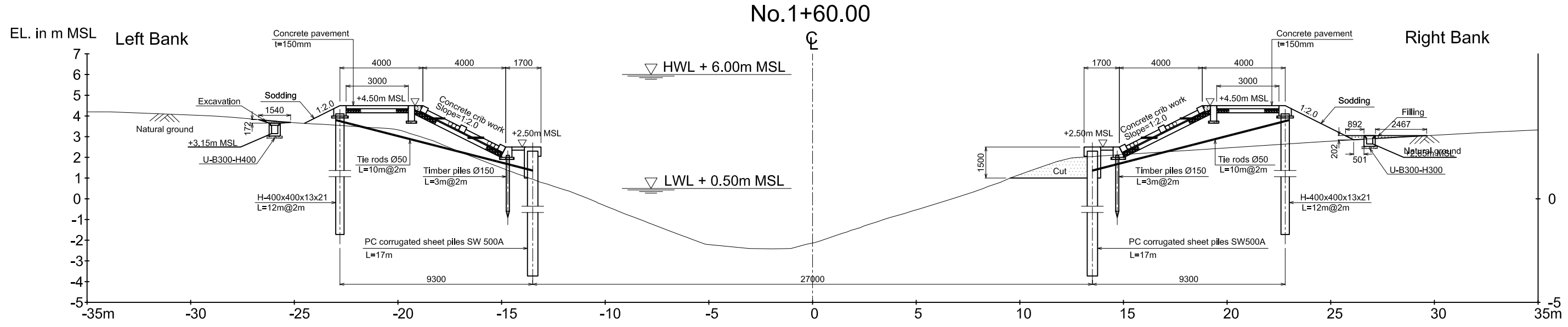
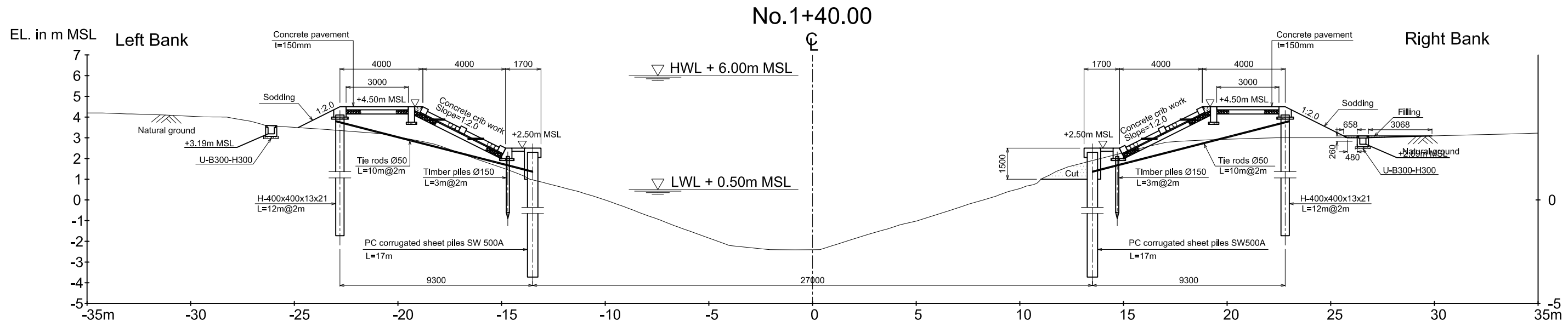
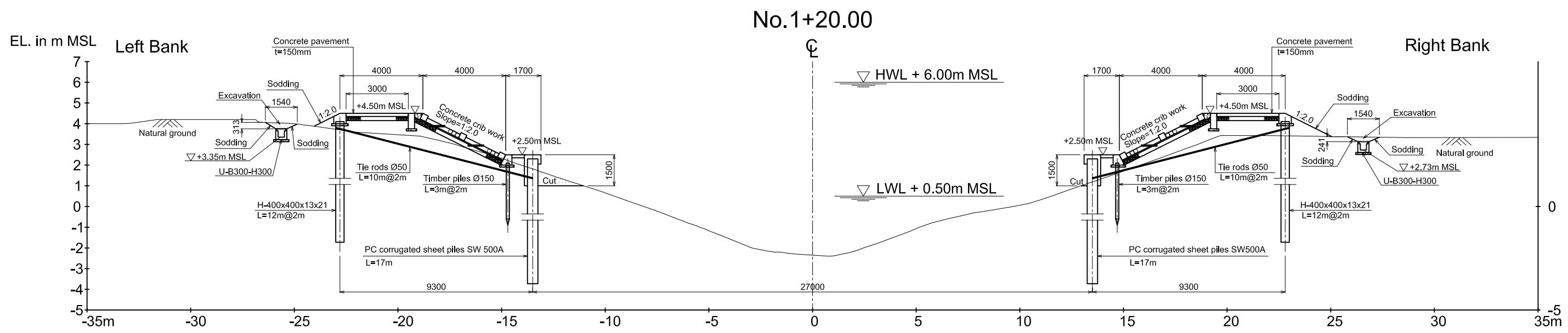
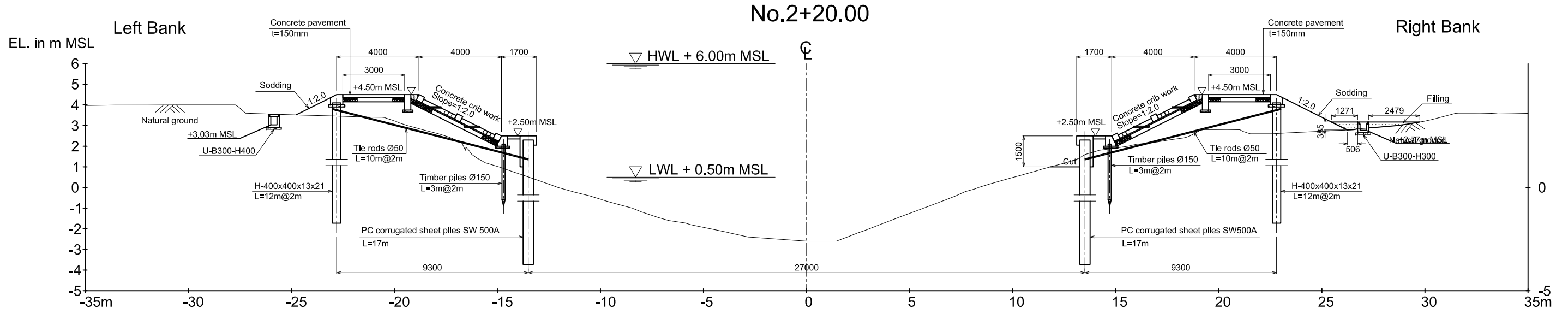
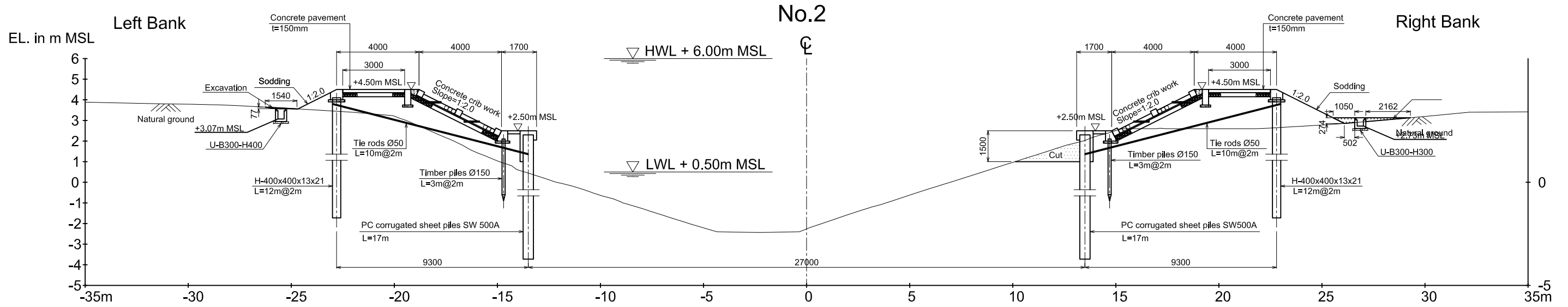
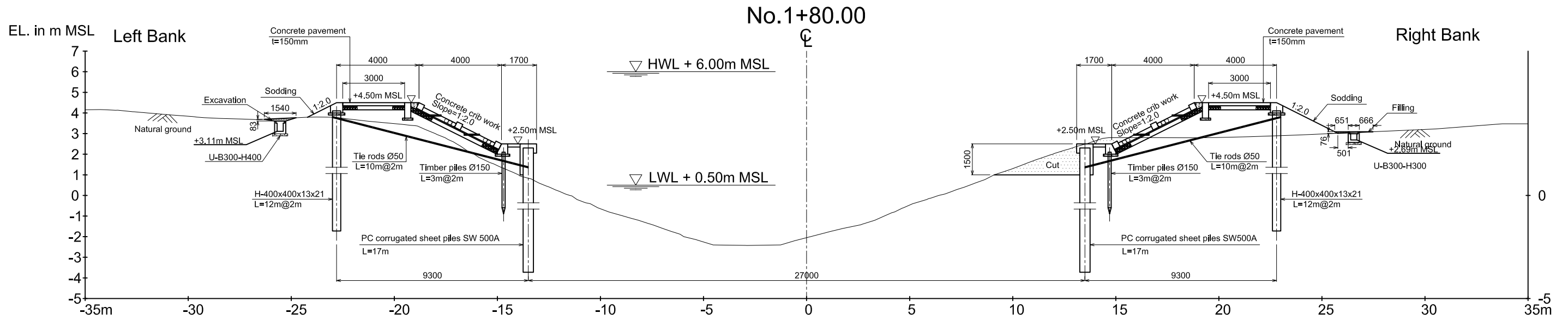


A8-22



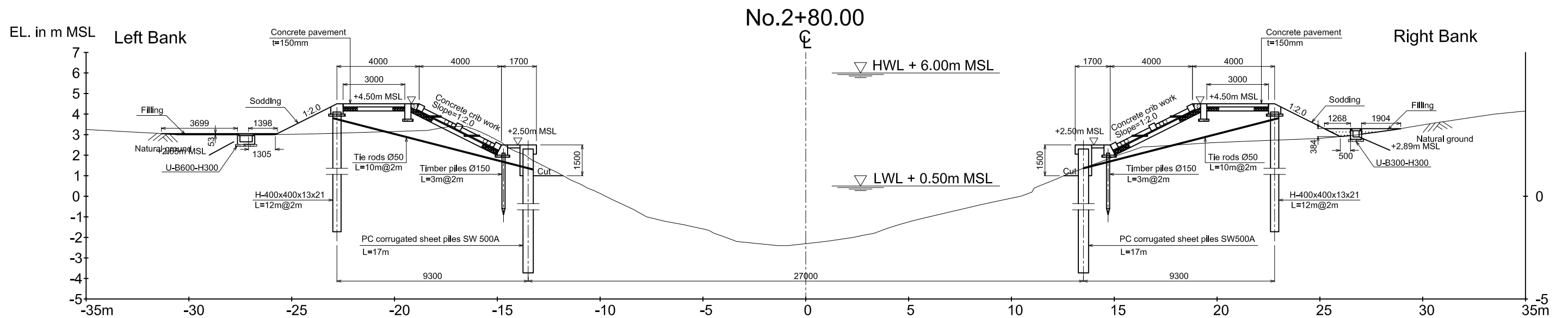
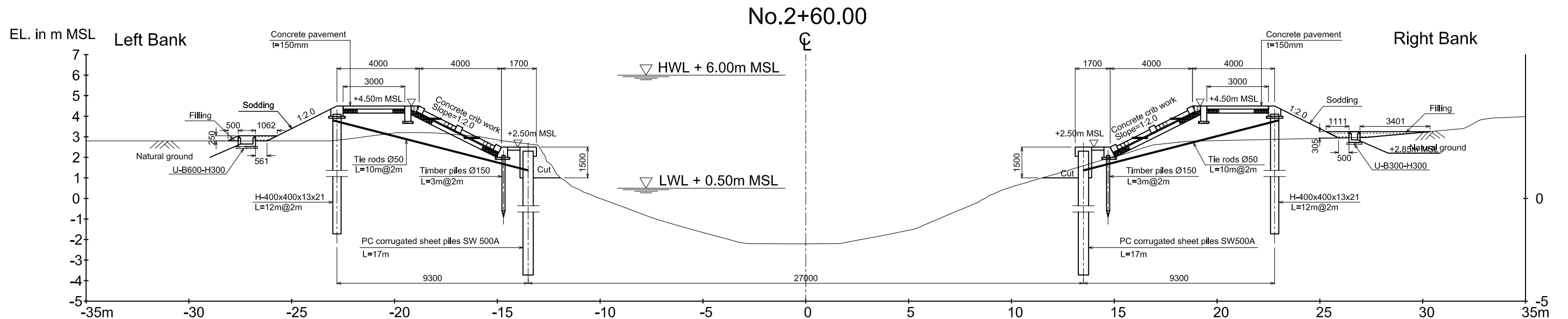
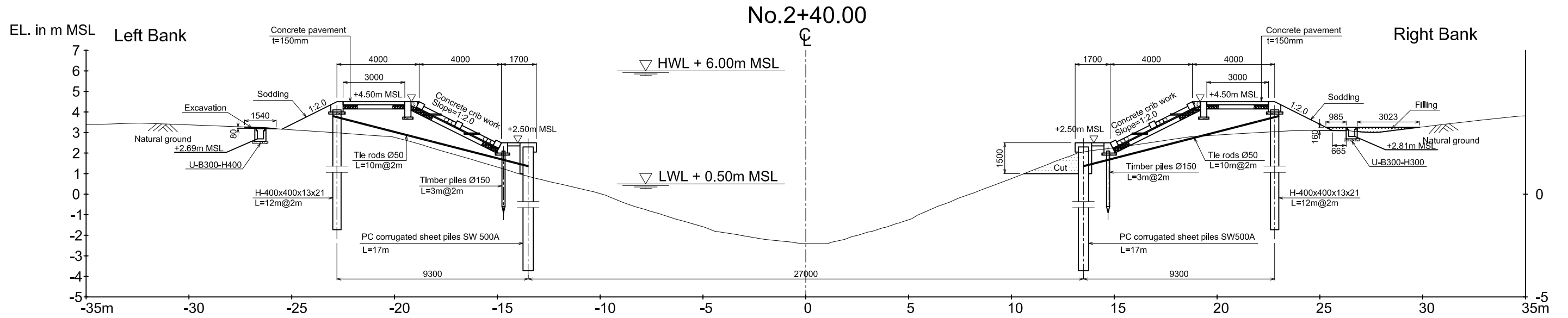
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|----------|-------------|--------------------|------|-------------|------|----------|-------------|---|---|--|---|--|--|--|-----------|
| | | | | | | | | KINGDOM OF THAILAND MINISTRY OF AGRICULTURE AND COOPERATIVES ROYAL IRRIGATION DEPARTMENT | Royal Irrigation Department Ministry of Agriculture and Cooperatives | Preparatory Survey on the Flood Prevention Project of East Side of the Pasak River in Ayutthaya in the Kingdom of Thailand | CTI ENGINEERING INTERNATIONAL CO., LTD. ORIENTAL CONSULTANTS CO., LTD. NIPPON KOEI CO., LTD. CTI ENGINEERING CO., LTD. | ISHII Masaki STRUCTURAL ENGINEER | MISHINA Takahiro TEAM LEADER | JULY 2012 DWG. NO. HT-BP-007 | SHEET NO. |



A8-23

| | | | | | | | | | | | | | | | |
|----------|-------------|--------------------|------|-------------|------|----------|-------------|---|---|---|--|-------------------------------------|---------------------------------|-----------------------|-----------|
| REV. NO. | DESCRIPTION | CONSULTANT CHECKED | DATE | RID CHECKED | DATE | REV. NO. | APPROVED BY | KINGDOM OF THAILAND MINISTRY OF AGRICULTURE AND COOPERATIVES ROYAL IRRIGATION DEPARTMENT | SHEET CONTENTS | OWNER | PROJECT TITLE | DESIGNED BY | CHECKED BY | DATE | SCALE |
| | | | | | | | | | (CIVIL WORKS) BANK PROTECTION OF HAN TRA CANAL CROSS SECTIONS (4/6) NO.1+80.00 TO NO.2+20.00 | Royal Irrigation Department Ministry of Agriculture and Cooperatives | Preparatory Survey on the Flood Prevention Project of East Side of the Pasak River in Ayutthaya in the Kingdom of Thailand | ISHII Masaki STRUCTURAL ENGINEER | MISHINA Takahiro TEAM LEADER | JULY 2012 | SHEET NO. |
| | | | | | | | | | | | | | | DWG. NO. HT-BP-008 | |

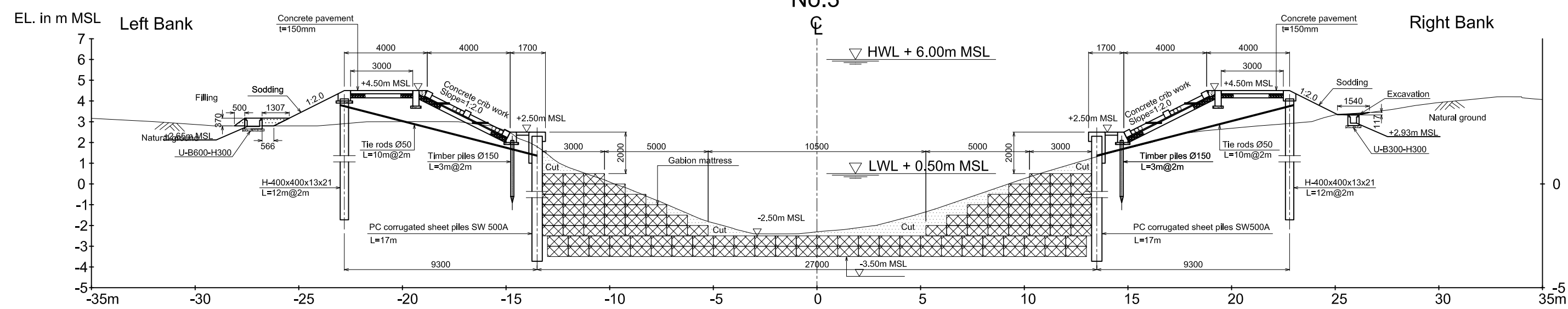
CTI ENGINEERING INTERNATIONAL CO., LTD.
 ORIENTAL CONSULTANTS CO., LTD.
 NIPPON KOEI CO., LTD.
 CTI ENGINEERING CO., LTD.



A8-24

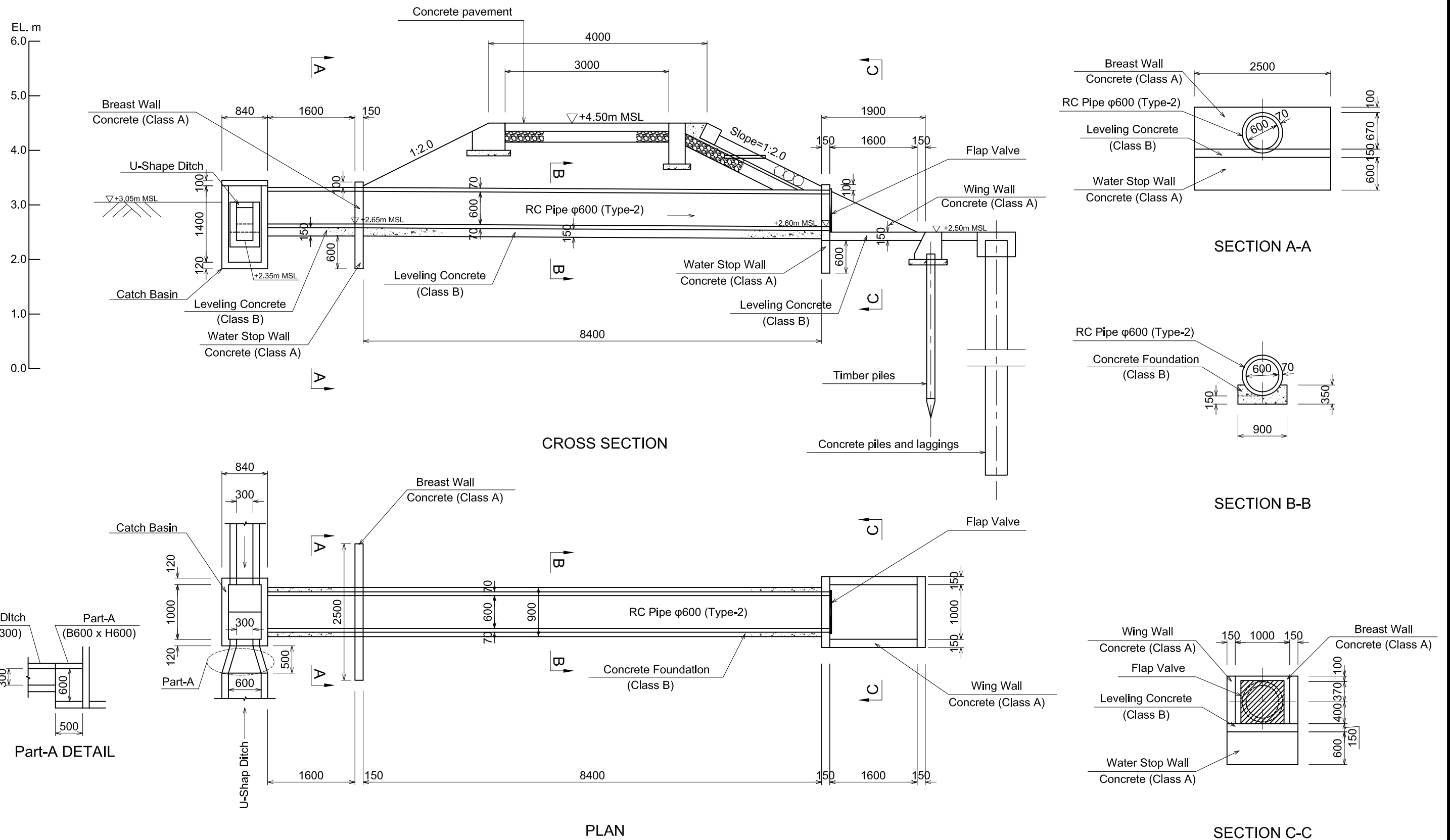
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| | | | | | | | | | | | | | ISHII Masaki STRUCTURAL ENGINEER | MISHINA Takahiro TEAM LEADER | JULY 2012 | |

No.3



A8-25

| | | | | | | | | | | | | | | | | |
|----------|-------------|------------|------|---------|------|----------|-------------|---|---|---|--|---|-------------------------------------|---------------------------------|-----------|-----------------------|
| REV. NO. | DESCRIPTION | CONSULTANT | | RID | | REV. NO. | APPROVED BY | KINGDOM OF THAILAND MINISTRY OF AGRICULTURE AND COOPERATIVES ROYAL IRRIGATION DEPARTMENT | SHEET CONTENTS | 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: |
| | | CHECKED | DATE | CHECKED | DATE | | | | (CIVIL WORKS) BANK PROTECTION OF HAN TRA CANAL CROSS SECTIONS (6/6) NO.3 | Royal Irrigation Department Ministry of Agriculture and Cooperatives | Preparatory Survey on the Flood Prevention Project of East Side of the Pasak River in Ayutthaya in the Kingdom of Thailand | | ISHII Masaki STRUCTURAL ENGINEER | MISHINA Takahiro TEAM LEADER | JULY 2012 | DWG. NO. HT-BP-010 |



| REV. NO. | DESCRIPTION | CONSULTANT | | RID | | REV. NO. | APPROVED BY |
|----------|-------------|------------|------|---------|------|----------|-------------|
| | | CHECKED | DATE | CHECKED | DATE | | |
| | | | | | | | |

KINGDOM OF THAILAND
 MINISTRY OF AGRICULTURE AND COOPERATIVES
 ROYAL IRRIGATION DEPARTMENT

SHEET CONTENTS
 (CIVIL WORKS)
 BANK PROTECTION OF HAN TRA CANAL
 SLUICeway

OWNER
 Royal Irrigation Department
 Ministry of Agriculture and Cooperatives

PROJECT TITLE
 Preparatory Survey on the Flood Prevention Project
 of East Side of the Pasak River in Ayutthaya
 in the Kingdom of Thailand

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

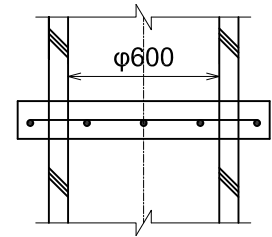
DESIGNED BY
 KAJIURA Takeki
 STRUCTURAL ENGINEER

CHECKED BY
 MISHINA Takahiro
 TEAM LEADER

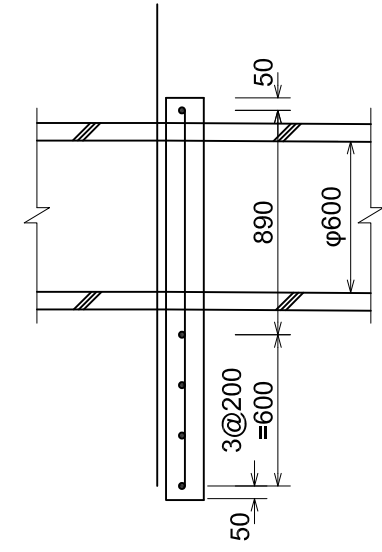
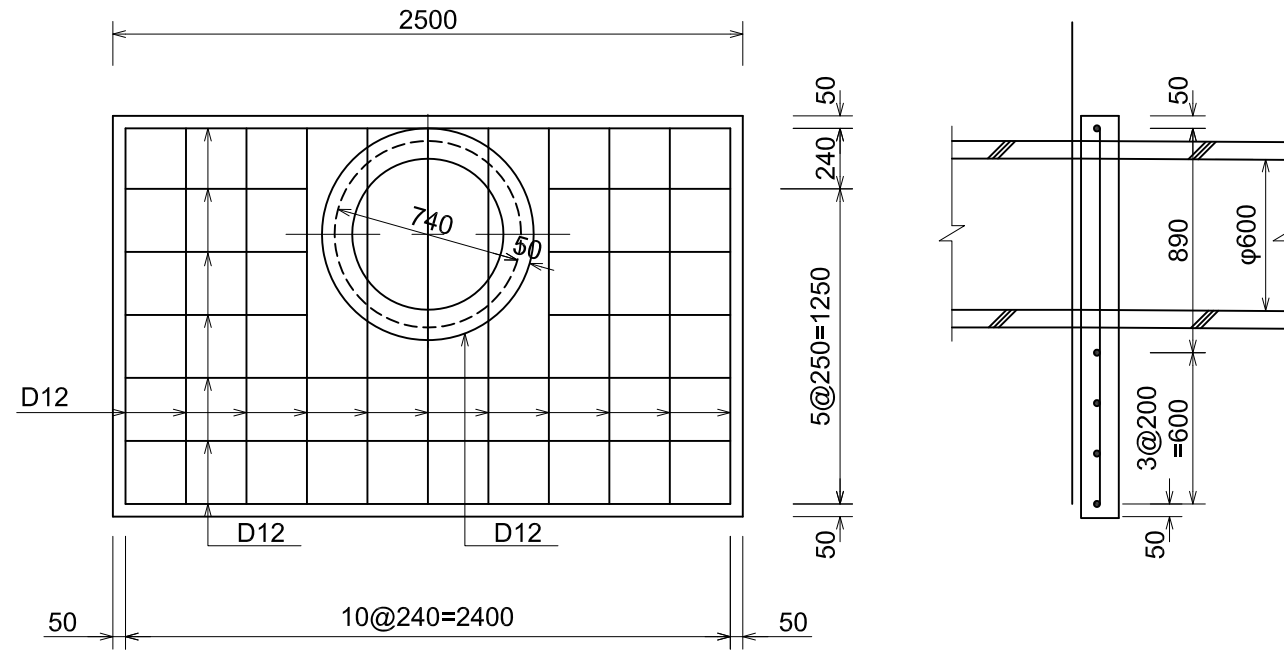
DATE:
 JULY 2012

DWG. NO.
 HT-BP-011

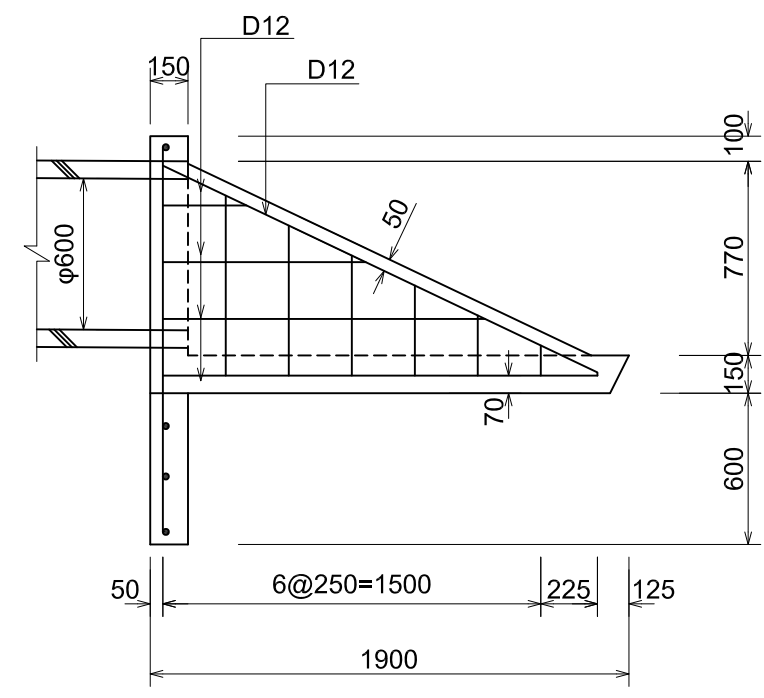
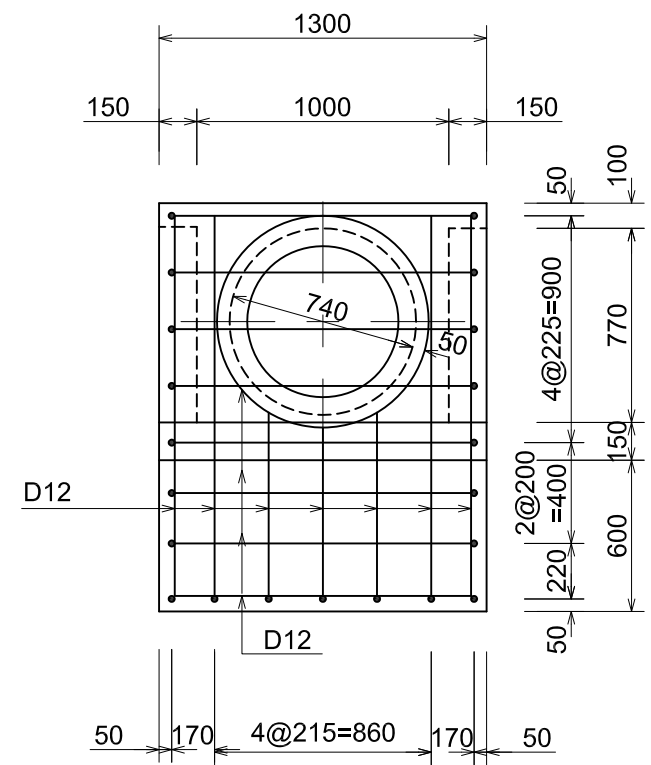
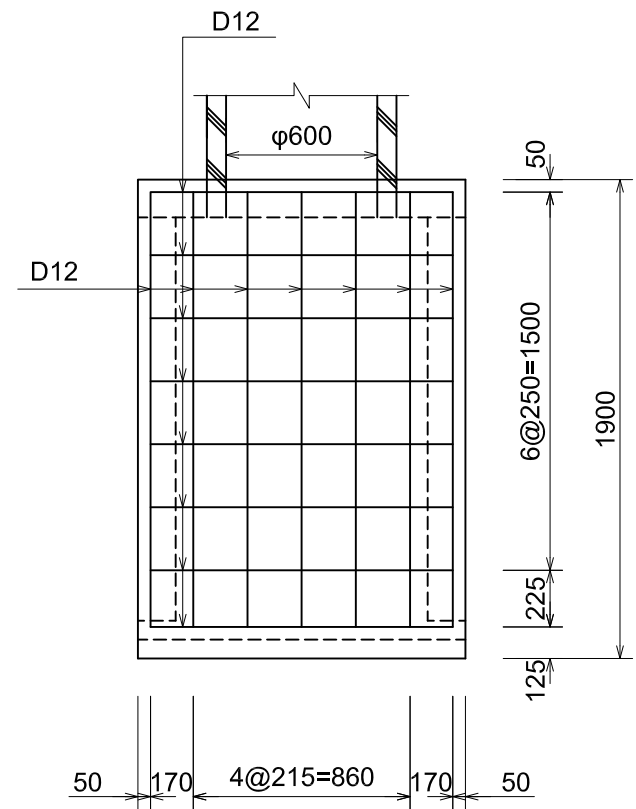
SCALE:
 SHEET NO.



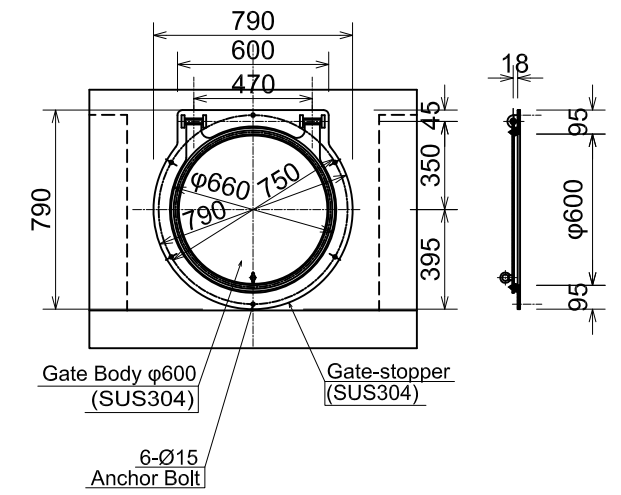
INLET (S=1/15)



OUTLET (S=1/15)

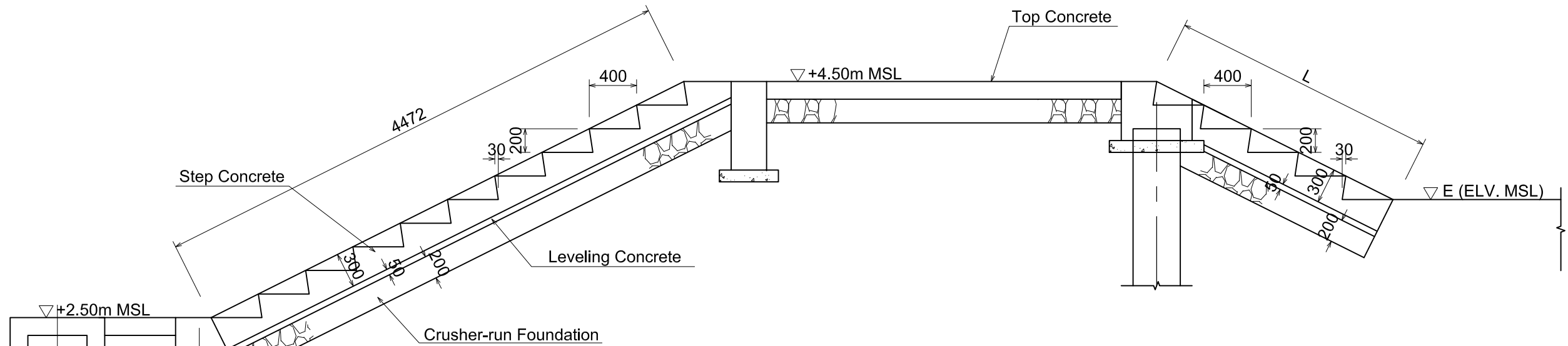


FLAP VALVE (S=1/15)

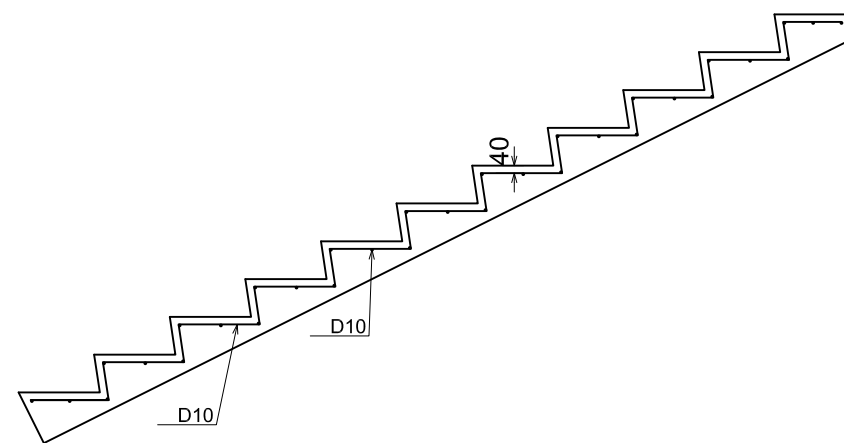
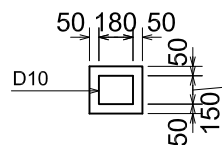
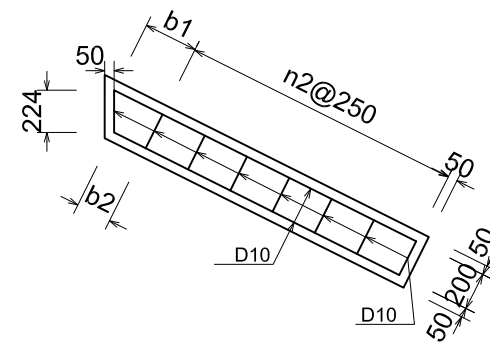


A8-27

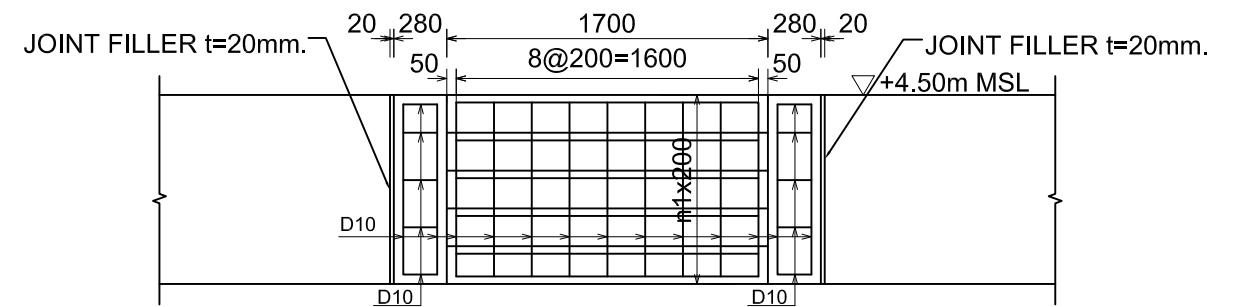
| REV. NO. | DESCRIPTION | CONSULTANT | | RID | | REV. NO. | APPROVED BY | KINGDOM OF THAILAND MINISTRY OF AGRICULTURE AND COOPERATIVES ROYAL IRRIGATION DEPARTMENT | SHEET CONTENTS (CIVIL WORKS) BANK PROTECTION OF HAN TRA CANAL SLUICeway | OWNER Royal Irrigation Department Ministry of Agriculture and Cooperatives | PROJECT TITLE Preparatory Survey on the Flood Prevention Project of East Side of the Pasak River in Ayutthaya in the Kingdom of Thailand | CTI ENGINEERING INTERNATIONAL CO., LTD. ORIENTAL CONSULTANTS CO., LTD. NIPPON KOEI CO., LTD. CTI ENGINEERING CO., LTD. | DESIGNED BY ISHII Masaki STRUCTURAL ENGINEER | CHECKED BY MISHINA Takahiro TEAM LEADER | DATE: | SCALE: |
|----------|-------------|------------|------|---------|------|----------|-------------|--|--|--|---|---|--|---|-----------------------|-----------|
| | | CHECKED | DATE | CHECKED | DATE | | | | | | | | | | JULY 2012 | SHEET NO. |
| | | | | | | | | | | | | | | | DWG. NO. HT-BP-012 | |



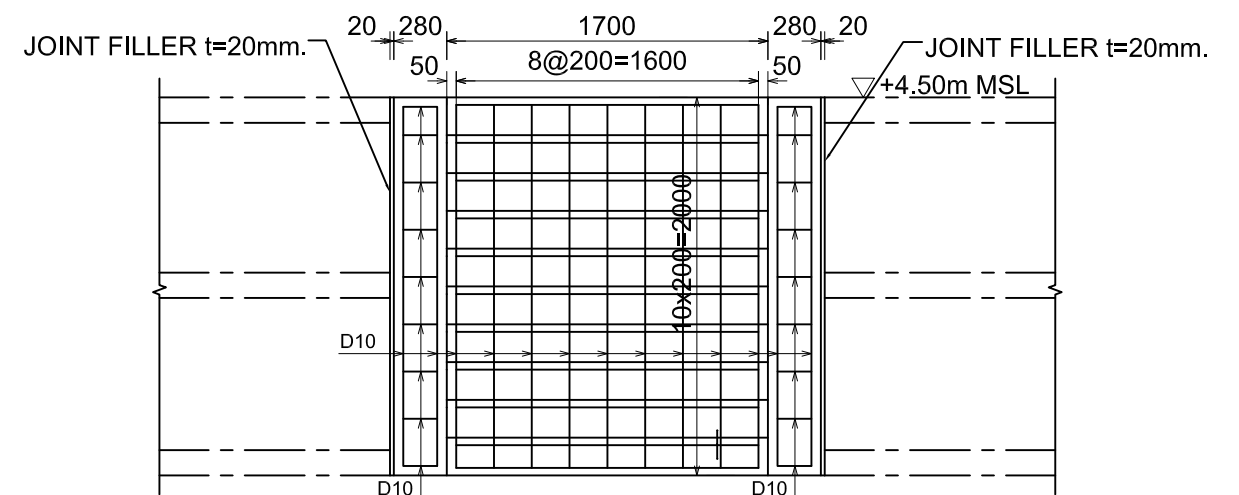
SECTION



REINFORCEMENT ARRANGEMENT



ELEVATION VIEW OF EXTERIOR STAIRS



ELEVATION VIEW OF RIVER SIDE STAIRS

| Stairs No. | n1 (-) | n2 (-) | b1 (mm) | b2 (mm) |
|------------|--------|--------|---------|---------|
| R1 | 5 | 6 | 151 | 51 |
| R2 | 8 | 11 | 160 | 60 |
| R3 | 6 | 8 | 147 | 47 |
| R4 | 8 | 11 | 135 | 35 |
| R5 | 8 | 10 | 356 | 256 |
| R6 | 9 | 11 | 265 | 165 |
| R7 | 9 | 11 | 348 | 248 |
| L1 | 3 | 3 | 363 | 263 |
| L2 | 4 | 5 | 187 | 87 |
| L3 | 5 | 6 | 231 | 131 |
| L4 | 8 | 10 | 380 | 280 |

| REV. NO. | DESCRIPTION | CONSULTANT | | RID | | REV. NO. | APPROVED BY | KINGDOM OF THAILAND MINISTRY OF AGRICULTURE AND COOPERATIVES ROYAL IRRIGATION DEPARTMENT | SHEET CONTENTS (CIVIL WORKS) BANK PROTECTION OF HAN TRA CANAL STAIRS AT REVETMENT | OWNER Royal Irrigation Department Ministry of Agriculture and Cooperatives | PROJECT TITLE Preparatory Survey on the Flood Prevention Project of East Side of the Pasak River in Ayutthaya in the Kingdom of Thailand | CTI ENGINEERING INTERNATIONAL CO., LTD. ORIENTAL CONSULTANTS CO., LTD. NIPPON KOEI CO., LTD. CTI ENGINEERING CO., LTD. | DESIGNED BY ISHII Masaki STRUCTURAL ENGINEER | CHECKED BY MISHINA Takahiro TEAM LEADER | DATE: | SCALE: |
|----------|-------------|------------|------|---------|------|----------|-------------|--|--|--|---|---|--|---|-----------------------|-----------|
| | | CHECKED | DATE | CHECKED | DATE | | | | | | | | | | JULY 2012 | 1:40 |
| | | | | | | | | | | | | | | | DWG. NO. HT-BP-013 | SHEET NO. |



LEGEND

| | |
|----------------------------------|--|
| ▲ TRAVERSE | ⊕ TRAFFIC LIGHT |
| — STEEL FENCE | ⊙ BORE HOLE |
| — CONCRETE WALL | ⊙ FIRE HYDRANT |
| -x-x- BARBED WIRE FENCE | ⊕ HIGH VOLTAGE ELECTRIC POLE |
| - - GUARD RAIL | ⊙ TREE |
| - - - WOODEN FENCE | 1-S-C ONE STORY CONCRETE HOUSE |
| CORRUGATED STEEL FENCE | 2-S-CW TWO STORIES CONCRETE/WOODEN HOUSE |
| — RAILWAY LINE | CONCRETE FLOOR AND SLOPE |
| — SLOP LINE | □ HAT , OR NO WALL HOUSE |
| — CONCRETE SLOP | |
| x, xx SPOT ELEVATION | |
| ⊕ ELECTRIC POLE | |
| ⊕ ELECTRIC POLE WITH TRANSFORMER | |
| ⊕ LAMP POST | |
| ⊕ MANHOLE, CONCRETE COVER | |
| ⊕ MANHOLE, GRATING COVER | |
| ⊕ MANHOLE, STEEL COVER | |
| ⊕ CROSS-SECTION POST | |
| ⊕ TRAFFIC SIGN | |

| | | | | | | | | | | | | | | | | |
|----------|-------------|--------------------|------|-------------|------|----------|-------------|--|--|---|--|--|---|---|--------------------|-------------------------------|
| REV. NO. | DESCRIPTION | CONSULTANT CHECKED | DATE | RID CHECKED | DATE | REV. NO. | APPROVED BY | <p>KINGDOM OF THAILAND MINISTRY OF AGRICULTURE AND COOPERATIVES ROYAL IRRIGATION DEPARTMENT</p> | SHEET CONTENTS | OWNER | PROJECT TITLE | | DESIGNED BY | CHECKED BY | DATE | SCALE |
| | | | | | | | | | <p>(CIVIL WORKS) KRA MANG FLOODGATE LAYOUT 1</p> | Royal Irrigation Department Ministry of Agriculture and Cooperatives | Preparatory Survey on the Flood Prevention Project of East Side of the Pasak River in Ayutthaya in the Kingdom of Thailand | | <p>ISHII Masaki STRUCTURAL ENGINEER</p> | <p>MISHINA Takahiro TEAM LEADER</p> | <p>AUGUST 2012</p> | <p>DWG. NO. KM-FG-001</p> |



131 CONTROL POINTS :

| 132 STA. | N (m) | E (m) | ELEV.(m) |
|-----------------|-------------|-------------|----------|
| GPS100 | 1587513.898 | 6705581.084 | 6.355 |
| GPS101 | 1587525.306 | 670674.402 | 6.655 |
| GPS102 | 1587564.291 | 670718.355 | 5.498 |
| GPS103 | 1587566.739 | 670742.638 | 5.902 |
| GPS319 | 1587494.919 | 670675.064 | 6.652 |
| BM6 | 1587564.745 | 670722.610 | 6.303 |
| BM-RID-10-01132 | 1587498.905 | 670579.963 | 4.424 |

A8-30

| REV. NO. | DESCRIPTION | CONSULTANT | | RID | | REV. NO. | APPROVED BY |
|----------|-------------|------------|------|---------|------|----------|-------------|
| | | CHECKED | DATE | CHECKED | DATE | | |
| | | | | | | | |

KINGDOM OF THAILAND
 MINISTRY OF AGRICULTURE AND COOPERATIVES
 ROYAL IRRIGATION DEPARTMENT

SHEET CONTENTS
(CIVIL WORKS)
KRA MANG FLOODGATE LAYOUT 2

OWNER
 Royal Irrigation Department
 Ministry of Agriculture and Cooperatives

PROJECT TITLE
 Preparatory Survey on the Flood Prevention Project of East Side of the Pasak River in Ayutthaya in the Kingdom of Thailand

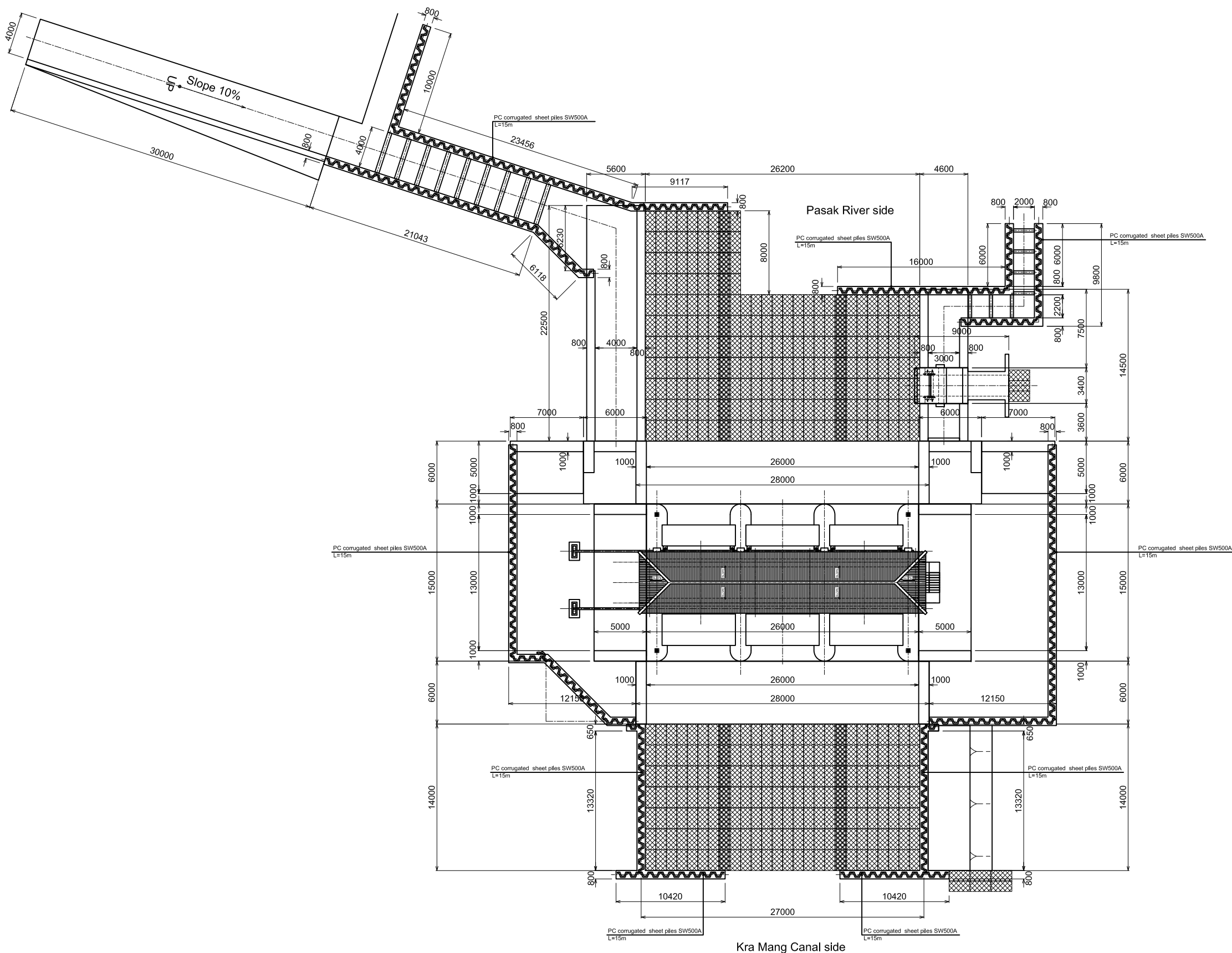
CTI ENGINEERING INTERNATIONAL CO., LTD.
 ORIENTAL CONSULTANTS CO., LTD.
 NIPPON KOEI CO., LTD.
 CTI ENGINEERING CO., LTD.

DESIGNED BY
 ISHII Masaki
 STRUCTURAL ENGINEER

CHECKED BY
 MISHINA Takahiro
 TEAM LEADER

DATE :
 AUGUST 2012
 DWG. NO.
 KM-FG-002

SCALE :
 SHEET NO.



PLAN OF KRA MANG FLOOD GATE

A8-31

| | | | | | | | | | | | | | | | | |
|----------|-------------|------------|------|---------|------|----------|-------------|--|----------------|-------|---------------|--|-------------------------------------|---------------------------------|--|-----------|
| REV. NO. | DESCRIPTION | CONSULTANT | | RID | | REV. NO. | APPROVED BY | | SHEET CONTENTS | OWNER | PROJECT TITLE | | DESIGNED BY | CHECKED BY | DATE: | SCALE: |
| | | CHECKED | DATE | CHECKED | DATE | | | | | | | | ISHII Masaki STRUCTURAL ENGINEER | MISHINA Takahiro TEAM LEADER | AUGUST 2012 DWG. NO. KM-FG-001 | SHEET NO. |