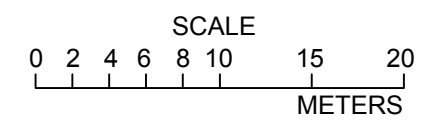


**PLAN OF HAN TRA FLOOD GATE**



ROYAL IRRIGATION DEPARTMENT  
 The Flood Prevention Project of  
 East Side of the Pasak River in Ayutthaya  
 in the Kingdom of Thailand  
 (CIVIL WORKS)  
**HAN TRA FLOODGATE  
 PLAN**

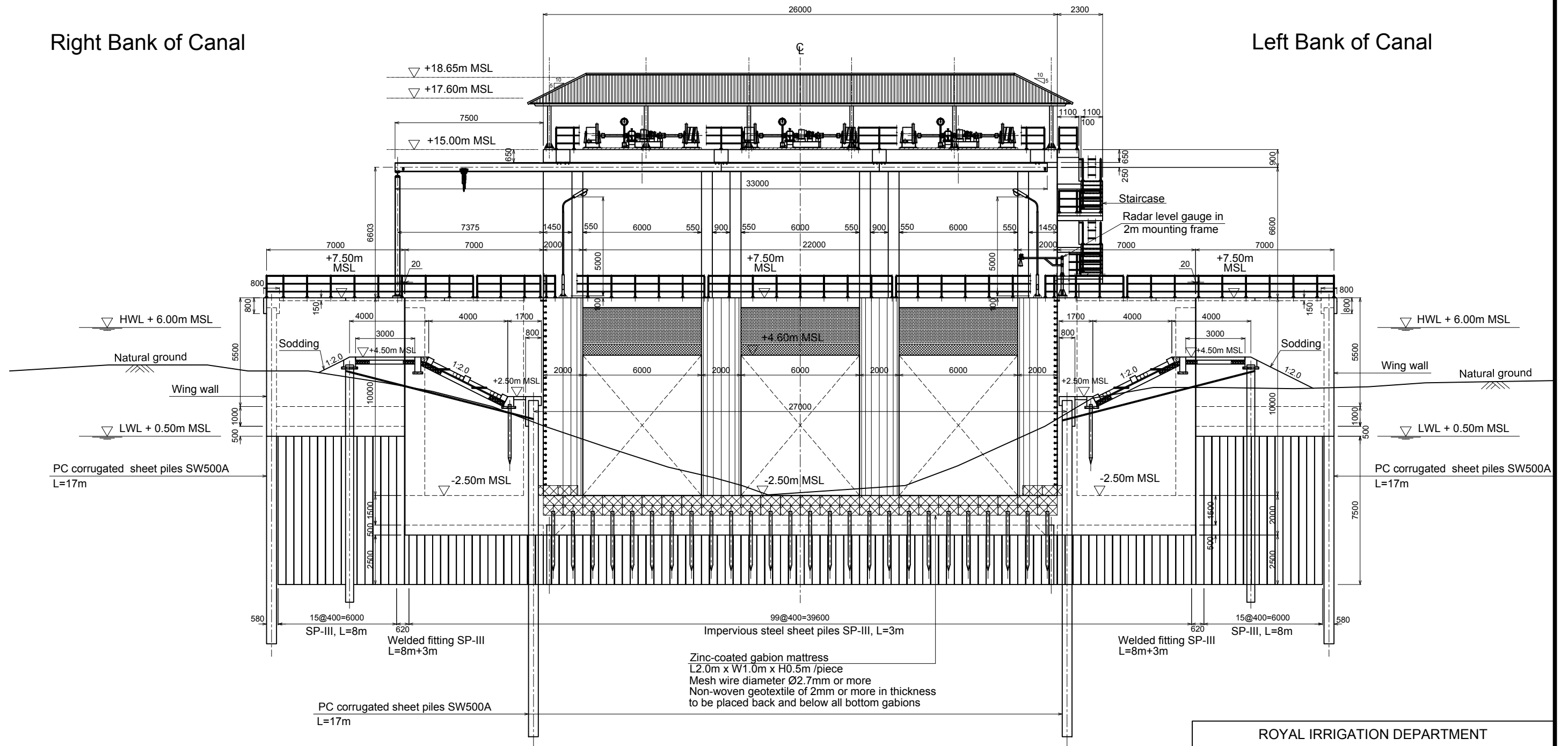
CONSULTING FIRMS :  
**CTI ENGINEERING INTERNATIONAL CO., LTD.**

DESIGNED	Masaki ISHII	ROYAL IRRIGATION DEPARTMENT		
DRAWN	Masaki ISHII	PROPOSED	P. SIRION	CHIEF
CHECKED	Akio SHICHIJUGARI	VERIFIED	S. INTARAPRACHA	DIRECTOR
APPROVED	T. MISHINA DATE _____	APPROVED	L. KOWATTANA	D.G.
OFFICE OF ENGINEERING DESIGN & ARCHITECTURE		IRRIIGATION SYSTEM DESIGN GROUP		
HT-FG-001		DATE _____		

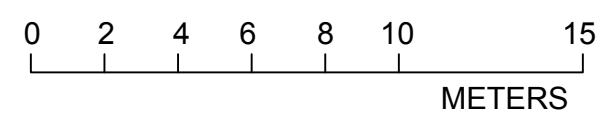
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Right Bank of Canal

Left Bank of Canal



SCALE



METERS

ROYAL IRRIGATION DEPARTMENT  
 The Flood Prevention Project of  
 East Side of the Pasak River in Ayutthaya  
 in the Kingdom of Thailand  
 (CIVIL WORKS)  
**HAN TRA FLOODGATE**  
**FRONT VIEW AT PASAK RIVER SIDE (1/2)**

CONSULTING FIRMS :

**CTI** CTI ENGINEERING INTERNATIONAL CO., LTD.

DESIGNED	Masaki ISHII	ROYAL IRRIGATION DEPARTMENT		
DRAWN	Masaki ISHII	PROPOSED	P. SIRION	CHIEF
CHECKED	Akio SHICHIJUGARI	VERIFIED	S. INTARAPRACHA	DIRECTOR
APPROVED	T. MISHINA DATE _____	APPROVED	L. KOWATTANA	D.G.

OFFICE OF ENGINEERING DESIGN & ARCHITECTURE  
 IRRIGATION SYSTEM DESIGN GROUP

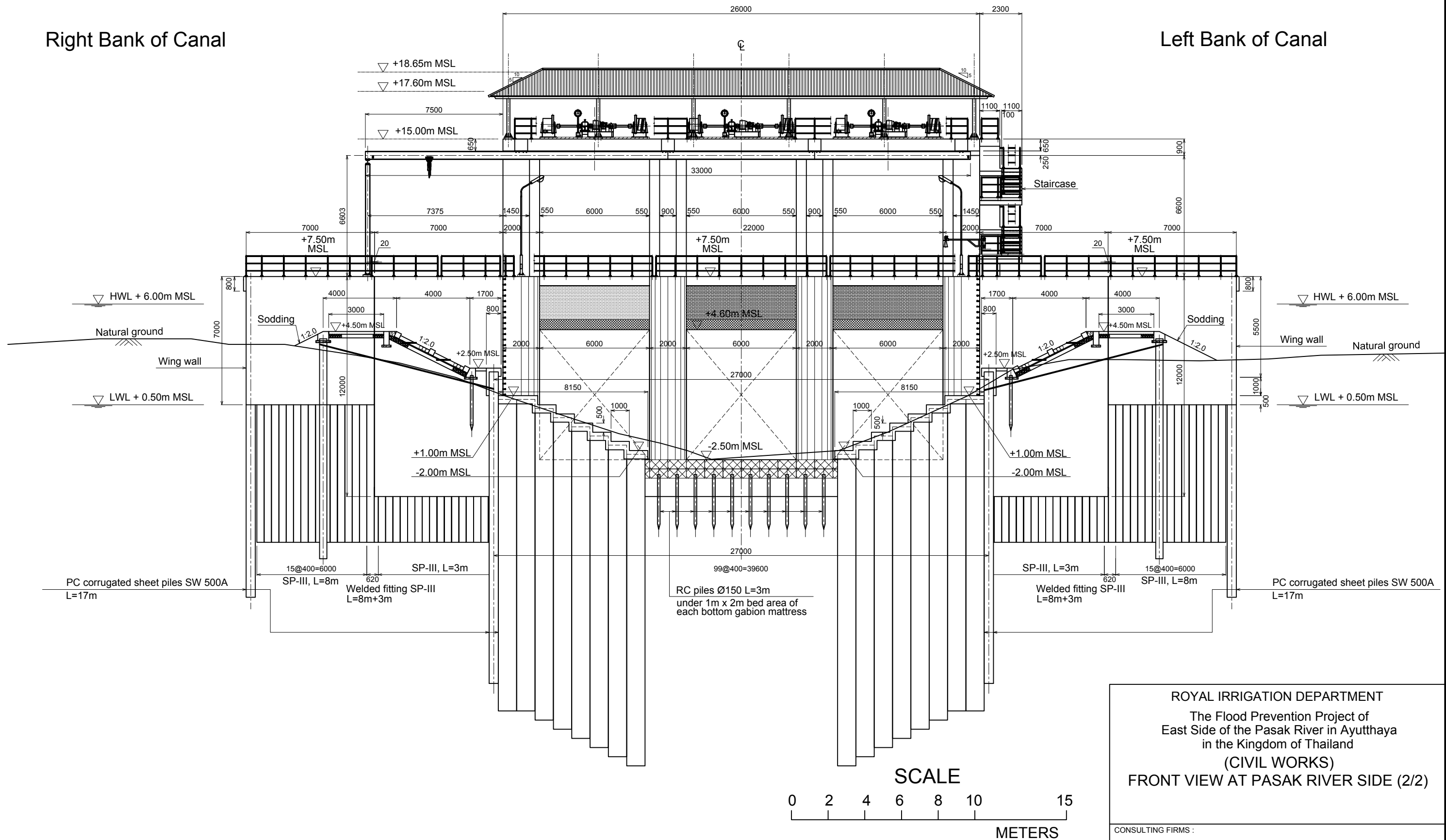
HT-FG-002

FRONT VIEW AT PASAK RIVER SIDE (1/2)  
 SECTION 1-1

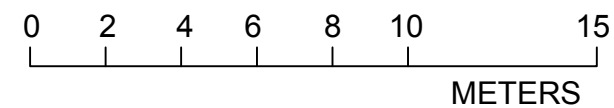
REV. NO.	LOCATION	DESCRIPTION	DATE	CHECKED	APPROVED	APPROVED

Right Bank of Canal

Left Bank of Canal



SCALE



ROYAL IRRIGATION DEPARTMENT  
 The Flood Prevention Project of  
 East Side of the Pasak River in Ayutthaya  
 in the Kingdom of Thailand  
 (CIVIL WORKS)  
 FRONT VIEW AT PASAK RIVER SIDE (2/2)

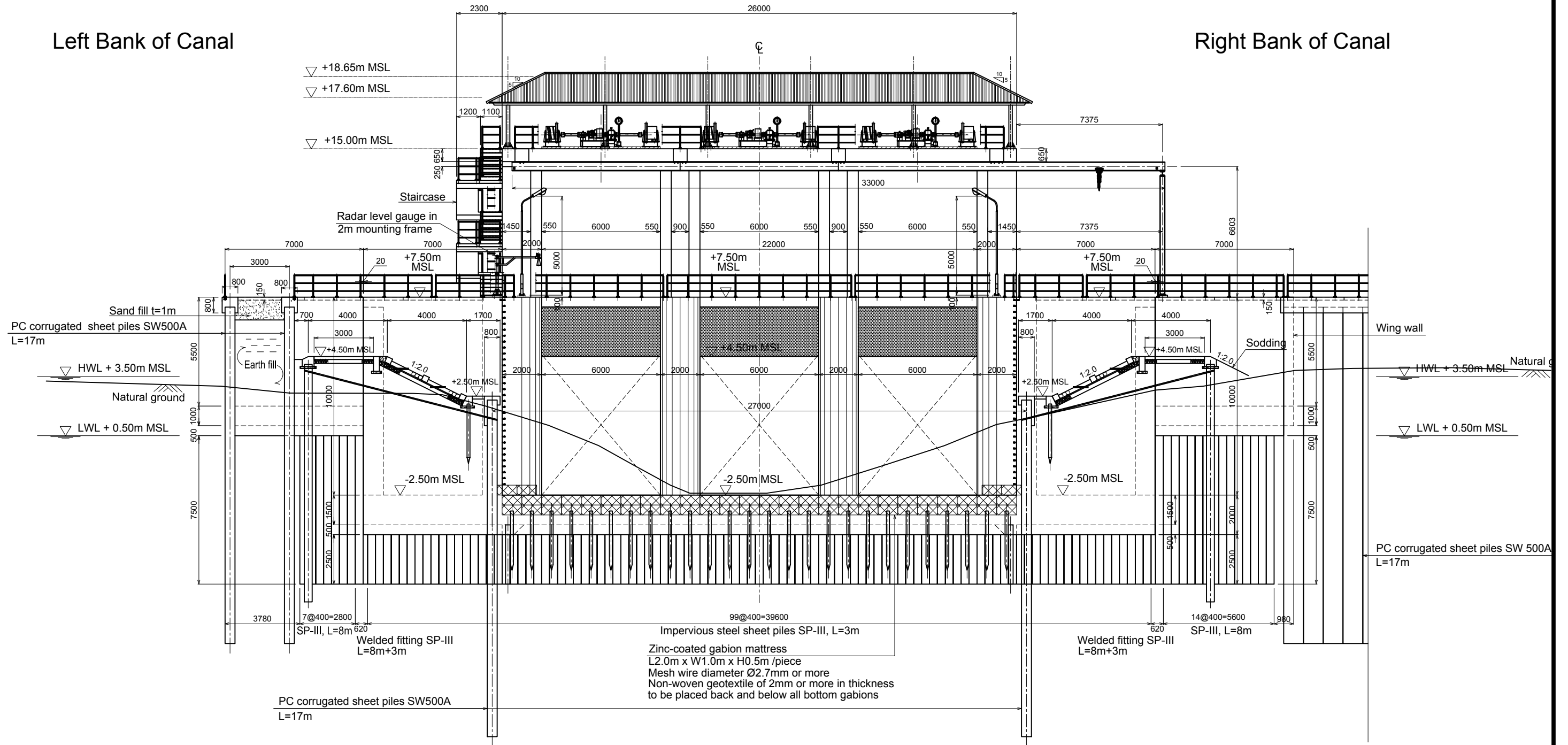
CONSULTING FIRMS :  
 CTI ENGINEERING INTERNATIONAL CO., LTD.

FRONT VIEW AT PASAK RIVER SIDE (2/2)  
 SECTION 2-2

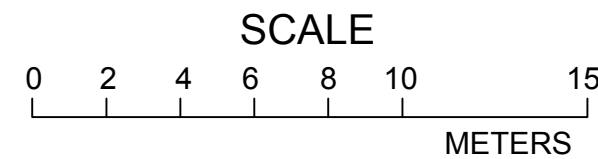
DESIGNED	Masaki ISHII	ROYAL IRRIGATION DEPARTMENT		
DRAWN	Masaki ISHII	PROPOSED	P. SIRION	CHIEF
CHECKED	Akio SHICHIJUGARI	VERIFIED	S. INTARAPRACHA	DIRECTOR
APPROVED	T. MISHINA DATE _____	APPROVED	L. KOWATTANA	D.G.
REV. NO.	LOCATION	DESCRIPTION	DATE	CHECKED PRESENT
				APPROVED APPROVED
				APPROVED
				OFFICE OF ENGINEERING DESIGN & ARCHITECTURE IRRIGATION SYSTEM DESIGN GROUP
				HT-FG-003

Left Bank of Canal

Right Bank of Canal



**FRONT VIEW AT HAN TRA CANAL SIDE (1/2)  
SECTION 3-3**



ROYAL IRRIGATION DEPARTMENT  
The Flood Prevention Project of  
East Side of the Pasak River in Ayutthaya  
in the Kingdom of Thailand  
(CIVIL WORKS)  
**HAN TRA FLOODGATE**  
**FRONT VIEW AT HAN TRA CANAL SIDE (1/2)**

CONSULTING FIRMS :  
**CTI ENGINEERING INTERNATIONAL CO., LTD.**

DESIGNED	Masaki ISHII	ROYAL IRRIGATION DEPARTMENT		
DRAWN	Masaki ISHII	PROPOSED	P. SIRION	CHIEF
CHECKED	Akio SHICHIJUGARI	VERIFIED	S. INTARAPRACHA	DIRECTOR
APPROVED	T. MISHINA DATE _____	APPROVED	L. KOWATTANA	D.G.

REV. NO.	LOCATION	DESCRIPTION	DATE	CHECKED PRESENT	APPROVED APPROVED	APPROVED

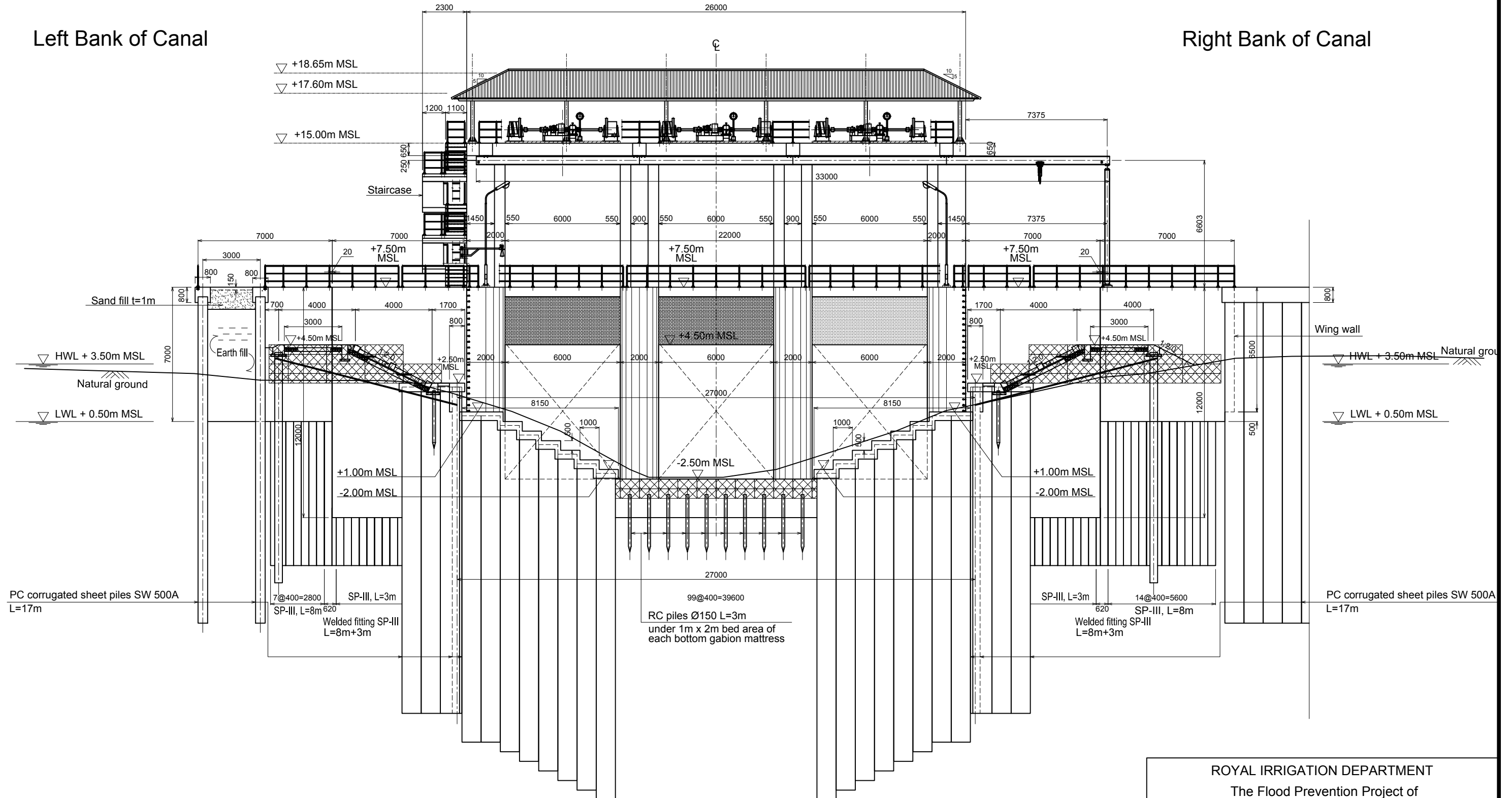
OFFICE OF ENGINEERING DESIGN & ARCHITECTURE  
IRRIGATION SYSTEM DESIGN GROUP  
DATE \_\_\_\_\_

**HT-FG-004**

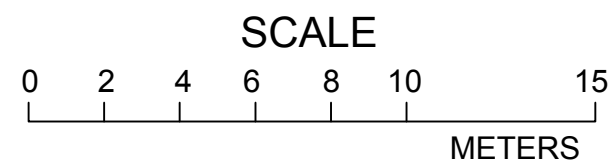


Left Bank of Canal

Right Bank of Canal



FRONT VIEW AT HAN TRA CANAL SIDE (2/2)  
SECTION 4-4



ROYAL IRRIGATION DEPARTMENT  
The Flood Prevention Project of  
East Side of the Pasak River in Ayutthaya  
in the Kingdom of Thailand  
(CIVIL WORKS)  
HAN TRA FLOODGATE  
FRONT VIEW AT HAN TRA CANAL SIDE (2/2)

CONSULTING FIRMS :

**CTI** CTI ENGINEERING INTERNATIONAL CO., LTD.

DESIGNED	Masaki ISHII	ROYAL IRRIGATION DEPARTMENT		
DRAWN	Masaki ISHII	PROPOSED	P. SIRION	CHIEF
CHECKED	Akio SHICHIJUGARI	VERIFIED	S. INTARAPRACHA	DIRECTOR
APPROVED	T. MISHINA DATE _____	APPROVED	L. KOWATTANA	D.G.

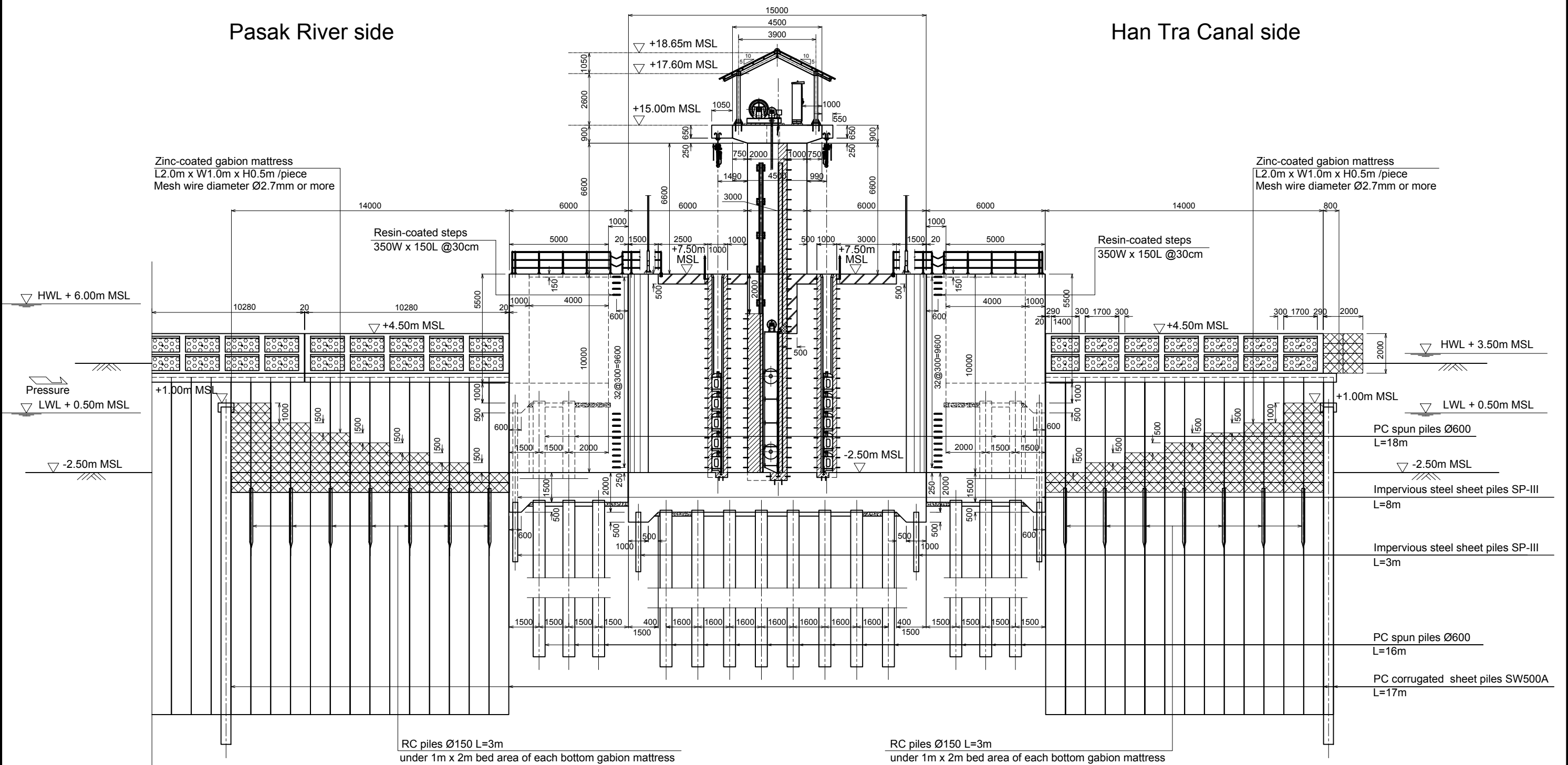
OFFICE OF ENGINEERING DESIGN & ARCHITECTURE  
IRRIGATION SYSTEM DESIGN GROUP

HT-FG-005

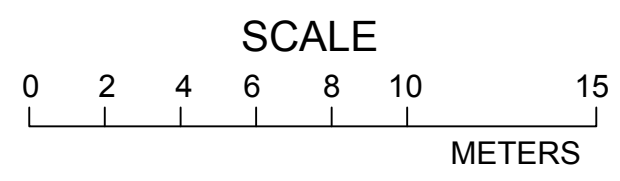
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Pasak River side

Han Tra Canal side



**LONGITUDINAL SECTION (1/2)  
SECTION 5-5**



ROYAL IRRIGATION DEPARTMENT  
The Flood Prevention Project of  
East Side of the Pasak River in Ayutthaya  
in the Kingdom of Thailand  
(CIVIL WORKS)  
**HAN TRA FLOODGATE  
LONGITUDINAL SECTION (1/2)**

CONSULTING FIRMS :

**CTI ENGINEERING INTERNATIONAL CO., LTD.**

DESIGNED	Masaki ISHII	ROYAL IRRIGATION DEPARTMENT		
DRAWN	Masaki ISHII	PROPOSED	P. SIRION	CHIEF
CHECKED	Akio SHICHIJUGARI	VERIFIED	S. INTARAPRACHA	DIRECTOR
APPROVED	T. MISHINA DATE _____	APPROVED	L. KOWATTANA	D.G.

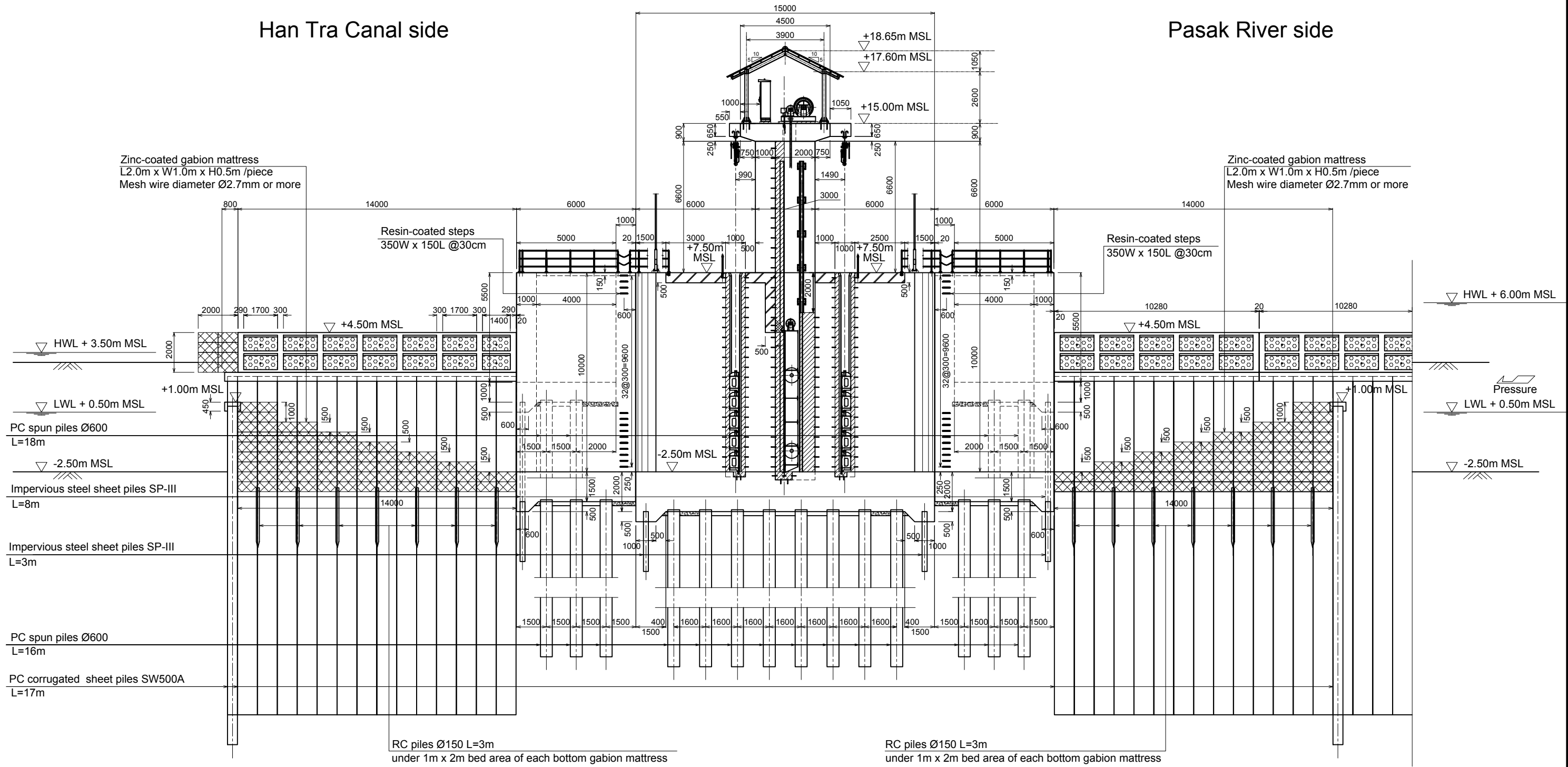
OFFICE OF ENGINEERING DESIGN & ARCHITECTURE  
IRRIGATION SYSTEM DESIGN GROUP

HT-FG-006

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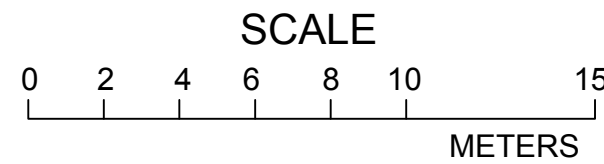
Han Tra Canal side

Pasak River side



**LONGITUDINAL SECTION (2/2)  
SECTION 6-6**

ROYAL IRRIGATION DEPARTMENT  
The Flood Prevention Project of  
East Side of the Pasak River in Ayutthaya  
in the Kingdom of Thailand  
(CIVIL WORKS)  
**HAN TRA FLOODGATE  
LONGITUDINAL SECTION (2/2)**



CONSULTING FIRMS :  
**CTI ENGINEERING INTERNATIONAL CO., LTD.**

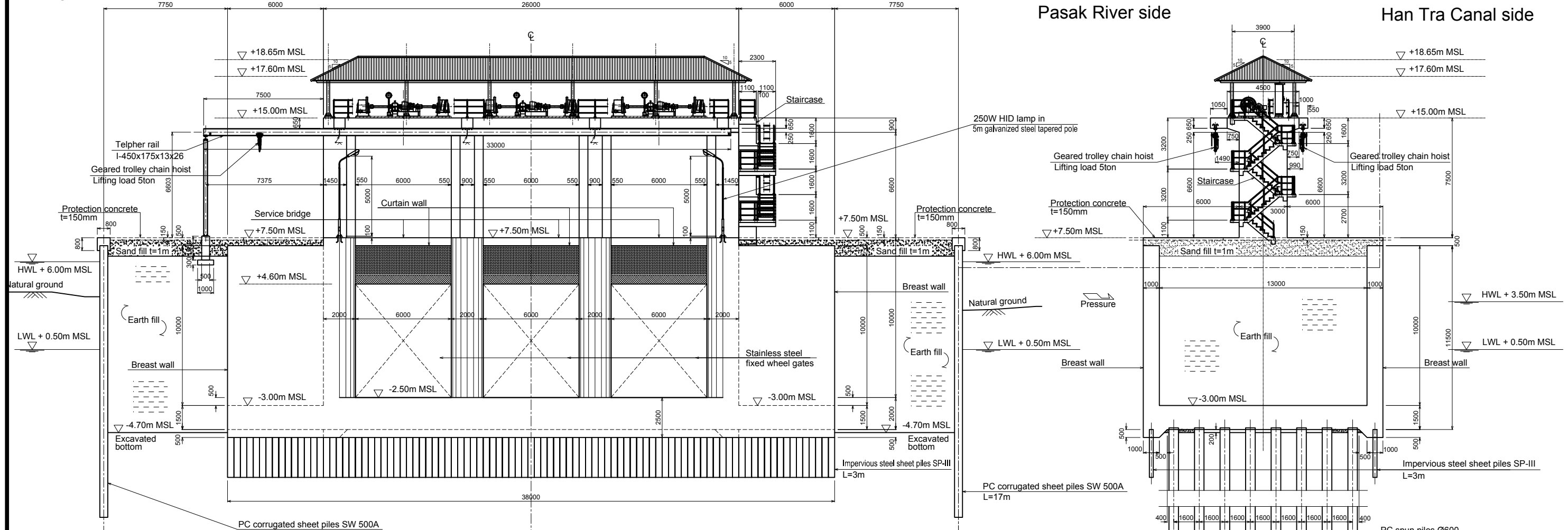
DESIGNED	Masaki ISHII	ROYAL IRRIGATION DEPARTMENT						
DRAWN	Masaki ISHII	PROPOSED	P. SIRION	CHIEF				
CHECKED	Akio SHICHIJUGARI	VERIFIED	S. INTARAPRACHA	DIRECTOR				
APPROVED	T. MISHINA DATE _____	APPROVED	L. KOWATTANA	D.G.				
REV. NO.	LOCATION	DESCRIPTION	DATE	CHECKED PRESENT	APPROVED APPROVED	APPROVED	OFFICE OF ENGINEERING DESIGN & ARCHITECTURE IRRIGATION SYSTEM DESIGN GROUP	HT-FG-007

Right Bank of Canal

Left Bank of Canal

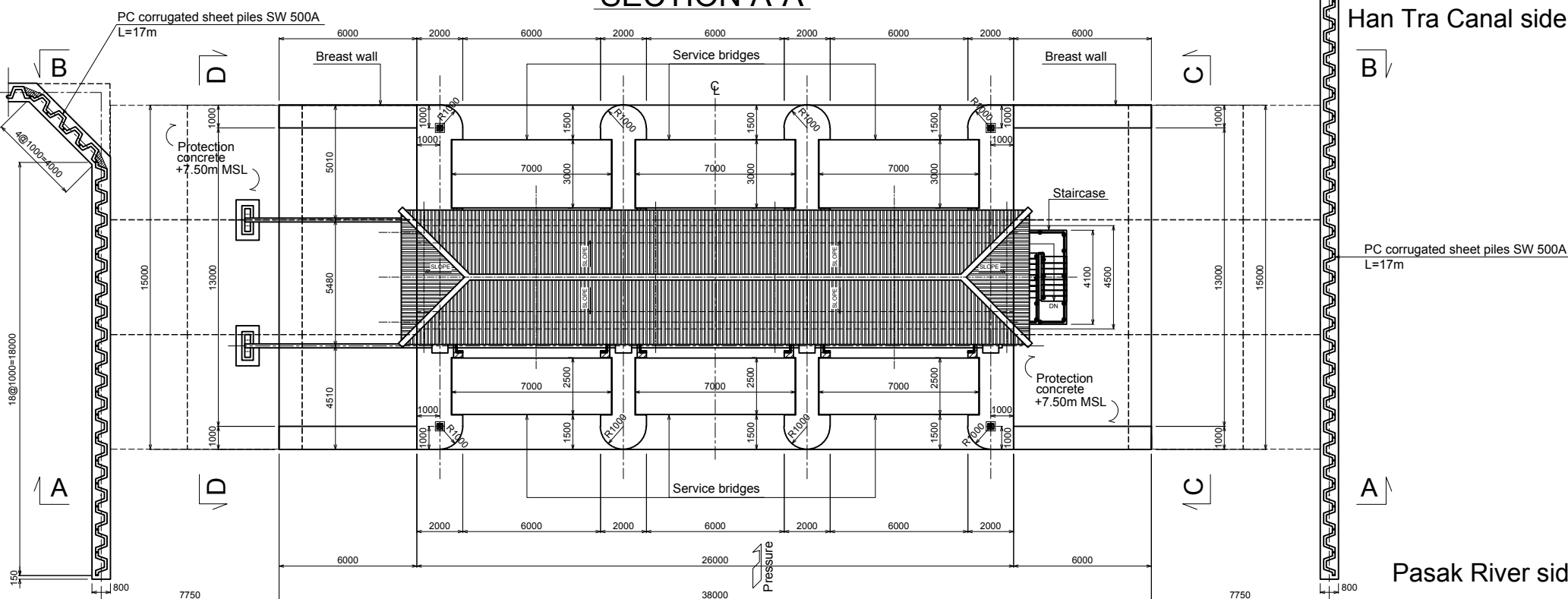
Pasak River side

Han Tra Canal side



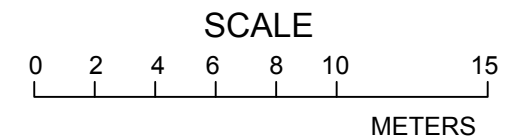
SECTION A-A

SECTION C-C



PLAN

MAIN STRUCTURE OF HAN TRA FLOODGATE



ROYAL IRRIGATION DEPARTMENT  
 The Flood Prevention Project of  
 East Side of the Pasak River in Ayutthaya  
 in the Kingdom of Thailand  
 (CIVIL WORKS)  
**HAN TRA FLOODGATE  
 MAIN STRUCTURE  
 PLAN AND SECTIONS (1/5)**

CONSULTING FIRMS :  
**CTI ENGINEERING INTERNATIONAL CO., LTD.**

DESIGNED	Masaki ISHII	ROYAL IRRIGATION DEPARTMENT		
DRAWN	Masaki ISHII	PROPOSED	P. SIRION	CHIEF
CHECKED	Akio SHICHIJUGARI	VERIFIED	S. INTARAPRACHA	DIRECTOR
APPROVED	T. MISHINA DATE _____	APPROVED	L. KOWATTANA	D.G.

REV. NO.	LOCATION	DESCRIPTION	DATE	CHECKED PRESENT	APPROVED APPROVED	APPROVED

OFFICE OF ENGINEERING DESIGN & ARCHITECTURE  
 IRRIGATION SYSTEM DESIGN GROUP  
 DATE \_\_\_\_\_  
**HT-FG-008**

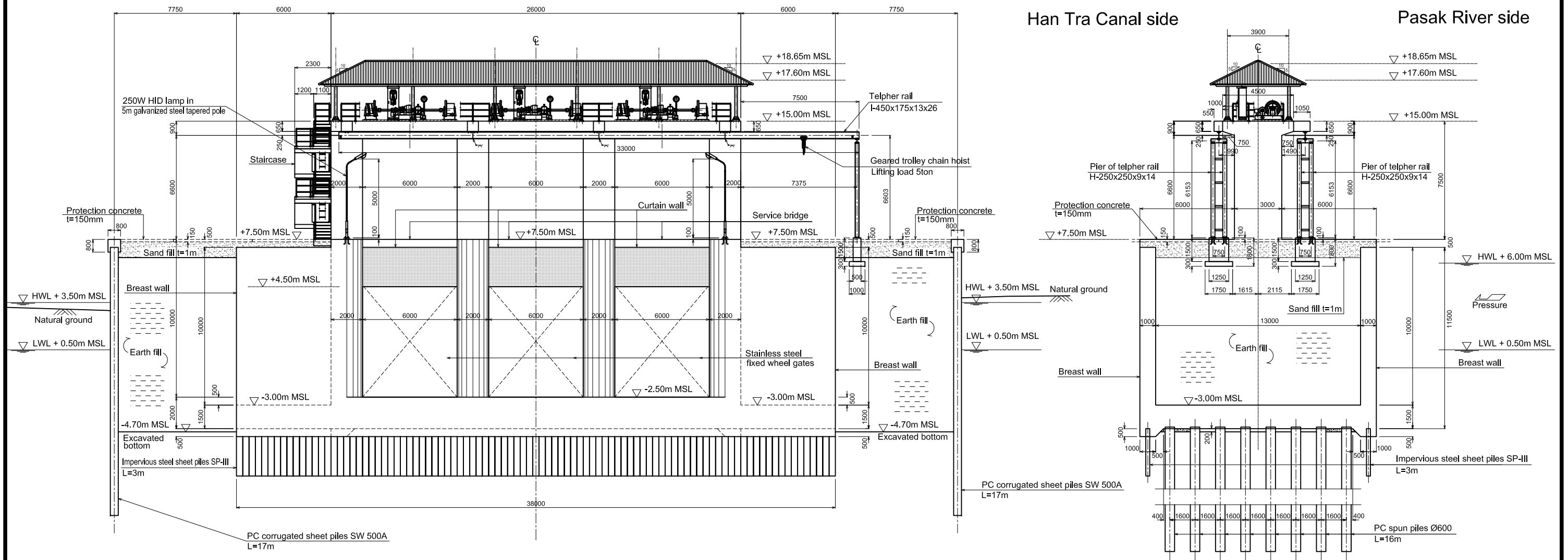


Left Bank of Canal

Right Bank of Canal

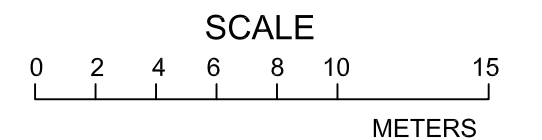
Han Tra Canal side

Pasak River side



SECTION B-B

SECTION D-D



MAIN STRUCTURE OF HAN TRA FLOOD GATE

ROYAL IRRIGATION DEPARTMENT  
 The Flood Prevention Project of  
 East Side of the Pasak River in Ayutthaya  
 in the Kingdom of Thailand  
 (CIVIL WORKS)  
 HAN TRA FLOODGATE  
 MAIN STRUCTURE  
 PLAN AND SECTIONS (2/5)

CONSULTING FIRMS :  
 CTI ENGINEERING INTERNATIONAL CO., LTD.

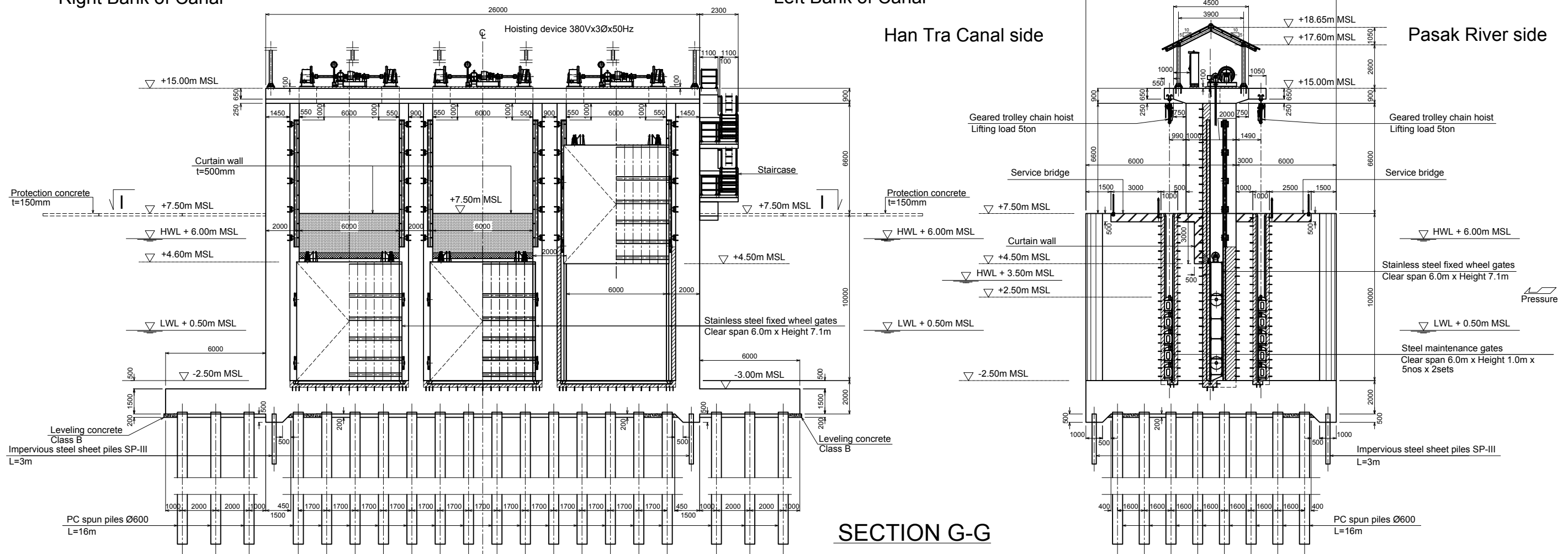
DESIGNED	Masaki ISHII	ROYAL IRRIGATION DEPARTMENT						
DRAWN	Masaki ISHII	PROPOSED	P. SIRION	CHIEF				
CHECKED	Akio SHICHIJUGARI	VERIFIED	S. INTARAPRACHA	DIRECTOR				
APPROVED	T. MISHINA DATE _____	APPROVED	L. KOWATTANA	D.G.				
REV. NO.	LOCATION	DESCRIPTION	DATE	CHECKED PRESENT	APPROVED APPROVED	APPROVED	OFFICE OF ENGINEERING DESIGN & ARCHITECTURE IRRIGATION SYSTEM DESIGN GROUP	HT-FG-009

Right Bank of Canal

Left Bank of Canal

Han Tra Canal side

Pasak River side

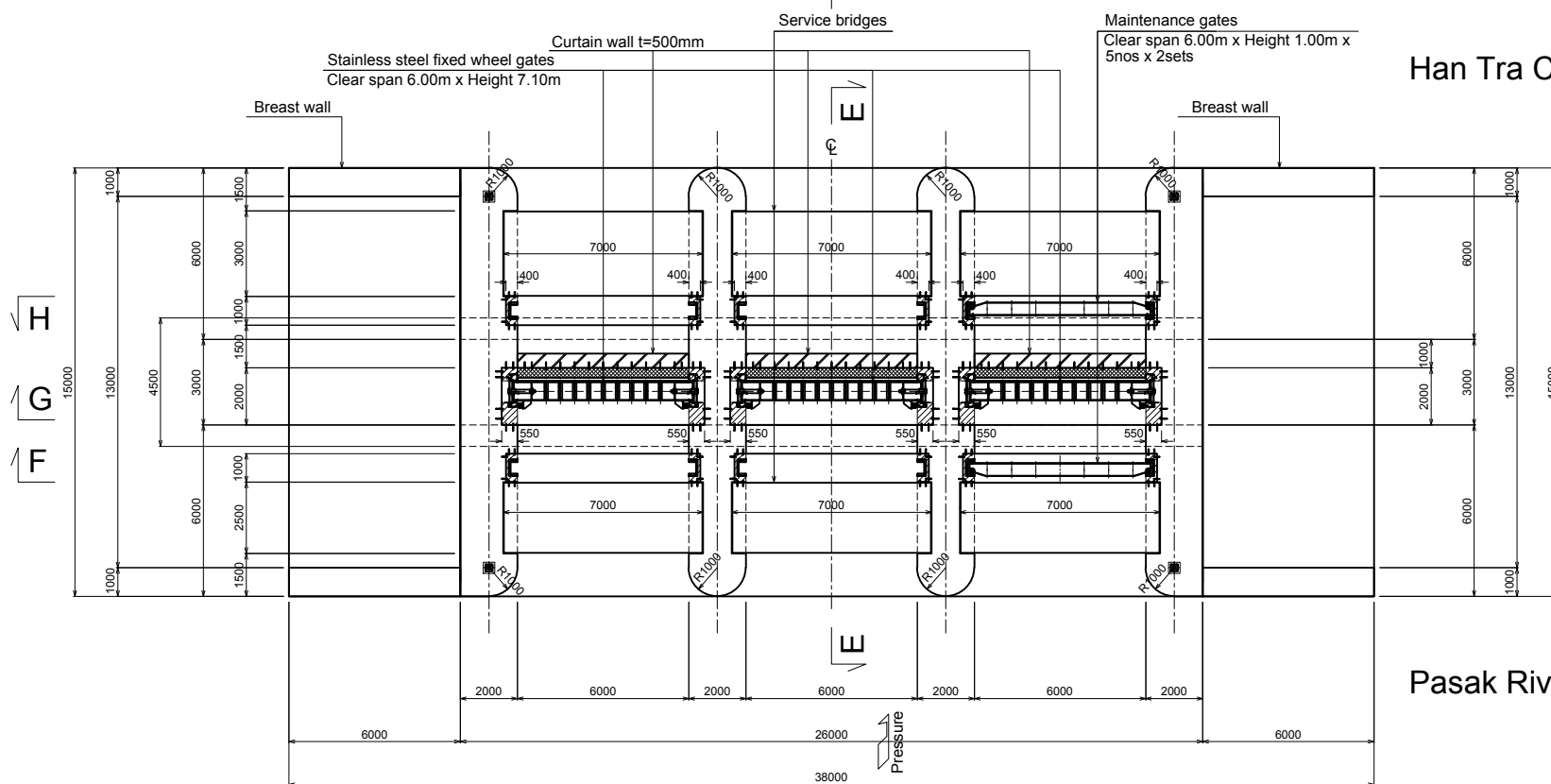


SECTION G-G

SECTION E-E

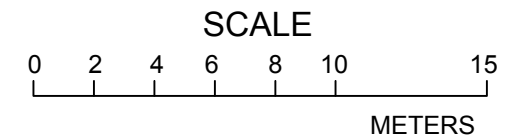
Han Tra Canal side

Pasak River side



SECTION I-I

MAIN STRUCTURE OF HAN TRA FLOODGATE



ROYAL IRRIGATION DEPARTMENT  
 The Flood Prevention Project of  
 East Side of the Pasak River in Ayutthaya  
 in the Kingdom of Thailand  
 (CIVIL WORKS)  
**HAN TRA FLOODGATE  
 MAIN STRUCTURE  
 PLAN AND SECTIONS (3/5)**

CONSULTING FIRMS :

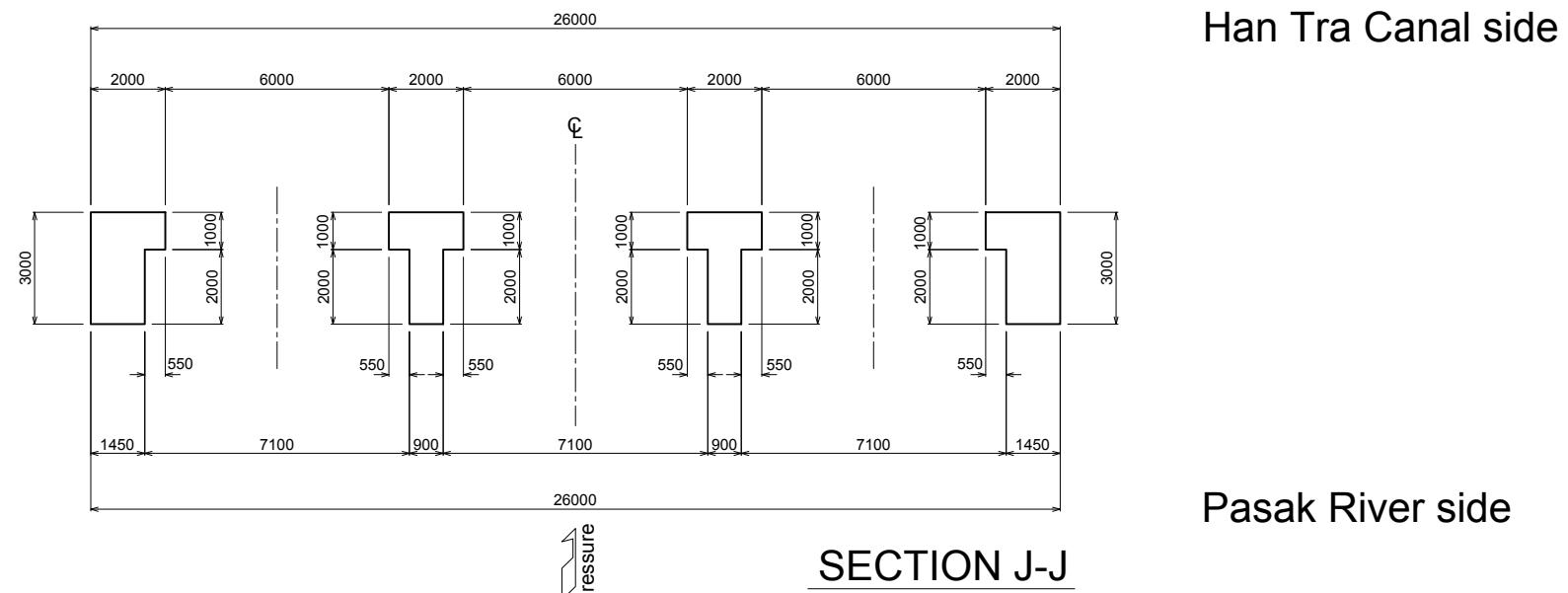
**CTI ENGINEERING INTERNATIONAL CO., LTD.**

DESIGNED	Masaki ISHII	ROYAL IRRIGATION DEPARTMENT		
DRAWN	Masaki ISHII	PROPOSED	P. SIRION	CHIEF
CHECKED	Akio SHICHIJUGARI	VERIFIED	S. INTARAPRACHA	DIRECTOR
APPROVED	T. MISHINA DATE _____	APPROVED	L. KOWATTANA	D.G.

OFFICE OF ENGINEERING DESIGN & ARCHITECTURE  
 IRRIGATION SYSTEM DESIGN GROUP

HT-FG-010

REV. NO.	LOCATION	DESCRIPTION	DATE	CHECKED PRESENT	APPROVED APPROVED	APPROVED



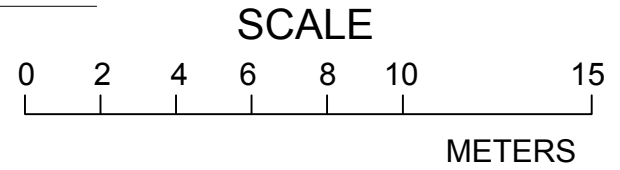
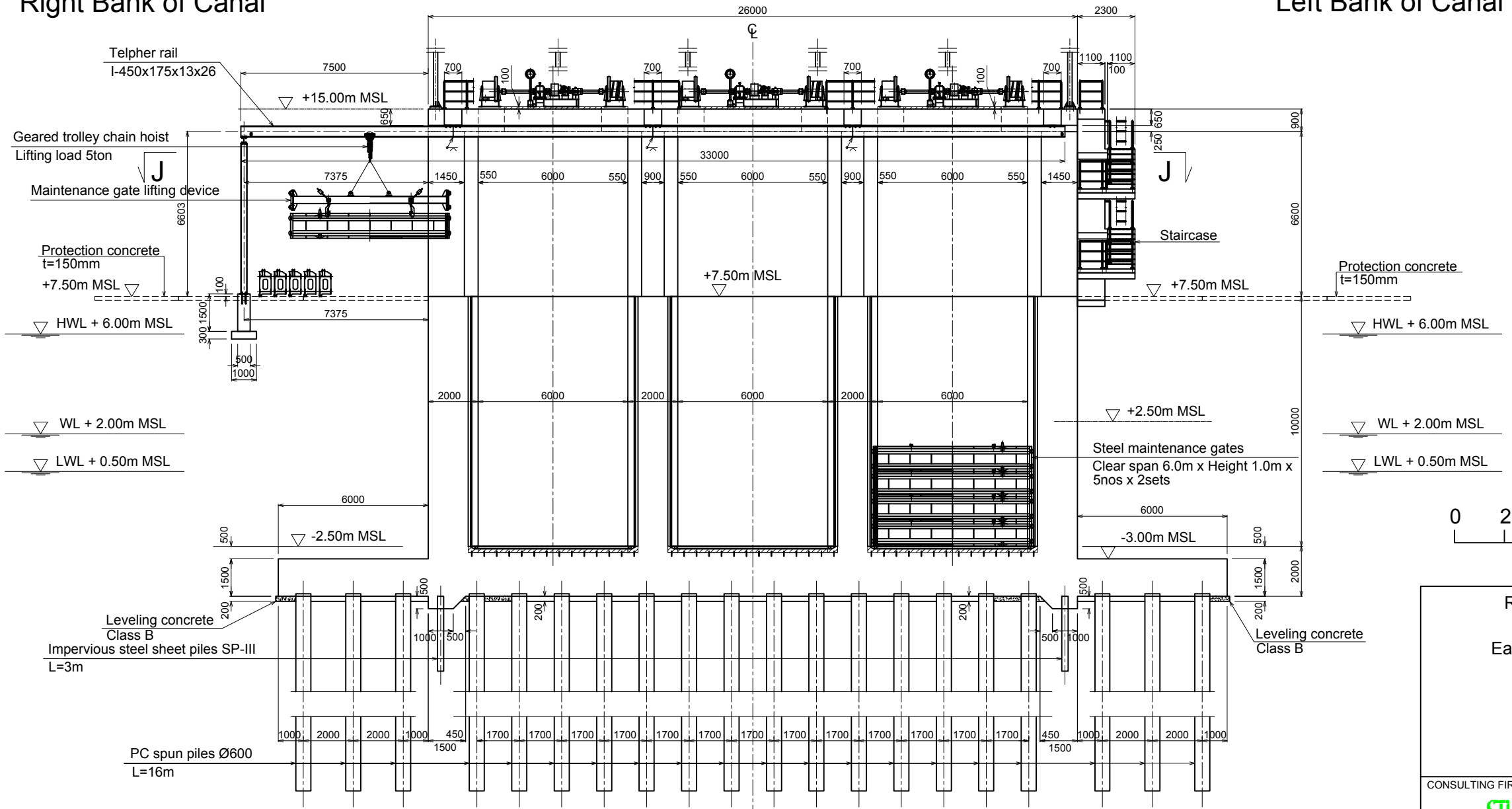
Han Tra Canal side

Pasak River side

SECTION J-J

Right Bank of Canal

Left Bank of Canal



ROYAL IRRIGATION DEPARTMENT  
 The Flood Prevention Project of  
 East Side of the Pasak River in Ayutthaya  
 in the Kingdom of Thailand  
 (CIVIL WORKS)  
**HAN TRA FLOODGATE  
 MAIN STRUCTURE  
 PLAN AND SECTIONS (4/5)**

CONSULTING FIRMS :  
**CTI ENGINEERING INTERNATIONAL CO., LTD.**

DESIGNED	Masaki ISHII	ROYAL IRRIGATION DEPARTMENT		
DRAWN	Masaki ISHII	PROPOSED	P. SIRION	CHIEF
CHECKED	Akio SHICHIJUGARI	VERIFIED	S. INTARAPRACHA	DIRECTOR
APPROVED	T. MISHINA DATE _____	APPROVED	L. KOWATTANA	D.G.

**MAIN STRUCTURE OF  
 HAN TRA FLOOD GATE**

SECTION F-F

REV. NO.	LOCATION	DESCRIPTION	DATE	CHECKED PRESENT	APPROVED APPROVED	APPROVED

OFFICE OF ENGINEERING DESIGN & ARCHITECTURE  
 IRRIGATION SYSTEM DESIGN GROUP  
 DATE \_\_\_\_\_

HT-FG-011

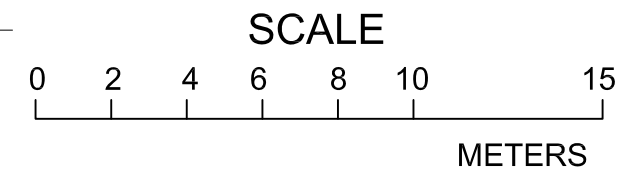
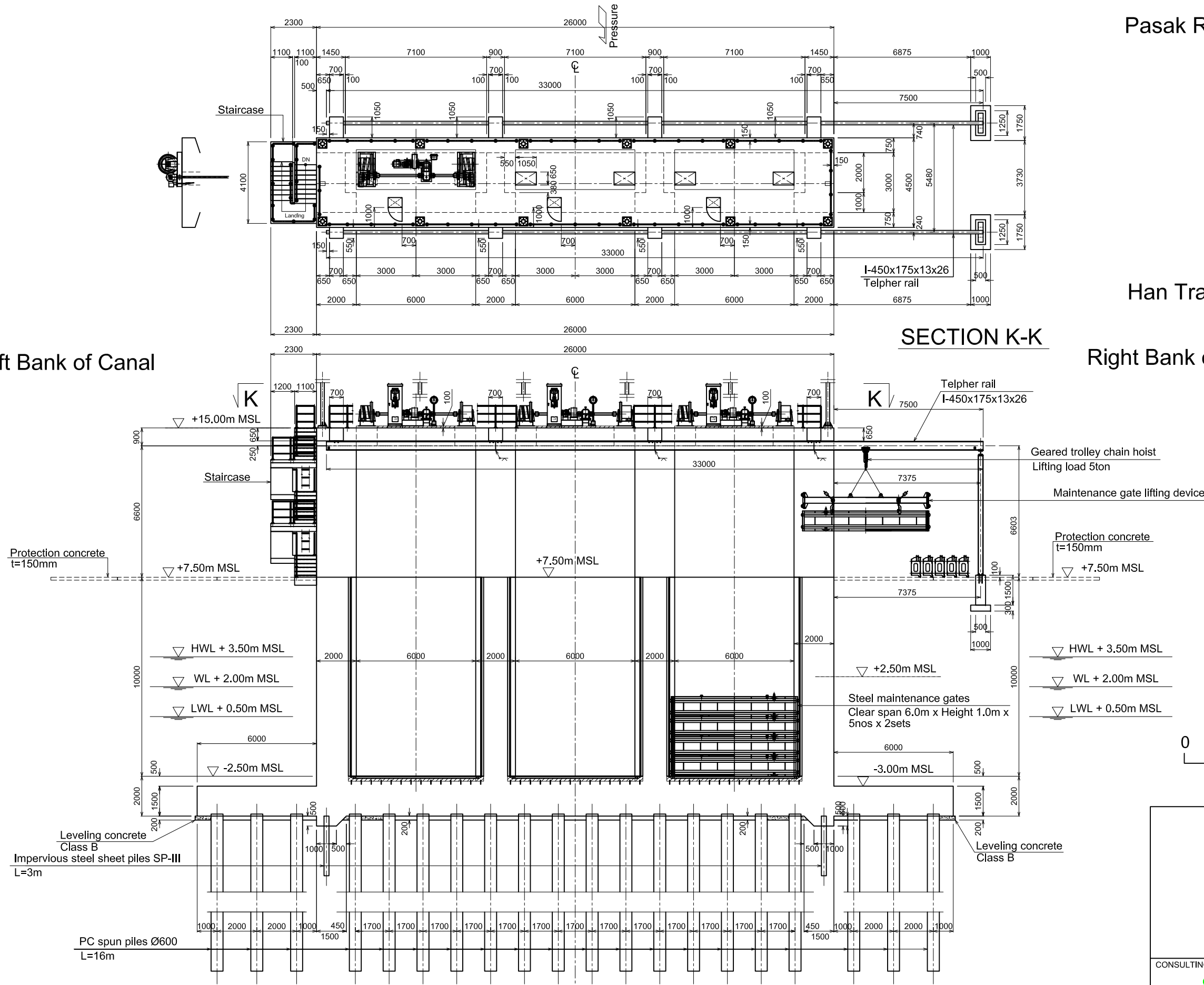
Pasak River side

Han Tra Canal side

Left Bank of Canal

Right Bank of Canal

SECTION K-K



MAIN STRUCTURE OF HAN TRA FLOODGATE

SECTION H-H

ROYAL IRRIGATION DEPARTMENT  
 The Flood Prevention Project of  
 East Side of the Pasak River in Ayutthaya  
 in the Kingdom of Thailand  
 (CIVIL WORKS)  
 HAN TRA FLOODGATE  
 MAIN STRUCTURE  
 PLAN AND SECTIONS (5/5)

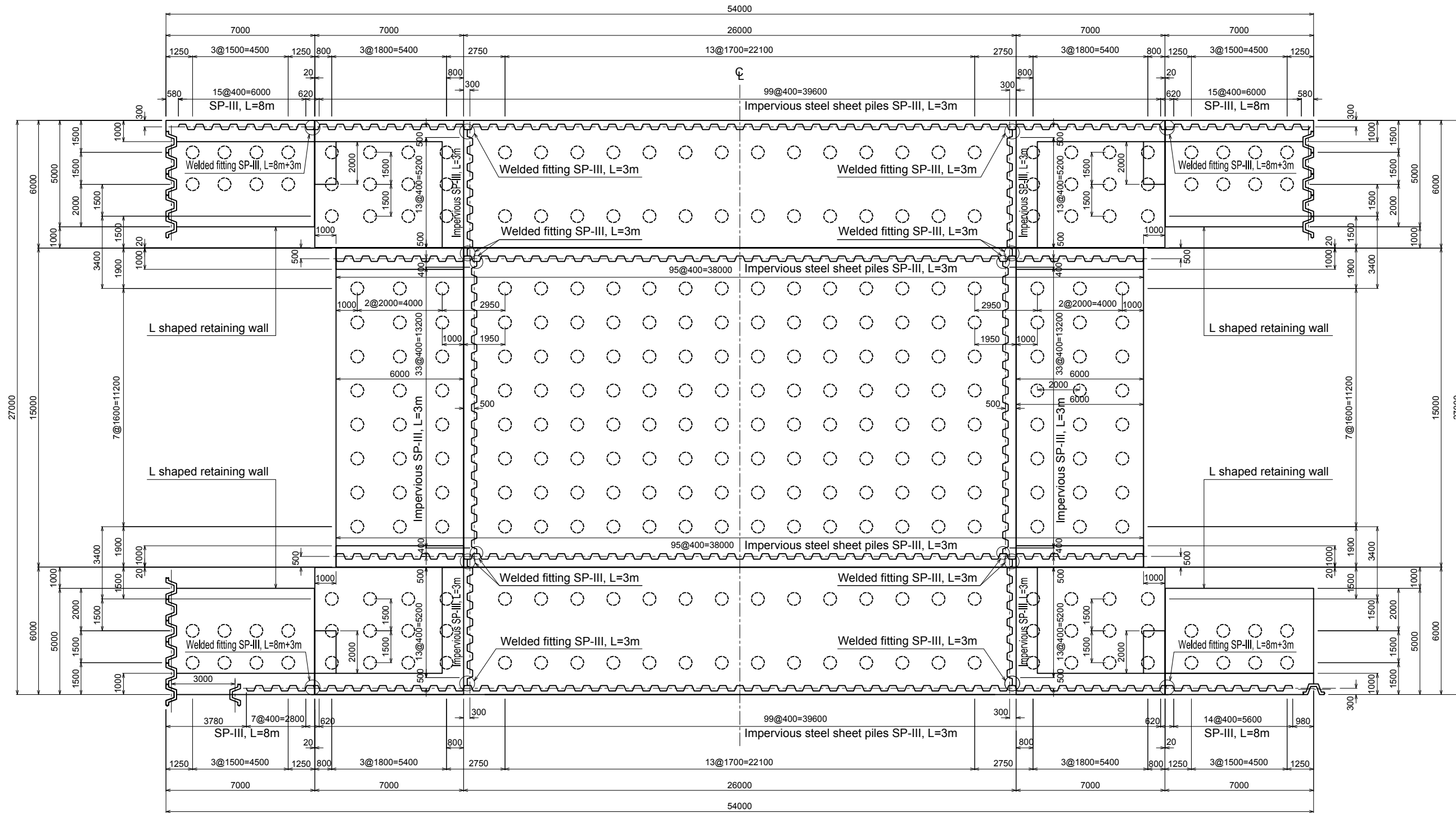
CONSULTING FIRMS :				
CTI ENGINEERING INTERNATIONAL CO., LTD.				
DESIGNED	Masaki ISHII	ROYAL IRRIGATION DEPARTMENT		
DRAWN	Masaki ISHII	PROPOSED	P. SIRION	CHIEF
CHECKED	Akio SHICHIJUGARI	VERIFIED	S. INTARAPRACHA	DIRECTOR
APPROVED	T. MISHINA DATE _____	APPROVED	L. KOWATTANA	D.G.
REV. NO.	LOCATION	DESCRIPTION	DATE	APPROVED
				OFFICE OF ENGINEERING DESIGN & ARCHITECTURE IRRIGATION SYSTEM DESIGN GROUP
				HT-FG-012



Left Bank of Canal

Pasak River side

Right Bank of Canal

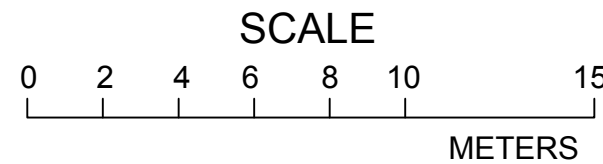


The foundation piles are to be PRESTRESSED CONCRETE SPUN PILE Ø600 which is in conformity with the accredited technical standards in Thai construction market.

AMOUNT OF PC SPUN PILE Ø600

Structures	Length/piece	Numbers
L shaped retaining walls	18m	32
The others	16m	264

Han Tra Canal side



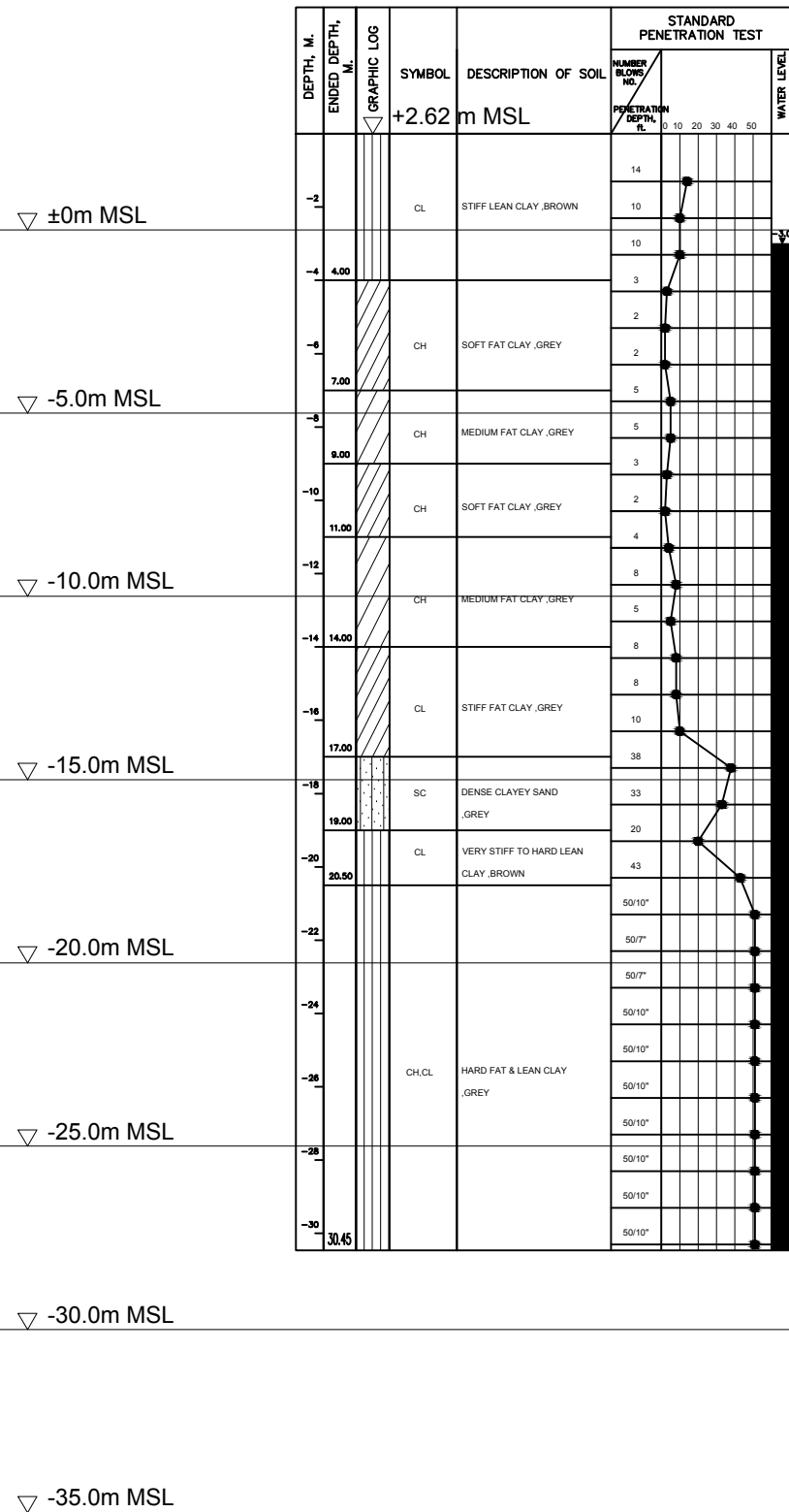
ROYAL IRRIGATION DEPARTMENT  
 The Flood Prevention Project of  
 East Side of the Pasak River in Ayutthaya  
 in the Kingdom of Thailand  
 (CIVIL WORKS)  
**HAN TRA FLOODGATE**  
**CONFIGURATION OF FOUNDATION PILES AND**  
**IMPERVIOUS STEEL SHEET PILES**

CONSULTING FIRMS :  
 CTI ENGINEERING INTERNATIONAL CO., LTD.

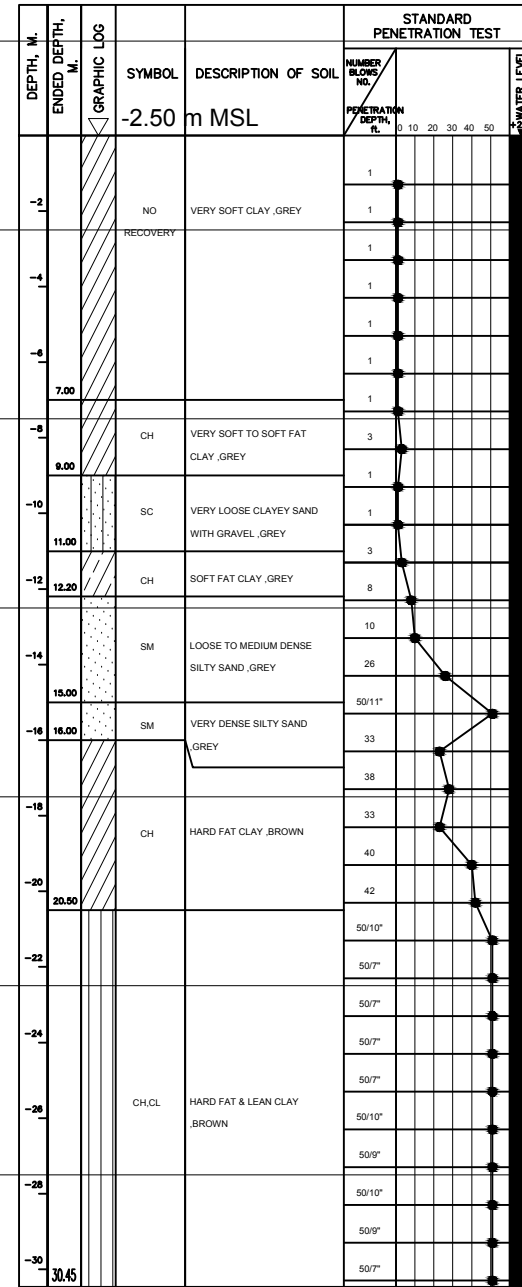
**CONFIGURATION OF FOUNDATION PILES AND IMPERVIOUS STEEL SHEET PILES FOR HAN TRA FLOODGATE**

DESIGNED	Masaki ISHII	ROYAL IRRIGATION DEPARTMENT						
DRAWN	Masaki ISHII	PROPOSED	P. SIRION	CHIEF				
CHECKED	Akio SHICHIJUGARI	VERIFIED	S. INTARAPRACHA	DIRECTOR				
APPROVED	T. MISHINA DATE _____	APPROVED	L. KOWATTANA	D.G.				
REV. NO.	LOCATION	DESCRIPTION	DATE	CHECKED PRESENT	APPROVED APPROVED	APPROVED	OFFICE OF ENGINEERING DESIGN & ARCHITECTURE IRRIGATION SYSTEM DESIGN GROUP	HT-FG-013

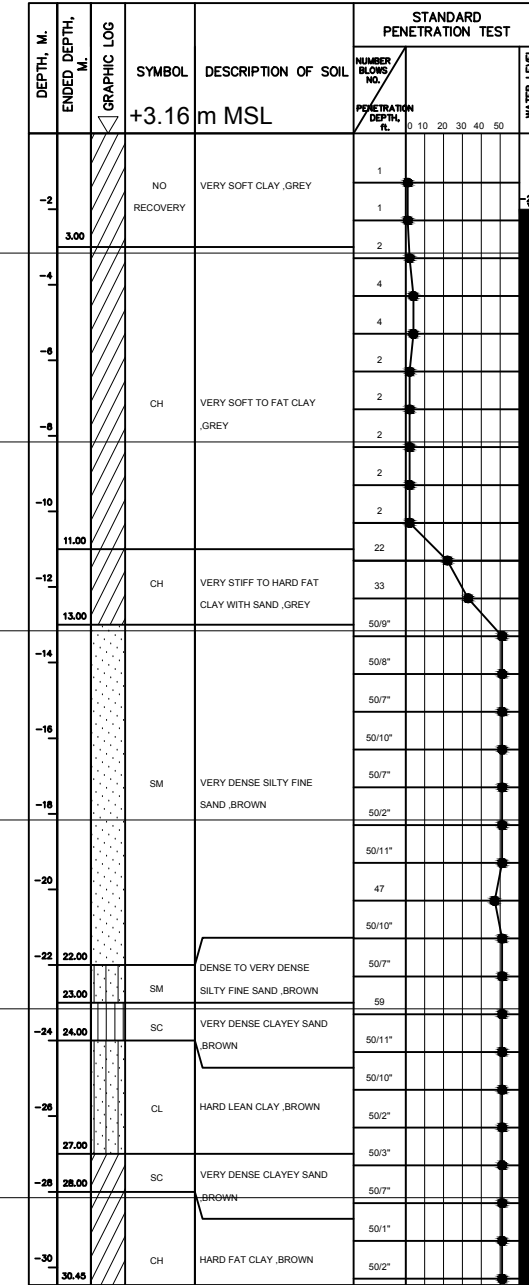
DH-HT-4



DH-HT-5



DH-HT-6



ROYAL IRRIGATION DEPARTMENT  
 The Flood Prevention Project of  
 East Side of the Pasak River in Ayutthaya  
 in the Kingdom of Thailand  
 (CIVIL WORKS)  
 HAN TRA FLOODGATE  
 BOREHOLE LOGS

CONSULTING FIRMS :  
 CTI ENGINEERING INTERNATIONAL CO., LTD.

DESIGNED	Masaki ISHII	ROYAL IRRIGATION DEPARTMENT		
DRAWN	Masaki ISHII	PROPOSED	P. SIRION	CHIEF
CHECKED	Akio SHICHIJUGARI	VERIFIED	S. INTARAPRACHA	DIRECTOR
APPROVED	T. MISHINA DATE _____	APPROVED	L. KOWATTANA	D.G.

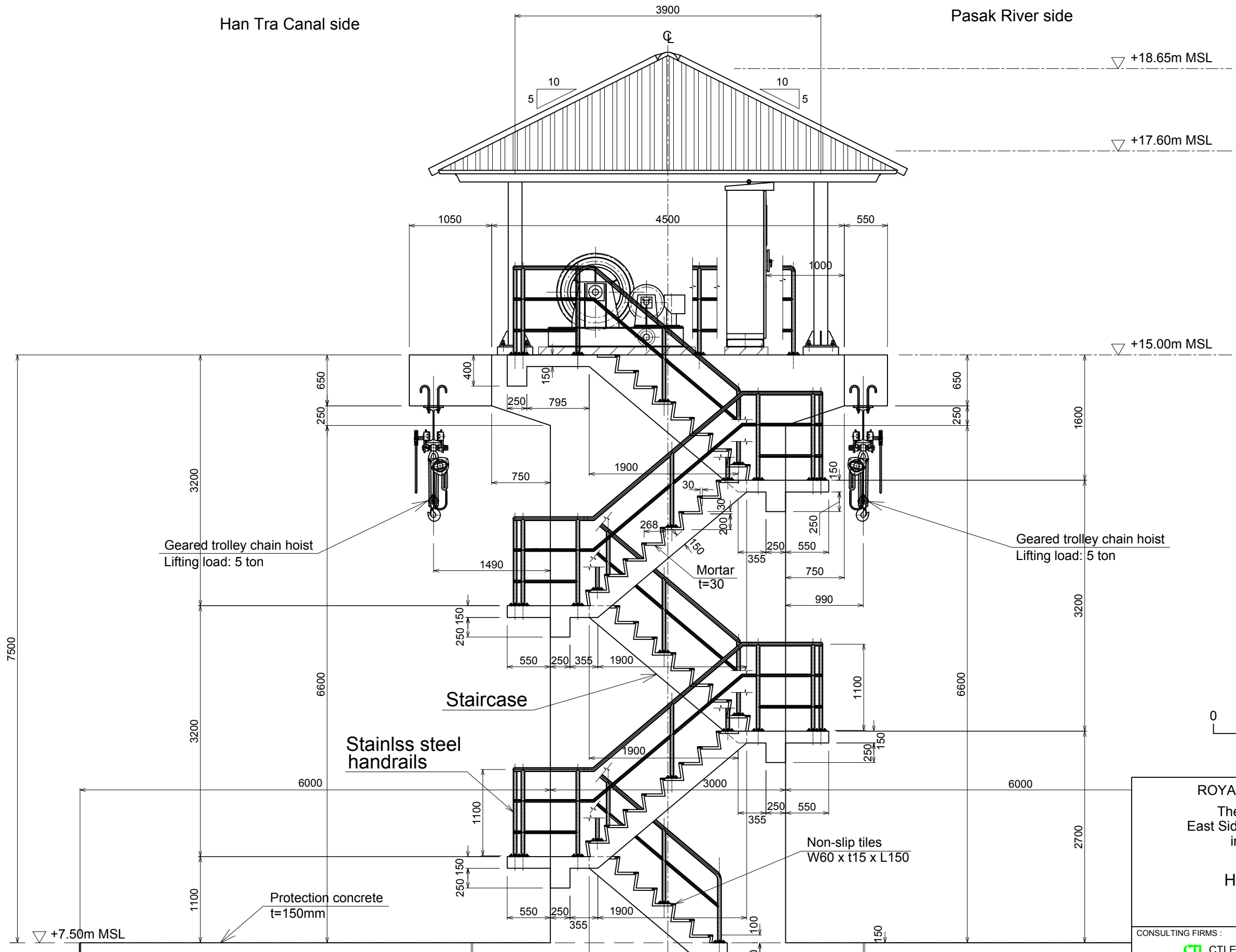
**BOREHOLE LOGS FOR  
 HAN TRA FLOODGATE**

REV. NO.	LOCATION	DESCRIPTION	DATE	CHECKED	APPROVED	APPROVED
				PRESENT	APPROVED	

OFFICE OF ENGINEERING DESIGN & ARCHITECTURE  
 IRRIGATION SYSTEM DESIGN GROUP  
 DATE \_\_\_\_\_  
**HT-FG-013A**

Han Tra Canal side

Pasak River side



▽ +18.65m MSL

▽ +17.60m MSL

▽ +15.00m MSL

▽ +7.50m MSL

Geared trolley chain hoist  
Lifting load: 5 ton

Geared trolley chain hoist  
Lifting load: 5 ton

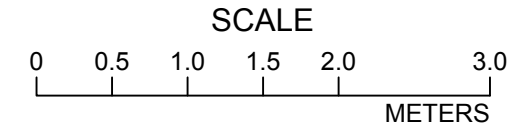
Staircase

Stainless steel handrails

Protection concrete  
t=150mm

Non-slip tiles  
W60 x t15 x L150

Mortar  
t=30



ROYAL IRRIGATION DEPARTMENT  
The Flood Prevention Project of  
East Side of the Pasak River in Ayutthaya  
in the Kingdom of Thailand  
(CIVIL WORKS)  
HAN TRA FLOODGATE  
STAIRCASE (1/4)

CONSULTING FIRMS :  
CTI ENGINEERING INTERNATIONAL CO., LTD.

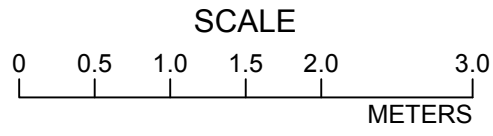
DESIGNED	Masaki ISHII	ROYAL IRRIGATION DEPARTMENT		
DRAWN	Masaki ISHII	PROPOSED	P. SIRION	CHIEF
CHECKED	Akio SHICHIJUGARI	VERIFIED	S. INTARAPRACHA	DIRECTOR
APPROVED	T. MISHINA DATE _____	APPROVED	L. KOWATTANA	D.G.

OFFICE OF ENGINEERING DESIGN & ARCHITECTURE  
IRRIGATION SYSTEM DESIGN GROUP  
DATE \_\_\_\_\_

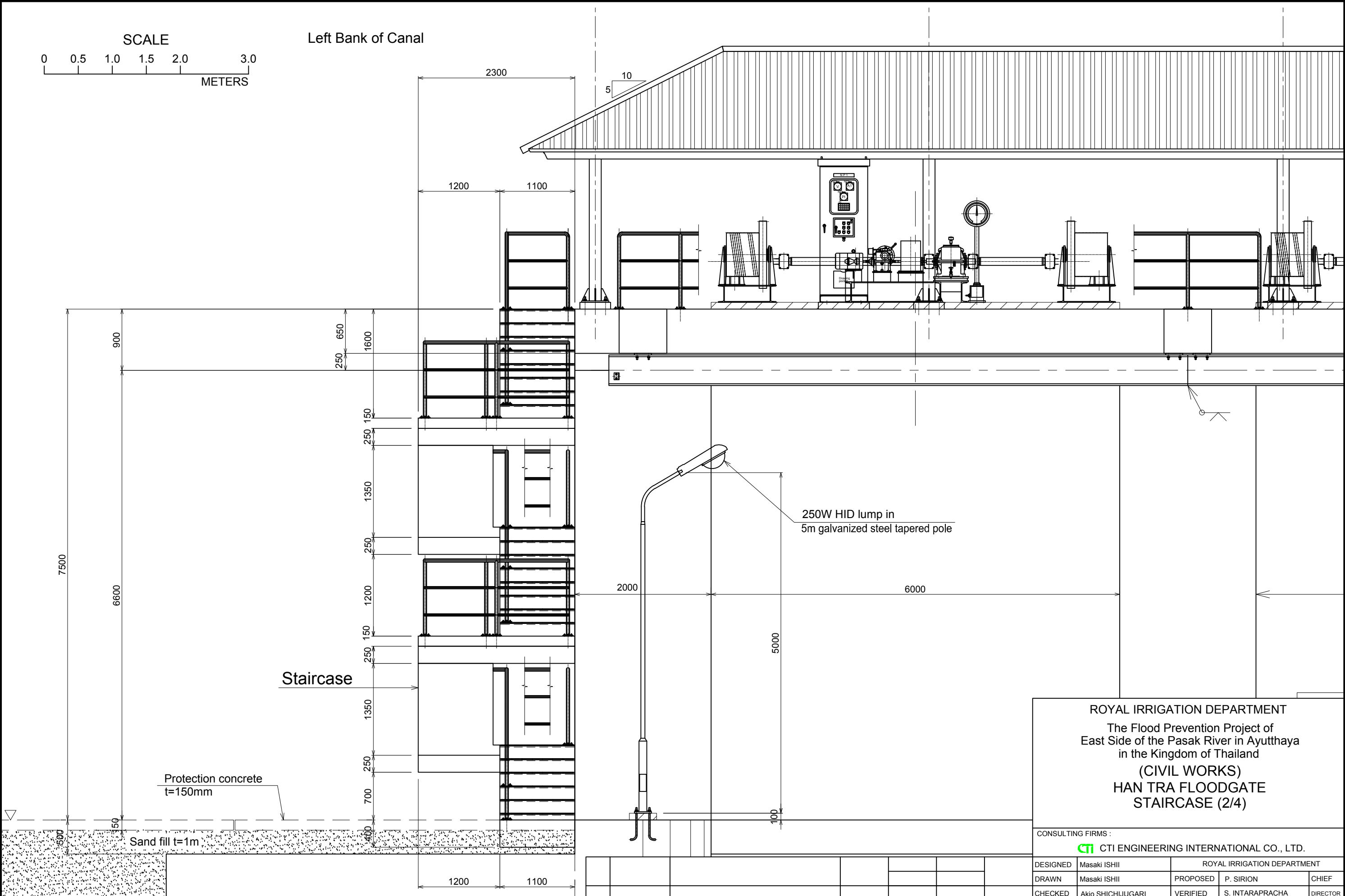
HT-FG-014

REV. NO.	LOCATION	DESCRIPTION	DATE	CHECKED PRESENT	APPROVED APPROVED	APPROVED

Sand fill t=1m



Left Bank of Canal



250W HID lump in  
5m galvanized steel tapered pole

Staircase

Protection concrete  
t=150mm

Sand fill t=1m

ROYAL IRRIGATION DEPARTMENT  
The Flood Prevention Project of  
East Side of the Pasak River in Ayutthaya  
in the Kingdom of Thailand  
(CIVIL WORKS)  
HAN TRA FLOODGATE  
STAIRCASE (2/4)

CONSULTING FIRMS :  
**CTI ENGINEERING INTERNATIONAL CO., LTD.**

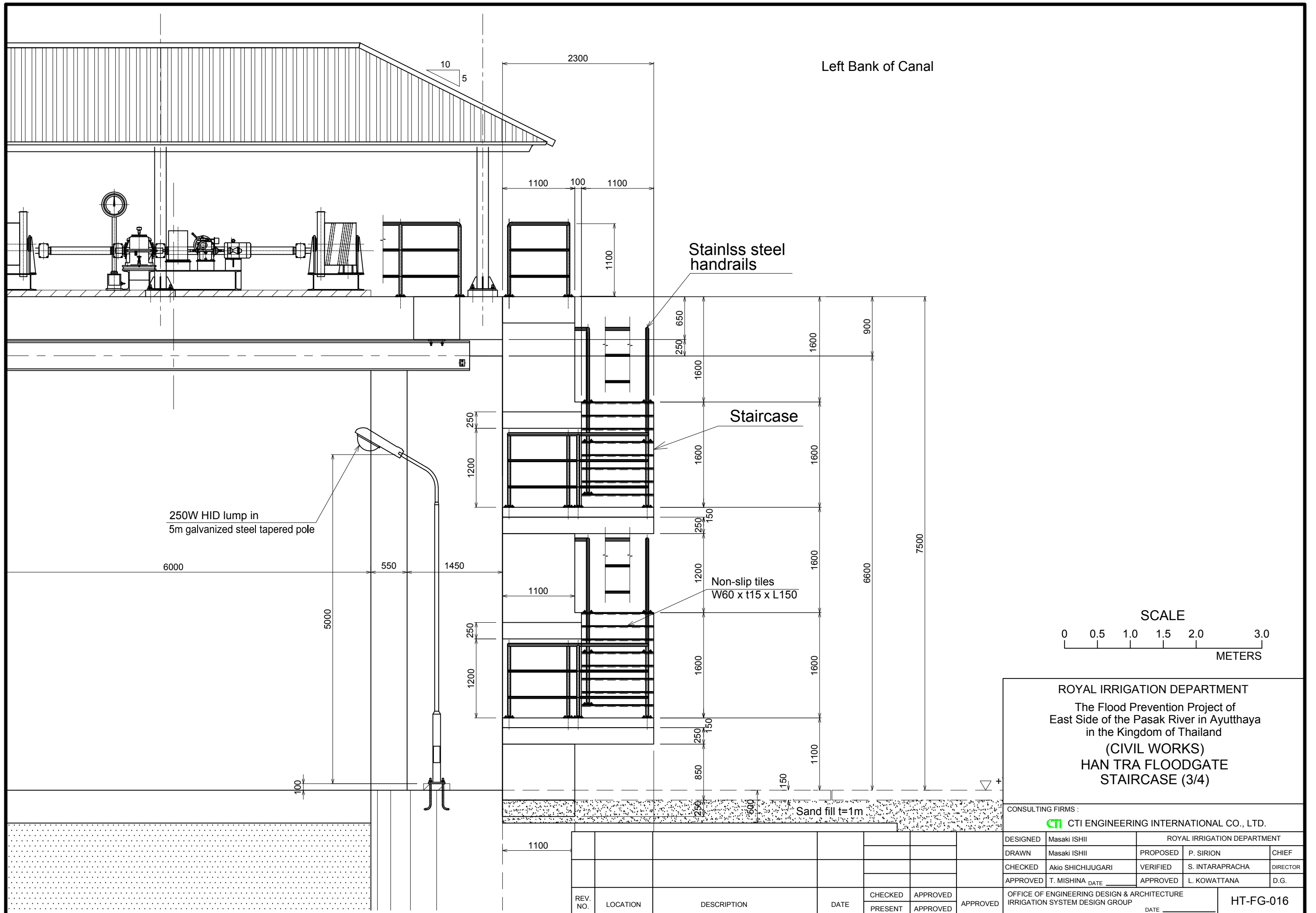
DESIGNED	Masaki ISHII	ROYAL IRRIGATION DEPARTMENT		
DRAWN	Masaki ISHII	PROPOSED	P. SIRION	CHIEF
CHECKED	Akio SHICHIJUGARI	VERIFIED	S. INTARAPRACHA	DIRECTOR
APPROVED	T. MISHINA DATE _____	APPROVED	L. KOWATTANA	D.G.

REV. NO.	LOCATION	DESCRIPTION	DATE	CHECKED PRESENT	APPROVED APPROVED	APPROVED

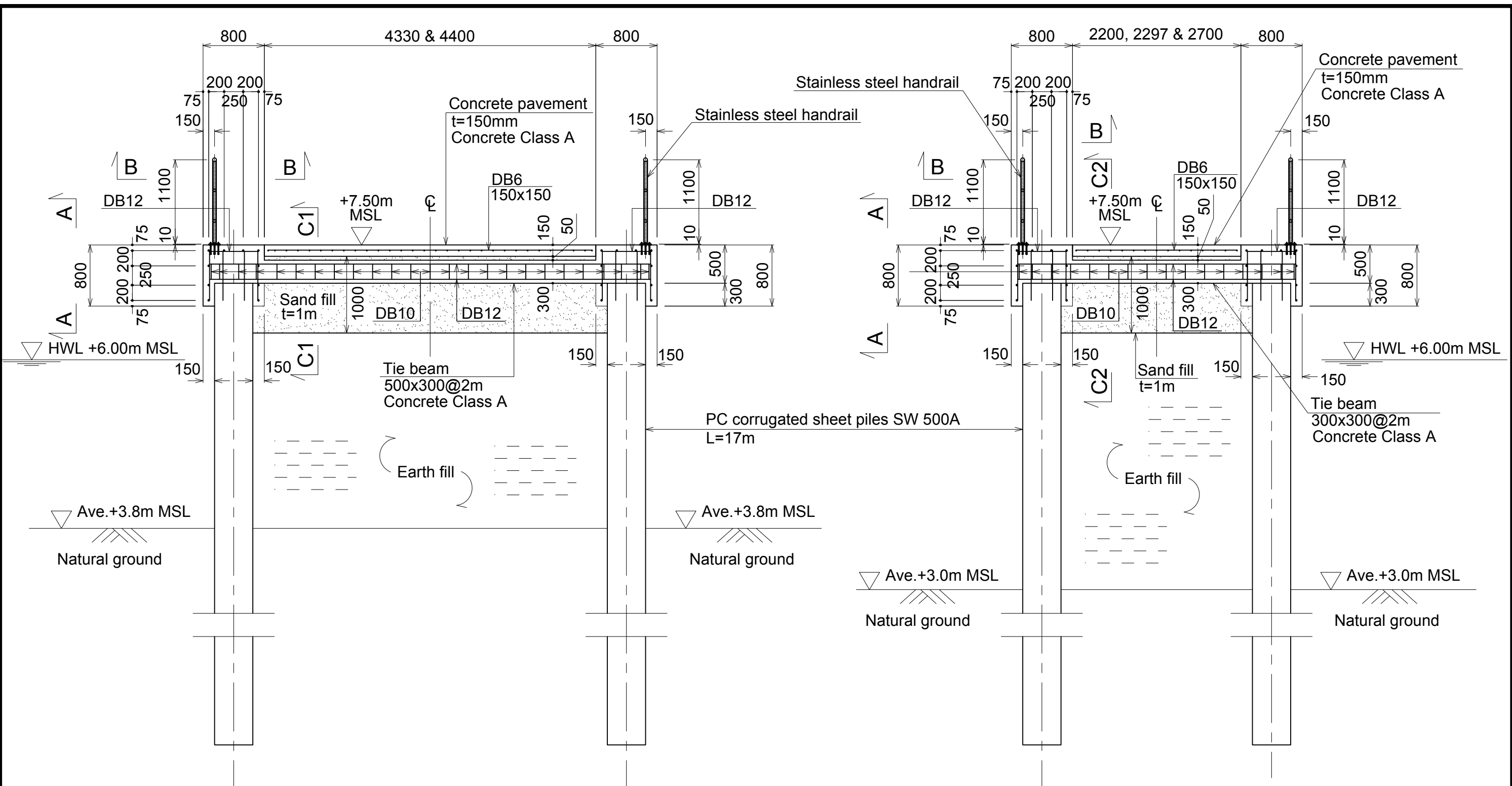
OFFICE OF ENGINEERING DESIGN & ARCHITECTURE  
IRRIGATION SYSTEM DESIGN GROUP  
DATE \_\_\_\_\_

HT-FG-015

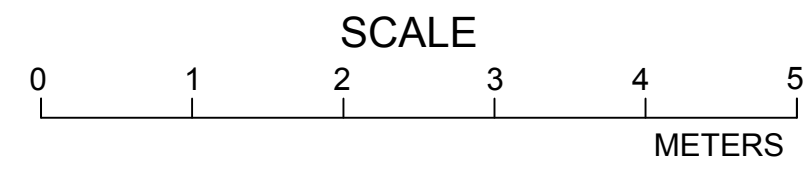








**CROSS SECTIONS**



ROYAL IRRIGATION DEPARTMENT  
 The Flood Prevention Project of  
 East Side of the Pasak River in Ayutthaya  
 in the Kingdom of Thailand  
 (CIVIL WORKS)  
**HAN TRA FLOODGATE  
 FLOODWALL (1/4)**

CONSULTING FIRMS :  
**CTI ENGINEERING INTERNATIONAL CO., LTD.**

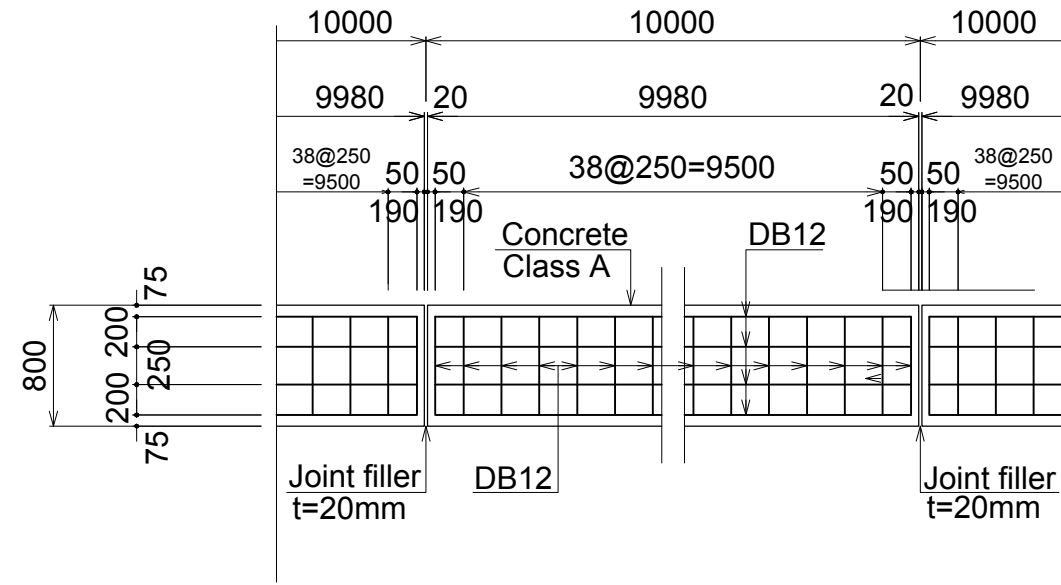
DESIGNED	Masaki ISHII	ROYAL IRRIGATION DEPARTMENT		
DRAWN	Masaki ISHII	PROPOSED	P. SIRION	CHIEF
CHECKED	Akio SHICHIJUGARI	VERIFIED	S. INTARAPRACHA	DIRECTOR
APPROVED	T. MISHINA DATE _____	APPROVED	L. KOWATTANA	D.G.

**FLOODWALL OF  
 HAN TRA FLOOD GATE (1/4)**

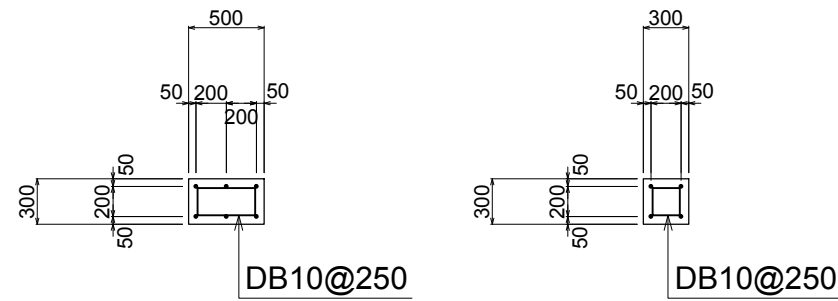
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				PRESENT	APPROVED	

OFFICE OF ENGINEERING DESIGN & ARCHITECTURE  
 IRRIGATION SYSTEM DESIGN GROUP  
 DATE \_\_\_\_\_

**HT-FG-018**

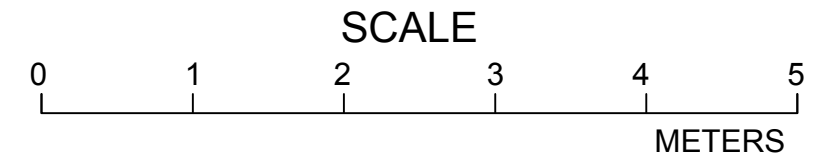


SECTION A-A, B-B



SECTION C1-C1

SECTION C2-C2



**FLOODWALL OF  
HAN TRA FLOOD GATE (2/4)**

ROYAL IRRIGATION DEPARTMENT  
The Flood Prevention Project of  
East Side of the Pasak River in Ayutthaya  
in the Kingdom of Thailand  
(CIVIL WORKS)  
**HAN TRA FLOODGATE  
FLOODWALL (2/4)**

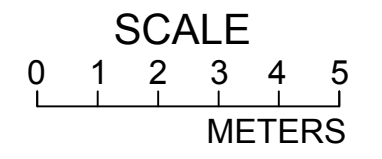
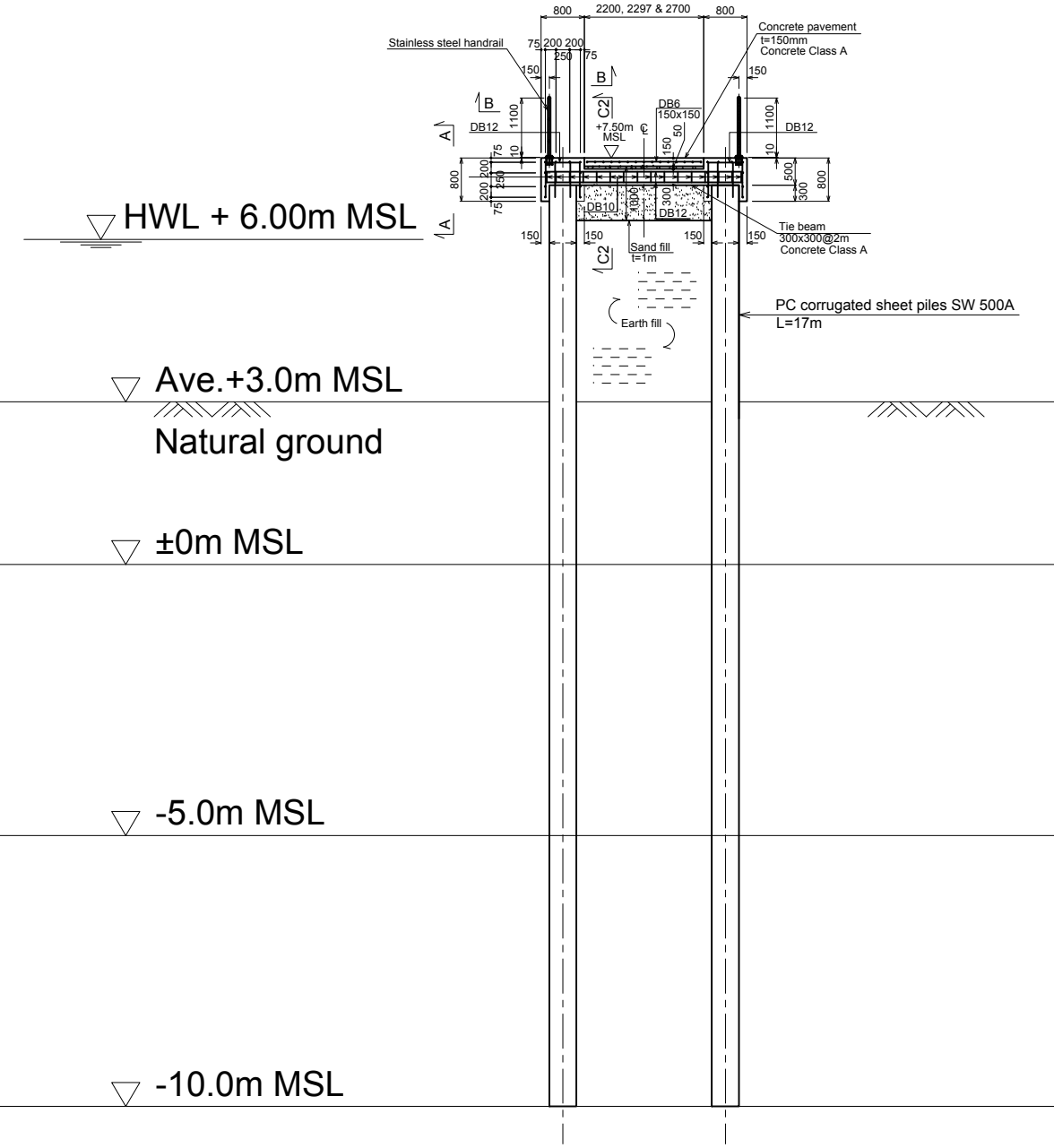
CONSULTING FIRMS :  
**CTI** CTI ENGINEERING INTERNATIONAL CO., LTD.

DESIGNED	Masaki ISHII	ROYAL IRRIGATION DEPARTMENT						
	Masaki ISHII	PROPOSED	P. SIRION	CHIEF				
CHECKED	Akio SHICHIJUGARI	VERIFIED	S. INTARAPRACHA	DIRECTOR				
APPROVED	T. MISHINA DATE _____	APPROVED	L. KOWATTANA	D.G.				
NO.	LOCATION	DESCRIPTION	DATE	CHECKED PRESENT	APPROVED APPROVED	APPROVED	OFFICE OF ENGINEERING DESIGN & ARCHITECTURE IRRIGATION SYSTEM DESIGN GROUP DATE _____	HT-FG-019



DH-HT-6

DEPTH, M.	ENDED DEPTH, M.	GRAPHIC LOG	SYMBOL	DESCRIPTION OF SOIL	STANDARD PENETRATION TEST						WATER LEVEL	
					NUMBER BLOWS NO.	PENETRATION DEPTH, ft.						
						0	10	20	30	40	50	
												+3.16m MSL
-2	3.00	[Hatched]	NO RECOVERY	VERY SOFT CLAY ,GREY	1							-2.0
-4		[Hatched]			2							
-6		[Hatched]			4							
-8		[Hatched]	CH	VERY SOFT TO FAT CLAY ,GREY	4							
-10		[Hatched]			2							
-12		[Hatched]			2							
-14		[Dotted]			2							
-16		[Dotted]			2							
-18		[Dotted]	SM	VERY DENSE SILTY FINE SAND ,BROWN	22							
-20		[Dotted]			33							
-22		[Dotted]			50/9"							
-23		[Dotted]			50/8"							
		[Dotted]			50/7"							
		[Dotted]			50/10"							
		[Dotted]			50/7"							
		[Dotted]			50/2"							
		[Dotted]			50/11"							
		[Dotted]			47							
		[Dotted]			50/10"							
		[Dotted]			50/7"							
		[Dotted]	SM	DENSE TO VERY DENSE SILTY FINE SAND ,BROWN								



ROYAL IRRIGATION DEPARTMENT  
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 in the Kingdom of Thailand  
 (CIVIL WORKS)  
**HAN TRA FLOODGATE  
 FLOODWALL (3/4)**

CONSULTING FIRMS :  
**CTI ENGINEERING INTERNATIONAL CO., LTD.**

**FLOODWALL OF  
 HAN TRA FLOOD GATE (3/4)**

DESIGNED	Masaki ISHII	ROYAL IRRIGATION DEPARTMENT		
DRAWN	Masaki ISHII	PROPOSED	P. SIRION	CHIEF
CHECKED	Akio SHICHIJUGARI	VERIFIED	S. INTARAPRACHA	DIRECTOR
APPROVED	T. MISHINA DATE _____	APPROVED	L. KOWATTANA	D.G.
REV. NO.	LOCATION	DESCRIPTION	DATE	CHECKED APPROVED PRESENT APPROVED APPROVED
				OFFICE OF ENGINEERING DESIGN & ARCHITECTURE IRRIGATION SYSTEM DESIGN GROUP DATE _____
				HT-FG-020

DH-HT-4

DEPTH, M.	ENDED DEPTH, M.	GRAPHIC LOG	SYMBOL	DESCRIPTION OF SOIL	STANDARD PENETRATION TEST					WATER LEVEL		
					NUMBER BLOWS NO.	PENETRATION DEPTH, ft.						
						0	10	20	30	40	50	
-2			CL	STIFF LEAN CLAY ,BROWN	14							
					10							
					10							
-4	4.00				3							
			CH	SOFT FAT CLAY ,GREY	2							
					2							
-6	7.00				5							
			CH	MEDIUM FAT CLAY ,GREY	5							
					3							
-8	9.00				2							
			CH	SOFT FAT CLAY ,GREY	4							
					8							
-10	11.00				5							
			CH	MEDIUM FAT CLAY ,GREY	8							
					5							
-12					8							
			CL	STIFF FAT CLAY ,GREY	8							
					10							
-14	14.00				38							
					33							
			SC	DENSE CLAYEY SAND ,GREY	20							
					43							
-16	17.00				50/10"							
			CL	VERY STIFF TO HARD LEAN CLAY ,BROWN	50/7"							
					50/7"							
-18	19.00				50/7"							
-20	20.50											
-22												
-24	24.00											

HWL + 6.00m MSL

Ave. +3.8m MSL

Natural ground

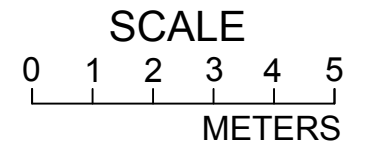
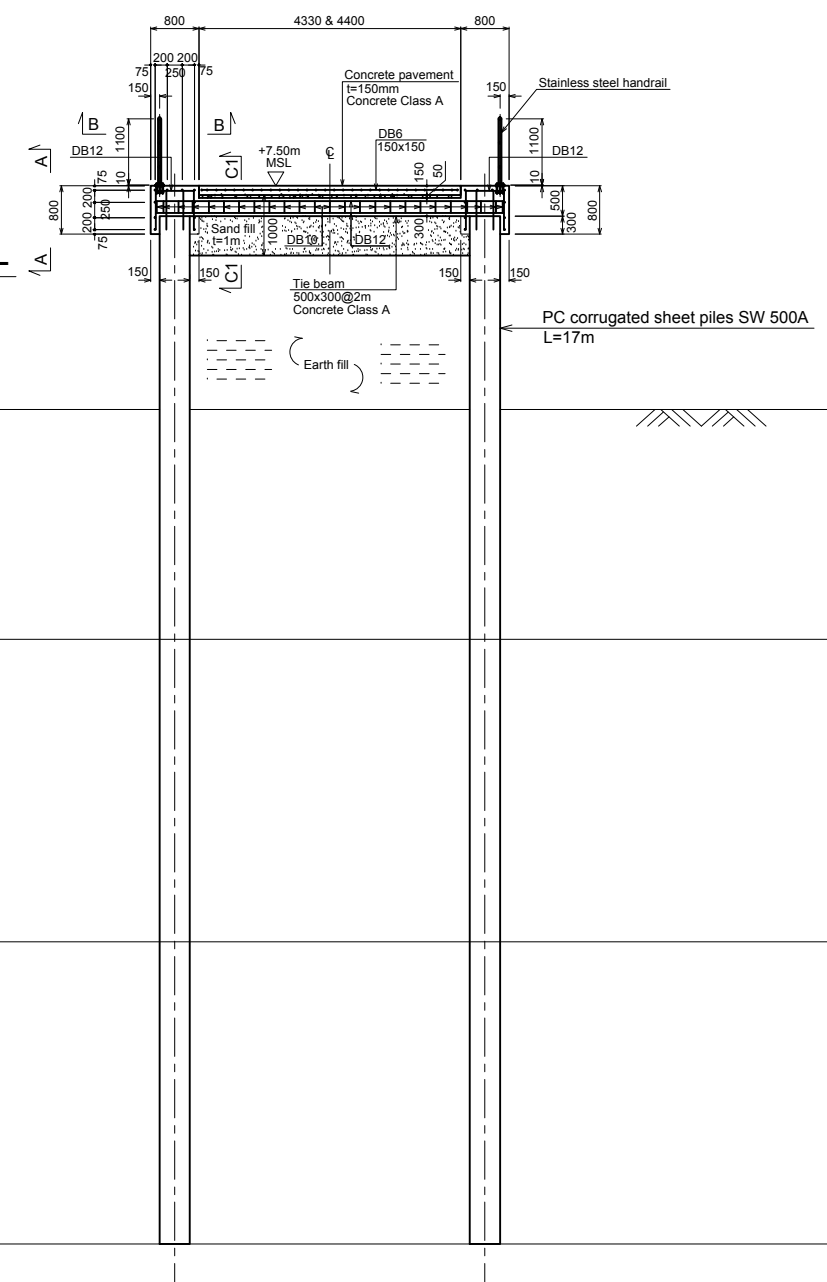
±0m MSL

-5.0m MSL

-10.0m MSL

-15.0m MSL

-3.0



ROYAL IRRIGATION DEPARTMENT  
The Flood Prevention Project of  
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(CIVIL WORKS)  
HAN TRA FLOODGATE  
FLOODWALL (4/4)

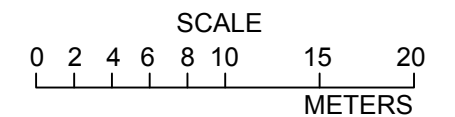
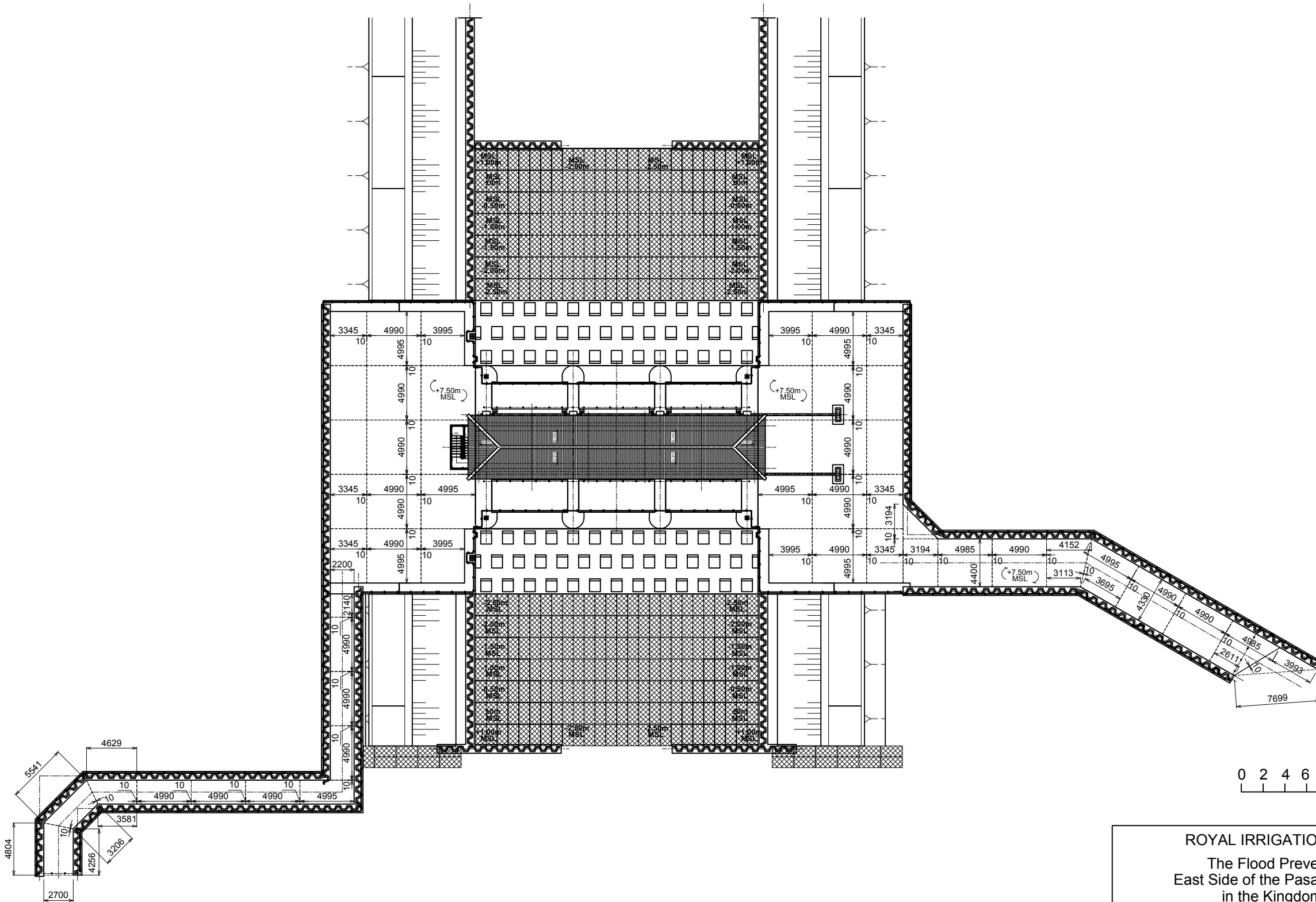
CONSULTING FIRMS :  
CTI ENGINEERING INTERNATIONAL CO., LTD.

DESIGNED	Masaki ISHII	ROYAL IRRIGATION DEPARTMENT		
DRAWN	Masaki ISHII	PROPOSED	P. SIRION	CHIEF
CHECKED	Akio SHICHIJUGARI	VERIFIED	S. INTARAPRACHA	DIRECTOR
APPROVED	T. MISHINA DATE _____	APPROVED	L. KOWATTANA	D.G.

FLOODWALL OF  
HAN TRA FLOOD GATE (4/4)

REV. NO.	LOCATION	DESCRIPTION	DATE	CHECKED PRESENT	APPROVED APPROVED	APPROVED

OFFICE OF ENGINEERING DESIGN & ARCHITECTURE  
IRRIGATION SYSTEM DESIGN GROUP  
DATE \_\_\_\_\_  
HT-FG-021



CONFIGURATION OF  
FLOOR PROTECTION CONCRETE  
FOR HAN TRA FLOOD GATE

ROYAL IRRIGATION DEPARTMENT  
The Flood Prevention Project of  
East Side of the Pasak River in Ayutthaya  
in the Kingdom of Thailand  
(CIVIL WORKS)  
HAN TRA FLOODGATE  
FLOOR PROTECTION CONCRETE (1/2)

CONSULTING FIRMS :

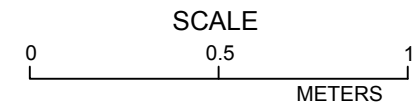
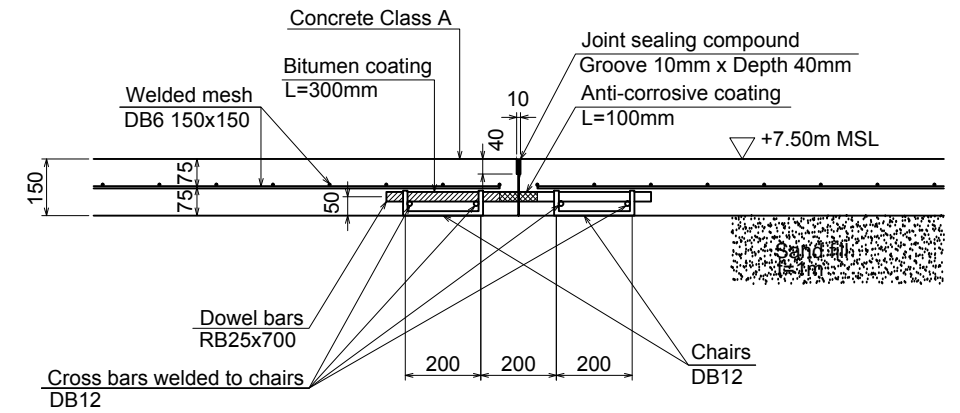
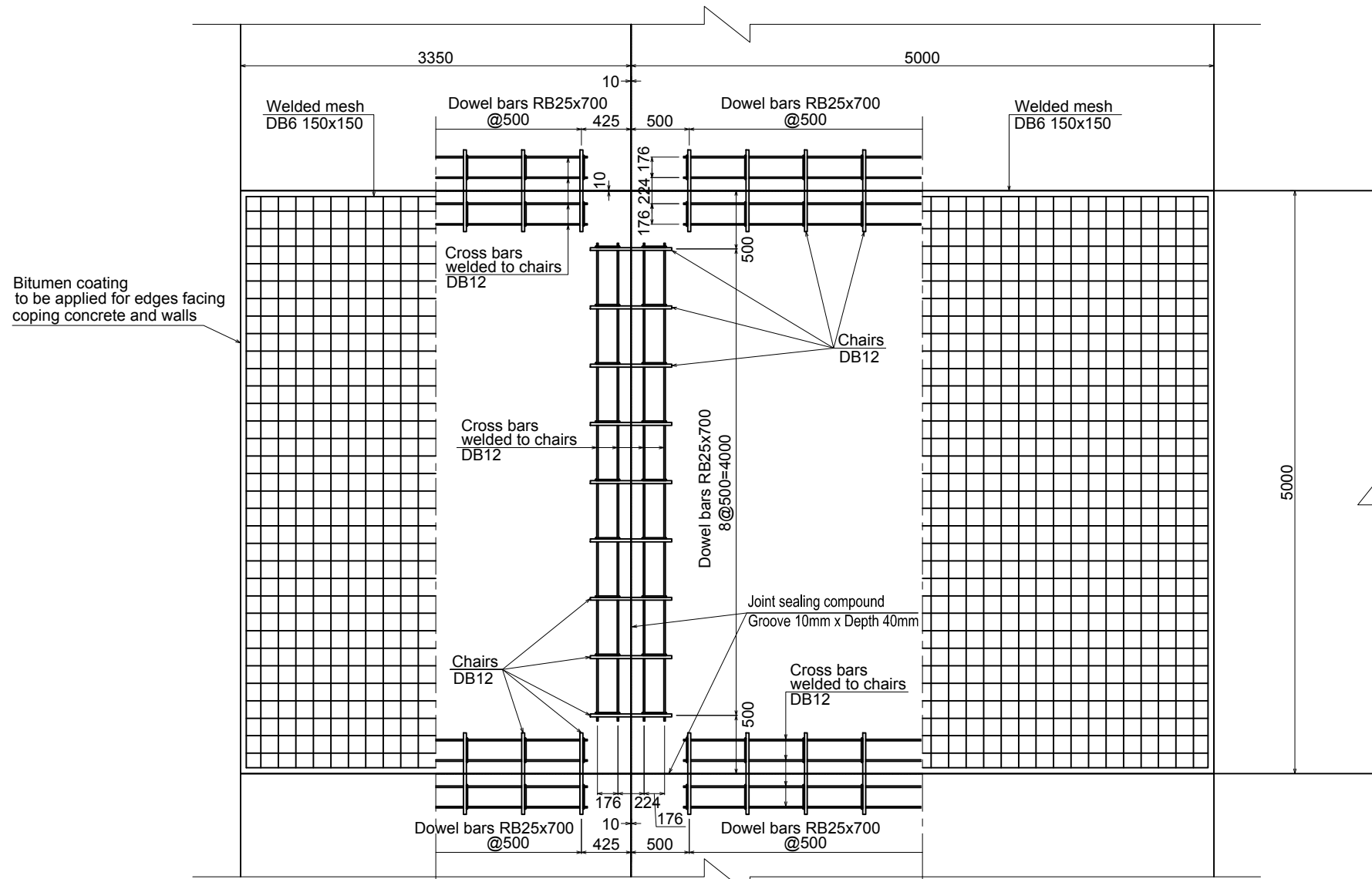
 CTI ENGINEERING INTERNATIONAL CO., LTD.

DESIGNED	Masaki ISHII	ROYAL IRRIGATION DEPARTMENT		
DRAWN	Masaki ISHII	PROPOSED	P. SIRION	CHIEF
CHECKED	Akio SHICHIJUGARI	VERIFIED	S. INTARAPRACHA	DIRECTOR
APPROVED	T. MISHINA DATE _____	APPROVED	L. KOWATTANA	D.G.

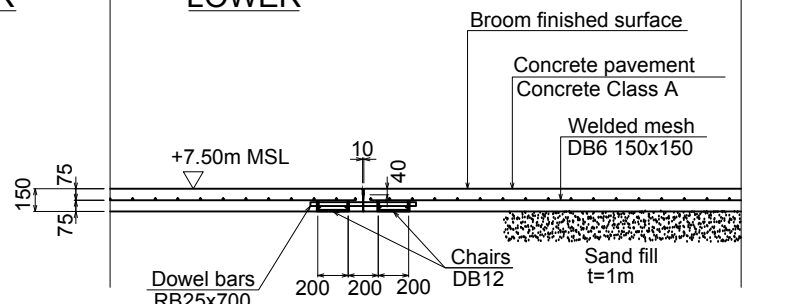
REV. NO.	LOCATION	DESCRIPTION	DATE	CHECKED	APPROVED	APPROVED
				PRESENT	APPROVED	

OFFICE OF ENGINEERING DESIGN & ARCHITECTURE  
IRRIGATION SYSTEM DESIGN GROUP  
DATE \_\_\_\_\_

HT-FG-021A

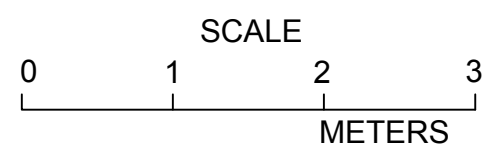


UPPER LOWER UPPER



SECTION

PRESS JOINT to be installed for edges of floor protection concrete See Details



PLAN AND SECTIONS OF FLOOR PROTECTION CONCRETE

ROYAL IRRIGATION DEPARTMENT  
 The Flood Prevention Project of  
 East Side of the Pasak River in Ayutthaya  
 in the Kingdom of Thailand  
 (CIVIL WORKS)  
 HAN TRA FLOODGATE  
 FLOOR PROTECTION CONCRETE (2/2)

CONSULTING FIRMS :  
 CTI ENGINEERING INTERNATIONAL CO., LTD.

DESIGNED	Masaki ISHII	ROYAL IRRIGATION DEPARTMENT		
DRAWN	Masaki ISHII	PROPOSED	P. SIRION	CHIEF
CHECKED	Akio SHICHIJUGARI	VERIFIED	S. INTARAPRACHA	DIRECTOR
APPROVED	T. MISHINA DATE _____	APPROVED	L. KOWATTANA	D.G.
REV. NO.	LOCATION	DESCRIPTION	DATE	CHECKED PRESENT APPROVED APPROVED APPROVED
OFFICE OF ENGINEERING DESIGN & ARCHITECTURE IRRIGATION SYSTEM DESIGN GROUP				HT-FG-021B



