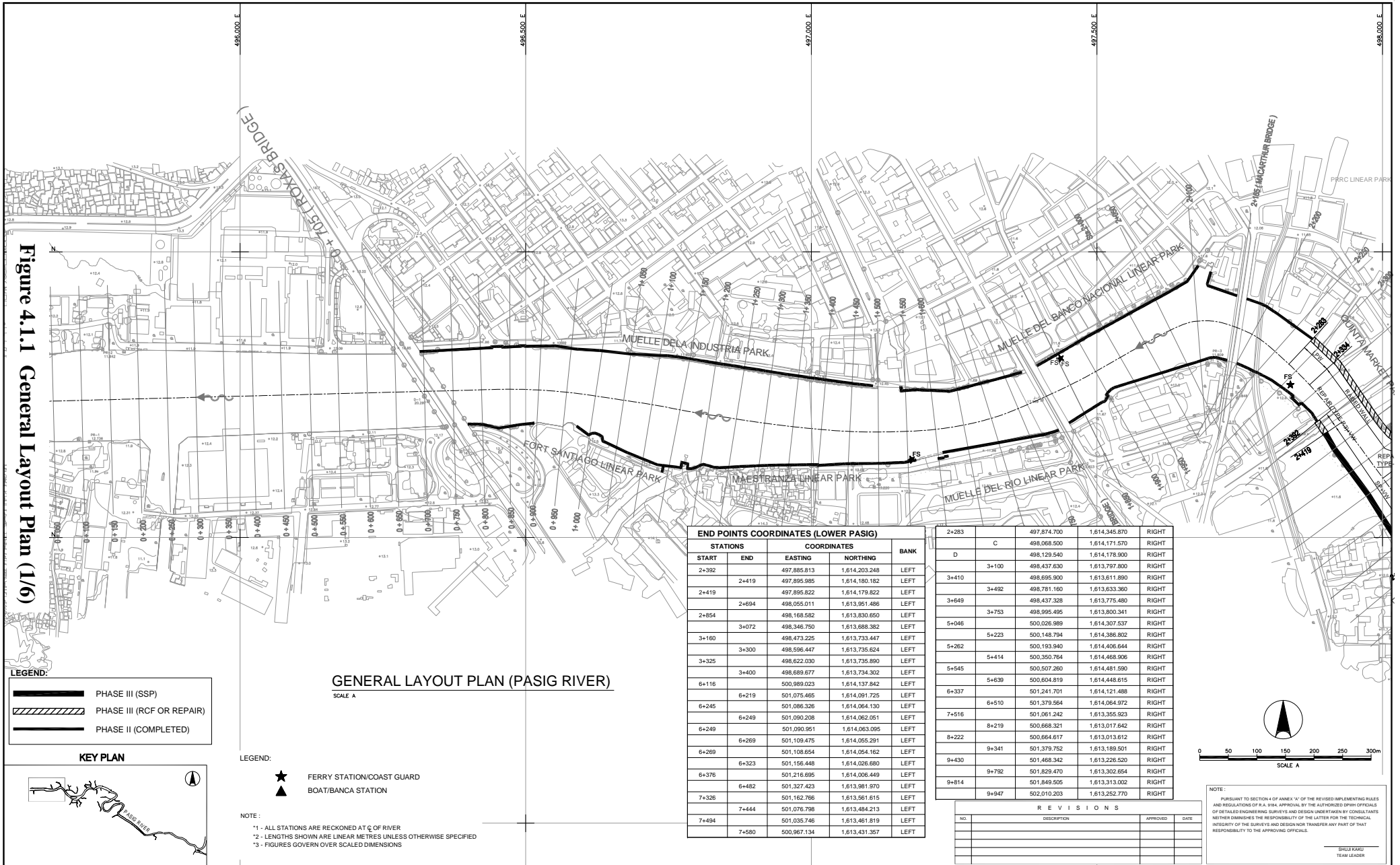


Figure 4.1.1 General Layout Plan (1/6)

Fig 4.1



GENERAL LAYOUT PLAN (PASIG RIVER)

SCALE A

LEGEND:

- PHASE III (SSP)
- PHASE III (RCF OR REPAIR)
- PHASE II (COMPLETED)

KEY PLAN

LEGEND:

- ★ FERRY STATION/COAST GUARD
- ▲ BOAT/BANCA STATION

- NOTE:**
- *1 - ALL STATIONS ARE RECKONED AT C OF RIVER
 - *2 - LENGTHS SHOWN ARE LINEAR METRES UNLESS OTHERWISE SPECIFIED
 - *3 - FIGURES GOVERN OVER SCALED DIMENSIONS

END POINTS COORDINATES (LOWER PASIG)				
STATIONS		COORDINATES		BANK
START	END	EASTING	NORTHING	
2+392		497,885.813	1,614,203.248	LEFT
	2+419	497,895.985	1,614,180.182	LEFT
2+419		497,895.822	1,614,179.822	LEFT
	2+694	498,055.011	1,613,951.486	LEFT
2+854		498,168.582	1,613,830.650	LEFT
	3+072	498,346.750	1,613,688.382	LEFT
3+160		498,473.225	1,613,733.447	LEFT
	3+300	498,596.447	1,613,735.624	LEFT
3+325		498,622.030	1,613,735.890	LEFT
	3+400	498,689.677	1,613,734.302	LEFT
6+116		500,889.023	1,614,137.842	LEFT
	6+219	501,075.465	1,614,091.725	LEFT
6+245		501,086.326	1,614,064.130	LEFT
	6+249	501,090.208	1,614,062.051	LEFT
6+249		501,090.951	1,614,063.095	LEFT
	6+269	501,109.475	1,614,055.291	LEFT
6+269		501,108.654	1,614,054.162	LEFT
	6+323	501,156.448	1,614,026.880	LEFT
6+376		501,216.695	1,614,006.449	LEFT
	6+482	501,327.423	1,613,981.970	LEFT
7+326		501,162.786	1,613,561.615	LEFT
	7+444	501,076.798	1,613,484.213	LEFT
7+494		501,035.746	1,613,461.819	LEFT
	7+580	500,967.134	1,613,431.357	LEFT

STATION	STATION	EASTING	NORTHING	BANK
2+283		497,874.700	1,614,345.870	RIGHT
	D	498,068.500	1,614,171.570	RIGHT
		498,129.540	1,614,176.900	RIGHT
	3+100	498,437.630	1,613,797.800	RIGHT
3+410		498,695.900	1,613,611.890	RIGHT
	3+492	498,781.160	1,613,633.360	RIGHT
3+649		498,437.328	1,613,775.480	RIGHT
	3+753	498,995.495	1,613,800.341	RIGHT
5+046		500,026.989	1,614,307.537	RIGHT
	5+223	500,148.794	1,614,386.802	RIGHT
5+262		500,193.940	1,614,406.644	RIGHT
	5+414	500,350.764	1,614,468.906	RIGHT
5+545		500,507.260	1,614,481.590	RIGHT
	5+639	500,604.819	1,614,448.615	RIGHT
6+337		501,241.701	1,614,121.488	RIGHT
	6+510	501,379.564	1,614,084.972	RIGHT
7+516		501,081.242	1,613,355.923	RIGHT
	8+219	500,668.321	1,613,017.642	RIGHT
8+222		500,664.617	1,613,013.612	RIGHT
	9+341	501,379.752	1,613,189.501	RIGHT
9+430		501,468.342	1,613,226.520	RIGHT
	9+792	501,829.470	1,613,302.654	RIGHT
9+814		501,849.505	1,613,313.002	RIGHT
	9+947	502,010.203	1,613,252.770	RIGHT

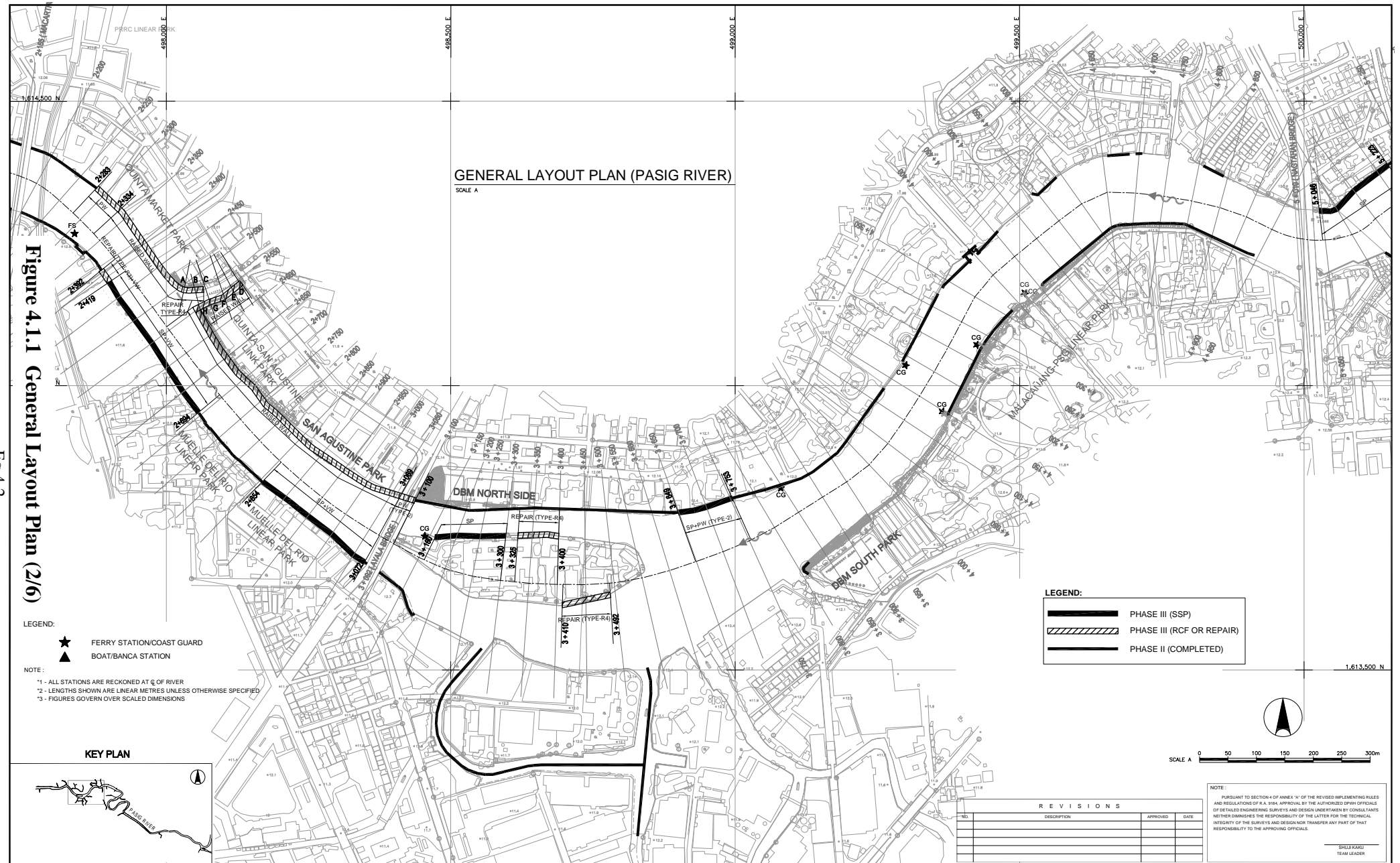
REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

NOTE:
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ENRIK KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN			REPUBLIC OF THE PHILIPPINES			PROJECT & LOCATION	SHEET CONTENTS	SHEET NO.	
CTI ENGINEERING INTERNATIONAL CO., LTD.	DESIGNED BY:	CHECKED BY:	SUBMITTED BY:	REVIEWED BY:	RECOMMENDING APPROVAL:	PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	GENERAL LAYOUT PLAN	LP-GE GL 01	
	ELJI MOKI STRUCTURAL ENGINEER	TOSHIKI KAWAKAMI THE CHECKER	SHUJI KAKU TEAM LEADER	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PERFECTO L. ZAPLAN, JR. CHIEF HYDRAULIC DIVISION BOD				PATRICK B. GATAN PROJECT DIRECTOR PWD - MFCP

Figure 4.1.1 General Layout Plan (2/6)



GENERAL LAYOUT PLAN (PASIG RIVER)
SCALE A

LEGEND:
★ FERRY STATION/COAST GUARD
▲ BOAT/BANCA STATION

NOTE:
*1 - ALL STATIONS ARE RECKONED AT Q OF RIVER
*2 - LENGTHS SHOWN ARE LINEAR METRES UNLESS OTHERWISE SPECIFIED
*3 - FIGURES GOVERN OVER SCALED DIMENSIONS

LEGEND:
 PHASE III (SSP)
 PHASE III (RCF OR REPAIR)
 PHASE II (COMPLETED)



SCALE A 0 50 100 150 200 250 300m

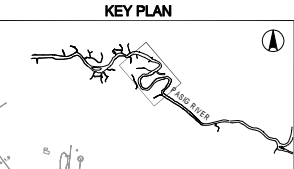
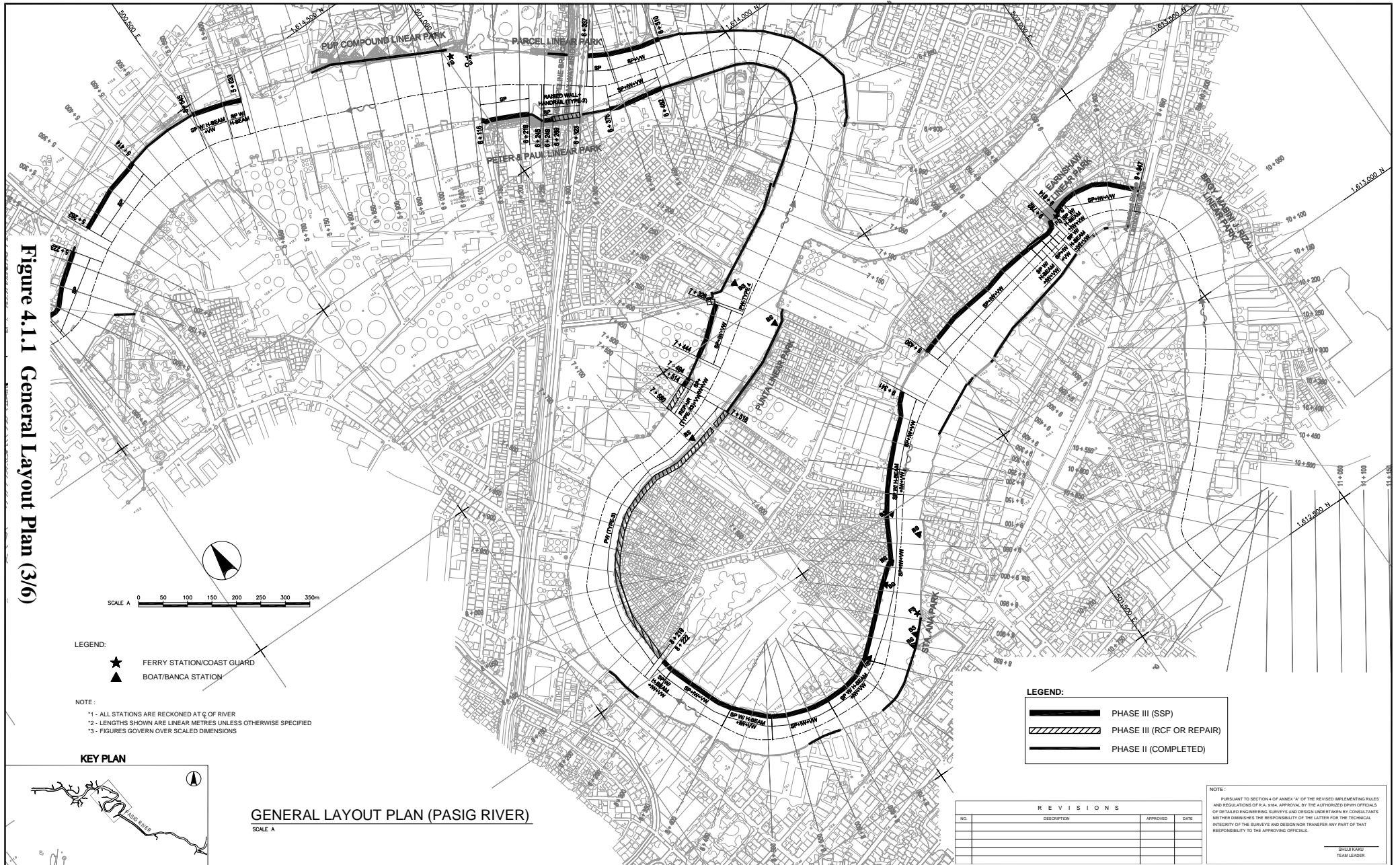
NOTE:
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SHUJI KAKU
TEAM LEADER

REVISIONS			
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CTI ENGINEERING INTERNATIONAL CO., LTD.	DESIGNED BY:	CHECKED BY:	SUBMITTED BY:	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED BY:	PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	GENERAL LAYOUT PLAN LOWER PASIG	
	ELJI MOKI STRUCTURAL ENGINEER	TOSHIKI KAWAKAMI THE CHECKER	SHUJI KAKU TEAM LEADER		PERFECTO L. ZAPLAN, JR. CHIEF HYDRAULIC DIVISION BOD	PATRICK B. GATAN PROJECT DIRECTOR PMO - MFCP	GILBERTO S. REYES DIRECTOR BOD			

Figure 4.1.1 General Layout Plan (3/6)

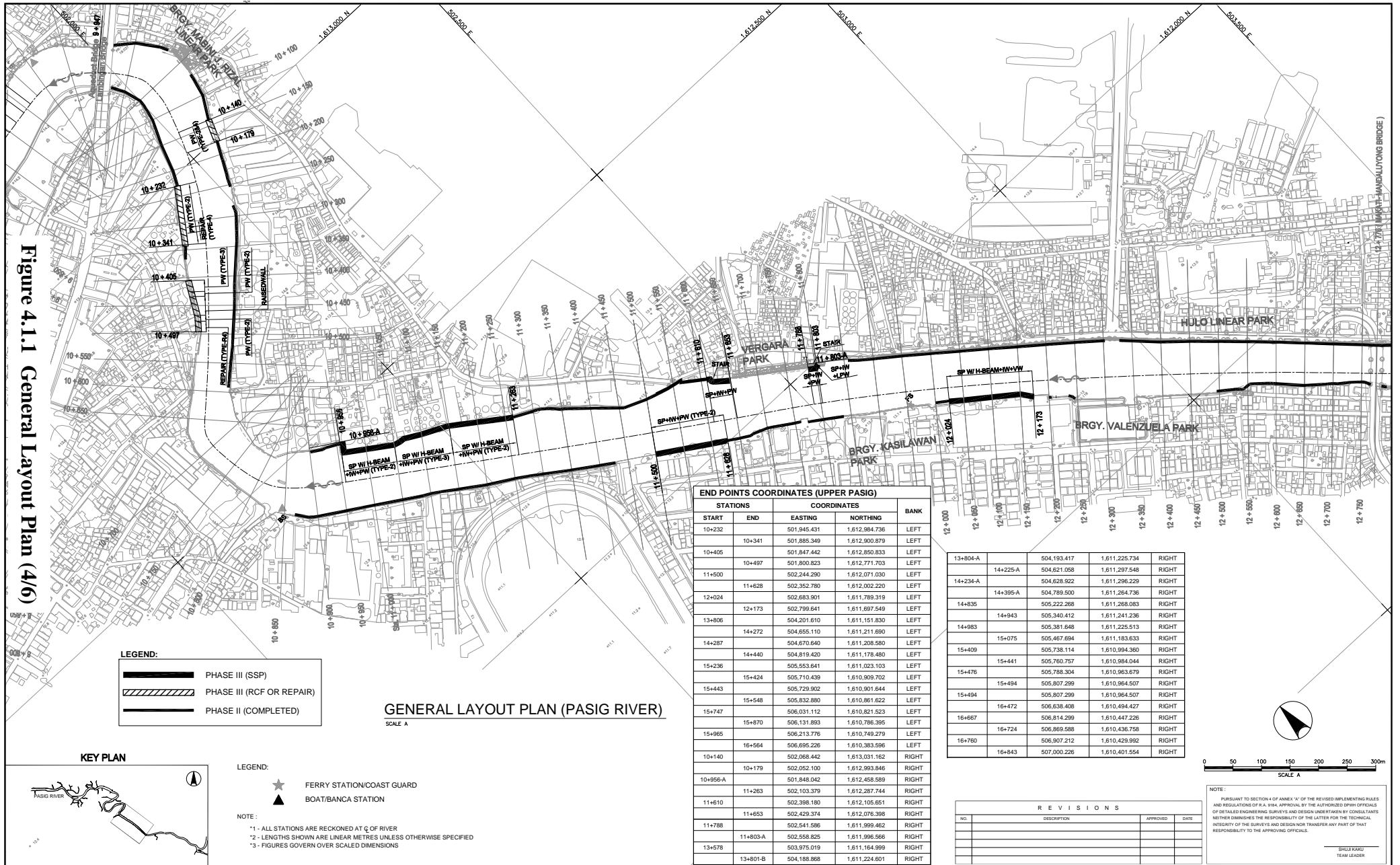


GENERAL LAYOUT PLAN (PASIG RIVER)
SCALE A

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN			REPUBLIC OF THE PHILIPPINES			PROJECT & LOCATION	SHEET CONTENTS	SHEET NO.
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	ELJI MOKI STRUCTURAL ENGINEER	TOSHIKI KAWAKAMI THE CHECKER		SHUJI KAKU TEAM LEADER	PERFECTO L. ZAPLAN, JR. CHIEF HYDRAULIC DIVISION BOD			

Figure 4.1.1 General Layout Plan (4/6)

Fig 4.4



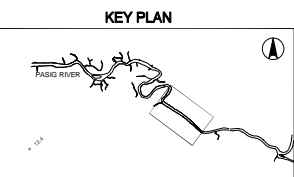
END POINTS COORDINATES (UPPER PASIG)				
STATIONS	COORDINATES		BANK	
START	END	EASTING	NORTHING	
10+232	10+341	501,945.431	1,612,984.736	LEFT
10+405	10+497	501,885.349	1,612,900.879	LEFT
11+500	11+628	501,847.442	1,612,850.833	LEFT
12+024	12+173	501,800.823	1,612,771.703	LEFT
13+806	14+272	502,244.290	1,612,071.030	LEFT
14+287	14+440	502,352.780	1,612,002.220	LEFT
15+236	15+424	502,683.901	1,611,789.319	LEFT
15+443	15+548	504,201.610	1,611,151.830	LEFT
15+747	15+870	504,655.110	1,611,211.690	LEFT
15+965	16+564	504,670.640	1,611,208.580	LEFT
10+140	10+179	504,819.420	1,611,178.480	LEFT
10+956-A	11+263	505,553.641	1,611,023.103	LEFT
11+610	11+653	505,710.439	1,610,909.702	LEFT
11+788	11+803-A	505,729.902	1,610,901.644	LEFT
13+578	13+801-B	506,031.112	1,610,821.523	LEFT
13+804-A	14+225-A	506,131.893	1,610,786.395	LEFT
14+635	14+943	506,213.776	1,610,749.279	LEFT
14+833	15+075	506,695.226	1,610,383.596	LEFT
14+835	14+935-A	502,068.442	1,613,031.162	RIGHT
14+835	14+943	502,052.100	1,613,993.846	RIGHT
14+835	14+943	501,848.042	1,612,458.589	RIGHT
14+835	14+943	502,103.379	1,612,287.744	RIGHT
14+835	14+943	502,398.180	1,612,105.651	RIGHT
14+835	14+943	502,429.374	1,612,076.398	RIGHT
14+835	14+943	502,541.586	1,611,999.462	RIGHT
14+835	14+943	502,558.825	1,611,996.566	RIGHT
14+835	14+943	503,975.019	1,611,164.909	RIGHT
14+835	14+943	504,188.868	1,611,224.601	RIGHT
14+835	14+943	504,193.417	1,611,225.734	RIGHT
14+835	14+943	504,621.058	1,611,297.548	RIGHT
14+835	14+943	504,628.922	1,611,296.229	RIGHT
14+835	14+943	504,789.500	1,611,284.736	RIGHT
14+835	14+943	505,222.268	1,611,268.083	RIGHT
14+835	14+943	505,340.412	1,611,241.236	RIGHT
14+835	14+943	505,381.648	1,611,225.513	RIGHT
14+835	14+943	505,467.694	1,611,183.633	RIGHT
14+835	14+943	505,738.114	1,610,994.360	RIGHT
14+835	14+943	505,780.757	1,610,984.044	RIGHT
14+835	14+943	505,788.304	1,610,963.679	RIGHT
14+835	14+943	505,807.299	1,610,964.507	RIGHT
14+835	14+943	505,807.299	1,610,964.507	RIGHT
14+835	14+943	506,638.408	1,610,494.427	RIGHT
14+835	14+943	506,614.289	1,610,447.226	RIGHT
14+835	14+943	506,869.599	1,610,436.758	RIGHT
14+835	14+943	506,907.212	1,610,429.992	RIGHT
14+835	14+943	507,000.226	1,610,401.554	RIGHT

STATIONS	COORDINATES		BANK	
START	END	EASTING	NORTHING	
13+804-A	14+225-A	504,193.417	1,611,225.734	RIGHT
14+234-A	14+395-A	504,621.058	1,611,297.548	RIGHT
14+435	14+943	504,628.922	1,611,296.229	RIGHT
14+835	14+943	504,789.500	1,611,284.736	RIGHT
14+835	14+943	505,222.268	1,611,268.083	RIGHT
14+835	14+943	505,340.412	1,611,241.236	RIGHT
14+835	14+943	505,381.648	1,611,225.513	RIGHT
14+835	14+943	505,467.694	1,611,183.633	RIGHT
14+835	14+943	505,738.114	1,610,994.360	RIGHT
14+835	14+943	505,780.757	1,610,984.044	RIGHT
14+835	14+943	505,788.304	1,610,963.679	RIGHT
14+835	14+943	505,807.299	1,610,964.507	RIGHT
14+835	14+943	505,807.299	1,610,964.507	RIGHT
14+835	14+943	506,638.408	1,610,494.427	RIGHT
14+835	14+943	506,614.289	1,610,447.226	RIGHT
14+835	14+943	506,869.599	1,610,436.758	RIGHT
14+835	14+943	506,907.212	1,610,429.992	RIGHT
14+835	14+943	507,000.226	1,610,401.554	RIGHT

LEGEND:

- PHASE III (SSP)
- PHASE III (RCF OR REPAIR)
- PHASE II (COMPLETED)

GENERAL LAYOUT PLAN (PASIG RIVER)
SCALE A



LEGEND:

- FERRY STATION/COAST GUARD
- BOAT/BANCA STATION

NOTE:

- *1 - ALL STATIONS ARE RECKONED AT C OF RIVER
- *2 - LENGTHS SHOWN ARE LINEAR METRES UNLESS OTHERWISE SPECIFIED
- *3 - FIGURES GOVERN OVER SCALED DIMENSIONS

REVISIONS

NO.	DESCRIPTION	APPROVED	DATE

NOTE:
PURSUANT TO SECTION 4 OF ANNEX 'A' OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 558, APPROVAL BY THE AUTHORIZED SPIN OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGN UNDERTAKEN BY CONSULTANTS NEITHER CONFERRES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGN NOR TRANSFERS ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

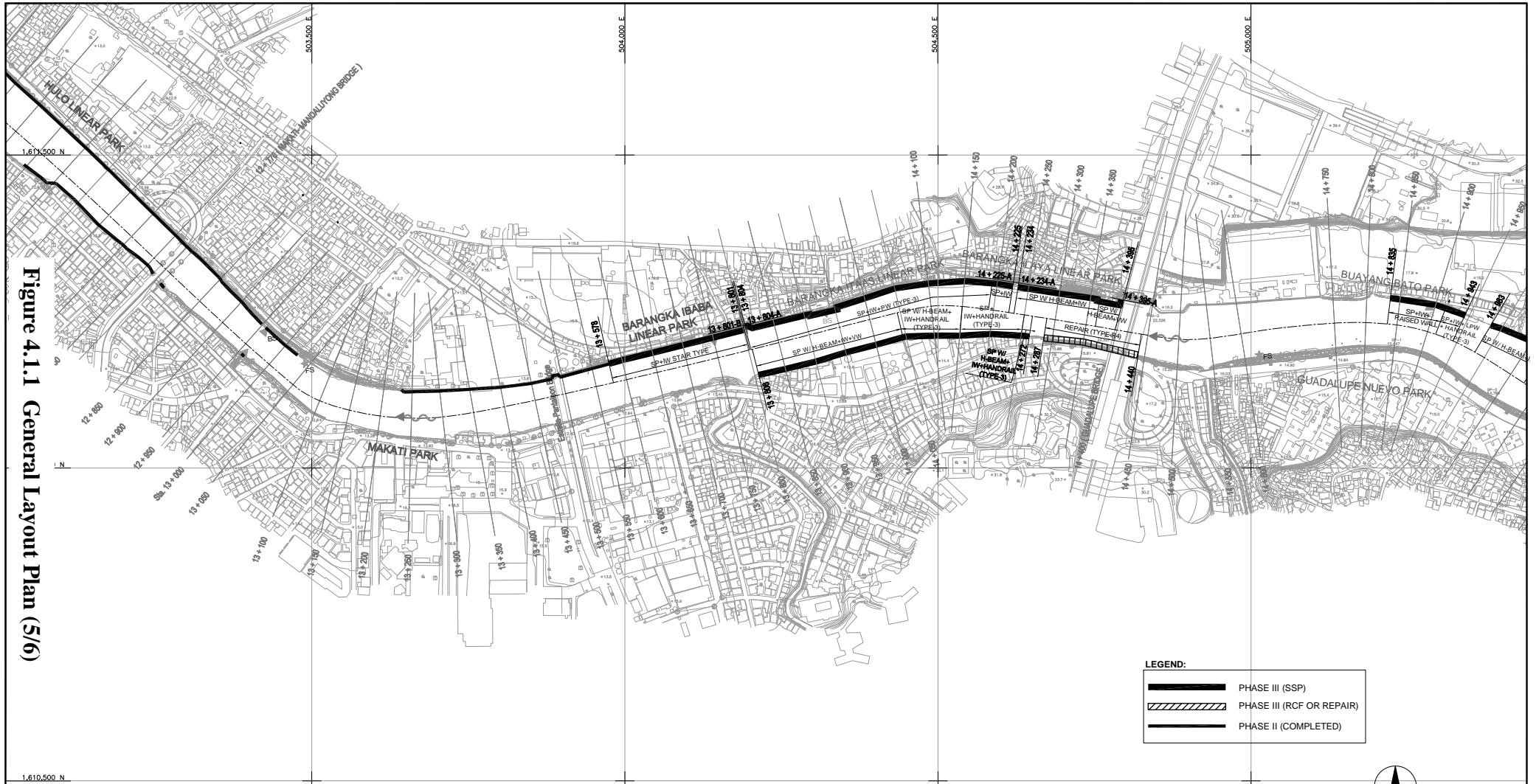
SCALE A

0 50 100 150 200 250 300m

REVISIONS

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CTI ENGINEERING INTERNATIONAL CO., LTD.	DESIGNED BY:	CHECKED BY:	SUBMITTED BY:	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	REVIEWED BY:	RECOMMENDING APPROVAL:		APPROVED BY:		PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	GENERAL LAYOUT PLAN UPPER PASIG	UP-GE GL 01
	ELJI MOKI STRUCTURAL ENGINEER	TOSHIKI KAWAKAMI THE CHECKER	SHUJI KAKU TEAM LEADER		PERFECTO L. ZAPLAN, JR. CHIEF HYDRAULIC DIVISION BOD	PATRICK B. GATAN PROJECT DIRECTOR PAO - MFCP	GILBERTO S. REYES DIRECTOR BOD	RAOUL C. ASSIS UNDERSECRETARY FOR TECHNICAL SERVICES	ROGELIO L. SINGSON SECRETARY			

Figure 4.1.1 General Layout Plan (S/6)



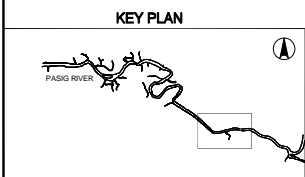
LEGEND:

- PHASE III (SSP)
- PHASE III (RCF OR REPAIR)
- PHASE II (COMPLETED)



SCALE A
0 50 100 150 200 250 300m

GENERAL LAYOUT PLAN (PASIG RIVER)
SCALE A



- LEGEND:**
- FERRY STATION/COAST GUARD
 - BOAT/BANCA STATION
- NOTE:**
- *1 - ALL STATIONS ARE RECKONED AT C OF RIVER
 - *2 - LENGTHS SHOWN ARE LINEAR METRES UNLESS OTHERWISE SPECIFIED
 - *3 - FIGURES GOVERN OVER SCALED DIMENSIONS

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

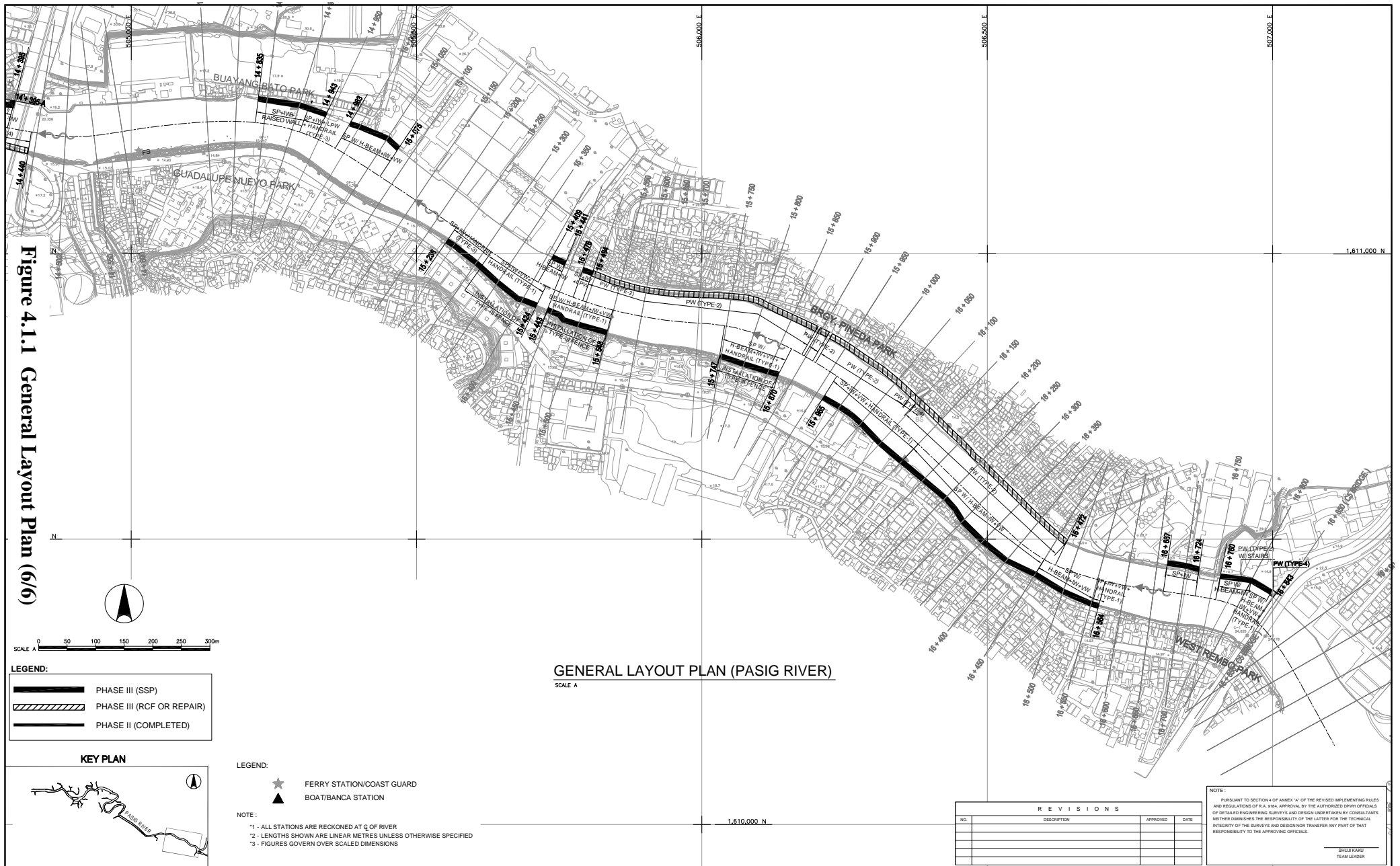
NOTE:
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SHUJI KAKU
TEAM LEADER

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CTI ENGINEERING INTERNATIONAL CO., LTD.	DESIGNED BY:	CHECKED BY:	SUBMITTED BY:	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	REVIEWED BY:	RECOMMENDING APPROVAL:		APPROVED BY:		PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	GENERAL LAYOUT PLAN UPPER PASIG	
	ELJI MOKI STRUCTURAL ENGINEER	TOSHIKI KAWAKAMI THE CHECKER	SHUJI KAKU TEAM LEADER		PERFECTO L. ZAPLAN, JR. CHIEF HYDRAULIC DIVISION BOD	PATRICK B. GATAN PROJECT DIRECTOR PMD - MFCP	GILBERTO S. REYES DIRECTOR BOD	RAUL C. ASSIS UNDERSECRETARY FOR TECHNICAL SERVICES	ROGELIO L. SINGSON SECRETARY			

Figure 4.1.1 General Layout Plan (6/6)

Fig 4.6



REVISIONS			
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SHUJI KAKU
TEAM LEADER

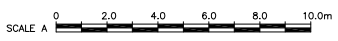
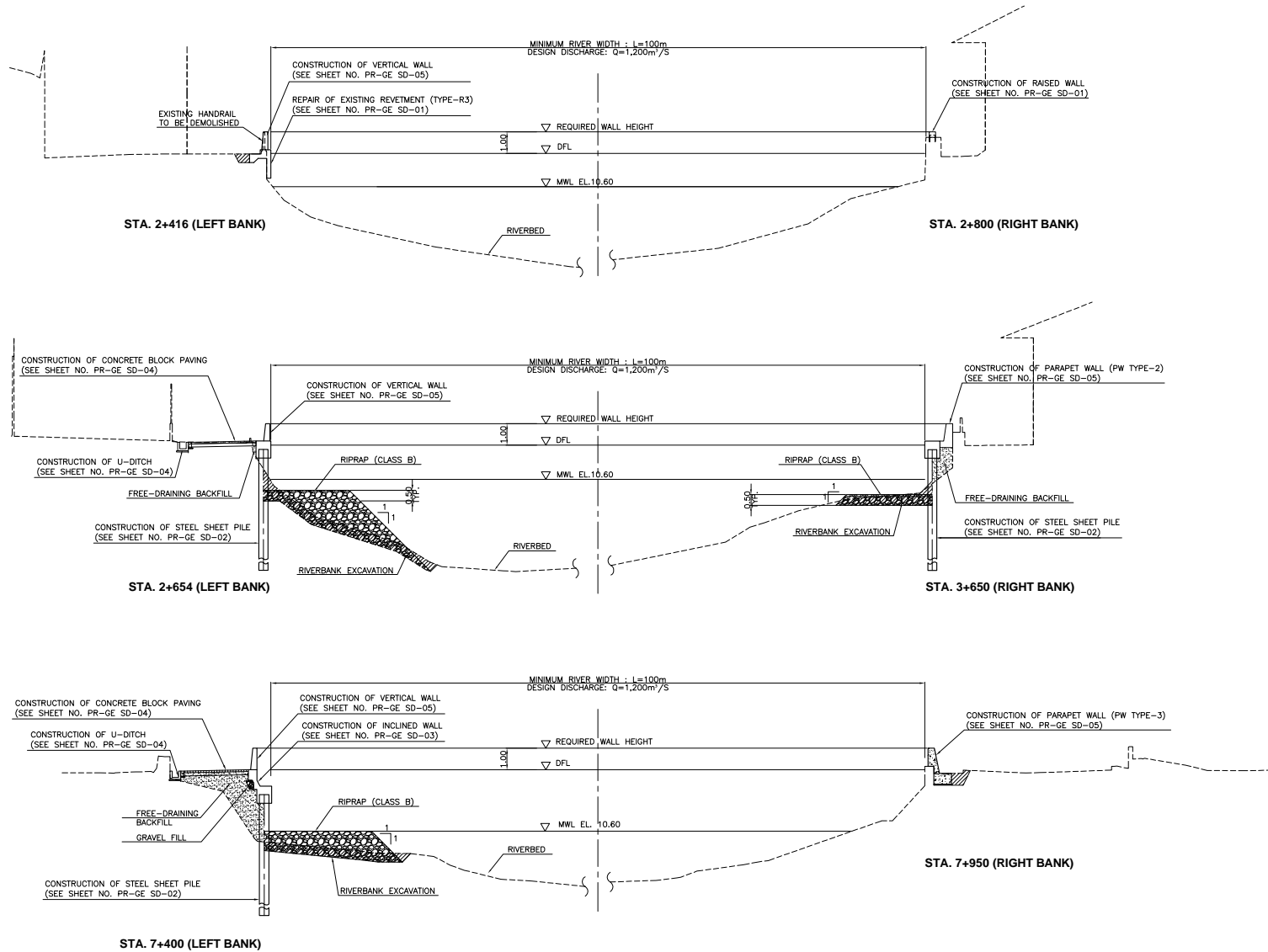
JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN		
DESIGNED BY: EJJI MOKI STRUCTURAL ENGINEER	CHECKED BY: TOSHIKI KAWAKAMI THE CHECKER	SUBMITTED BY: SHUJI KAKU TEAM LEADER

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS

REPUBLIC OF THE PHILIPPINES		PROJECT & LOCATION	SHEET CONTENTS	SHEET NO.
REVIEWED BY: PERFECTO L. ZAPLAN, JR. CHIEF HYDRAULIC DIVISION BOD	RECOMMENDING APPROVAL: PATRICK B. GATAN PROJECT DIRECTOR PMD - MFCP	APPROVED BY: ROGELIO L. SINGSON SECRETARY	PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), UPPER PASIG	UP-GE GL 03
GILBERTO S. REYES DIRECTOR BOD	RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES			

PROJECT & LOCATION	SHEET CONTENTS	SHEET NO.
PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	GENERAL LAYOUT PLAN UPPER PASIG	UP-GE GL 03

Figure 4.1.2 Typical Cross Section of Revetment (1/2)



TYPICAL CROSS SECTION OF REVETMENT (LOWER PASIG)
SCALE : A

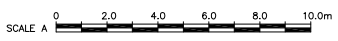
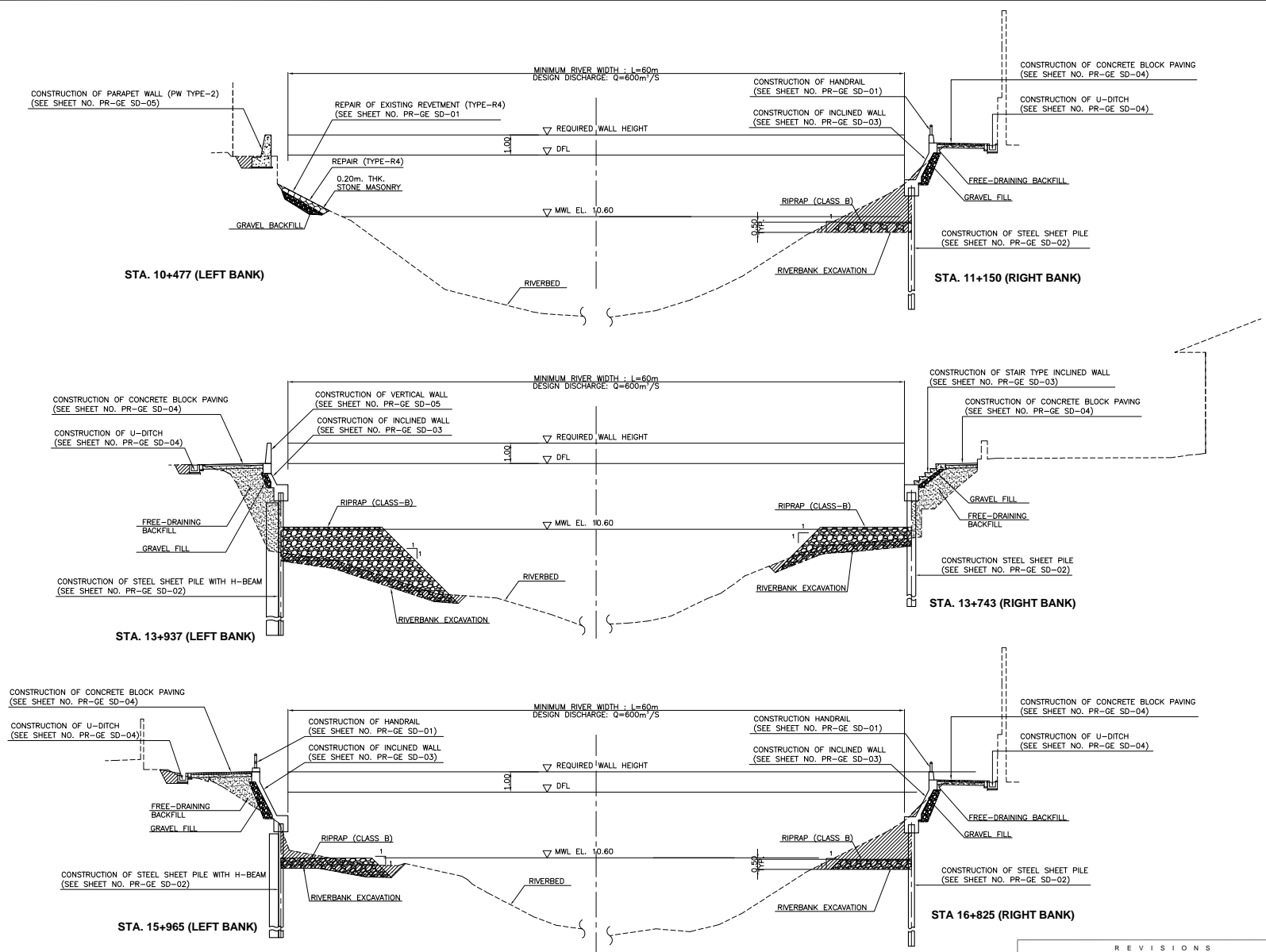
REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

NOTE:
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SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN			REPUBLIC OF THE PHILIPPINES			PROJECT & LOCATION	SHEET CONTENTS	SHEET NO.
CTI ENGINEERING INTERNATIONAL CO., LTD.	DESIGNED BY:	CHECKED BY:	SUBMITTED BY:	REVIEWED BY:	RECOMMENDING APPROVAL:	PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	TYPICAL CROSS SECTION OF REVETMENT (1/2) PASIG RIVER	
	ELJI MOKI <small>STRUCTURAL ENGINEER</small>	TOSHIKI KAWAKAMI <small>THE CHECKER</small>	SHUJI KAKU <small>TEAM LEADER</small>	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	PERFECTO L. ZAPLAN, JR. <small>CHIEF HYDRAULIC DIVISION BOD</small>			

Figure 4.1.2 Typical Cross Section of Revetment (2/2)



TYPICAL CROSS SECTION OF REVETMENT (UPPER PASIG)
SCALE : A

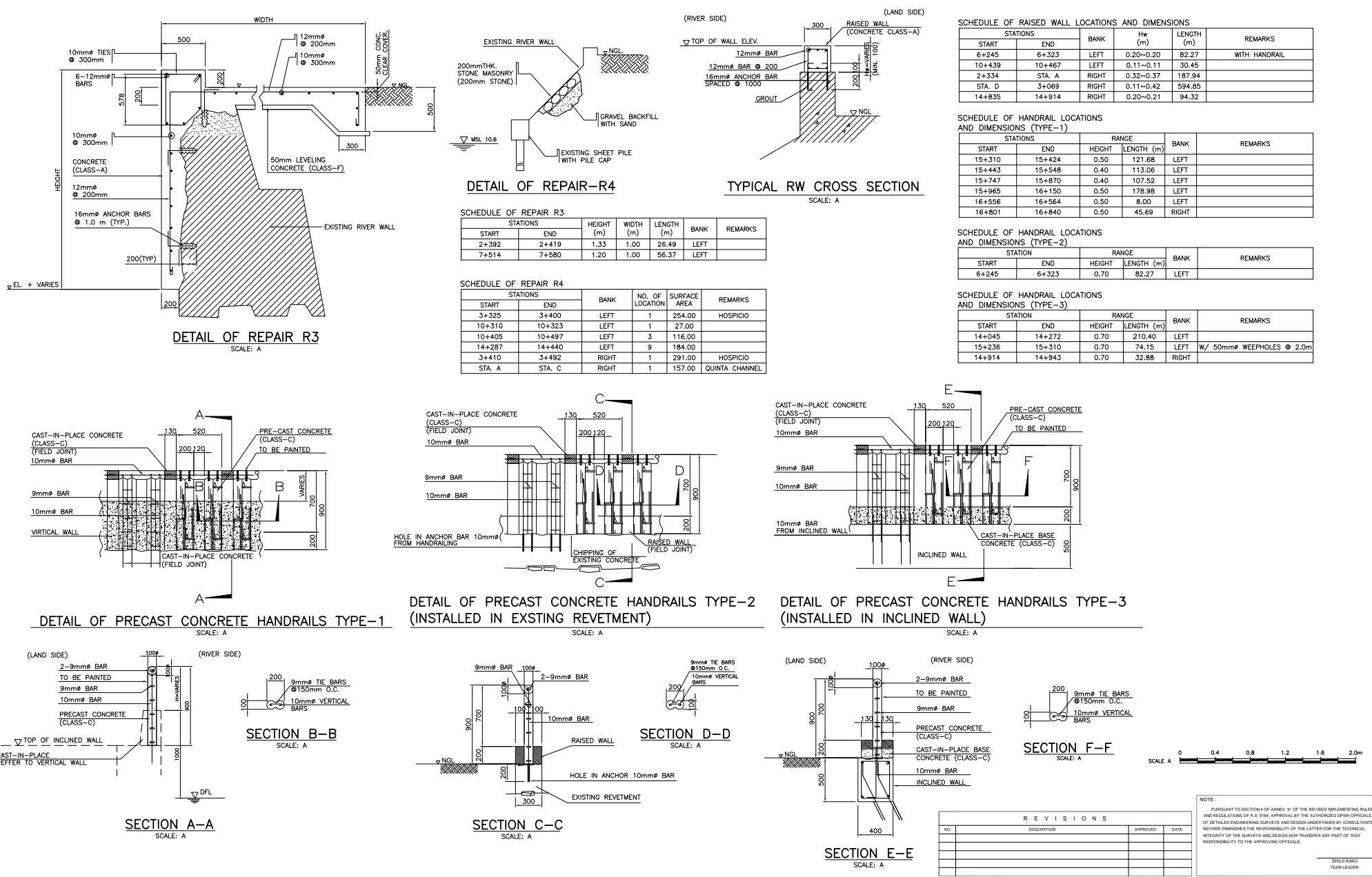
REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

NOTE:
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SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN CTI ENGINEERING INTERNATIONAL CO., LTD.			REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS			PROJECT & LOCATION PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA		SHEET CONTENTS TYPICAL CROSS SECTION OF REVETMENT (2/2) PASIG RIVER	SHEET NO. PR-GE TR 02
DESIGNED BY: EJI MOKI <small>STRUCTURAL ENGINEER</small>	CHECKED BY: TOSHIKI KAWAKAMI <small>THE CHECKER</small>	SUBMITTED BY: SHUJI KAKU <small>TEAM LEADER</small>	REVIEWED BY: PERFECTO L. ZAPLAN, JR. <small>CHIEF HYDRAULIC DIVISION BOD</small>	RECOMMENDING APPROVAL: PATRICK B. GATAN <small>PROJECT DIRECTOR PMO - MFCP</small>	GILBERTO S. REYES <small>DIRECTOR BOD</small>	APPROVED BY: RAUL C. ASIS <small>UNDERSECRETARY FOR TECHNICAL SERVICES</small>	ROGELIO L. SINGSON <small>SECRETARY</small>		

Figure 4.1.3 Standard River Structural Details (1/6)
Fig 4.9



SCHEDULE OF RAISED WALL LOCATIONS AND DIMENSIONS

STATIONS	BANK	Hw (m)	LENGTH (m)	REMARKS	
6+245	6+323	LEFT	0.20~0.20	82.27	WITH HANDRAIL
10+439	10+467	LEFT	0.11~0.11	30.45	
2+334	STA. A	RIGHT	0.32~0.37	187.94	
STA. D	3+069	RIGHT	0.11~0.42	594.85	
14+835	14+914	RIGHT	0.20~0.21	94.32	

SCHEDULE OF HANDRAIL LOCATIONS AND DIMENSIONS (TYPE-1)

STATIONS	RANGE	HEIGHT	LENGTH (m)	BANK	REMARKS
15+310	15+424	0.50	121.68	LEFT	
15+443	15+548	0.40	113.06	LEFT	
15+747	15+870	0.40	107.52	LEFT	
15+965	16+150	0.50	178.98	LEFT	
16+556	16+564	0.50	8.00	LEFT	
16+801	16+840	0.50	45.69	RIGHT	

SCHEDULE OF HANDRAIL LOCATIONS AND DIMENSIONS (TYPE-2)

STATION	RANGE	HEIGHT	LENGTH (m)	BANK	REMARKS
6+245	6+323	0.70	82.27	LEFT	

SCHEDULE OF HANDRAIL LOCATIONS AND DIMENSIONS (TYPE-3)

STATION	RANGE	HEIGHT	LENGTH (m)	BANK	REMARKS
14+045	14+272	0.70	210.40	LEFT	
15+236	15+310	0.70	74.15	LEFT	W/ 50mm ϕ WEEPHOLES ϕ 2.0m
14+914	14+943	0.70	32.88	RIGHT	

REVISIONS

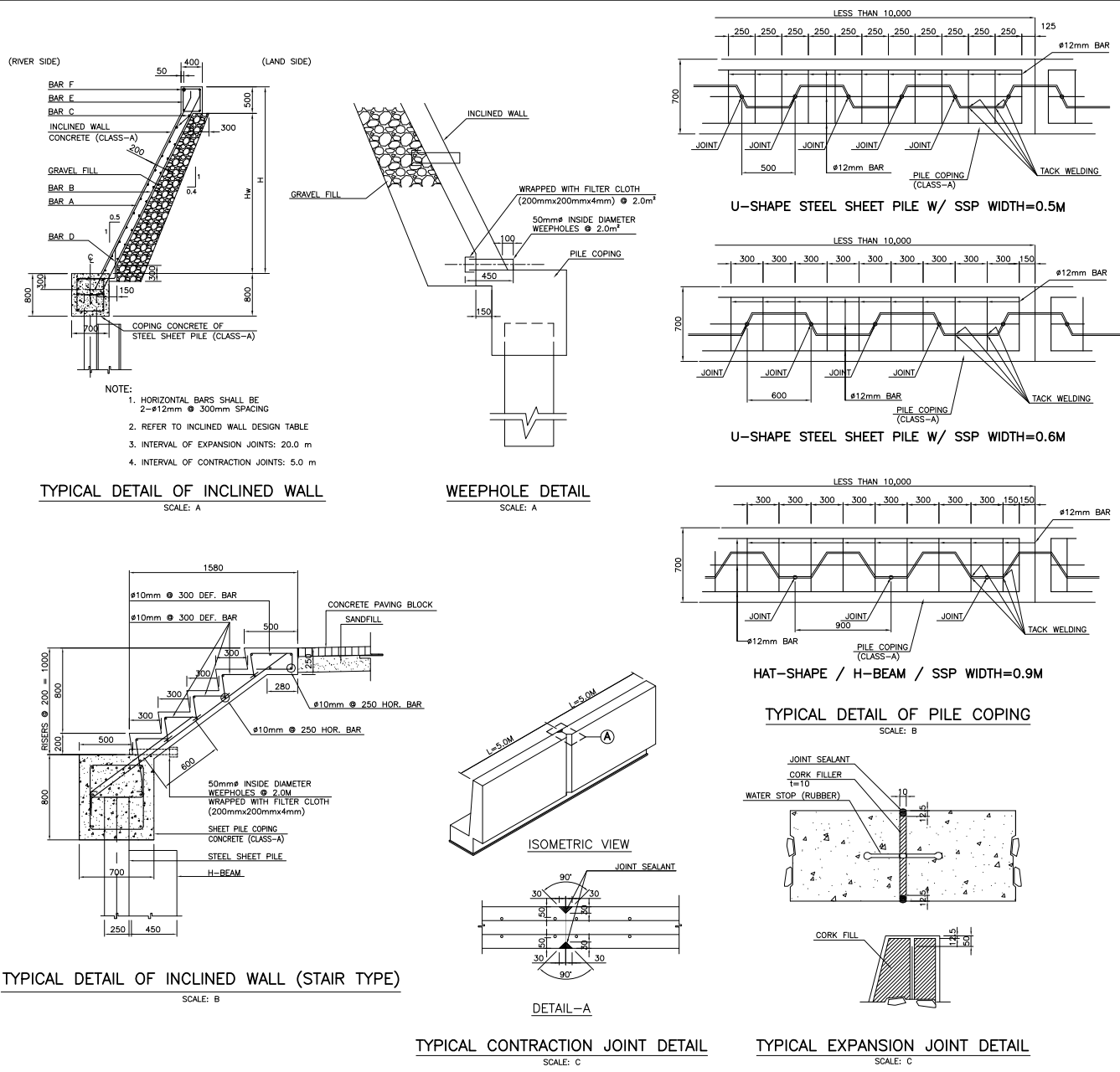
NO.	DESCRIPTION	APPROVED	DATE

NOTE:
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TEAM LEADER

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Figure 4.1.3 Standard River Structural Details (3/6)
Fig 4.11



SCHEDULE OF INCLINED WALL LOCATIONS AND DIMENSIONS

STATIONS	RANGE	SLOPE OF BACKWALL H:V	ADJOINING MEMBERS	BANK	REMARKS		
						FROM	TO
6+376	6+482	0.32~0.32	114.40	0.5:1	VW,SW	PC	LEFT
7+326	7+444	0.26~0.27	121.28	0.5:1	VW,SW	PC	LEFT
7+494	7+514	0.27~0.27	19.42	0.5:1	VW,SW	PC	LEFT
11+500	11+628	0.41~0.42	128.49	0.5:1	PW,FC	PC	LEFT
12+024	12+173	0.44~0.45	148.38	0.5:1	VW,SW	PC	LEFT
13+806	14+043	0.54~0.55	237.55	0.5:1	VW,SW	PC	LEFT
14+043	14+045	0.55~1.56	6.41	0.5:1	RL,SW	PC	LEFT
14+045	14+272	1.56~1.56	210.40	0.5:1	RL,SW	PC	LEFT
15+236	15+310	1.63~1.63	74.15	0.5:1	RL,SW	PC	LEFT
15+310	15+311	1.23~1.63	1.60	0.5:1	VW,SW	PC	LEFT
15+311	15+424	1.23~1.23	120.08	0.5:1	VW,SW	PC	LEFT
15+443	15+548	0.94~0.94	113.06	0.5:1	VW,SW	PC	LEFT
15+747	15+870	0.95~0.96	107.52	0.5:1	VW,SW	PC	LEFT
15+965	15+973	1.27~1.67	8.04	0.5:1	VW,SW	PC	LEFT
15+973	16+142	1.27~1.28	162.94	0.5:1	VW,SW	PC	LEFT
16+142	16+150	1.28~0.88	8.01	0.5:1	VW,SW	PC	LEFT
16+150	16+450	0.88~0.90	310.41	0.5:1	VW,SW	PC	LEFT
16+450	16+454	0.70~0.90	4.00	0.5:1	VW,SW	PC	LEFT
16+454	16+552	0.70~0.70	109.73	0.5:1	VW,SW	PC	LEFT
16+552	16+564	0.70~1.30	11.82	0.5:1	VW,SW	PC	LEFT
8+222	9+341	0.31~0.38	1048.65	0.5:1	VW,SW	PC	RIGHT
9+430	9+792	0.39~0.40	380.67	0.5:1	VW,SW	PC	RIGHT
9+814	9+947	0.41~0.41	187.85	0.5:1	VW,SW	PC	RIGHT
10+956-A	11+263	0.37~0.39	327.85	0.5:1	PW,SW	PC	RIGHT
11+610	11+653	0.41~0.41	43.65	0.5:1	SW	PC	RIGHT
11+788	11+803-A	0.42~0.42	20.46	0.5:1	SW	PC	RIGHT
13+578	13+801-B	1.03~1.04	226.75	1.0:0.7	SW	PC	RIGHT STAIR TYPE
13+804-A	14+225-A	0.54~0.56	448.58	0.5:1	SW	PC	RIGHT
14+234-B	14+365	0.56~0.57	138.22	0.5:1	SW	PC	RIGHT
14+835	14+943	0.60~0.61	125.83	0.5:1	SW	PC	RIGHT
14+983	15+075	0.61~0.62	96.55	0.5:1	VW,SW	PC	RIGHT
15+409	15+441	1.64~1.64	25.10	0.5:1	SW	PC	RIGHT
15+476	15+494	0.64~0.64	20.17	0.5:1	SW	PC	RIGHT
16+667	16+724	0.71~0.71	56.26	0.5:1	SW	PC	RIGHT
16+760	16+801	1.32~1.32	56.06	0.5:1	SW	PC	RIGHT
16+801	16+840	1.32~1.32	45.69	0.5:1	VW,SW	PC	RIGHT

*ADJOINING MEMBERS:
 VW - VERTICAL WALL
 PW - PARAPET WALL
 SW - SIDEWALK (CONCRETE BLOCK PAVING)
 PC - PILE COPING
 RL - RAILING
 FC - FILLER CONCRETE
 EPIC - EXISTING PILE CAP

SCHEDULE OF INCLINED WALL REINFORCEMENT

HEIGHT RANGE	REINFORCEMENT	REINFORCEMENT													
		BAR A	BAR B	BAR C	BAR D	BAR E	BAR F	BAR A	BAR B	BAR C	BAR D	BAR E	BAR F		
Hw (m)	H (m)	DIA (mm)	SPACING (mm)	DIA (mm)	SPACING (mm)	DIA (mm)	SPACING (mm)	DIA (mm)	SPACING (mm)	DIA (mm)	SPACING (mm)	DIA (mm)	SPACING (mm)	DIA (mm)	SPACING (mm)
0.0~1.5	0.5~2.0	16	250	16	250	12	300	12	250	12	250	12	125	12	-
1.5~2.5	2.0~3.0	16	125	16	125	12	300	12	125	12	125	12	125	12	-
2.5~2.75	3.0~3.25	16	125	16	125	12	300	12	125	12	125	12	125	12	-
2.75~3.0	3.25~3.5	20	125	20	125	12	300	12	125	12	125	12	125	12	-

SCALE A: 0 0.8 1.6 2.4 3.2 4.0m
 SCALE B: 0 0.4 0.8 1.2 1.6 2.0m
 SCALE C: 0 0.2 0.4 0.6 0.8 1.0m

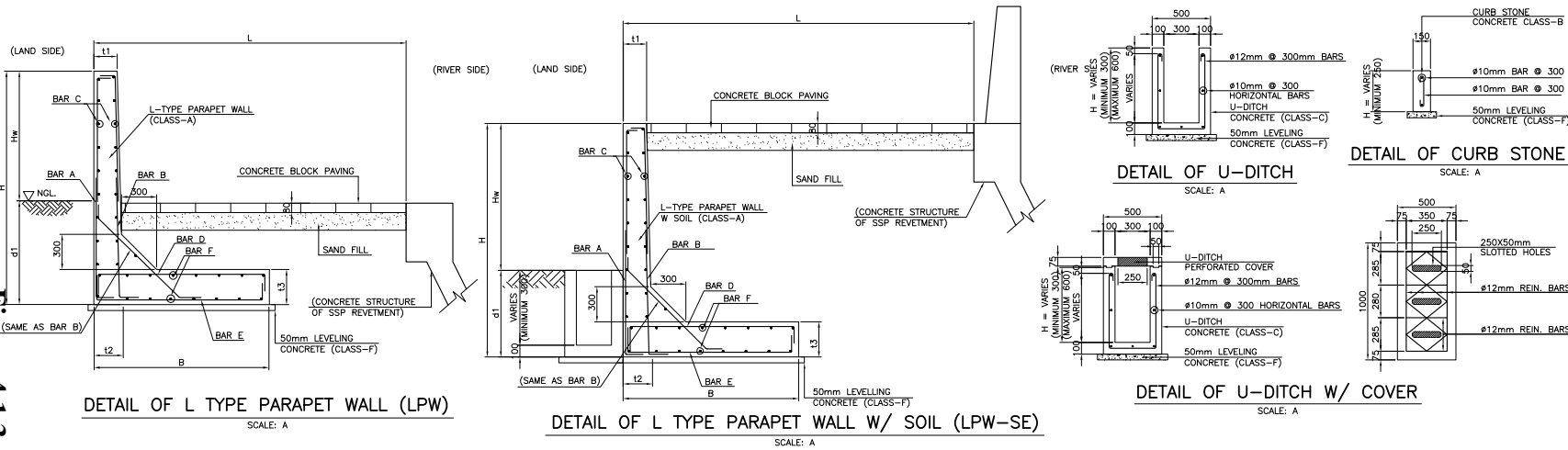
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DESIGNED BY: ELJI MOKI (STRUCTURAL ENGINEER)	CHECKED BY: TOSHIKI KAWAKAMI (THE CHECKER)	SUBMITTED BY: SHUJI KAKU (TEAM LEADER)	APPROVED BY: ROGELIO L. SINGSON (SECRETARY)			SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE UNDERSECRETARY RAUL C. ASSIS (UNDER SECRETARY FOR TECHNICAL SERVICES)			SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY		SHEET NO.			

Figure 4.1.3 Standard River Structural Details (4/6)

Fig 4.12



SCHEDULE OF U-DITCH LOCATIONS AND DIMENSIONS. Table with columns for Station, Range, Length (m), Bank, and Remarks.

SCHEDULE OF LPW SIZE AND REINFORCEMENT (CASE OF L > 2.0m)

SCHEDULE OF LPW SIZE AND REINFORCEMENT (CASE OF L > 2.0m). Table showing dimensions and reinforcement specifications for different height ranges.

SCHEDULE OF LPW-SE SIZE AND REINFORCEMENTS

SCHEDULE OF LPW-SE SIZE AND REINFORCEMENTS. Table showing dimensions and reinforcement specifications for different height ranges.

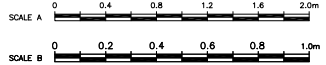
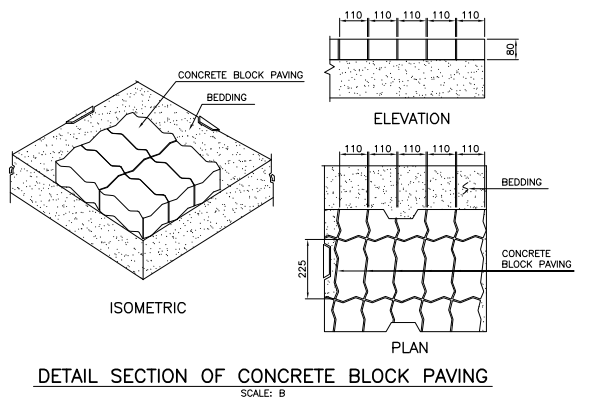
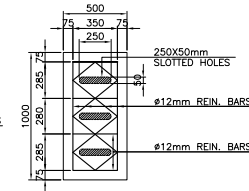
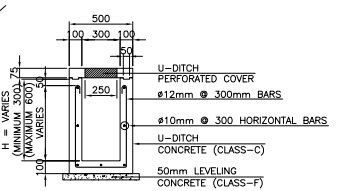
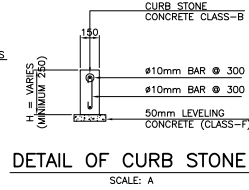
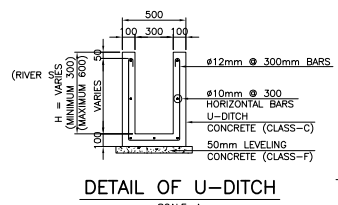
NOTE: HORIZONTAL ALIGNMENTS OF L-TYPE PARAPET WALLS WAS BASED ON THE ALIGNMENT OF EXISTING RIVER SHORELINE AND OFFSET DISTANCE SHOWN IN THE DRAWINGS ARE FOR ESTIMATES ONLY. ACTUAL ALIGNMENT SHALL BE CONFIRMED BY THE ENGINEER DURING CONSTRUCTION.

SCHEDULE OF L TYPE PARAPET WALL (LPW) LOCATIONS AND DIMENSIONS

SCHEDULE OF L TYPE PARAPET WALL (LPW) LOCATIONS AND DIMENSIONS. Table with columns for Station, Range, Adjoining Members, Width of Sidewalk, Bank, and Remarks.

SCHEDULE OF L TYPE PARAPET WALL WITH SOIL EMBANKMENT (LPW-SE) LOCATION AND DIMENSIONS

SCHEDULE OF L TYPE PARAPET WALL WITH SOIL EMBANKMENT (LPW-SE) LOCATION AND DIMENSIONS. Table with columns for Station, Range, Adjoining Members, Width of Sidewalk, Bank, and Remarks.

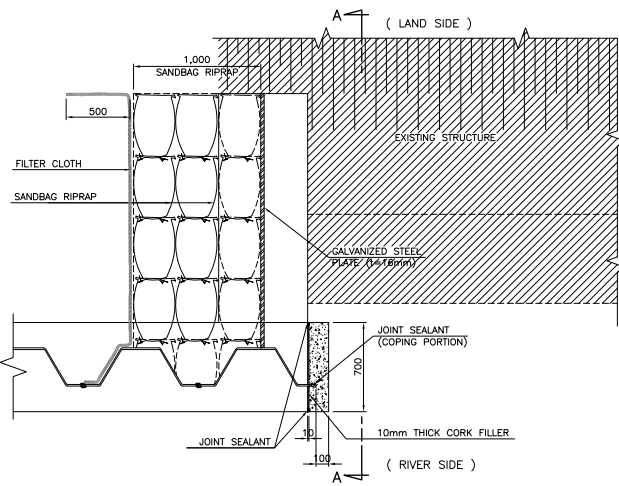


REVISIONS table with columns for No., Description, Approved, and Date.

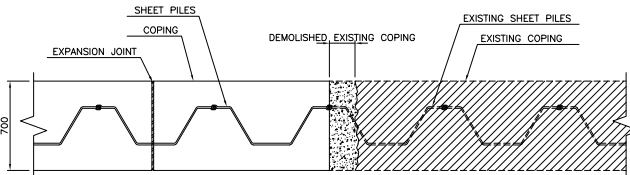
NOTE: PURSUANT TO SECTION 4 OF ANNEX 'A' OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 5184, APPROVAL BY THE AUTHORIZED SIGN OFFICERS OF DETAILED ENGINEERING SURVEYS AND DESIGN UNDERTAKEN BY CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGN NOR TRANSFERS ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

Project information table including JICA Consultant, Republic of the Philippines Department of Public Works and Highways, Project Location (Pasig-Marikina River Channel Improvement Project), and various approvals/signatures.

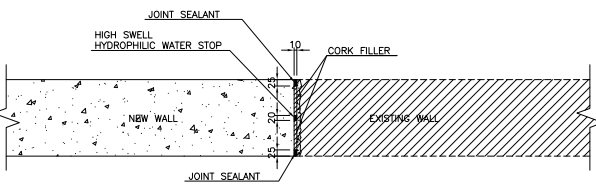
Figure 4.1.3 Standard River Structural Details (6/6)
Fig 4.14



TYPICAL SHEET PILE END CONNECTION DETAIL (TYPE-1)
SCALE: A



TYPICAL SHEET PILE END CONNECTION DETAIL (TYPE-2)
SCALE: A

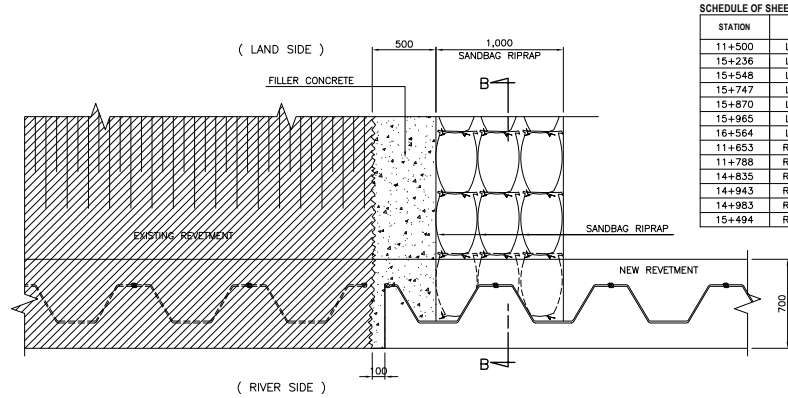


TYPICAL DETAIL OF WALL END CONNECTION TO EXISTING WALL
SCALE: B

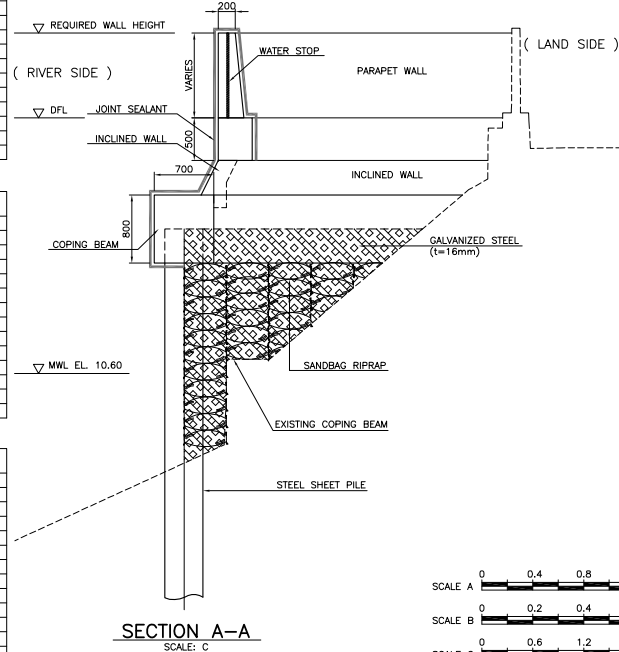
SCHEDULE OF SHEET PILES END CONNECTION (TYPE-1)		
STATION	BANK	REMARKS
2+419	LEFT BANK	
3+072	LEFT BANK	
3+160	LEFT BANK	
3+300	LEFT BANK	
6+116	LEFT BANK	
6+249	LEFT BANK	
6+269	LEFT BANK	
7+326	LEFT BANK	
7+514	LEFT BANK	
12+173	LEFT BANK	
13+806	LEFT BANK	
14+272	LEFT BANK	
15+424	LEFT BANK	
15+443	LEFT BANK	
3+753	RIGHT BANK	
5+046	RIGHT BANK	
5+223	RIGHT BANK	
5+262	RIGHT BANK	
5+414	RIGHT BANK	
5+639	RIGHT BANK	
6+337	RIGHT BANK	
6+510	RIGHT BANK	
8+222	RIGHT BANK	
9+341	RIGHT BANK	
9+430	RIGHT BANK	
9+792	RIGHT BANK	
9+814	RIGHT BANK	
9+947	RIGHT BANK	
10+956-A	RIGHT BANK	
11+803-A	RIGHT BANK	
13+801-B	RIGHT BANK	
13+804-A	RIGHT BANK	
14+225-A	RIGHT BANK	
14+234-A	RIGHT BANK	
14+395-A	RIGHT BANK	
15+075	RIGHT BANK	
15+409	RIGHT BANK	
15+441	RIGHT BANK	
15+476	RIGHT BANK	
16+667	RIGHT BANK	
16+724	RIGHT BANK	
16+760	RIGHT BANK	
16+840	RIGHT BANK	

SCHEDULE OF SHEET PILES END CONNECTION (TYPE-2)		
STATION	BANK	REMARKS
2+694	LEFT BANK	
2+854	LEFT BANK	
6+219	LEFT BANK	
6+376	LEFT BANK	
6+482	LEFT BANK	
7+444	LEFT BANK	
7+494	LEFT BANK	
11+628	LEFT BANK	
12+024	LEFT BANK	
3+649	RIGHT BANK	
5+545	RIGHT BANK	
11+263	RIGHT BANK	
11+610	RIGHT BANK	
13+578	RIGHT BANK	

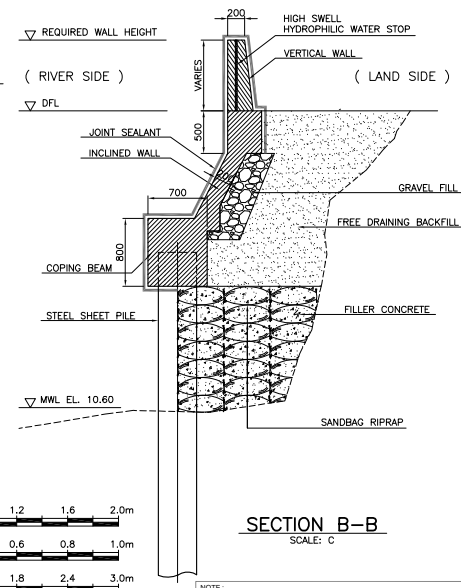
SCHEDULE OF WALL END CONNECTION (RCF)		
STATION	BANK	REMARKS
2+392	LEFT BANK	
7+326-A	LEFT BANK	
7+580	LEFT BANK	
10+232	LEFT BANK	
10+341	LEFT BANK	
10+405	LEFT BANK	
10+434	LEFT BANK	
10+467	LEFT BANK	
10+477	LEFT BANK	
2+283	RIGHT BANK	
STA. A	RIGHT BANK	QUINTA CHANNEL
STA. D	RIGHT BANK	QUINTA CHANNEL
3+100	RIGHT BANK	
7+516	RIGHT BANK	
8+219	RIGHT BANK	
10+140	RIGHT BANK	
10+179	RIGHT BANK	
16+472	RIGHT BANK	
16+843	RIGHT BANK	



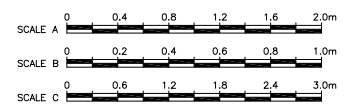
TYPICAL SHEET PILE END CONNECTION DETAIL (TYPE-3)
SCALE: A



SECTION A-A
SCALE: C



SECTION B-B
SCALE: C



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SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN			REPUBLIC OF THE PHILIPPINES			PROJECT & LOCATION		SHEET CONTENTS		SHEET NO.		
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	ELIJI MOKI STRUCTURAL ENGINEER	TOSHIKI KAWAKAMI THE CHECKER	SHUJI KAKU TEAM LEADER		PERFECTO L. ZAPLAN, JR. CHIEF HYDRAULIC DIVISION BOD	PATRICK B. GATAN PROJECT DIRECTOR PMD - MFCP	GILBERTO S. REYES DIRECTOR BOD	SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSIGNATORY	RAUL C. ASSIS UNDER SECRETARY FOR TECHNICAL SERVICES			

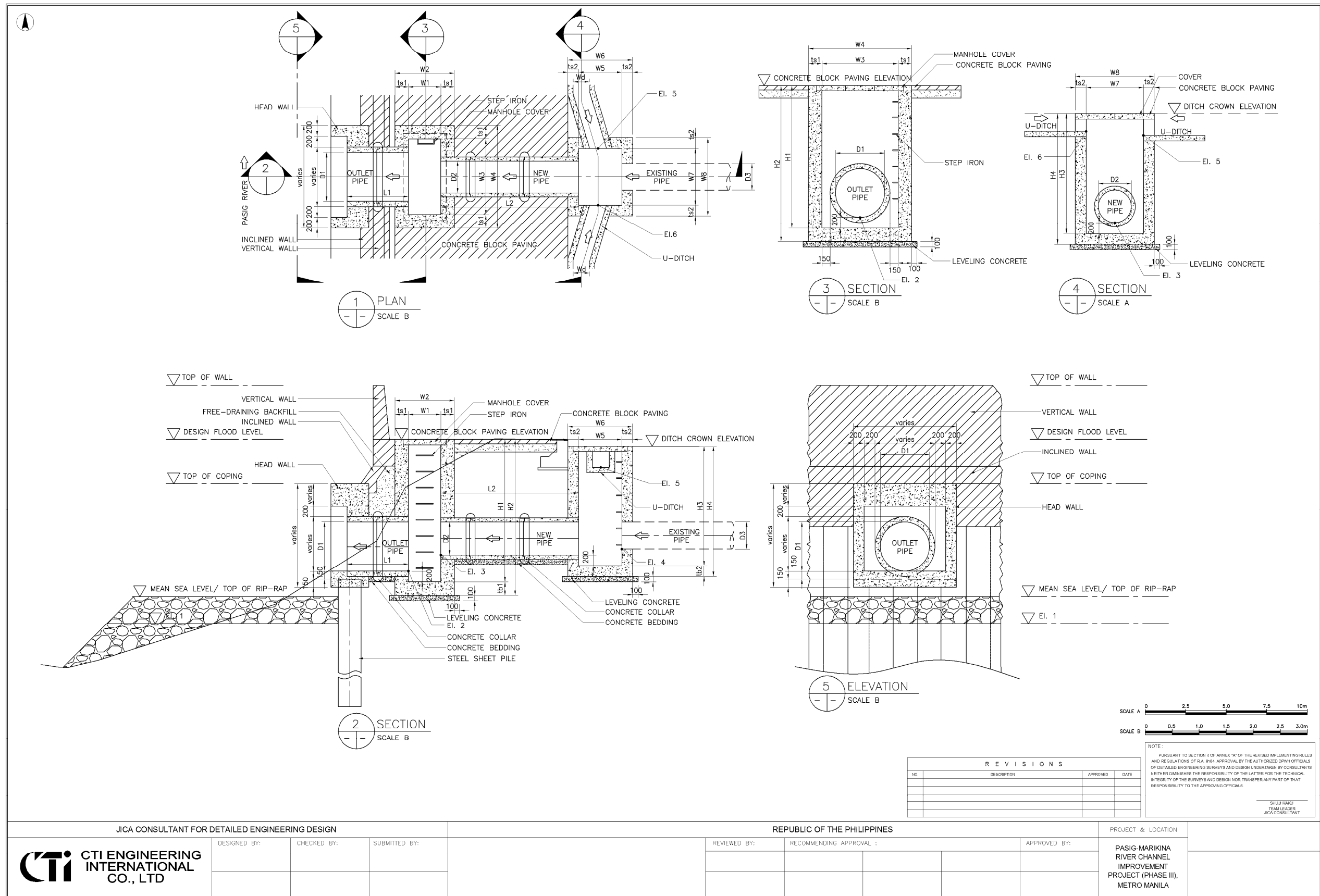


Figure 4.1.4 Typical Drawing of Drainage Facility in Pasig River (1/2)

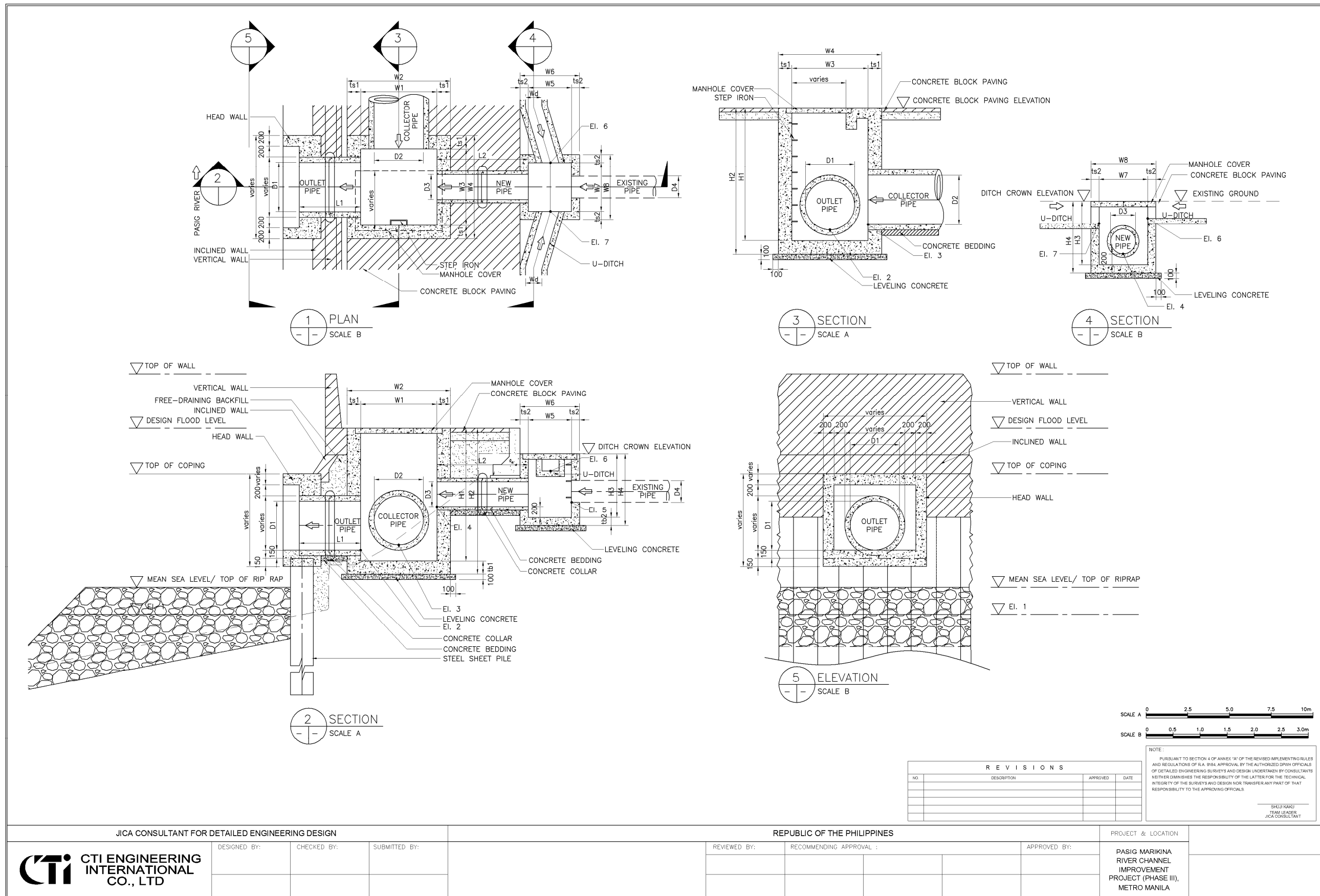


Figure 4.1.5 Typical Drawing of Drainage Facility in Pasig River (1/2) (2/2)

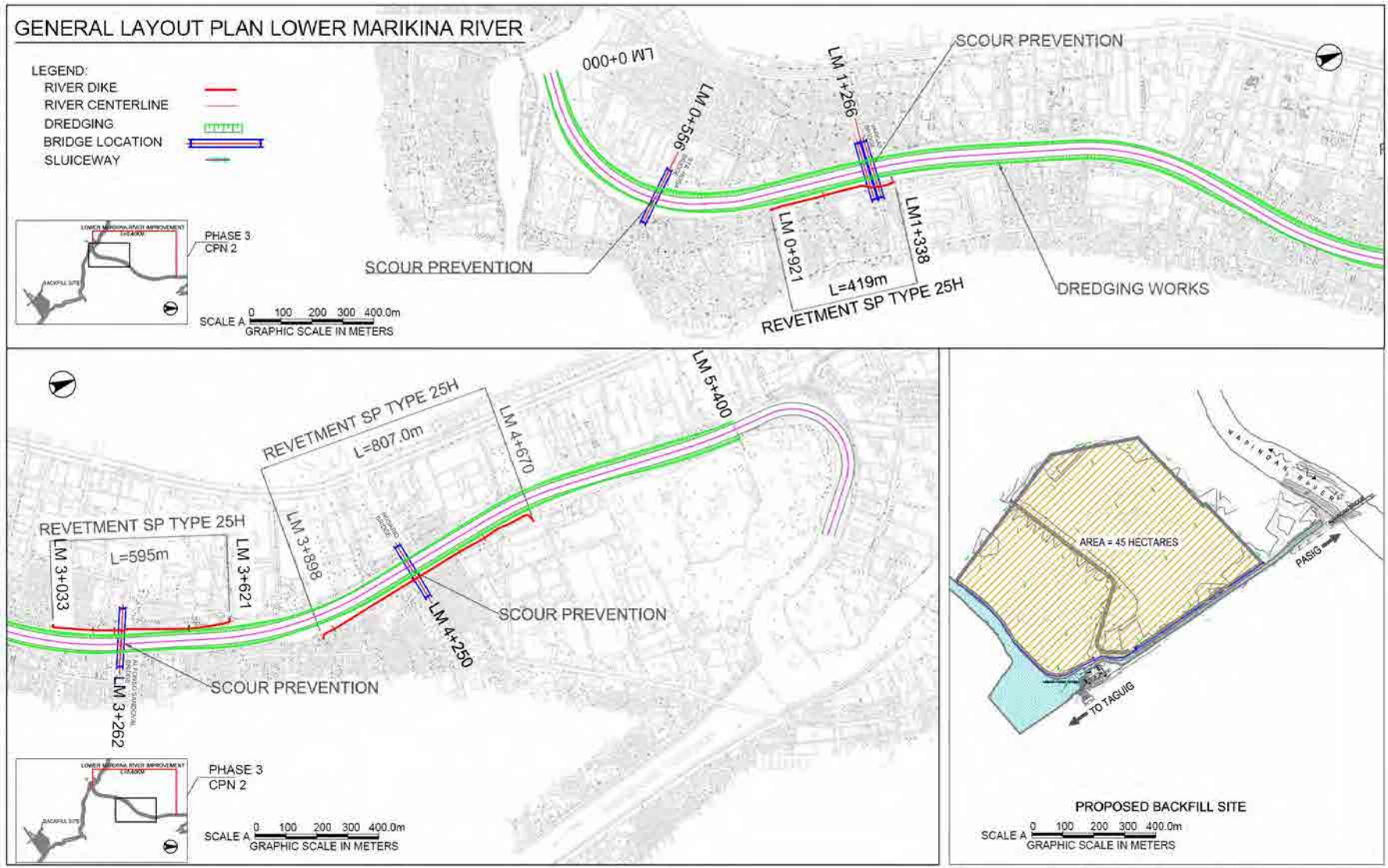


Figure 4.2.1 General Layout Plan(Lower Marikina River)

Fig. 4.17

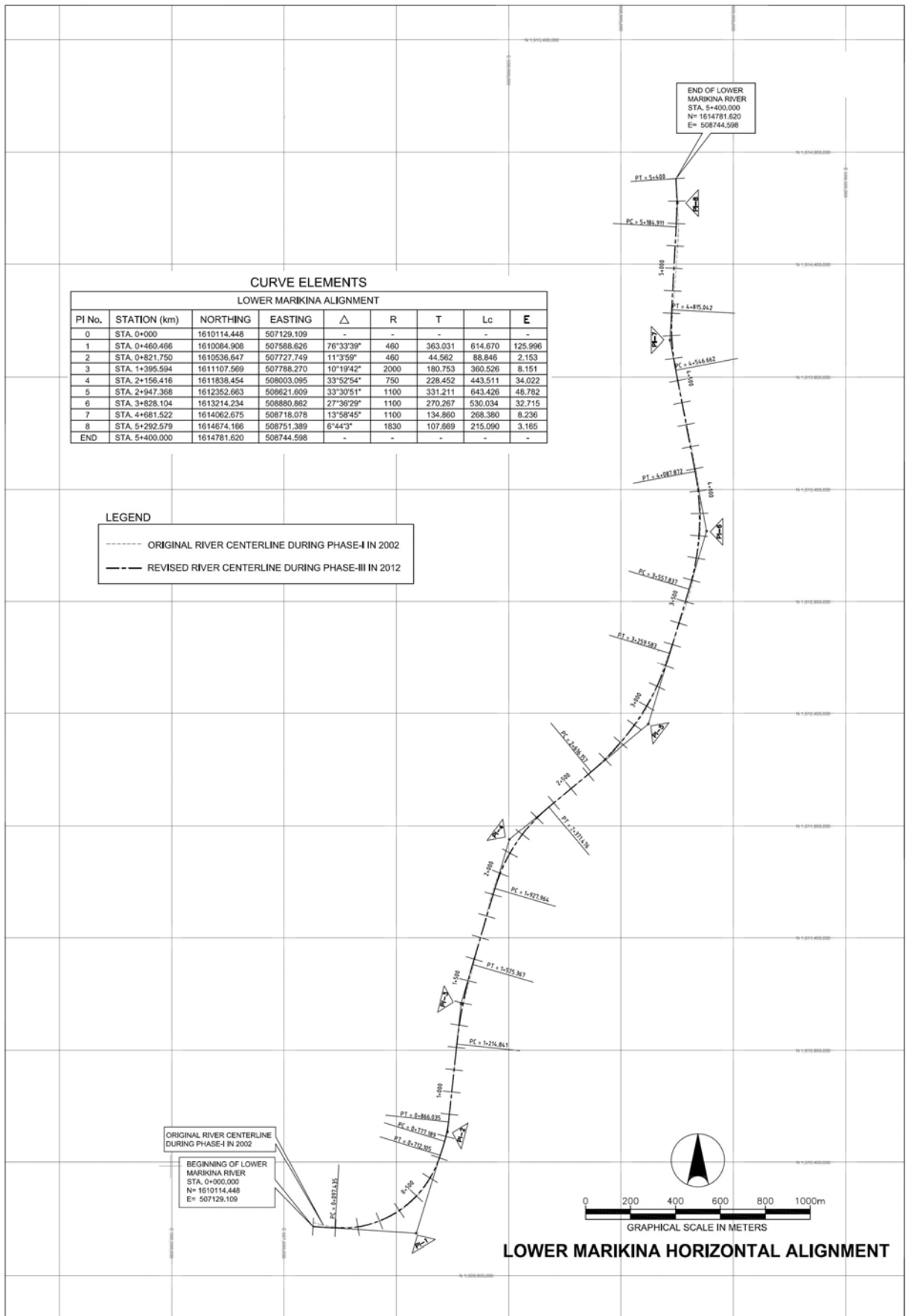


Figure 4.2.2 River Centerline (Horizontal Alignment)

Fig 4.19

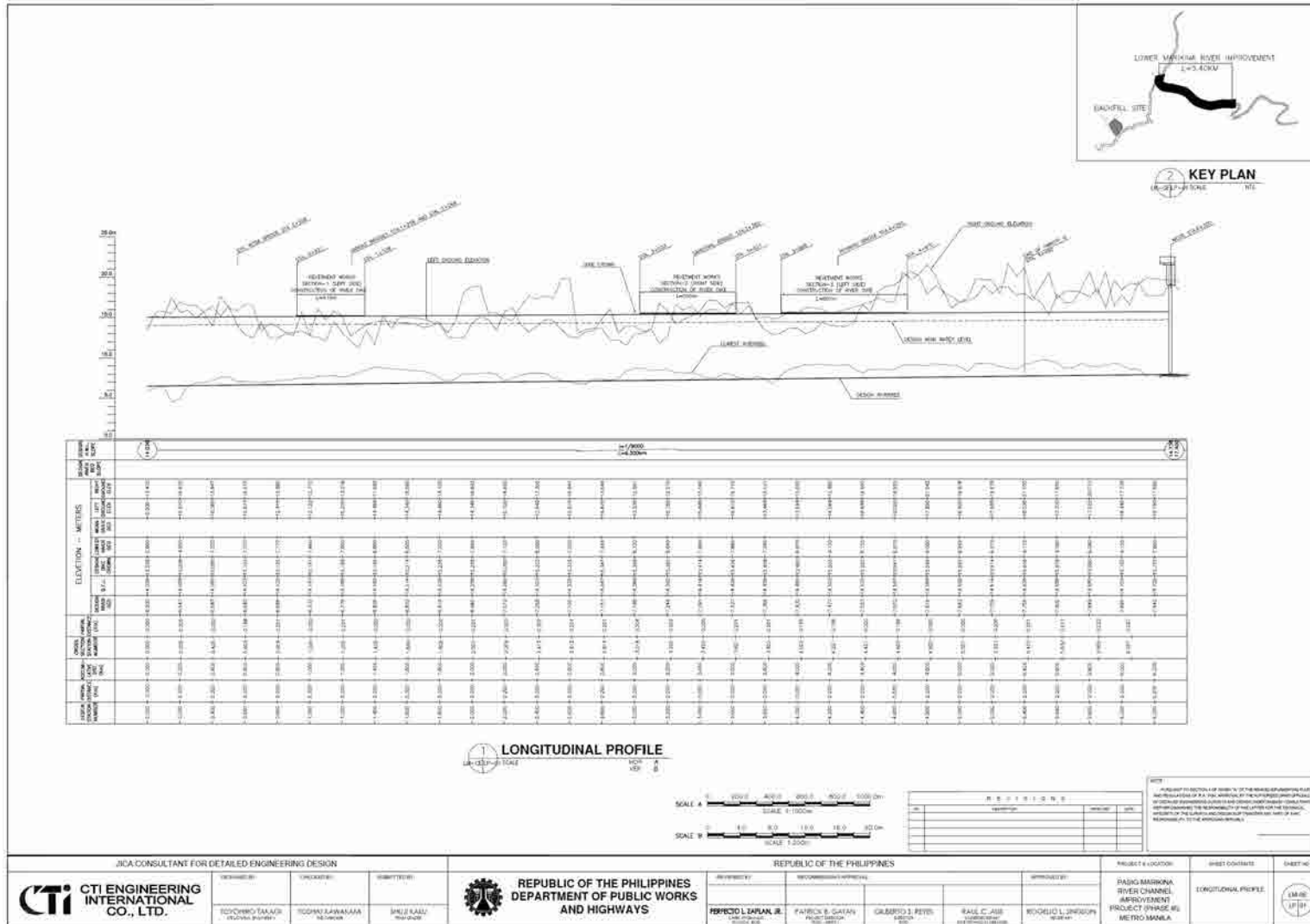


Figure 4.2.3 Longitudinal Profile

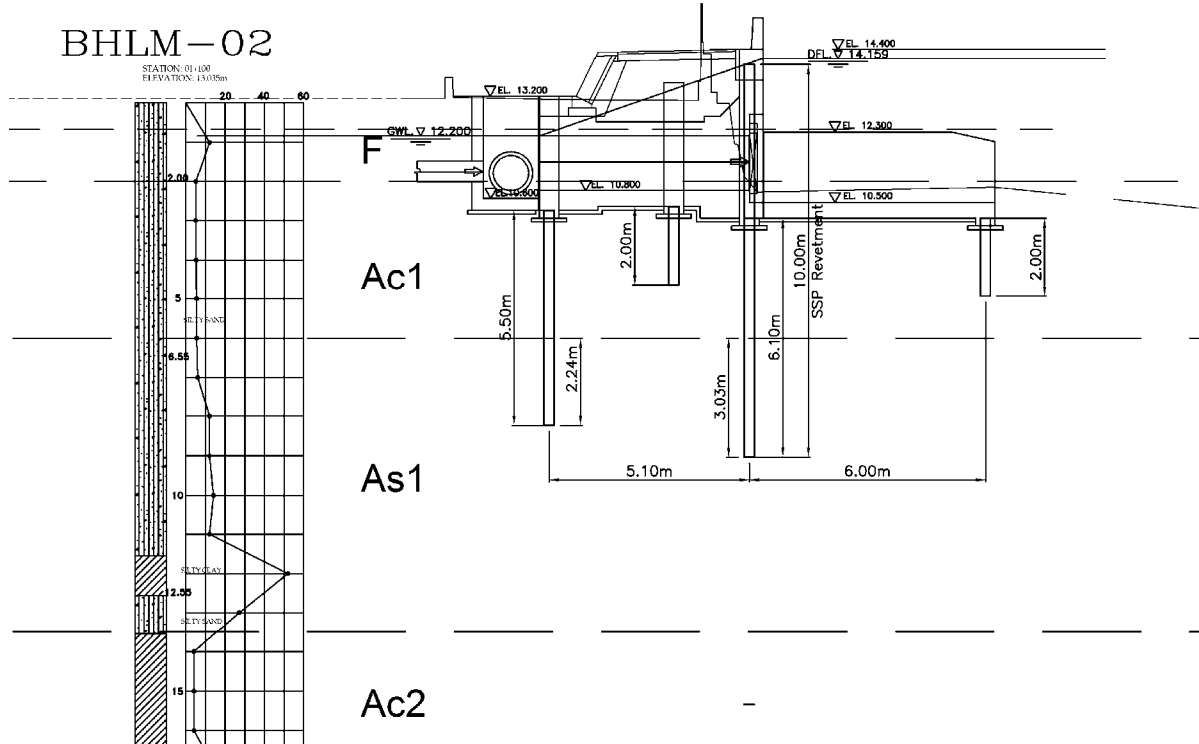


Figure 4.2.4 Length of SSP Cut off Wall (1/9) (MSL-1)

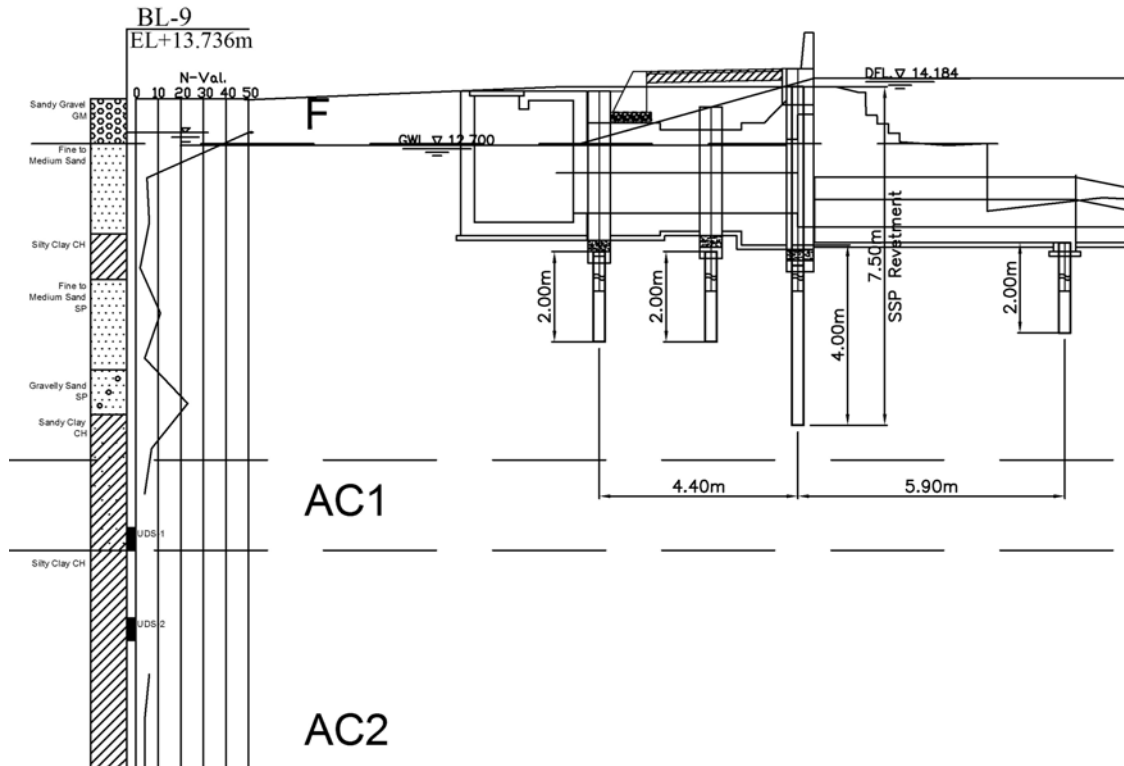


Figure 4.2.4 Length of SSP Cut off Wall (2/9) (MSL-2)

BHLM-14

STATION: 04+050
ELEVATION: 12.796m

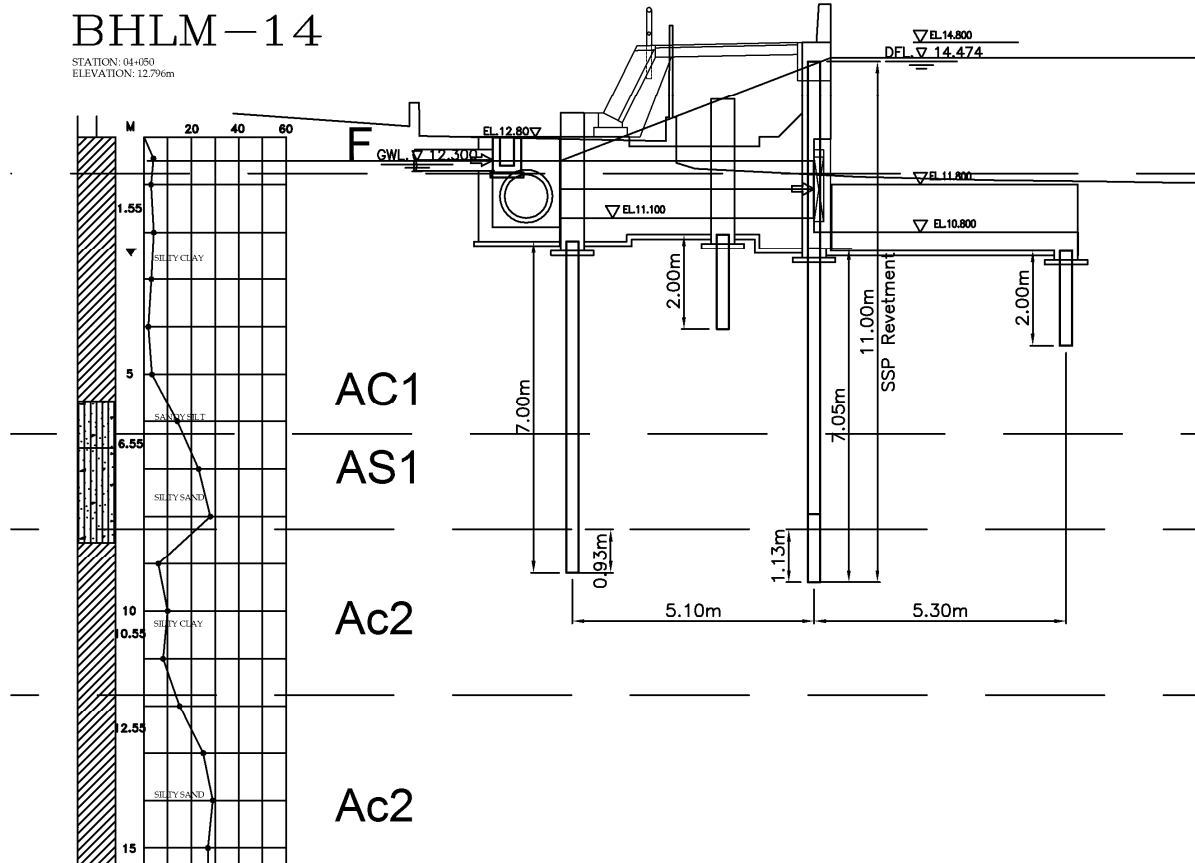


Figure 4.2.4 Length of SSP Cut off Wall (3/9) (MSL-3)

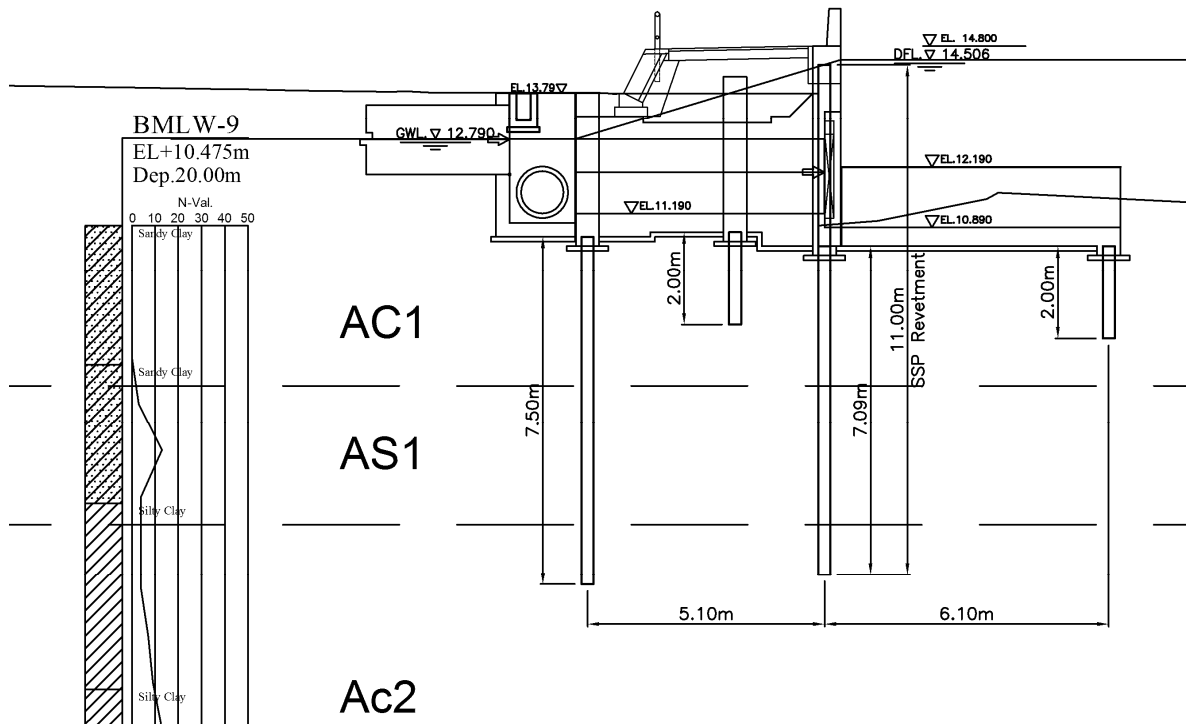


Figure 4.2.4 Length of SSP Cut off Wall (4/9) (MSL-4)

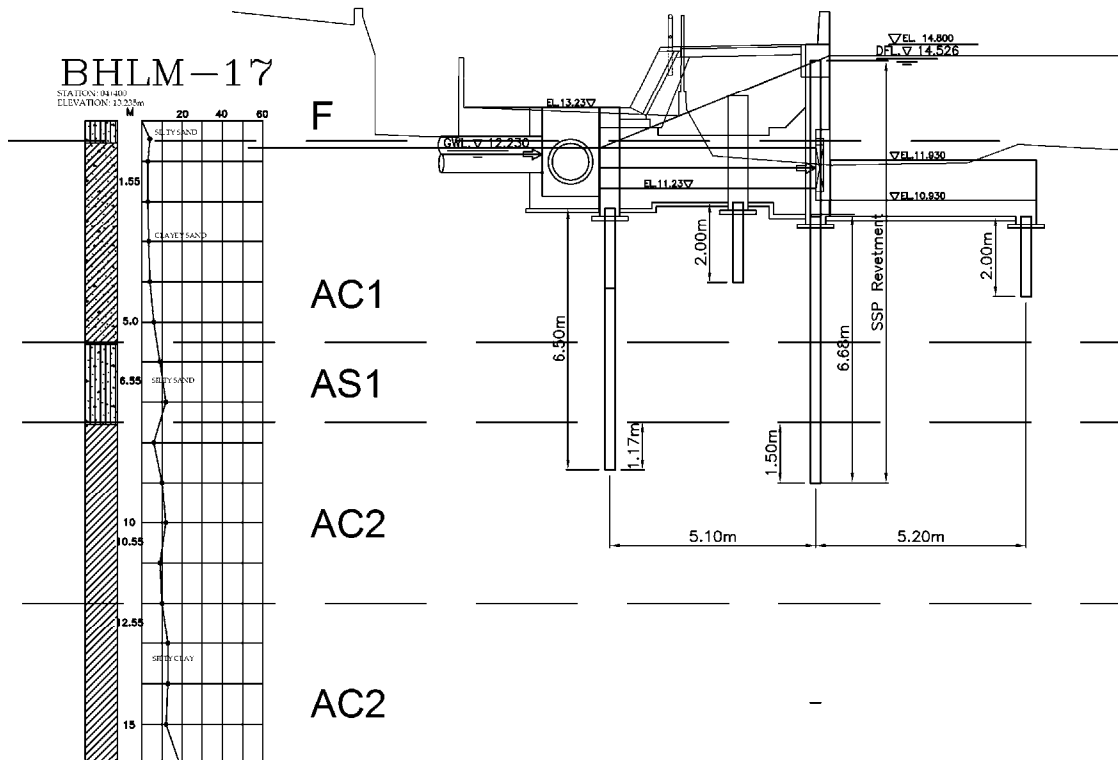


Figure 4.2.4 Length of SSP Cut off Wall (5/9) (MSL-5)

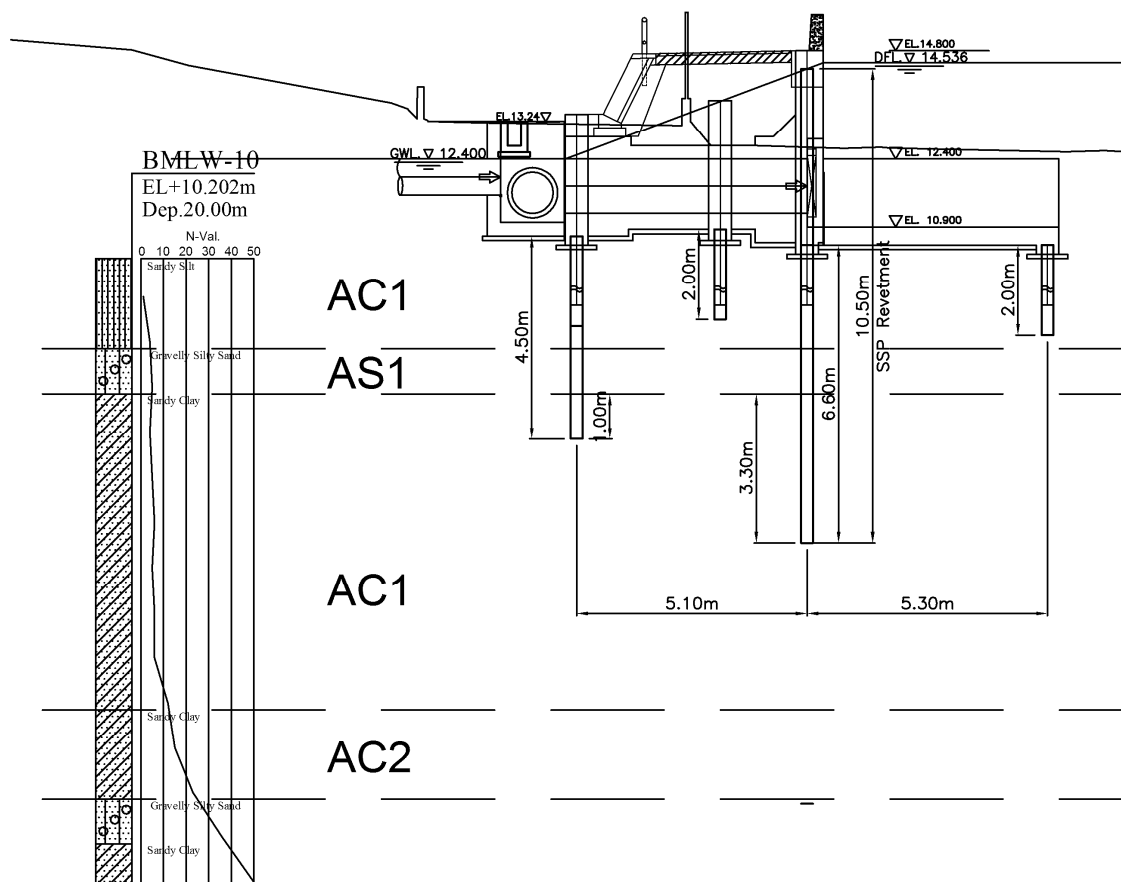


Figure 4.2.4 Length of SSP Cut off Wall (6/9) (MSL-6)

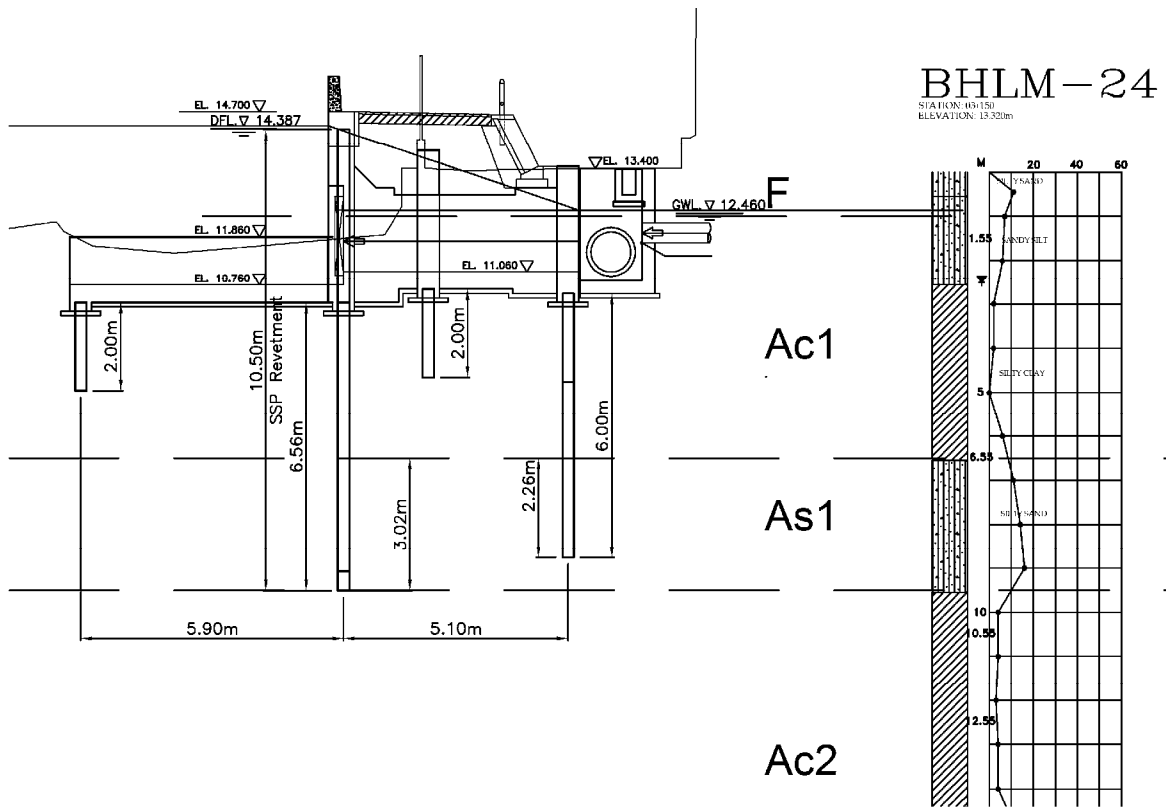


Figure 4.2.4 Length of SSP Cut off Wall (7/9) (MSR-2)

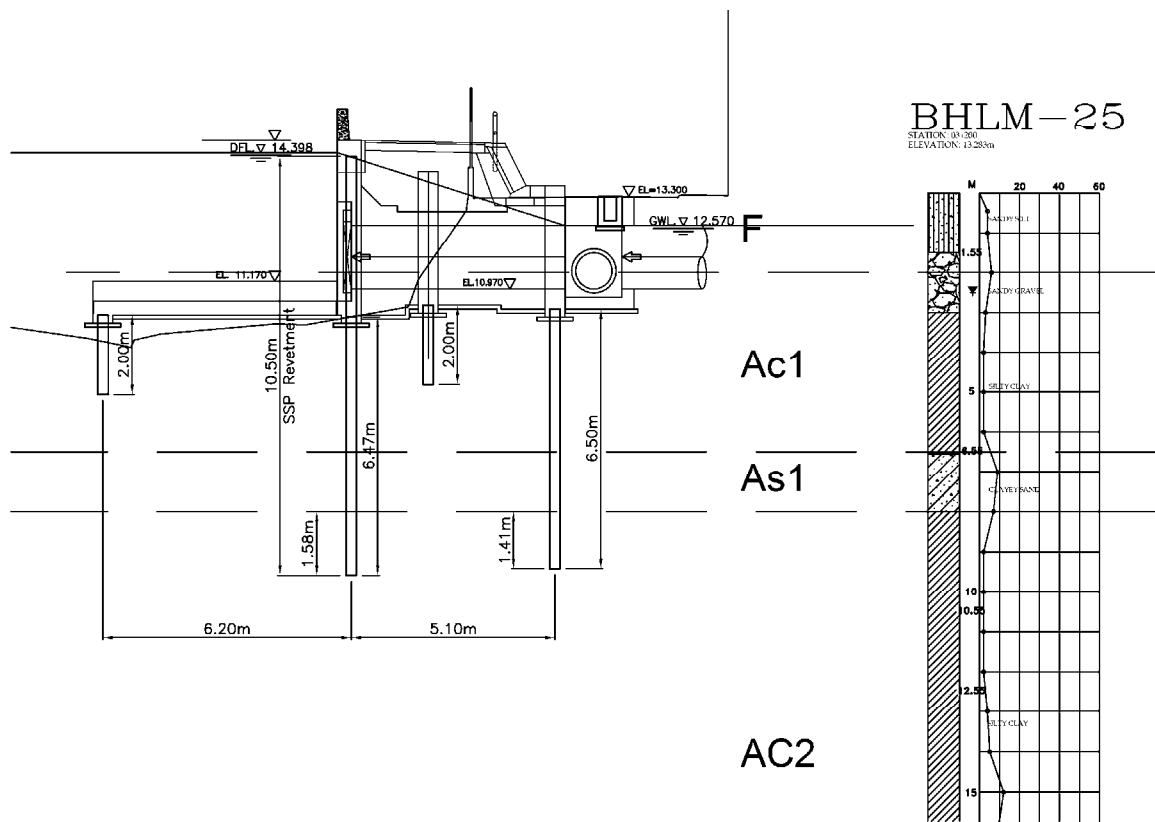


Figure 4.2.4 Length of SSP Cut off Wall (8/9) (MSR-3)

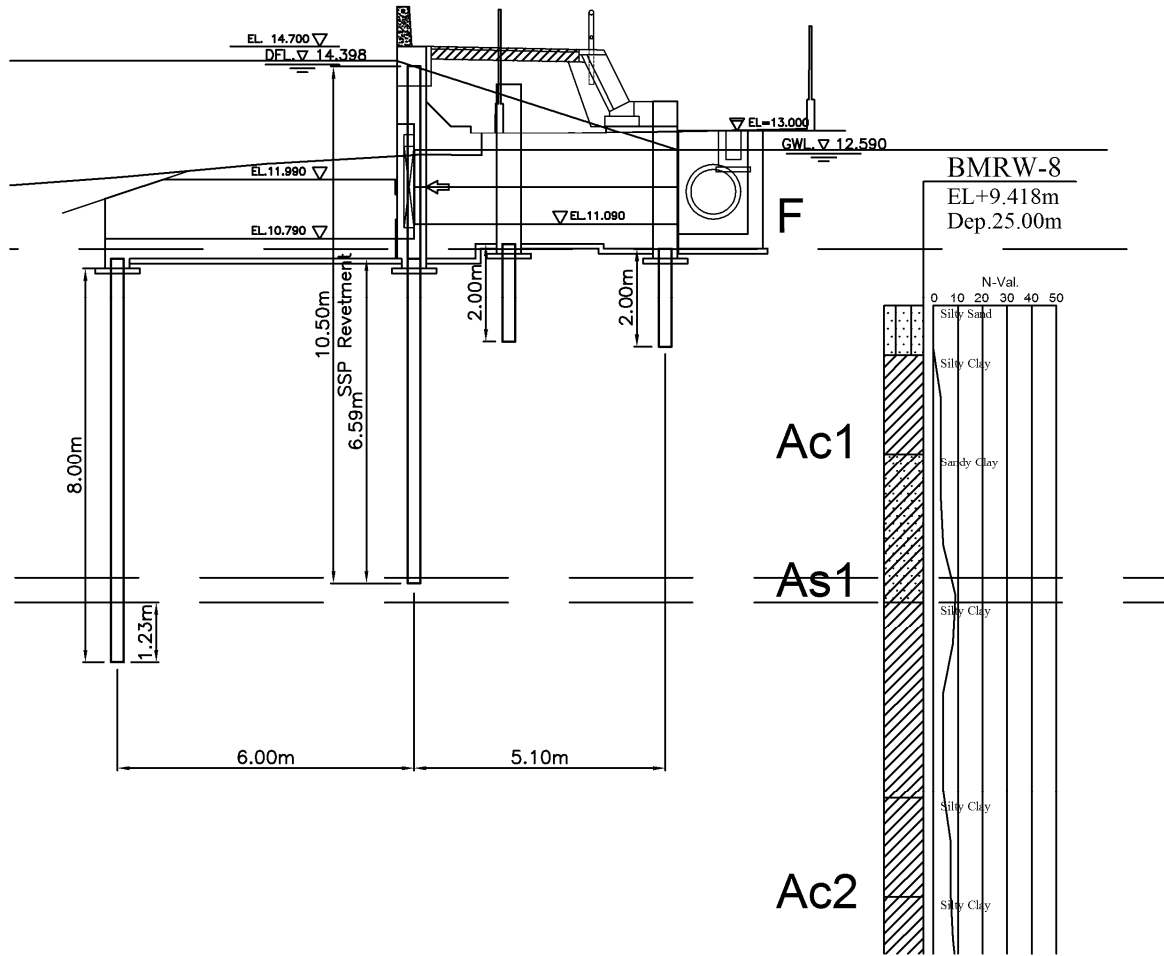


Figure 4.2.4 Length of SSP Cut off Wall (9/9) (MSR-4)

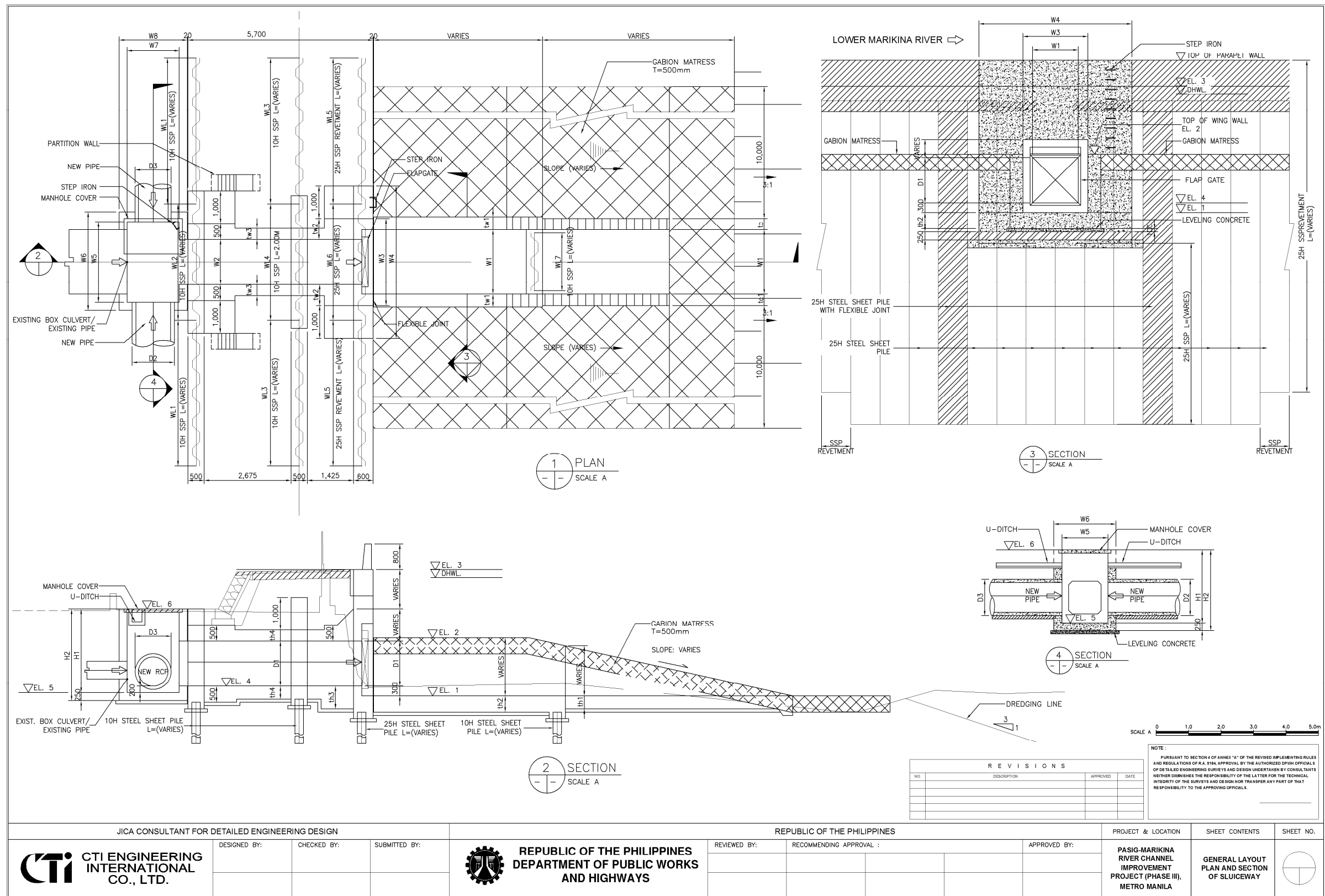


Figure 4.21 Typical Drawing of Sluiceway in Lower Marikina River



Figure 5.2.1 Sampling Stations of Soil

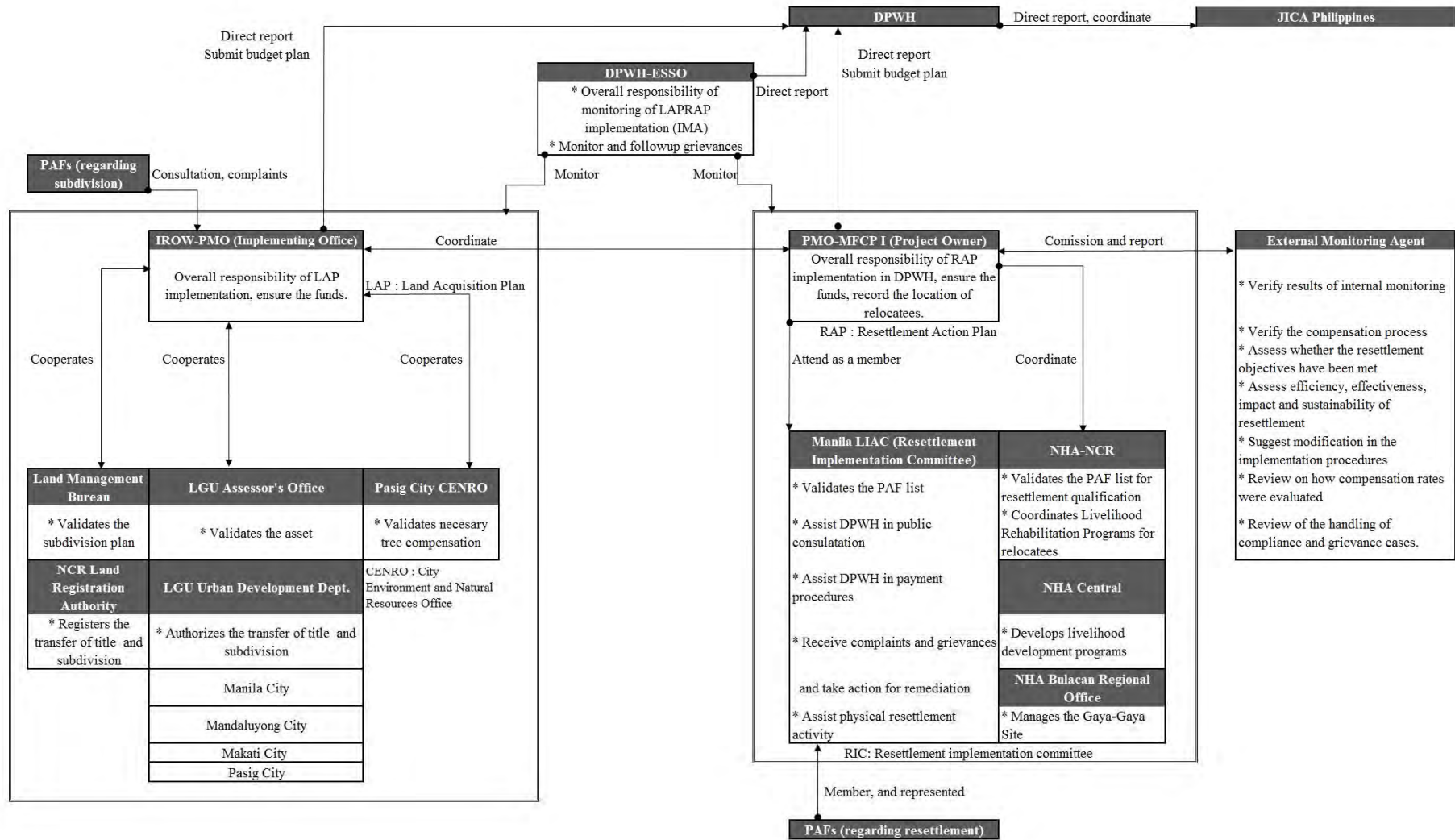


Figure 5.5.1 Institutional Organization for Implementation of Land Acquisition and Resettlement Action Plan

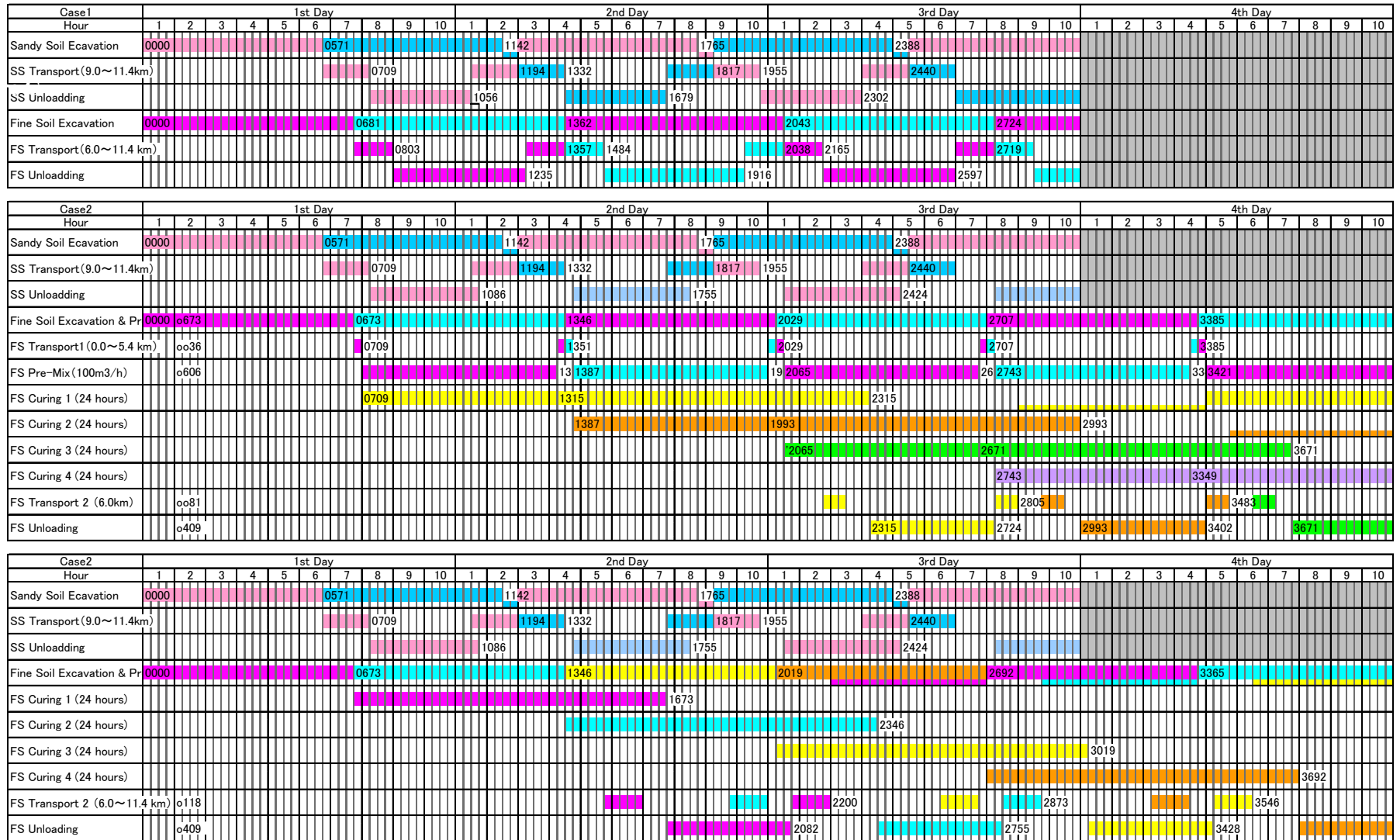


Figure 6.4.1 Working Ship Diagram Example

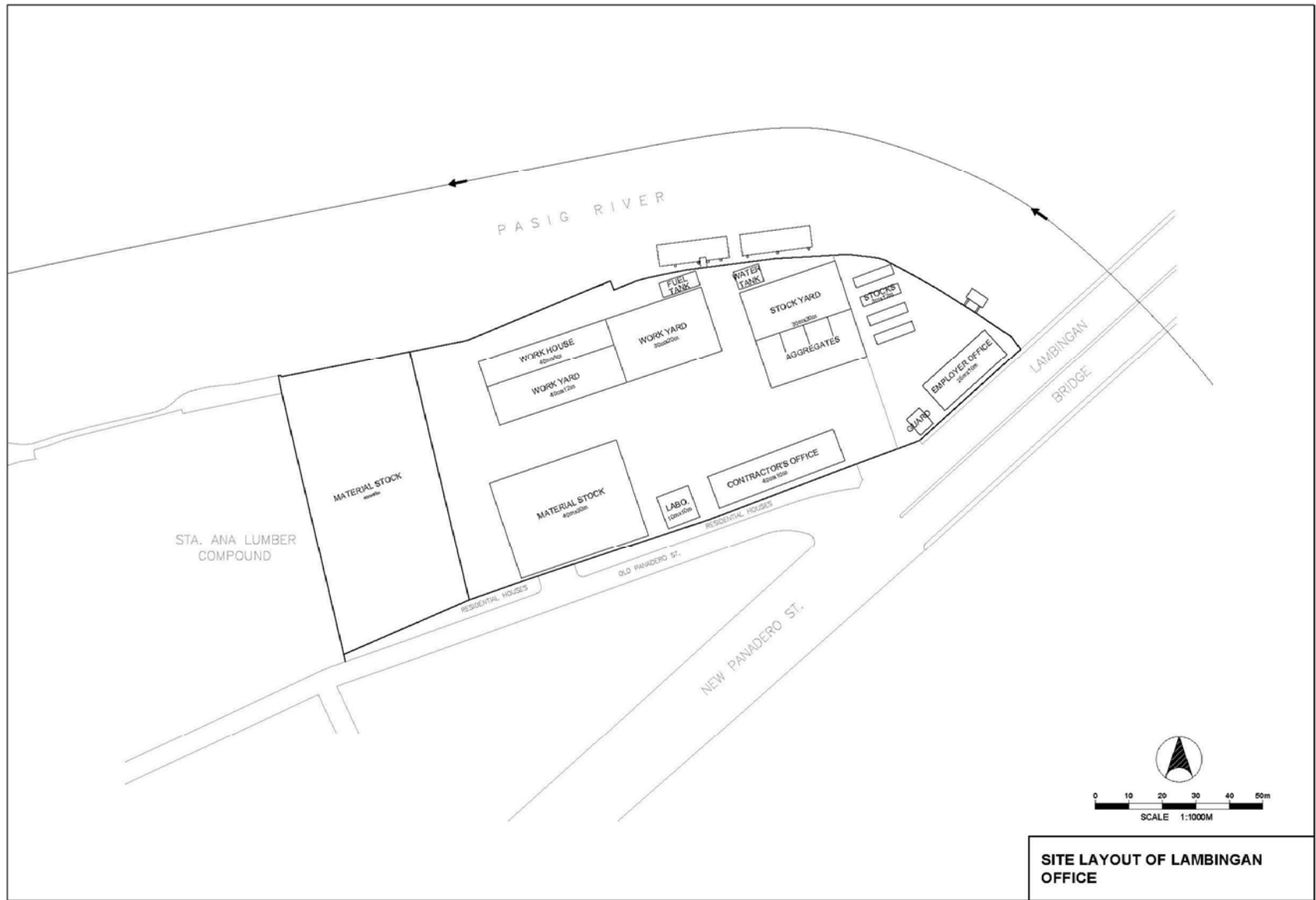


Figure 6.4.2 Lambingan Yard Layout Plan

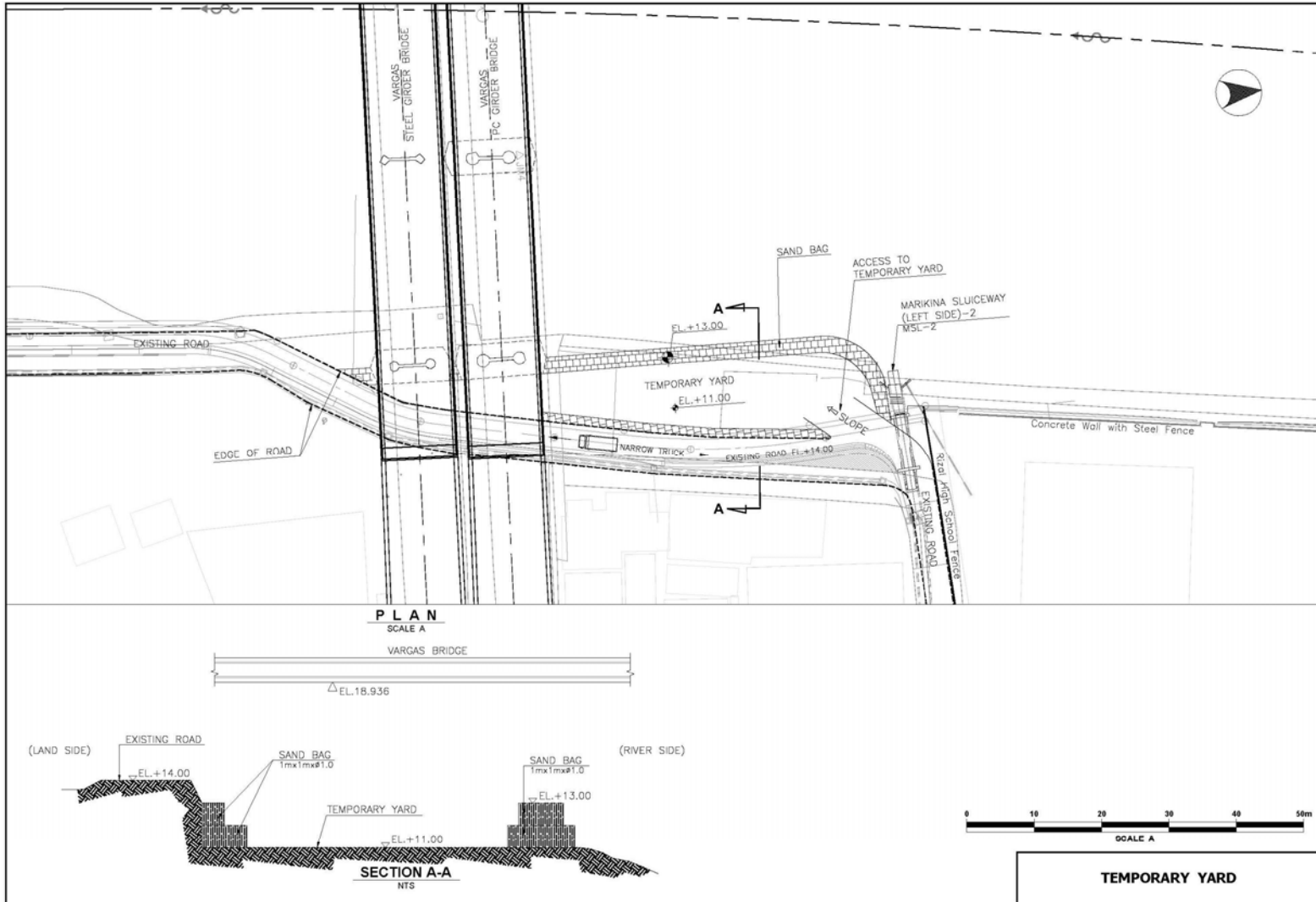


Figure 6.4.3 Marikina West Bank Yard Plan

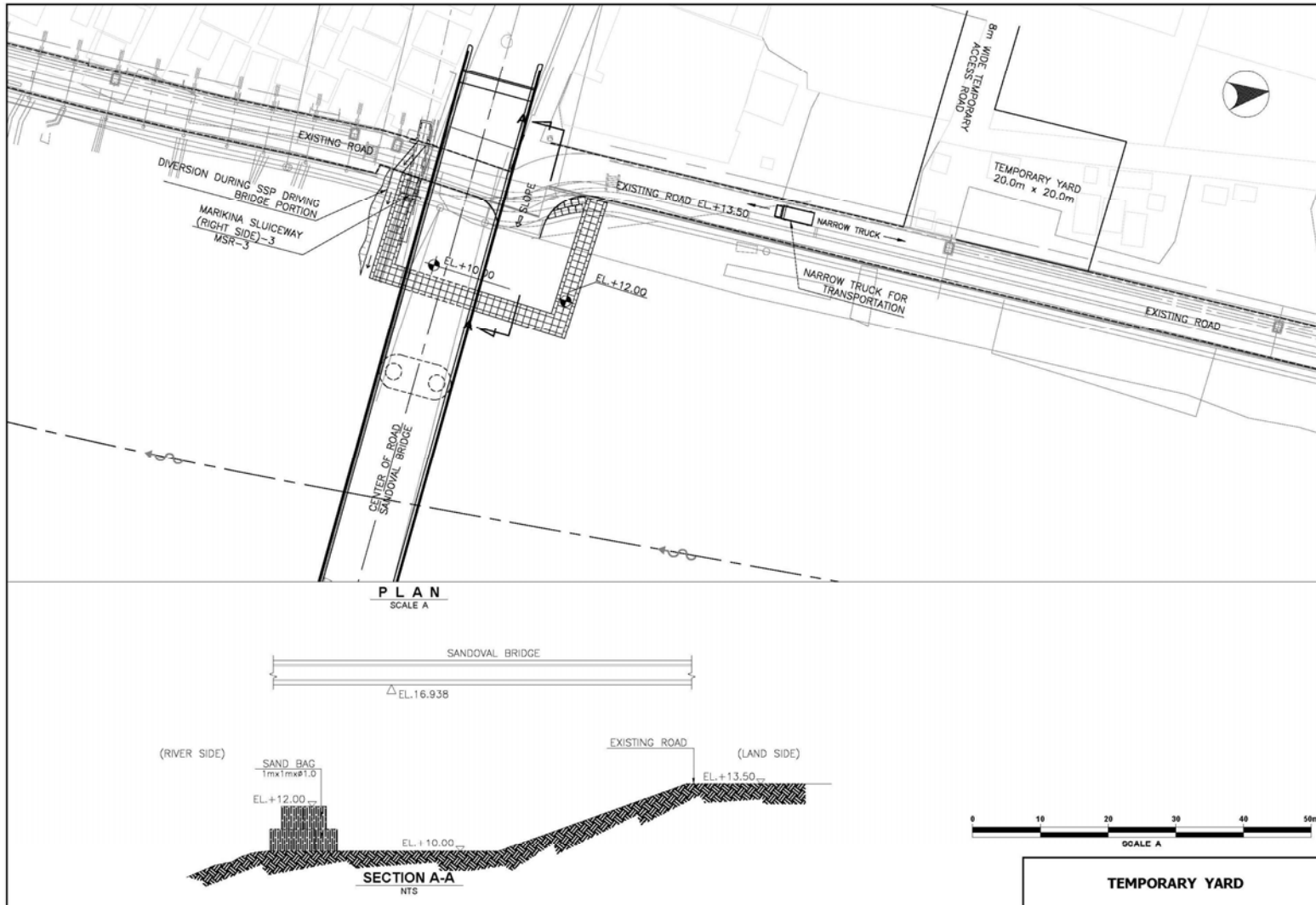


Figure 6.4.4 Marikina Middle Bank Yard Plan

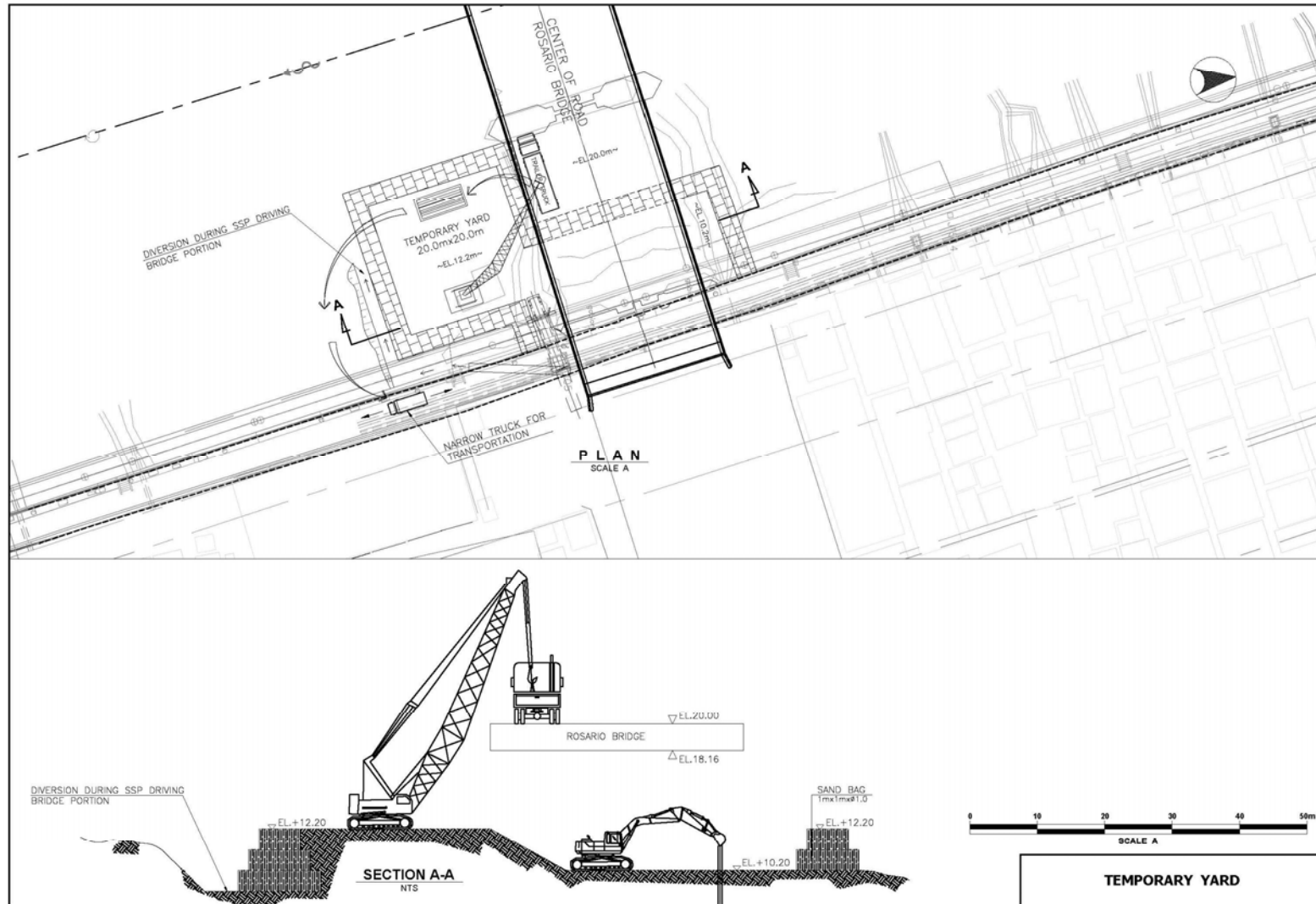


Figure 6.4.5 Marikina East Bank Yard Plan

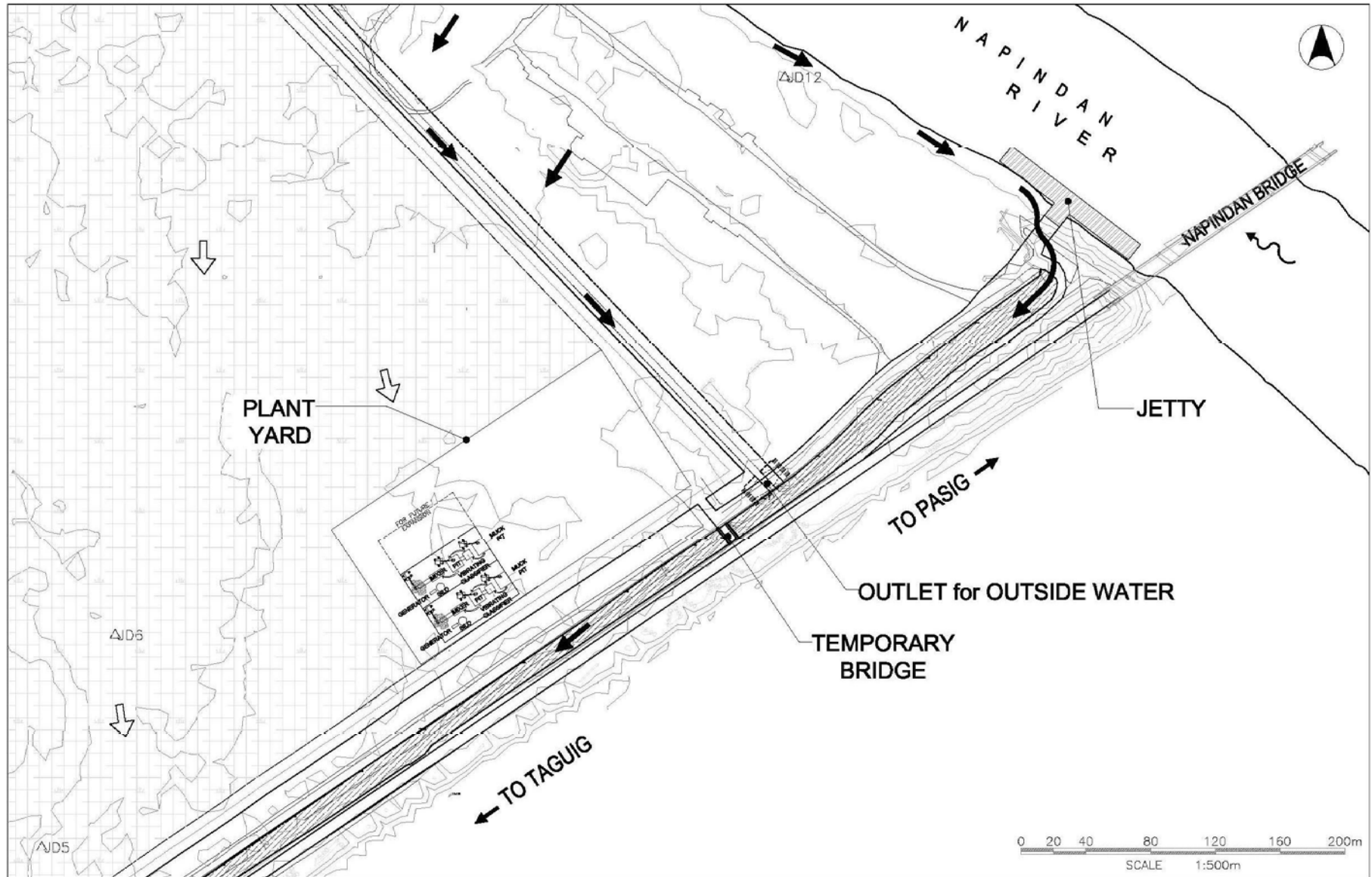


Figure 6.4.6 Disposal Site Yard Plant Plan

Pasig SSP & Drain Conduits (Days in working days.)

Pasig SSP & Drain Conduits (for 50m)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36		
Back Fill 50m	up to bottom of Manhole																																					
Main Manhole		Re	F	C	Re	F	C				F									Cofferdam				Cuttin of SSP		Re	F	C		F						Cofferdam		
Junction Manhole			Bottom		Side Wall						Removal															Side Wall												
Drain Conduits			Bottom		Side Wall						Layout Sleeper		Collar					Water Diversion								Re	F	C										
Outlet																																						
Outlet Pipe																																						
Coping Section 1B (10m)				Rebar		Concrete																																
Coping Section 2B (10m)					Form						Removal																											
Coping Section 3B (10m)						0.6m ²			6m ³																													
Coping Section 4B (10m)																																						
Coping Section 5B (10m)																																						

Pasig SSP & Drain Conduits (for 50m)	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	
Back Fill 50m	Backfill													Final Backfill																							
Main Manhole																																					
Junction Manhole																																					
Drain Conduits																																					
Outlet																																					
Outlet Pipe																																					
Coping Section 1B (10m)																																					
Coping Section 2B (10m)																																					
Coping Section 3B (10m)																																					
Coping Section 4B (10m)																																					
Coping Section 5B (10m)																																					

After 48 days, main party can go to a new site, so that average speed is assumed as: 50m/48 days = 1m/days for a Party.

Pasig RC Flood Wall (Days in working days.)

Pasig Parapett Wall (for 20m)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
Demolish & Excavation																					
Re-bar Arrangemnt for Lower Pariton																					
Form Works for Lower Pariton																					
Concrete for Lower Pariton																					
Re-bar Arrangemnt for Upper Pariton																					
Form Works for Upper Pariton																					
Concrete for Upper Pariton																					
Pavement																					
The Next Block Works Demolish & Excavation		1	2	3	4	5	6														

The team can go to another 20m portion every 6 days, so that average speed is assumed as: 20m/6 days = 3.33m/days for a Party

Figure 6.5.1 Details of Program for Pasig River

Marikina Sluiceway (Days in working days.)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Sluiceway (for 1 unit)																														
Embankment Removal 10L*15B*5D=750c.m.																														
Install SSP L=2 to 6.0m, Total 40m																														
Foundation Preparation 130ms.m.																														
Re-Bar for Bottom Slab 2.5t																														
Concreting for Bottom Slab 25mc.m.																														
Scaffold 2mH*20s.m.																														
Re-Bar for Side Wall 2.4t																														
Form for Side Wall 60s.m.=30*2*2																														
Concreting for Side Wall 24m ³ =30*2*0.4																														
Re-Bar for Top Slab 1.4t																														
Form for Top Slab 20s.m.=10*2																														
Concreting for Top Slab 14c.m.=10*2.8*0.5																														
Miscellaneous Re-Bar																														
Miscellaneous Form																														
Miscellaneous Concreting																														
Backfill 650c.m.																														

Marikina Block Work for Embankment (Days in working days.)

	1	2	3	4	5	6	7	8	9
Marikina Block Work (for 20m*0.9/3person)									
Form 20*0.9*2=28s.m.									
Concreting 20*0.9*0.1=1.8c.m.									
Gravel Backfill 20*0.9*0.4=7.2c.m.									
Block Prefabrication 198pieces									
Block Prefabrication 198pieces									
Block Prefabrication 198pieces									
Concrete Backfill									

Average speed is assumed as: 60*0.9m²/9person/9day

Figure 6.5.2 Details of Program for Marikina River