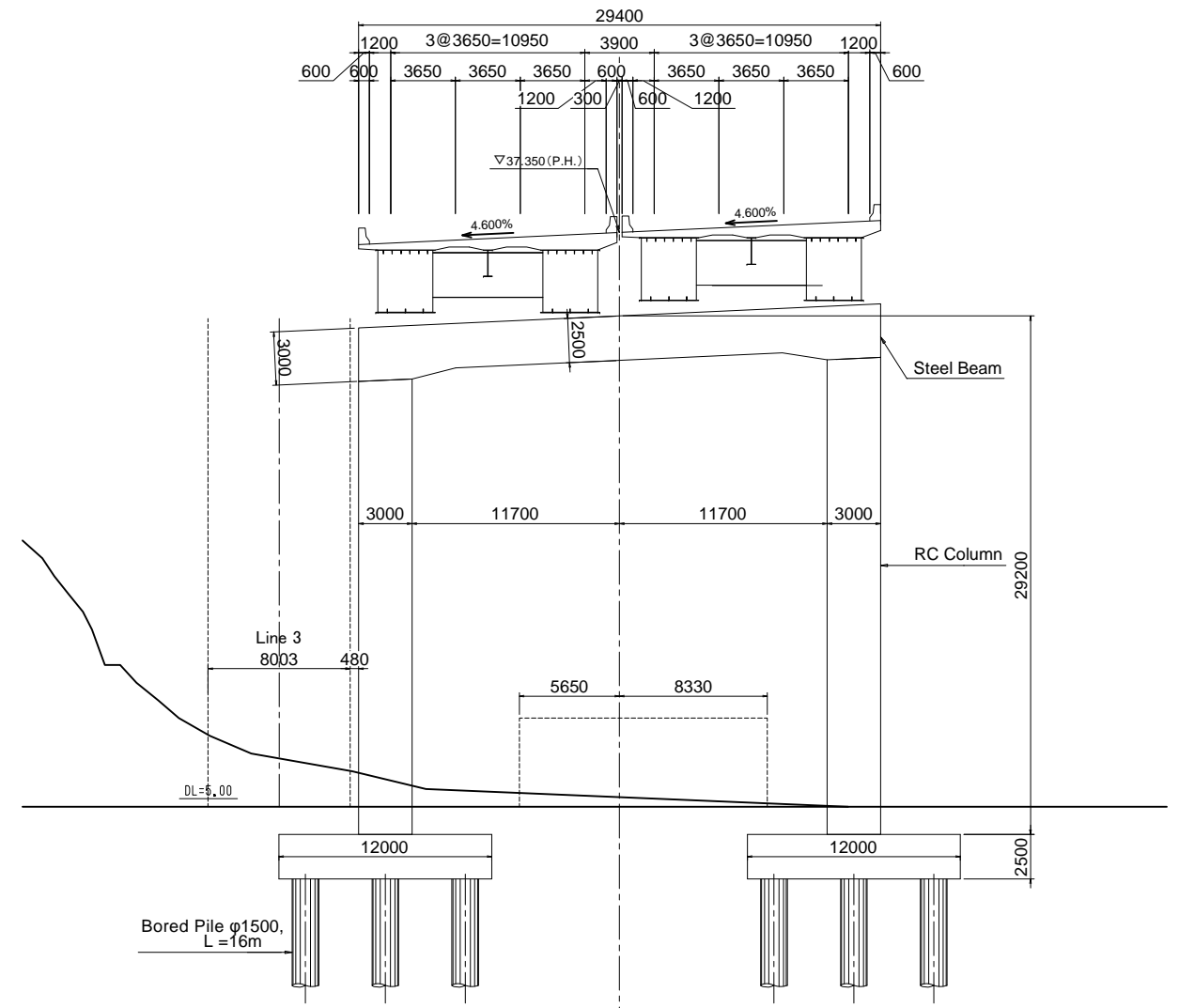
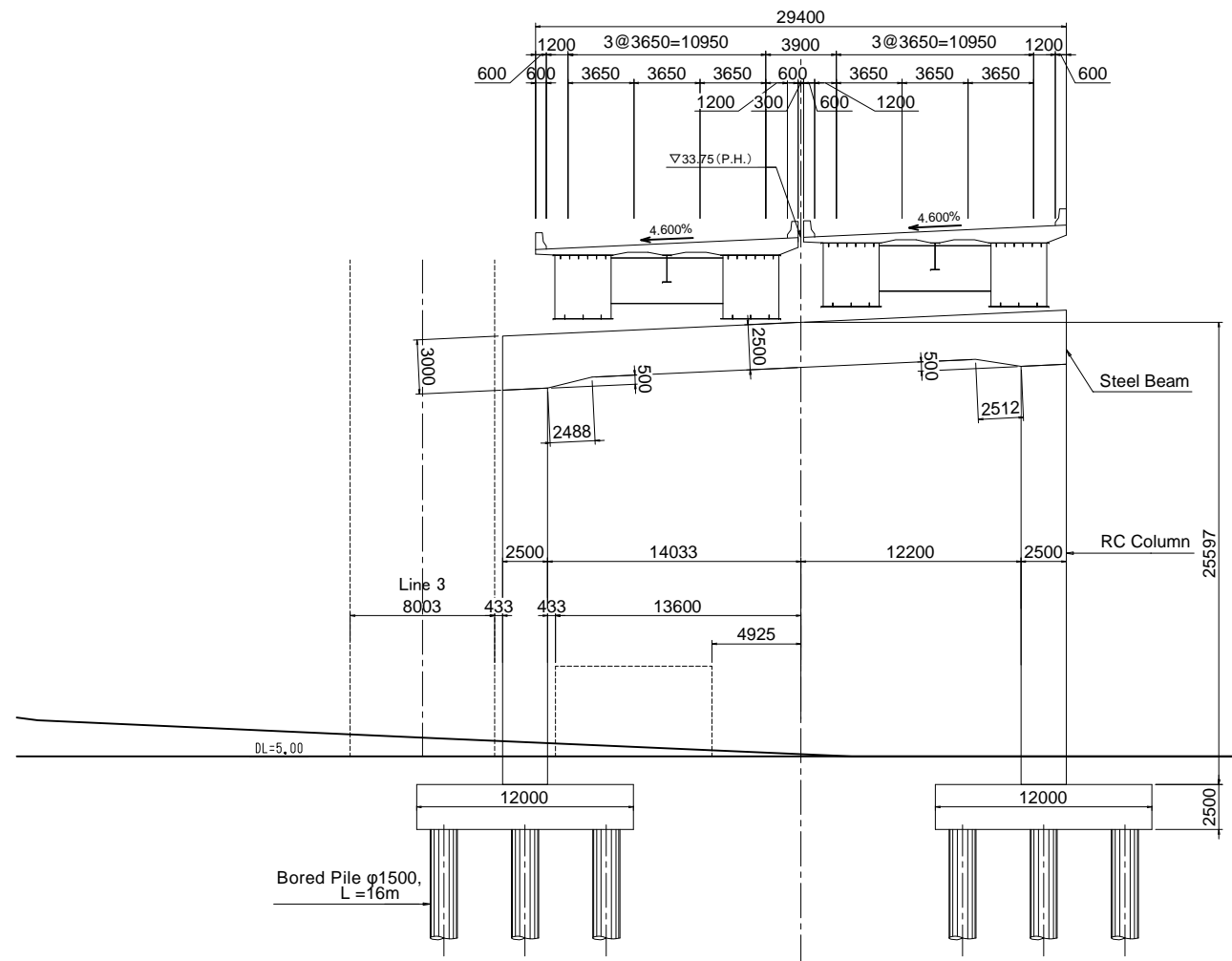
Flyover No.2 (4 of 5)
(KM2+000.000~KM2+740.000)

25

Flyover No.2 (5 of 5)
(KM2+000.000~KM2+740.000)

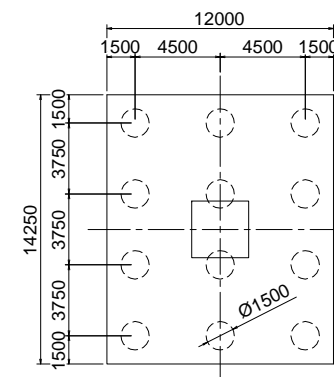
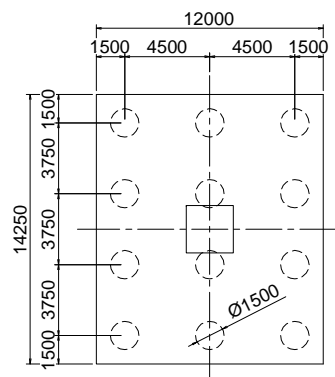
P21 Cross Section S=1:200

P22 Cross Section S=1:200



A - A S=1:200

A - A S=1:200



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JAPAN INTERNATIONAL COOPERATION AGENCY

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

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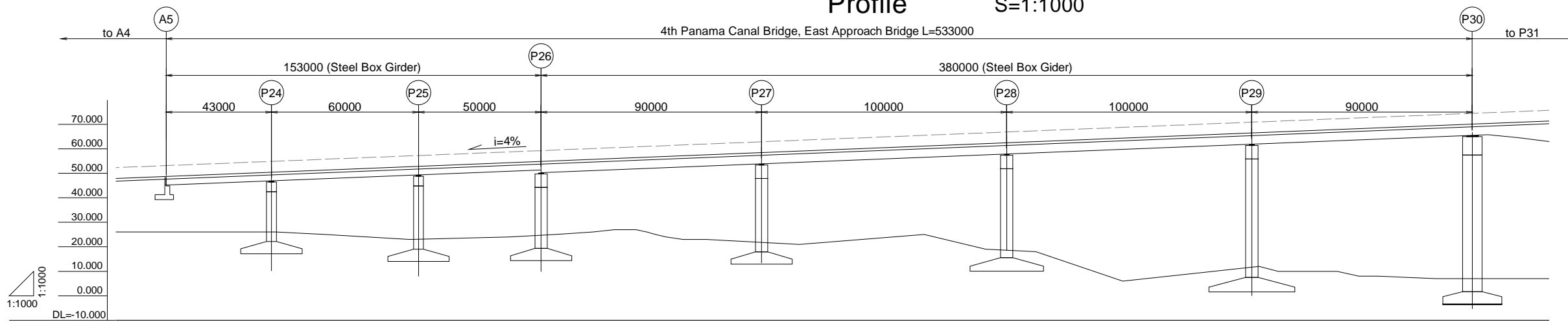
REMARKS:

Flyover No.2 (5 of 5)
(KM2+000.000~KM2+740.000)

4th Panama Canal Bridge, East Approach Bridge (1 of 2)

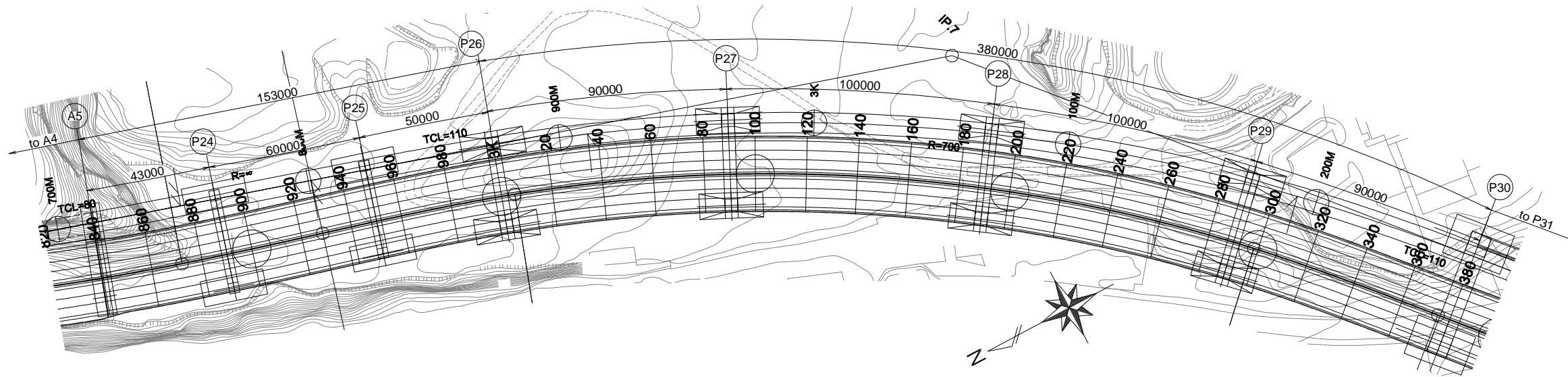
(KM2+847.000~KM3+380.000)

Profile S=1:1000



| Gradient | Proposed Height | Ground Height | Station | Distance | Measure Point | Curve | Superelevation |
|----------|-----------------|---------------|------------|----------|---------------|-------|----------------|
| | 47.350 | 26.000 | 840.000 | 20.000 | 840.000 | | 4.000 |
| | 48.150 | 26.000 | 860.000 | 20.000 | 860.000 | | 4.000 |
| | 48.631 | 26.000 | KE 5-2 | | | | |
| | 48.950 | 26.000 | 880.000 | 20.000 | 880.000 | | 4.000 |
| | 49.750 | 25.564 | 900.000 | 20.000 | 900.000 | | 4.000 |
| | 50.550 | 24.526 | 920.000 | 20.000 | 920.000 | | 4.000 |
| | 50.886 | 24.041 | KA 6-1 | | | | |
| | 51.350 | 23.371 | 940.000 | 20.000 | 940.000 | | 4.000 |
| | 52.150 | 23.335 | 960.000 | 20.000 | 960.000 | | 4.000 |
| | 52.950 | 23.828 | 980.000 | 20.000 | 980.000 | | 4.000 |
| | 53.750 | 24.690 | 3K 000.000 | 20.000 | 3K 000.000 | | 6.000 |
| | 53.959 | 24.966 | KE 6-1 | | | | |
| | 54.550 | 25.921 | 020.000 | 20.000 | 020.000 | | 6.000 |
| | 55.350 | 26.698 | 040.000 | 20.000 | 040.000 | | 6.000 |
| | 56.150 | 23.000 | 060.000 | 20.000 | 060.000 | | 6.000 |
| | 56.950 | 22.334 | 080.000 | 20.000 | 080.000 | | 6.000 |
| | 57.750 | 21.280 | 100.000 | 20.000 | 100.000 | | 6.000 |
| | 58.550 | 22.153 | 120.000 | 20.000 | 120.000 | | 6.000 |
| | 59.350 | 23.722 | 140.000 | 20.000 | 140.000 | | 6.000 |
| | 60.150 | 24.110 | 160.000 | 20.000 | 160.000 | | 6.000 |
| | 60.950 | 19.320 | 180.000 | 20.000 | 180.000 | | 6.000 |
| | 61.750 | 18.089 | 200.000 | 20.000 | 200.000 | | 6.000 |
| | 62.550 | 11.852 | 220.000 | 20.000 | 220.000 | | 6.000 |
| | 63.350 | 6.290 | 240.000 | 20.000 | 240.000 | | 6.000 |
| | 64.150 | 8.450 | 260.000 | 20.000 | 260.000 | | 6.000 |
| | 64.950 | 10.609 | 280.000 | 20.000 | 280.000 | | 6.000 |
| | 65.681 | 10.624 | KE 6-2 | | | | |
| | 65.750 | 10.175 | 300.000 | 20.000 | 300.000 | | 6.000 |
| | 66.550 | 10.000 | 320.000 | 20.000 | 320.000 | | 6.000 |
| | 67.350 | 8.000 | 340.000 | 20.000 | 340.000 | | 6.000 |
| | 68.150 | 7.216 | 360.000 | 0.290 | 360.000 | | 2.000 |
| | 68.754 | 7.000 | KA 6-2 | | | | |
| | 68.950 | 7.000 | 380.000 | 20.000 | 380.000 | | 2.000 |
| | 69.750 | 7.000 | 400.000 | 20.000 | 400.000 | | 2.000 |

Plan S=1:1000



SECRETARIA DEL METRO DE PANAMA



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REMARKS:

4th Panama Canal Bridge East Approach Bridge (1 of 2) (KM2+847.000~KM3+380.000)

4th Panama Canal Bridge, East Approach Bridge (2 of 2)

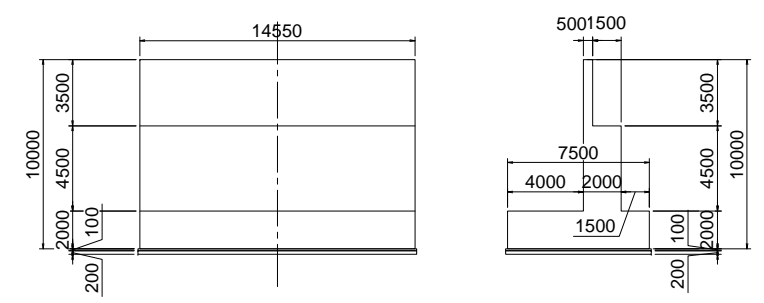
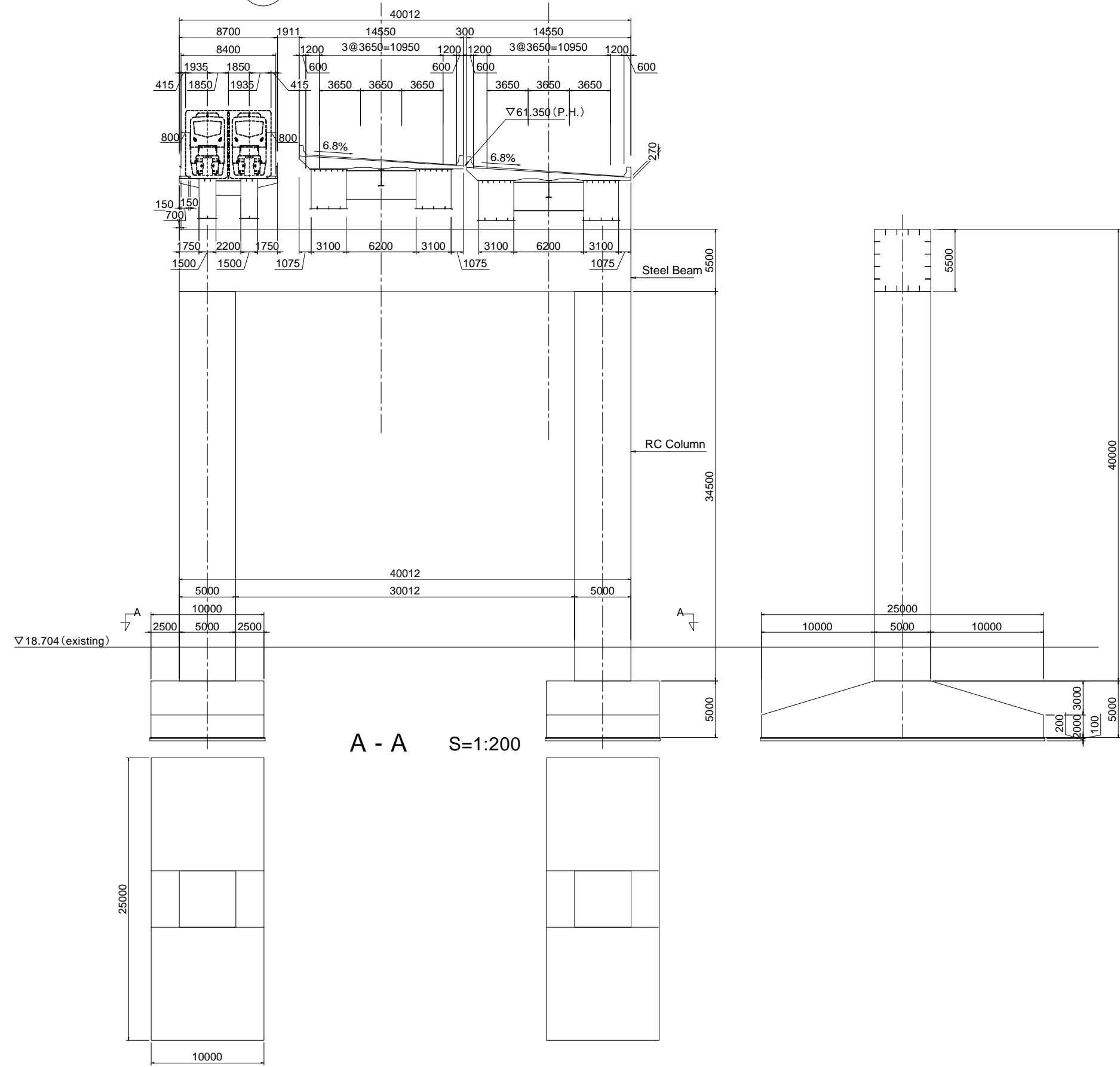
P28 Cross Section

S=1:200

(KM2+847.000~KM3+380.000)

A5 Cross Section

S=1:200



A - A S=1:200



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

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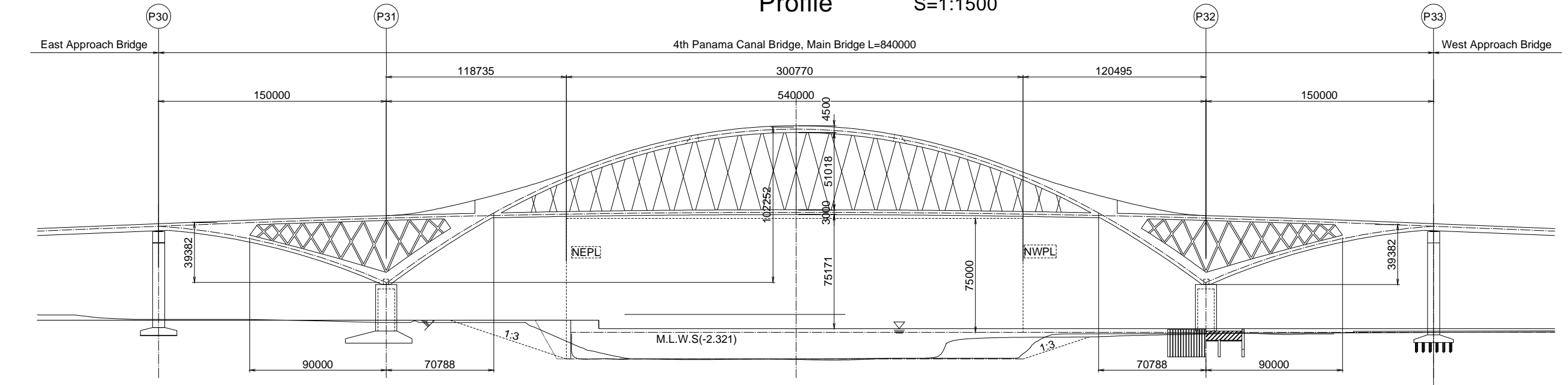
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REMARKS:
 4th Panama Canal Bridge East Approach Bridge (2 of 2) (KM2+847.000~KM3+380.000)

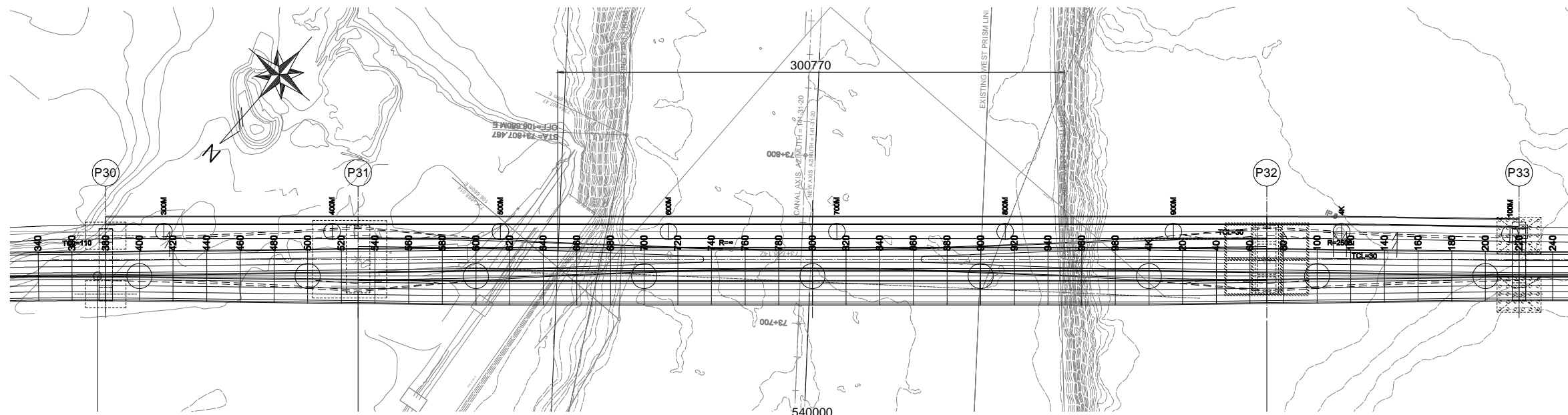
4th Panama Canal Bridge, Main Bridge (1 of 4) (KM3+380.000 ~ KM4+220.000)

Profile S=1:1500



| Station | Distance | Measure Point | Ground Height | Proposed Height | Gradient |
|----------|----------|---------------|---------------|-----------------|-------------------------|
| 300.000 | 20.000 | 300.000 | 10.175 | 65.750 | i=-4.000% L=2000.000 |
| 320.000 | 20.000 | 320.000 | 10.000 | 66.550 | |
| 340.000 | 20.000 | 340.000 | 8.000 | 67.350 | i=-4.000% L=1680.000 |
| 360.000 | 20.000 | 360.000 | 7.216 | 68.150 | |
| 380.000 | 20.000 | 380.000 | 7.000 | 68.754 | |
| 400.000 | 20.000 | 400.000 | 7.000 | 68.950 | |
| 420.000 | 20.000 | 420.000 | 7.000 | 69.750 | |
| 440.000 | 20.000 | 440.000 | 6.966 | 71.329 | |
| 460.000 | 20.000 | 460.000 | 6.570 | 72.086 | |
| 480.000 | 20.000 | 480.000 | 6.173 | 72.761 | |
| 500.000 | 20.000 | 500.000 | 5.694 | 73.413 | |
| 520.000 | 20.000 | 520.000 | 5.151 | 74.024 | |
| 540.000 | 20.000 | 540.000 | 5.000 | 74.592 | |
| 560.000 | 20.000 | 560.000 | 5.000 | 75.118 | |
| 580.000 | 20.000 | 580.000 | 5.000 | 75.603 | |
| 600.000 | 20.000 | 600.000 | 5.000 | 76.045 | |
| 620.000 | 20.000 | 620.000 | 5.000 | 76.445 | |
| 640.000 | 20.000 | 640.000 | -3.221 | 76.803 | |
| 660.000 | 20.000 | 660.000 | -11.724 | 77.118 | |
| 680.000 | 20.000 | 680.000 | -16.918 | 77.392 | |
| 700.000 | 20.000 | 700.000 | -19.000 | 77.624 | |
| 720.000 | 20.000 | 720.000 | -19.000 | 77.813 | |
| 740.000 | 20.000 | 740.000 | -19.000 | 77.961 | |
| 760.000 | 20.000 | 760.000 | -19.000 | 78.066 | |
| 780.000 | 20.000 | 780.000 | -19.000 | 78.129 | |
| 800.000 | 20.000 | 800.000 | -18.995 | 78.150 | |
| 820.000 | 20.000 | 820.000 | -18.861 | 78.129 | |
| 840.000 | 20.000 | 840.000 | -18.726 | 78.066 | |
| 860.000 | 20.000 | 860.000 | -18.591 | 77.961 | |
| 880.000 | 20.000 | 880.000 | -18.500 | 77.813 | |
| 900.000 | 20.000 | 900.000 | -18.500 | 77.624 | |
| 920.000 | 20.000 | 920.000 | -18.500 | 77.392 | |
| 940.000 | 20.000 | 940.000 | -18.197 | 77.118 | |
| 960.000 | 20.000 | 960.000 | -7.117 | 76.803 | |
| 980.000 | 20.000 | 980.000 | -2.489 | 76.445 | |
| 1000.000 | 20.000 | 1000.000 | -2.429 | 76.045 | |
| 1020.000 | 20.000 | 1020.000 | -2.368 | 75.603 | |
| 1040.000 | 20.000 | 1040.000 | -2.308 | 75.118 | |
| 1060.000 | 20.000 | 1060.000 | -2.248 | 74.592 | |
| 1080.000 | 20.000 | 1080.000 | -2.187 | 74.024 | |
| 1100.000 | 20.000 | 1100.000 | -2.127 | 73.413 | |
| 1120.000 | 20.000 | 1120.000 | -2.067 | 72.761 | |
| 1140.000 | 20.000 | 1140.000 | -2.006 | 72.086 | |
| 1160.000 | 20.000 | 1160.000 | -1.945 | 71.329 | |
| 1180.000 | 20.000 | 1180.000 | -1.779 | 70.550 | |
| 1200.000 | 20.000 | 1200.000 | -1.662 | 69.750 | |
| 1220.000 | 20.000 | 1220.000 | -1.546 | 68.950 | |
| 1240.000 | 20.000 | 1240.000 | -1.426 | 68.150 | |
| 1260.000 | 20.000 | 1260.000 | -1.303 | 67.350 | |
| 1280.000 | 20.000 | 1280.000 | -1.181 | 66.550 | |
| 1300.000 | 20.000 | 1300.000 | -1.059 | 65.750 | |

Plan S=1:1500



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12
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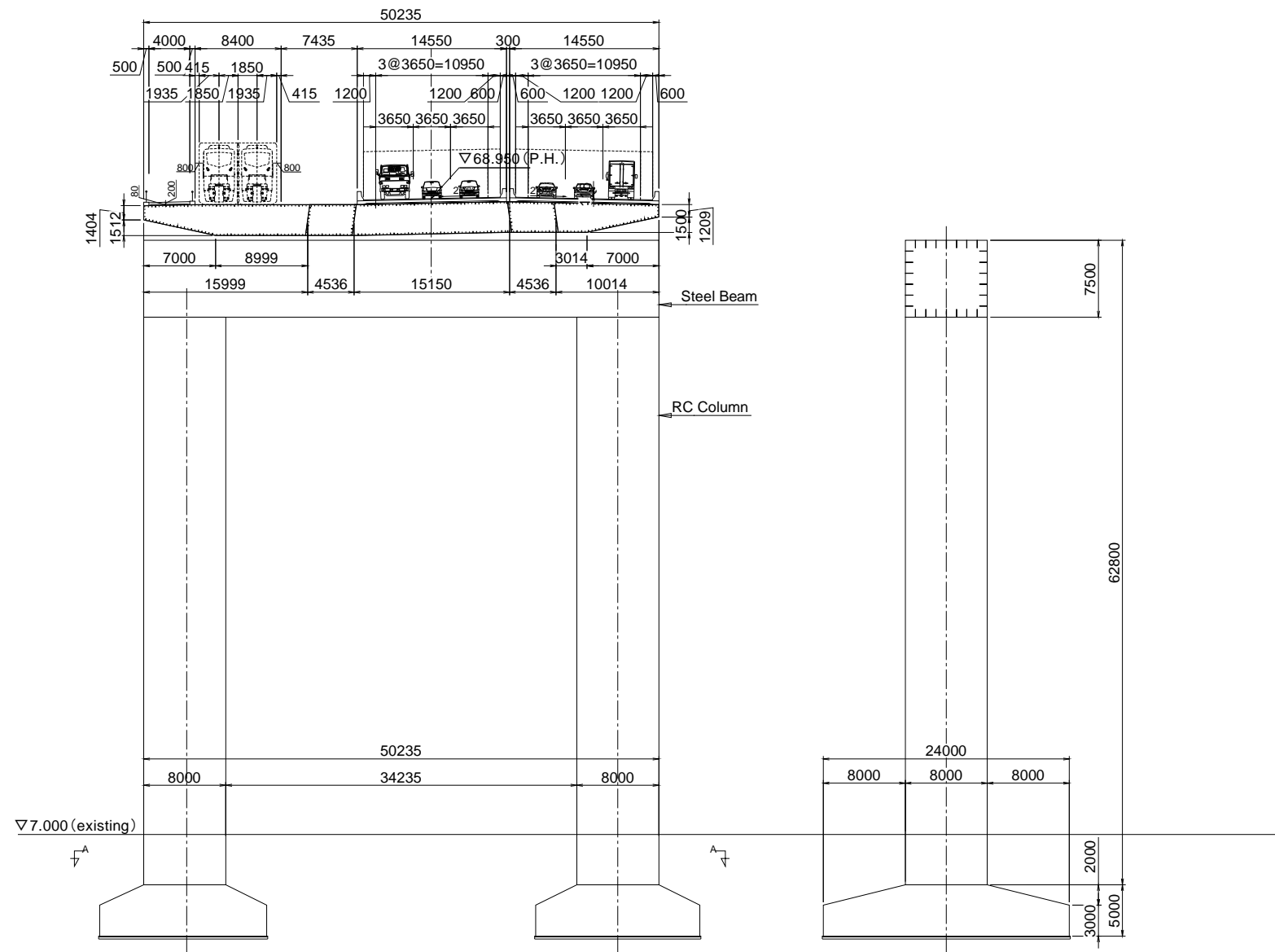
REMARKS:

4th Panama Canal Bridge
Main Bridge (1 of 4)
(KM3+380.000~KM4+220.000)

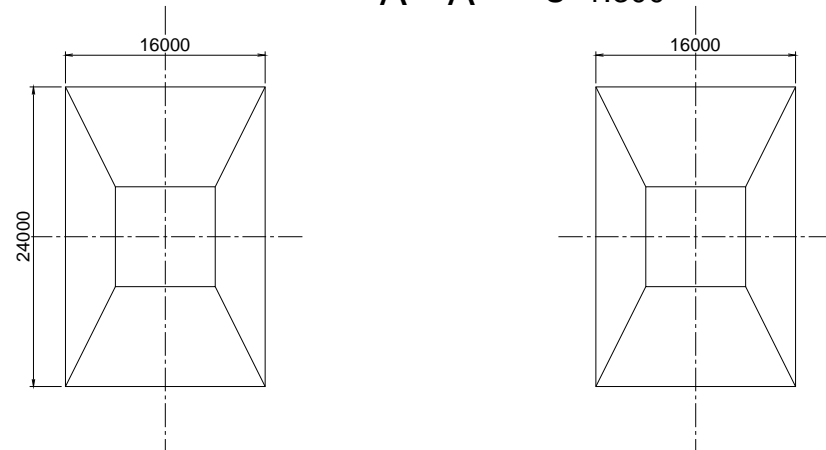
4th Panama Canal Bridge, Main Bridge (2 of 4)

(KM3+380.000 ~ KM4+220.000)

P30 Cross Section S=1:300



A - A S=1:300



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

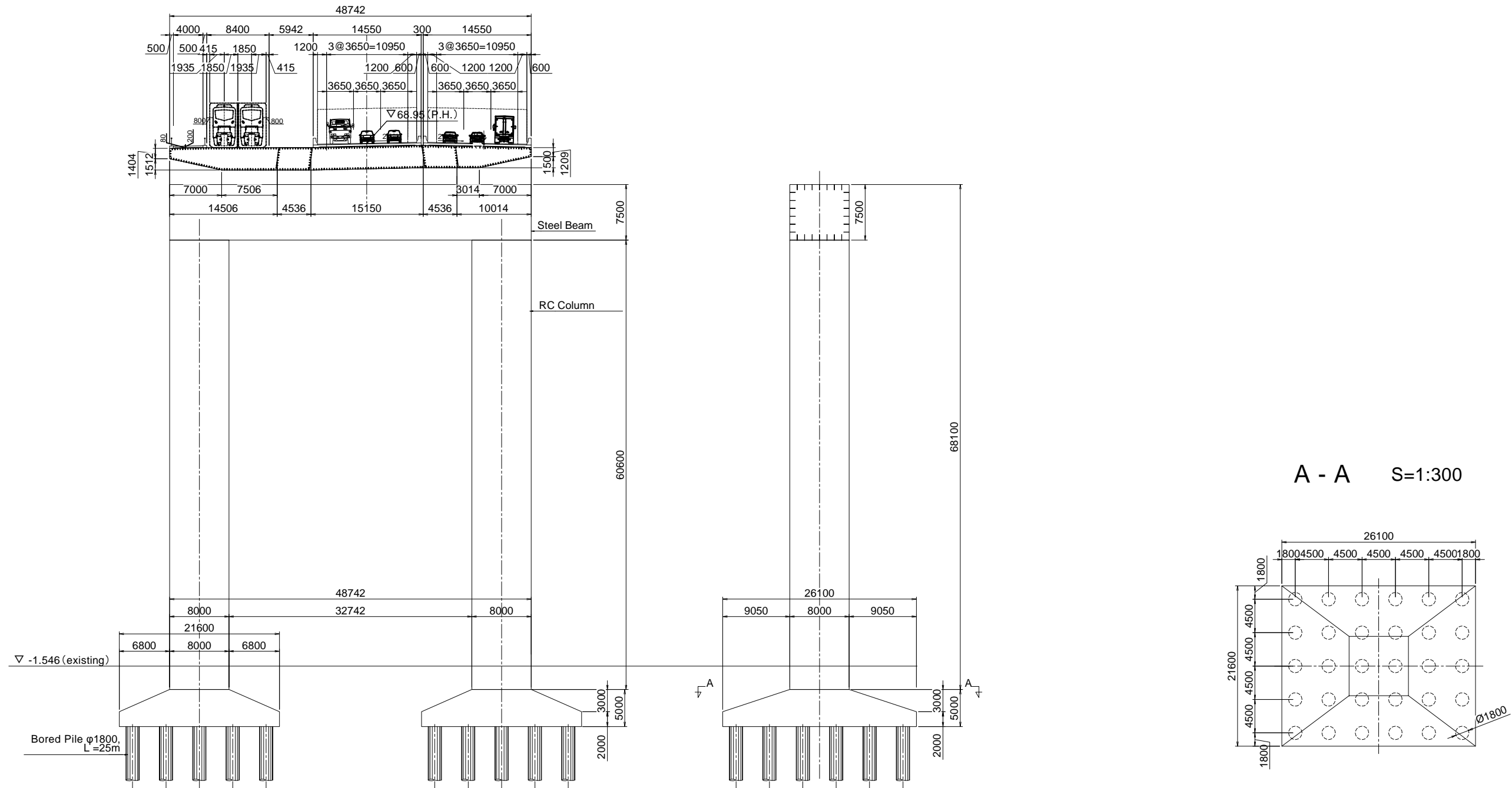
| | | | | | |
|-----------|----------------|------------------------------------|-----------------------------|--------------|-------|
| DRAWN: | DATE: May 2014 | RECEIVED BY: | SUBMITTED BY: | CHECKED BY: | PAGE: |
| DESIGNED: | SCALE: S=1:300 | TEAM LEADER/URBAN RAILWAY PLANNING | CIVIL AND FACILITY PLANNING | APPROVED BY: | 13/25 |

REMARKS:
4th Panama Canal Bridge Main Bridge (2 of 4) (KM3+380.000~KM4+220.000)

4th Panama Canal Bridge, Main Bridge (4 of 4)

(KM3+380.000 ~ KM4+220.000)

P33 Cross Section S=1:300



A - A S=1:300



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SCALE:

S=1:300

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REMARKS:

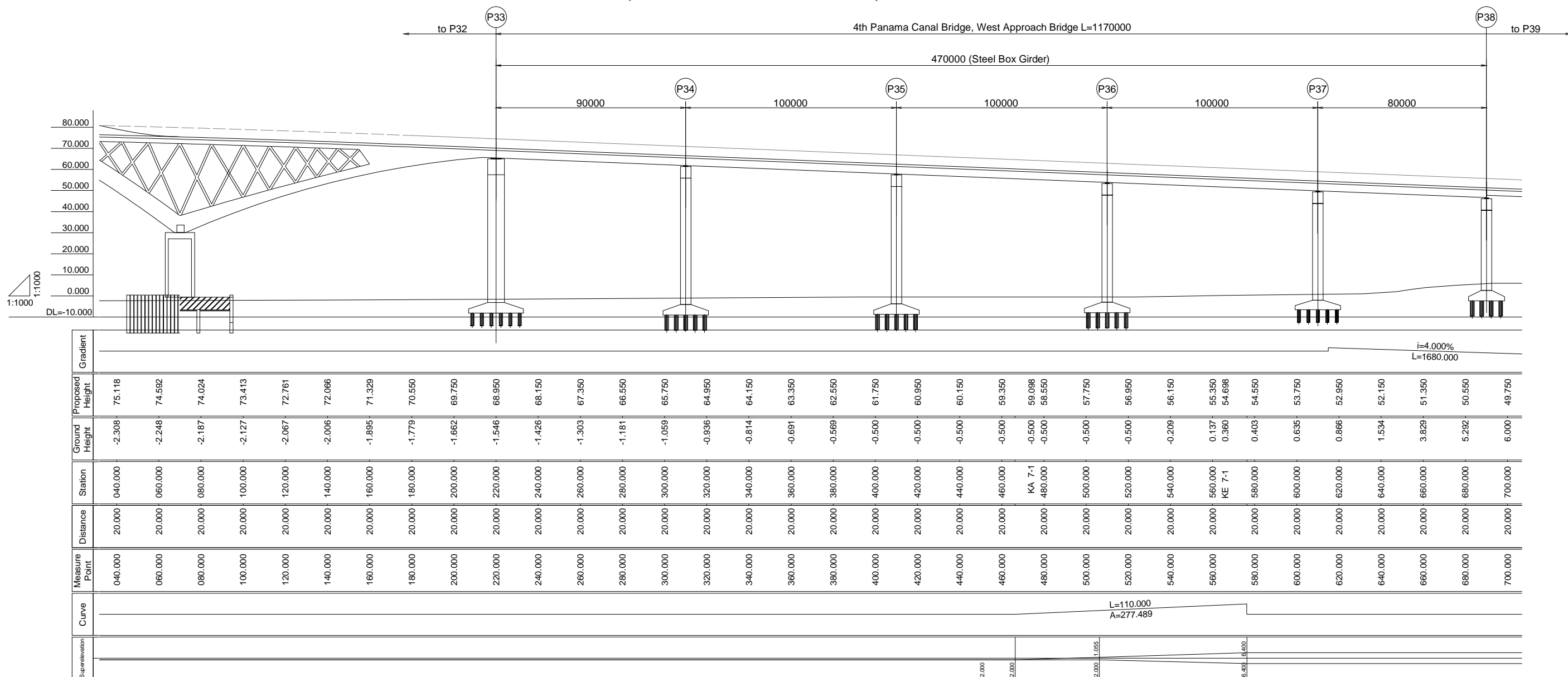
4th Panama Canal Bridge
Main Bridge (4 of 4)
(KM3+380.000~KM4+220.000)

4th Panama Canal Bridge, West Approach Bridge (1 of 6)

Profile

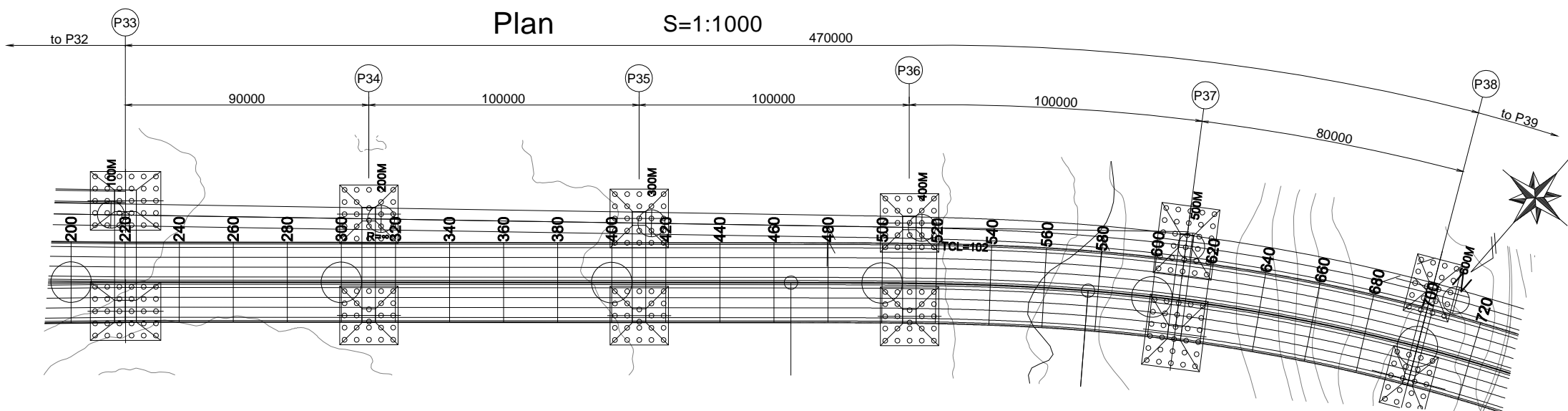
S=1:1000

(KM4+220.000 ~ KM5+390.000)



Plan

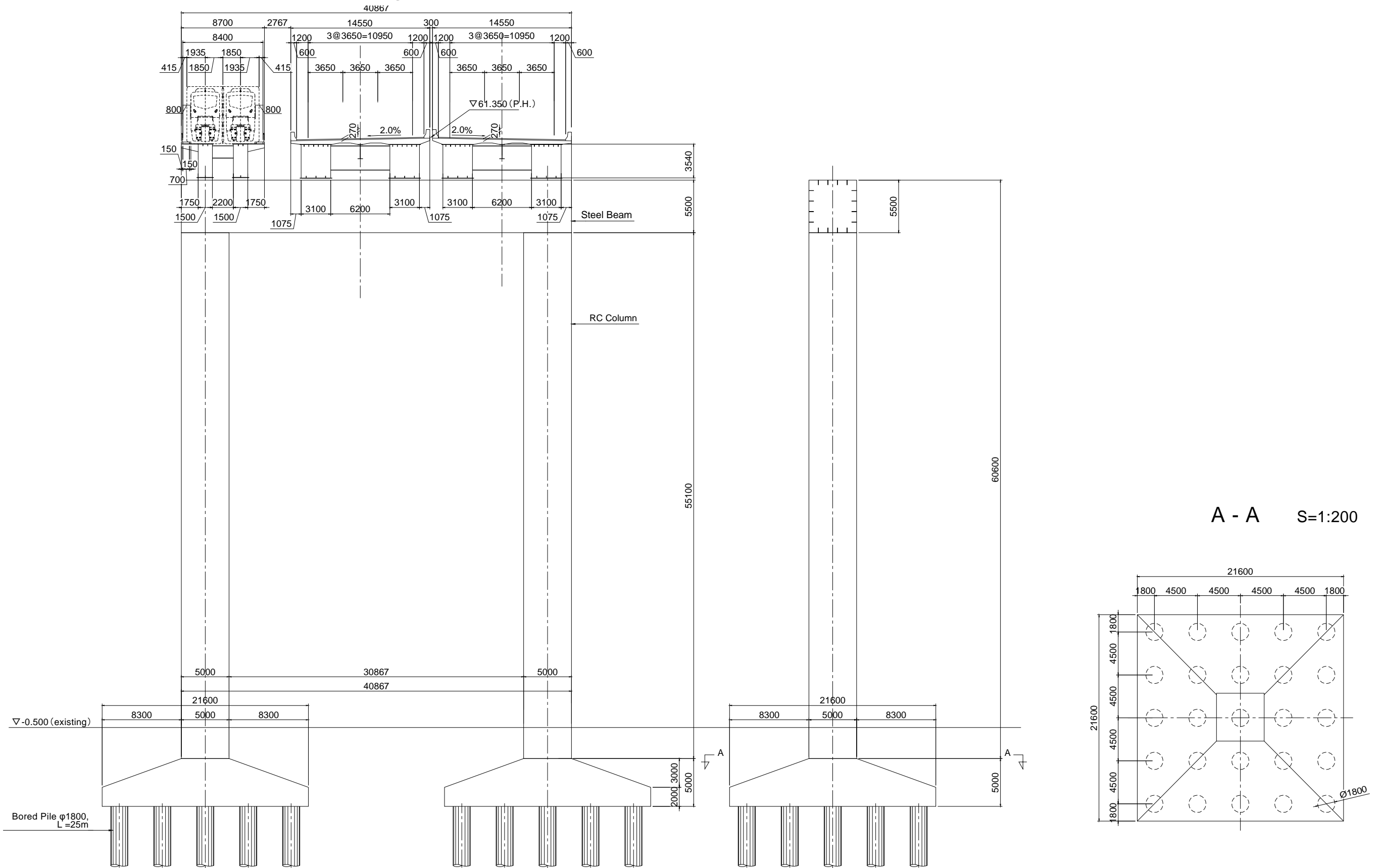
S=1:1000



4th Panama Canal Bridge, West Approach Bridge (2 of 6)

(KM4+220.000 ~ KM5+390.000)

P35 Cross Section S=1:200



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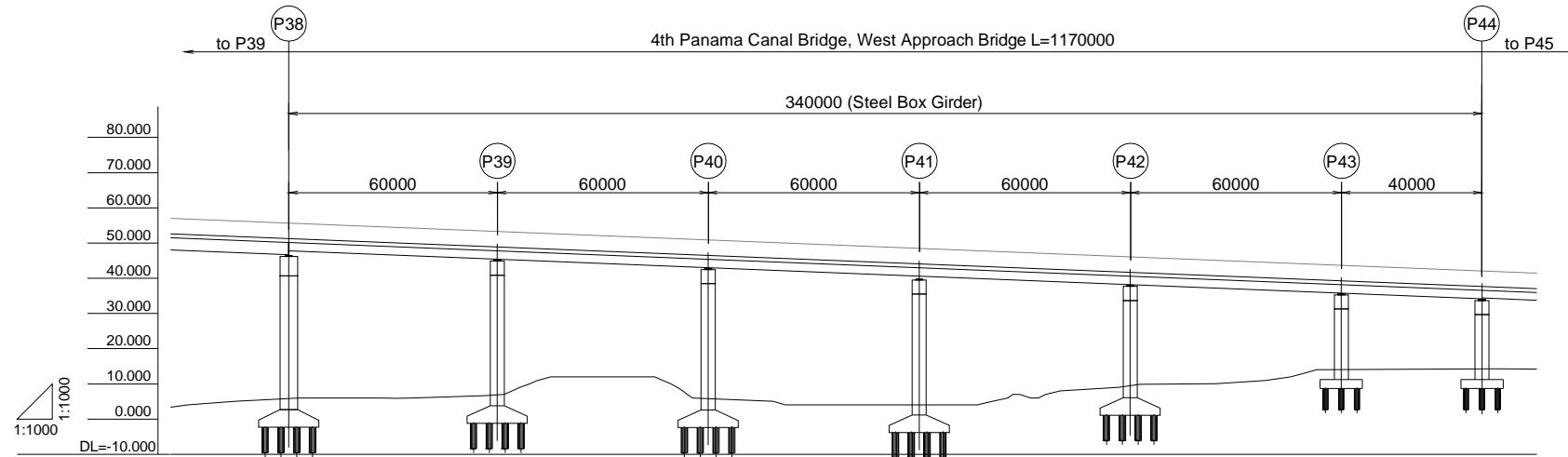
REMARKS:
 4th Panama Canal Bridge West Approach Bridge (2 of 6) (KM4+220.000~KM5+390.000)

4th Panama Canal Bridge, West Approach Bridge (3 of 6)

Profile

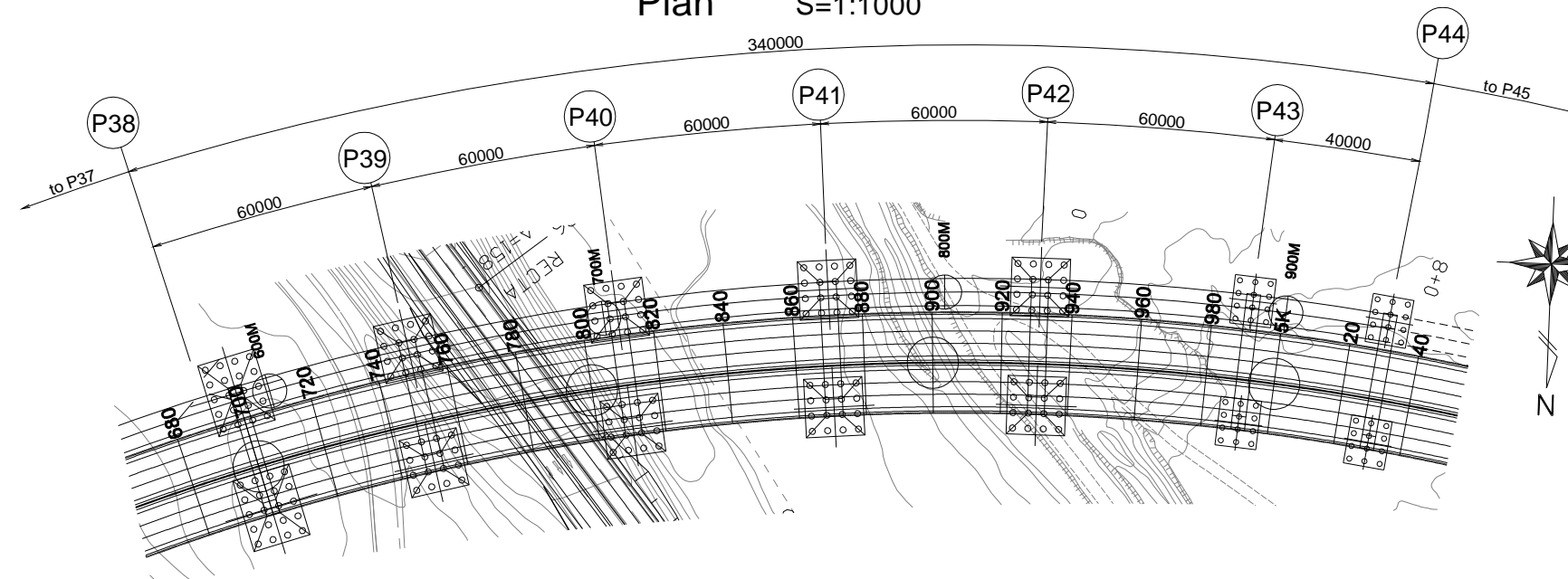
S=1:1000

(KM4+220.000~KM5+390.000)



| Station | Distance | Measure Point | Curve | Superelevation |
|---------|----------|---------------|-------|----------------|
| 660.000 | 20.000 | 660.000 | | |
| 680.000 | 20.000 | 680.000 | | |
| 700.000 | 20.000 | 700.000 | | |
| 720.000 | 20.000 | 720.000 | | |
| 740.000 | 20.000 | 740.000 | | |
| 760.000 | 20.000 | 760.000 | | |
| 780.000 | 20.000 | 780.000 | | |
| 800.000 | 20.000 | 800.000 | | |
| 820.000 | 20.000 | 820.000 | | |
| 840.000 | 20.000 | 840.000 | | |
| 860.000 | 20.000 | 860.000 | | |
| 880.000 | 20.000 | 880.000 | | |
| 900.000 | 20.000 | 900.000 | | |
| 920.000 | 20.000 | 920.000 | | |
| 940.000 | 20.000 | 940.000 | | |
| 960.000 | 20.000 | 960.000 | | |
| 980.000 | 20.000 | 980.000 | | |
| 000.000 | 20.000 | 5K 000.000 | | |
| 020.000 | 20.000 | 020.000 | | |
| 040.000 | 20.000 | 040.000 | | |

Plan S=1:1000



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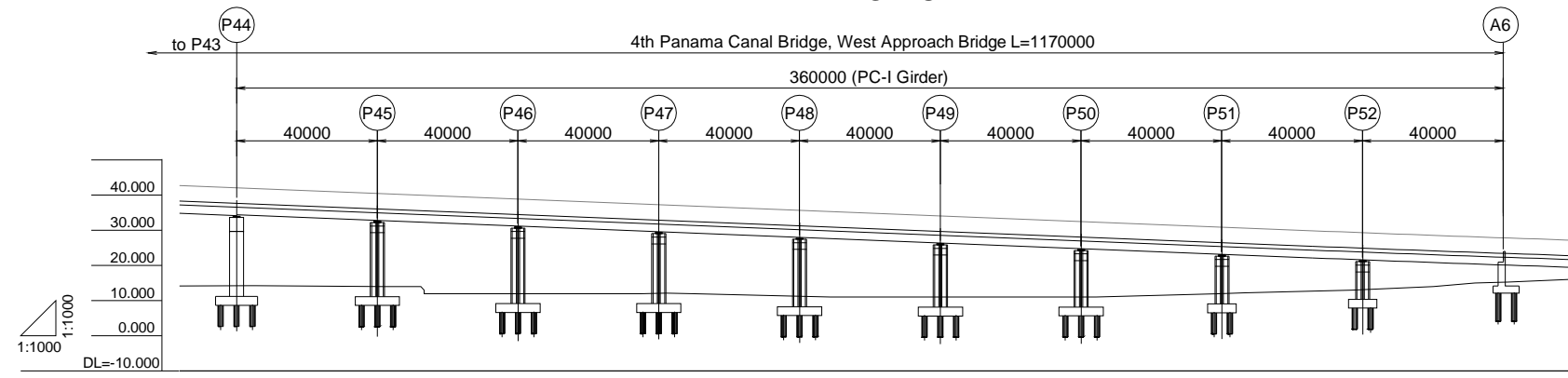
REMARKS:

4th Panama Canal Bridge West Approach Bridge (3 of 6) (KM4+220.000~KM5+390.000)

4th Panama Canal Bridge, West Approach Bridge (5 of 6)

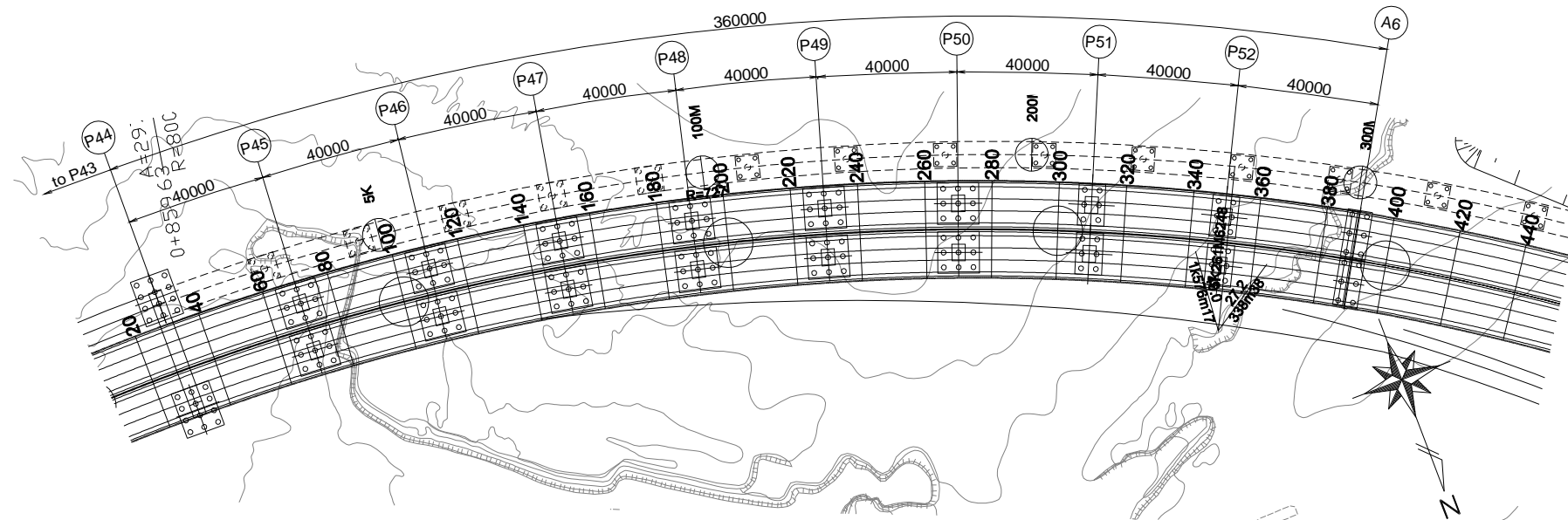
(KM4+220.000~KM5+390.000)

Profile S=1:1000



| Station | Distance | Measure Point | Curve | Superelevation | Proposed Height | Ground Height | Gradient |
|---------|----------|---------------|-------------------------|----------------|-----------------|---------------|----------|
| 020.000 | 20.000 | 020.000 | L=1224.901 R=700.000 | | 36.950 | 14.178 | |
| 040.000 | 20.000 | 040.000 | | | 36.150 | 14.204 | |
| 060.000 | 20.000 | 060.000 | | | 35.350 | 14.072 | |
| 080.000 | 20.000 | 080.000 | | | 34.550 | 14.000 | |
| 100.000 | 20.000 | 100.000 | | | 33.750 | 12.000 | |
| 120.000 | 20.000 | 120.000 | | | 32.950 | 12.000 | |
| 140.000 | 20.000 | 140.000 | | | 32.150 | 12.000 | |
| 160.000 | 20.000 | 160.000 | | | 31.350 | 11.979 | |
| 180.000 | 20.000 | 180.000 | | | 30.550 | 11.464 | |
| 200.000 | 20.000 | 200.000 | | | 29.750 | 11.000 | |
| 220.000 | 20.000 | 220.000 | | | 28.950 | 11.000 | |
| 240.000 | 20.000 | 240.000 | | 28.150 | 11.000 | | |
| 260.000 | 20.000 | 260.000 | | 27.350 | 11.000 | | |
| 280.000 | 20.000 | 280.000 | | 26.550 | 11.185 | | |
| 300.000 | 20.000 | 300.000 | | 25.750 | 11.759 | | |
| 320.000 | 20.000 | 320.000 | | 24.950 | 12.325 | | |
| 340.000 | 20.000 | 340.000 | | 24.151 | 12.843 | | |
| 360.000 | 20.000 | 360.000 | | 23.382 | 13.601 | | |
| 380.000 | 20.000 | 380.000 | | 22.655 | 14.905 | | |
| 400.000 | 20.000 | 400.000 | | 21.969 | 15.656 | | |

Plan S=1:1000



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REMARKS:

4th Panama Canal Bridge
West Approach Bridge (5 of 6)
(KM4+220.000~KM5+390.000)

4th Panama Canal Bridge, West Approach Bridge (6 of 6)

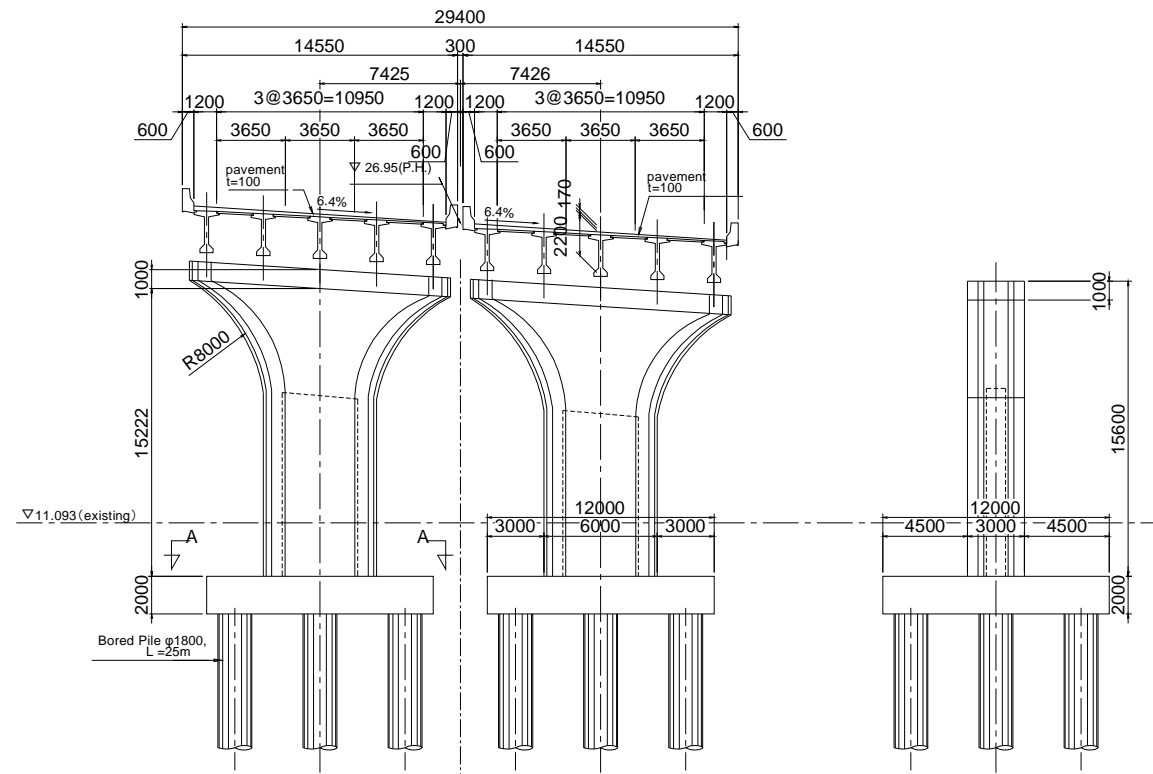
(KM4+220.000 ~ KM5+390.000)

P50 Cross Section

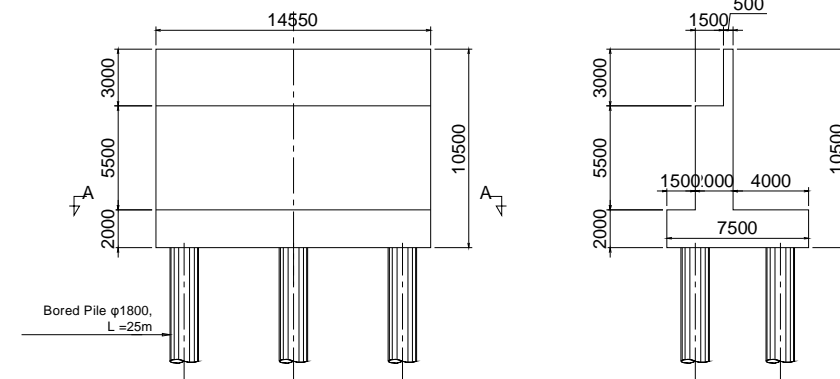
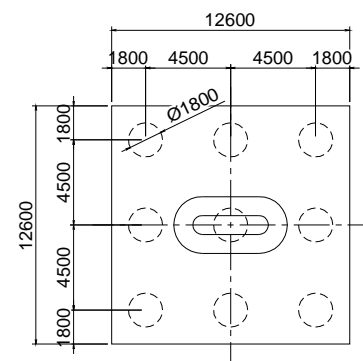
S=1:200

A6 Cross Section

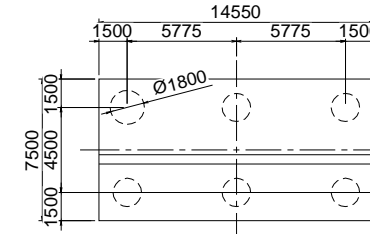
S=1:200



A - A S=1:200



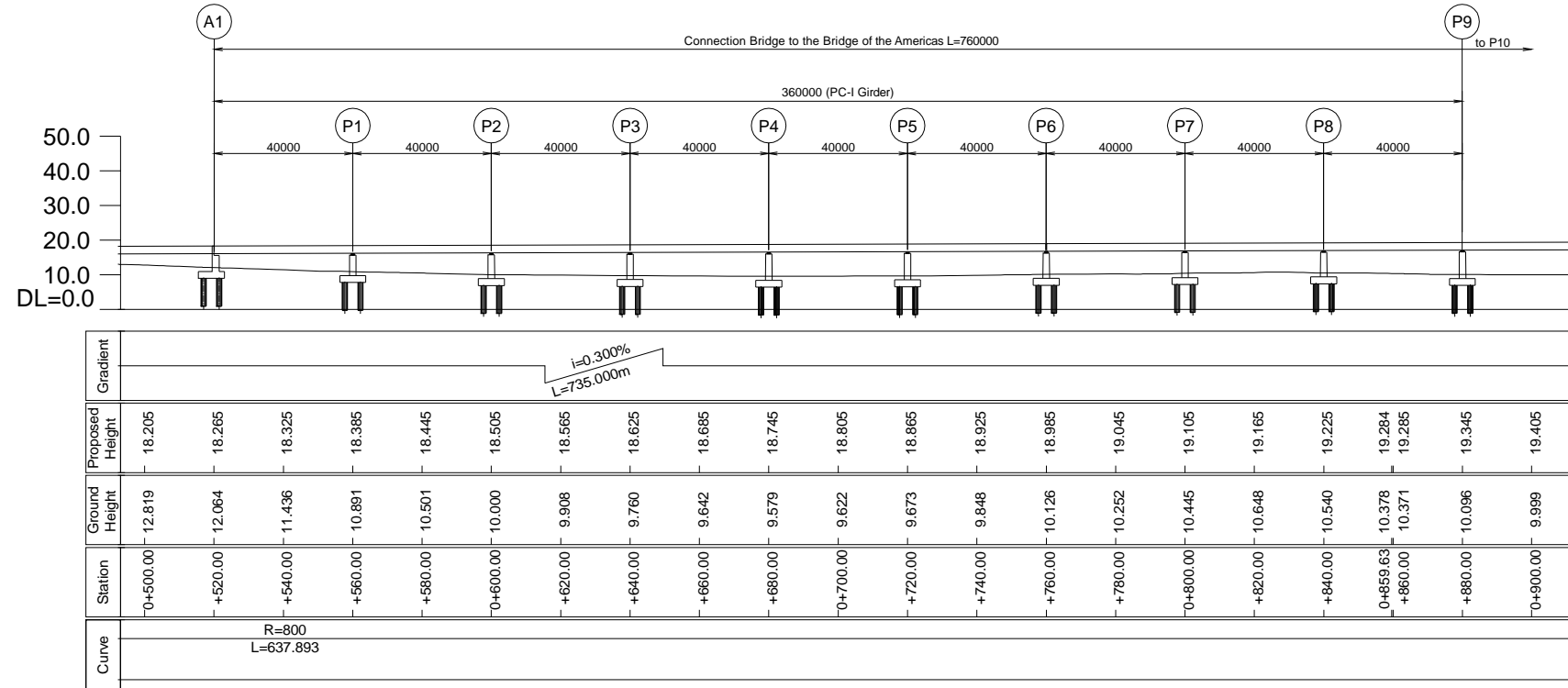
A - A S=1:200



Connection Bridge to the Bridge of the Americas (1 of 4)

(KM0+520.000 ~ KM1+280.000)

Profile S=1:1000



Plan S=1:1000



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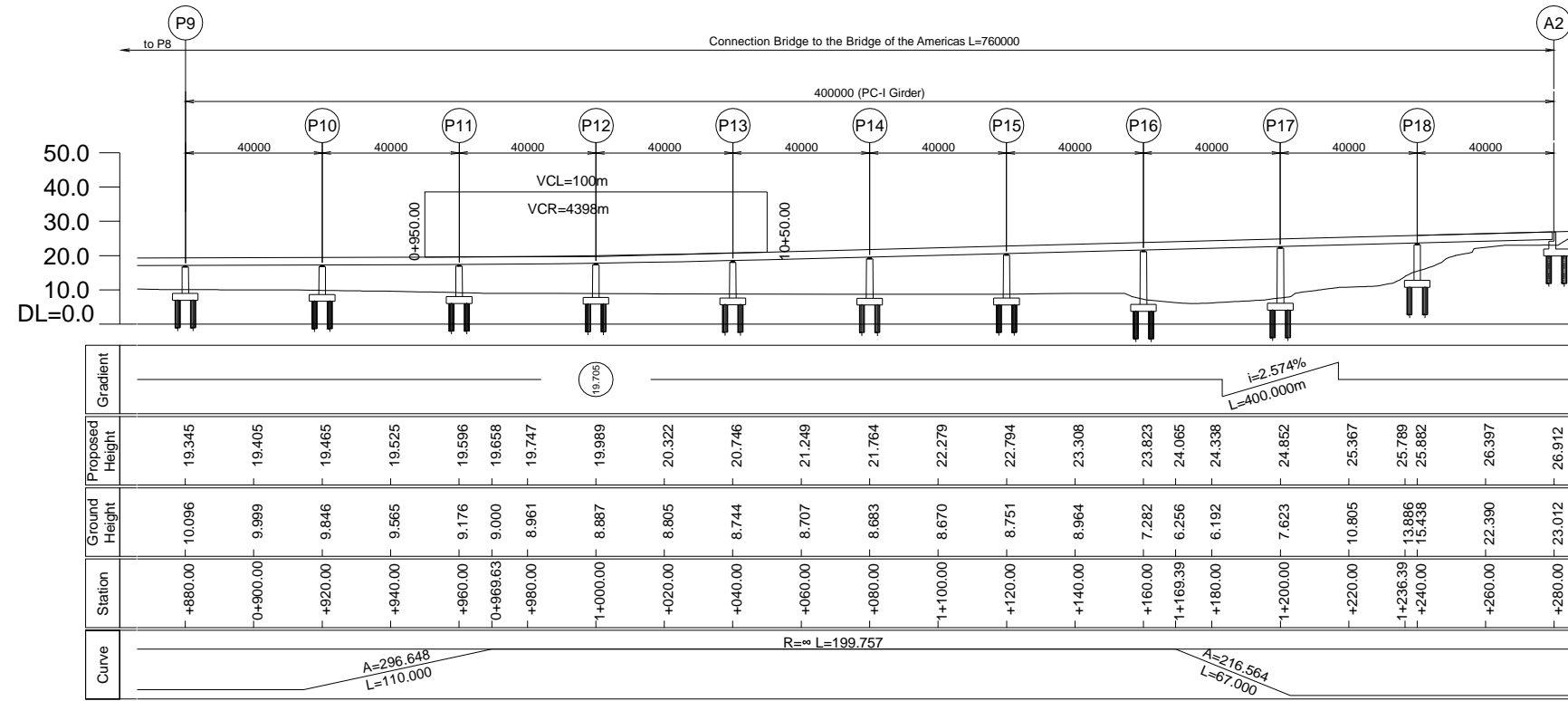
REMARKS:

Connection Bridge to the Bridge of the Americas (1 of 4)
(KM0+520.000~KM1+280.000)

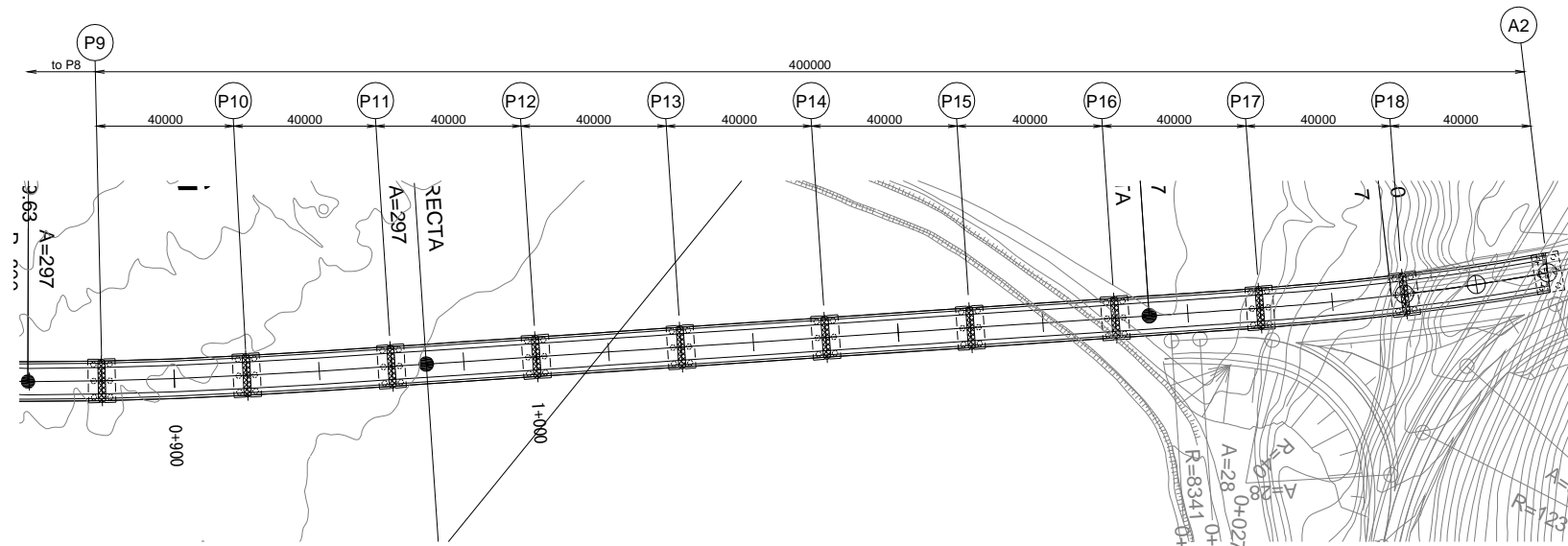
Connection Bridge to the Bridge of the Americas (2 of 4)

(KM0+520.000 ~ KM1+280.000)

Profile S=1:1000



Plan S=1:1000



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SCALE: S=1:1000

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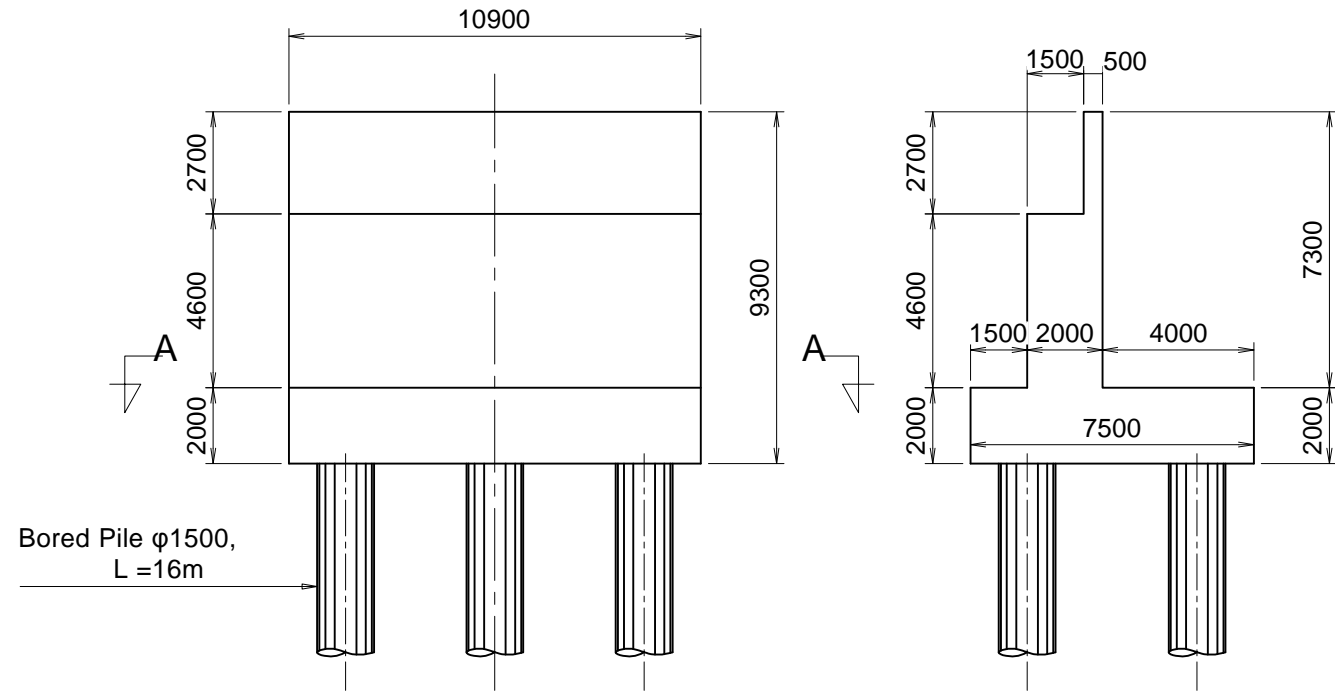
REMARKS:

Connection Bridge to the Bridge of the Americas (2 of 4) (KM0+520.000~KM1+280.000)

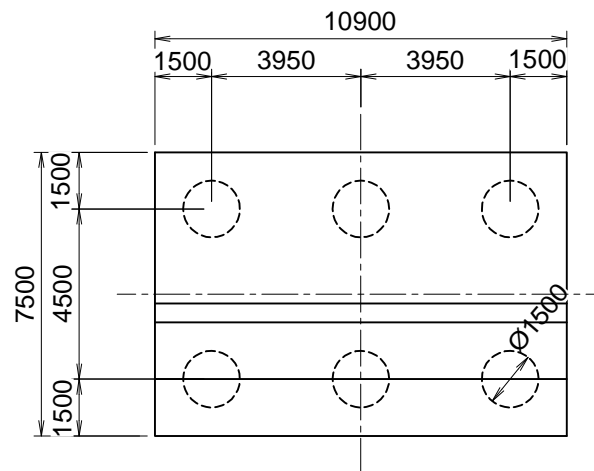
Connection Bridge to the Bridge of the Americas (3 of 4)

(KM0+520.000 ~ KM1+280.000)

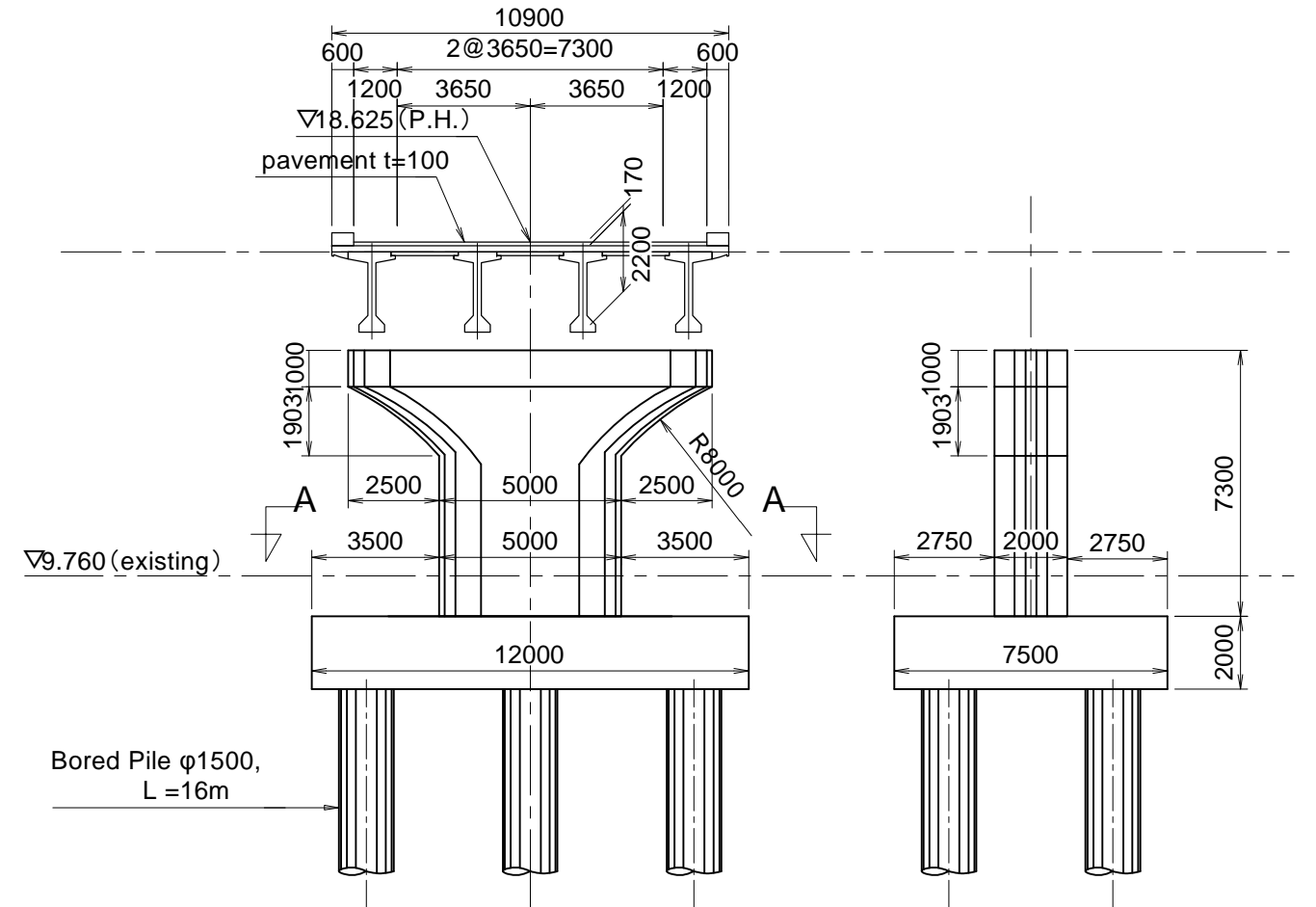
A1 Cross Section S=1:100



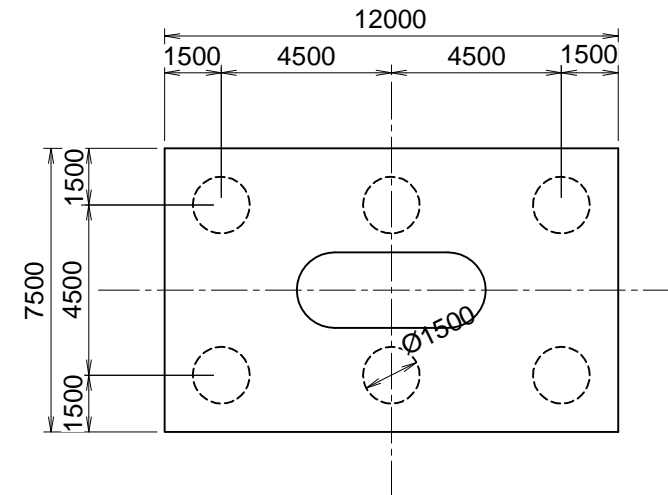
A - A S=1:100



P3 Cross Section S=1:100



A - A S=1:100



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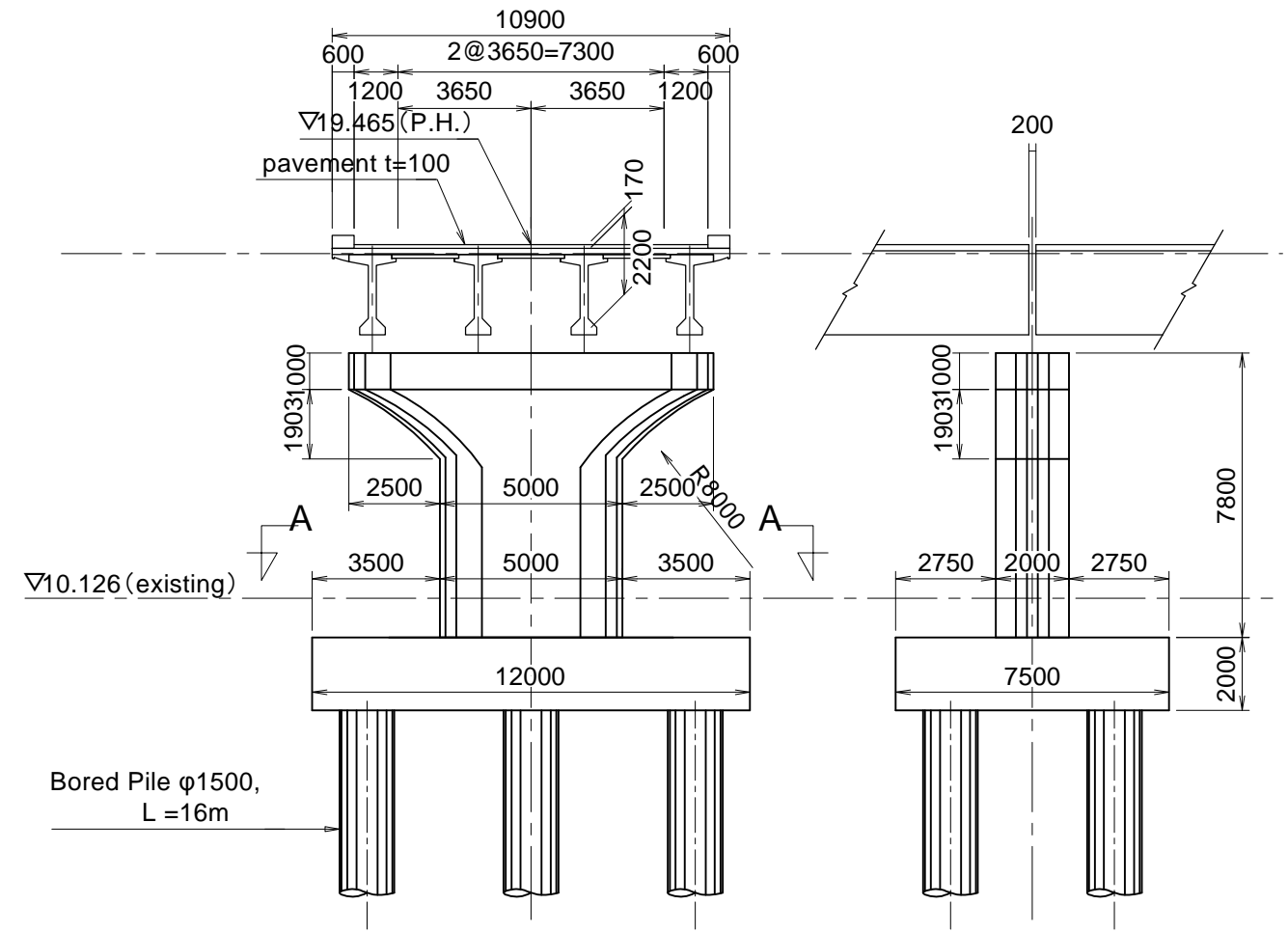
REMARKS:

Connection Bridge to the Bridge of the Americas (3 of 4)
(KM0+520.000 ~ KM1+280.000)

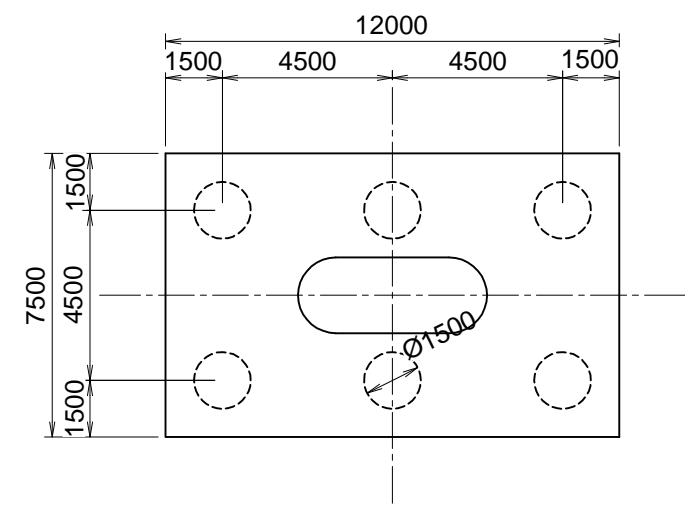
Connection Bridge to the Bridge of the Americas (4 of 4)

(KM0+520.000 ~ KM1+280.000)

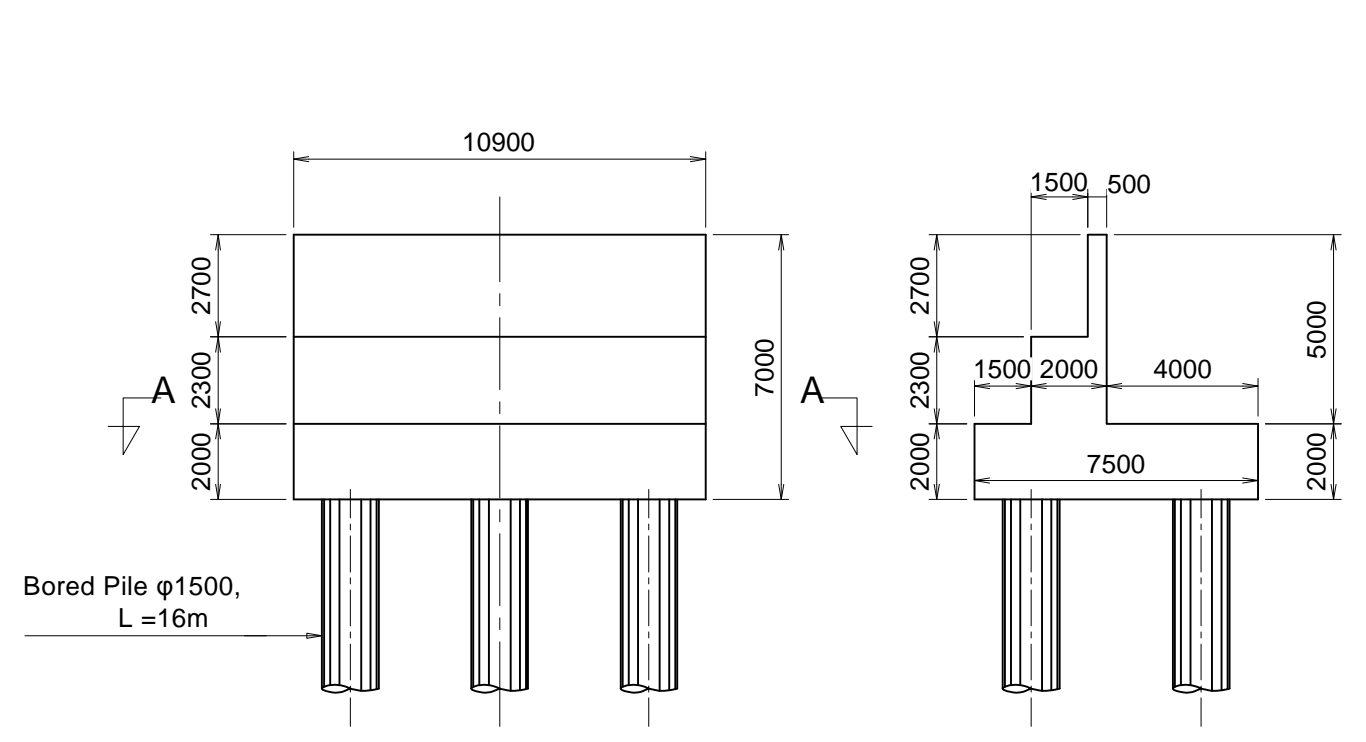
P10 Cross Section S=1:100



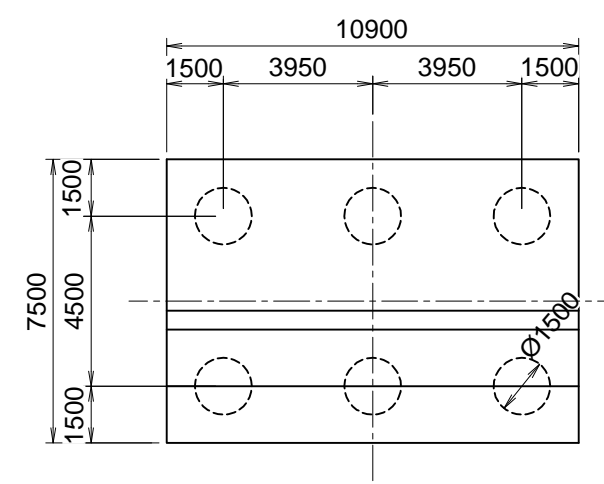
A - A S=1:100



A2 Cross Section S=1:100



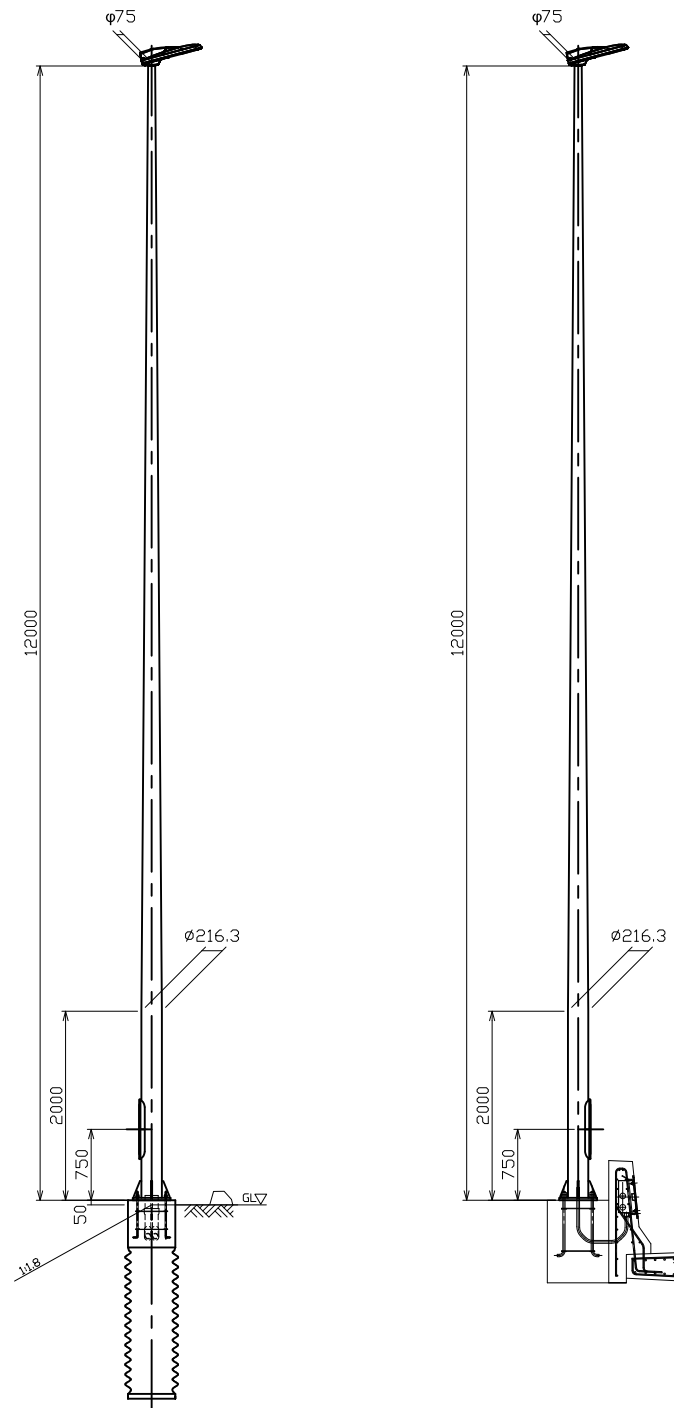
A - A S=1:100



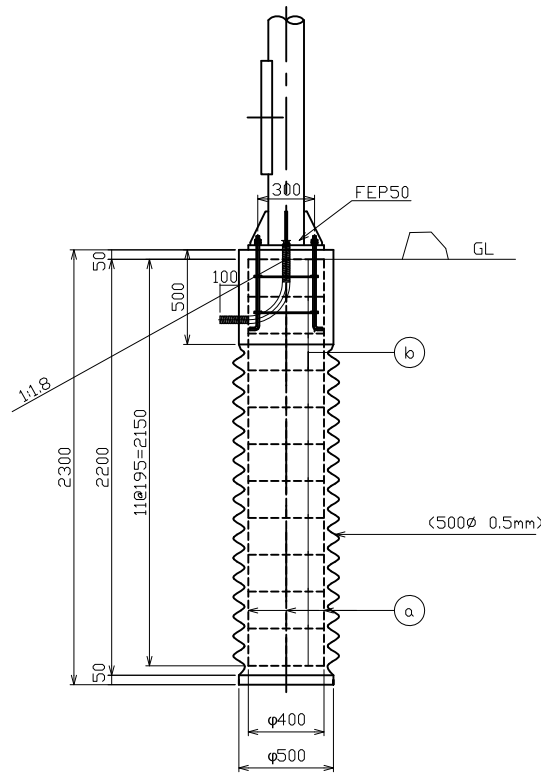
Appendix 5-1-4: Electrical and Mechanical Facility Drawings

Lighting Equipment

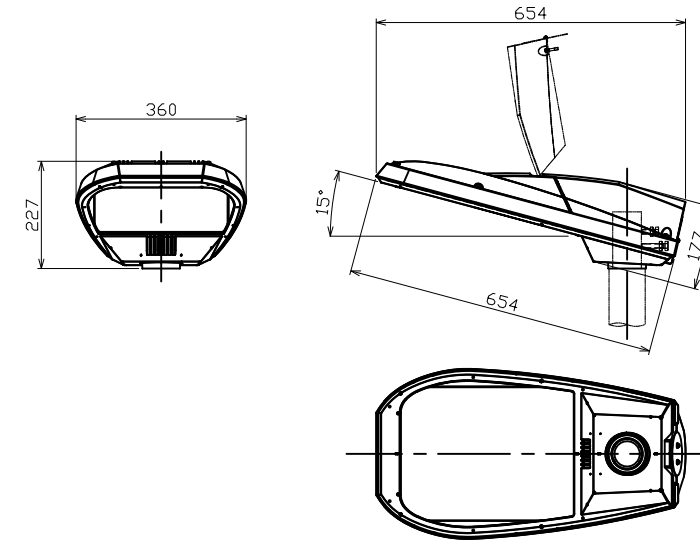
Pole Lighting S=1:40



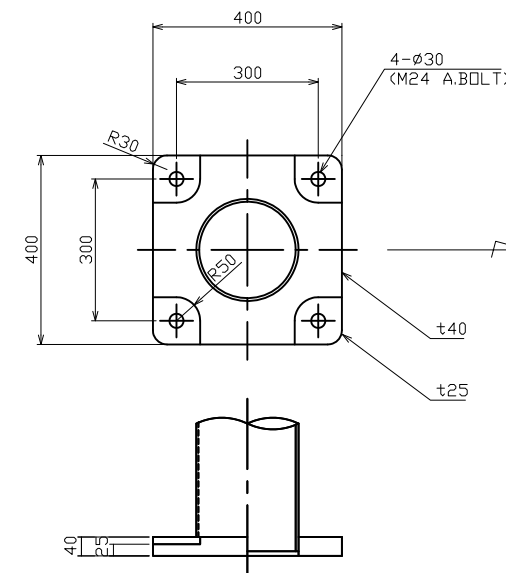
Basis S=1:20



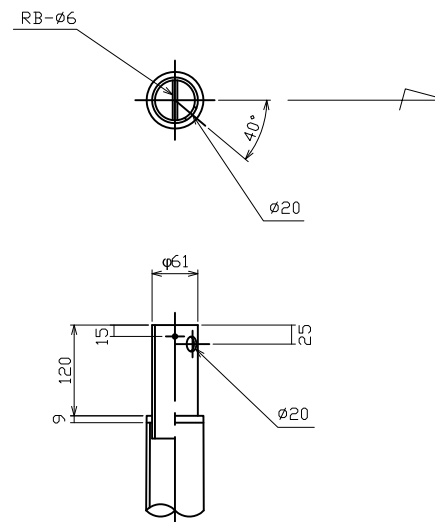
Lamp Fitting S=1:8



Base plate S=1:8



Adapter S=1:5



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SCALE: S=1:40, S=1:20, S=1:8, S=1:5

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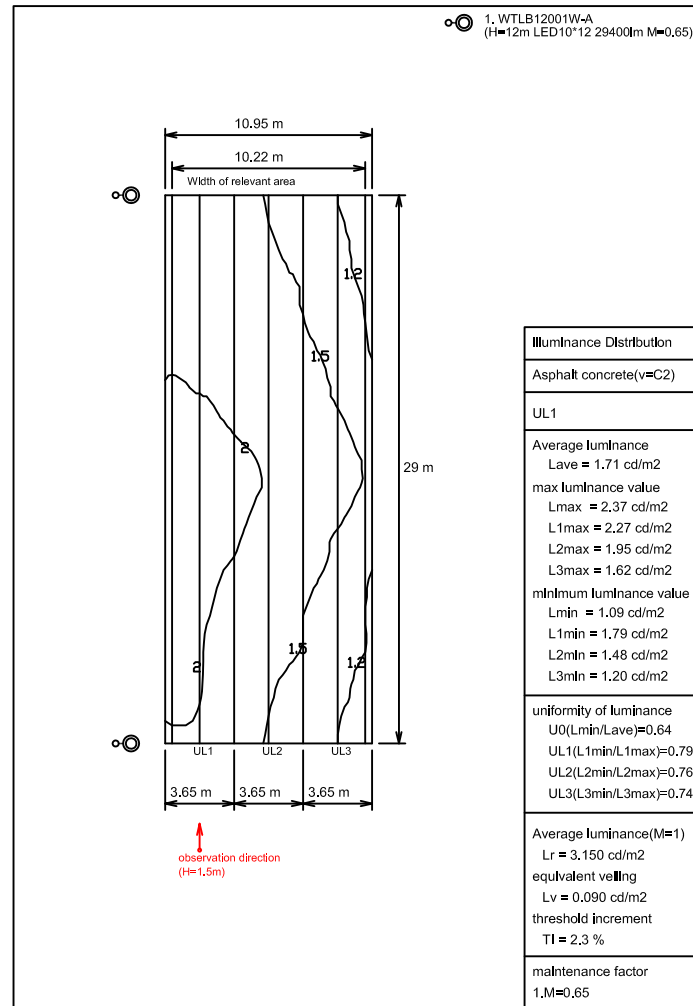
PAGE: 1/4

REMARKS:

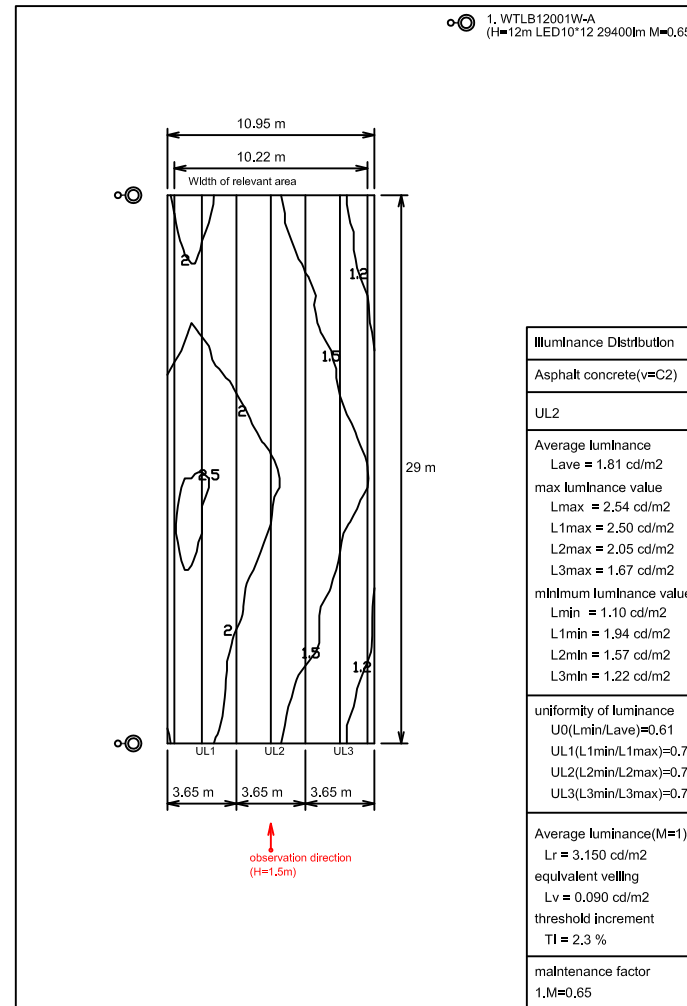
Lighting Equipment

Illuminance Distribution (3 Lanes) S=1:200

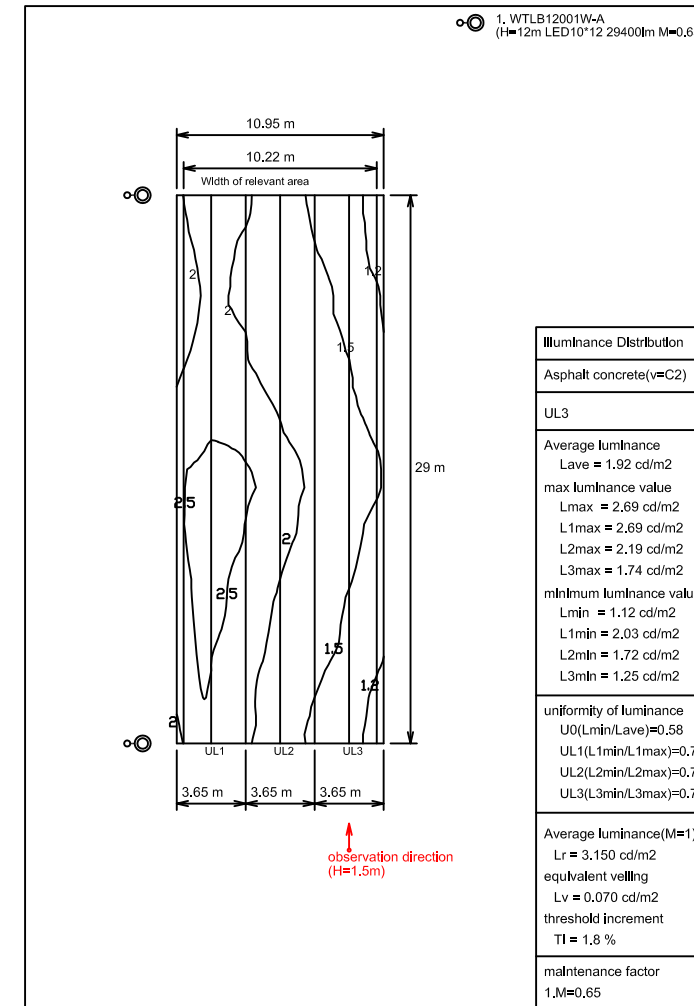
First Lane



Second Lane



Third Lane



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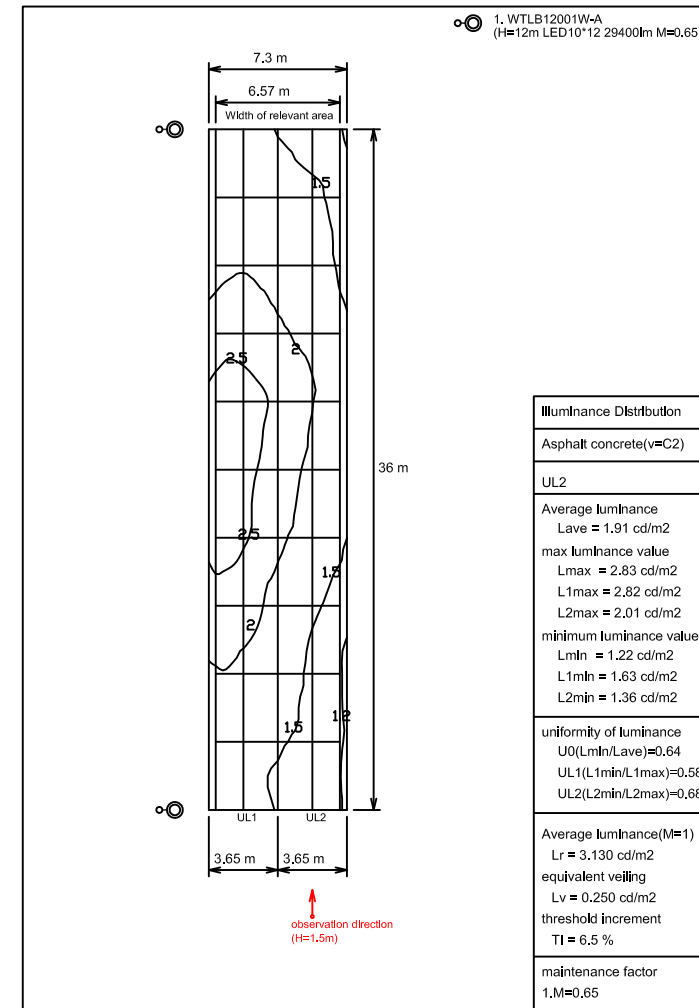
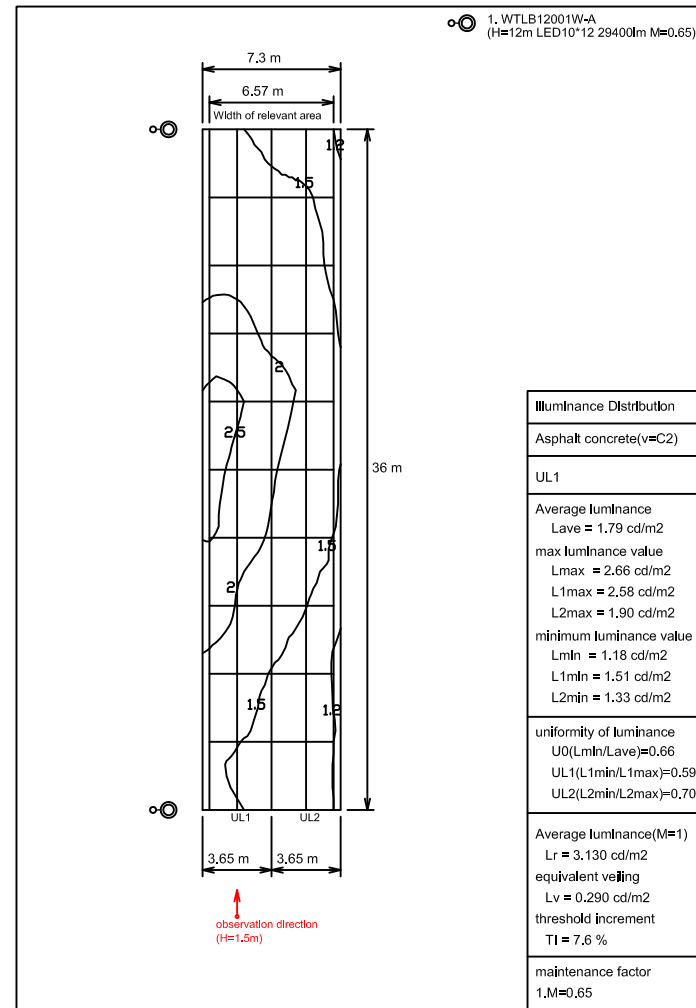
REMARKS:

Illuminance Distribution (3 Lanes)

Illuminance Distribution (2 Lanes) S=1:200

First Lane

Second Lane



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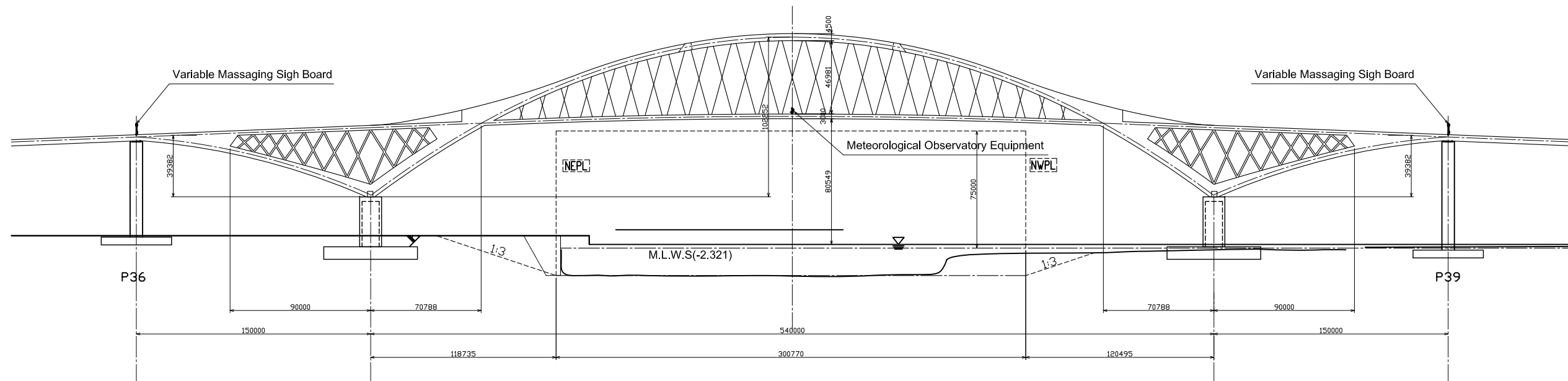
3

4

REMARKS:

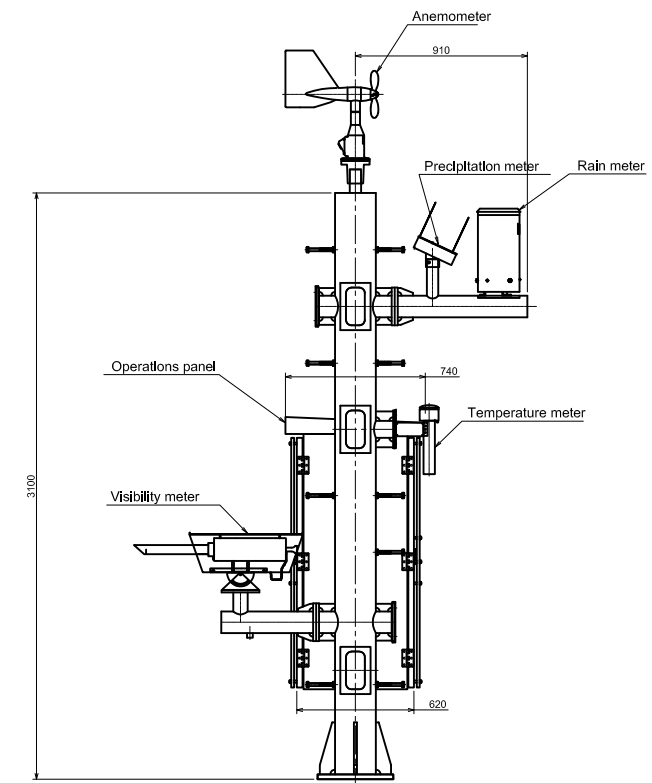
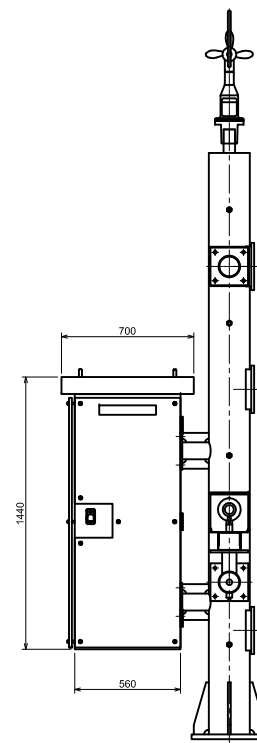
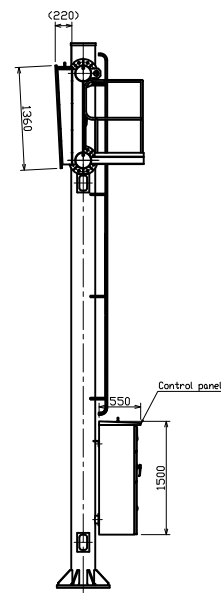
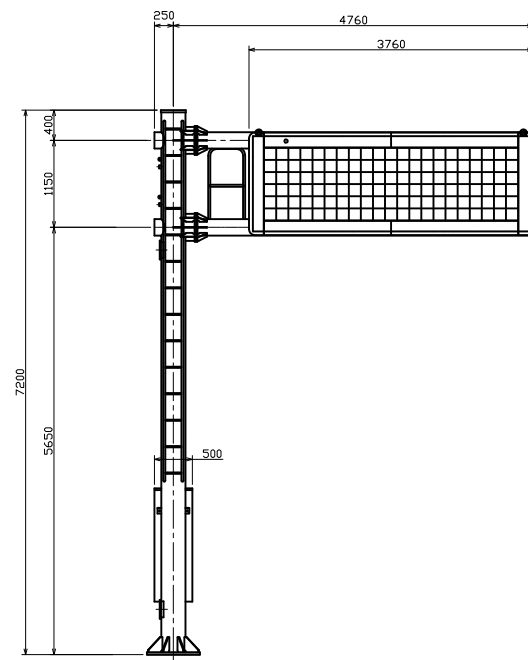
Illuminance Distribution (2 Lanes)

Meteorological Observatory Facilities S=1:1500



Meteorological Observatory Equipment S=1:20

Variable Massaging Sigh Board S=1:50



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REMARKS:

Meteorological Observatory Facilities