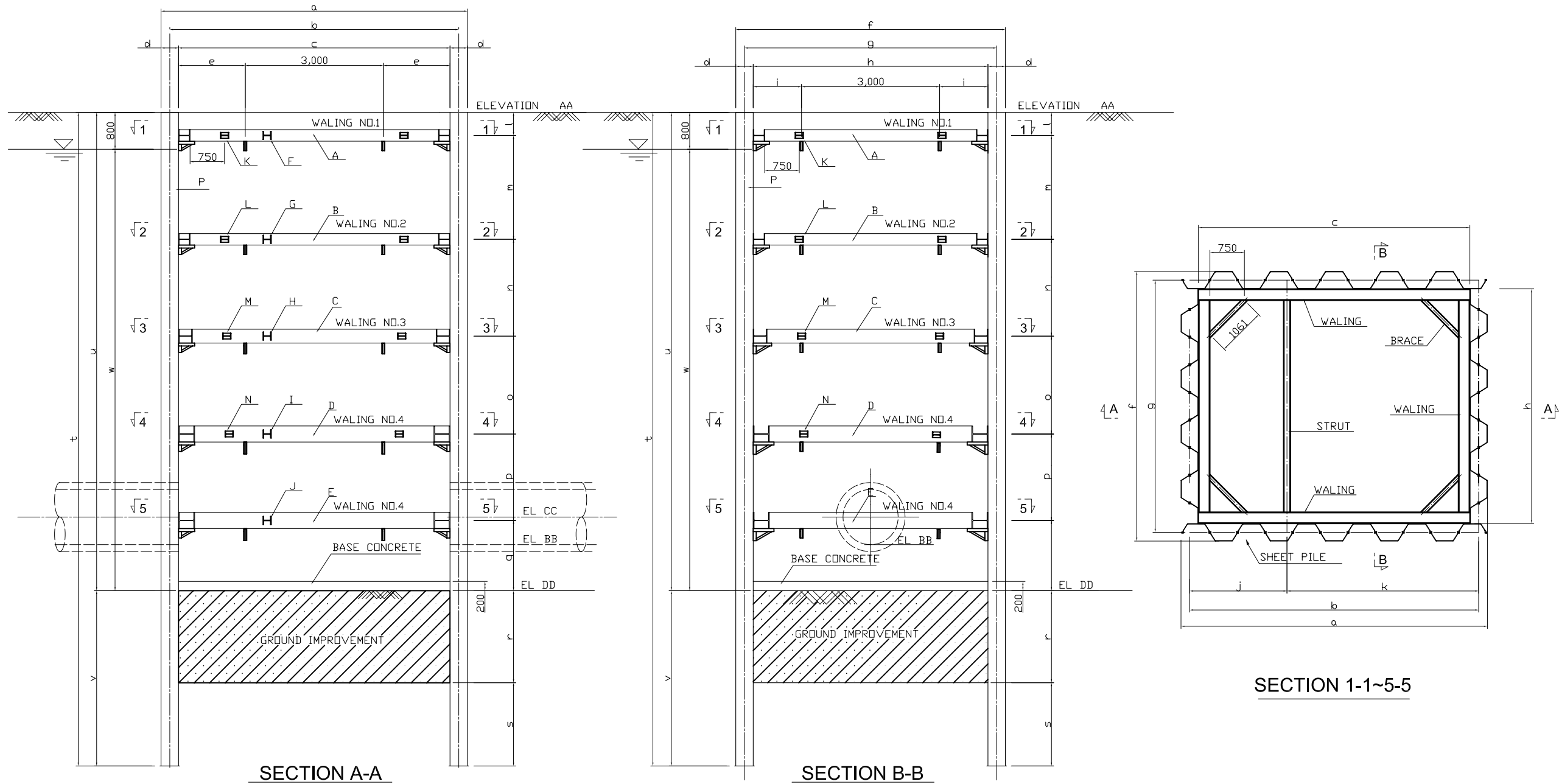


SHAFT NO.9~NO.14

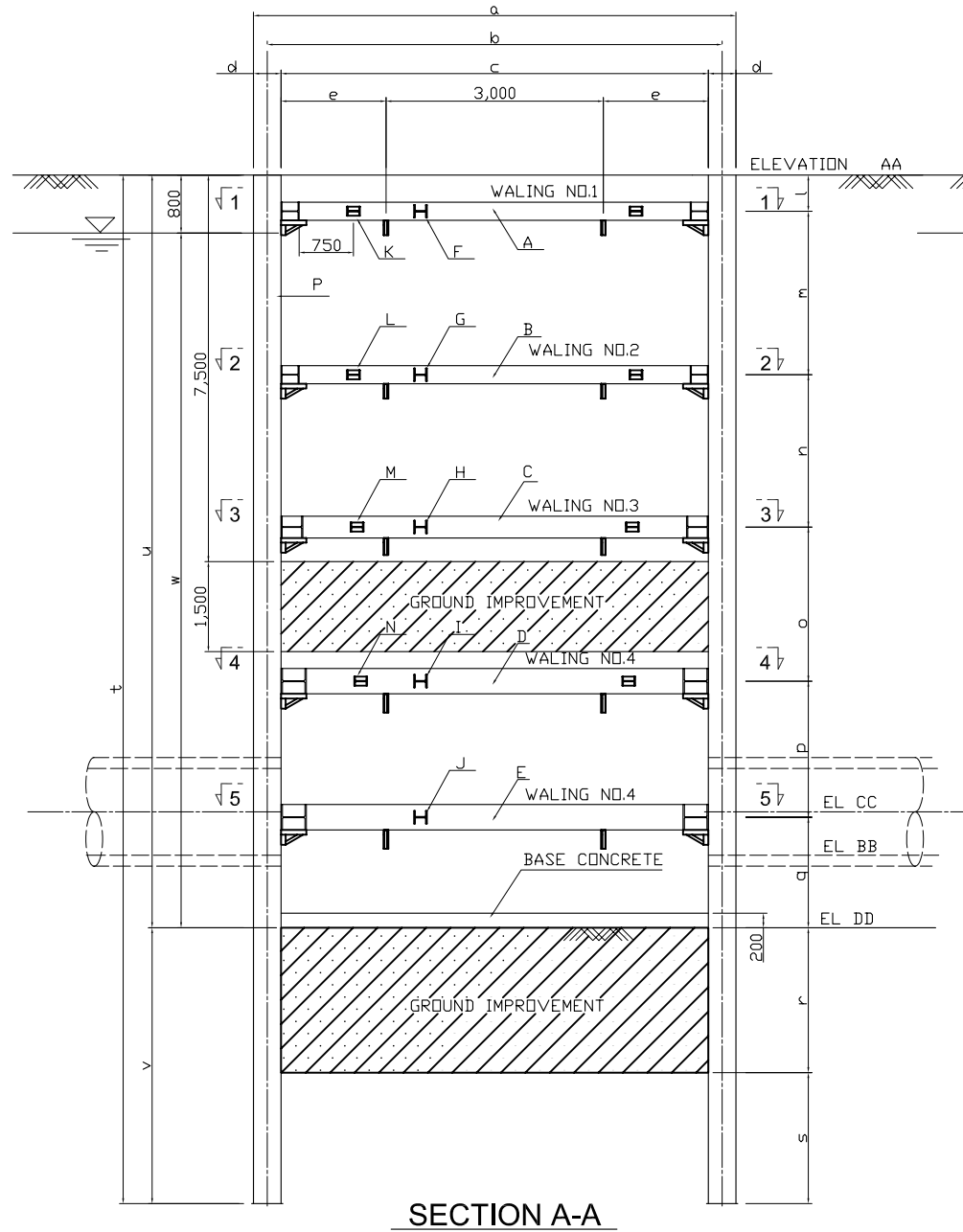


SYMBOL SHAFT NUMBER	LENGTH											DEPTH											LEVEL				REMARK	
	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	AA	BB	CC		DD
SHAFT NO.9	7,700	7,300	6,900	400	1,950	6,200	5,800	5,400	1,200	3,076	4,250	1,000	3,000	3,000	2,500	1,616	1,616	2,500	1,369	16,600	12,731	3,869	11,931	+1,880	-9,851	-9,101	-10,851	
SHAFT NO.10	7,700	7,300	6,900	400	1,950	6,200	5,800	5,400	1,200	3,076	4,250	1,000	3,000	3,000	2,500	1,838	1,838	2,500	925	16,600	13,175	3,425	12,375	+2,010	-10,165	-9,465	-11,165	
SHAFT NO.11	7,100	6,700	6,400	400	1,700	6,200	5,800	5,400	1,200	2,601	4,250	1,000	3,000	3,000	2,500	1,970	1,970	2,500	661	16,600	13,439	3,161	12,639	+1,950	-10,489	-9,789	-11,489	
SHAFT NO.12	7,700	7,300	6,900	400	1,950	6,200	5,800	5,400	1,200	3,076	4,250	1,000	3,000	3,000	2,500	2,059	2,059	2,500	582	16,700	13,618	3,082	12,818	+1,850	-10,768	-10,018	-11,768	
SHAFT NO.13	7,700	7,300	6,900	400	1,950	6,200	5,800	5,400	1,200	3,076	4,250	1,000	3,000	3,000	2,500	2,050	2,050	2,500	601	16,700	13,599	3,101	12,799	+1,660	-10,939	-10,189	-11,939	
SHAFT NO.14	6,900	6,500	6,100	400	1,700	6,400	6,000	5,600	1,300	2,276	4,250	1,000	3,000	3,000	2,500	2,153	2,153	2,500	595	16,900	13,805	3,095	13,005	+1,590	-11,215	-10,465	-12,215	

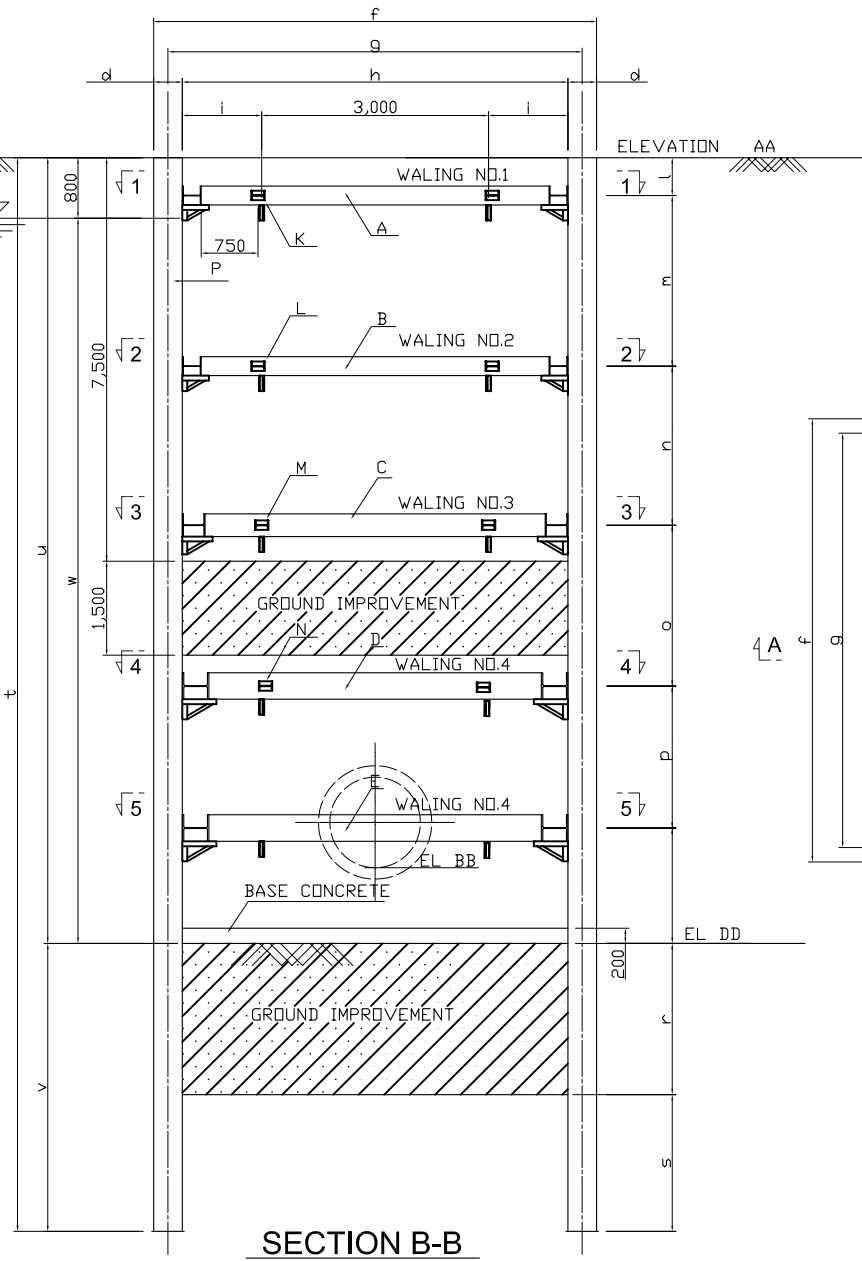
SYMBOL		SHAFT NO.9	SHAFT NO.10	SHAFT NO.11	SHAFT NO.12	SHAFT NO.13	SHAFT NO.14	REMARK
MATERIAL NUMBER								
WALING	A	H - 250 X 250 X 9 X 14		H - 250 X 250 X 9 X 14		H - 250 X 250 X 9 X 14		
	B	H - 300 X 300 X 10 X 15		H - 300 X 300 X 10 X 15		H - 300 X 300 X 10 X 15		
	C	H - 300 X 300 X 10 X 15		H - 300 X 300 X 10 X 15		H - 300 X 300 X 10 X 15		
	D	H - 400 X 400 X 13 X 21		H - 400 X 400 X 13 X 21		H - 400 X 400 X 13 X 21		
	E	H - 350 X 350 X 12 X 19		H - 350 X 350 X 12 X 19		H - 350 X 350 X 12 X 19		
STRUT	F	H - 200 X 200 X 8 X 12		H - 200 X 200 X 8 X 12		H - 200 X 200 X 8 X 12		
	G	H - 250 X 250 X 9 X 14		H - 200 X 200 X 8 X 12		H - 250 X 250 X 9 X 14		
	H	H - 250 X 250 X 9 X 14		H - 250 X 250 X 9 X 14		H - 250 X 250 X 9 X 14		
	I	H - 300 X 300 X 10 X 15		H - 250 X 250 X 9 X 14		H - 300 X 300 X 10 X 15		
	J	H - 250 X 250 X 9 X 14		H - 250 X 250 X 9 X 14		H - 250 X 250 X 9 X 14		
BRACE	K	H - 100 X 100 X 6 X 8		H - 100 X 100 X 6 X 8		H - 100 X 100 X 6 X 8		
	L	H - 125 X 125 X 6.5 X 9		H - 100 X 100 X 6 X 8		H - 125 X 125 X 6.5 X 9		
	M	H - 125 X 125 X 6.5 X 9		H - 125 X 125 X 6.5 X 9		H - 125 X 125 X 6.5 X 9		
	N	H - 200 X 200 X 8 X 12		H - 175 X 157X 7.5 X 11		H - 200 X 200 X 8 X 12		
SHEET PILE	O	FSP - 5		FSP - 5		FSP - 5		

NO.	DATE	DESCRIPTIONS		BY	APPRO.
REVISIONS					
PROJECT MANAGEMENT UNIT FOR HO CHI MINH CITY WATER ENVIRONMENT IMPROVEMENT					
THE DETAILED DESIGN ON HO CHI MINH CITY WATER ENVIRONMENT IMPROVEMENT PROJECT IN THE SOCIALIST REPUBLIC OF VIET NAM					
PACKAGE C INTERCEPTOR SEWER CONSTRUCTION TEMPORARY STRUCTURE OF SHAFT FOR PIPE JACKING METHOD (3) (REFERENCE) (SHAFT No.9~14)					
SCALE : 1/100					
 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)					
 PACIFIC CONSULTANTS INTERNATIONAL					
DESIGNED SATO NOBUYUKI		CHECKED KONDO MASAMI			
DATE : JUNE 2001		DWG. No. PC - ISC - 320			

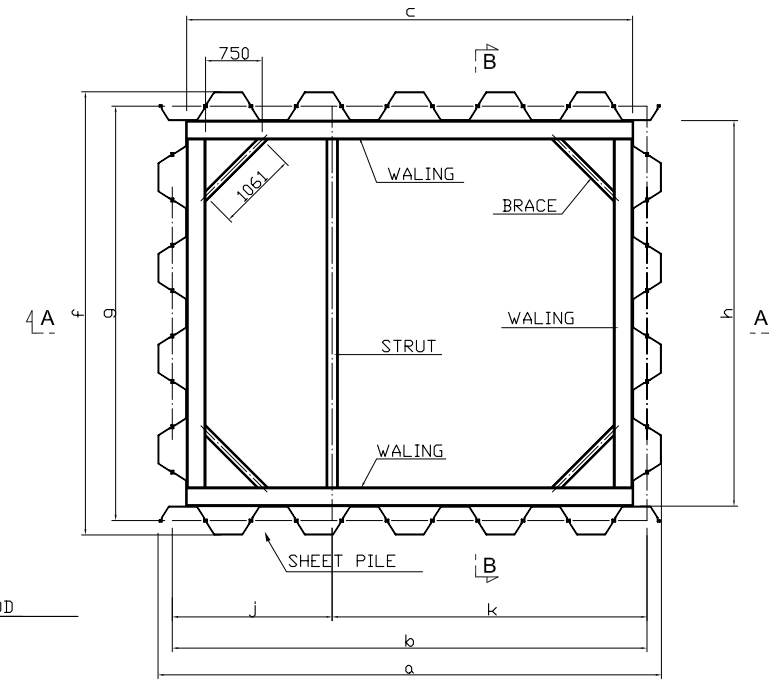
SHAFT NO.15~NO.17



SECTION A-A



SECTION B-B

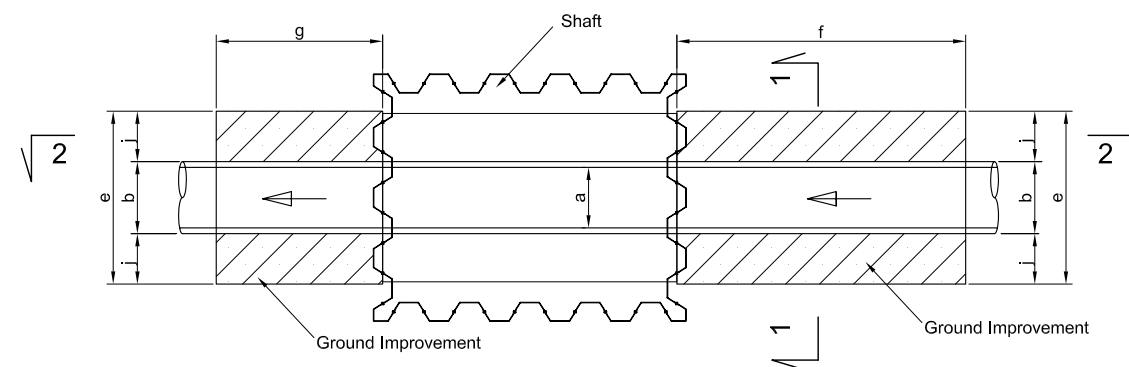
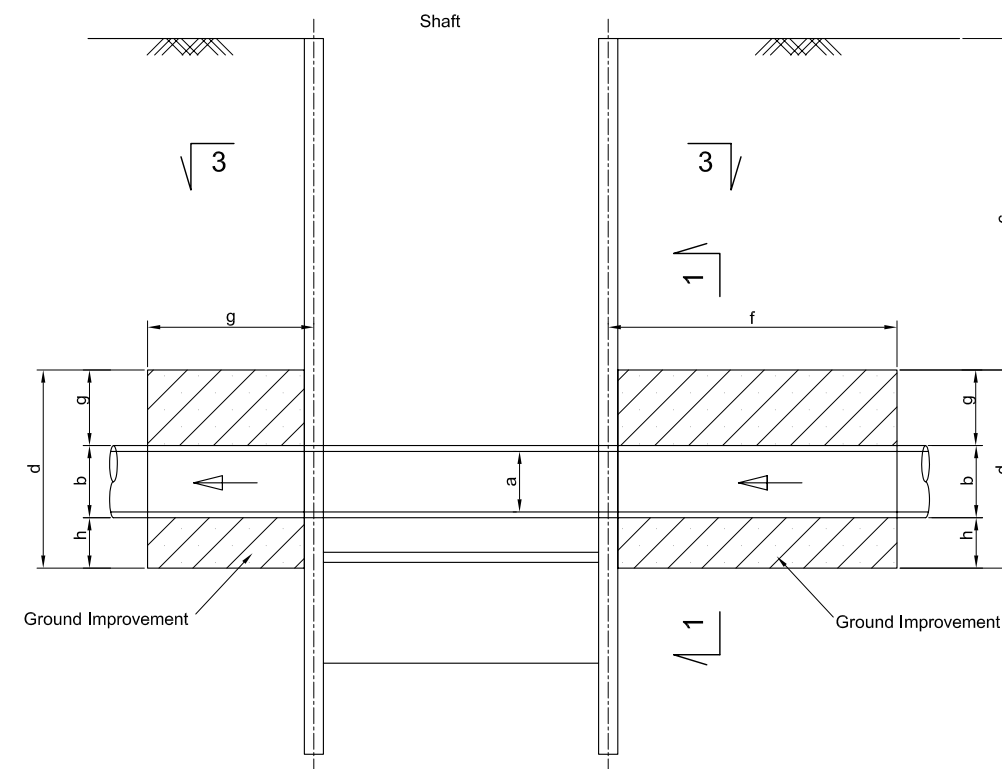
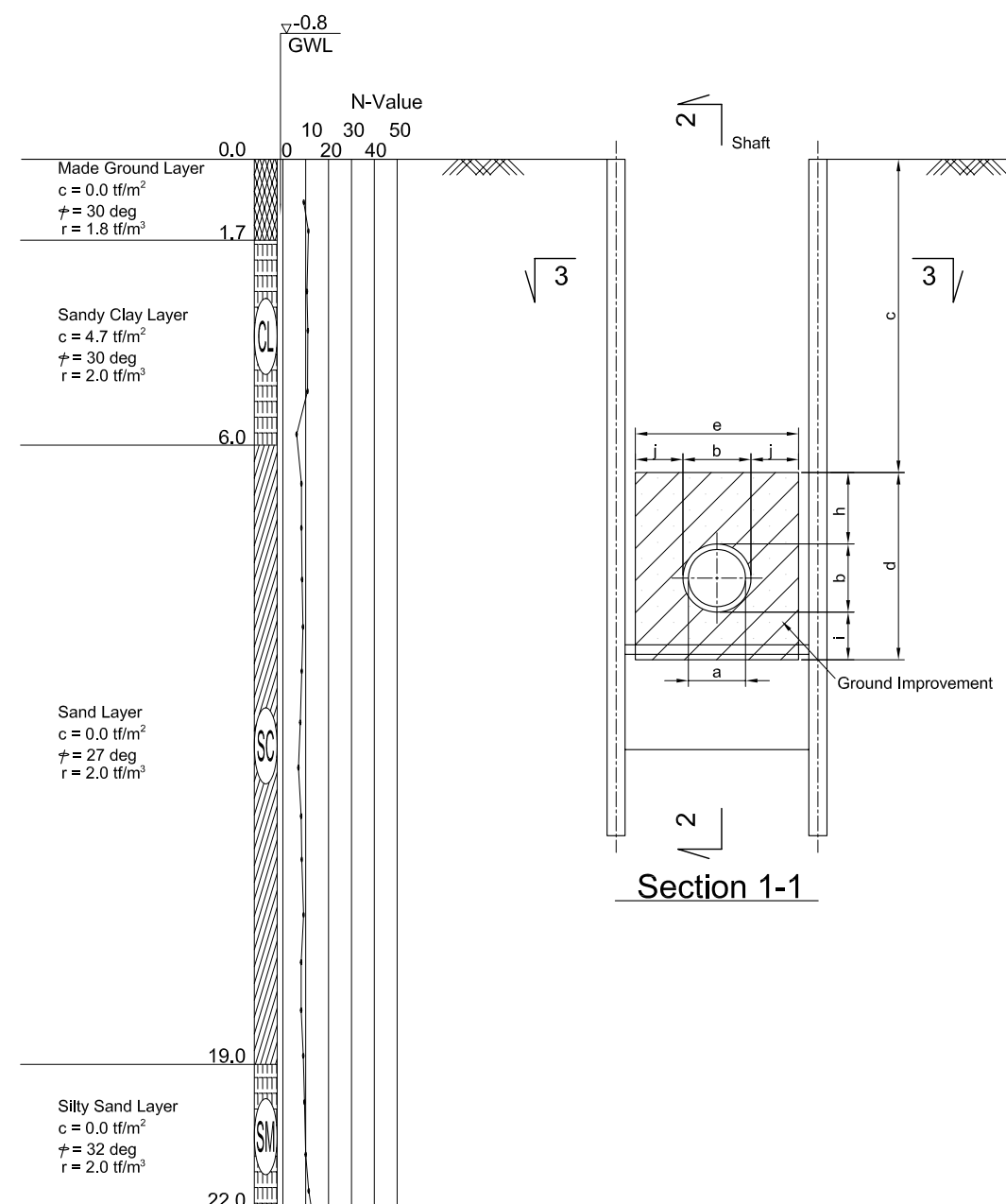


SECTION 1-1~5-5

SYMBOL SHAFT NUMBER	LENGTH											DEPTH											LEVEL				REMARK	
	a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p	q	r	s	t	u	v	w	AA	BB	CC		DD
SHAFT NO.15	7,900	7,500	7,100	400	2,050	7,100	6,700	6,300	1,650	3,236	4,264	1,000	3,000	3,000	2,750	2,477	2,477	3,000	996	18,700	14,704	3,996	13,904	+1,520	-12,184	-11,084	-13,184	
SHAFT NO.16	6,900	6,500	6,100	400	1,550	7,100	6,700	6,300	1,650	2,236	4,264	1,000	3,000	3,000	2,750	2,629	2,629	3,000	692	18,700	15,008	3,692	14,208	+1,610	-12,398	-11,298	-13,398	
SHAFT NO.17	7,700	7,300	6,900	400	1,950	7,100	6,700	6,300	1,650	3,036	4,264	1,000	3,000	3,000	2,750	2,899	2,899	3,000	152	18,700	15,548	3,152	14,748	+1,860	-12,688	-11,588	-13,688	

SYMBOL		SHAFT NO.15	SHAFT NO.16	SHAFT NO.17	REMARK
MATERIAL NUMBER					
WALING	A	H - 200 X 200 X 8 X 12			
	B	H - 250 X 250 X 9 X 14			
	C	H - 300 X 300 X 10 X 15			
	D	H - 414 X 405 X 18 X 28			
	E	H - 400 X 400 X 13 X 21			
STRUT	F	H - 250 X 250 X 9 X 14			
	G	H - 250 X 250 X 9 X 14			
	H	H - 250 X 250 X 9 X 14			
	I	H - 300 X 300 X 10 X 15			
	J	H - 250 X 250 X 9 X 14			
BRACE	K	H - 100 X 100 X 6 X 8			
	L	H - 100 X 100 X 6 X 8			
	M	H - 125 X 125 X 6.5 X 9			
	N	H - 250 X 250 X 9 X 14			
SHEET PILE	O	FSP - 5			

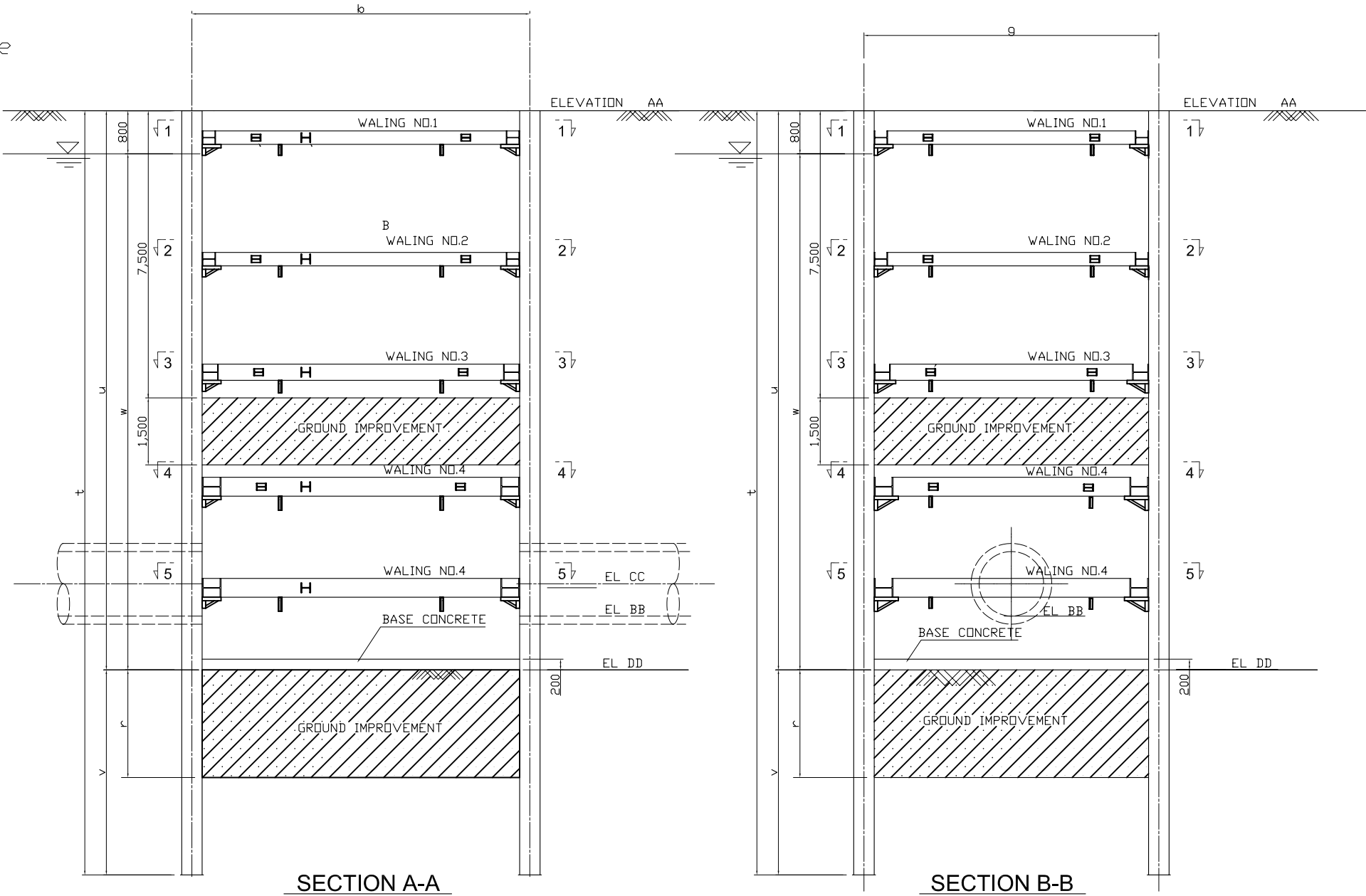
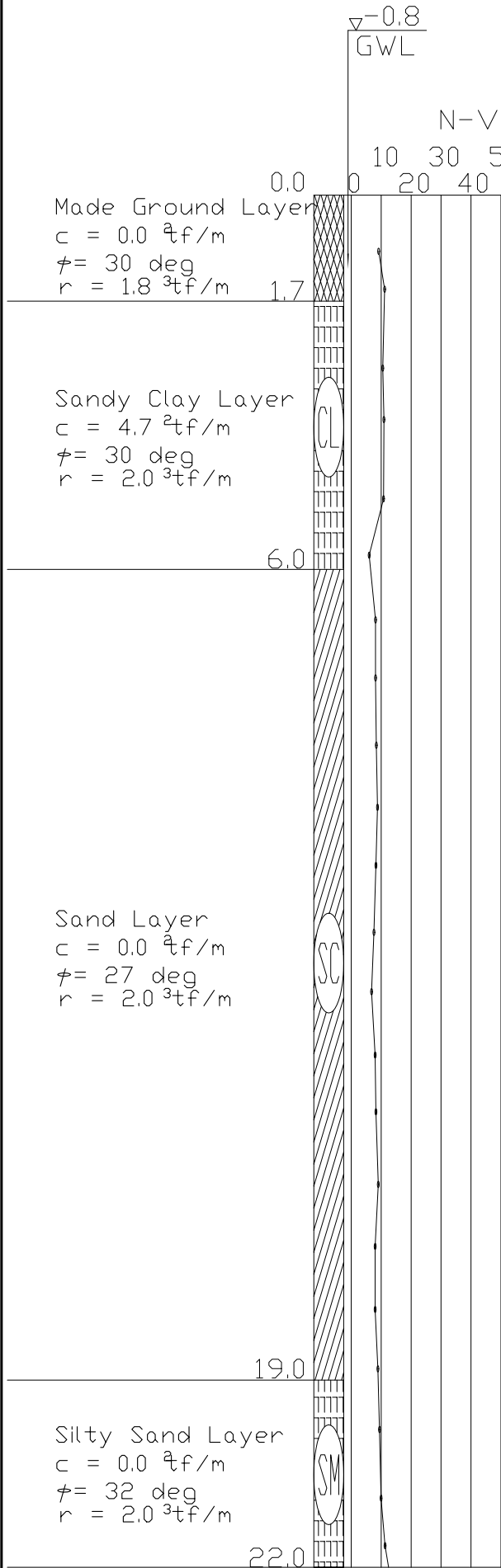
NO.	DATE	DESCRIPTIONS		BY	APPRO
REVISIONS					
PROJECT MANAGEMENT UNIT FOR HO CHI MINH CITY WATER ENVIRONMENT IMPROVEMENT					
THE DETAILED DESIGN ON HO CHI MINH CITY WATER ENVIRONMENT IMPROVEMENT PROJECT IN THE SOCIALIST REPUBLIC OF VIET NAM					
PACKAGE C INTERCEPTOR SEWER CONSTRUCTION TEMPORARY STRUCTURE OF SHAFT FOR PIPE JACKING METHOD (4) (REFERENCE) (SHAFT No.15~17)					
SCALE : 1/100					
 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)					
 PACIFIC CONSULTANTS INTERNATIONAL					
DESIGNED SATO NOBUYUKI			CHECKED KONDO MASAMI		
DATE : JUNE 2001			DWG. No. PC - ISC - 321		



	φ1200	φ1500	φ2200	Remark
a	1200 mm	1500 mm	2200 mm	
b	1450 mm	1800 mm	2680 mm	
c	6600 mm	9100 mm	10800 mm	
d	4000 mm	4300 mm	5200 mm	
e	3500 mm	3800 mm	4700 mm	
f	5500 mm	5900 mm	7500 mm	
g	3200 mm	3300 mm	3600 mm	
h	1500 mm	1500 mm	1500 mm	
i	1050 mm	1000 mm	1020 mm	
j	1025 mm	1000 mm	1010 mm	
Volume of Ground Improvement	Lunching	44.8 m ²	53.9 m ²	88.0 m ²
	Reception	77.0 m ²	96.4 m ²	183.3 m ²
Total number of Shafts	8	6	3	
Total volume of GI	974.4 m ³ (44.8 + 77.0) x 8	901.8 m ³ (53.9 + 96.4) x 6	813.9 m ³ (88.0 + 183.3) x 3	

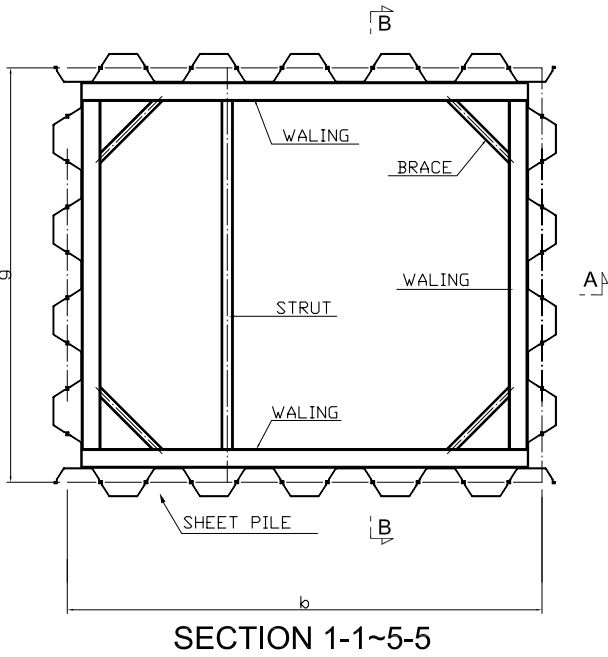
NO.	DATE	DESCRIPTIONS	BY	APPROV.
REVISIONS				
PROJECT MANAGEMENT UNIT FOR HO CHI MINH CITY WATER ENVIRONMENT IMPROVEMENT				
THE DETAILED DESIGN ON HO CHI MINH CITY WATER ENVIRONMENT IMPROVEMENT PROJECT IN THE SOCIALIST REPUBLIC OF VIET NAM				
PACKAGE C INTERCEPTOR SEWER CONSTRUCTION GROUND IMPROVEMENT FOR JACKING METHOD (1)				
SCALE : AS SHOWN				
 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)				
 PACIFIC CONSULTANTS INTERNATIONAL				
DESIGNED SATO NOBUYUKI		CHECKED KONDO MASAMI		
DATE : JUNE 2001		DWG. No. PC - ISC - 322		

SHAFT NO.15~NO.17



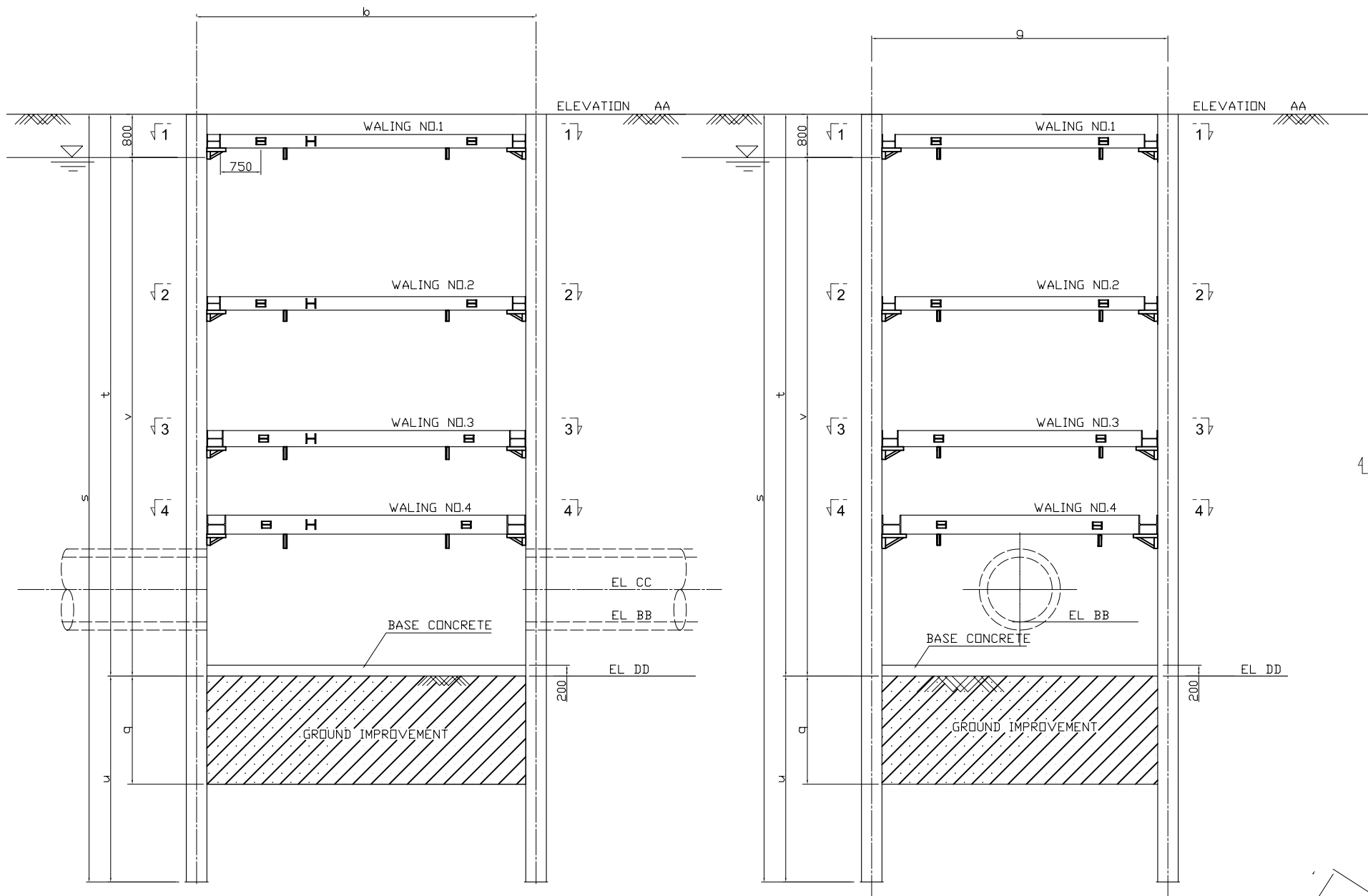
SHAFT NUMBER	SYMBOL	LENGTH AND DEPTH							LEVEL				Ground Improvement						REMARK	
													Up side			Under side				
		b	g	r	t	u	v	w	AA	BB	CC	DD	Area	m ²	Volume	m ³	Area	m ²		Volume
	SHAFT NO.15	7,500	6,700	3,000	18,700	14,704	3,996	13,904	+1,520	-12,184	-11,084	-13,184	51.0		76.5		51.0		153.0	
	SHAFT NO.16	6,500	6,700	3,000	18,700	15,008	3,692	14,208	+1,610	-12,398	-11,298	-13,398	42.9		64.4		42.9		128.8	
	SHAFT NO.17	7,300	6,700	3,000	18,700	15,548	3,152	14,748	+1,860	-12,688	-11,588	-13,688	49.6		74.4		49.6		148.8	
															215.3				430.6	

1340.4 + 430.6 + 215.3 = 1986.3 m³



NO.	DATE	DESCRIPTIONS		BY	APPRO.
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PROJECT MANAGEMENT UNIT FOR HO CHI MINH CITY WATER ENVIRONMENT IMPROVEMENT					
THE DETAILED DESIGN ON HO CHI MINH CITY WATER ENVIRONMENT IMPROVEMENT PROJECT IN THE SOCIALIST REPUBLIC OF VIET NAM					
PACKAGE C INTERCEPTOR SEWER CONSTRUCTION GROUND IMPROVEMENT FOR JACKING METHOD (3) (SHAFT No.15~17)					
SCALE : 1/100					
 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)					
 PACIFIC CONSULTANTS INTERNATIONAL					
DESIGNED SATO NOBUYUKI			CHECKED KONDO MASAMI		
DATE : JUNE 2001			DWG. No. PC - ISC - 324		

SHAFT NO.1~NO.14

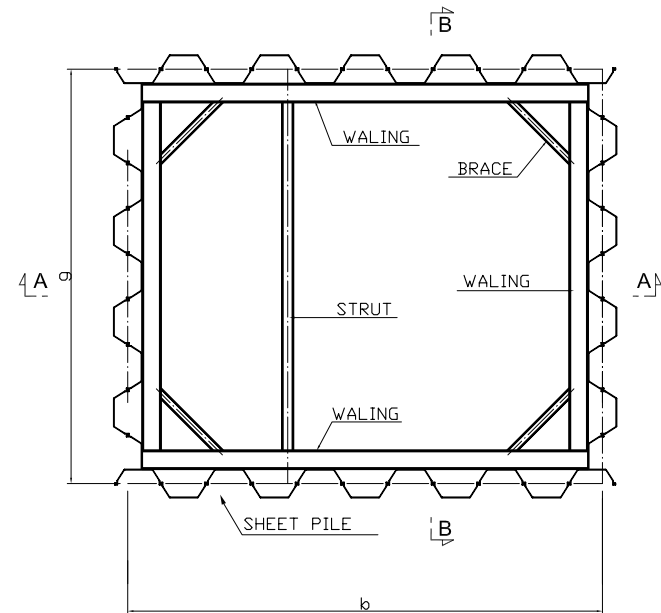


SECTION A-A

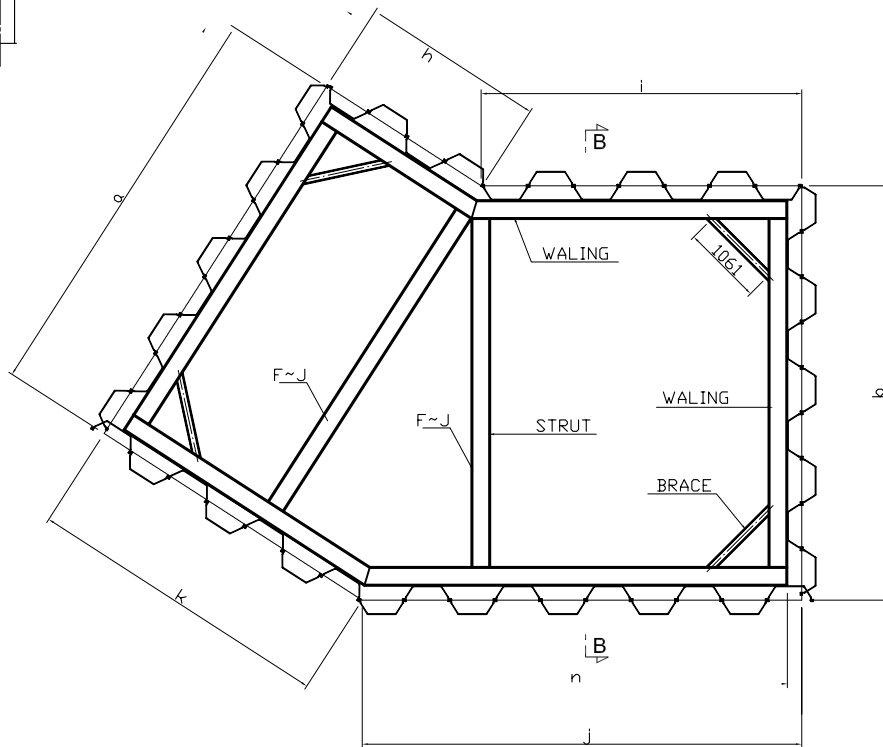
SHAFT NUMBER	SYMBOL	LENGTH AND DEPTH											LEVEL				Ground Improvement				REMARK
		b	g	q	s	t	u	v	h	i	j	k	AA	BB	CC	DD	Area	m ²	Volume	m ³	
	SHAFT NO.1	6,270	5,470	2,000	14,200	10,399	3,801	9,599						+1,870	-7,529	-6,929	-8,529	34.4	68.8		
	SHAFT NO.2	6,270	5,470	2,000	14,200	10,673	3,527	9,873						+1,800	-7,853	-7,253	-8,853	34.4	68.8		
	SHAFT NO.3	7,270	5,470	2,000	14,200	11,167	3,033	10,367						+1,970	-8,197	-7,597	-9,197	39.9	79.8		
	SHAFT NO.4	7,270	5,470	2,500	15,200	11,380	3,820	10,580						+1,960	-8,420	-7,820	-9,420	40.5	101.3		
	SHAFT NO.5	6,270	5,470	2,500	15,200	11,642	3,558	10,842						+1,970	-8,672	-8,072	-9,672	35.0	87.5		
	SHAFT NO.6	7,270	5,470	2,500	15,200	11,916	3,284	11,116						+2,050	-8,866	-8,266	-9,866	40.5	101.3		
	SHAFT NO.7	6,270	5,470	2,500	15,200	12,102	3,098	11,302						+2,020	-9,082	-8,482	-10,082	35.0	87.5		
	SHAFT NO.8	5,500		2,500	16,600	12,295	4,305	11,125		2,440	4,240	5,943	4,143	+1,980	-9,315	-8,715	-10,315	46.3	115.8		
	SHAFT NO.9	7,300	5,800	2,500	16,600	12,731	3,869	11,931						+1,880	-9,851	-9,101	-10,851	43.0	107.5		
	SHAFT NO.10	7,300	5,800	2,500	16,600	13,175	3,425	12,375						+2,010	-10,165	-9,465	-11,165	43.0	107.5		
	SHAFT NO.11	6,700	5,800	2,500	16,600	13,439	3,161	12,639						+1,950	-10,489	-9,789	-11,489	40.1	100.3		
	SHAFT NO.12	7,300	5,800	2,500	16,700	13,618	3,082	12,818						+1,850	-10,768	-10,018	-11,768	43.0	107.5		
	SHAFT NO.13	7,300	5,800	2,500	16,700	13,599	3,101	12,799						+1,660	-10,939	-10,189	-11,939	43.0	107.5		
	SHAFT NO.14	6,500	6,000	2,500	16,900	13,805	3,095	13,005						+1,590	-11,215	-10,465	-12,215	39.7	99.3		
	Sub total																		1340.4		

Ground condition is the same as Shaft number 15 ~ 17.

SECTION B-B



SECTION 1-1~4-4
Shaft no.1 ~ 7, no.9 ~ 14

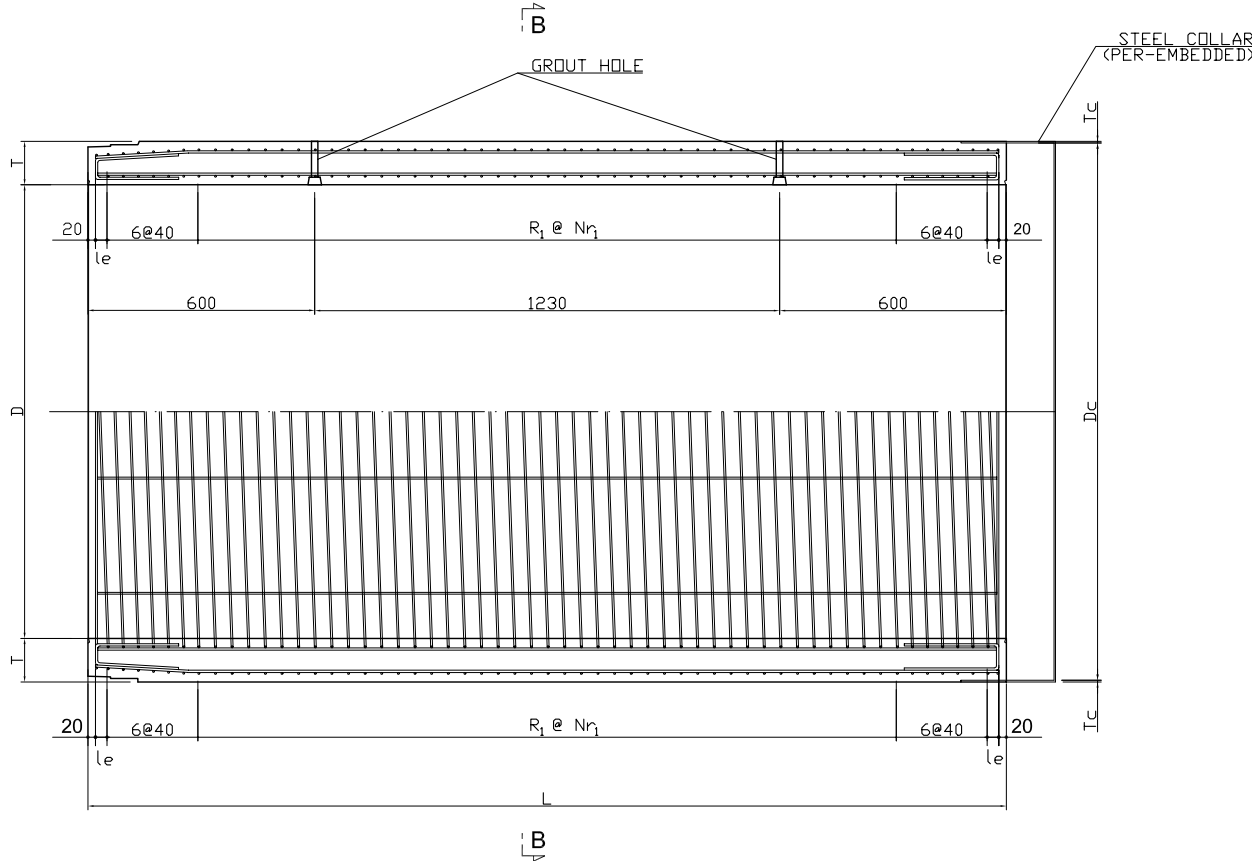


SECTION 1-1~4-4
Shaft no.8

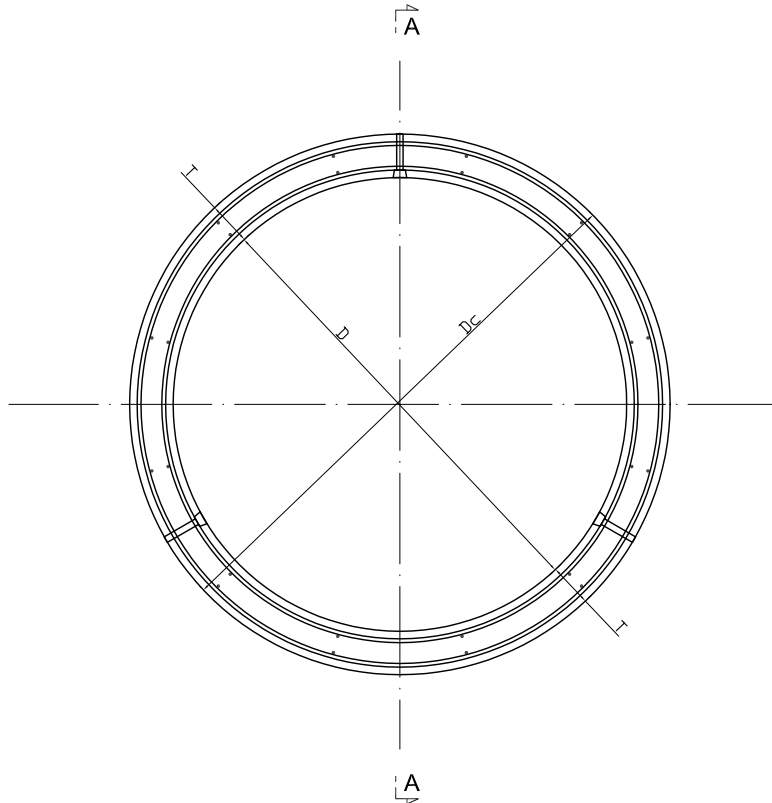
NO.	DATE	DESCRIPTIONS		BY	APPROVED
REVISIONS					
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THE DETAILED DESIGN ON HO CHI MINH CITY WATER ENVIRONMENT IMPROVEMENT PROJECT IN THE SOCIALIST REPUBLIC OF VIET NAM					
PACKAGE C INTERCEPTOR SEWER CONSTRUCTION GROUND IMPROVEMENT FOR JACKING METHOD (2) (SHAFT No.1~14)					
SCALE : 1/100					
 JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)					
 PACIFIC CONSULTANTS INTERNATIONAL					
DESIGNED SATO NOBUYUKI		CHECKED KONDO MASAMI			
DATE : JUNE 2001		DWG. No. PC - ISC - 323			

REINFORCEMENT CONCRETE JACKING PIPE (Ø1200, Ø1500, Ø2200)

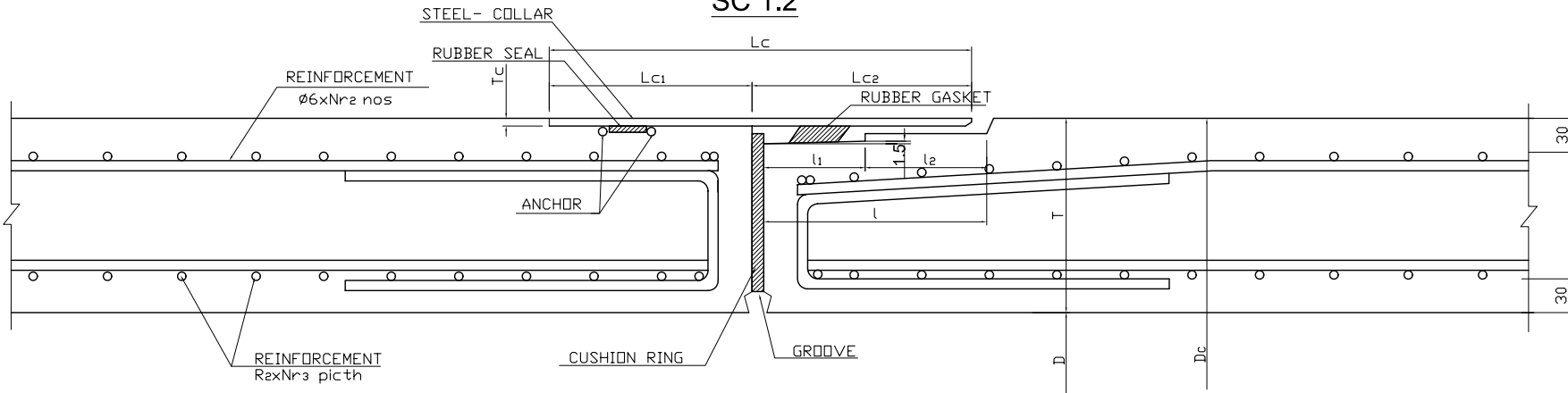
SECTION A-A
SC 1:10



SECTION B-B
SC 1:10



COUPLING DETAILS
SC 1:2



Dimensions of Pipe by Internal Diameter in mm			
D	1200	1500	2200
D1	1450	1800	2600
T	125	150	200
L	2430	2430	2430
Lc1	120	120	120
Lc2	130	130	130
Lc	250	250	250
Tc	4.5	6.0	6.0
Dc	1441	1788	2588
le	31	12.5	20
R1	42	29	34
Nr1	44	65	55
Nr2	12	16	24
R2	5	6	7
Nr3	42	65	34

NO.	DATE	DESCRIPTIONS	BY	APPRO.

REVISIONS

PROJECT MANAGEMENT UNIT FOR
HO CHI MINH CITY
WATER ENVIRONMENT IMPROVEMENT

THE DETAILED DESIGN ON HO CHI MINH CITY
WATER ENVIRONMENT IMPROVEMENT PROJECT
IN THE SOCIALIST REPUBLIC OF VIET NAM

PACKAGE C

INTERCEPTOR SEWER CONSTRUCTION

REINFORCEMENT CONCRETE JACKING PIPE

SCALE : AS SHOW

 JAPAN INTERNATIONAL COOPERATION
AGENCY (JICA)


PACIFIC CONSULTANTS INTERNATIONAL

DESIGNED	CHECKED
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DATE :	DWG. No. PC - ISC -325
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