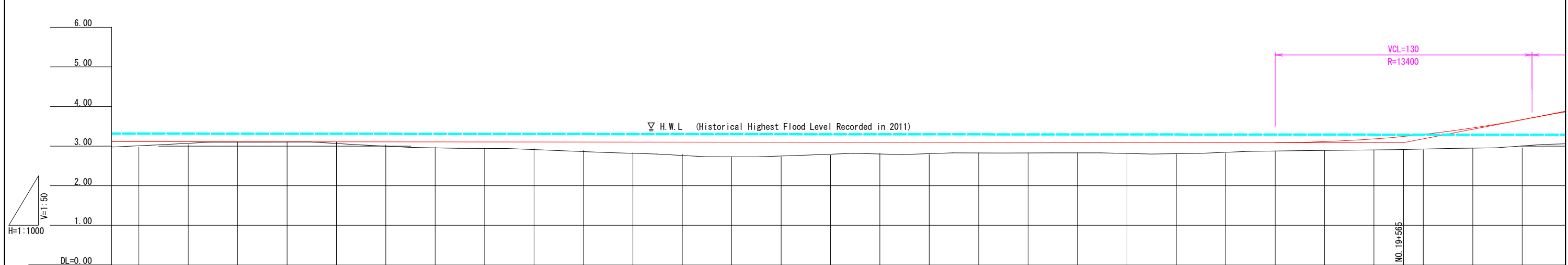
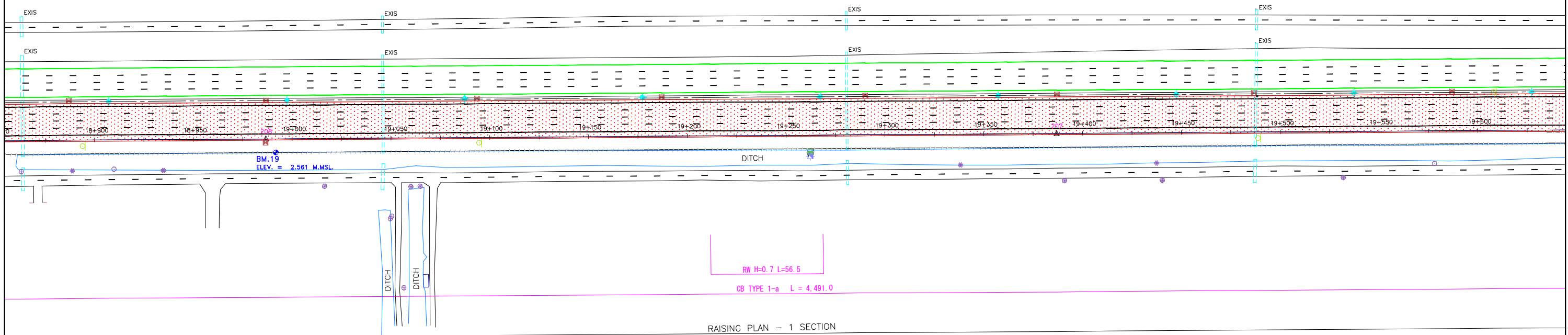
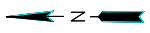


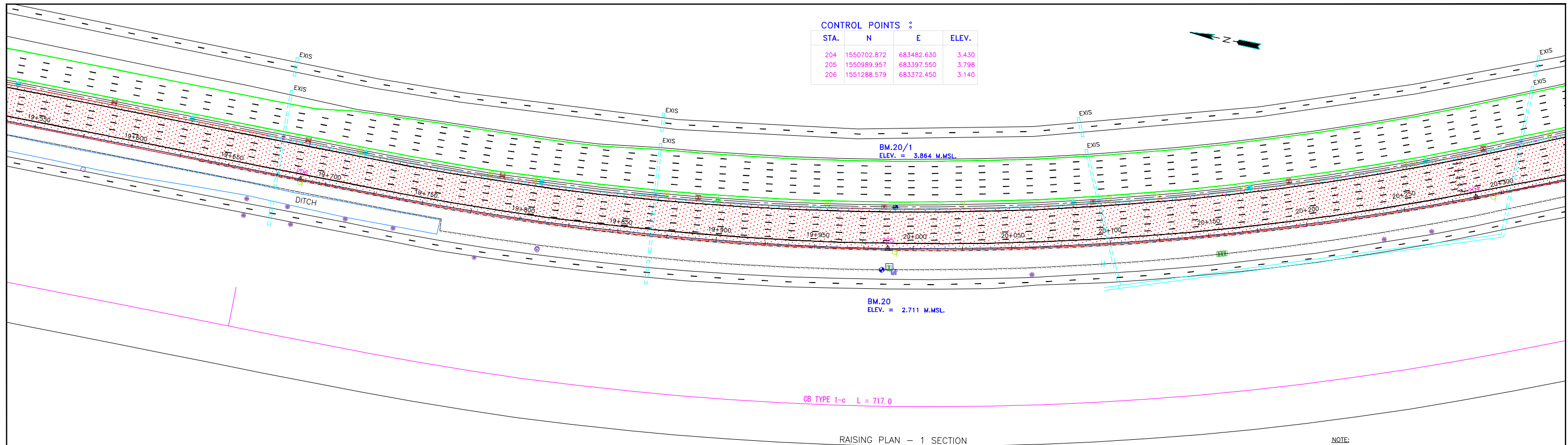
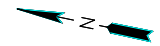
| STA. | N | E | ELEV. |
|------|-------------|------------|-------|
| 207 | 1551588.683 | 683370.411 | 2.830 |
| 208 | 1551988.842 | 683367.690 | 3.100 |



| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------|-----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| H=1:1000 | V=1:50 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DL=0.00 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GRADE | $i=0.004\%$ $L=6565.000$ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FORMATION HEIGHT | 3.114 | 3.113 | 3.111 | 3.110 | 3.109 | 3.108 | 3.107 | 3.106 | 3.105 | 3.104 | 3.103 | 3.102 | 3.101 | 3.100 | 3.099 | 3.097 | 3.096 | 3.095 | 3.094 | 3.093 | 3.092 | 3.091 | 3.090 | 3.089 | 3.111 | 3.180 | 3.244 | 3.295 | 3.457 | 3.666 |
| EMBANKMENT | 0.134 | 0.073 | 0.011 | 0.010 | 0.078 | 0.137 | 0.166 | 0.165 | 0.214 | 0.263 | 0.302 | 0.371 | 0.370 | 0.329 | 0.277 | 0.306 | 0.265 | 0.264 | 0.263 | 0.262 | 0.291 | 0.270 | 0.219 | 0.221 | 0.280 | 0.334 | 0.385 | 0.517 | 0.706 | |
| GROUND HEIGHT | 2.98 | 3.04 | 3.10 | 3.10 | 3.11 | 3.03 | 2.94 | 2.94 | 2.89 | 2.84 | 2.80 | 2.73 | 2.73 | 2.77 | 2.82 | 2.79 | 2.83 | 2.83 | 2.83 | 2.83 | 2.80 | 2.82 | 2.87 | 2.89 | 2.90 | 2.91 | 2.91 | 2.94 | 2.96 | |
| DESIGN FLOOD LEVEL | 3.315 | 3.314 | 3.313 | 3.312 | 3.311 | 3.310 | 3.308 | 3.307 | 3.306 | 3.305 | 3.304 | 3.302 | 3.301 | 3.300 | 3.299 | 3.298 | 3.297 | 3.296 | 3.295 | 3.294 | 3.293 | 3.292 | 3.291 | 3.290 | 3.289 | 3.287 | 3.286 | 3.285 | | |
| STATION | 18+925 | +950 | +975 | 19+0 | +25 | +50 | +75 | +100 | +125 | +150 | +175 | +200 | +225 | +250 | +275 | +300 | +325 | +350 | +375 | +400 | +425 | +450 | +475 | +500 | +525 | +550 | +565 | +575 | +600 | +625 |
| HORIZONTAL CURVATURE | $R=\infty$ $L=2641.893$ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SUPER ELEVATION | $+540.731$ $+2.5\%$ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

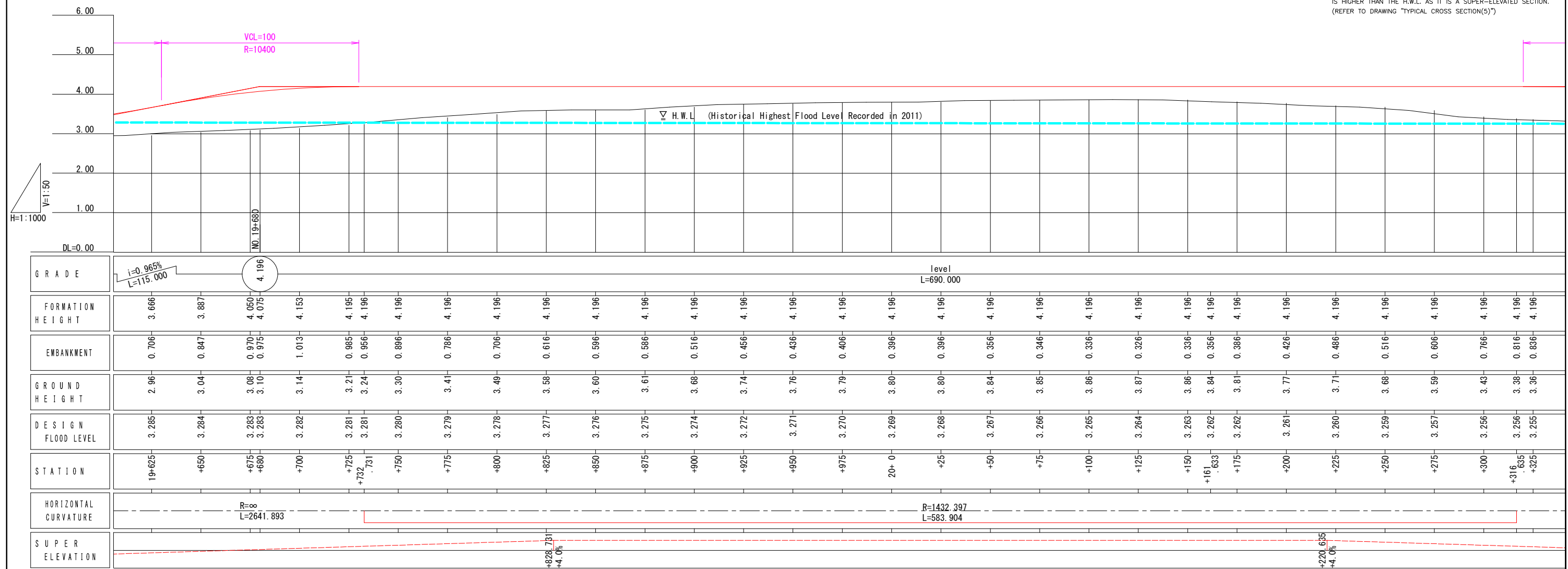
CONTROL POINTS :

| STA. | N | E | ELEV. |
|------|-------------|------------|-------|
| 204 | 1550702.872 | 683482.630 | 3.430 |
| 205 | 1550989.957 | 683397.550 | 3.798 |
| 206 | 1551288.579 | 683372.450 | 3.140 |



RAISING PLAN - 1 SECTION

NOTE:
THE EXISTING GROUND SURFACE OF THE SECTION IN THIS DRAWING IS HIGHER THAN THE H.W.L. AS IT IS A SUPER-ELEVATED SECTION. (REFER TO DRAWING "TYPICAL CROSS SECTION(5)")

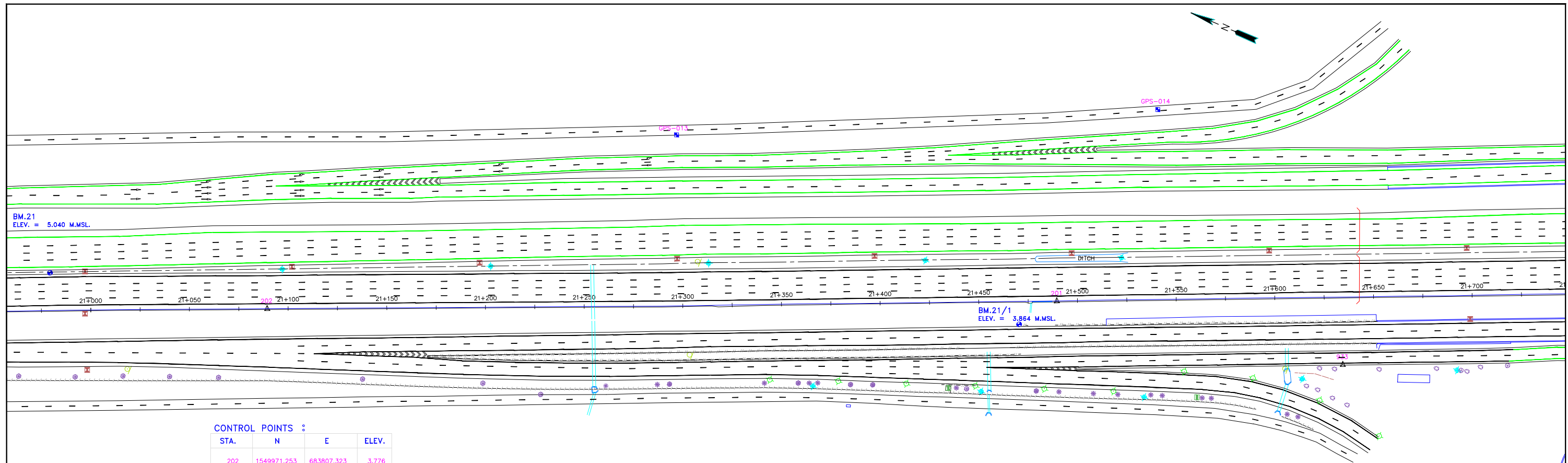


| REV. NO. | DESCRIPTION | ENGINEER CHECKED | ENGINEER DATE | DOH CHECKED | DOH DATE | REV. NO. | APPROVED BY | HIGHWAY ROUTE NO. 9 | OWNER | PROJECT TITLE | DESIGNED BY | CHECKED BY | DATE | SCALE |
|----------|-------------|------------------|---------------|-------------|----------|----------|-------------|--------------------------|--|---|----------------------------------|-----------------------------------|----------------|-----------------|
| | | | | | | | | KM. 19+600 TO KM. 20+300 | The Inter-City Motorways Division Department of Highways Ministry of Transport | The Preparatory Survey on the Rehabilitation Project of the Outer Bangkok Ring Road | SAGARA Hidetaka ROAD ENGINEER | WATANABE Ryohei CHIEF ENGINEER | AUGUST 2012 | V=1/50 H=1/1000 |
| | | | | | | | | | | | | | DWG. NO. MW-35 | SHEET NO. 40 |



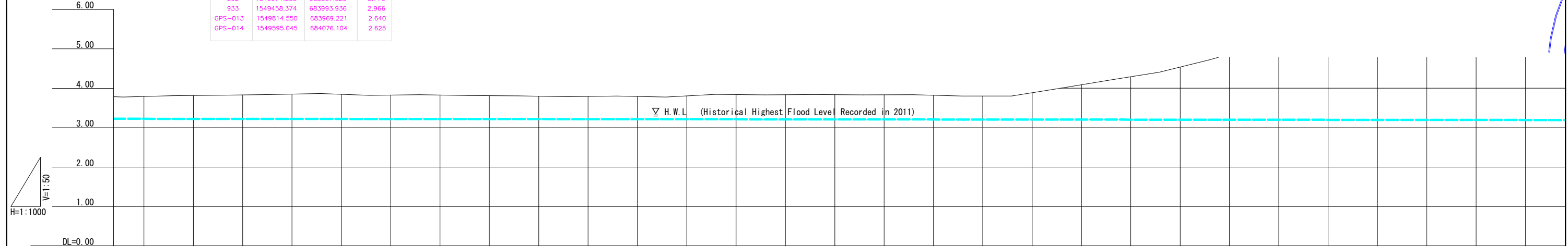
KINGDOM OF THAILAND
MINISTRY OF TRANSPORT
DEPARTMENT OF HIGHWAYS

CTI ENGINEERING INTERNATIONAL CO., LTD.
ORIENTAL CONSULTANTS CO., LTD.
NIPPON KOEI CO., LTD.
CTI ENGINEERING CO., LTD.



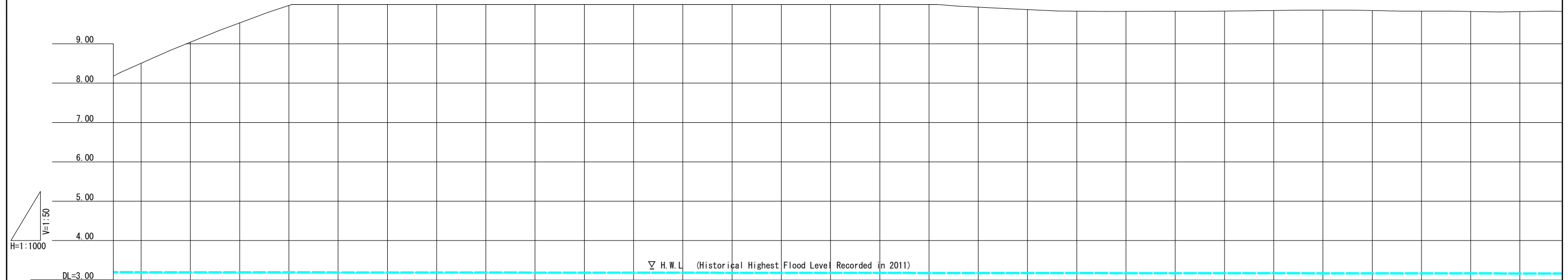
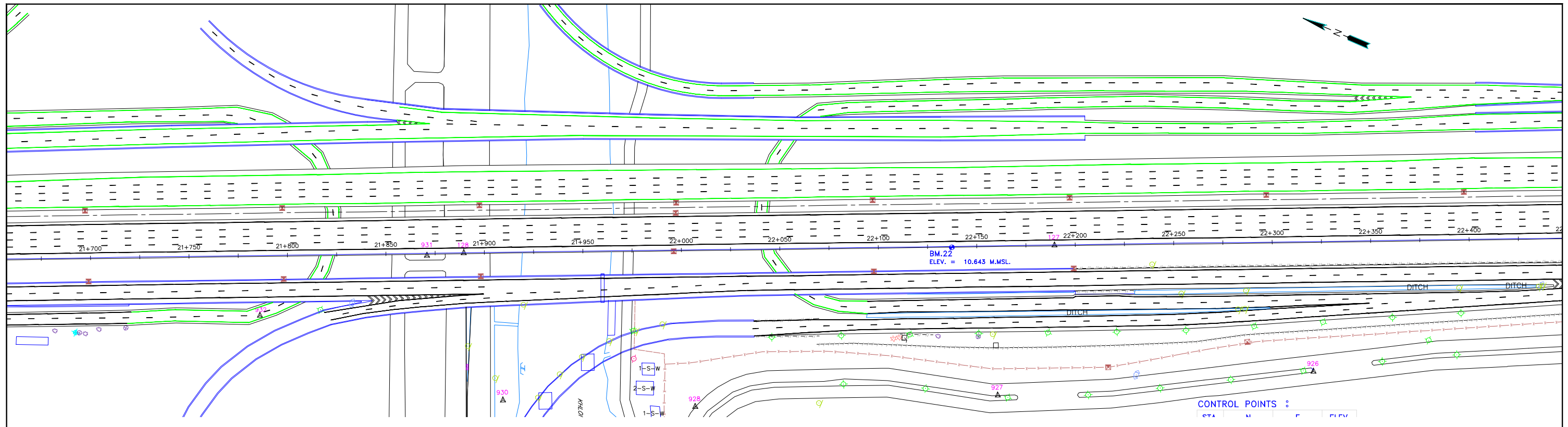
CONTROL POINTS :

| STA. | N | E | ELEV. |
|---------|-------------|------------|-------|
| 202 | 1549971.253 | 683807.323 | 3.776 |
| 933 | 1549458.374 | 683993.936 | 2.966 |
| GPS-013 | 1549814.550 | 683969.221 | 2.640 |
| GPS-014 | 1549595.045 | 684076.104 | 2.625 |

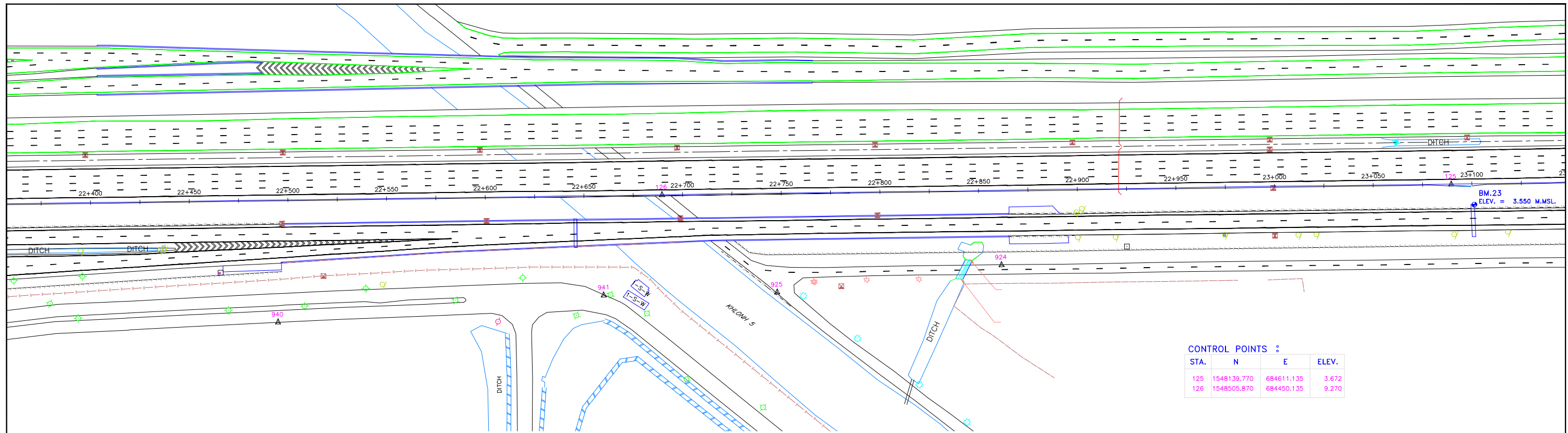


| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| GRADE | EXISTING | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FORMATION HEIGHT | EXISTING | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EMBANKMENT | NONE | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GROUND HEIGHT | 3.79 | 3.82 | 3.83 | 3.85 | 3.85 | 3.83 | 3.83 | 3.81 | 3.80 | 3.79 | 3.79 | 3.81 | 3.84 | 3.84 | 3.84 | 3.83 | 3.82 | 3.80 | 3.89 | 4.09 | 4.29 | 4.54 | 4.87 | 5.29 | 5.83 | 6.47 | 7.20 | 7.89 | 8.51 |
| DESIGN FLOOD LEVEL | 3.225 | 3.224 | 3.223 | 3.222 | 3.221 | 3.220 | 3.219 | 3.218 | 3.217 | 3.216 | 3.215 | 3.214 | 3.213 | 3.211 | 3.210 | 3.209 | 3.208 | 3.207 | 3.206 | 3.205 | 3.204 | 3.203 | 3.202 | 3.201 | 3.200 | 3.199 | 3.198 | 3.196 | 3.195 |
| STATION | 21+25 | +50 | +75 | +100 | +125 | +150 | +175 | +200 | +225 | +250 | +275 | +300 | +325 | +350 | +375 | +400 | +425 | +450 | +475 | +500 | +525 | +550 | +575 | +600 | +625 | +650 | +675 | +700 | +725 |
| HORIZONTAL CURVATURE | EXISTING | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SUPER ELEVATION | EXISTING | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | |
|----------|-------------|------------------|---------------|-------------|----------|----------|-------------|---|----------------------------|--|---|---|----------------------------------|-----------------------------------|----------------|-----------------|
| REV. NO. | DESCRIPTION | ENGINEER CHECKED | ENGINEER DATE | DOH CHECKED | DOH DATE | REV. NO. | APPROVED BY | <p>KINGDOM OF THAILAND MINISTRY OF TRANSPORT DEPARTMENT OF HIGHWAYS</p> | HIGHWAY ROUTE NO. 9 | OWNER | PROJECT TITLE | <p>CTI ENGINEERING INTERNATIONAL CO., LTD. ORIENTAL CONSULTANTS CO., LTD. NIPPON KOEI CO., LTD. CTI ENGINEERING CO., LTD.</p> | DESIGNED BY | CHECKED BY | DATE | SCALE |
| | | | | | | | | | PLAN & PROFILE (31 / 43) | The Inter-City Motorways Division Department of Highways Ministry of Transport | The Preparatory Survey on the Rehabilitation Project of the Outer Bangkok Ring Road | | SAGARA Hidetaka ROAD ENGINEER | WATANABE Ryohei CHIEF ENGINEER | AUGUST 2012 | V=1/50 H=1/1000 |
| | | | | | | | | | KM. 21+000 TO KM. 21+700 | | | | | | DWG. NO. MW-37 | SHEET NO. 42 |

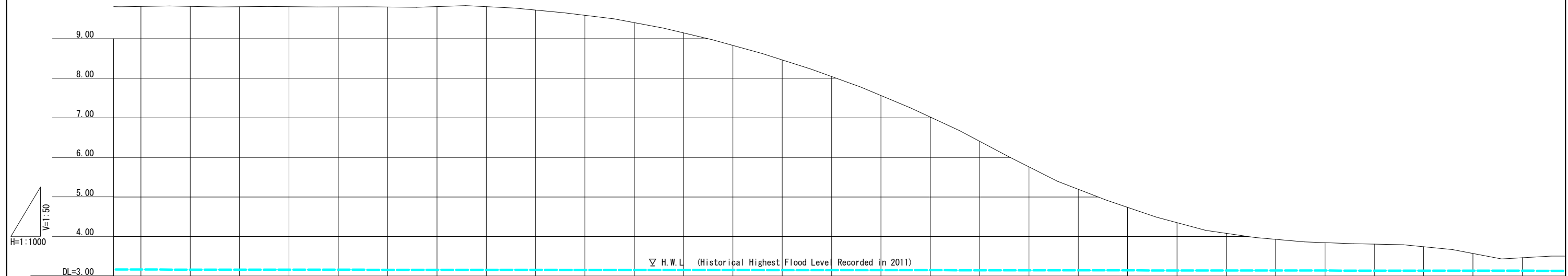


| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| GRADE | EXISTING | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FORMATION HEIGHT | EXISTING | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EMBANKMENT | NONE | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GROUND HEIGHT | 8.51 | 9.04 | 9.53 | 9.97 | 10.35 | 10.64 | 10.84 | 10.97 | 11.04 | 11.08 | 11.07 | 10.97 | 10.83 | 10.66 | 10.41 | 10.18 | 10.02 | 9.93 | 9.87 | 9.83 | 9.82 | 9.82 | 9.83 | 9.84 | 9.85 | 9.84 | 9.83 | 9.82 | 9.82 |
| DESIGN FLOOD LEVEL | 3.195 | 3.194 | 3.193 | 3.192 | 3.191 | 3.190 | 3.189 | 3.188 | 3.187 | 3.186 | 3.185 | 3.184 | 3.183 | 3.181 | 3.180 | 3.179 | 3.178 | 3.177 | 3.176 | 3.175 | 3.174 | 3.173 | 3.172 | 3.171 | 3.170 | 3.169 | 3.168 | 3.167 | 3.165 |
| STATION | 21+725 | +750 | +775 | +800 | +825 | +850 | +875 | +900 | +925 | +950 | +975 | 22+0 | +25 | +50 | +75 | +100 | +125 | +150 | +175 | +200 | +225 | +250 | +275 | +300 | +325 | +350 | +375 | +400 | +425 |
| HORIZONTAL CURVATURE | EXISTING | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SUPER ELEVATION | EXISTING | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



CONTROL POINTS :

| STA. | N | E | ELEV. |
|------|-------------|------------|-------|
| 125 | 1548139.770 | 684611.135 | 3.672 |
| 126 | 1548505.870 | 684450.135 | 9.270 |

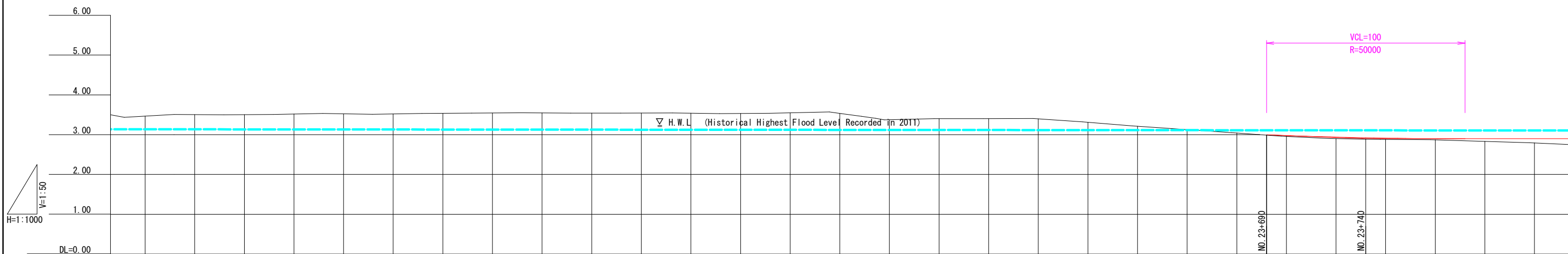
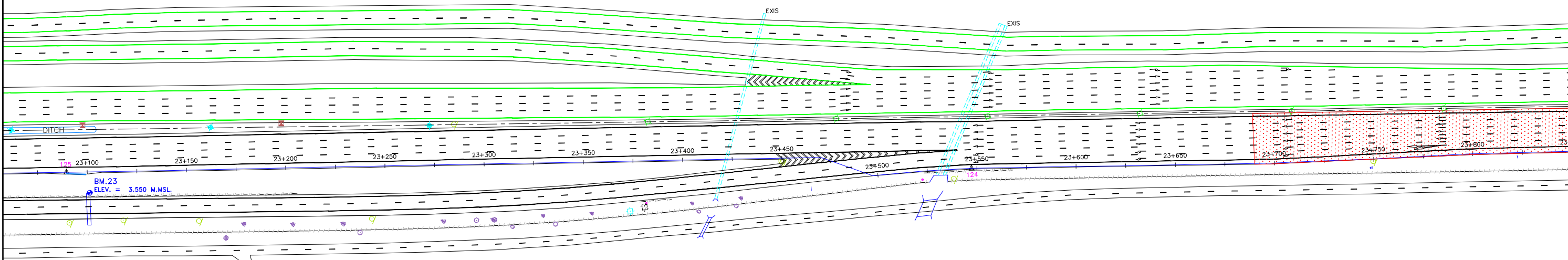
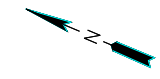


| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| GRADE | EXISTING | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FORMATION HEIGHT | EXISTING | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EMBANKMENT | NONE | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| GROUND HEIGHT | 9.82 | 9.82 | 9.81 | 9.81 | 9.80 | 9.80 | 9.81 | 9.81 | 9.72 | 9.59 | 9.41 | 9.15 | 8.83 | 8.46 | 8.04 | 7.56 | 7.02 | 6.41 | 5.76 | 5.19 | 4.74 | 4.35 | 4.08 | 3.93 | 3.84 | 3.81 | 3.74 | 3.57 | 3.47 |
| DESIGN FLOOD LEVEL | 3.165 | 3.164 | 3.163 | 3.162 | 3.161 | 3.160 | 3.159 | 3.158 | 3.157 | 3.156 | 3.155 | 3.154 | 3.153 | 3.152 | 3.150 | 3.149 | 3.148 | 3.147 | 3.146 | 3.145 | 3.144 | 3.143 | 3.142 | 3.141 | 3.140 | 3.139 | 3.138 | 3.137 | 3.135 |
| STATION | 22+425 | +450 | +475 | +500 | +525 | +550 | +575 | +600 | +625 | +650 | +675 | +700 | +725 | +750 | +775 | +800 | +825 | +850 | +875 | +900 | +925 | +950 | +975 | 23+0 | +25 | +50 | +75 | +100 | +125 |
| HORIZONTAL CURVATURE | EXISTING | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SUPER ELEVATION | EXISTING | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | |
|----------|-------------|------------------|---------------|-------------|----------|----------|-------------|--|----------------------------|--|---|---|----------------------------------|-----------------------------------|-------------|-----------------|
| REV. NO. | DESCRIPTION | ENGINEER CHECKED | ENGINEER DATE | DOH CHECKED | DOH DATE | REV. NO. | APPROVED BY | <p>KINGDOM OF THAILAND MINISTRY OF TRANSPORT DEPARTMENT OF HIGHWAYS</p> | HIGHWAY ROUTE NO. 9 | OWNER | PROJECT TITLE | <p>CTI ENGINEERING INTERNATIONAL CO., LTD. ORIENTAL CONSULTANTS CO., LTD. NIPPON KOEI CO., LTD. CTI ENGINEERING CO., LTD.</p> | DESIGNED BY | CHECKED BY | DATE | SCALE |
| | | | | | | | | | PLAN & PROFILE (33 / 43) | The Inter-City Motorways Division Department of Highways Ministry of Transport | The Preparatory Survey on the Rehabilitation Project of the Outer Bangkok Ring Road | | SAGARA Hidetaka ROAD ENGINEER | WATANABE Ryohei CHIEF ENGINEER | AUGUST 2012 | V=1/50 H=1/1000 |
| | | | | | | | | | KM. 22+400 TO KM. 23+100 | | | | | | DWG. NO. | SHEET NO. |
| | | | | | | | | | | | | | MW-39 | 44 | | |

CONTROL POINTS :

| STA. | N | E | ELEV. |
|------|-------------|------------|-------|
| 124 | 1547720.701 | 684790.926 | 3.404 |



| GRADE | EXISTING | | | | | | | | | | | | | | | | | | | | 2.998 | i=0.200% L=50.000 | | 2.898 | level L=1300.000 | | | | | | |
|----------------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----------------------|--------------------|-------|---------------------|-------|-------|-------|-------|-------|------|
| FORMATION HEIGHT | EXISTING | | | | | | | | | | | | | | | | | | | | 2.998 | 2.979 | 2.940 | 2.923 | 2.914 | 2.900 | 2.898 | 2.898 | | | |
| EMBANKMENT | NONE | | | | | | | | | | | | | | | | | | | | | 0.019 | 0.040 | 0.033 | 0.034 | 0.020 | 0.058 | 0.098 | | | |
| GROUND HEIGHT | 3.47 | 3.50 | 3.50 | 3.52 | 3.52 | 3.52 | 3.54 | 3.54 | 3.55 | 3.54 | 3.54 | 3.53 | 3.55 | 3.54 | 3.38 | 3.40 | 3.40 | 3.40 | 3.31 | 3.21 | 3.13 | 3.04 | 3.00 | 2.96 | 2.90 | 2.88 | 2.88 | 2.84 | 2.80 | | |
| DESIGN FLOOD LEVEL | 3.135 | 3.134 | 3.133 | 3.132 | 3.131 | 3.130 | 3.129 | 3.128 | 3.127 | 3.126 | 3.125 | 3.124 | 3.123 | 3.122 | 3.120 | 3.119 | 3.118 | 3.117 | 3.116 | 3.115 | 3.114 | 3.113 | 3.112 | 3.111 | 3.111 | 3.110 | 3.109 | 3.108 | 3.107 | 3.105 | |
| STATION | 23+125 | +150 | +175 | +200 | +225 | +250 | +275 | +300 | +325 | +350 | +375 | +400 | +425 | +450 | +475 | +500 | +525 | +550 | +575 | +600 | +625 | +650 | +675 | +690 | +700 | +725 | +740 | +750 | +775 | +800 | +825 |
| HORIZONTAL CURVATURE | EXISTING | | | | | | | | | | | | | | | | | | | | | | R=∞ L=210.603 | | | | | | | | |
| SUPER ELEVATION | EXISTING | | | | | | | | | | | | | | | | | | | | -2.5% | | +7.89.603 -2.5% | | | | | | | | |

| REV. NO. | DESCRIPTION | ENGINEER CHECKED | ENGINEER DATE | DOH CHECKED | DOH DATE | REV. NO. | APPROVED BY |
|----------|-------------|------------------|---------------|-------------|----------|----------|-------------|
| | | | | | | | |



KINGDOM OF THAILAND
MINISTRY OF TRANSPORT
DEPARTMENT OF HIGHWAYS

HIGHWAY ROUTE NO. 9
PLAN & PROFILE (34 / 43)
KM. 23+100 TO KM. 23+800

OWNER
The Inter-City Motorways Division
Department of Highways
Ministry of Transport

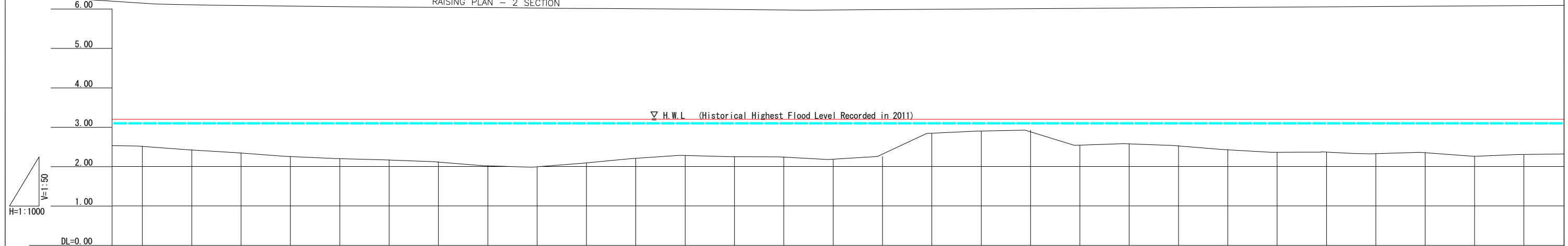
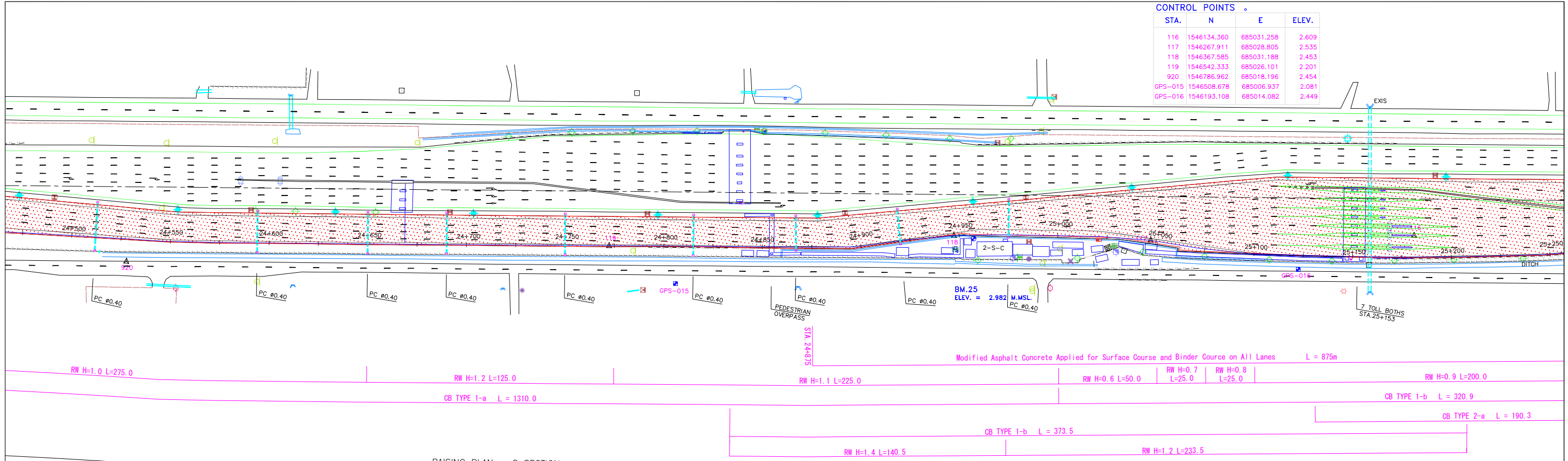
PROJECT TITLE
The Preparatory Survey on
the Rehabilitation Project of
the Outer Bangkok Ring Road

DESIGNED BY
SAGARA Hidetaka
ROAD ENGINEER

CHECKED BY
WATANABE Ryohei
CHIEF ENGINEER

DATE : AUGUST 2012
DWG. NO. MW-40
SCALE : V=1/50 H=1/1000
SHEET NO. 45

| CONTROL POINTS | | | |
|----------------|-------------|------------|-------|
| STA. | N | E | ELEV. |
| 116 | 1546134.360 | 685031.258 | 2.609 |
| 117 | 1546267.911 | 685028.805 | 2.535 |
| 118 | 1546367.585 | 685031.188 | 2.453 |
| 119 | 1546542.333 | 685026.101 | 2.201 |
| 920 | 1546786.962 | 685018.196 | 2.454 |
| GPS-015 | 1546508.678 | 685006.937 | 2.081 |
| GPS-016 | 1546193.108 | 685014.082 | 2.449 |

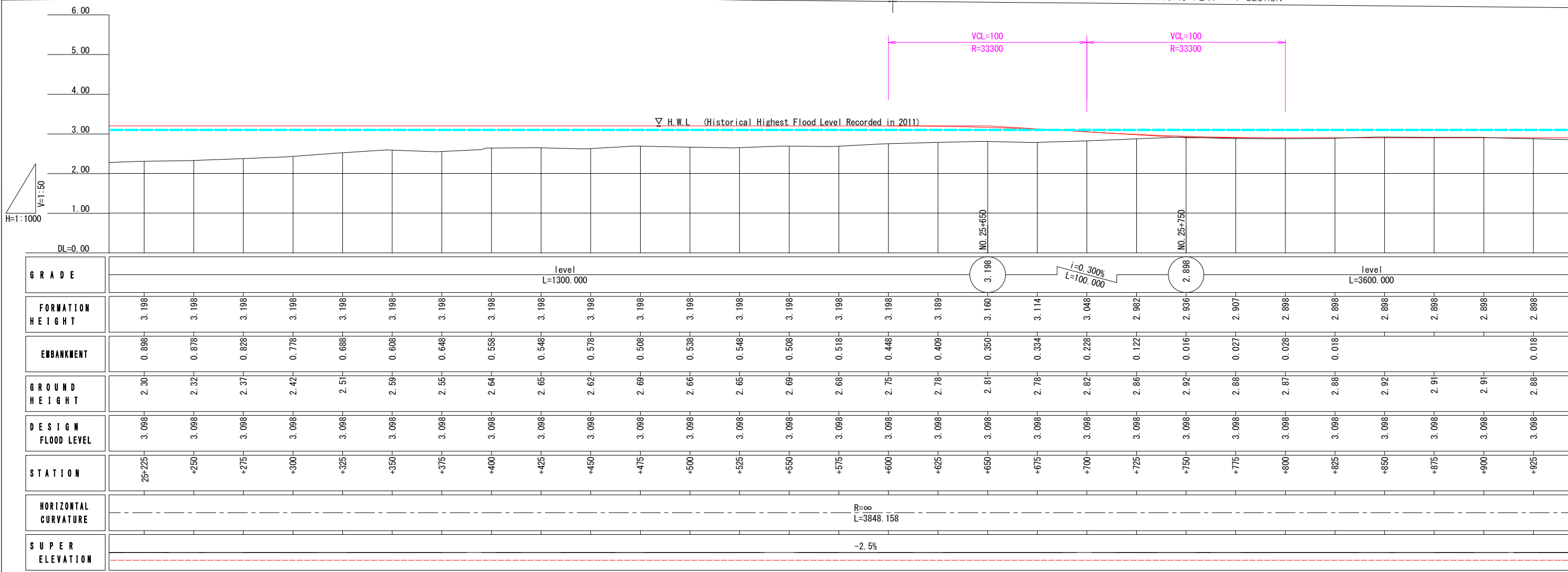
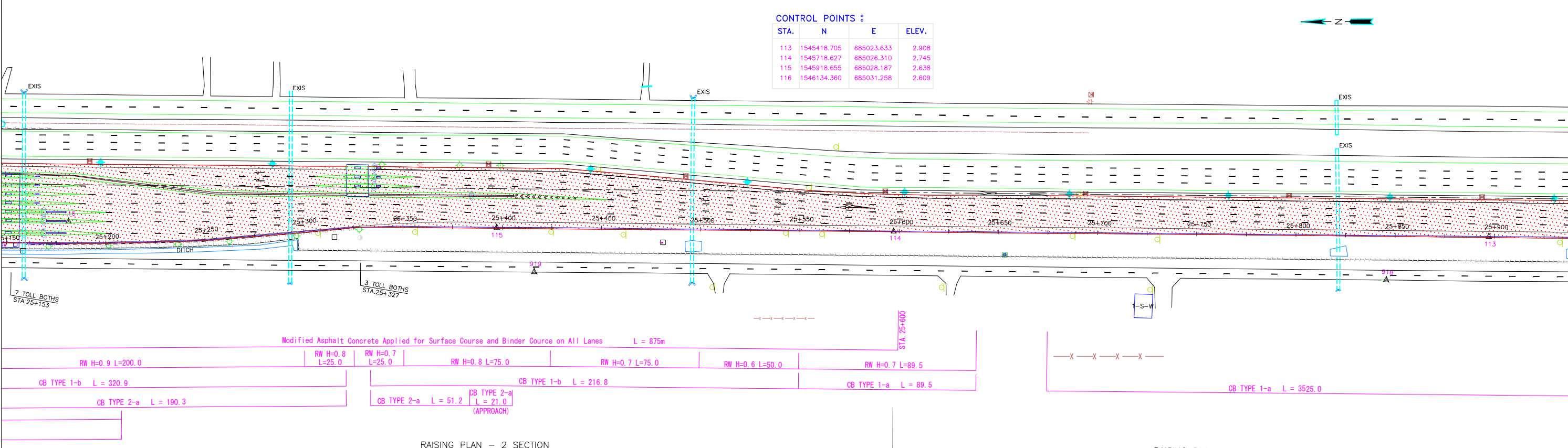


| GRADE | level L=1300.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 24+500 | +550 | +575 | +600 | +625 | +650 | +675 | +700 | +725 | +750 | +775 | +800 | +825 | +850 | +875 | +900 | +925 | +950 | +975 | 25+0 | +25 | +50 | +75 | +100 | +125 | +150 | +175 | +200 | +225 |
| FORMATION HEIGHT | 3.198 | 3.198 | 3.198 | 3.198 | 3.198 | 3.198 | 3.198 | 3.198 | 3.198 | 3.198 | 3.198 | 3.198 | 3.198 | 3.198 | 3.198 | 3.198 | 3.198 | 3.198 | 3.198 | 3.198 | 3.198 | 3.198 | 3.198 | 3.198 | 3.198 | 3.198 | 3.198 | 3.198 | 3.198 |
| EMBANKMENT | 0.678 | 0.768 | 0.848 | 0.938 | 0.998 | 1.028 | 1.078 | 1.178 | 1.218 | 1.118 | 0.998 | 0.918 | 0.948 | 0.948 | 1.018 | 0.938 | 0.358 | 0.298 | 0.278 | 0.658 | 0.618 | 0.668 | 0.768 | 0.838 | 0.838 | 0.878 | 0.838 | 0.938 | 0.898 |
| GROUND HEIGHT | 2.52 | 2.43 | 2.35 | 2.26 | 2.20 | 2.17 | 2.12 | 2.02 | 1.98 | 2.08 | 2.20 | 2.28 | 2.25 | 2.25 | 2.18 | 2.26 | 2.84 | 2.90 | 2.92 | 2.54 | 2.58 | 2.53 | 2.43 | 2.36 | 2.36 | 2.32 | 2.36 | 2.26 | 2.30 |
| DESIGN FLOOD LEVEL | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 |
| STATION | 24+500 | +550 | +575 | +600 | +625 | +650 | +675 | +700 | +725 | +750 | +775 | +800 | +825 | +850 | +875 | +900 | +925 | +950 | +975 | 25+0 | +25 | +50 | +75 | +100 | +125 | +150 | +175 | +200 | +225 |
| HORIZONTAL CURVATURE | | | | | | | | | | | | | | | | R=∞ L=3848.158 | | | | | | | | | | | | | |
| SUPER ELEVATION | | | | | | | | | | | | | | | | -2.5% | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | |
|----------|-------------|------------------|---------------|-------------|----------|----------|-------------|---|--|--|---|---|----------------------------------|-----------------------------------|-------------|-----------------|
| REV. NO. | DESCRIPTION | ENGINEER CHECKED | ENGINEER DATE | DOH CHECKED | DOH DATE | REV. NO. | APPROVED BY | KINGDOM OF THAILAND MINISTRY OF TRANSPORT DEPARTMENT OF HIGHWAYS | HIGHWAY ROUTE NO. 9 | OWNER | PROJECT TITLE | CTI ENGINEERING INTERNATIONAL CO., LTD. ORIENTAL CONSULTANTS CO., LTD. NIPPON KOEI CO., LTD. CTI ENGINEERING CO., LTD. | DESIGNED BY | CHECKED BY | DATE: | SCALE: |
| | | | | | | | | | PLAN & PROFILE (36/43) KM. 24+500 TO KM. 25+200 | The Inter-City Motorways Division Department of Highways Ministry of Transport | The Preparatory Survey on the Rehabilitation Project of the Outer Bangkok Ring Road | | SAGARA Hidetaka ROAD ENGINEER | WATANABE Ryohei CHIEF ENGINEER | AUGUST 2012 | V=1/50 H=1/1000 |
| | | | | | | | | | | | | DWG. NO. | SHEET NO. | | | |
| | | | | | | | | | | | | MW-42 | 47 | | | |

CONTROL POINTS :

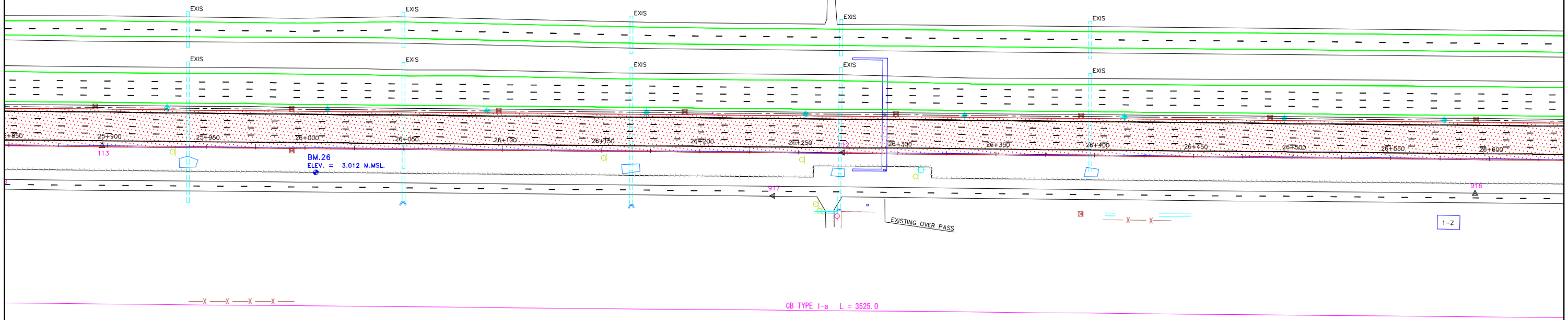
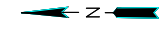
| STA. | N | E | ELEV. |
|------|-------------|------------|-------|
| 113 | 1545418.705 | 685023.633 | 2.908 |
| 114 | 1545718.627 | 685026.310 | 2.745 |
| 115 | 1545918.655 | 685028.187 | 2.638 |
| 116 | 1546134.360 | 685031.258 | 2.609 |



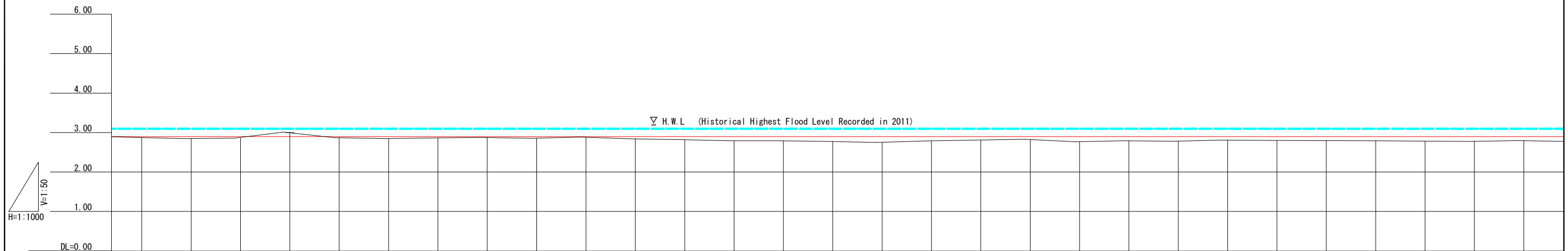
| REV. NO. | DESCRIPTION | ENGINEER CHECKED | ENGINEER DATE | DOH CHECKED | DOH DATE | REV. NO. | APPROVED BY | HIGHWAY ROUTE NO. 9 | OWNER | PROJECT TITLE | DESIGNED BY | CHECKED BY | DATE | SCALE |
|----------|-------------|------------------|---------------|-------------|----------|----------|-------------|--------------------------|--|---|----------------------------------|-----------------------------------|-------------|-----------------|
| | | | | | | | | KM. 25+200 TO KM. 25+900 | The Inter-City Motorways Division Department of Highways Ministry of Transport | The Preparatory Survey on the Rehabilitation Project of the Outer Bangkok Ring Road | SAGARA Hidetaka ROAD ENGINEER | WATANABE Ryohei CHIEF ENGINEER | AUGUST 2012 | V=1/50 H=1/1000 |
| | | | | | | | | | | | | | MW-43 | SHEET NO. 48 |

CONTROL POINTS :

| STA. | N | E | ELEV. |
|------|-------------|------------|-------|
| 112 | 1545043.673 | 685020.147 | 2.777 |
| 916 | 1544723.275 | 684999.452 | 2.577 |
| 917 | 1545078.998 | 684998.245 | 2.422 |



RAISING PLAN - 1 SECTION



| GRADE | level L=3600.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| FORMATION HEIGHT | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | | |
| EMBANKMENT | 0.018 | 0.048 | 0.038 | | 0.028 | 0.048 | 0.028 | 0.018 | 0.038 | 0.008 | 0.058 | 0.078 | 0.108 | 0.108 | 0.118 | 0.148 | 0.108 | 0.088 | 0.068 | 0.128 | 0.108 | 0.118 | 0.088 | 0.098 | 0.098 | 0.108 | 0.108 | 0.118 | 0.098 | 2.898 |
| GROUND HEIGHT | 2.88 | 2.85 | 2.86 | 3.01 | 2.87 | 2.85 | 2.87 | 2.88 | 2.86 | 2.89 | 2.84 | 2.82 | 2.79 | 2.79 | 2.78 | 2.75 | 2.79 | 2.81 | 2.83 | 2.77 | 2.79 | 2.78 | 2.81 | 2.80 | 2.80 | 2.79 | 2.79 | 2.78 | 2.80 | 2.898 |
| DESIGN FLOOD LEVEL | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 |
| STATION | 25+925 | +950 | +975 | 26+0 | +25 | +50 | +75 | +100 | +125 | +150 | +175 | +200 | +225 | +250 | +275 | +300 | +325 | +350 | +375 | +400 | +425 | +450 | +475 | +500 | +525 | +550 | +575 | +600 | +625 | |
| HORIZONTAL CURVATURE | | | | | | | | | | | | | R=∞ L=3848.158 | | | | | | | | | | | | | | | | | |
| SUPER ELEVATION | | | | | | | | | | | | | -2.5% | | | | | | | | | | | | | | | | | |

| REV. NO. | DESCRIPTION | ENGINEER CHECKED | ENGINEER DATE | DOH CHECKED | DOH DATE | REV. NO. | APPROVED BY |
|----------|-------------|------------------|---------------|-------------|----------|----------|-------------|
| | | | | | | | |



HIGHWAY ROUTE NO. 9
 PLAN & PROFILE (38 / 43)
 KM. 25+900 TO KM. 26+600

OWNER
 The Inter-City Motorways Division
 Department of Highways
 Ministry of Transport

PROJECT TITLE
 The Preparatory Survey on
 the Rehabilitation Project of
 the Outer Bangkok Ring Road

CTI ENGINEERING INTERNATIONAL CO., LTD.
 ORIENTAL CONSULTANTS CO., LTD.
 NIPPON KOEI CO., LTD.
 CTI ENGINEERING CO., LTD.

DESIGNED BY
 SAGARA Hidetaka
 ROAD ENGINEER

CHECKED BY
 WATANABE Ryohei
 CHIEF ENGINEER

DATE :
 AUGUST 2012

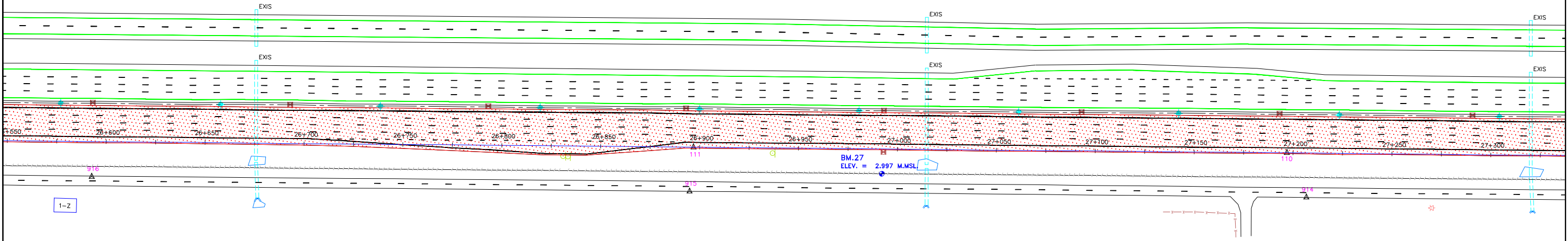
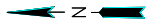
DWG. NO.
MW-44

SCALE :
 V=1/50 H=1/1000

SHEET NO.
49

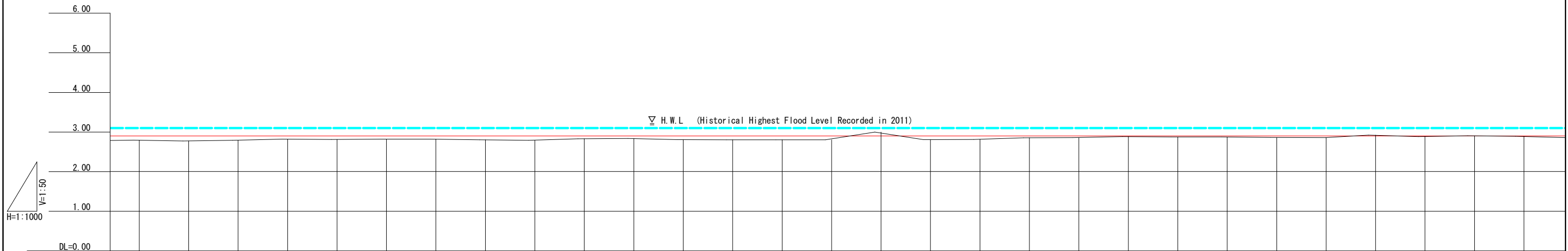
CONTROL POINTS :

| STA. | N | E | ELEV. |
|------|-------------|------------|-------|
| 110 | 1544119.074 | 685011.499 | 2.861 |
| 111 | 1544419.033 | 685014.351 | 2.807 |
| 914 | 1544109.212 | 684988.988 | 2.541 |
| 915 | 1544421.058 | 684992.034 | 2.521 |



CB TYPE 1-a L = 3525.0

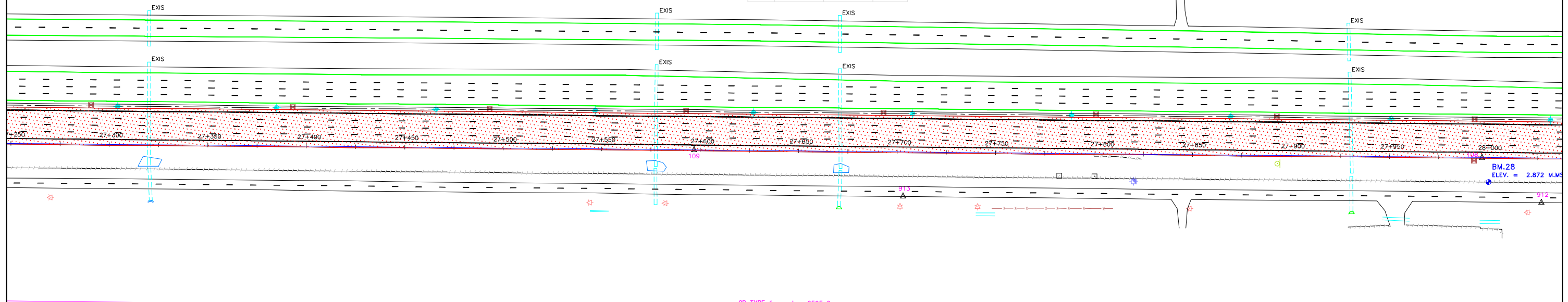
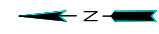
RAISING PLAN - 1 SECTION



| GRADE | level | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------|-------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| | L=3600.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FORMATION HEIGHT | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | 2.898 | |
| EMBANKMENT | 0.098 | 0.128 | 0.108 | 0.078 | 0.088 | 0.078 | 0.078 | 0.098 | 0.108 | 0.068 | 0.068 | 0.068 | 0.088 | 0.098 | 0.098 | 0.098 | 0.098 | 0.098 | 0.098 | 0.098 | 0.048 | 0.038 | 0.018 | 0.018 | 0.028 | 0.038 | 0.038 | 0.018 | 0.008 | |
| GROUND HEIGHT | 2.80 | 2.77 | 2.79 | 2.82 | 2.81 | 2.82 | 2.82 | 2.80 | 2.79 | 2.83 | 2.83 | 2.81 | 2.80 | 2.80 | 2.80 | 3.00 | 2.81 | 2.81 | 2.85 | 2.86 | 2.88 | 2.88 | 2.88 | 2.87 | 2.86 | 2.86 | 2.92 | 2.88 | 2.90 | 2.89 |
| DESIGN FLOOD LEVEL | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | |
| STATION | 26+625 | +650 | +675 | +700 | +725 | +750 | +775 | +800 | +825 | +850 | +875 | +900 | +925 | +950 | +975 | 27+0 | +25 | +50 | +75 | +100 | +125 | +150 | +175 | +200 | +225 | +250 | +275 | +300 | +325 | |
| HORIZONTAL CURVATURE | R=∞ L=3848.158 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SUPER ELEVATION | -2.5% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

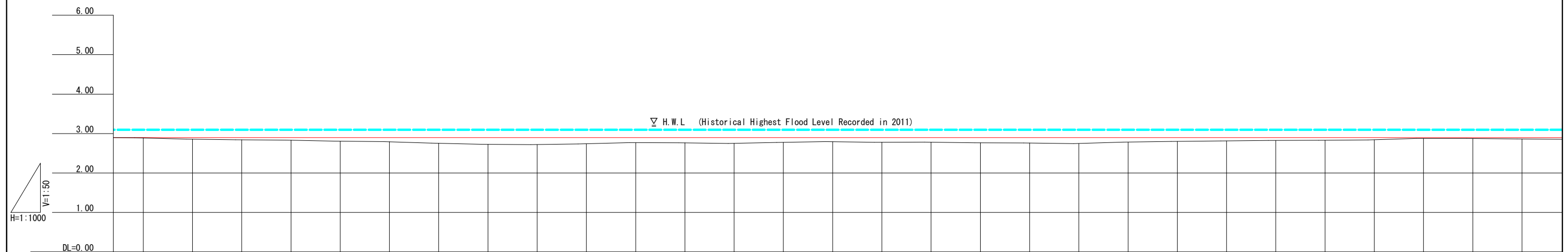
CONTROL POINTS :

| STA. | N | E | ELEV. |
|------|-------------|------------|-------|
| 108 | 1543319.054 | 685003.777 | 2.874 |
| 109 | 1543719.099 | 685007.665 | 2.765 |
| 913 | 1543612.995 | 684984.142 | 2.419 |



CB TYPE 1-a L = 3525.0

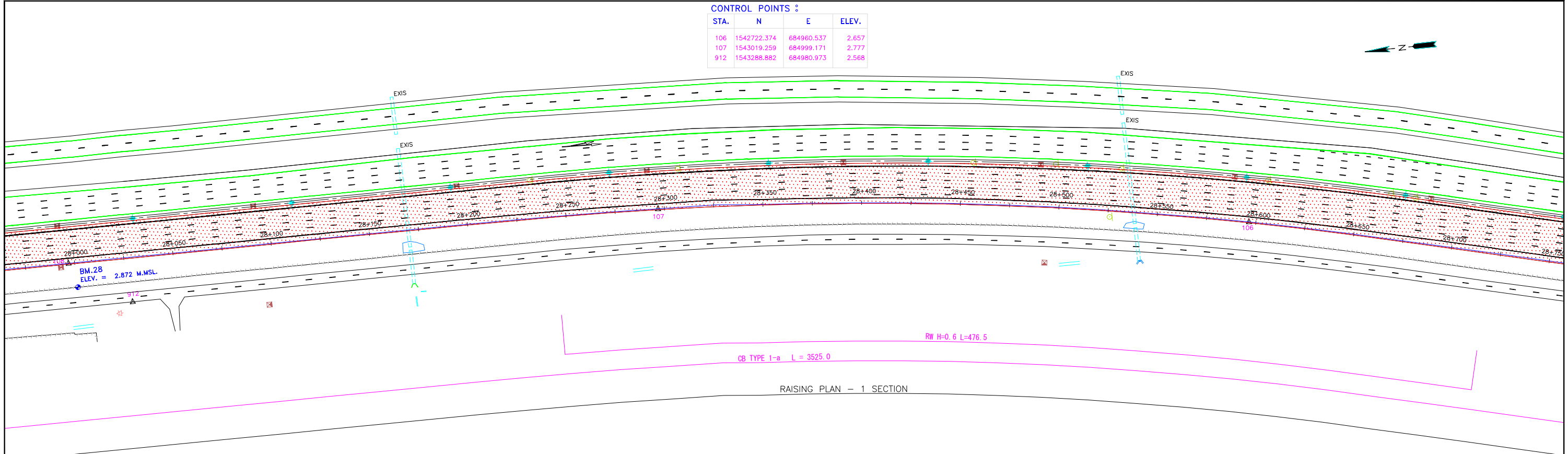
RAISING PLAN - 1 SECTION



| GRADE | level L=3600.000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------|----------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| FORMATION HEIGHT | 2.899 | 2.899 | 2.899 | 2.899 | 2.899 | 2.899 | 2.899 | 2.899 | 2.899 | 2.899 | 2.899 | 2.899 | 2.899 | 2.899 | 2.899 | 2.899 | 2.899 | 2.899 | 2.899 | 2.899 | 2.899 | 2.899 | 2.899 | 2.899 | 2.899 | 2.899 | 2.899 | 2.899 | 2.899 | 2.899 |
| EMBANKMENT | 0.008 | 0.038 | 0.058 | 0.058 | 0.088 | 0.108 | 0.138 | 0.168 | 0.178 | 0.158 | 0.128 | 0.128 | 0.148 | 0.118 | 0.098 | 0.118 | 0.118 | 0.128 | 0.138 | 0.158 | 0.118 | 0.098 | 0.088 | 0.068 | 0.068 | 0.058 | 0.018 | 0.028 | 0.038 | |
| GROUND HEIGHT | 2.89 | 2.86 | 2.84 | 2.84 | 2.81 | 2.79 | 2.76 | 2.73 | 2.72 | 2.74 | 2.77 | 2.77 | 2.75 | 2.78 | 2.80 | 2.78 | 2.78 | 2.77 | 2.76 | 2.74 | 2.78 | 2.80 | 2.81 | 2.83 | 2.83 | 2.84 | 2.88 | 2.87 | 2.86 | |
| DESIGN FLOOD LEVEL | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | |
| STATION | 27+325 | +350 | +375 | +400 | +425 | +450 | +475 | +500 | +525 | +550 | +575 | +600 | +625 | +650 | +675 | +700 | +725 | +750 | +775 | +800 | +825 | +850 | +875 | +900 | +925 | +950 | +975 | 28+0 | +25 | |
| HORIZONTAL CURVATURE | $R = \infty$ L=3848.158 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SUPER ELEVATION | -2.5% | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

CONTROL POINTS :

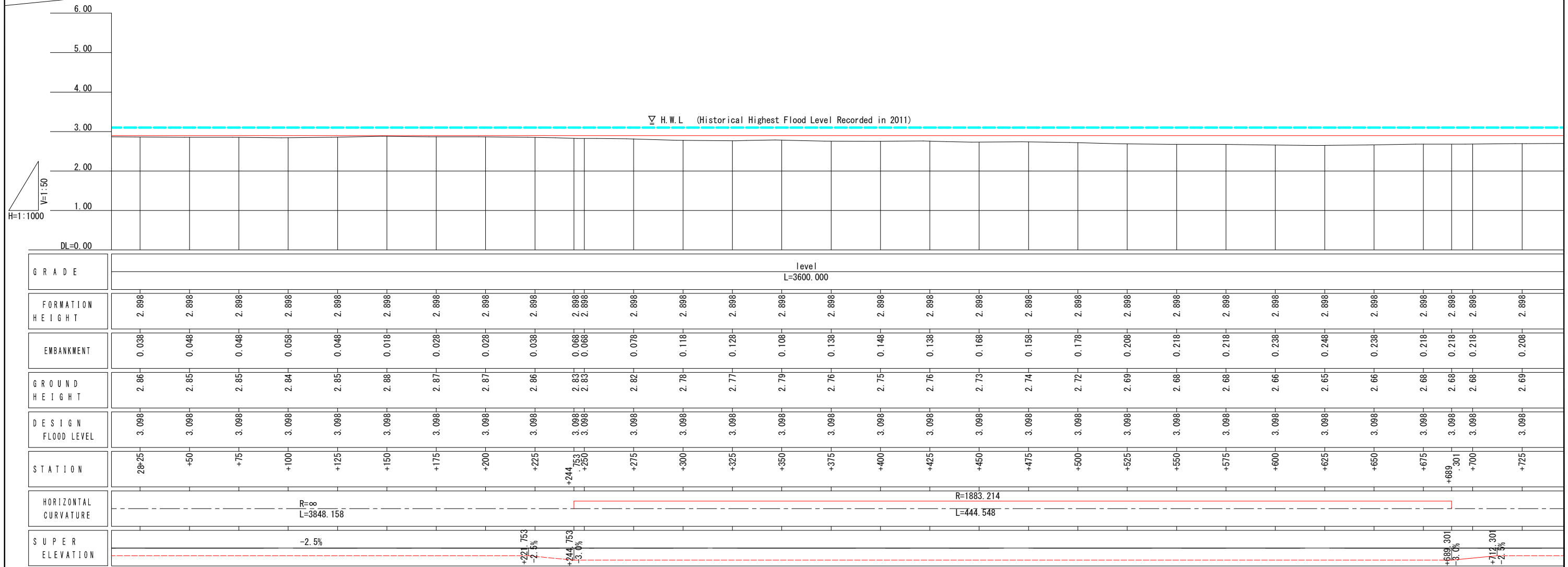
| STA. | N | E | ELEV. |
|------|-------------|------------|-------|
| 106 | 1542722.374 | 684960.537 | 2.657 |
| 107 | 1543019.259 | 684999.171 | 2.777 |
| 912 | 1543288.882 | 684980.973 | 2.568 |



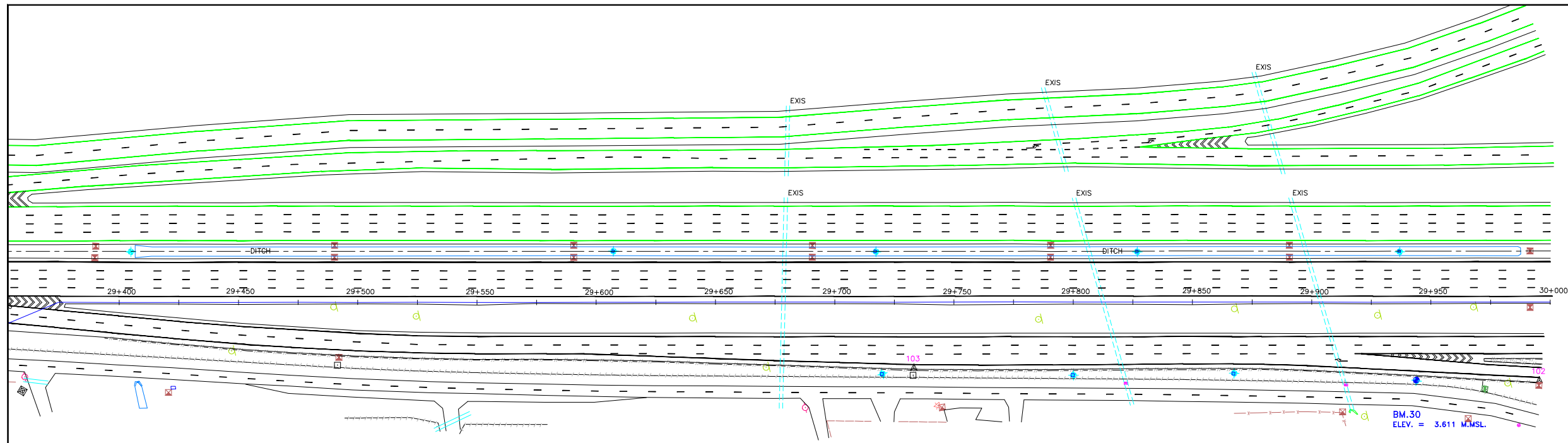
CB TYPE 1-a L = 3525.0

RW H=0.6 L=476.5

RAISING PLAN - 1 SECTION

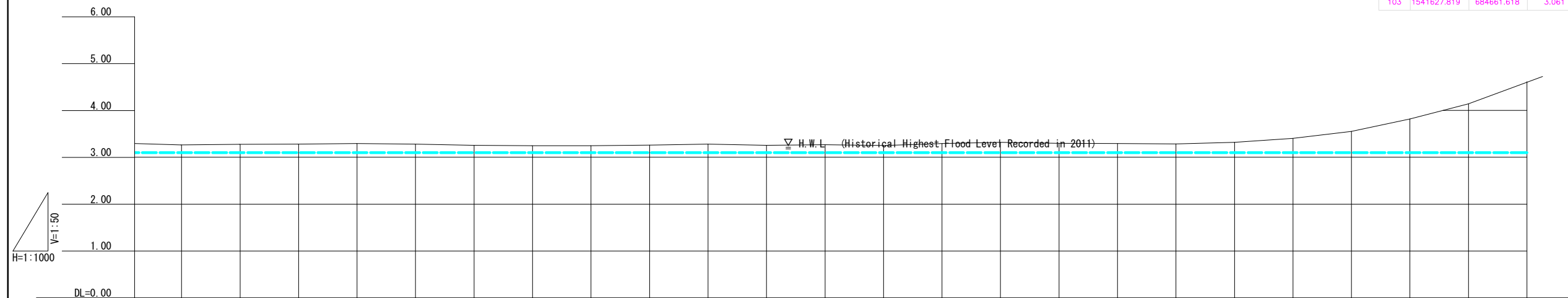


| REV. NO. | DESCRIPTION | ENGINEER | | DOH | | REV. NO. | APPROVED BY | KINGDOM OF THAILAND MINISTRY OF TRANSPORT DEPARTMENT OF HIGHWAYS | HIGHWAY ROUTE NO. 9 | | OWNER The Inter-City Motorways Division Department of Highways Ministry of Transport | PROJECT TITLE The Preparatory Survey on the Rehabilitation Project of the Outer Bangkok Ring Road | DESIGNED BY SAGARA Hidetaka ROAD ENGINEER | CHECKED BY WATANABE Ryohei CHIEF ENGINEER | DATE AUGUST 2012 | SCALE V=1/50 H=1/1000 |
|----------|-------------|----------|------|---------|------|----------|-------------|--|---------------------|---------------|---|--|---|---|---------------------|--------------------------|
| | | CHECKED | DATE | CHECKED | DATE | | | | KM. 28+000 | TO KM. 28+700 | | | | | | |
| | | | | | | | | | | | | | | | | |



CONTROL POINTS :

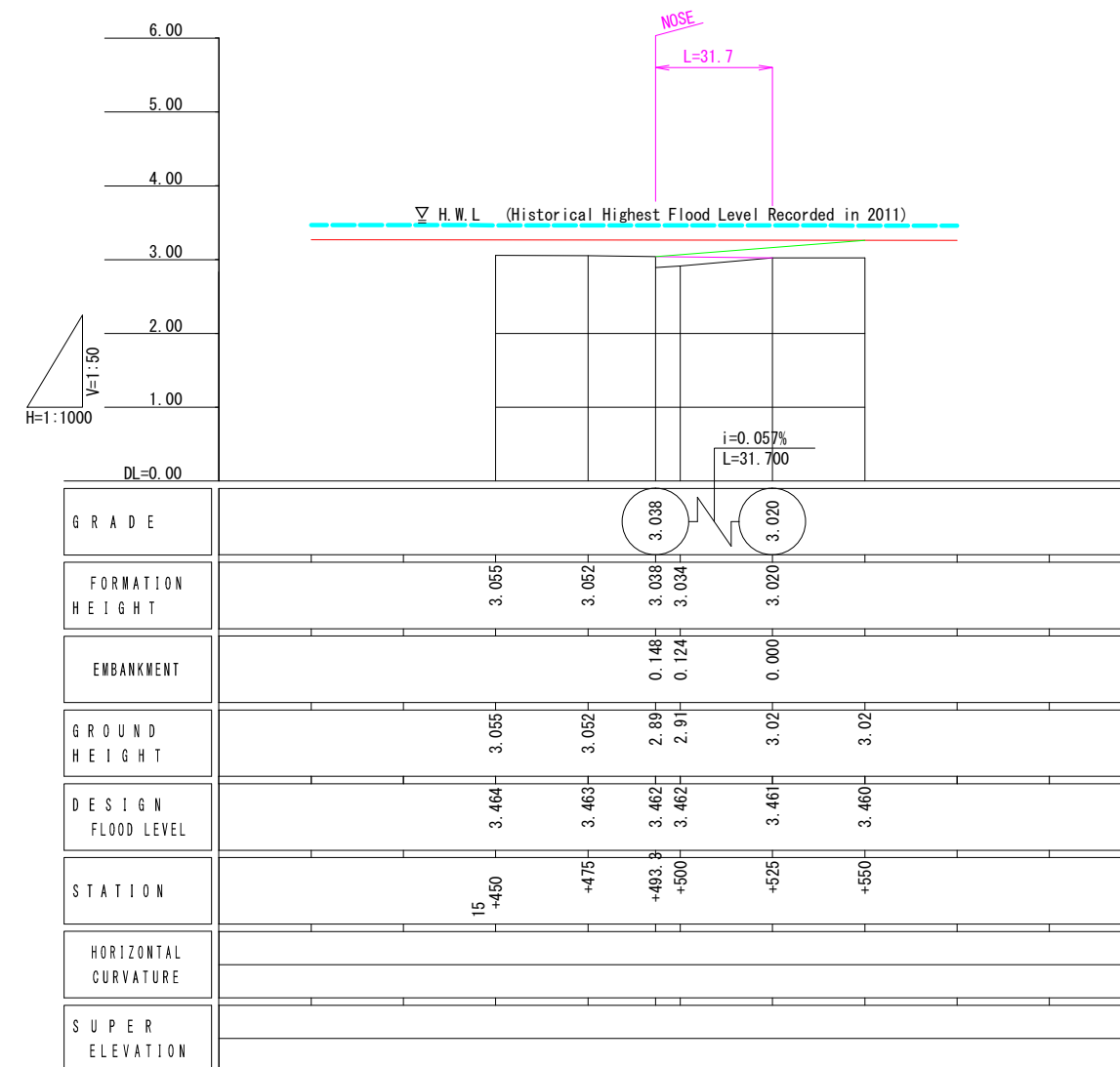
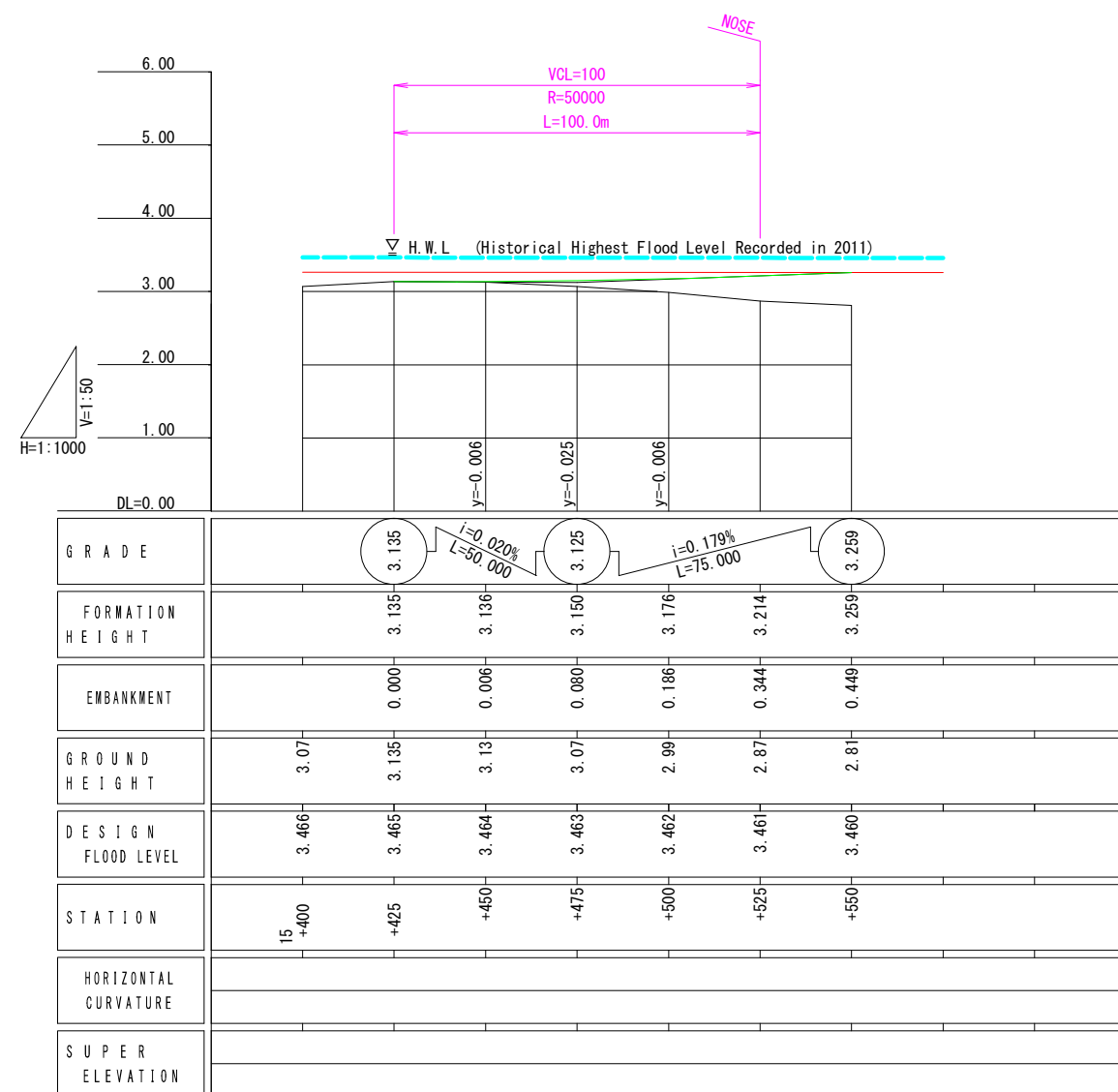
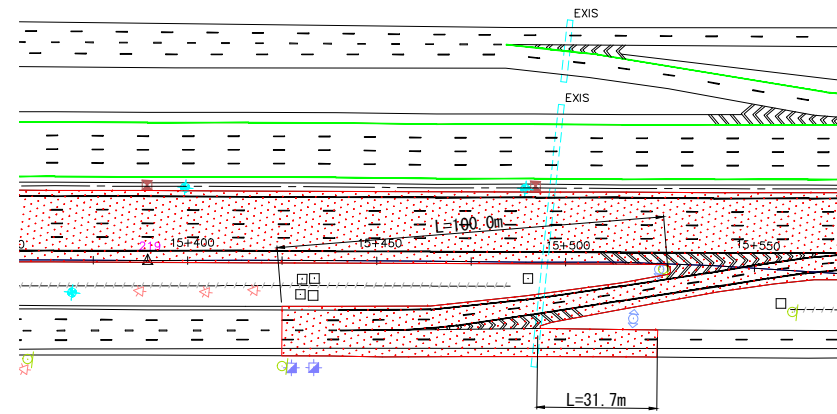
| STA. | N | E | ELEV. |
|------|-------------|------------|-------|
| 102 | 1541374.597 | 684593.008 | 3.137 |
| 103 | 1541627.819 | 684661.618 | 3.061 |



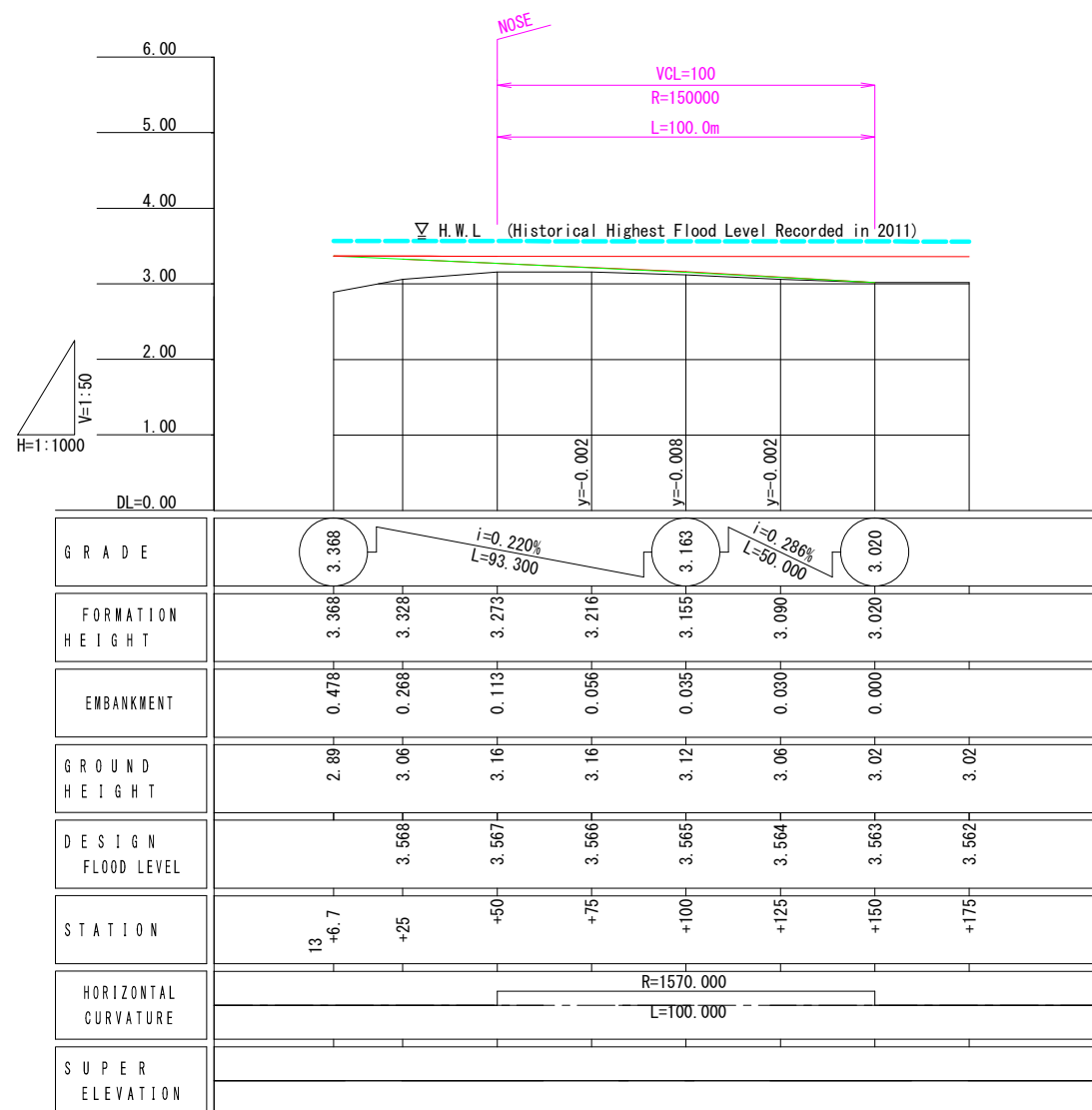
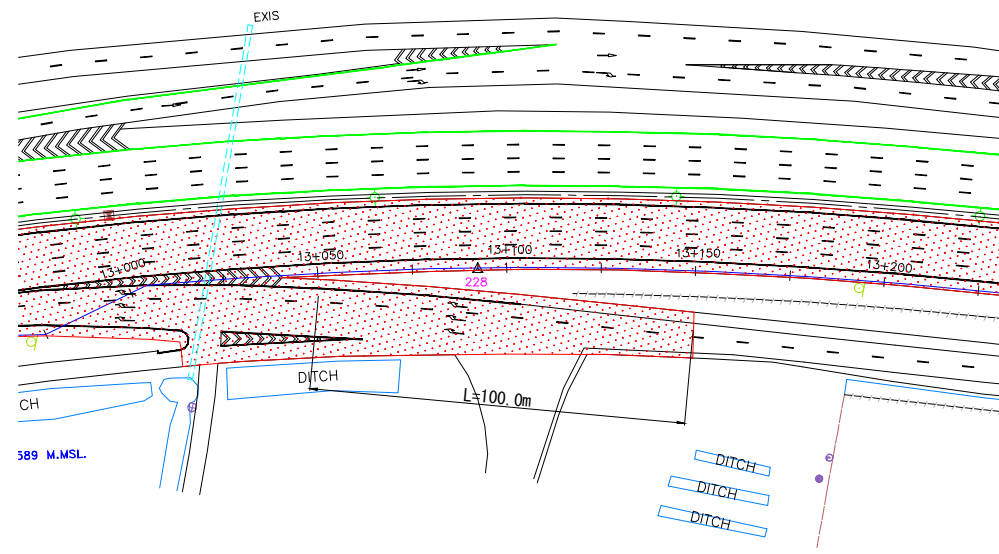
| | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| GRADE | EXISTING | | | | | | | | | | | | | | | | | | | | | | | |
| FORMATION HEIGHT | EXISTING | | | | | | | | | | | | | | | | | | | | | | | |
| EMBANKMENT | EXISTING | | | | | | | | | | | | | | | | | | | | | | | |
| GROUND HEIGHT | 3.26 | 3.28 | 3.28 | 3.29 | 3.28 | 3.25 | 3.25 | 3.25 | 3.26 | 3.28 | 3.26 | 3.27 | 3.25 | 3.29 | 3.32 | 3.30 | 3.29 | 3.28 | 3.32 | 3.40 | 3.55 | 3.82 | 4.14 | 4.60 |
| DESIGN FLOOD LEVEL | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 | 3.098 |
| STATION | 29+425 | +450 | +475 | +500 | +525 | +550 | +575 | +600 | +625 | +650 | +675 | +700 | +725 | +750 | +775 | +800 | +825 | +850 | +875 | +900 | +925 | +950 | +975 | 30+0 |
| HORIZONTAL CURVATURE | EXISTING | | | | | | | | | | | | | | | | | | | | | | | |
| SUPER ELEVATION | EXISTING | | | | | | | | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | |
|----------|-------------|------------------|---------------|-------------|----------|----------|-------------|--|----------------------------|--|---|---|----------------------------------|-----------------------------------|-------------|-----------------|
| REV. NO. | DESCRIPTION | ENGINEER CHECKED | ENGINEER DATE | DOH CHECKED | DOH DATE | REV. NO. | APPROVED BY | <p>KINGDOM OF THAILAND MINISTRY OF TRANSPORT DEPARTMENT OF HIGHWAYS</p> | HIGHWAY ROUTE NO. 9 | OWNER | PROJECT TITLE | <p>CTI ENGINEERING INTERNATIONAL CO., LTD. ORIENTAL CONSULTANTS CO., LTD. NIPPON KOEI CO., LTD. CTI ENGINEERING CO., LTD.</p> | DESIGNED BY | CHECKED BY | DATE | SCALE |
| | | | | | | | | | PLAN & PROFILE (43 / 43) | The Inter-City Motorways Division Department of Highways Ministry of Transport | The Preparatory Survey on the Rehabilitation Project of the Outer Bangkok Ring Road | | SAGARA Hidetaka ROAD ENGINEER | WATANABE Ryohei CHIEF ENGINEER | AUGUST 2012 | V=1/50 H=1/1000 |
| | | | | | | | | | KM. 29+400 TO KM. 30+000 | | | | | | | DWG. NO. |
| | | | | | | | | | | | | MW-49 | | 54 | | |

**2-3 PLAN / PROFILE OF RAMP AND
FRONTAGE ROAD**



| | | | | | | | | | | | | | | | | |
|----------|-------------|------------------|---------------|-------------|----------|----------|-------------|---|--|--|---|--|----------------------------------|-----------------------------------|-------------|-----------------|
| REV. NO. | DESCRIPTION | ENGINEER CHECKED | ENGINEER DATE | DOH CHECKED | DOH DATE | REV. NO. | APPROVED BY | KINGDOM OF THAILAND MINISTRY OF TRANSPORT DEPARTMENT OF HIGHWAYS | HIGHWAY ROUTE NO. 9 | OWNER | PROJECT TITLE | CTI ENGINEERING INTERNATIONAL CO., LTD. ORIENTAL CONSULTANTS CO., LTD. NIPPON KOEI CO., LTD. CTI ENGINEERING CO., LTD. | DESIGNED BY | CHECKED BY | DATE | SCALE |
| | | | | | | | | | PLAN & PROFILE OF RAMP AND FRONTAGE ROAD | The Inter-City Motorways Division Department of Highways Ministry of Transport | The Preparatory Survey on the Rehabilitation Project of the Outer Bangkok Ring Road | | SAGARA Hidetaka ROAD ENGINEER | WATANABE Ryohei CHIEF ENGINEER | AUGUST 2012 | V=1/50 H=1/1000 |
| | | | | | | | | | KM. 15+525 | | | | | | MW-50 | SHEET NO. 55 |



| REV. NO. | DESCRIPTION | ENGINEER | | DOH | | REV. NO. | APPROVED BY | KINGDOM OF THAILAND MINISTRY OF TRANSPORT DEPARTMENT OF HIGHWAYS | HIGHWAY ROUTE NO. 9 | OWNER | PROJECT TITLE | DESIGNED BY | CHECKED BY | DATE : | SCALE : |
|----------|-------------|----------|------|---------|------|----------|-------------|--|---------------------|-------|---------------|----------------------------------|-----------------------------------|-------------|-----------------|
| | | CHECKED | DATE | CHECKED | DATE | | | | | | | | | AUGUST 2012 | V=1/50 H=1/1000 |
| | | | | | | | | | | | | | | DWG. NO. | SHEET NO. |
| | | | | | | | | | | | | SAGARA Hidetaka ROAD ENGINEER | WATANABE Ryohei CHIEF ENGINEER | MW-51 | 56 |