

DRAWING LIST (1/4)

(DRAINAGE WORKS; LOWER PASIG)

SHEET NO.	DRAWING NO.	NAME OF LOCATION	SHEET CONTENTS
1	LP-DR; DL-01		DRAINAGE LAYOUT PLAN (ARROCEROS, HOSPICIO & MALACAÑANG AREA)
2	LP-DR; DL-02		DRAINAGE LAYOUT PLAN (NAGTAHAN BRIDGE~ PANDACAN BRIDGE AREA)
3	LP-DR; DL-03		DRAINAGE LAYOUT PLAN (PUNTA, STA. ANA AREA)
4	LP-DR; SD-01		STANDARD DETAIL OF OUTLET
5	LP-DR; MD-01		TYPICAL MANHOLE DETAIL AND BAR SCHEDULE
6	LP-DR; JB-01		TYPICAL JUNCTION BOX DETAIL, BAR SCHEDULE & TYPICAL DETAIL OF U-DITCH
7	LP-DR; MH-SC1		SCHEDULE OF MANHOLE STA. 2+392~STA. 3+072 LB
8	LP-DR; MH-SC2		SCHEDULE OF MANHOLE STA. 6+357 ~ STA. 6+510 RB
9	LP-DR; MH-SC3		SCHEDULE OF MANHOLE STA. 8+242 ~ STA. 9+947 RB
10	LP-DR; JB-SC1		SCHEDULE OF JUNCTION BOX STA. 2+392 ~ STA. 3+072 LB
11	LP-DR; JB-SC2		SCHEDULE OF JUNCTION BOX STA. 6+357 ~ STA. 6+510 RB
12	LP-DR; JB-SC3		SCHEDULE OF JUNCTION BOX STA. 8+242 ~ STA. 9+947 RB
13	LP-DL; DO-35.5/P		PLAN & PROFILE OF COLLECTOR PIPE (DL 35.5, LEFT BANK)
14	LP-DL; DO-35.5		DETAIL OF DRAINAGE OUTLET; (DL 35.5 & ML 35.5, LEFT BANK)
15	LP-DL; DO-37.3/P		PLAN & PROFILE OF COLLECTOR PIPE (DL 37.3, LEFT BANK)
16	LP-DL; DO-37.3		DETAIL OF DRAINAGE OUTLET; (DL 37.3 & ML 37.3, LEFT BANK)
17	LP-DL; DO-37.6/P		PLAN & PROFILE OF COLLECTOR PIPE (DL 37.6, LEFT BANK)
18	LP-DL; DO-37.6		DETAIL OF DRAINAGE OUTLET; (DL 37.6 & ML 37.6, LEFT BANK)
19	LP-DL; DO-37.11		DETAIL OF DRAINAGE OUTLET; (DL 37.11, ML 37.11, & COLLECTOR PIPE, RIGHT BANK)
20	LP-DL; DO-37.12/P		PLAN & PROFILE OF COLLECTOR PIPE (DL 37.12, LEFT BANK)
21	LP-DL; DO-37.12		DETAIL OF DRAINAGE OUTLET; (DL 37.12 & ML 37.12, LEFT BANK)
22	LP-DL; DO-37.22		DETAIL OF DRAINAGE OUTLET; (DL 37.22 & ML 37.22, LEFT BANK)
23	LP-DL; DO-40		DETAIL OF DRAINAGE OUTLET; (DL 40 & ML 40, LEFT BANK)
24	LP-DL; DO-41		DETAIL OF DRAINAGE OUTLET; (DL 41 & ML 41, LEFT BANK)
25	LP-DL; DO-41.1		DETAIL OF DRAINAGE OUTLET; (DL 41.1 & ML 41.1, LEFT BANK)
26	LP-DL; DO-42		DETAIL OF DRAINAGE OUTLET; (DL 42 & ML 42, LEFT BANK)
27	LP-DL; DO-46/P		PLAN & PROFILE OF COLLECTOR PIPE (DL 46, LEFT BANK)
28	LP-DL; DO-46		DETAIL OF DRAINAGE OUTLET; (DL 46 & ML 46, LEFT BANK)
29	LP-DL; DO-48		DETAIL OF DRAINAGE OUTLET; (DL 48 & ML 48, LEFT BANK)
30	LP-DL; DO-48.2		DETAIL OF DRAINAGE OUTLET; (DL 48.2 & ML 48.2, LEFT BANK)
31	LP-DL; DO-50		DETAIL OF DRAINAGE OUTLET; (DL 50 & ML 50, LEFT BANK)
32	LP-DL; DO-51		DETAIL OF DRAINAGE OUTLET; (DL 51 & ML 51, LEFT BANK)
33	LP-DL; DO-52		DETAIL OF DRAINAGE OUTLET; (DL 52 & ML 52, LEFT BANK)
34	LP-DL; DO-53		DETAIL OF DRAINAGE OUTLET; (DL 53 & ML 53, LEFT BANK)
35	LP-DL; DO-54		DETAIL OF DRAINAGE OUTLET; (DL 54 & ML 54, LEFT BANK)
36	LP-DL; DO-56		DETAIL OF DRAINAGE OUTLET; (DL 56 & ML 56, LEFT BANK)
37	LP-DL; DO-57		DETAIL OF DRAINAGE OUTLET; (DL 57 & ML 57 LEFT BANK)
38	LP-DL; DO-58		DETAIL OF DRAINAGE OUTLET; (DL 58 & ML 58, LEFT BANK)
39	LP-DL; DO-59		DETAIL OF DRAINAGE OUTLET; (DL 59 & ML 59, LEFT BANK)
40	LP-DL; DO-59.1		DETAIL OF DRAINAGE OUTLET; (DL 59.1 & ML 59.1, LEFT BANK)
41	LP-DL; DO-59.2		DETAIL OF DRAINAGE OUTLET; (DL 59.2 & ML 59.2, LEFT BANK)
42	LP-DL; DO-62A.6/P		PLAN & PROFILE OF COLLECTOR PIPE/ U-DITCH (DL 62A.6, LEFT BANK)

DRAWING LIST (2/4)

(DRAINAGE WORKS; LOWER PASIG)

SHEET NO.	DRAWING NO.	NAME OF LOCATION	SHEET CONTENTS
43	LP-DL; DO-62A.6		DETAIL OF DRAINAGE OUTLET; (DL 62A.6 & ML 62A.6, LEFT BANK)
44	LP-DL; DO-62A.10		DETAIL OF DRAINAGE OUTLET; (DL 62A.10 & ML 62A.10, LEFT BANK)
45	LP-DL; DO-62A.13		DETAIL OF DRAINAGE OUTLET; (DL 62A.13 & ML 62A.13, LEFT BANK)
46	LP-DL; DO-63		DETAIL OF DRAINAGE OUTLET; (DL 63 & ML 63, LEFT BANK)
47	LP-DL; DO-63.1		DETAIL OF DRAINAGE OUTLET; (DL 63.1 & ML 63.1, LEFT BANK)
48	LP-DL; DO-HSP4/P		PLAN & PROFILE OF U-DITCH (DL HSP4, LEFT BANK)
49	LP-DL; DO-HSP4		DETAIL OF DRAINAGE OUTLET; (DL HSP4 & ML HSP4, LEFT BANK)
50	LP-DR; DO-35.1		DETAIL OF DRAINAGE OUTLET; (DR 35.1 & MR 35.1, RIGHT BANK)
51	LP-DR; DO-36.3		DETAIL OF DRAINAGE OUTLET; (DR 36.3, MR 36.3, & COLLECTOR PIPE, RIGHT BANK)
52	LP-DR; DO-36.9/P		PLAN & PROFILE OF COLLECTOR PIPE; (DR 36.9, RIGHT BANK)
53	LP-DR; DO-36.9		DETAIL OF DRAINAGE OUTLET; (DR 36.9, RIGHT BANK)
54	LP-DR; DO-36.15/P		PLAN & PROFILE OF COLLECTOR PIPE (DR 36.15, LEFT BANK)
55	LP-DR; DO-36.15		DETAIL OF DRAINAGE OUTLET; (DR 36.15, RIGHT BANK)
56	LP-DR; DO-36.20/P		PLAN & PROFILE OF COLLECTOR PIPE (DR 36.20, RIGHT BANK)
57	LP-DR; DO-36.20		DETAIL OF DRAINAGE OUTLET; (DR 36.20, RIGHT BANK)
58	LP-DR; DO-36.21		DETAIL OF DRAINAGE OUTLET; (DR 36.21, & COLLECTOR PIPE, RIGHT BANK)
59	LP-DR; DO-36.23		DETAIL OF DRAINAGE OUTLET; (DR 36.23, RIGHT BANK)
60	LP-DR; DO-36.24		DETAIL OF DRAINAGE OUTLET; (DR 36.24, RIGHT BANK)
61	LP-DR; DO-37.40		DETAIL OF DRAINAGE OUTLET; (DR 37.40, MR 37.40, & U-DITCH COLLECTOR, RIGHT BANK)
62	LP-DR; DO-40/P		PLAN & PROFILE OF COLLECTOR PIPE (DR 40, RIGHT BANK)
63	LP-DR; DO-40		DETAIL OF DRAINAGE OUTLET; (DR 40 & MR 40, RIGHT BANK)
64	LP-DR; DO-42		DETAIL OF DRAINAGE OUTLET; (DR 42 & MR 42, RIGHT BANK)
65	LP-DR; DO-43/P		PLAN & PROFILE OF COLLECTOR PIPE (DR 43, RIGHT BANK)
66	LP-DR; DO-43		DETAIL OF DRAINAGE OUTLET; (DR 43 & MR 43, RIGHT BANK)
67	LP-DR; DO-44		DETAIL OF DRAINAGE OUTLET; (DR 44, MR 44, & COLLECTOR PIPE, RIGHT BANK)
68	LP-DR; DO-44.1		DETAIL OF DRAINAGE OUTLET; (DR 44.1 & MR 44.1, RIGHT BANK)
69	LP-DR; DO-44.2		DETAIL OF DRAINAGE OUTLET; (DR 44.2 & MR 44.2, RIGHT BANK)
70	LP-DR; DO-68		DETAIL OF DRAINAGE OUTLET; (DR 68 & MR 68, RIGHT BANK)
71	LP-DR; DO-69		DETAIL OF DRAINAGE OUTLET; (DR 69 & MR 69, RIGHT BANK)
72	LP-DR; DO-70		DETAIL OF DRAINAGE OUTLET; (DR 70 & MR 70, RIGHT BANK)
73	LP-DR; DO-70A		DETAIL OF DRAINAGE OUTLET; (DR 70A & MR 70A, RIGHT BANK)
74	LP-DR; DO-70A.2		DETAIL OF DRAINAGE OUTLET; (DR 70A.2 & MR 70A.2, RIGHT BANK)
75	LP-DR; DO-70C		DETAIL OF DRAINAGE OUTLET; (DR 70C & MR 70C, RIGHT BANK)
76	LP-DR; DO-71		DETAIL OF DRAINAGE OUTLET; (DR 71 & MR 71, RIGHT BANK)
77	LP-DR; DO-74A		DETAIL OF DRAINAGE OUTLET; (DR 74A & MR 74A, RIGHT BANK)
78	LP-DR; DO-74A.2		DETAIL OF DRAINAGE OUTLET; (DR 74A.2, MR 74A.2, & COLLECTOR PIPE, RIGHT BANK)
79	LP-DR; DO-75/P		PLAN & PROFILE OF COLLECTOR PIPE (DR 75, RIGHT BANK)
80	LP-DR; DO-75		DETAIL OF DRAINAGE OUTLET; (DR 75 & MR 75, RIGHT BANK)
81	LP-DR; DO-76A/P		PLAN & PROFILE OF COLLECTOR PIPE (DR 76A, RIGHT BANK)
82	LP-DR; DO-76A		DETAIL OF DRAINAGE OUTLET; (DR 76A & MR 76A, RIGHT BANK)
83	LP-DR; DO-76A.2		DETAIL OF DRAINAGE OUTLET; (DR 76A.2 & MR 76A.2, RIGHT BANK)
84	LP-DR; DO-77A		DETAIL OF DRAINAGE OUTLET; (DR 77A & MR 77A, RIGHT BANK)

DRAWING LIST (3/4)

(DRAINAGE WORKS; LOWER PASIG)

SHEET NO.	DRAWING NO.	NAME OF LOCATION	SHEET CONTENTS
85	LP-DR; DO-78/P		PLAN & PROFILE OF COLLECTOR PIPE (DR 78, RIGHT BANK)
86	LP-DR; DO-78		DETAIL OF DRAINAGE OUTLET; (DR 78 & MR 78, RIGHT BANK)
87	LP-DR; DO-79A/P		PLAN & PROFILE OF COLLECTOR PIPE (DR 79A, RIGHT BANK)
88	LP-DR; DO-79A		DETAIL OF DRAINAGE OUTLET; (DR 79A & MR 79A, RIGHT BANK)
89	LP-DR; DO-79A.5/P		PLAN & PROFILE OF COLLECTOR PIPE (DR 79A.5, RIGHT BANK)
90	LP-DR; DO-79A.5		DETAIL OF DRAINAGE OUTLET; (DR 79A.5 & MR 79A.5, RIGHT BANK)
91	LP-DR; DO-80/P		PLAN & PROFILE OF COLLECTOR PIPE (DR 80, RIGHT BANK)
92	LP-DR; DO-80		DETAIL OF DRAINAGE OUTLET; (DR 80 & MR 80, RIGHT BANK)
93	LP-DR; DO-81/P		PLAN & PROFILE OF COLLECTOR PIPE (DR 81, RIGHT BANK)
94	LP-DR; DO-81		DETAIL OF DRAINAGE OUTLET; (DR 81 & MR 81, RIGHT BANK)
95	LP-DR; DO-83.1/P		PLAN & PROFILE OF COLLECTOR PIPE (DR 83.1, RIGHT BANK)
96	LP-DR; DO-83.1		DETAIL OF DRAINAGE OUTLET; (DR 83.1 & MR 83.1, RIGHT BANK)
97	LP-DR; DO-83.4		DETAIL OF DRAINAGE OUTLET; (DR 83.4, MR 83.4, & COLLECTOR PIPE, RIGHT BANK)
98	LP-DR; DO-83.5/P		PLAN & PROFILE OF COLLECTOR PIPE (DR 83.5, RIGHT BANK)
99	LP-DR; DO-83.5		DETAIL OF DRAINAGE OUTLET; (DR 83.5 & MR 83.5, RIGHT BANK)
100	LP-DR; DO-83.18/P		PLAN & PROFILE OF COLLECTOR PIPE (DR 83.18, RIGHT BANK)
101	LP-DR; DO-83.18		DETAIL OF DRAINAGE OUTLET; (DR 83.18 & MR 83.18, RIGHT BANK)
102	LP-DR; DO-83.21		DETAIL OF DRAINAGE OUTLET; (DR 83.21 & MR 83.21, RIGHT BANK)
103	LP-DR; DO-83.23		DETAIL OF DRAINAGE OUTLET; (DR 83.23 & MR 83.23, RIGHT BANK)
104	LP-DR; DO-83.27/P		PLAN & PROFILE OF COLLECTOR PIPE (DR 83.27, RIGHT BANK)
105	LP-DR; DO-83.27		DETAIL OF DRAINAGE OUTLET; (DR 83.27 & MR 83.27, RIGHT BANK)
106	LP-DR; DO-83.29/P		PLAN & PROFILE OF U-DITCH (DR 83.29, RIGHT BANK)
107	LP-DR; DO-83.29		DETAIL OF DRAINAGE OUTLET; (DR 83.29 & MR 83.29, RIGHT BANK)
108	LP-DR; DO-83.36		DETAIL OF DRAINAGE OUTLET; (DR 83.36, MR 83.36, & COLLECTOR PIPE, RIGHT BANK)
109	LP-DR; DO-83.46/P		PLAN & PROFILE OF COLLECTOR PIPE (DR 83.46, RIGHT BANK)
110	LP-DR; DO-83.46		DETAIL OF DRAINAGE OUTLET; (DR 84.46 & MR 83.46, RIGHT BANK)
111	LP-DR; DO-85/P		PLAN & PROFILE OF COLLECTOR PIPE (DR 85, RIGHT BANK)
112	LP-DR; DO-85		DETAIL OF DRAINAGE OUTLET; (DR 85 & MR 85, RIGHT BANK)
113	LP-DR; DO-86/P		PLAN & PROFILE OF COLLECTOR PIPE (DR 86, RIGHT BANK)
114	LP-DR; DO-86		DETAIL OF DRAINAGE OUTLET; (DR 86 & MR 86, RIGHT BANK)
115	LP-DR; DO-90/P		PLAN & PROFILE OF COLLECTOR PIPE (DR 90, RIGHT BANK)
116	LP-DR; DO-90		DETAIL OF DRAINAGE OUTLET; (DR 90 & MR 90, RIGHT BANK)
117	LP-DR; DO-90.2		DETAIL OF DRAINAGE OUTLET; (DR 90.2 & MR 90.2, RIGHT BANK)
118	LP-DR; DO92A		DETAIL OF DRAINAGE OUTLET; (DR 92A, MR 92A, & COLLECTOR PIPE, RIGHT BANK)
119	LP-DR; DO-92A.5		DETAIL OF DRAINAGE OUTLET; (DR 92A.5, MR 92A.5, & COLLECTOR PIPE, RIGHT BANK)
120	LP-DR; DO-93/P		PLAN & PROFILE OF COLLECTOR PIPE (DR 93, RIGHT BANK)
121	LP-DR; DO-93		DETAIL OF DRAINAGE OUTLET; (DR 93 & MR 93, RIGHT BANK)
122	LP-DR; DO-95/P		PLAN & PROFILE OF COLLECTOR PIPE (DR 95, RIGHT BANK)
123	LP-DR; DO-95		DETAIL OF DRAINAGE OUTLET; (DR 95 & MR 95, RIGHT BANK)
124	LP-DR; DO-97/P		PLAN & PROFILE OF COLLECTOR PIPE (DR 97, RIGHT BANK)
125	LP-DR; DO-97		DETAIL OF DRAINAGE OUTLET; (DR 97 & MR 97, RIGHT BANK)

DRAWING LIST (4/4)

(DRAINAGE WORKS; LOWER PASIG)

SHEET NO.	DRAWING NO.	NAME OF LOCATION	SHEET CONTENTS
126	LP-DR; DO-98/P		PLAN & PROFILE OF COLLECTOR PIPE (DR 98, RIGHT BANK)
127	LP-DR; DO-98		DETAIL OF DRAINAGE OUTLET; (DR 98 & MR 98, RIGHT BANK)
128	LP-DR; DO-98.7/P		PLAN & PROFILE OF COLLECTOR PIPE (DR 98.7, RIGHT BANK)
129	LP-DR; DO-98.7		DETAIL OF DRAINAGE OUTLET; (DR 98.7 & MR 98.7, RIGHT BANK)
130	LP-DR; DO-99.1/P		PLAN & PROFILE OF COLLECTOR PIPE (DR 99.1, RIGHT BANK)
131	LP-DR; DO-99.1		DETAIL OF DRAINAGE OUTLET; (DR 99.1 & MR 99.1, RIGHT BANK)
132	LP-DR; DO-99.9		DETAIL OF DRAINAGE OUTLET; (DR 99.9, MR 99.9 & COLLECTOR PIPE, RIGHT BANK)
133	LP-DR; DO-100/P		PLAN & PROFILE OF U-DITCH COLLECTOR (DR 100, RIGHT BANK)
134	LP-DR; DO-100		DETAIL OF DRAINAGE OUTLET; (DR 100 & MR 100, RIGHT BANK)
135	LP-DR; DO-102.1		DETAIL OF DRAINAGE OUTLET; (DR 102.1, MR 102.1, & COLLECTOR PIPE, RIGHT BANK)
136	LP-DR; DO-102.6/P		PLAN & PROFILE OF COLLECTOR PIPE (DR 102.6, RIGHT BANK)
137	LP-DR; DO-102.6		DETAIL OF DRAINAGE OUTLET; (DR 102.6 & MR 102.6, RIGHT BANK)



KEY PLAN

GENERAL LAYOUT PLAN
SCALE A



LEGEND:

- 100 • EXISTING OUTLET
- EXISTING DRAINAGE
- DRAINAGE OUTLET
- COLLECTOR PIPE
- ↑ PDR-100 DRAINAGE OUTLET NO.

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

NOTE:
PURSUANT TO SECTION 4 OF ANNEX 'A' OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES



DESIGNED BY:	CHECKED BY:	SUBMITTED BY:
KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	TOSHIKI KAWAKAMI THE CHECKER	SHUJI KAKU TEAM LEADER



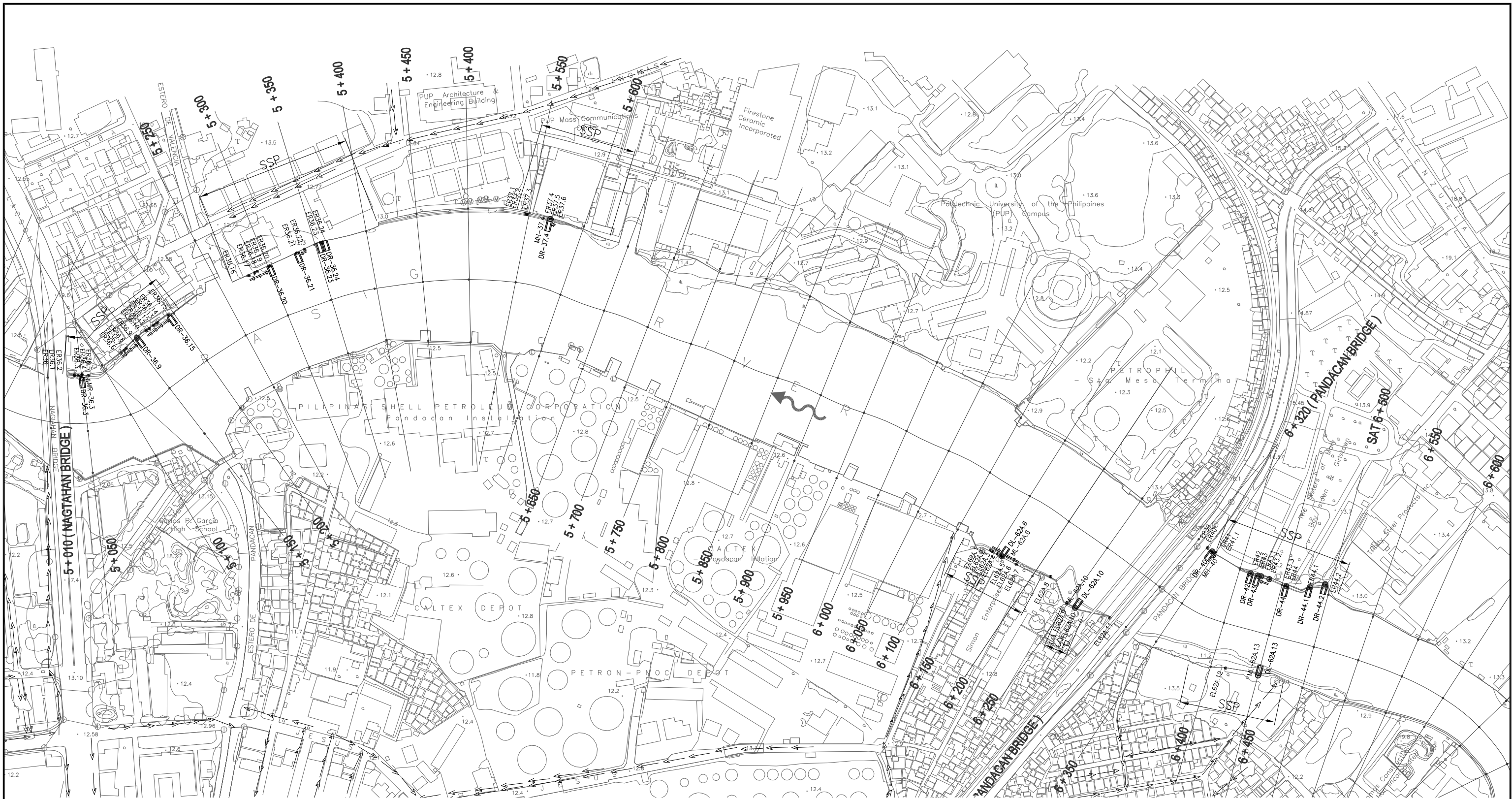
REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS

REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED BY:
PERFECTO L. ZAPLAN, JR. CHIEF, HYDRAULIC DIVISION, BOD	PATRICK B. GATAN PROJECT DIRECTOR PMO - MFCP	GILBERTO S. REYES DIRECTOR BOD
SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY	RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES	SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY
		ROGELIO L. SINGSON SECRETARY

PROJECT & LOCATION
PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS
GENERAL LAYOUT PLAN (ARROCEROS, HOSPICIO & MALACAÑANG AREA)

SHEET NO.
LP-DR
DL 01



KEY PLAN

GENERAL LAYOUT PLAN
SCALE A

LEGEND:

- 100 • EXISTING OUTLET
- EXISTING DRAINAGE
- DRAINAGE OUTLET
- COLLECTOR PIPE
- PDR-100 DRAINAGE OUTLET NO.



NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

SHUJI KAKU
TEAM LEADER

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY

APPROVED BY: RAUL C. ASIS
UNDERSECRETARY FOR TECHNICAL SERVICES

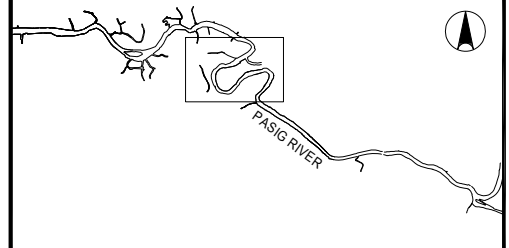
SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY

ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION: PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS: GENERAL LAYOUT PLAN (NAGTAHAN BRIDGE-PANDACAN BRIDGE AREA)

SHEET NO.: LP-DR DL 02



- LEGEND:**
- 100 • EXISTING OUTLET
 - EXISTING DRAINAGE
 - DRAINAGE OUTLET
 - COLLECTOR PIPE
 - PDR-100 DRAINAGE OUTLET NO.

GENERAL LAYOUT PLAN
SCALE A

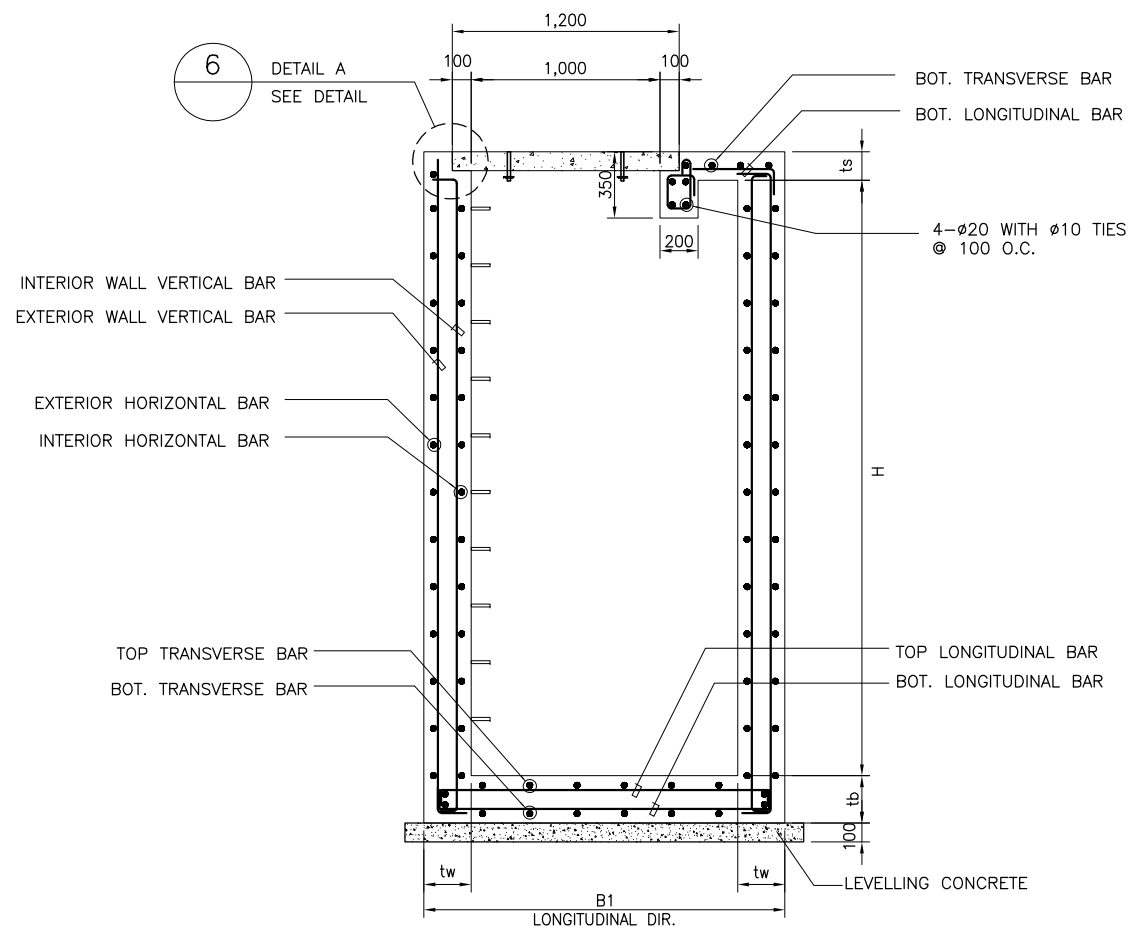


REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

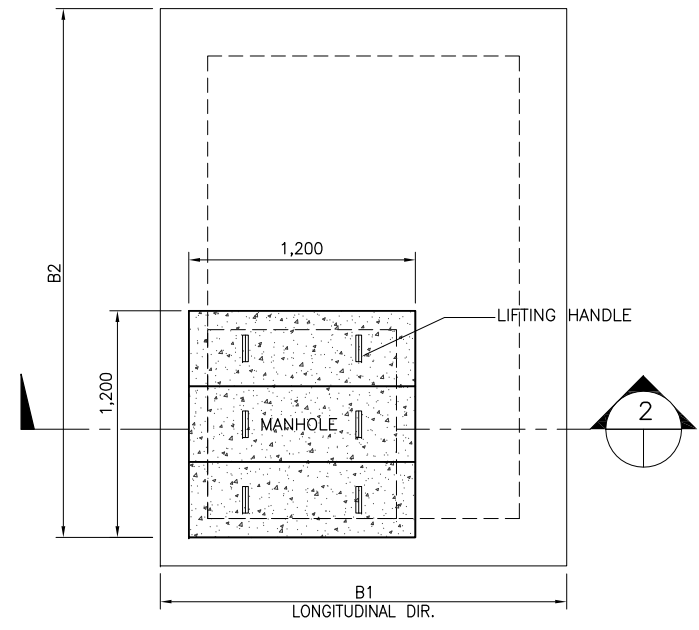
NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGN UNDERTAKEN BY CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGN NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

SHUJI KAKU
TEAM LEADER

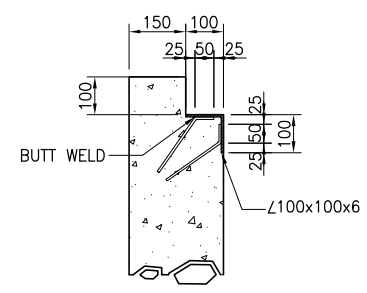
JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN 			REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS 			PROJECT & LOCATION PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA		SHEET CONTENTS GENERAL LAYOUT PLAN (PUNTA, STA. ANA AREA)	SHEET NO. LP-DR DL 03
DESIGNED BY: KOHEI TAKAYAMA <small>STRUCTURAL ENGINEER IV</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>	APPROVED BY: GILBERTO S. REYES <small>DIRECTOR BOD</small>	<small>SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY</small> RAUL C. ASIS <small>UNDERSECRETARY FOR TECHNICAL SERVICES</small>	<small>SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY</small> ROGELIO L. SINGSON <small>SECRETARY</small>	<small>PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.</small>	



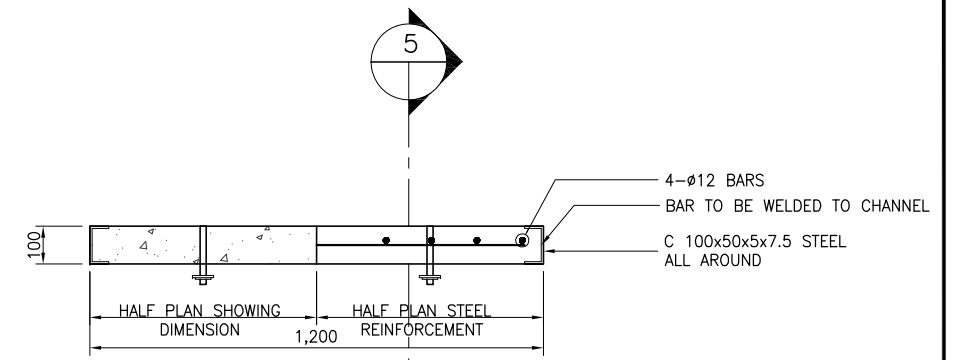
2 SECTION
SCALE A



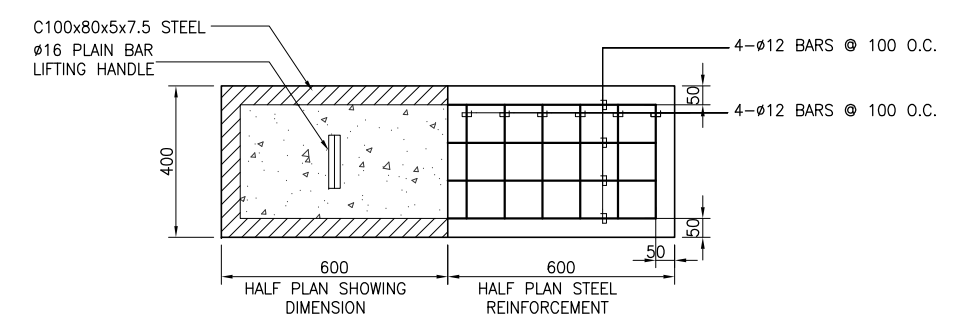
1 PLAN
SCALE A



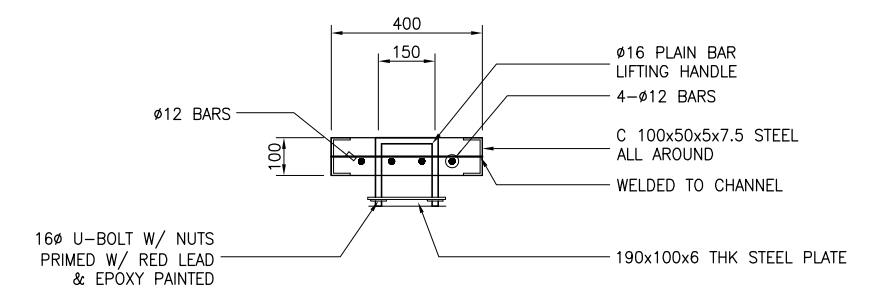
6 DETAIL A
SCALE B



4 ELEVATION
SCALE B



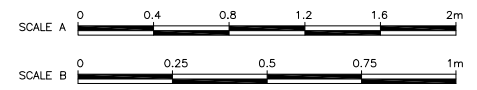
3 PLAN OF MANHOLE COVER
SCALE B



5 SECTION
SCALE B

MANHOLE BAR SCHEDULE

MANHOLE DIMENSION			MANHOLE THICKNESS			TOP SLAB		BOTTOM SLAB BAR				WALL			
B1 mm	B2 mm	H mm	TOP SLAB ts (mm)	BOT. SLAB tb (mm)	WALL tw (mm)	BOTTOM BAR		TOP BAR		BOTTOM BAR		HOR. BAR		VERTICAL BAR	
						LONG. BAR	TRANS. BAR	LONG. BAR	TRANS. BAR	LONG. BAR	TRANS. BAR	EXT. BAR	INT. BAR	EXT. BAR	INT. BAR
2000	1200	2000-4000	150	250	250	D12@125	D12@125	D12@250	D12@250	D12@250	D12@250	D12@250	D12@250	D12@250	D12@250
2000	2000	2000-4000	150	250	250	D12@125	D12@125	D12@250	D12@250	D12@250	D12@250	D12@250	D12@250	D12@250	D12@250
2000	2800	2000-2500	150	250	250	D12@125	D12@125	D12@250	D12@250	D12@250	D12@250	D12@250	D12@250	D12@250	D12@250
2000	2800	3000	150	250	250	D12@125	D12@125	D12@250	D12@250	D16@250	D16@250	D12@250	D12@250	D16@250	D12@250
2100	2800	3500	150	300	250	D12@125	D12@125	D12@250	D12@250	D16@250	D16@250	D16@250	D12@250	D16@250	D12@250
2100	2900	4000	150	300	300	D12@125	D12@125	D12@250	D12@250	D16@250	D16@250	D16@250	D12@250	D16@250	D12@250
2500	1200	2000-2500	150	250	250	D12@250	D12@250	D12@250	D12@250	D12@250	D12@250	D12@250	D12@250	D12@250	D12@250
2500	1200	2500-3500	150	250	250	D12@125	D12@125	D12@250	D12@250	D12@250	D12@250	D16@250	D16@250	D12@250	D12@250
2600	1200	4000	150	300	300	D12@125	D12@125	D12@250	D12@250	D12@250	D12@250	D16@250	D16@250	D12@250	D12@250
2100	4100	3000-3500	150	300	300	D12@125	D12@125	D12@250	D12@250	D20@250	D20@250	D16@250	D12@250	D20@250	D12@250
2200	3900	4000-4200	150	350	350	D12@125	D12@125	D12@250	D12@250	D20@250	D20@250	D16@250	D12@250	D20@250	D12@250

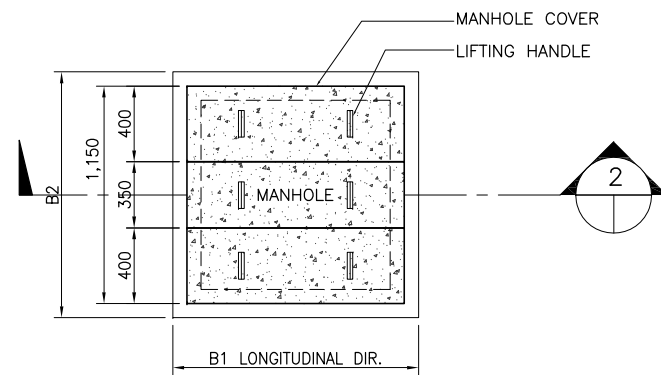


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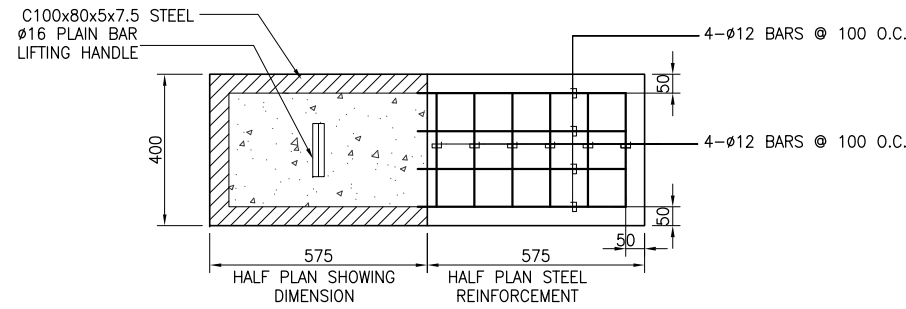
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SHUJI KAKU
TEAM LEADER

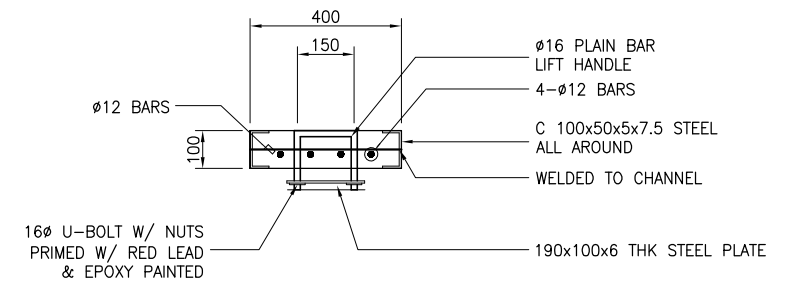
JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN			REPUBLIC OF THE PHILIPPINES			PROJECT & LOCATION	SHEET CONTENTS	SHEET NO.
	DESIGNED BY:	CHECKED BY:		REVIEWED BY:	RECOMMENDING APPROVAL:	PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	TYPICAL MANHOLE DETAIL AND BAR SCHEDULE	
	KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	TOSHIKI KAWAKAMI THE CHECKER		SHUJI KAKU TEAM LEADER	PERFECTO L. ZAPLAN, JR. CHIEF, HYDRAULIC DIVISION, BOD			
			APPROVED BY: SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY					
			RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES			ROGELIO L. SINGSON SECRETARY		



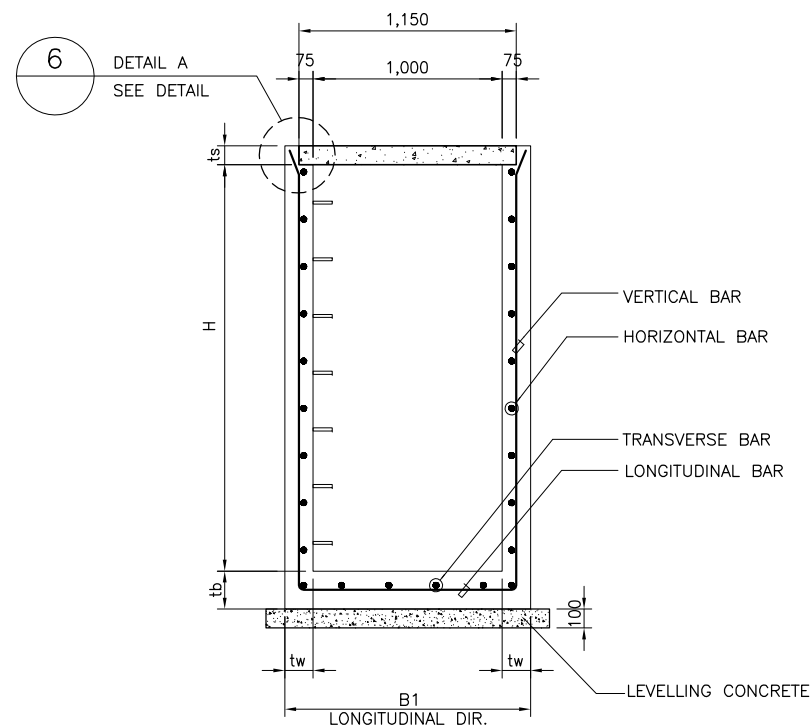
1 PLAN
SCALE A



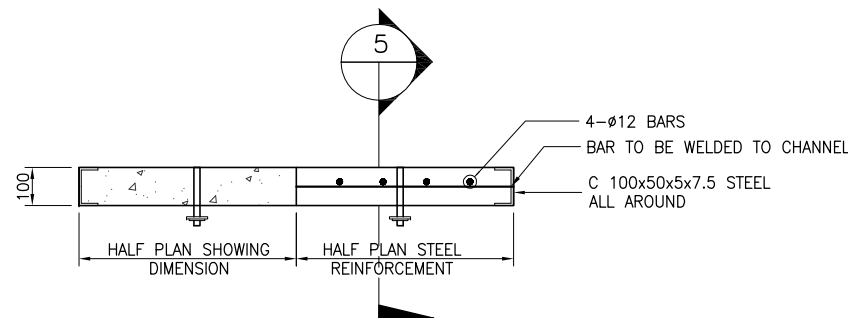
3 PLAN OF JUNCTION BOX COVER
SCALE B



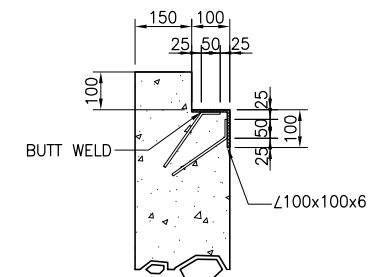
5 SECTION
SCALE B



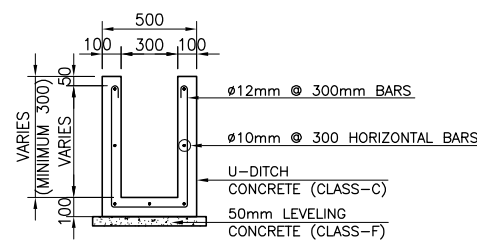
2 SECTION
SCALE A



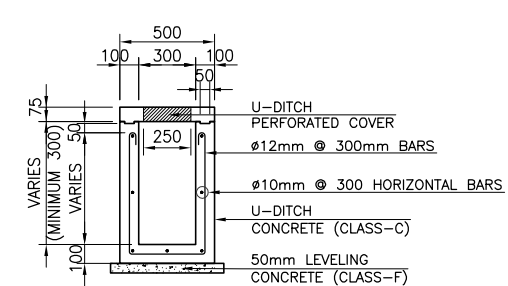
4 ELEVATION
SCALE B



6 DETAIL A
SCALE B



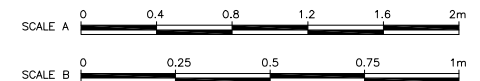
7 DETAIL OF U-DITCH
SCALE: A



8 DETAIL OF U-DITCH W/ COVER
SCALE: A

JUNCTION BOX BAR SCHEDULE

JUNCTION BOX DIMENSION			JUNCTION BOX THICKNESS		JUNCTION BOX STEEL REINFORCEMENT			
B1 mm	B2 mm	H mm	WALL tw (mm)	BOT. SLAB tb (mm)	BOTTOM SLAB BAR		WALL	
					LONG. BAR	TRANS. BAR	VERT. BAR	HOR. BAR
1200	1200	0-1500	150	200	D12@250	D12@250	D12@250	D12@250
1200	1200	1501-2000	150	200	D12@250	D12@250	D12@250	D12@250
1200	1200	2001-2500	150	200	D12@250	D12@250	D12@250	D12@250



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SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

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

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY

APPROVED BY: RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY

ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION

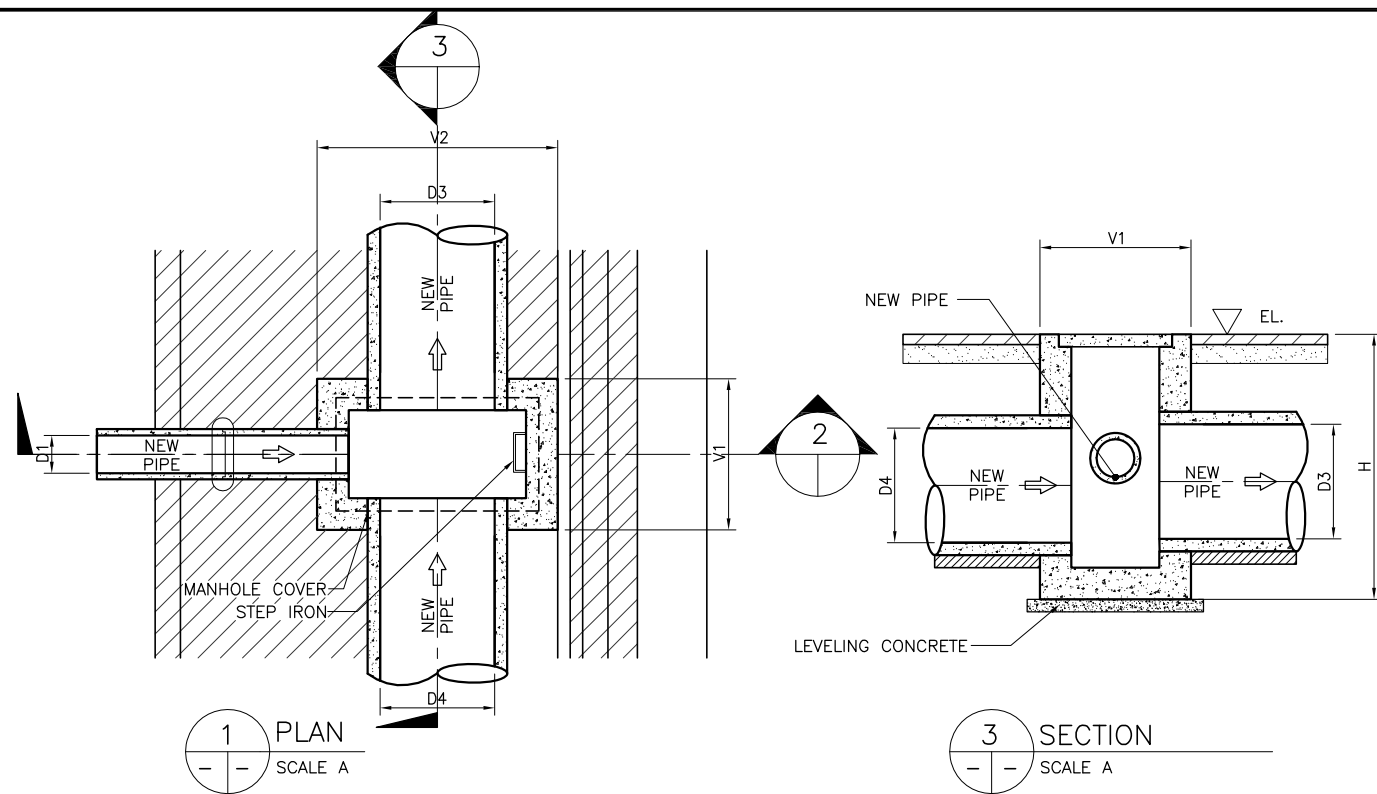
PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS

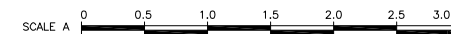
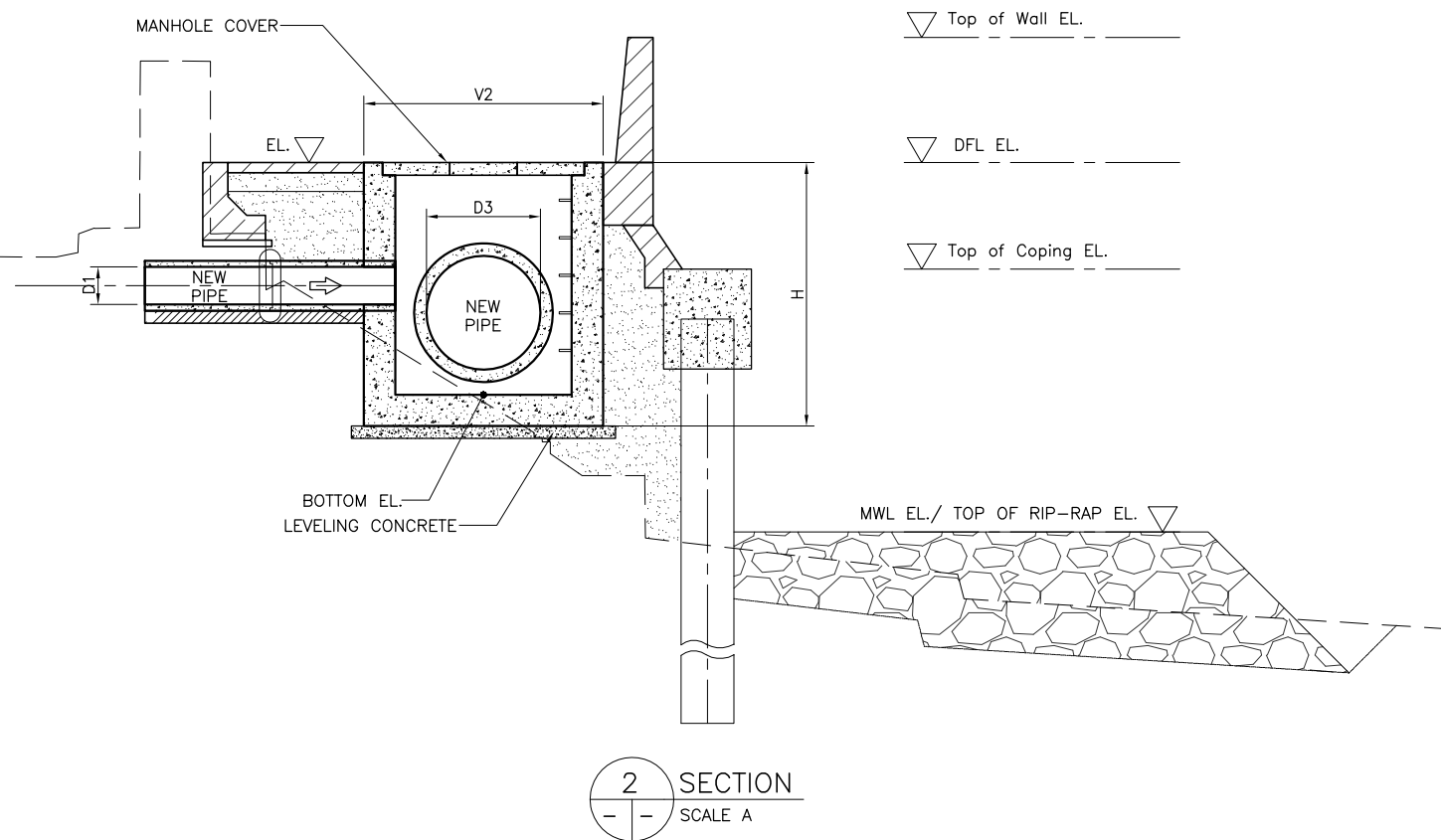
TYPICAL JUNCTION BOX DETAIL, BAR SCHEDULE & TYPICAL DETAIL OF U-DITCH

SHEET NO.





SCHEDULE OF MANHOLE (STA. 2+392 ~ STA. 3+072 LB)									
STATION No.	MANHOLE NO.	OUTLET NO.	BOTTOM ELEV.	D1 (mm)	D3 (mm)	D4 (mm)	V1 (mm)	V2 (mm)	H (mm)
2+446 LB	ML 35.6	DL 35.5	10.327	∅ 200	∅ 910	∅ 910	1100	1910	2205
2+457 LB	ML 36	DL 35.5	10.386	∅ 170	∅ 910	∅ 910	1400	1910	2161
2+477 LB	ML 37	DL 35.5	10.479	∅ 150	∅ 910		1100	1910	2060
2+507 LB	ML 37.1	DL 37.3	10.466	∅ 300		∅ 910	1200	1910	2060
2+549 LB	ML 37.5	DL 37.6	10.330	∅ 400		∅ 910	1320	1910	2230
2+577 LB	ML 37.9	DL 37.6	10.532	150x150		∅ 910	1100	1910	2060
2+595 LB	ML 37.10	DL 37.11	10.529	∅ 500		∅ 910	1430	1910	2081
2+621 LB	ML 37.16	DL 37.12	10.317	∅ 300	∅ 910	∅100, ∅200	1400	1910	2303
2+904 LB	ML 43	DL 46	10.737	∅ 300		∅ 910	1200	1910	2260
2+929 LB	ML 45	DL 46	10.690	∅ 300		∅ 910	1200	1910	1992

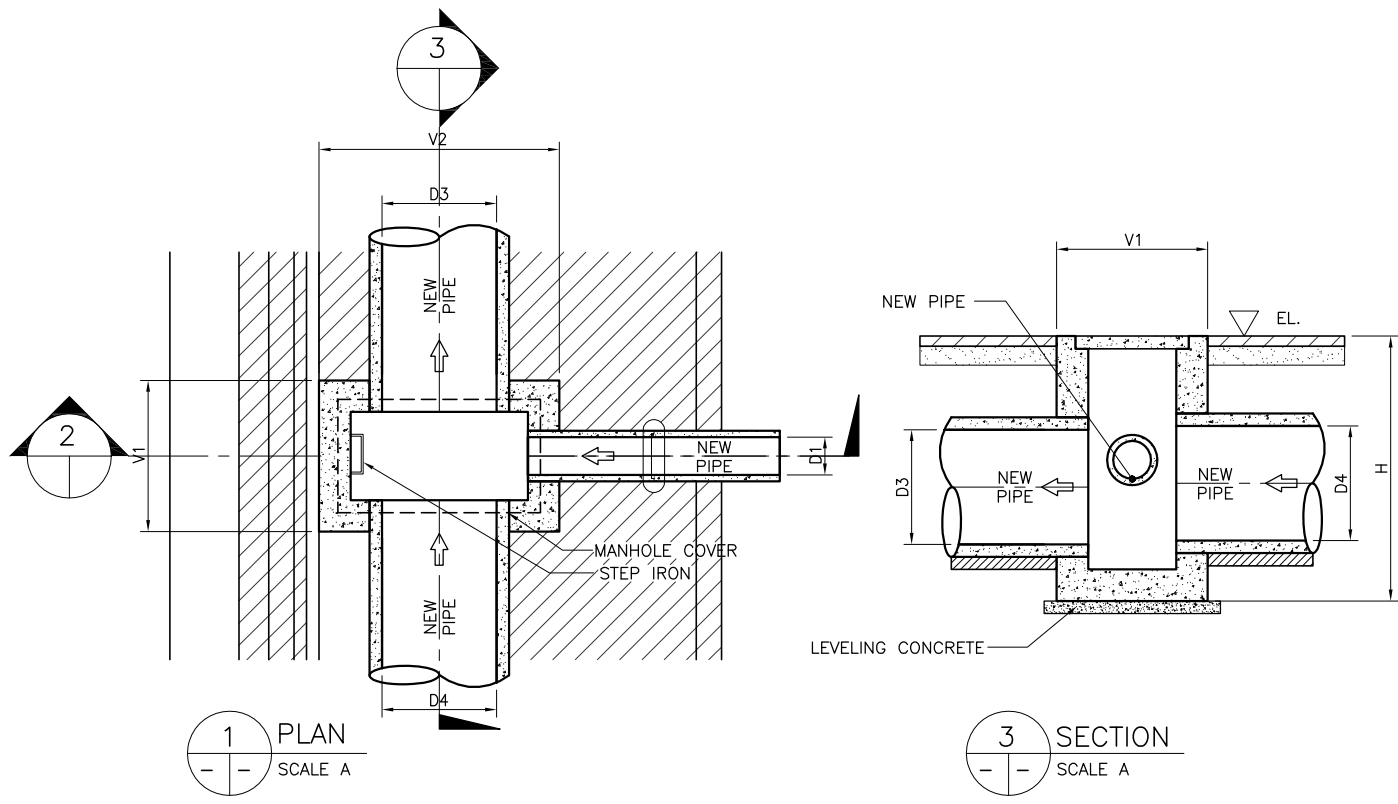


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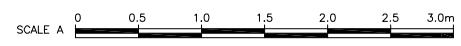
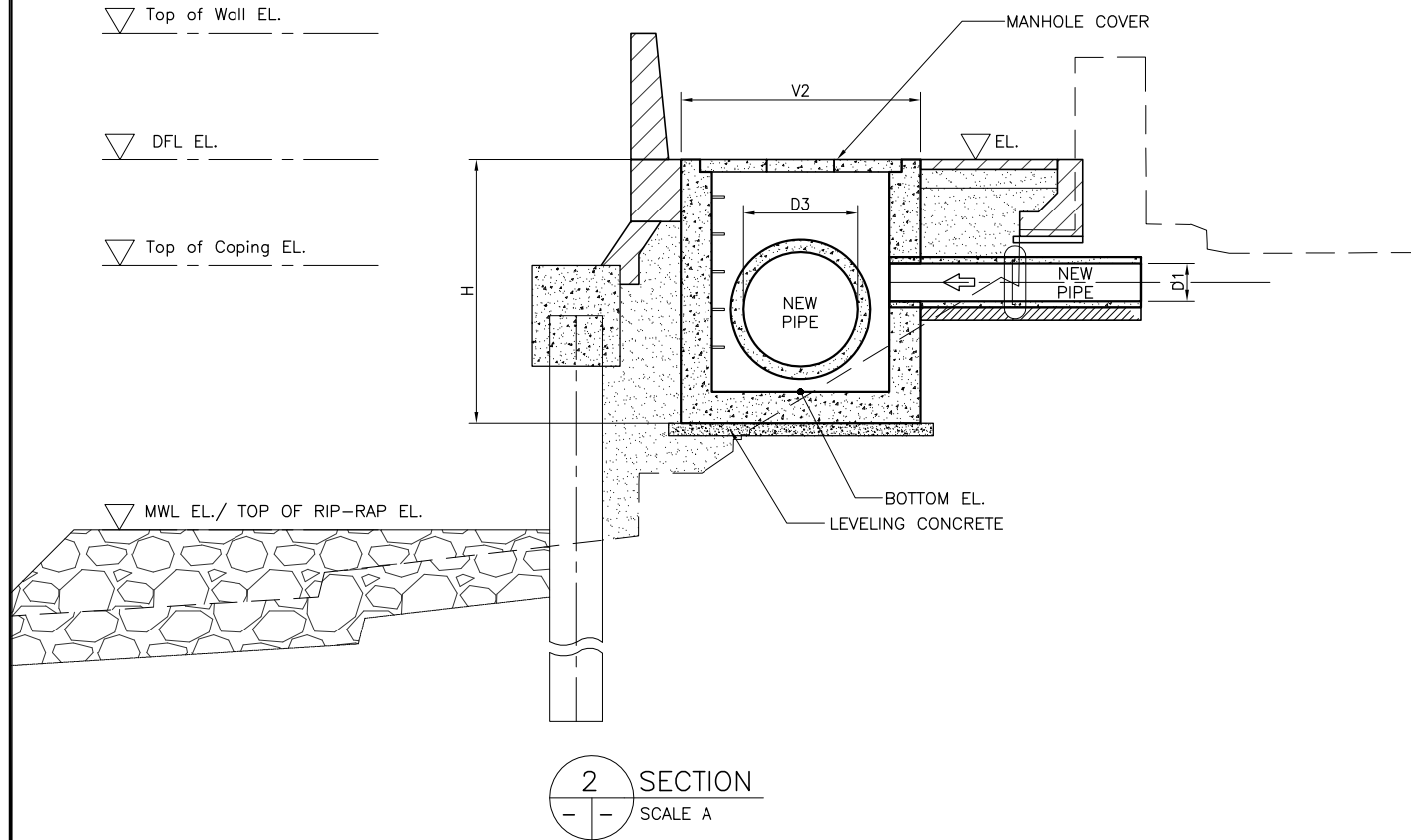
SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN			REPUBLIC OF THE PHILIPPINES				PROJECT & LOCATION		SHEET CONTENTS		SHEET NO.
	DESIGNED BY:	CHECKED BY:	SUBMITTED BY:		REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED BY:		PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	SCHEDULE OF MANHOLE @ STA. 2+392 ~ STA. 3+072 LB	
	KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	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	SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES			



SCHEDULE OF MANHOLE (STA. 6+357 ~ STA. 6+510 RB)									
STATION No.	MANHOLE NO.	OUTLET NO.	BOTTOM ELEV.	D1 (mm)	D3 (mm)	D4 (mm)	V1 (mm)	V2 (mm)	H (mm)
6+425 RB	MR 43.1	DR 43	10.922	∅ 265	∅ 910	∅ 910	1150	1910	2347
6+434 RB	MR 43.2	DR 43	10.981	∅ 400	∅ 910		1320	1910	2293

▽ Top of Wall EL.
 ▽ DFL EL.
 ▽ Top of Coping EL.

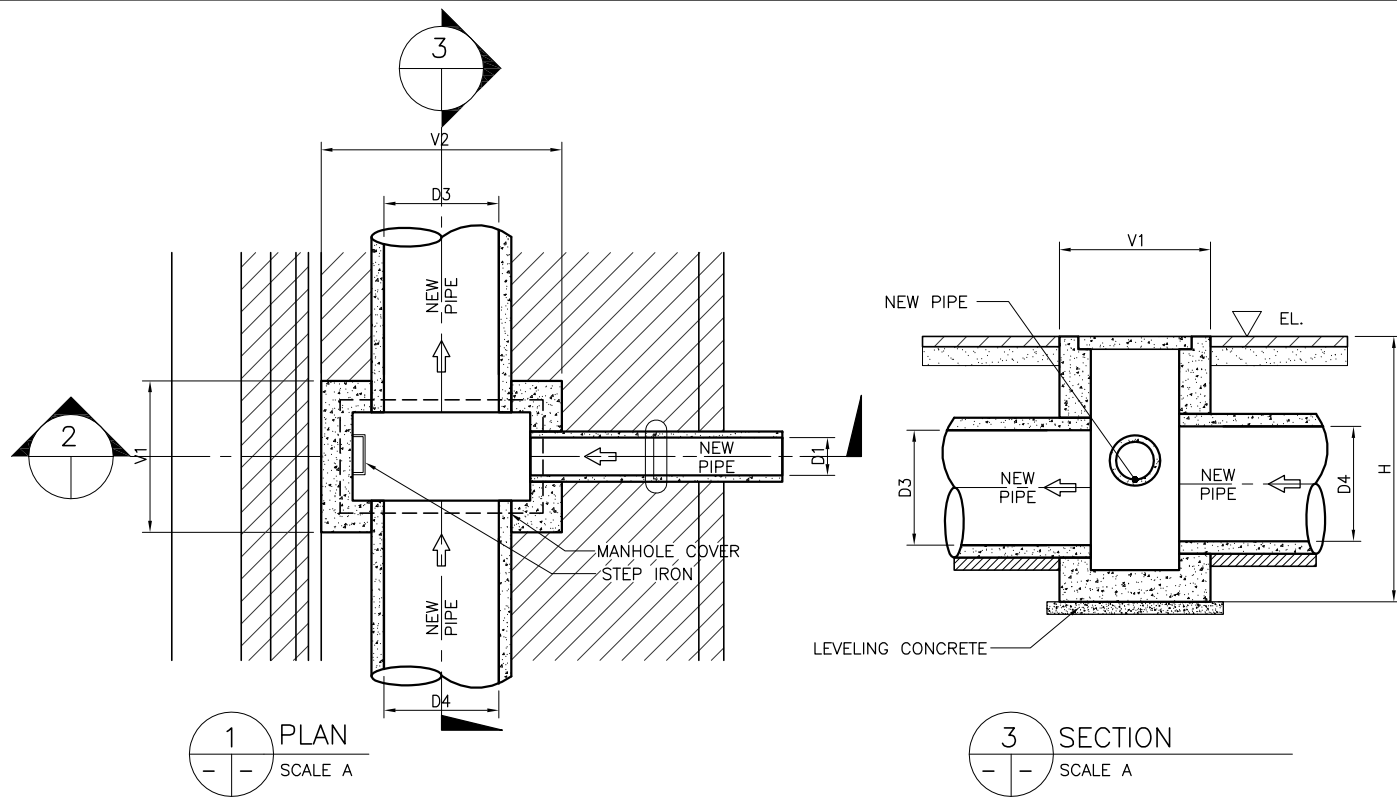


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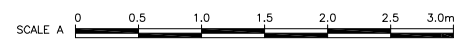
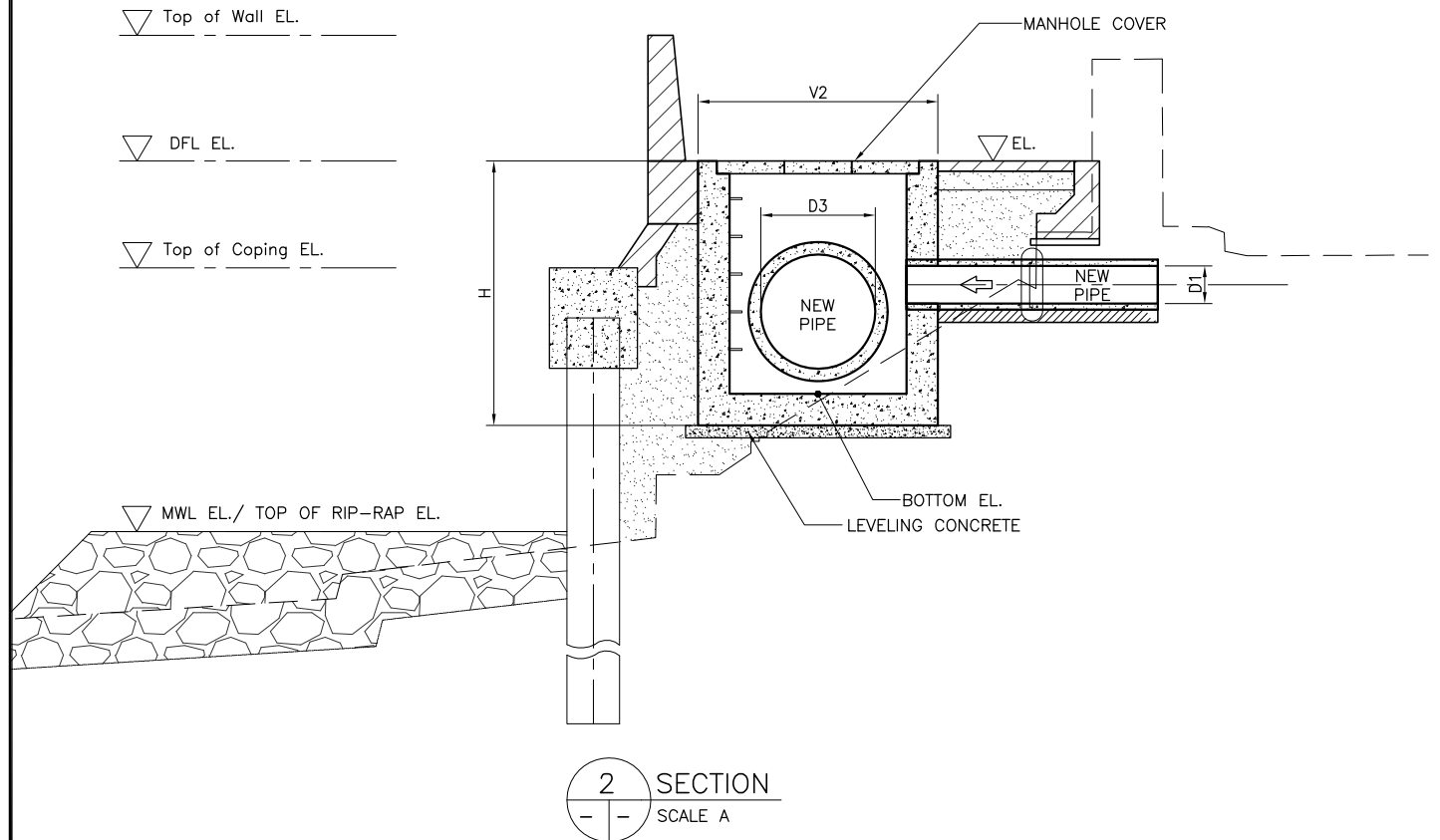
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SHUJI KAKU
 TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN			REPUBLIC OF THE PHILIPPINES				PROJECT & LOCATION	SHEET CONTENTS	SHEET NO.
	DESIGNED BY:	CHECKED BY:	SUBMITTED BY:		REVIEWED BY:	RECOMMENDING APPROVAL:	PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	SCHEDULE OF MANHOLE @ STA. 6+357 ~ STA. 6+510 RB	
	KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	TOSHIKI KAWAKAMI THE CHECKER	SHUJI KAKU TEAM LEADER		PERFECTO L. ZAPLAN, JR. CHIEF, HYDRAULIC DIVISION, BOD	PATRICK B. GATAN PROJECT DIRECTOR PMO - MFCP			



SCHEDULE OF MANHOLE (STA. 8+242 ~ STA. 9+947 RB)									
STATION No.	MANHOLE NO.	OUTLET NO.	BOTTOM ELEV.	D1 (mm)	D3 (mm)	D4 (mm)	V1 (mm)	V2 (mm)	H (mm)
8+798 RB	MR 74A.1	DR 74A.2	11.207	ø 460		ø 910	1390	1910	2590
8+853 RB	MR 76	DR 75	11.696	ø 300	ø 910	ø 910	1200	1910	2104
8+857 RB	MR 76.1	DR 75	11.740	ø 460	ø 910	ø 910	1390	1910	2060
8+947 RB	MR 77A.3	DR 78	11.357	ø 460	ø 200	ø 910	1390	1910	2429
9+060 RB	MR 81.1	DR 81	11.515	ø 460	ø 910		1390	1910	1877
9+110 RB	MR 83	DR 83.1	11.252	ø 400	ø 910	ø 910	1320	1910	2694
9+099 RB	MR 82.1	DR 83.1	11.352	ø 250	ø 910	ø 910	1150	1910	2533
9+092 RB	MR 82	DR 83.1	11.334	300x300		ø 910	1200	1910	2481
9+239 RB	MR 83.15	DR 83.18	10.900	ø400; ø200		ø 910	1200	1910	2923
9+209 RB	MR 83.7	DR 83.5	11.179	ø 250	ø 910	ø80; ø200	1200	1910	2643
9+308 RB	MR 83.26	DR 83.27	10.800	ø 260	ø460; ø100	ø 460	1100	1390	3027
9+439 RB	MR 83.38	DR 83.36	10.802	ø100; ø150	ø 910	ø 910	1100	1910	3034
9+441 RB	MR 83.40	DR 83.36	10.845	ø 150	ø 910	ø 100	1100	1910	2991
9+444 RB	MR 83.41	DR 83.46	10.747	ø 160		ø 910	1100	1910	3089
9+454 RB	MR 83.44	DR 83.46	10.707	ø150; ø160	ø 910	ø 910	1100	1910	3159
9+472 RB	MR 84	DR 85	11.322	ø 260		ø 910	1150	1910	2515
9+521 RB	MR 87	DR 90	11.187	ø 300	ø 200	ø 910	1200	1910	2653
9+522 RB	MR 88	DR 90	11.066	ø 370	ø 910	ø 910	1300	1910	2836
9+532 RB	MR 89	DR 90	10.972	ø 250	ø 910	ø 910	1390	1910	2899
9+628 RB	MR 94.2	DR 95	11.406	ø 150		ø 910	1100	1910	2442
9+650 RB	MR 96	DR 97	11.437	ø 260	ø 100	ø 910	1150	1910	2411
9+677 RB	MR 98.3	DR 98	11.399	ø 150	ø 910	ø 100	1100	1910	2450
9+838 RB	MR 101	DR 100	10.957	ø 300	ø 910		1200	1910	2897
9+876 RB	MR 102.1	DR 102.1	10.949	ø 610		ø 910	1560	1910	2913

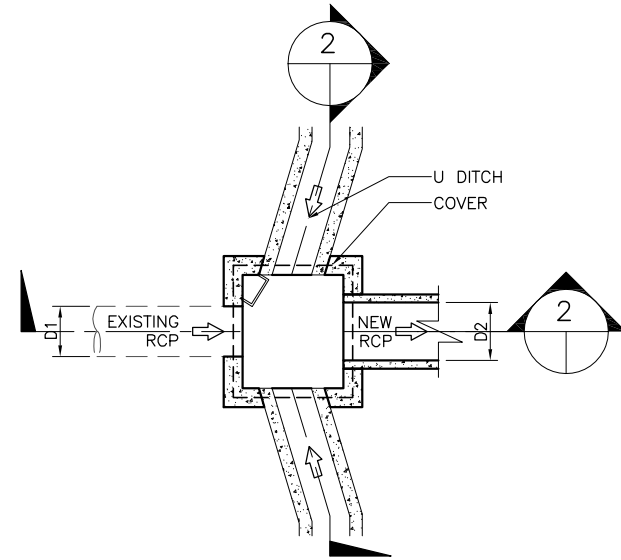


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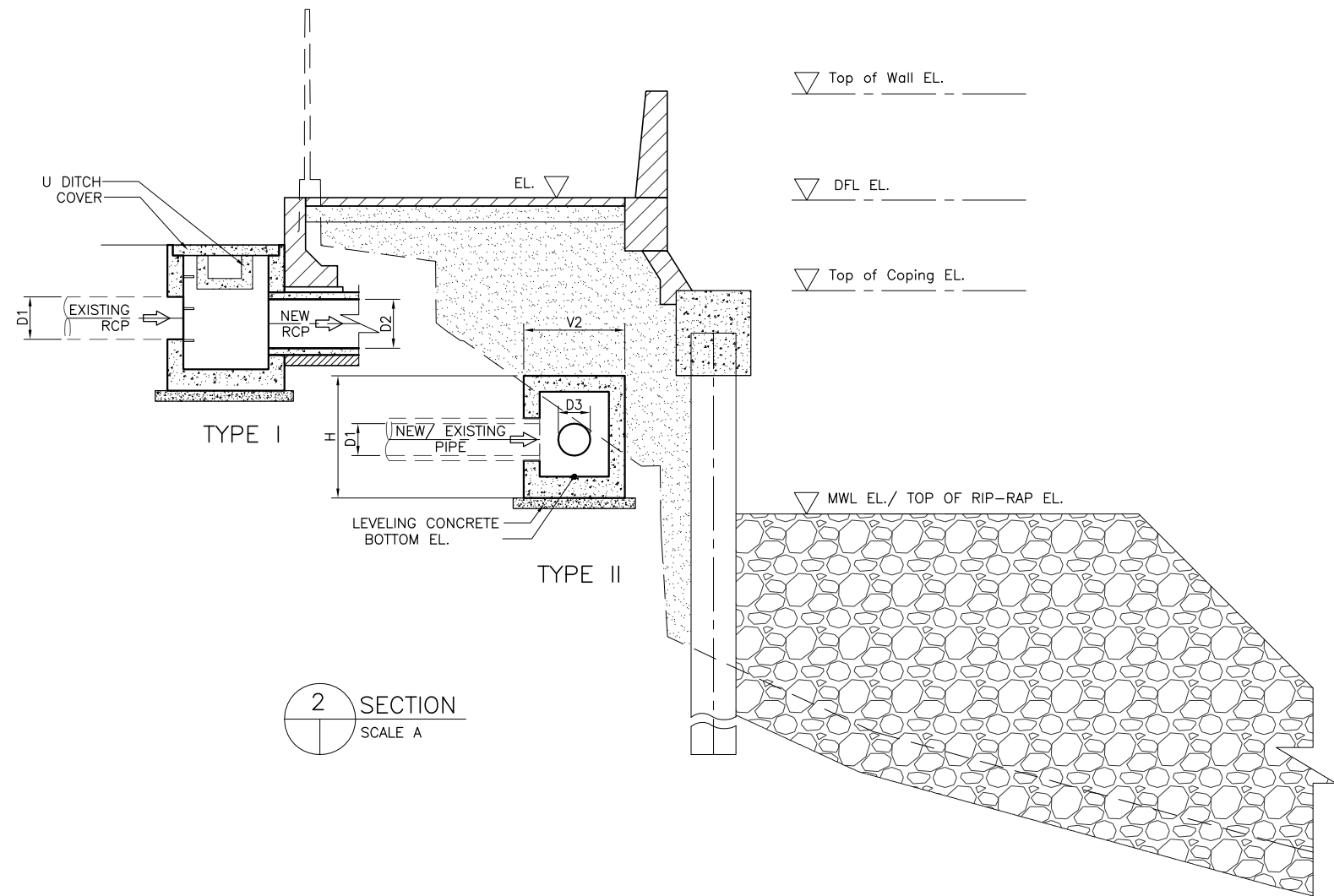
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SHUJI KAKU
 TEAM LEADER

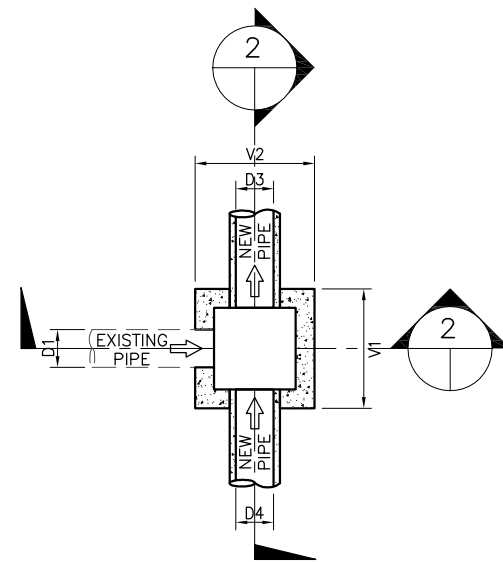
JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN 			REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS 				PROJECT & LOCATION PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA		SHEET CONTENTS SCHEDULE OF MANHOLE @ STA. 8+242 ~ STA. 9+947 RB	SHEET NO.
DESIGNED BY:	CHECKED BY:	SUBMITTED BY:	REVIEWED BY:	RECOMMENDING APPROVAL:		APPROVED BY:				
KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	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	RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES	ROGELIO L. SINGSON SECRETARY			



1 TYPE I JUNCTION BOX PLAN
SCALE A



2 SECTION
SCALE A



1 TYPE II JUNCTION BOX PLAN
SCALE A

SCHEDULE OF JUNCTION BOX (STA. 2+392 ~ STA. 3+072 LB)											
STATION No.	JUNCTION BOX NO.	TYPE	OUTLET	BOTTOM ELEV.	D1 (mm)	D2 (mm)	D3 (mm)	D4 (mm)	V1 (mm)	V2 (mm)	H (mm)
2+543 LB	JL 37.4	I	DL 37.3	11.211	ø 150	ø 150			900	900	900

SCALE A 0 0.5 1.0 1.5 2.0 2.5 3.0m

REVISIONS			
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SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

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

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE UNDERSECRETARY

RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

APPROVED BY: ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION

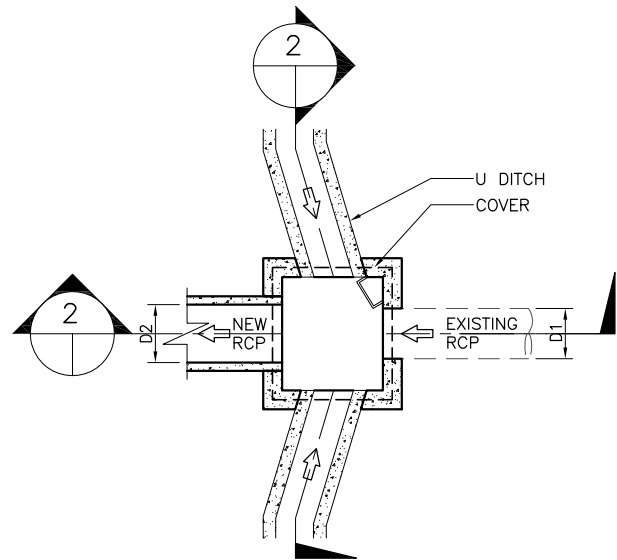
PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS

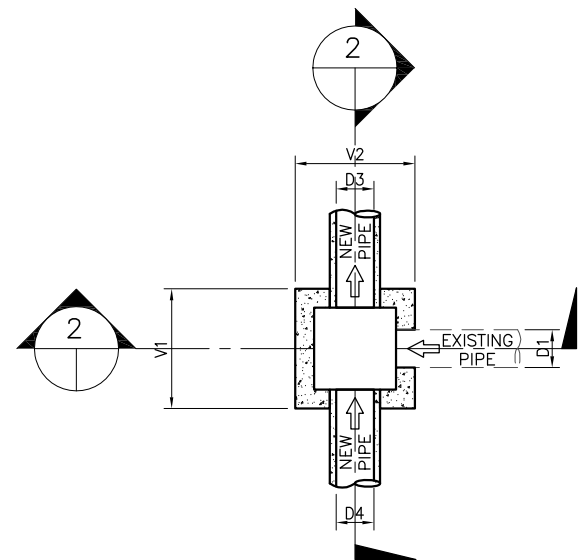
SCHEDULE OF JUNCTION BOX @ STA. 2+392 ~ STA. 3+072 LB

SHEET NO.





TYPE I
JUNCTION BOX PLAN
SCALE A



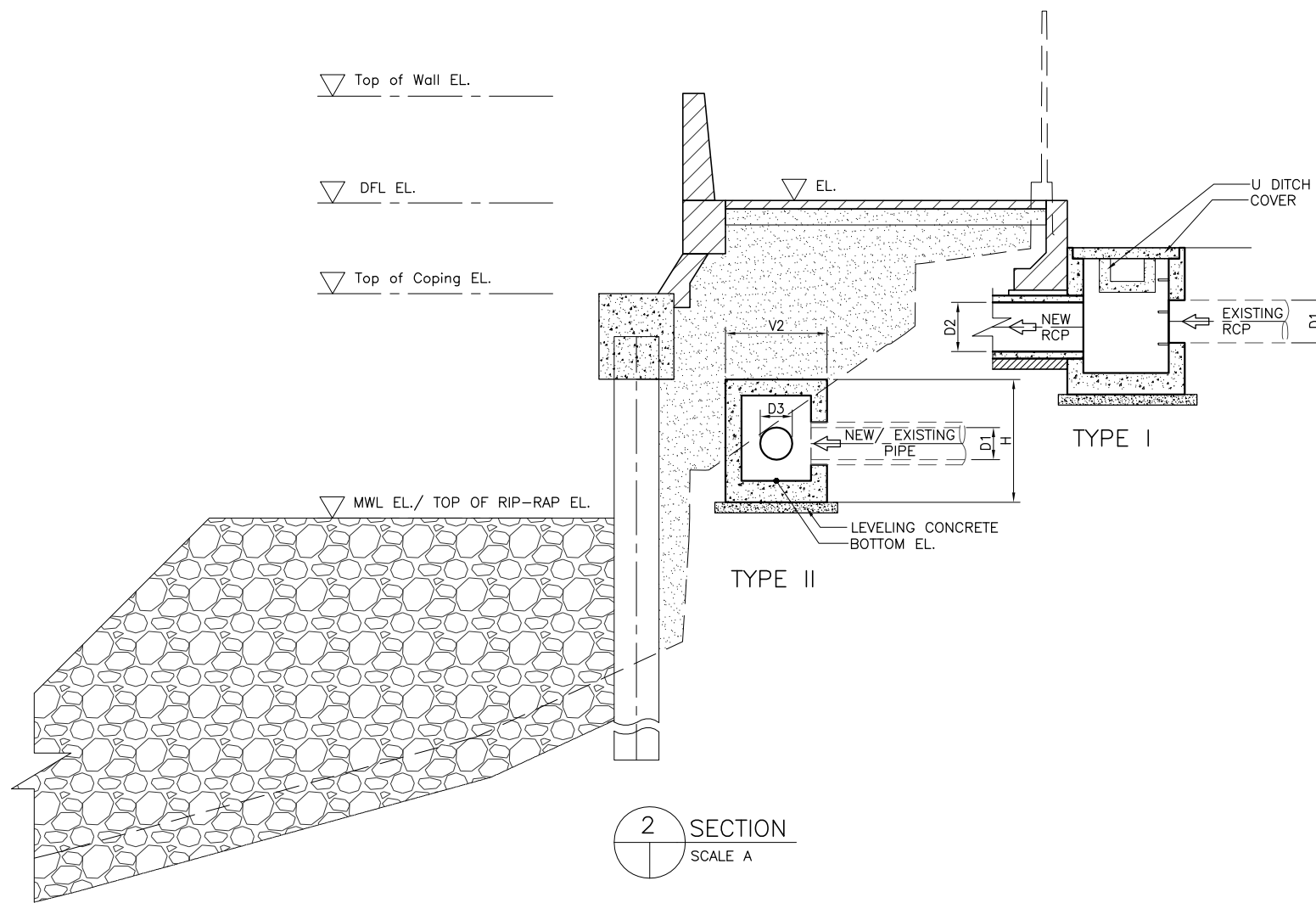
TYPE II
JUNCTION BOX PLAN
SCALE A

▽ Top of Wall EL.

▽ DFL EL.

▽ Top of Coping EL.

▽ MWL EL./ TOP OF RIP-RAP EL.



SECTION
SCALE A

SCHEDULE OF JUNCTION BOX (STA. 6+357 ~ STA. 6+510 RB)

STATION No.	JUNCTION BOX NO.	TYPE	OUTLET	BOTTOM ELEV.	D1 (mm)	D2 (mm)	D3 (mm)	D4 (mm)	V1 (mm)	V2 (mm)	H (mm)
6+439 RB	JR 41.1	II	DR 40	11.548	ø 230		ø 300		900	900	1100
6+453 RB	JR 43.3	II	DR 44	11.744	ø 192			ø 200	800	800	1050

SCALE A 0 0.5 1.0 1.5 2.0 2.5 3.0m

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

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

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY

RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

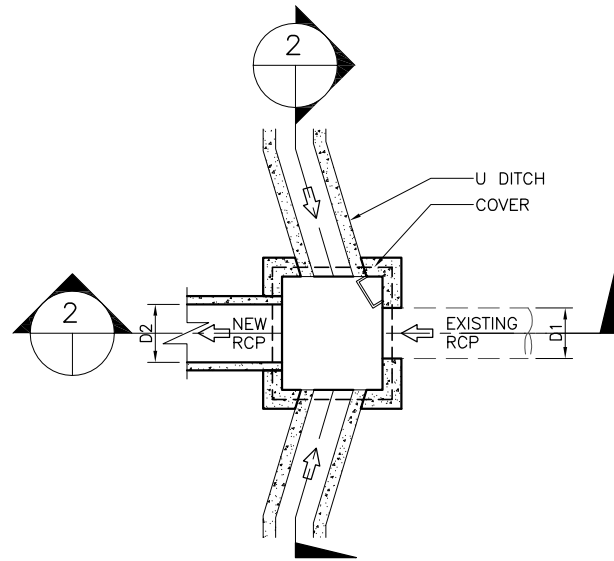
APPROVED BY: ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION
PASIG-MARIKINA
RIVER CHANNEL
IMPROVEMENT
PROJECT (PHASE III),
METRO MANILA

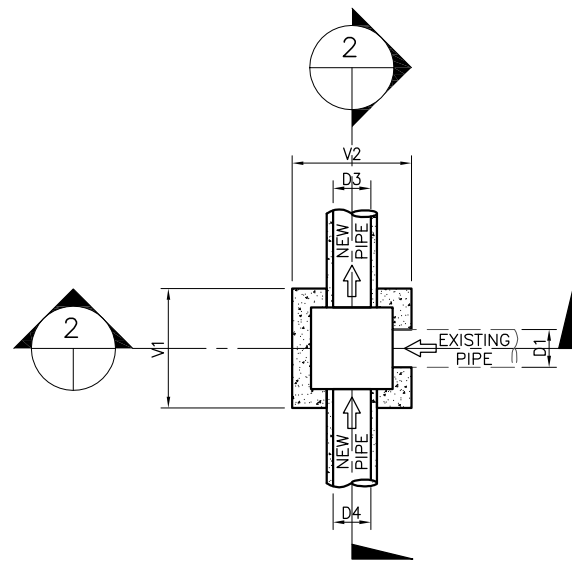
SHEET CONTENTS
SCHEDULE OF
MANHOLE @
STA. 6+357 ~
STA. 6+510 RB

SHEET NO.

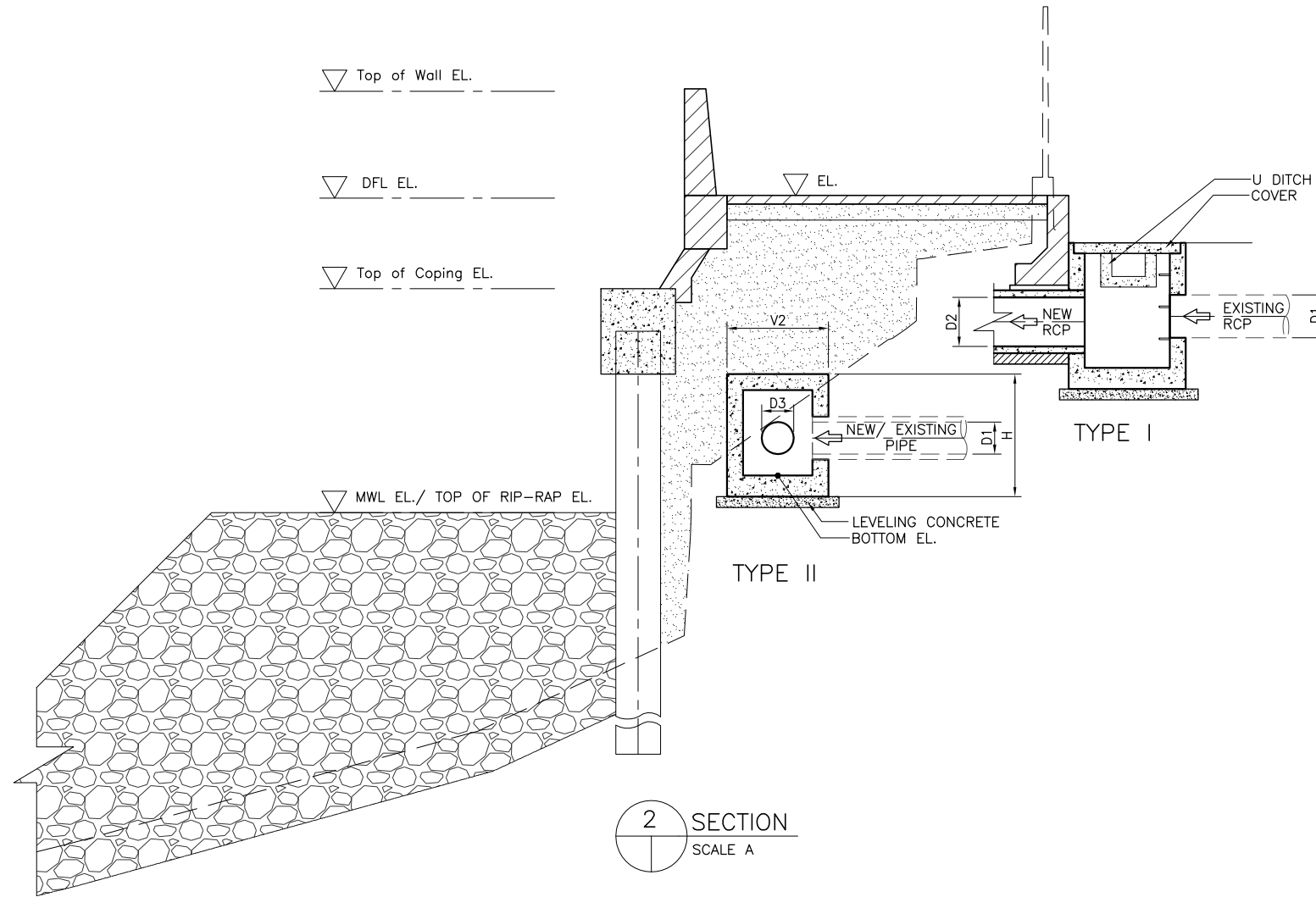




TYPE I
JUNCTION BOX PLAN
SCALE A



TYPE II
JUNCTION BOX PLAN
SCALE A



SECTION
SCALE A

SCHEDULE OF JUNCTION BOX (STA. 8+242 ~ STA. 9+947 RB)

STATION No.	JUNCTION BOX NO.	TYPE	OUTLET	BOTTOM ELEV.	D1 (mm)	D2 (mm)	D3 (mm)	D4 (mm)	V1 (mm)	V2 (mm)	H (mm)
8+789RB	JR 74A.1	I	DR 74A.2	11.830	∅ 460			∅ 460	1200	1100	1552
8+857 RB	JR 76.1	I	DR 75	11.767	∅ 200	∅ 460			1200	1100	1472
8+947 RB	JR 77A.3	I	DR 78	11.770	∅ 300	∅ 460			1200	1100	1389
9+060 RB	JR 81.1	I	DR 81	11.515	230x250	∅ 460			1200	1100	1877
9+302 RB	JR 83.24	II	DR 83.27	11.396	∅ 320			∅ 460	900	1190	1340
9+315 RB	JR 83.28	II	DR 83.27	12.141	∅ 250		∅ 300		900	950	1150
9+248 RB	JR 83.19	II	DR 83.18	10.949	∅ 300		∅ 300		950	950	1150

SCALE A 0 0.5 1.0 1.5 2.0 2.5 3.0m

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

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SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

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

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
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RECOMMENDING APPROVAL: PATRICK B. GATAN
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PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

APPROVED BY: RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION

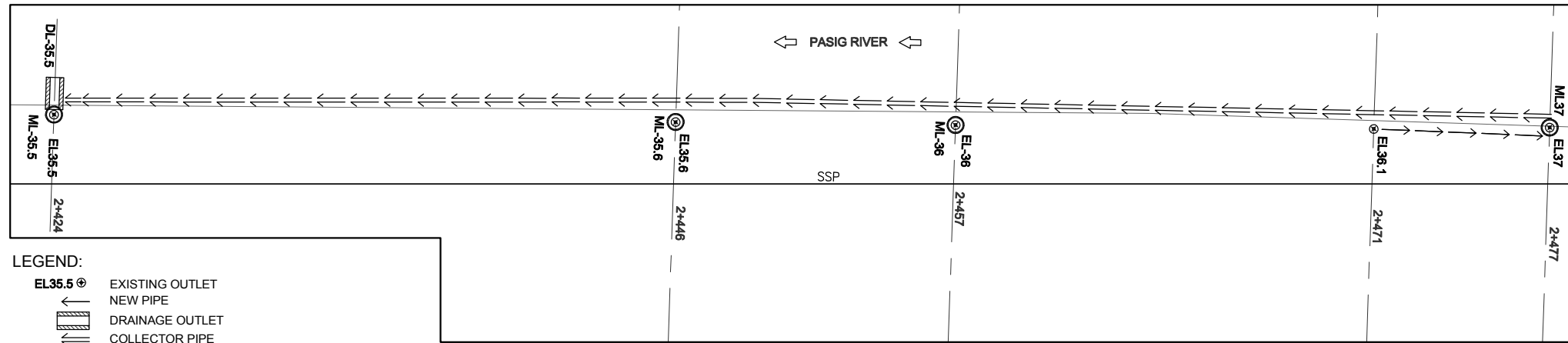
PASIG-MARIKINA
RIVER CHANNEL
IMPROVEMENT
PROJECT (PHASE III),
METRO MANILA

SHEET CONTENTS

SCHEDULE OF
JUNCTION BOX @
STA. 8+242 ~
STA. 9+947 RB

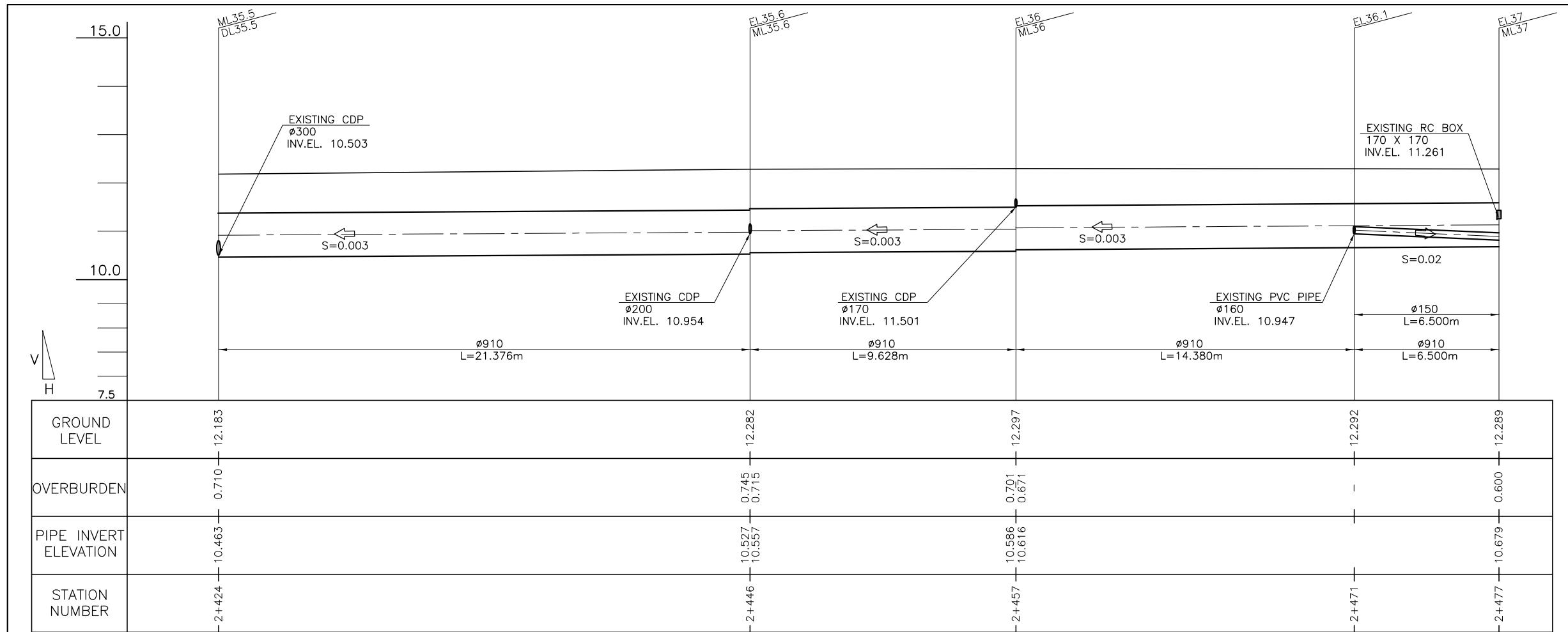
SHEET NO.





- LEGEND:**
- EL35.5 ⊕ EXISTING OUTLET
 - ← NEW PIPE
 - ▭ DRAINAGE OUTLET
 - ▭ COLLECTOR PIPE
 - DL35.5 DRAINAGE OUTLET NO.
 - PROPOSED MANHOLE

1 DRAINAGE PLAN
SCALE A



2 PROFILE
SCALE A

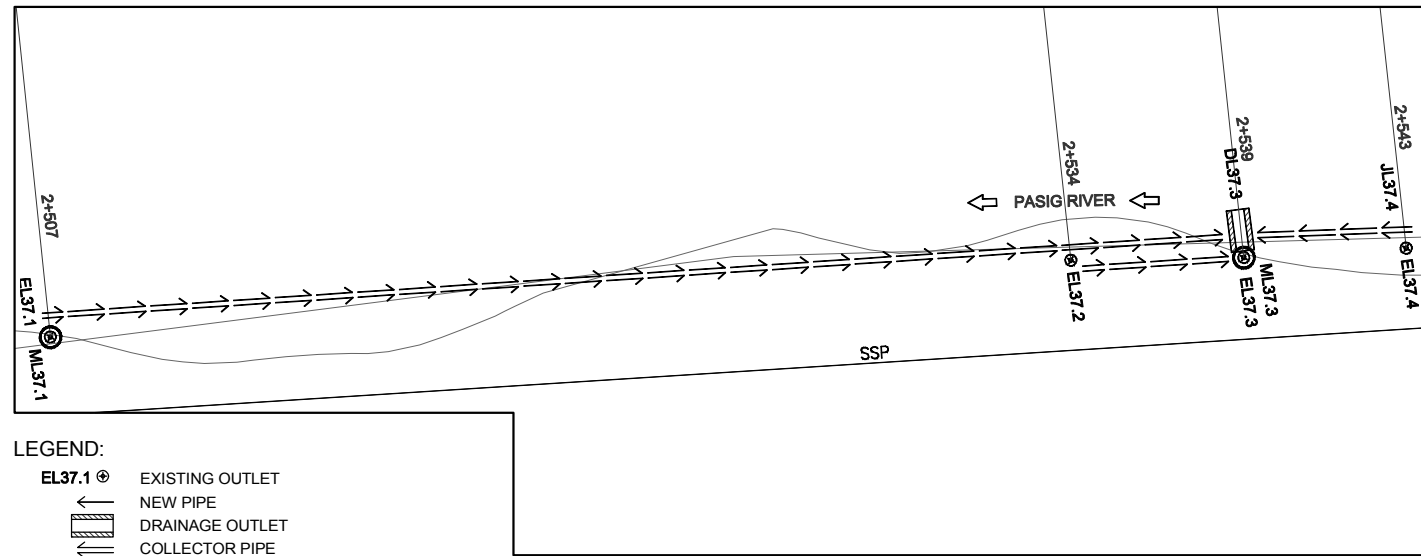


REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

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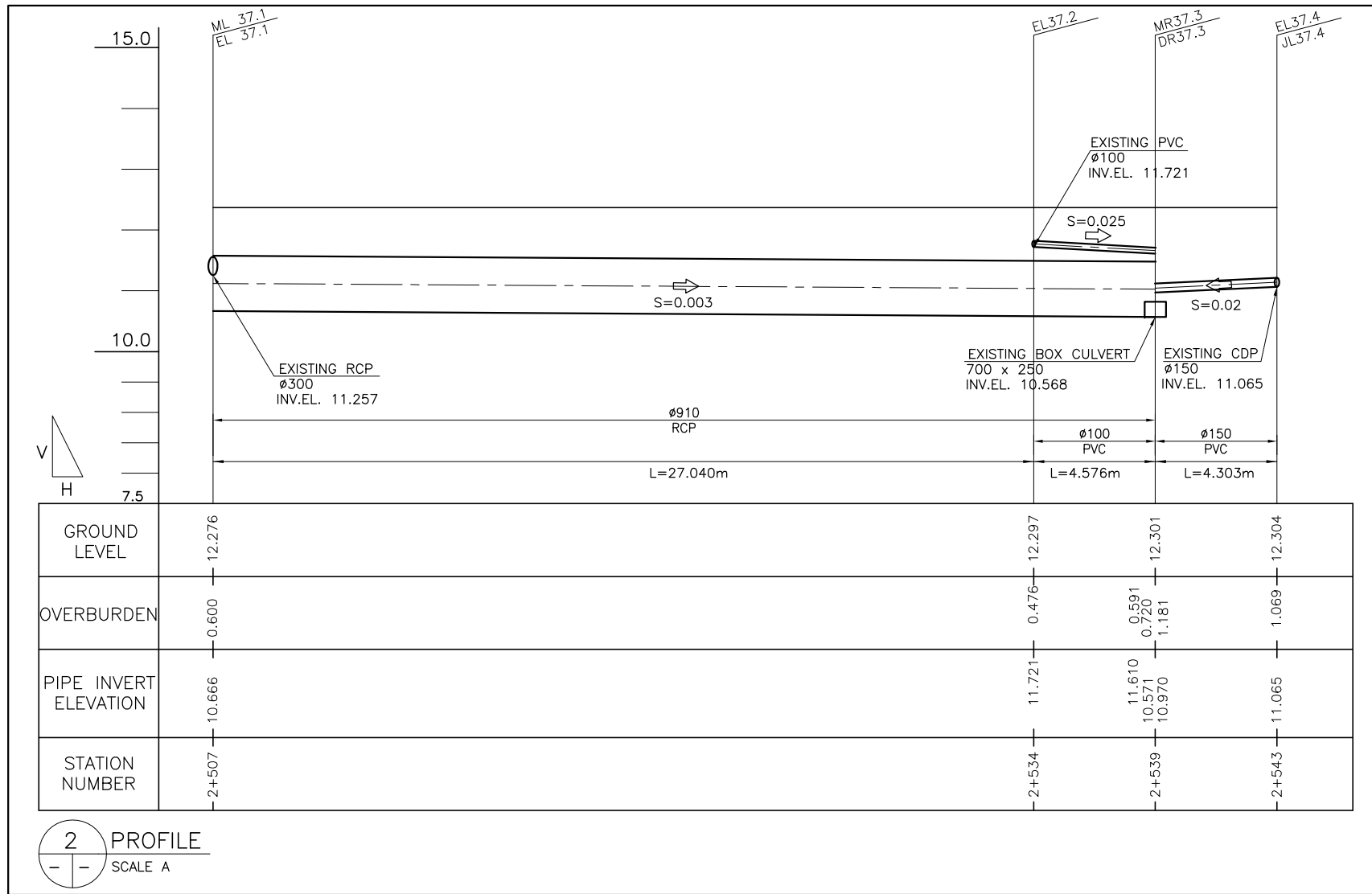
SHUJI KAKU
TEAM LEADER

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:	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	PLAN & PROFILE OF COLLECTOR PIPE	
	KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	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	RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES			



- LEGEND:
- EL37.1 ⊙ EXISTING OUTLET
 - ← NEW PIPE
 - ▭ DRAINAGE OUTLET
 - ▭ COLLECTOR PIPE
 - DL 37.3 DRAINAGE OUTLET NO.
 - PROPOSED MANHOLE

1 DRAINAGE PLAN
SCALE A



2 PROFILE
SCALE A



REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

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SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY

APPROVED BY: RAUL C. ASIS
UNDERSECRETARY FOR TECHNICAL SERVICES

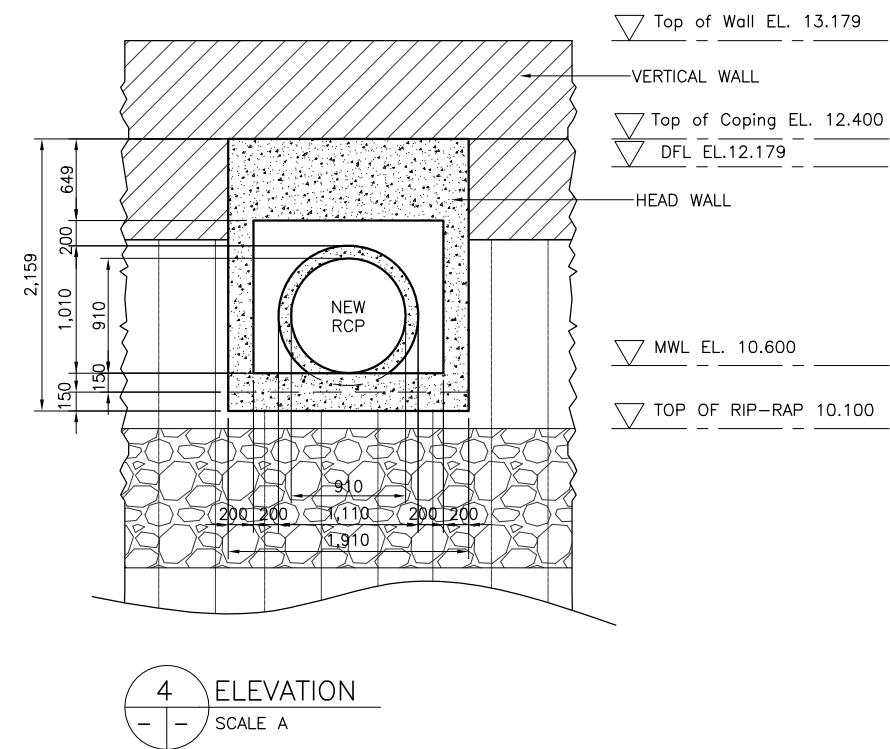
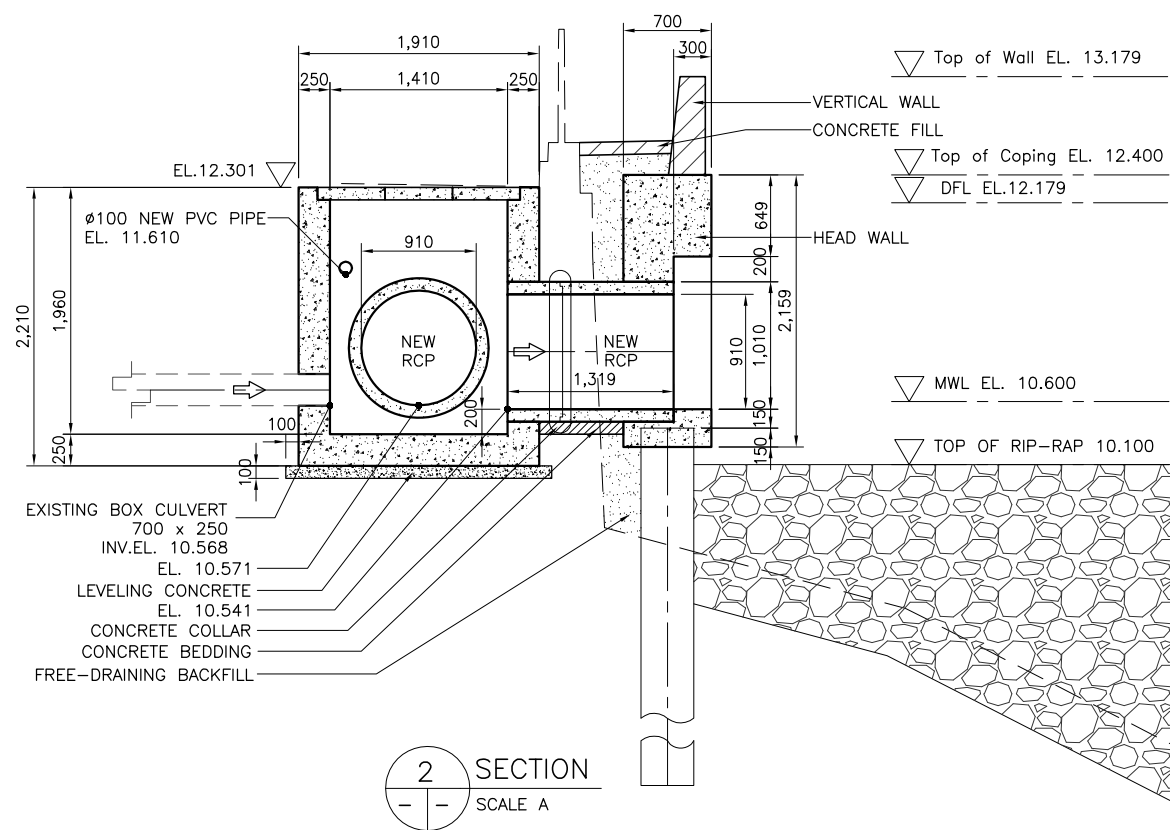
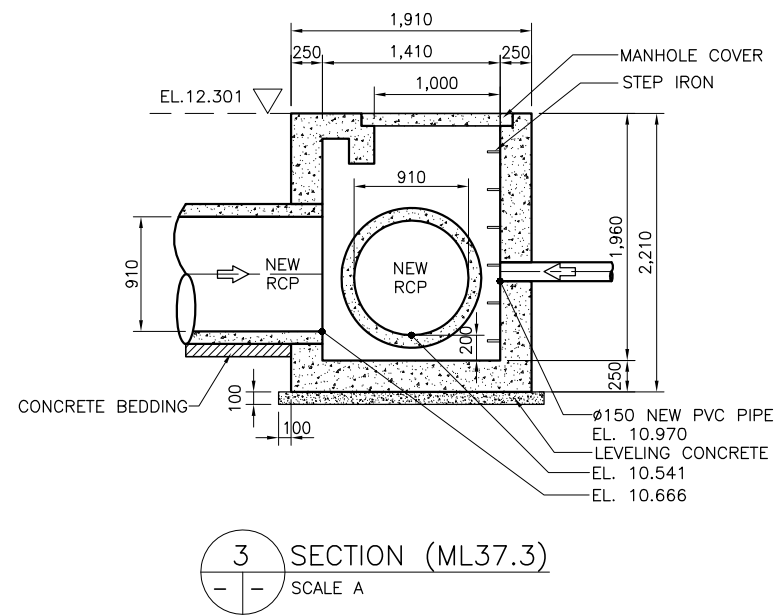
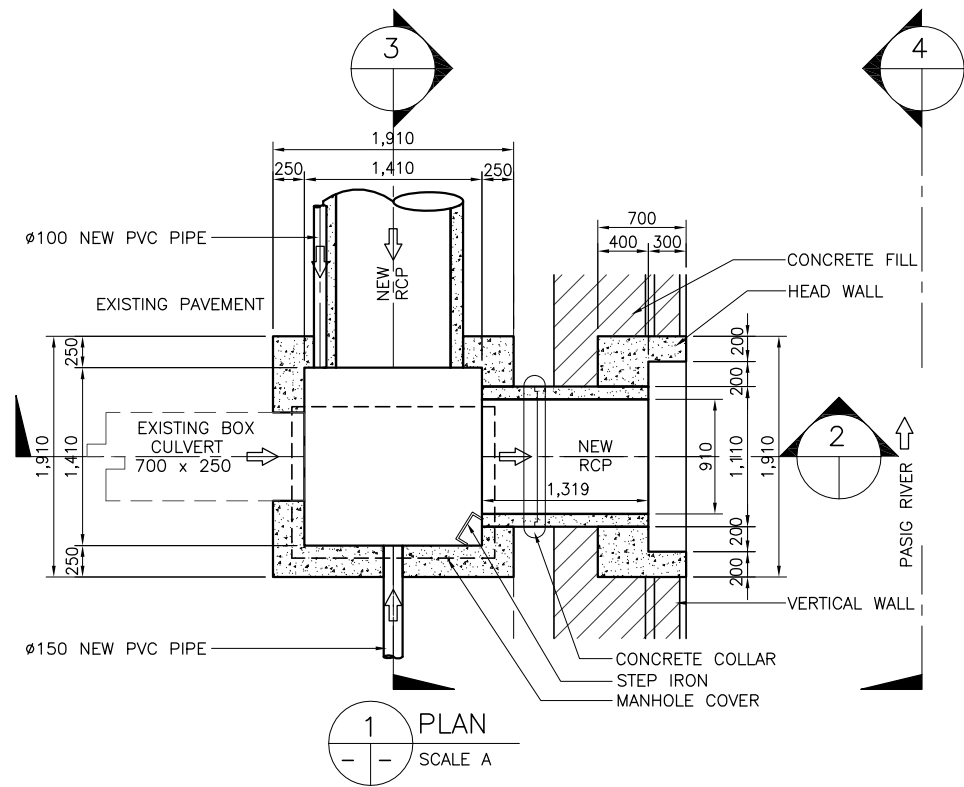
SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY

ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION
PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS
PLAN & PROFILE OF COLLECTOR PIPE

SHEET NO.
LP-DL
DOJ37.3P



REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
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REVIEWED BY: PERFECTO L. ZAPLAN, JR.
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RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY

APPROVED BY: RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

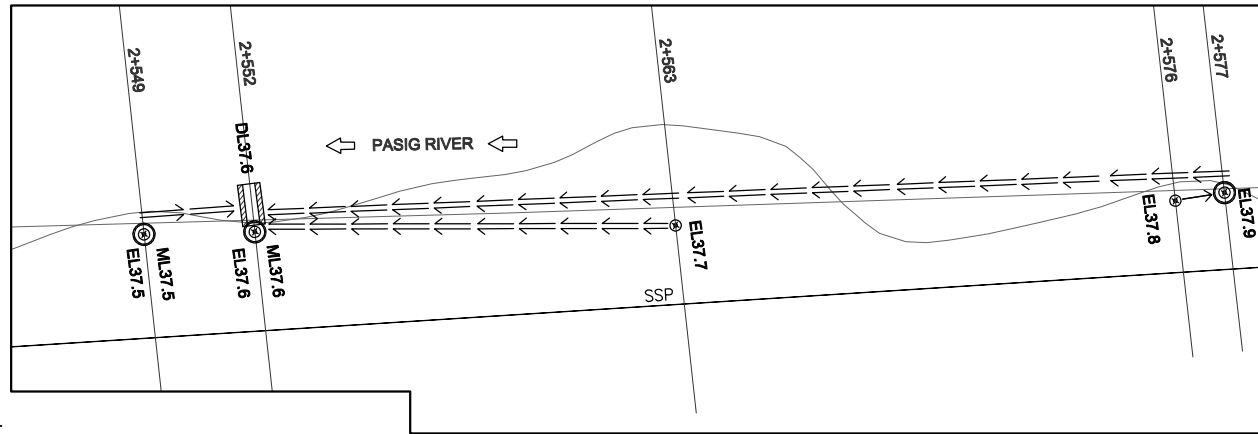
SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY

ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION: PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS: DETAIL OF DRAINAGE OUTLET- DL 37.3; MANHOLE ML37.3 STA. 2+539 LB

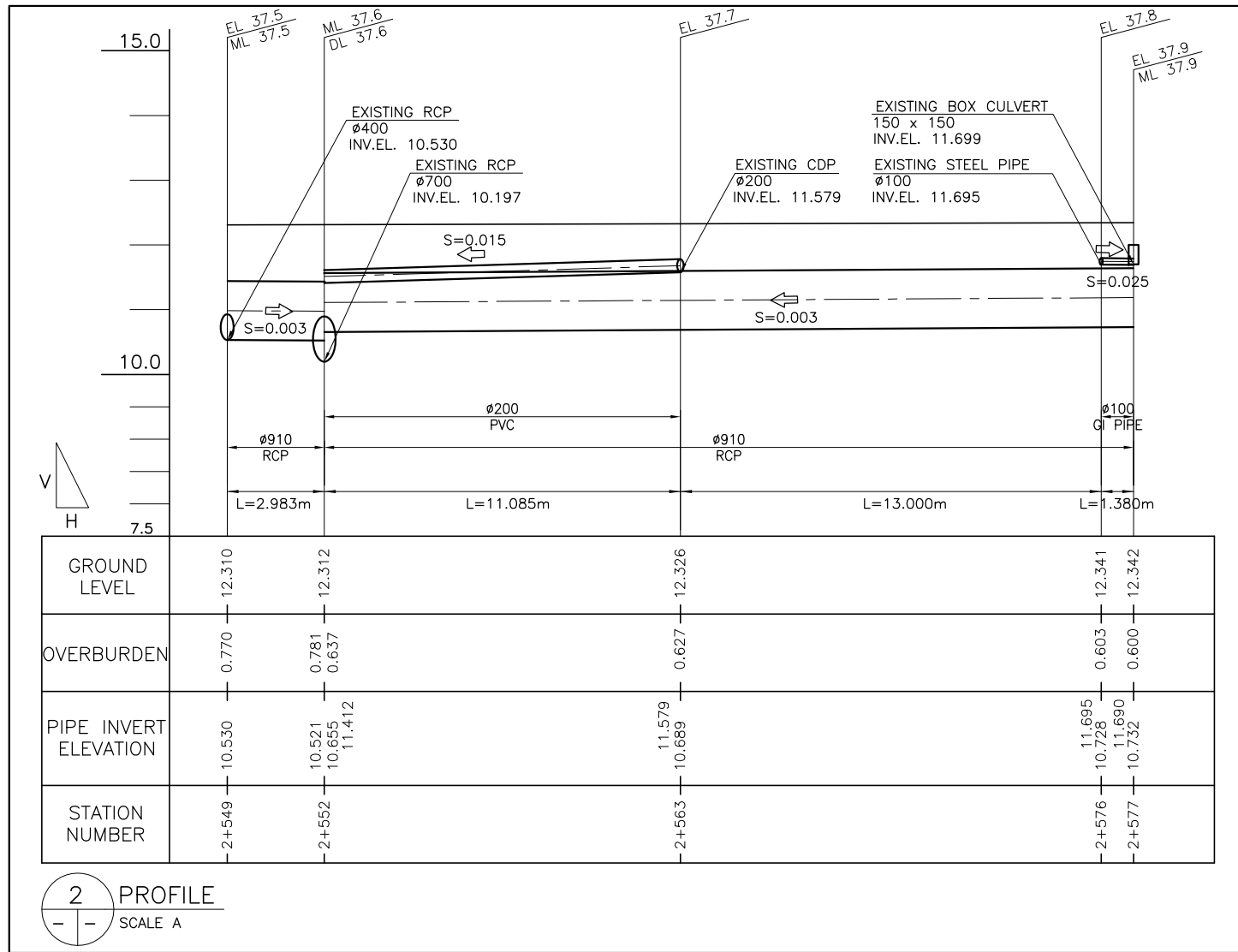
SHEET NO.: LP-DL DO/37.3



LEGEND:

- EL 37.5 ⊙ EXISTING OUTLET
- ← NEW PIPE
- ▬ DRAINAGE OUTLET
- ▬ COLLECTOR PIPE
- DL 37.6 DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

1 DRAINAGE PLAN
SCALE A



2 PROFILE
SCALE A



REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

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SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



**REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS**

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY

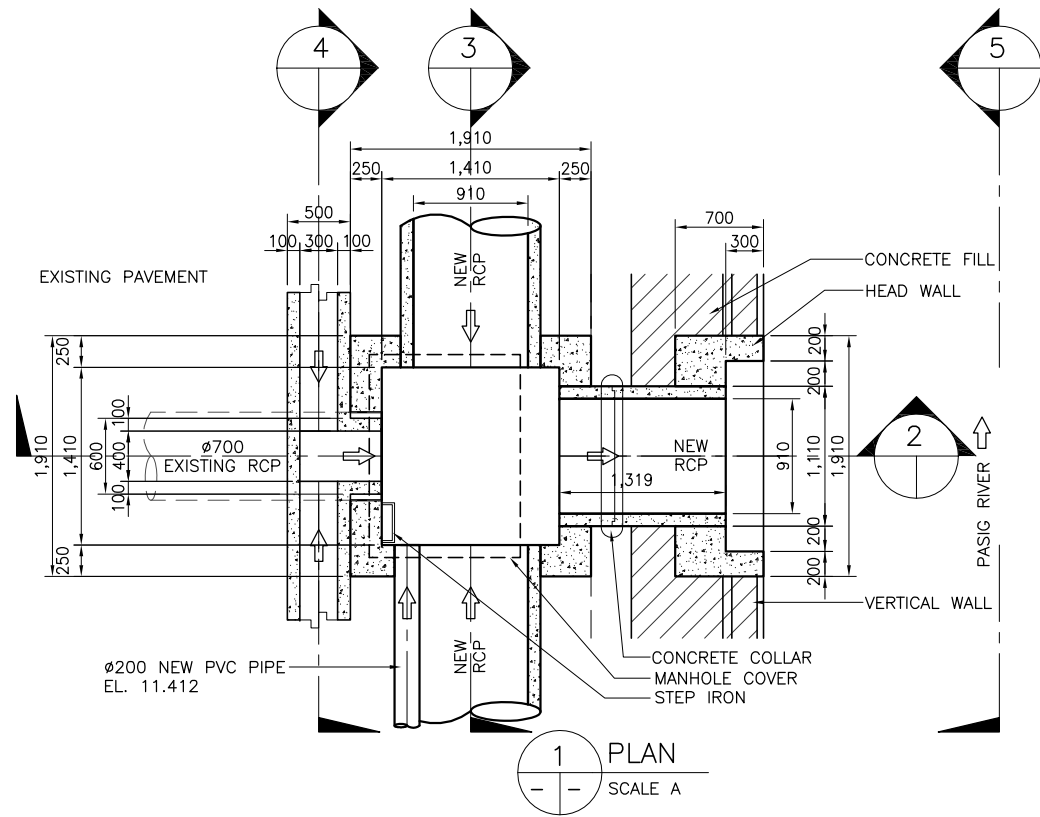
RAUL C. ASIS
UNDERSECRETARY FOR TECHNICAL SERVICES

APPROVED BY: ROGELIO L. SINGSON
SECRETARY

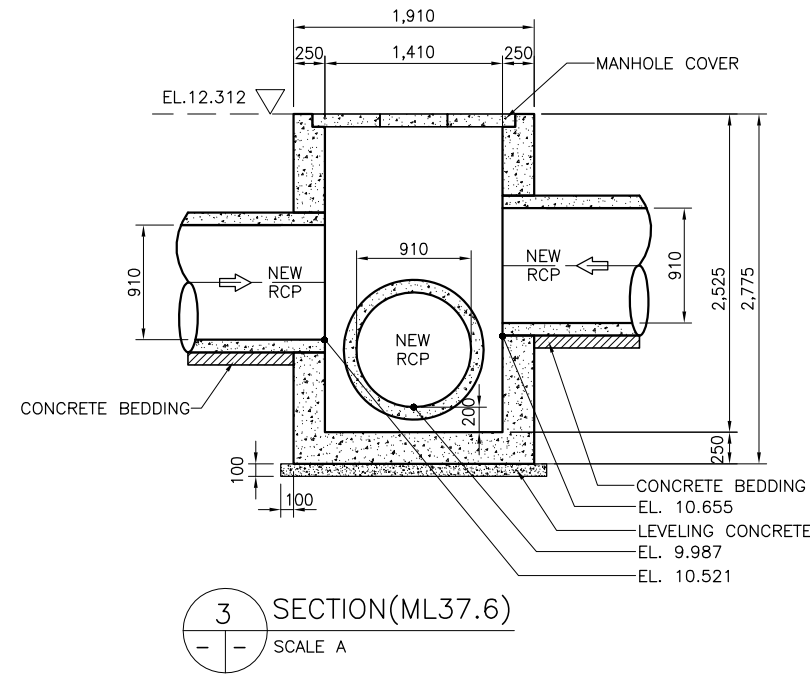
PROJECT & LOCATION
PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS
PLAN & PROFILE OF COLLECTOR PIPE

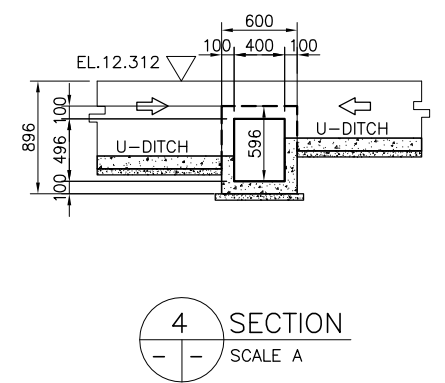
SHEET NO.
LP-DL
DO/37.6/P



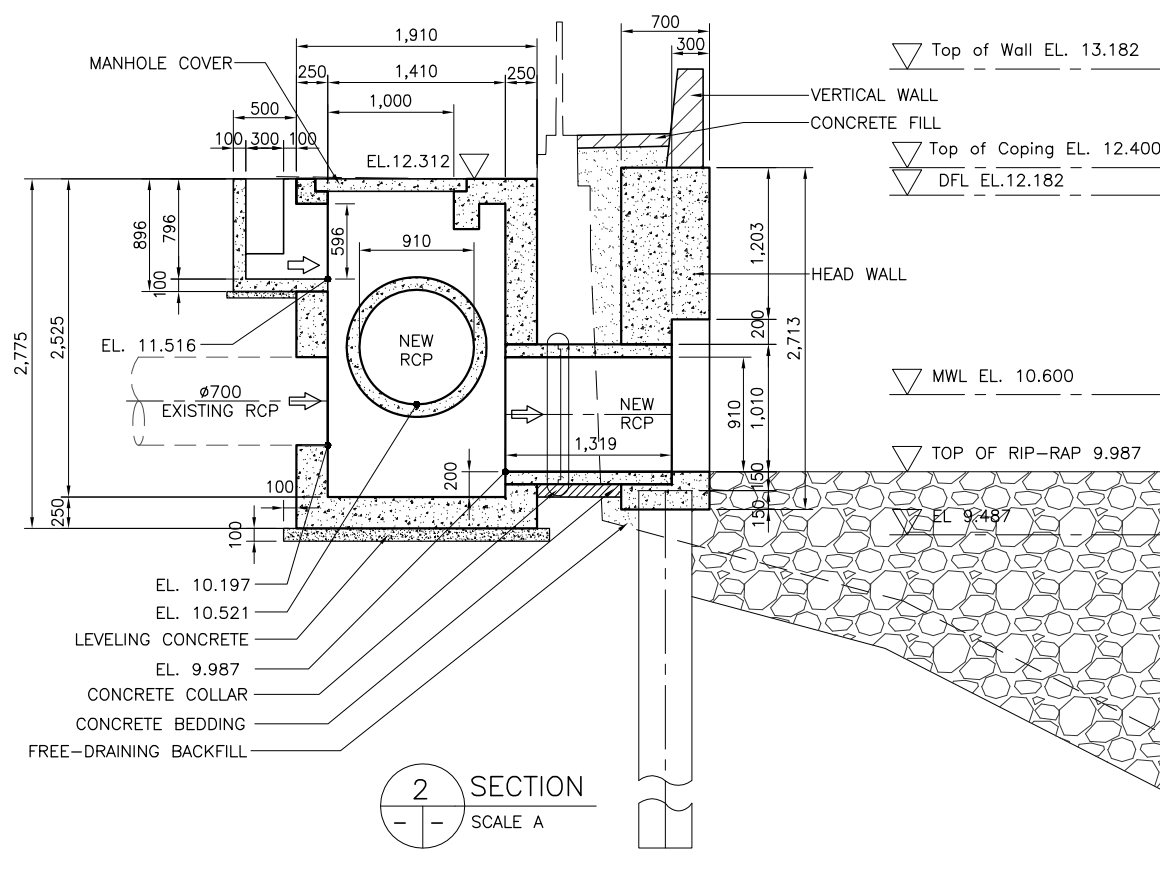
1 PLAN
SCALE A



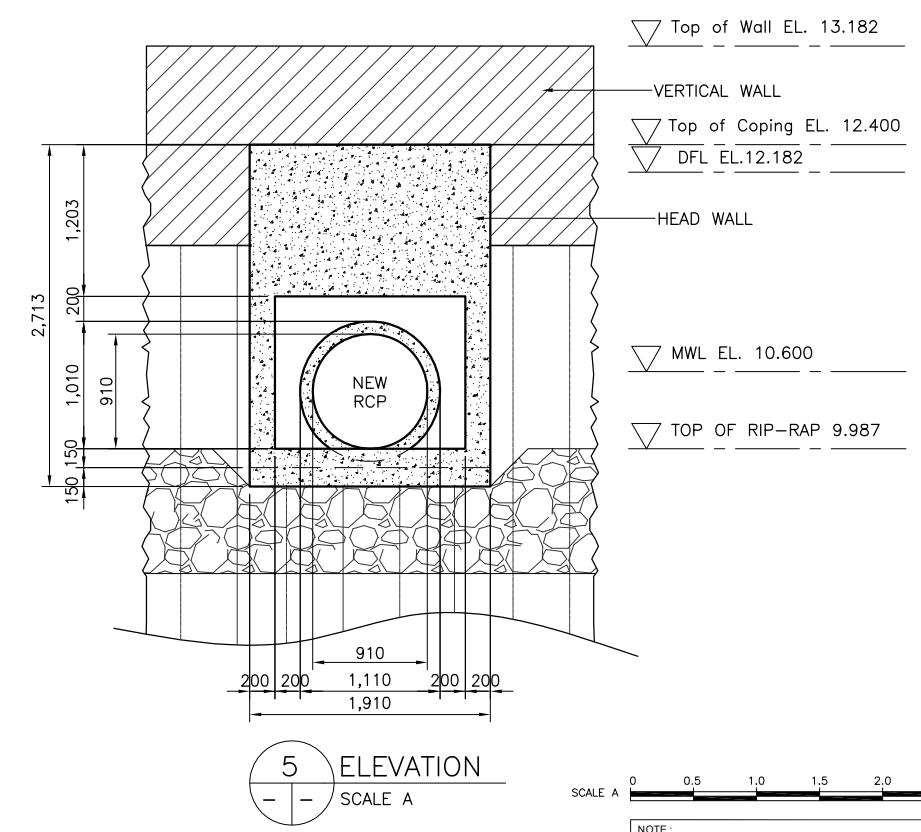
3 SECTION (ML37.6)
SCALE A



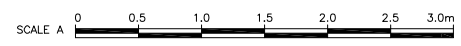
4 SECTION
SCALE A



2 SECTION
SCALE A



5 ELEVATION
SCALE A

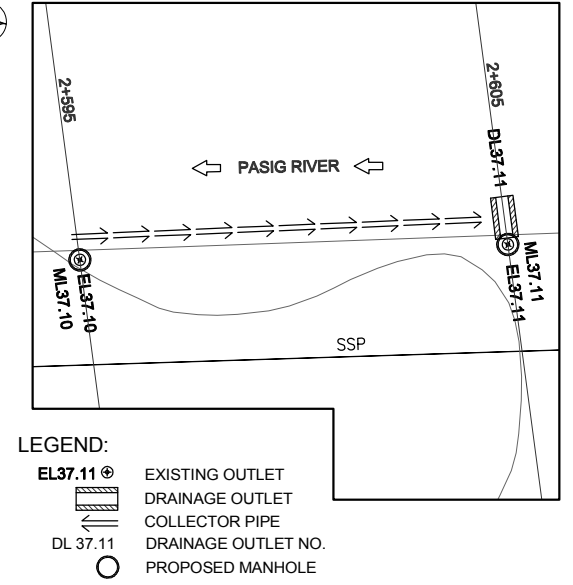


REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

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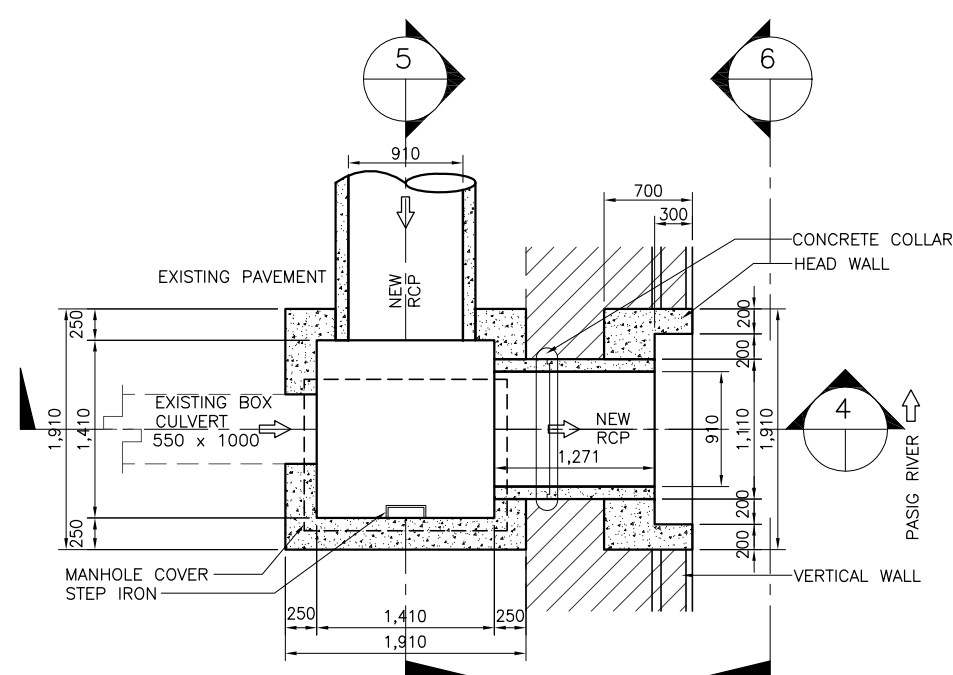
SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN			REPUBLIC OF THE PHILIPPINES				PROJECT & LOCATION	SHEET CONTENTS	SHEET NO.
	DESIGNED BY:	CHECKED BY:	SUBMITTED BY:		REVIEWED BY:	RECOMMENDING APPROVAL:	PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	DETAIL OF DRAINAGE OUTLET- DL 37.6; MANHOLE ML37.6 STA. 2+552 LB	
	KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	TOSHIKI KAWAKAMI THE CHECKER	SHUJI KAKU TEAM LEADER		PERFECTO L. ZAPLAN, JR. CHIEF, HYDRAULIC DIVISION, BOD	PATRICK B. GATAN PROJECT DIRECTOR PMO - MFCP			

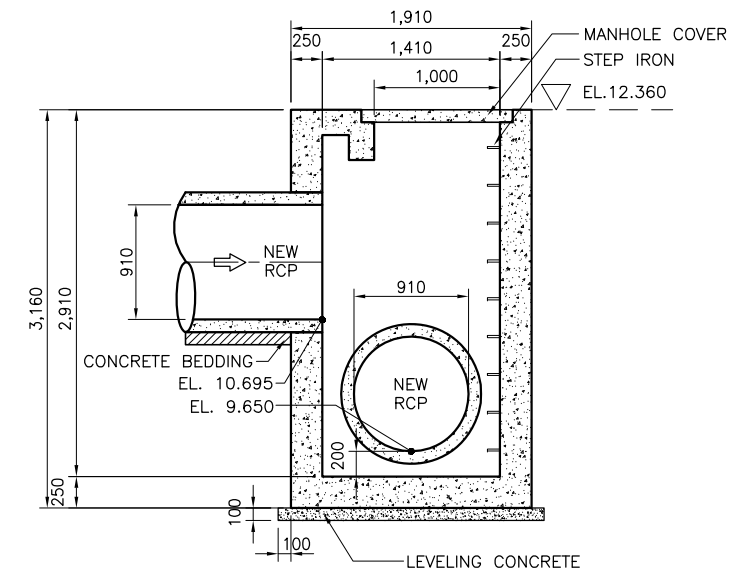


- LEGEND:**
- ⊕ EL. 37.11 EXISTING OUTLET
 - ▬ DRAINAGE OUTLET COLLECTOR PIPE
 - DL 37.11 DRAINAGE OUTLET NO.
 - PROPOSED MANHOLE

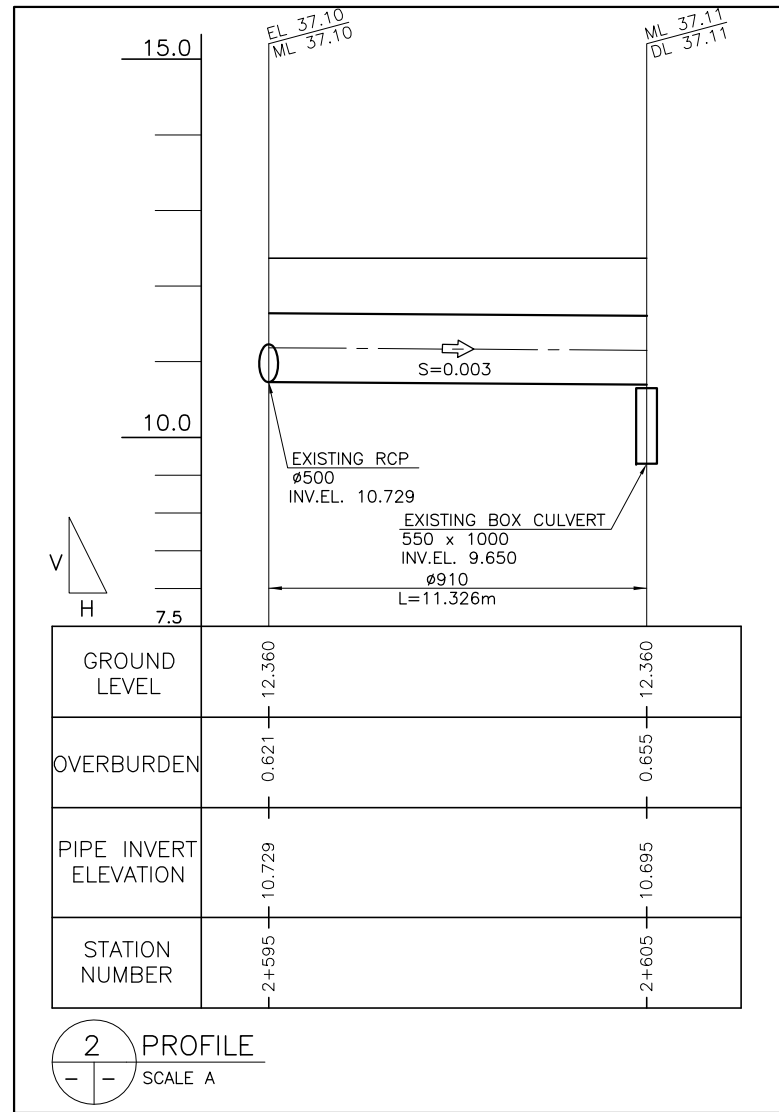
1 DRAINAGE PLAN
SCALE A



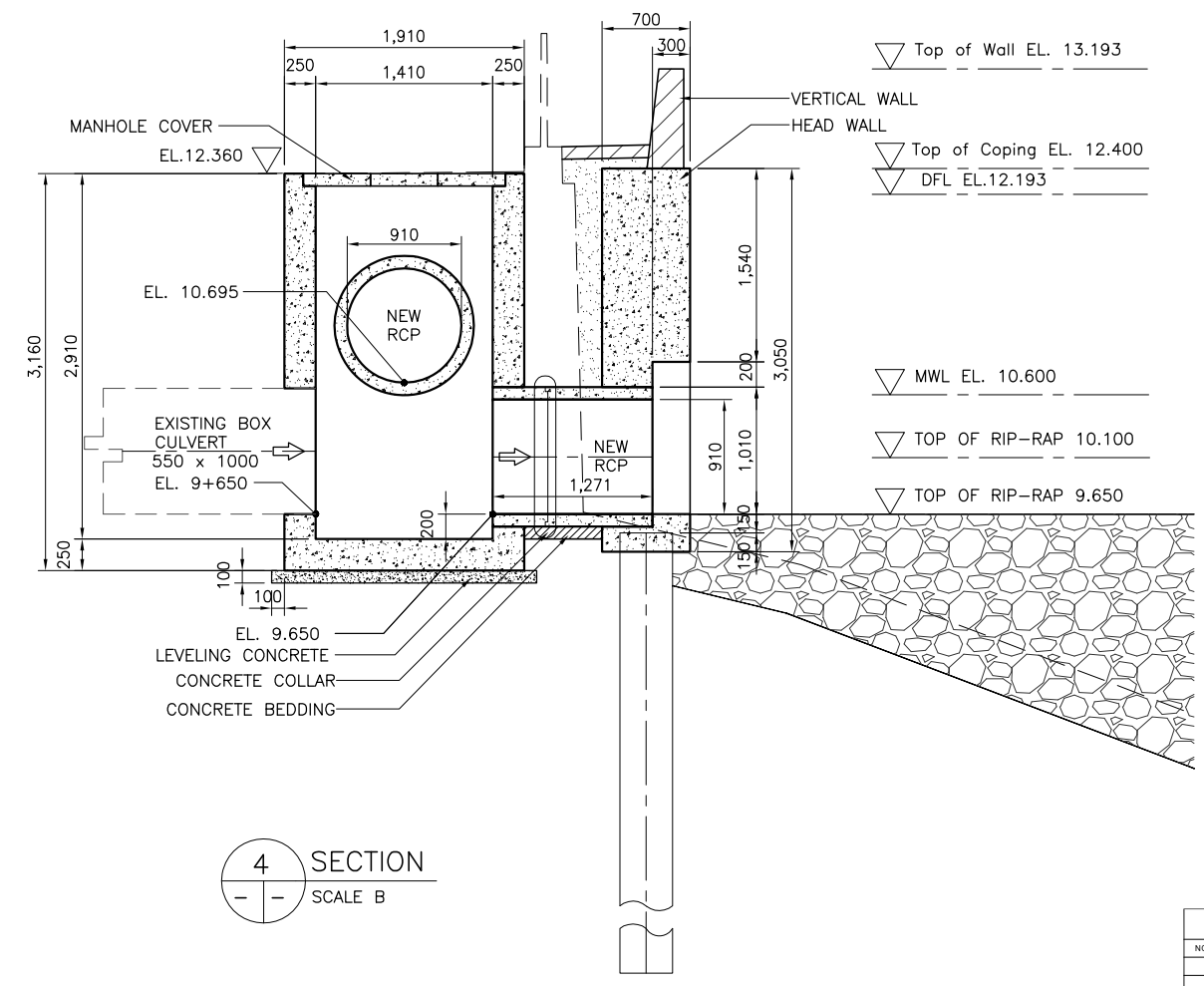
3 PLAN
SCALE B



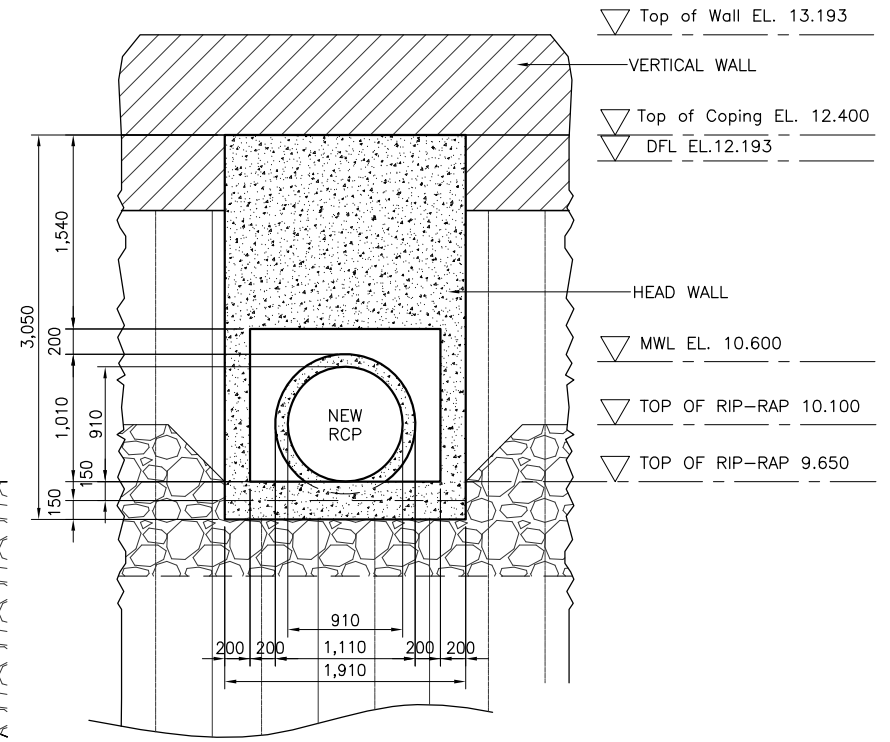
5 SECTION (ML. 37.11)
SCALE B



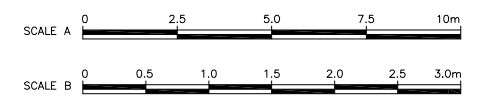
2 PROFILE
SCALE A



4 SECTION
SCALE B



6 ELEVATION
SCALE B

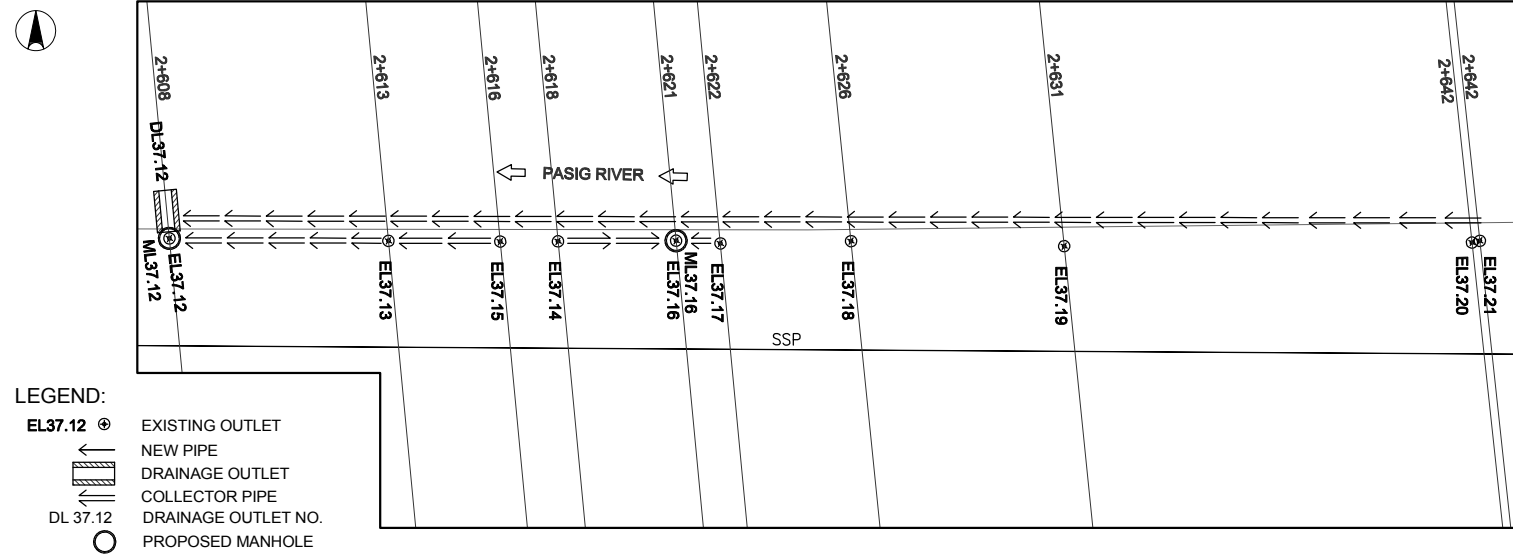


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REVISIONS			
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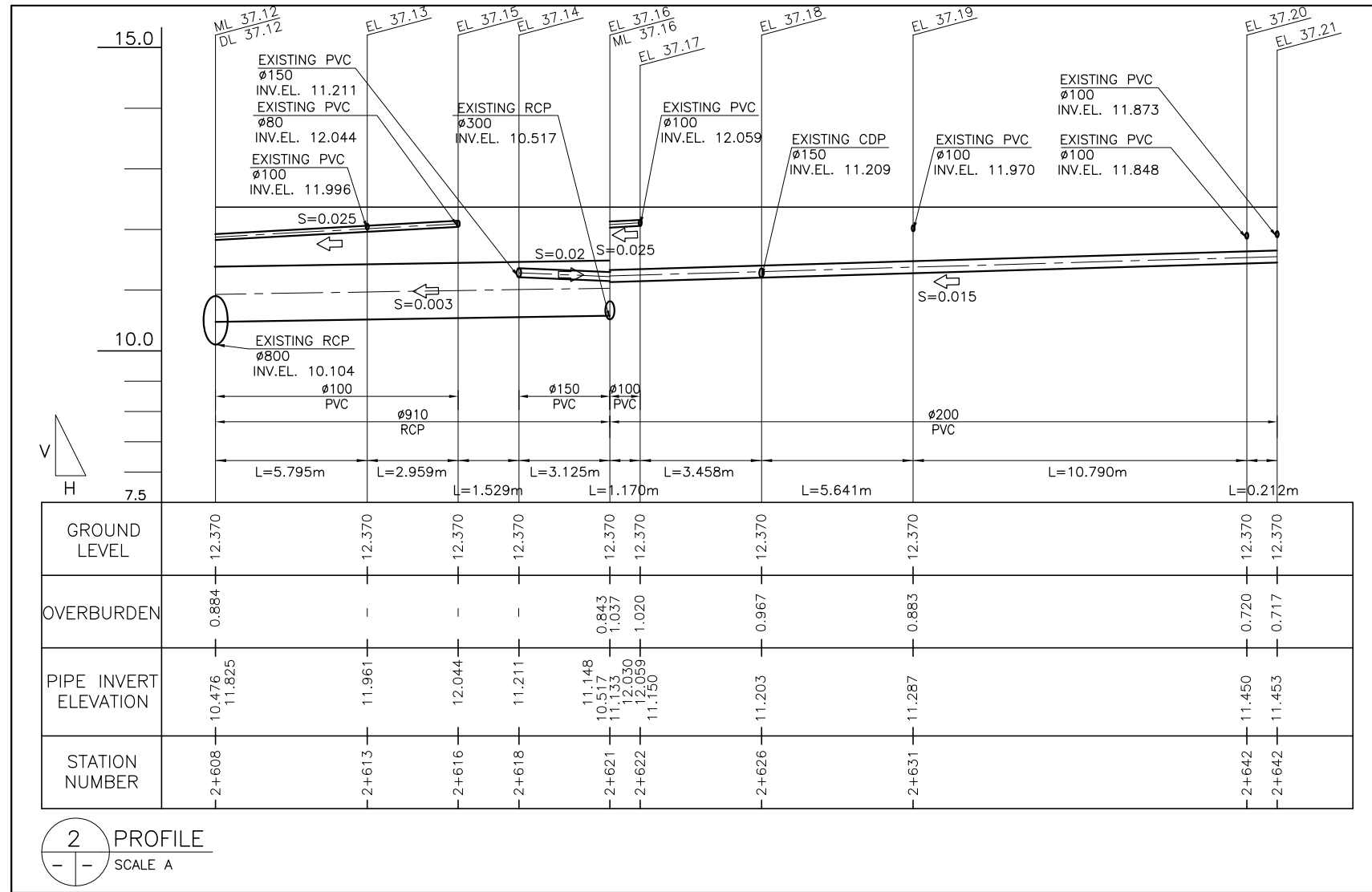
SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN			REPUBLIC OF THE PHILIPPINES				PROJECT & LOCATION		SHEET CONTENTS		SHEET NO.
	DESIGNED BY:	CHECKED BY:	SUBMITTED BY:	REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED BY:	PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	DETAIL OF DRAINAGE OUTLET- DL 37.11; MANHOLE ML. 37.11 STA. 2+605 LB			
	KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	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				SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES	SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY ROGELIO L. SINGSON SECRETARY



- LEGEND:**
- ⊕ EL 37.12 EXISTING OUTLET
 - ← NEW PIPE
 - ▭ DRAINAGE OUTLET
 - ▭ COLLECTOR PIPE
 - DL 37.12 DRAINAGE OUTLET NO.
 - PROPOSED MANHOLE

1 DRAINAGE PLAN
SCALE A



2 PROFILE
SCALE A

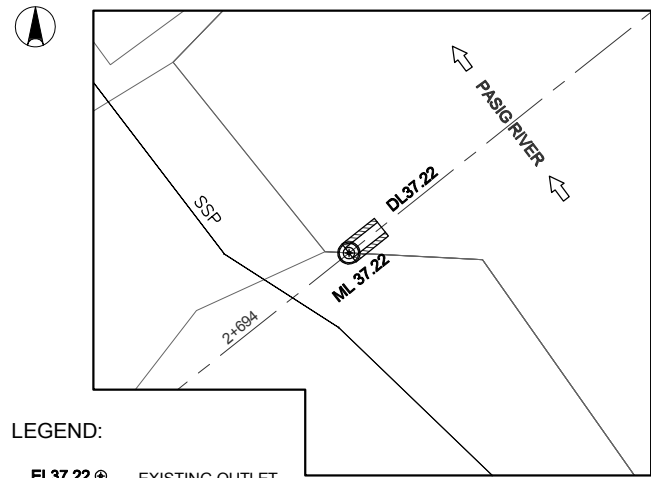


REVISIONS			
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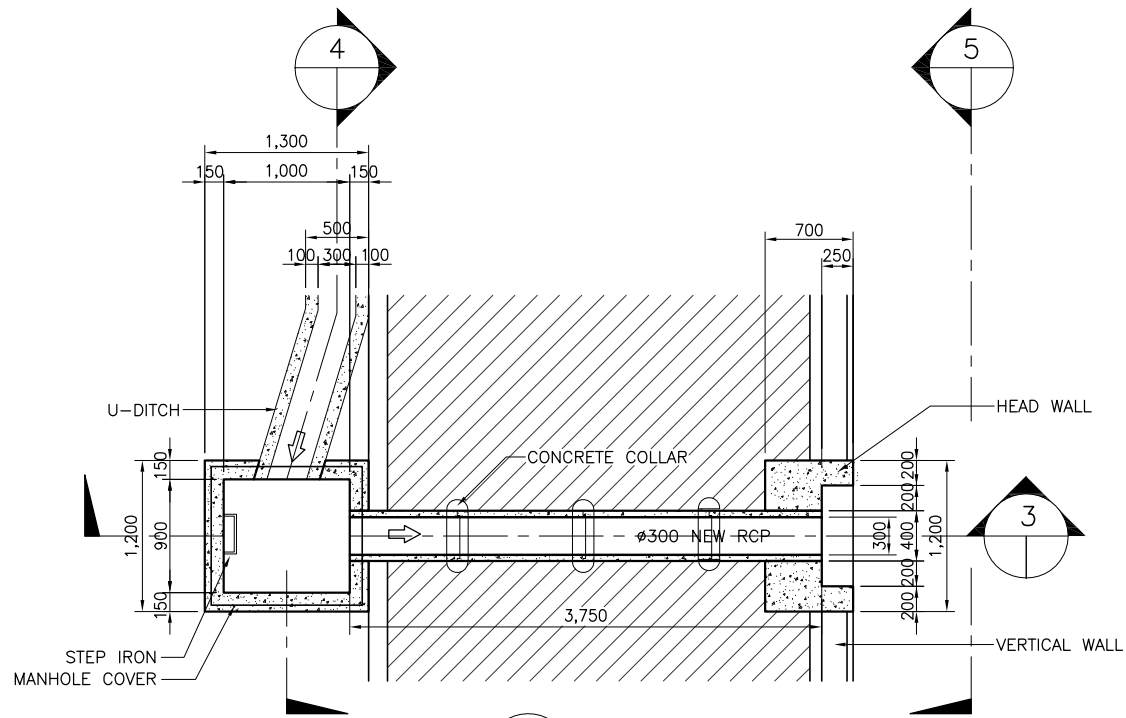
SHUJI KAKU
TEAM LEADER

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:	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	PLAN & PROFILE OF COLLECTOR PIPE	
	KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	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	SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY			

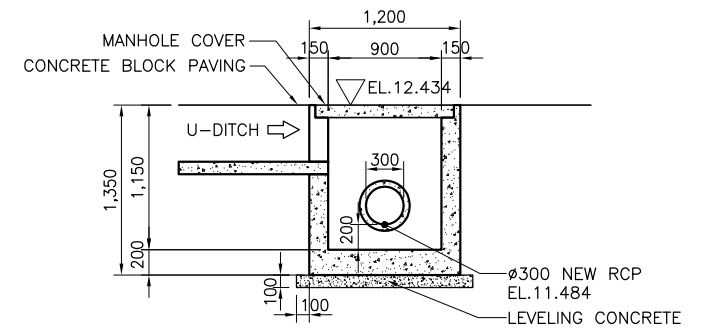


- LEGEND:**
- EL.37.22 Ⓞ EXISTING OUTLET
 - ▨ DRAINAGE OUTLET
 - DL37.22 DRAINAGE OUTLET NO.
 - PROPOSED MANHOLE

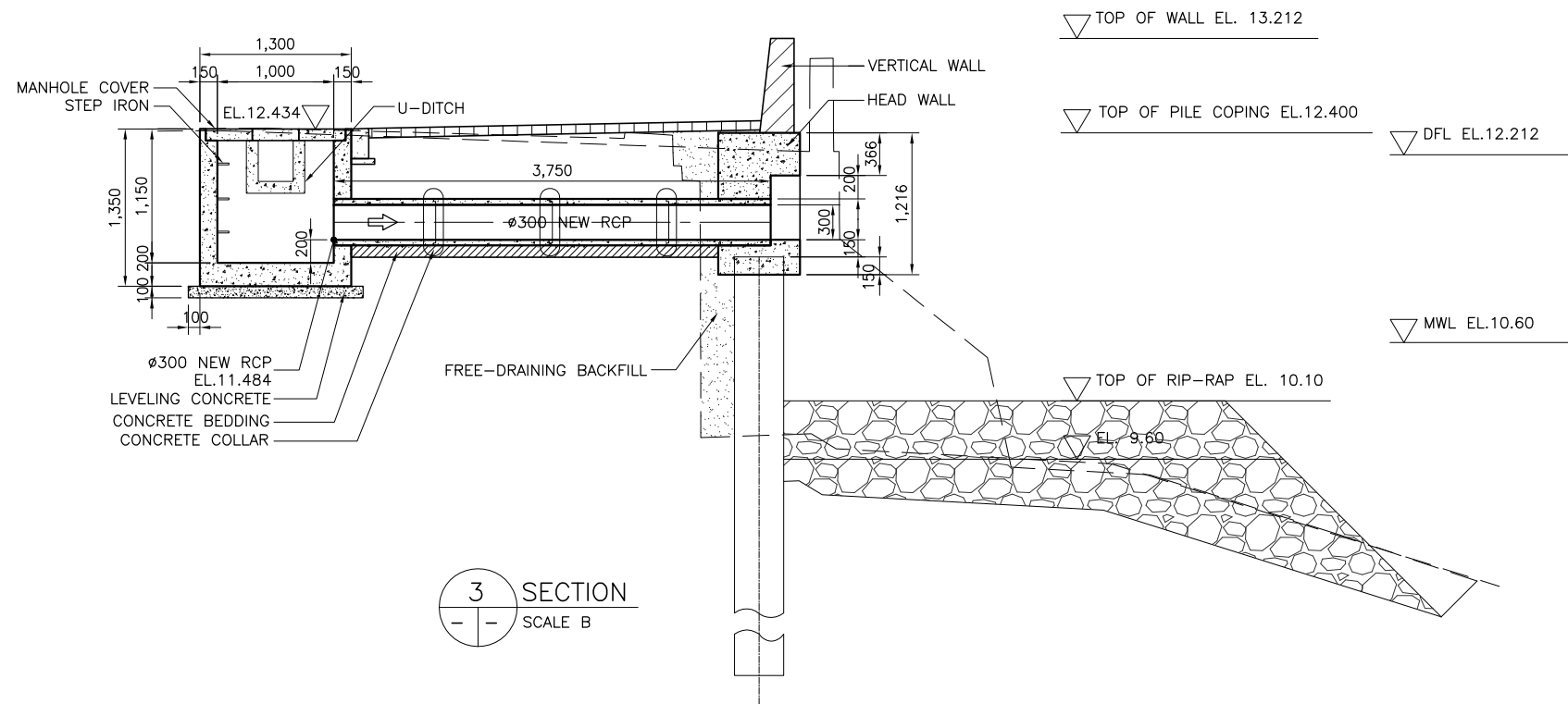
1 DRAINAGE PLAN
SCALE A



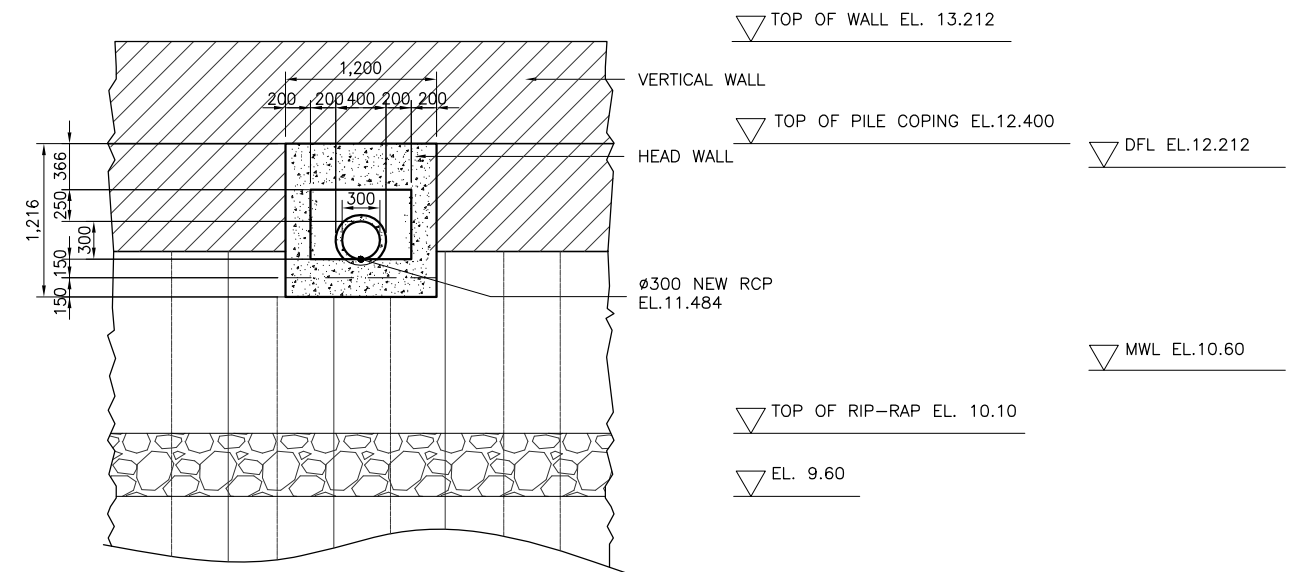
2 PLAN
SCALE B



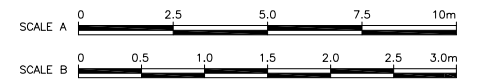
4 SECTION (ML 37.22)
SCALE B



3 SECTION
SCALE B



5 ELEVATION
SCALE B



NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

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

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY

RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

APPROVED BY: ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION

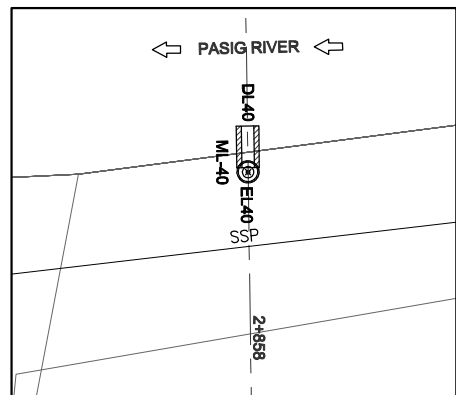
PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS

DETAIL OF DRAINAGE OUTLET- DL 37.22 & MANHOLE ML.37.22 STA. 2+694 LB

SHEET NO.

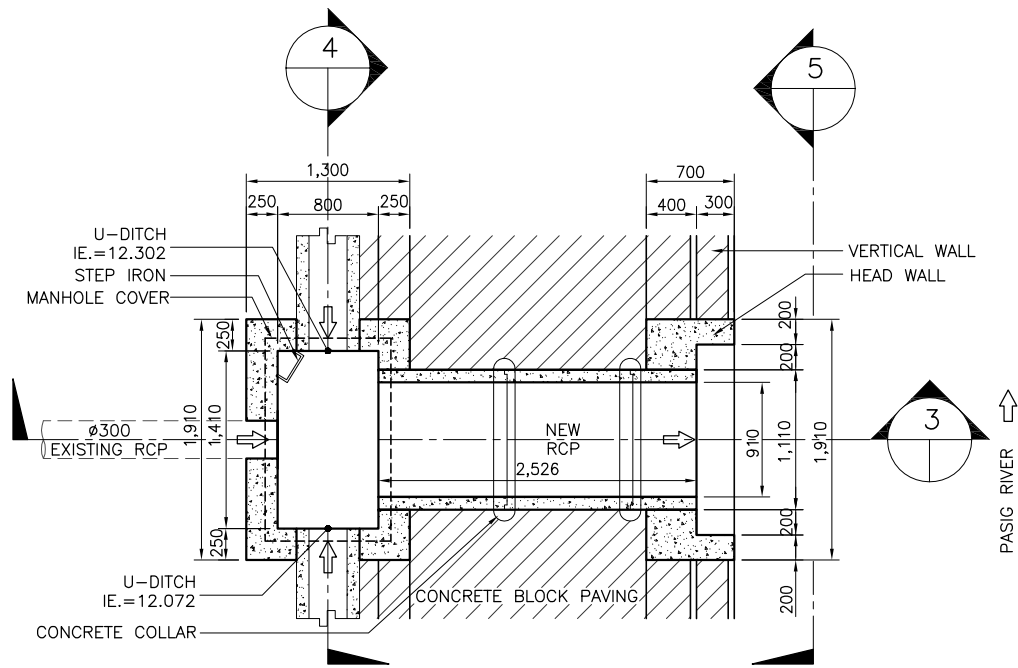




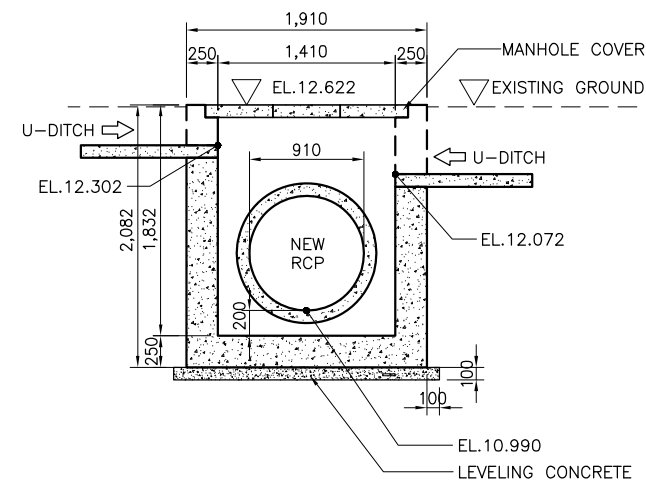
LEGEND:

- EL40 Ⓞ EXISTING OUTLET
- EXISTING DRAINAGE
- DRAINAGE OUTLET
- COLLECTOR PIPE
- DL 40 DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

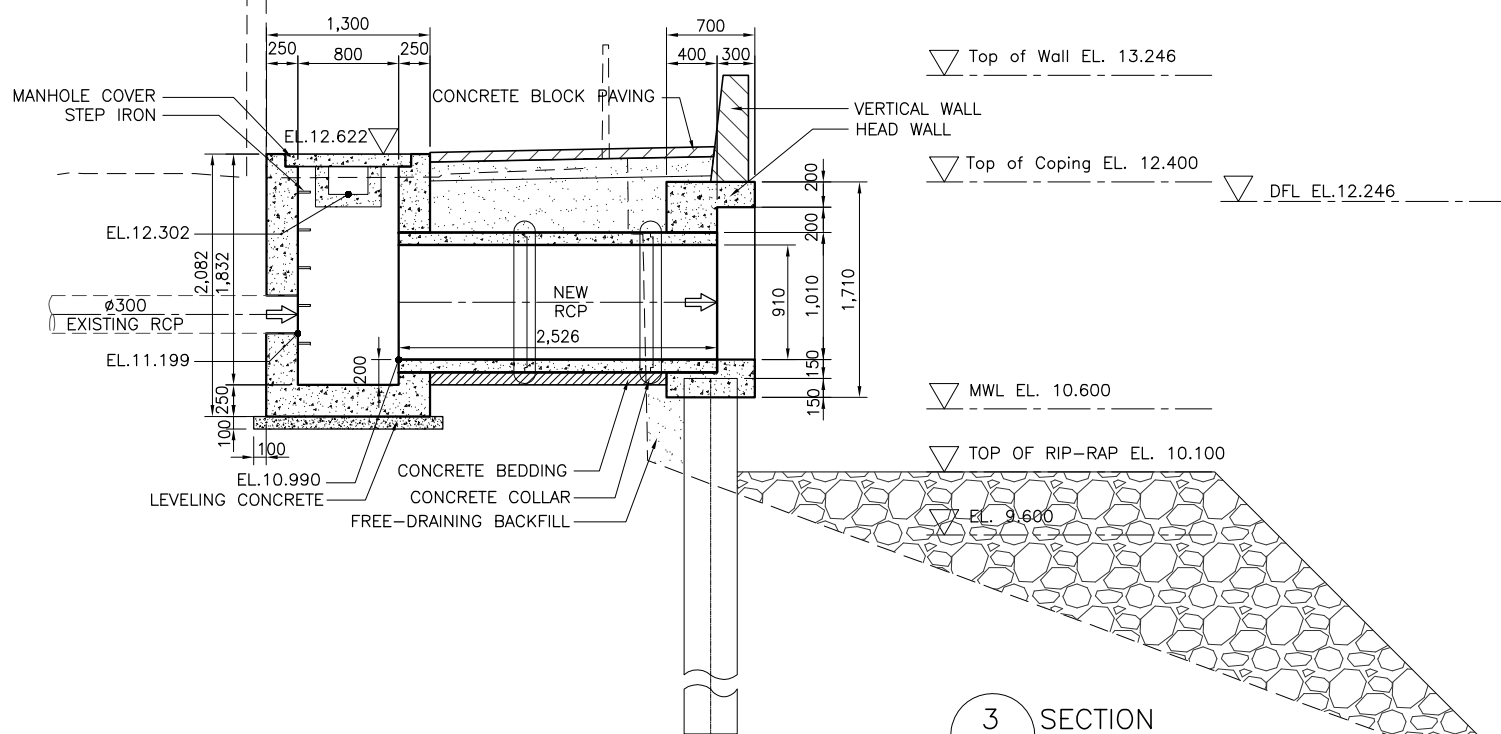
1 DRAINAGE PLAN
SCALE A



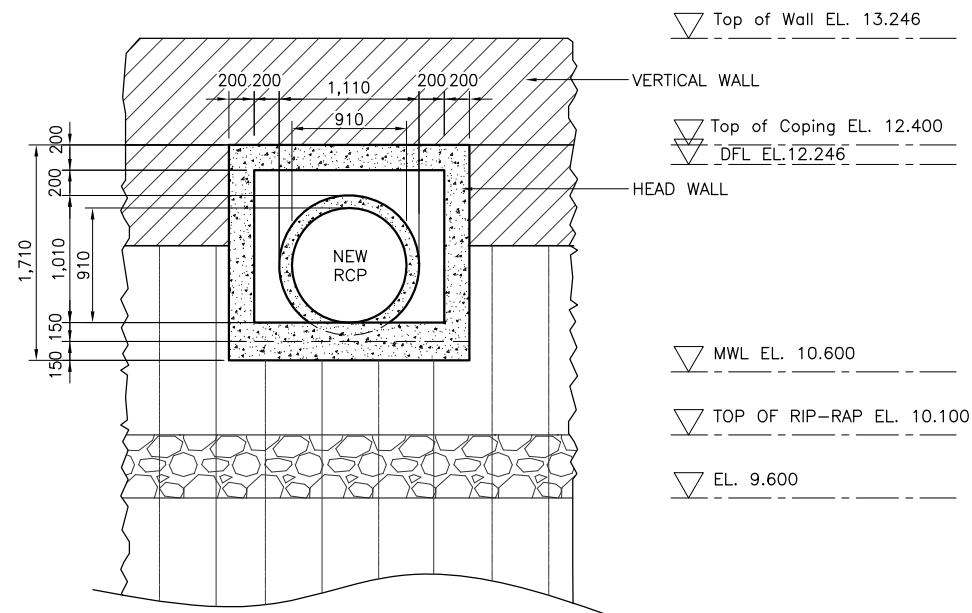
2 PLAN
SCALE B



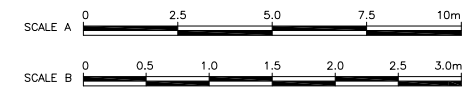
4 SECTION (ML40)
SCALE B



3 SECTION
SCALE B



5 ELEVATION
SCALE B



REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

NOTE:
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SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY

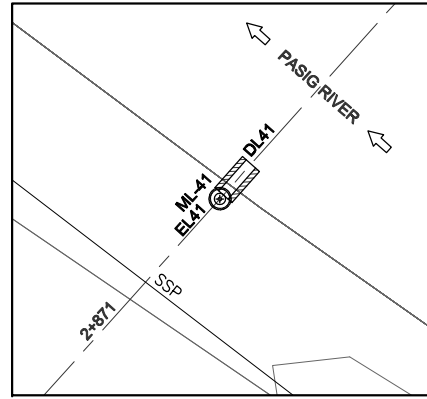
APPROVED BY: RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION: PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS: DETAIL OF DRAINAGE OUTLET- DL40, MANHOLE ML40 STA. 2+858 LB

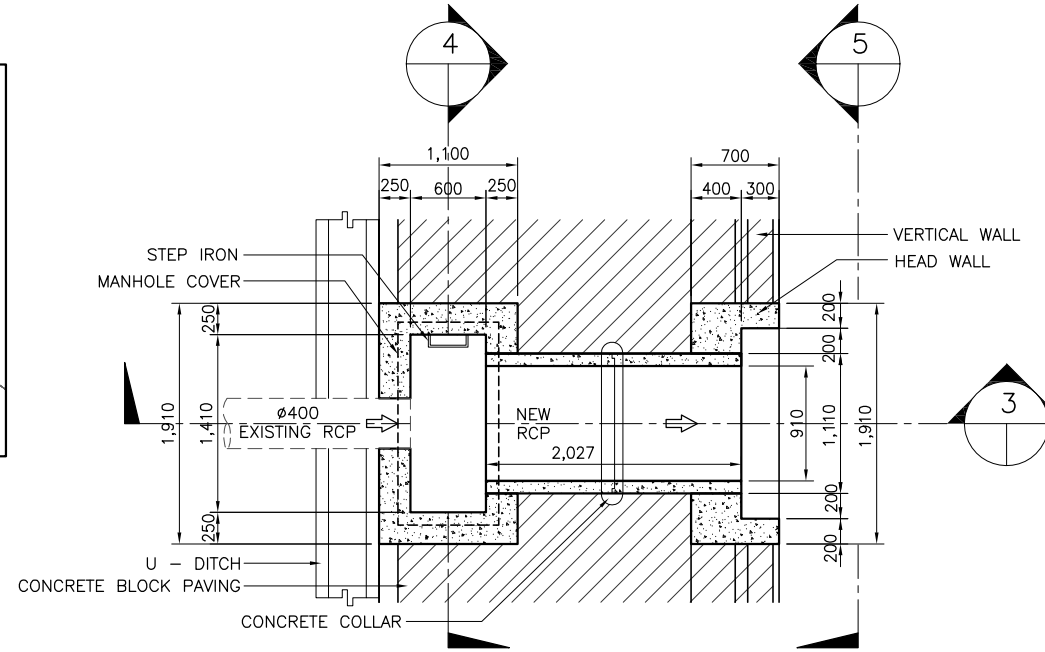
SHEET NO.: LP-DL/DO/40



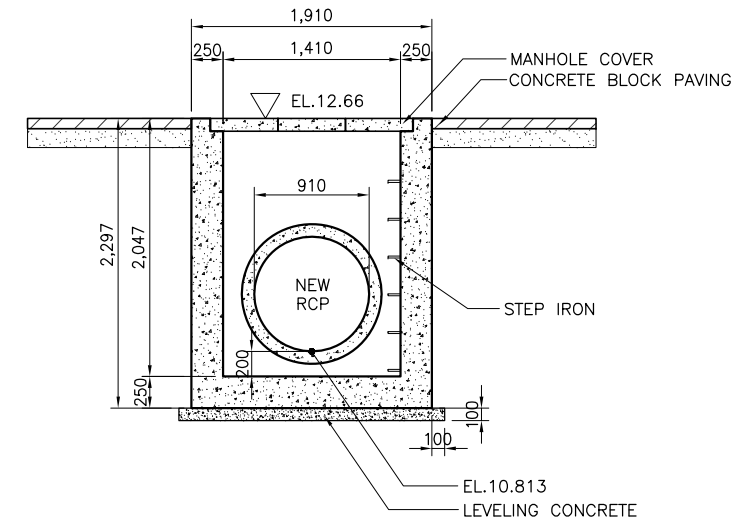
LEGEND:

- EL.41 ⊕ EXISTING OUTLET
- ← EXISTING DRAINAGE
- DRAINAGE OUTLET
- COLLECTOR PIPE
- DL 41 DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

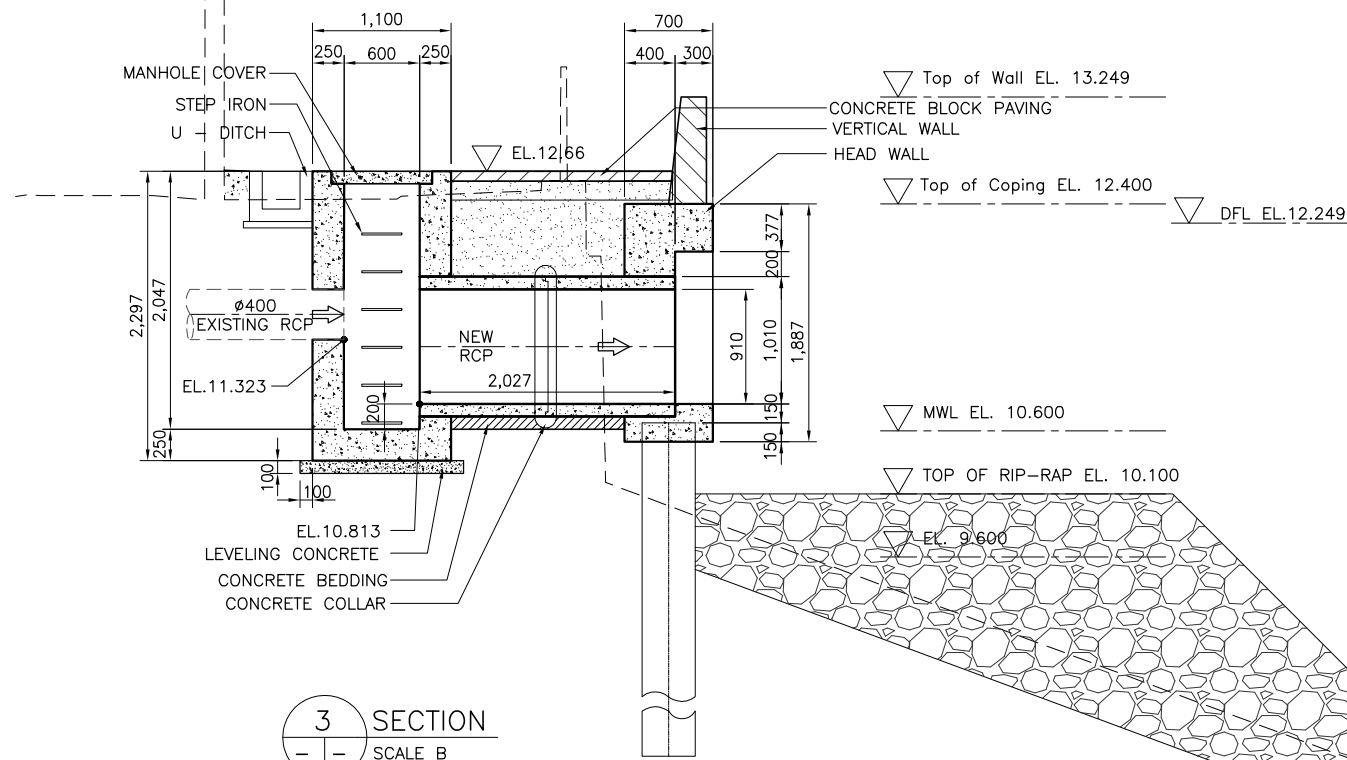
1 DRAINAGE PLAN
SCALE A



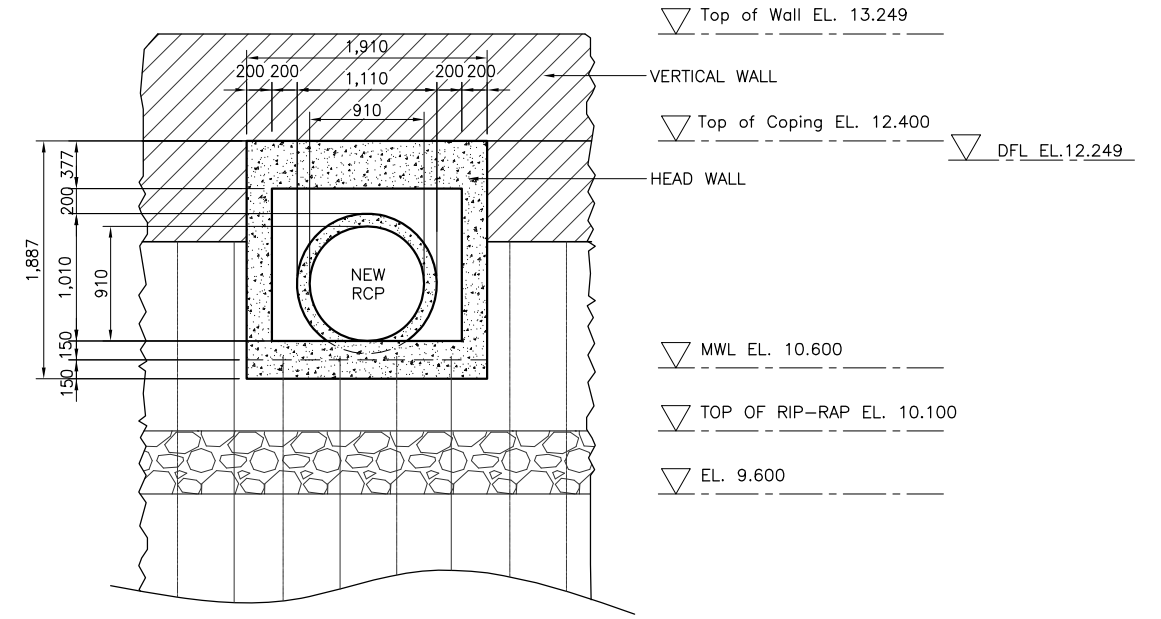
2 PLAN
SCALE B



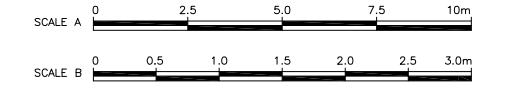
4 SECTION (ML41)
SCALE B



3 SECTION
SCALE B



5 ELEVATION
SCALE B



NOTE:
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SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

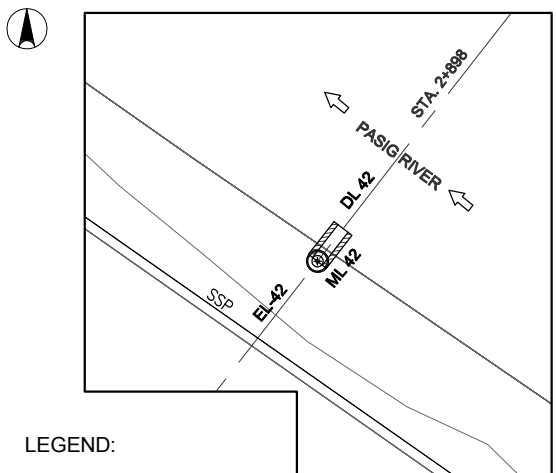
APPROVED BY: RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION: PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

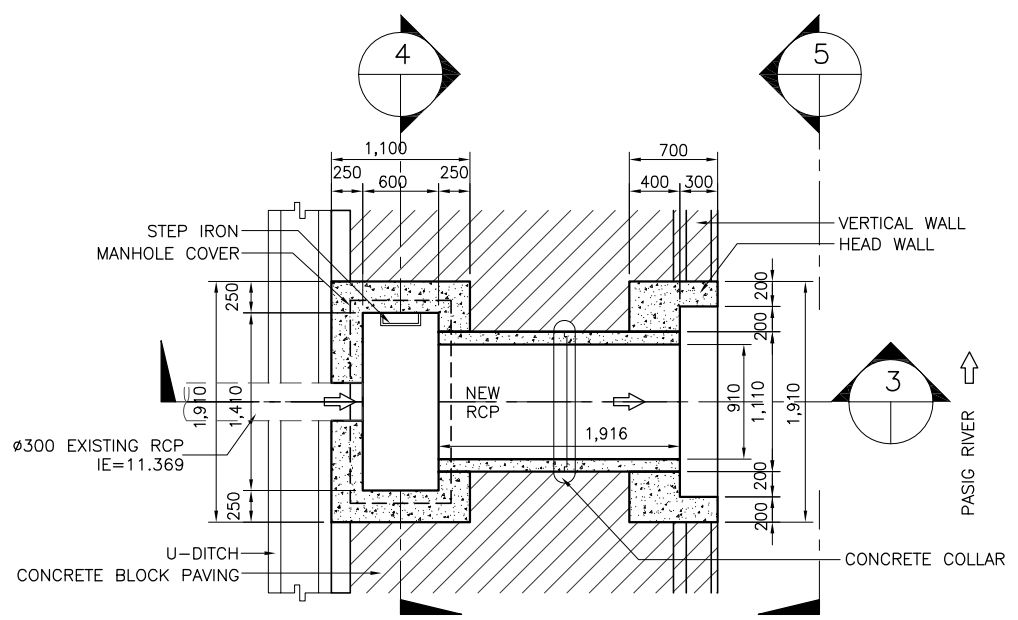
SHEET CONTENTS: DETAIL OF DRAINAGE OUTLET- DL41, MANHOLE ML41 STA. 2+871 LB

SHEET NO.: LP-DL/DO/41

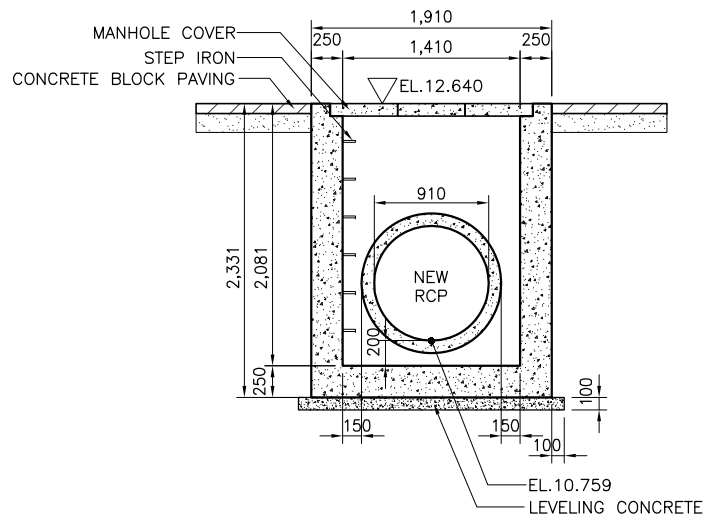


- LEGEND:**
- EL42 ⊕ EXISTING OUTLET
 - ← EXISTING DRAINAGE
 - ▨ DRAINAGE OUTLET
 - COLLECTOR PIPE
 - DL42 DRAINAGE OUTLET NO.
 - PROPOSED MANHOLE

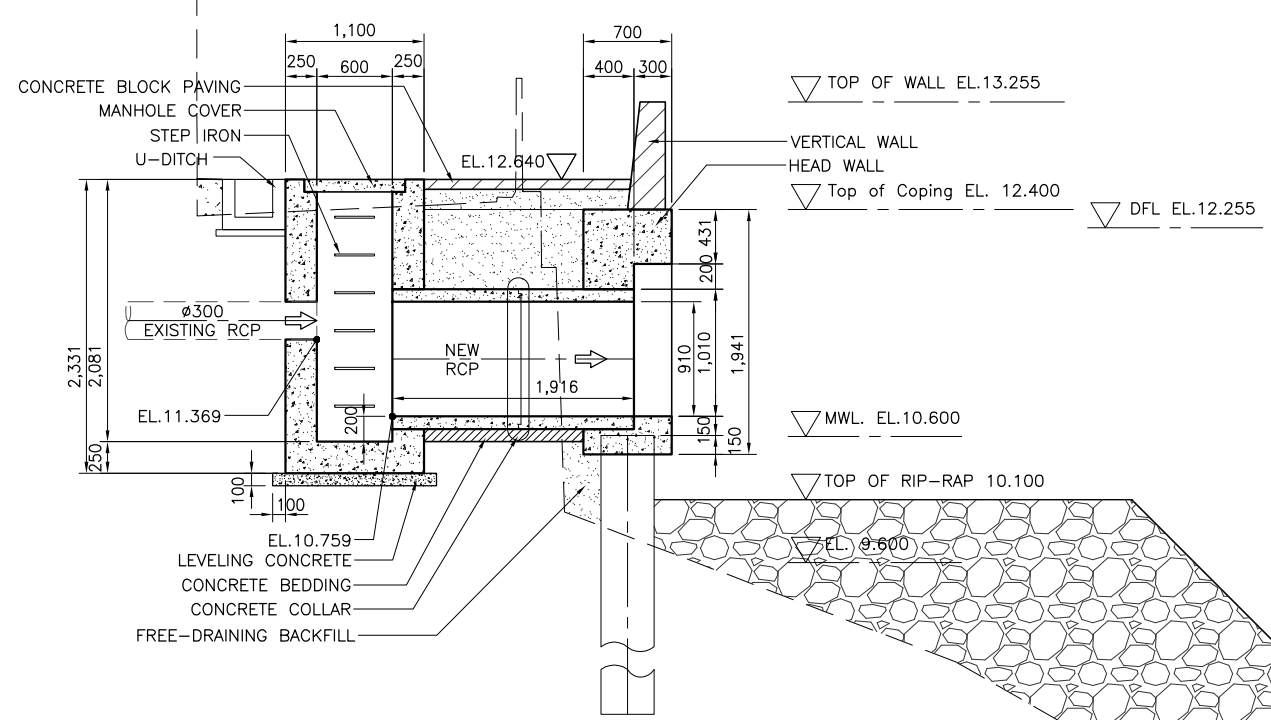
1 DRAINAGE PLAN
SCALE A



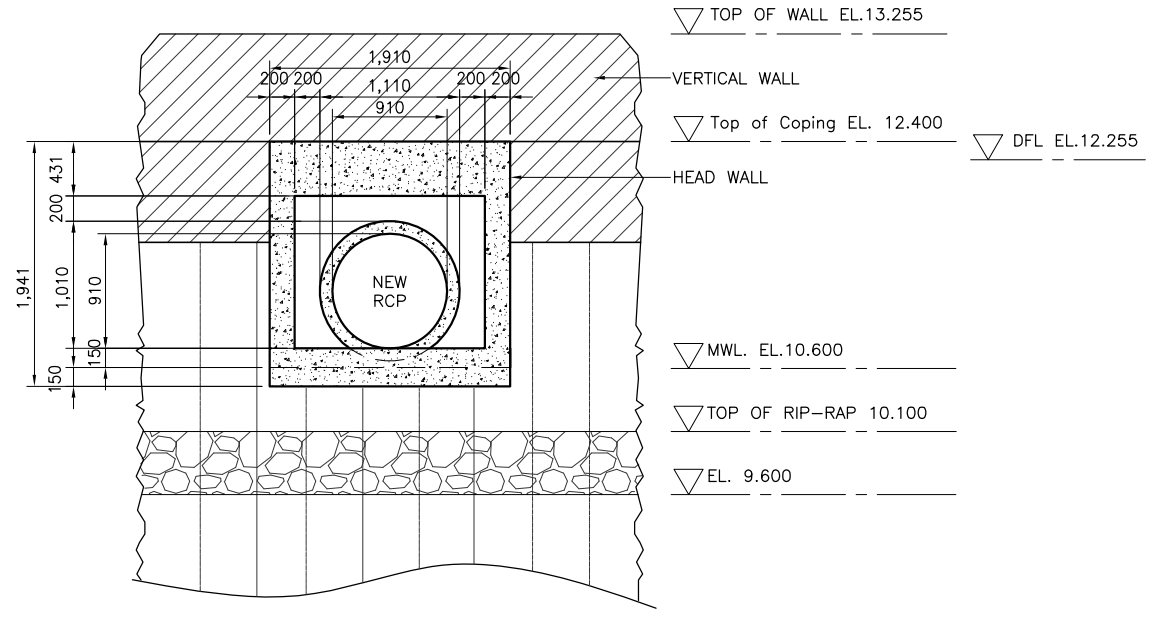
2 PLAN
SCALE B



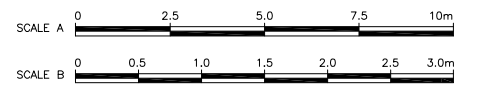
4 SECTION (ML42)
SCALE B



3 SECTION
SCALE B



5 ELEVATION
SCALE B



NOTE:
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JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES

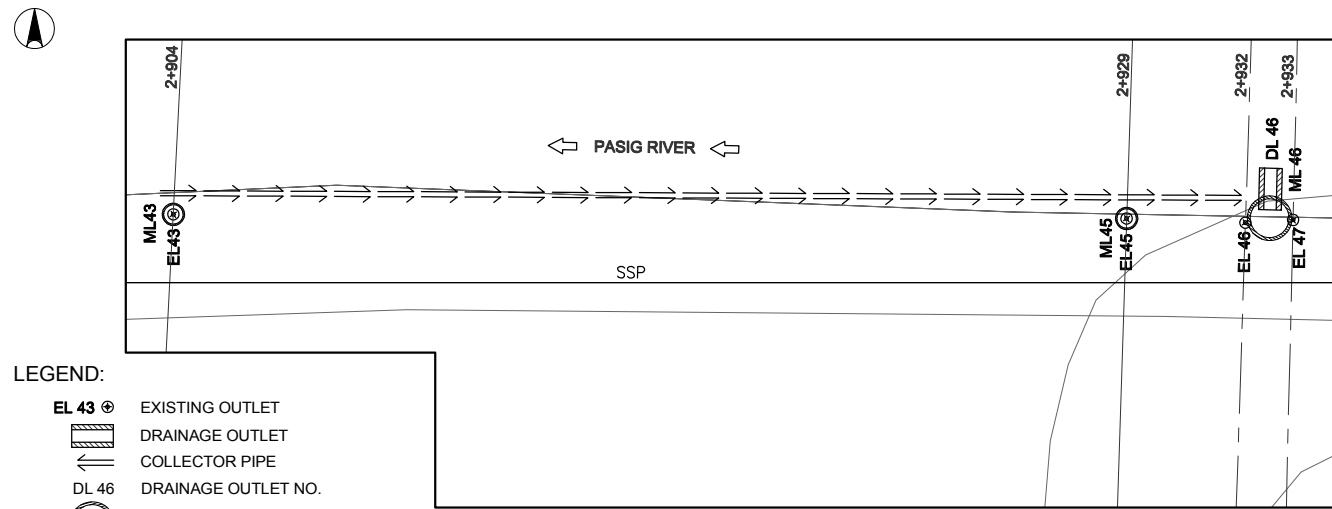


DESIGNED BY:	CHECKED BY:	SUBMITTED BY:
KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	TOSHIKI KAWAKAMI THE CHECKER	SHUJI KAKU TEAM LEADER



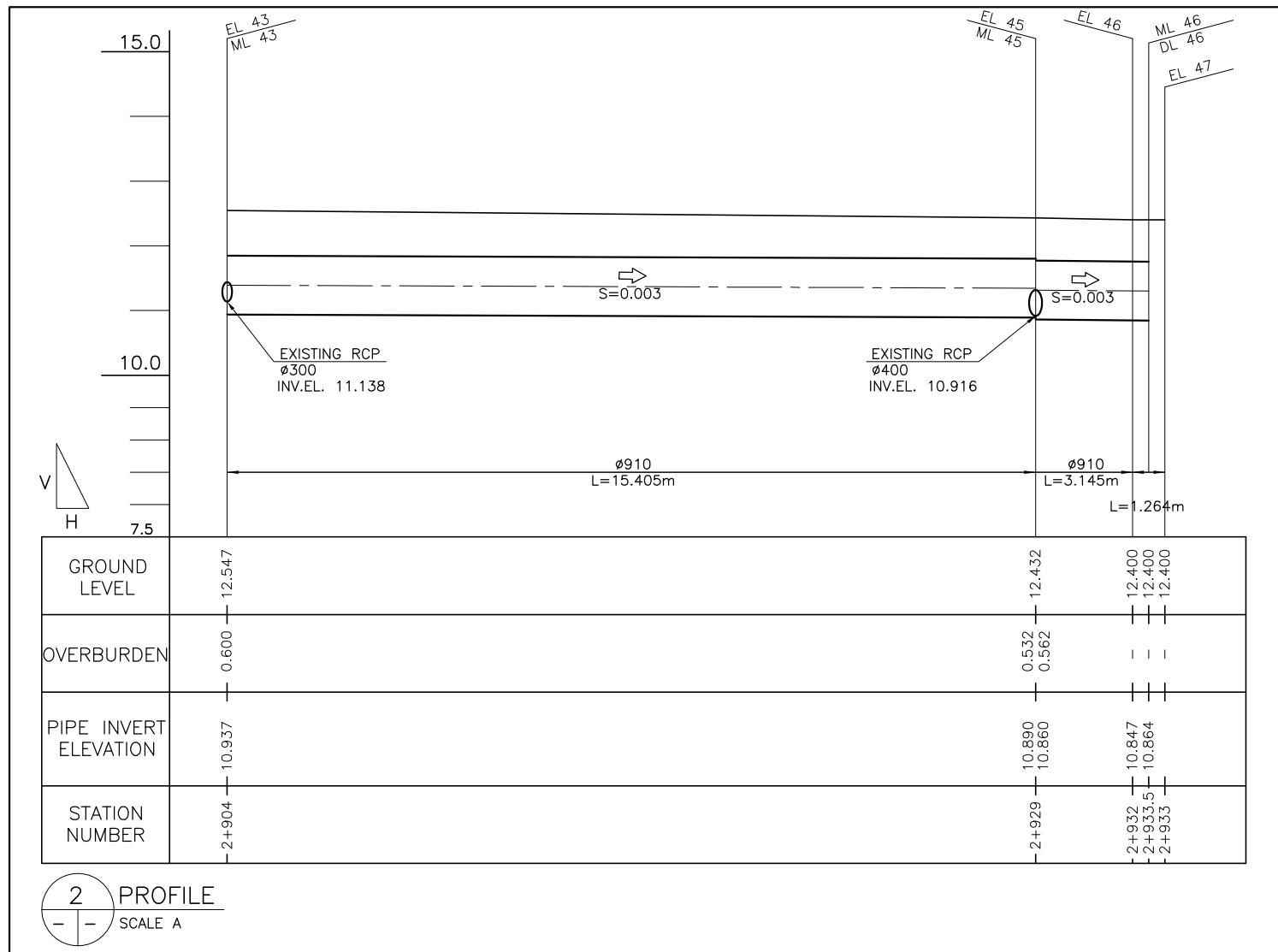
REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED BY:
PERFECTO L. ZAPLAN, JR. CHIEF, HYDRAULIC DIVISION, BOD	PATRICK B. GATAN PROJECT DIRECTOR PMO - MFCP	GILBERTO S. REYES DIRECTOR BOD
SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY	SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY	RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES
		ROGELIO L. SINGSON SECRETARY

PROJECT & LOCATION	SHEET CONTENTS	SHEET NO.
PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	DETAIL OF DRAINAGE OUTLET- DL42, MANHOLE ML42 STA. 2+898 LB	LP-DL DO42



- LEGEND:
- EL 43 ⊕ EXISTING OUTLET
 - DRAINAGE OUTLET
 - COLLECTOR PIPE
 - DL 46 DRAINAGE OUTLET NO.
 - PROPOSED MANHOLE

1 DRAINAGE PLAN
SCALE A



2 PROFILE
SCALE A

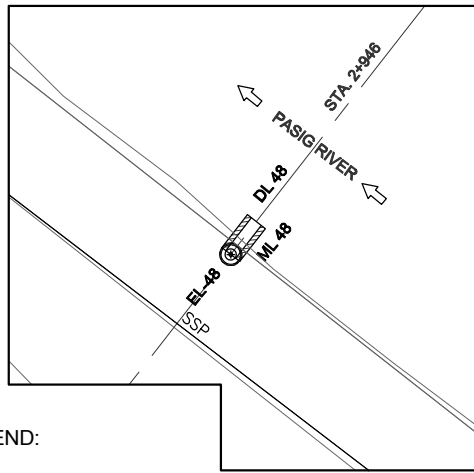


REVISIONS			
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NOTE:
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SHUJI KAKU
TEAM LEADER

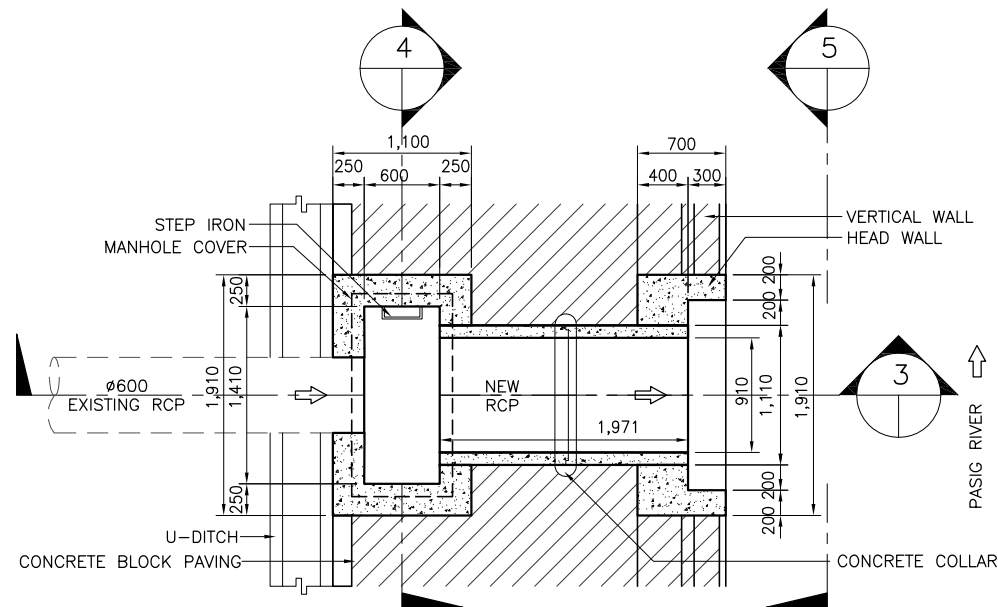
JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN			REPUBLIC OF THE PHILIPPINES				PROJECT & LOCATION		SHEET CONTENTS		SHEET NO.	
CTI ENGINEERING INTERNATIONAL CO., LTD.	DESIGNED BY:	CHECKED BY:	SUBMITTED BY:	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	REVIEWED BY:	RECOMMENDING APPROVAL:		APPROVED BY:		PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	PLAN & PROFILE OF COLLECTOR PIPE	
	KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	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	SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY	RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES			



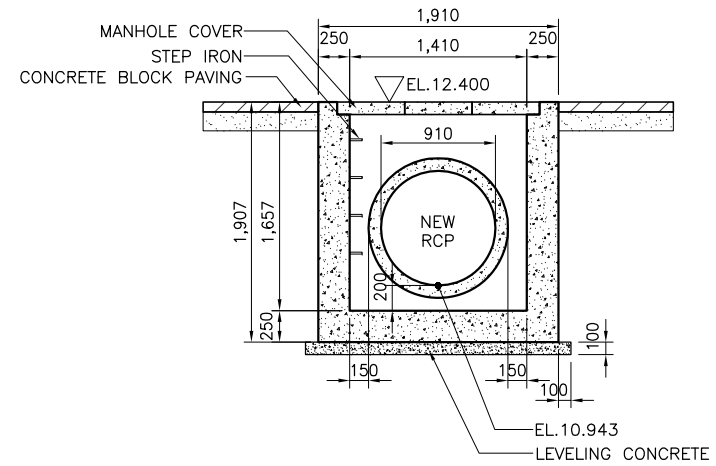
LEGEND:

- EL48 ⊕ EXISTING OUTLET
- ← EXISTING DRAINAGE
- ▨ DRAINAGE OUTLET
- COLLECTOR PIPE
- DL48 DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

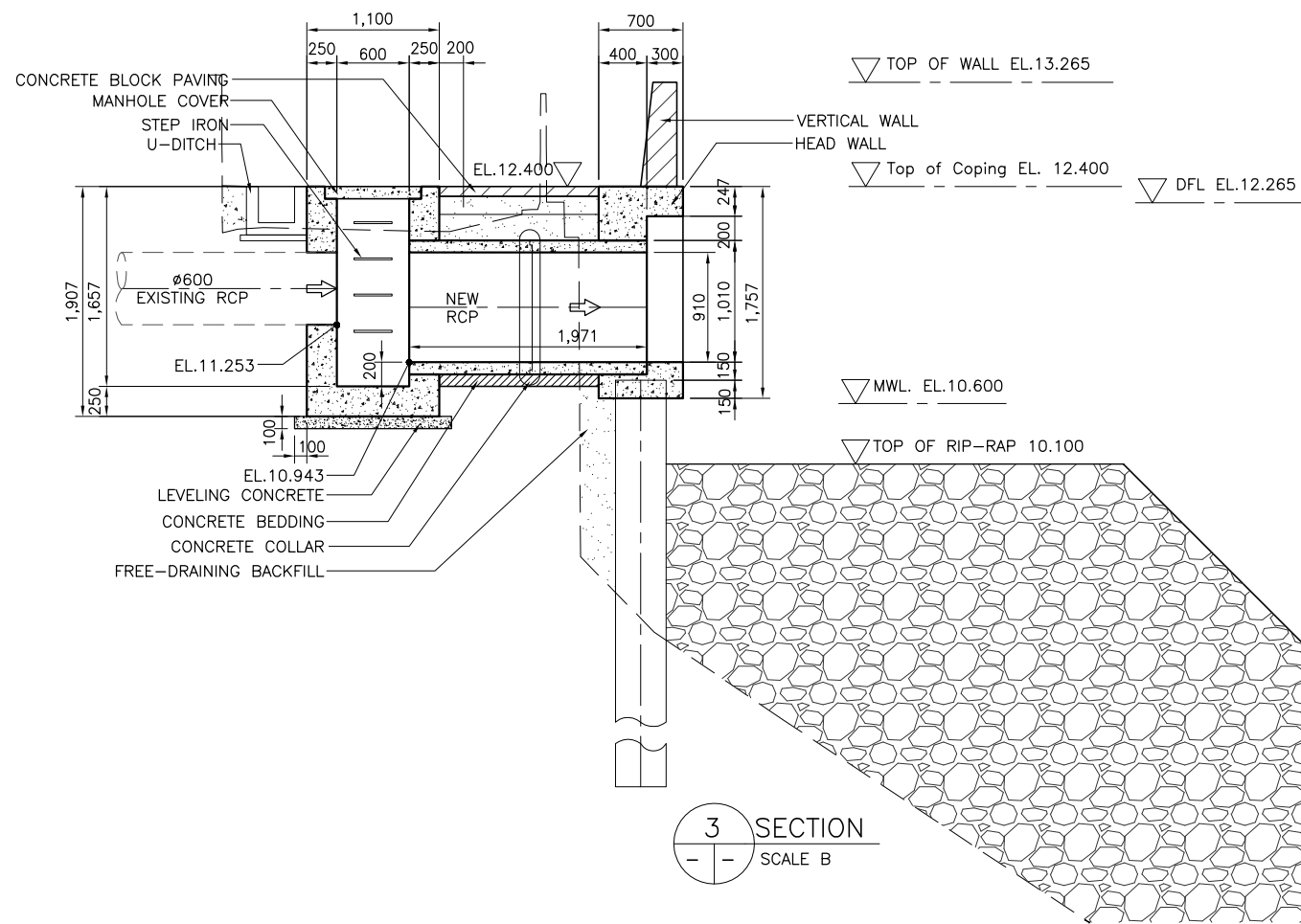
1 DRAINAGE PLAN
SCALE A



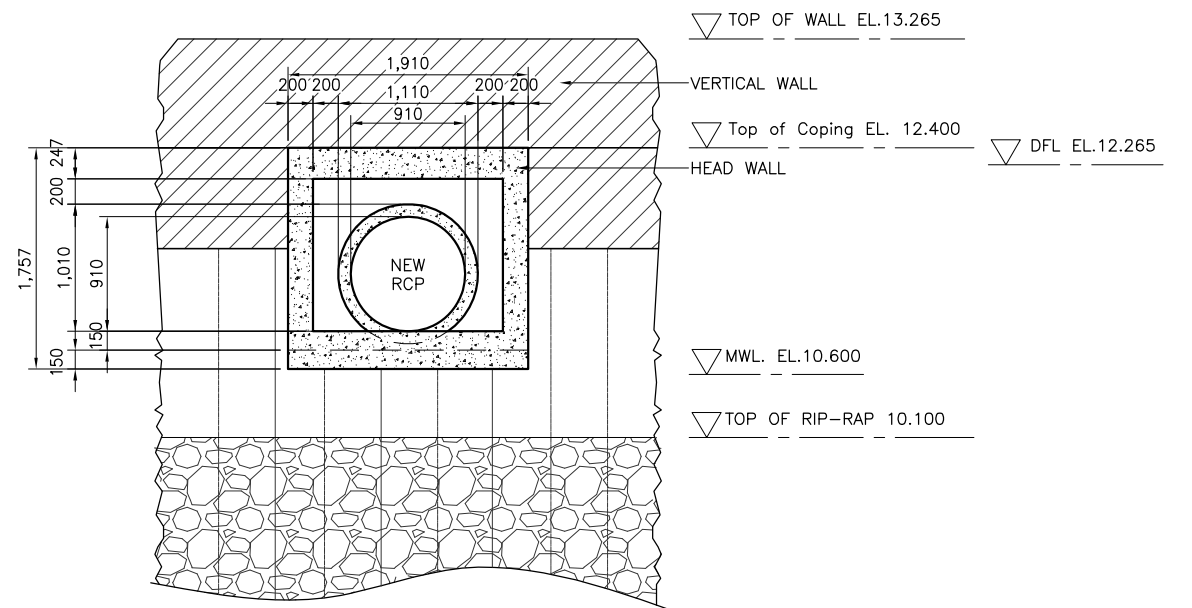
2 PLAN
SCALE B



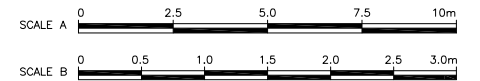
4 SECTION (ML48)
SCALE B



3 SECTION
SCALE B



5 ELEVATION
SCALE B



NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY

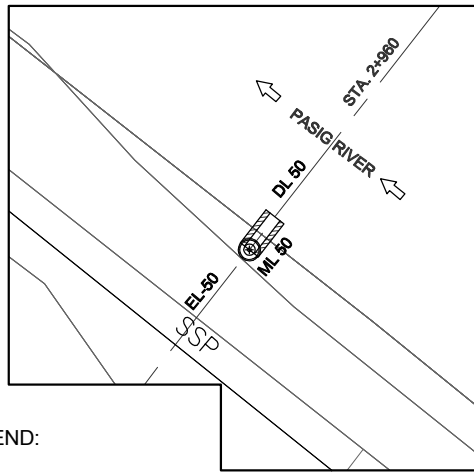
RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

APPROVED BY: ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION: PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS: DETAIL OF DRAINAGE OUTLET- DL48, MANHOLE ML48 STA. 2+946 LB

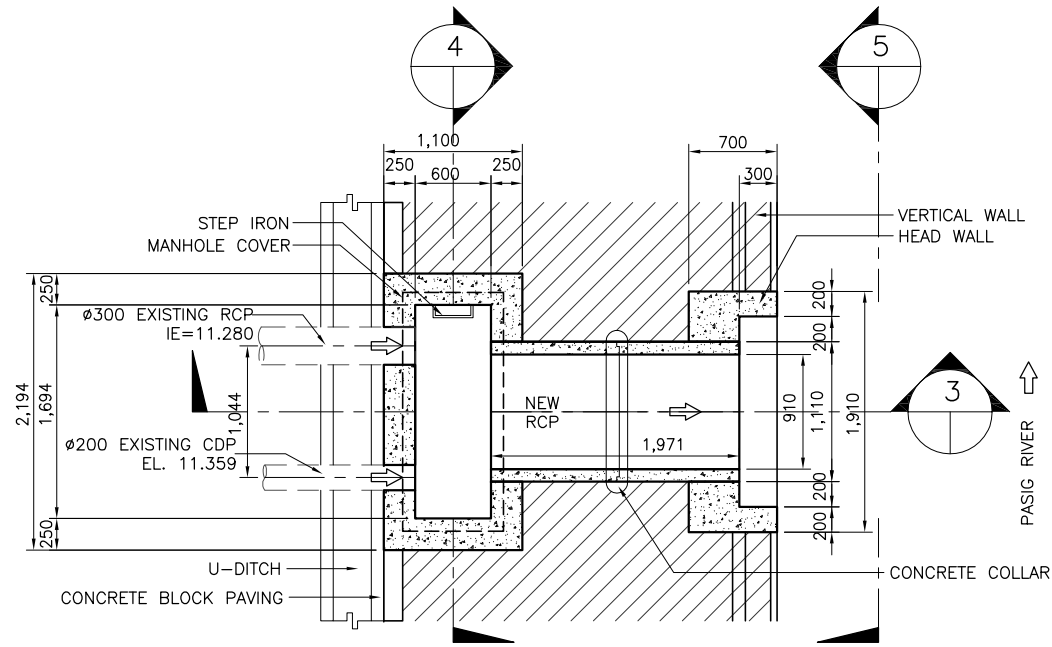
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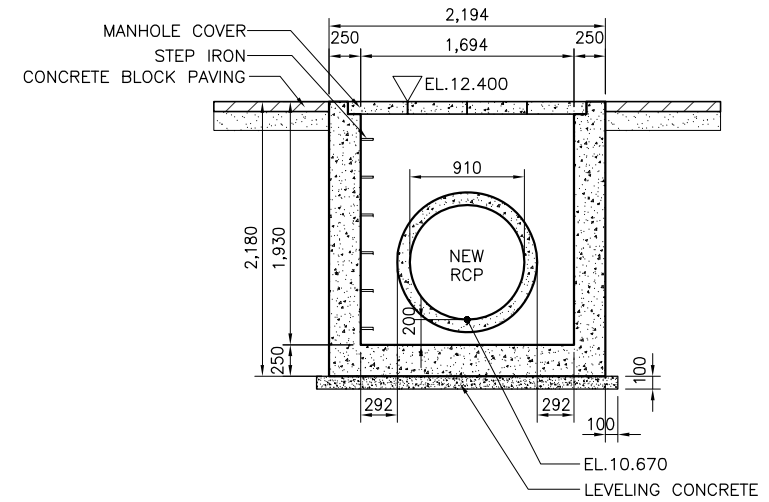
LEGEND:

- EL50 EXISTING OUTLET
- EXISTING DRAINAGE
- DRAINAGE OUTLET
- COLLECTOR PIPE
- DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

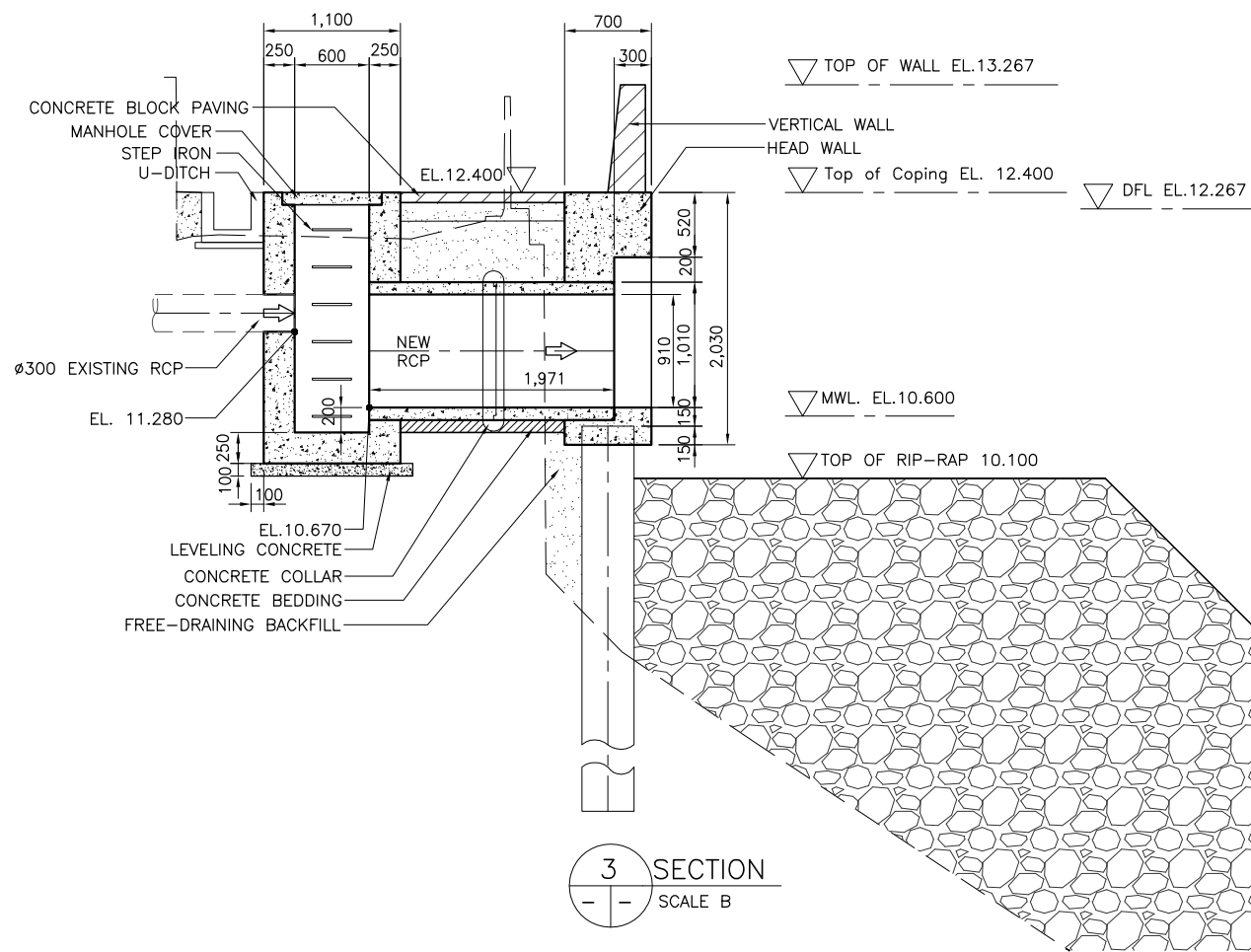
1 DRAINAGE PLAN
SCALE A



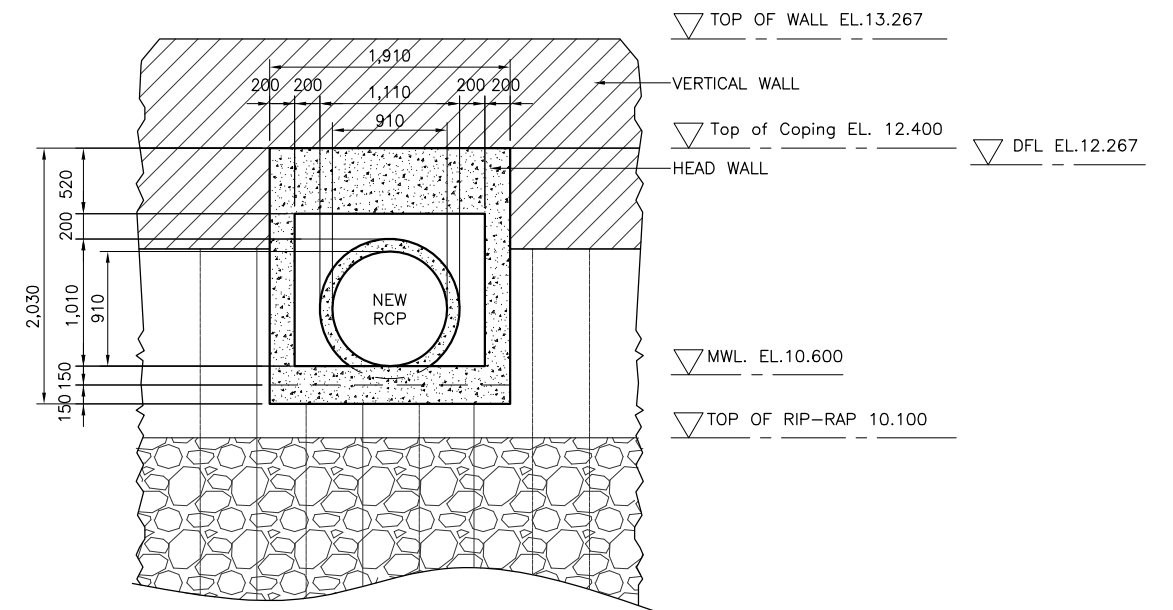
2 PLAN
SCALE B



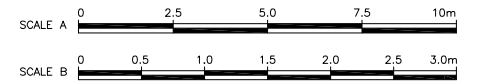
4 SECTION (ML50)
SCALE B



3 SECTION
SCALE B



5 ELEVATION
SCALE B



NOTE:
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SHUJI KAKU
TEAM LEADER

REVISIONS			
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JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES



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STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



REPUBLIC OF THE PHILIPPINES
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REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY

RAUL C. ASIS
UNDERSECRETARY FOR TECHNICAL SERVICES

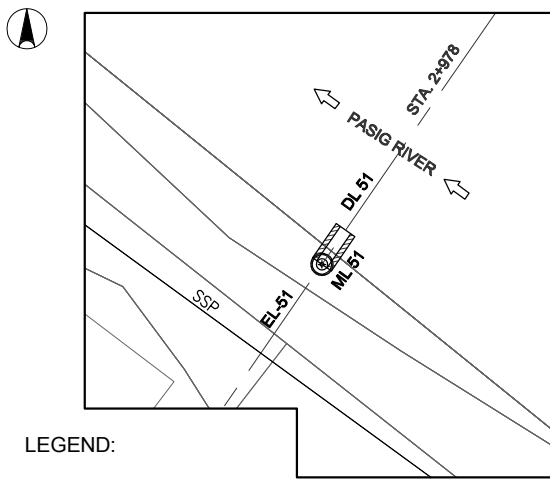
APPROVED BY: ROGELIO L. SINGSON
SECRETARY

SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY

PROJECT & LOCATION: PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS: DETAIL OF DRAINAGE OUTLET- DL50 & MANHOLE ML50 STA. 2+960 LB

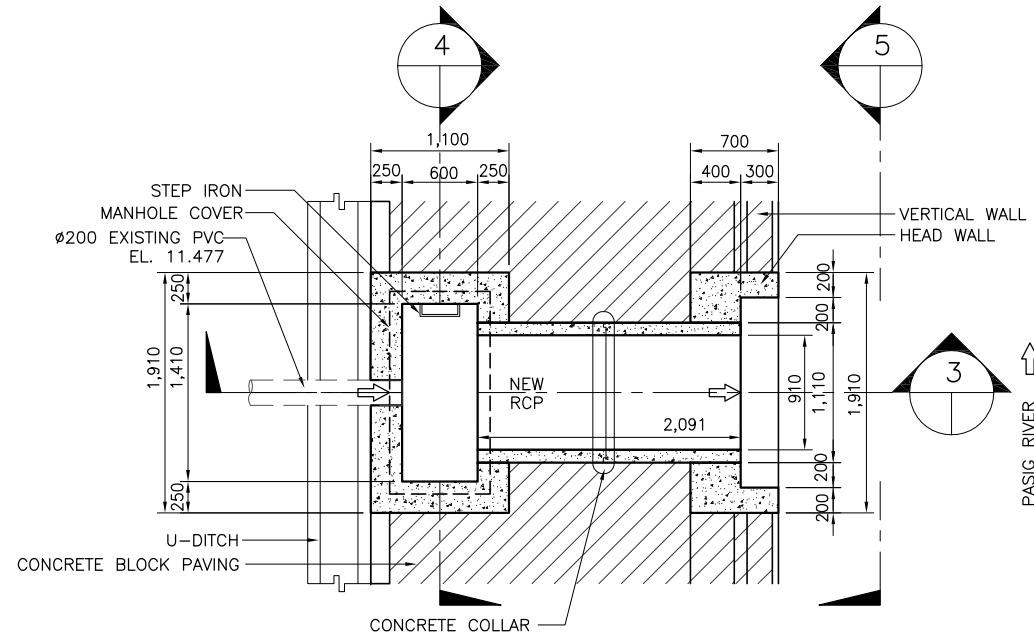
SHEET NO.: LP-DL DO/50



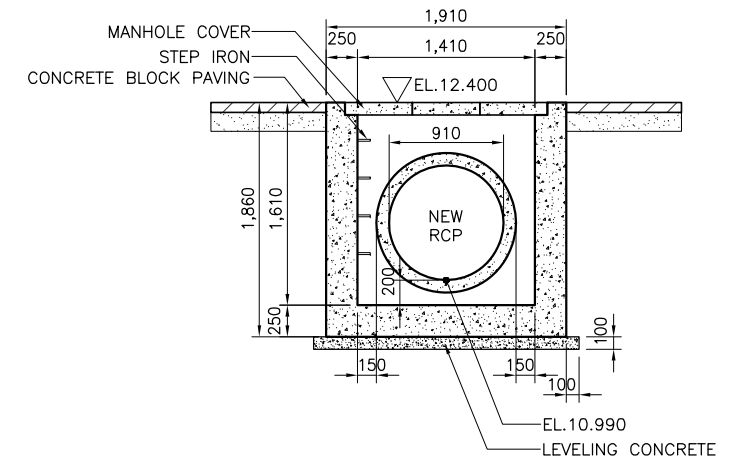
LEGEND:

- EL51 ⊕ EXISTING OUTLET
- ← EXISTING DRAINAGE
- ▨ DRAINAGE OUTLET
- COLLECTOR PIPE
- DL51 DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

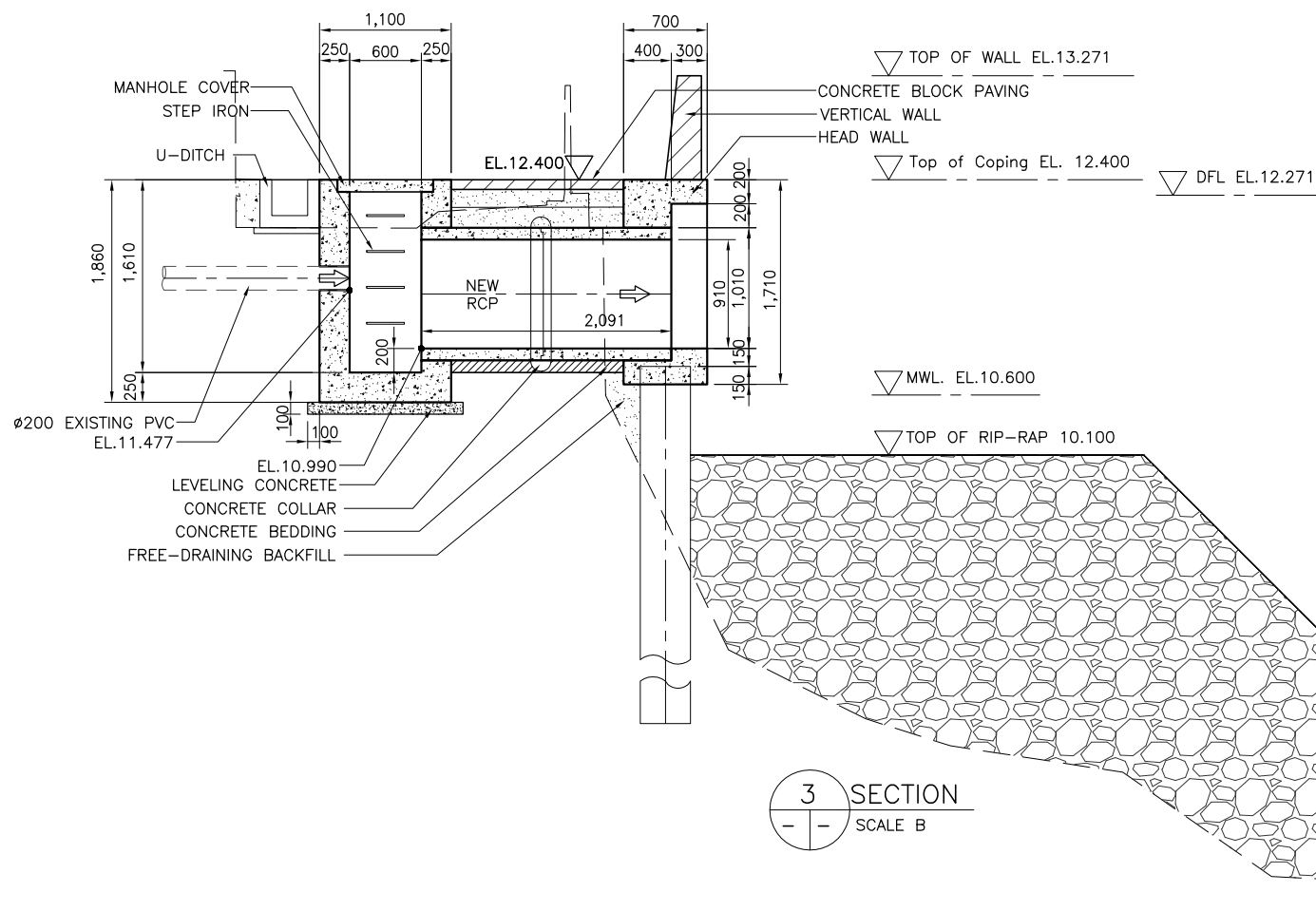
1 DRAINAGE PLAN
SCALE A



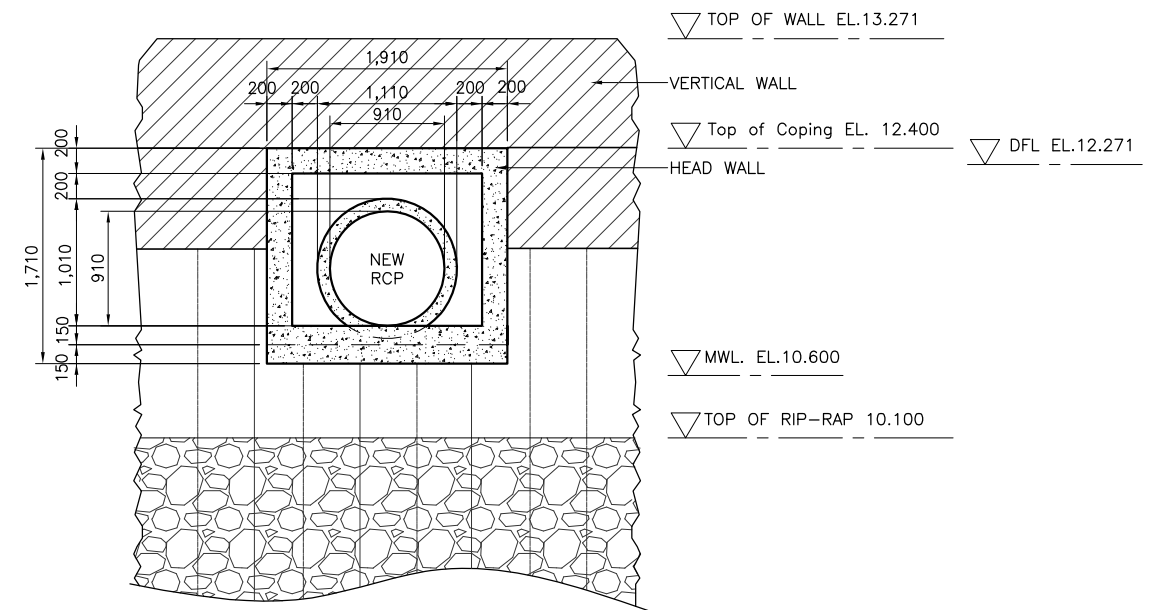
2 PLAN
SCALE B



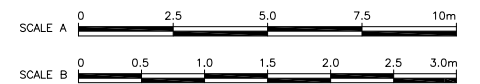
4 SECTION (ML51)
SCALE B



3 SECTION
SCALE B



5 ELEVATION
SCALE B



NOTE:
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SHUJI KAKU
TEAM LEADER

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DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

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

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY

RAUL C. ASIS
UNDERSECRETARY FOR TECHNICAL SERVICES

APPROVED BY: ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION

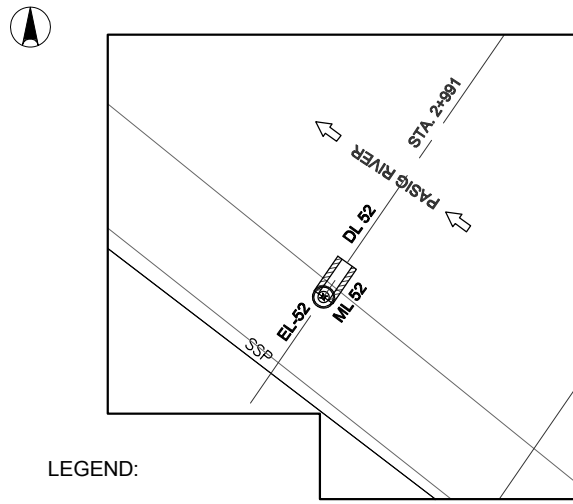
PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS

DETAIL OF DRAINAGE OUTLET- DL51, MANHOLE ML51 STA. 2+978 LB

SHEET NO.

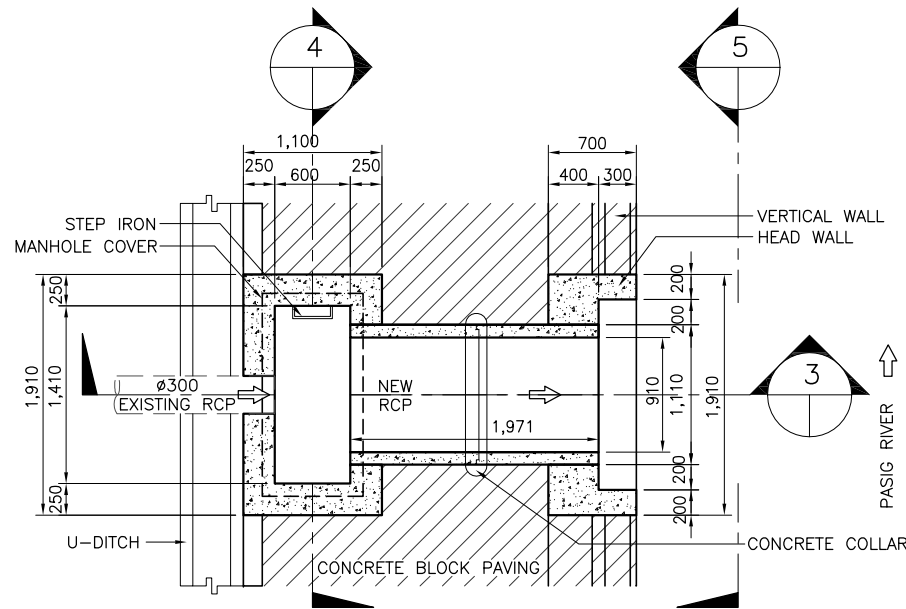




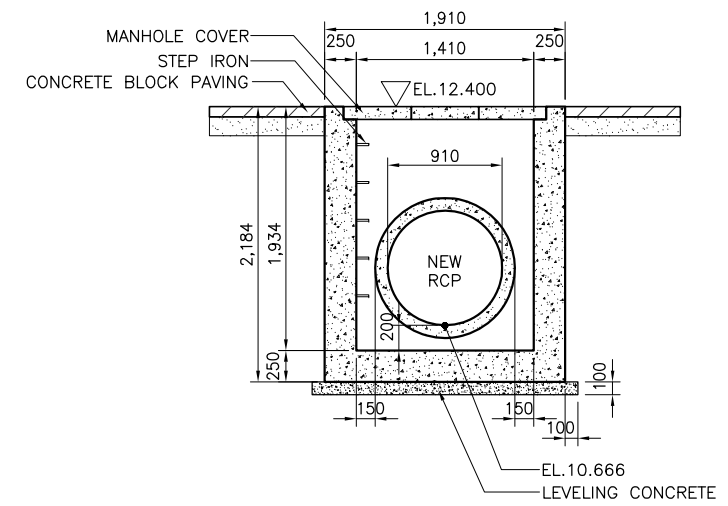
LEGEND:

- EL52 ⊕ EXISTING OUTLET
- ← EXISTING DRAINAGE
- ▨ DRAINAGE OUTLET
- COLLECTOR PIPE
- DL52 DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

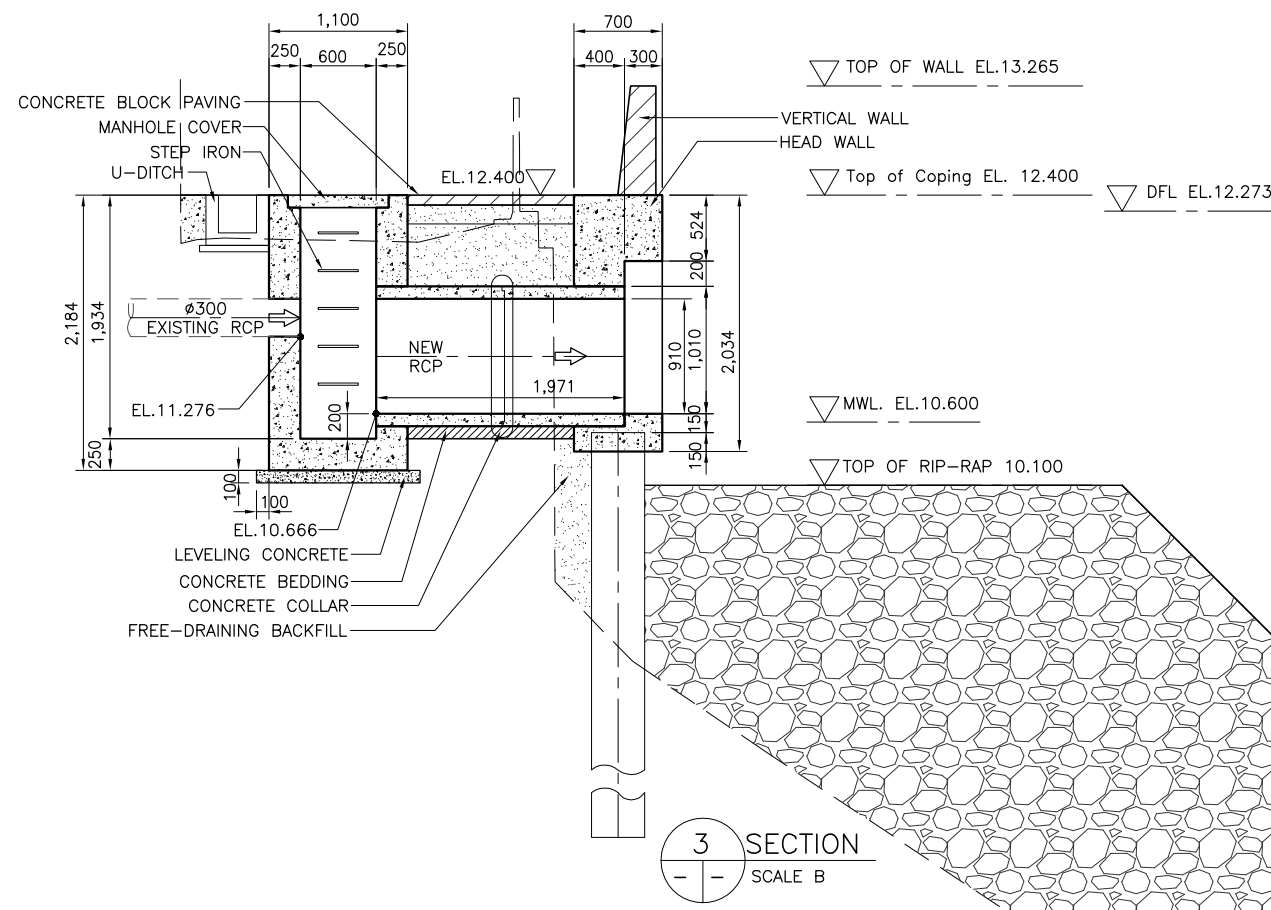
1 DRAINAGE PLAN
SCALE A



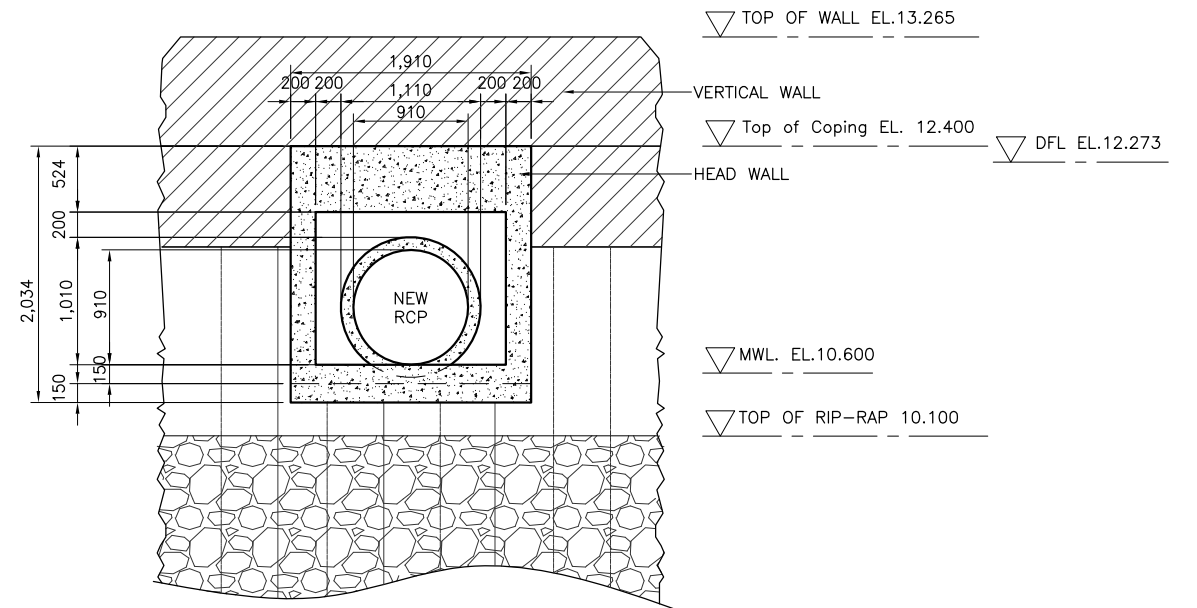
2 PLAN
SCALE B



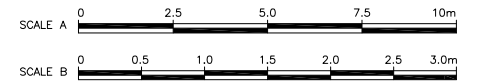
4 SECTION(DL52)
SCALE B



3 SECTION
SCALE B



5 ELEVATION
SCALE B



NOTE:
PURSUANT TO SECTION 4 OF ANNEX 'A' OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

SHUJI KAKU
TEAM LEADER

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



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PROJECT DIRECTOR
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BOD

SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY

APPROVED BY: RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

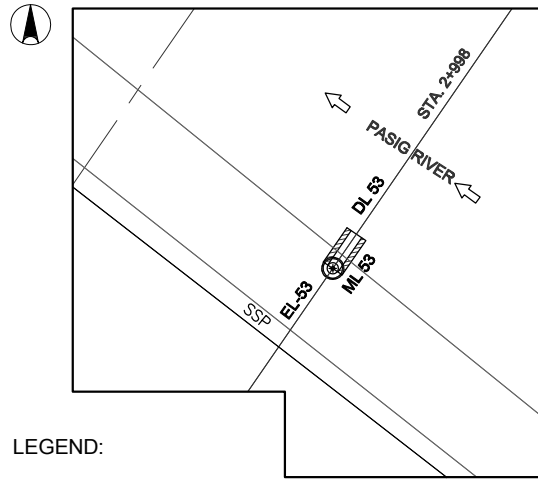
SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY

ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION: PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS: DETAIL OF DRAINAGE OUTLET- DL52, MANHOLE ML52 STA. 2+991 LB

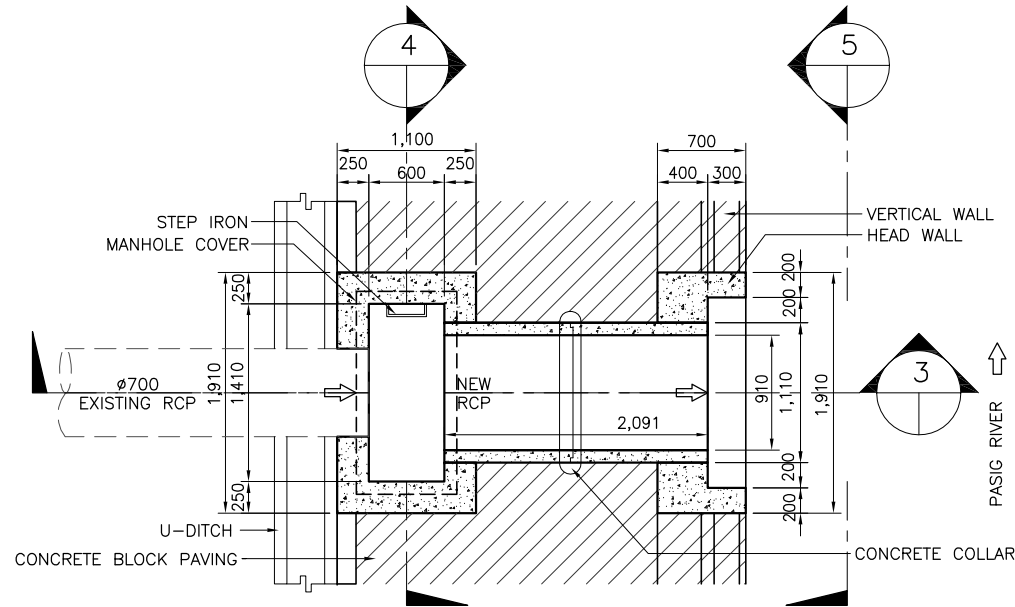
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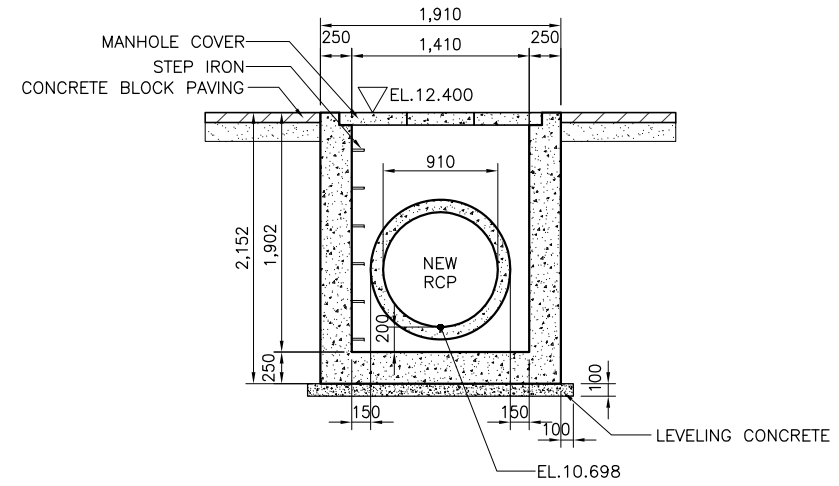
LEGEND:

- EL53 ⊕ EXISTING OUTLET
- ← EXISTING DRAINAGE
- ▨ DRAINAGE OUTLET
- COLLECTOR PIPE
- DL53 DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

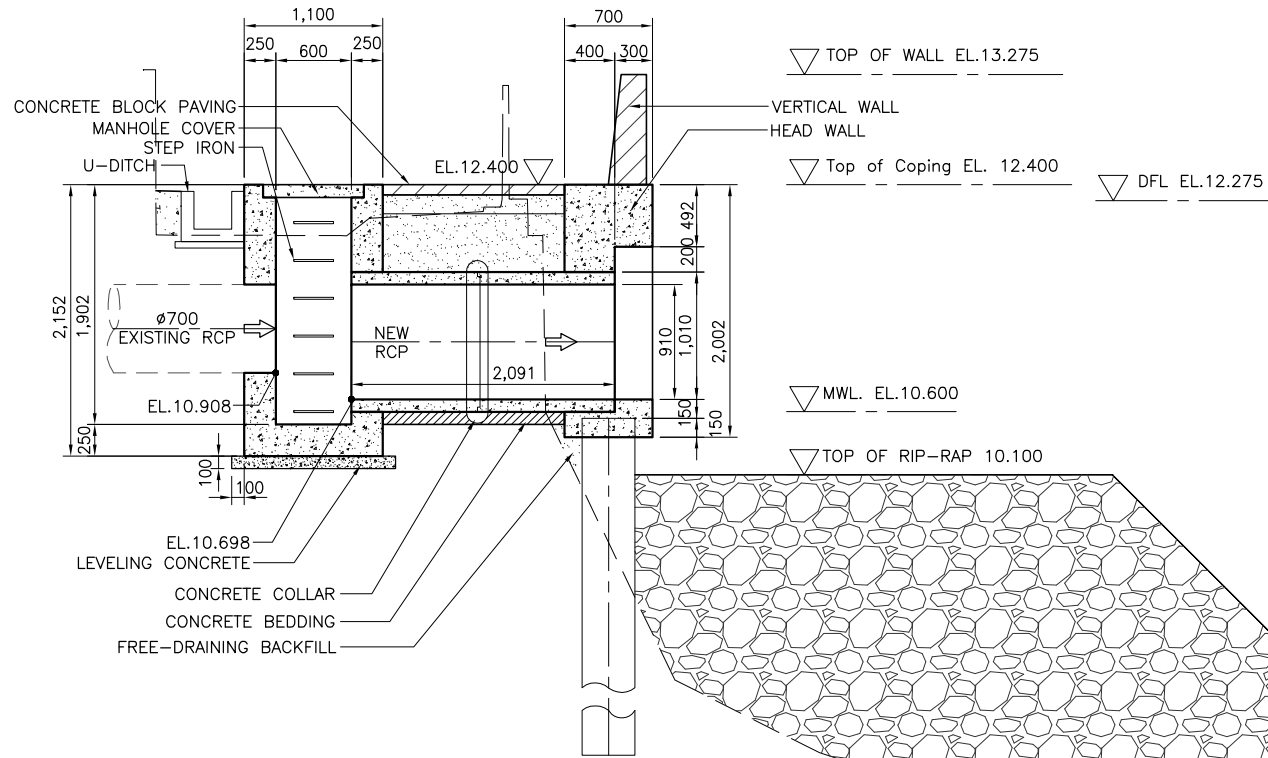
1 DRAINAGE PLAN
SCALE A



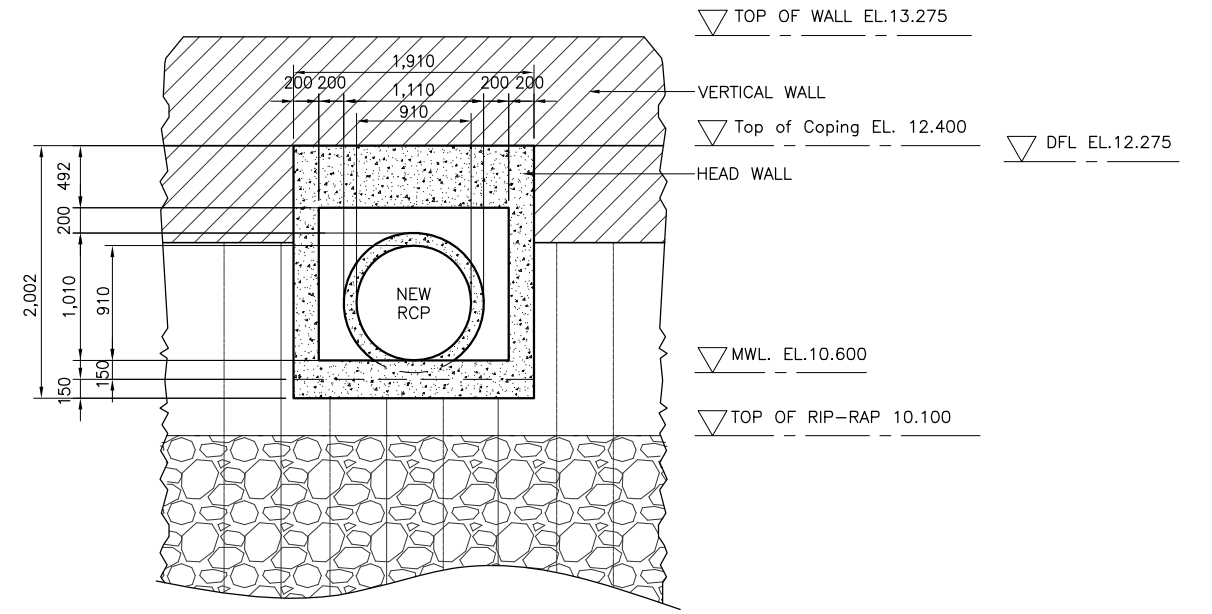
2 PLAN
SCALE B



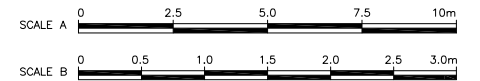
4 SECTION (ML53)
SCALE B



3 SECTION
SCALE B



5 ELEVATION
SCALE B



NOTE:
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TEAM LEADER

REVISIONS			
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REPUBLIC OF THE PHILIPPINES



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

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THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



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CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
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BOD

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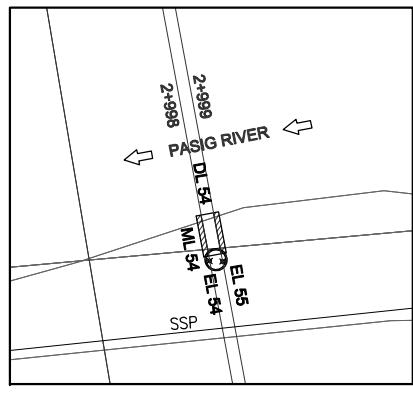
RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

APPROVED BY: ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION: PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS: DETAIL OF DRAINAGE OUTLET- DL53, MANHOLE ML53, STA. 2+998 LB

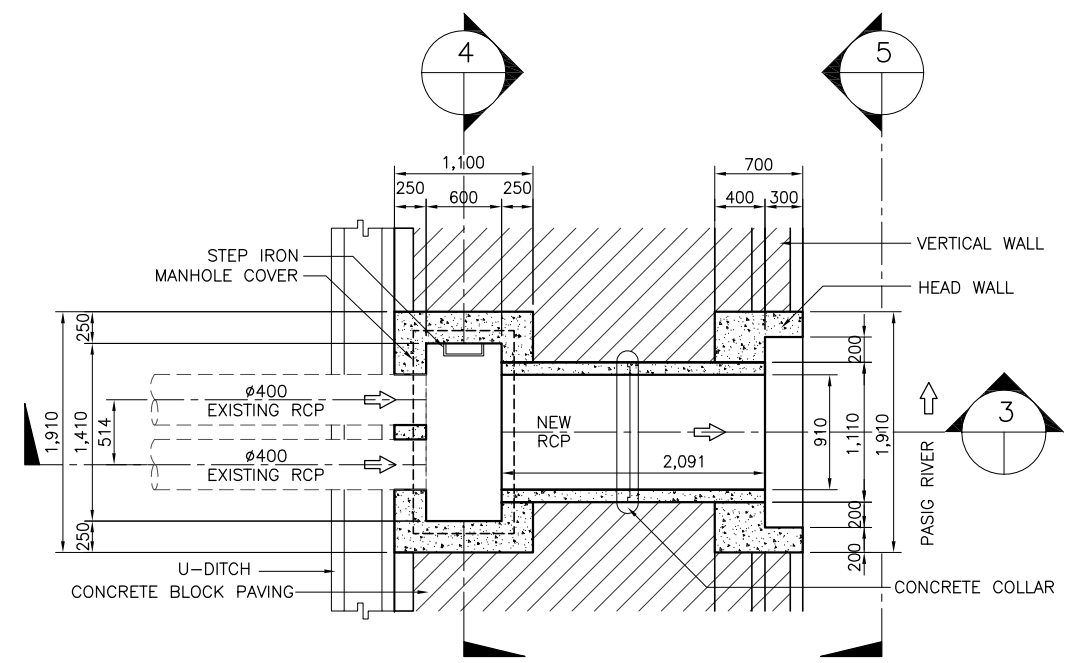
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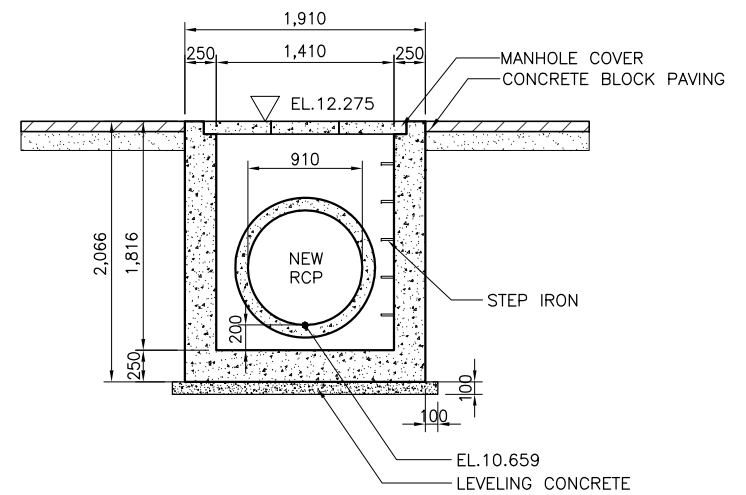
LEGEND:

- EXISTING OUTLET
- DRAINAGE OUTLET
- DL 54 DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

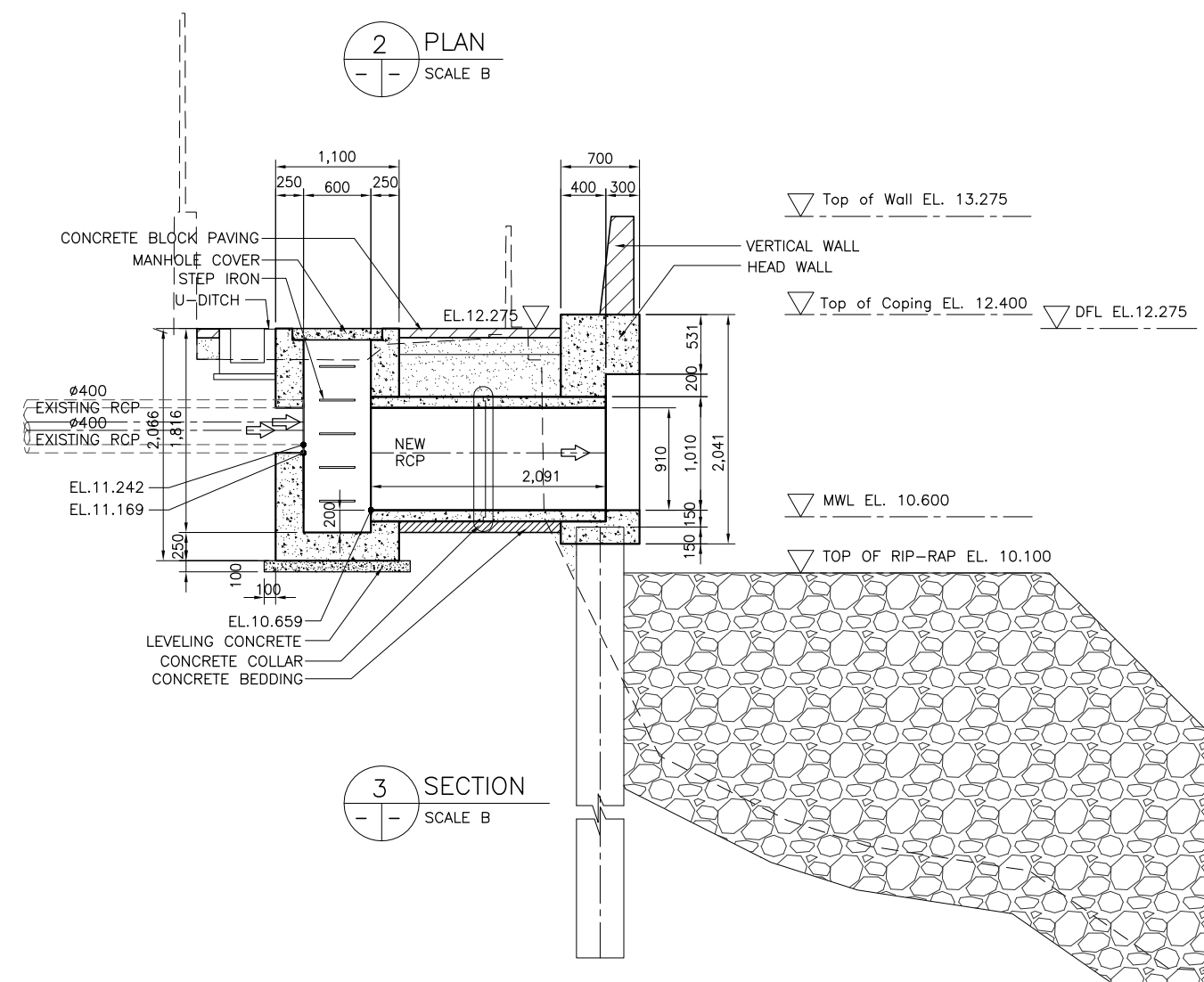
1 DRAINAGE PLAN
SCALE A



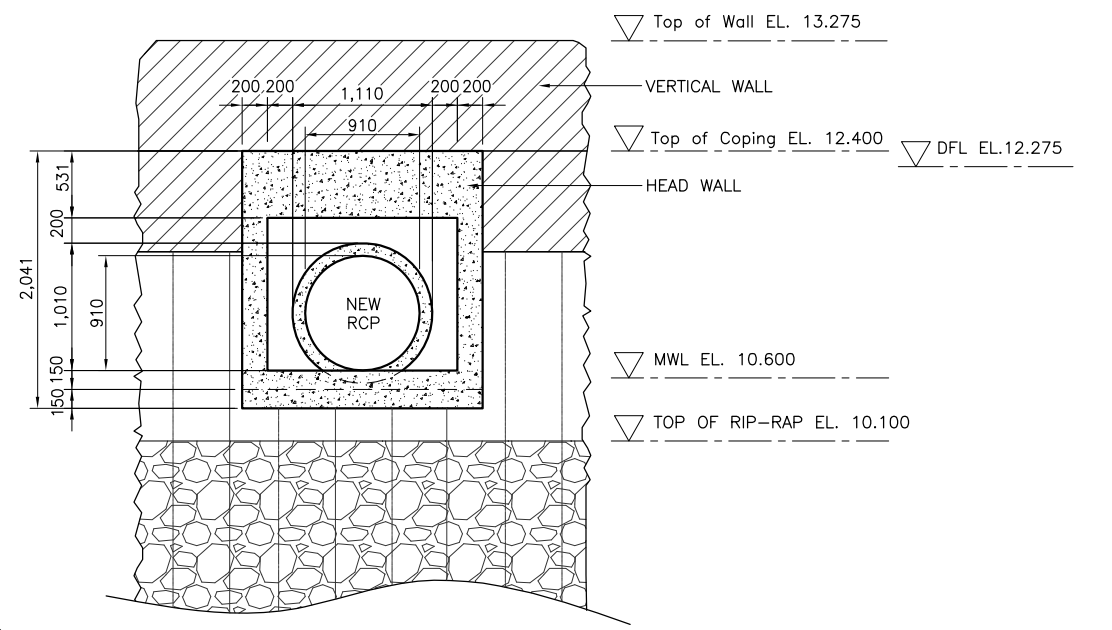
2 PLAN
SCALE B



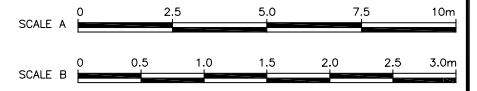
4 SECTION (ML54)
SCALE B



3 SECTION
SCALE B



5 ELEVATION
SCALE B



NOTE:
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REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES

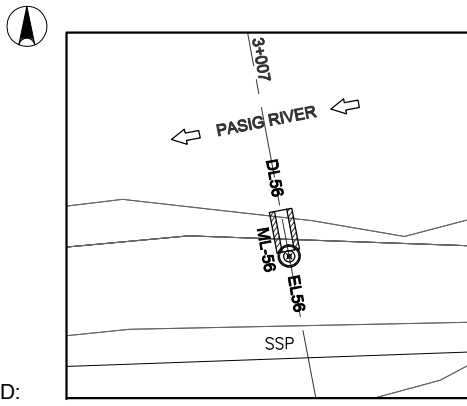


DESIGNED BY:	CHECKED BY:	SUBMITTED BY:
KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	TOSHIKI KAWAKAMI THE CHECKER	SHUJI KAKU TEAM LEADER



REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED BY:
PERFECTO L. ZAPLAN, JR. CHIEF, HYDRAULIC DIVISION, BOD	PATRICK B. GATAN PROJECT DIRECTOR PMO - MFCP	GILBERTO S. REYES DIRECTOR BOD
SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY	SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY	SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY
RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES	ROGELIO L. SINGSON SECRETARY	

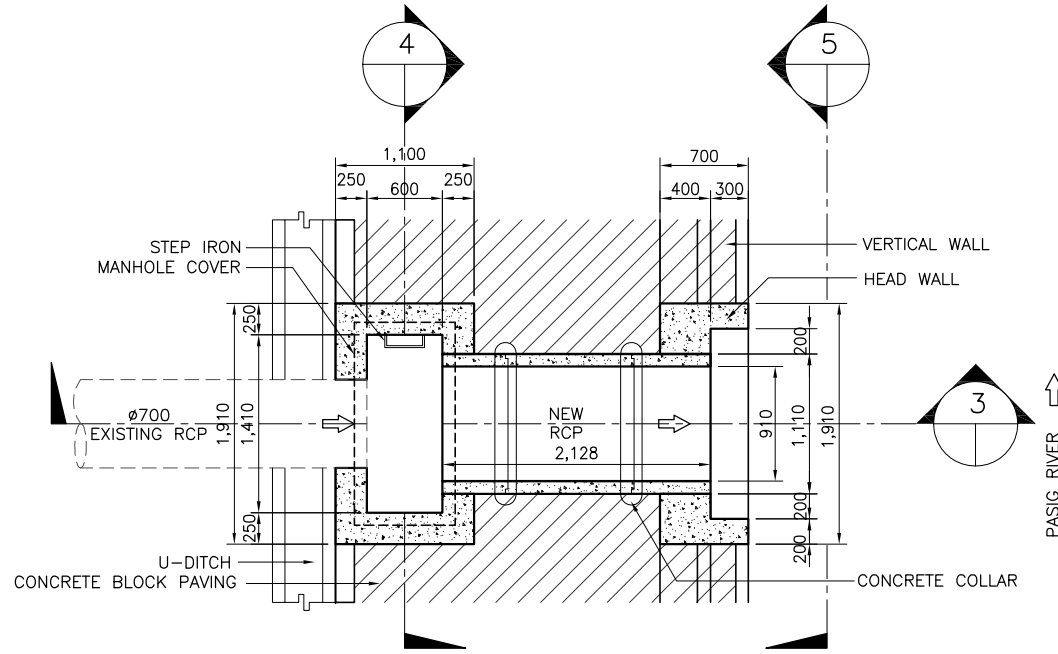
PROJECT & LOCATION	SHEET CONTENTS	SHEET NO.
PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	DETAIL OF DRAINAGE OUTLET- DL54, MANHOLE ML54 STA. 2+998 LB	LP-DL DO 54



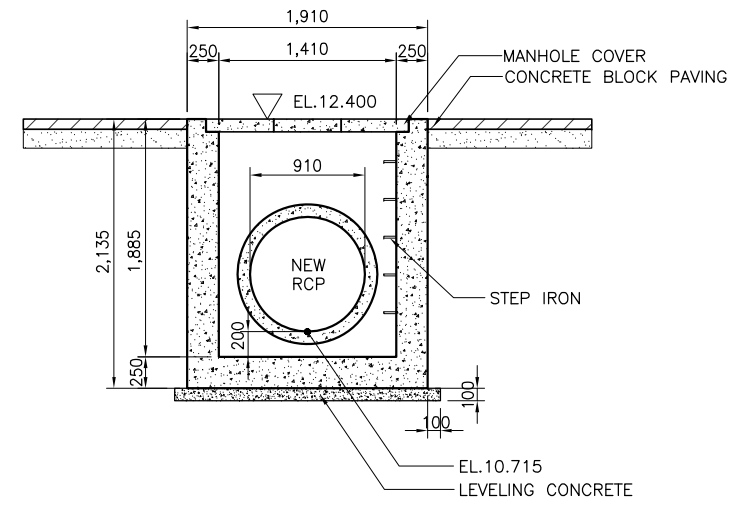
LEGEND:

- EL56 ⊕ EXISTING OUTLET
- EXISTING DRAINAGE
- DRAINAGE OUTLET
- COLLECTOR PIPE
- DL 56 DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

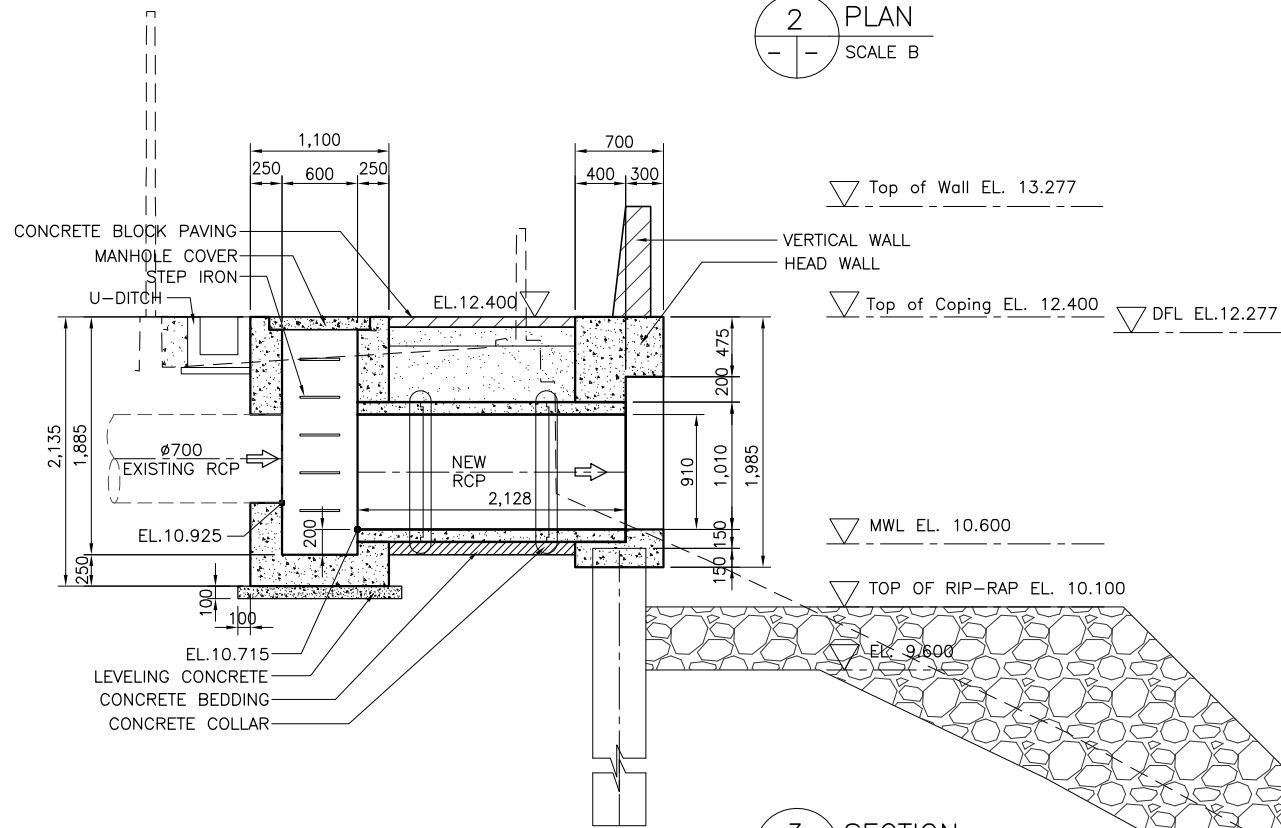
1 DRAINAGE PLAN
SCALE A



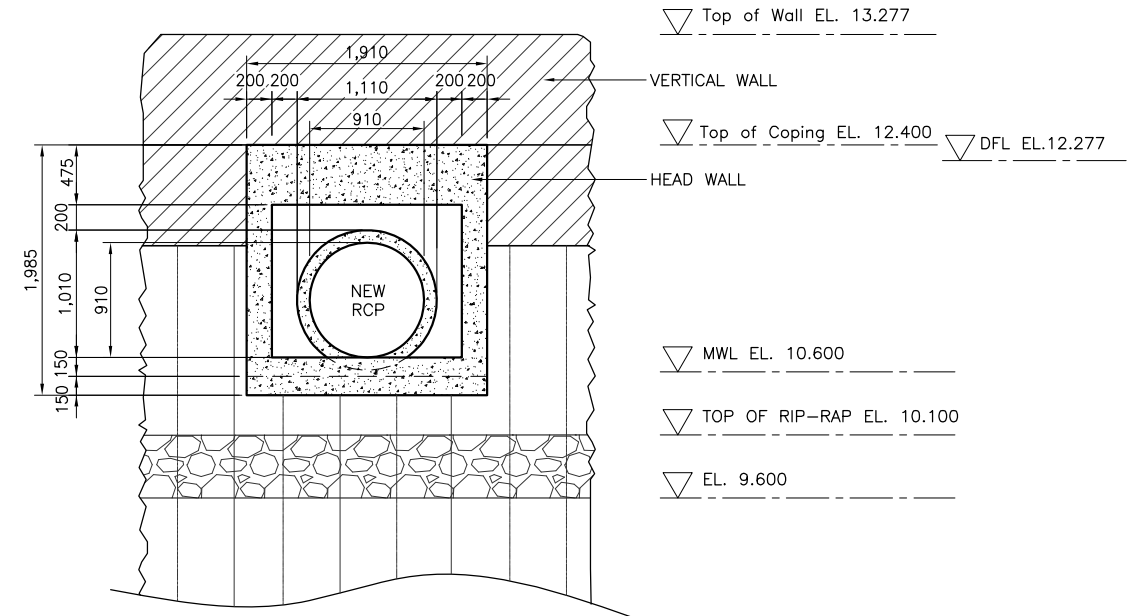
2 PLAN
SCALE B



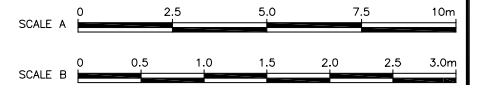
4 SECTION (ML56)
SCALE B



3 SECTION
SCALE B



5 ELEVATION
SCALE B



REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

NOTE:
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SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY

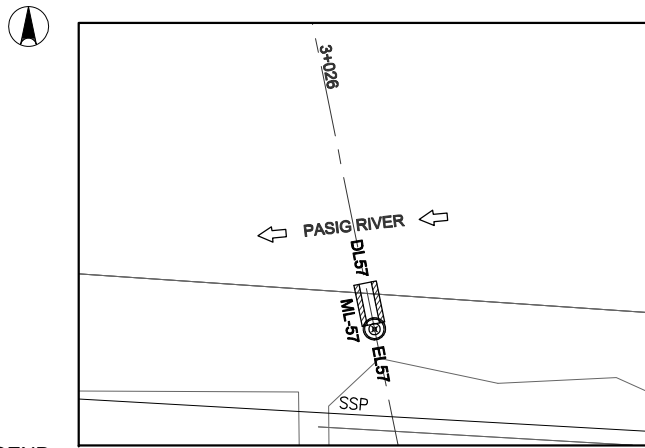
RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

APPROVED BY: ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION
PASIG-MARIKINA
RIVER CHANNEL
IMPROVEMENT
PROJECT (PHASE III),
METRO MANILA

SHEET CONTENTS
DETAIL OF DRAINAGE
OUTLET- DL56,
MANHOLE ML56
STA. 3+007 LB

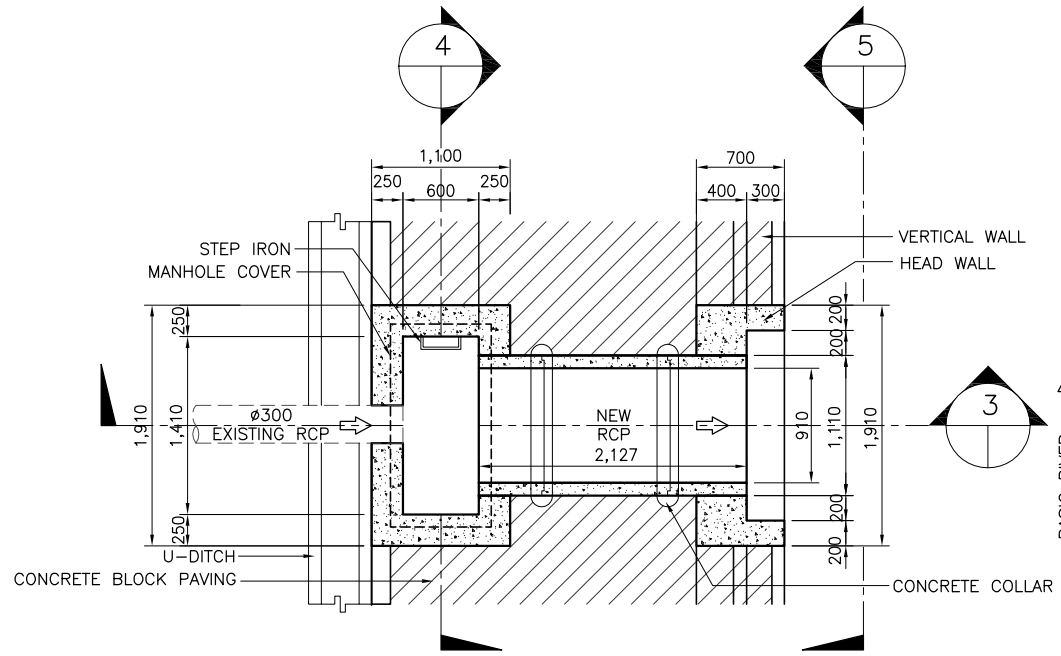
SHEET NO.
LP-DL
DO/56



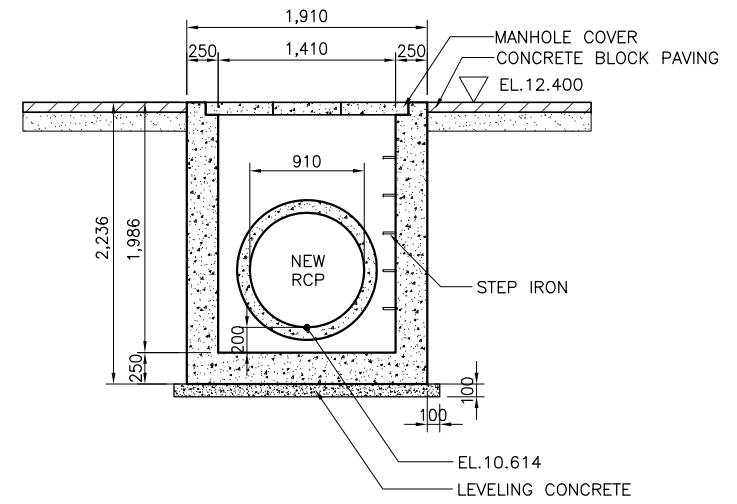
LEGEND:

- EL57 ⊕ EXISTING OUTLET
- EXISTING DRAINAGE
- DRAINAGE OUTLET
- COLLECTOR PIPE
- DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

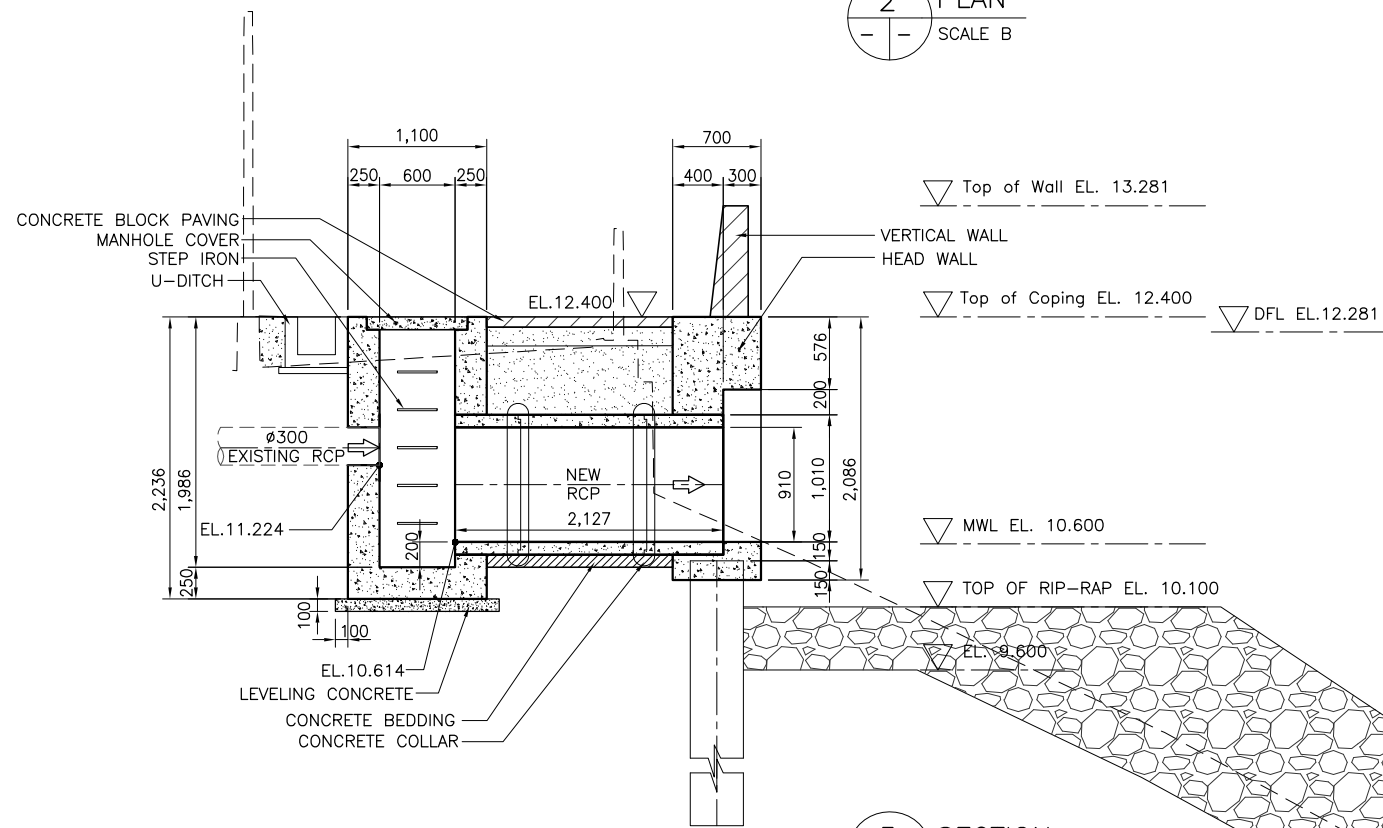
1 DRAINAGE PLAN
SCALE A



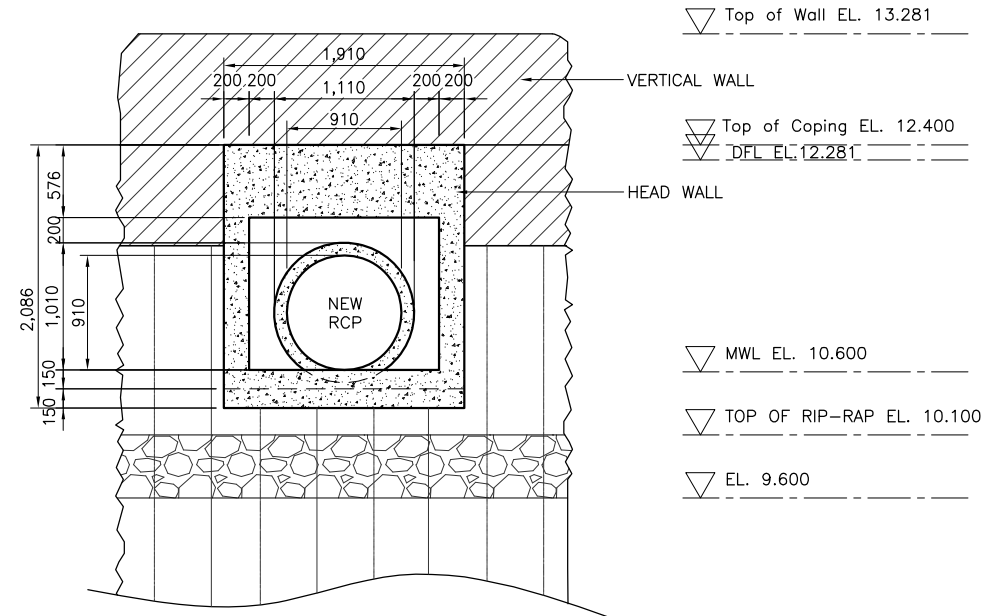
2 PLAN
SCALE B



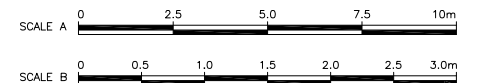
4 SECTION (ML57)
SCALE B



3 SECTION
SCALE B



5 ELEVATION
SCALE B



NOTE:
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SHUJI KAKU
TEAM LEADER

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



REPUBLIC OF THE PHILIPPINES
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GILBERTO S. REYES
DIRECTOR
BOD

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APPROVED BY: RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

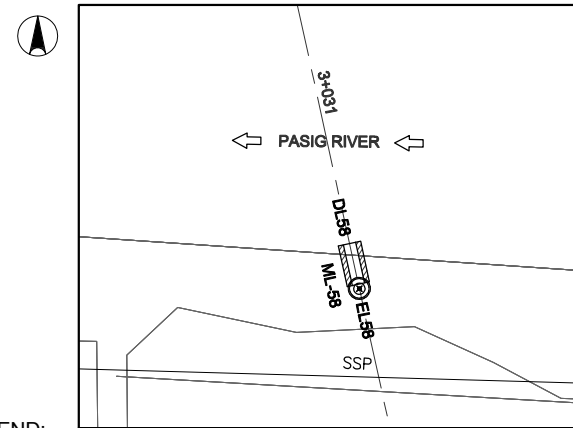
SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY

ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION
PASIG-MARIKINA
RIVER CHANNEL
IMPROVEMENT
PROJECT (PHASE III),
METRO MANILA

SHEET CONTENTS
DETAIL OF DRAINAGE
OUTLET- DL57,
MAHOLE ML57
STA. 3+026 LB

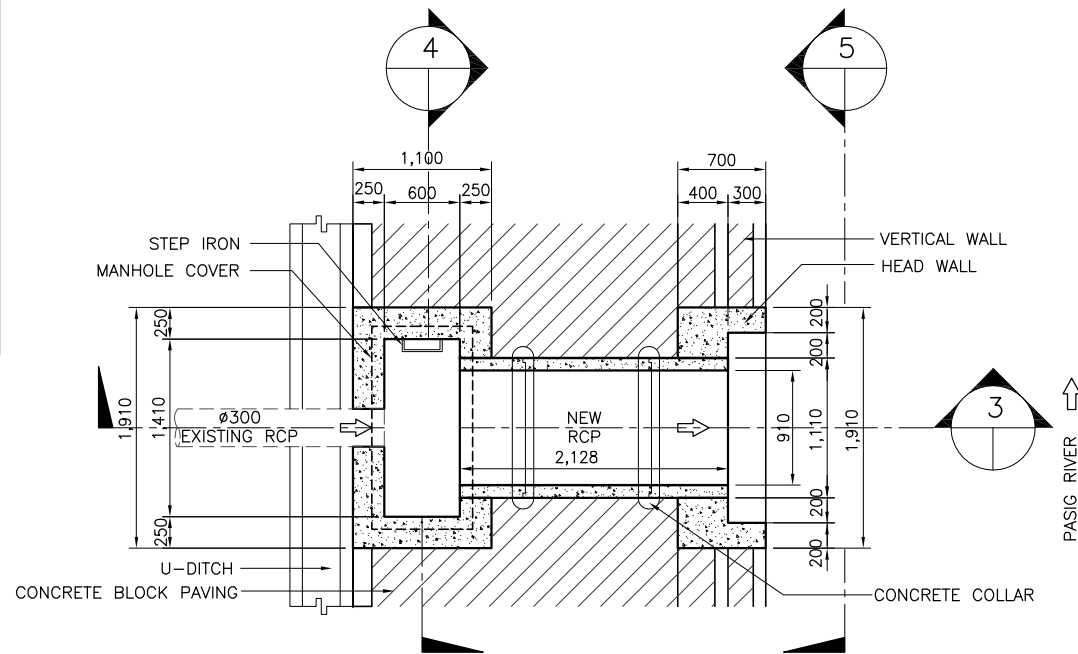
SHEET NO.
LP-DL
DO57



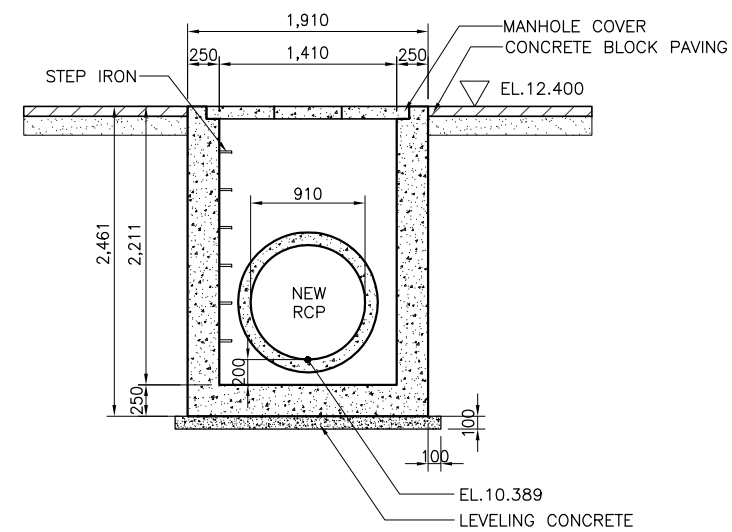
LEGEND:

- EL58 Ⓞ EXISTING OUTLET
- EXISTING DRAINAGE
- DRAINAGE OUTLET
- COLLECTOR PIPE
- DL 58 DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

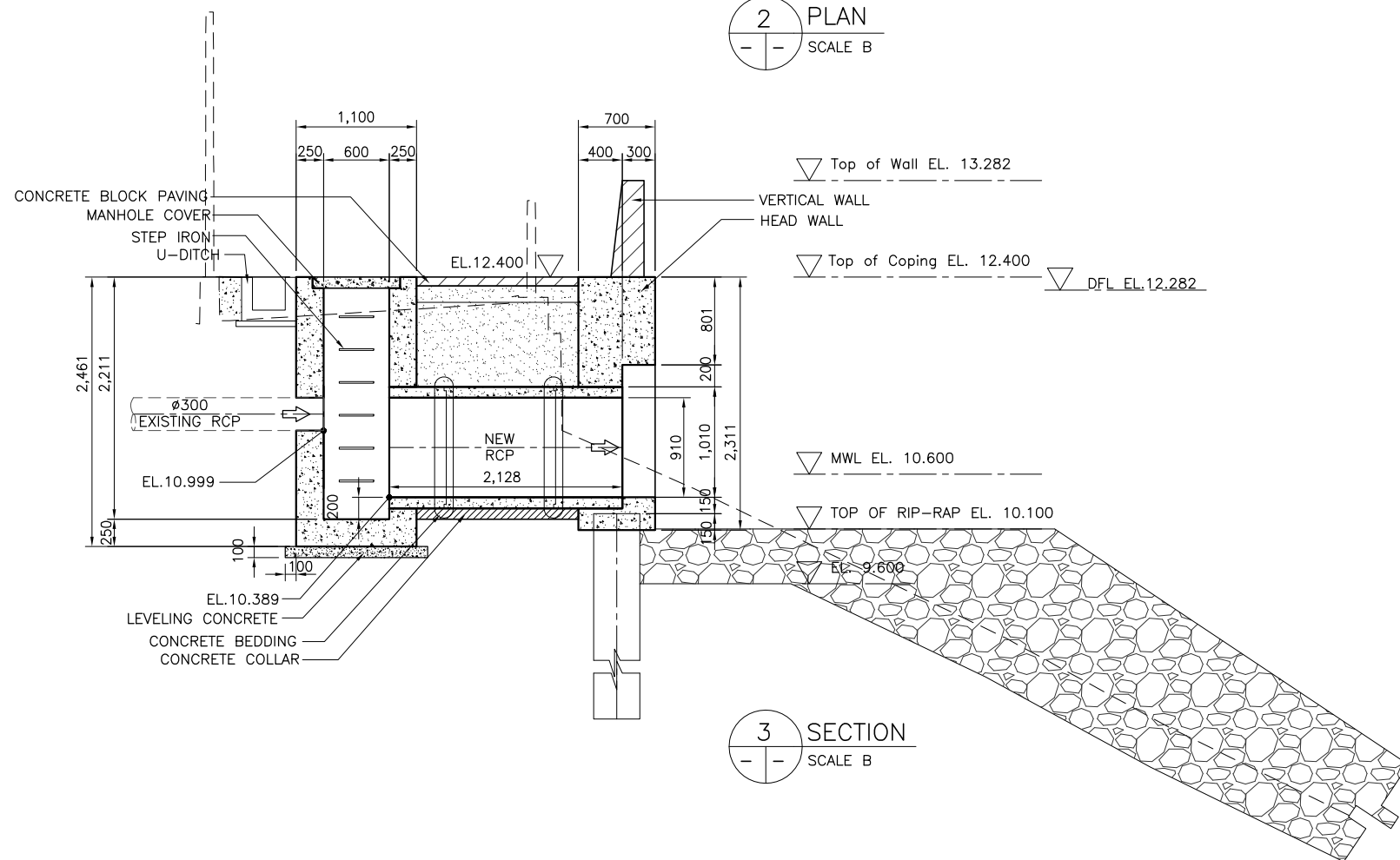
1 DRAINAGE PLAN
SCALE A



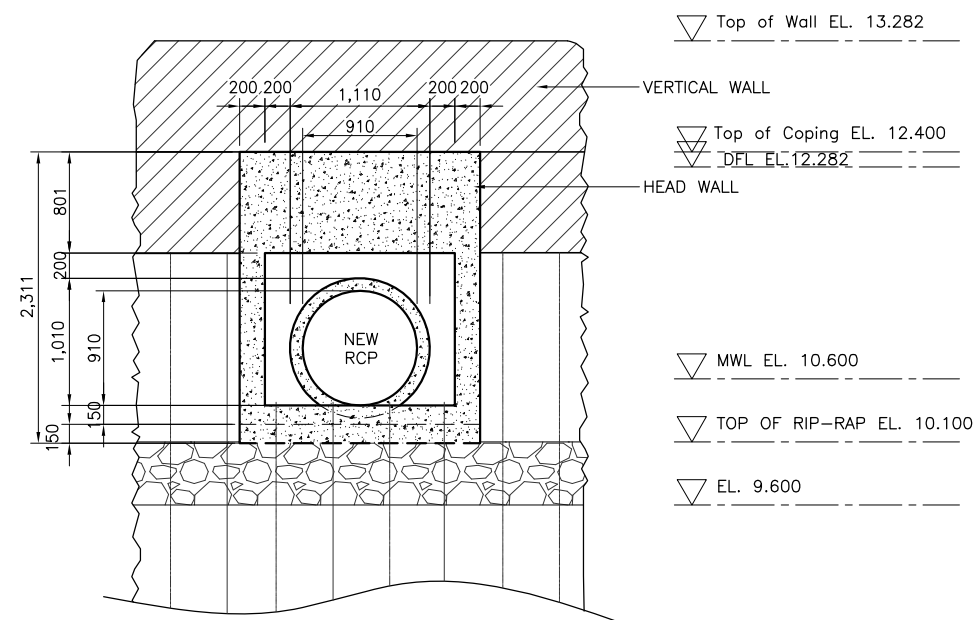
2 PLAN
SCALE B



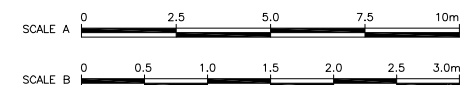
4 SECTION (ML58)
SCALE B



3 SECTION
SCALE B



5 ELEVATION
SCALE B



NOTE:
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REVISIONS			
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SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



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REPUBLIC OF THE PHILIPPINES

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

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RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

APPROVED BY: ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION

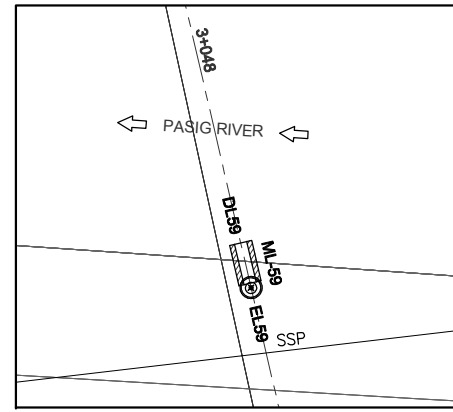
PASIG-MARIKINA
RIVER CHANNEL
IMPROVEMENT
PROJECT (PHASE III),
METRO MANILA

SHEET CONTENTS

DETAIL OF DRAINAGE
OUTLET- DL58,
MANHOLE ML58
STA. 3+031 LB

SHEET NO.

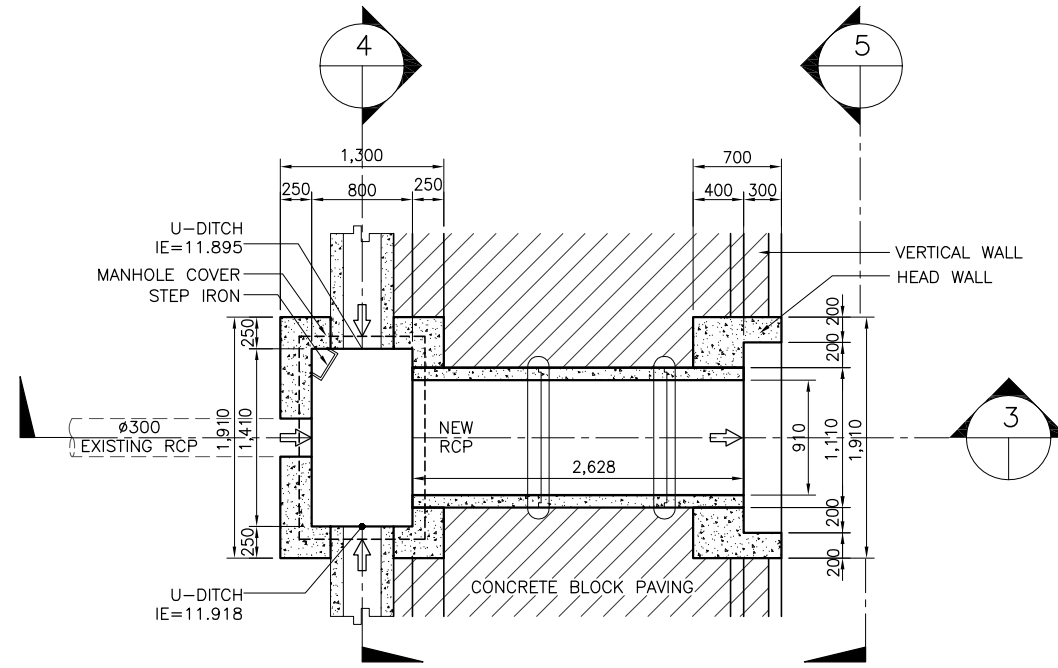
LP-DL
DO 58



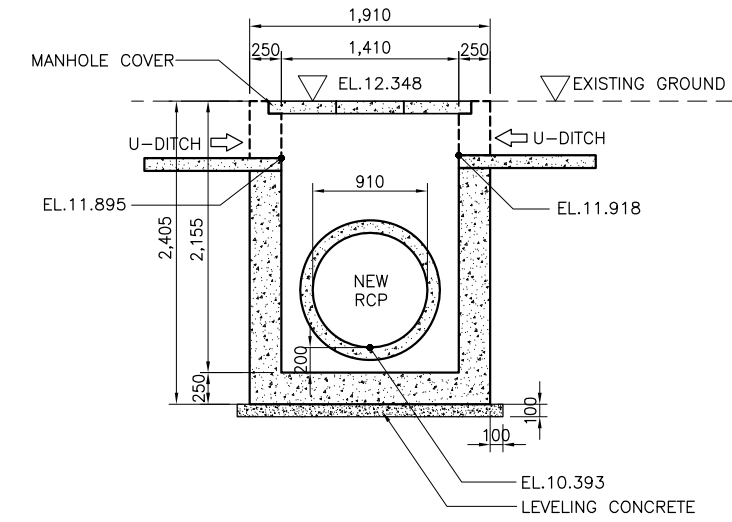
LEGEND:

- EL59 ⊕ EXISTING OUTLET
- ← EXISTING DRAINAGE
- DRAINAGE OUTLET
- COLLECTOR PIPE
- DL 59 DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

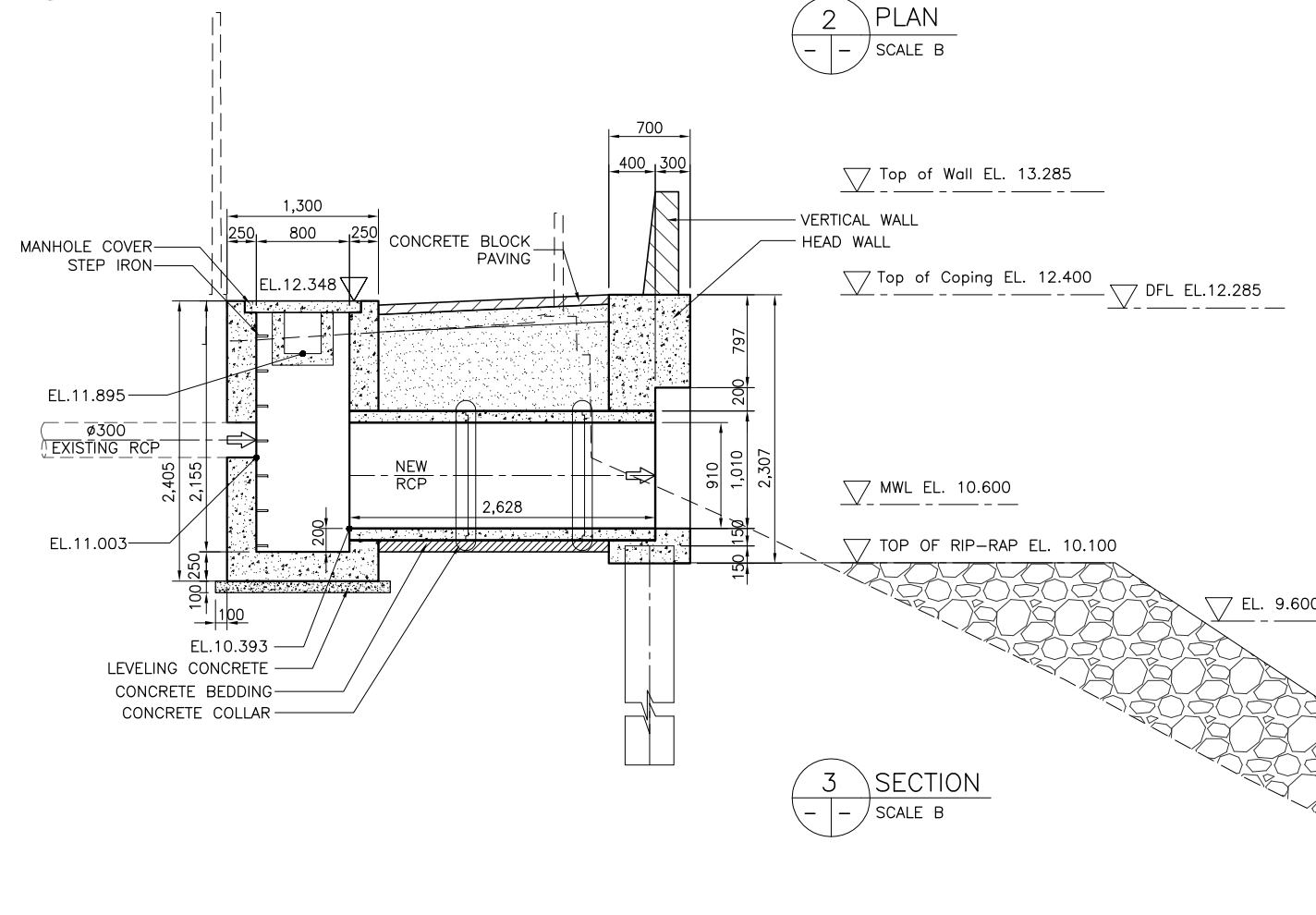
1 DRAINAGE PLAN
SCALE A



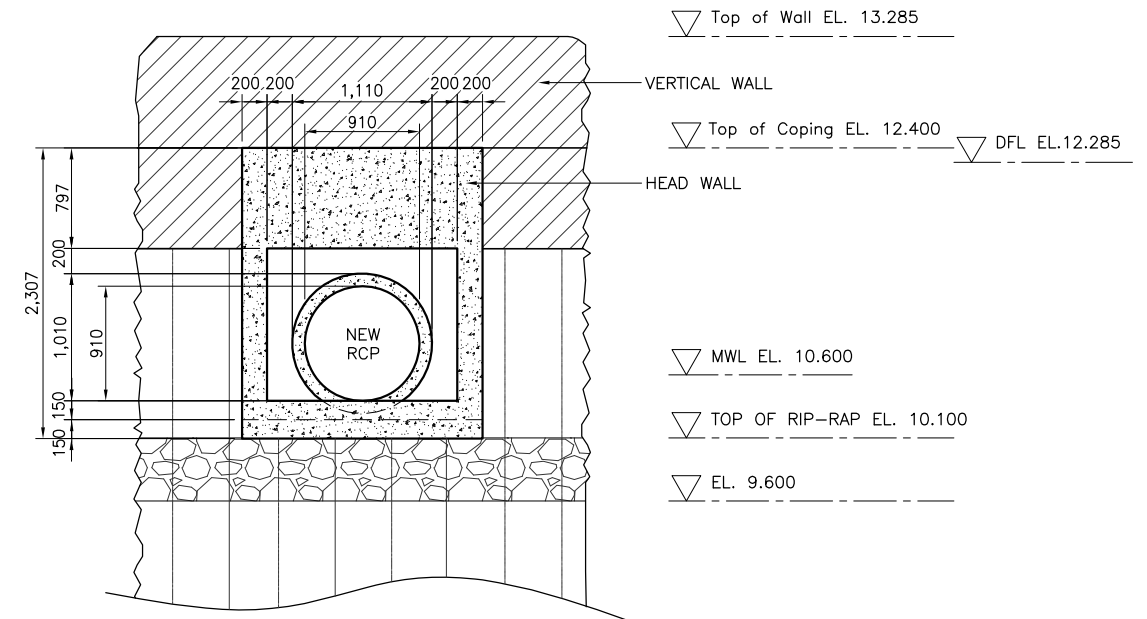
2 PLAN
SCALE B



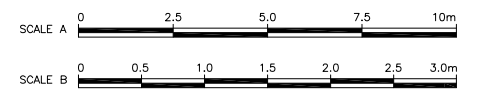
4 SECTION (ML59)
SCALE B



3 SECTION
SCALE B



5 ELEVATION
SCALE B



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SHUJI KAKU
TEAM LEADER

REVISIONS			
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JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

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

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY

RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

APPROVED BY: ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION

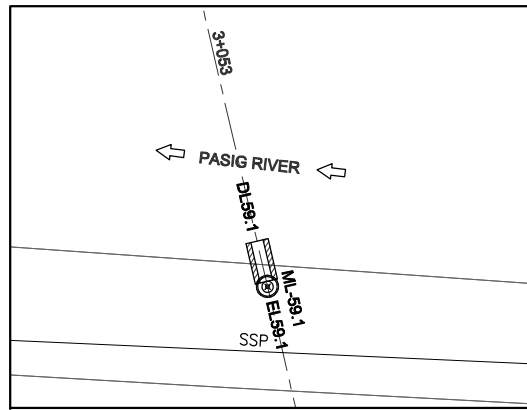
PASIG-MARIKINA
RIVER CHANNEL
IMPROVEMENT
PROJECT (PHASE III),
METRO MANILA

SHEET CONTENTS

DETAIL OF DRAINAGE
OUTLET- DL59,
MANHOLE ML59
STA. 3+048 LB

SHEET NO.

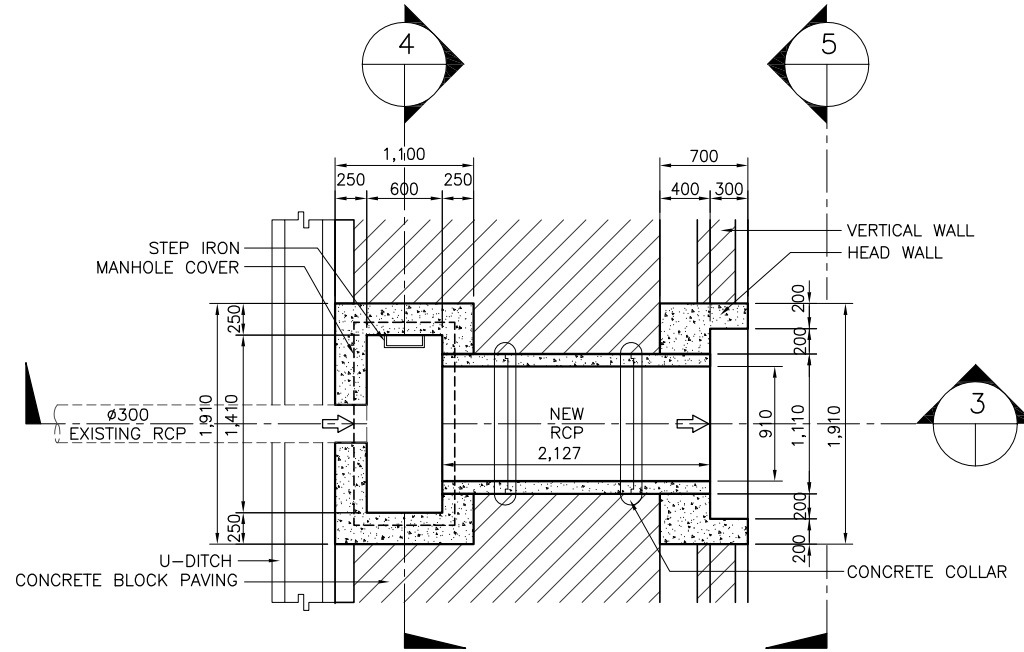




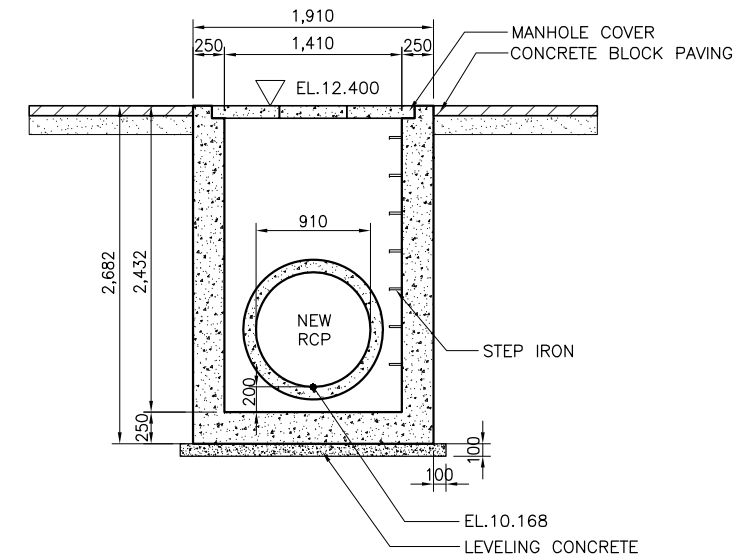
LEGEND:

- EL59.1 ⊕ EXISTING OUTLET
- ← EXISTING DRAINAGE
- ▨ DRAINAGE OUTLET
- ▨ COLLECTOR PIPE
- DL 59.1 DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

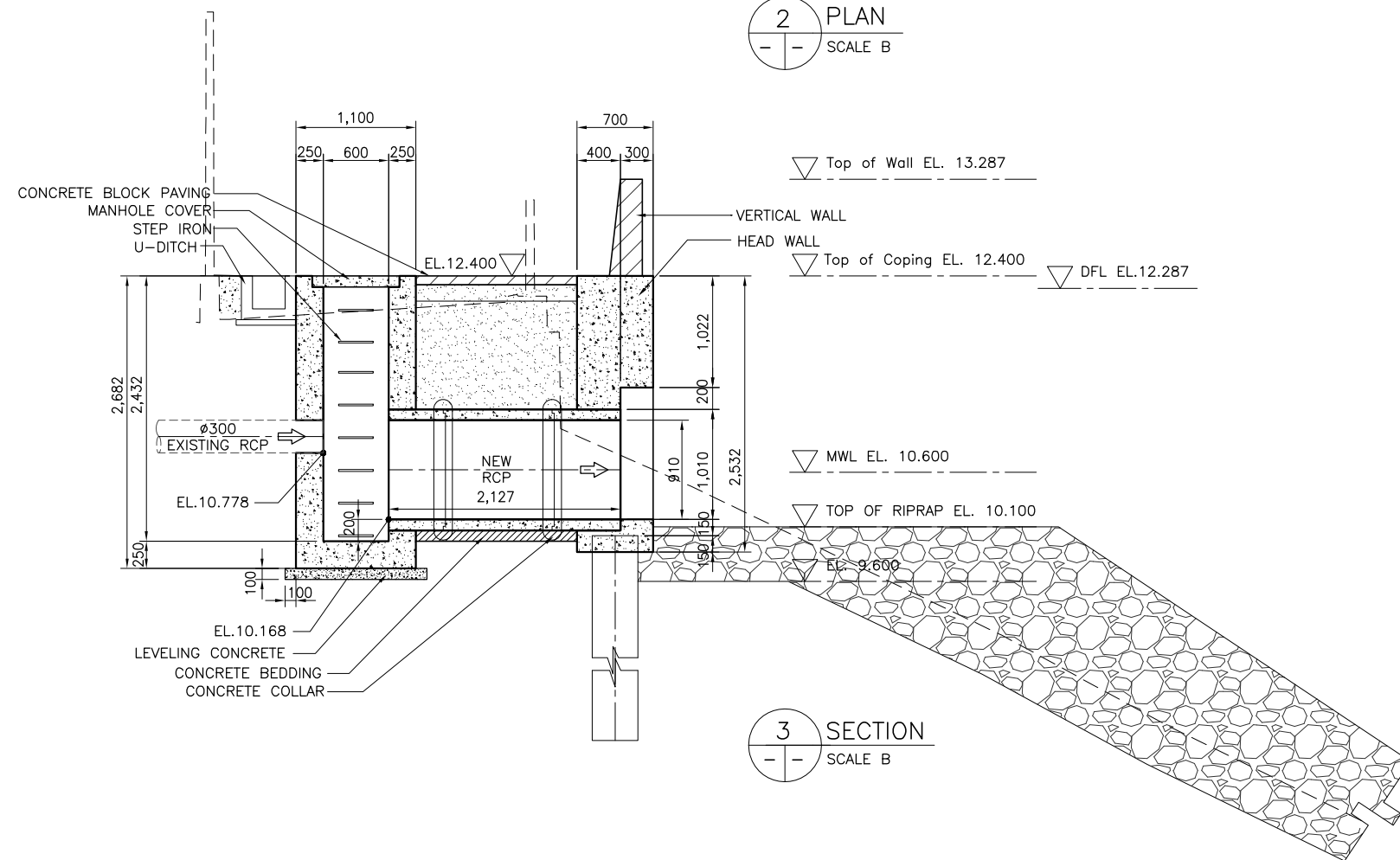
1 DRAINAGE PLAN
SCALE A



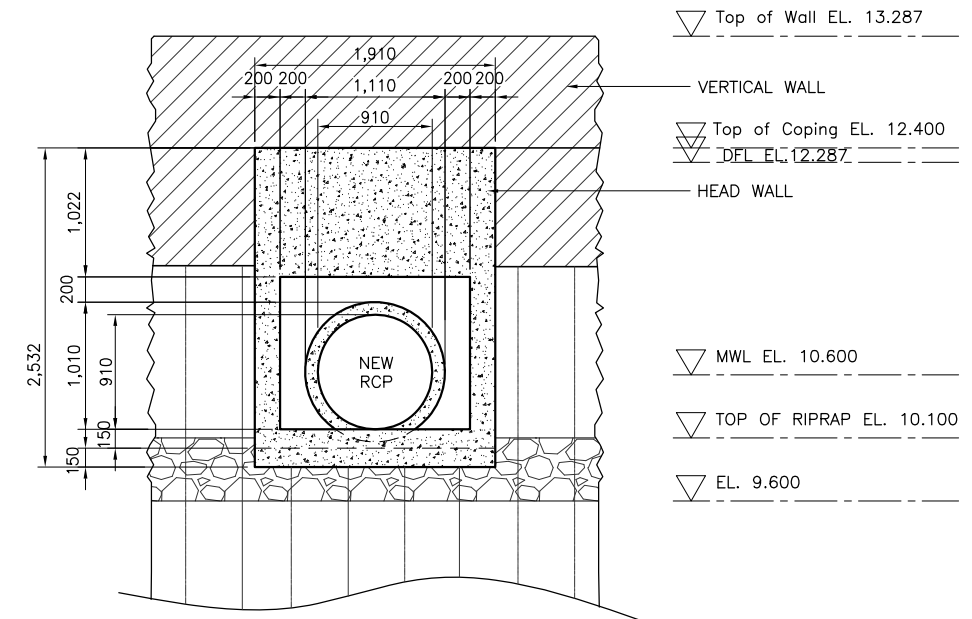
2 PLAN
SCALE B



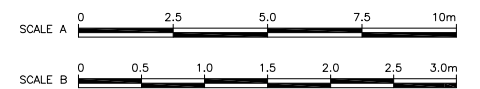
4 SECTION (ML59.1)
SCALE B



3 SECTION
SCALE B



5 ELEVATION
SCALE B



NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY

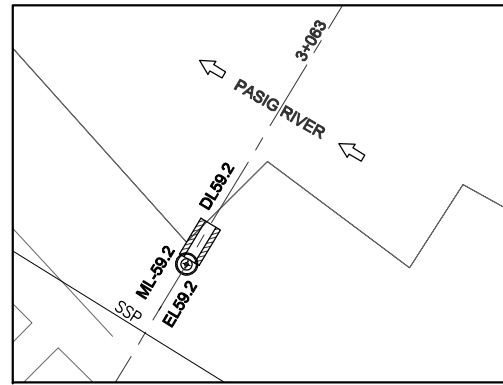
RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

APPROVED BY: ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION: PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS: DETAIL OF DRAINAGE OUTLET- DL59.1, MANHOLE ML59.1 STA. 3+053 LB

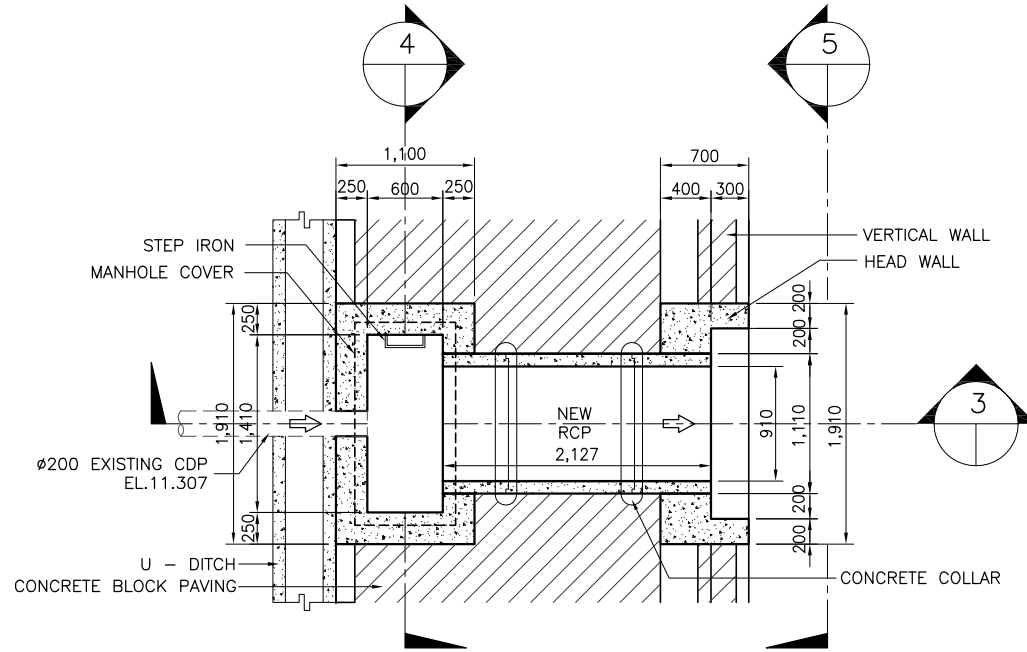
SHEET NO.: LP-DL DO/59.1



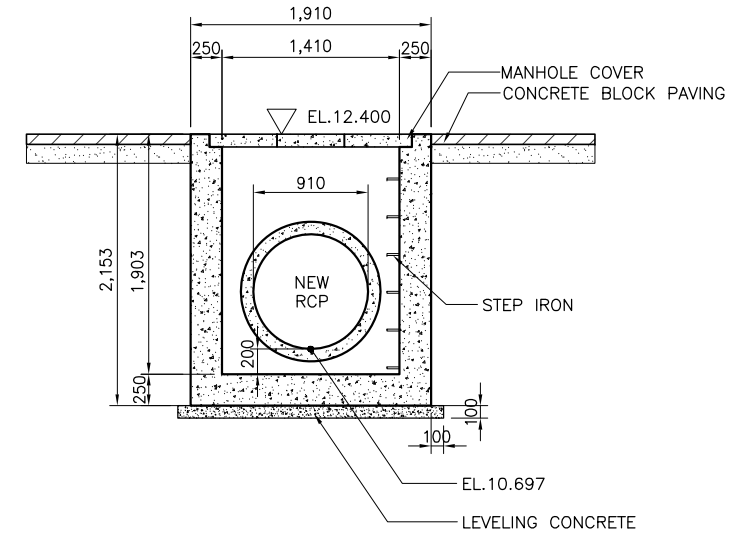
LEGEND:

- EL59.2 ⊙ EXISTING OUTLET
- EXISTING DRAINAGE
- DRAINAGE OUTLET
- COLLECTOR PIPE
- DL 59.2 DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

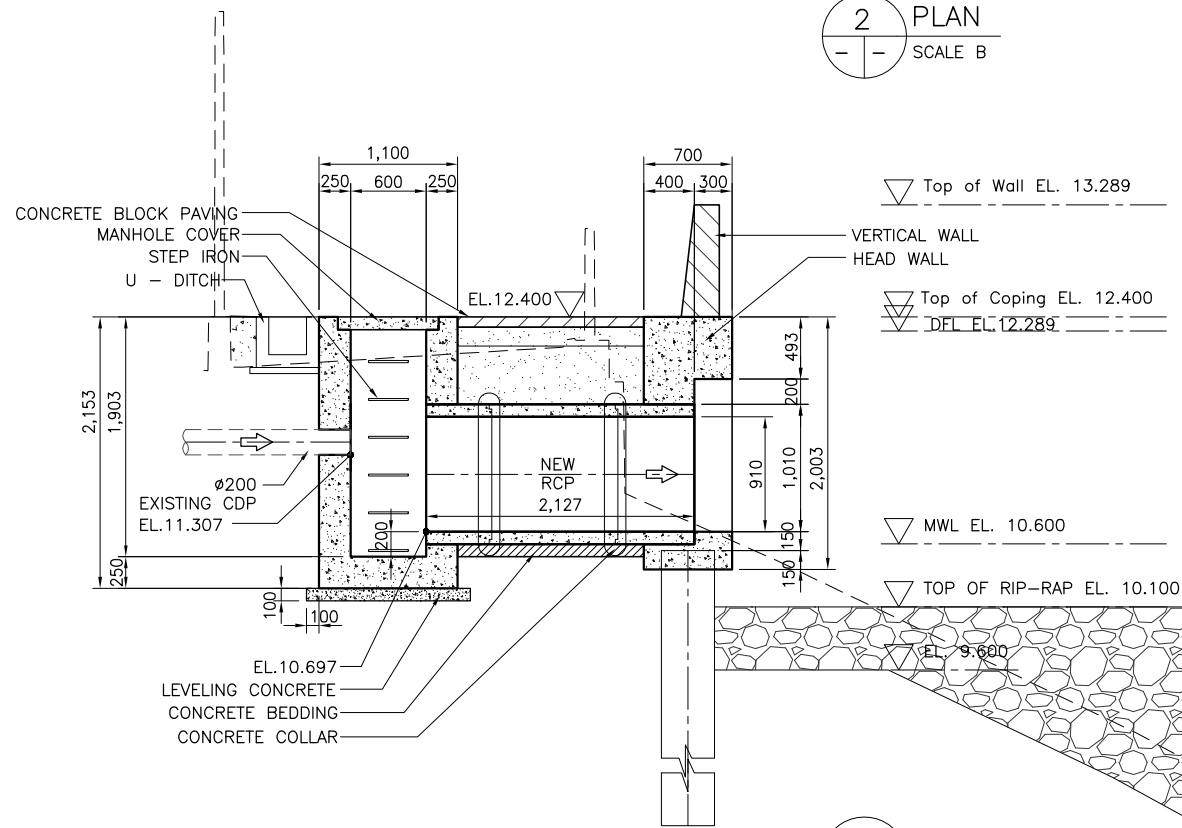
1 DRAINAGE PLAN
SCALE A



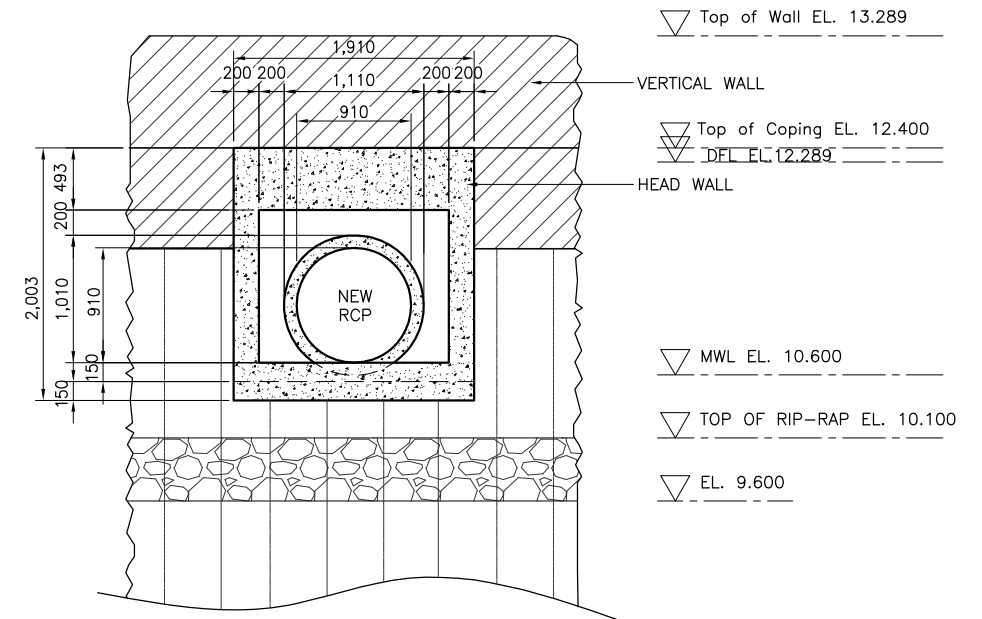
2 PLAN
SCALE B



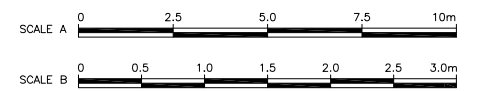
4 SECTION (ML59.2)
SCALE B



3 SECTION
SCALE B



5 ELEVATION
SCALE B



NOTE:
PURSUANT TO SECTION 4 OF ANNEX 'A' OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

SHUJI KAKU
TEAM LEADER

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES



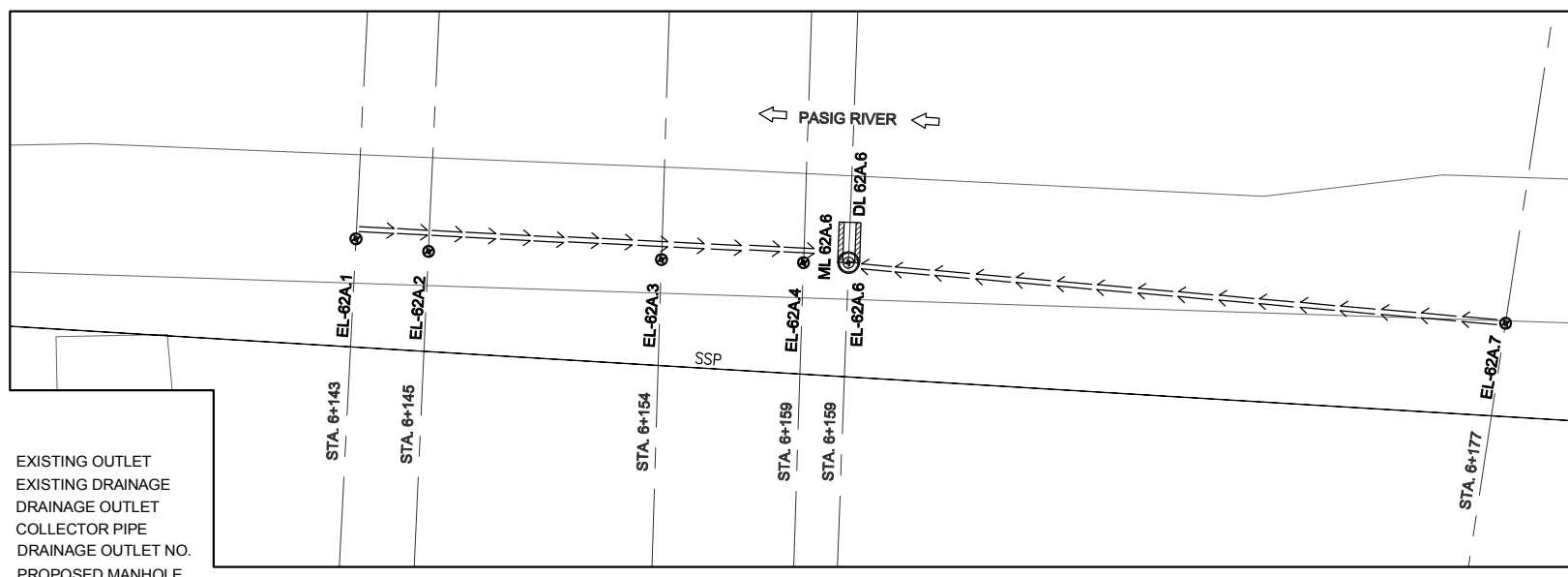
DESIGNED BY:	CHECKED BY:	SUBMITTED BY:
KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	TOSHIKI KAWAKAMI THE CHECKER	SHUJI KAKU TEAM LEADER



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS

REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED BY:
PERFECTO L. ZAPLAN, JR. CHIEF, HYDRAULIC DIVISION, BOD	PATRICK B. GATAN PROJECT DIRECTOR PMO - MFCP	GILBERTO S. REYES DIRECTOR BOD
SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY	SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY	SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY
RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES	ROGELIO L. SINGSON SECRETARY	

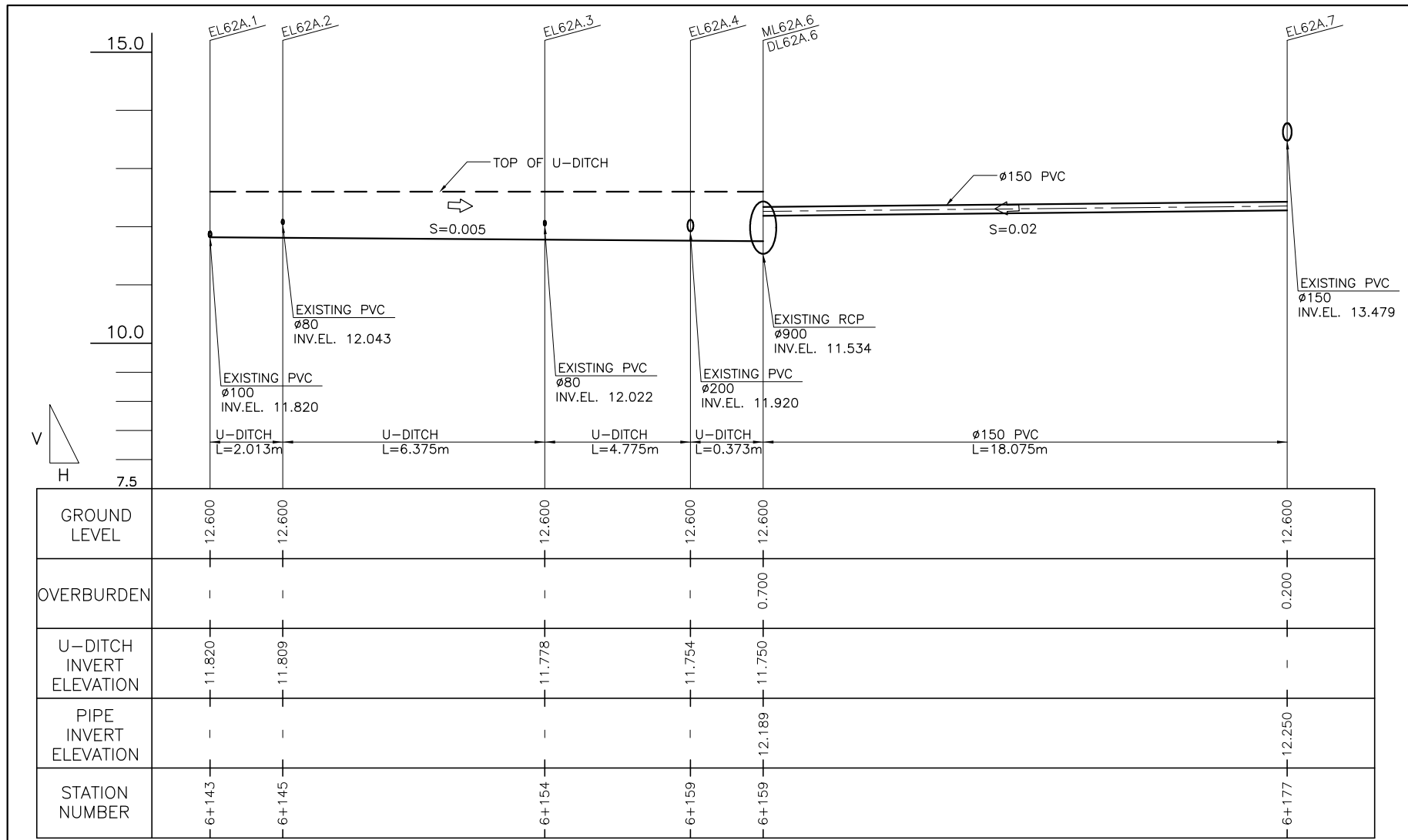
PROJECT & LOCATION	SHEET CONTENTS	SHEET NO.
PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	DETAIL OF DRAINAGE OUTLET- DL59.2, MANHOLE ML59.2 STA. 3+063 LB	LP-DL DO/59.2



LEGEND:

- EL 62A.6 ⊕ EXISTING OUTLET
- ← EXISTING DRAINAGE
- ▭ DRAINAGE OUTLET
- ▬ COLLECTOR PIPE
- DL62A.6 ○ DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

1 DRAINAGE PLAN
SCALE A



2 PROFILE
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



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY

APPROVED BY: RAUL C. ASIS
UNDERSECRETARY FOR TECHNICAL SERVICES

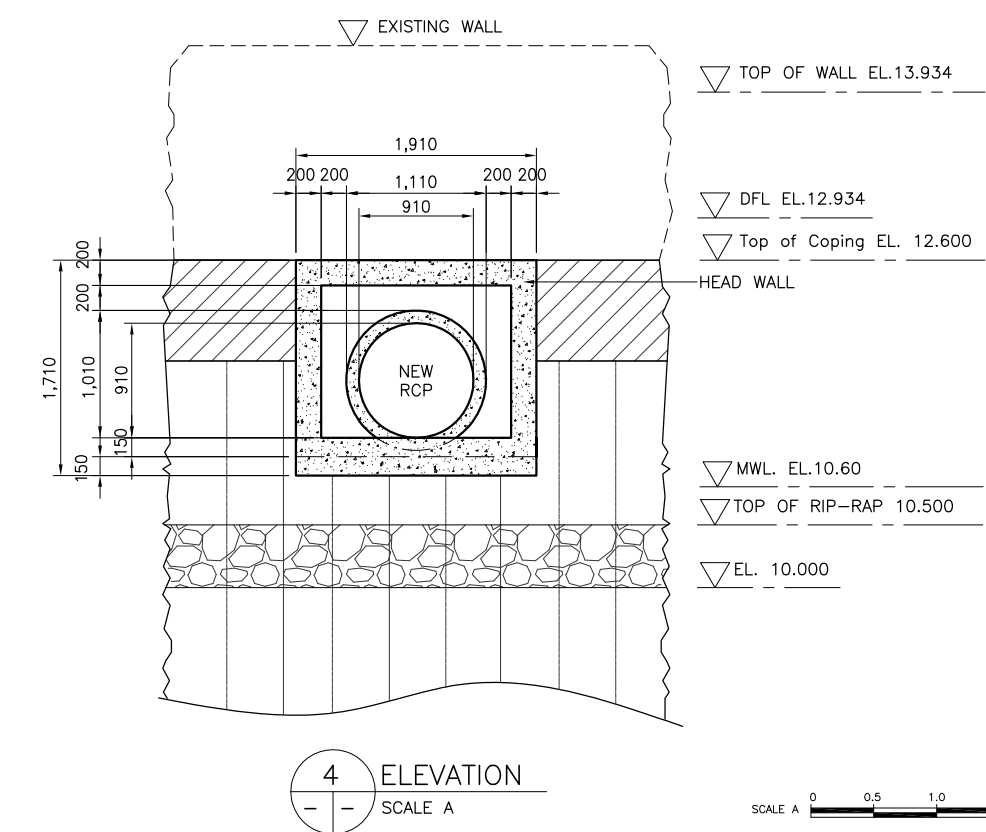
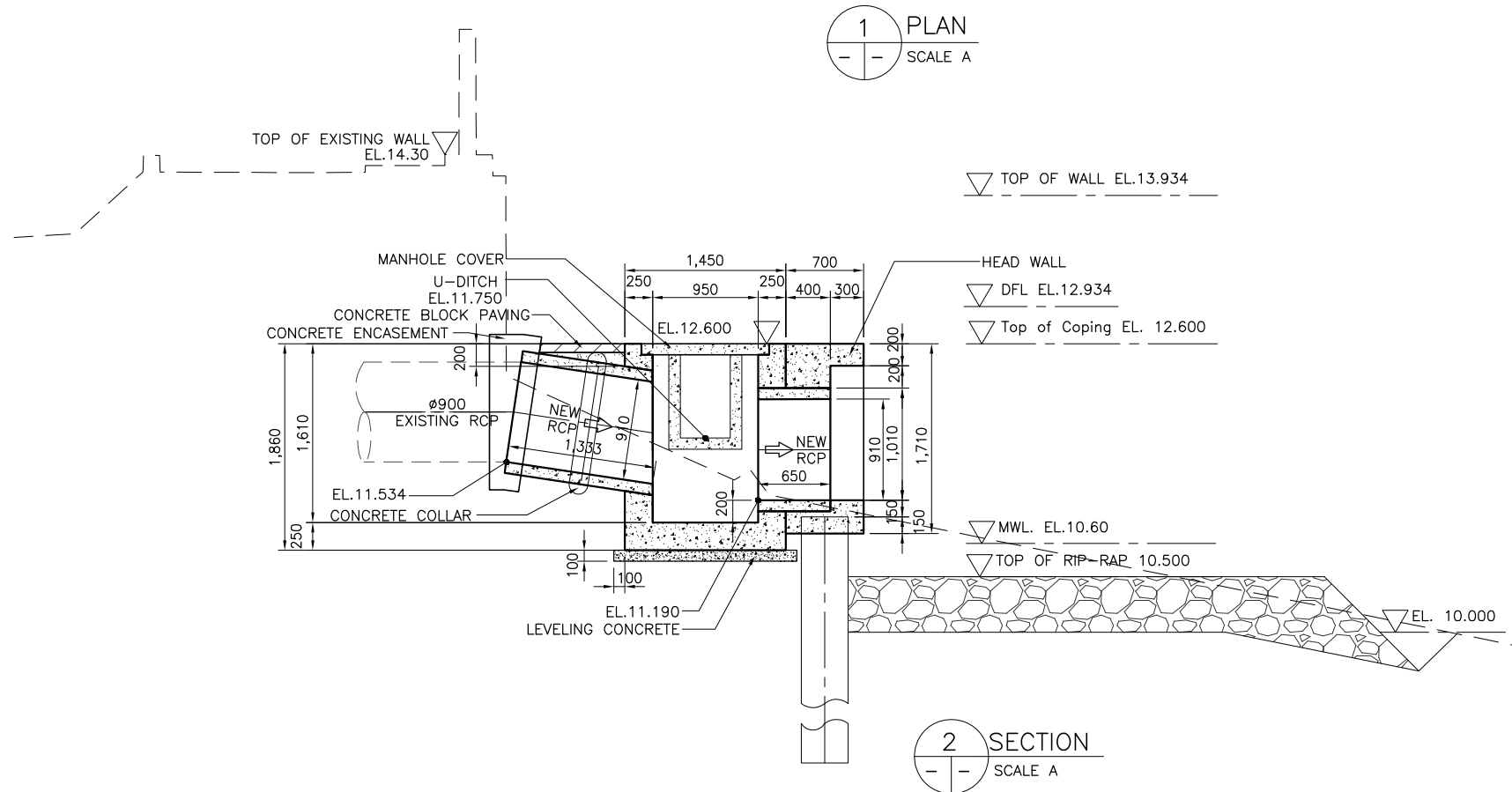
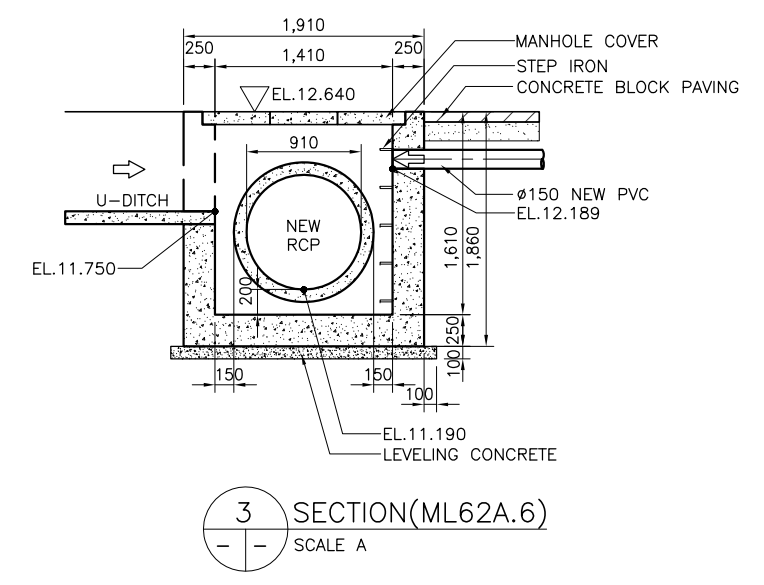
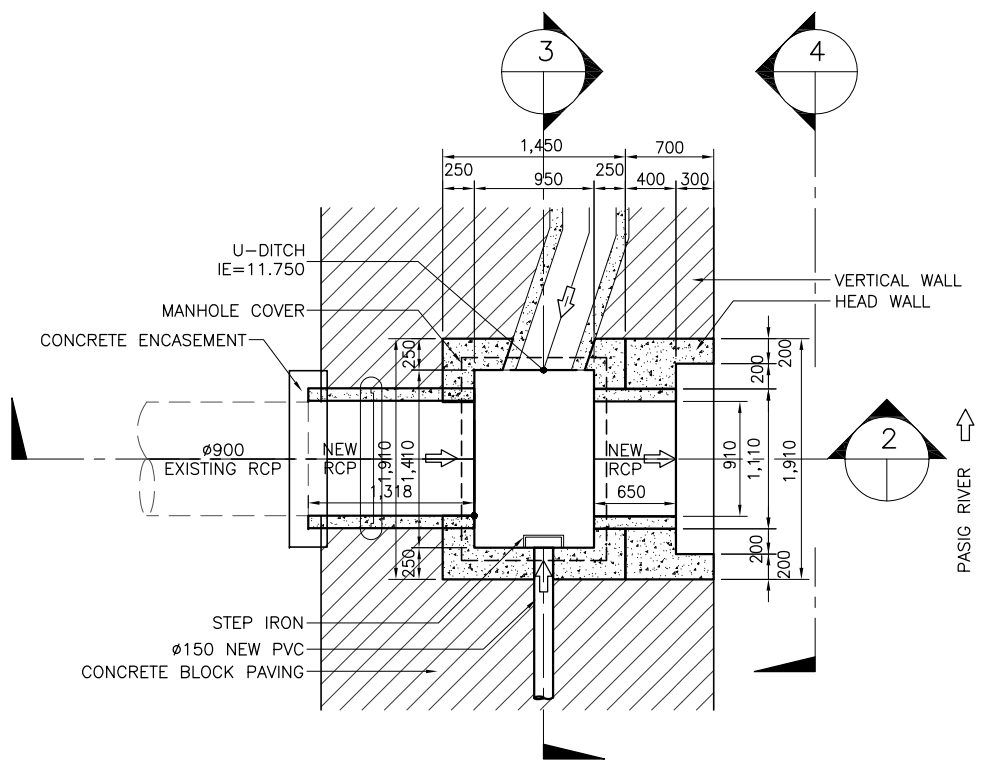
SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY

ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION: PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS: PLAN & PROFILE OF COLLECTOR PIPE/ U-DITCH

SHEET NO.: LP-DL DO 62A.6/P

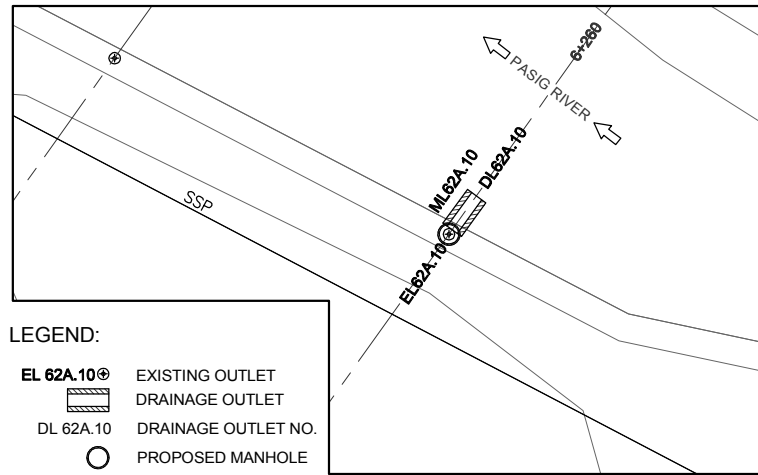


REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

NOTE:
PURSUANT TO SECTION 4 OF ANNEX 'A' OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

SHUJI KAKU
TEAM LEADER

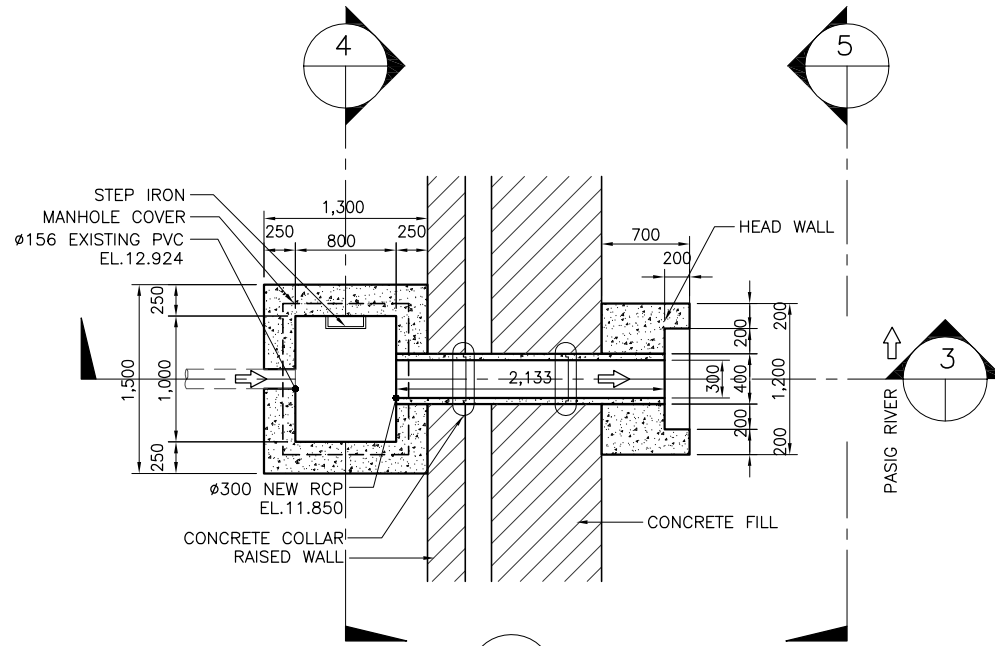
JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN			REPUBLIC OF THE PHILIPPINES				PROJECT & LOCATION	SHEET CONTENTS	SHEET NO.
	DESIGNED BY:	CHECKED BY:		REVIEWED BY:	RECOMMENDING APPROVAL:	PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	DETAIL OF DRAINAGE OUTLET- DL62A.6, MANHOLE ML62A.6 STA. 6+159 LB		
	KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	TOSHIKI KAWAKAMI THE CHECKER		SHUJI KAKU TEAM LEADER	PERFECTO L. ZAPLAN, JR. CHIEF, HYDRAULIC DIVISION, BOD				PATRICK B. GATAN PROJECT DIRECTOR PMO - MFCP



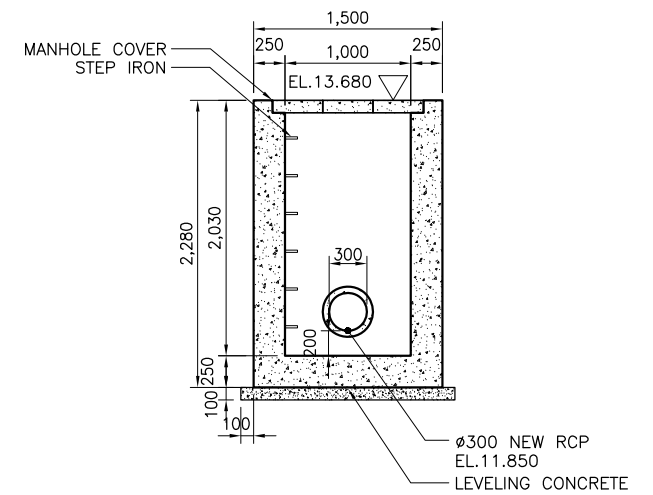
LEGEND:

- EL 62A.10 Ⓞ EXISTING OUTLET
- ▭ DRAINAGE OUTLET
- DL 62A.10 DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

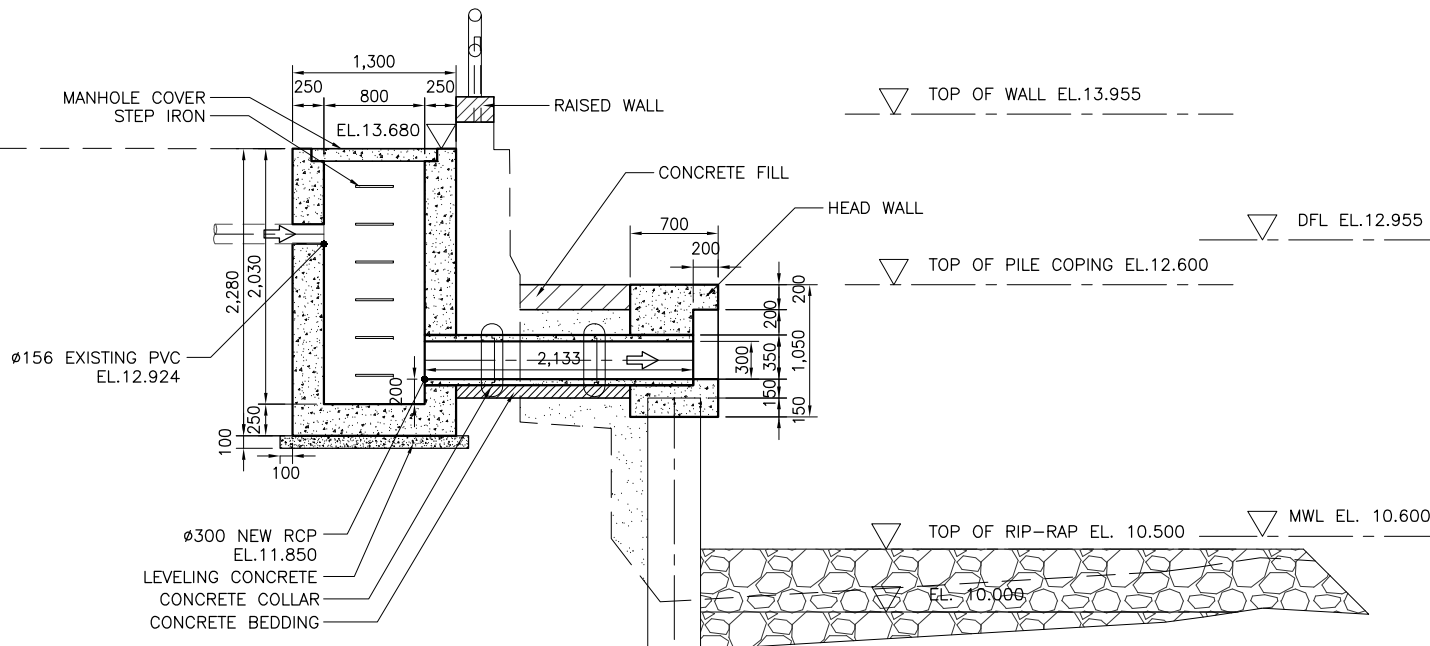
1 DRAINAGE PLAN
SCALE A



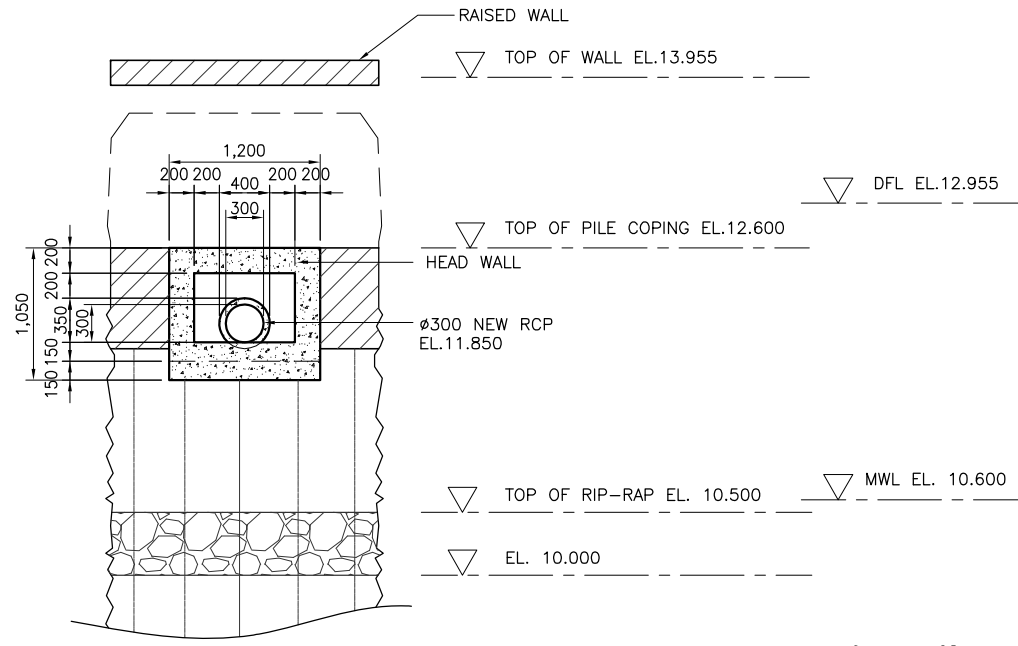
2 PLAN
SCALE B



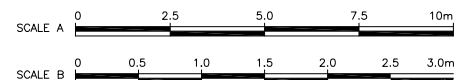
4 SECTION(62A.10)
SCALE B



3 SECTION
SCALE B



5 ELEVATION
SCALE B



REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

NOTE:
PURSUANT TO SECTION 4 OF ANNEX 'A' OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

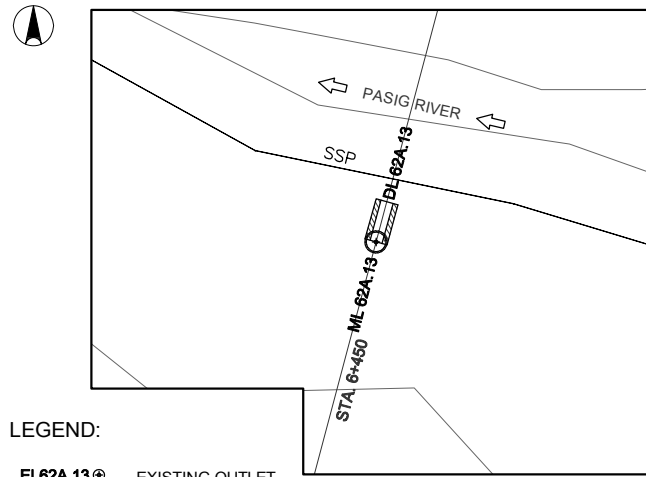
APPROVED BY: RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION: PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS: DETAIL OF DRAINAGE OUTLET- DL 62A.10 & MANHOLE 62A.10 STA. 6+260 LB

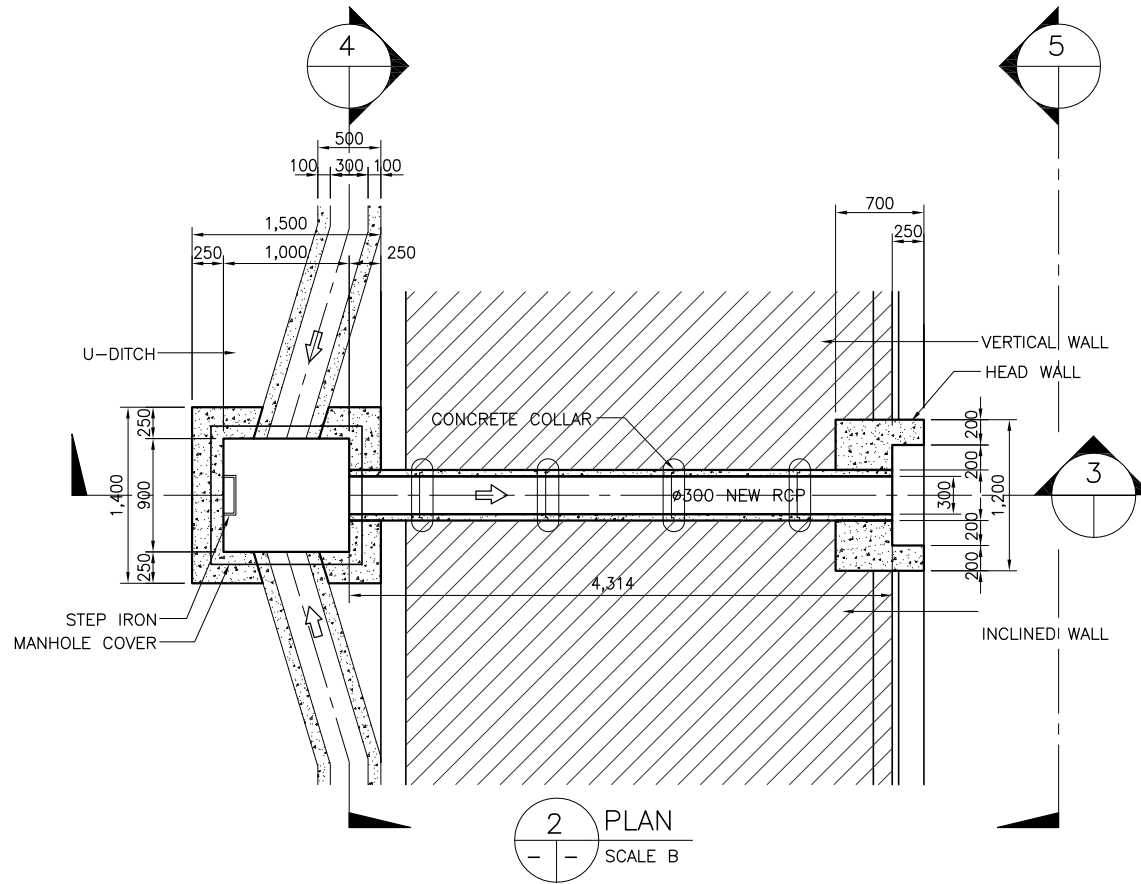
SHEET NO.: LP-DL DO 62A.10



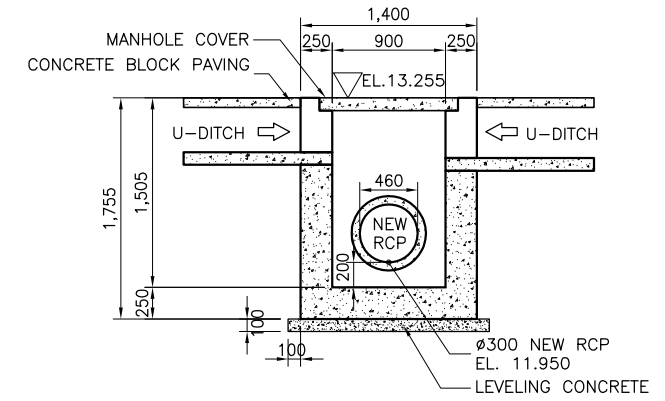
LEGEND:

- EL62A.13 ⊕ EXISTING OUTLET
- DRAINAGE OUTLET
- DL62A.13 DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

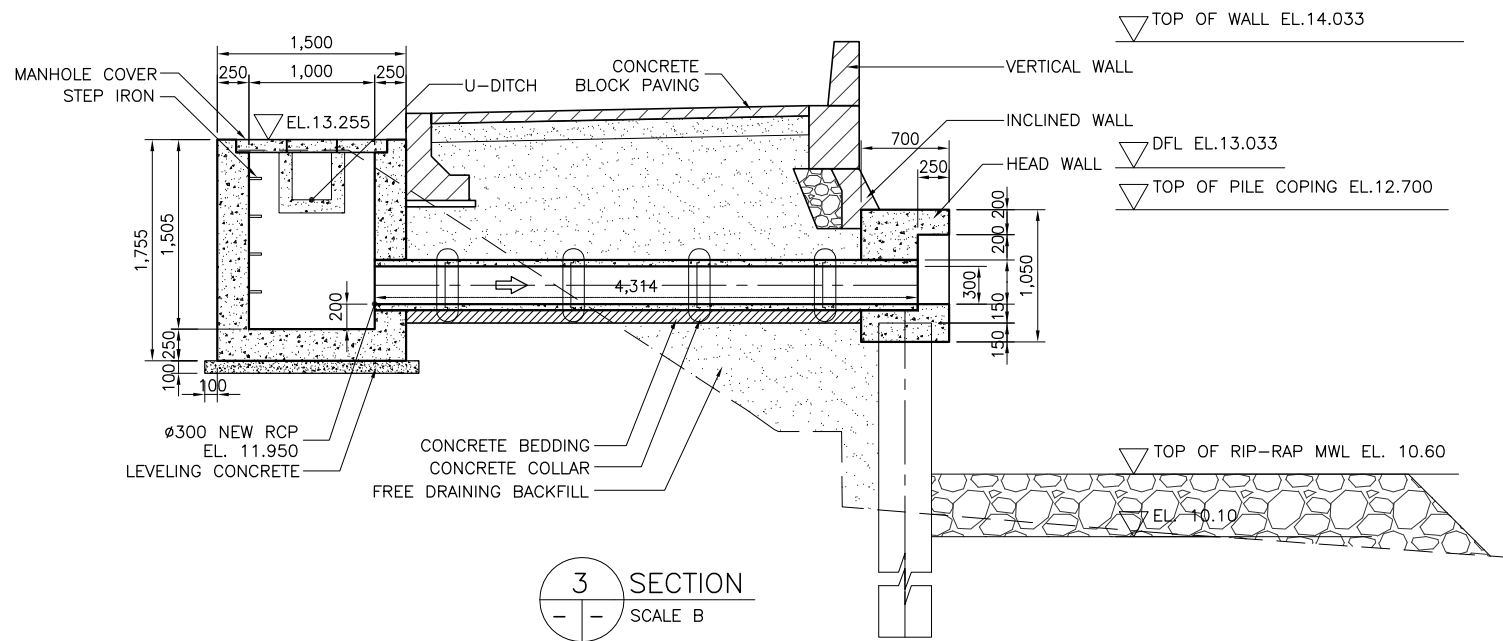
1 DRAINAGE PLAN
SCALE A



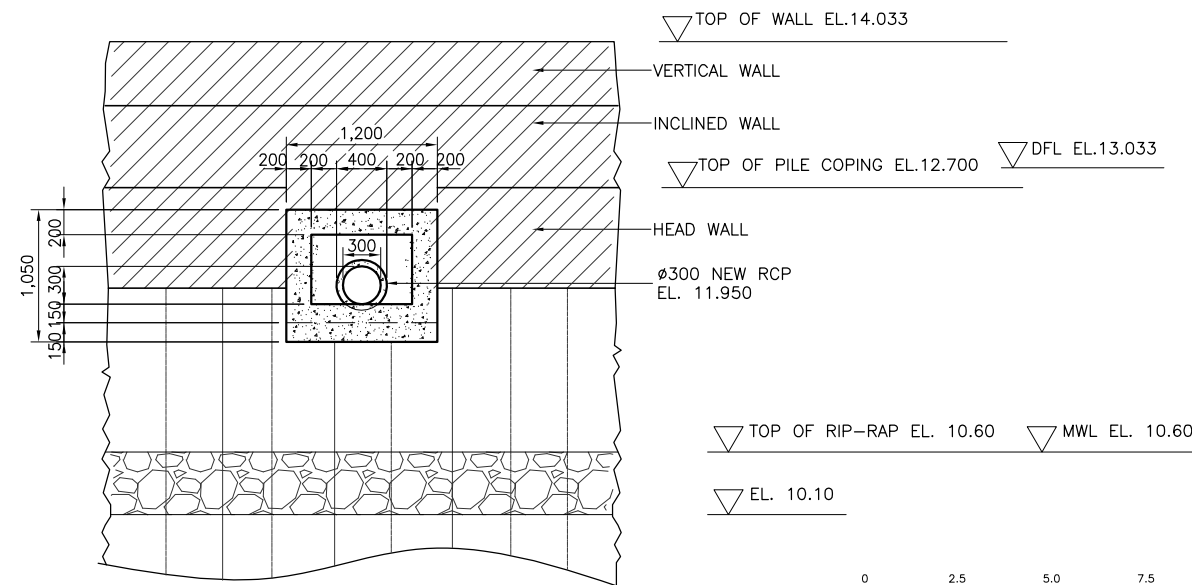
2 PLAN
SCALE B



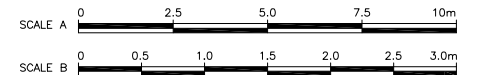
4 SECTION (ML62A.13)
SCALE B



3 SECTION
SCALE B



5 ELEVATION
SCALE B



NOTE:
PURSUANT TO SECTION 4 OF ANNEX 'A' OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

SHUJI KAKU
TEAM LEADER

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY

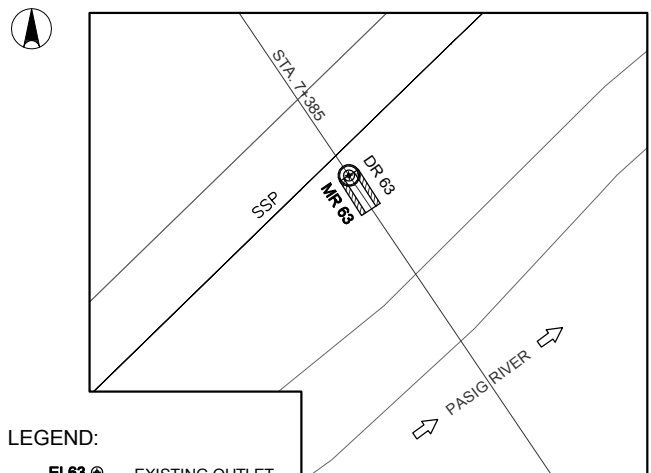
APPROVED BY: RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION: PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

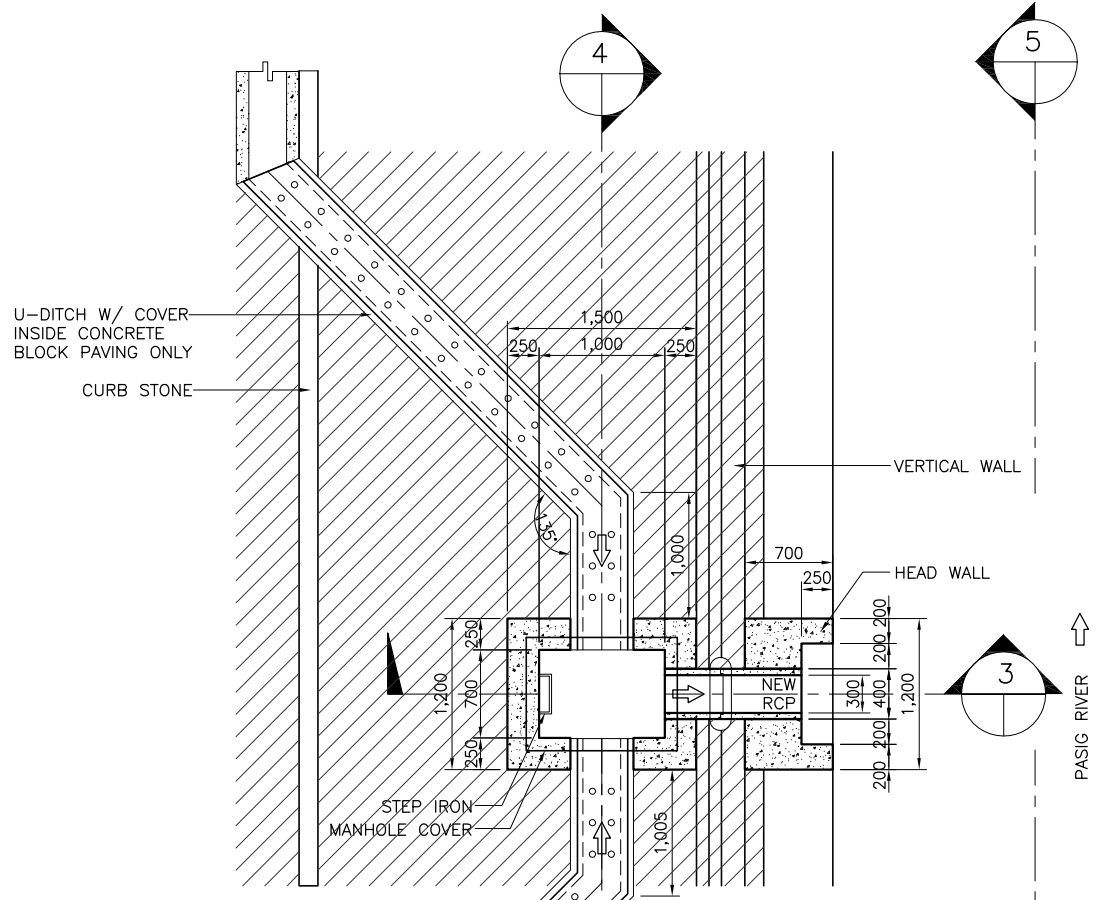
SHEET CONTENTS: DETAIL OF DRAINAGE OUTLET- DL62A.13; MANHOLE ML62A.13 & STA. 6+450 LB

SHEET NO.: LP-DL DO/62A/13

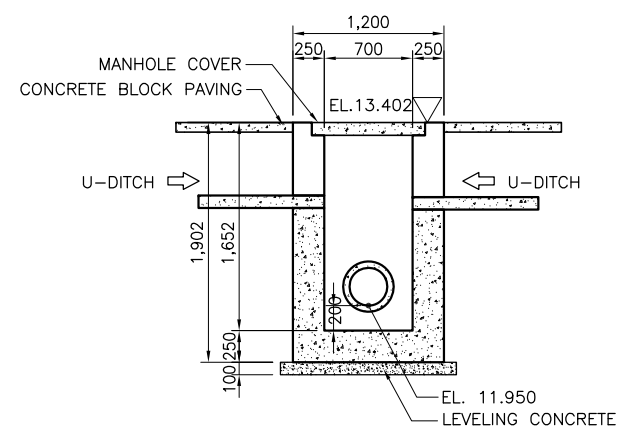


- LEGEND:
- EL63 ⊕ EXISTING OUTLET
 - DRAINAGE OUTLET
 - DL63 DRAINAGE OUTLET NO.
 - PROPOSED MANHOLE

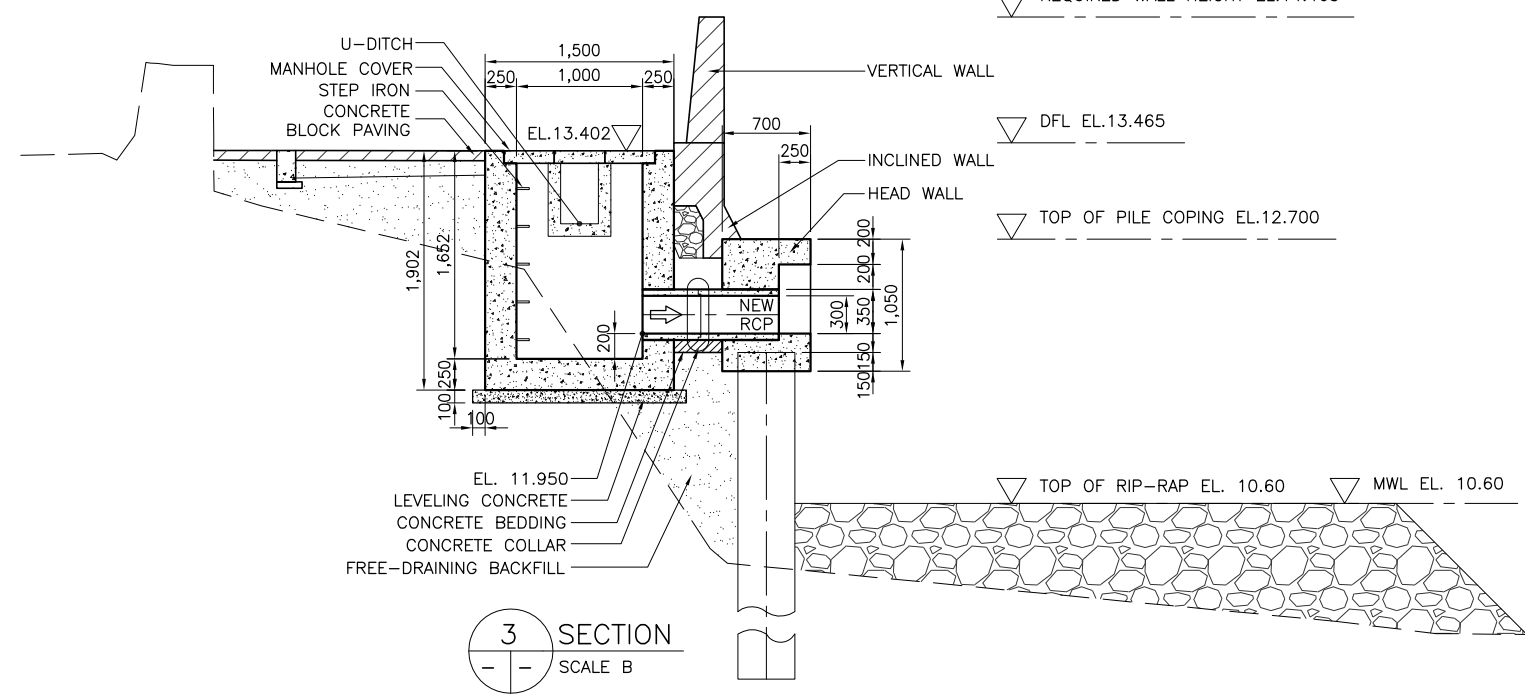
1 DRAINAGE PLAN
SCALE A



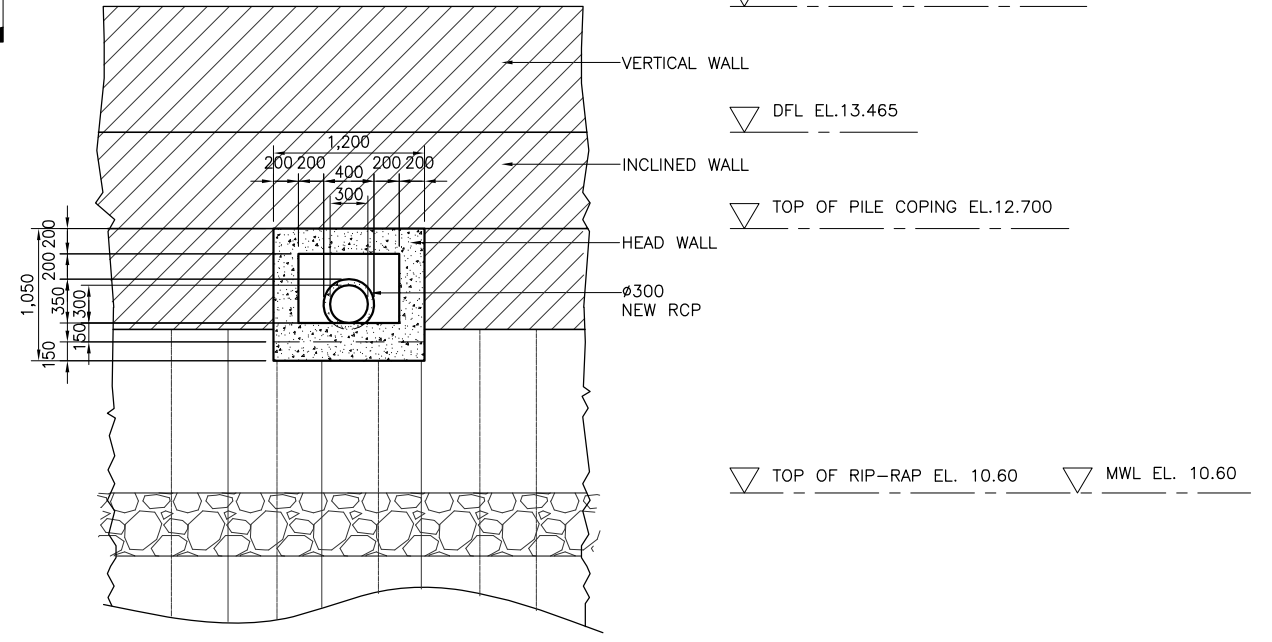
2 PLAN
SCALE B



4 SECTION (ML63)
SCALE B

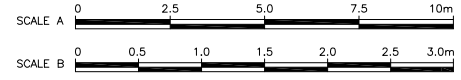


3 SECTION
SCALE B



5 ELEVATION
SCALE B

- ▽ REQUIRED WALL HEIGHT EL.14.465
- ▽ DFL EL.13.465
- ▽ TOP OF PILE COPING EL.12.700
- ▽ TOP OF RIP-RAP EL. 10.60
- ▽ MWL EL. 10.60



NOTE:
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REPUBLIC OF THE PHILIPPINES

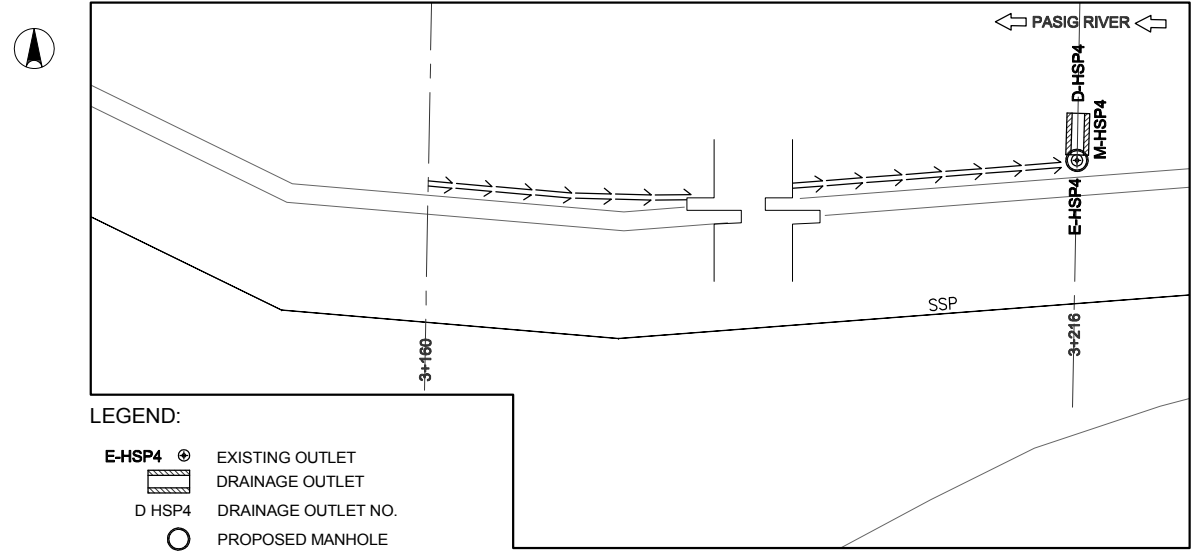


DESIGNED BY:	CHECKED BY:	SUBMITTED BY:
KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	TOSHIKI KAWAKAMI THE CHECKER	SHUJI KAKU TEAM LEADER



REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED BY:
PERFECTO L. ZAPLAN, JR. CHIEF, HYDRAULIC DIVISION, BOD	PATRICK B. GATAN PROJECT DIRECTOR PMO - MFCP	GILBERTO S. REYES DIRECTOR BOD
SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY	SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY	RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES
		ROGELIO L. SINGSON SECRETARY

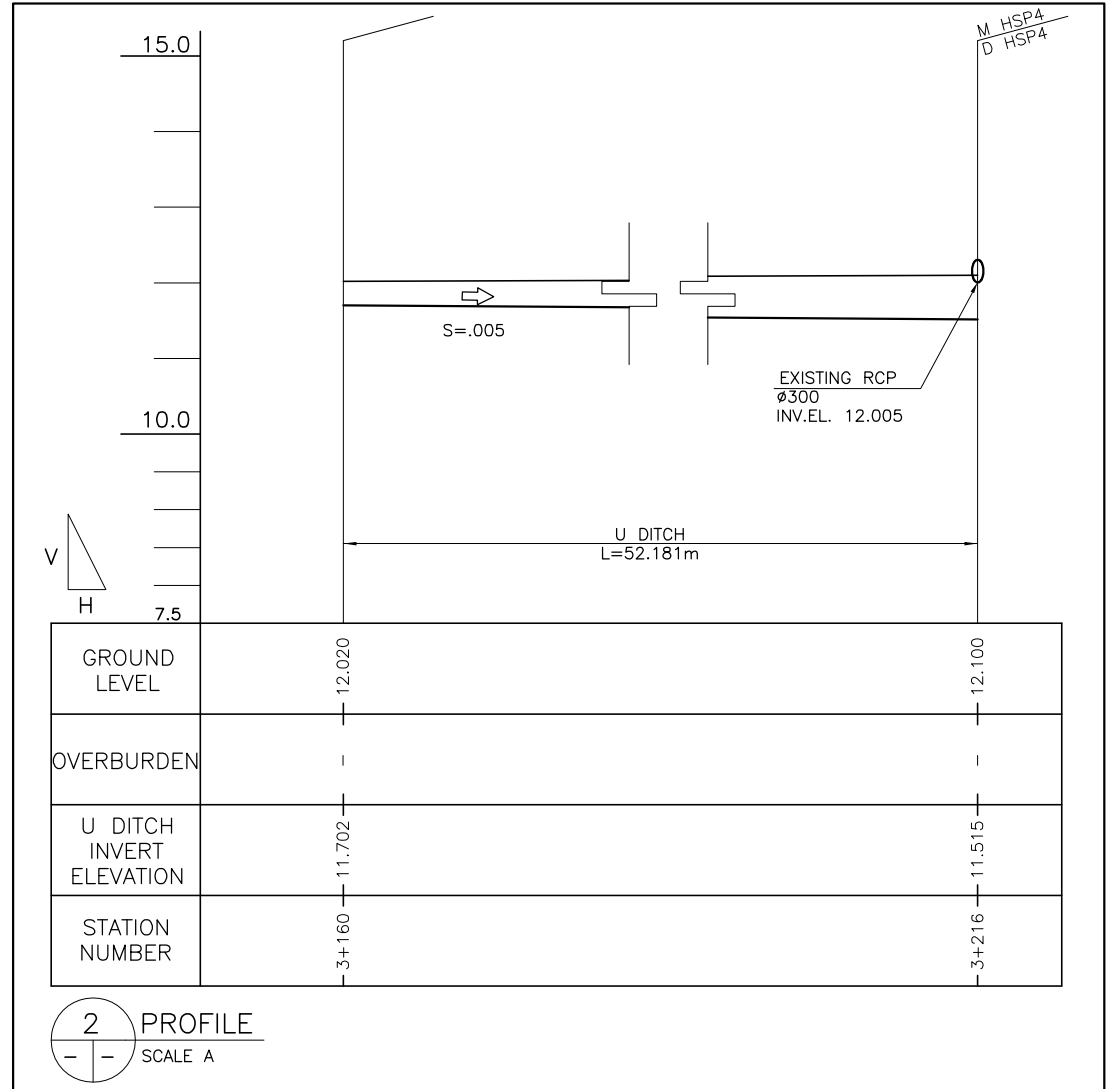
PROJECT & LOCATION	SHEET CONTENTS	SHEET NO.
PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	DETAIL OF DRAINAGE OUTLET- DL63; MANHOLE ML63 & STA. 7+385 LB	LP-DL DO/63



LEGEND:

- E-HSP4 EXISTING OUTLET
- DRAINAGE OUTLET
- D HSP4 DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

1 DRAINAGE PLAN
SCALE A



2 PROFILE
SCALE A

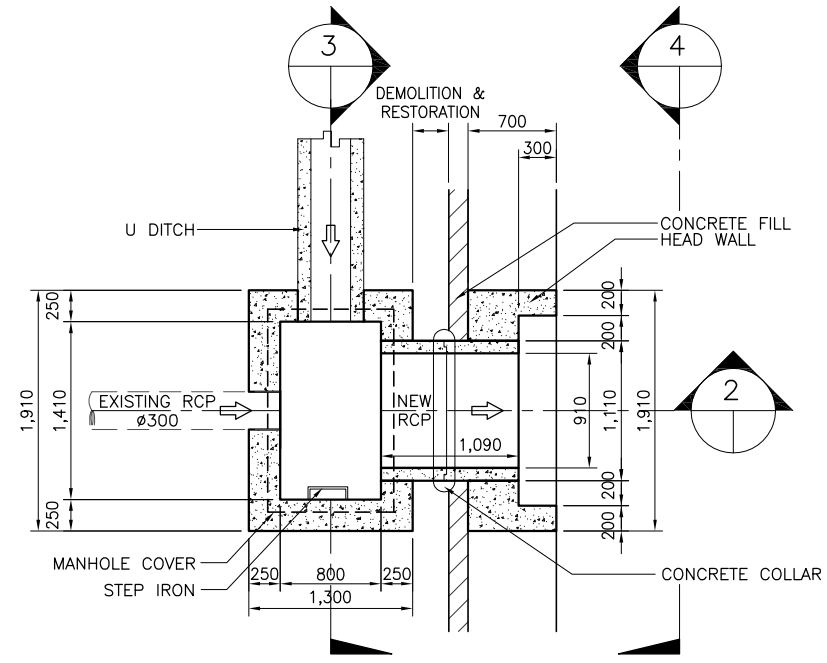


REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

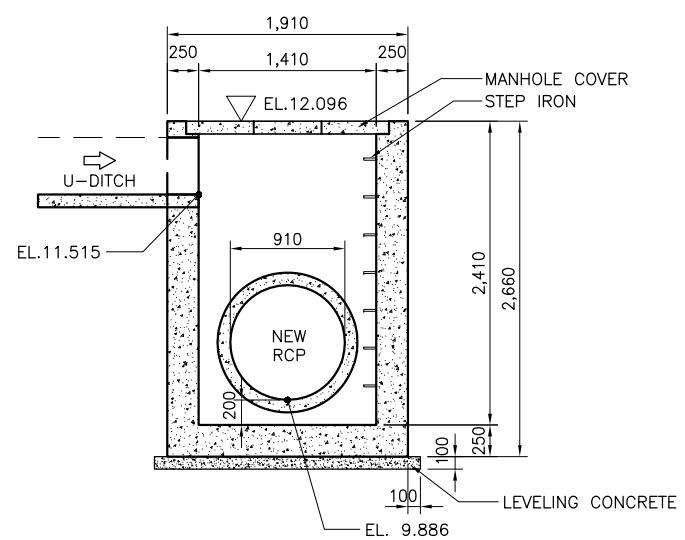
NOTE:
PURSUANT TO SECTION 4 OF ANNEX 'A' OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGN UNDERTAKEN BY CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGN NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

SHUJI KAKU
TEAM LEADER

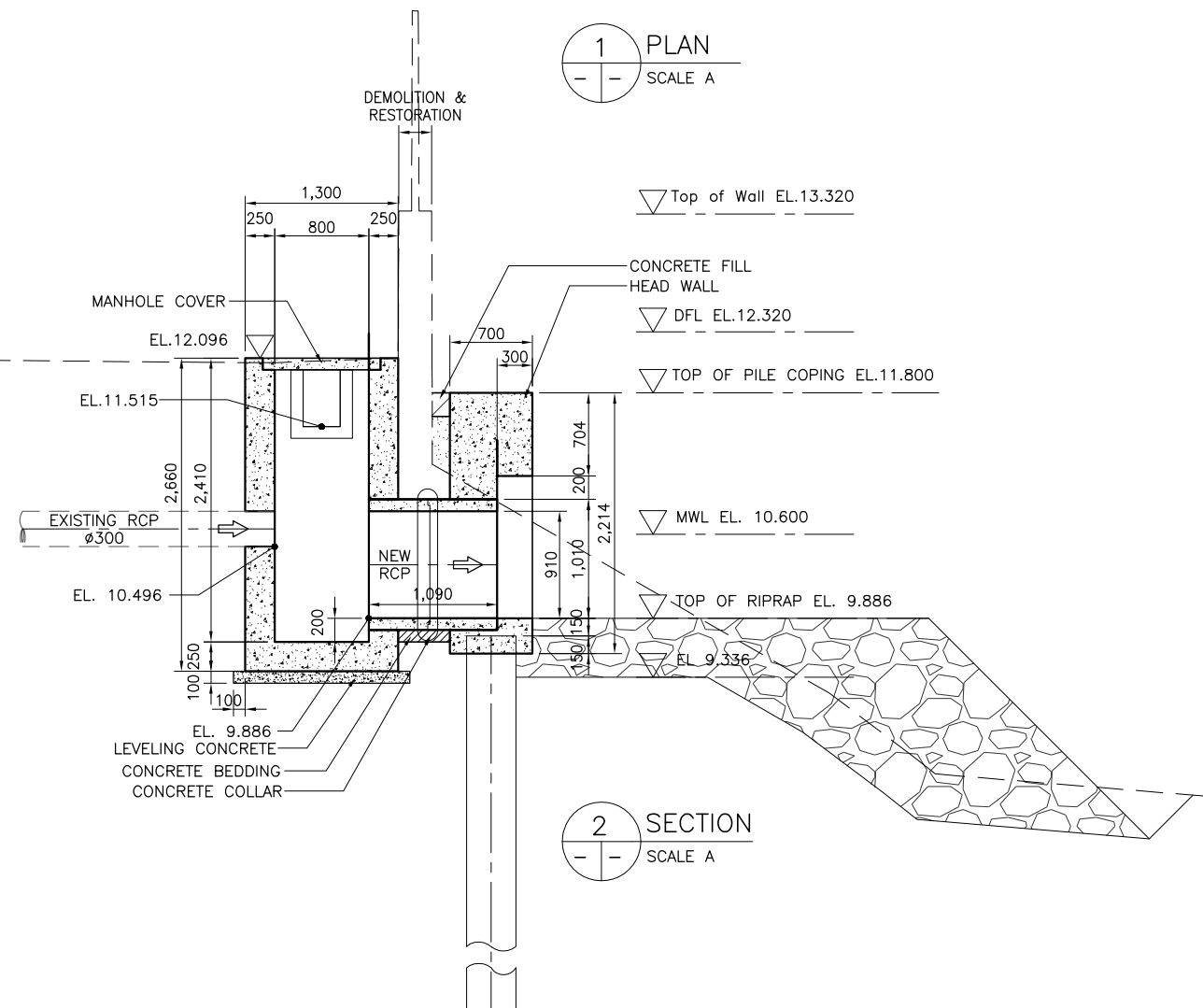
JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN			REPUBLIC OF THE PHILIPPINES				PROJECT & LOCATION		SHEET CONTENTS		SHEET NO.
	DESIGNED BY:	CHECKED BY:		REVIEWED BY:	RECOMMENDING APPROVAL:		APPROVED BY:		PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	PLAN & PROFILE OF U-DITCH	
	KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	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	RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES			



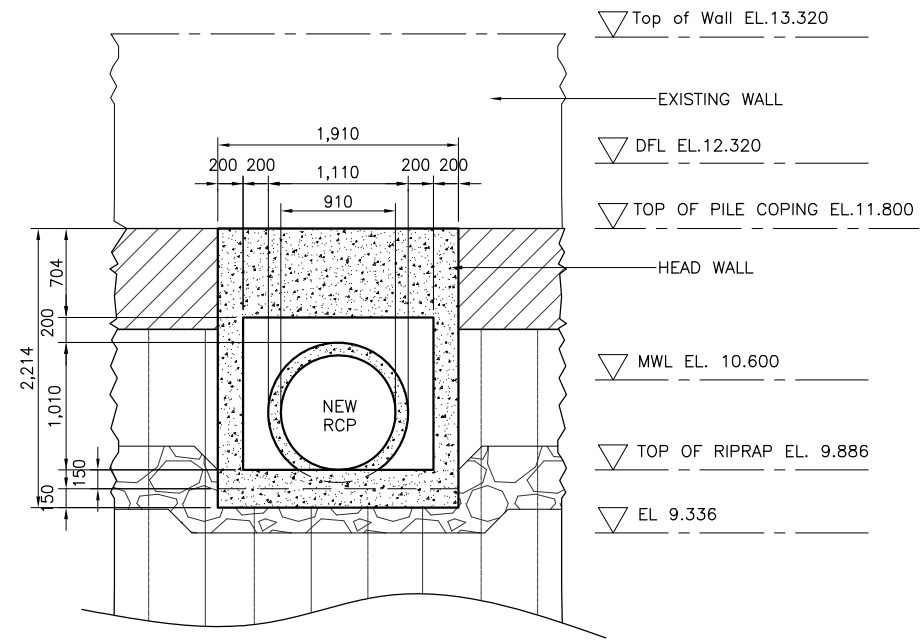
1 PLAN
 SCALE A



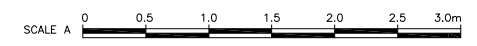
3 SECTION (MHHSP4)
 SCALE A



2 SECTION
 SCALE A



4 ELEVATION
 SCALE A

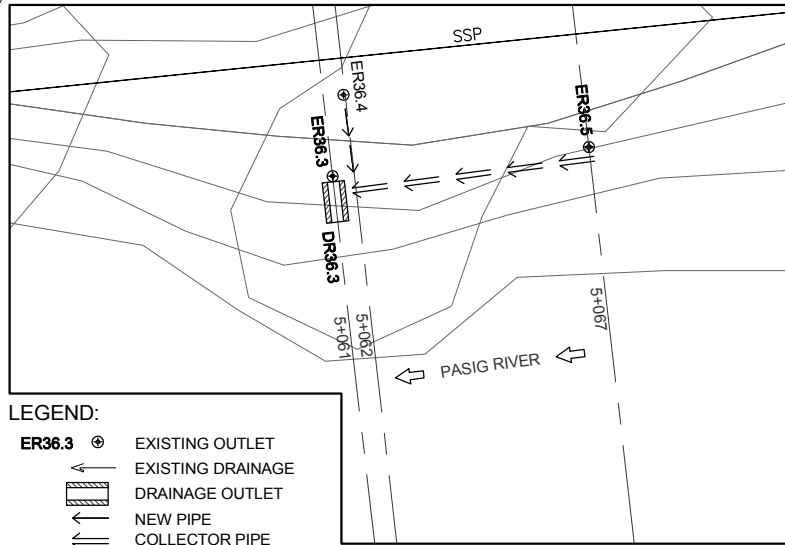


REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

NOTE:
 PURSUANT TO SECTION 4 OF ANNEX 'A' OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

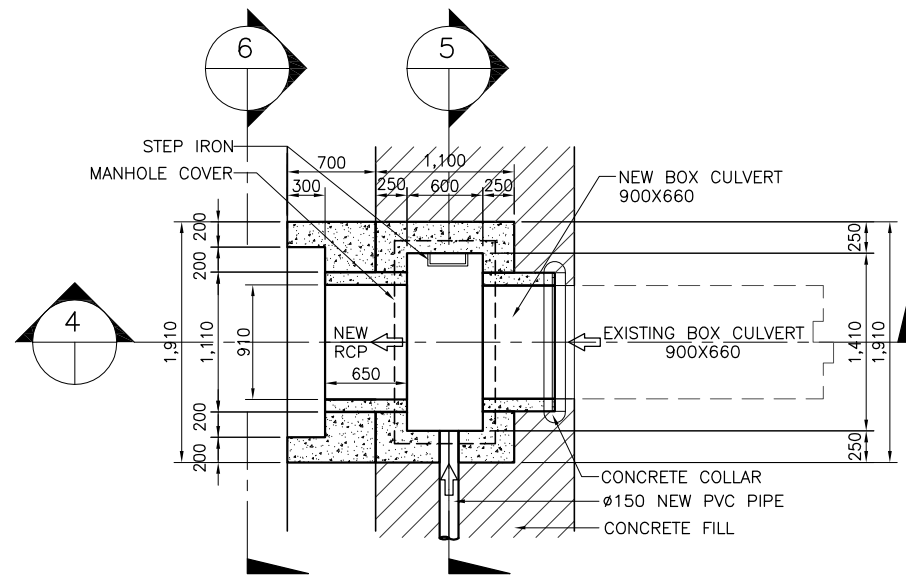
SHUJI KAKU
 TEAM LEADER

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:	REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	REVIEWED BY:	RECOMMENDING APPROVAL:	PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	DETAIL OF DRAINAGE OUTLET- DL HSP4 & MANHOLE MHP4 STA. 3+216 LB	
	KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	TOSHIKI KAWAKAMI THE CHECKER	SHUJI KAKU TEAM LEADER		PERFECTO L. ZAPLAN, JR. CHIEF, HYDRAULIC DIVISION, BOD	PATRICK B. GATAN PROJECT DIRECTOR PMO - MFCP			

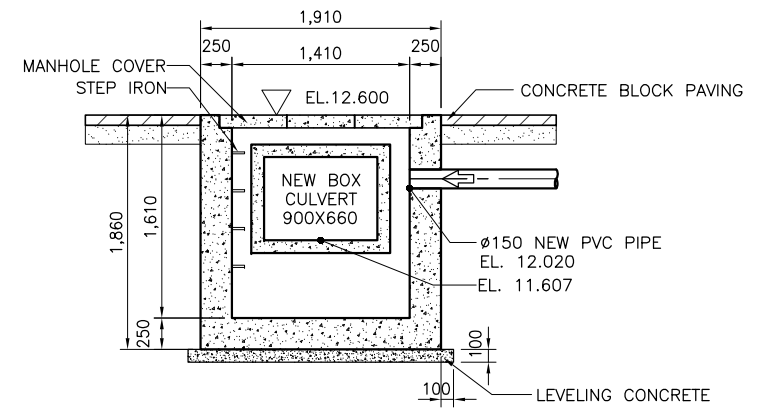


- LEGEND:**
- ER36.3 EXISTING OUTLET
 - EXISTING DRAINAGE
 - DRAINAGE OUTLET
 - NEW PIPE
 - COLLECTOR PIPE
 - DR 35.5 DRAINAGE OUTLET NO.
 - PROPOSED MANHOLE

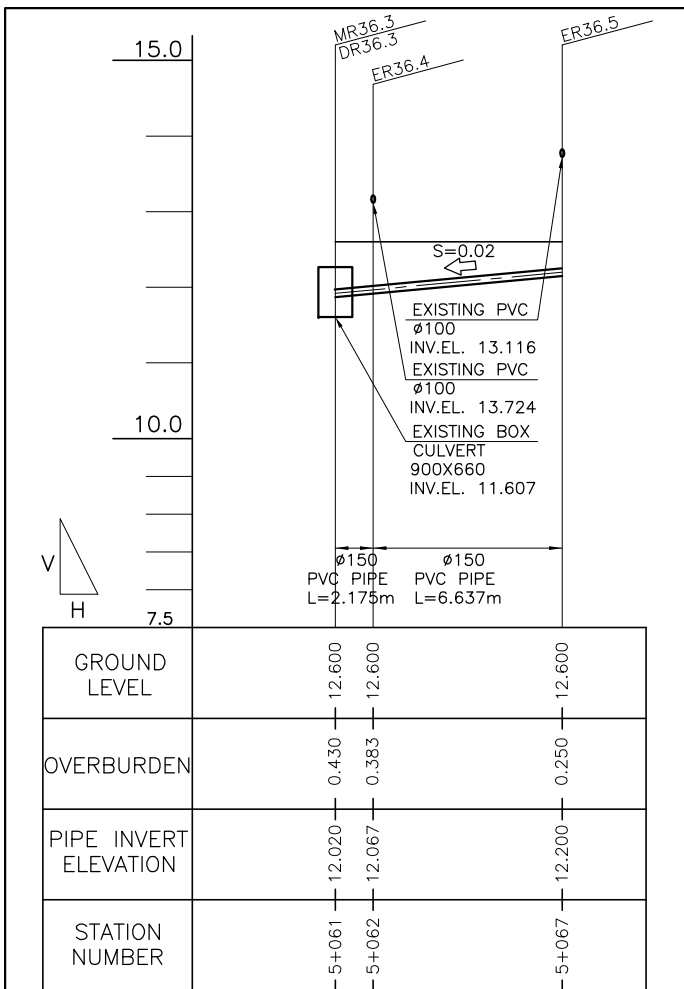
1 DRAINAGE PLAN
SCALE A



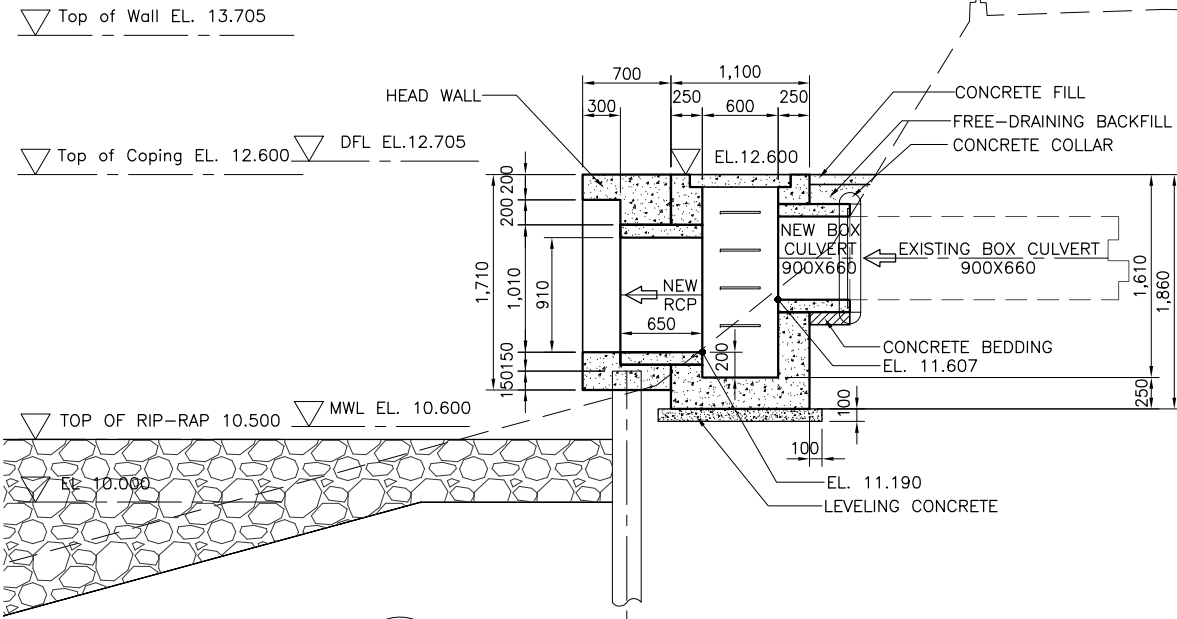
3 PLAN
SCALE B



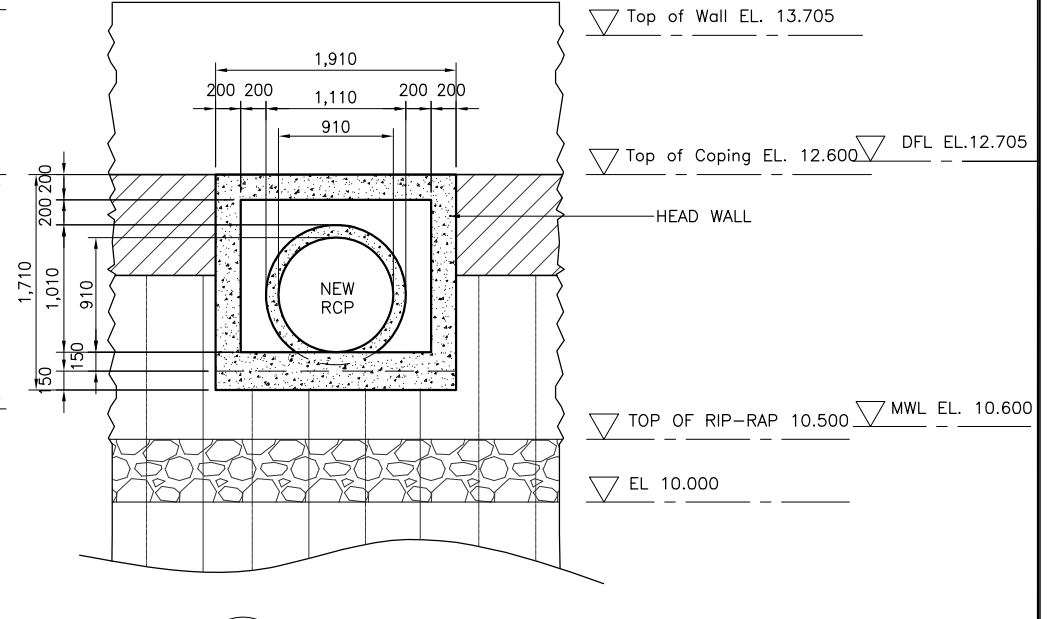
5 SECTION (ML36.3)
SCALE B



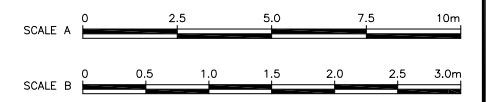
2 PROFILE
SCALE A



4 SECTION
SCALE B



6 ELEVATION
SCALE B



NOTE:
PURSUANT TO SECTION 4 OF ANNEX 'A' OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES

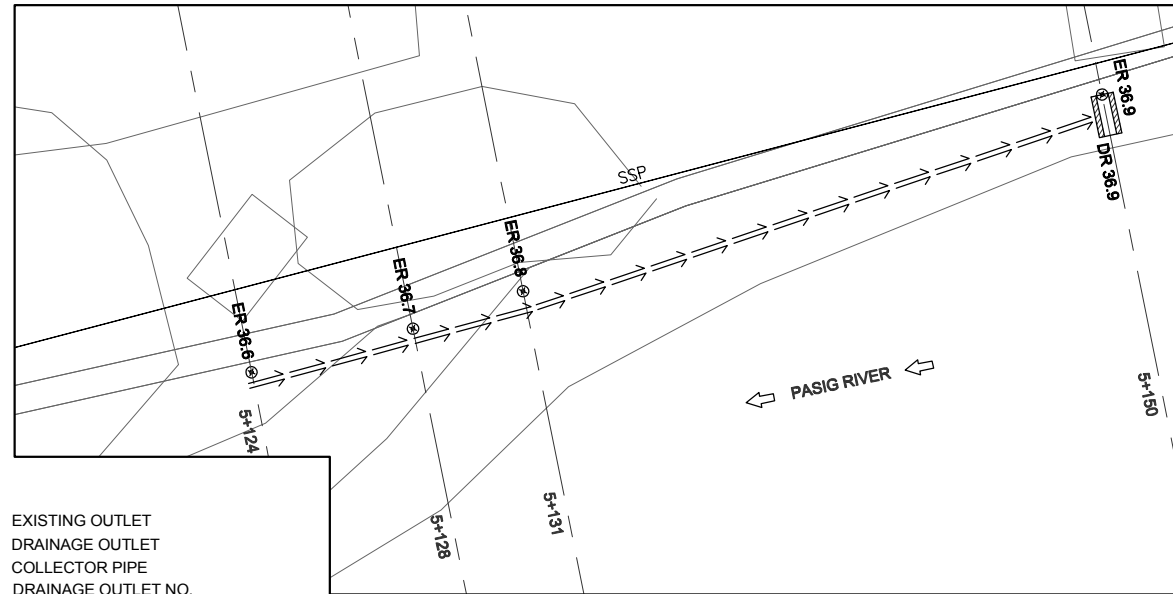




DESIGNED BY:	CHECKED BY:	SUBMITTED BY:
KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	TOSHIKI KAWAKAMI THE CHECKER	SHUJI KAKU TEAM LEADER



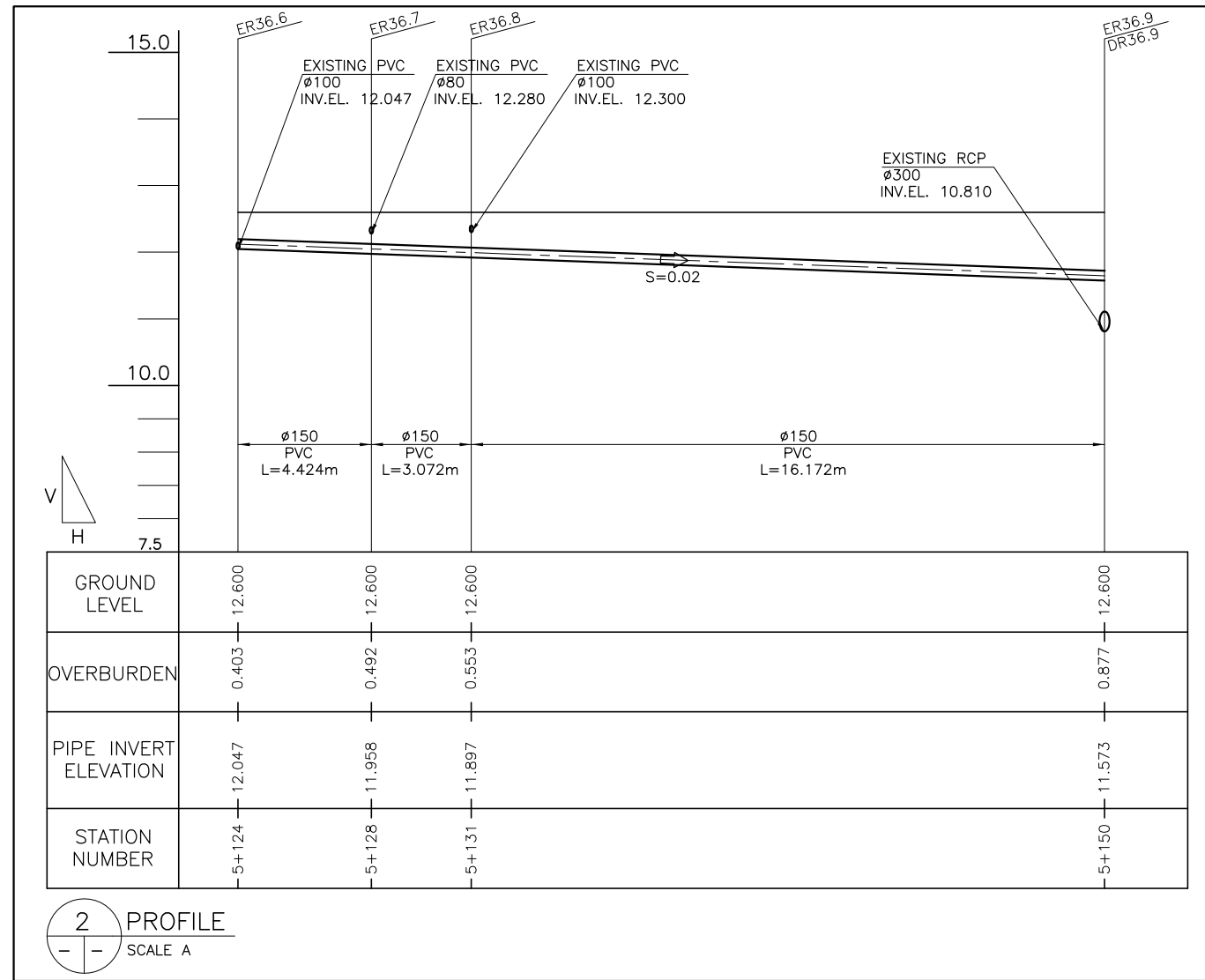
REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED BY:
PERFECTO L. ZAPLAN, JR. CHIEF, HYDRAULIC DIVISION, BOD	PATRICK B. GATAN PROJECT DIRECTOR PMO - MFCP	GILBERTO S. REYES DIRECTOR BOD
SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY	SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY	SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY
RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES	ROGELIO L. SINGSON SECRETARY	

PROJECT & LOCATION	SHEET CONTENTS	SHEET NO.
PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	DETAIL OF DRAINAGE OUTLET- DR36.3 & MANHOLE ML36.3 STA. 5+061 RB	LP-DR/DO/36.3



LEGEND:
 ER36.9 ⊕ EXISTING OUTLET
 DRAINAGE OUTLET
 COLLECTOR PIPE
 DR 36.9 DRAINAGE OUTLET NO.

1 DRAINAGE PLAN
 SCALE A



2 PROFILE
 SCALE A



REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

NOTE:
 PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

SHUJI KAKU
 TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES



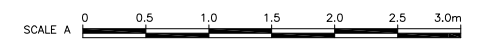
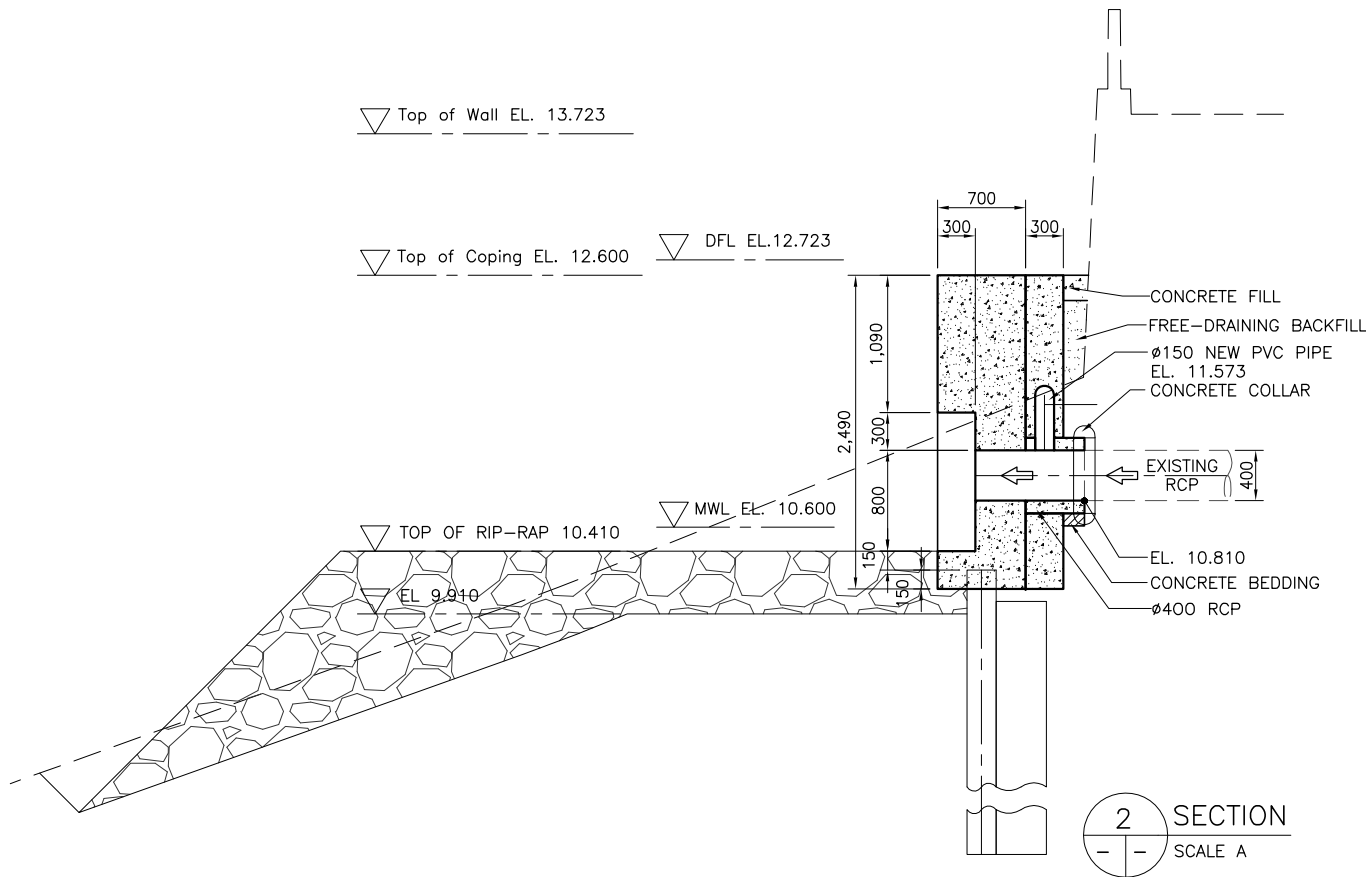
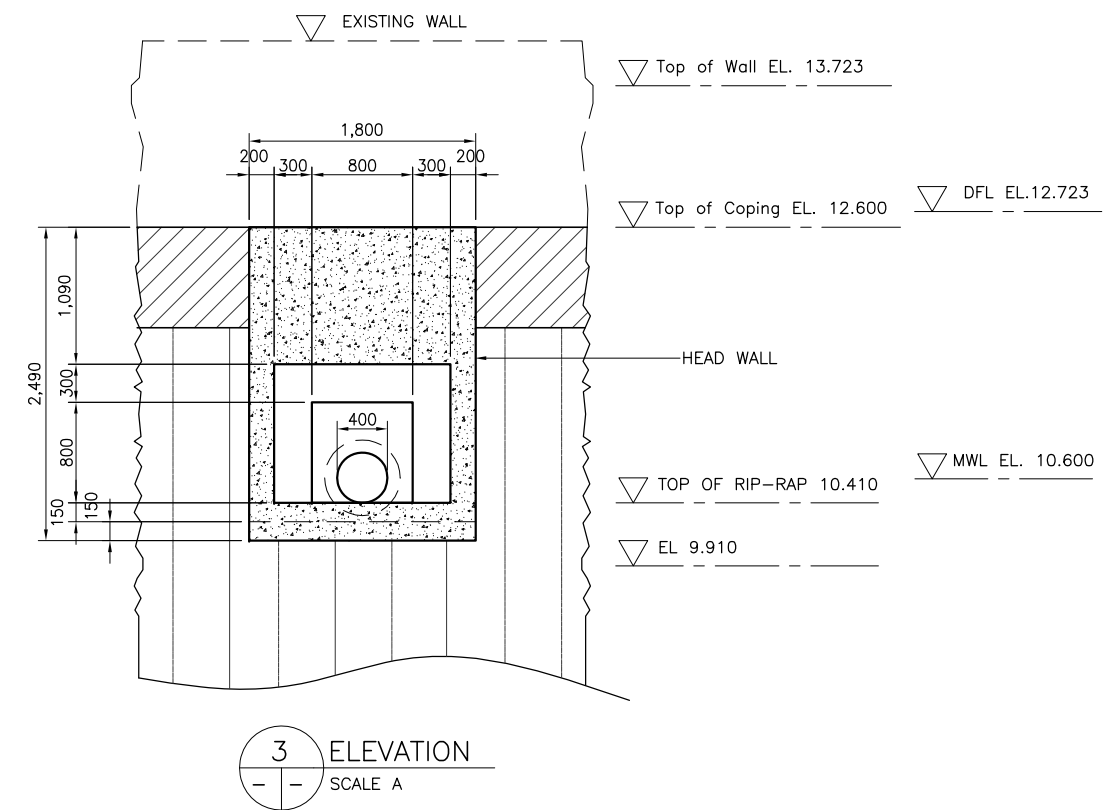
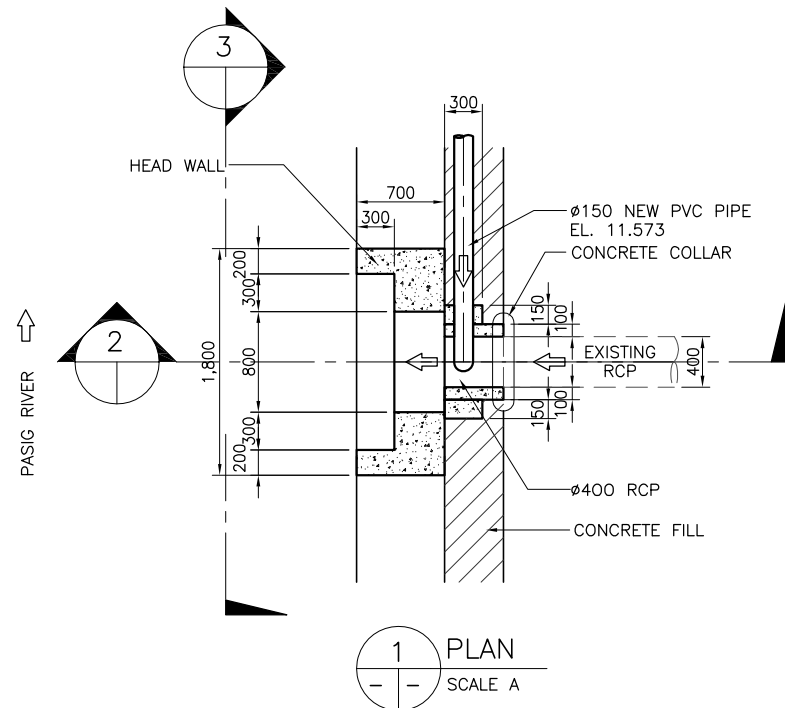
DESIGNED BY: KOHEI TAKAYAMA
 STRUCTURAL ENGINEER IV
 CHECKED BY: TOSHIKI KAWAKAMI
 THE CHECKER
 SUBMITTED BY: SHUJI KAKU
 TEAM LEADER



REPUBLIC OF THE PHILIPPINES
 DEPARTMENT OF PUBLIC WORKS
 AND HIGHWAYS

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
 CHIEF, HYDRAULIC DIVISION, BOD
 RECOMMENDING APPROVAL: PATRICK B. GATAN
 PROJECT DIRECTOR
 PMO - MFCP
 GILBERTO S. REYES
 DIRECTOR
 BOD
 SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY
 RAUL C. ASIS
 UNDERSECRETARY FOR TECHNICAL SERVICES
 APPROVED BY: ROGELIO L. SINGSON
 SECRETARY
 SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY

PROJECT & LOCATION: PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA
 SHEET CONTENTS: PLAN & PROFILE OF COLLECTOR PIPE
 SHEET NO.: LP-DR/DO/36.9/P

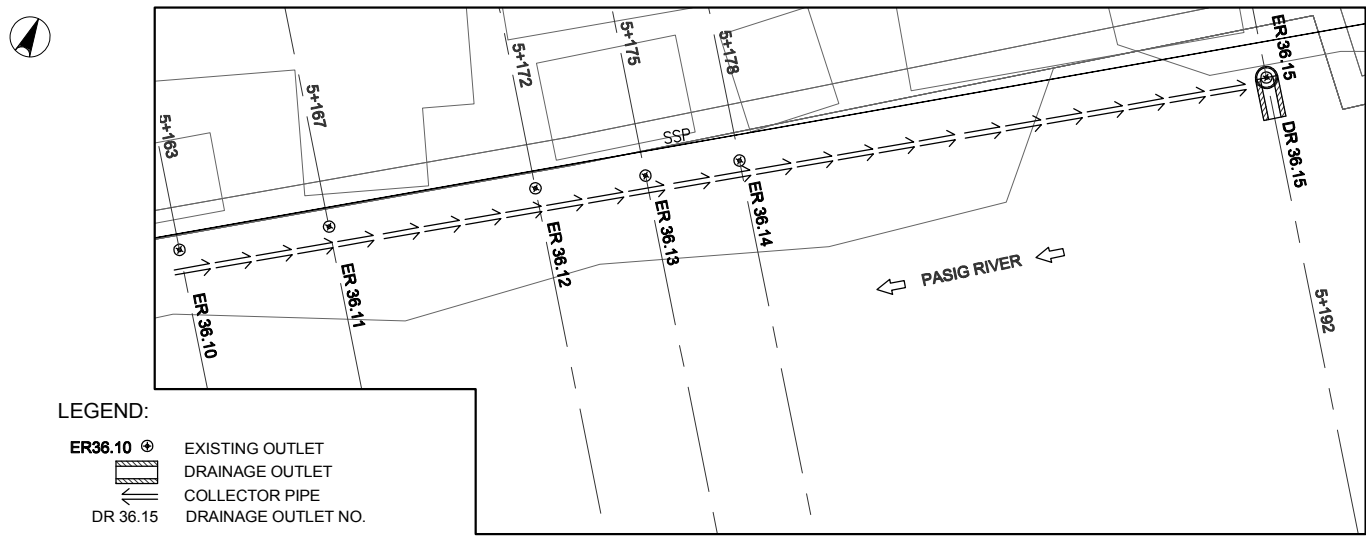


REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

NOTE:
PURSUANT TO SECTION 4 OF ANNEX 'A' OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

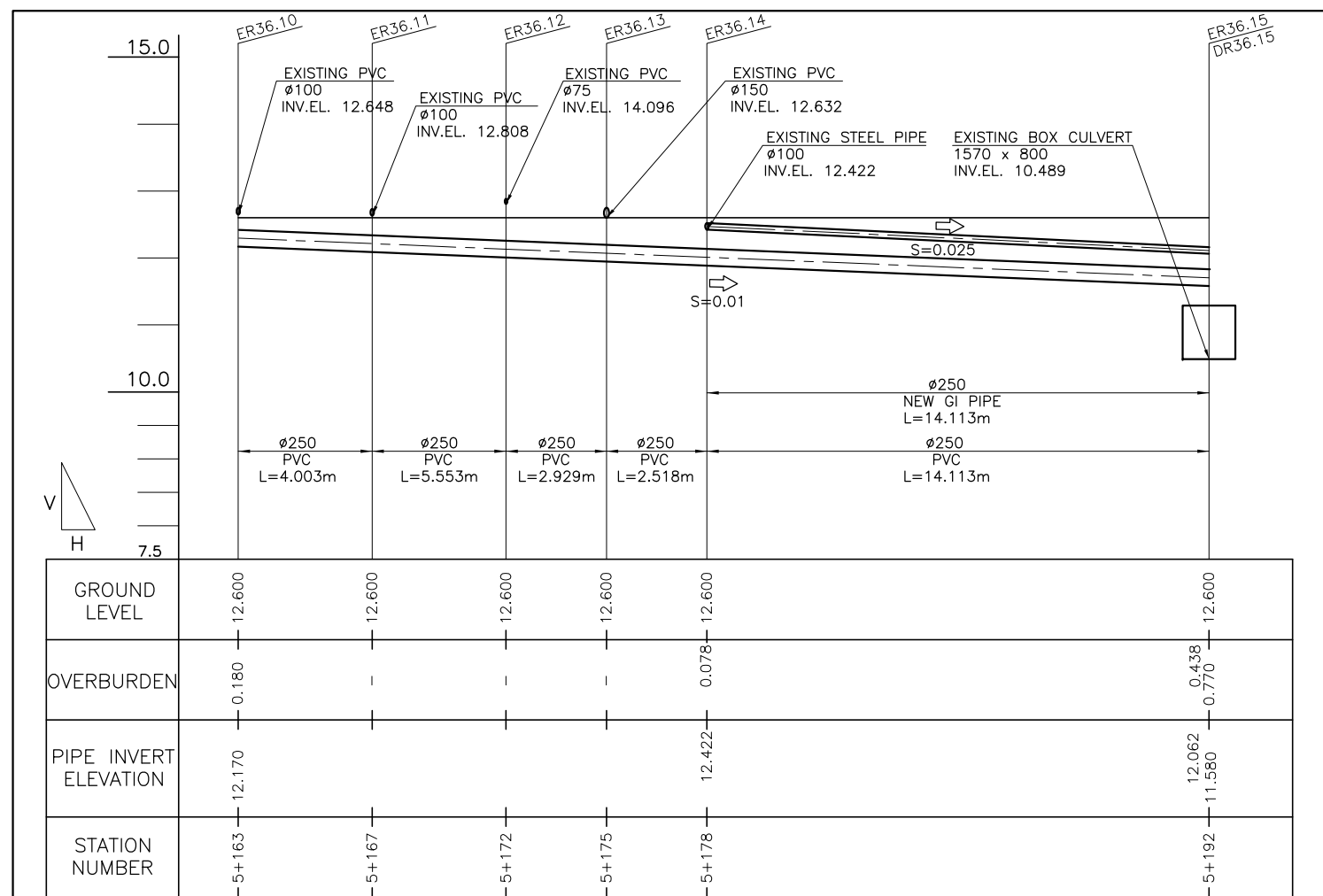
SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN 			REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS 				PROJECT & LOCATION PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA		SHEET CONTENTS DETAIL OF DRAINAGE OUTLET- DR36.9 STA. 5+150 RB	SHEET NO.
DESIGNED BY:	CHECKED BY:	SUBMITTED BY:	REVIEWED BY:	RECOMMENDING APPROVAL:		APPROVED BY:				
KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	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	RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES	ROGELIO L. SINGSON SECRETARY			



LEGEND:
 ER36.10 ⊕ EXISTING OUTLET
 [Symbol] DRAINAGE OUTLET
 [Symbol] COLLECTOR PIPE
 DR 36.15 DRAINAGE OUTLET NO.

1 DRAINAGE PLAN
 SCALE A



2 PROFILE
 SCALE A

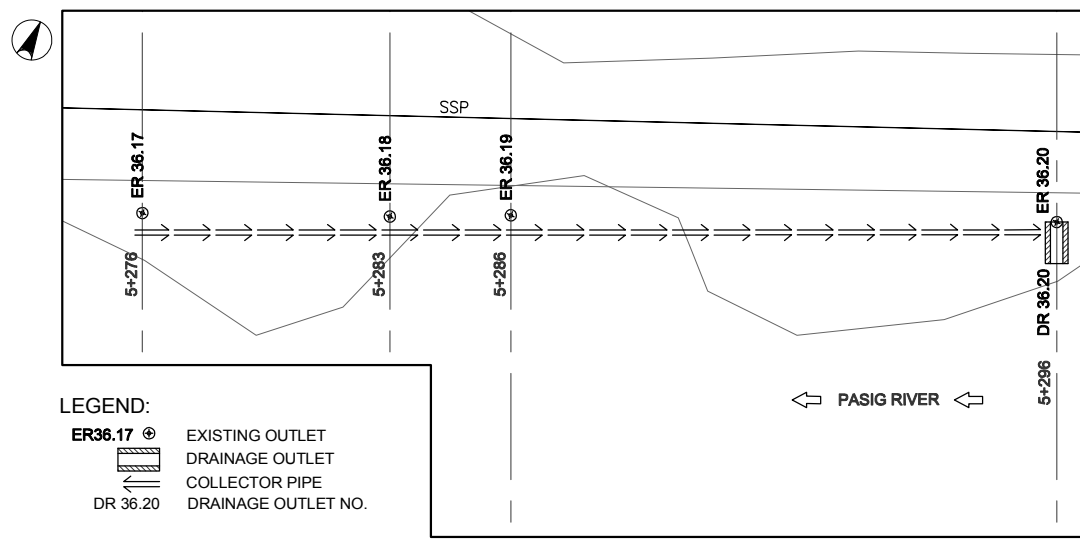


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NO.	DESCRIPTION	APPROVED	DATE

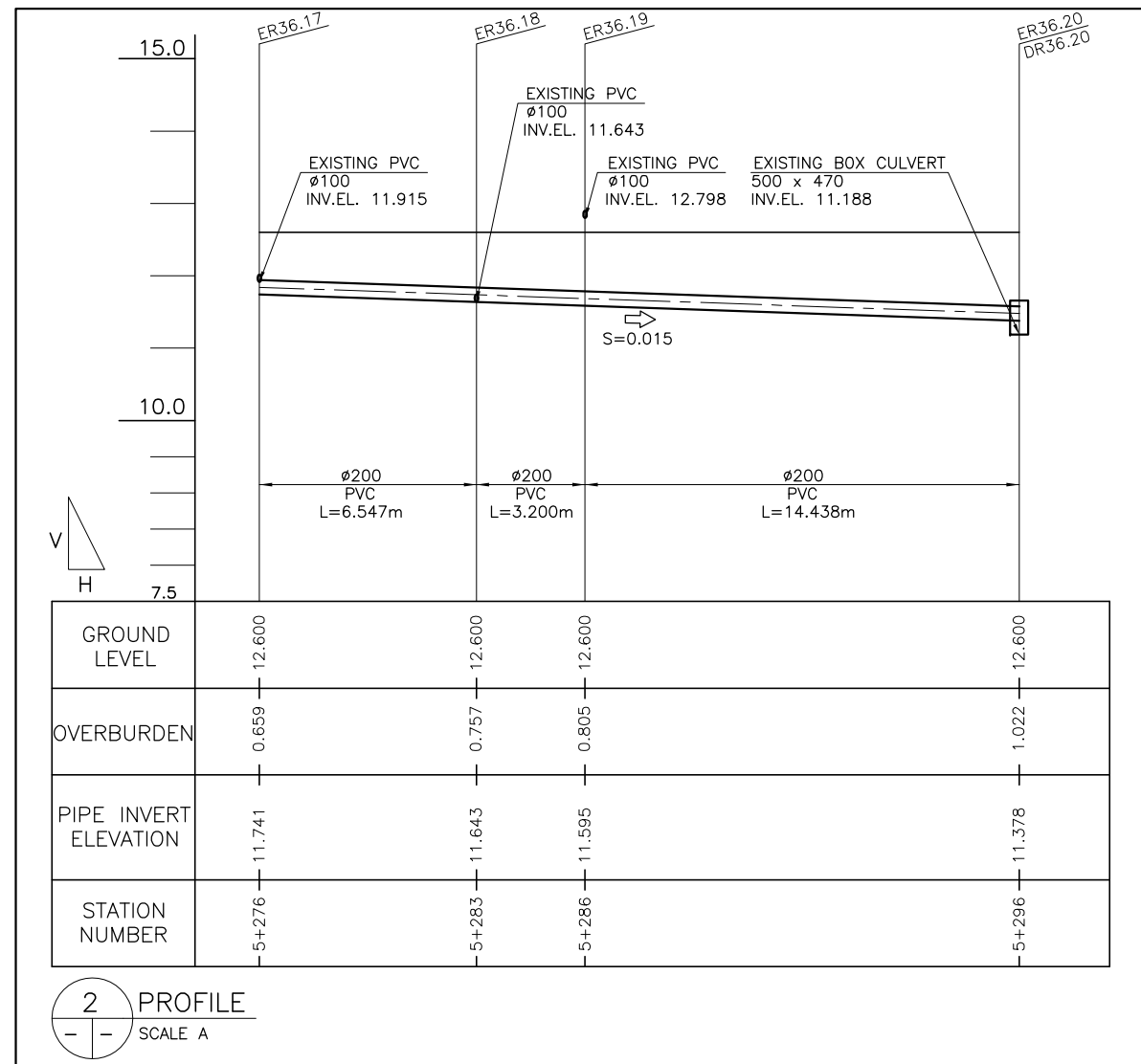
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SHUJI KAKU
 TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN			REPUBLIC OF THE PHILIPPINES				PROJECT & LOCATION	SHEET CONTENTS	SHEET NO.
	DESIGNED BY:	CHECKED BY:	SUBMITTED BY:		REVIEWED BY:	RECOMMENDING APPROVAL:	PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	PLAN & PROFILE OF COLLECTOR PIPE	
	KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	TOSHIKI KAWAKAMI THE CHECKER	SHUJI KAKU TEAM LEADER		PERFECTO L. ZAPLAN, JR. CHIEF, HYDRAULIC DIVISION, BOD	PATRICK B. GATAN PROJECT DIRECTOR PMO - MFCP			



1 DRAINAGE PLAN
 SCALE A



2 PROFILE
 SCALE A

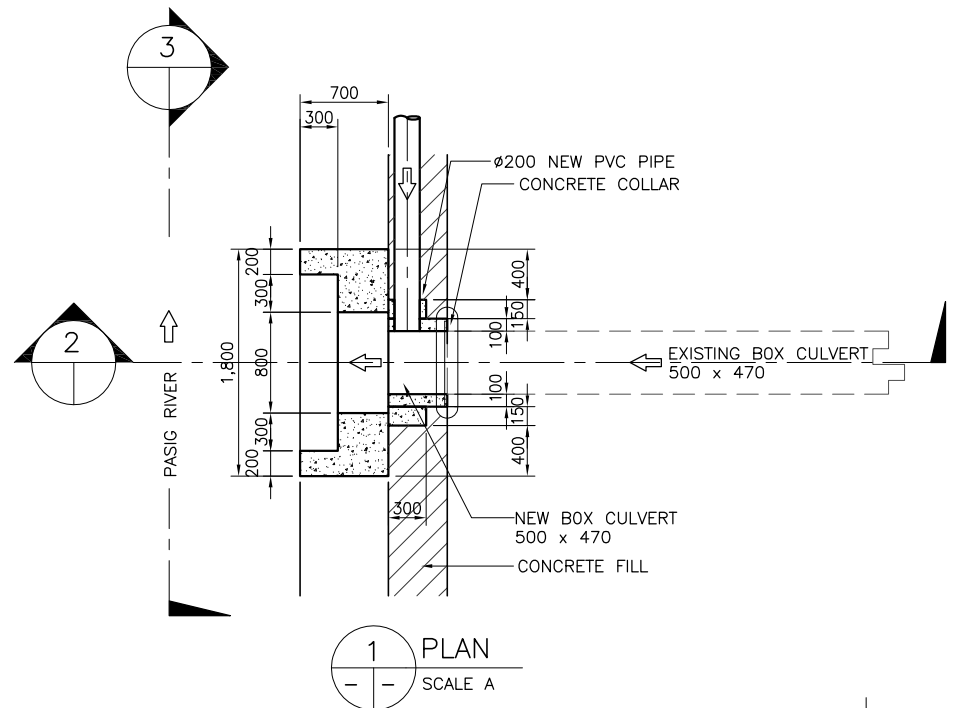


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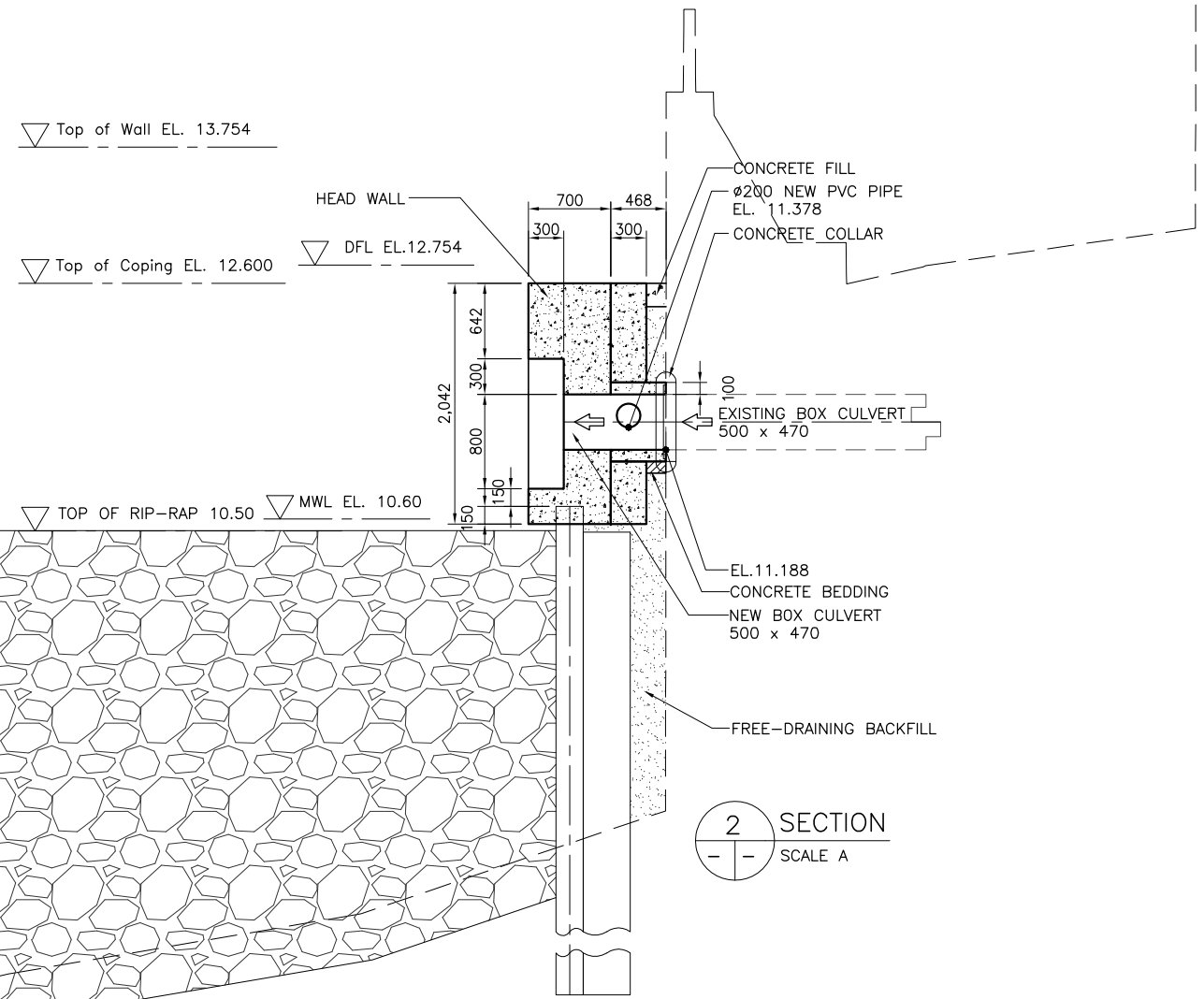
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SHUJI KAKU
 TEAM LEADER

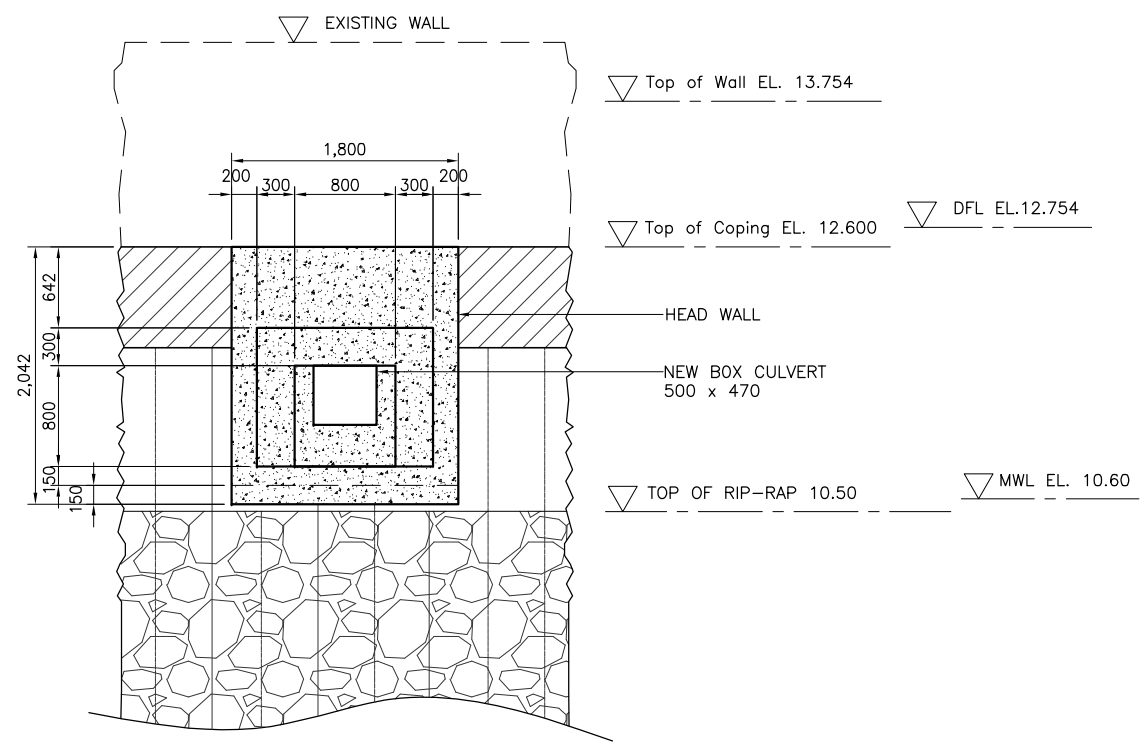
JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN			REPUBLIC OF THE PHILIPPINES				PROJECT & LOCATION	SHEET CONTENTS	SHEET NO.
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	KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	TOSHIKI KAWAKAMI THE CHECKER		SHUJI KAKU TEAM LEADER	PERFECTO L. ZAPLAN, JR. CHIEF, HYDRAULIC DIVISION, BOD				PATRICK B. GATAN PROJECT DIRECTOR PMO - MFCP
			RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES		ROGELIO L. SINGSON SECRETARY				



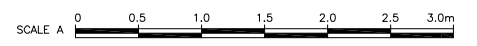
1 PLAN
SCALE A



2 SECTION
SCALE A



3 ELEVATION
SCALE A

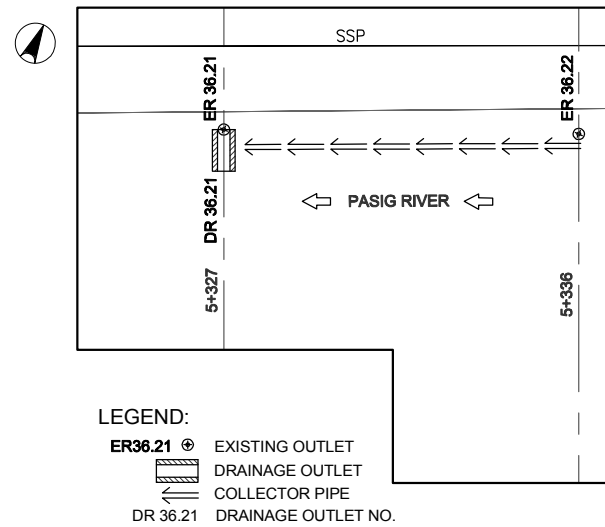


REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

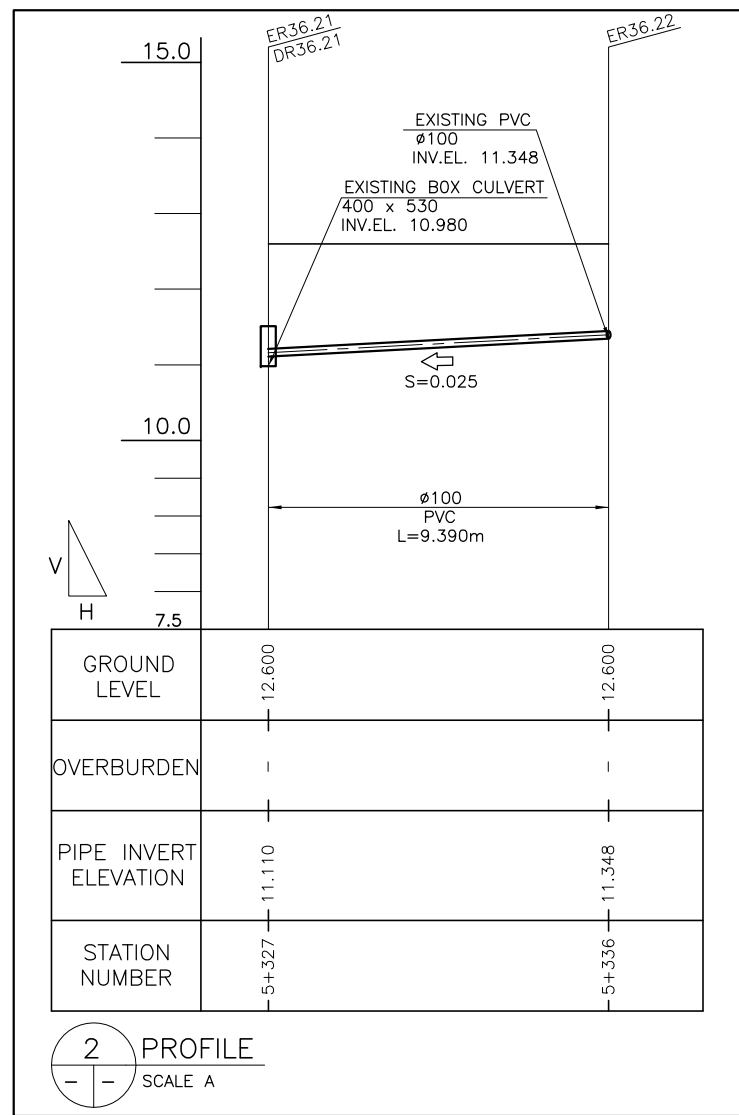
SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN			REPUBLIC OF THE PHILIPPINES				PROJECT & LOCATION		SHEET CONTENTS		SHEET NO.
	DESIGNED BY:	CHECKED BY:	SUBMITTED BY:		REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED BY:	PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	DETAIL OF DRAINAGE OUTLET- DR36.20 STA. 5+296 RB		
	KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	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				RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES

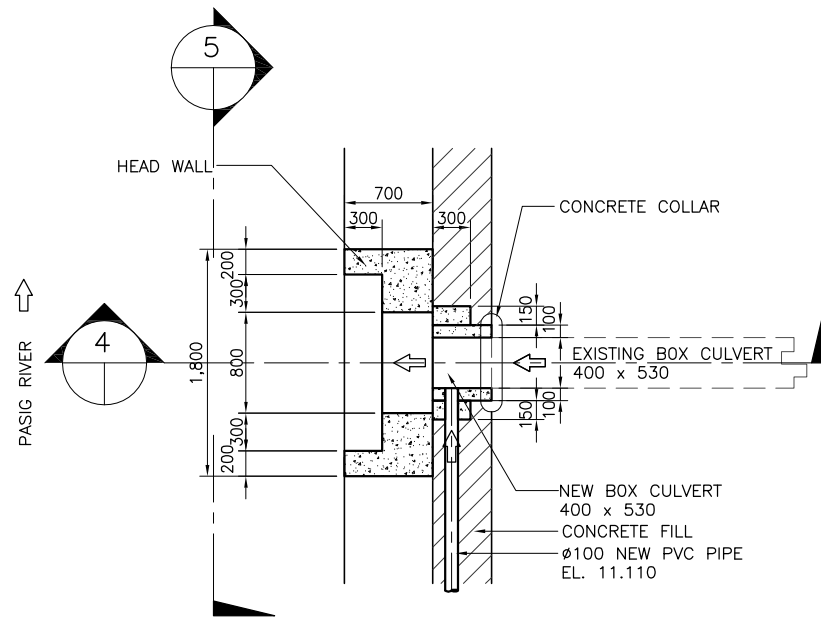


LEGEND:
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 [Symbol] DRAINAGE OUTLET
 [Symbol] COLLECTOR PIPE
 DR 36.21 DRAINAGE OUTLET NO.

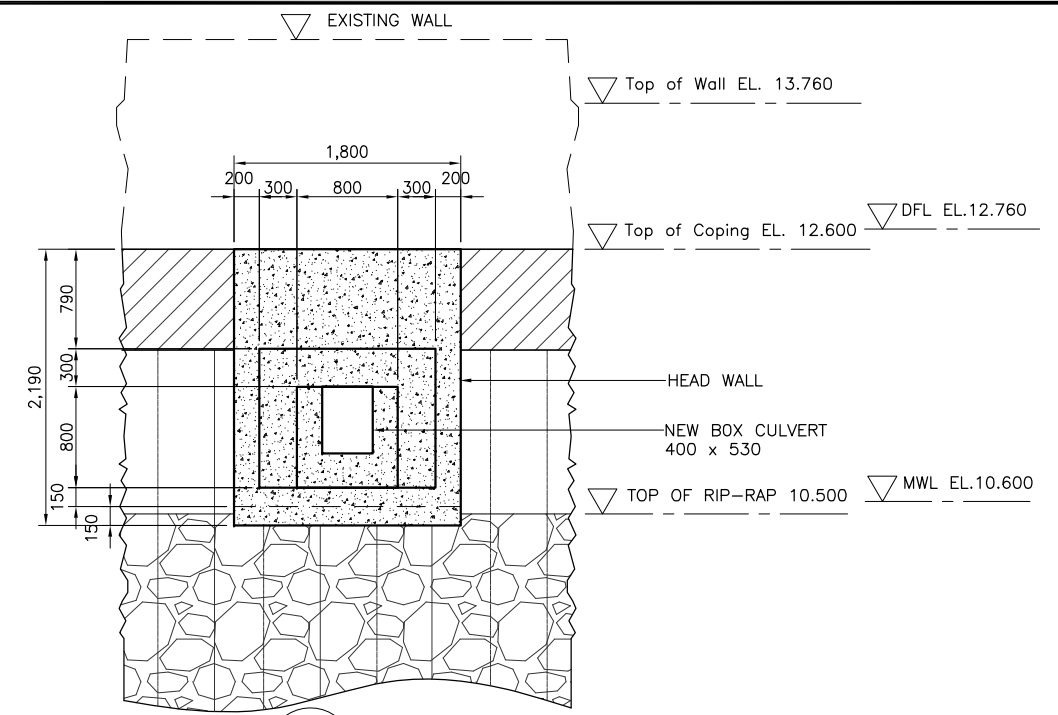
1 DRAINAGE PLAN
 SCALE A



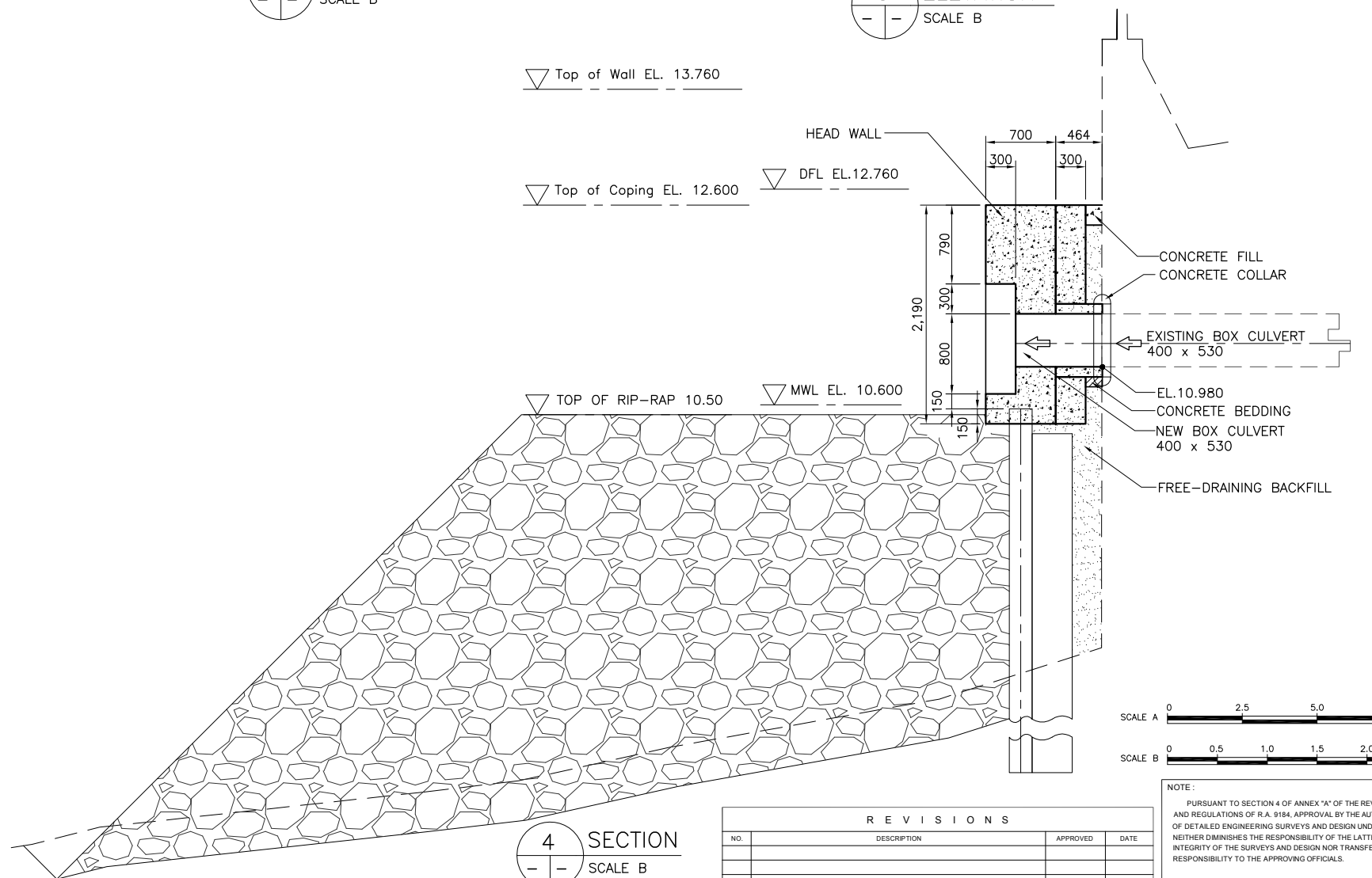
2 PROFILE
 SCALE A



3 PLAN
 SCALE B

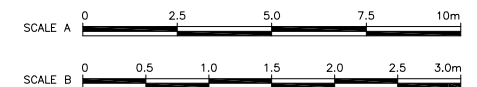


5 ELEVATION
 SCALE B



4 SECTION
 SCALE B

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE



NOTE:
 PURSUANT TO SECTION 4 OF ANNEX 'A' OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

SHUJI KAKU
 TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

DESIGNED BY:	CHECKED BY:	SUBMITTED BY:
KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	TOSHIKI KAWAKAMI THE CHECKER	SHUJI KAKU TEAM LEADER

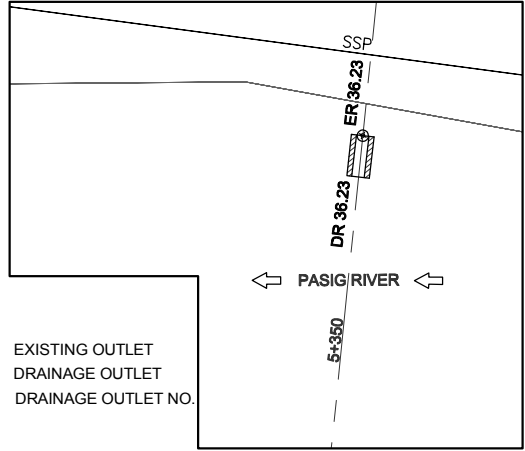


REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS

REPUBLIC OF THE PHILIPPINES

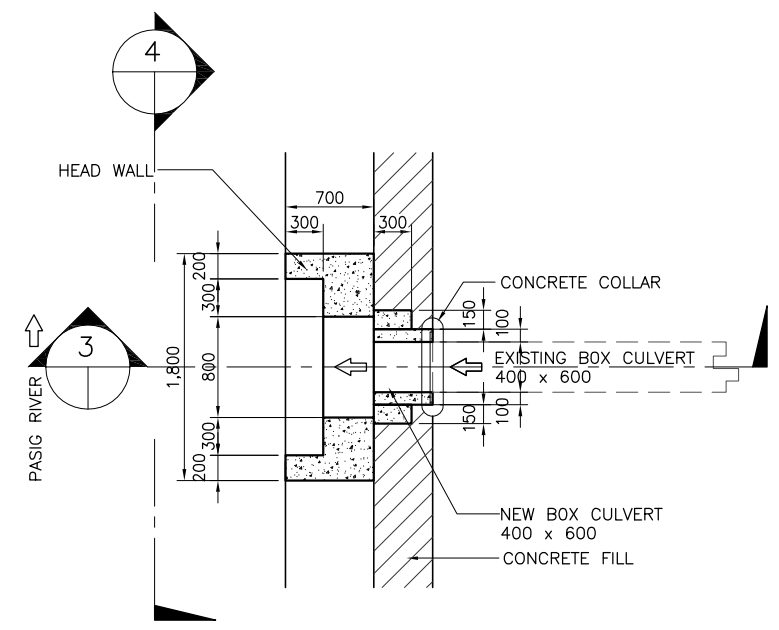
REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED BY:
PERFECTO L. ZAPLAN, JR. CHIEF, HYDRAULIC DIVISION, BOD	PATRICK B. GATAN PROJECT DIRECTOR PMO - MFCP	GILBERTO S. REYES DIRECTOR BOD
SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY	SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY	SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY
RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES	ROGELIO L. SINGSON SECRETARY	

PROJECT & LOCATION	SHEET CONTENTS	SHEET NO.
PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	DETAIL OF DRAINAGE OUTLET- DR36.21 STA. 5+327 RB	LP-DR DO36.21

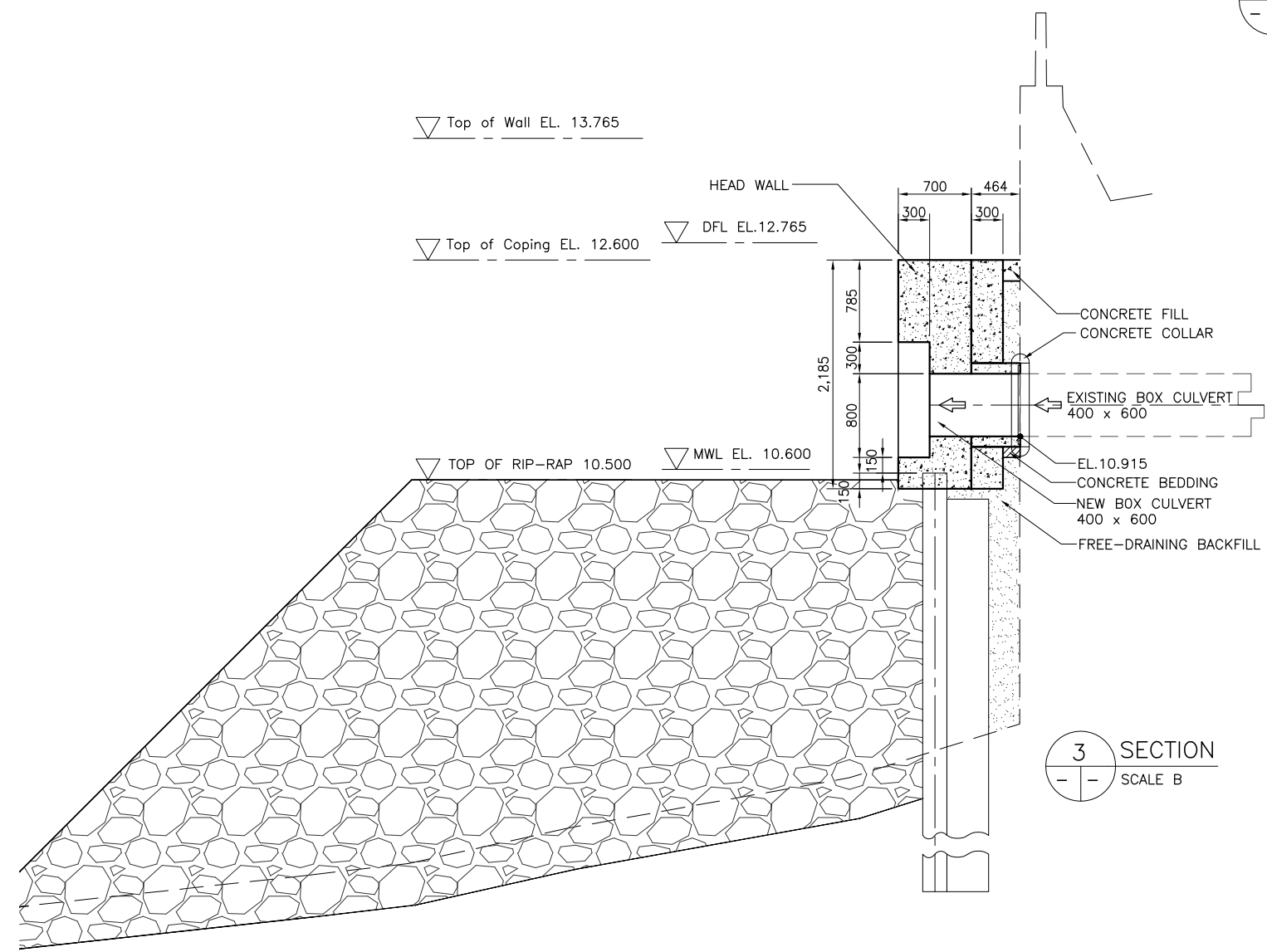


LEGEND:
 ER36.23 ⊕ EXISTING OUTLET
 □ DRAINAGE OUTLET
 DR 36.23 DRAINAGE OUTLET NO.

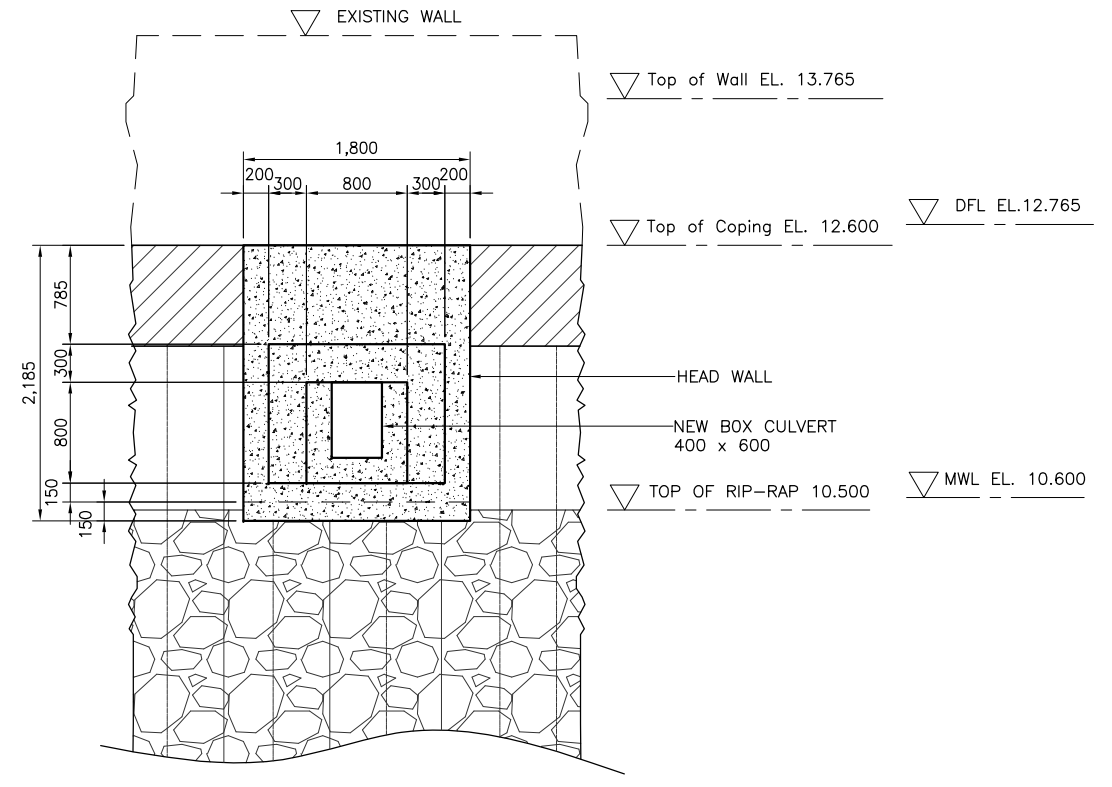
1 DRAINAGE PLAN
 SCALE A



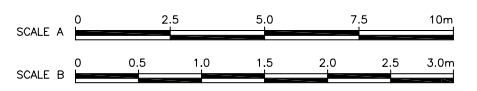
2 PLAN
 SCALE B



3 SECTION
 SCALE B



4 ELEVATION
 SCALE B



NOTE:
 PURSUANT TO SECTION 4 OF ANNEX 'A' OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

SHUJI KAKU
 TEAM LEADER

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

DESIGNED BY:	CHECKED BY:	SUBMITTED BY:
KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	TOSHIKI KAWAKAMI THE CHECKER	SHUJI KAKU TEAM LEADER

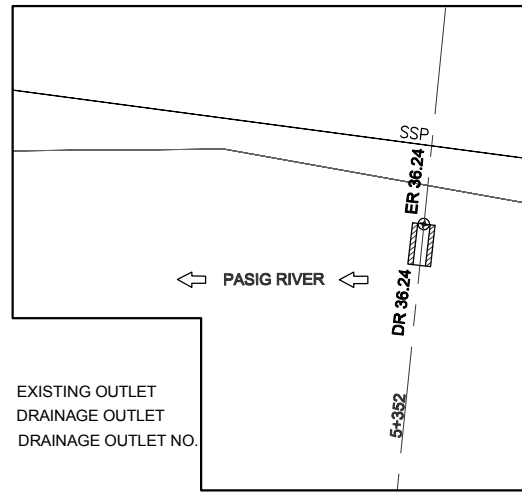


REPUBLIC OF THE PHILIPPINES
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 AND HIGHWAYS

REPUBLIC OF THE PHILIPPINES

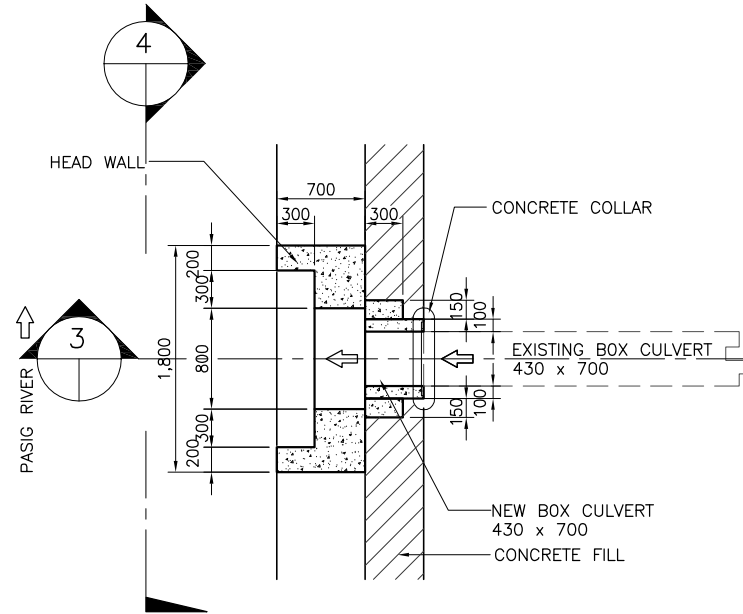
REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED BY:
PERFECTO L. ZAPLAN, JR. CHIEF, HYDRAULIC DIVISION, BOD	PATRICK B. GATAN PROJECT DIRECTOR PMO - MFCP	GILBERTO S. REYES DIRECTOR BOD
SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY	SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY	SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY
RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES	ROGELIO L. SINGSON SECRETARY	

PROJECT & LOCATION	SHEET CONTENTS	SHEET NO.
PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	DETAIL OF DRAINAGE OUTLET- DR36.23 STA. 5+350 RB	LP-DR DO 36.23

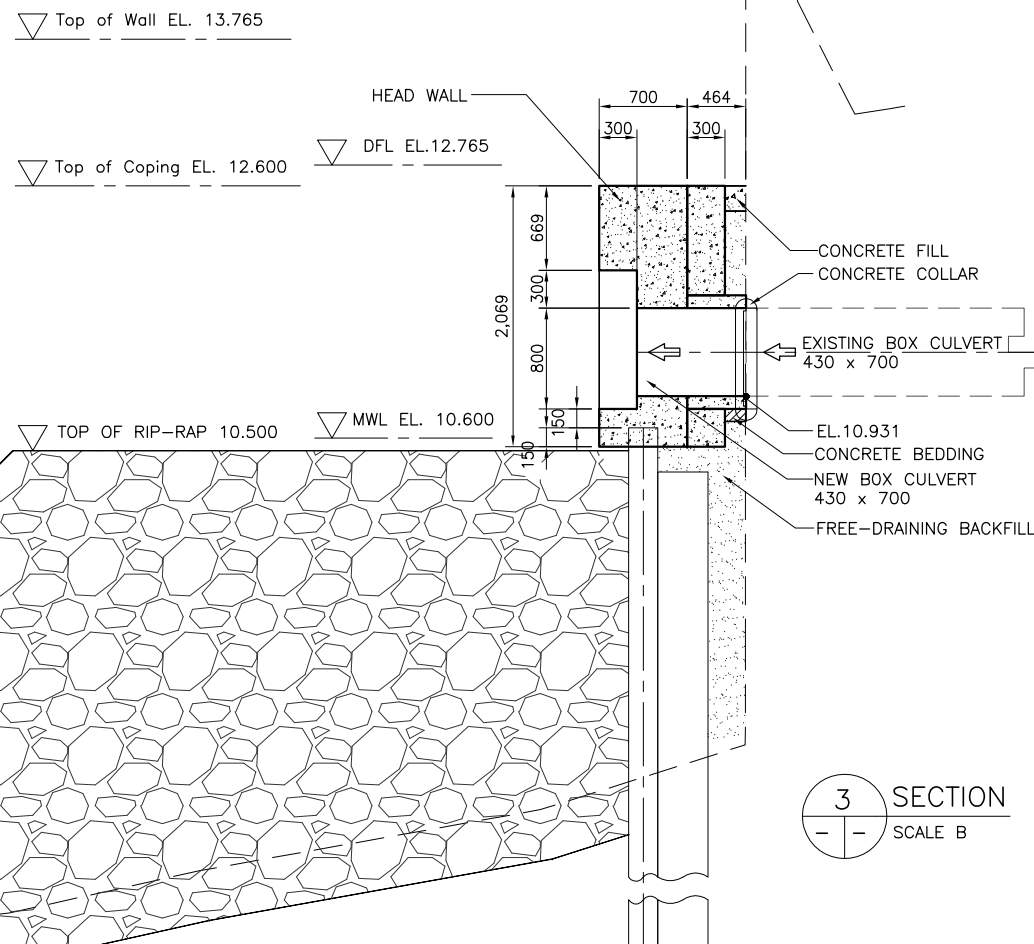


LEGEND:
 ER36.24 ⊕ EXISTING OUTLET
 DR 36.24 □ DRAINAGE OUTLET NO.

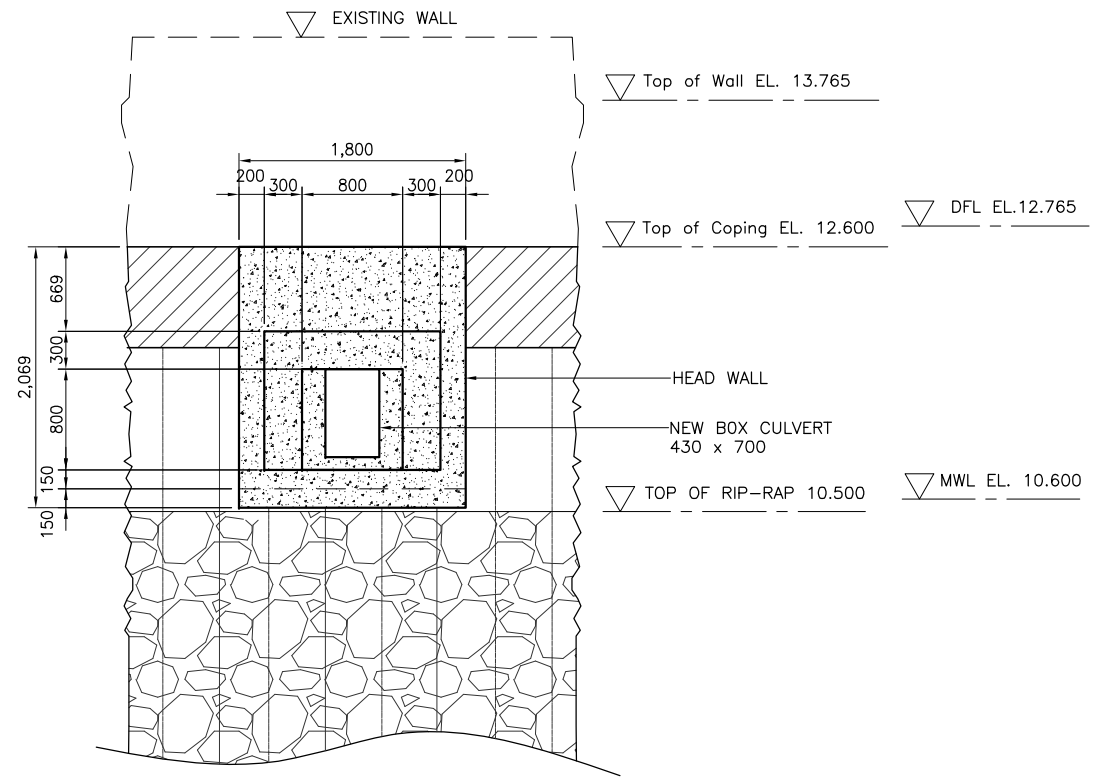
1 DRAINAGE PLAN
SCALE A



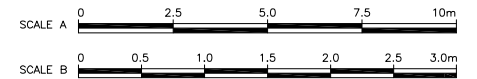
2 PLAN
SCALE B



3 SECTION
SCALE B



4 ELEVATION
SCALE B



NOTE:
 PURSUANT TO SECTION 4 OF ANNEX 'A' OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

SHUJI KAKU
TEAM LEADER

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



REPUBLIC OF THE PHILIPPINES
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AND HIGHWAYS

REPUBLIC OF THE PHILIPPINES

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

APPROVED BY: ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION

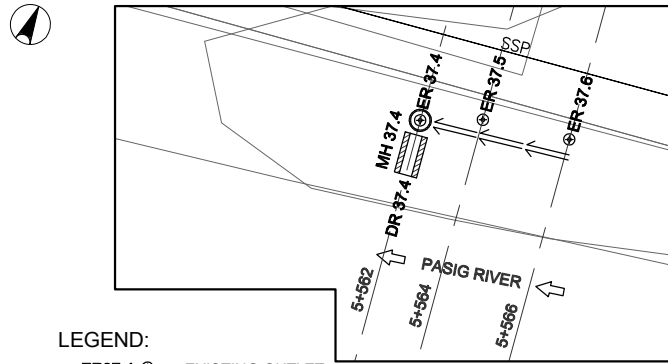
PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS

DETAIL OF DRAINAGE OUTLET- DR36.24 STA. 5+352 RB

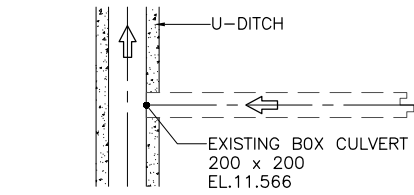
SHEET NO.



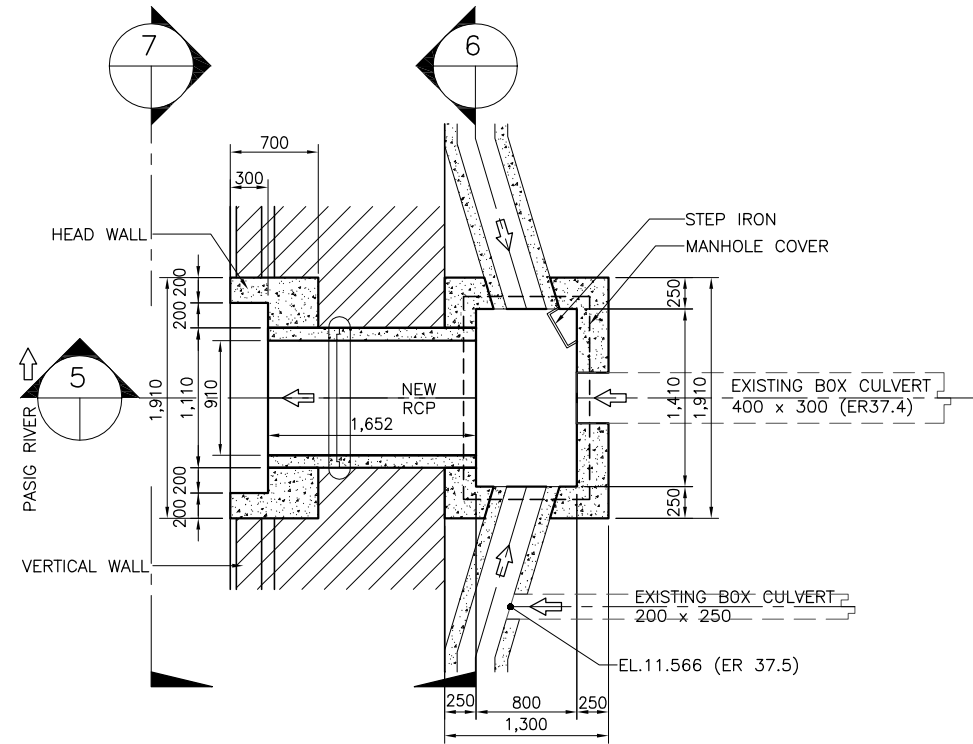


- LEGEND:**
- ER37.4 ⊕ EXISTING OUTLET
 - DR 36.4 ▭ DRAINAGE OUTLET
 - DR 36.4 ○ DRAINAGE OUTLET NO.
 - PROPOSED MANHOLE

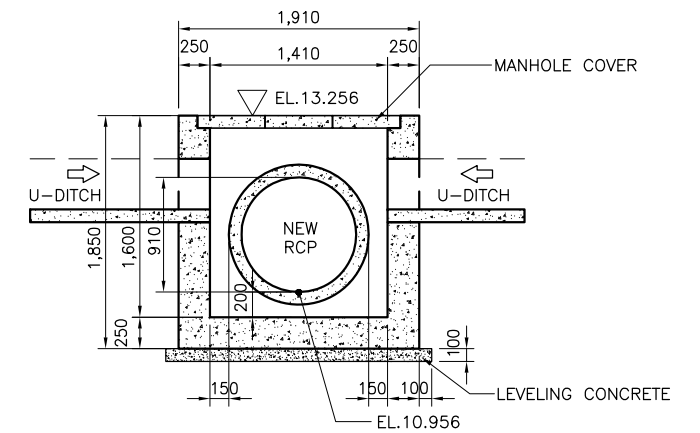
1 DRAINAGE PLAN
SCALE A



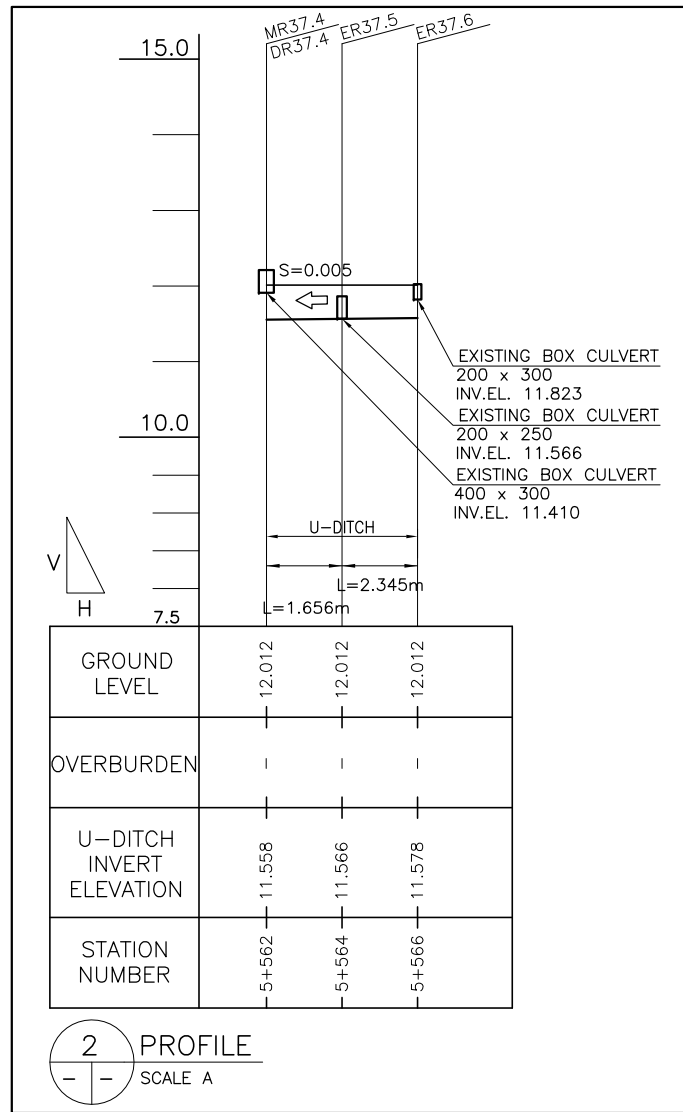
3 PARTIAL PLAN (ER37.6)
SCALE B



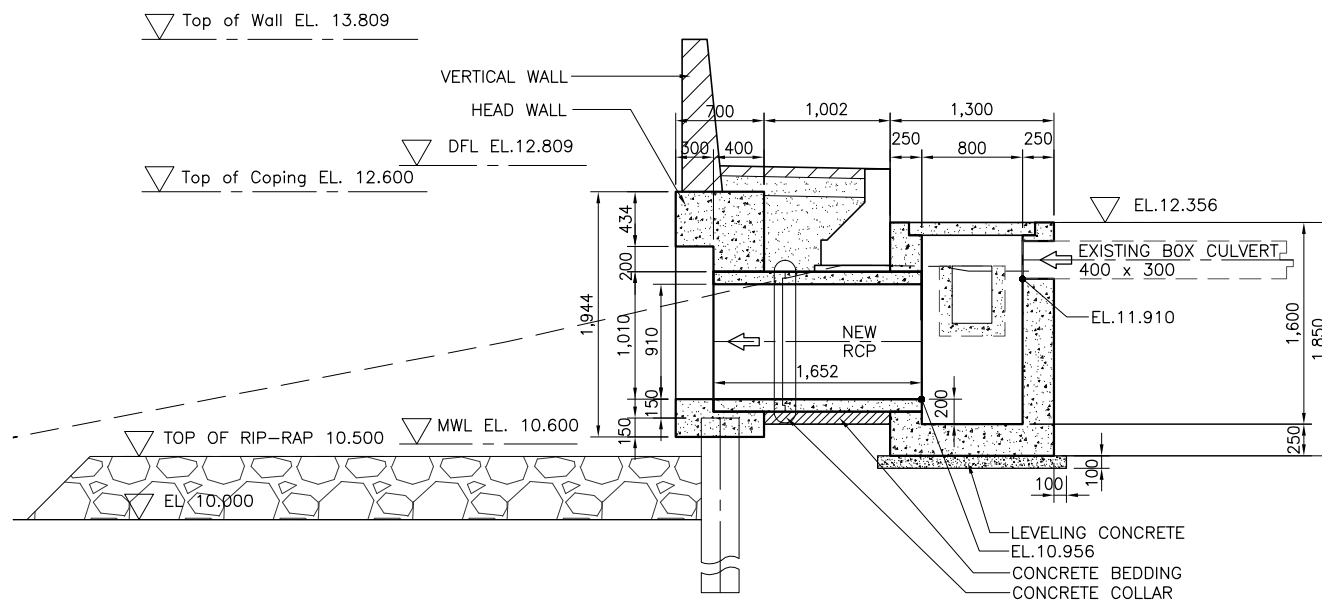
4 PLAN
SCALE B



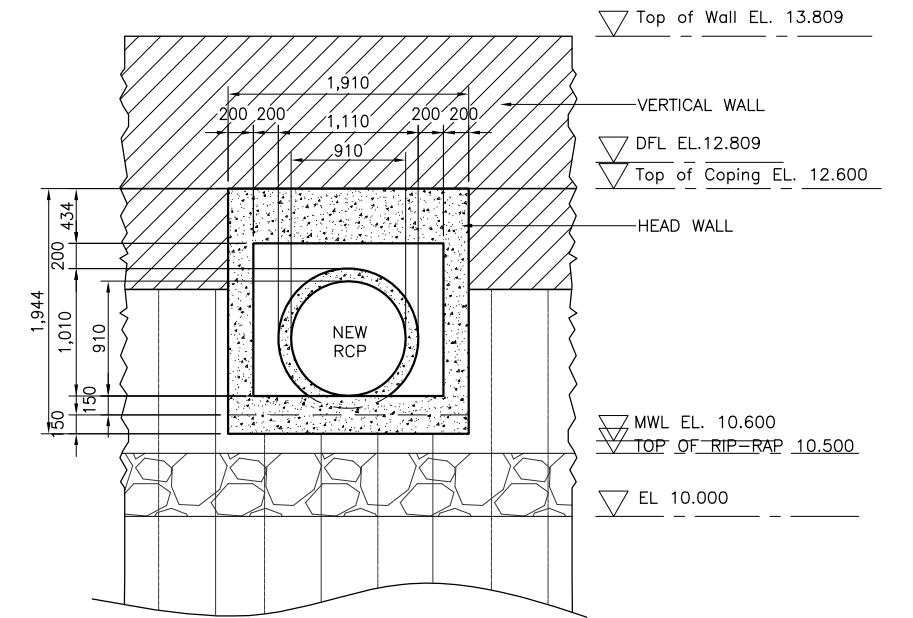
6 SECTION (ML37.4)
SCALE B



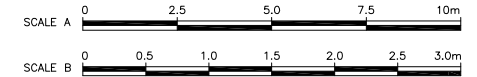
2 PROFILE
SCALE A



5 SECTION
SCALE B



7 ELEVATION
SCALE B



REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



REPUBLIC OF THE PHILIPPINES
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AND HIGHWAYS

REPUBLIC OF THE PHILIPPINES

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

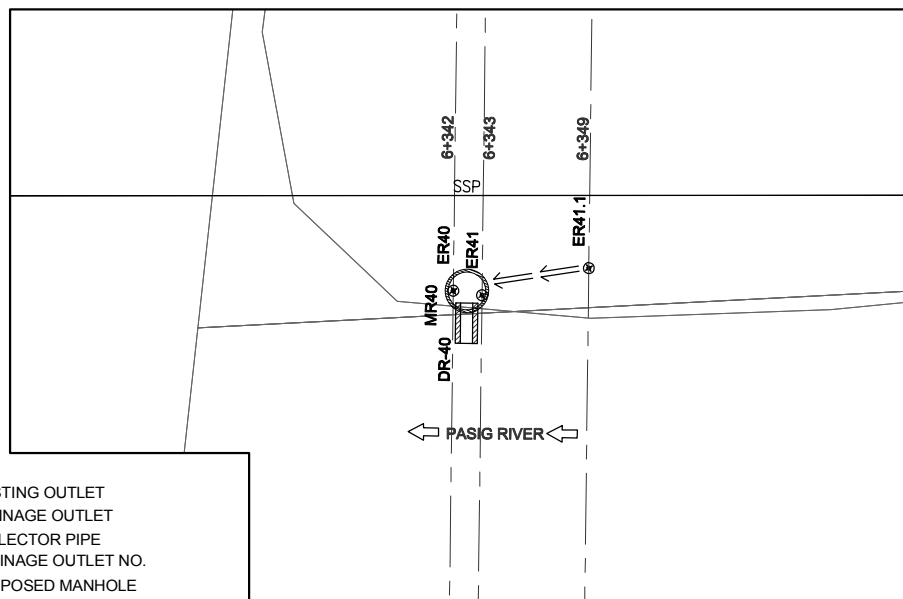
APPROVED BY: RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION
PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS
U-DITCH PROFILE, PARTIAL PLAN OF ER37.6, DETAIL OF DRAINAGE OUTLET- DR37.40, & MANHOLE ML37.40 STA. 5+562 RB

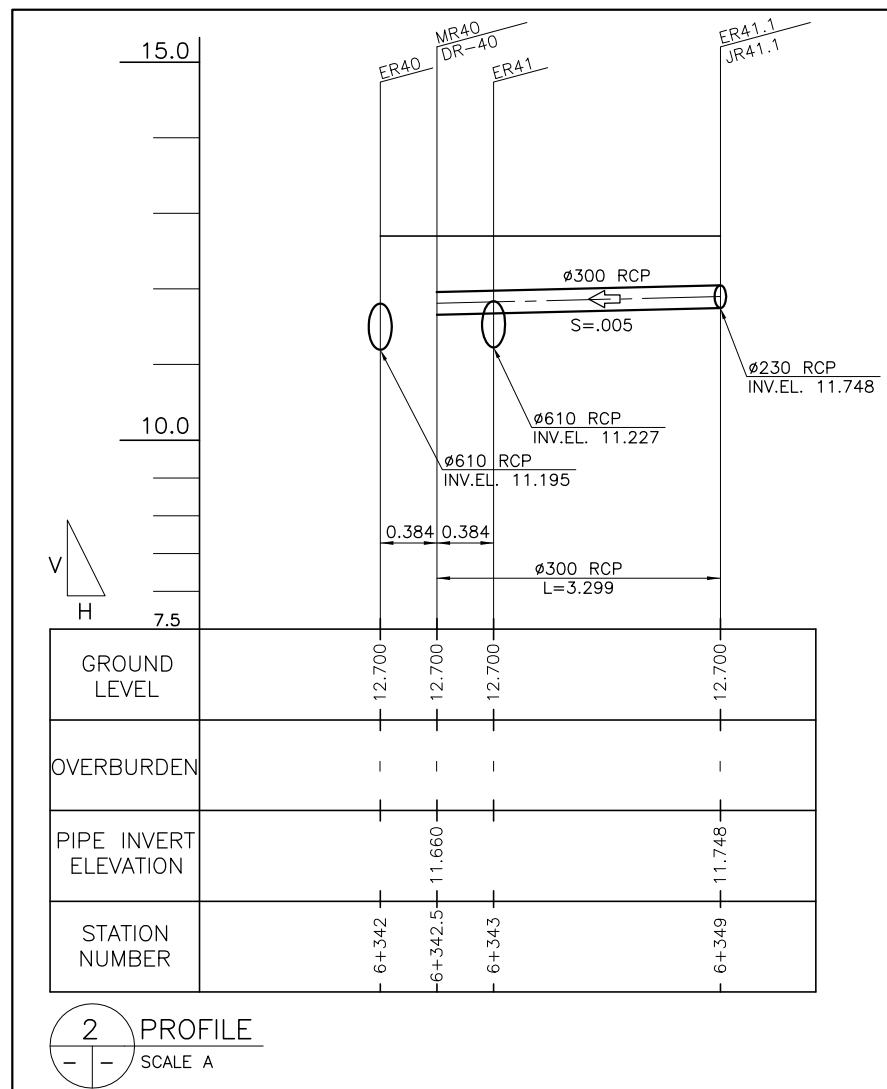




LEGEND:

- ER 40 ⊕ EXISTING OUTLET
- DRAINAGE OUTLET
- COLLECTOR PIPE
- DR 40 DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

1 DRAINAGE PLAN
SCALE A



2 PROFILE
SCALE A



REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

NOTE:
PURSUANT TO SECTION 4 OF ANNEX 'A' OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

DESIGNED BY: KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	CHECKED BY: TOSHIKI KAWAKAMI THE CHECKER	SUBMITTED BY: SHUJI KAKU TEAM LEADER
--	--	--



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AND HIGHWAYS

REPUBLIC OF THE PHILIPPINES

REVIEWED BY: PERFECTO L. ZAPLAN, JR. CHIEF, HYDRAULIC DIVISION, BOD	RECOMMENDING APPROVAL: PATRICK B. GATAN PROJECT DIRECTOR PMO - MFCP	GILBERTO S. REYES DIRECTOR BOD	SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES	APPROVED BY: SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY ROGELIO L. SINGSON SECRETARY
---	--	--------------------------------------	--	--

PROJECT & LOCATION

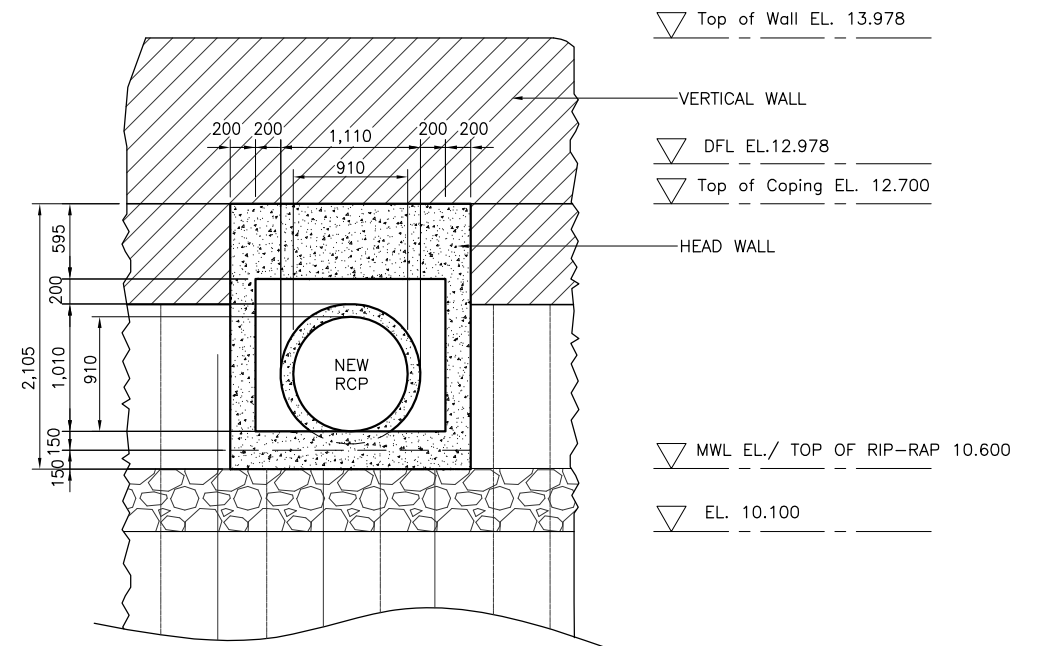
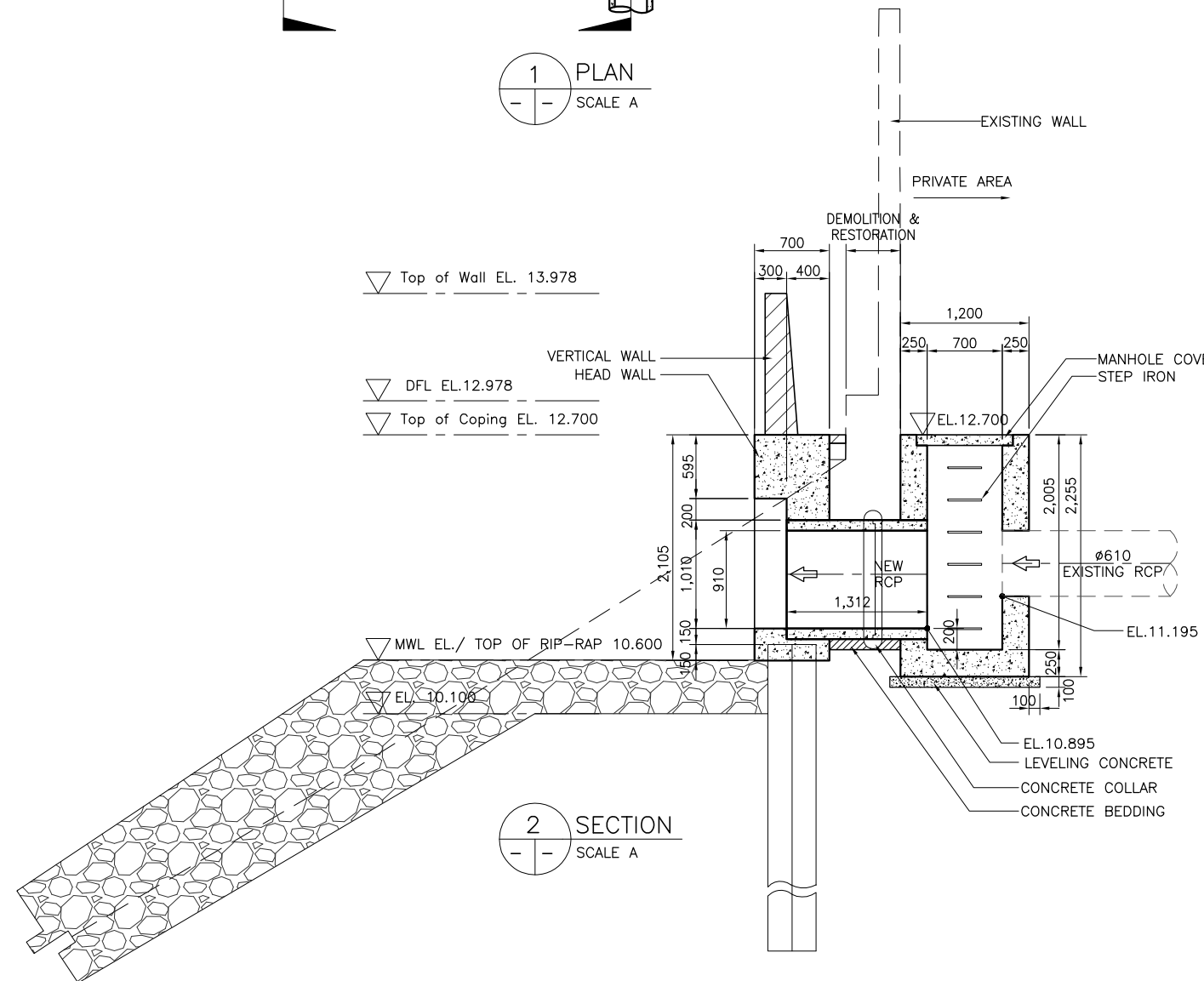
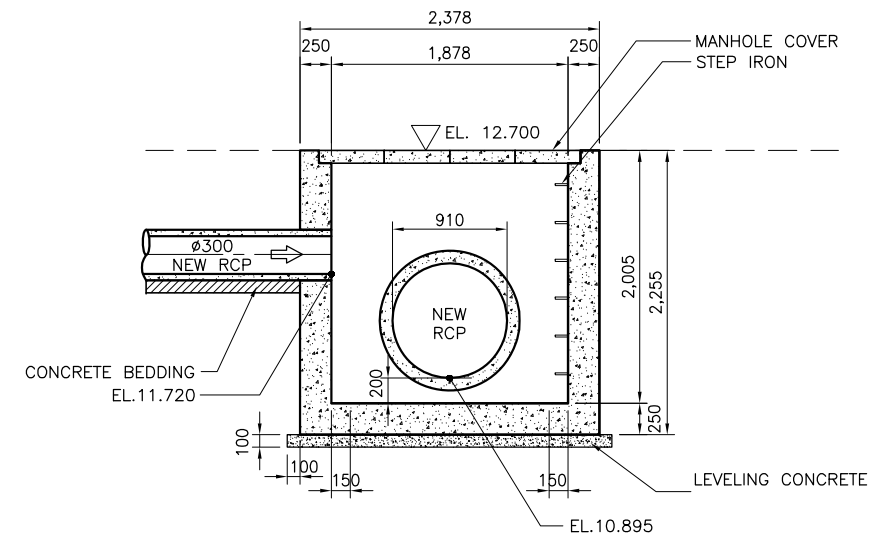
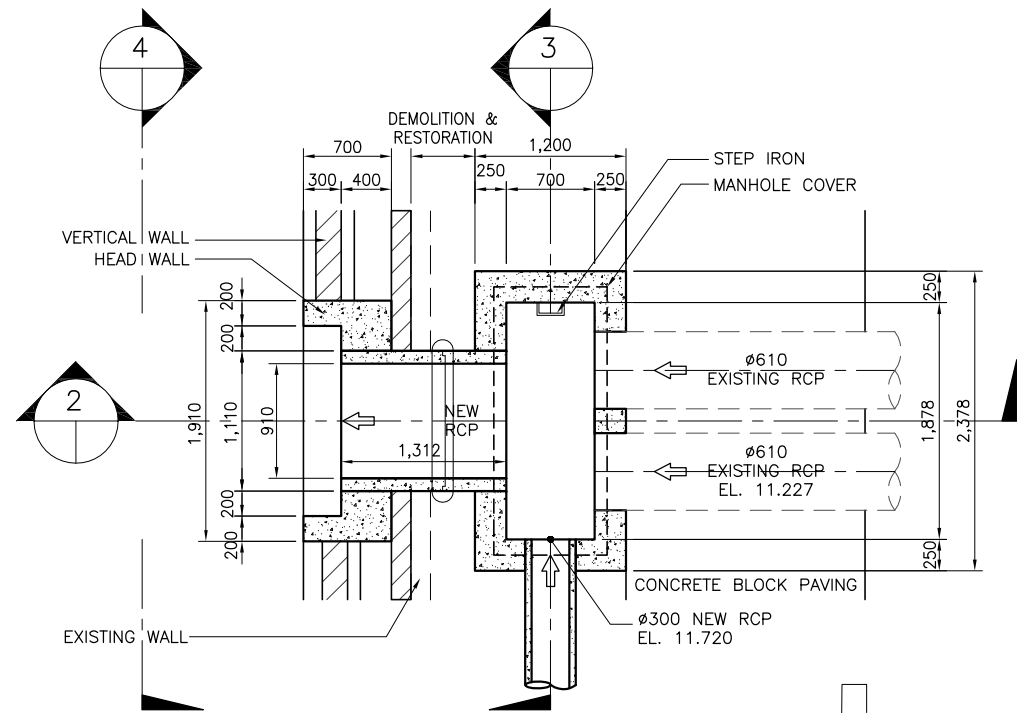
PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS

PLAN & PROFILE OF COLLECTOR PIPE

SHEET NO.





REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



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REPUBLIC OF THE PHILIPPINES

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY

RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

APPROVED BY: ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION

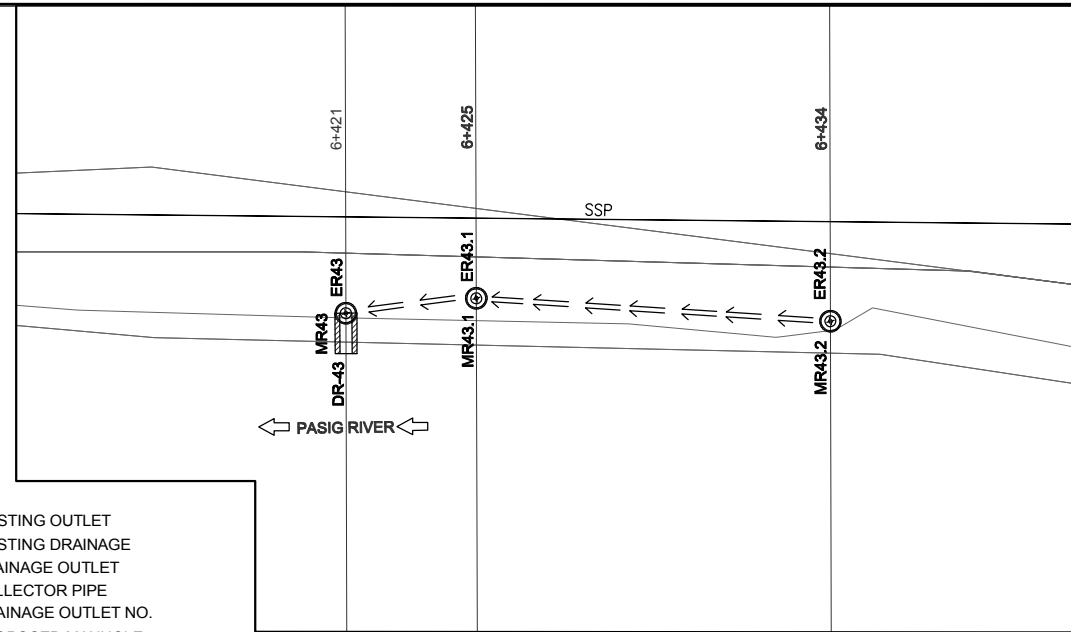
PASIG-MARIKINA
RIVER CHANNEL
IMPROVEMENT
PROJECT (PHASE III),
METRO MANILA

SHEET CONTENTS

DETAIL OF DRAINAGE
OUTLET- DR-40,
MANHOLE MR40
STA. 6+342 RB

SHEET NO.

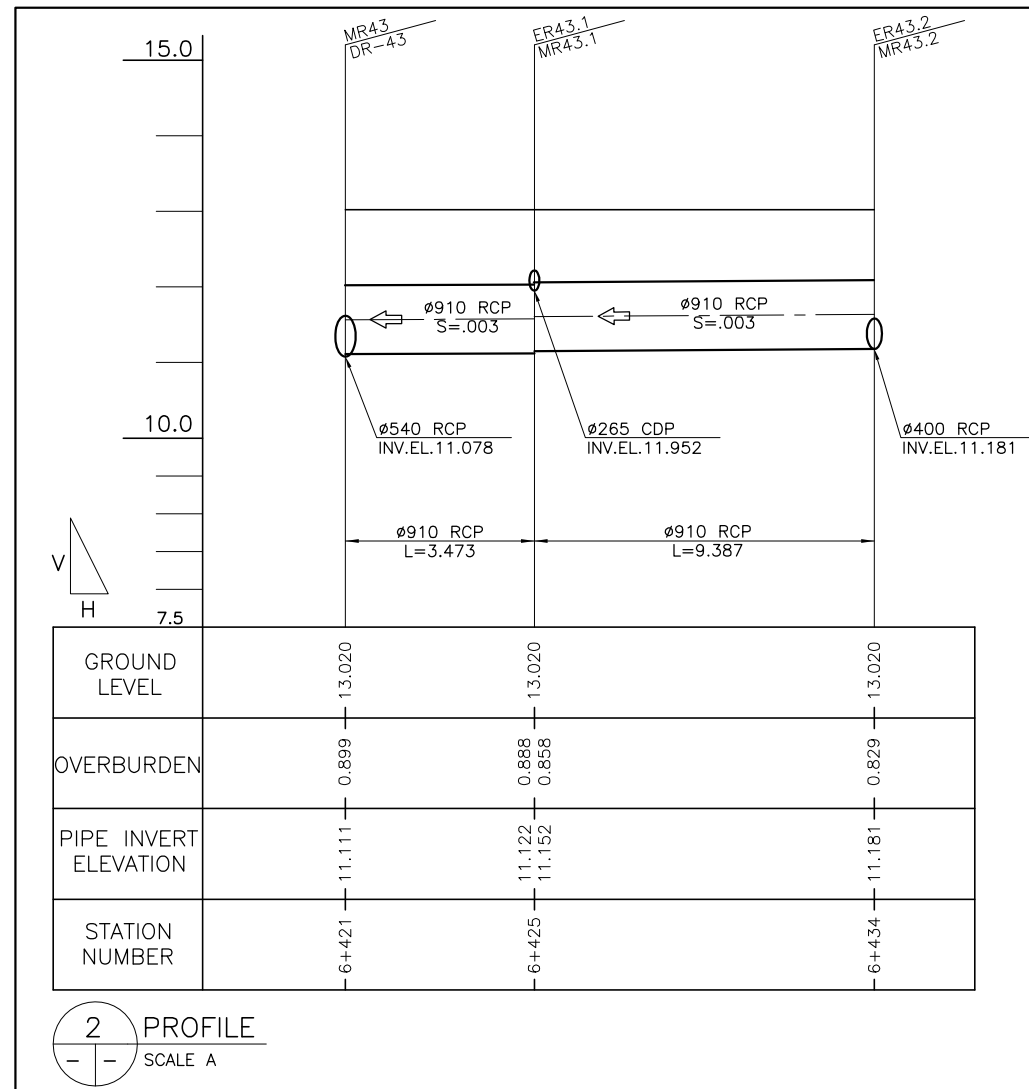




LEGEND:

- ER43 ⊙ EXISTING OUTLET
- ← EXISTING DRAINAGE
- ▨ DRAINAGE OUTLET
- COLLECTOR PIPE
- DR 43 DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

1 DRAINAGE PLAN
SCALE A



2 PROFILE
SCALE A



REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

NOTE:
PURSUANT TO SECTION 4 OF ANNEX 'A' OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

DESIGNED BY:	CHECKED BY:	SUBMITTED BY:
KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	TOSHIKI KAWAKAMI THE CHECKER	SHUJI KAKU TEAM LEADER



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS

REPUBLIC OF THE PHILIPPINES

REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED BY:
PREFECTO L. ZAPLAN, JR. CHIEF, HYDRAULIC DIVISION, BOD	PATRICK B. GATAN PROJECT DIRECTOR PMO - MFCP	GILBERTO S. REYES DIRECTOR BOD
SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY	SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY	SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY
RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES	ROGELIO L. SINGSON SECRETARY	

PROJECT & LOCATION

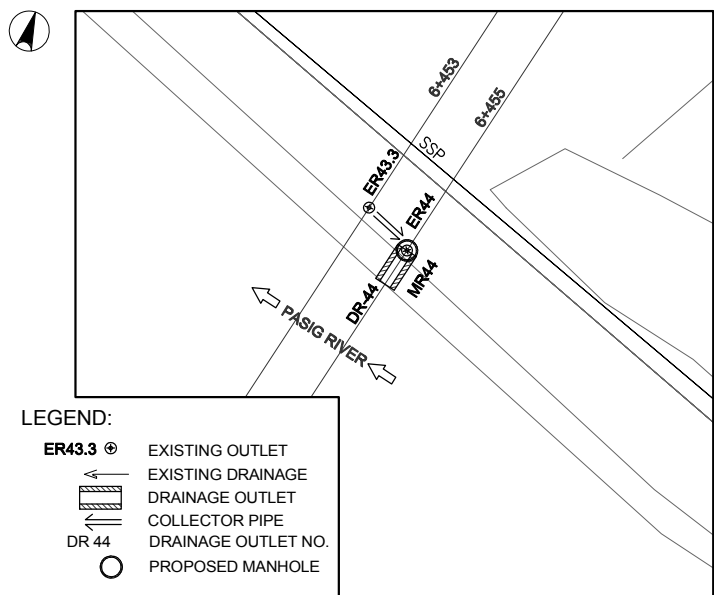
PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS

PLAN & PROFILE OF COLLECTOR PIPE

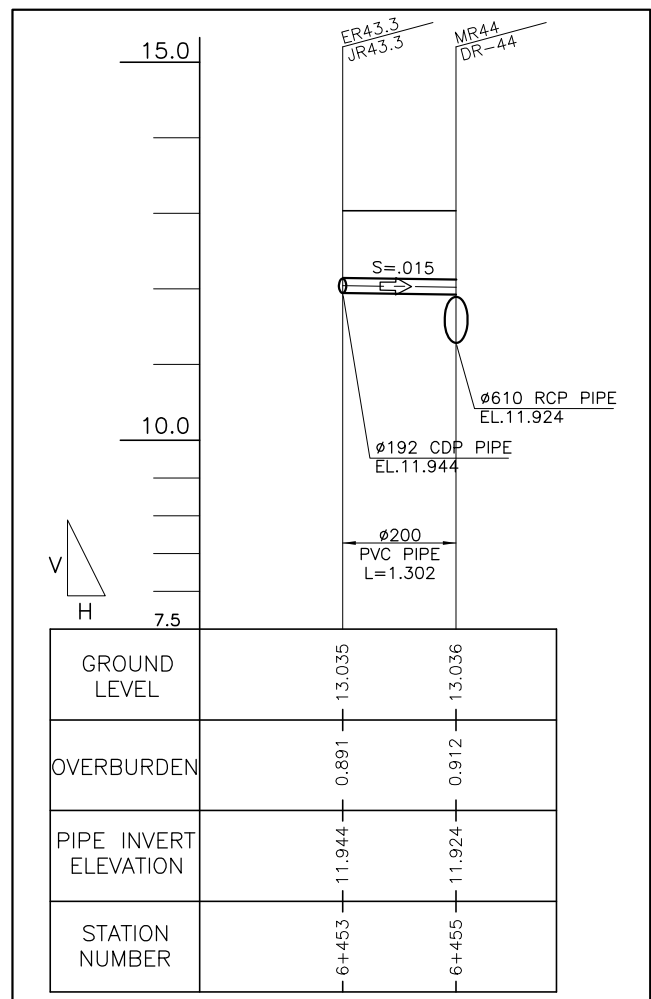
SHEET NO.

LP-DR-DO43/P

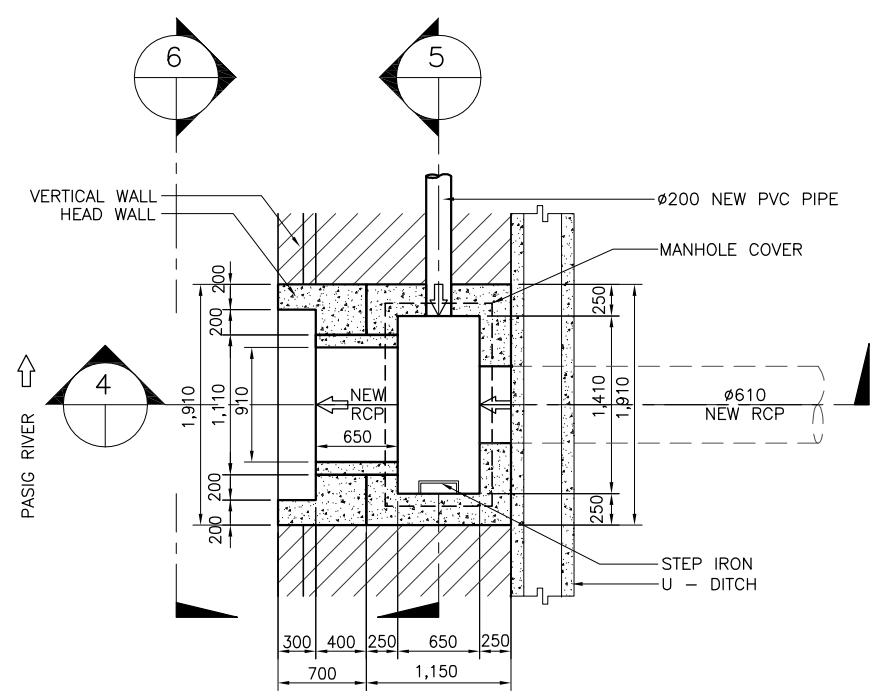


- LEGEND:**
- ER43.3 ⊕ EXISTING OUTLET
 - ← EXISTING DRAINAGE
 - DRAINAGE OUTLET
 - ▬ COLLECTOR PIPE
 - DR 44 DRAINAGE OUTLET NO.
 - PROPOSED MANHOLE

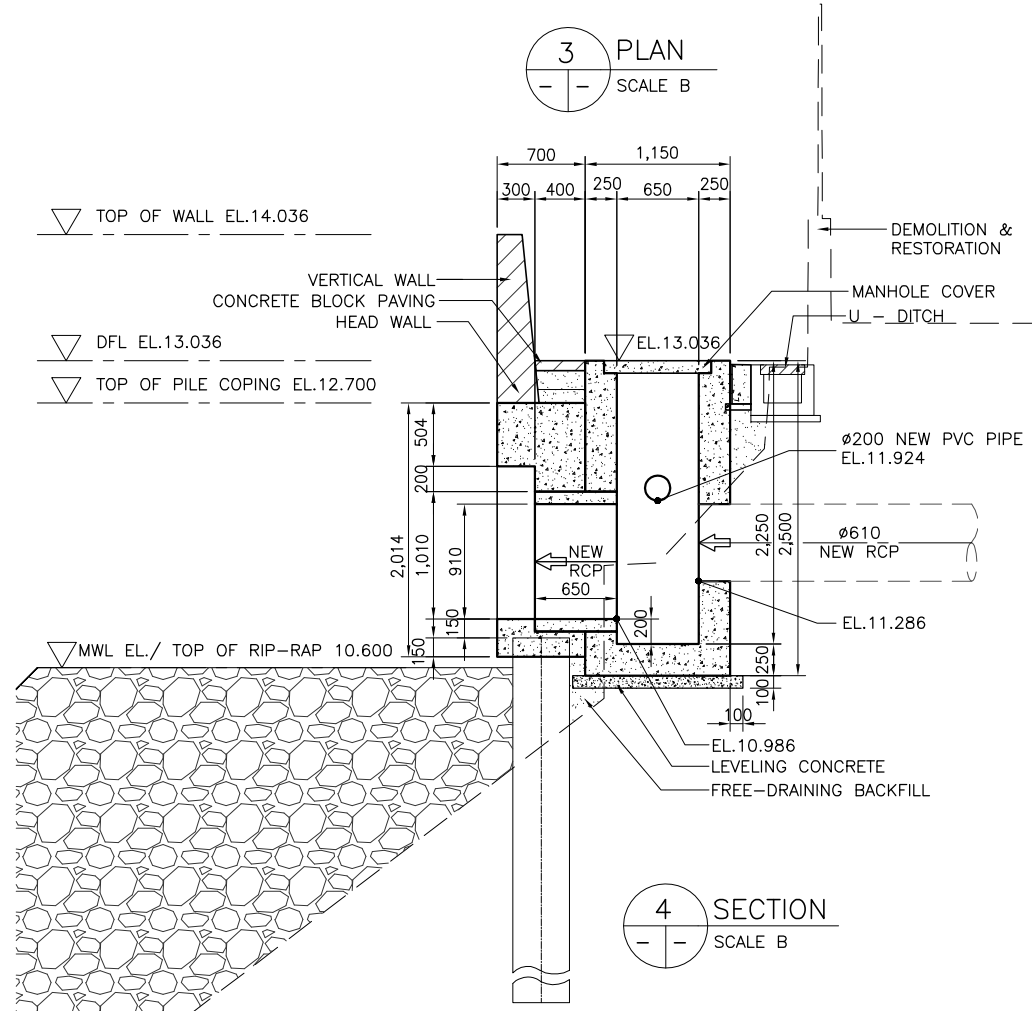
1 DRAINAGE PLAN
SCALE A



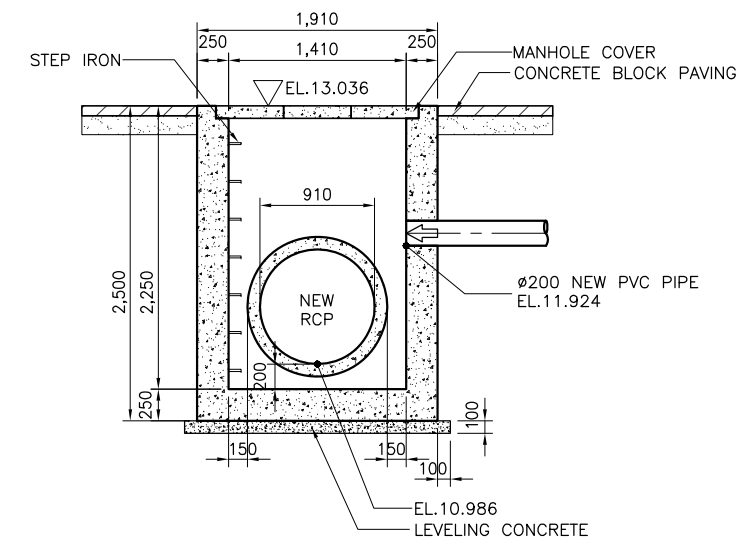
2 PROFILE
SCALE A



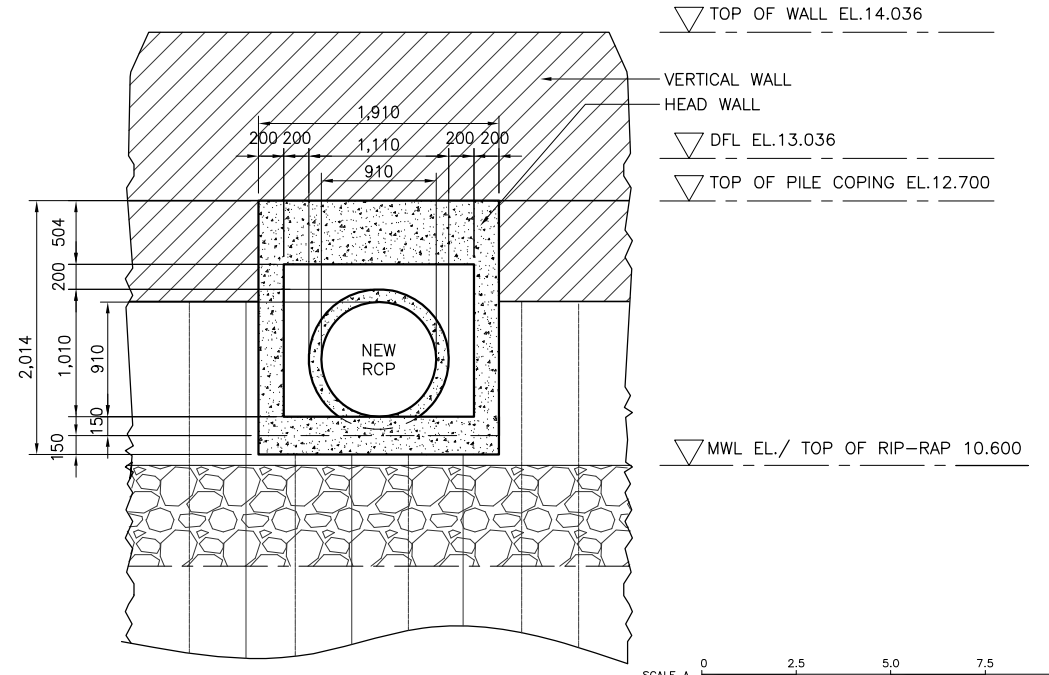
3 PLAN
SCALE B



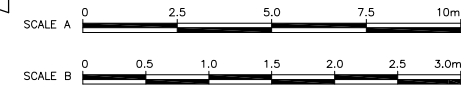
4 SECTION
SCALE B



5 SECTION(MR44)
SCALE B



6 ELEVATION
SCALE B



REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

NOTE:
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SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES

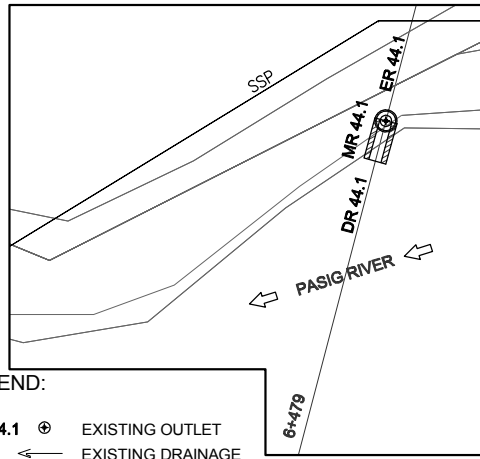


DESIGNED BY:	CHECKED BY:	SUBMITTED BY:
KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	TOSHIKI KAWAKAMI THE CHECKER	SHUJI KAKU TEAM LEADER



REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED BY:
PERFECTO L. ZAPLAN, JR. CHIEF, HYDRAULIC DIVISION, BOD	PATRICK B. GATAN PROJECT DIRECTOR PMO - MFCP	GILBERTO S. REYES DIRECTOR BOD
SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY	SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY	RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES
		ROGELIO L. SINGSON SECRETARY

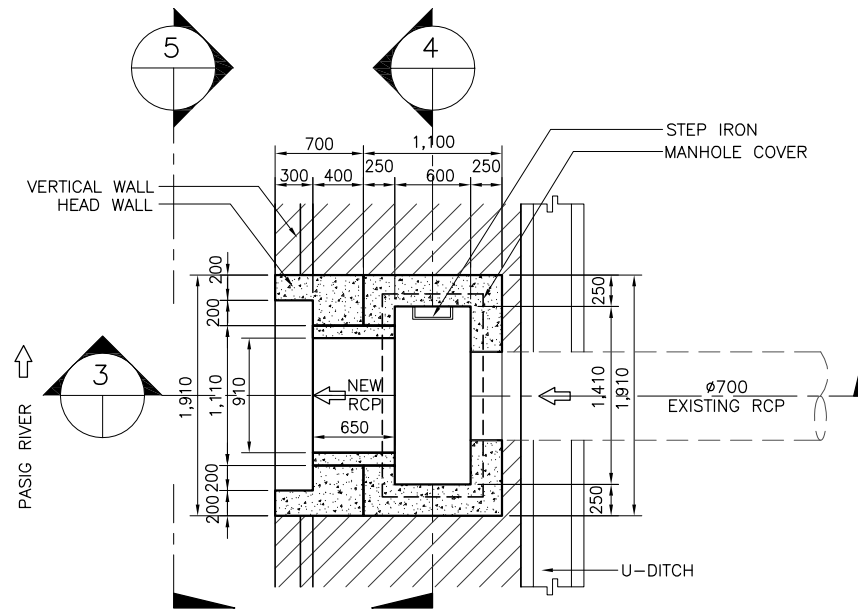
PROJECT & LOCATION	SHEET CONTENTS	SHEET NO.
PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	DETAIL OF DRAINAGE OUTLET- DR-44, MANHOLE MR44 STA. 6+455 RB	LP-DR DO 44



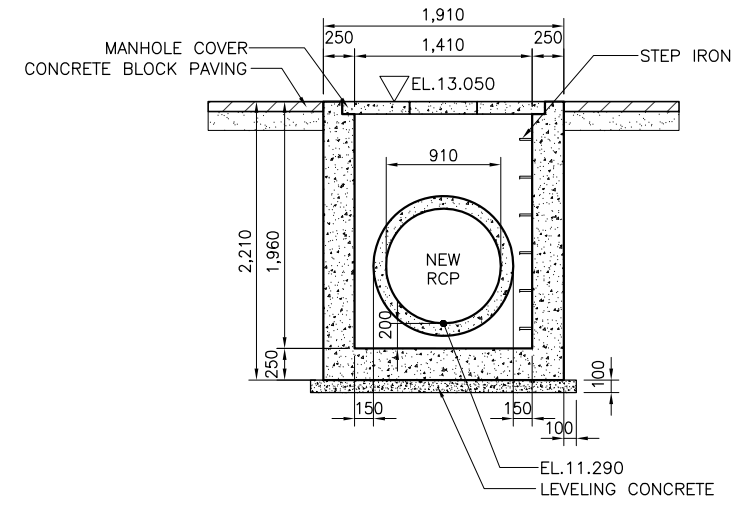
LEGEND:

- ER44.1 ⊕ EXISTING OUTLET
- ← EXISTING DRAINAGE
- ▨ DRAINAGE OUTLET
- ▬ COLLECTOR PIPE
- DR44.1 DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

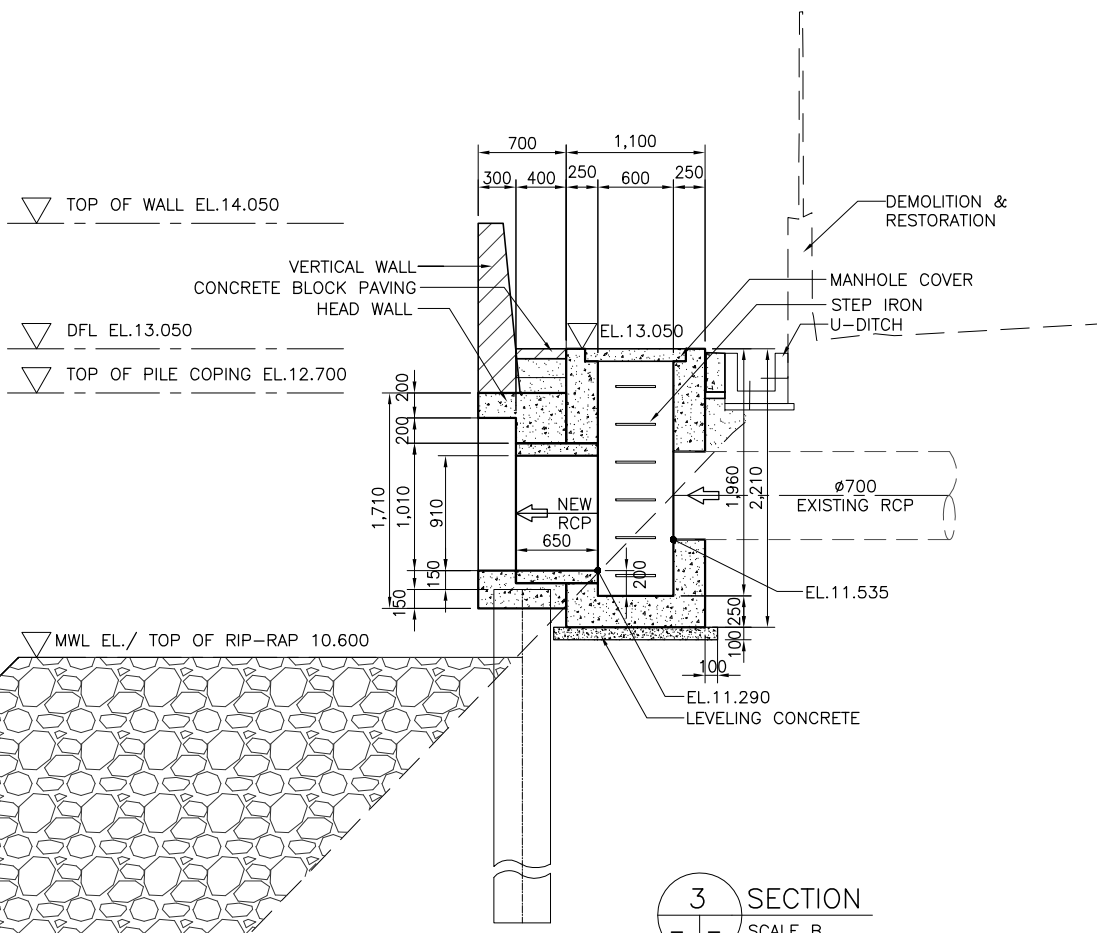
1 DRAINAGE PLAN
SCALE A



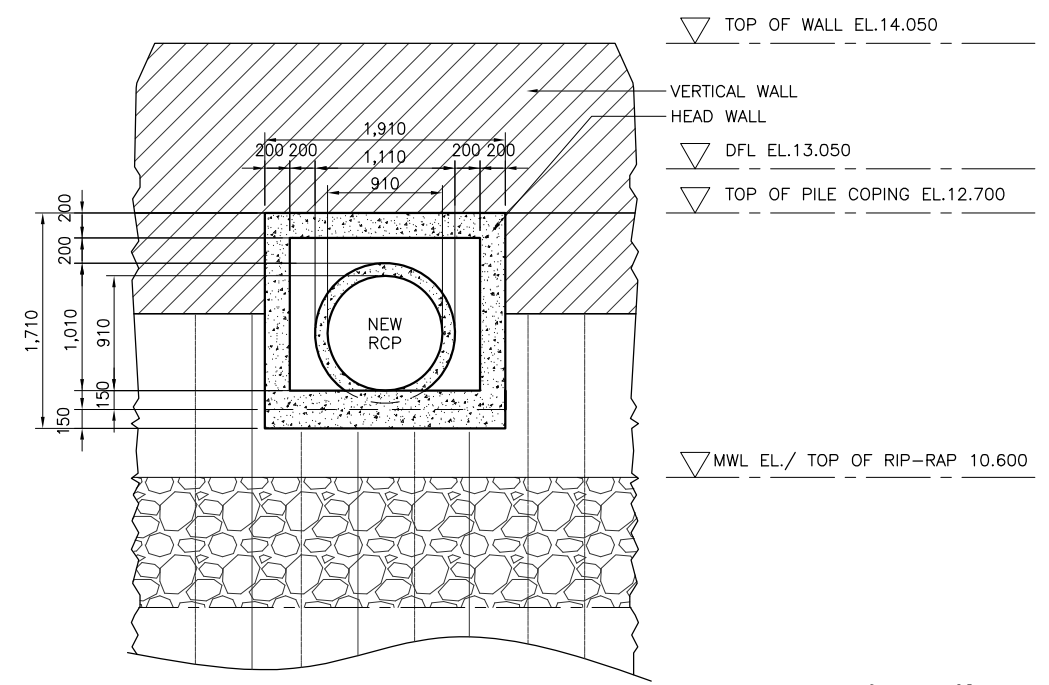
2 PLAN
SCALE B



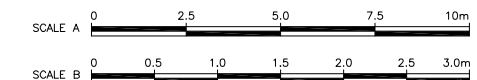
4 SECTION(MR44.1)
SCALE B



3 SECTION
SCALE B



5 ELEVATION
SCALE B



NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



REPUBLIC OF THE PHILIPPINES
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REPUBLIC OF THE PHILIPPINES

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY

RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

APPROVED BY: ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION

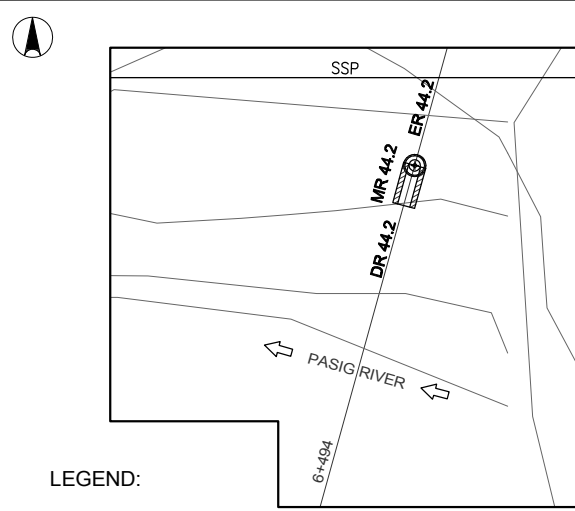
PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS

DETAIL OF DRAINAGE OUTLET- DR 44.1, MANHOLE MR44.1 STA. 6+479 RB

SHEET NO.

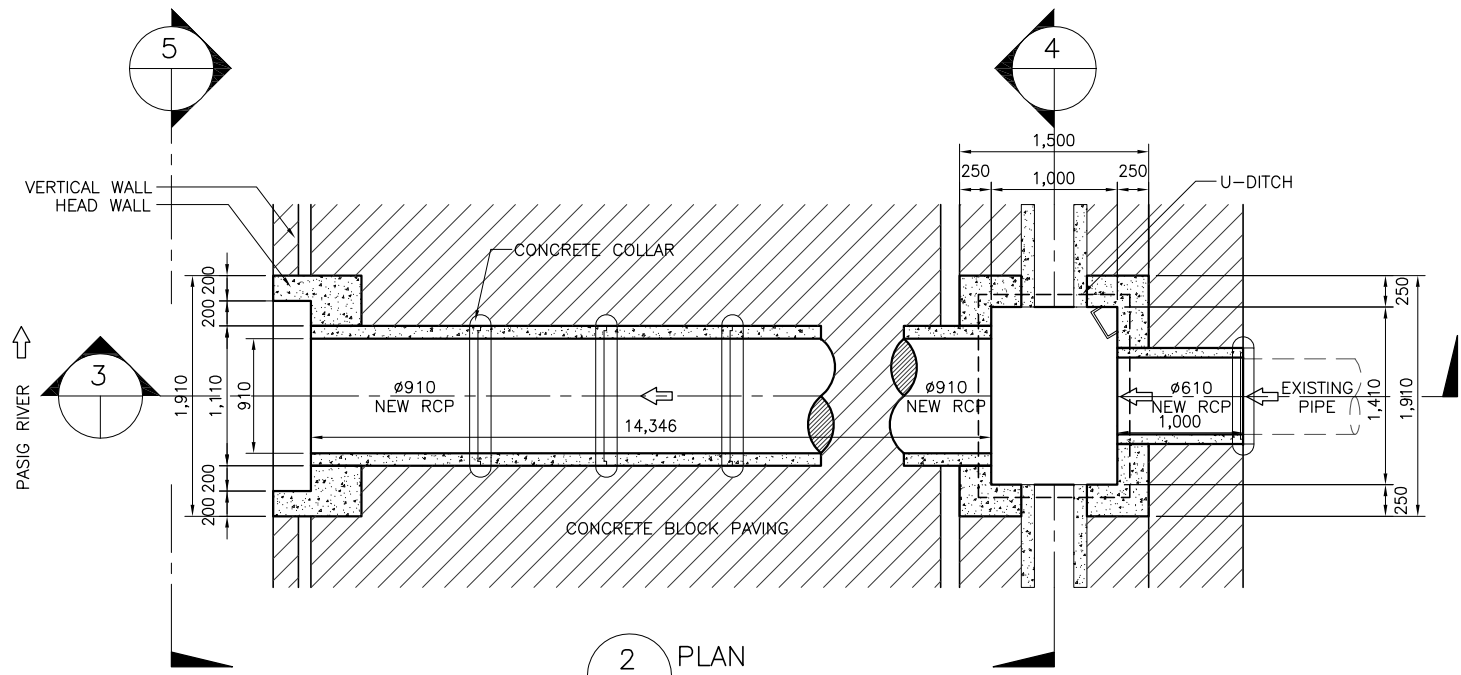




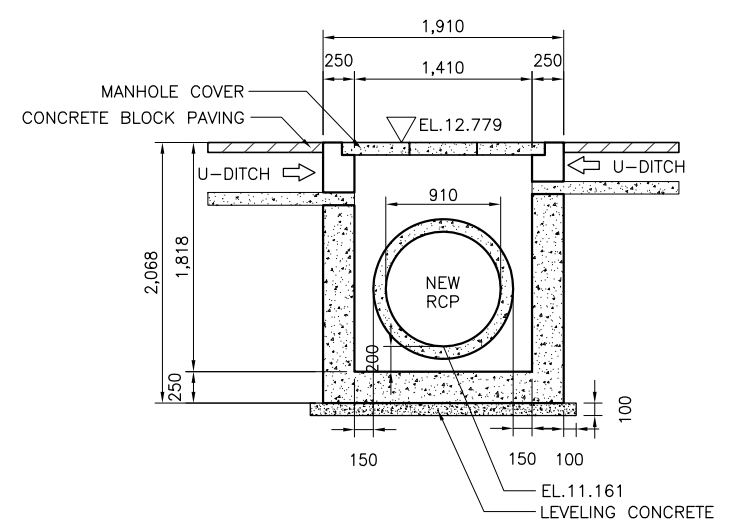
LEGEND:

- ER44.2 ⊕ EXISTING OUTLET
- ← EXISTING DRAINAGE
- ▨ DRAINAGE OUTLET
- ▨ COLLECTOR PIPE
- DR44.2 DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

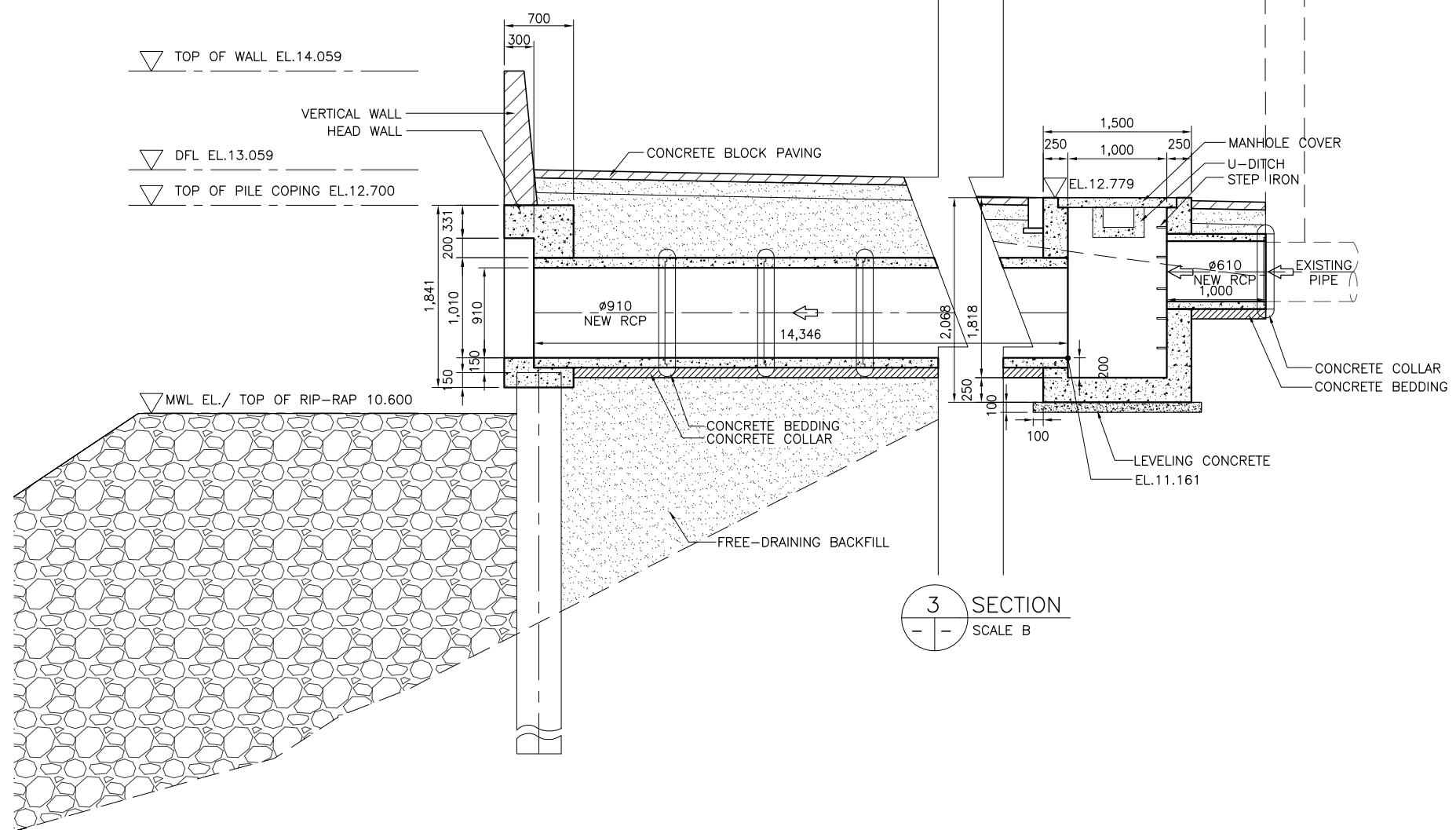
1 DRAINAGE PLAN
SCALE A



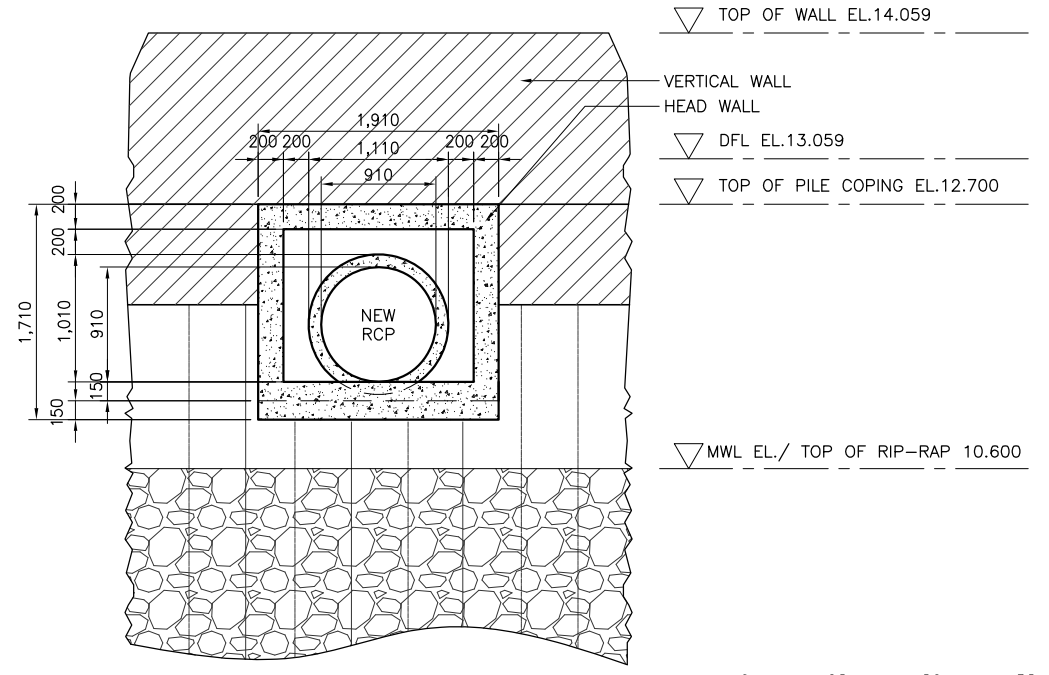
2 PLAN
SCALE B



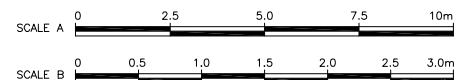
4 SECTION (MR 44.2)
SCALE B



3 SECTION
SCALE B



5 ELEVATION
SCALE B



NOTE:
PURSUANT TO SECTION 4 OF ANNEX 'A' OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

SHUJI KAKU
TEAM LEADER

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES

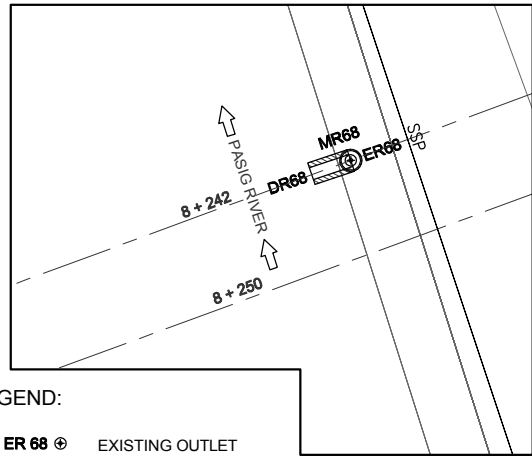


DESIGNED BY: KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	CHECKED BY: TOSHIKI KAWAKAMI THE CHECKER	SUBMITTED BY: SHUJI KAKU TEAM LEADER
--	--	--



REVIEWED BY: PERFECTO L. ZAPLAN, JR. CHIEF, HYDRAULIC DIVISION, BOD	RECOMMENDING APPROVAL: PATRICK B. GATAN PROJECT DIRECTOR PMO - MFCP	APPROVED BY: GILBERTO S. REYES DIRECTOR BOD	SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES	SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY ROGELIO L. SINGSON SECRETARY
---	--	--	--	--

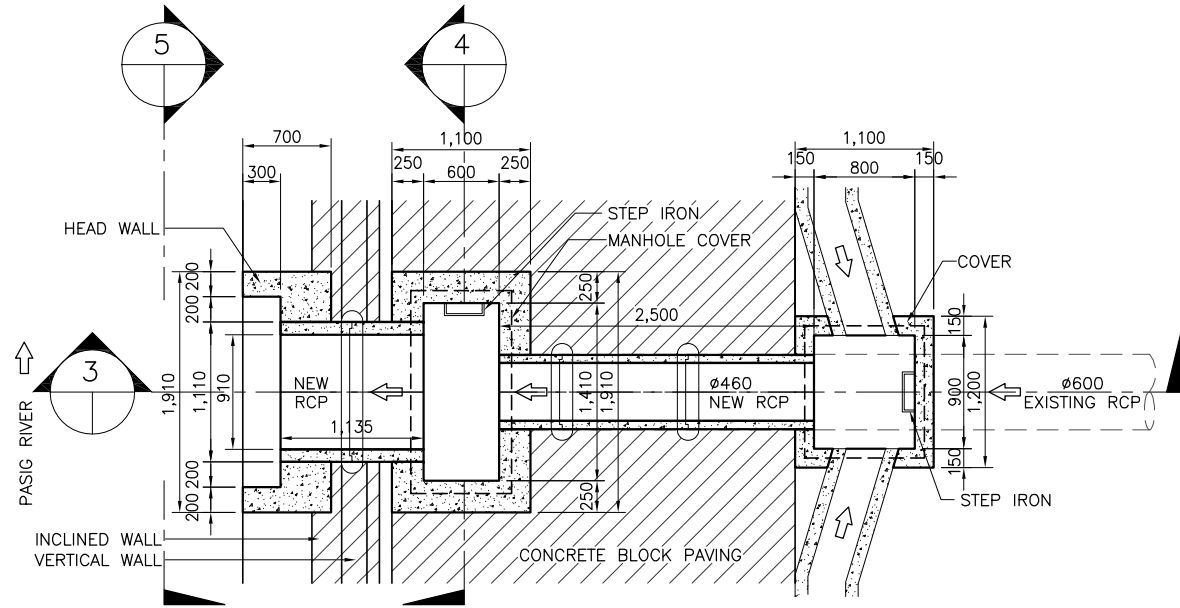
PROJECT & LOCATION PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	SHEET CONTENTS DETAIL OF DRAINAGE OUTLET- DR 44.2, MANHOLE MR44.2 STA. 6+494 RB	SHEET NO. LP-DR/DO/44.2
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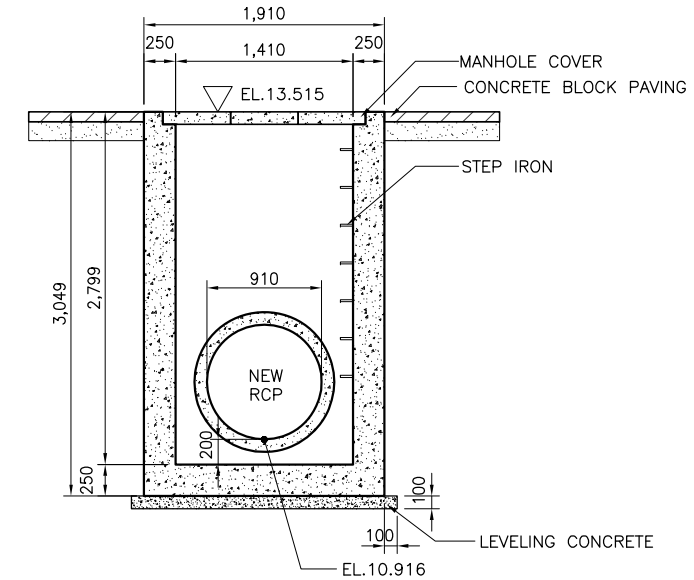
LEGEND:

- ER 68 ⊕ EXISTING OUTLET
- ← EXISTING DRAINAGE
- ▨ DRAINAGE OUTLET
- ▬ COLLECTOR PIPE
- DR 68 DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

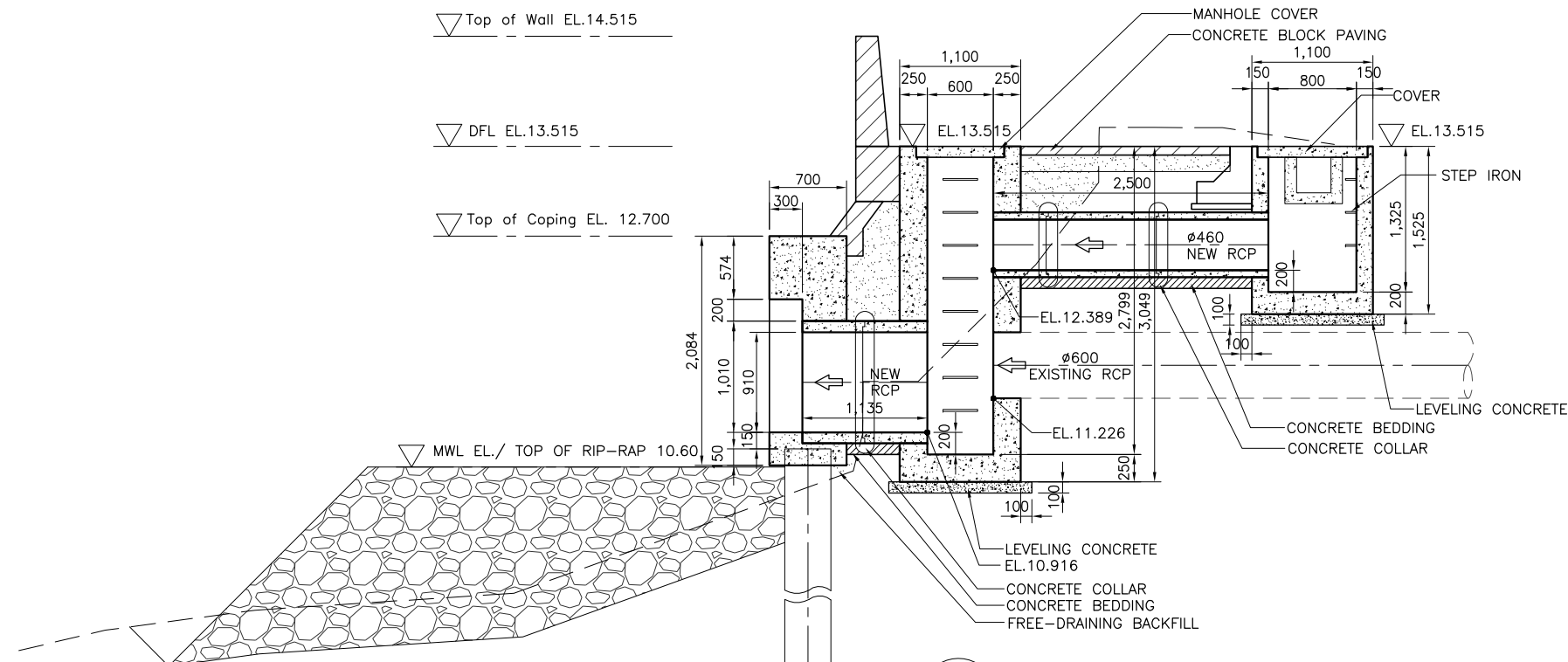
1 DRAINAGE PLAN
SCALE A



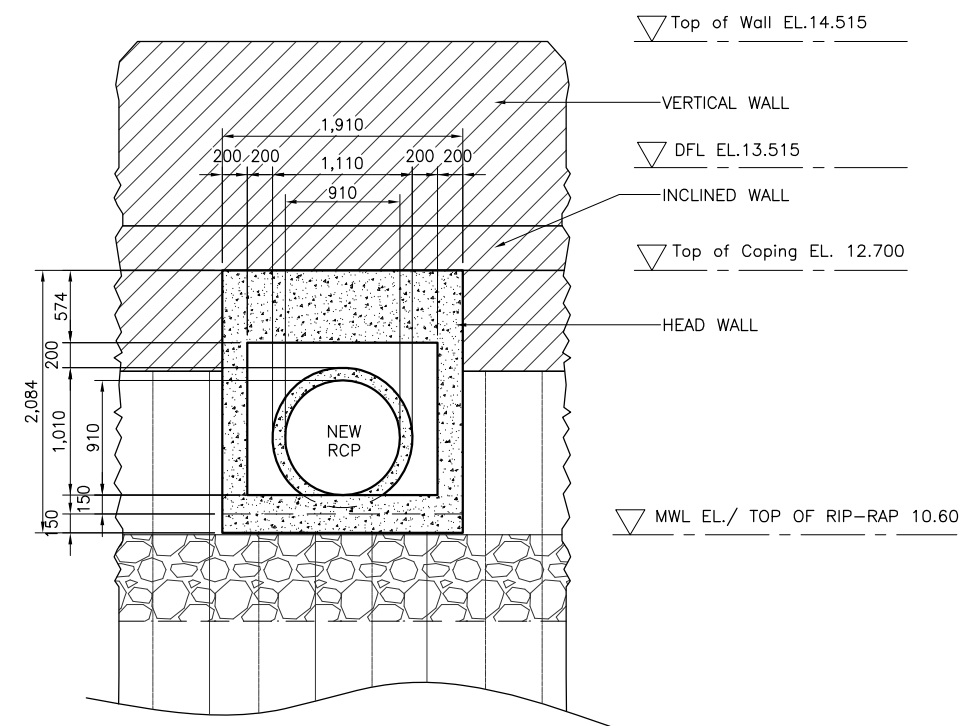
2 PLAN
SCALE B



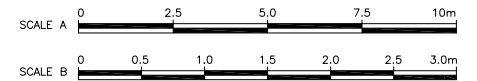
4 SECTION(MR68)
SCALE B



3 SECTION
SCALE B



5 ELEVATION
SCALE B



NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

SHUJI KAKU
TEAM LEADER

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

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

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

APPROVED BY: RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION

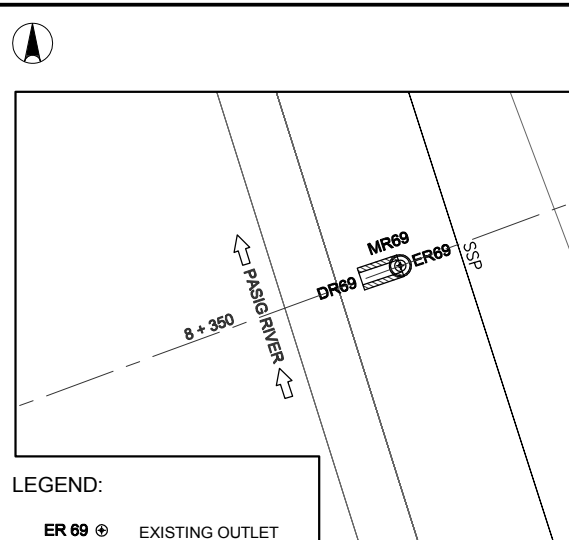
PASIG-MARIKINA
RIVER CHANNEL
IMPROVEMENT
PROJECT (PHASE III),
METRO MANILA

SHEET CONTENTS

DETAIL OF DRAINAGE
OUTLET- DR 68 &
MANHOLE MR68
STA. 8+242 RB

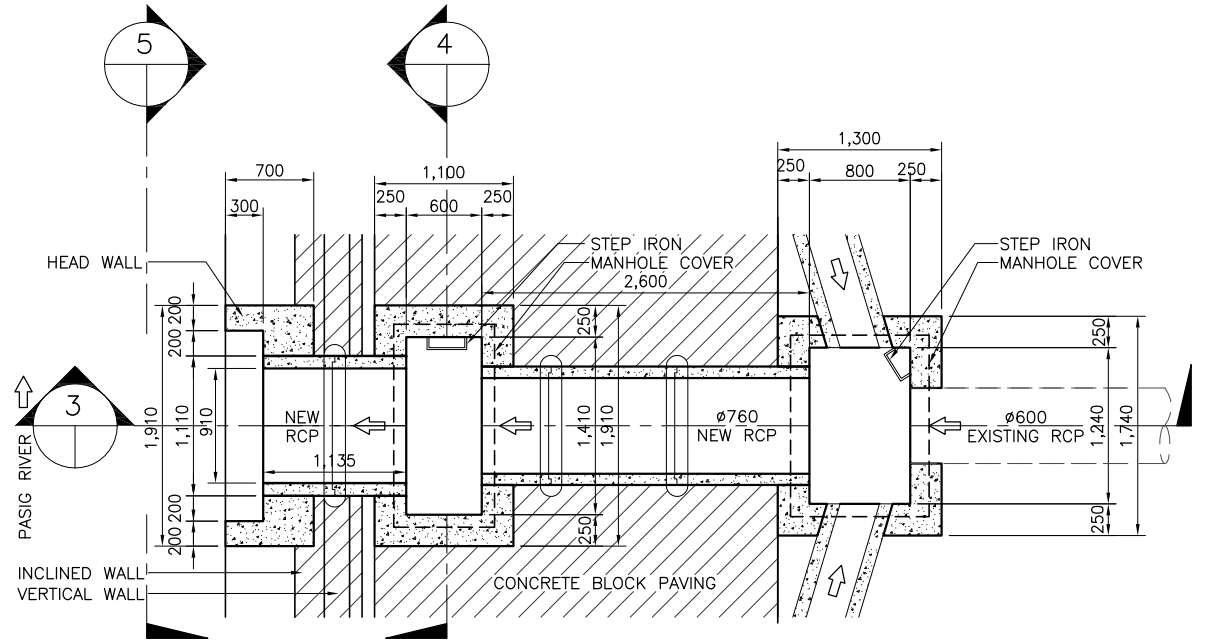
SHEET NO.

LP-DR
DO 68

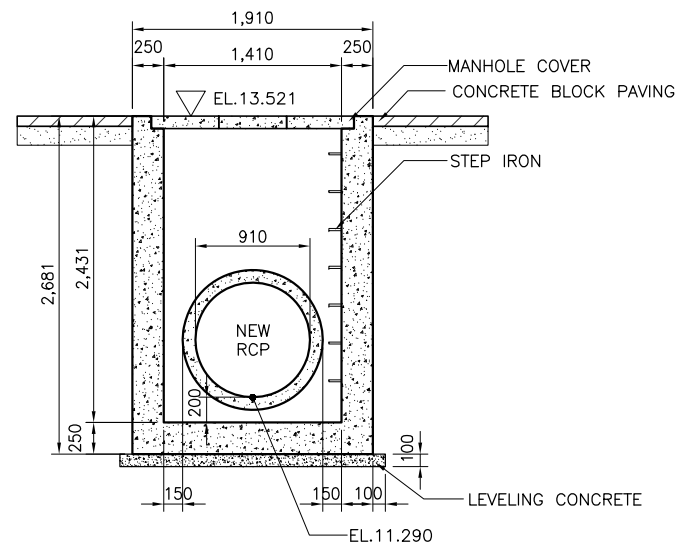


- LEGEND:**
- ER 69 ⊕ EXISTING OUTLET
 - ← EXISTING DRAINAGE
 - ▨ DRAINAGE OUTLET
 - ▭ COLLECTOR PIPE
 - DR 69 ← DRAINAGE OUTLET NO.
 - PROPOSED MANHOLE

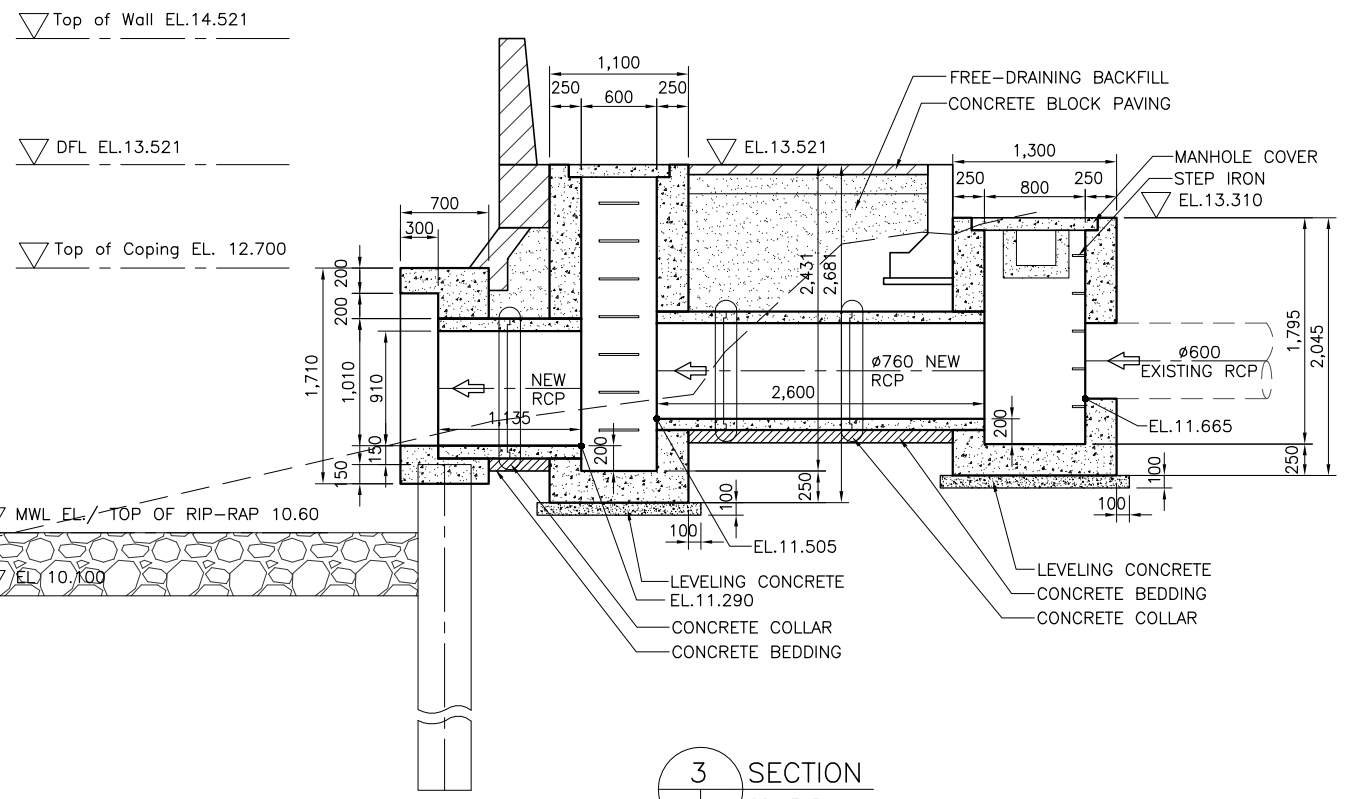
1 DRAINAGE PLAN
SCALE A



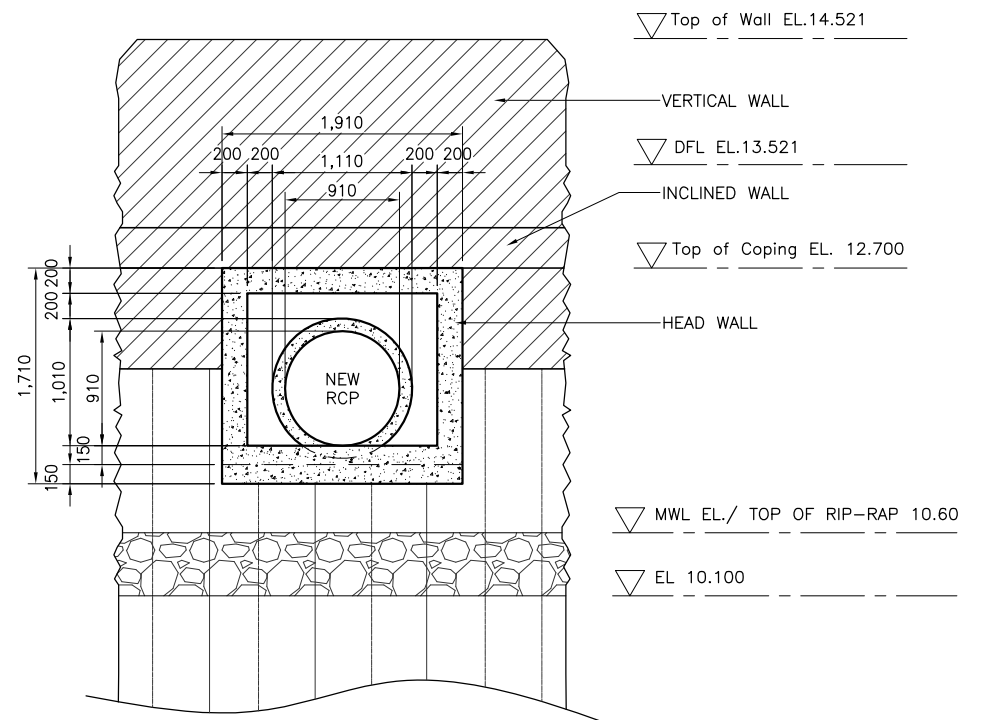
2 PLAN
SCALE B



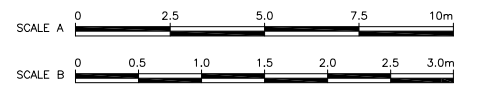
4 SECTION (MR69)
SCALE B



3 SECTION
SCALE B



5 ELEVATION
SCALE B

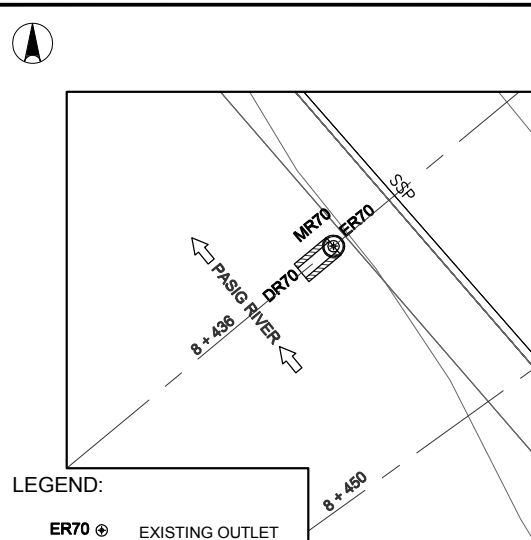


NOTE:
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REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

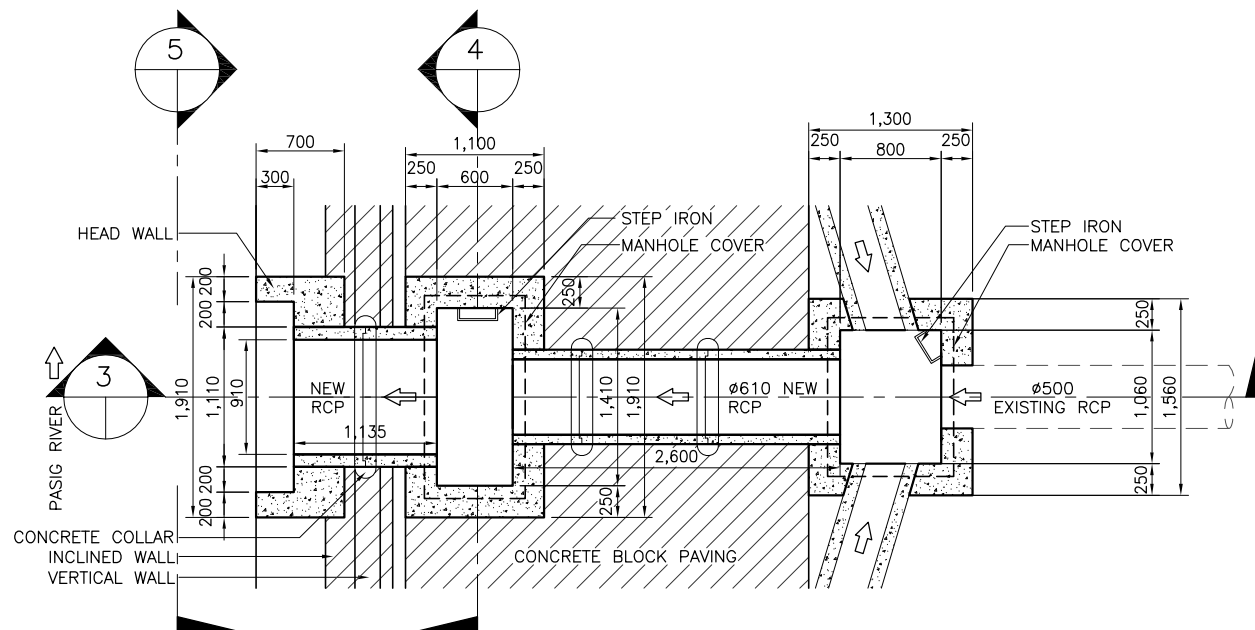
SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN			REPUBLIC OF THE PHILIPPINES				PROJECT & LOCATION		SHEET CONTENTS		SHEET NO.
	DESIGNED BY:	CHECKED BY:	SUBMITTED BY:		REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED BY:	PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	DETAIL OF DRAINAGE OUTLET DR 69 & MANHOLE MR69 STA. 8+350 RB		
	KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	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				SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE UNDERSECRETARY RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES

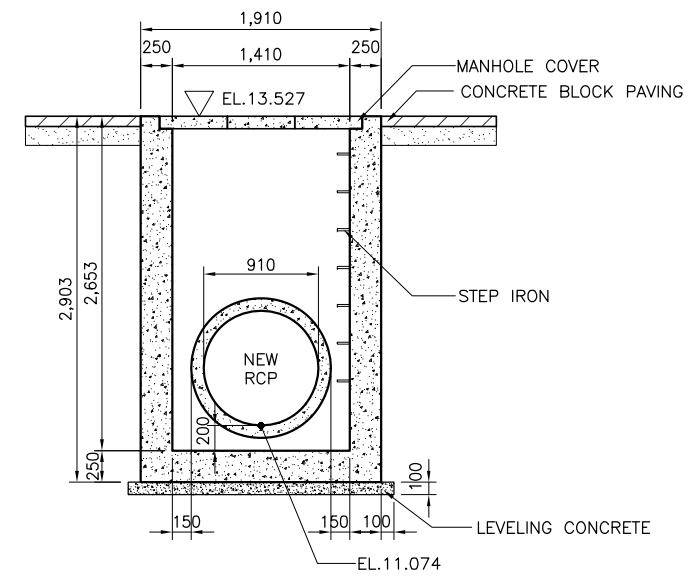


- LEGEND:**
- ER70 ⊕ EXISTING OUTLET
 - ← EXISTING DRAINAGE
 - ▨ DRAINAGE OUTLET
 - ▭ COLLECTOR PIPE
 - DR 70 DRAINAGE OUTLET NO.
 - PROPOSED MANHOLE

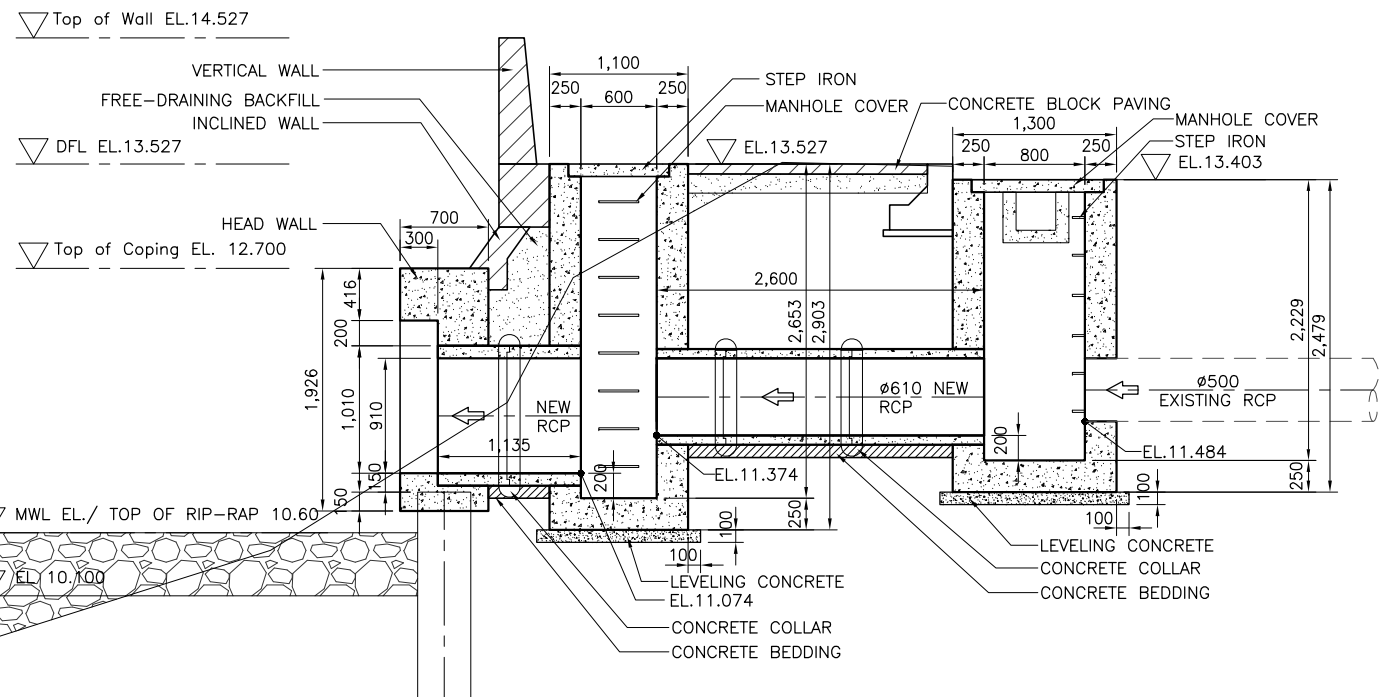
1 DRAINAGE PLAN
SCALE A



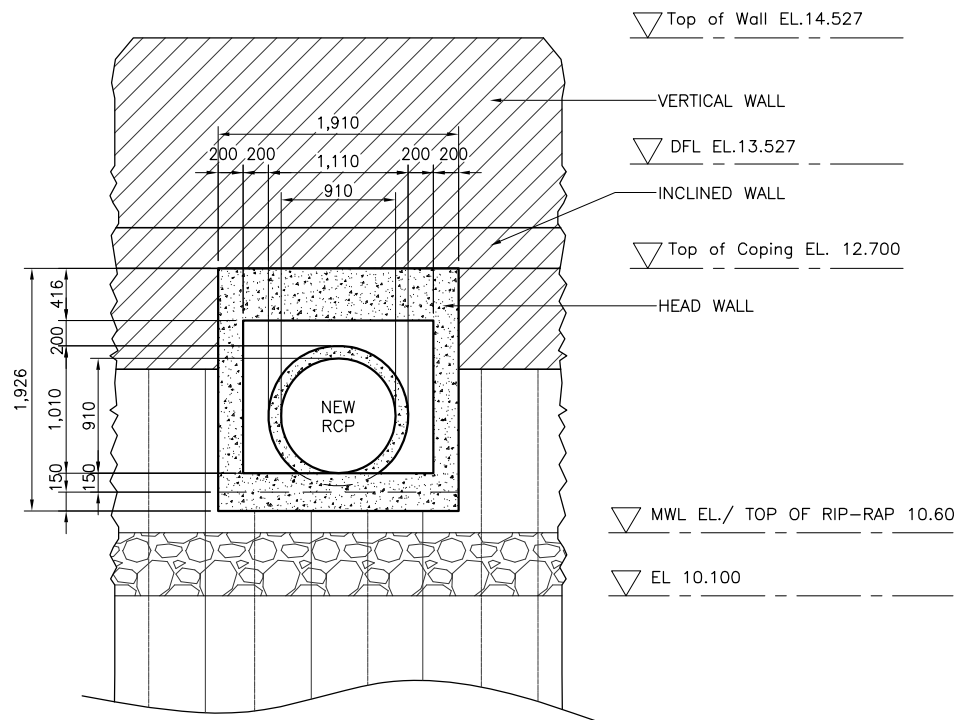
2 PLAN
SCALE B



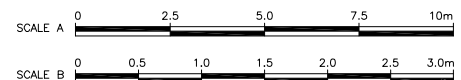
4 SECTION(MR70)
SCALE B



3 SECTION
SCALE B



5 ELEVATION
SCALE B

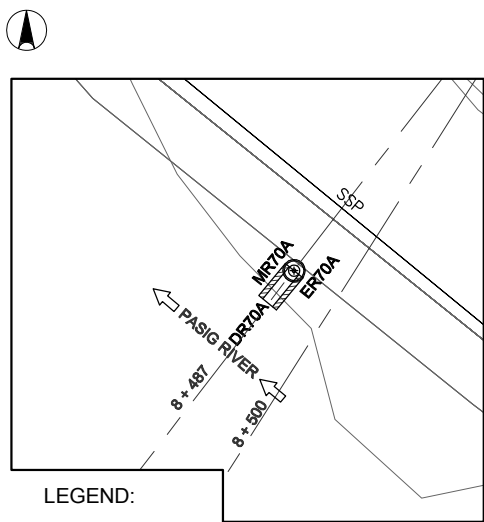


NOTE:
PURSUANT TO SECTION 4 OF ANNEX 'A' OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGN UNDERTAKEN BY CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGN NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

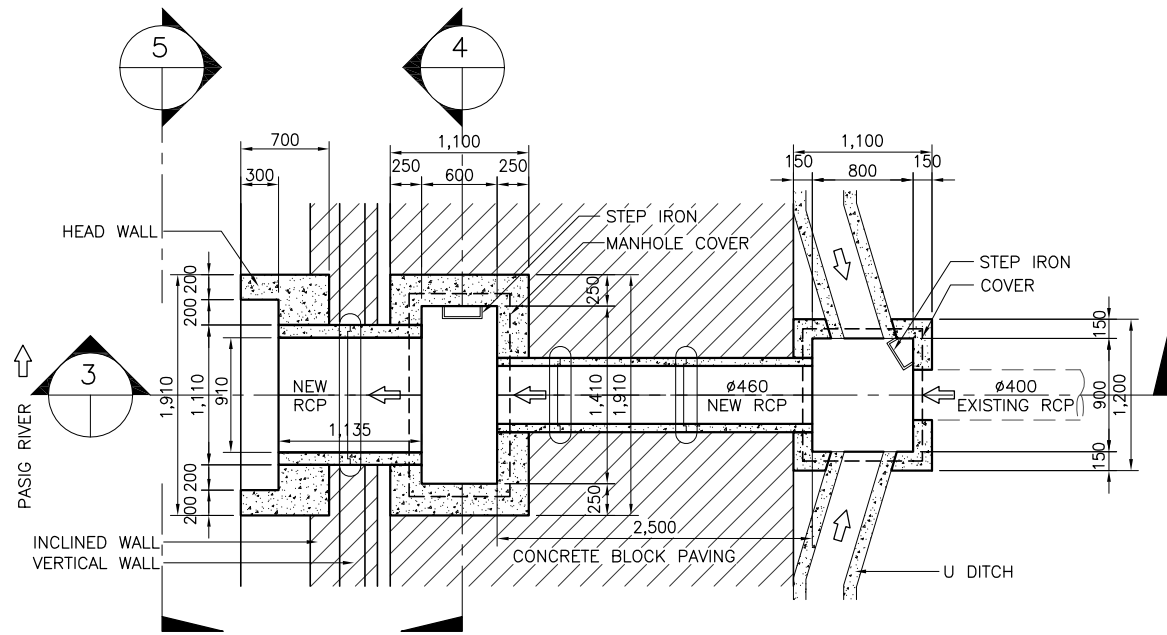
SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN			REPUBLIC OF THE PHILIPPINES				PROJECT & LOCATION	SHEET CONTENTS	SHEET NO.
	DESIGNED BY:	CHECKED BY:	SUBMITTED BY:		REVIEWED BY:	RECOMMENDING APPROVAL:	PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	DETAIL OF DRAINAGE OUTLET DR 70 & MANHOLE MR70 STA. 8+436 RB	
	KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	TOSHIKI KAWAKAMI THE CHECKER	SHUJI KAKU TEAM LEADER		PERFECTO L. ZAPLAN, JR. CHIEF, HYDRAULIC DIVISION, BOD	PATRICK B. GATAN PROJECT DIRECTOR PMO - MFCP			

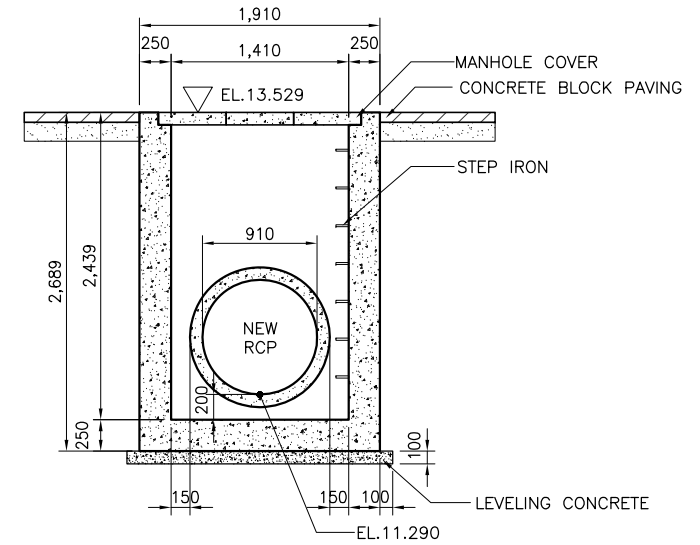


- LEGEND:**
- ER 70A Ⓞ EXISTING OUTLET
 - ← EXISTING DRAINAGE
 - DRAINAGE OUTLET
 - ▨ COLLECTOR PIPE
 - DR 70A DRAINAGE OUTLET NO.
 - PROPOSED MANHOLE

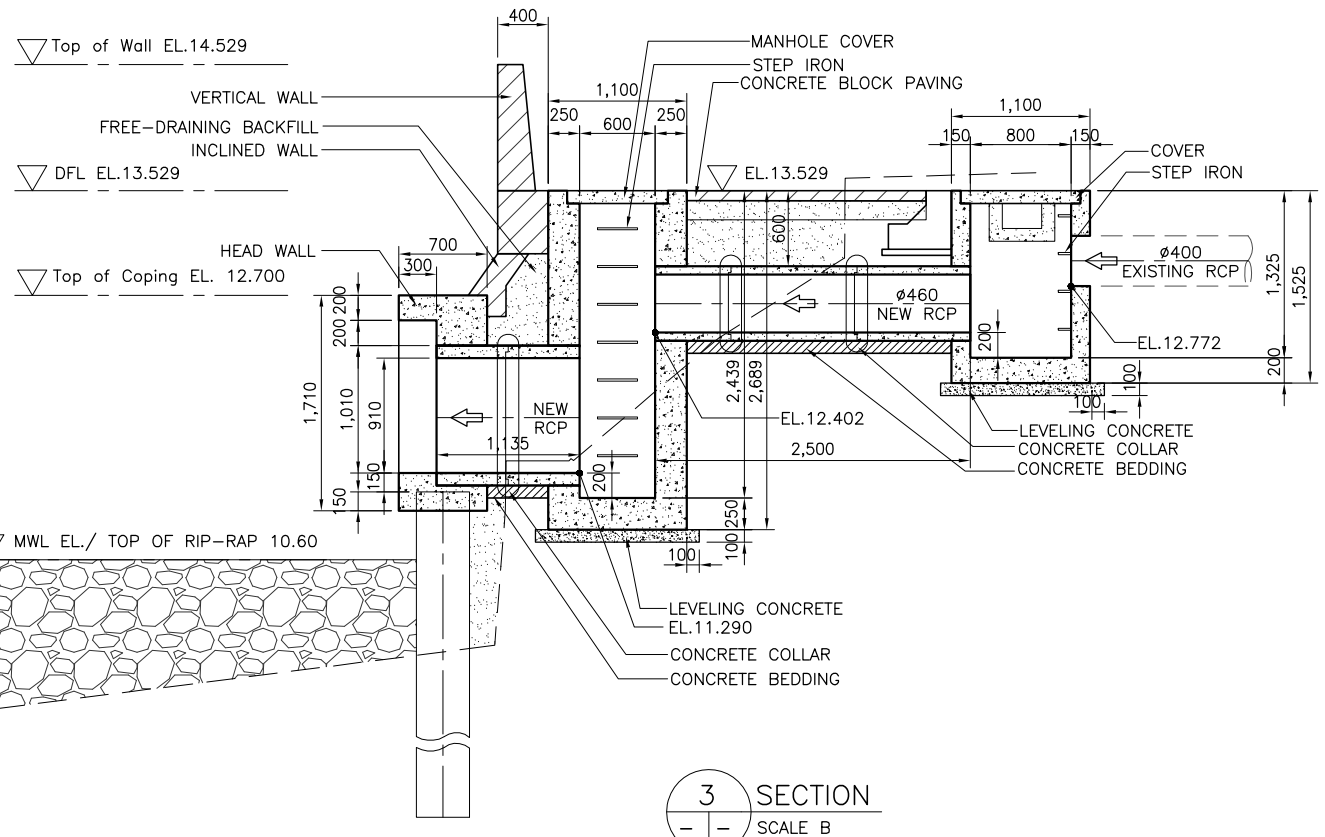
1 DRAINAGE PLAN
SCALE A



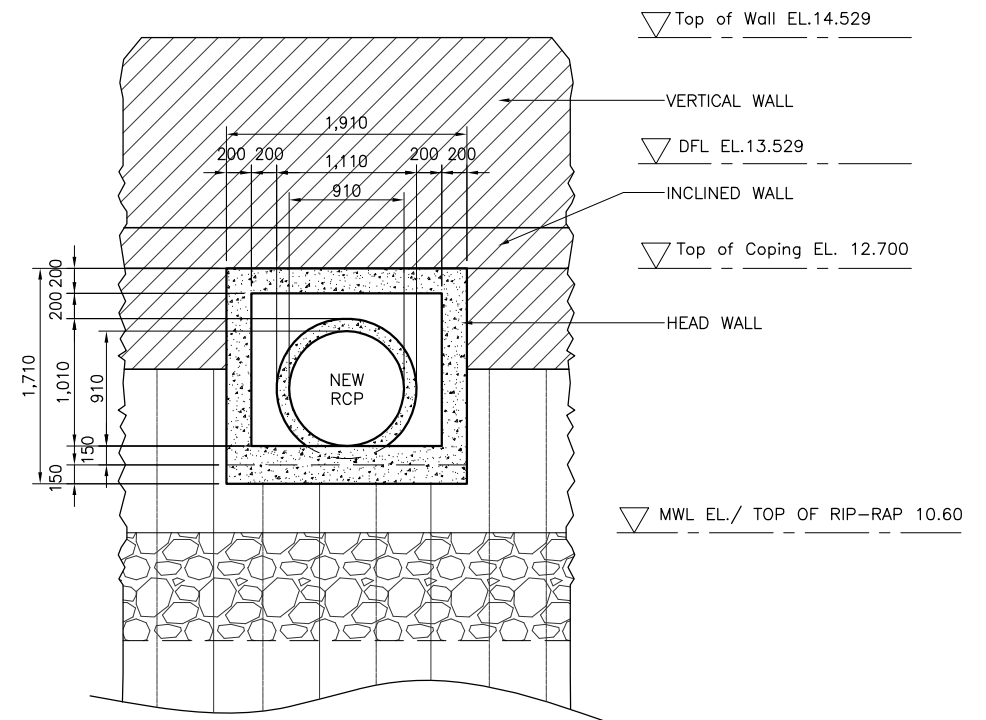
2 PLAN
SCALE B



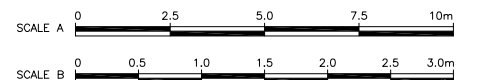
4 SECTION (MR70A)
SCALE B



3 SECTION
SCALE B



5 ELEVATION
SCALE B



NOTE:
PURSUANT TO SECTION 4 OF ANNEX 'A' OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

SHUJI KAKU
TEAM LEADER

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES

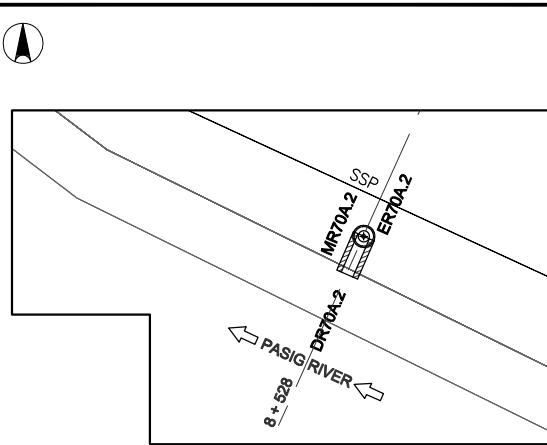


DESIGNED BY:	CHECKED BY:	SUBMITTED BY:
KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	TOSHIKI KAWAKAMI THE CHECKER	SHUJI KAKU TEAM LEADER



REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED BY:
PERFECTO L. ZAPLAN, JR. CHIEF, HYDRAULIC DIVISION, BOD	PATRICK B. GATAN PROJECT DIRECTOR PMO - MFCP	GILBERTO S. REYES DIRECTOR BOD
SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY	RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES	ROGELIO L. SINGSON SECRETARY

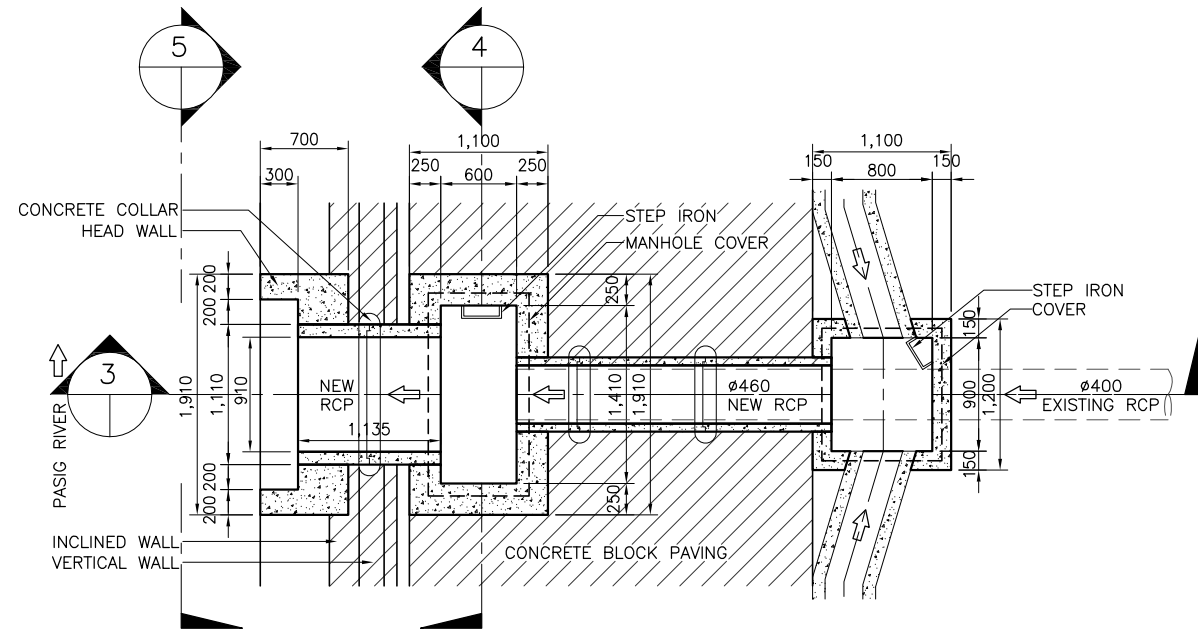
PROJECT & LOCATION	SHEET CONTENTS	SHEET NO.
PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	DETAIL OF DRAINAGE OUTLET- DR 70A, MANHOLE MR70A STA. 8+487 RB	LP-DR/DO/70A



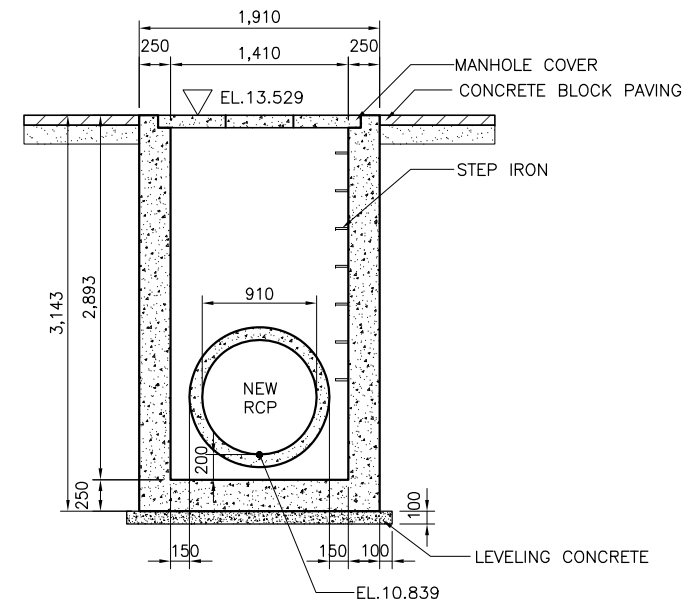
LEGEND:

- ER70A.2 ⊕ EXISTING OUTLET
- ← EXISTING DRAINAGE
- ▨ DRAINAGE OUTLET
- ← COLLECTOR PIPE
- DR70A.2 DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

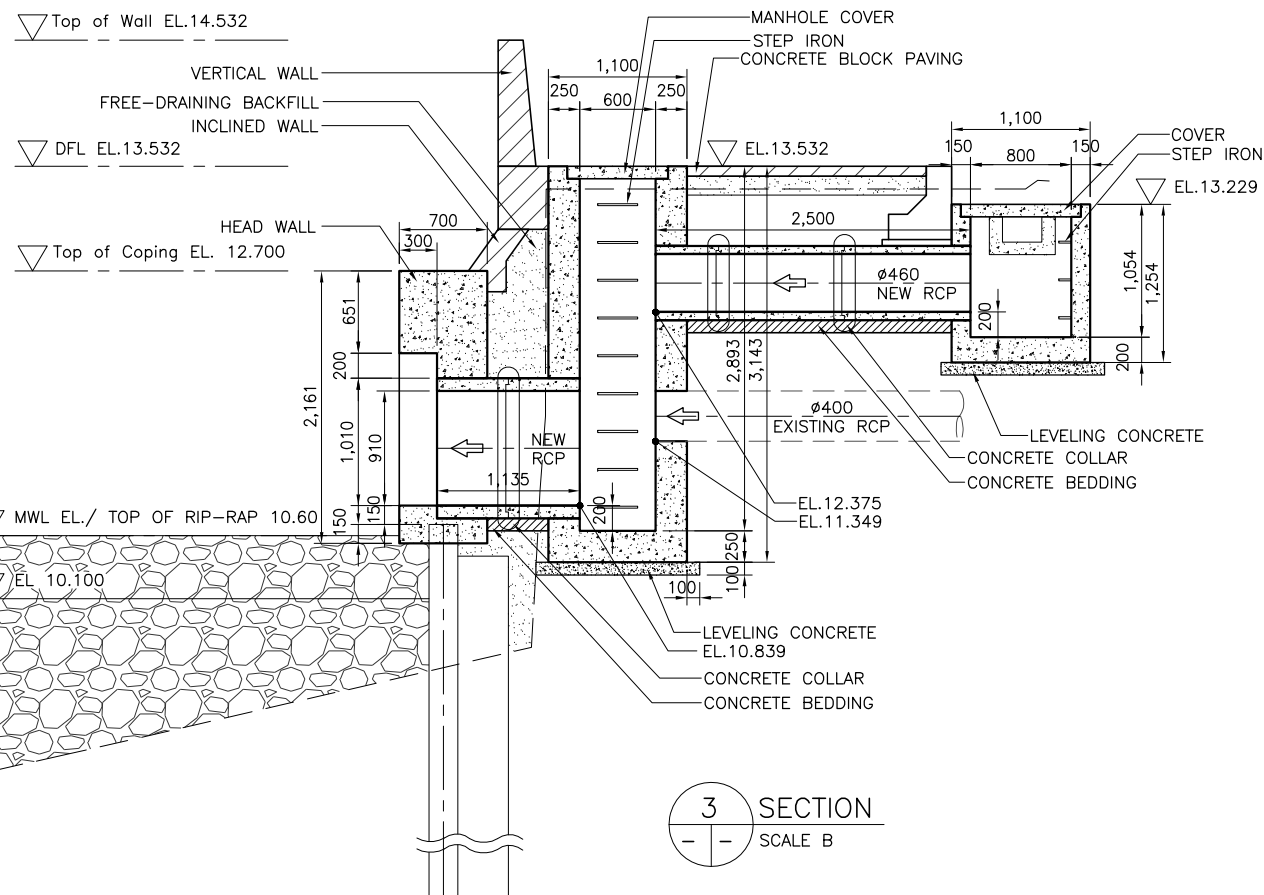
1 DRAINAGE PLAN
SCALE A



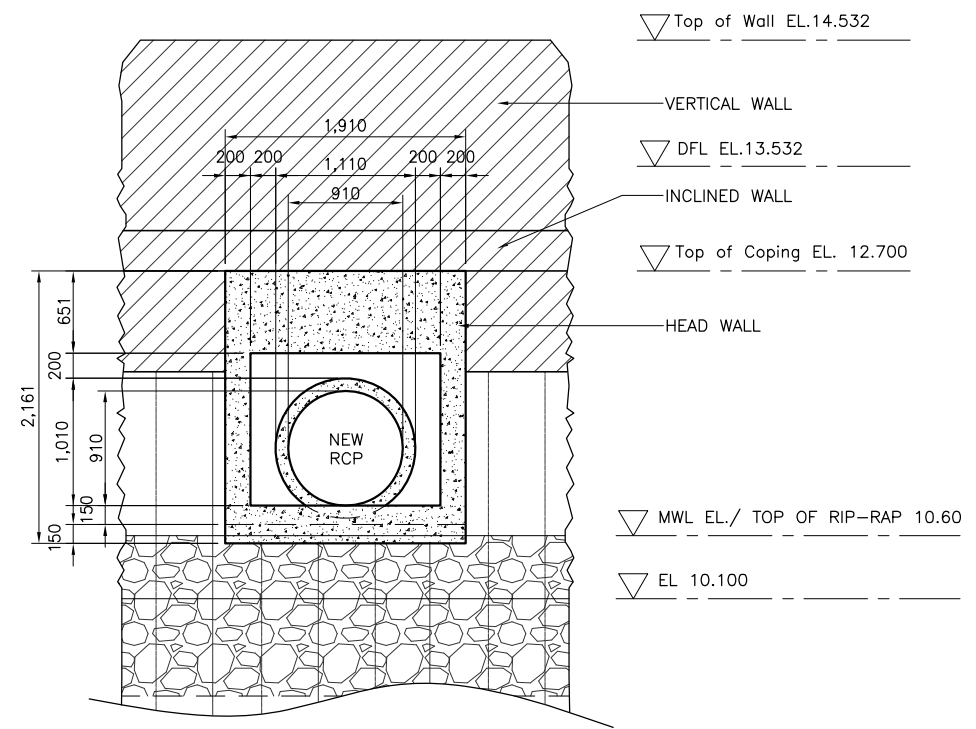
2 PLAN
SCALE B



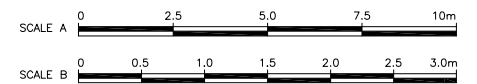
4 SECTION (MR70A.2)
SCALE B



3 SECTION
SCALE B



5 ELEVATION
SCALE B



NOTE:
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SHUJI KAKU
TEAM LEADER

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

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

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

APPROVED BY: RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION

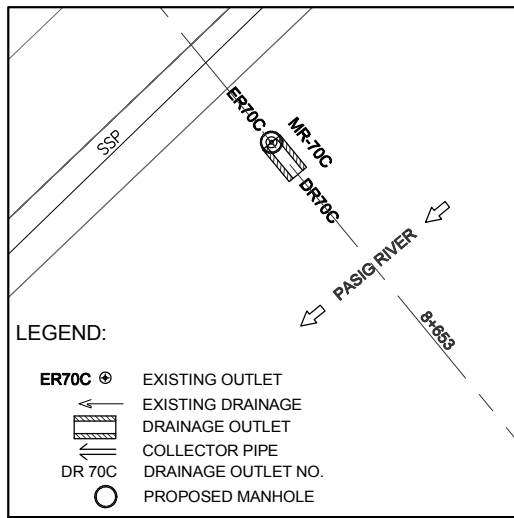
PASIG-MARIKINA
RIVER CHANNEL
IMPROVEMENT
PROJECT (PHASE III),
METRO MANILA

SHEET CONTENTS

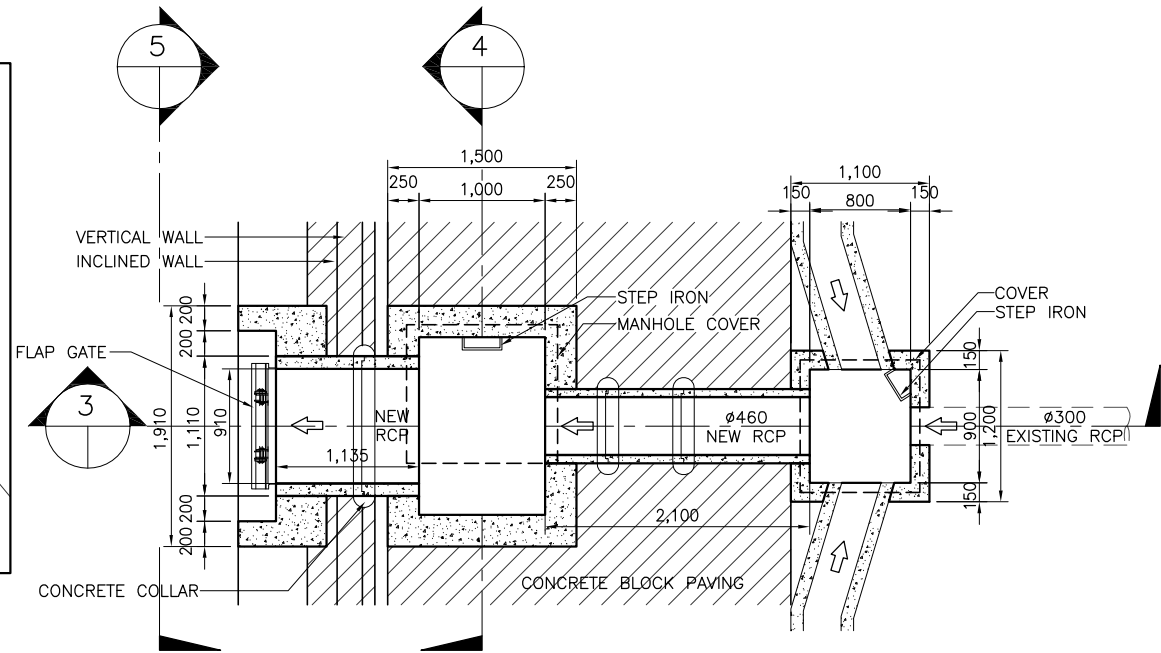
DETAIL OF DRAINAGE
OUTLET- DR 70A.2 &
MANHOLE MR70A.2
STA. 8+528 RB

SHEET NO.

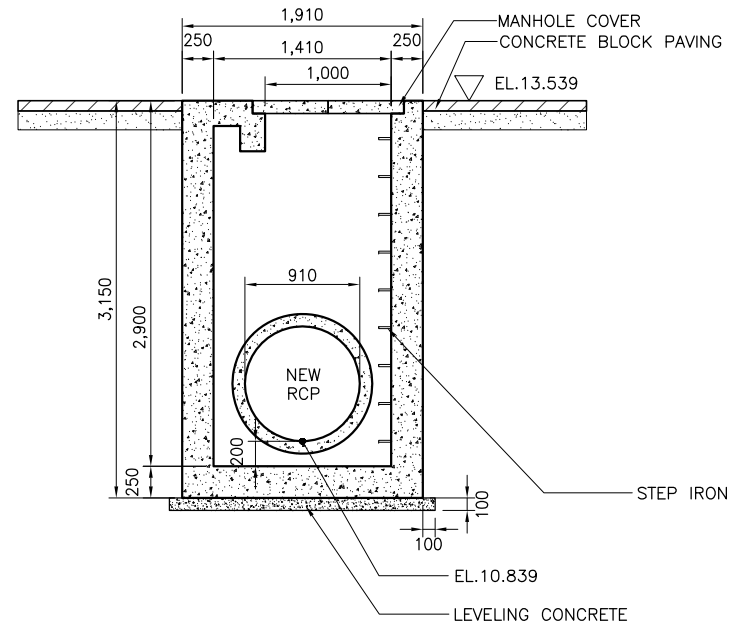




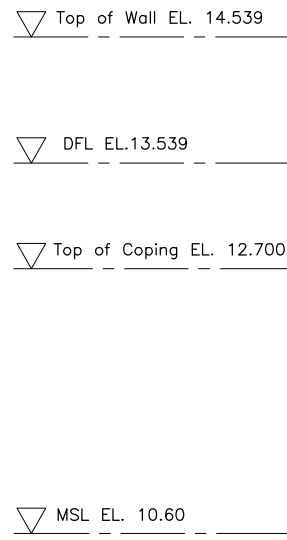
1 DRAINAGE PLAN
SCALE A



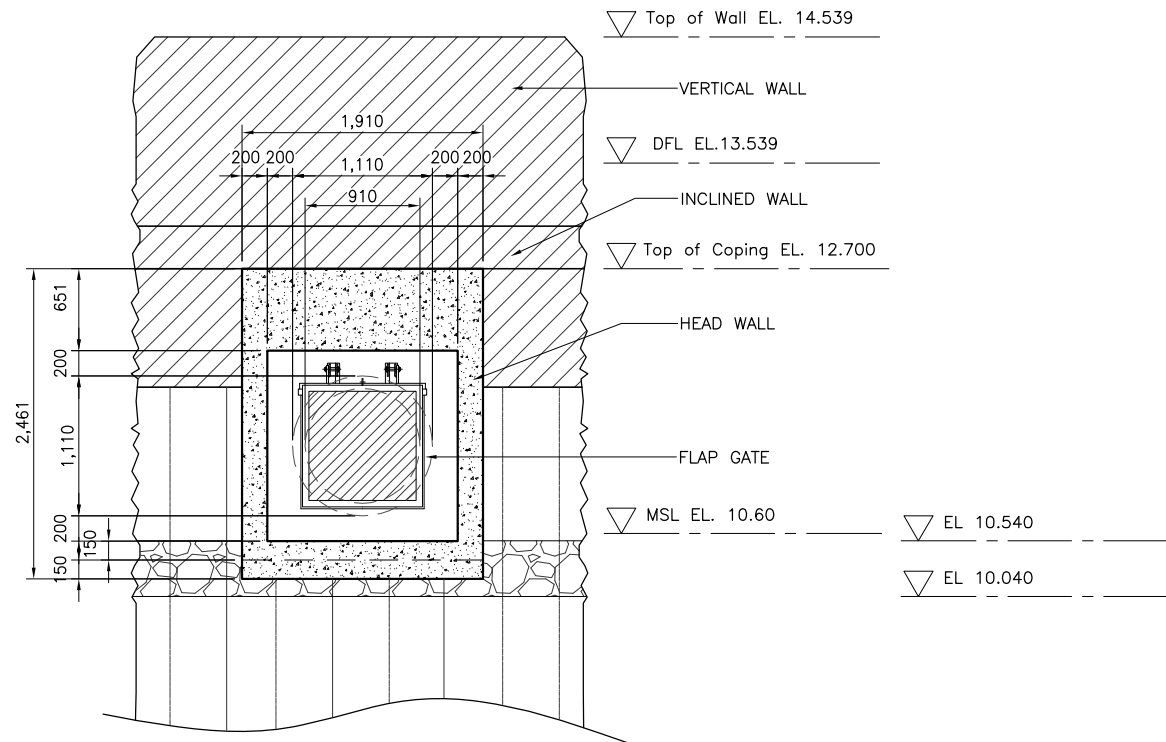
2 PLAN
SCALE B



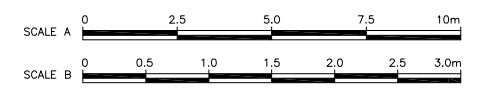
4 SECTION (MR70C)
SCALE B



3 SECTION
SCALE B



5 ELEVATION
SCALE B

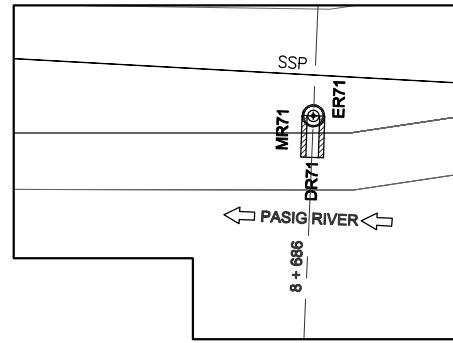


NOTE:
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SHUJI KAKU
TEAM LEADER

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

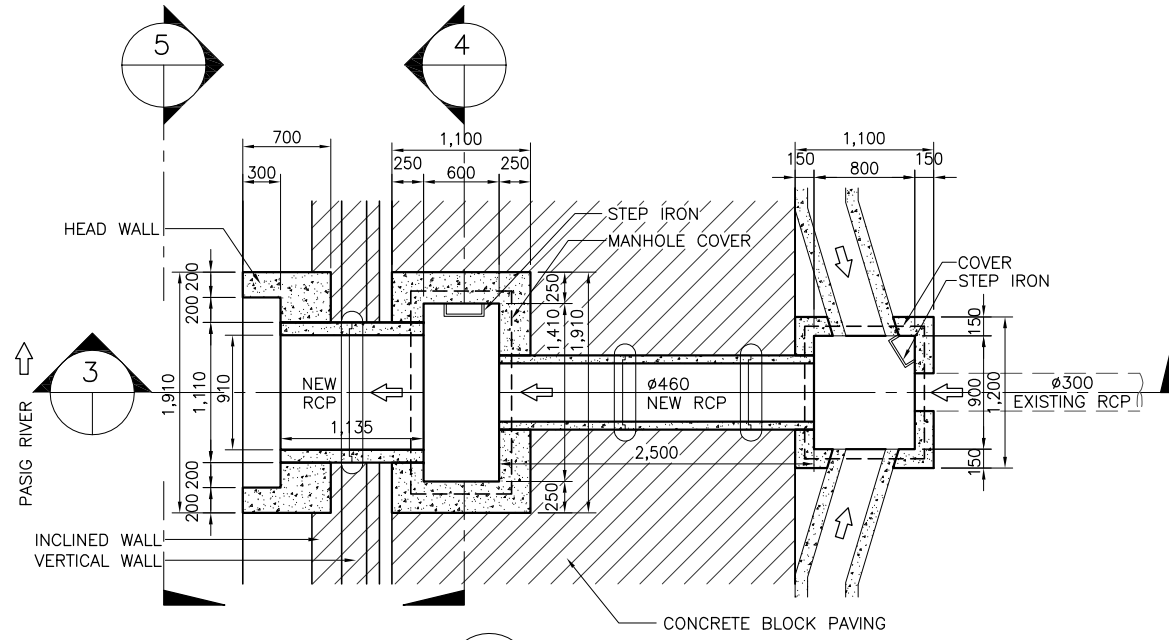
JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN			REPUBLIC OF THE PHILIPPINES				PROJECT & LOCATION	SHEET CONTENTS	SHEET NO.
	DESIGNED BY:	CHECKED BY:	SUBMITTED BY:	REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED BY:	PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	DETAIL OF DRAINAGE OUTLET- DR70C; MANHOLE MR70C STA. 8+653 RB	
	KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	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			



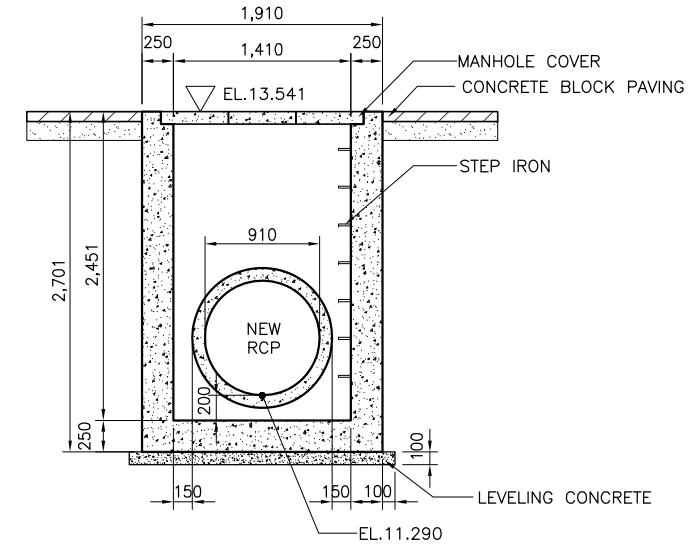
LEGEND:

- ER71⊕ EXISTING OUTLET
- ← EXISTING DRAINAGE
- ▨ DRAINAGE OUTLET
- ▬ COLLECTOR PIPE
- DR71 DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

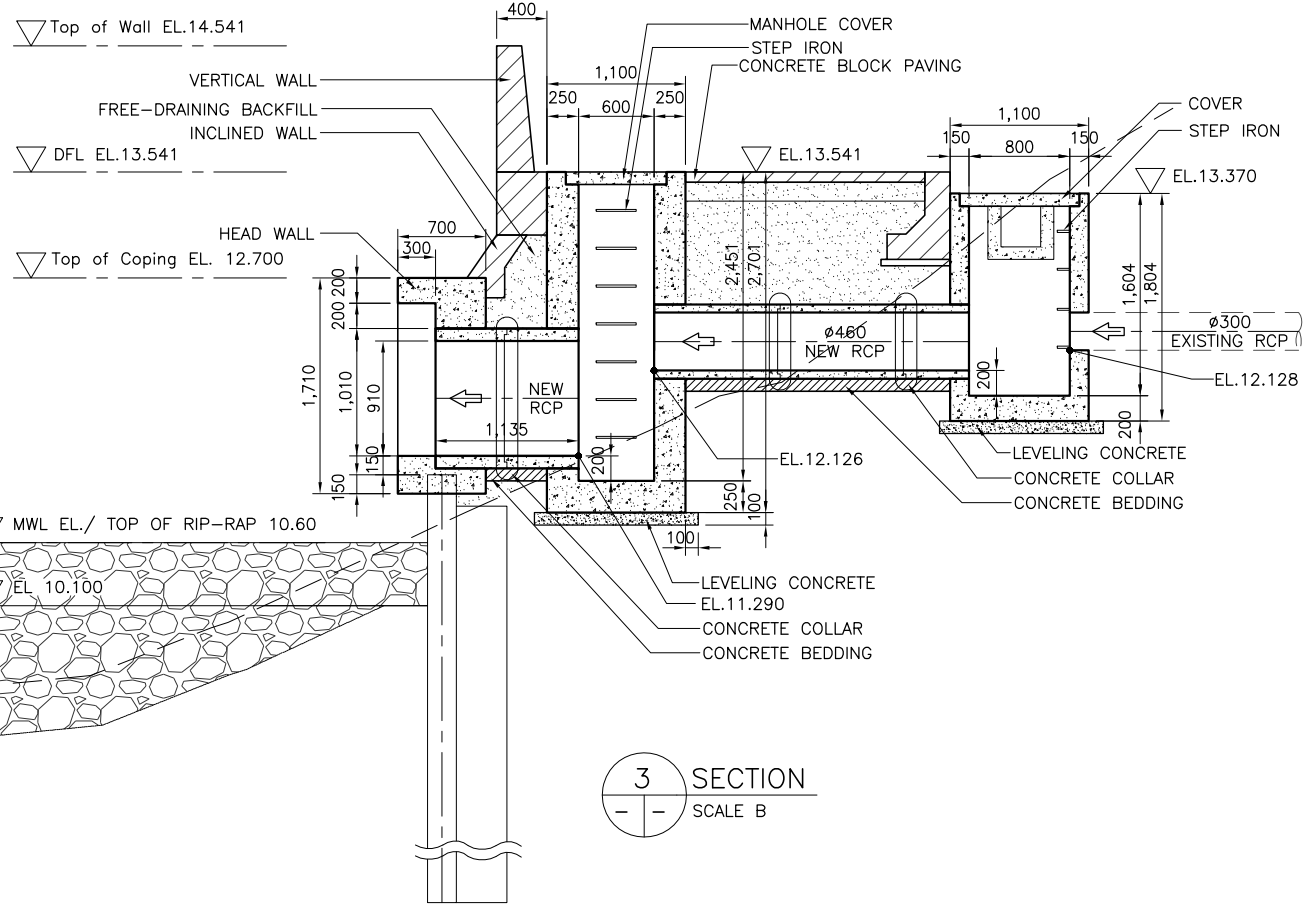
1 DRAINAGE PLAN
SCALE A



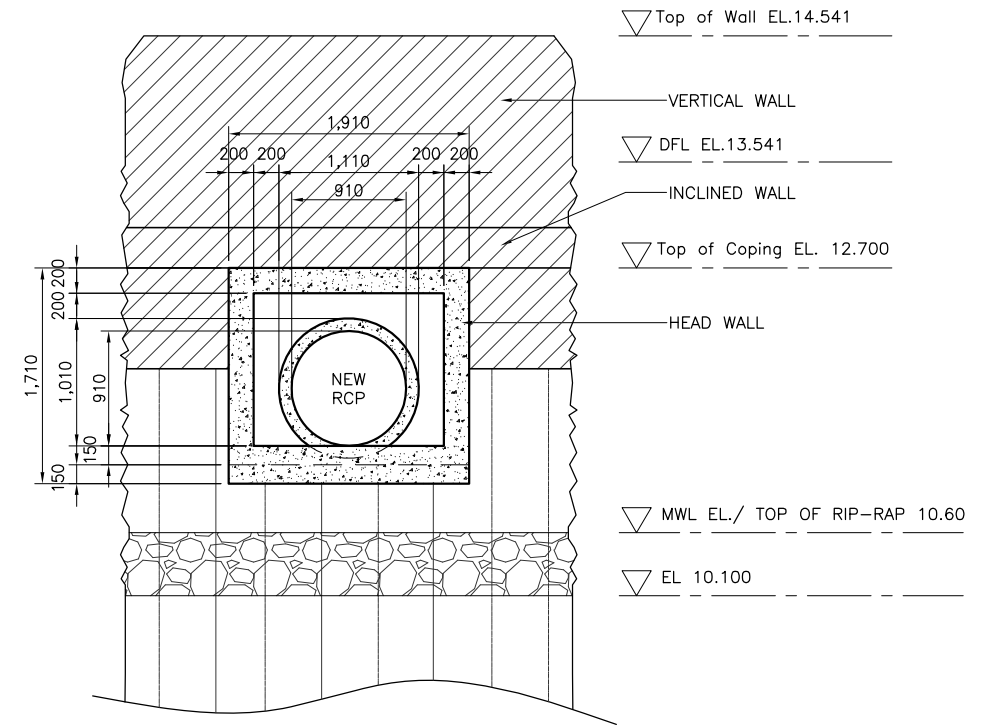
2 PLAN
SCALE B



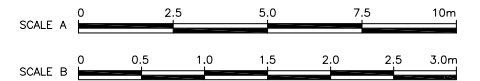
4 SECTION (MR71)
SCALE B



3 SECTION
SCALE B



5 ELEVATION
SCALE B



NOTE:
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SHUJI KAKU
TEAM LEADER

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

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

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY

RAUL C. ASIS
UNDERSECRETARY FOR TECHNICAL SERVICES

APPROVED BY: ROGELIO L. SINGSON
SECRETARY

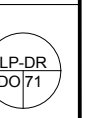
PROJECT & LOCATION

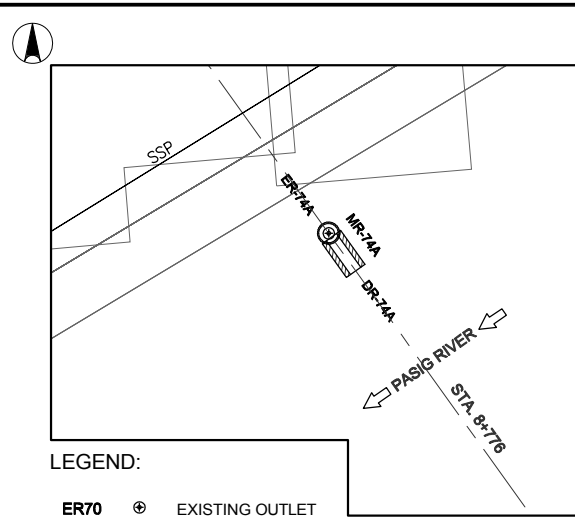
PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS

DETAIL OF DRAINAGE OUTLET- DR 71, MANHOLE MR71 STA. 8+686 RB

SHEET NO.

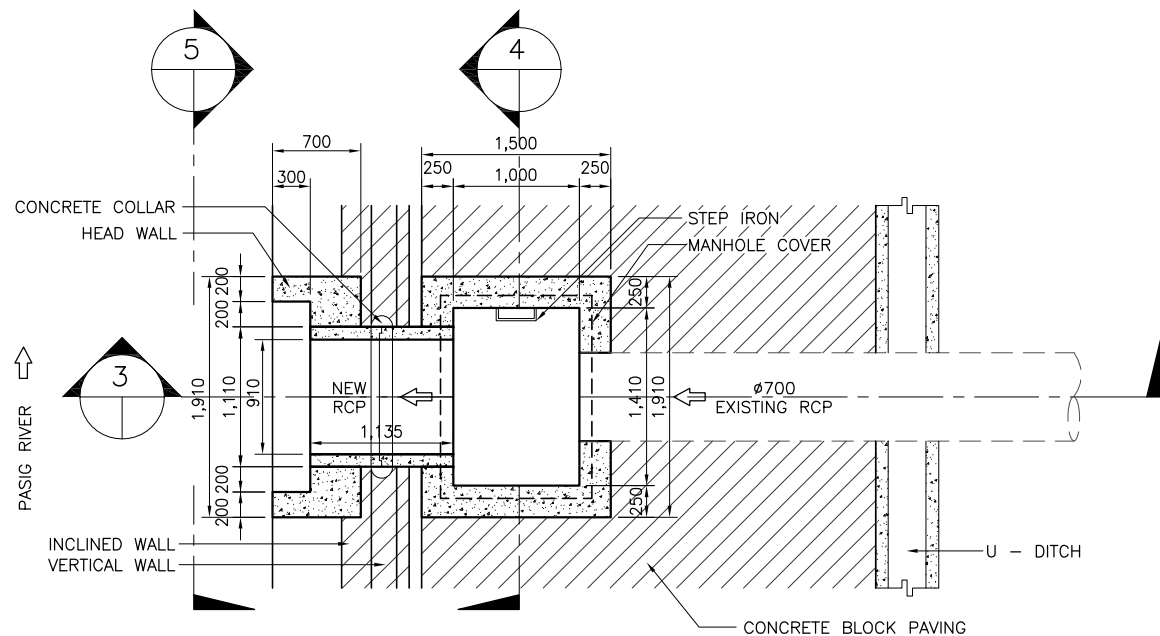




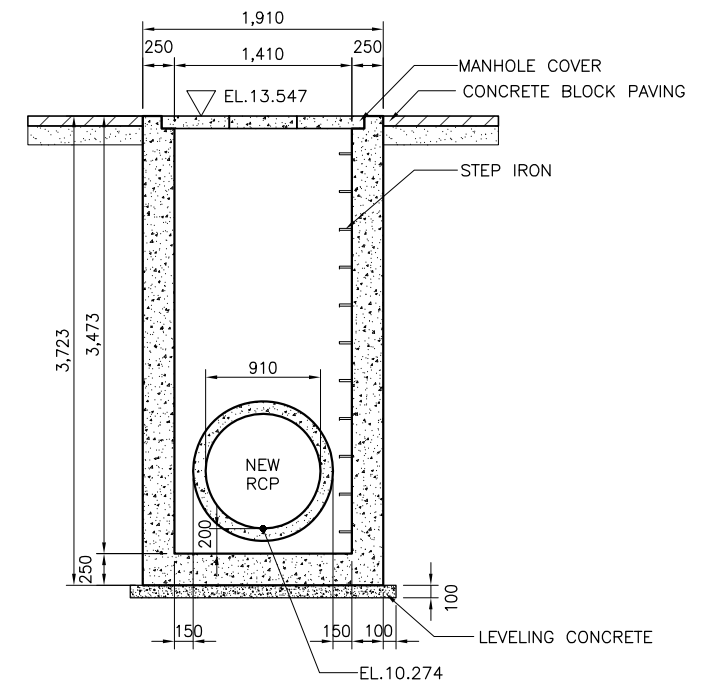
LEGEND:

- ER70 ⊕ EXISTING OUTLET
- ← EXISTING DRAINAGE
- ▨ DRAINAGE OUTLET
- ▨ COLLECTOR PIPE
- DR74A DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

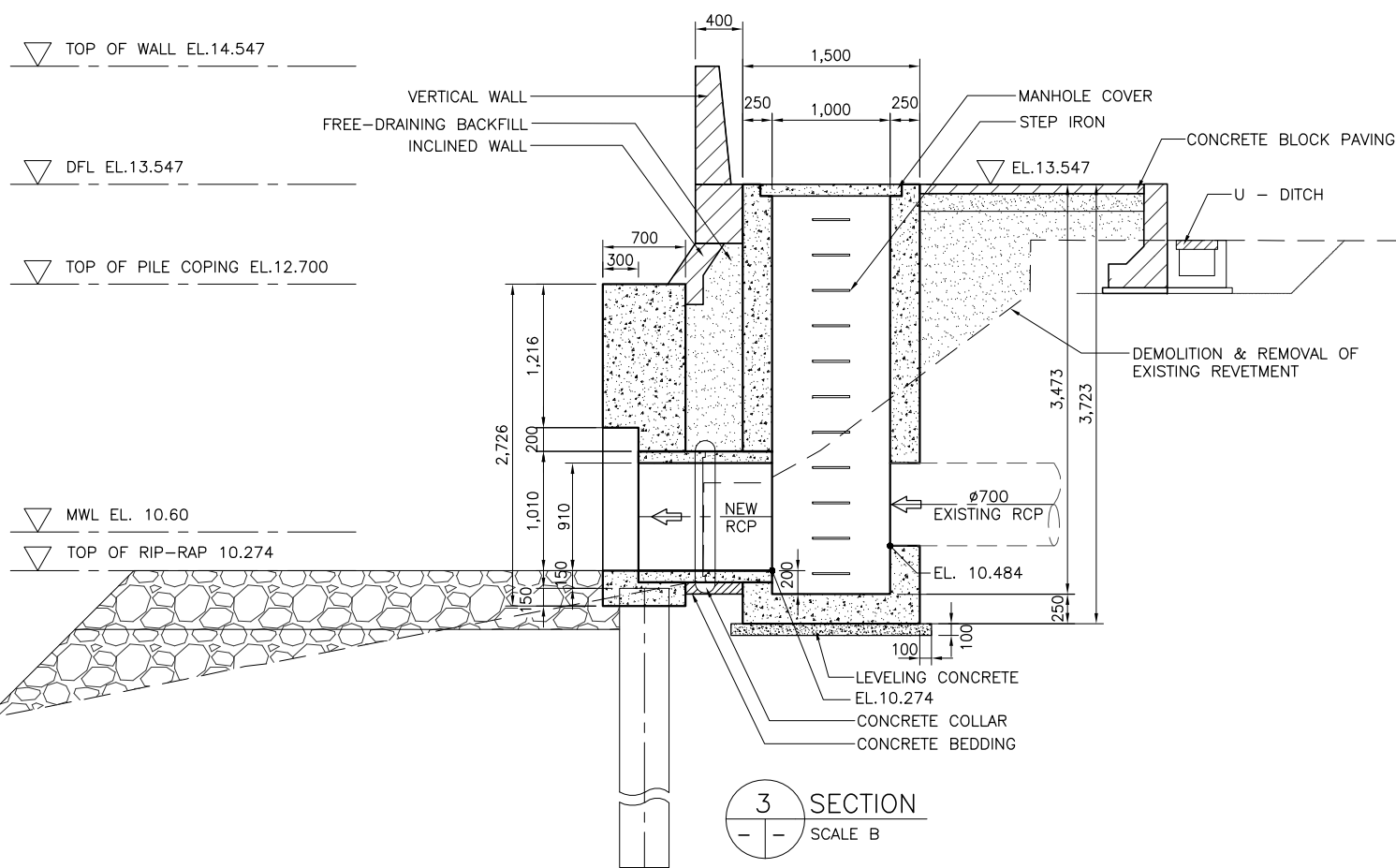
1 DRAINAGE PLAN
SCALE A



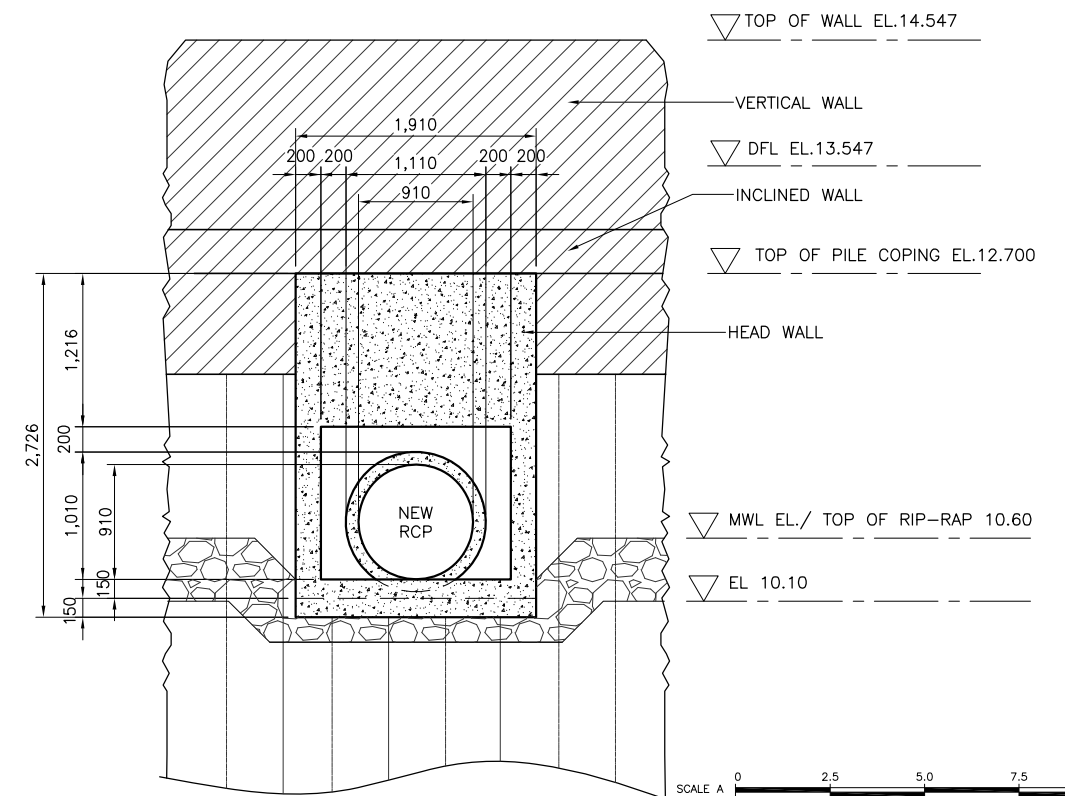
2 PLAN
SCALE B



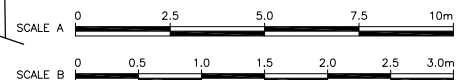
4 SECTION (MR74A)
SCALE B



3 SECTION
SCALE B



5 ELEVATION
SCALE B



NOTE:
PURSUANT TO SECTION 4 OF ANNEX 'A' OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

SHUJI KAKU
TEAM LEADER

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY

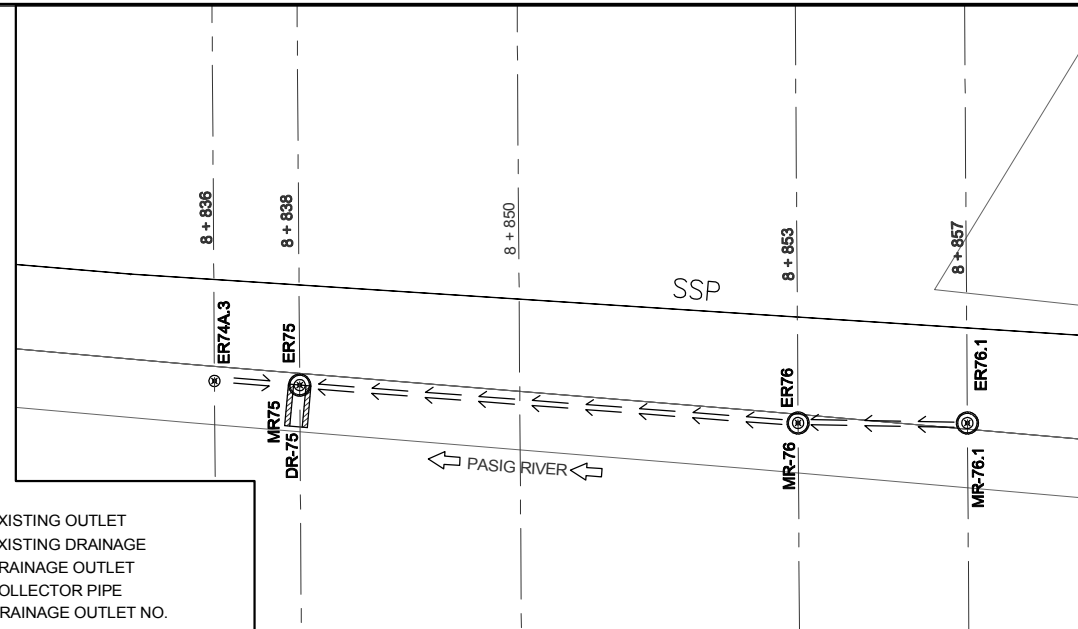
RAUL C. ASIS
UNDERSECRETARY FOR TECHNICAL SERVICES

APPROVED BY: ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION: PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS: DETAIL OF DRAINAGE OUTLET- DR 74A, & MANHOLE MR74A STA. 8+776 RB

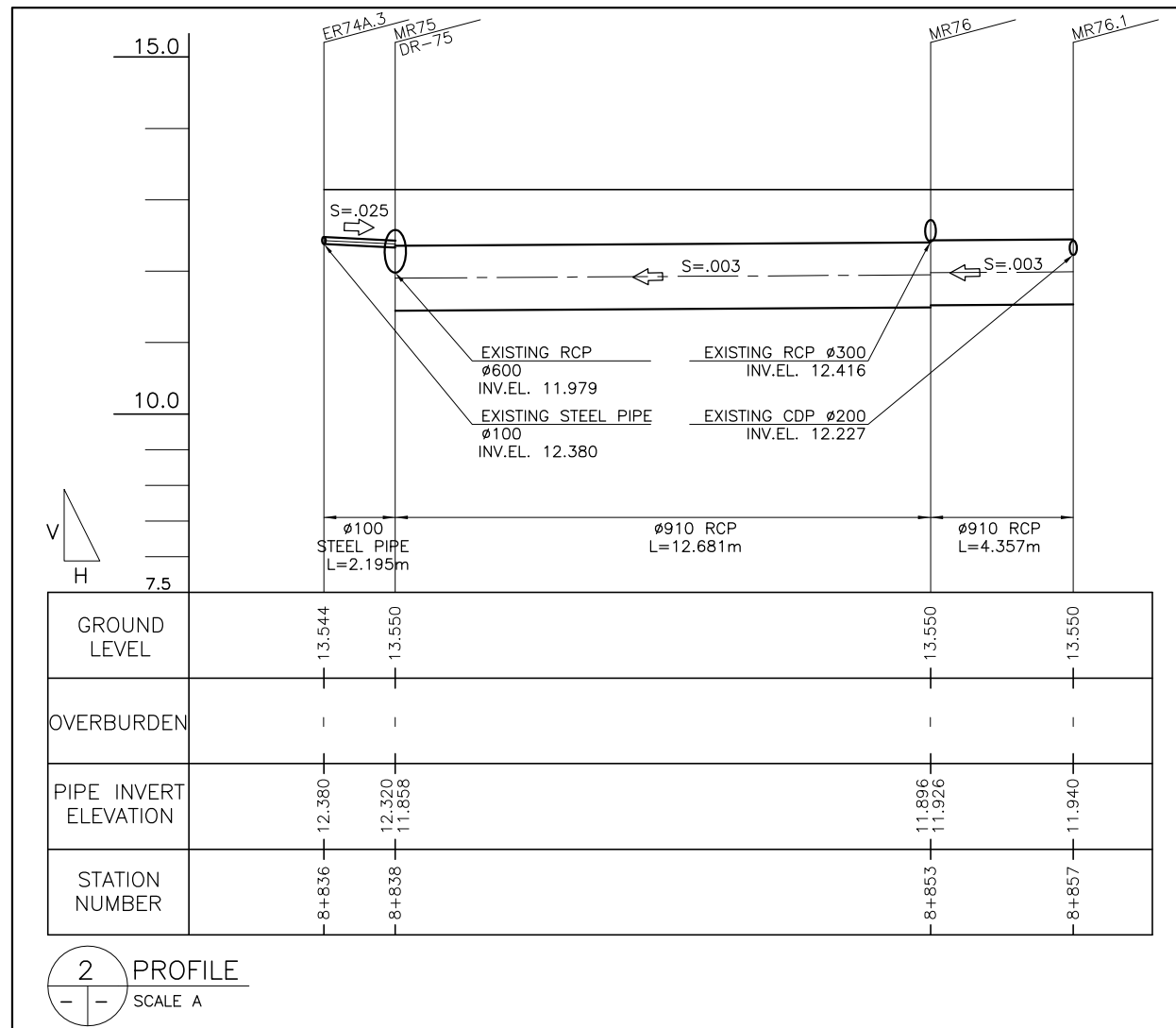
SHEET NO.: LP-DR/DO/74A



LEGEND:

- ER74A.3 ⊕ EXISTING OUTLET
- ← EXISTING DRAINAGE
- ▭ DRAINAGE OUTLET
- ← COLLECTOR PIPE
- DR75 DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

1 DRAINAGE PLAN
SCALE A



2 PROFILE
SCALE A



REVISIONS			
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NOTE:
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SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES



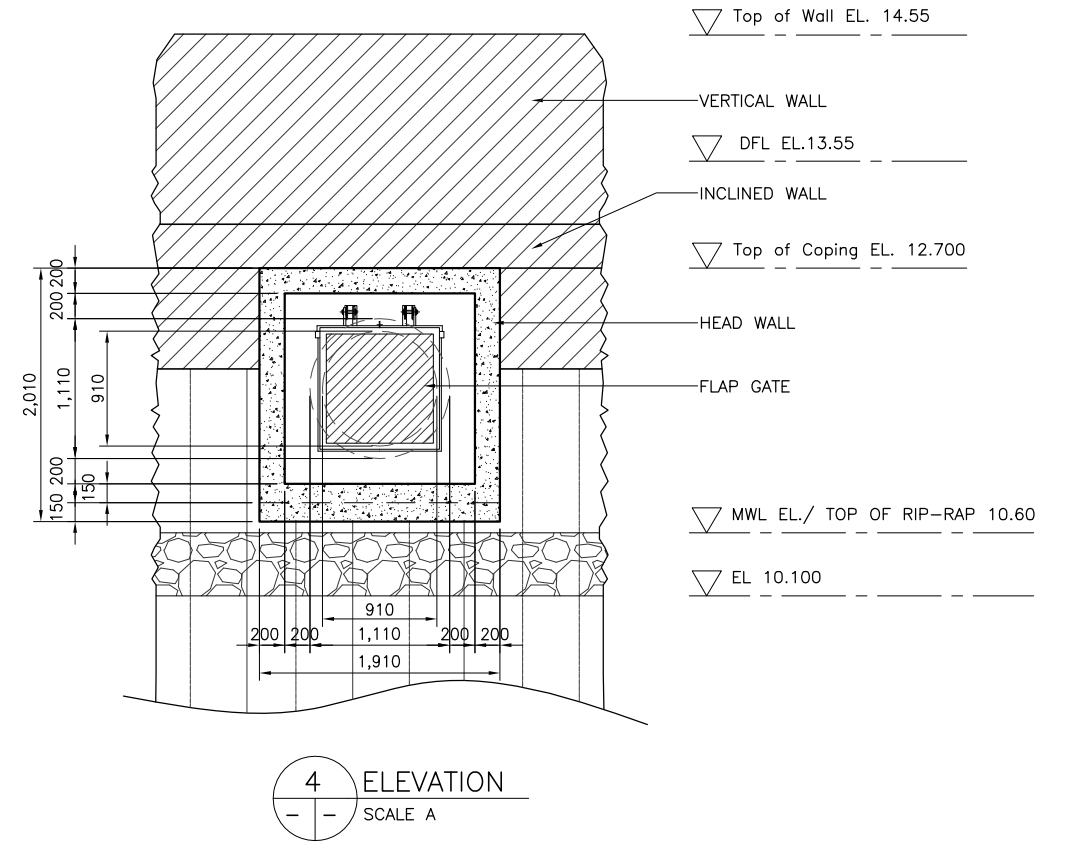
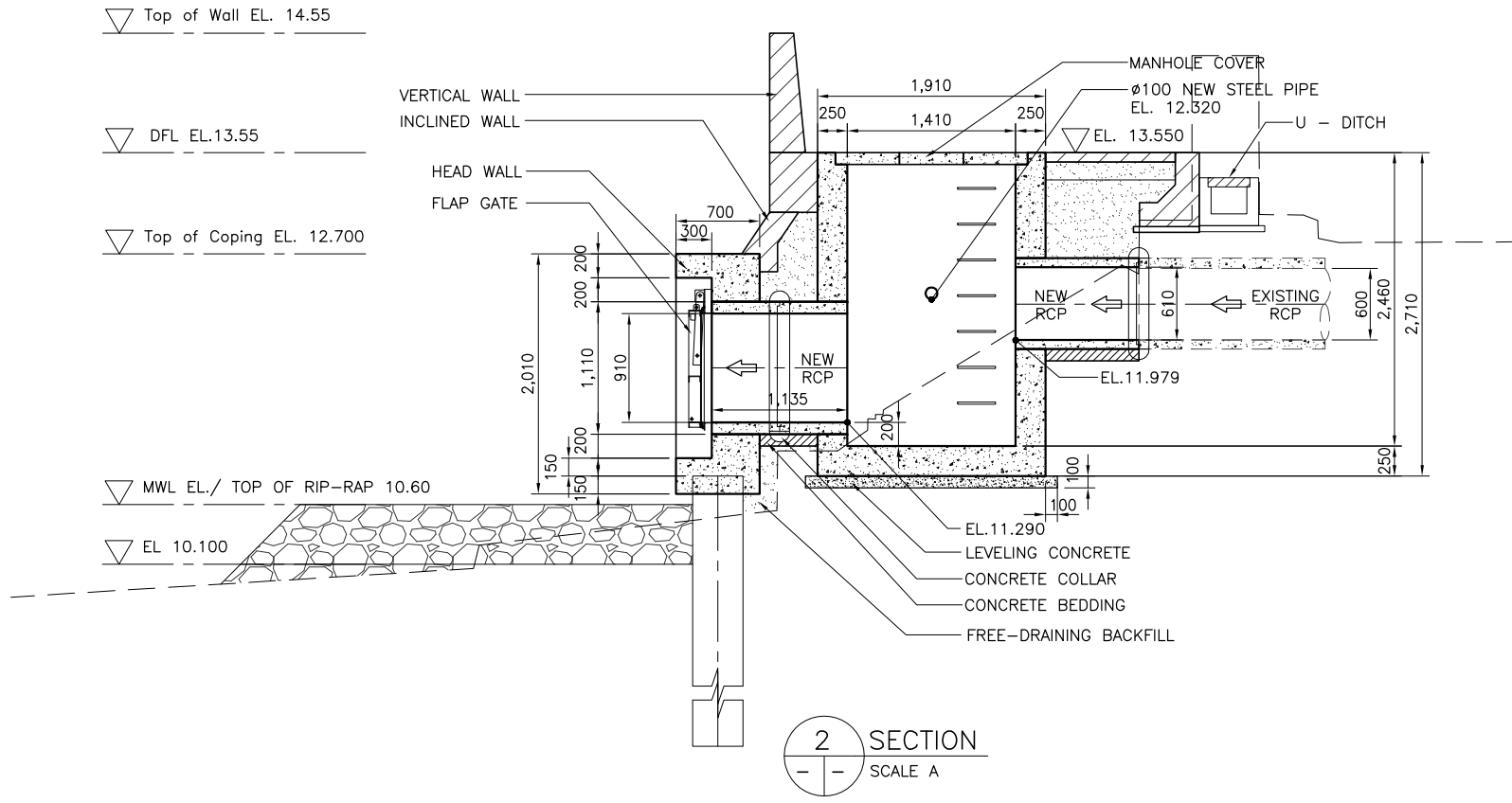
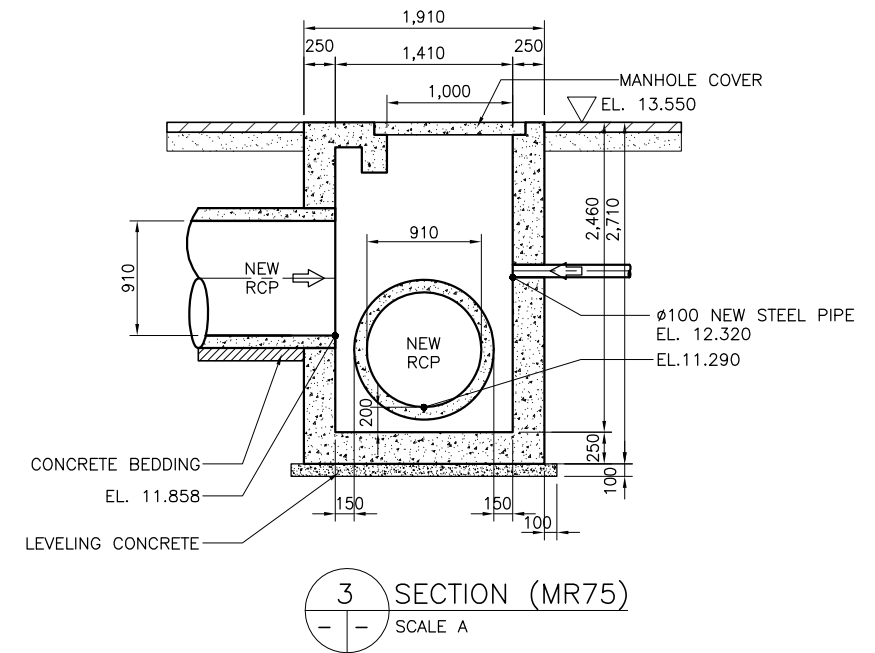
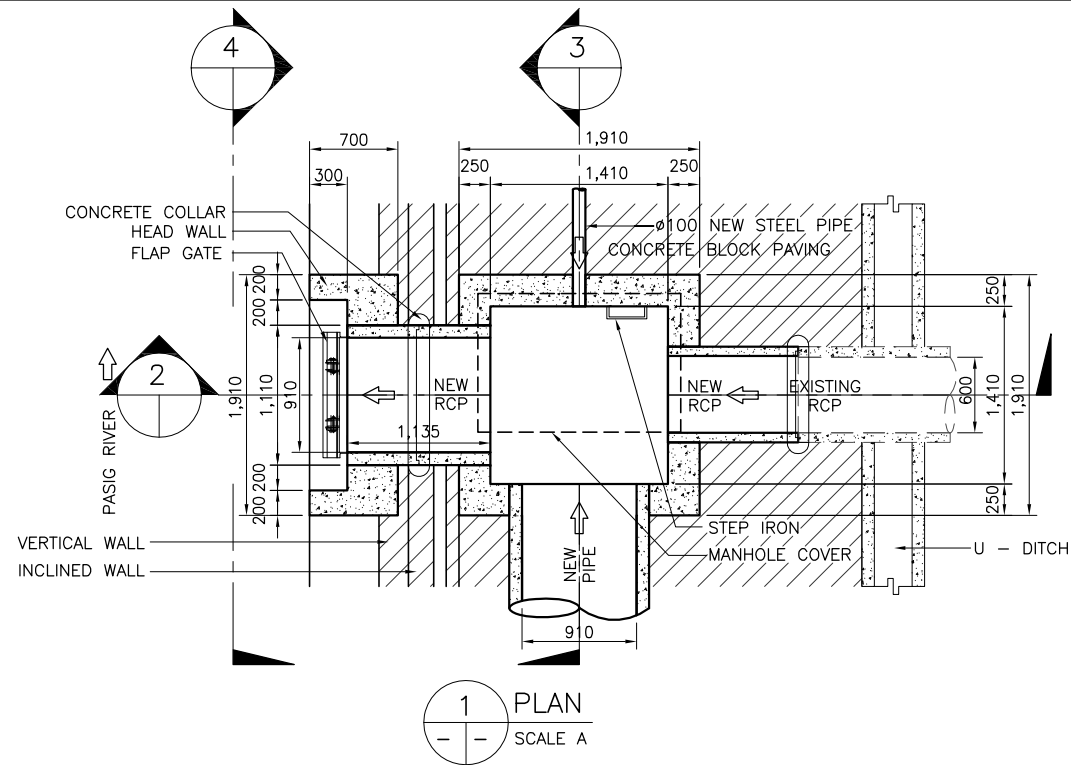
DESIGNED BY:	CHECKED BY:	SUBMITTED BY:
KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	TOSHIKI KAWAKAMI THE CHECKER	SHUJI KAKU TEAM LEADER



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS

REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED BY:
PERFECTO L. ZAPLAN, JR. CHIEF, HYDRAULIC DIVISION, BOD	PATRICK B. GATAN PROJECT DIRECTOR PMO - MFCP	GILBERTO S. REYES DIRECTOR BOD
SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY	SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY	RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES
		ROGELIO L. SINGSON SECRETARY

PROJECT & LOCATION	SHEET CONTENTS	SHEET NO.
PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	PLAN & PROFILE OF COLLECTOR PIPE	LP-DR/DO/75/P

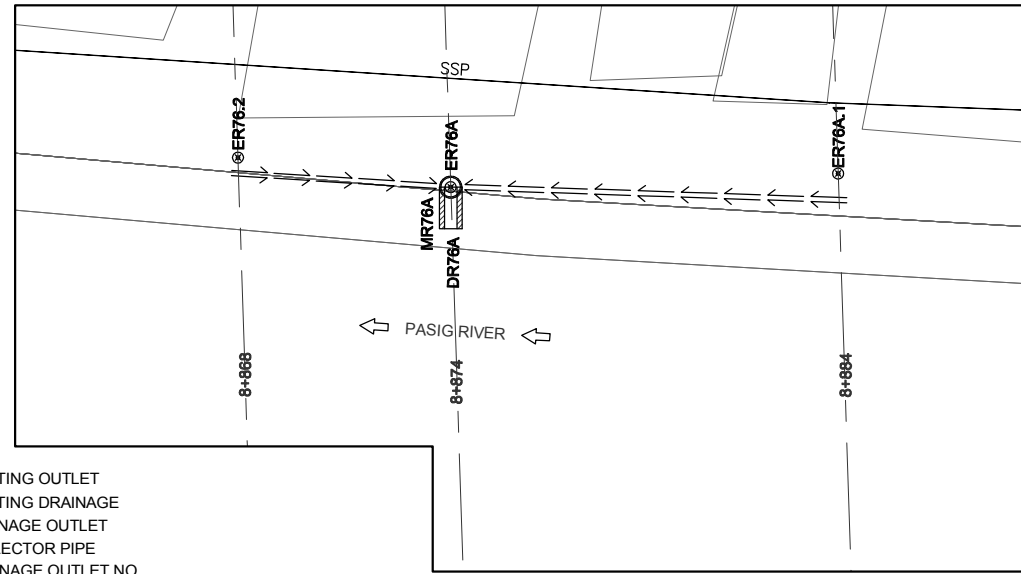


REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

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SHUJI KAKU
TEAM LEADER

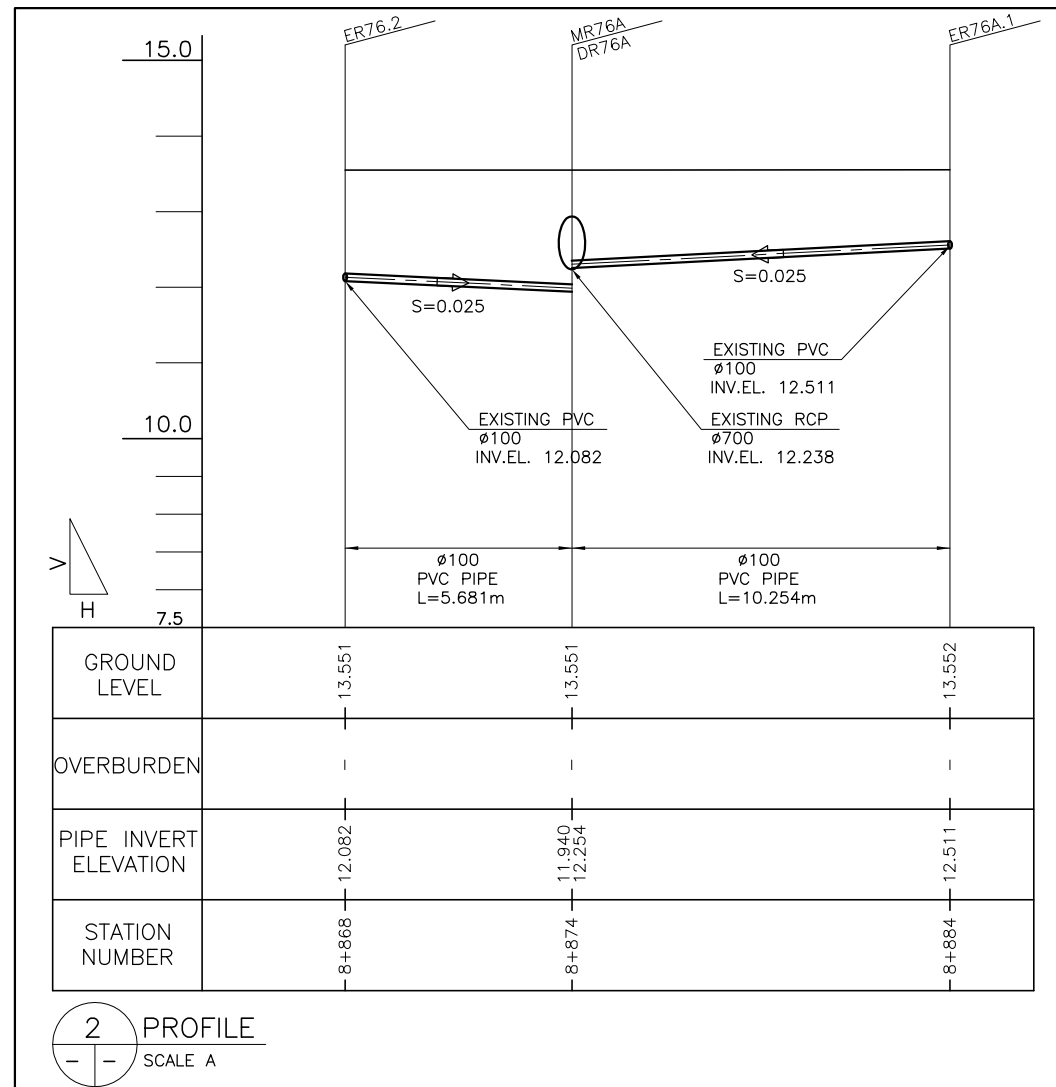
JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN			REPUBLIC OF THE PHILIPPINES				PROJECT & LOCATION	SHEET CONTENTS	SHEET NO.
	DESIGNED BY:	CHECKED BY:	SUBMITTED BY:		REVIEWED BY:	RECOMMENDING APPROVAL:	PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	DETAIL OF DRAINAGE OUTLET- DR 75 & MANHOLE MR75 STA. 8+838RB	
	KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	TOSHIKI KAWAKAMI THE CHECKER	SHUJI KAKU TEAM LEADER		PERFECTO L. ZAPLAN, JR. CHIEF, HYDRAULIC DIVISION, BOD	PATRICK B. GATAN PROJECT DIRECTOR PMO - MFCP			



LEGEND:

- ER 76A ⊕ EXISTING OUTLET
- ← EXISTING DRAINAGE
- ▭ DRAINAGE OUTLET
- ← COLLECTOR PIPE
- DR 76A DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

1 DRAINAGE PLAN
SCALE A



2 PROFILE
SCALE A



REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

NOTE:
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SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

DESIGNED BY: KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	CHECKED BY: TOSHIKI KAWAKAMI THE CHECKER	SUBMITTED BY: SHUJI KAKU TEAM LEADER
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REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS

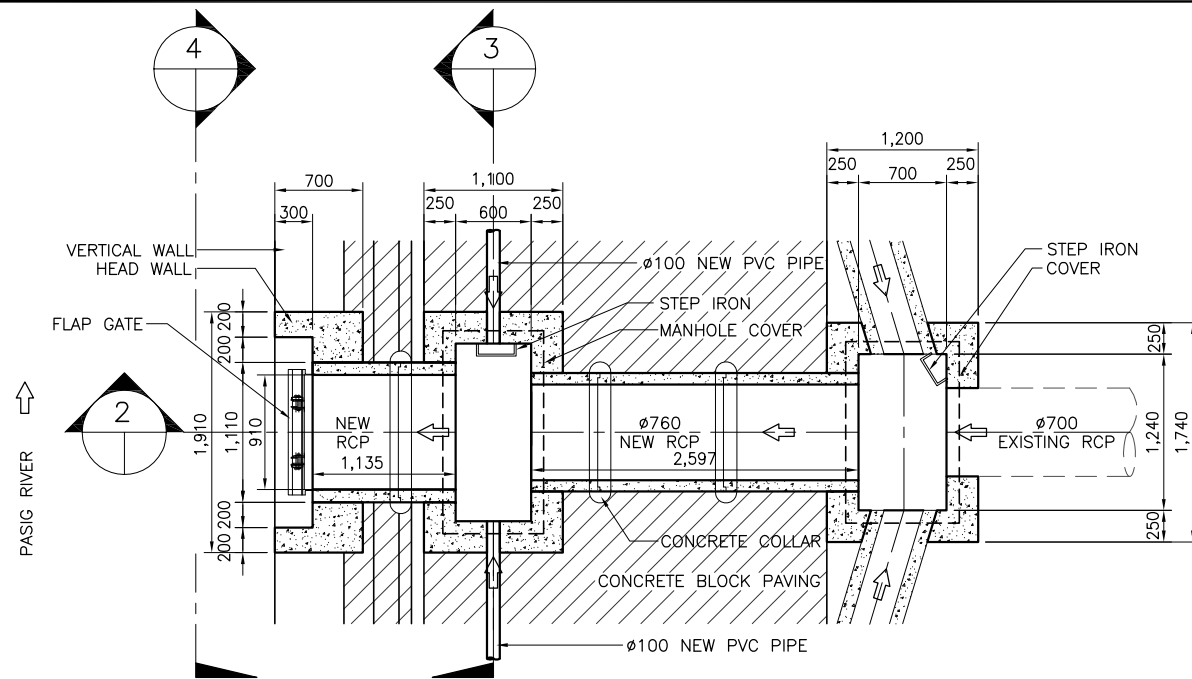
REPUBLIC OF THE PHILIPPINES

REVIEWED BY: PERFECTO L. ZAPLAN, JR. CHIEF, HYDRAULIC DIVISION, BOD	RECOMMENDING APPROVAL: PATRICK B. GATAN PROJECT DIRECTOR PMO - MFCP	APPROVED BY: GILBERTO S. REYES DIRECTOR BOD	APPROVED BY: RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES
SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY		SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY	
ROGELIO L. SINGSON SECRETARY			

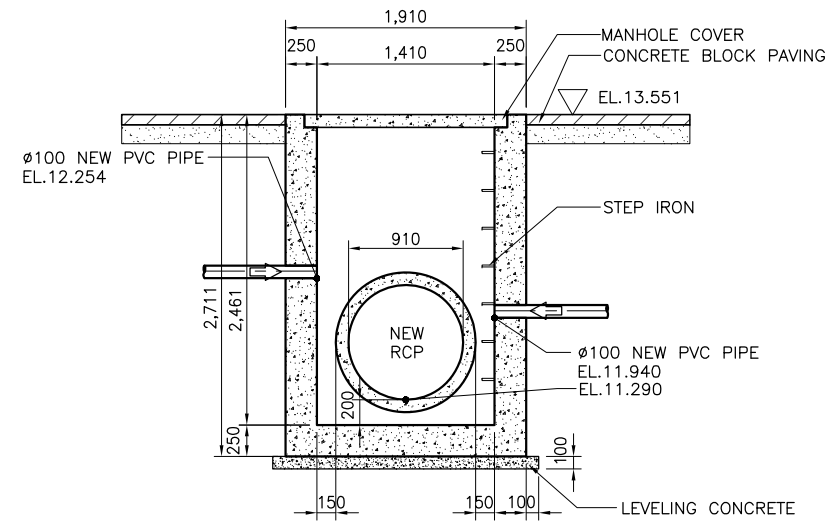
PROJECT & LOCATION
PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS
PLAN & PROFILE OF COLLECTOR PIPE

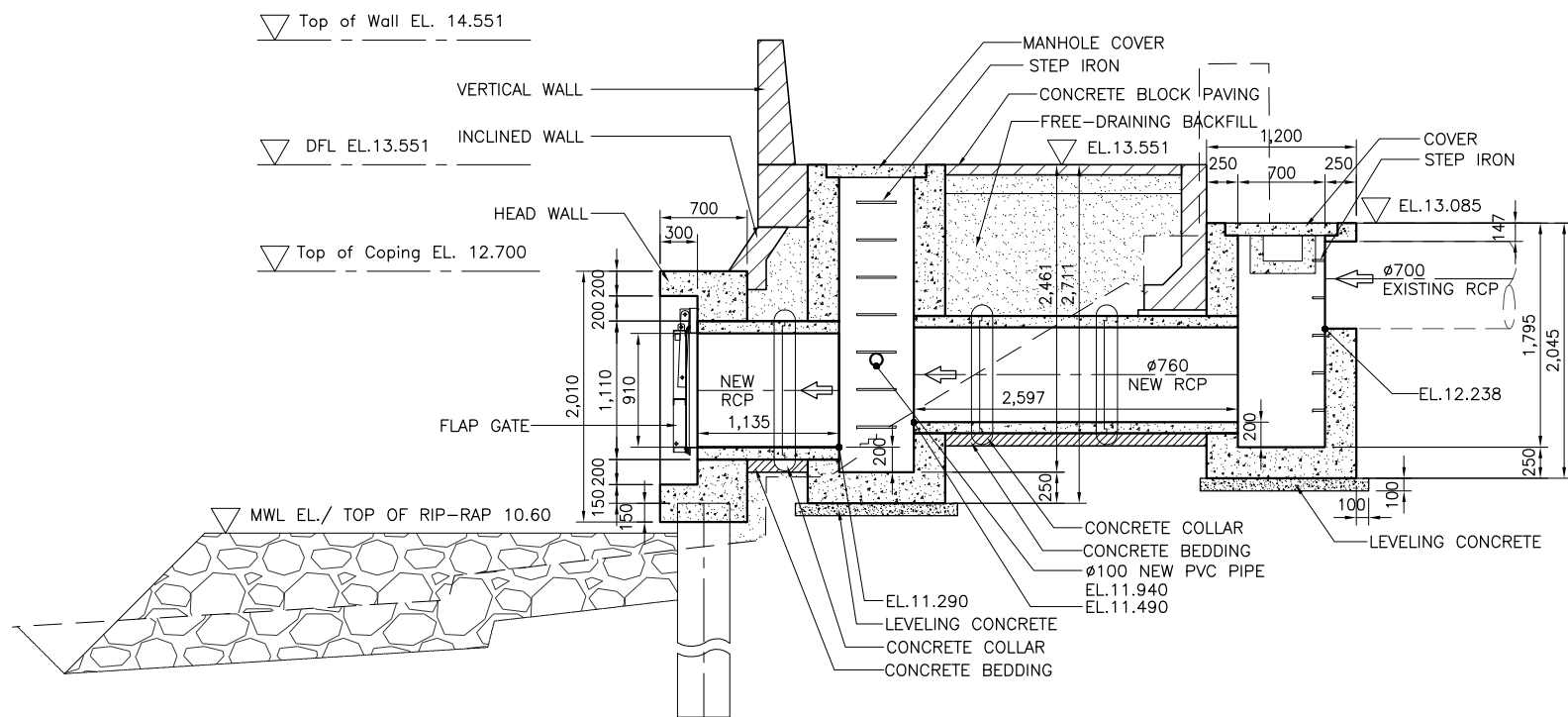
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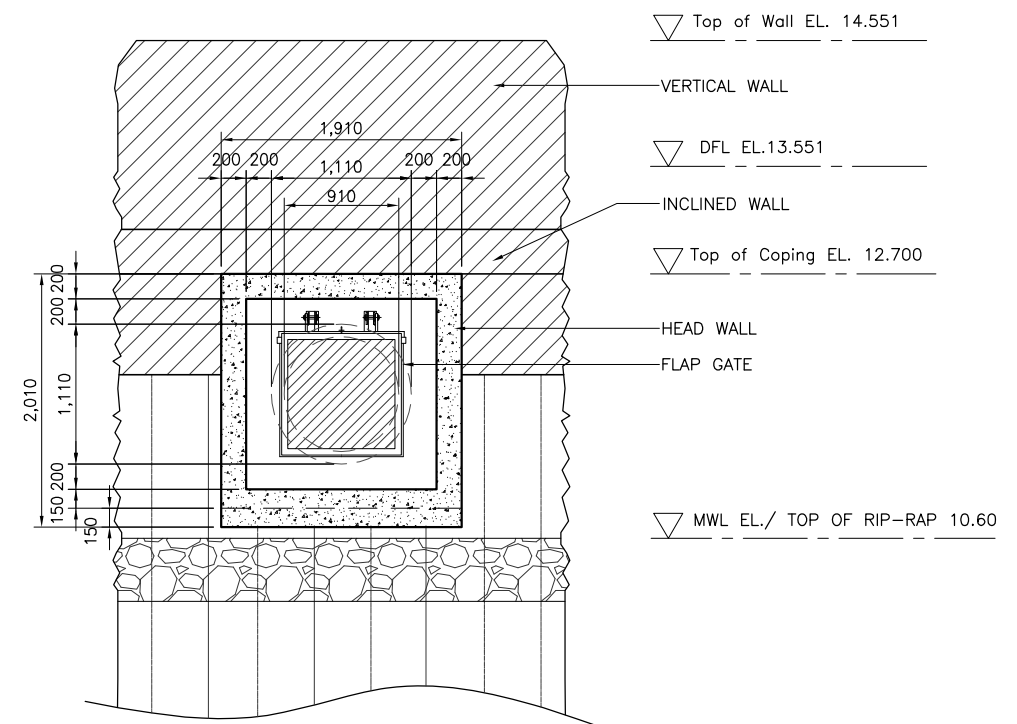
1 PLAN
SCALE A



3 SECTION (MR76A)
SCALE A



2 SECTION
SCALE A



4 ELEVATION
SCALE A



NOTE:
PURSUANT TO SECTION 4 OF ANNEX 'A' OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

SHUJI KAKU
TEAM LEADER

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY

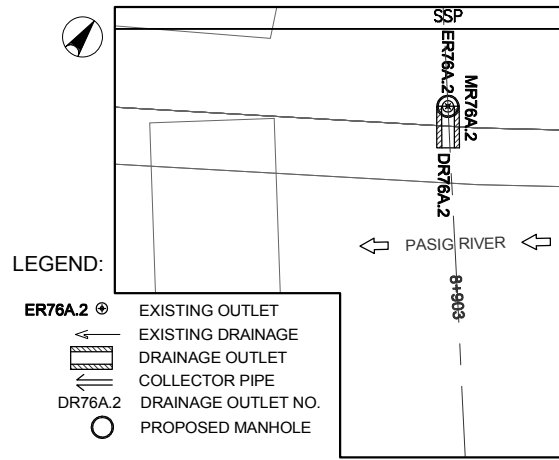
APPROVED BY: RAUL C. ASIS
UNDERSECRETARY FOR TECHNICAL SERVICES

ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION: PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

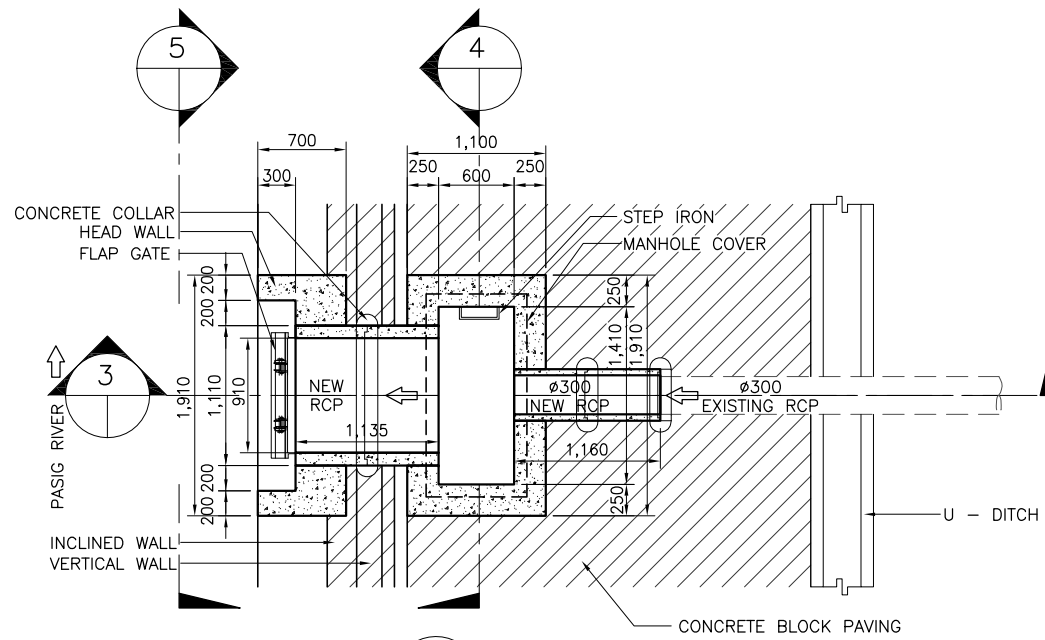
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SHEET NO.: LP-DR/DO/76A

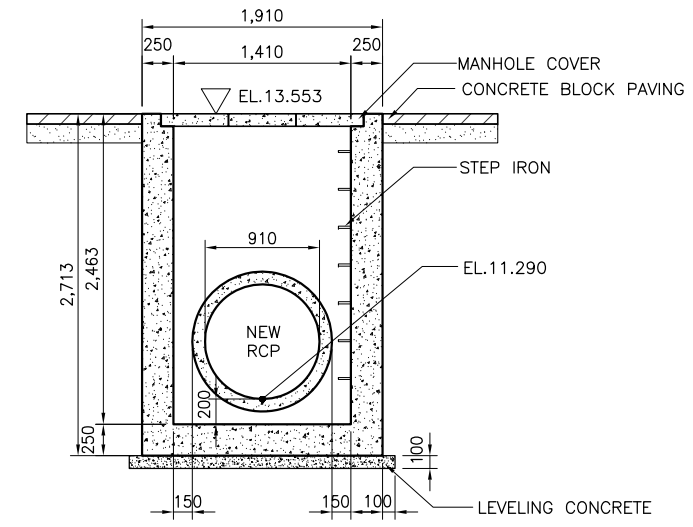


- LEGEND:**
- ER76A.2 ⊕ EXISTING OUTLET
 - ← EXISTING DRAINAGE
 - ▨ DRAINAGE OUTLET
 - ▭ COLLECTOR PIPE
 - DR76A.2 DRAINAGE OUTLET NO.
 - PROPOSED MANHOLE

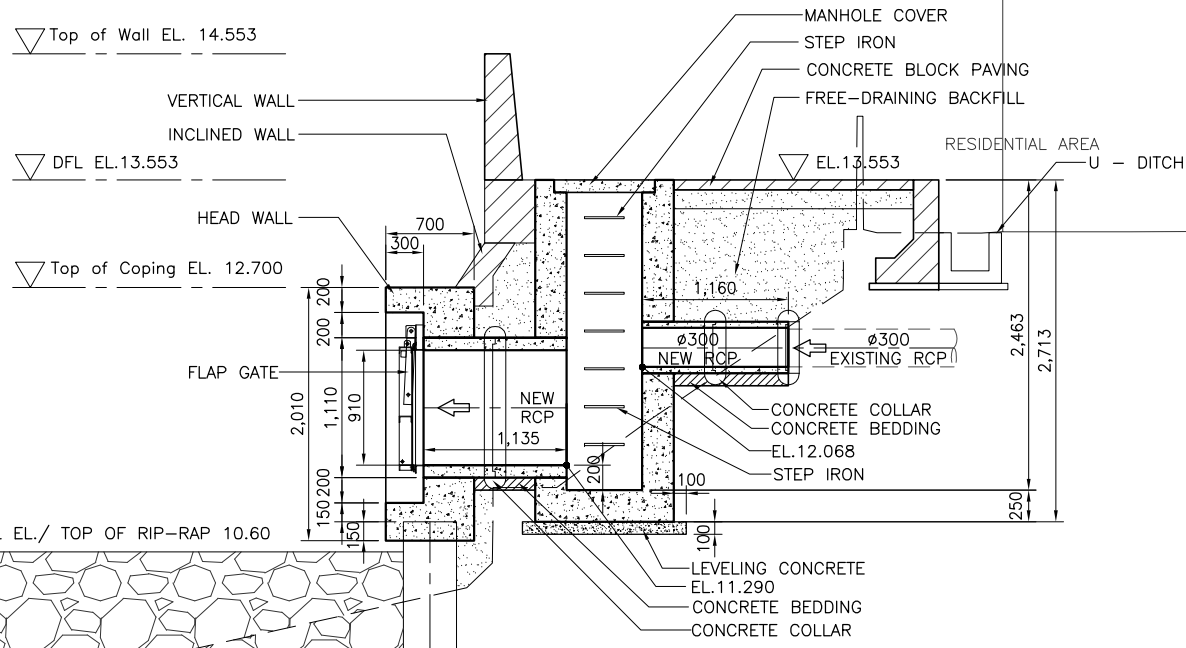
1 DRAINAGE PLAN
SCALE A



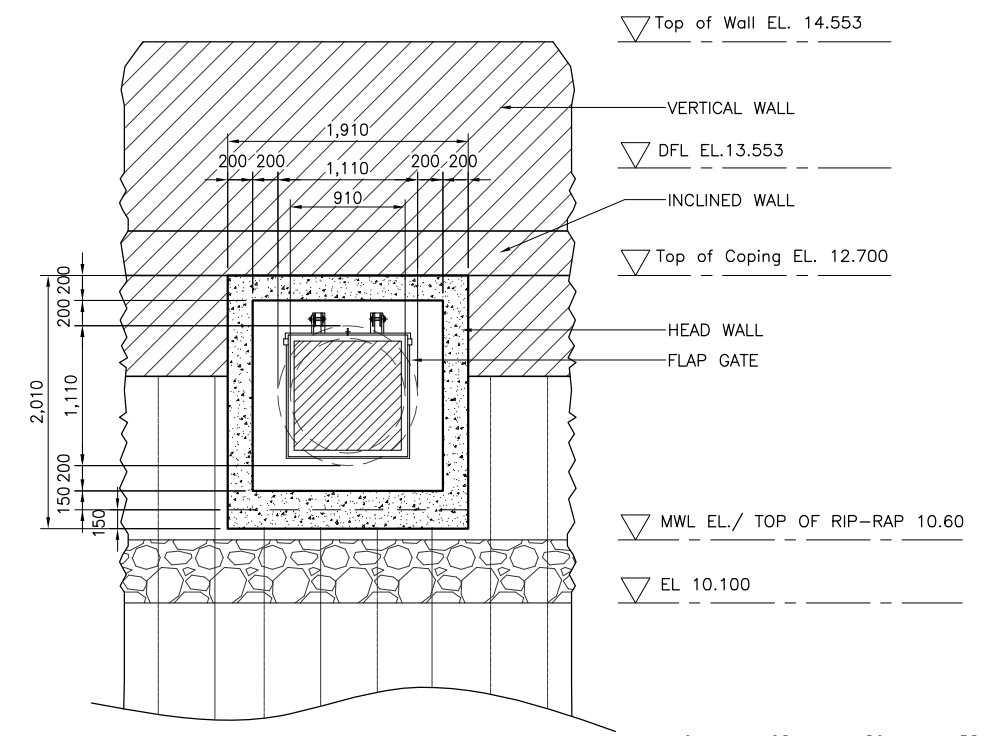
2 PLAN
SCALE B



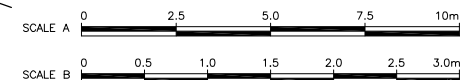
4 SECTION (MR76A.2)
SCALE B



3 SECTION
SCALE B



5 ELEVATION
SCALE B

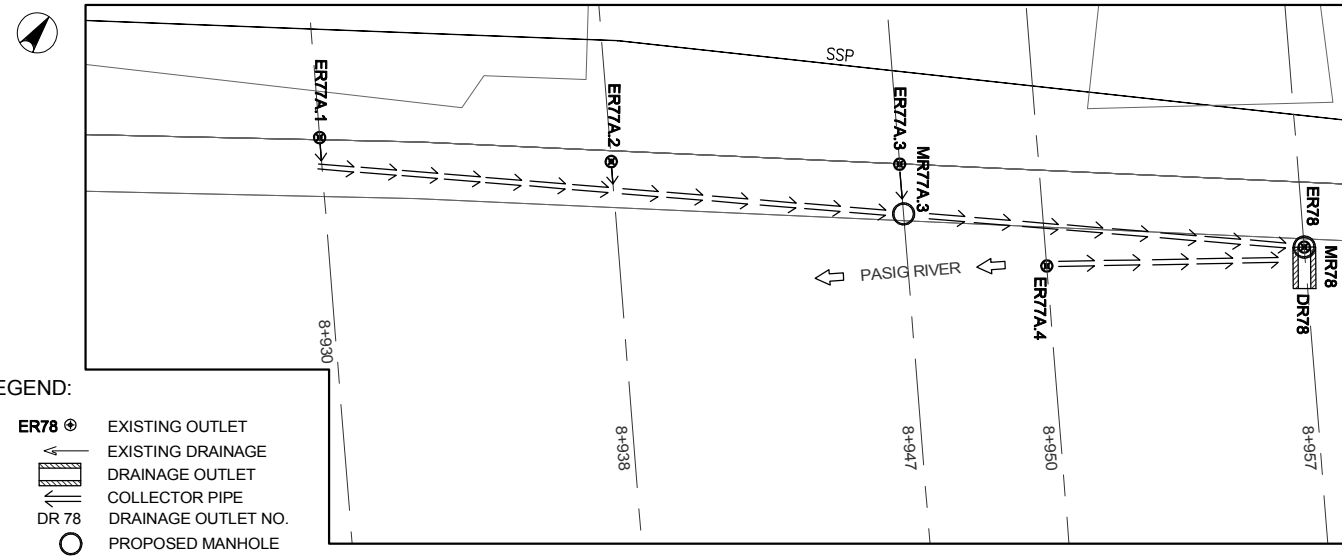


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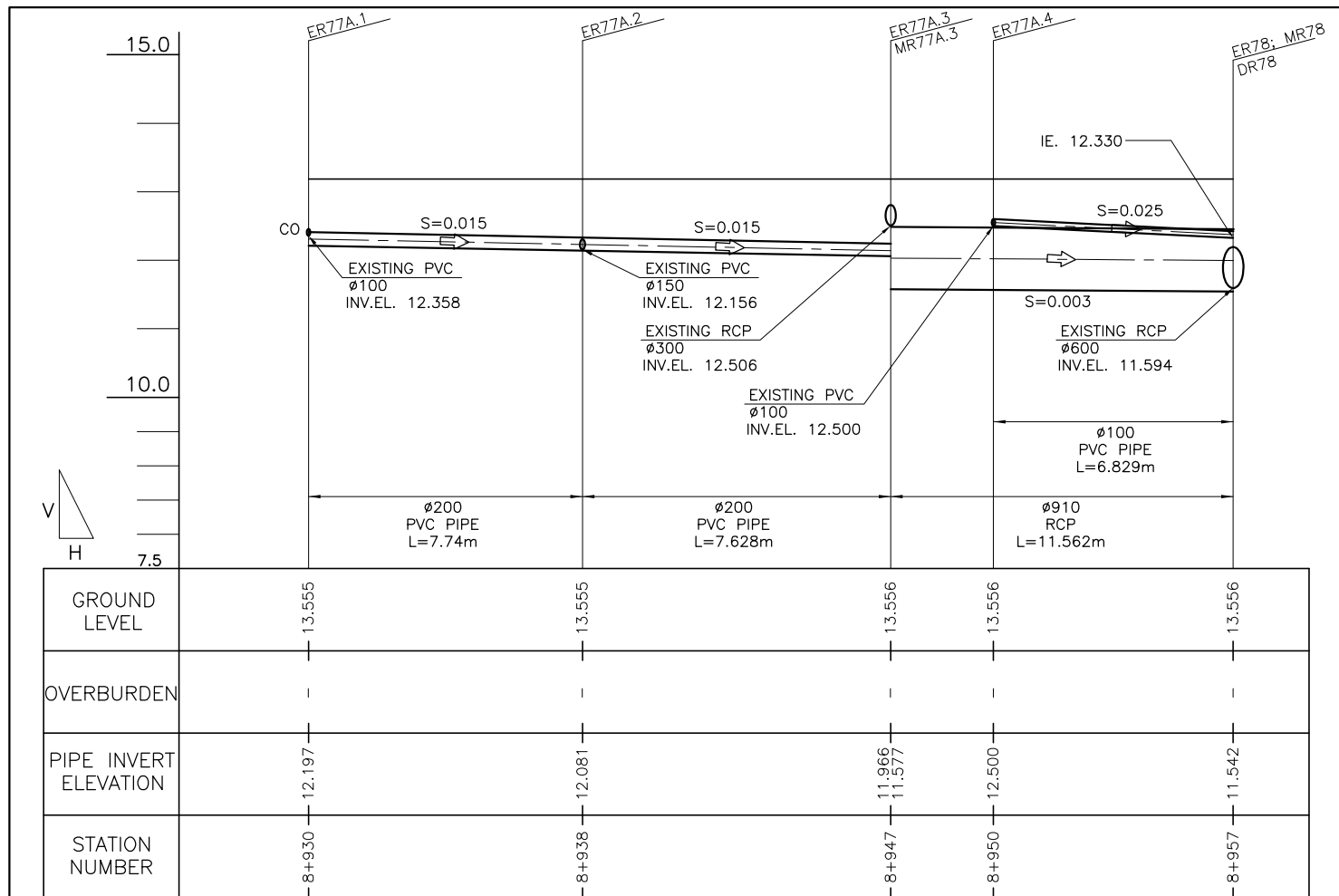
SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN			REPUBLIC OF THE PHILIPPINES				PROJECT & LOCATION	SHEET CONTENTS	SHEET NO.
	DESIGNED BY:	CHECKED BY:	SUBMITTED BY:	REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED BY:	PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	DETAIL OF DRAINAGE OUTLET- DR76A.2& MANHOLE MR76A.2 STA. 8+903 RB	
	KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	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			



- LEGEND:**
- ER78 ⊕ EXISTING OUTLET
 - ← EXISTING DRAINAGE
 - ▨ DRAINAGE OUTLET
 - ⇨ COLLECTOR PIPE
 - DR 78 DRAINAGE OUTLET NO.
 - PROPOSED MANHOLE

1 DRAINAGE PLAN
SCALE A



2 PROFILE
SCALE A

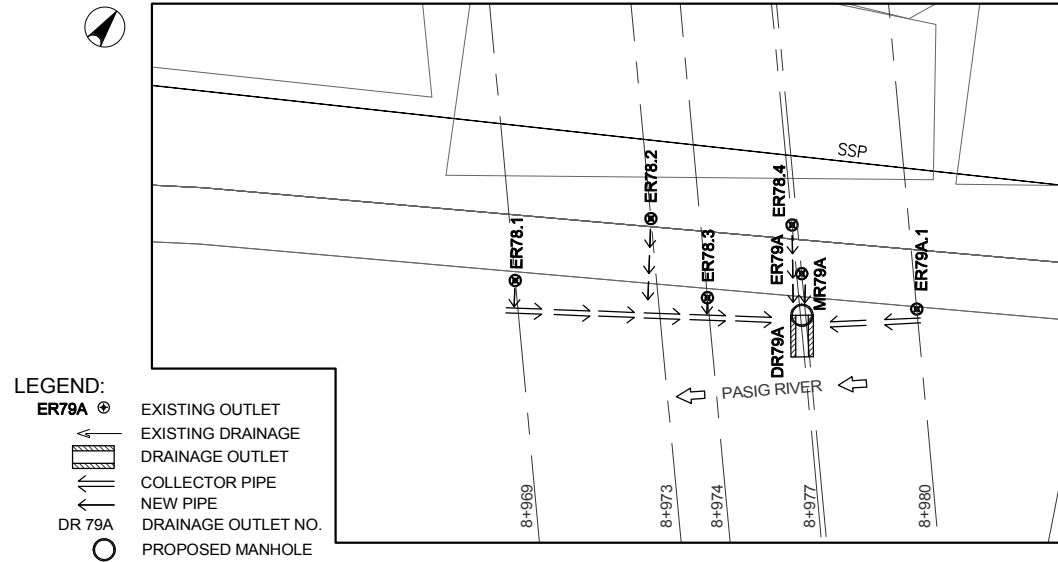


REVISIONS			
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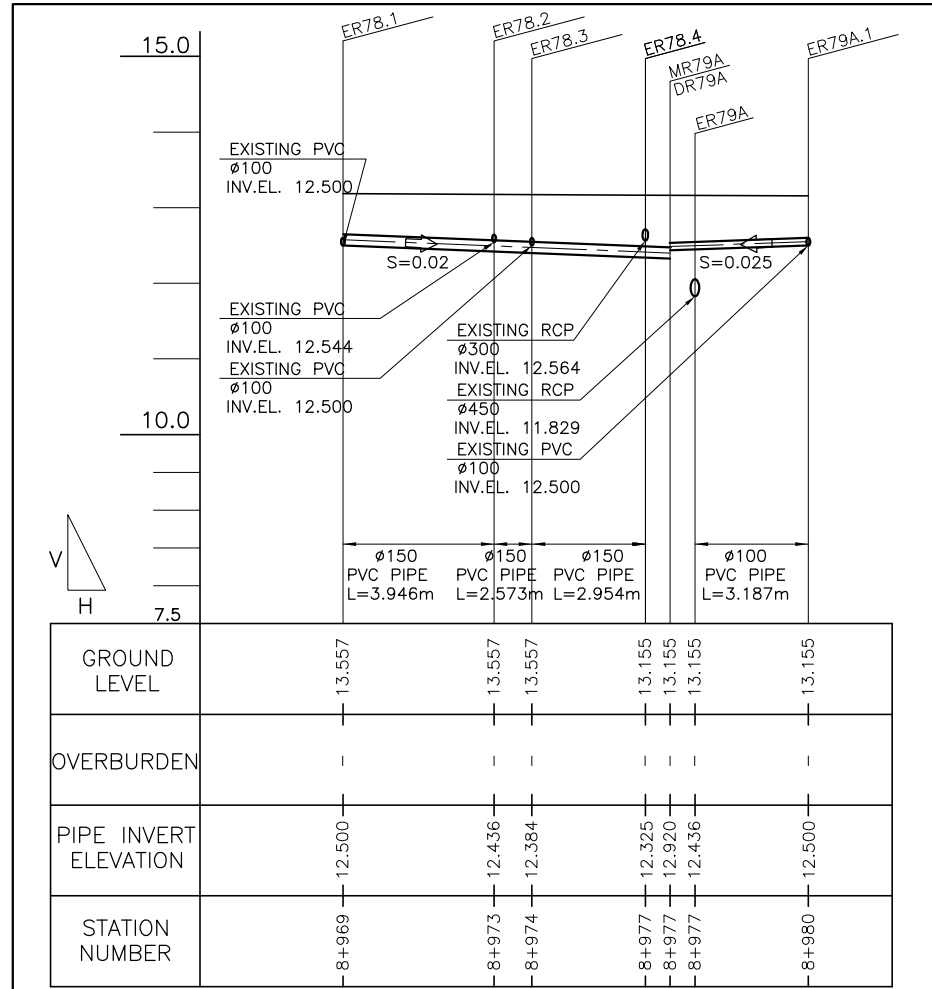
SHUJI KAKU
TEAM LEADER

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	KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	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	RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES			



- LEGEND:**
- ER78A ⊕ EXISTING OUTLET
 - ↑ EXISTING DRAINAGE
 - ↑ EXISTING DRAINAGE OUTLET
 - ↑ COLLECTOR PIPE
 - ↑ NEW PIPE
 - DR 79A DRAINAGE OUTLET NO.
 - PROPOSED MANHOLE

1 DRAINAGE PLAN
SCALE A



2 PROFILE
SCALE A

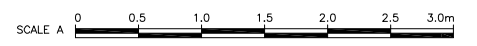
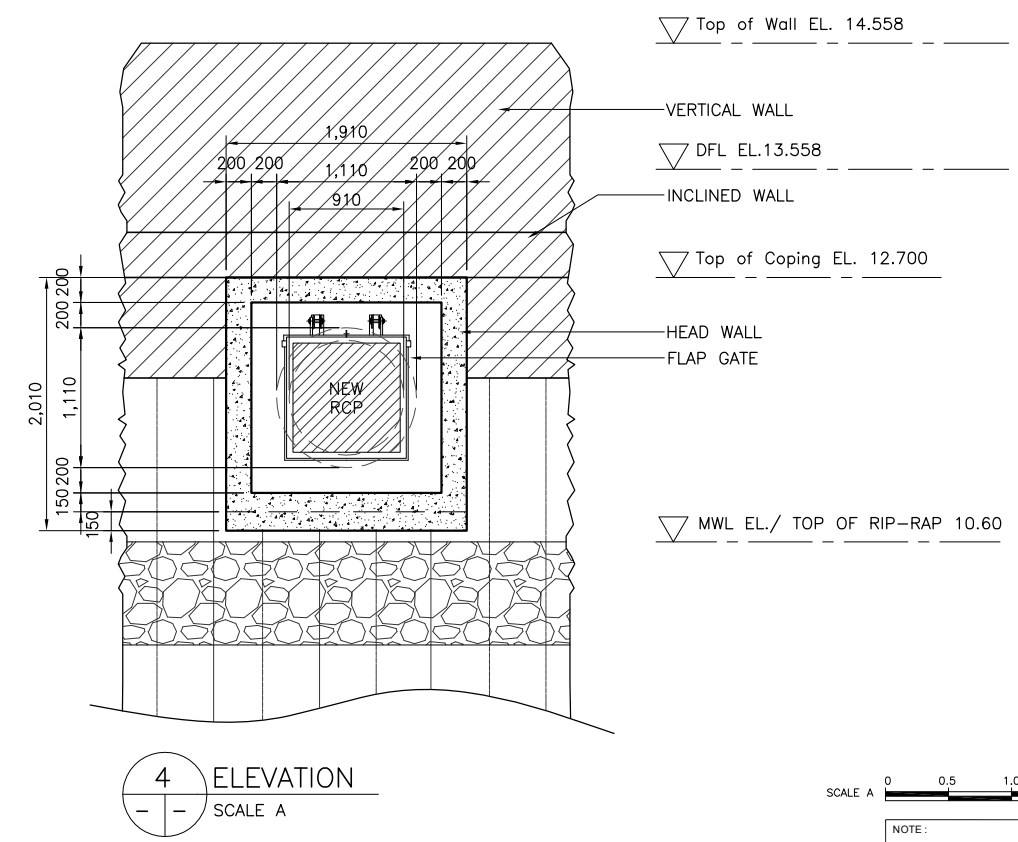
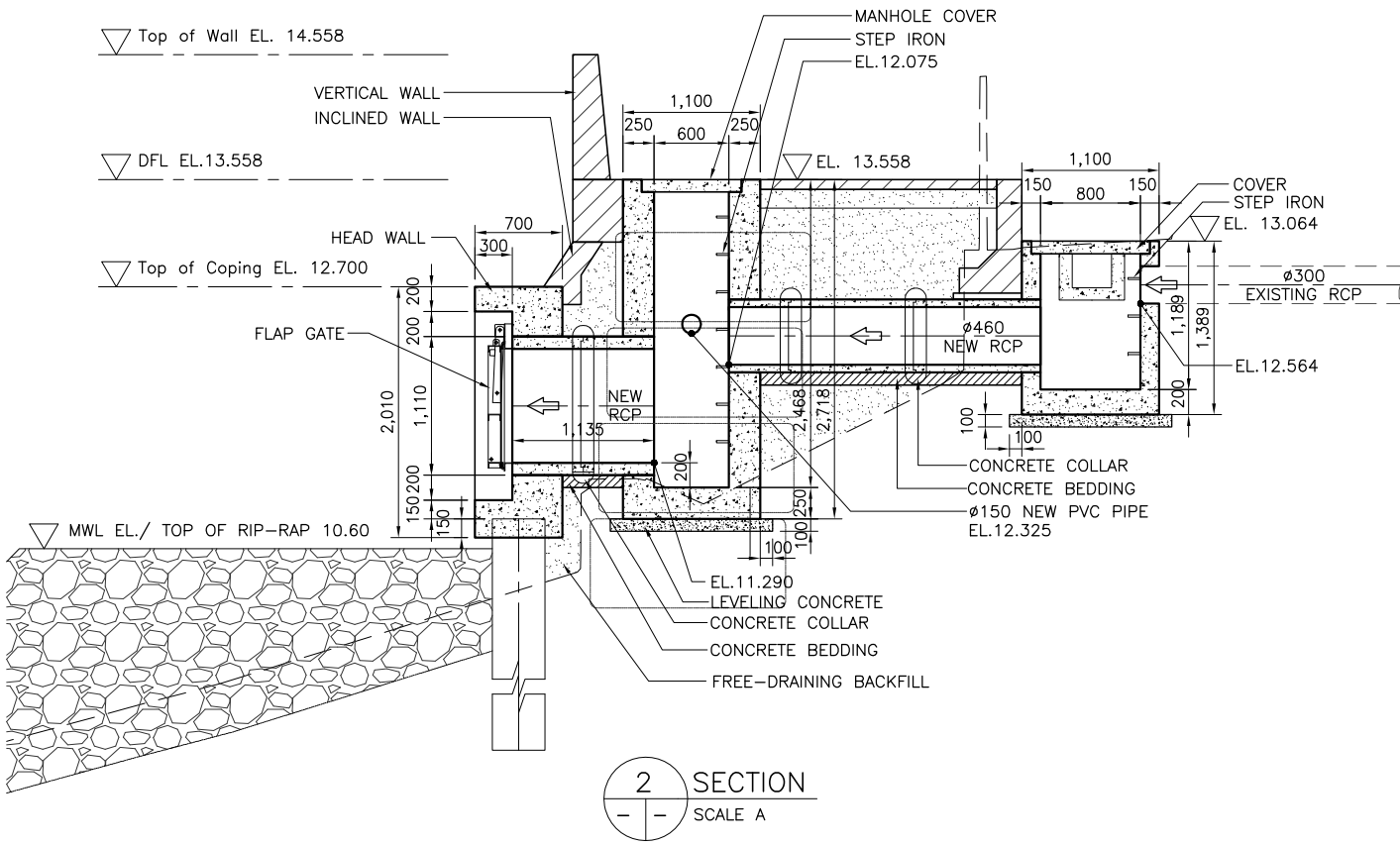
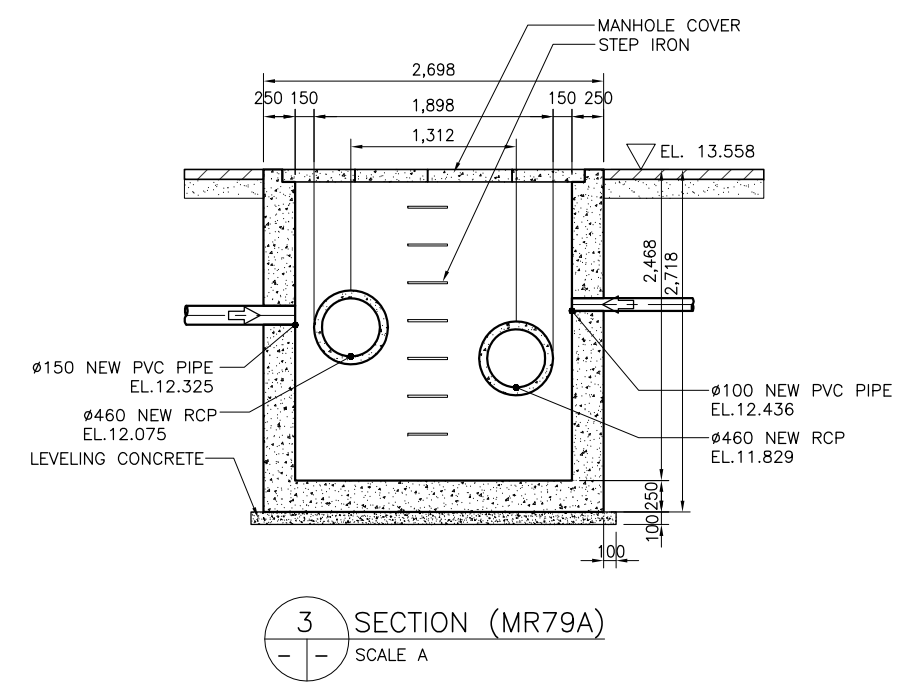
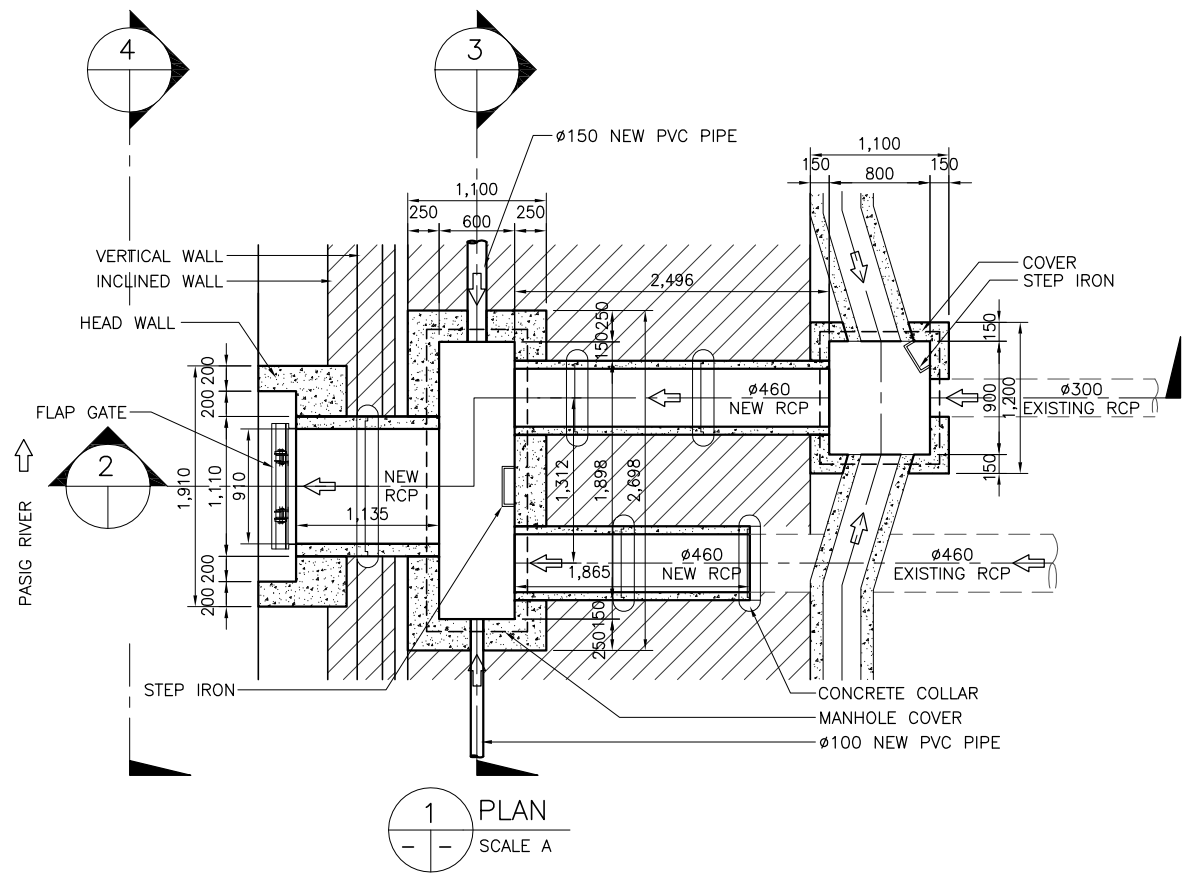


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SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN			REPUBLIC OF THE PHILIPPINES				PROJECT & LOCATION		SHEET CONTENTS		SHEET NO.	
	DESIGNED BY:	CHECKED BY:	SUBMITTED BY:		REVIEWED BY:	RECOMMENDING APPROVAL:		APPROVED BY:		PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	PLAN & PROFILE OF COLLECTOR PIPE	
	KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	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	SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY	SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY			

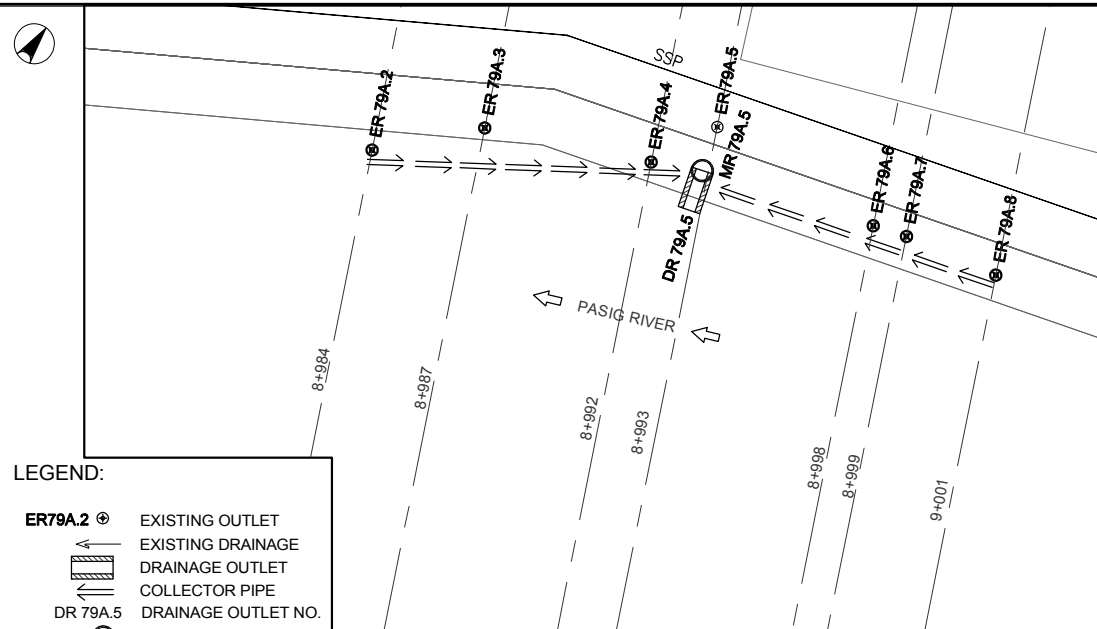


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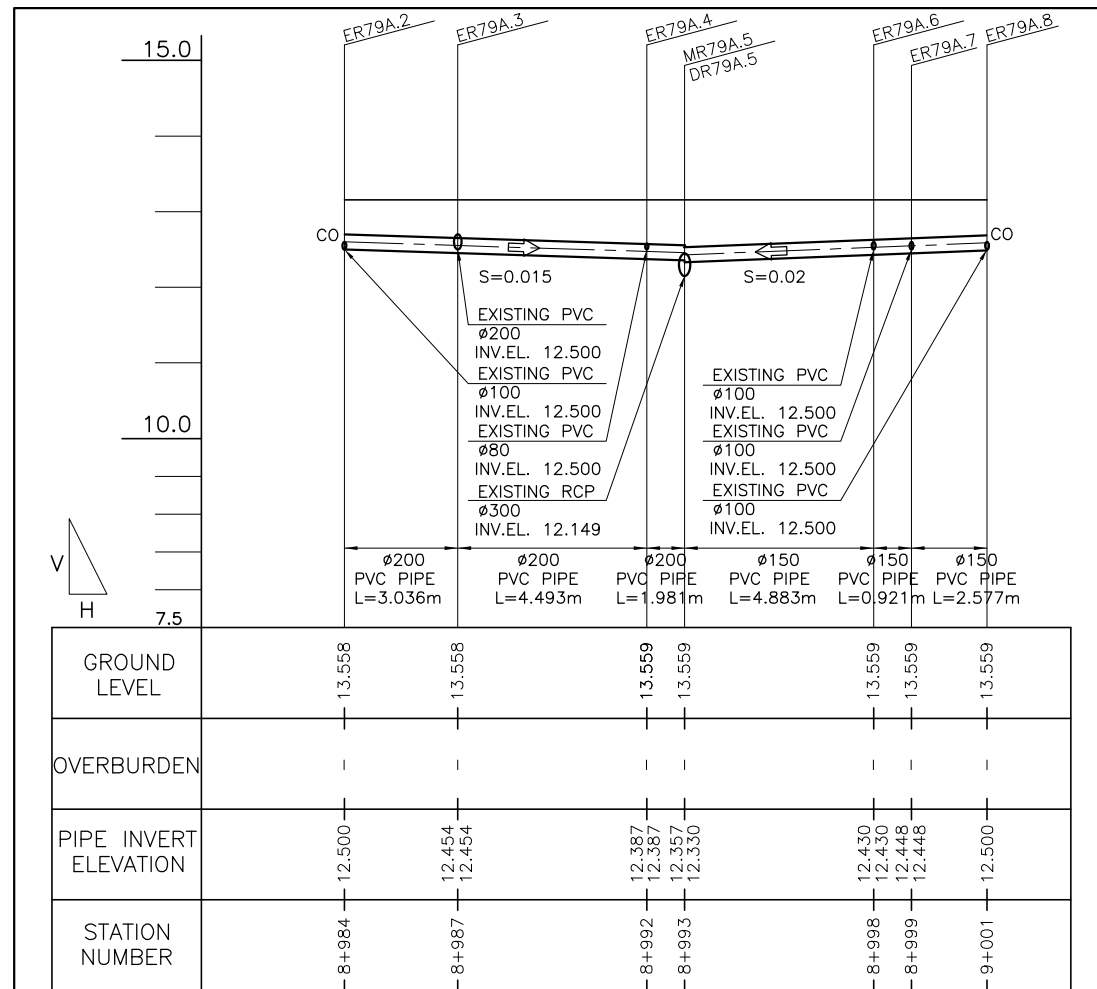
SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN			REPUBLIC OF THE PHILIPPINES				PROJECT & LOCATION	SHEET CONTENTS	SHEET NO.
	DESIGNED BY:	CHECKED BY:	SUBMITTED BY:	REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED BY:	PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	DETAIL OF DRAINAGE OUTLET- DR79A & MANHOLE MR79A STA. 8+977 RB	
	KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	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			



- LEGEND:**
- ER79A.2 ⊕ EXISTING OUTLET
 - ← EXISTING DRAINAGE
 - ▭ DRAINAGE OUTLET
 - ▭ COLLECTOR PIPE
 - DR 79A.5 DRAINAGE OUTLET NO.
 - PROPOSED MANHOLE

1 DRAINAGE PLAN
SCALE A



2 PROFILE
SCALE A

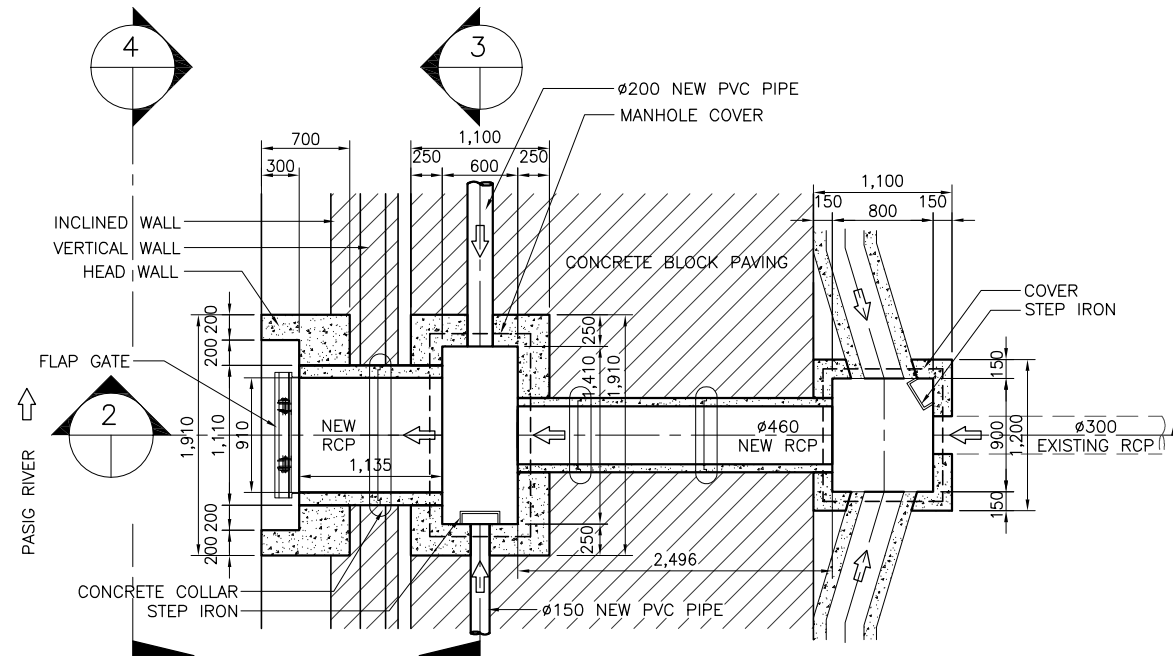


REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

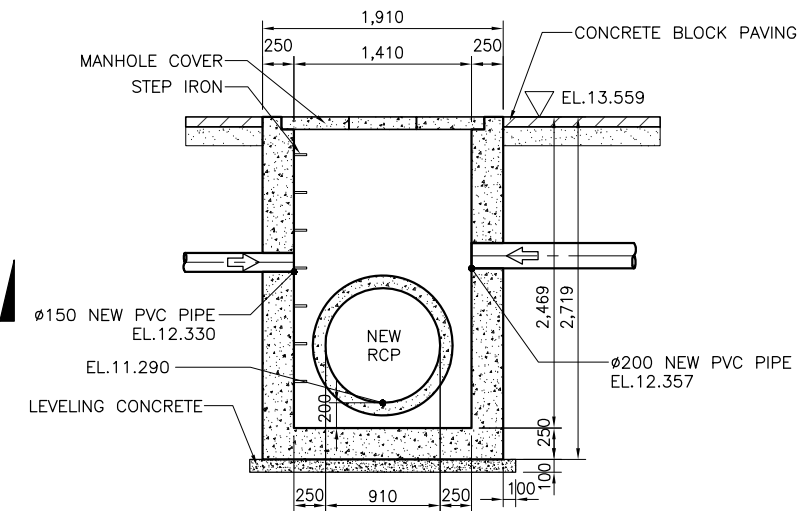
NOTE:
PURSUANT TO SECTION 4 OF ANNEX 'A' OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGN UNDERTAKEN BY CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGN NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

SHUJI KAKU
TEAM LEADER

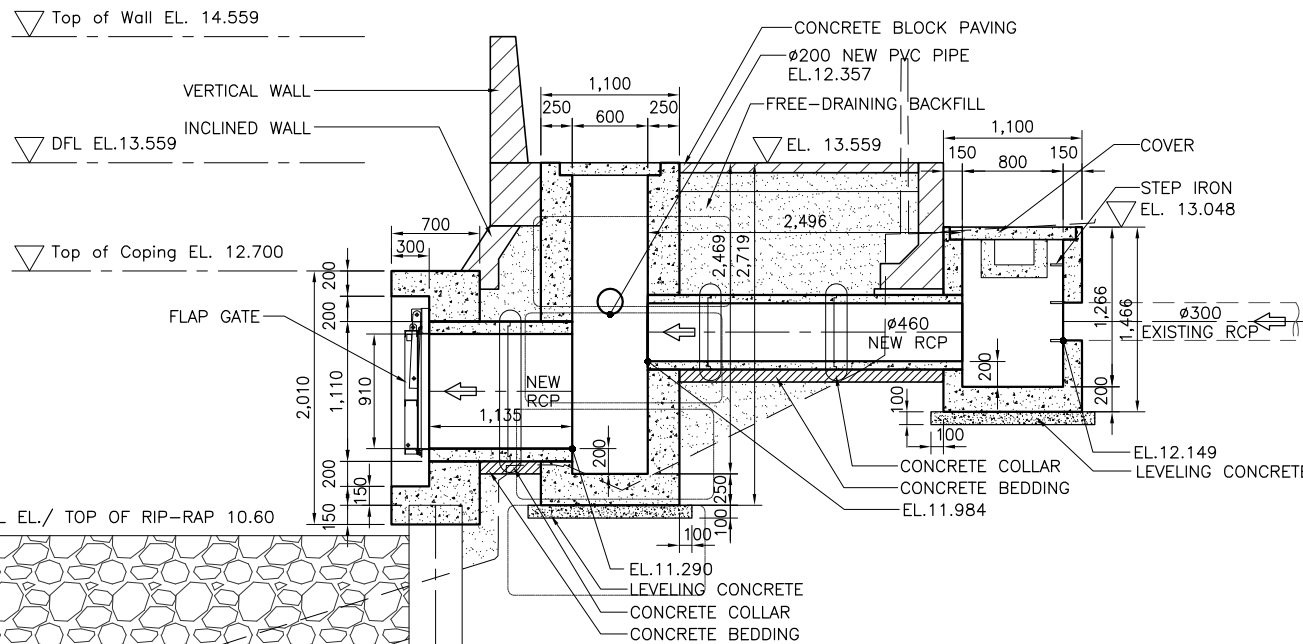
JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN 			REPUBLIC OF THE PHILIPPINES 				PROJECT & LOCATION PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA		SHEET CONTENTS PLAN & PROFILE OF COLLECTOR PIPE	SHEET NO. LP-DR-DO 79A.5P
DESIGNED BY: KOHEI TAKAYAMA <small>STRUCTURAL ENGINEER IV</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>	SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY RAUL C. ASIS <small>UNDERSECRETARY FOR TECHNICAL SERVICES</small>	SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY ROGELIO L. SINGSON <small>SECRETARY</small>	APPROVED BY: PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA		



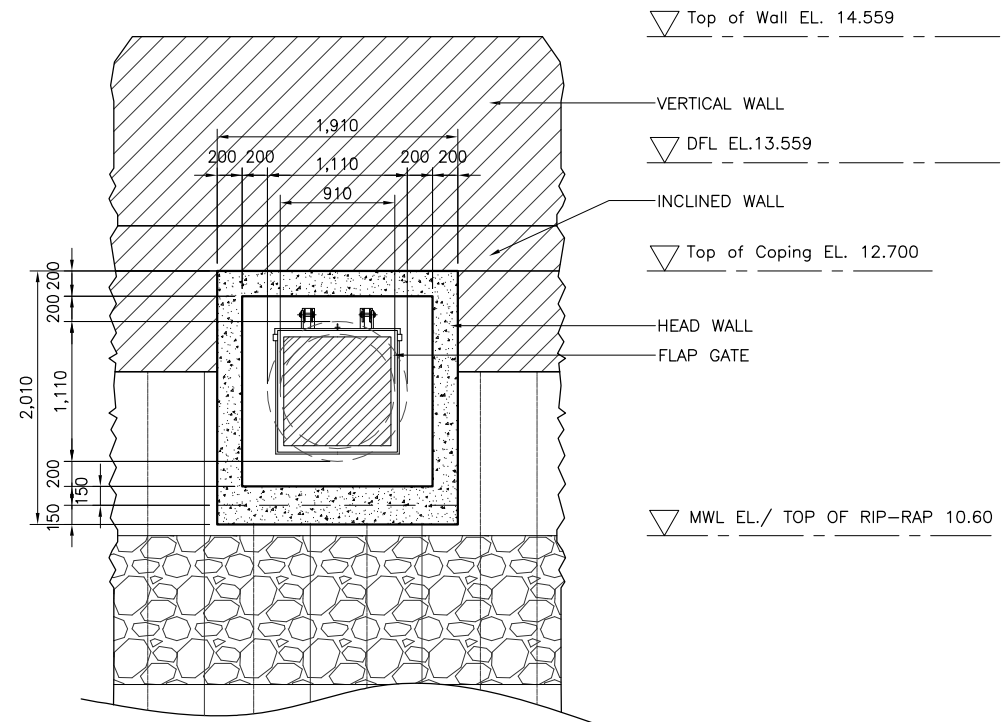
1 PLAN
SCALE A



3 SECTION (MR79A.5)
SCALE A



2 SECTION
SCALE A



4 ELEVATION
SCALE A



NOTE:
PURSUANT TO SECTION 4 OF ANNEX 'A' OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

SHUJI KAKU
TEAM LEADER

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY

APPROVED BY: RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

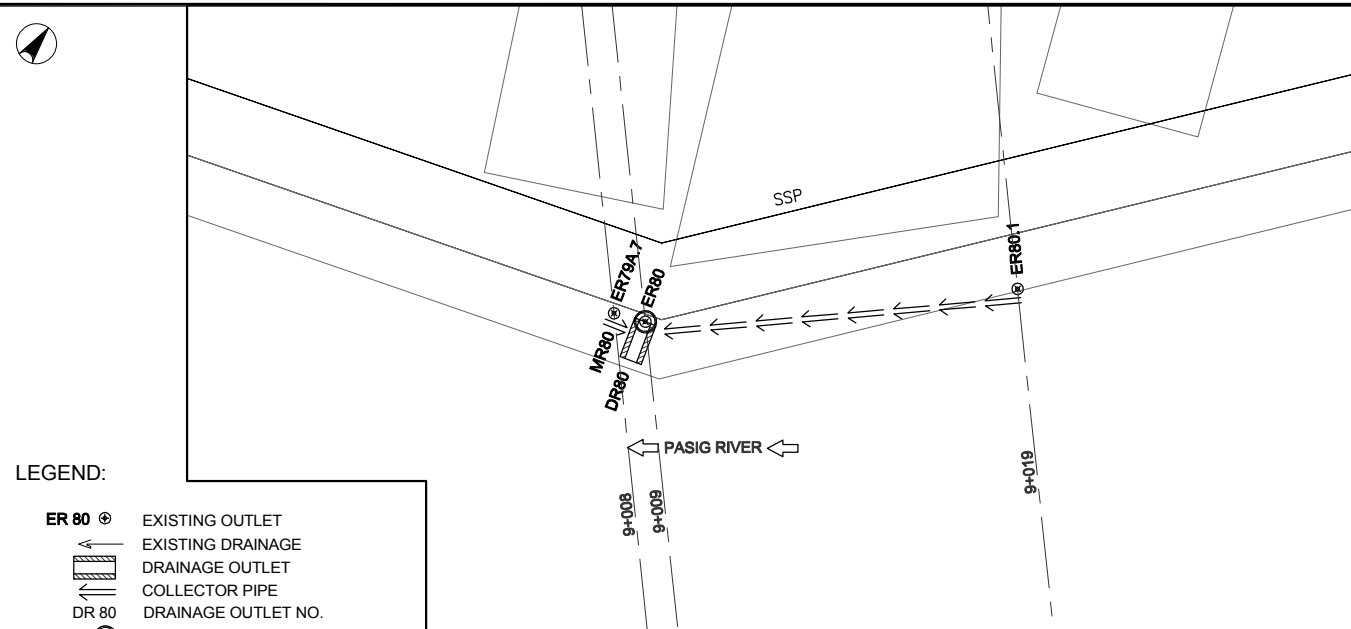
SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY

ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION: PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS: DETAIL OF DRAINAGE OUTLET DR79A.5 & MANHOLE MR79A.5 STA. 8+993 RB

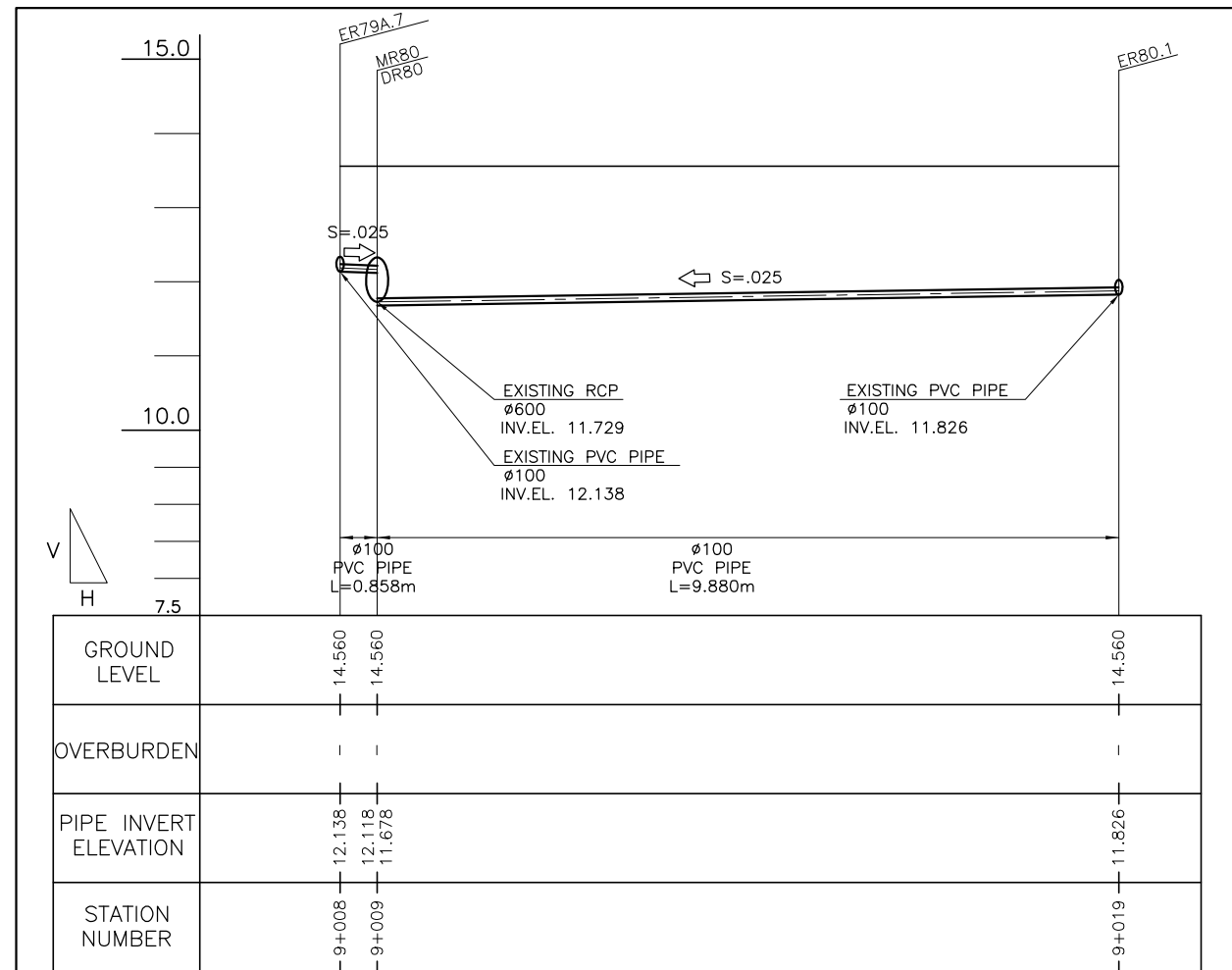
SHEET NO.: LP-DR/DO/79A.5



LEGEND:

- ER 80 ⊕ EXISTING OUTLET
- ← EXISTING DRAINAGE
- ▭ DRAINAGE OUTLET
- ← COLLECTOR PIPE
- DR 80 DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

1 DRAINAGE PLAN
SCALE A



2 PROFILE
SCALE A

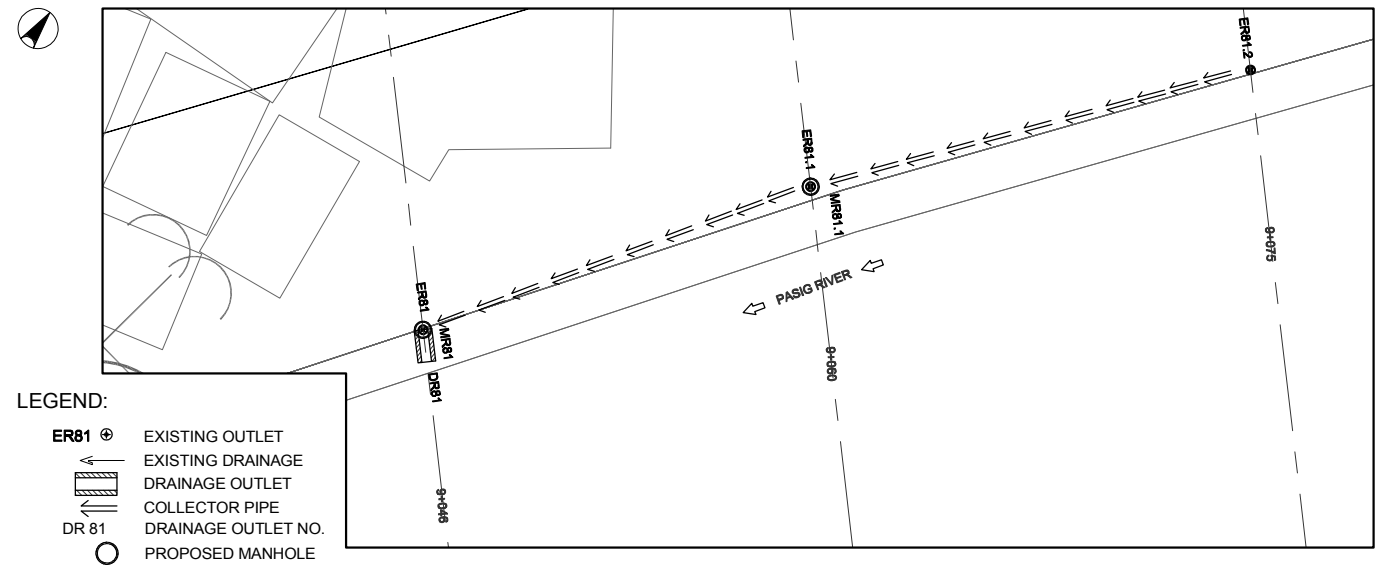


REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

NOTE:
PURSUANT TO SECTION 4 OF ANNEX 'A' OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

SHUJI KAKU
TEAM LEADER

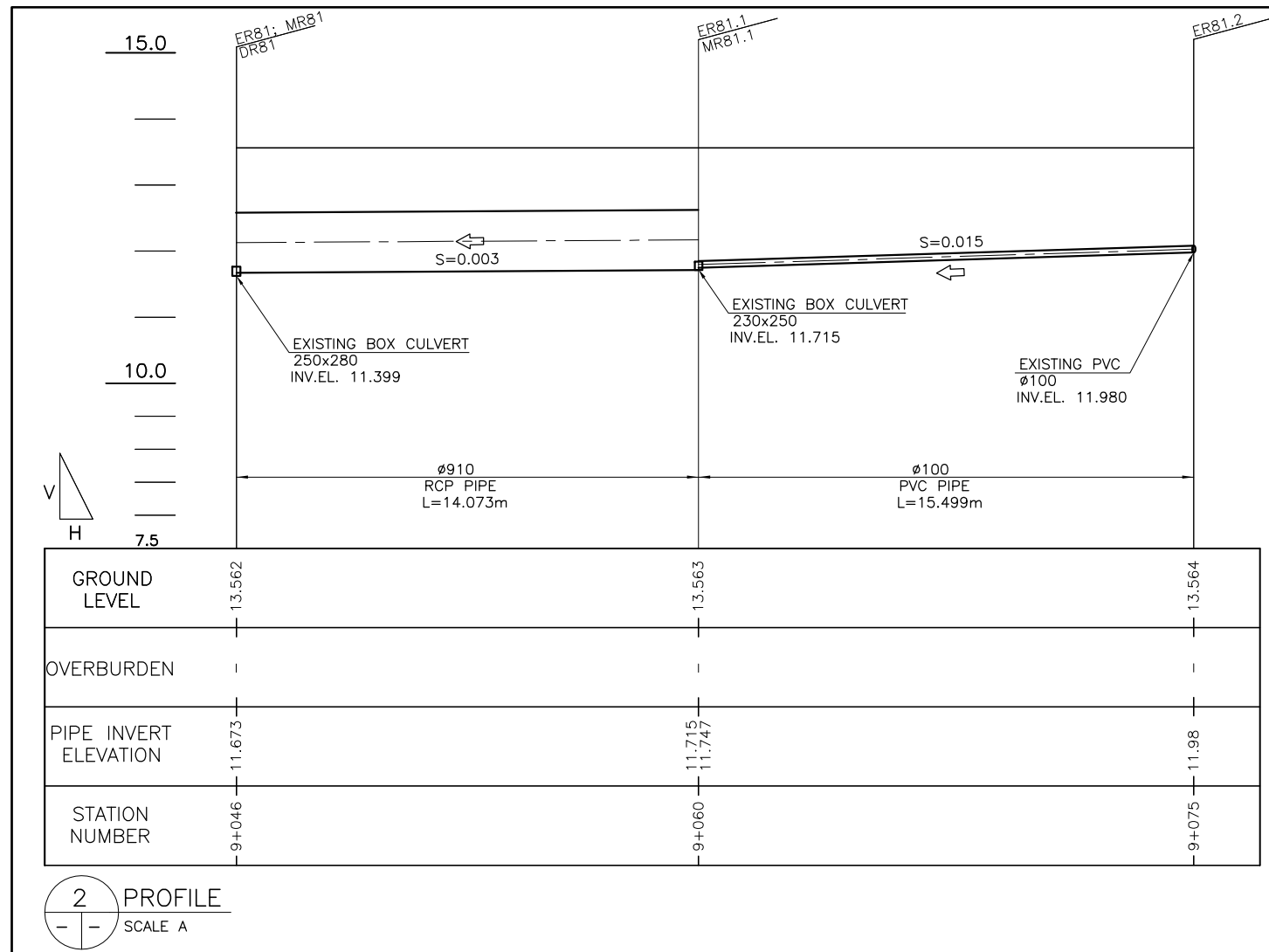
JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN			REPUBLIC OF THE PHILIPPINES				PROJECT & LOCATION	SHEET CONTENTS	SHEET NO.
	DESIGNED BY:	CHECKED BY:	SUBMITTED BY:		REVIEWED BY:	RECOMMENDING APPROVAL:	PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	PLAN & PROFILE OF COLLECTOR PIPE	
	KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	TOSHIKI KAWAKAMI THE CHECKER	SHUJI KAKU TEAM LEADER		PERFECTO L. ZAPLAN, JR. CHIEF, HYDRAULIC DIVISION, BOD	PATRICK B. GATAN PROJECT DIRECTOR PMO - MFCP			



LEGEND:

- ER81 ⊕ EXISTING OUTLET
- ← EXISTING DRAINAGE
- ▬ DRAINAGE OUTLET
- ▬ COLLECTOR PIPE
- DR 81 DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

1 DRAINAGE PLAN
SCALE A



2 PROFILE
SCALE A



NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY

APPROVED BY: RAUL C. ASIS
UNDERSECRETARY FOR TECHNICAL SERVICES

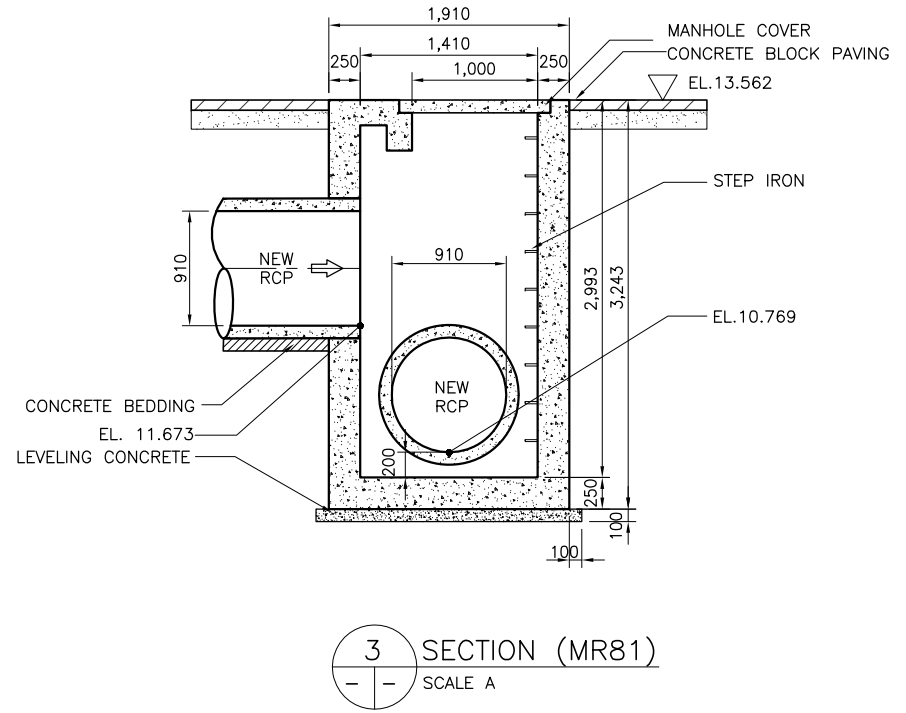
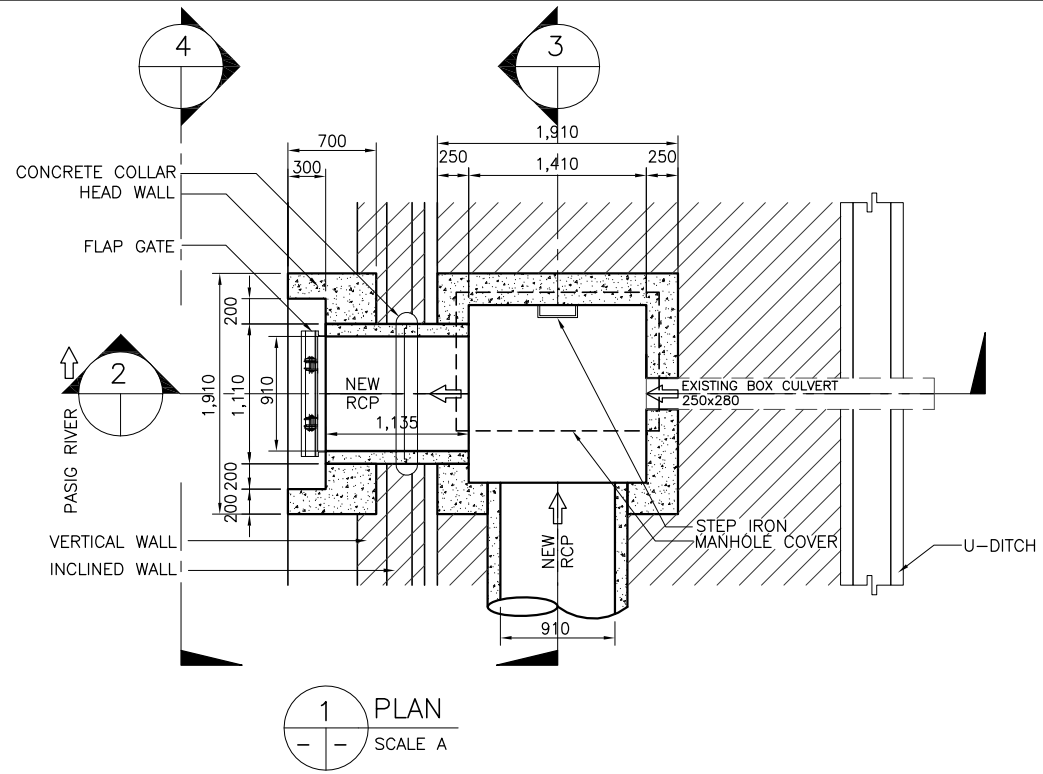
SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY

ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION
PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS
PLAN & PROFILE OF COLLECTOR PIPE

SHEET NO.
LP-DR
DO/81/P



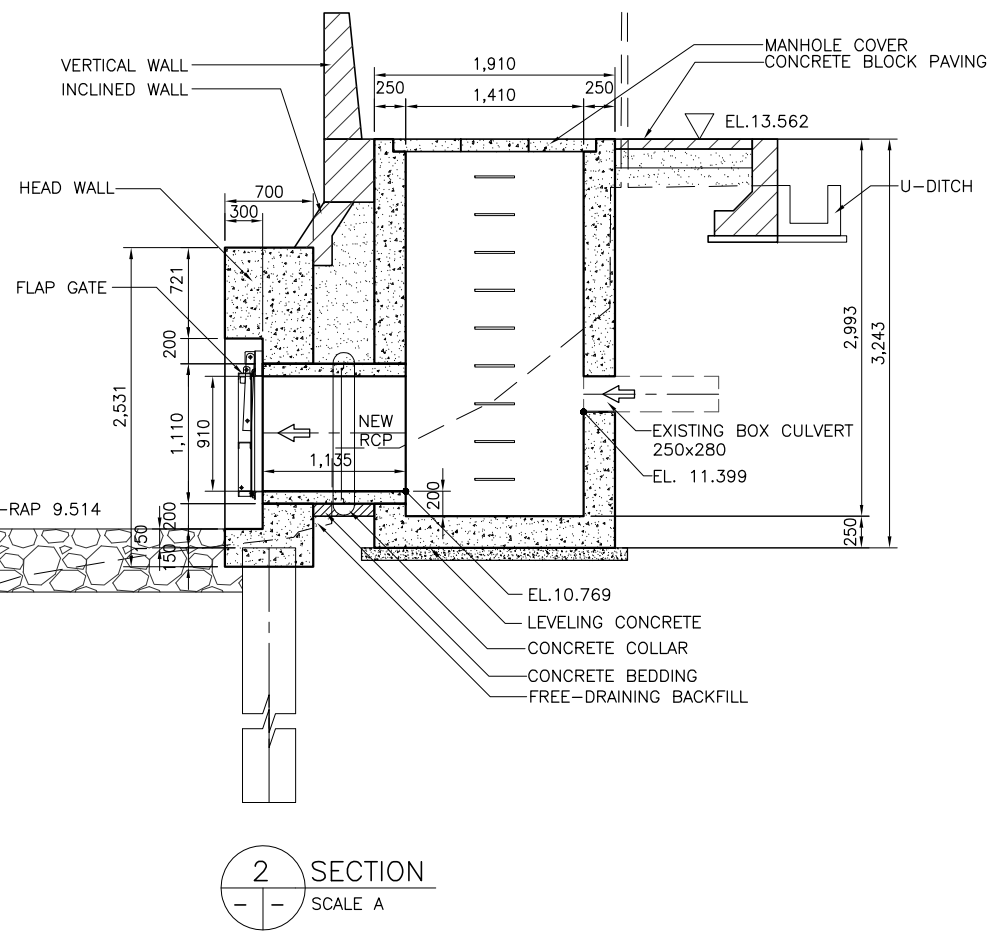
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▽ DFL EL.13.562

▽ Top of Coping EL.12.700

▽ MWL EL 10.60

▽ EL. 9.014



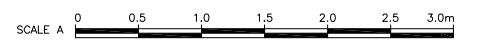
▽ Top of Wall EL. 14.562

▽ DFL EL.13.562

▽ Top of Coping EL. 12.700

▽ MWL EL 10.60

▽ EL. 9.014



4 ELEVATION
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



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

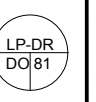
SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY

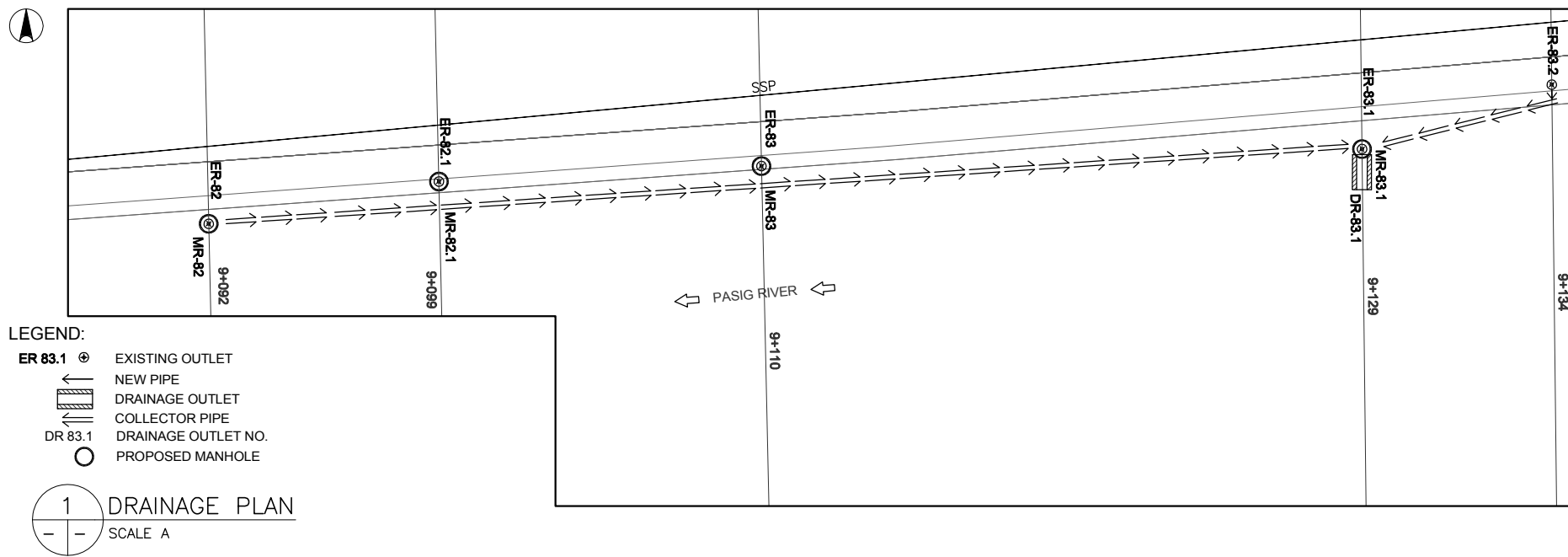
RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

APPROVED BY: ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION
PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS
DETAIL OF DRAINAGE OUTLET- DR81 & MANHOLE MR81 STA. 9+046 RB

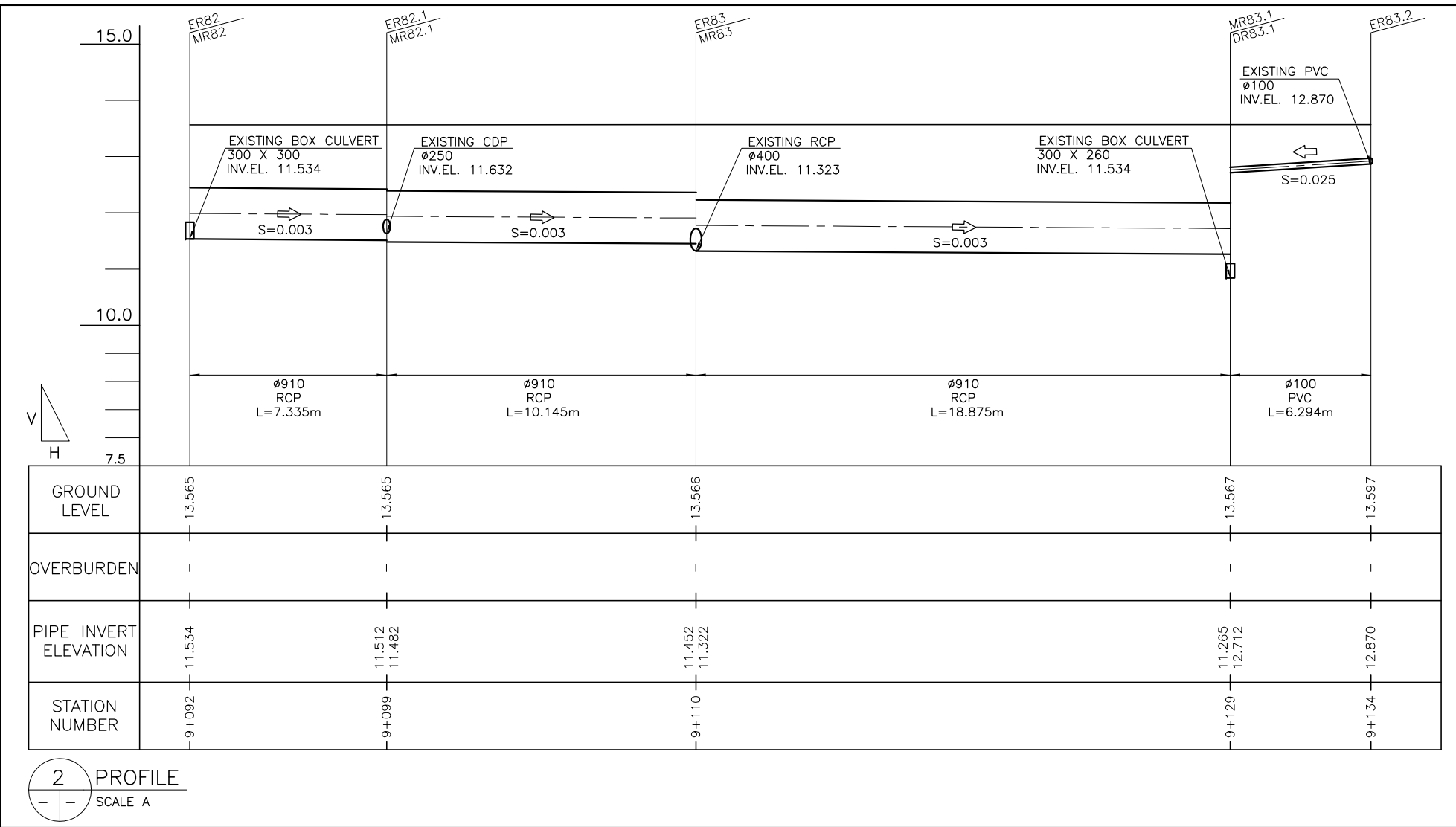




LEGEND:

- ER 83.1 ⊕ EXISTING OUTLET
- ← NEW PIPE
- ▭ DRAINAGE OUTLET
- ▭ COLLECTOR PIPE
- DR 83.1 DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

1 DRAINAGE PLAN
SCALE A



2 PROFILE
SCALE A

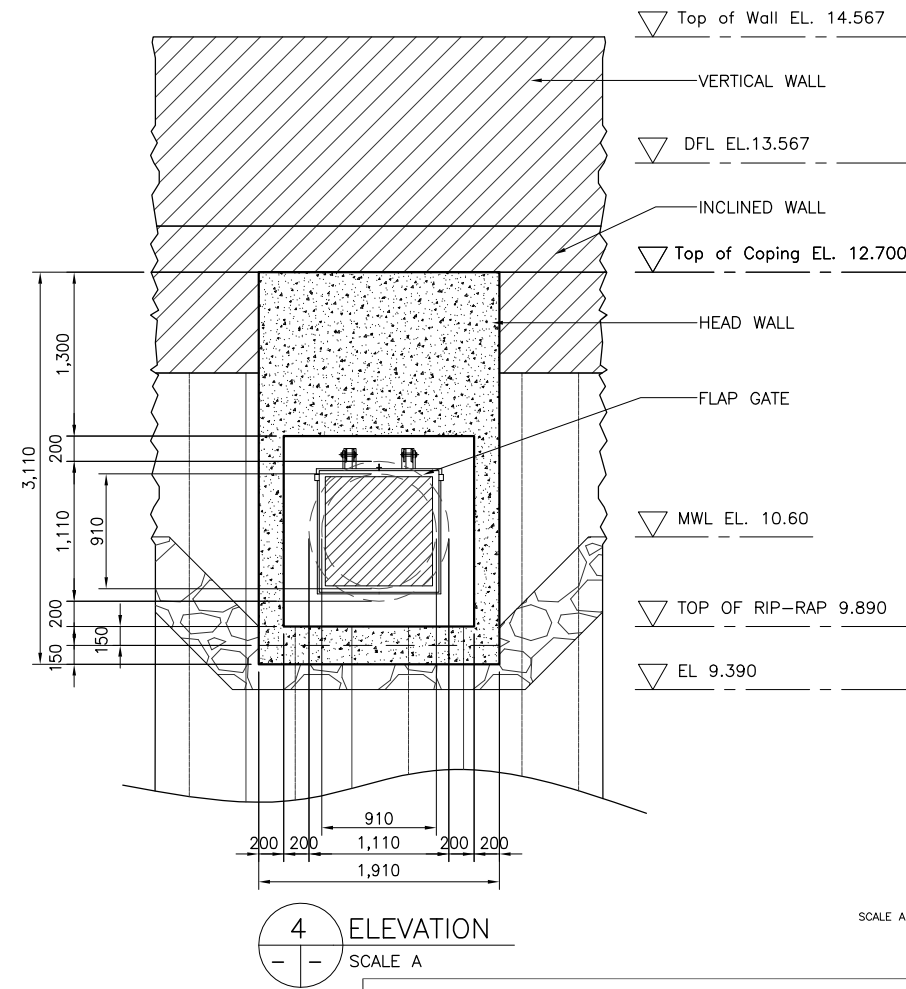
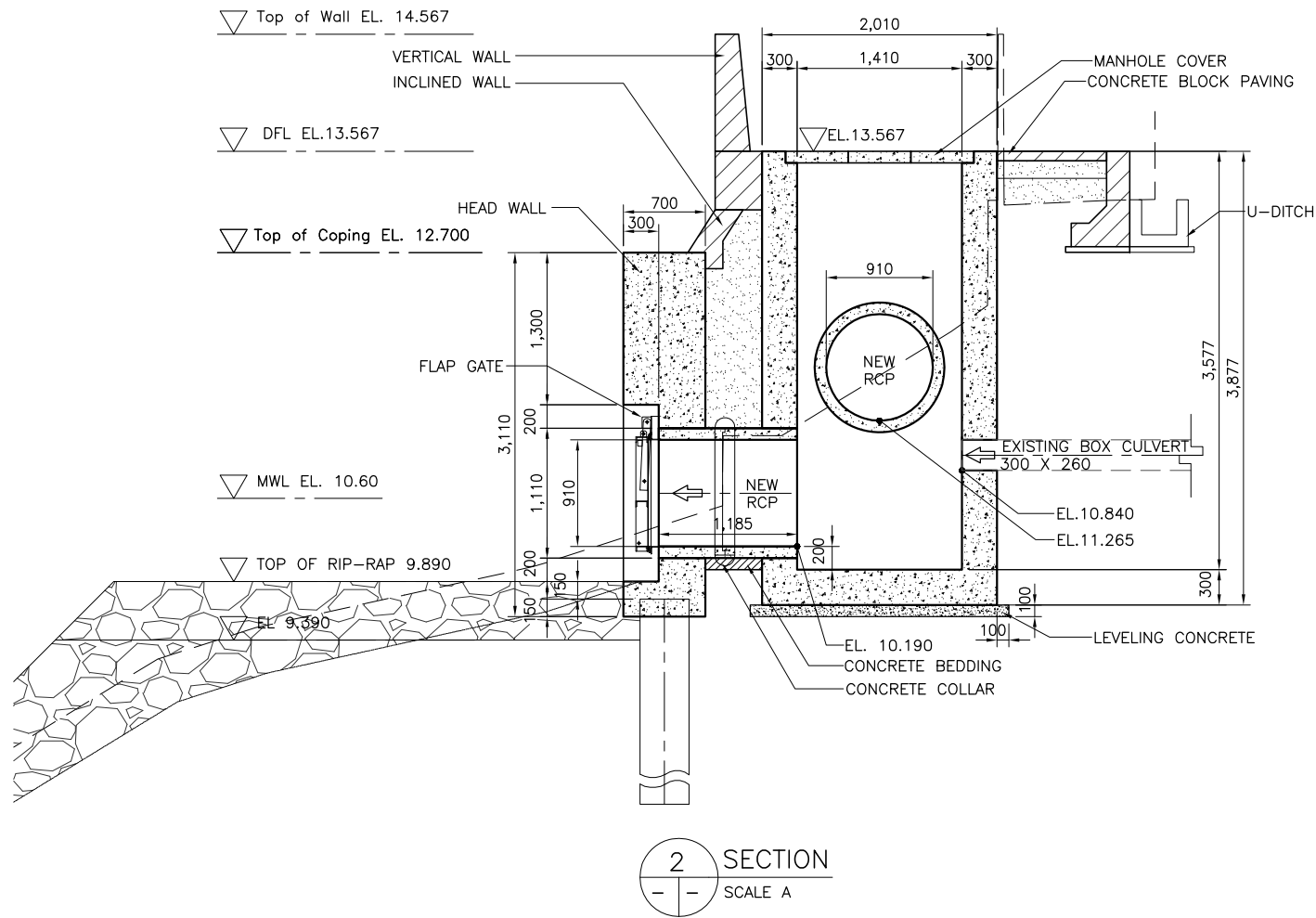
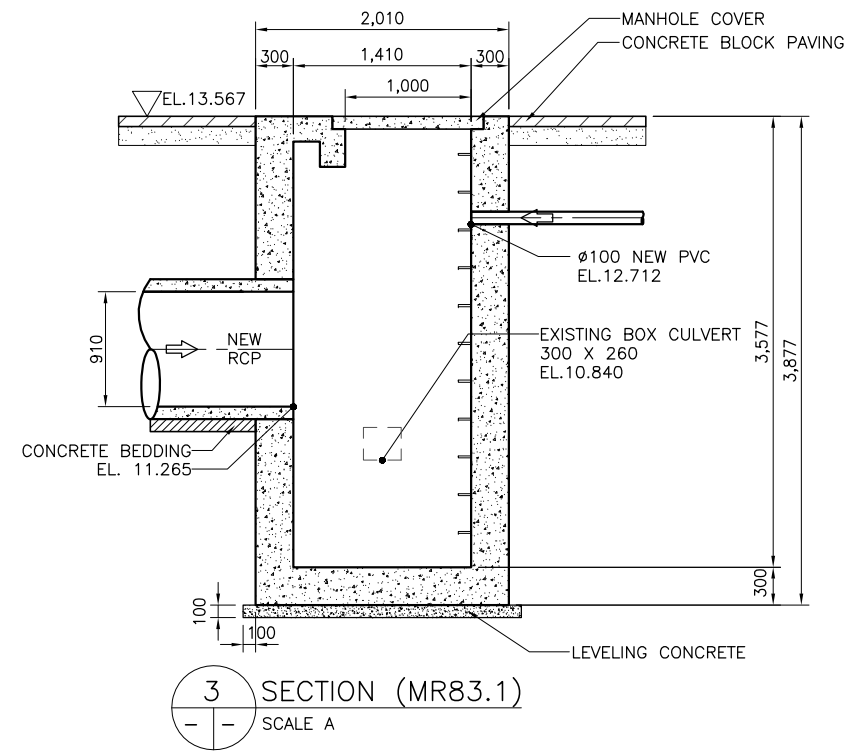
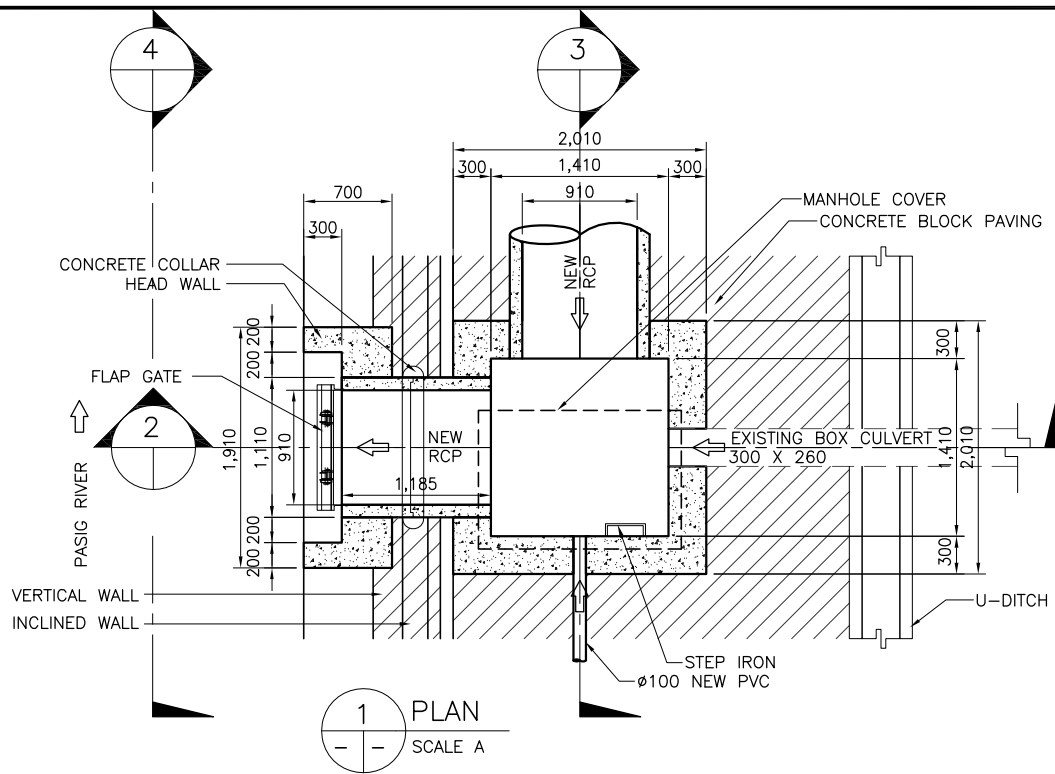


REVISIONS			
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SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN			REPUBLIC OF THE PHILIPPINES				PROJECT & LOCATION		SHEET CONTENTS		SHEET NO.	
	DESIGNED BY:	CHECKED BY:	SUBMITTED BY:		REVIEWED BY:	RECOMMENDING APPROVAL:		APPROVED BY:		PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	PLAN & PROFILE OF COLLECTOR PIPE	
	KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	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	RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES	ROGELIO L. SINGSON SECRETARY			



NOTE:
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SHUJI KAKU
TEAM LEADER

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY

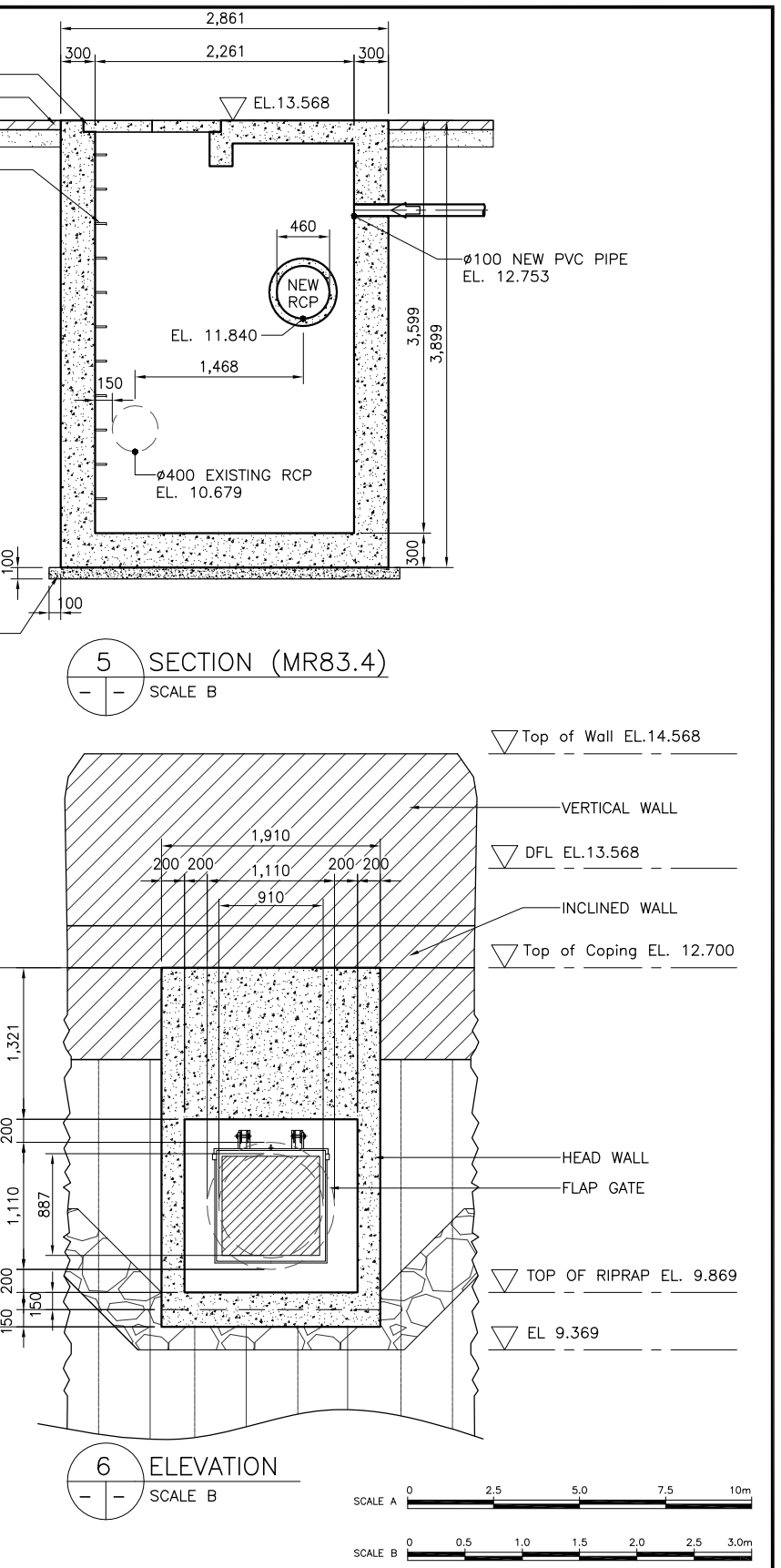
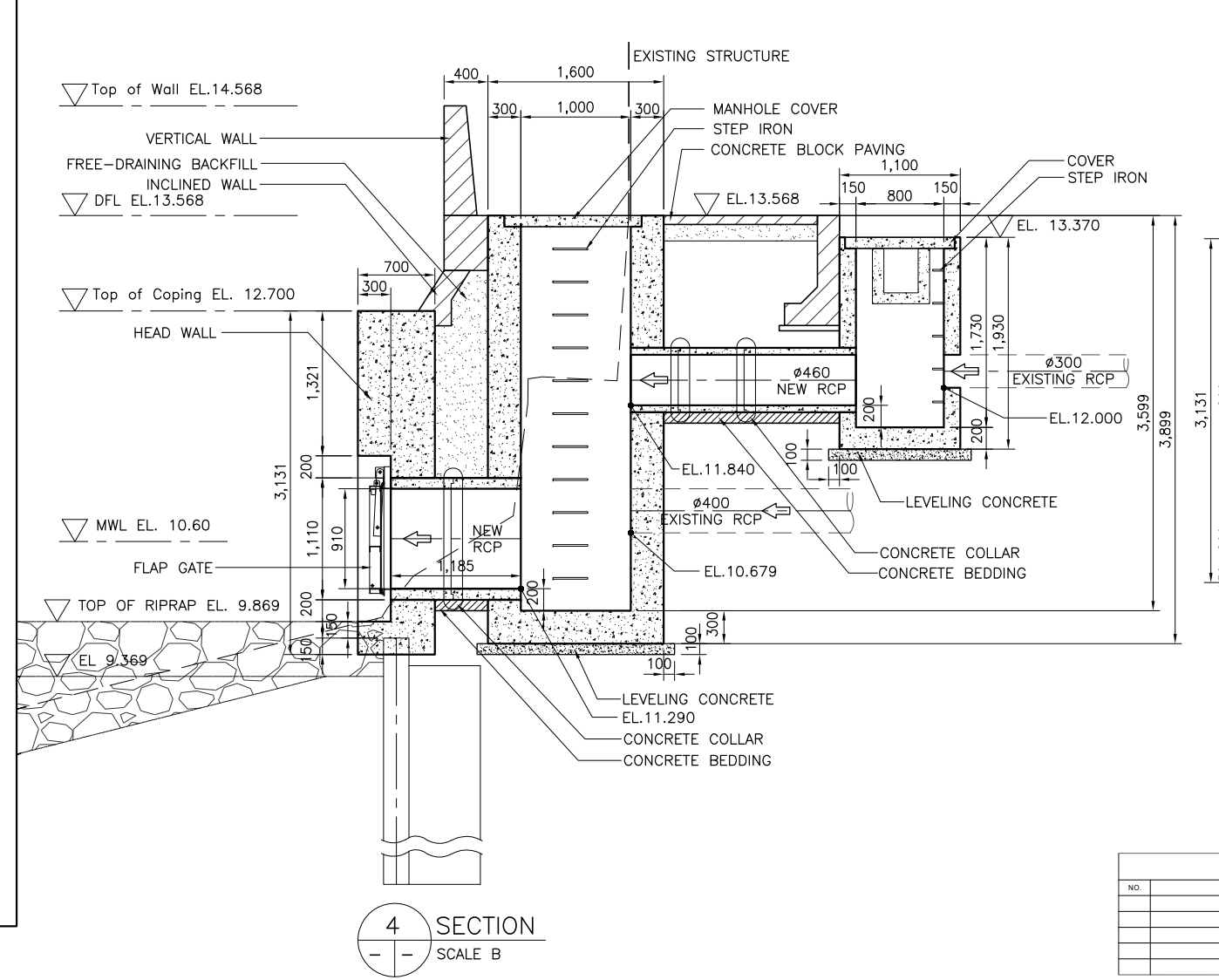
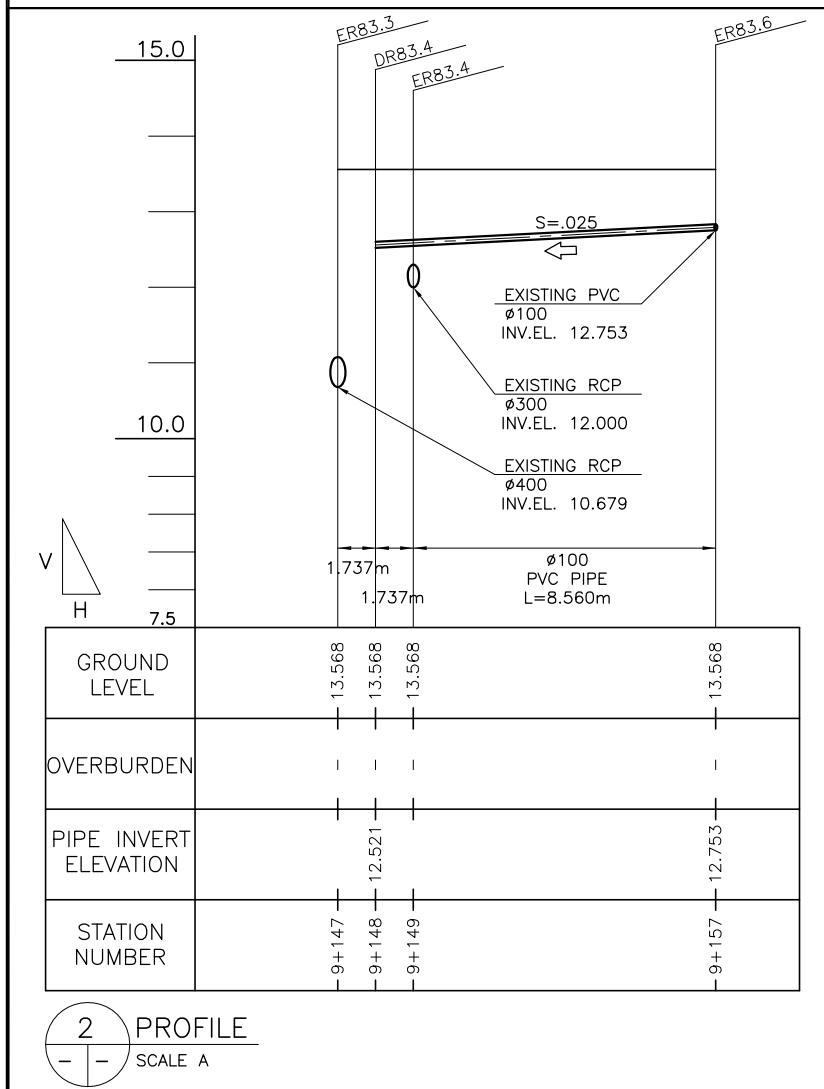
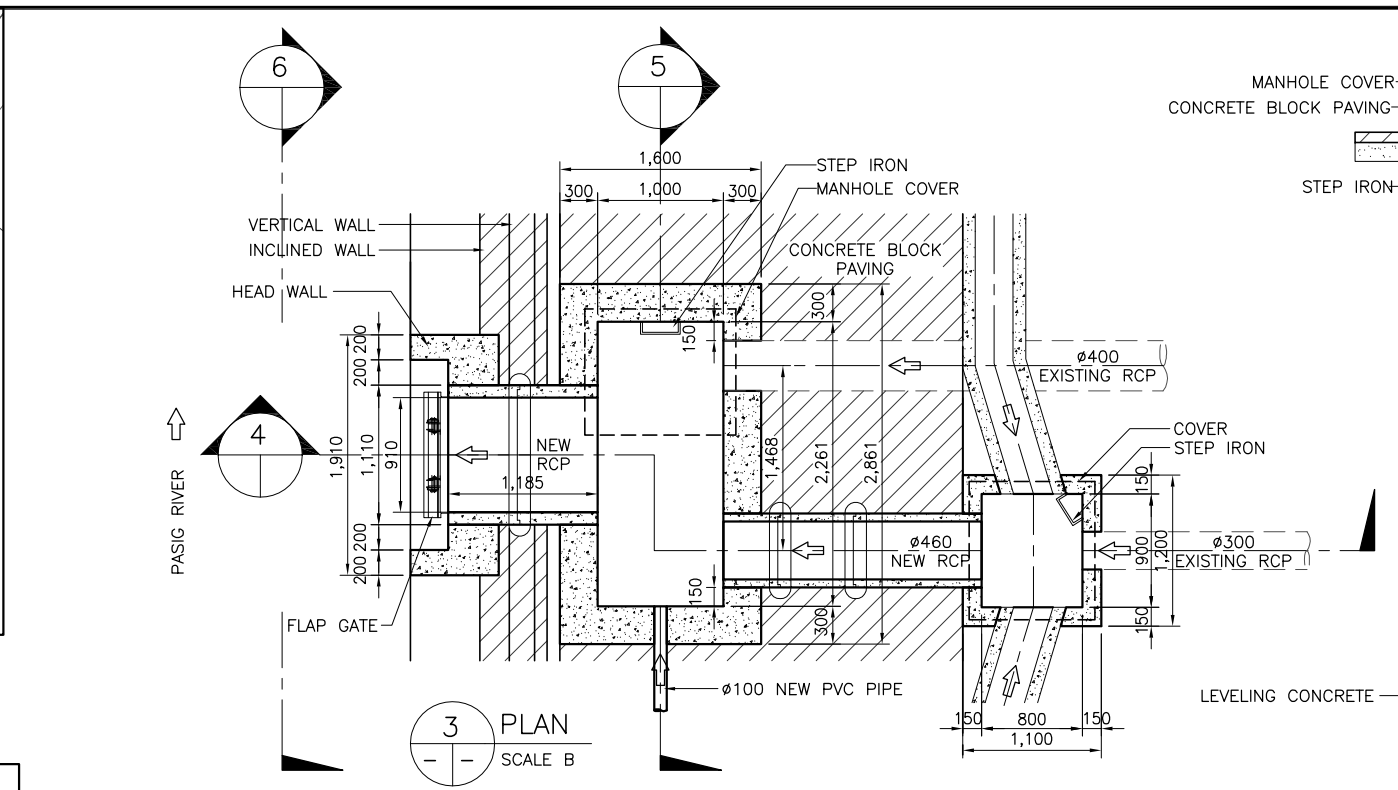
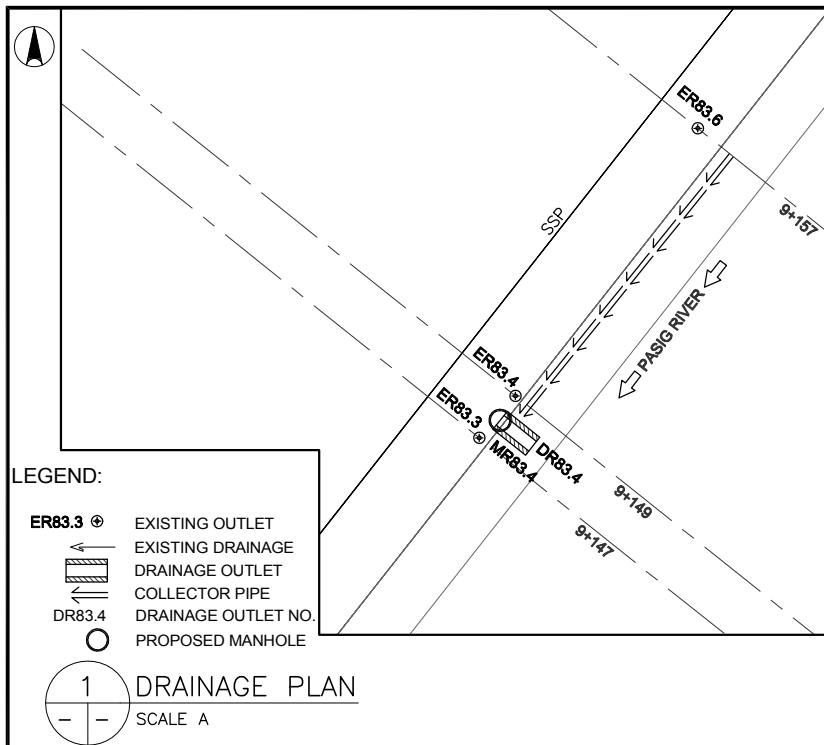
RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

APPROVED BY: ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION: PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS: DETAIL OF DRAINAGE OUTLET- DR83.1 & MANHOLE MR83.1 STA. 9+129 RB

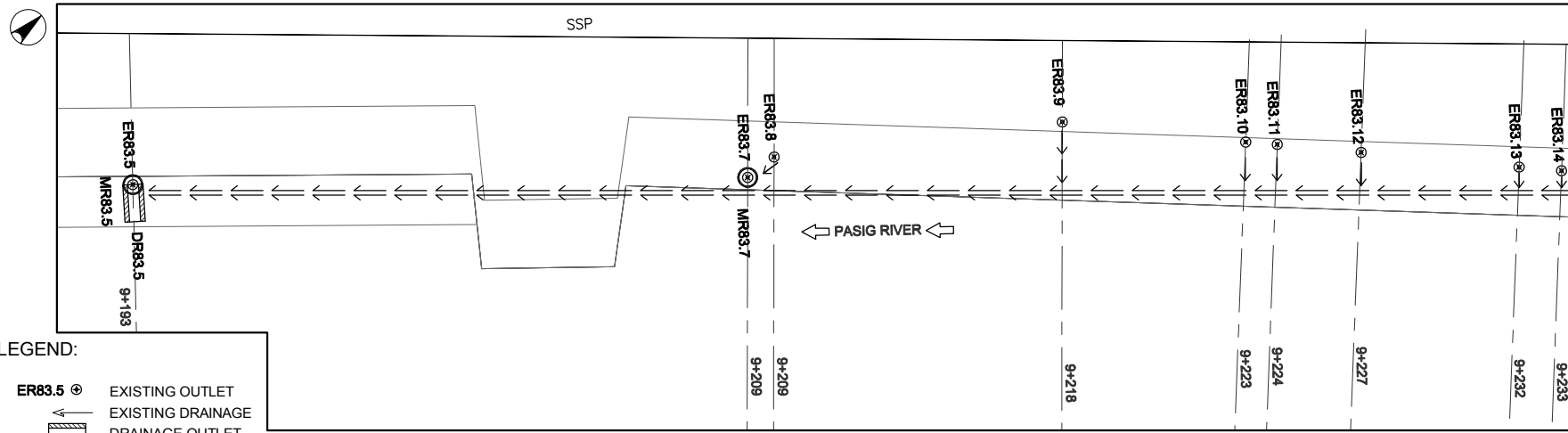
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REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

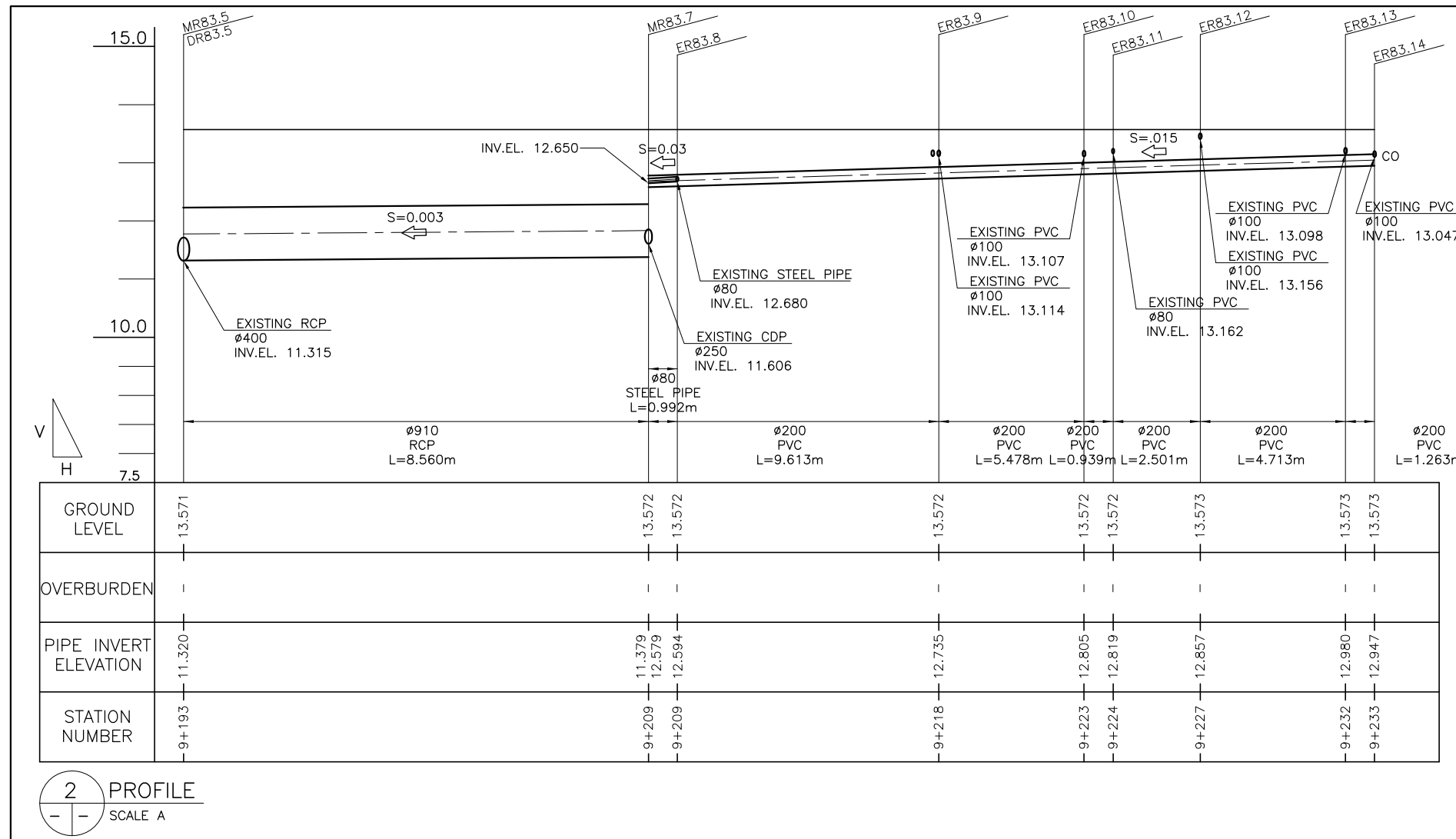
NOTE:
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SHUJI KAKU
TEAM LEADER



- LEGEND:**
- ER83.5 ⊕ EXISTING OUTLET
 - ← EXISTING DRAINAGE
 - ▭ DRAINAGE OUTLET
 - ▭ COLLECTOR PIPE
 - ▭ COLLECTOR PIPE
 - DR83.5 DRAINAGE OUTLET NO.
 - PROPOSED MANHOLE

1 DRAINAGE PLAN
SCALE A



2 PROFILE
SCALE A

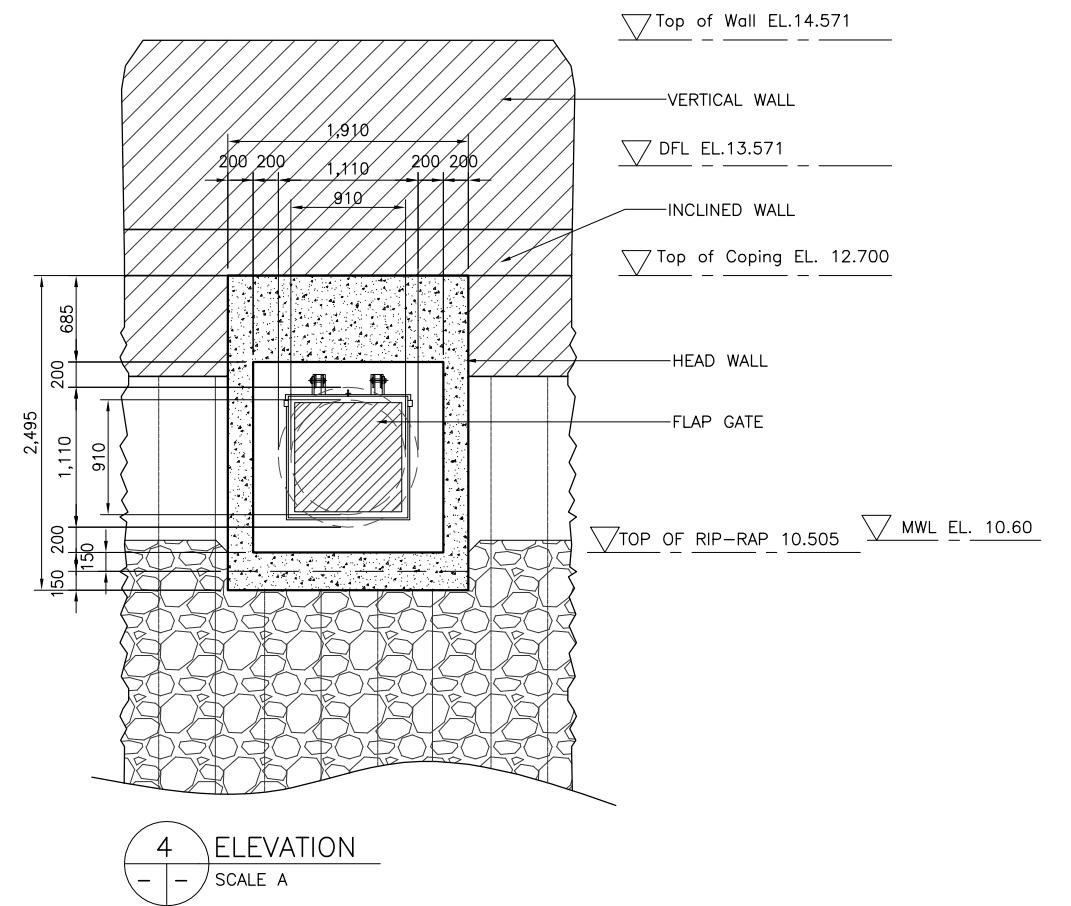
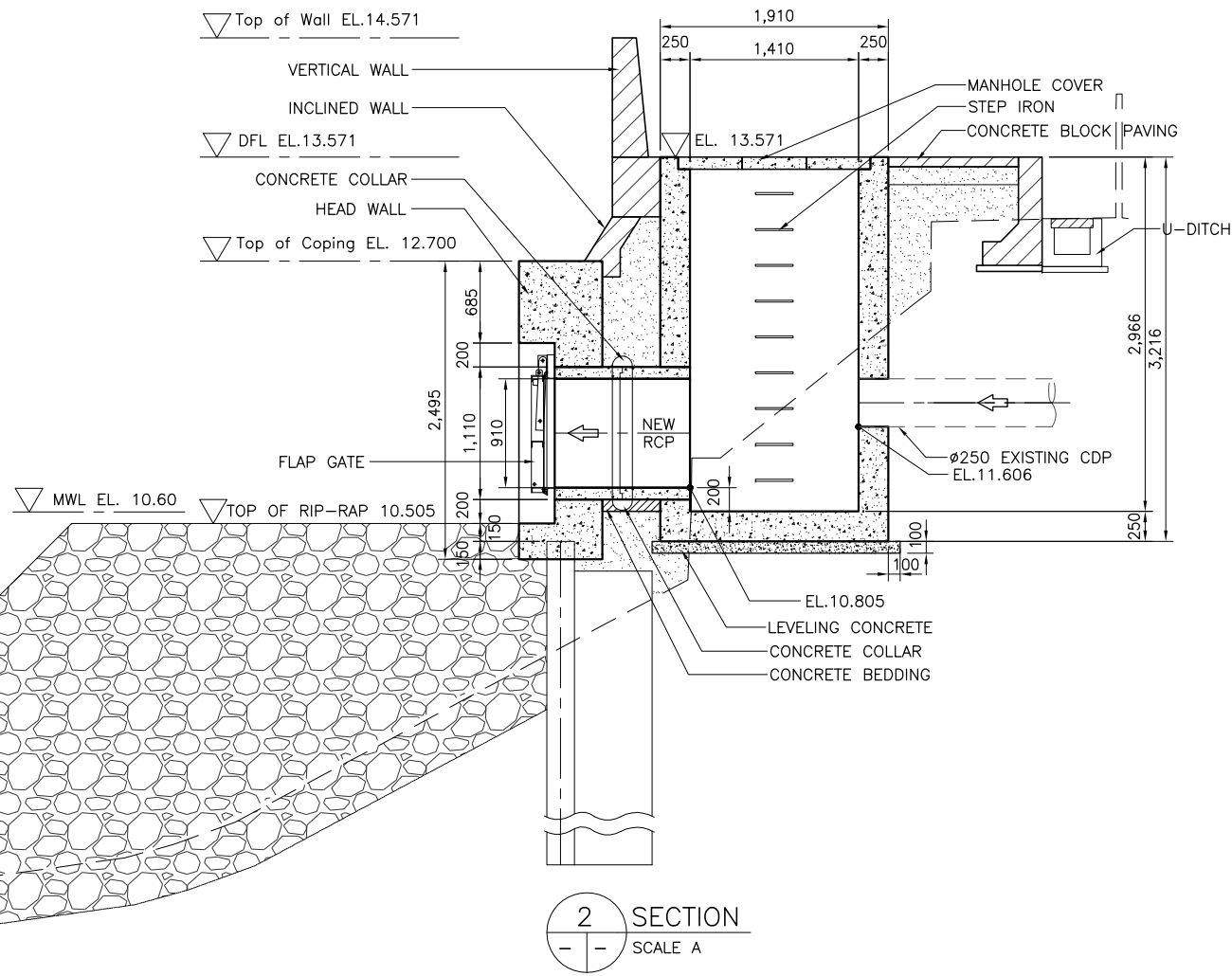
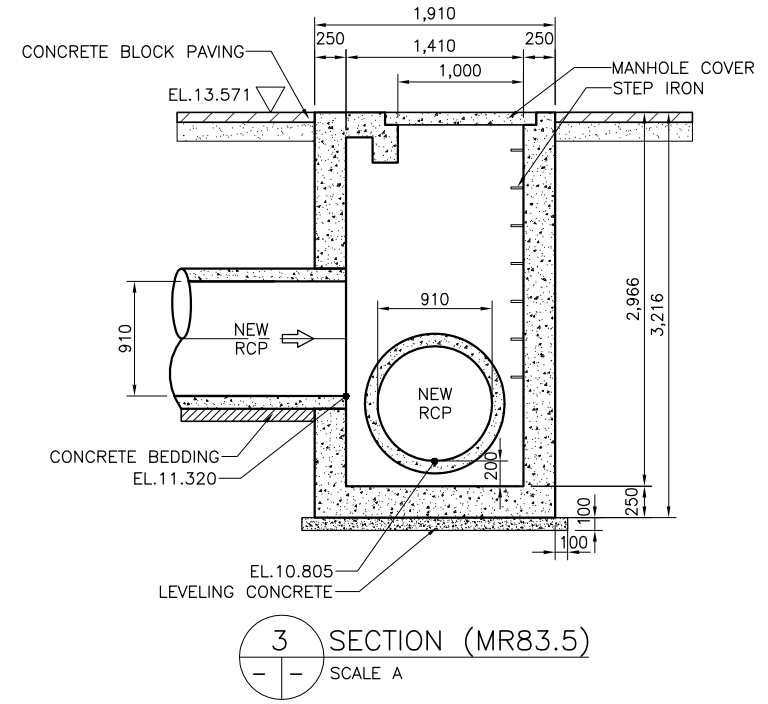
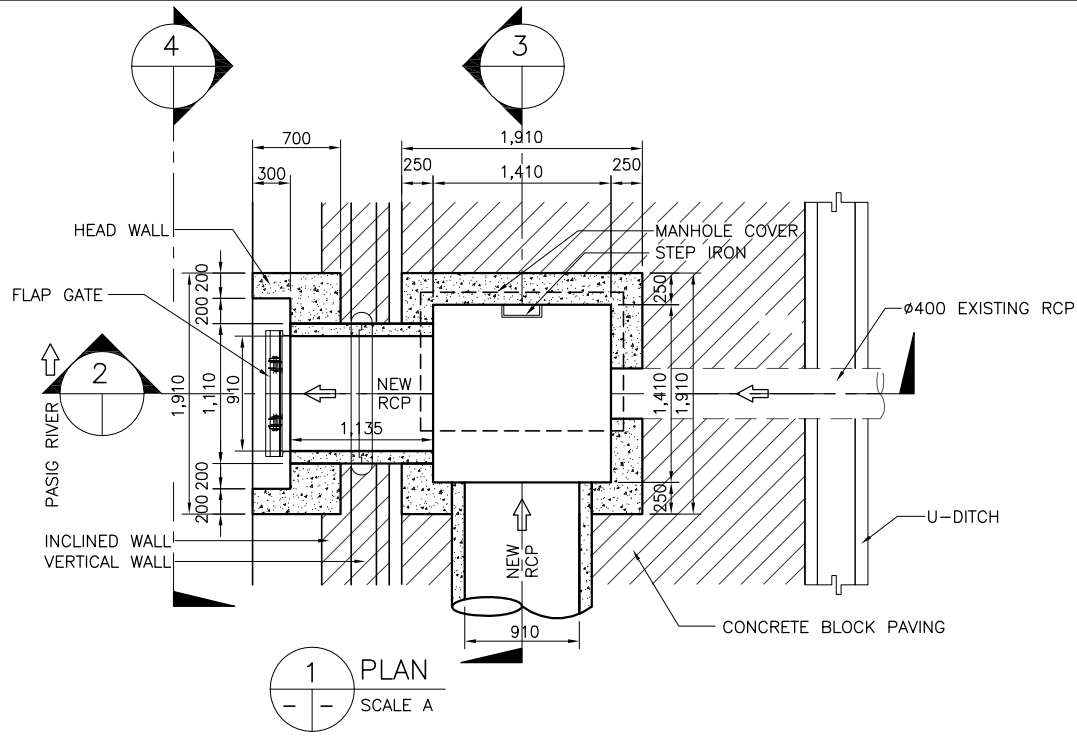


REVISIONS			
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SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN 			REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS 			REPUBLIC OF THE PHILIPPINES REVIEWED BY: PERFECTO L. ZAPLAN, JR. (CHIEF, HYDRAULIC DIVISION, BOD) RECOMMENDING APPROVAL: PATRICK B. GATAN (PROJECT DIRECTOR, PMO - MFCP), GILBERTO S. REYES (DIRECTOR, BOD)		APPROVED BY: RAUL C. ASIS (UNDERSECRETARY FOR TECHNICAL SERVICES), ROGELIO L. SINGSON (SECRETARY)		PROJECT & LOCATION: PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	SHEET CONTENTS: PLAN & PROFILE OF COLLECTOR PIPE	SHEET NO.: LP-DR/DO/83.5/P
DESIGNED BY: KOHEI TAKAYAMA (STRUCTURAL ENGINEER IV)	CHECKED BY: TOSHIKI KAWAKAMI (THE CHECKER)	SUBMITTED BY: SHUJI KAKU (TEAM LEADER)										



NOTE:
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SHUJI KAKU
TEAM LEADER

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

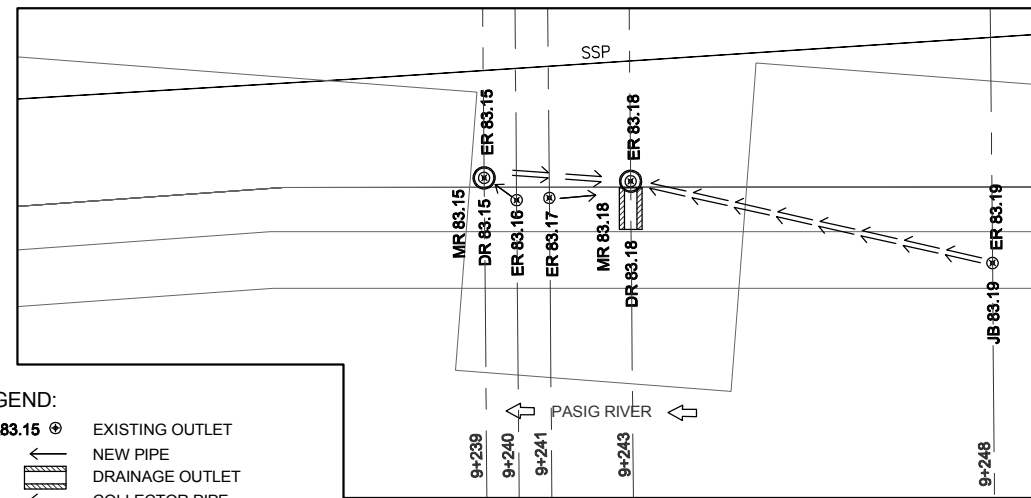
APPROVED BY: RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION: PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

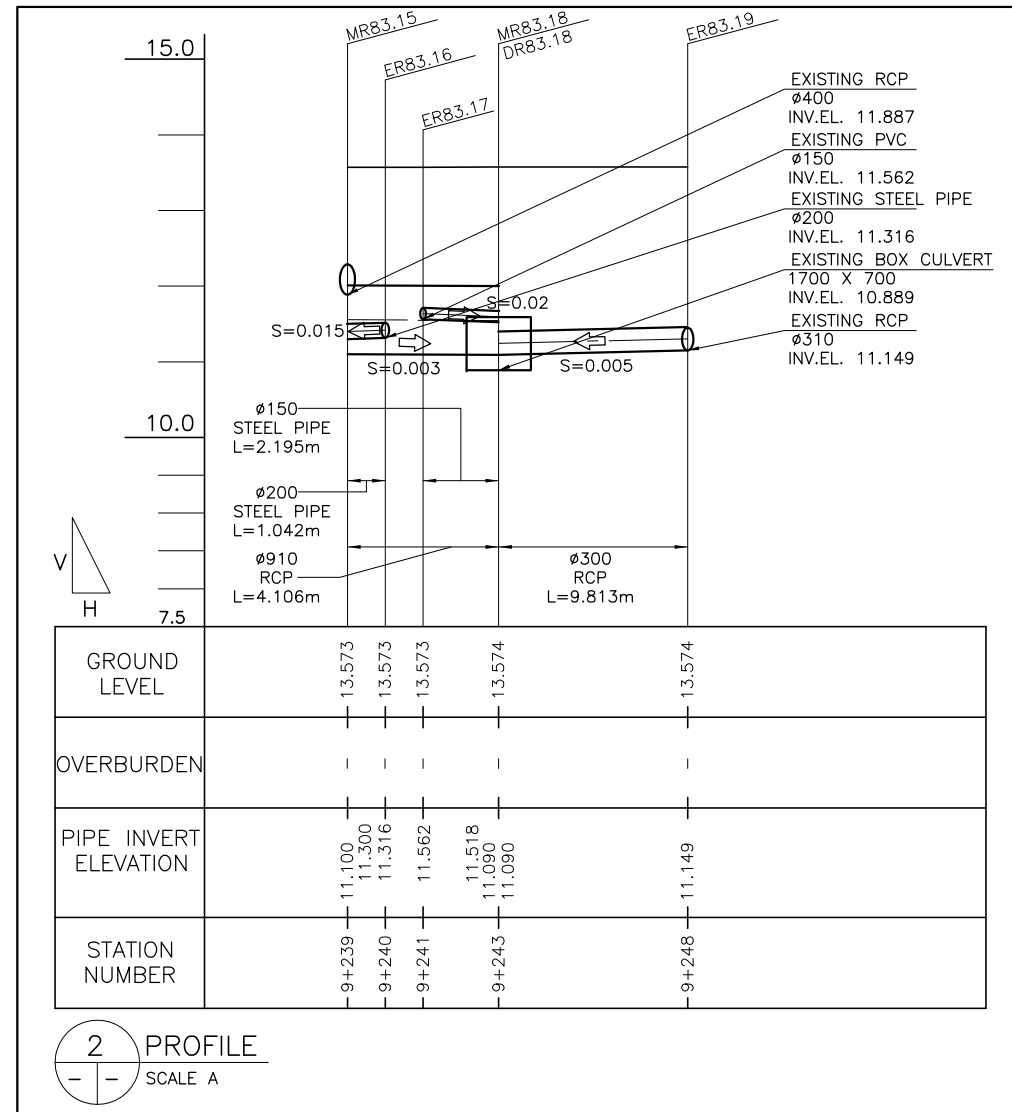
SHEET CONTENTS: DETAIL OF DRAINAGE OUTLET- DR-83.5 & MANHOLE MR83.5 STA. 9+193 RB

SHEET NO.: LP-DR/DO/83.5



- LEGEND:**
- ER83.15 ⊕ EXISTING OUTLET
 - ← NEW PIPE
 - ▨ DRAINAGE OUTLET
 - ⇐ COLLECTOR PIPE
 - DR 83.18 DRAINAGE OUTLET NO.
 - JB 83.19 PROPOSED JUNCTION BOX
 - PROPOSED MANHOLE

1 DRAINAGE PLAN
SCALE A



2 PROFILE
SCALE A



REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

NOTE:
PURSUANT TO SECTION 4 OF ANNEX 'A' OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

DESIGNED BY:	CHECKED BY:	SUBMITTED BY:
KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	TOSHIKI KAWAKAMI THE CHECKER	SHUJI KAKU TEAM LEADER



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS

REPUBLIC OF THE PHILIPPINES

REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED BY:
PERFECTO L. ZAPLAN, JR. CHIEF, HYDRAULIC DIVISION, BOD	PATRICK B. GATAN PROJECT DIRECTOR PMO - MFCP	GILBERTO S. REYES DIRECTOR BOD
SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY	SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY	SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY
RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES	ROGELIO L. SINGSON SECRETARY	

PROJECT & LOCATION

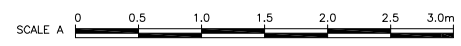
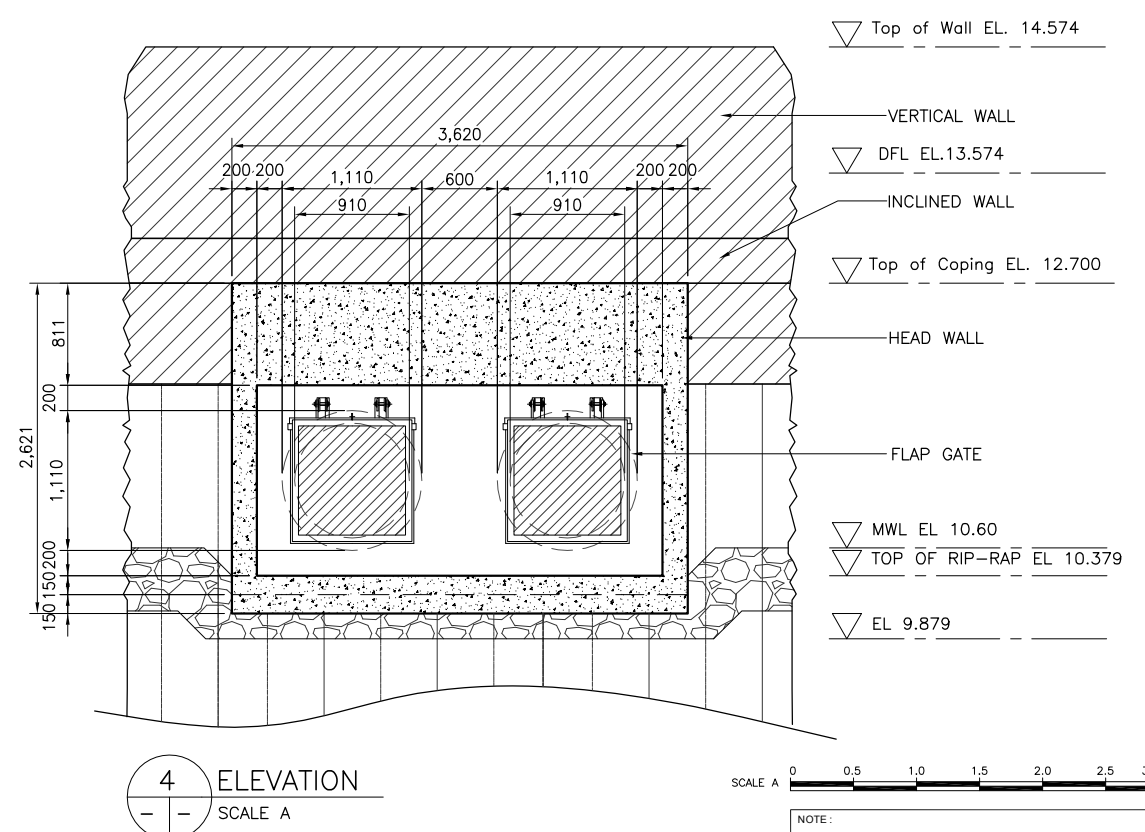
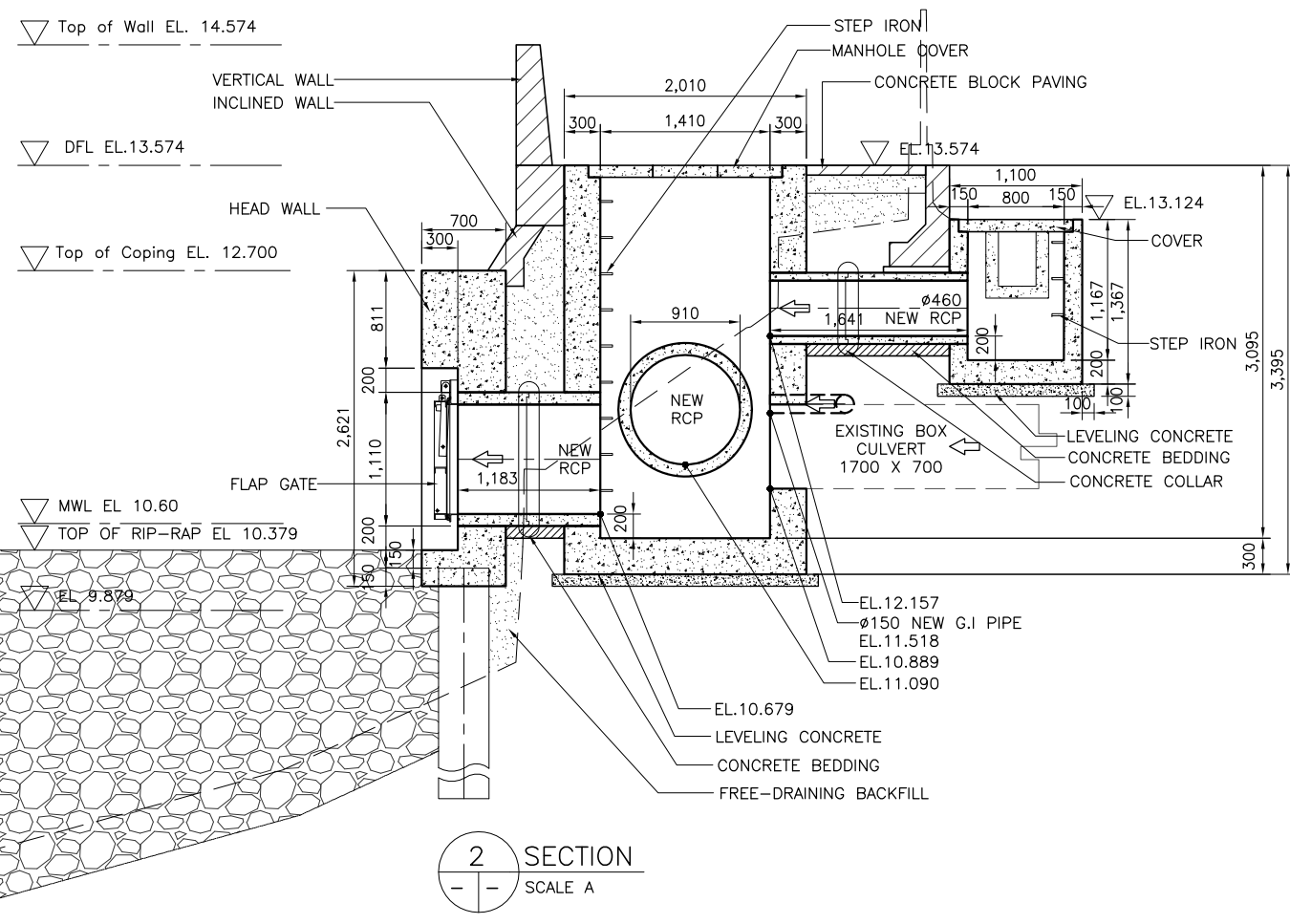
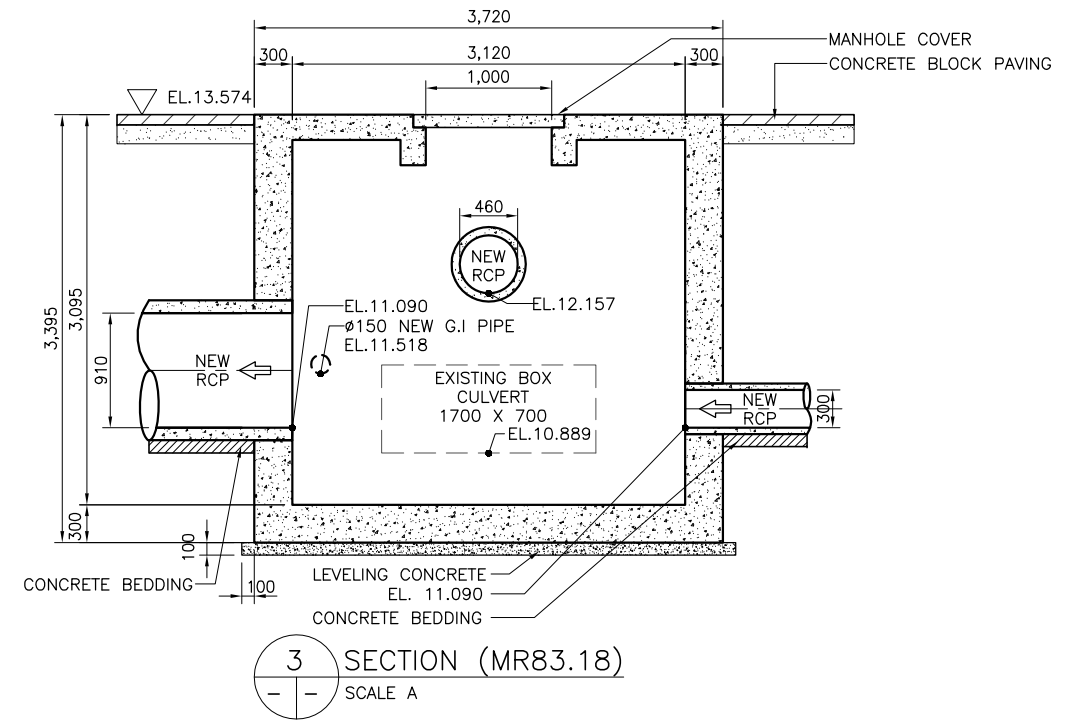
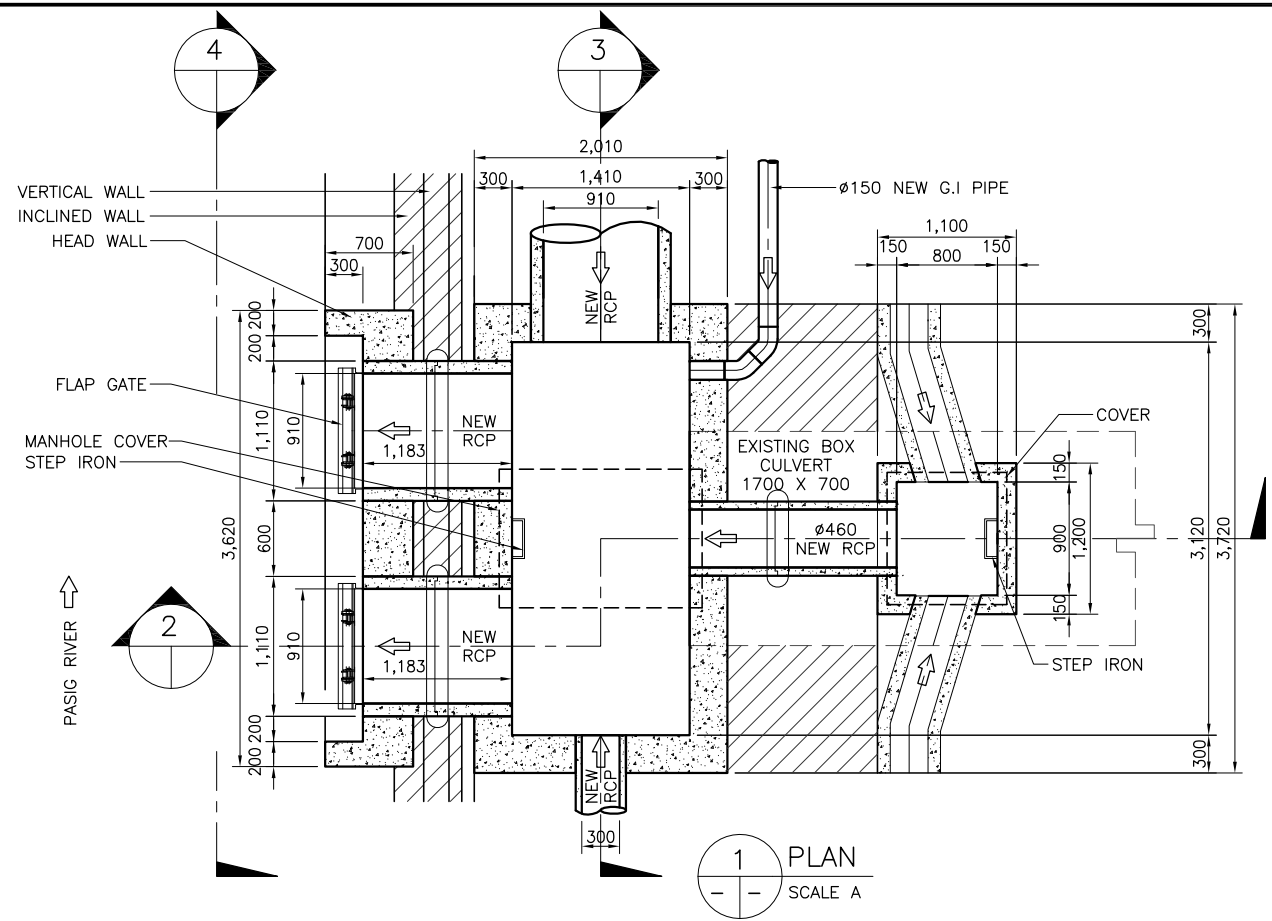
PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS

PLAN & PROFILE OF COLLECTOR PIPE

SHEET NO.

LP-DR-DO 83.18/P

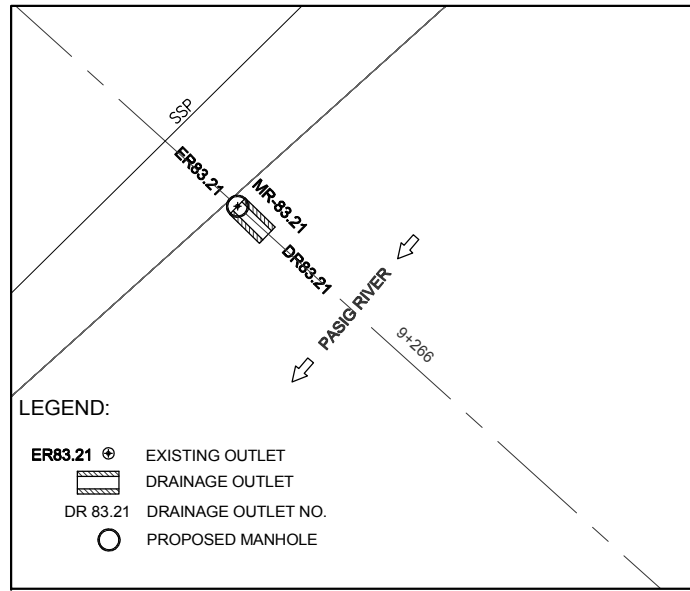


NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGN UNDERTAKEN BY CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGN NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

SHUJI KAKU
TEAM LEADER

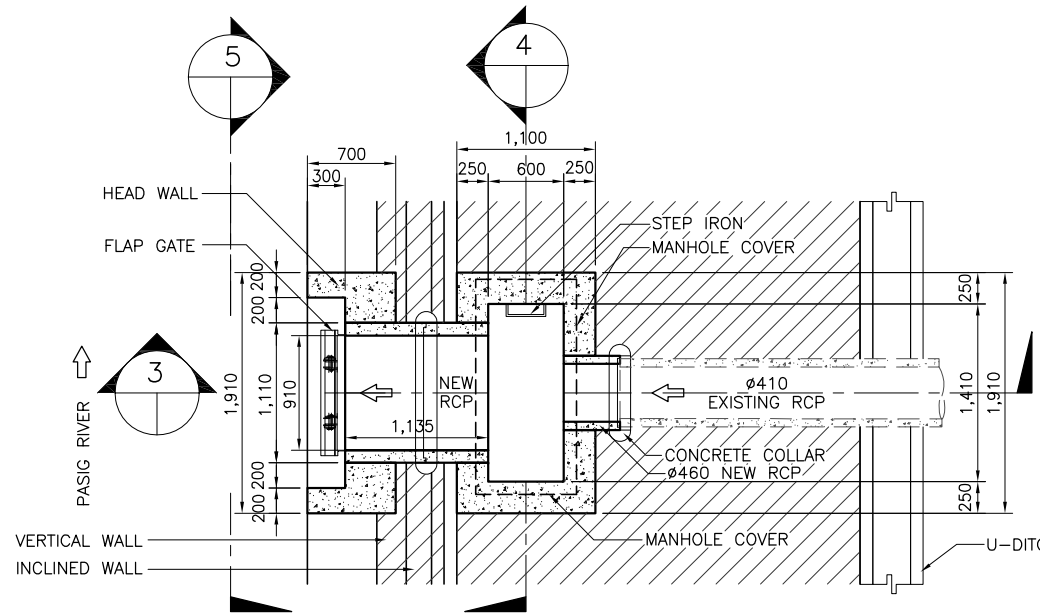
REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN			REPUBLIC OF THE PHILIPPINES				PROJECT & LOCATION	SHEET CONTENTS	SHEET NO.
	DESIGNED BY:	CHECKED BY:	SUBMITTED BY:		REVIEWED BY:	RECOMMENDING APPROVAL:	PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	DETAIL OF DRAINAGE OUTLET DR83.18 & MANHOLE MR83.18 STA. 9+243 RB	
	KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	TOSHIKI KAWAKAMI THE CHECKER	SHUJI KAKU TEAM LEADER		PERFECTO L. ZAPLAN, JR. CHIEF, HYDRAULIC DIVISION, BOD	PATRICK B. GATAN PROJECT DIRECTOR PMO - MFCP			
					RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES	ROGELIO L. SINGSON SECRETARY			

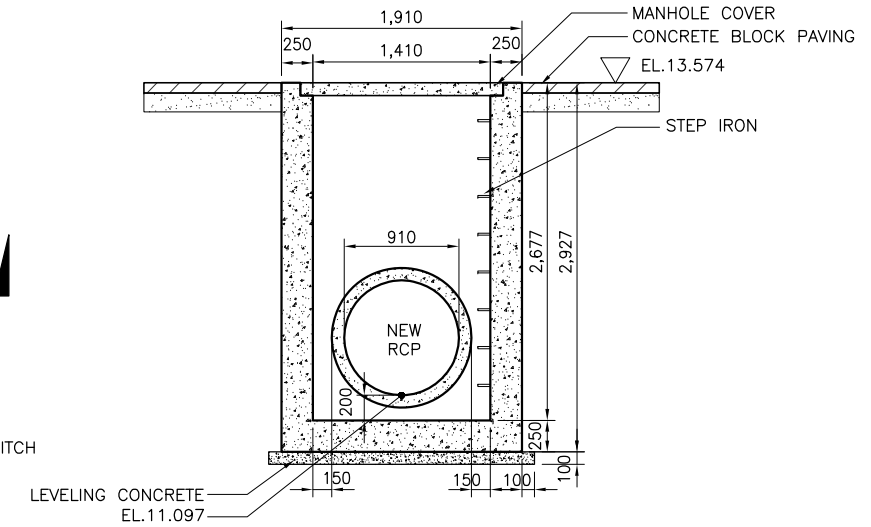


- LEGEND:**
- ER83.21 ⊕ EXISTING OUTLET
 - ▭ DRAINAGE OUTLET
 - DR 83.21 DRAINAGE OUTLET NO.
 - PROPOSED MANHOLE

1 DRAINAGE PLAN
SCALE A



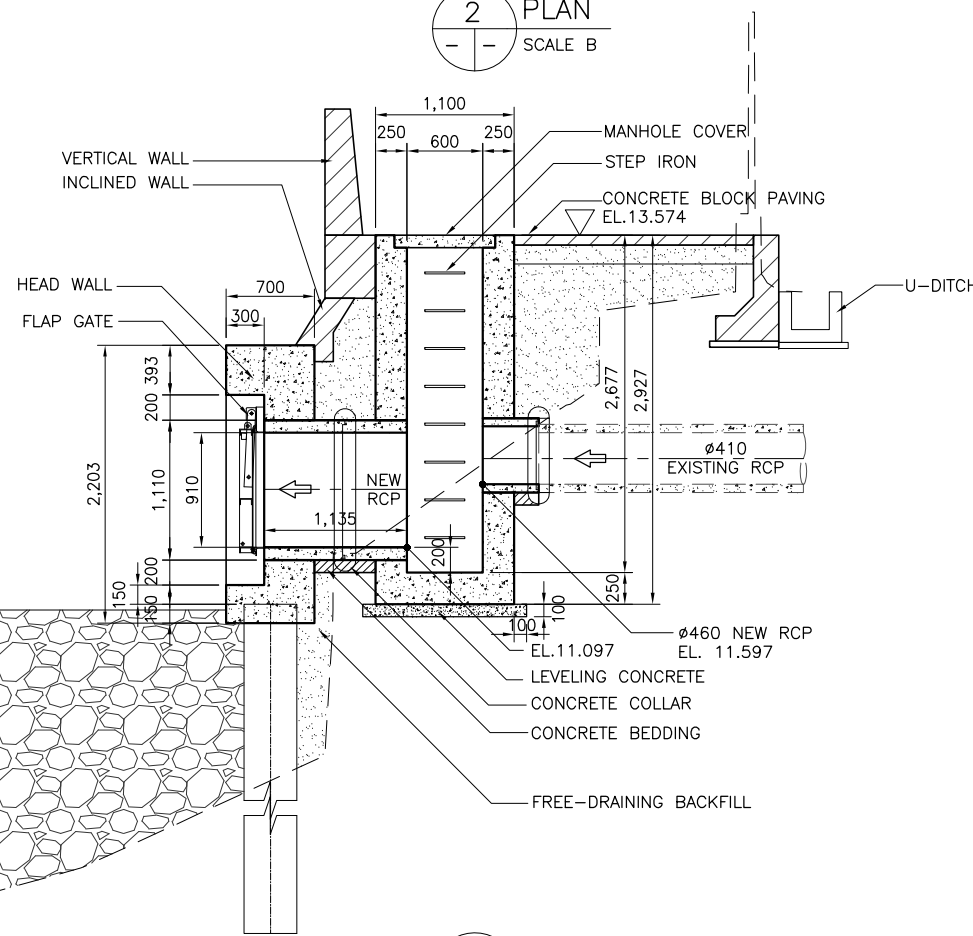
2 PLAN
SCALE B



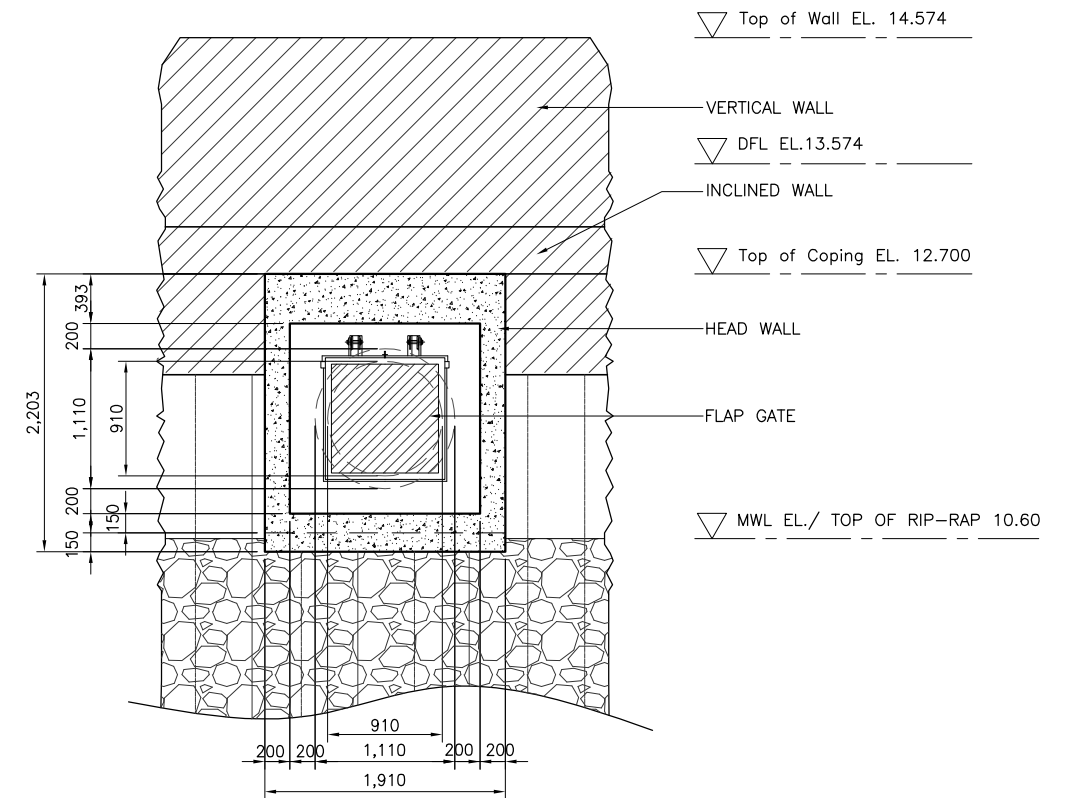
4 SECTION (MR83.21)
SCALE B

- ▽ Top of Wall EL.14.574
- ▽ DFL EL.13.574
- ▽ Top of Coping EL.12.700

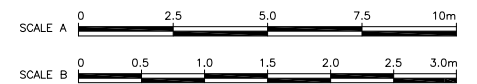
▽ MWL EL./ TOP OF RIP-RAP 10.60



3 SECTION
SCALE B



5 ELEVATION
SCALE B



NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

SHUJI KAKU
TEAM LEADER

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR PMO - MFCP

GILBERTO S. REYES
DIRECTOR BOD

SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY

APPROVED BY: RAUL C. ASIS
UNDERSECRETARY FOR TECHNICAL SERVICES

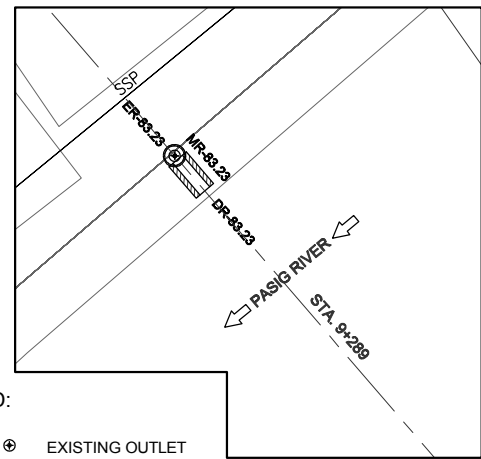
SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY

ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION: PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS: DETAIL OF DRAINAGE OUTLET- DR83.21 & MANHOLE MR83.21 STA. 9+266 RB

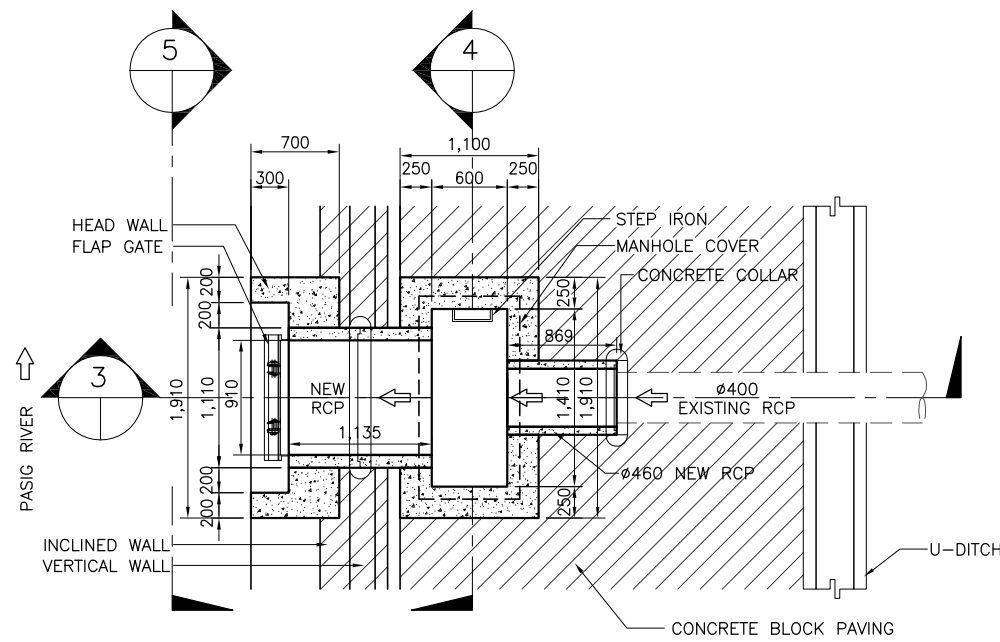
SHEET NO.: LP-DR/DO/83.21



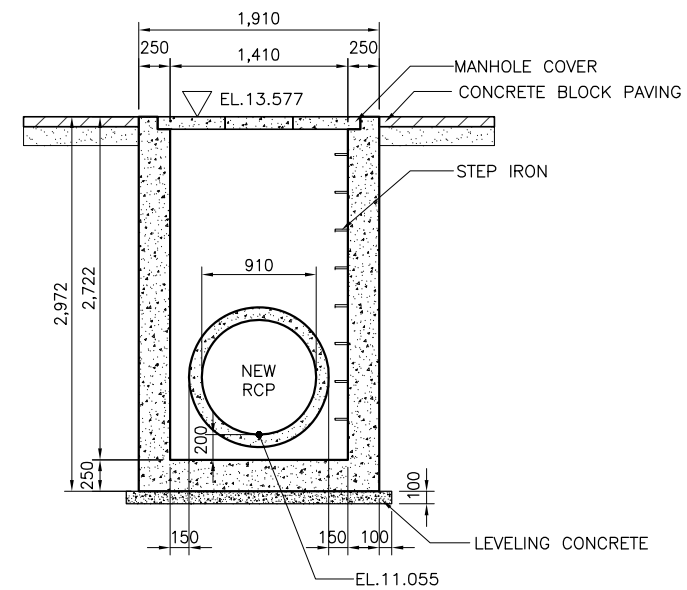
LEGEND:

- ER83.23 ⊕ EXISTING OUTLET
- ▨ DRAINAGE OUTLET
- COLLECTOR PIPE
- DR83.23 DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

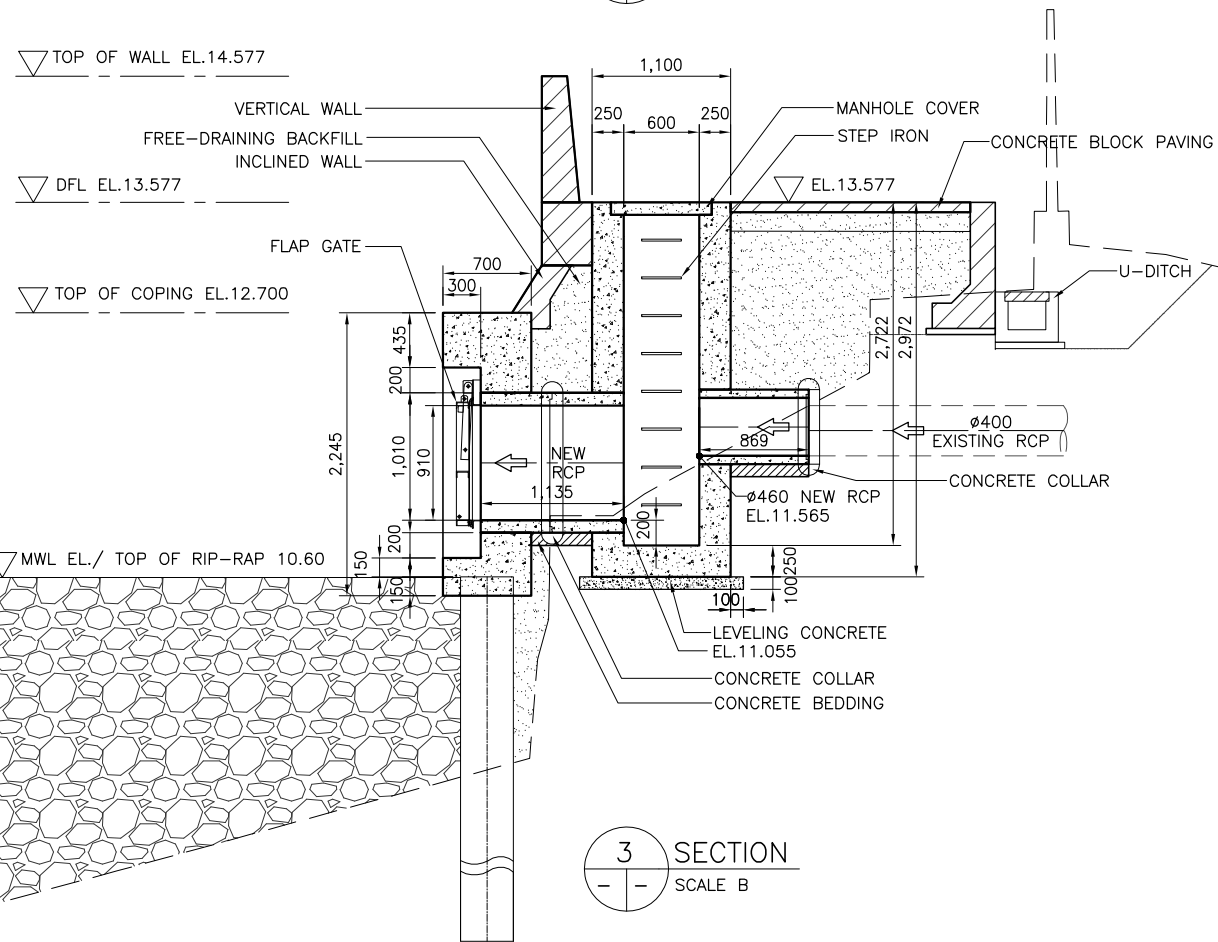
1 DRAINAGE PLAN
SCALE A



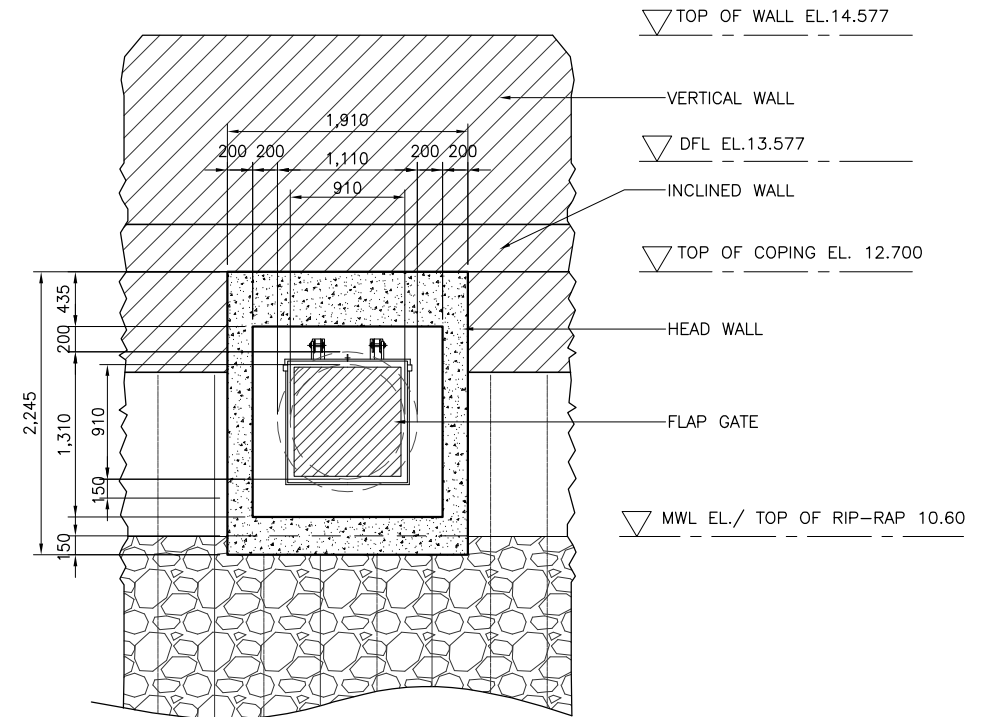
2 PLAN
SCALE B



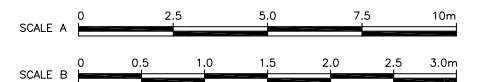
4 SECTION (MR83.23)
SCALE B



3 SECTION
SCALE B



5 ELEVATION
SCALE B



NOTE:
PURSUANT TO SECTION 4 OF ANNEX 'A' OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

SHUJI KAKU
TEAM LEADER

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY

APPROVED BY: RAUL C. ASIS
UNDERSECRETARY FOR TECHNICAL SERVICES

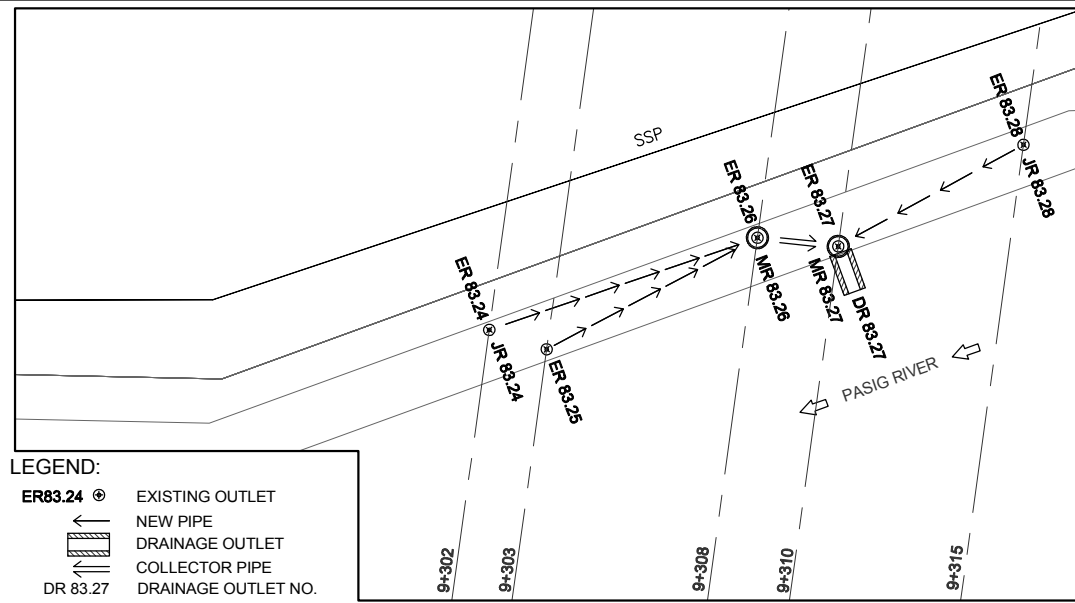
SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY

ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION: PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

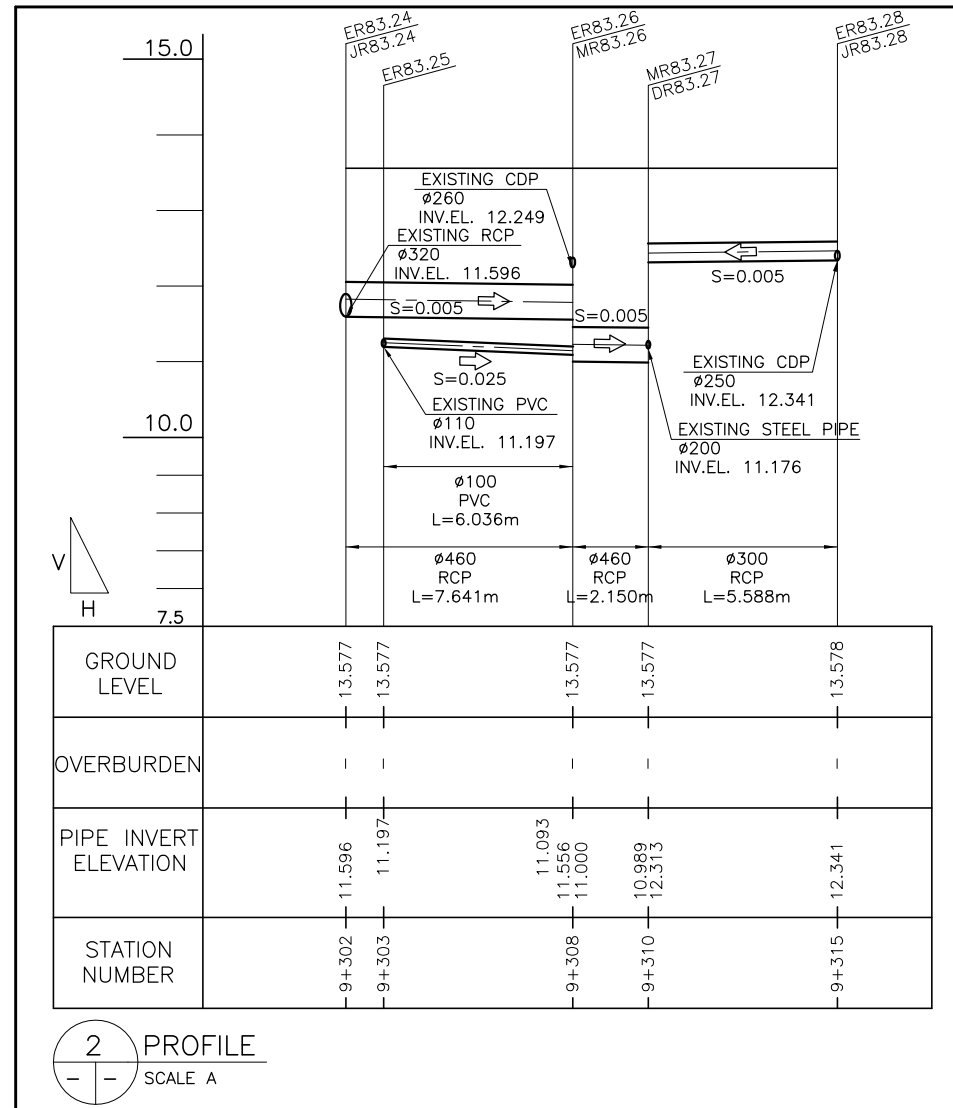
SHEET CONTENTS: DETAIL OF DRAINAGE OUTLET- DR83.23 & MANHOLE MR83.23, STA. 9+289 RB

SHEET NO.: LP-DR DO 83.23



- LEGEND:**
- ER83.24 ⊕ EXISTING OUTLET
 - ← NEW PIPE
 - ▭ DRAINAGE OUTLET
 - ⇄ COLLECTOR PIPE
 - DR 83.27 DRAINAGE OUTLET NO.
 - JB 83.24 PROPOSED JUNCTION BOX
 - PROPOSED MANHOLE

1 DRAINAGE PLAN
SCALE A



2 PROFILE
SCALE A



REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

NOTE:
PURSUANT TO SECTION 4 OF ANNEX 'A' OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

DESIGNED BY: KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	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

REVIEWED BY: PERFECTO L. ZAPLAN, JR. CHIEF, HYDRAULIC DIVISION, BOD	RECOMMENDING APPROVAL: PATRICK B. GATAN PROJECT DIRECTOR PMO - MFCP	APPROVED BY: ROGELIO L. SINGSON SECRETARY
---	--	---

PROJECT & LOCATION

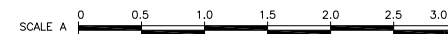
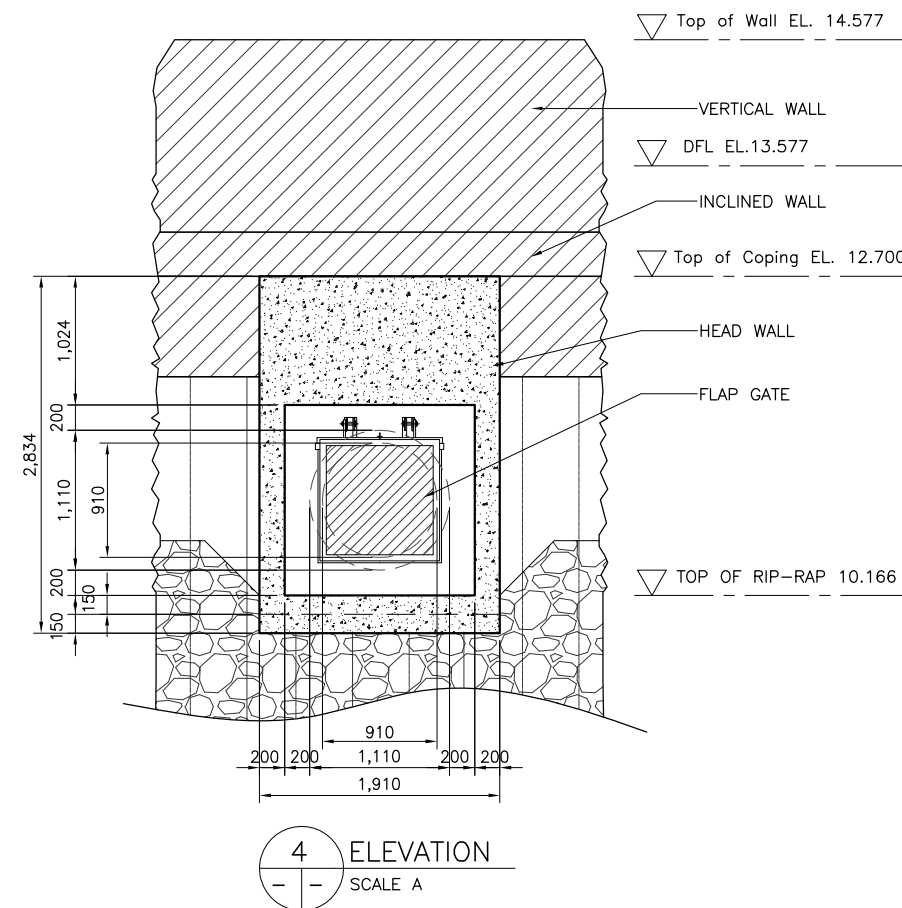
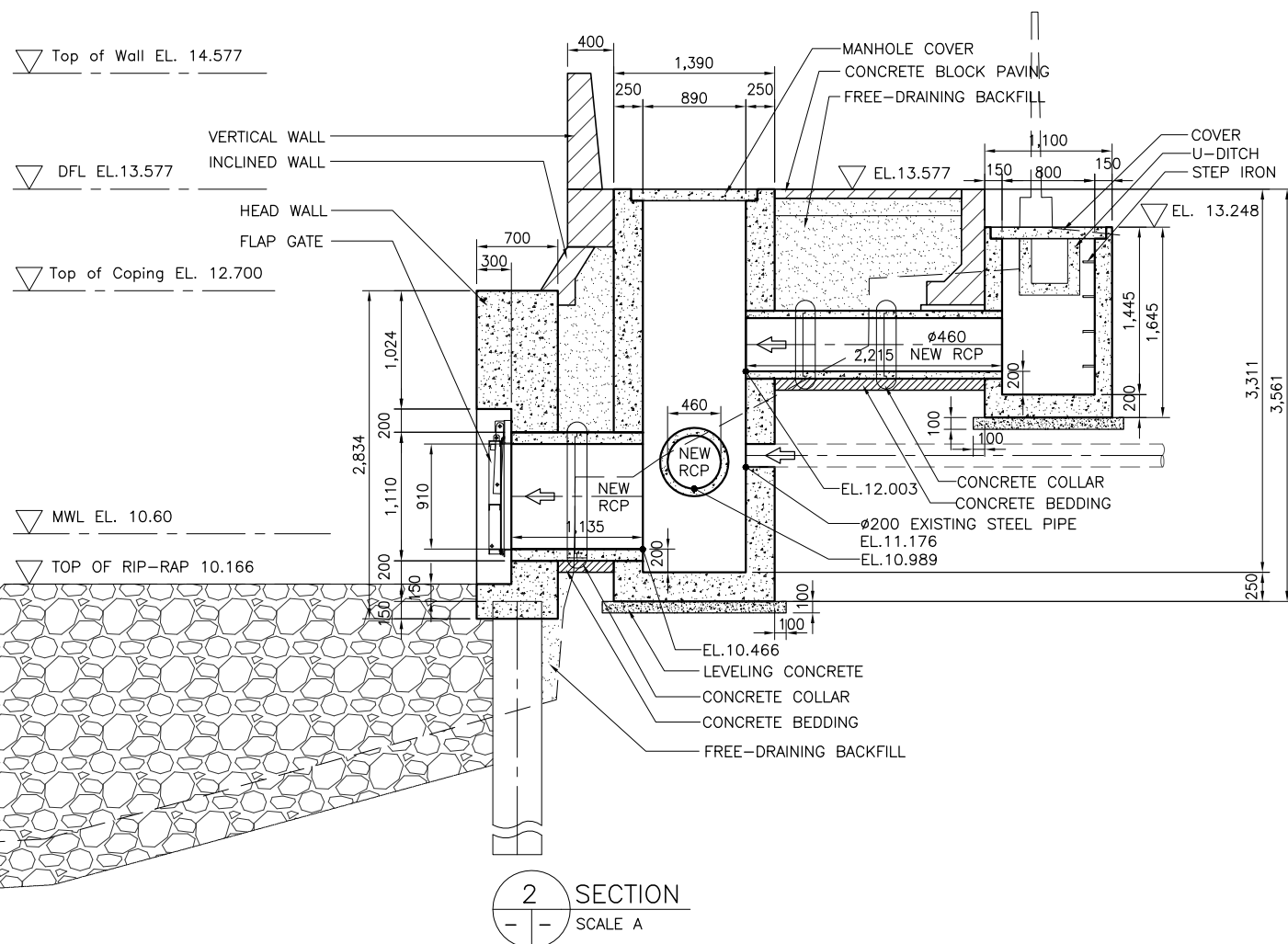
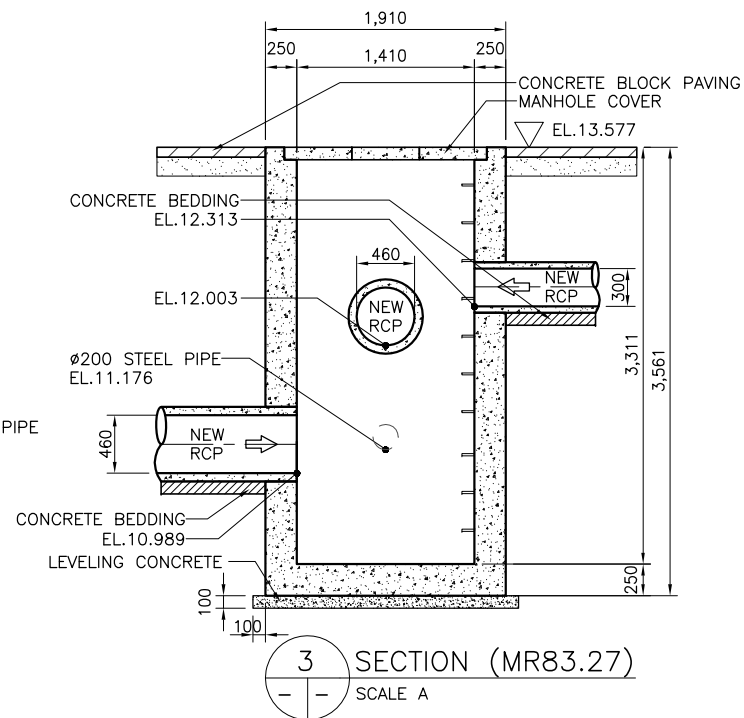
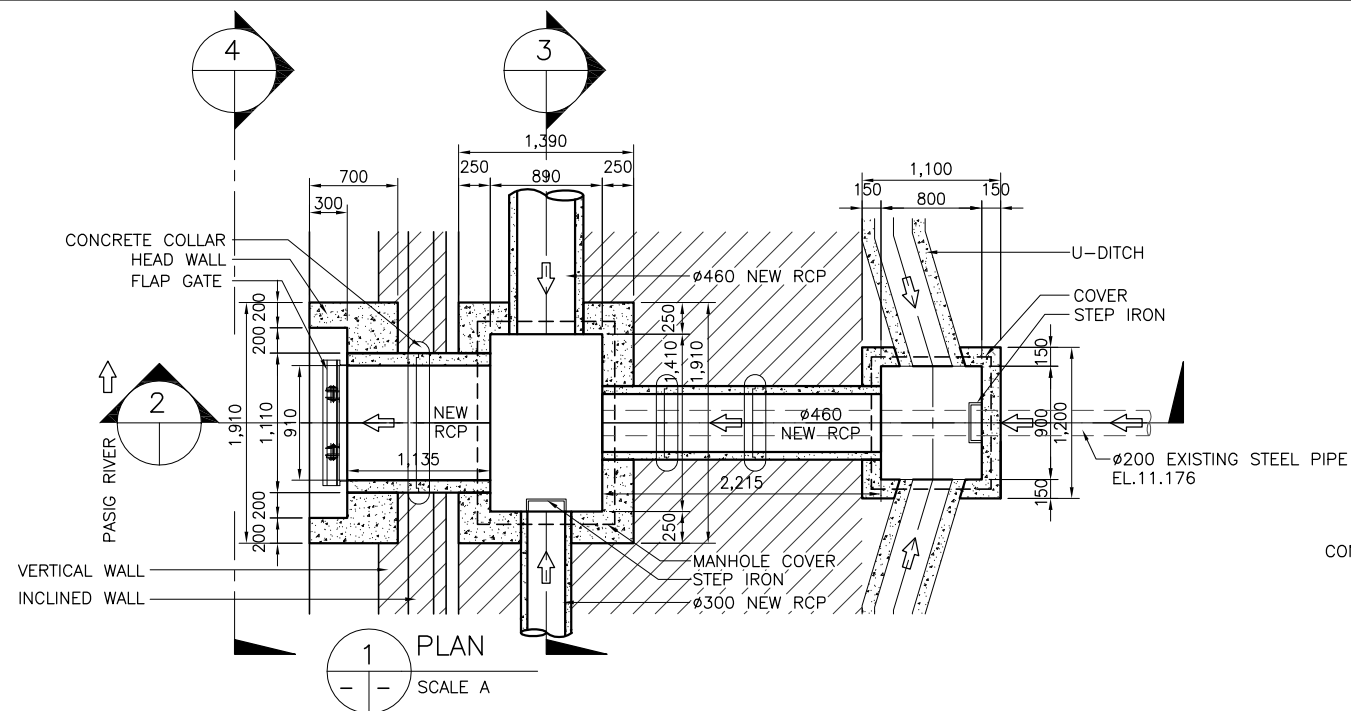
PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS

PLAN & PROFILE OF COLLECTOR PIPE

SHEET NO.

LP-DR-DO 83.27/P



NOTE:
PURSUANT TO SECTION 4 OF ANNEX 'A' OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY

APPROVED BY: RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

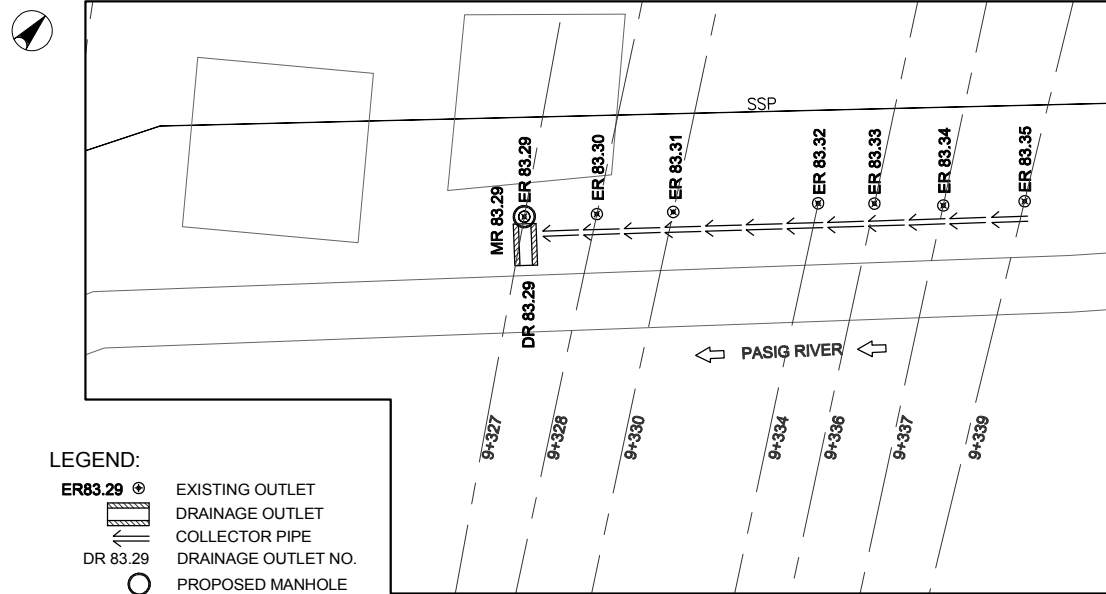
SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY

ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION
PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

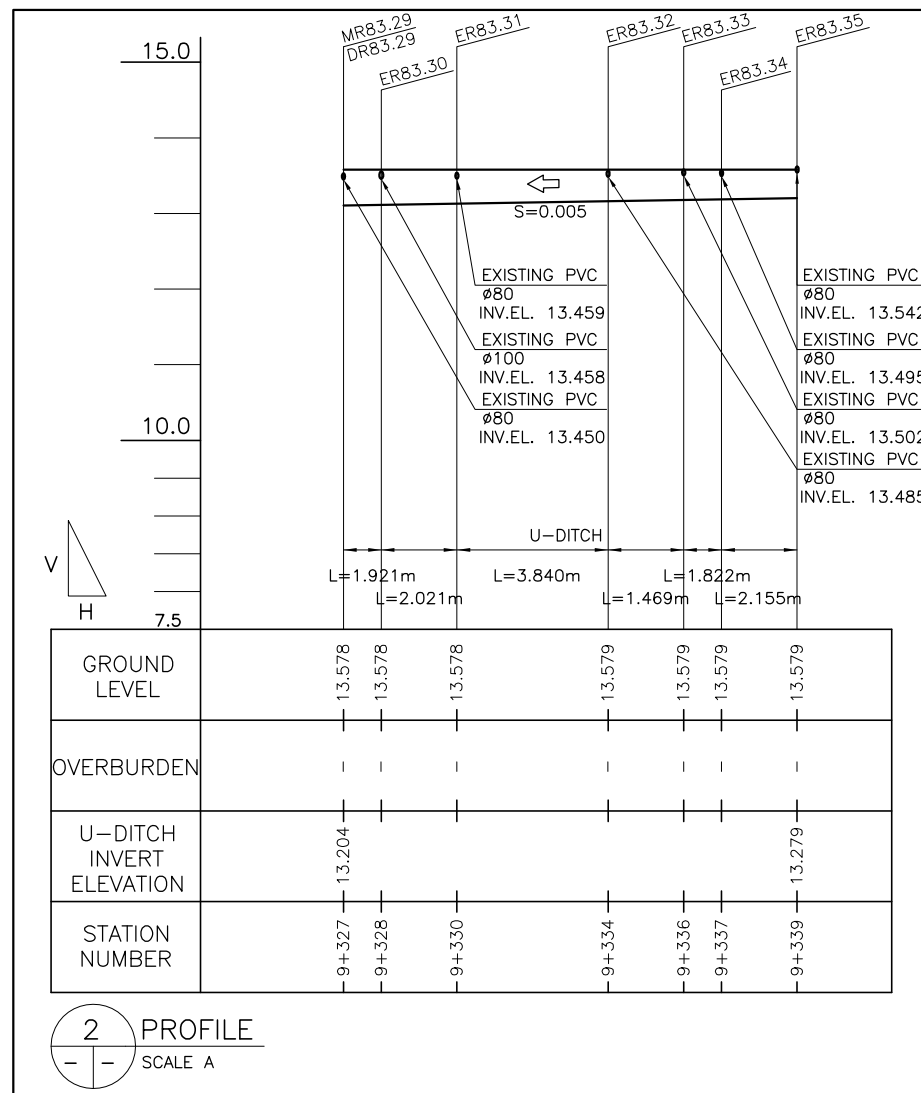
SHEET CONTENTS
DETAIL OF DRAINAGE OUTLET- DR83.27 & MANHOLE MR83.27 STA. 9+310 RB

SHEET NO.
LP-DR
DO 83.27



- LEGEND:**
- ER83.29 ⊕ EXISTING OUTLET
 - DR 83.29 ▭ DRAINAGE OUTLET
 - ⇐ COLLECTOR PIPE
 - DR 83.29 ○ DRAINAGE OUTLET NO.
 - PROPOSED MANHOLE

1 DRAINAGE PLAN
SCALE A



2 PROFILE
SCALE A

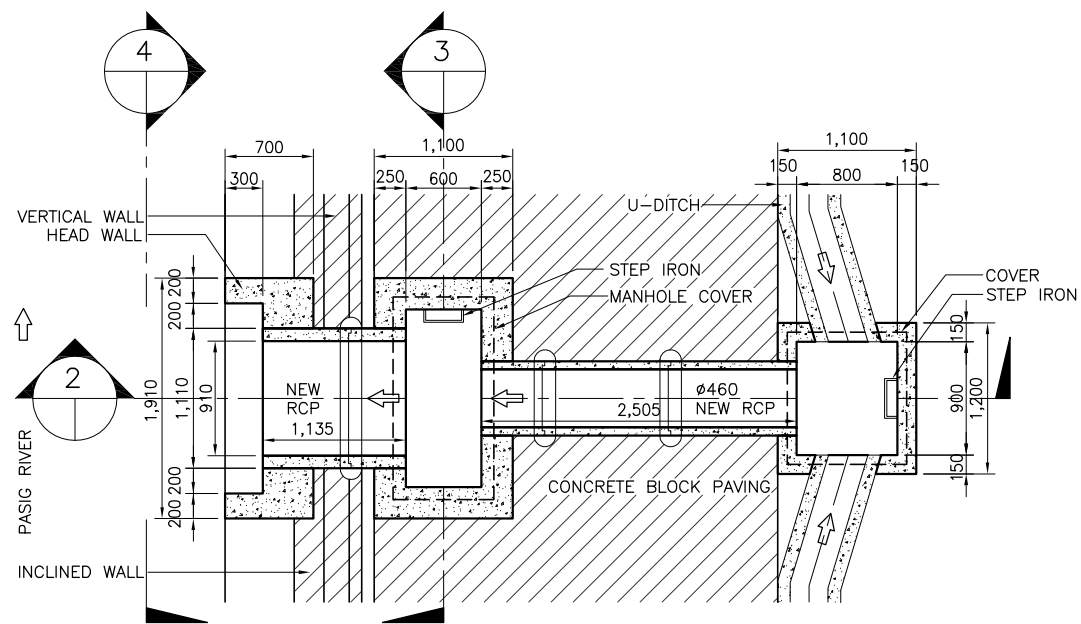


REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

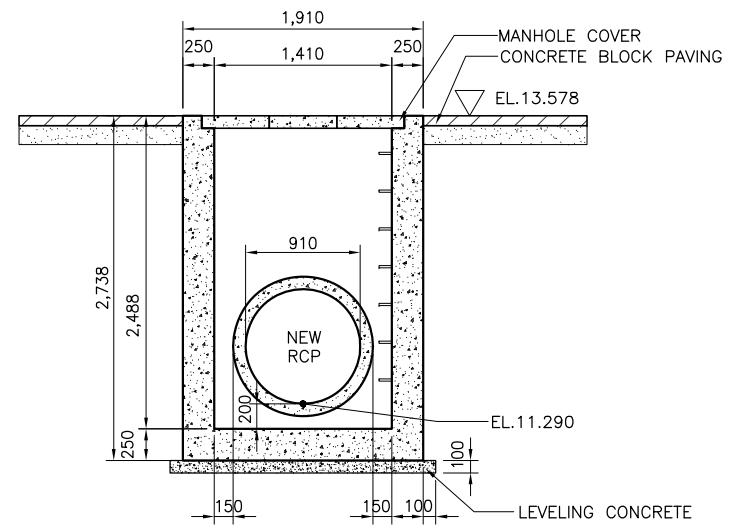
NOTE:
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SHUJI KAKU
TEAM LEADER

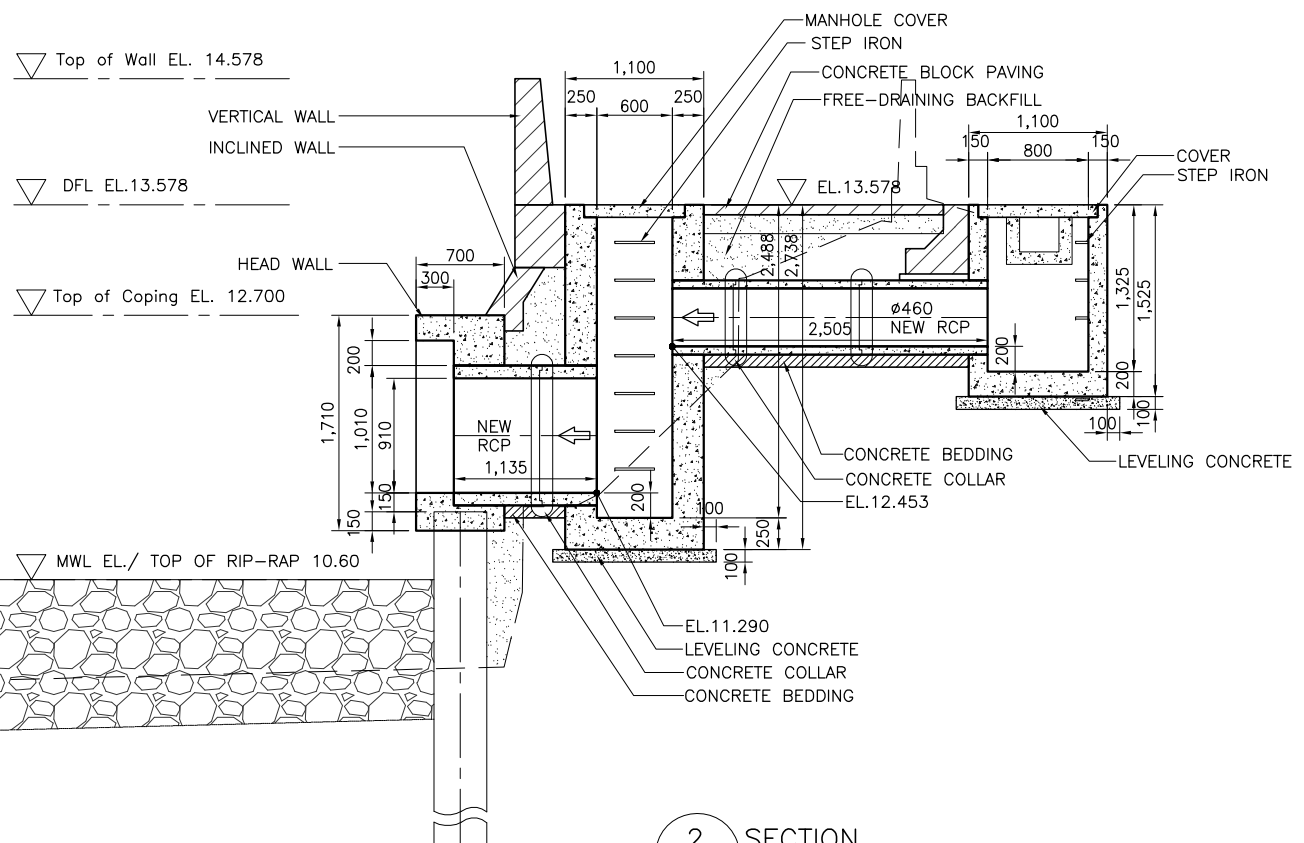
JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN			REPUBLIC OF THE PHILIPPINES				PROJECT & LOCATION	SHEET CONTENTS	SHEET NO.
	DESIGNED BY:	CHECKED BY:		REVIEWED BY:	RECOMMENDING APPROVAL:	PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	PLAN & PROFILE OF U-DITCH	LP-DR-DO 83.29/P	
	KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	TOSHIKI KAWAKAMI THE CHECKER		SHUJI KAKU TEAM LEADER	PERFECTO L. ZAPLAN, JR. CHIEF, HYDRAULIC DIVISION, BOD				PATRICK B. GATAN PROJECT DIRECTOR PMO - MFCP
						APPROVED BY: SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY ROGELIO L. SINGSON SECRETARY			



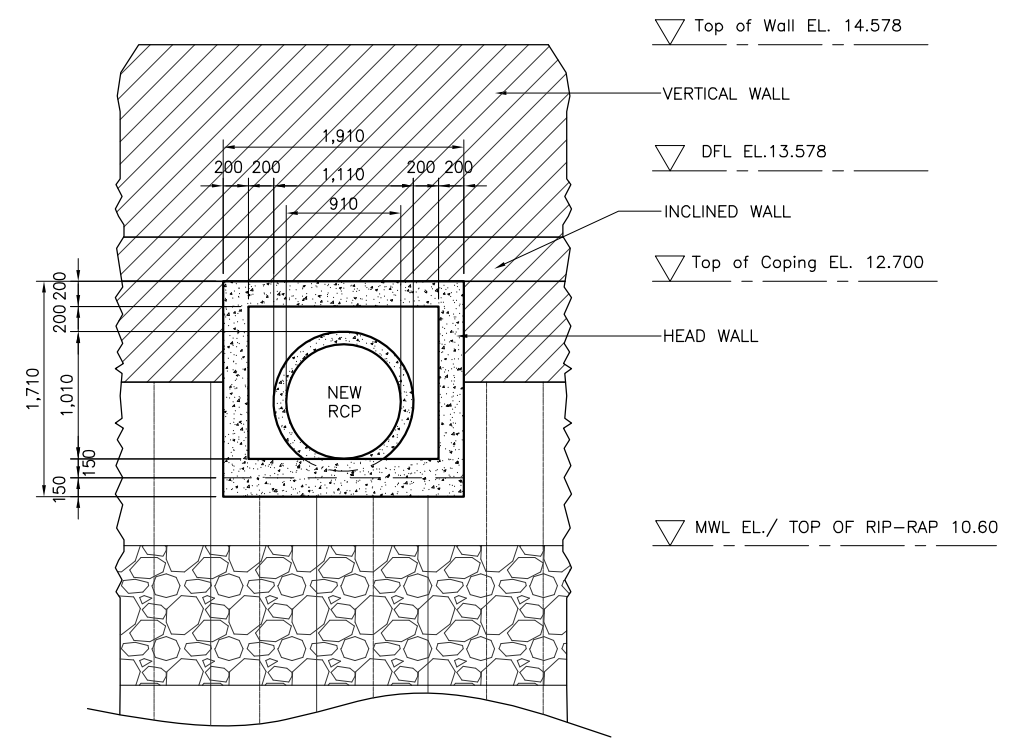
1 PLAN
SCALE A



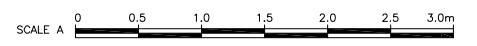
3 SECTION (MR83.29)
SCALE A



2 SECTION
SCALE A



4 ELEVATION
SCALE A

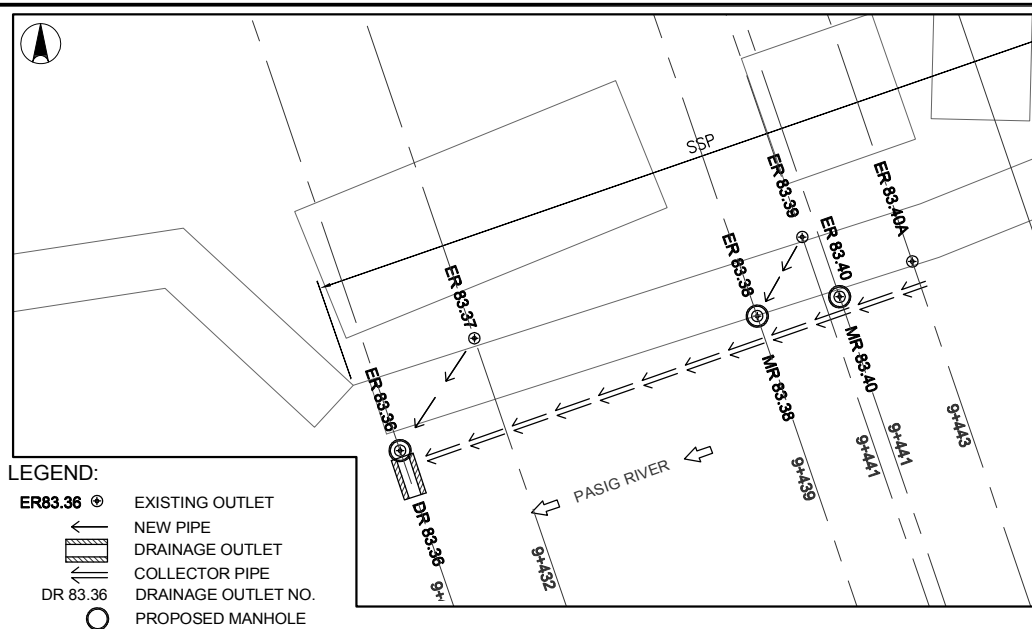


REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

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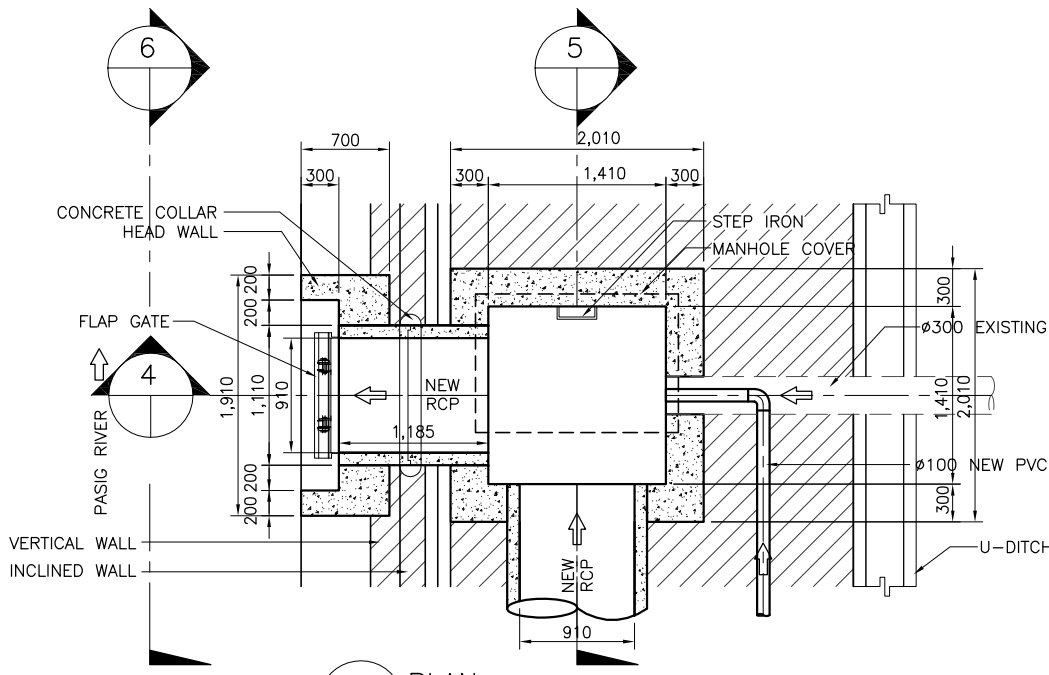
SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN			REPUBLIC OF THE PHILIPPINES				PROJECT & LOCATION	SHEET CONTENTS	SHEET NO.
	DESIGNED BY:	CHECKED BY:	SUBMITTED BY:		REVIEWED BY:	RECOMMENDING APPROVAL:	PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	DETAIL OF DRAINAGE OUTLET- DR83.29 & MANHOLE MR83.29 STA. 9+327 RB	
	KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	TOSHIKI KAWAKAMI THE CHECKER	SHUJI KAKU TEAM LEADER		PERFECTO L. ZAPLAN, JR. CHIEF, HYDRAULIC DIVISION, BOD	PATRICK B. GATAN PROJECT DIRECTOR PMO - MFCP			

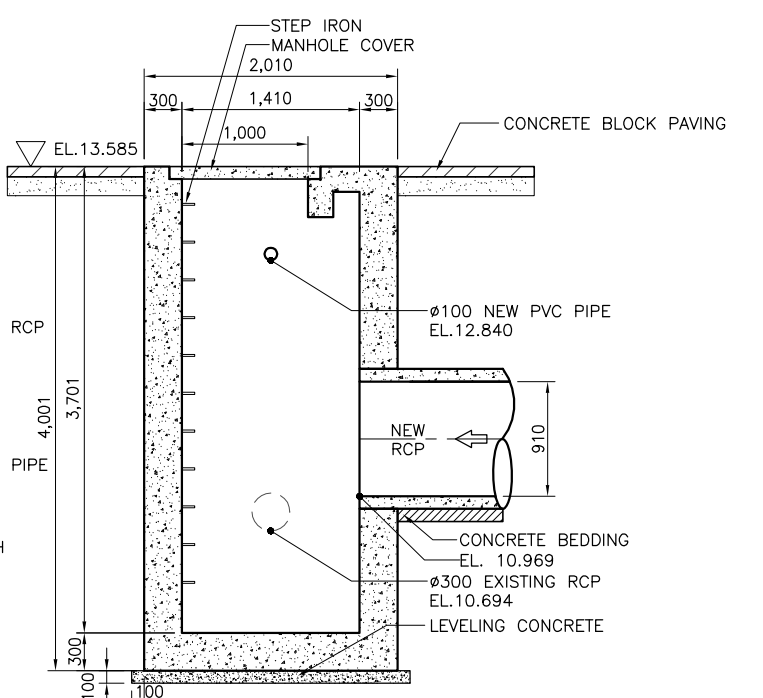


- LEGEND:**
- ER83.36 EXISTING OUTLET
 - NEW PIPE
 - DRAINAGE OUTLET
 - COLLECTOR PIPE
 - DR 83.36 DRAINAGE OUTLET NO.
 - PROPOSED MANHOLE

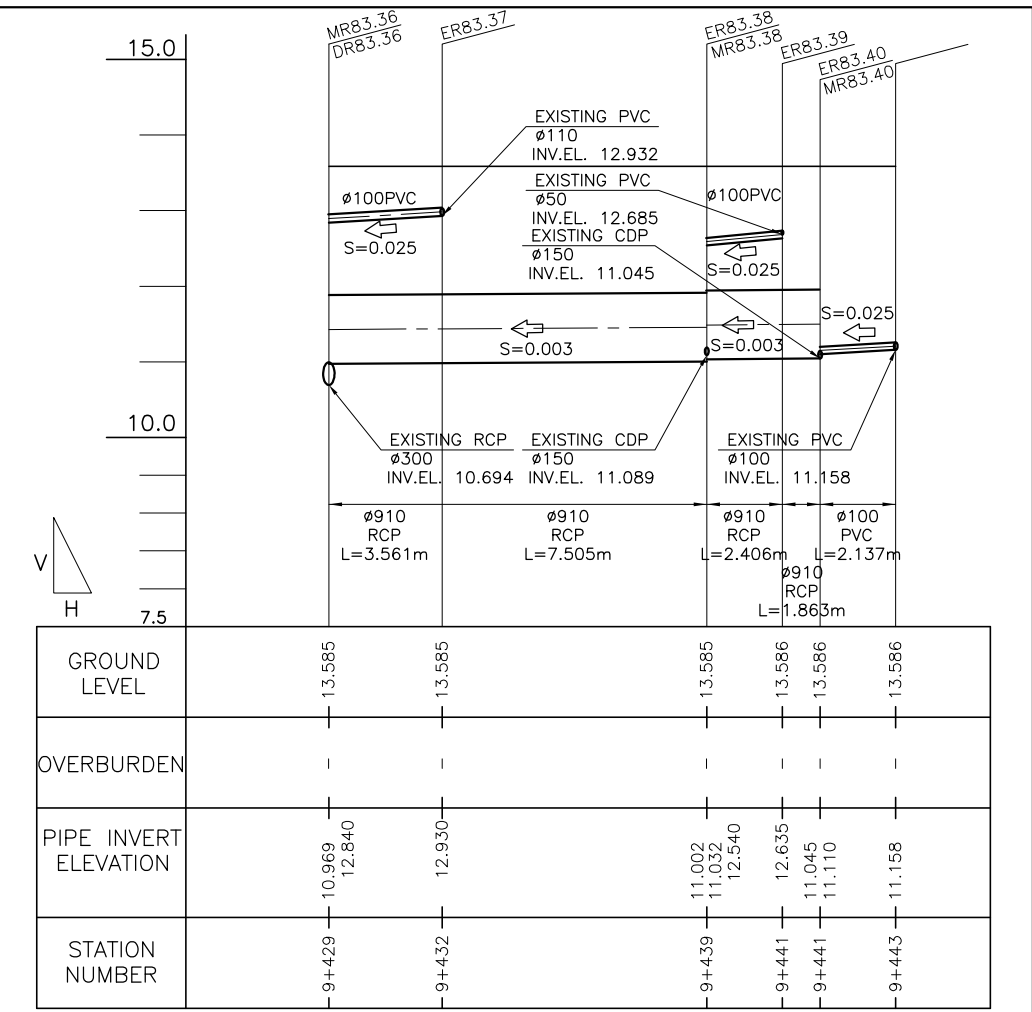
1 DRAINAGE PLAN
SCALE A



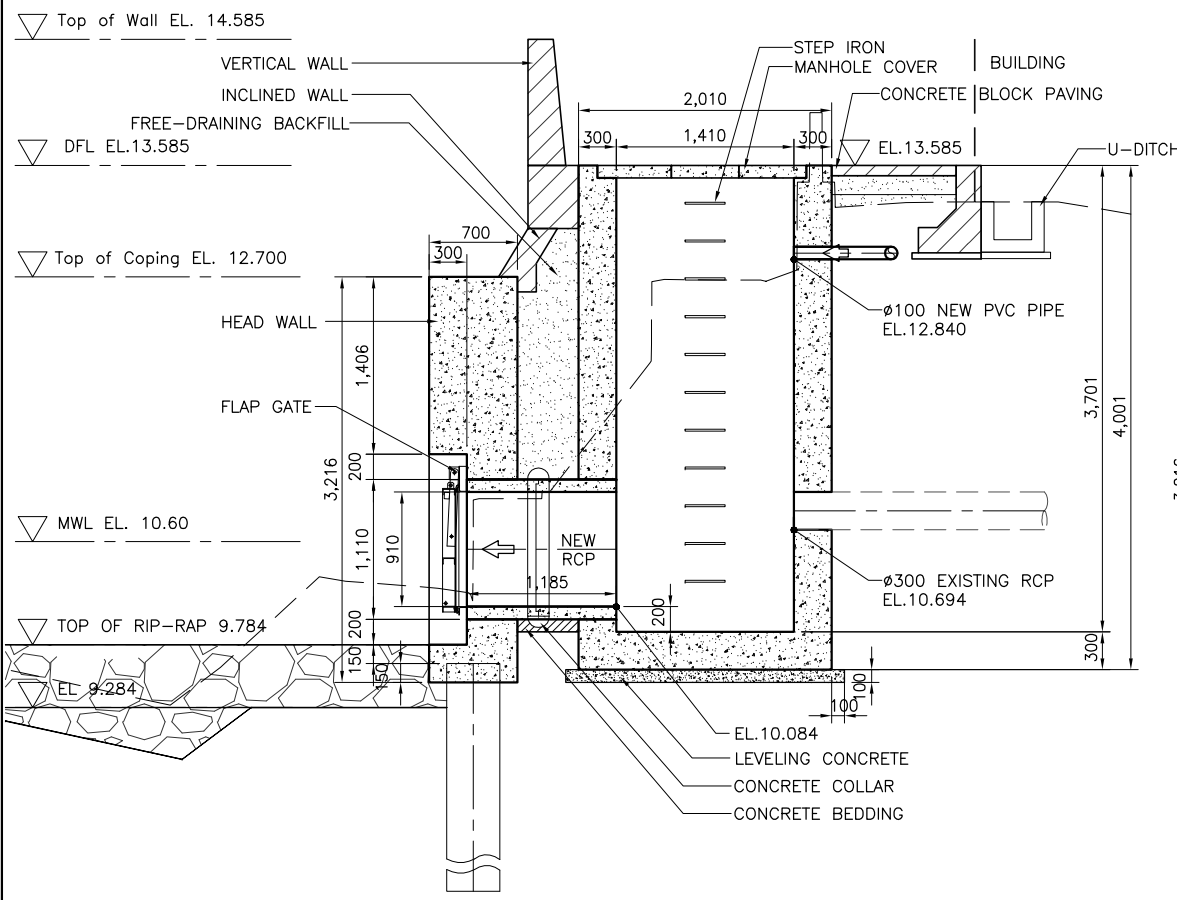
3 PLAN
SCALE B



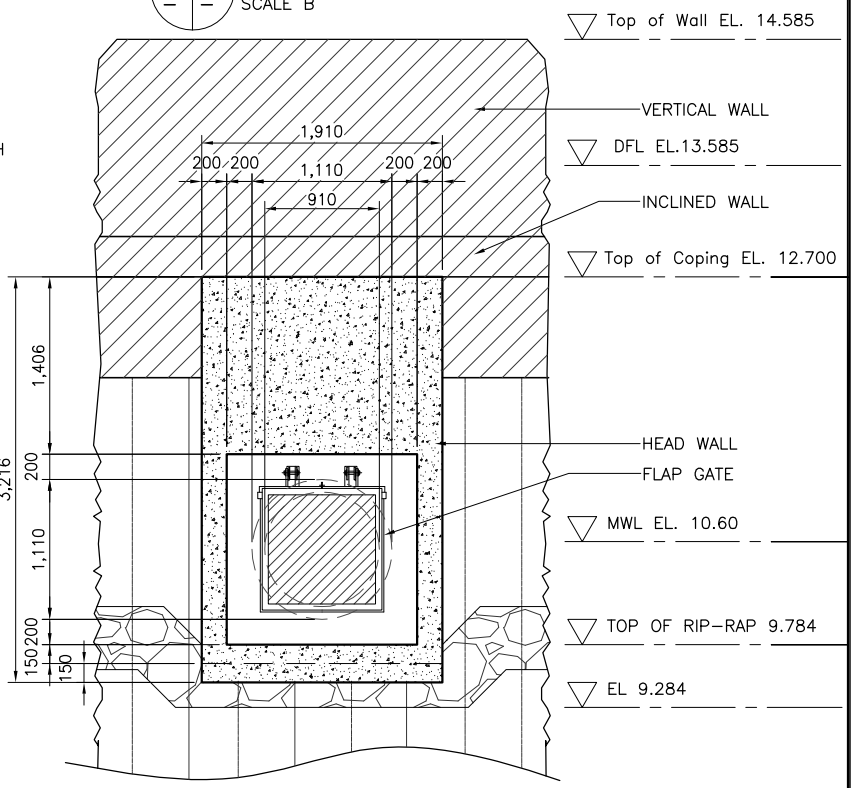
5 SECTION (MR83.36)
SCALE B



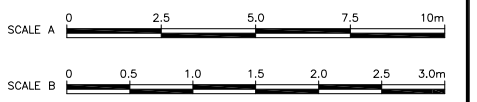
2 PROFILE
SCALE A



4 SECTION
SCALE B



6 ELEVATION
SCALE B



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.

DESIGNED BY: KOHEI TAKAYAMA (STRUCTURAL ENGINEER IV)
 CHECKED BY: TOSHIKI KAWAKAMI (THE CHECKER)
 SUBMITTED BY: SHUJI KAKU (TEAM LEADER)

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS

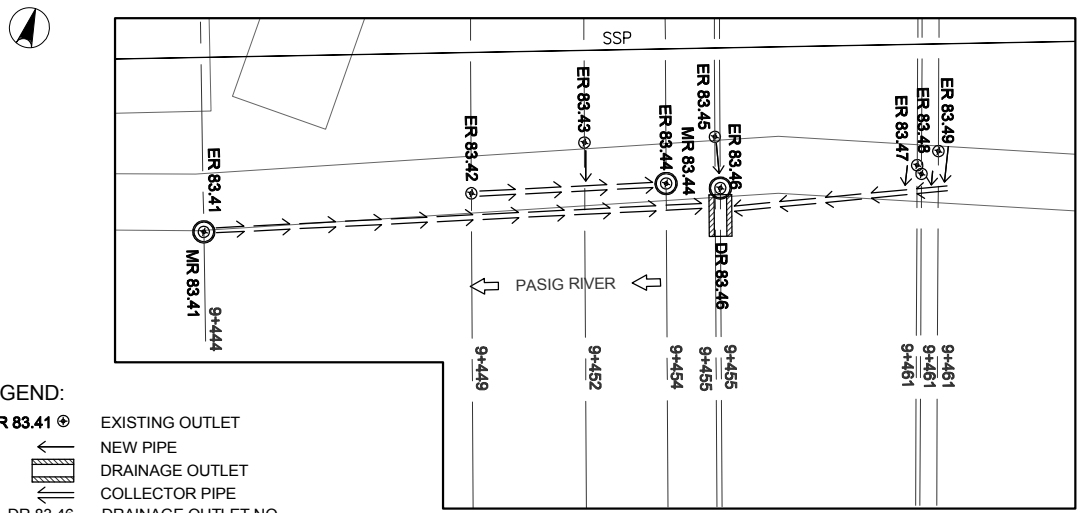
REPUBLIC OF THE PHILIPPINES

REVIEWED BY: PERFECTO L. ZAPLAN, JR. (CHIEF, HYDRAULIC DIVISION, BOD)
 RECOMMENDING APPROVAL: PATRICK B. GATAN (PROJECT DIRECTOR, PMO - MFCP), GILBERTO S. REYES (DIRECTOR, BOD)
 APPROVED BY: RAUL C. ASIS (UNDERSECRETARY FOR TECHNICAL SERVICES), ROGELIO L. SINGSON (SECRETARY)

PROJECT & LOCATION: PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

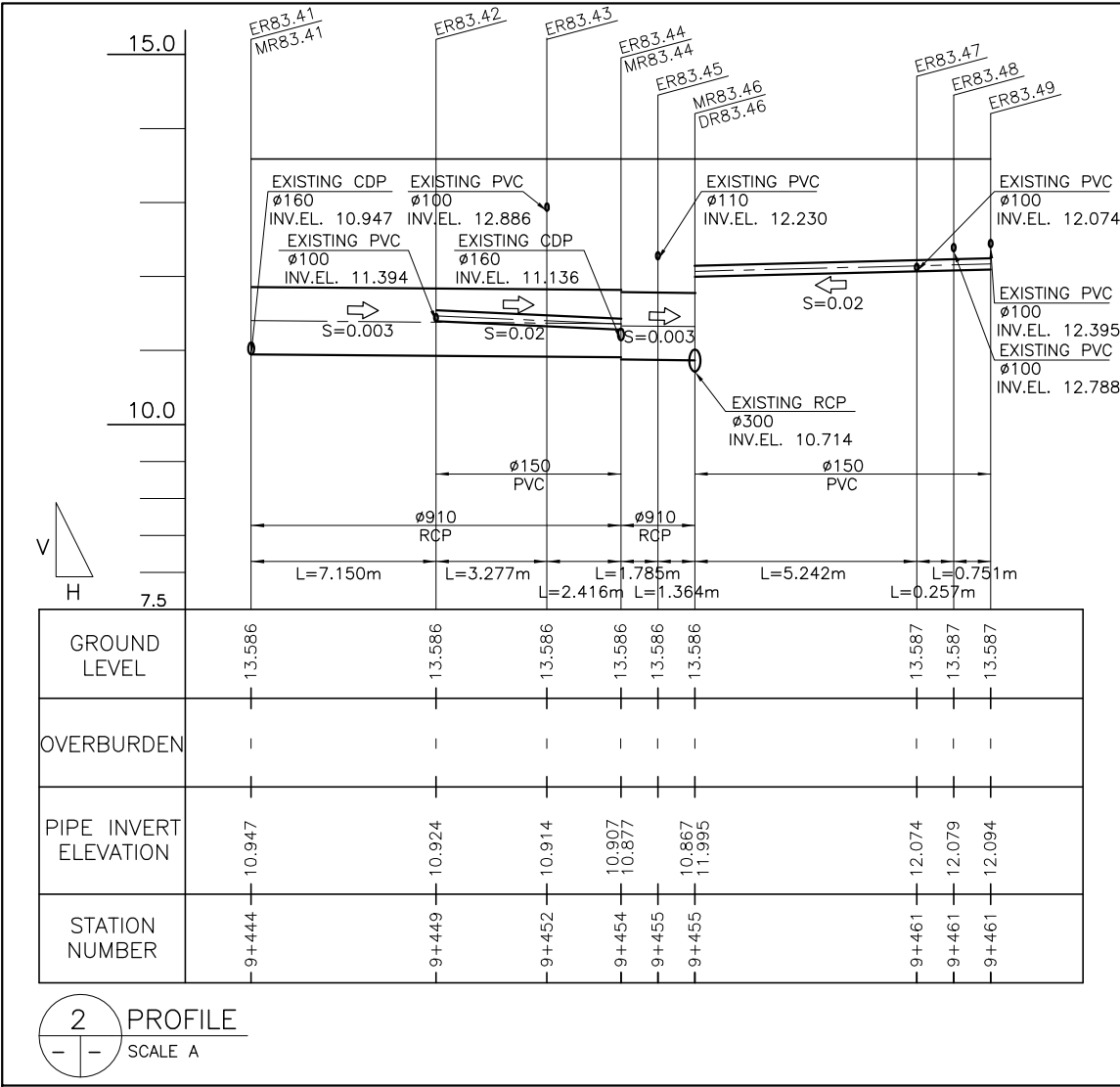
SHEET CONTENTS: DETAIL OF DRAINAGE OUTLET- DR83.36 & MANHOLE MR83.36 STA. 9+429 RB

SHEET NO.: LP-DR DO 83.36



- LEGEND:**
- ER 83.41 ⊕ EXISTING OUTLET
 - ← NEW PIPE
 - ▭ DRAINAGE OUTLET
 - ⇄ COLLECTOR PIPE
 - DR 83.46 DRAINAGE OUTLET NO.
 - PROPOSED MANHOLE

1 DRAINAGE PLAN
SCALE A



2 PROFILE
SCALE A

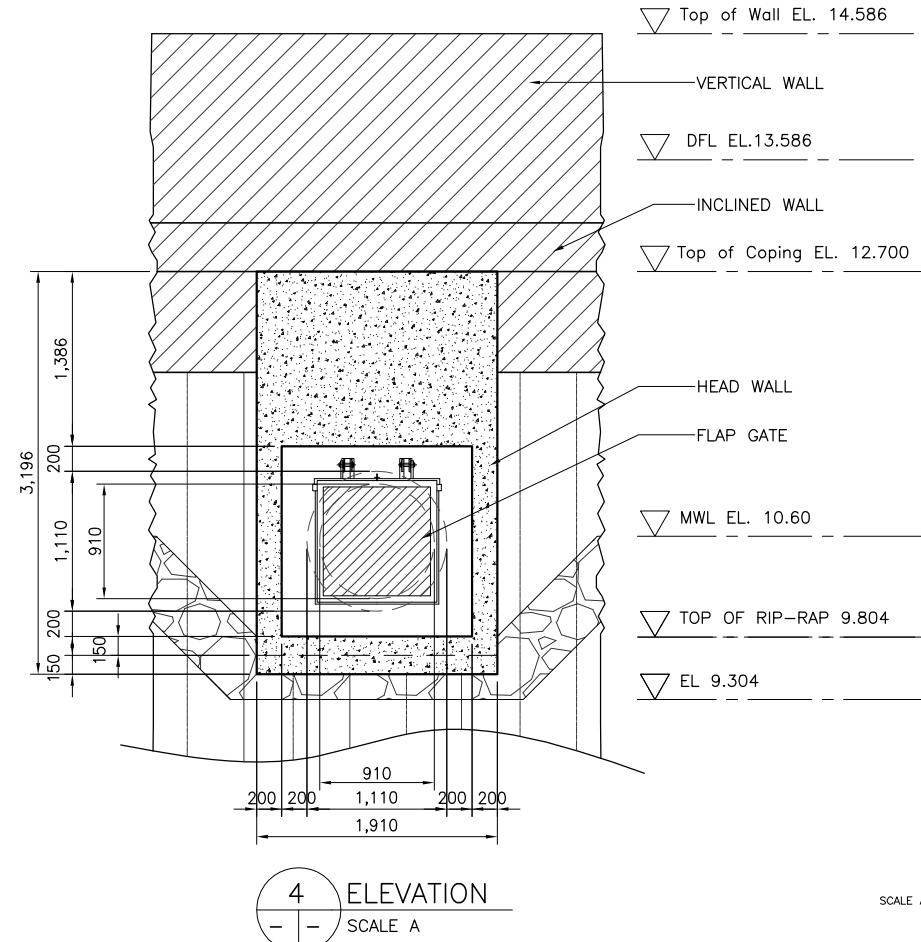
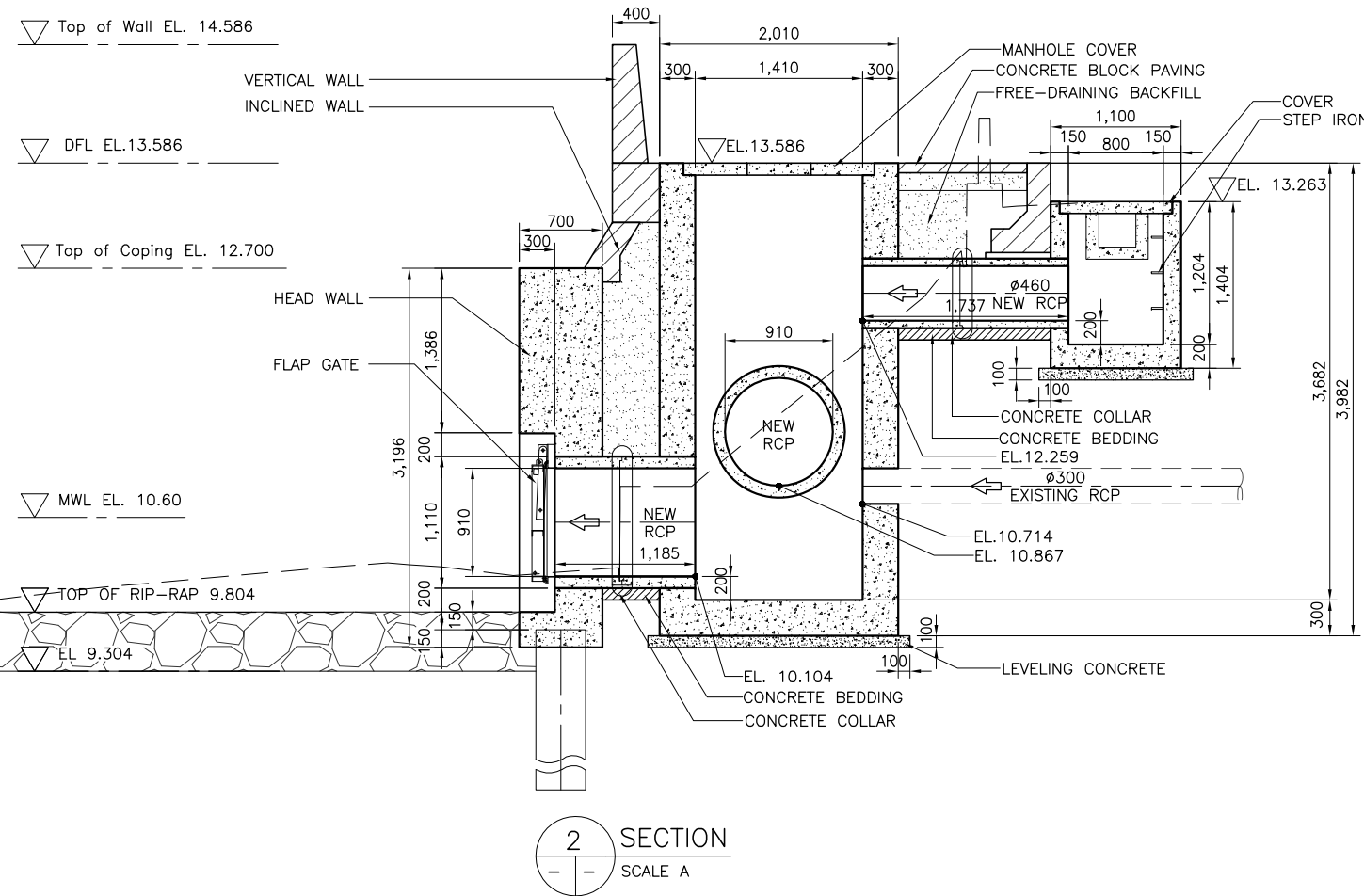
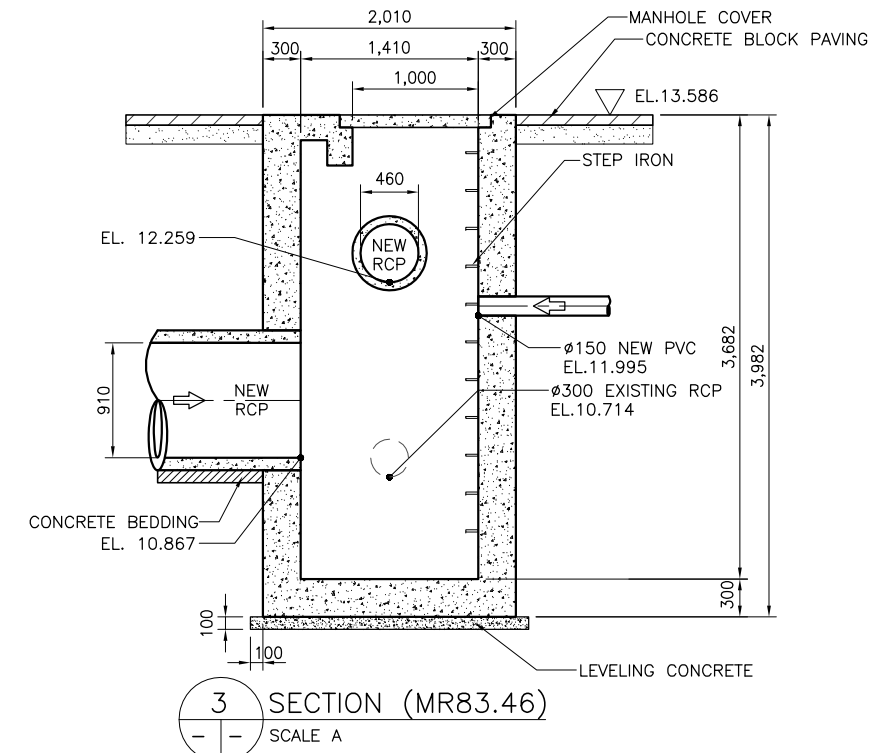
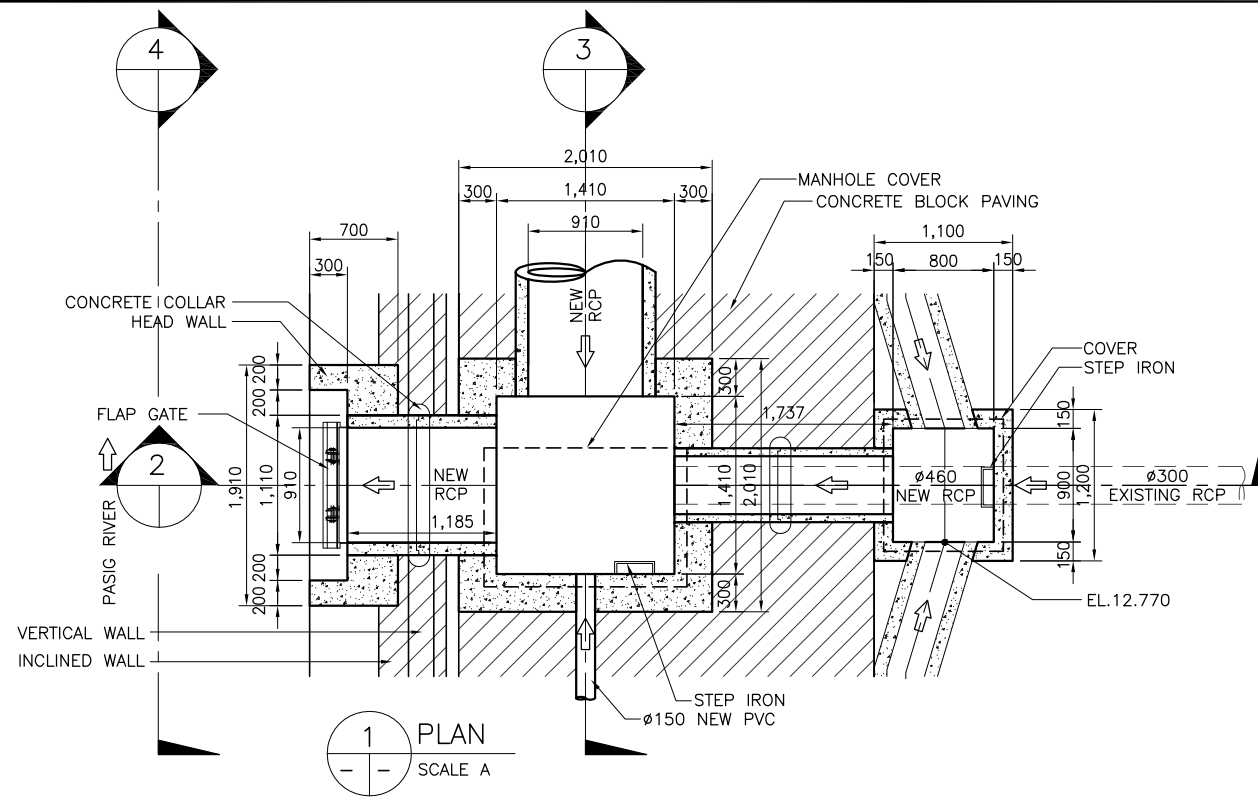


REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

NOTE:
PURSUANT TO SECTION 4 OF ANNEX 'A' OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN			REPUBLIC OF THE PHILIPPINES				PROJECT & LOCATION		SHEET CONTENTS		SHEET NO.	
	DESIGNED BY:	CHECKED BY:	SUBMITTED BY:		REVIEWED BY:	RECOMMENDING APPROVAL:		APPROVED BY:		PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	PLAN & PROFILE OF COLLECTOR PIPE	
	KOHEI TAKAYAMA <small>STRUCTURAL ENGINEER IV</small>	TOSHIKI KAWAKAMI <small>THE CHECKER</small>	SHUJI KAKU <small>TEAM LEADER</small>		PERFECTO L. ZAPLAN, JR. <small>CHIEF, HYDRAULIC DIVISION, BOD</small>	PATRICK B. GATAN <small>PROJECT DIRECTOR PMO - MFCP</small>	GILBERTO S. REYES <small>DIRECTOR BOD</small>	RAUL C. ASIS <small>UNDERSECRETARY FOR TECHNICAL SERVICES</small>	ROGELIO L. SINGSON <small>SECRETARY</small>			



NOTE:
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SHUJI KAKU
TEAM LEADER

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

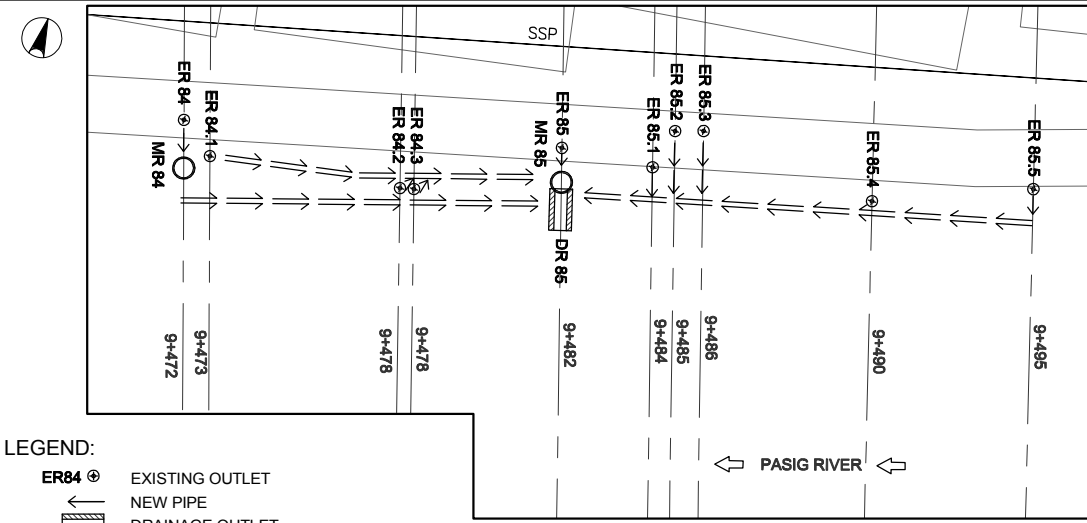
APPROVED BY: RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION
PASIG-MARIKINA
RIVER CHANNEL
IMPROVEMENT
PROJECT (PHASE III),
METRO MANILA

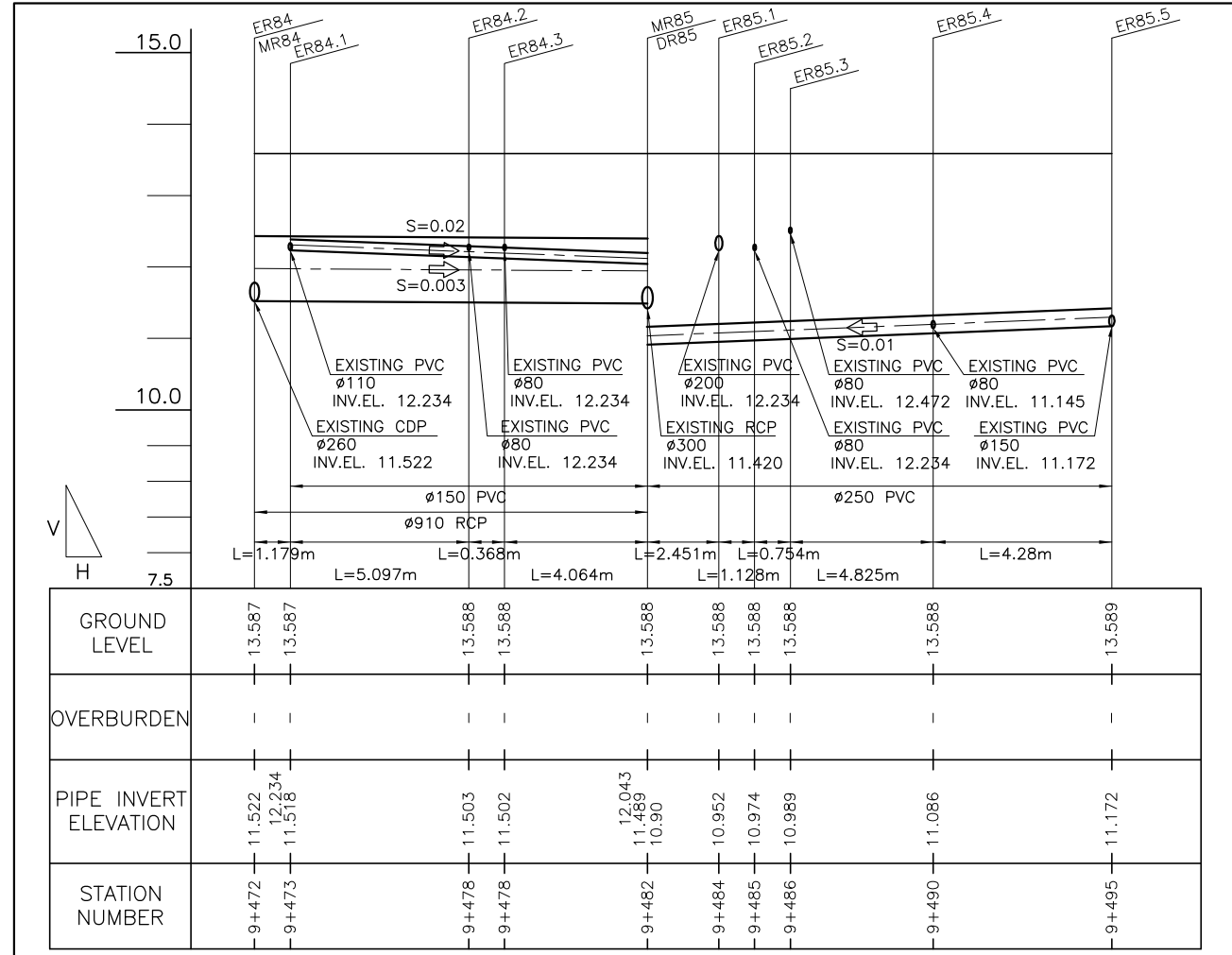
SHEET CONTENTS
DETAIL OF DRAINAGE
OUTLET- DR83.46 &
MANHOLE MR83.46
STA. 9+455 RB

SHEET NO.
LP-DR
DO/83.46



- LEGEND:**
- ER84 ⊕ EXISTING OUTLET
 - NEW PIPE
 - ⊕ DRAINAGE OUTLET
 - ⇨ COLLECTOR PIPE
 - DR 85 DRAINAGE OUTLET NO.
 - PROPOSED MANHOLE

1 DRAINAGE PLAN
SCALE A



2 PROFILE
SCALE A

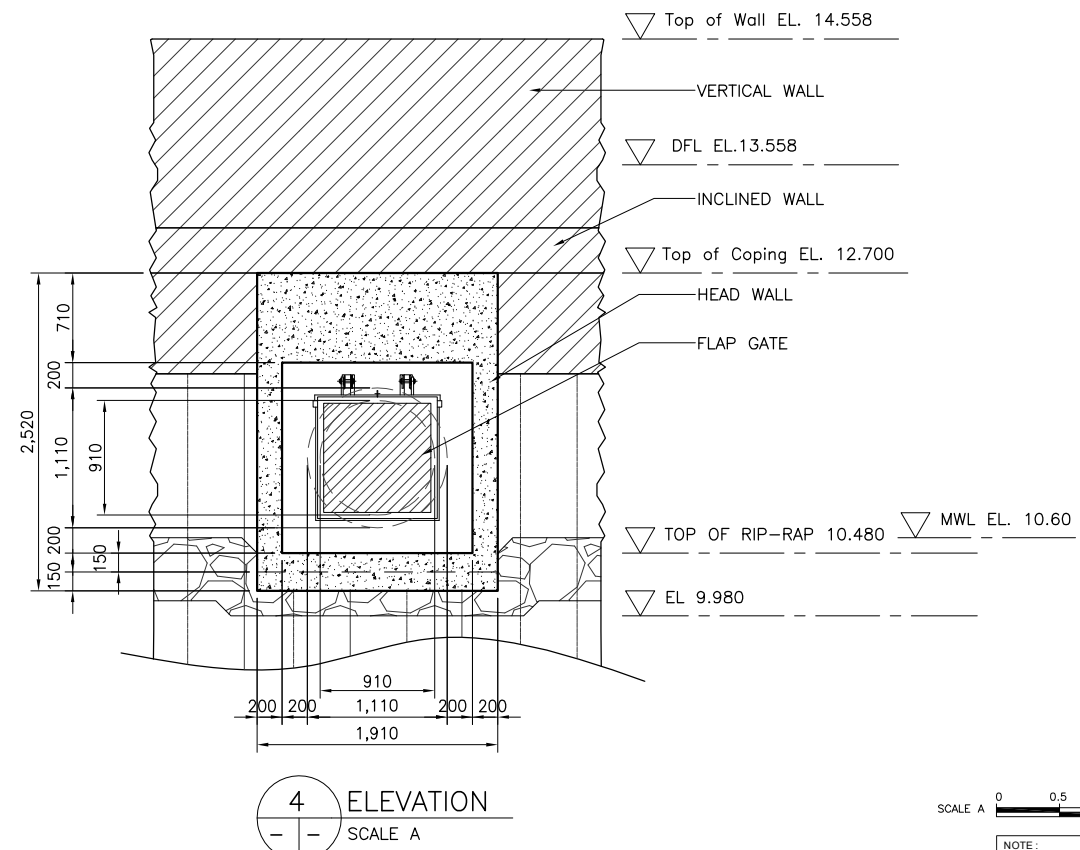
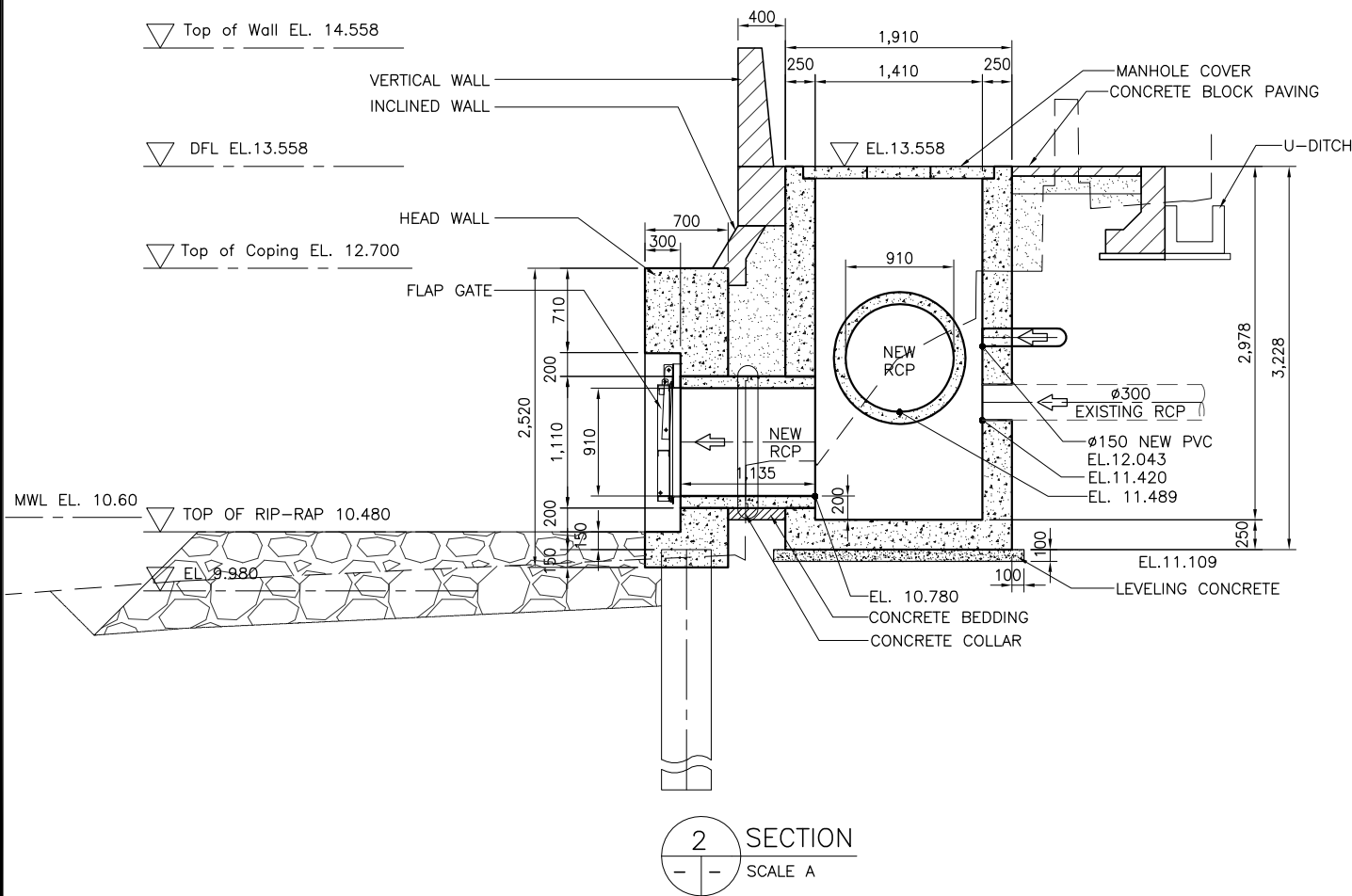
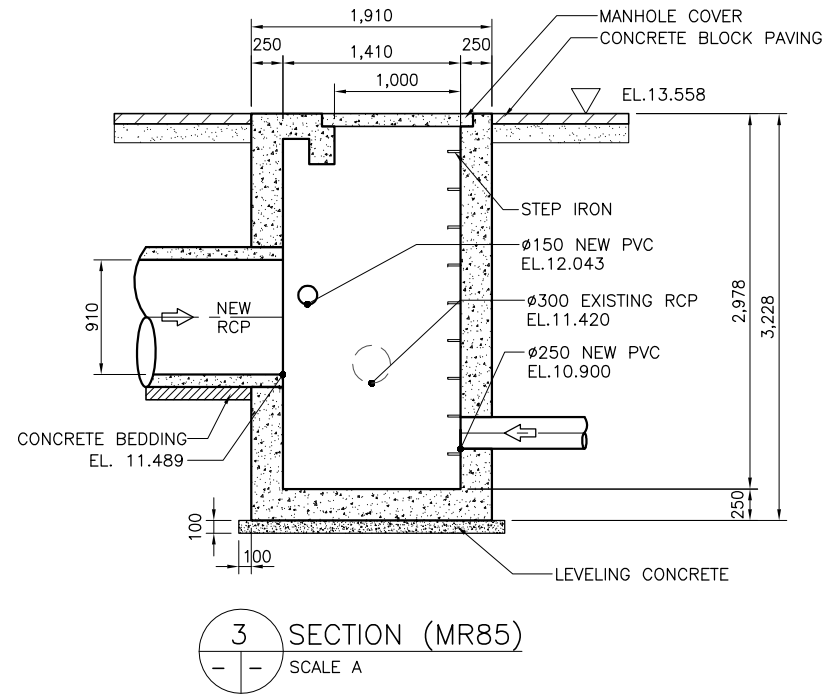
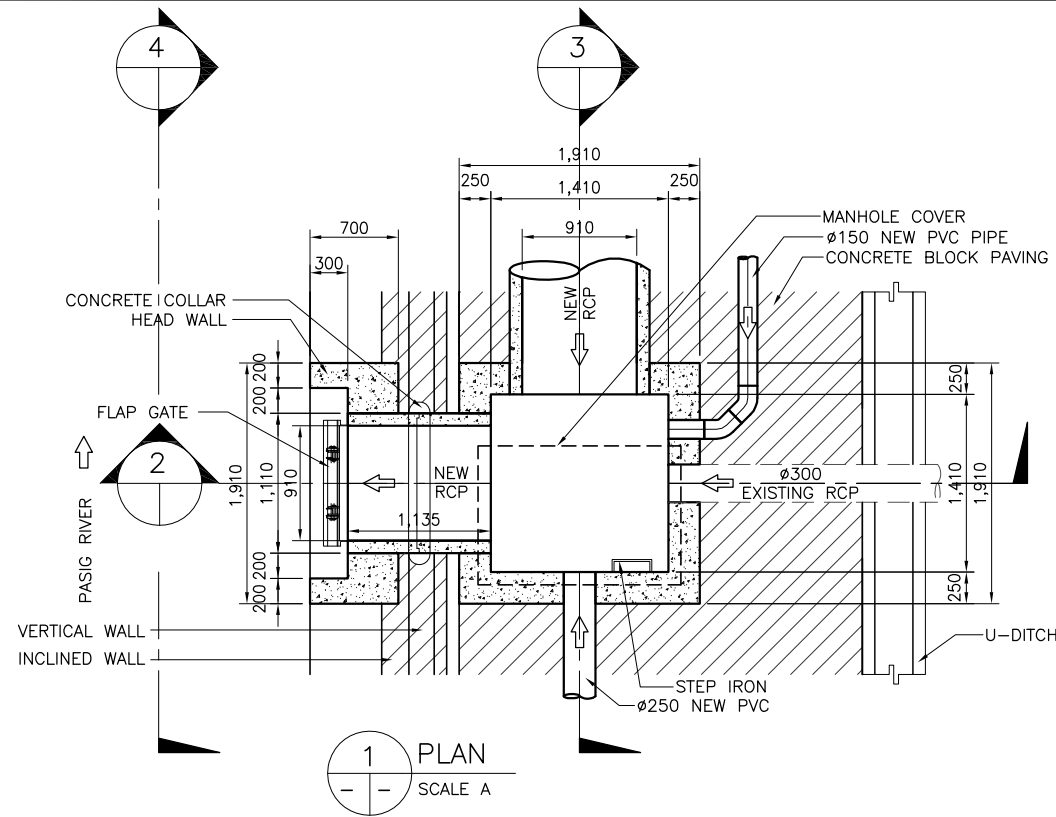


REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

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SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN 			REPUBLIC OF THE PHILIPPINES 			PROJECT & LOCATION PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA		SHEET CONTENTS PLAN & PROFILE OF COLLECTOR PIPE	SHEET NO.
DESIGNED BY: KOHEI TAKAYAMA <small>STRUCTURAL ENGINEER IV</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>	SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY RAUL C. ASIS <small>UNDERSECRETARY FOR TECHNICAL SERVICES</small>	SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY ROGELIO L. SINGSON <small>SECRETARY</small>	PLAN & PROFILE OF COLLECTOR PIPE	



SCALE A 0 0.5 1.0 1.5 2.0 2.5 3.0m

NOTE:
PURSUANT TO SECTION 4 OF ANNEX 'A' OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

SHUJI KAKU
TEAM LEADER

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY

APPROVED BY: RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

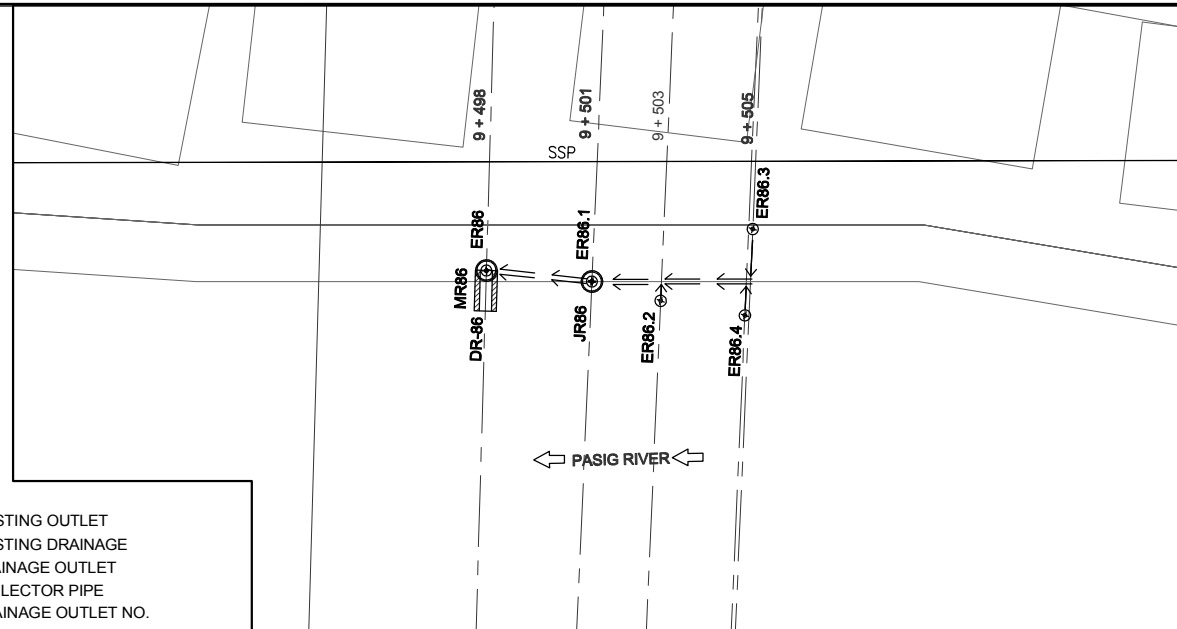
SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY

ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION: PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS: DETAIL OF DRAINAGE OUTLET- DR85 & MANHOLE MR85 STA. 9+482 RB

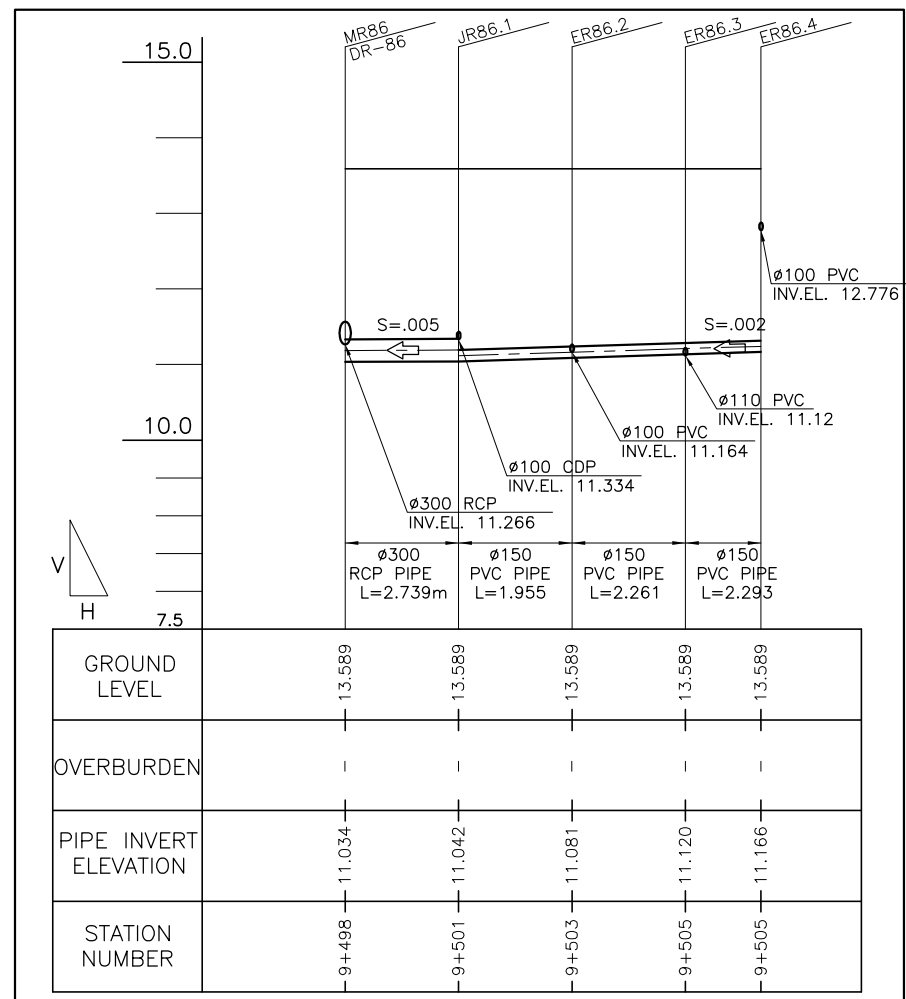
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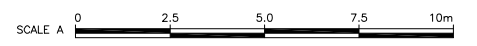
LEGEND:

- ER86 ⊕ EXISTING OUTLET
- ← EXISTING DRAINAGE
- ▭ DRAINAGE OUTLET
- ← COLLECTOR PIPE
- DR 86 DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

1 DRAINAGE PLAN
SCALE A



2 PROFILE
SCALE A

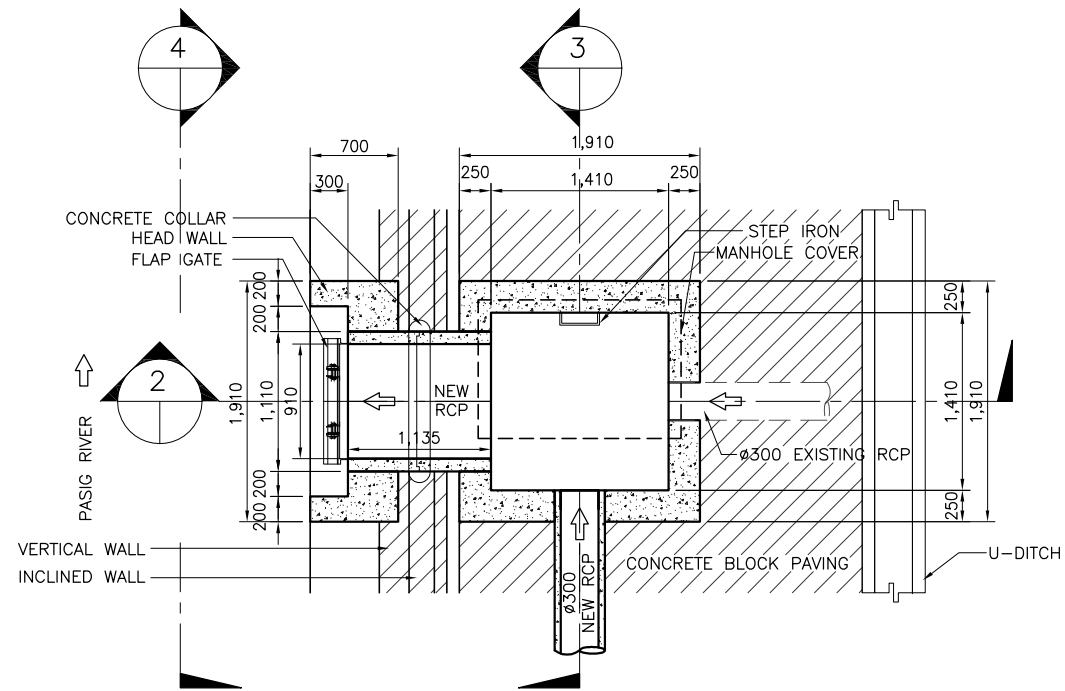


REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

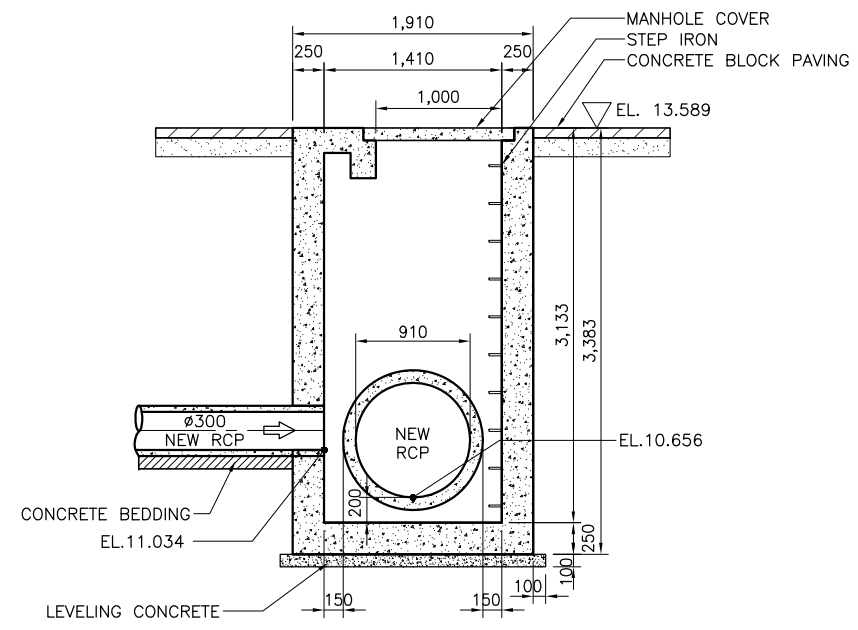
NOTE:
PURSUANT TO SECTION 4 OF ANNEX 'A' OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGN UNDERTAKEN BY CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGN NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

SHUJI KAKU
TEAM LEADER

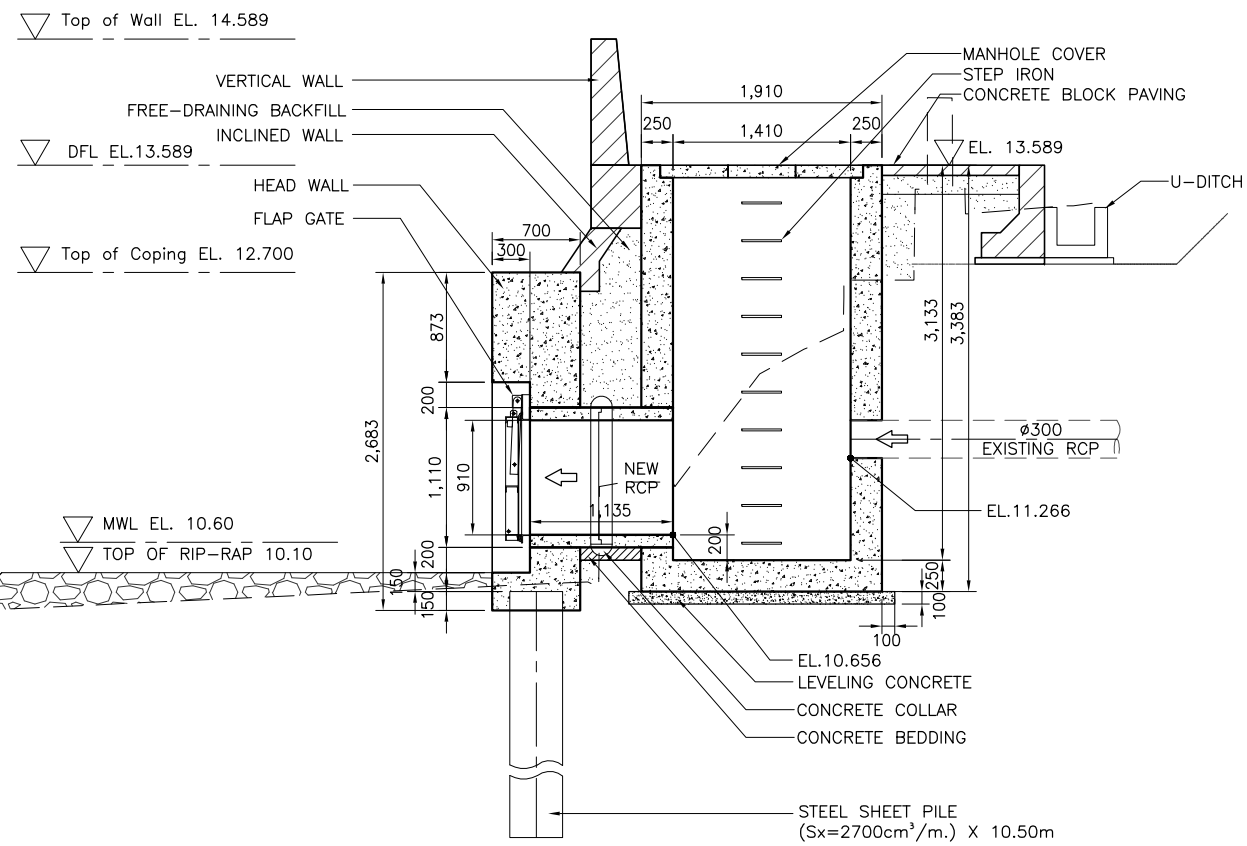
JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN			REPUBLIC OF THE PHILIPPINES				PROJECT & LOCATION		SHEET CONTENTS		SHEET NO.
	DESIGNED BY:	CHECKED BY:	SUBMITTED BY:		REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED BY:		PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	PLAN & PROFILE OF COLLECTOR PIPE	
	KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	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	SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES			



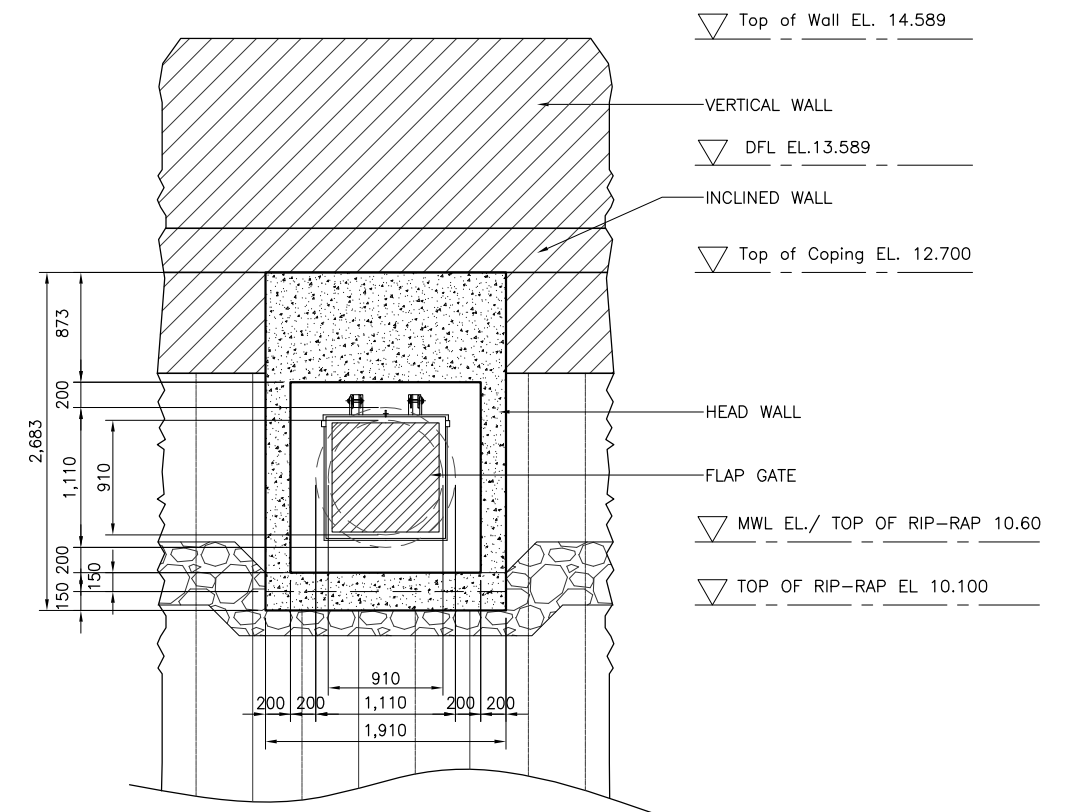
1 PLAN
SCALE A



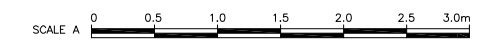
3 SECTION (MR86)
SCALE A



2 SECTION
SCALE A



4 ELEVATION
SCALE A



NOTE:
PURSUANT TO SECTION 4 OF ANNEX "A" OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

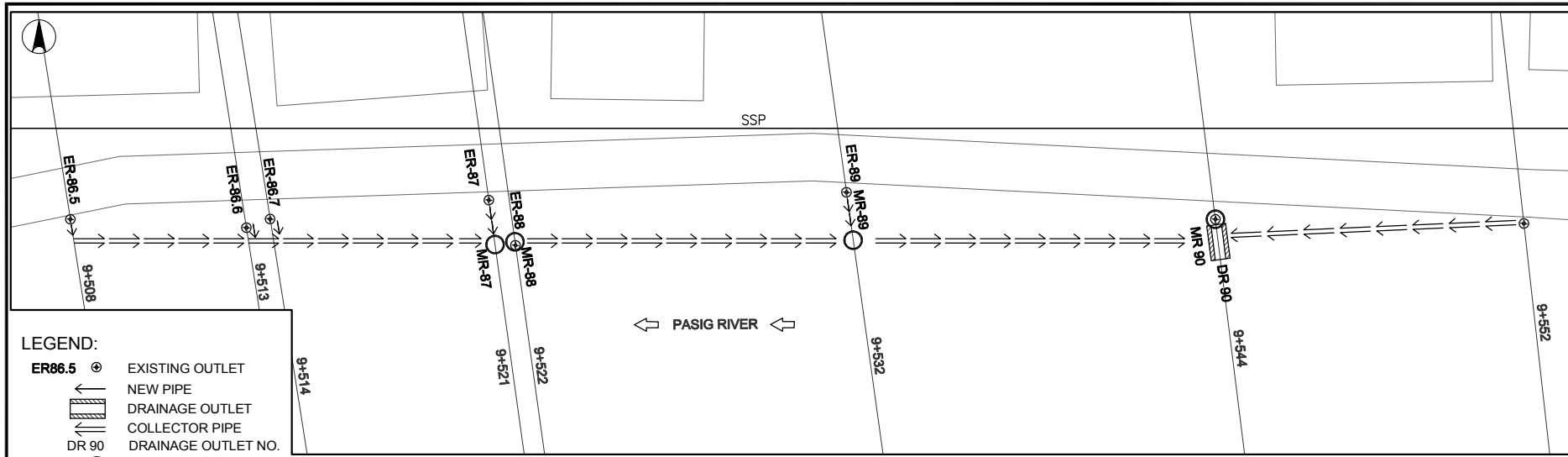
APPROVED BY: RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION: PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

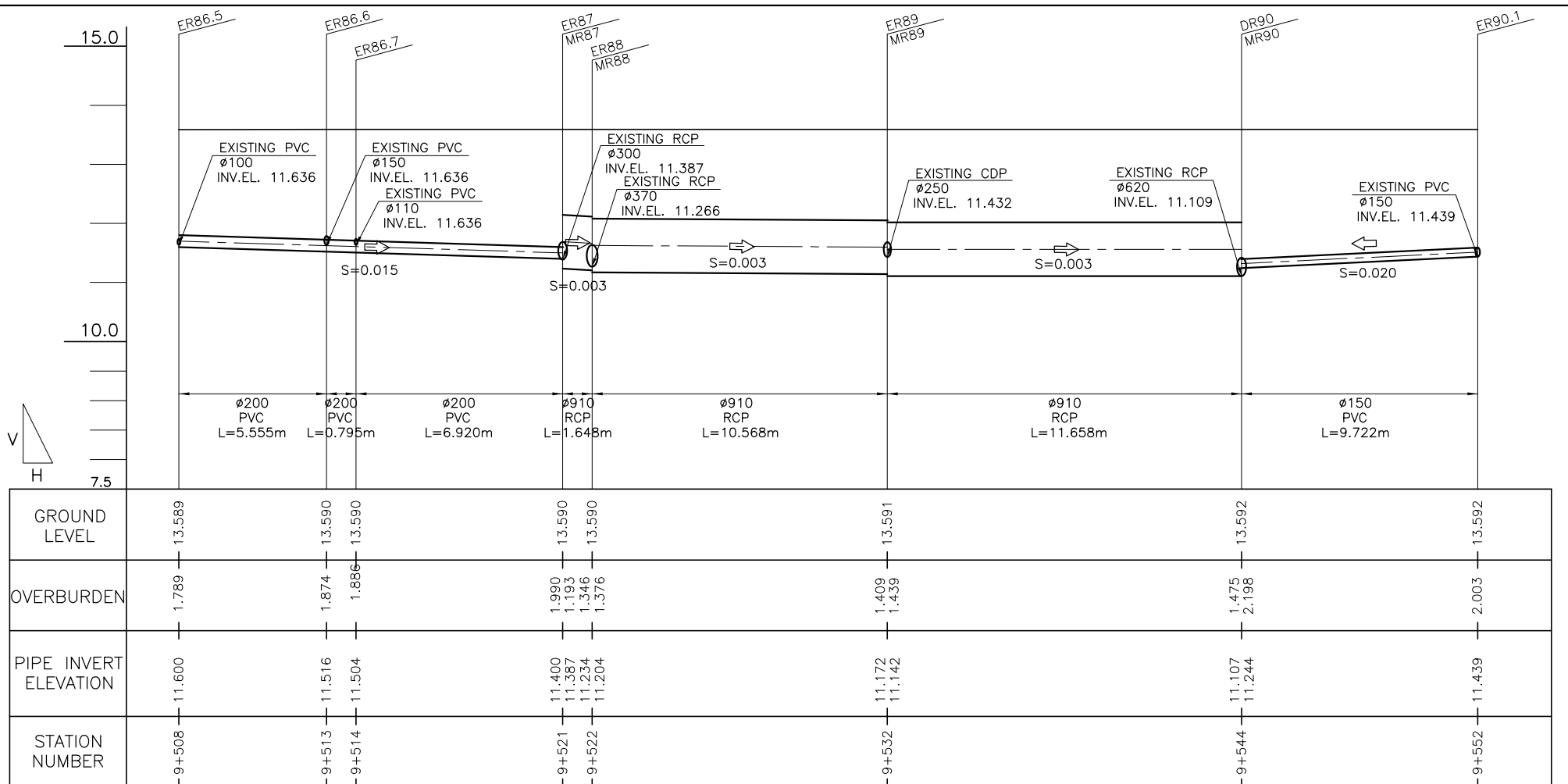
SHEET CONTENTS: DETAIL OF DRAINAGE OUTLET- DR 86 & MANHOLE MR86 STA. 9+498 RB

SHEET NO.: LP-DR 01/86



- LEGEND:**
- ER86.5 EXISTING OUTLET
 - NEW PIPE
 - DRAINAGE OUTLET
 - COLLECTOR PIPE
 - DR 90 DRAINAGE OUTLET NO.
 - PROPOSED MANHOLE

1 DRAINAGE PLAN
SCALE A



2 PROFILE
SCALE A



REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

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SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

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

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY

APPROVED BY: RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

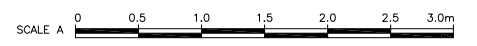
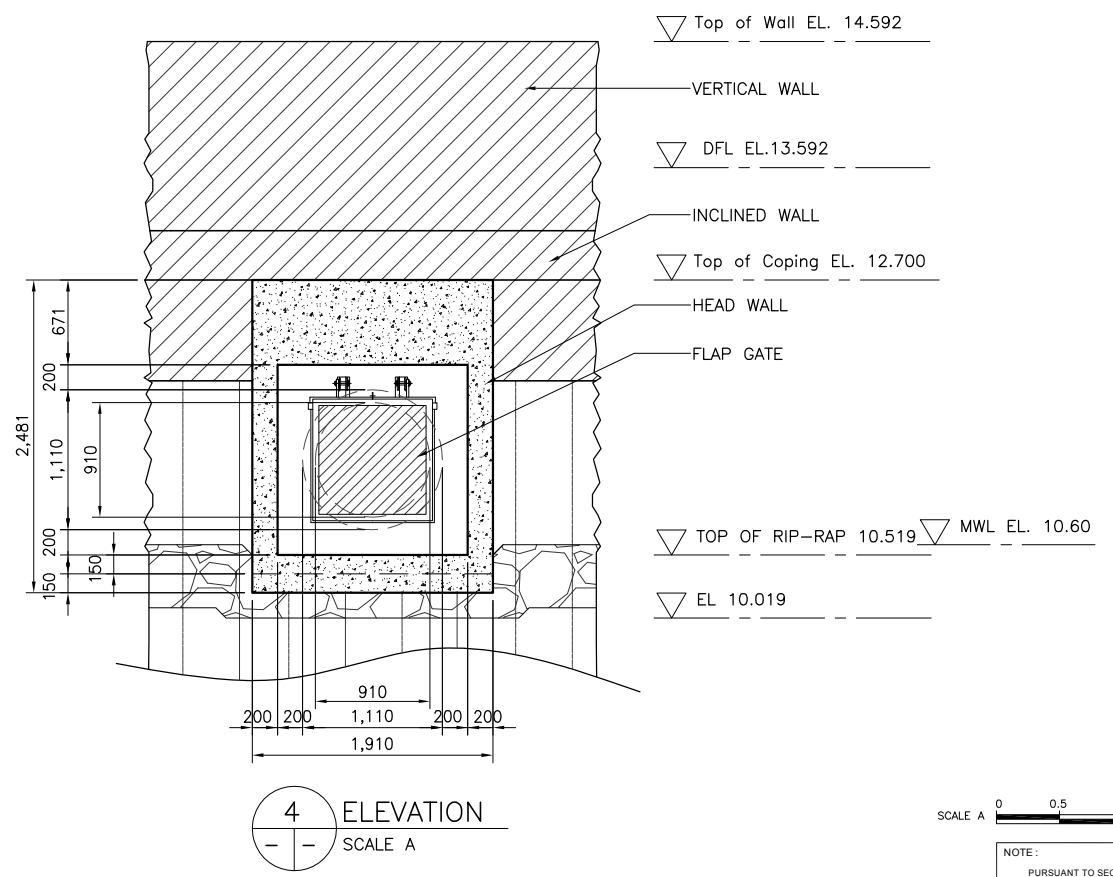
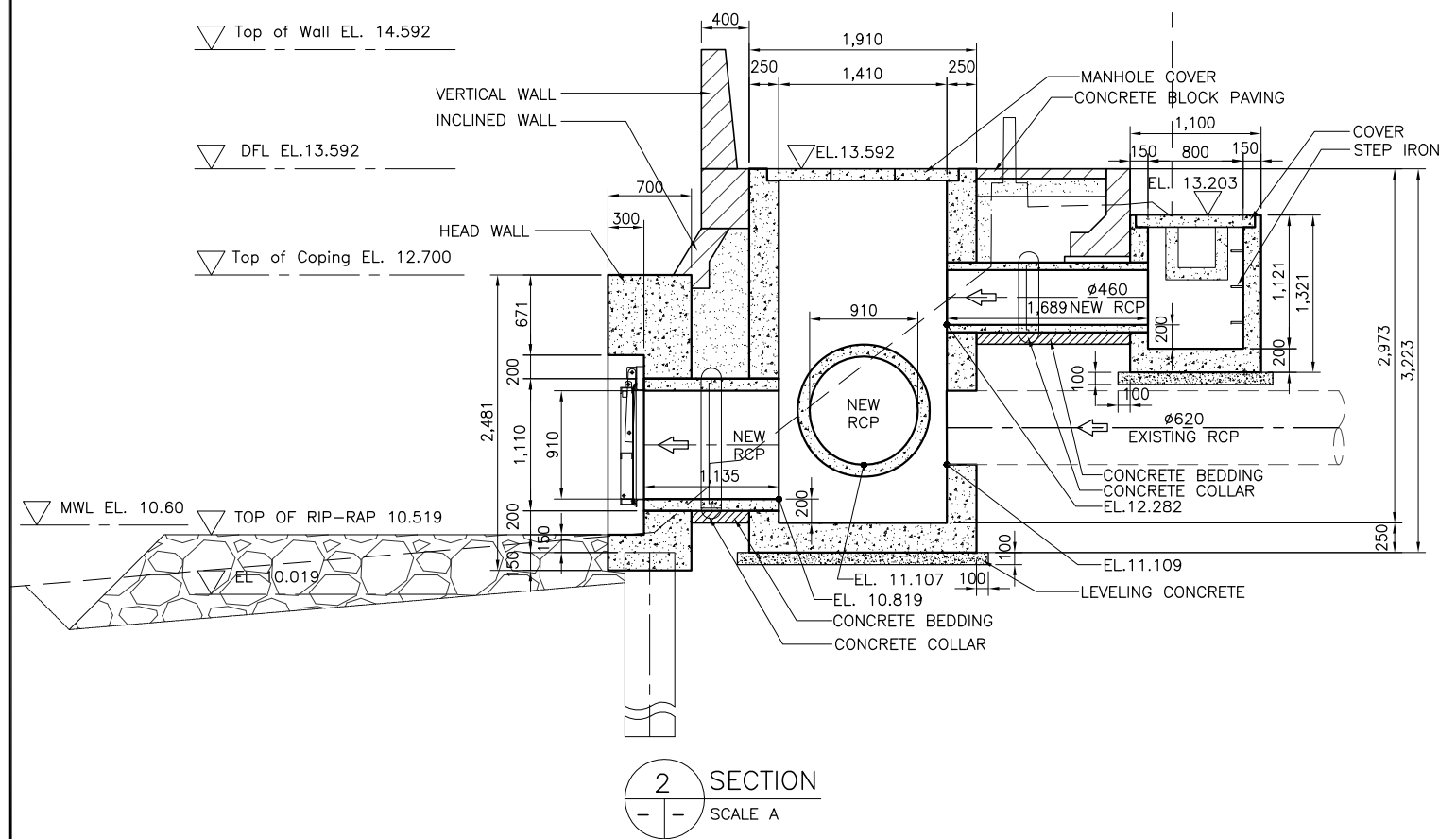
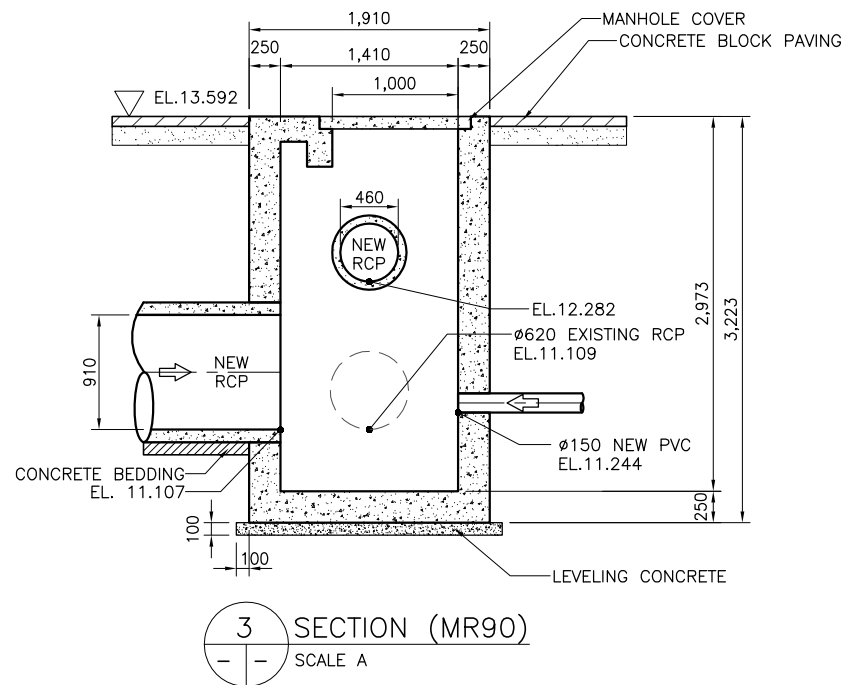
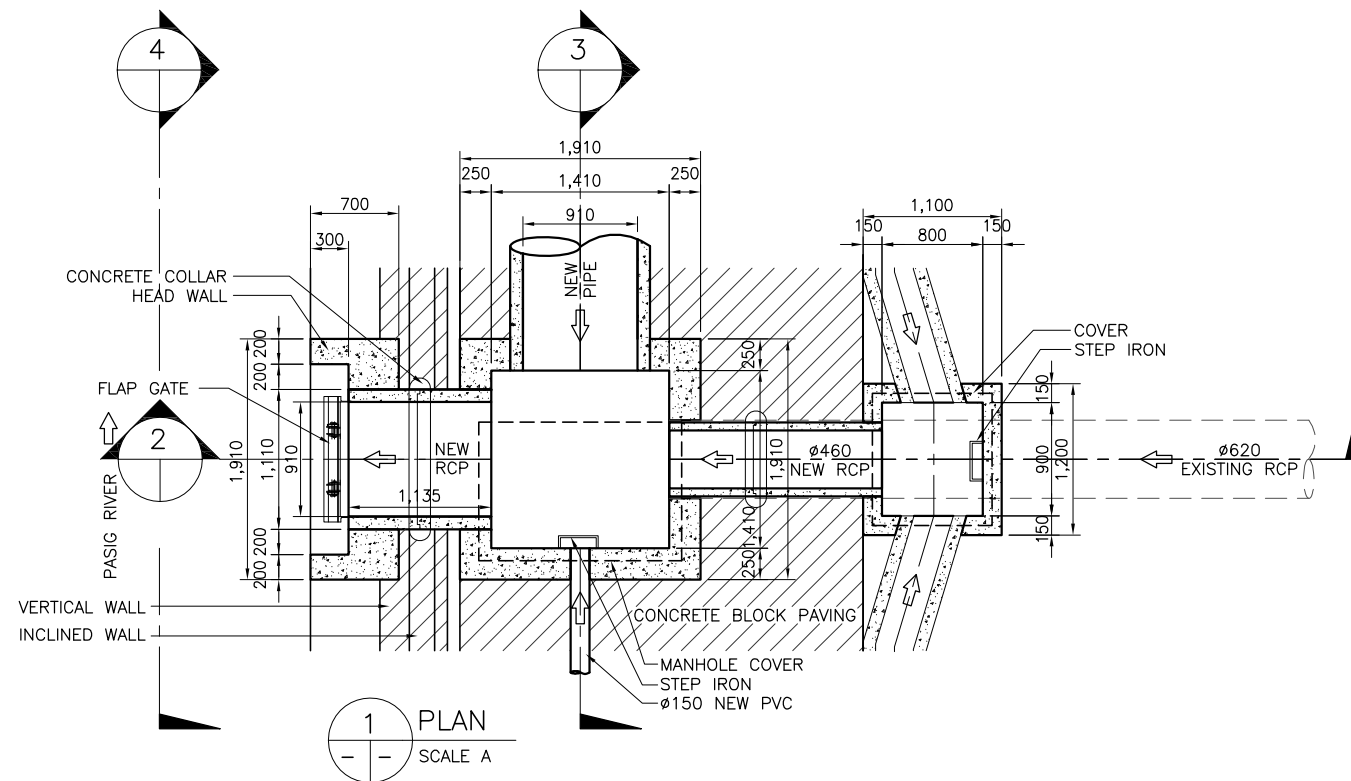
SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY

ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION: PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS: PLAN & PROFILE OF COLLECTOR PIPE

SHEET NO.: LP-DR/DO/90/P



REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

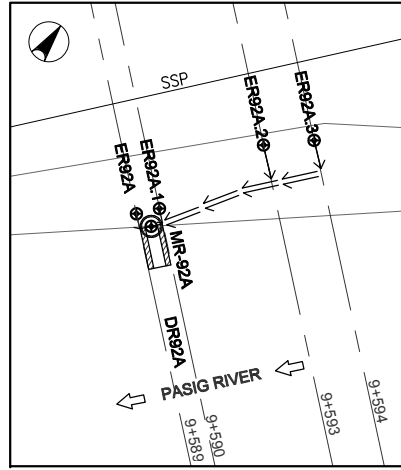
NOTE:
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SHUJI KAKU
TEAM LEADER

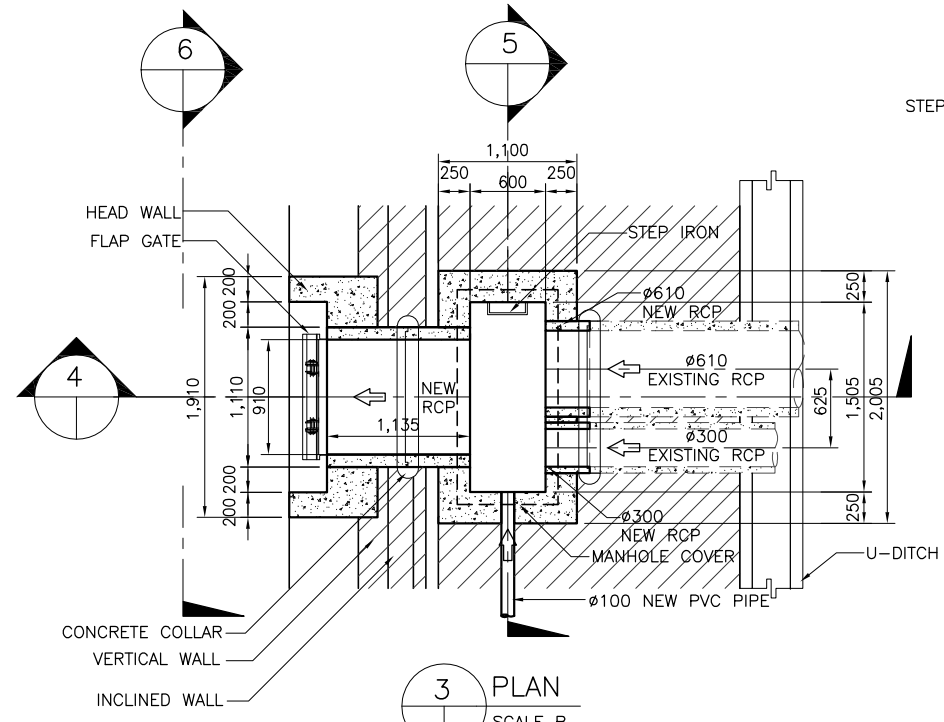
JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN			REPUBLIC OF THE PHILIPPINES				PROJECT & LOCATION		SHEET CONTENTS		SHEET NO.
	DESIGNED BY:	CHECKED BY:	SUBMITTED BY:		REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED BY:	PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	DETAIL OF DRAINAGE OUTLET- DR90 & MANHOLE MR90 STA. 9+544 RB		
	KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	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				SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY ROGELIO L. SINGSON SECRETARY

LEGEND:

- ER92A ⊕ EXISTING OUTLET
- ← EXISTING DRAINAGE DRAINAGE OUTLET
- ▬ COLLECTOR PIPE
- DR 92A DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

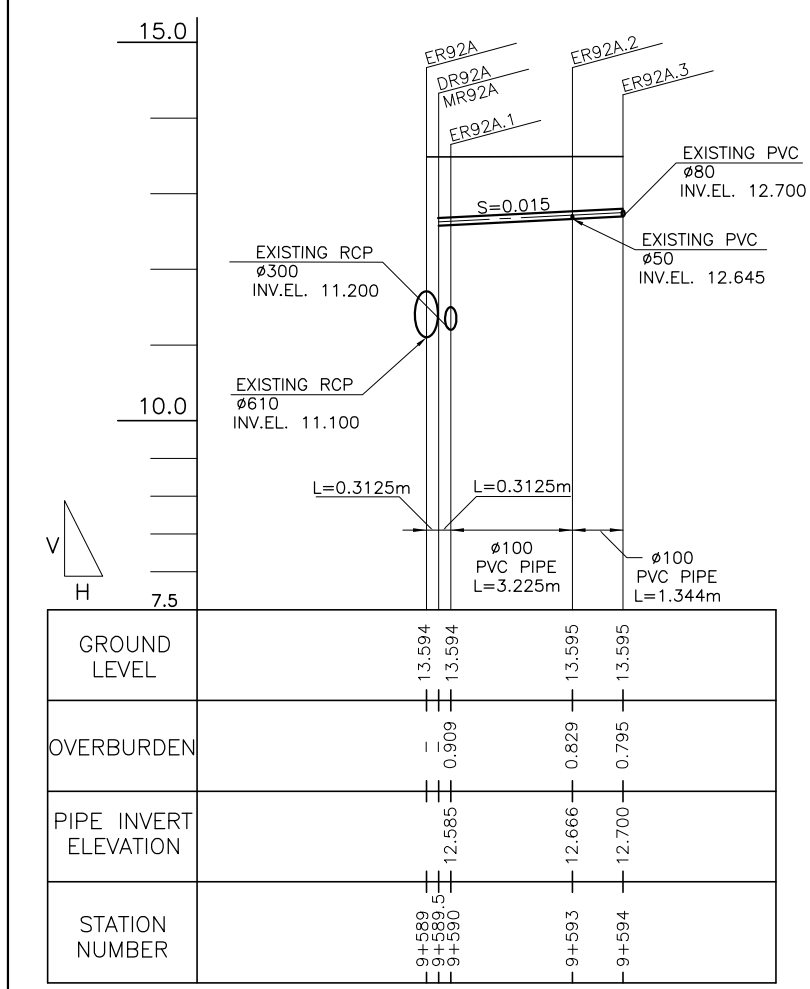


1 DRAINAGE PLAN
SCALE A

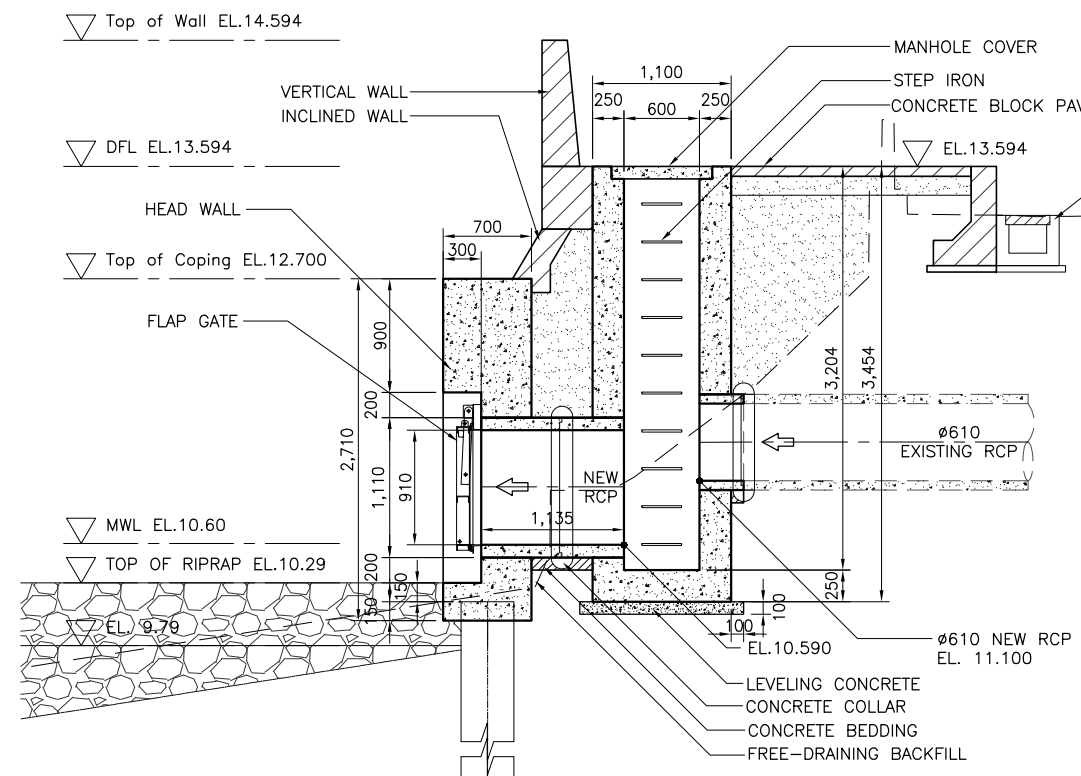


3 PLAN
SCALE B

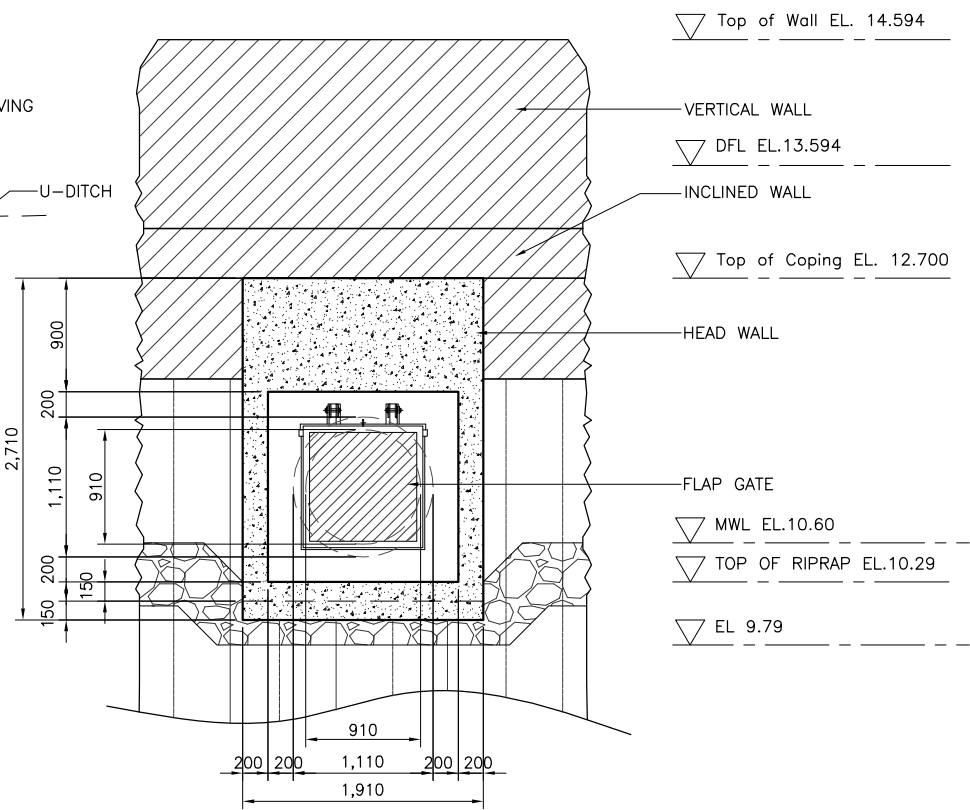
5 SECTION (MR92A)
SCALE B



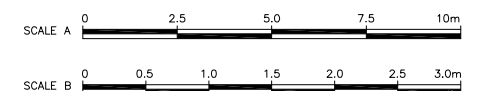
2 PROFILE
SCALE A



4 SECTION
SCALE B



6 ELEVATION
SCALE B



REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

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SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES



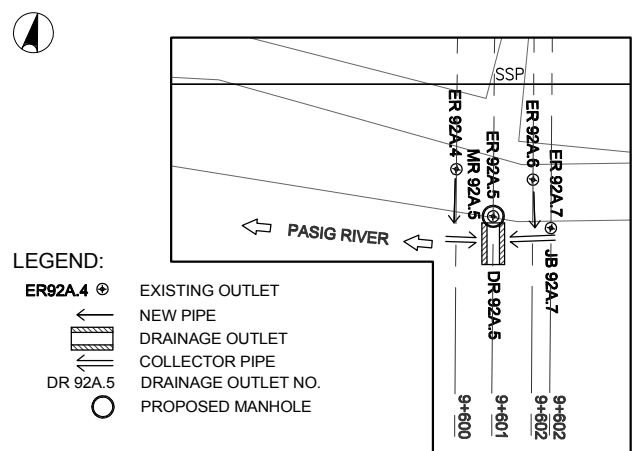
DESIGNED BY: KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	CHECKED BY: TOSHIKI KAWAKAMI THE CHECKER	SUBMITTED BY: SHUJI KAKU TEAM LEADER
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REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS

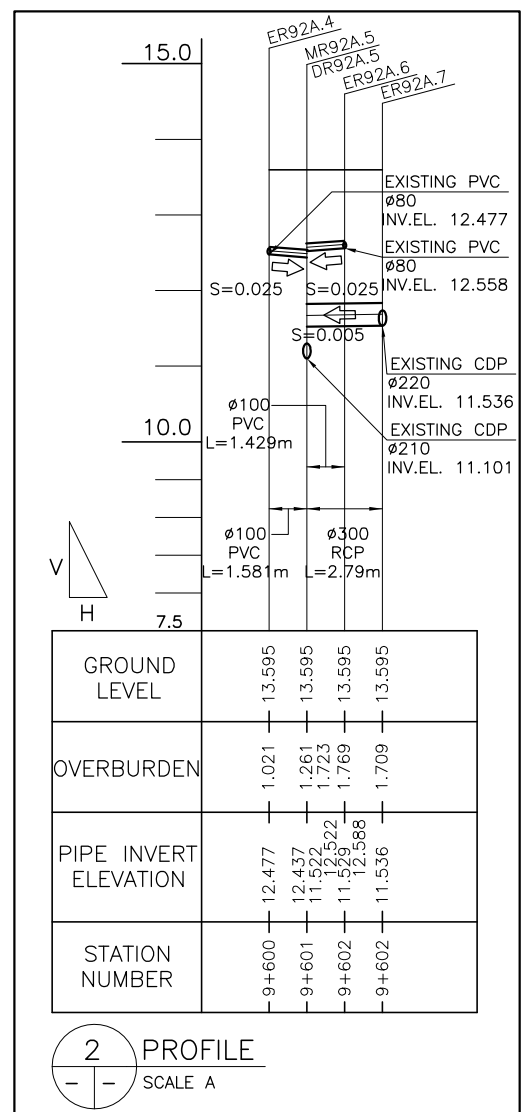
REVIEWED BY: PERFECTO L. ZAPLAN, JR. CHIEF, HYDRAULIC DIVISION, BOD	RECOMMENDING APPROVAL: PATRICK B. GATAN PROJECT DIRECTOR PMO - MFCP	GILBERTO S. REYES DIRECTOR BOD	APPROVED BY: RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES	APPROVED BY: ROGELIO L. SINGSON SECRETARY
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PROJECT & LOCATION PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	SHEET CONTENTS DETAIL OF DRAINAGE OUTLET- DR92A & MANHOLE MR92A STA. 9+589.5 RB	SHEET NO. LP-DR/DO/92A
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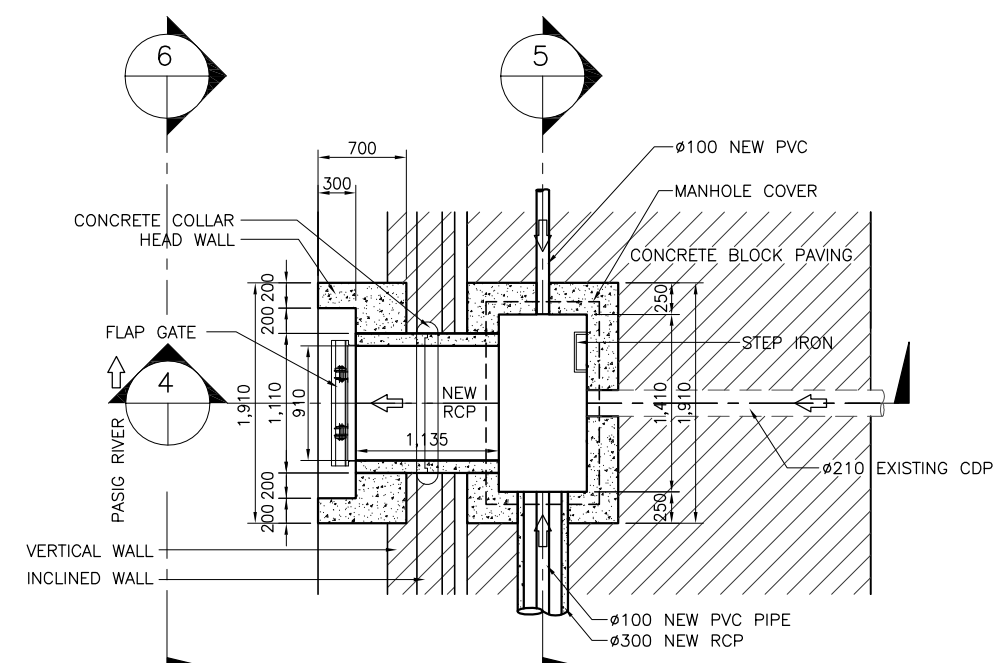


LEGEND:
 ER92A.4 ⊕ EXISTING OUTLET
 — NEW PIPE
 ▭ DRAINAGE OUTLET
 ▭ COLLECTOR PIPE
 DR 92A.5 DRAINAGE OUTLET NO.
 ○ PROPOSED MANHOLE

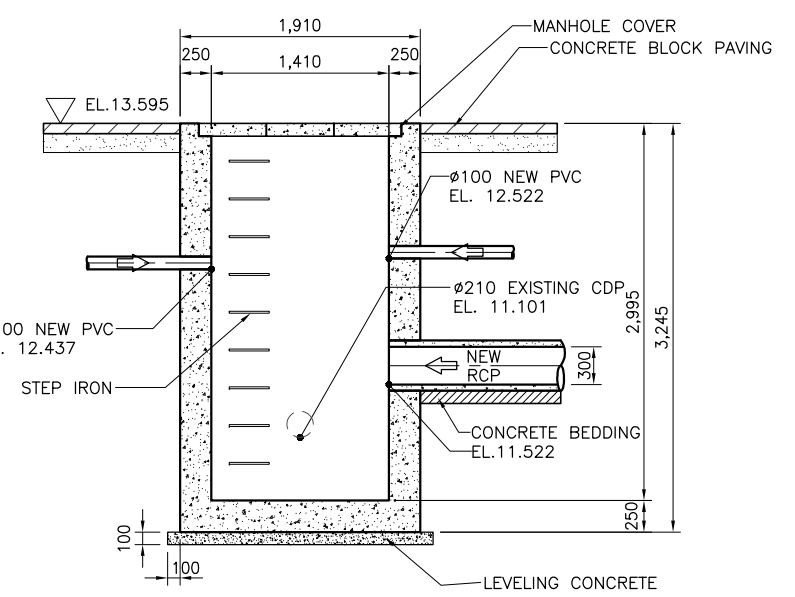
1 DRAINAGE PLAN
 SCALE A



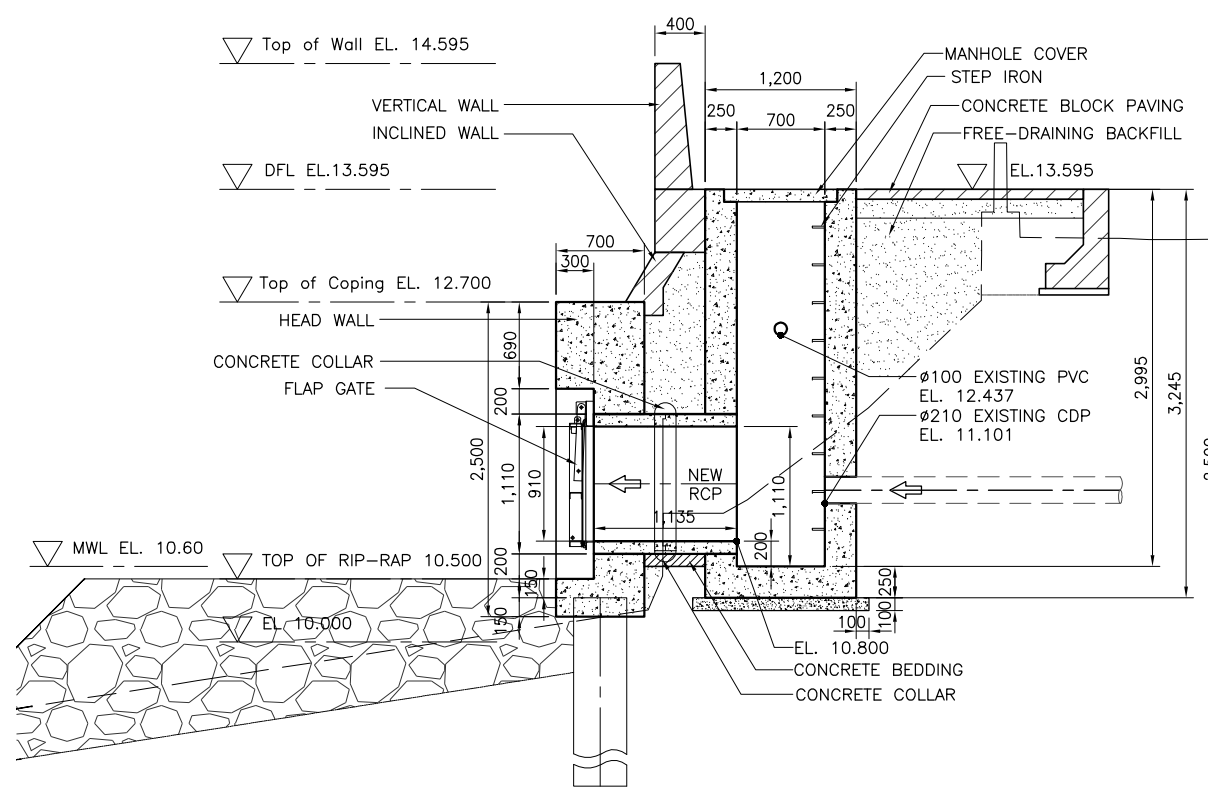
2 PROFILE
 SCALE A



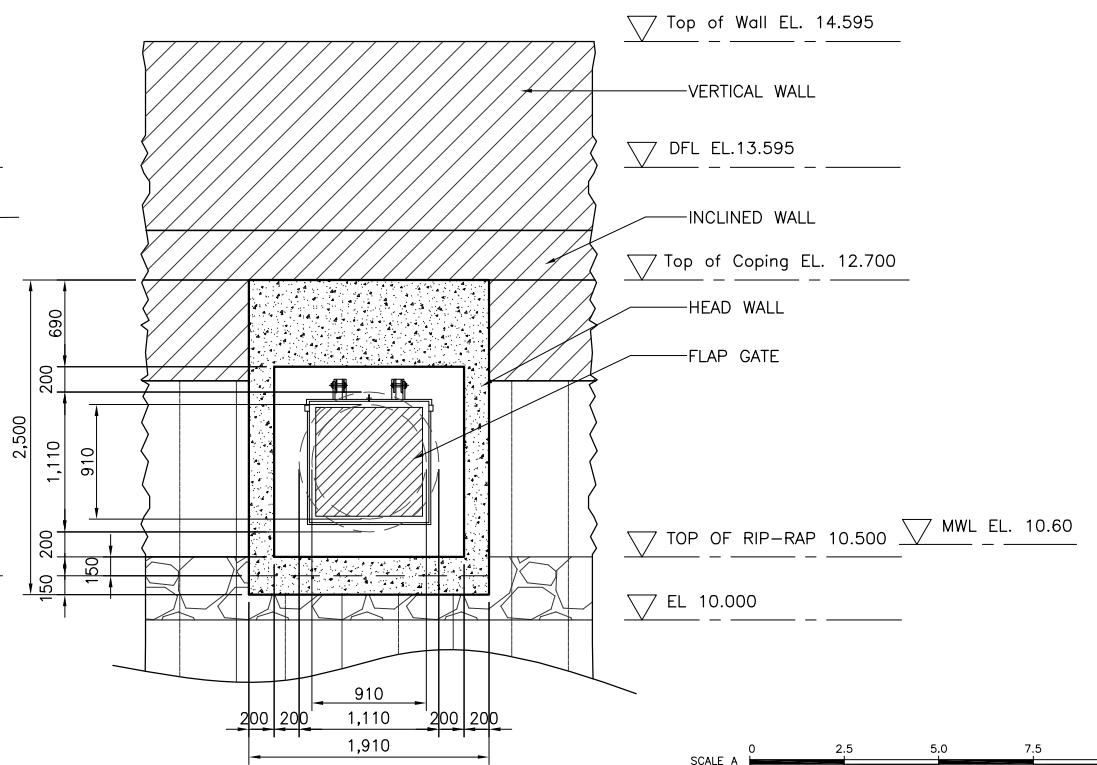
3 PLAN
 SCALE B



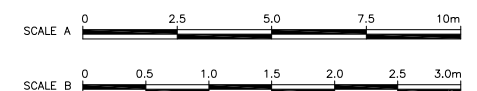
5 SECTION (MR92A.5)
 SCALE B



4 SECTION
 SCALE B



6 ELEVATION
 SCALE B

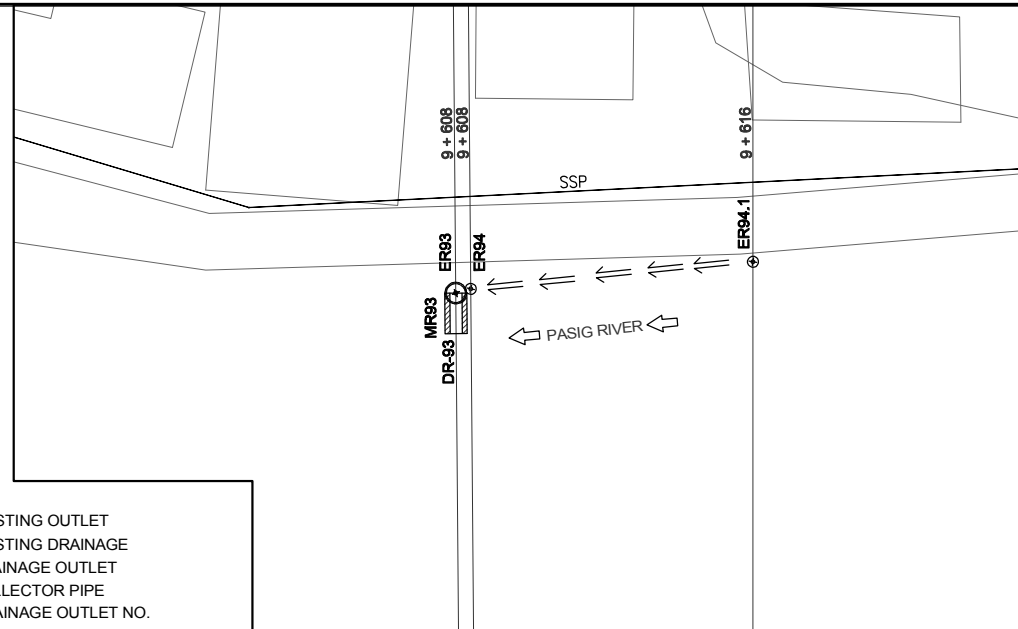


NOTE:
 PURSUANT TO SECTION 4 OF ANNEX 'A' OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS OF DETAILED ENGINEERING SURVEYS AND DESIGN UNDERTAKEN BY CONSULTANTS NEITHER DIMINISHES THE RESPONSIBILITY OF THE LATTER FOR THE TECHNICAL INTEGRITY OF THE SURVEYS AND DESIGN NOR TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

SHUJI KAKU
 TEAM LEADER

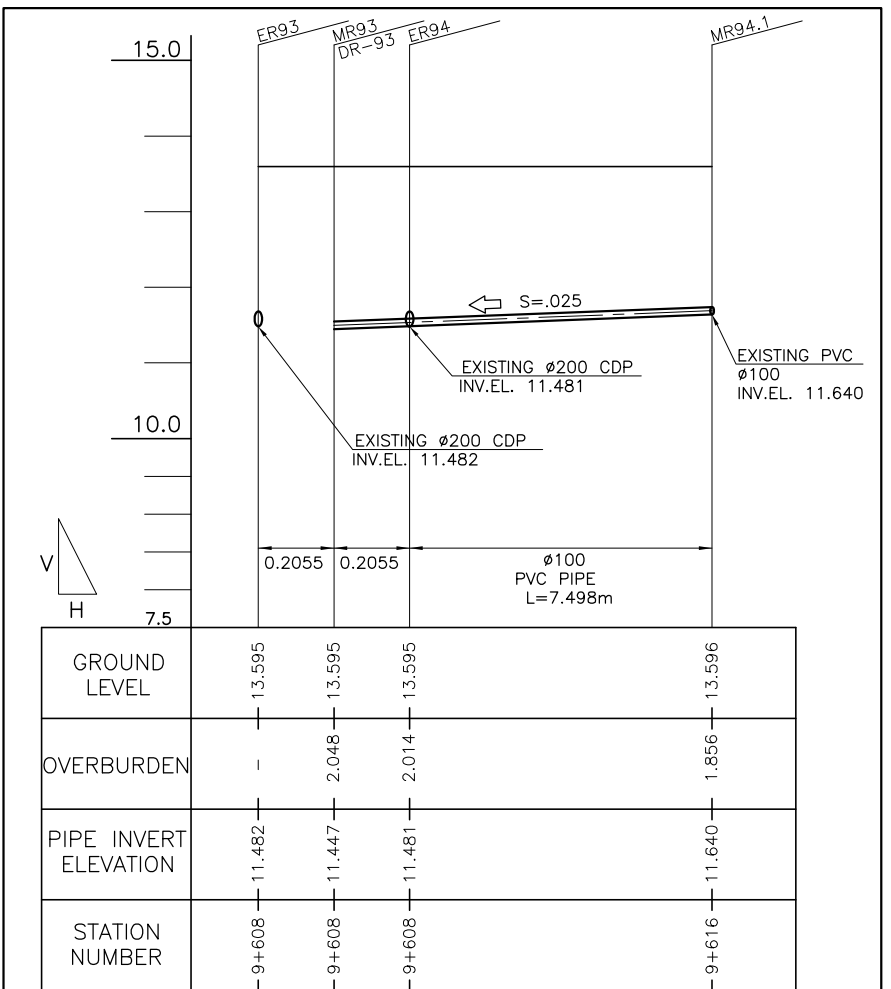
JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN			REPUBLIC OF THE PHILIPPINES				PROJECT & LOCATION	SHEET CONTENTS	SHEET NO.
	DESIGNED BY:	CHECKED BY:	SUBMITTED BY:	REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED BY:	PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	DETAIL OF DRAINAGE OUTLET- DR92A.5 & MANHOLE MR92A.5 STA. 9+601 RB	
	KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	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			



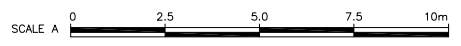
LEGEND:

- ER 93 ⊕ EXISTING OUTLET
- ← EXISTING DRAINAGE
- ▭ DRAINAGE OUTLET
- ← COLLECTOR PIPE
- DR 93 DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

1 DRAINAGE PLAN
SCALE A



2 PROFILE
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

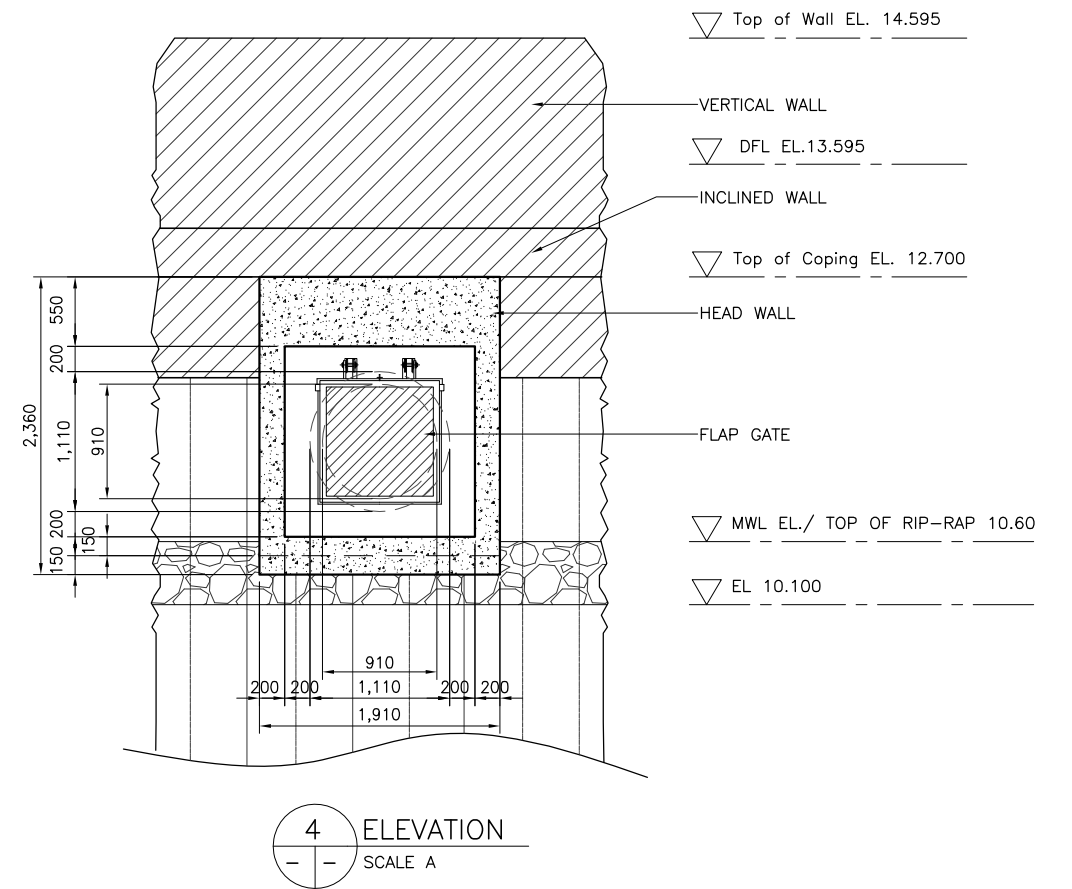
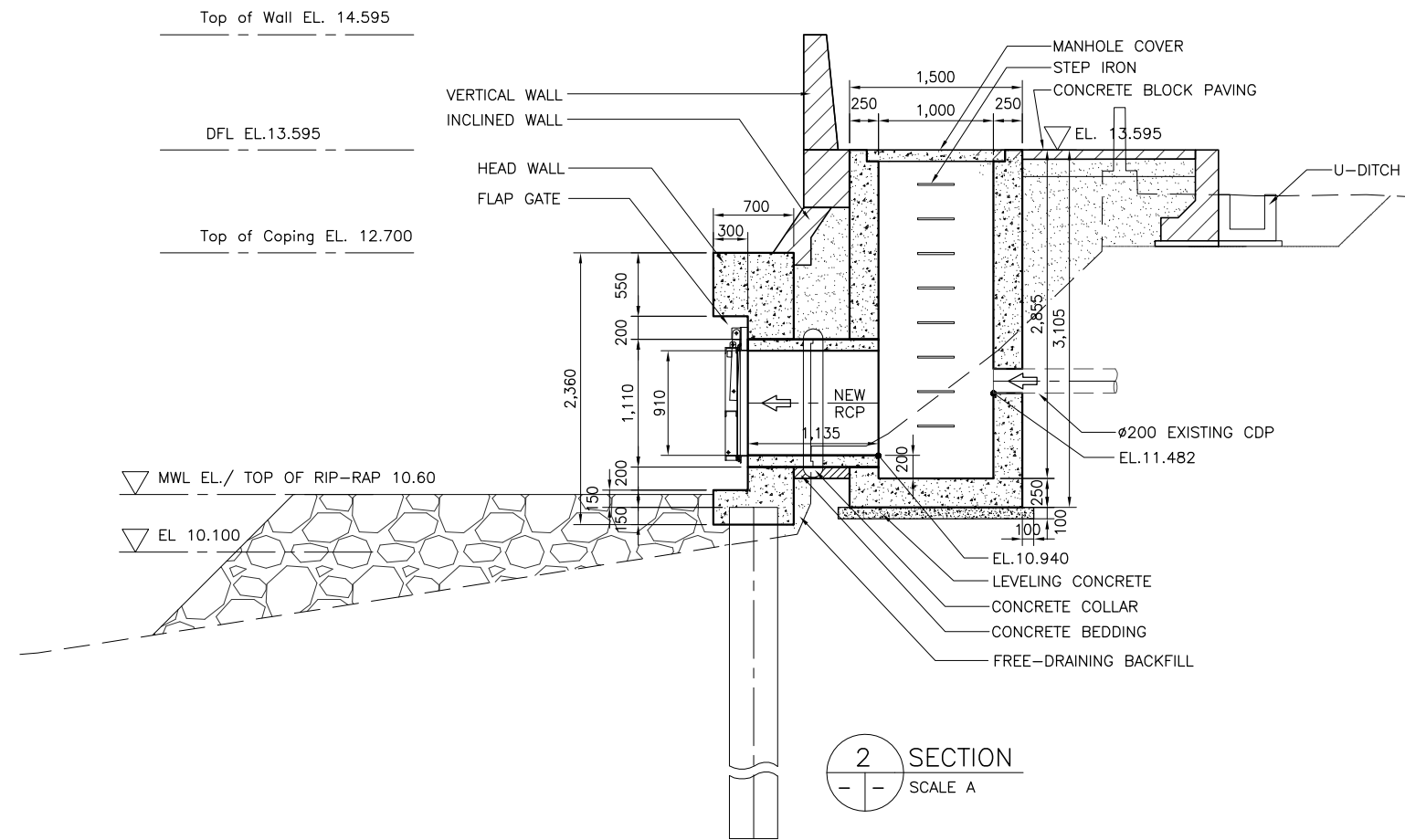
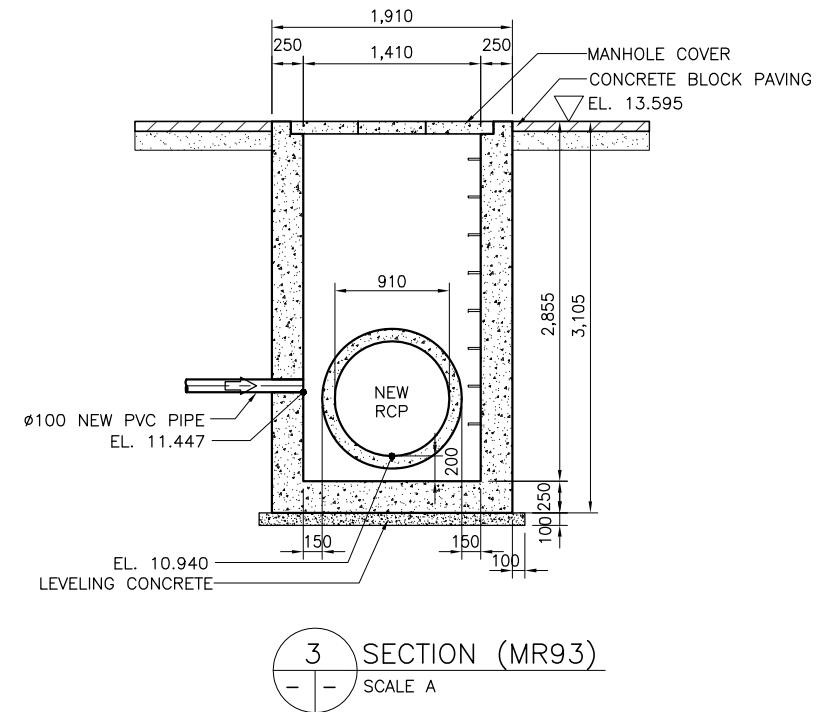
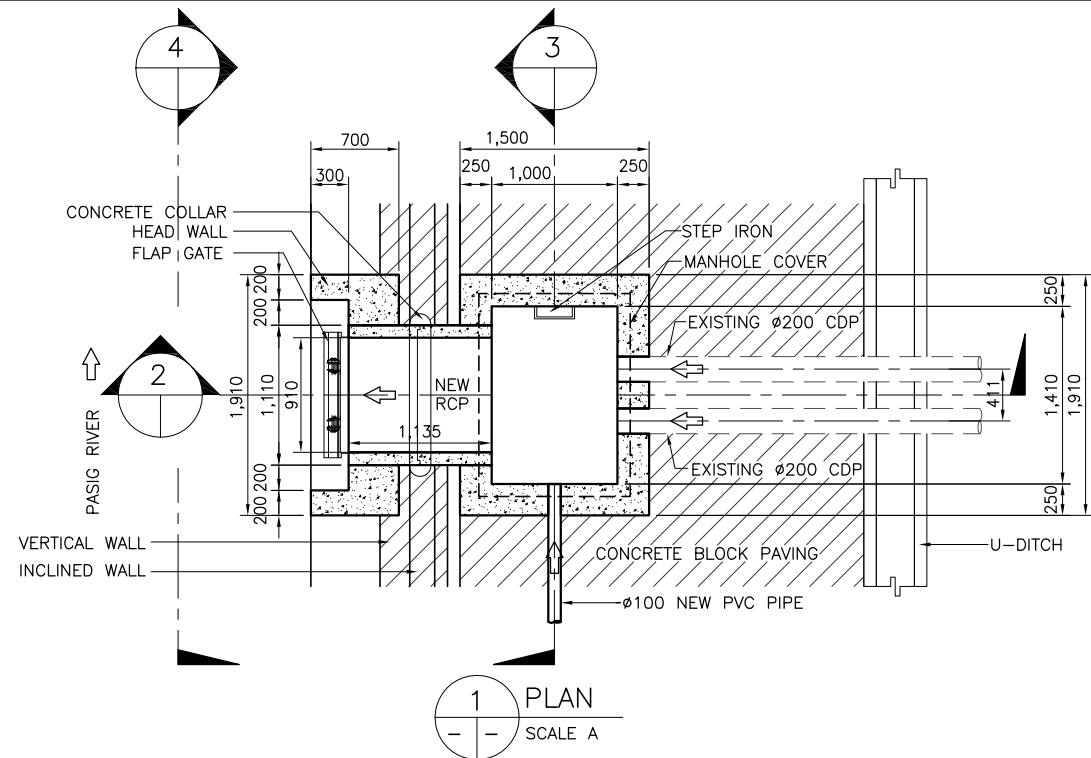


DESIGNED BY:	CHECKED BY:	SUBMITTED BY:
KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	TOSHIKI KAWAKAMI THE CHECKER	SHUJI KAKU TEAM LEADER



REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED BY:
PERFECTO L. ZAPLAN, JR. CHIEF, HYDRAULIC DIVISION, BOD	PATRICK B. GATAN PROJECT DIRECTOR PMO - MFCP	GILBERTO S. REYES DIRECTOR BOD
SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY	SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY	RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES
		ROGELIO L. SINGSON SECRETARY

PROJECT & LOCATION	SHEET CONTENTS	SHEET NO.
PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	PLAN & PROFILE OF COLLECTOR PIPE	LP-DR/DO/93/P



NOTE:
PURSUANT TO SECTION 4 OF ANNEX 'A' OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY

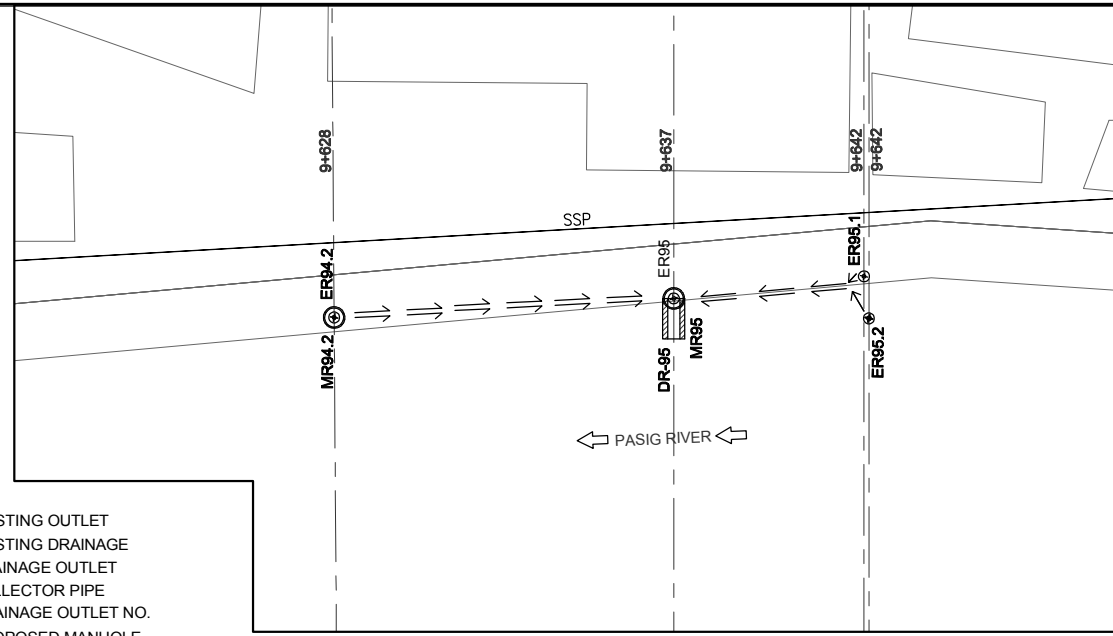
RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

APPROVED BY: ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION: PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS: DETAIL OF DRAINAGE OUTLET- DR 93 & MANHOLE MR93 STA. 9+608 RB

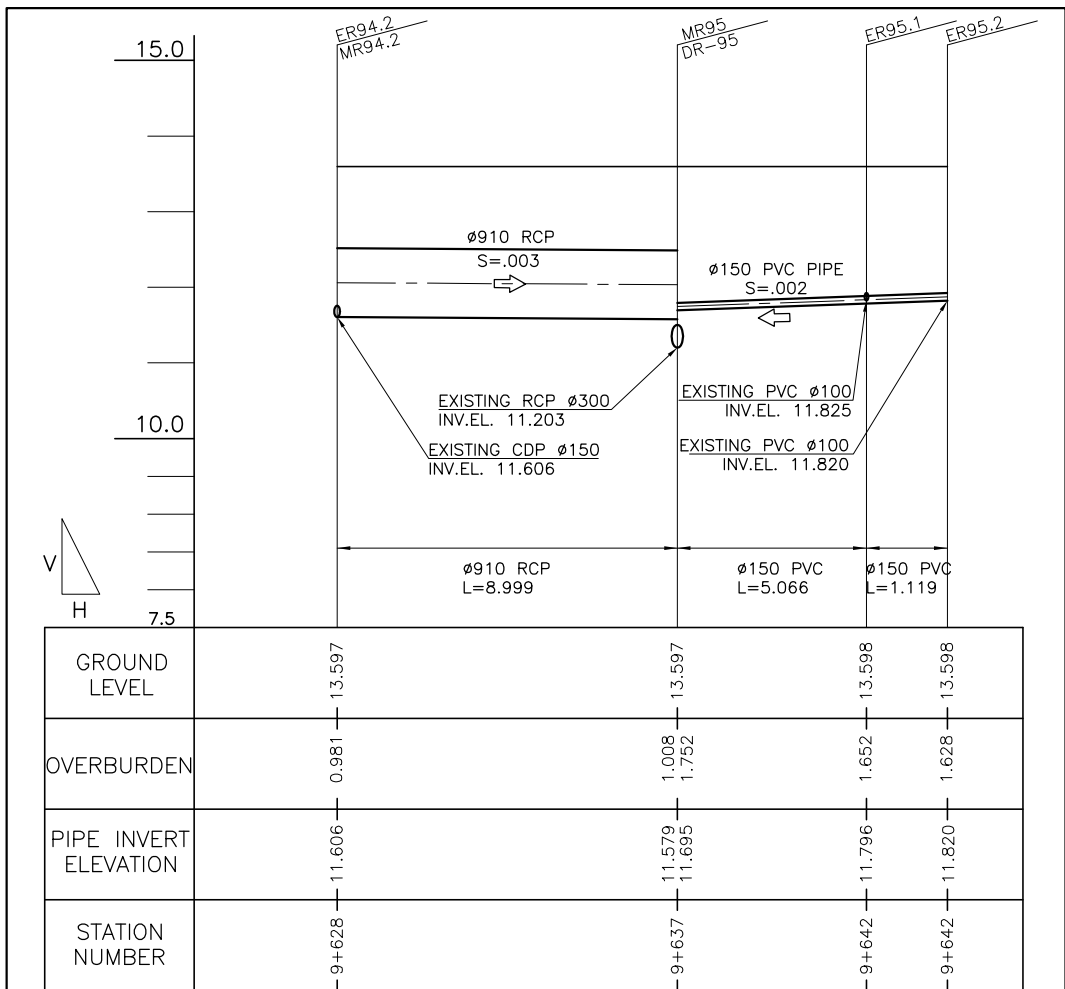
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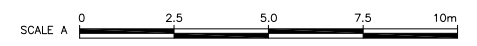
LEGEND:

- ER94.2 ⊕ EXISTING OUTLET
- ← EXISTING DRAINAGE
- ▭ DRAINAGE OUTLET
- ← COLLECTOR PIPE
- DL 95 DRAINAGE OUTLET NO.
- PROPOSED MANHOLE

1 DRAINAGE PLAN
SCALE A



2 PROFILE
SCALE A



REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

NOTE:
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SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

DESIGNED BY:	CHECKED BY:	SUBMITTED BY:
KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	TOSHIKI KAWAKAMI THE CHECKER	SHUJI KAKU TEAM LEADER



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS

REPUBLIC OF THE PHILIPPINES

REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED BY:
PERFECTO L. ZAPLAN, JR. CHIEF, HYDRAULIC DIVISION, BOD	PATRICK B. GATAN PROJECT DIRECTOR PMO - MFCP	GILBERTO S. REYES DIRECTOR BOD
SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY	SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY	RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES
		ROGELIO L. SINGSON SECRETARY

PROJECT & LOCATION

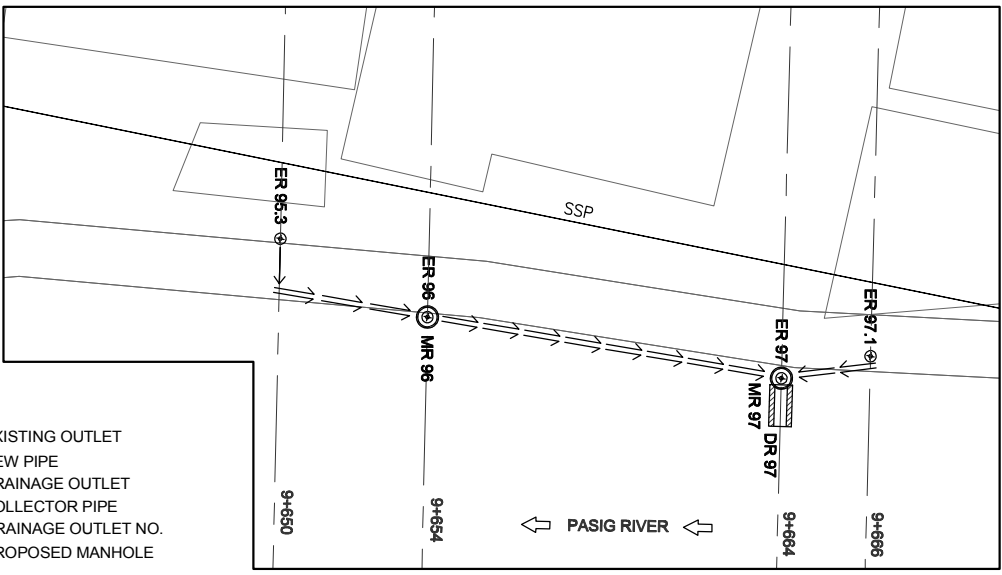
PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS

PLAN & PROFILE OF COLLECTOR PIPE

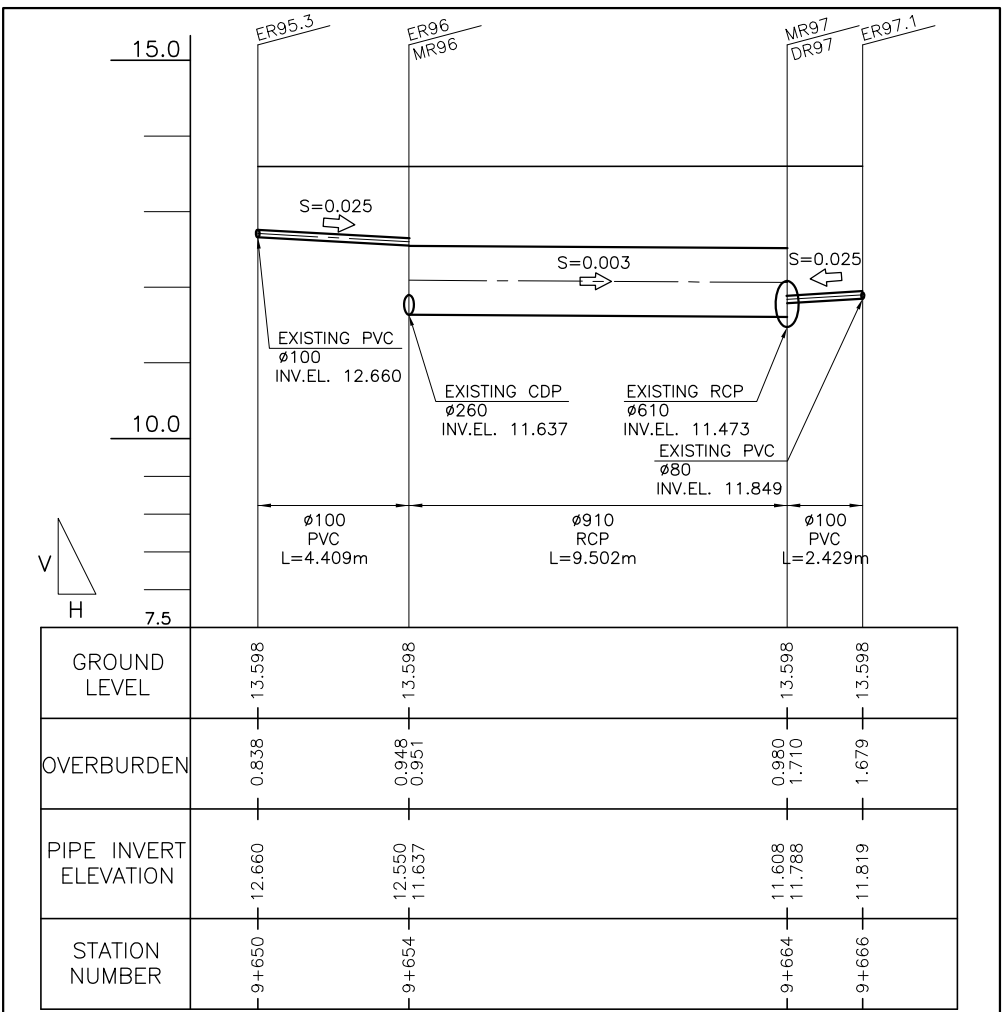
SHEET NO.



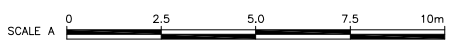


- LEGEND:**
- ER95.3 ⊕ EXISTING OUTLET
 - ↑ NEW PIPE
 - ⇄ DRAINAGE OUTLET
 - ⇄ COLLECTOR PIPE
 - DR 97 DRAINAGE OUTLET NO.
 - PROPOSED MANHOLE

1 DRAINAGE PLAN
SCALE A



2 PROFILE
SCALE A



REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

NOTE:
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SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

DESIGNED BY:	CHECKED BY:	SUBMITTED BY:
KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	TOSHIKI KAWAKAMI THE CHECKER	SHUJI KAKU TEAM LEADER



**REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS**

REPUBLIC OF THE PHILIPPINES

REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED BY:
PERFECTO L. ZAPLAN, JR. CHIEF, HYDRAULIC DIVISION, BOD	PATRICK B. GATAN PROJECT DIRECTOR PMO - MFCP	GILBERTO S. REYES DIRECTOR BOD
SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY	SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY	RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES
		ROGELIO L. SINGSON SECRETARY

PROJECT & LOCATION

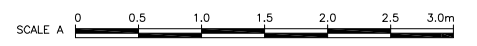
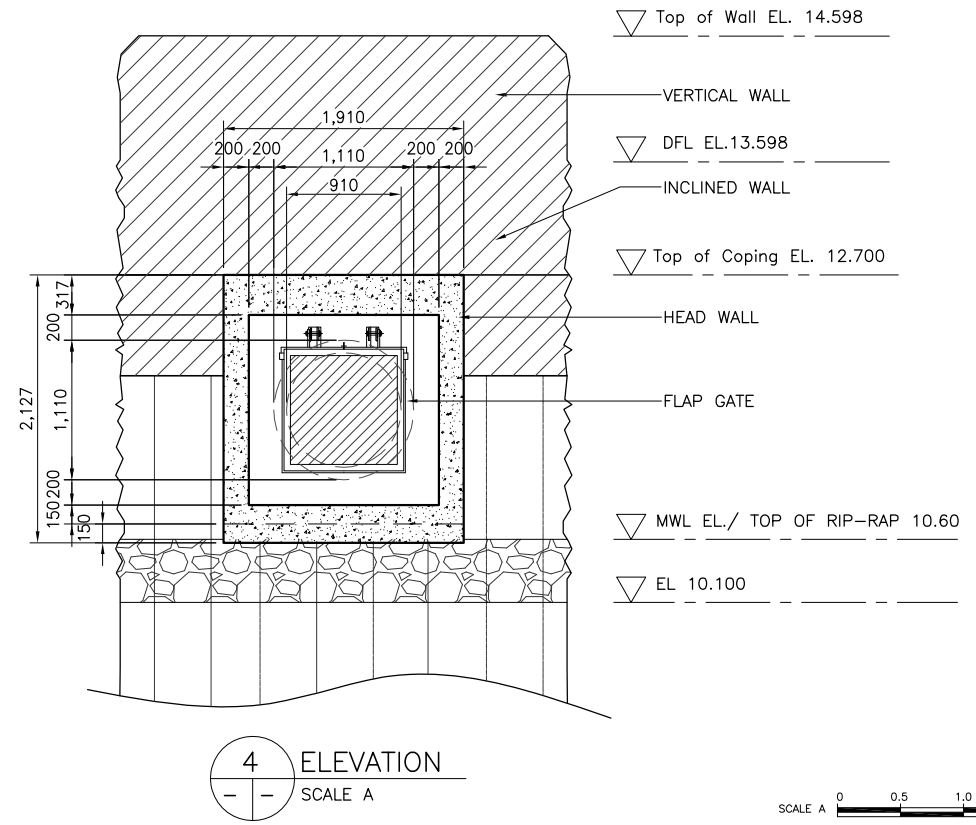
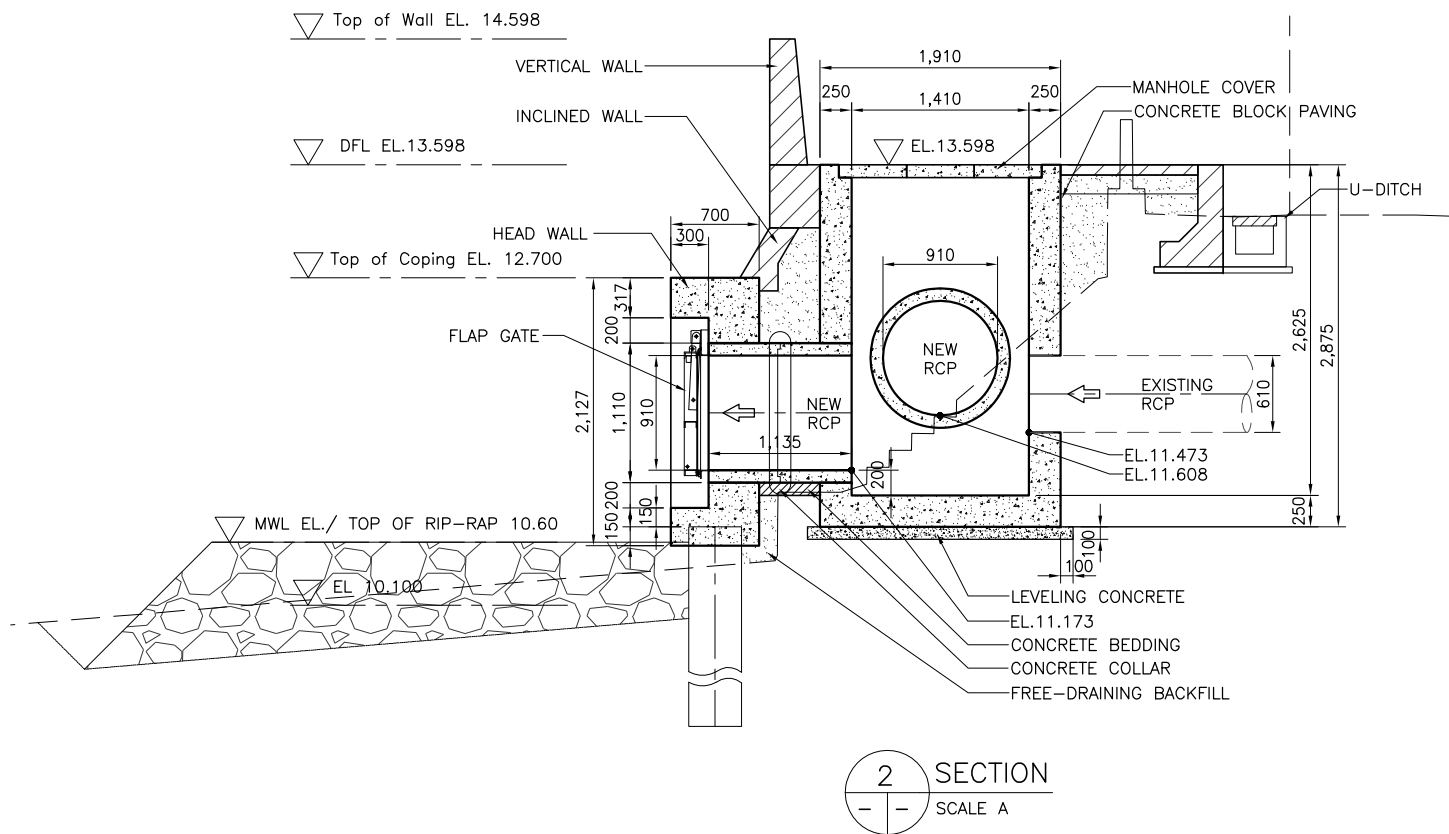
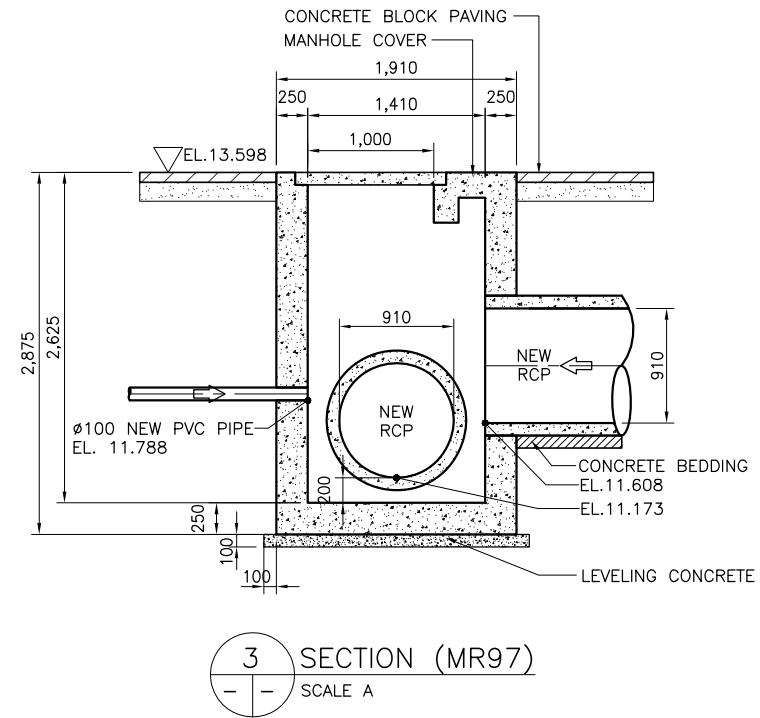
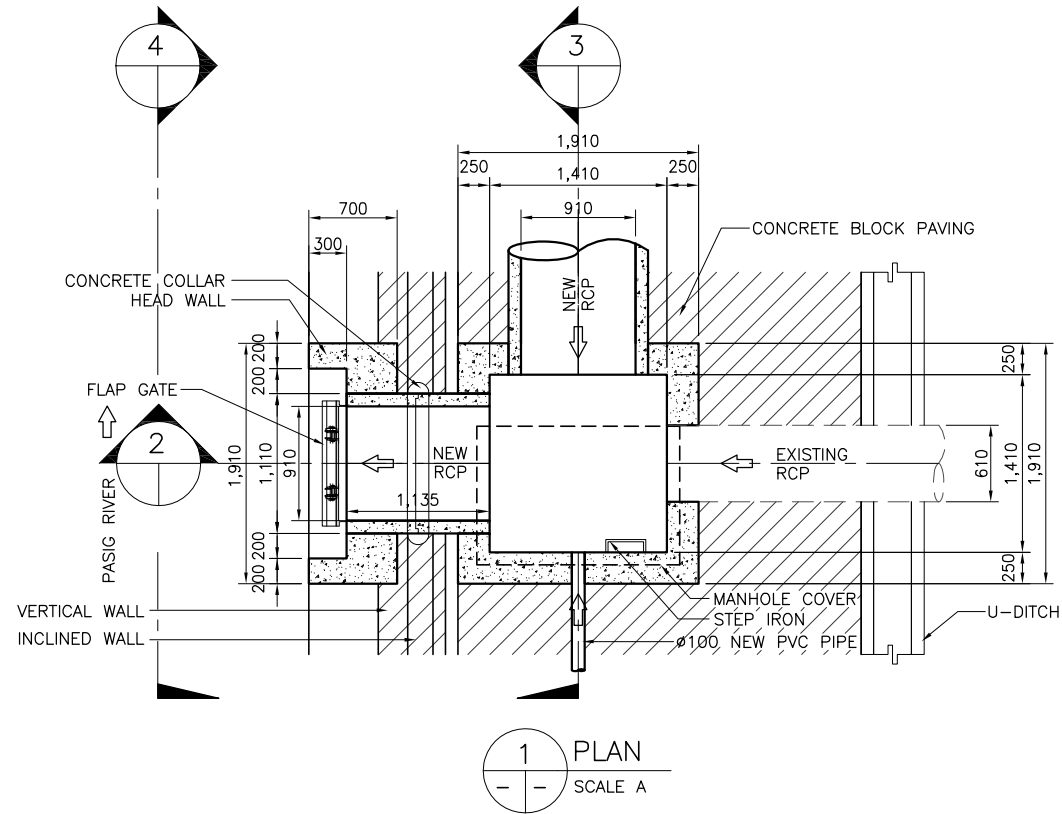
PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS

PLAN & PROFILE OF COLLECTOR PIPE

SHEET NO.



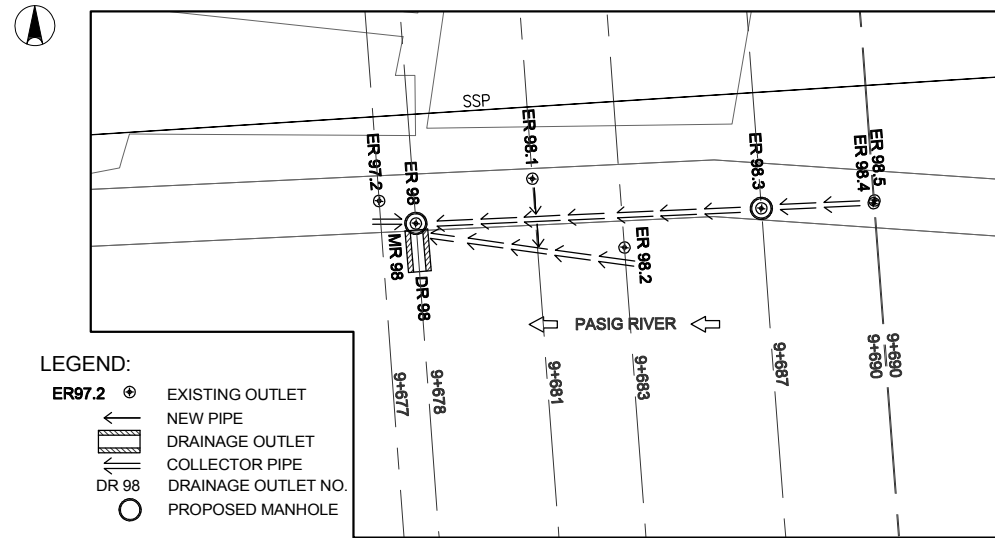


REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

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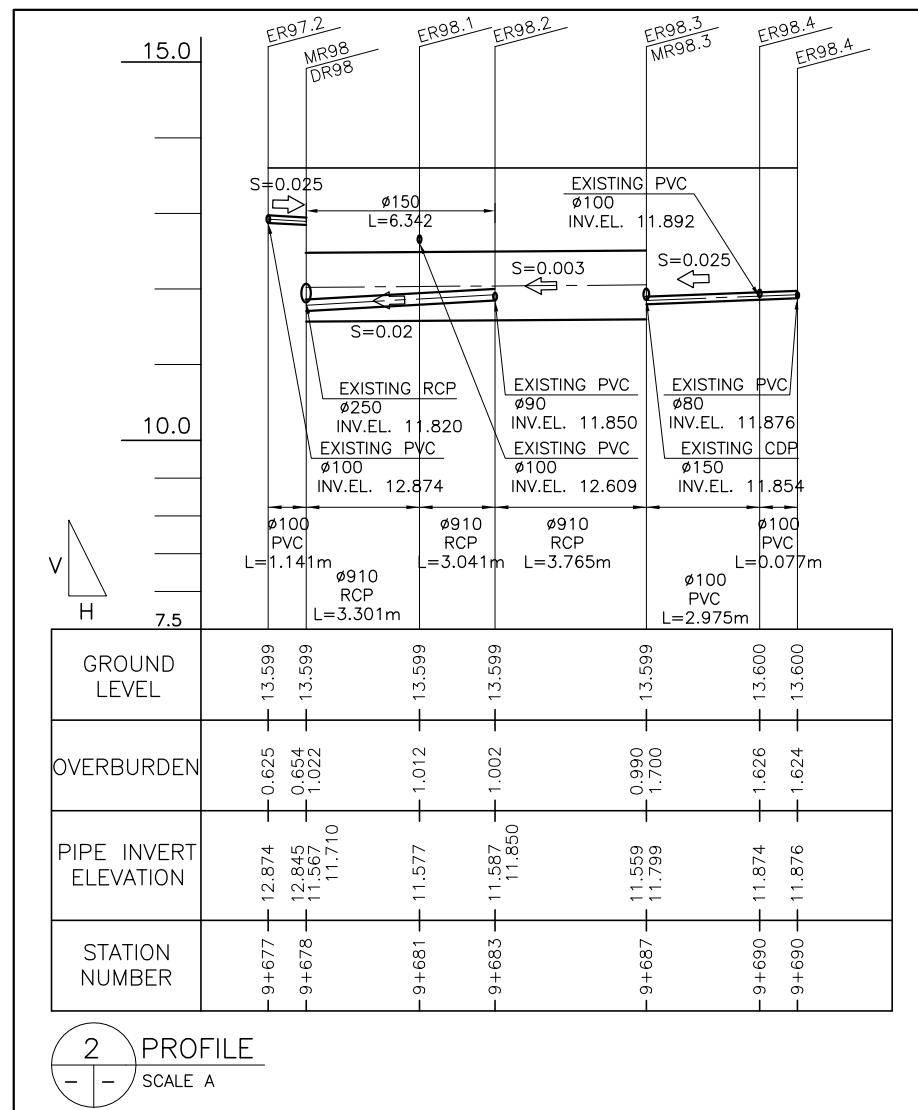
SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN 			REPUBLIC OF THE PHILIPPINES 			PROJECT & LOCATION PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA		SHEET CONTENTS DETAIL OF DRAINAGE OUTLET- DR 97 & MANHOLE MR97 STA. 9+664 RB	SHEET NO.
DESIGNED BY: KOHEI TAKAYAMA <small>STRUCTURAL ENGINEER IV</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>	APPROVED BY: GILBERTO S. REYES <small>DIRECTOR BOD</small>	<small>SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY</small> RAUL C. ASIS <small>UNDERSECRETARY FOR TECHNICAL SERVICES</small>	<small>SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY</small> ROGELIO L. SINGSON <small>SECRETARY</small>		



- LEGEND:**
- ER97.2 ⊕ EXISTING OUTLET
 - NEW PIPE
 - ▬ DRAINAGE OUTLET
 - ▬ COLLECTOR PIPE
 - DR 98 DRAINAGE OUTLET NO.
 - PROPOSED MANHOLE

1 DRAINAGE PLAN
SCALE A



2 PROFILE
SCALE A



REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

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SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY

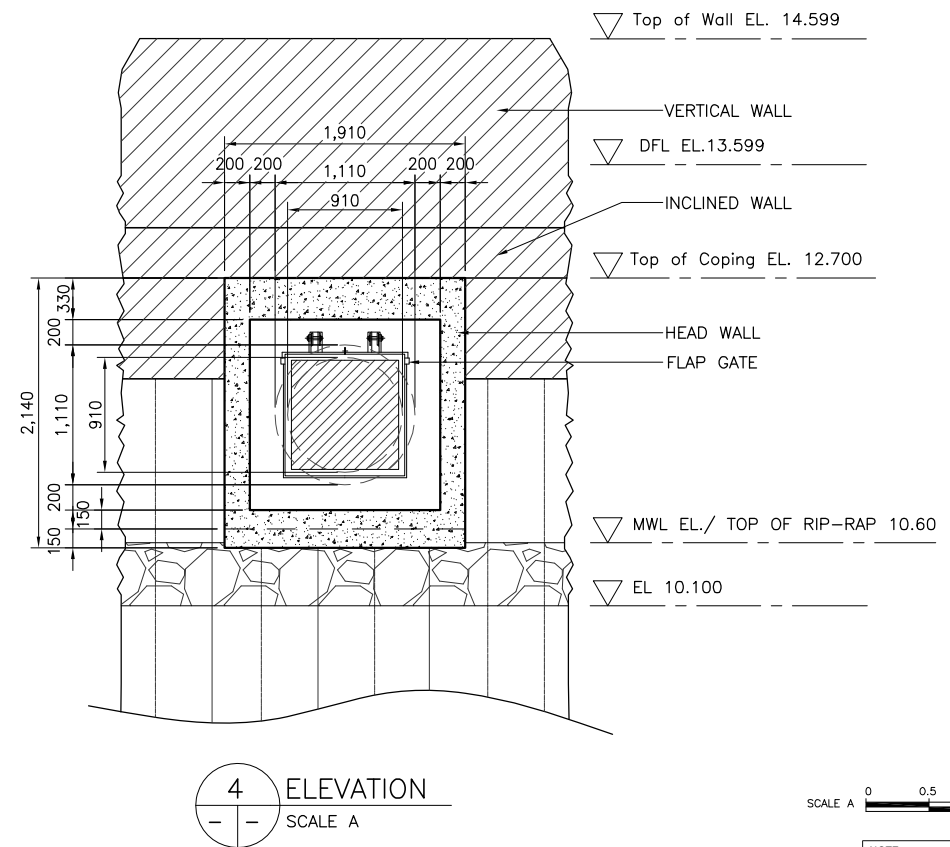
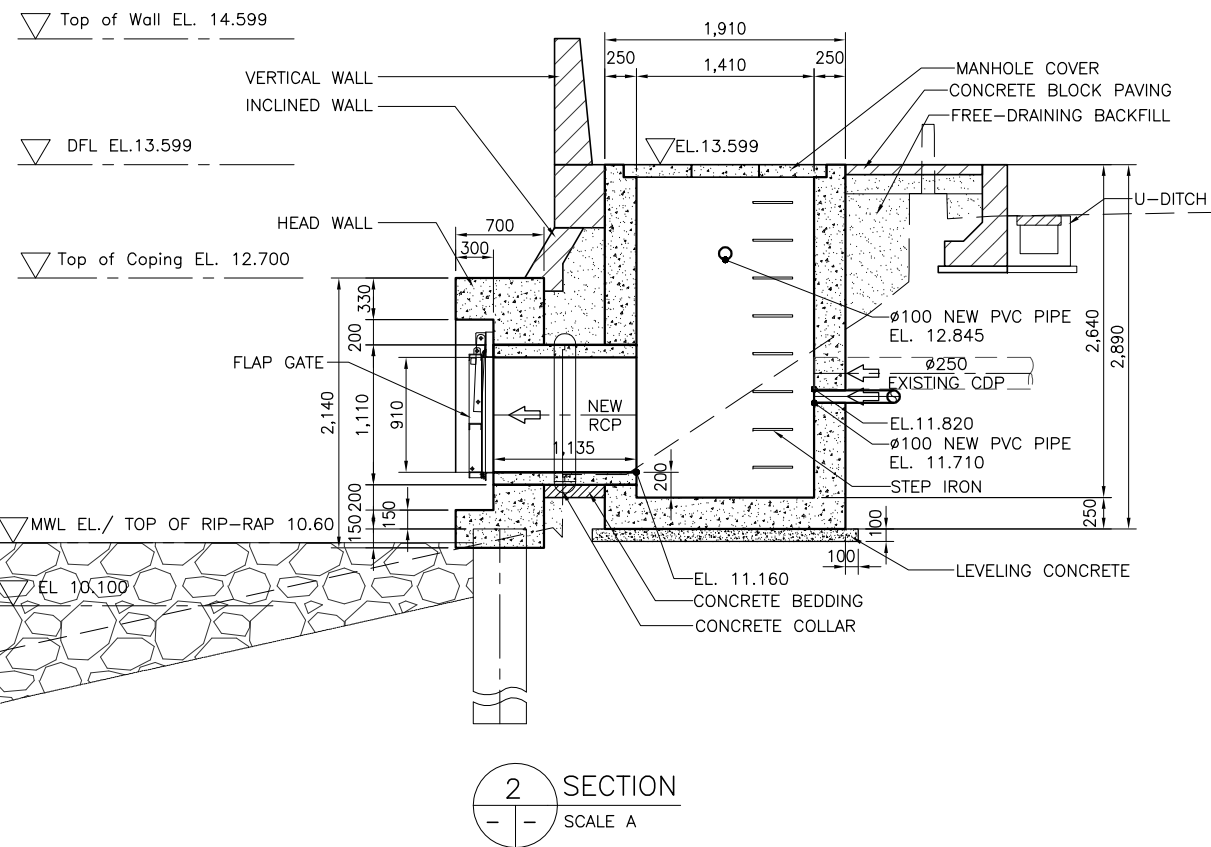
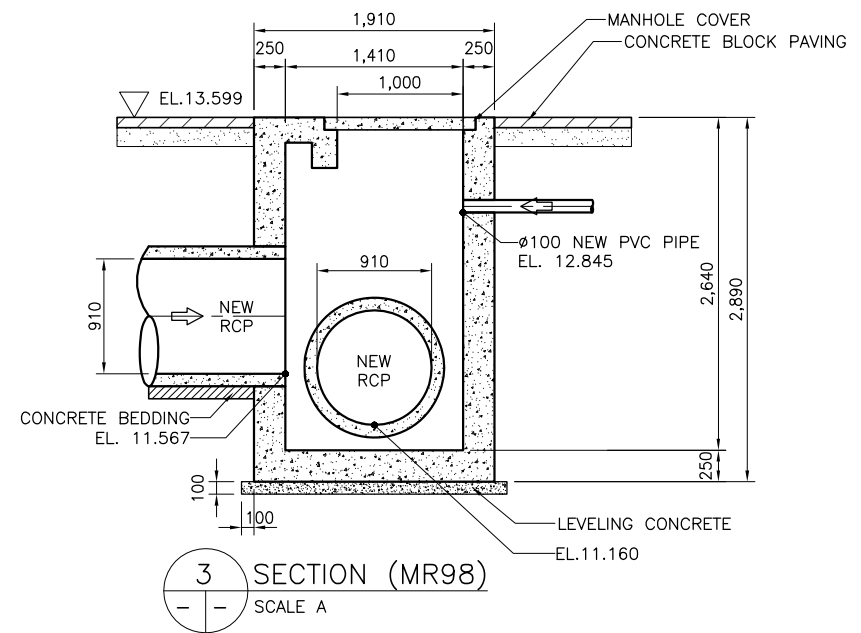
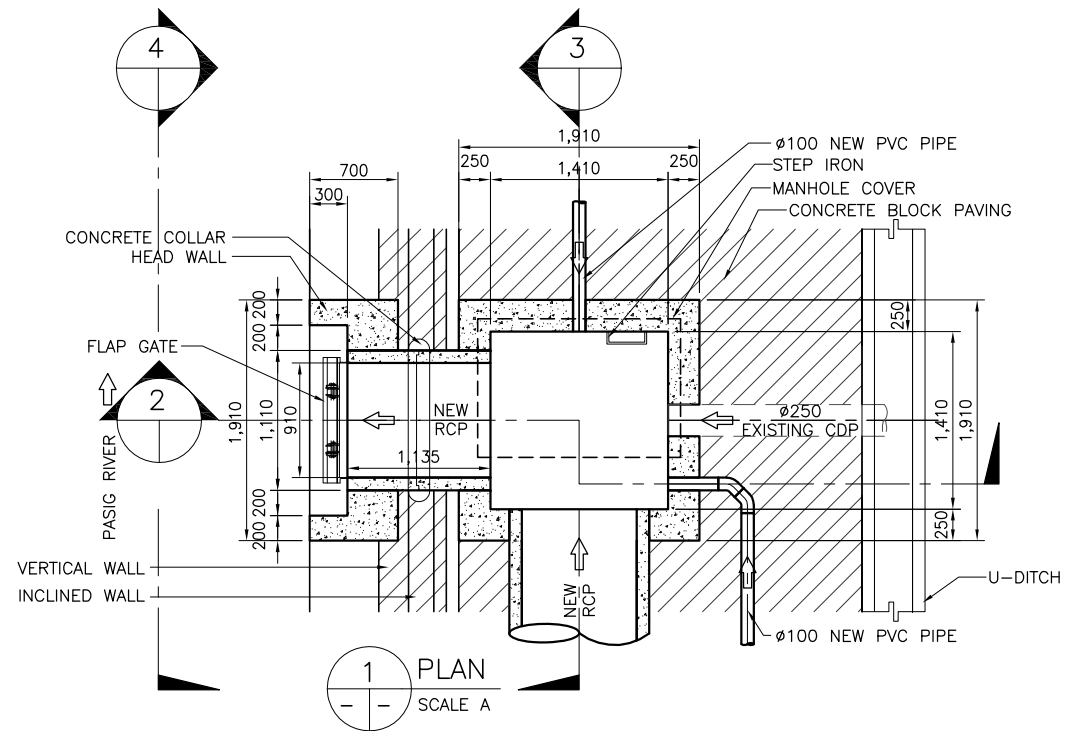
APPROVED BY: RAUL C. ASIS
UNDERSECRETARY FOR TECHNICAL SERVICES

ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION: PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS: PLAN & PROFILE OF COLLECTOR PIPE

SHEET NO.: LP-DR/DO/98/P



NOTE:
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SHUJI KAKU
TEAM LEADER

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES

PROJECT & LOCATION

SHEET CONTENTS

SHEET NO.



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS

REVIEWED BY:

RECOMMENDING APPROVAL:

APPROVED BY:

PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY

RAUL C. ASIS
UNDERSECRETARY FOR TECHNICAL SERVICES

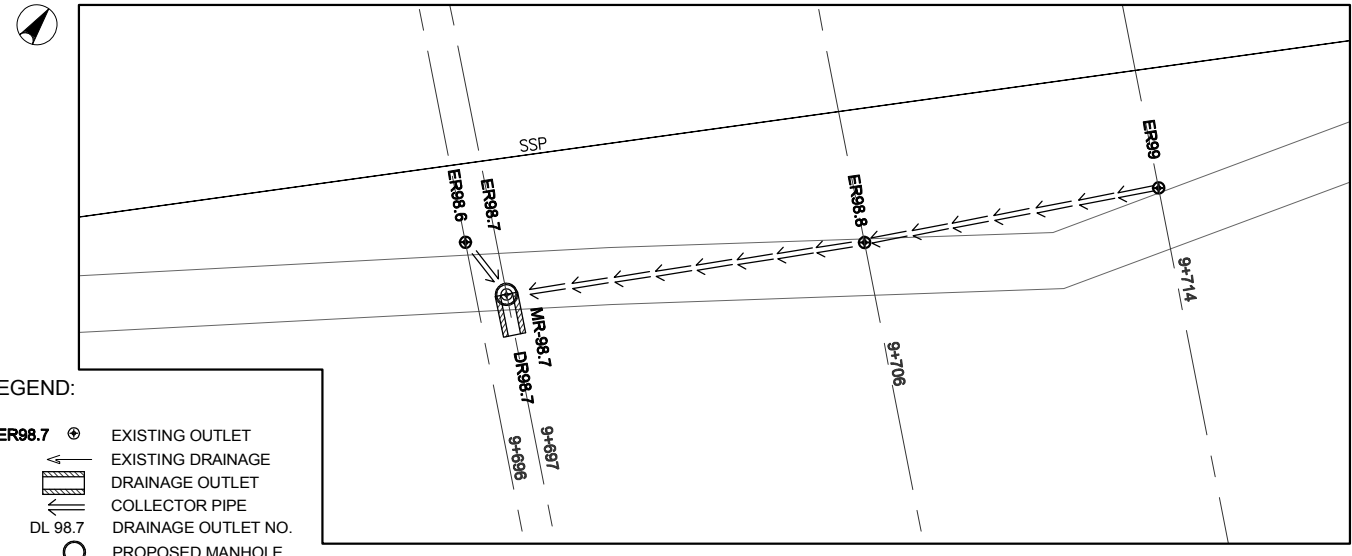
SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY

ROGELIO L. SINGSON
SECRETARY

PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

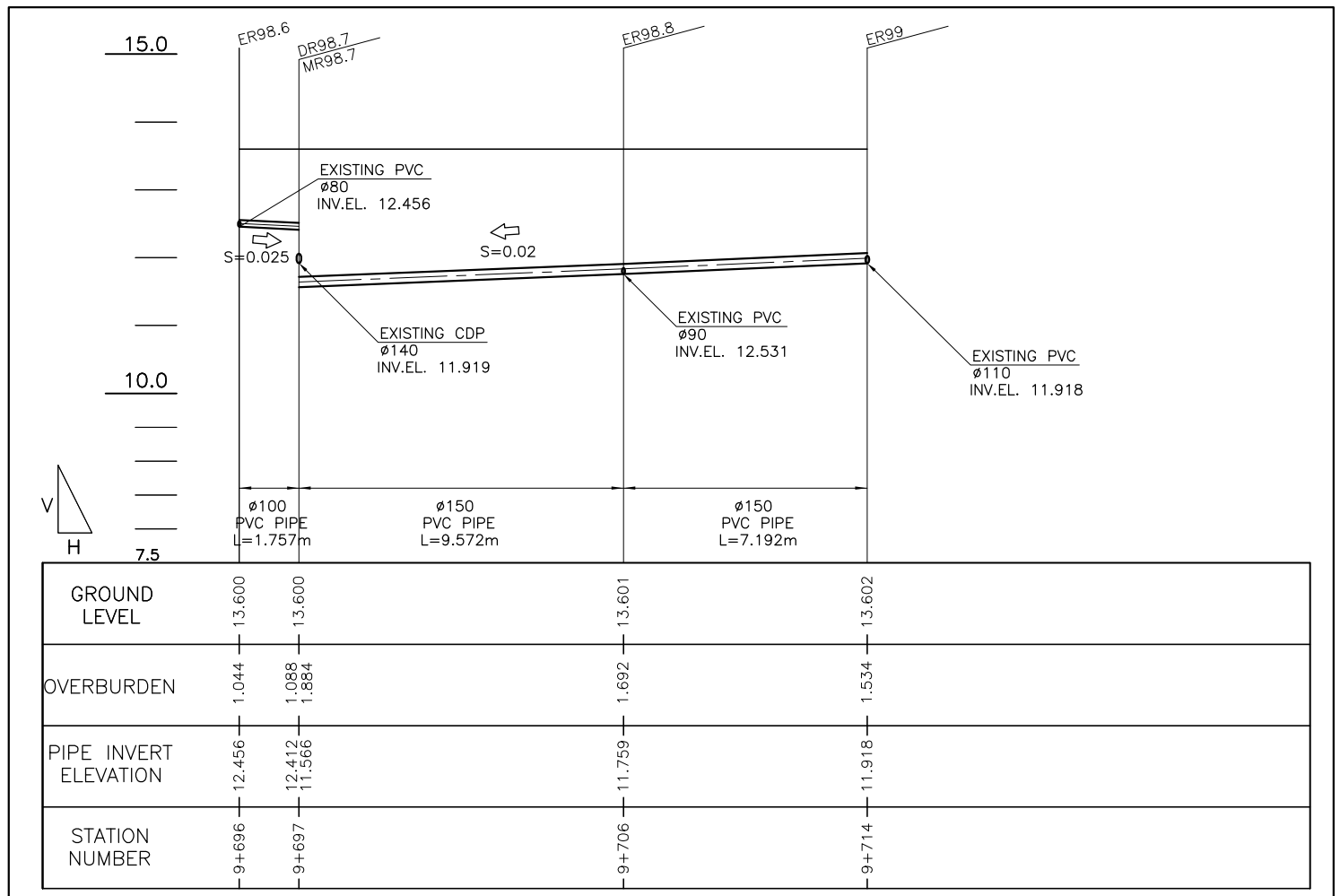
DETAIL OF DRAINAGE OUTLET- DR98 & MANHOLE MR98 STA. 9+678 RB





- LEGEND:**
- ER98.7 ⊕ EXISTING OUTLET
 - ← EXISTING DRAINAGE
 - ▨ DRAINAGE OUTLET
 - ▬ COLLECTOR PIPE
 - DL 98.7 DRAINAGE OUTLET NO.
 - PROPOSED MANHOLE

1 DRAINAGE PLAN
SCALE A



2 PROFILE
SCALE A

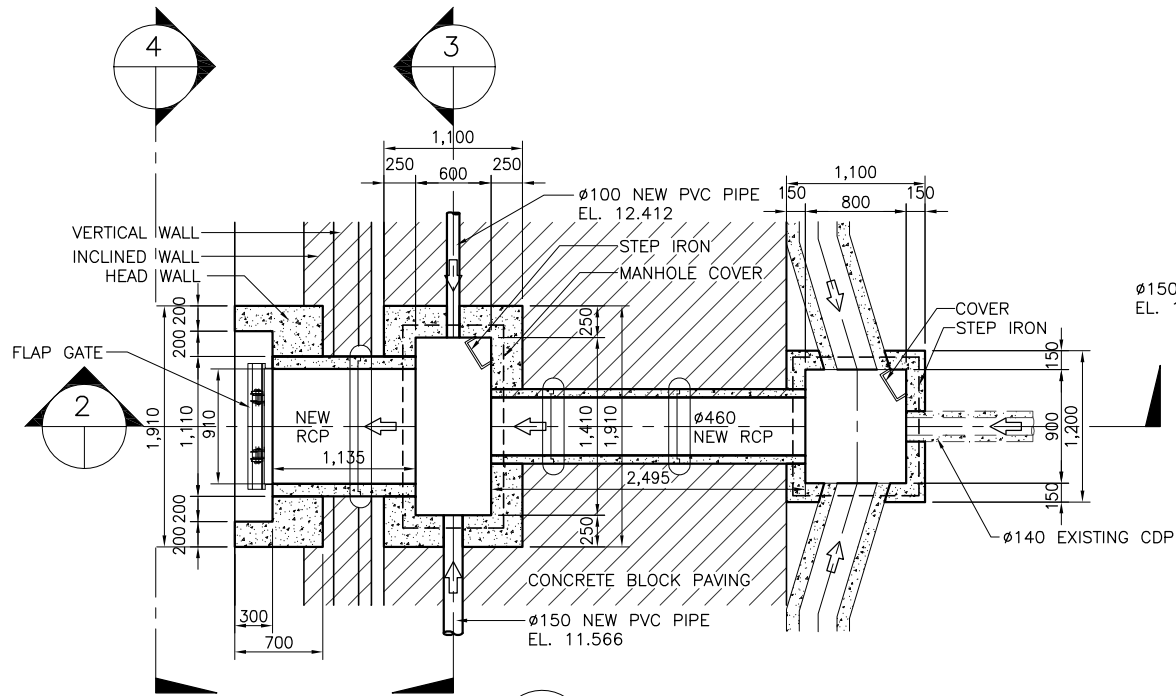


REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

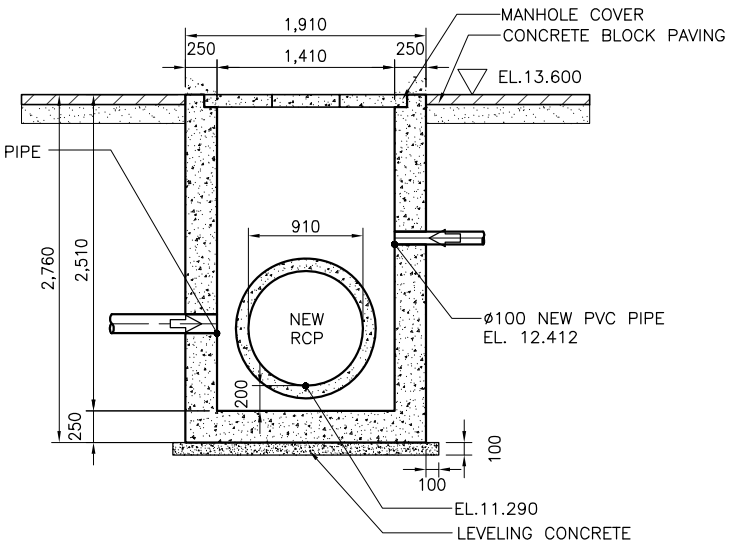
NOTE:
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SHUJI KAKU
TEAM LEADER

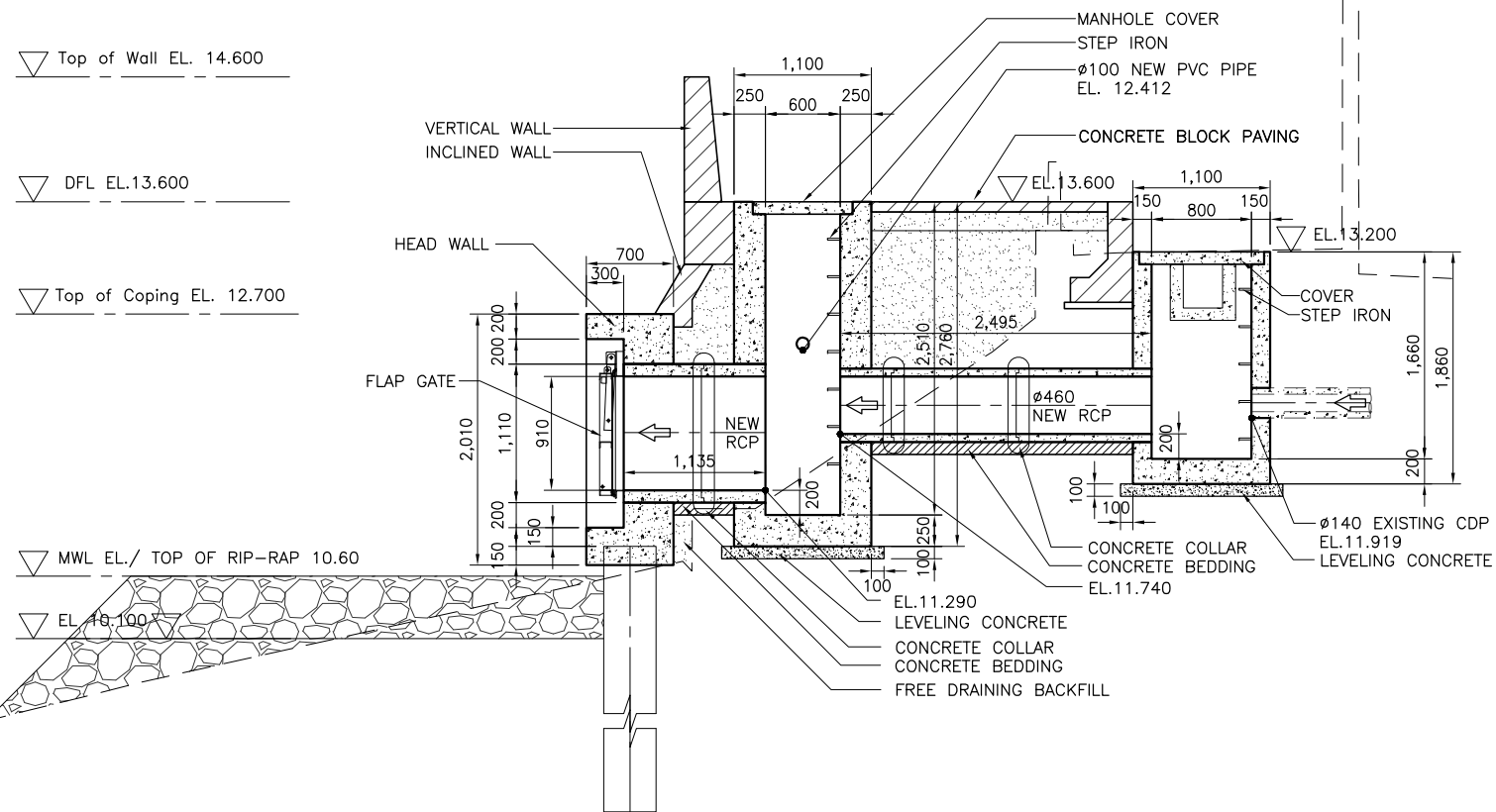
JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN 			REPUBLIC OF THE PHILIPPINES 			PROJECT & LOCATION PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA		SHEET CONTENTS PLAN & PROFILE OF COLLECTOR PIPE	SHEET NO.
DESIGNED BY: KOHEI TAKAYAMA <small>STRUCTURAL ENGINEER IV</small>	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: SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY RAUL C. ASIS <small>UNDERSECRETARY FOR TECHNICAL SERVICES</small>	APPROVED BY: SEE COVER SHEET FOR THE SIGNATURE AND APPROVAL OF THE SECRETARY ROGELIO L. SINGSON <small>SECRETARY</small>		



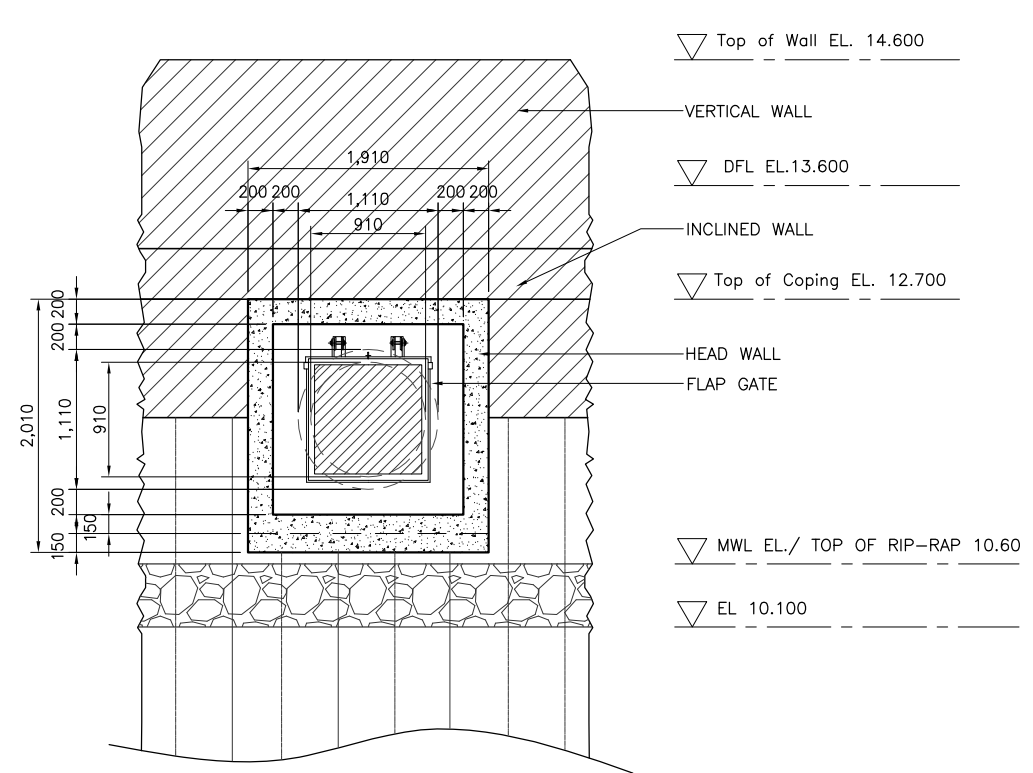
1 PLAN
SCALE A



3 SECTION (MR98.7)
SCALE A



2 SECTION
SCALE A



4 ELEVATION
SCALE A

▽ Top of Wall EL. 14.600

▽ DFL EL. 13.600

▽ Top of Coping EL. 12.700

▽ MWL EL./ TOP OF RIP-RAP 10.60

▽ EL. 10.100

▽ Top of Wall EL. 14.600

▽ DFL EL. 13.600

▽ Top of Coping EL. 12.700

▽ MWL EL./ TOP OF RIP-RAP 10.60

▽ EL. 10.100

SCALE A 0 0.5 1.0 1.5 2.0 2.5 3.0m

NOTE:
PURSUANT TO SECTION 4 OF ANNEX 'A' OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

SHUJI KAKU
TEAM LEADER

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

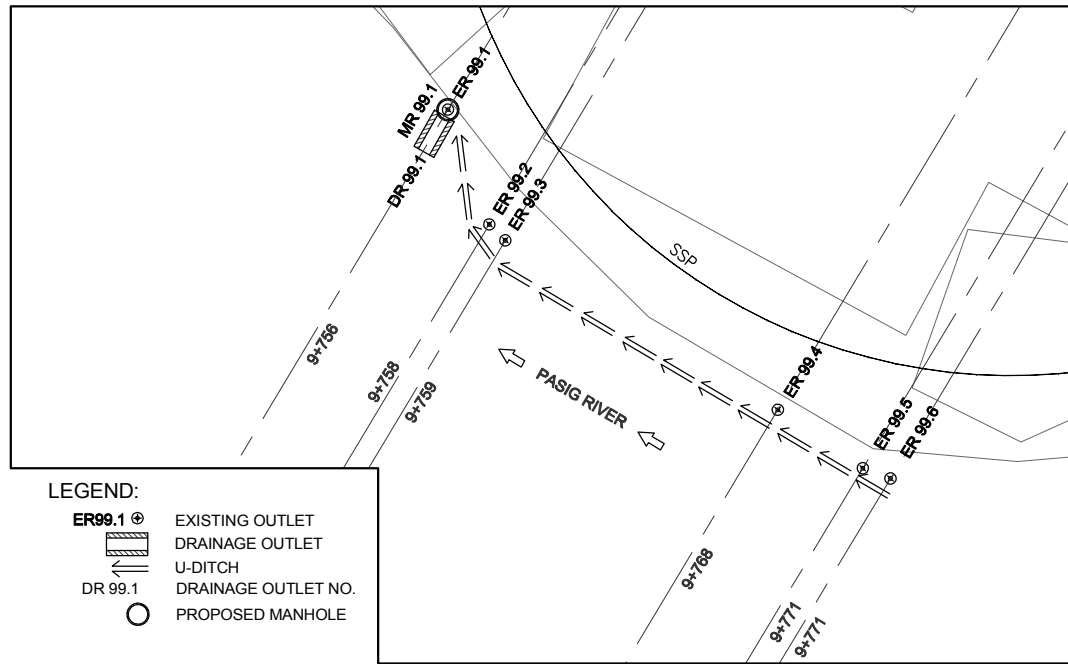
APPROVED BY: RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION: PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

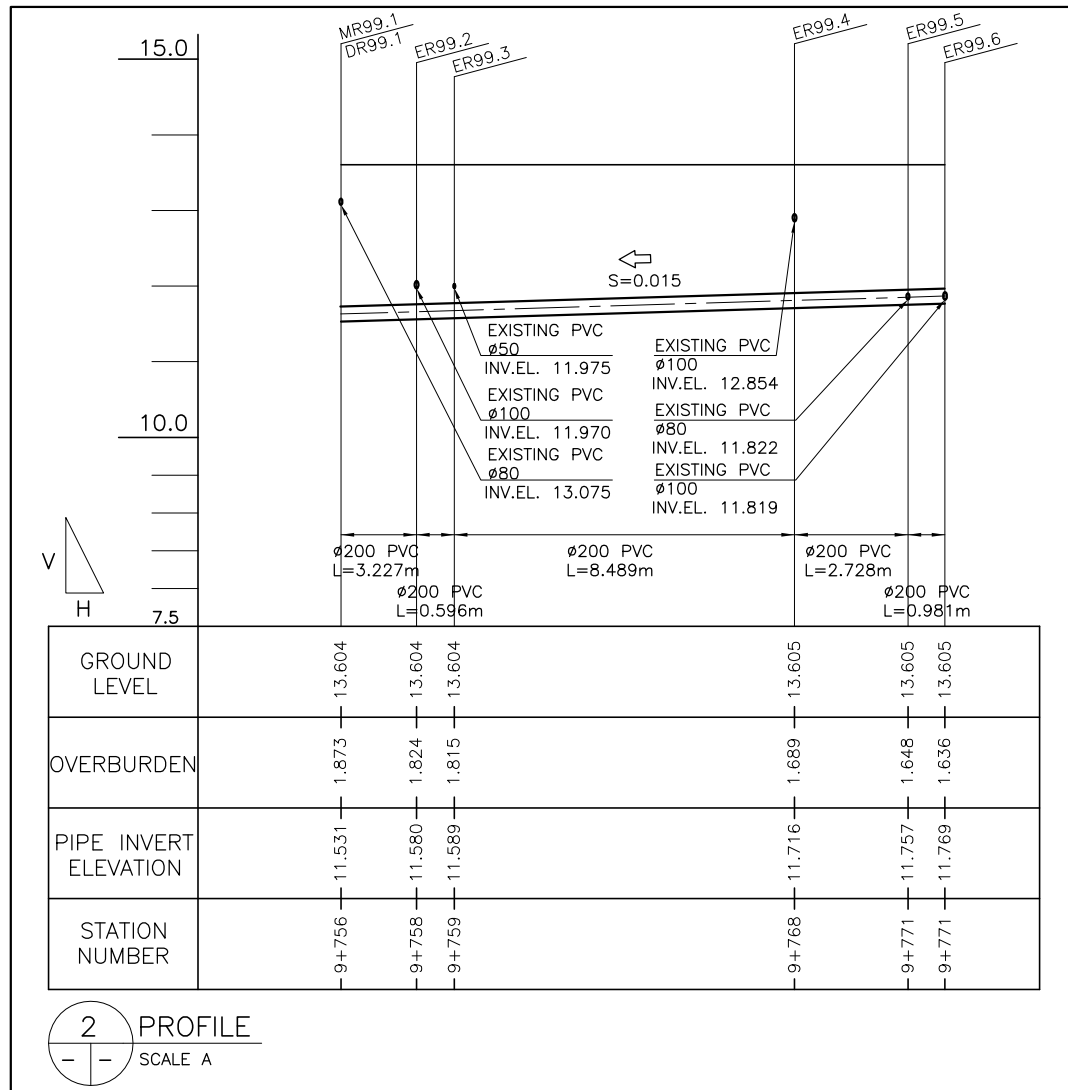
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SHEET NO.: LP-DR/DO/98.7

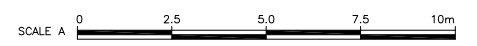


- LEGEND:**
- ER99.1 ⊕ EXISTING OUTLET
 - ▭ DRAINAGE OUTLET
 - ← U-DITCH
 - DR 99.1 DRAINAGE OUTLET NO.
 - PROPOSED MANHOLE

1 DRAINAGE PLAN
SCALE A



2 PROFILE
SCALE A

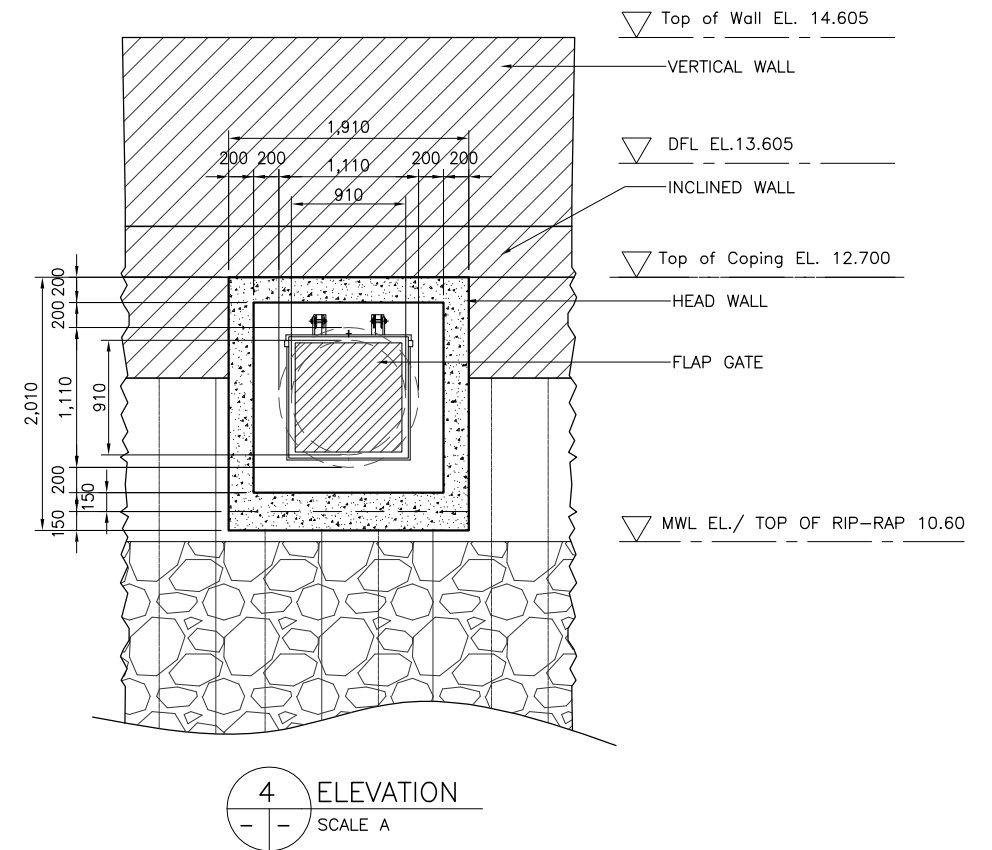
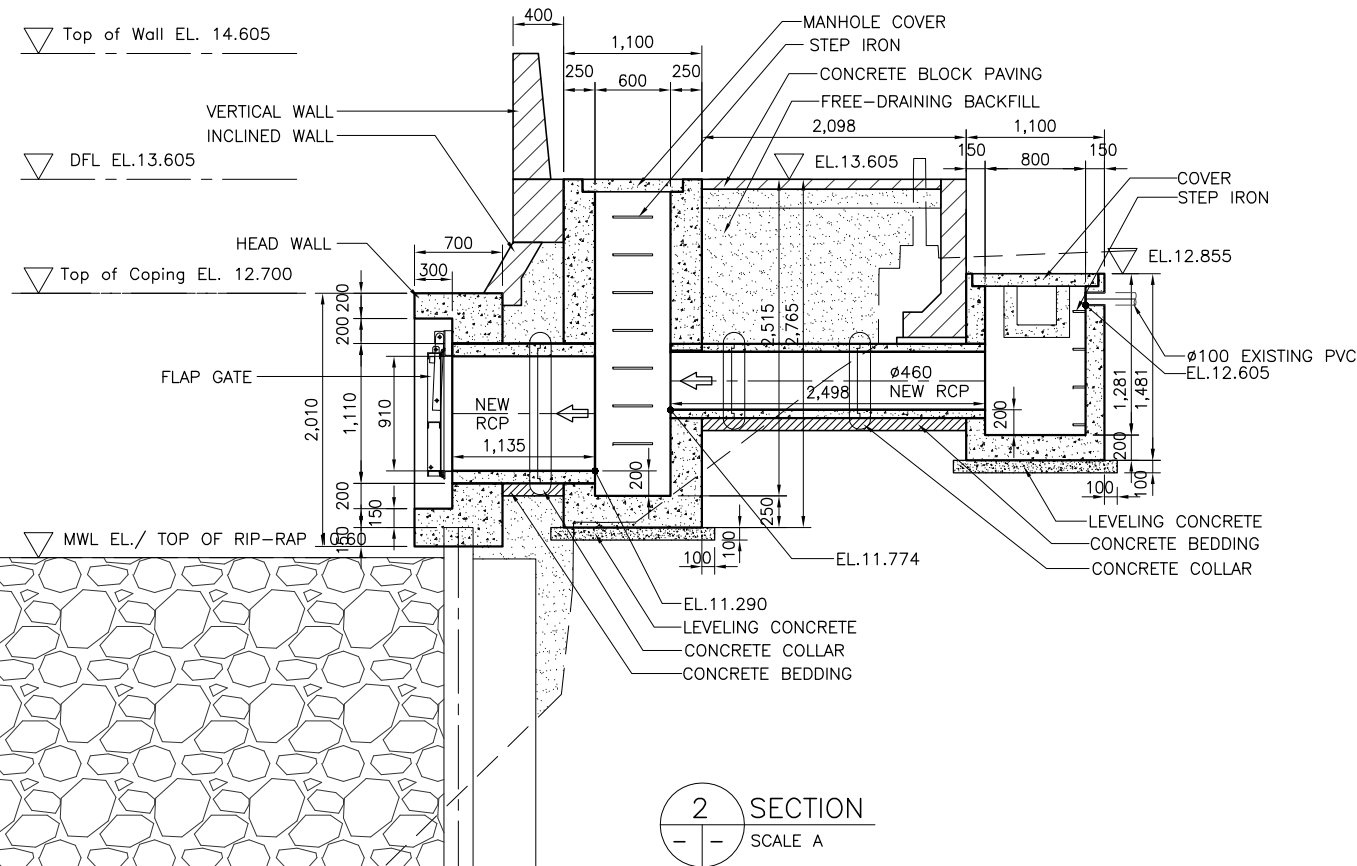
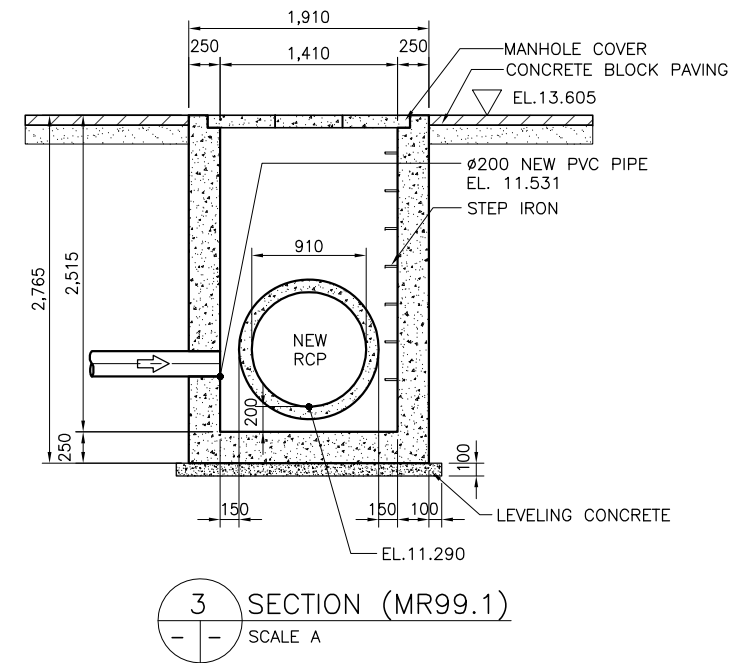
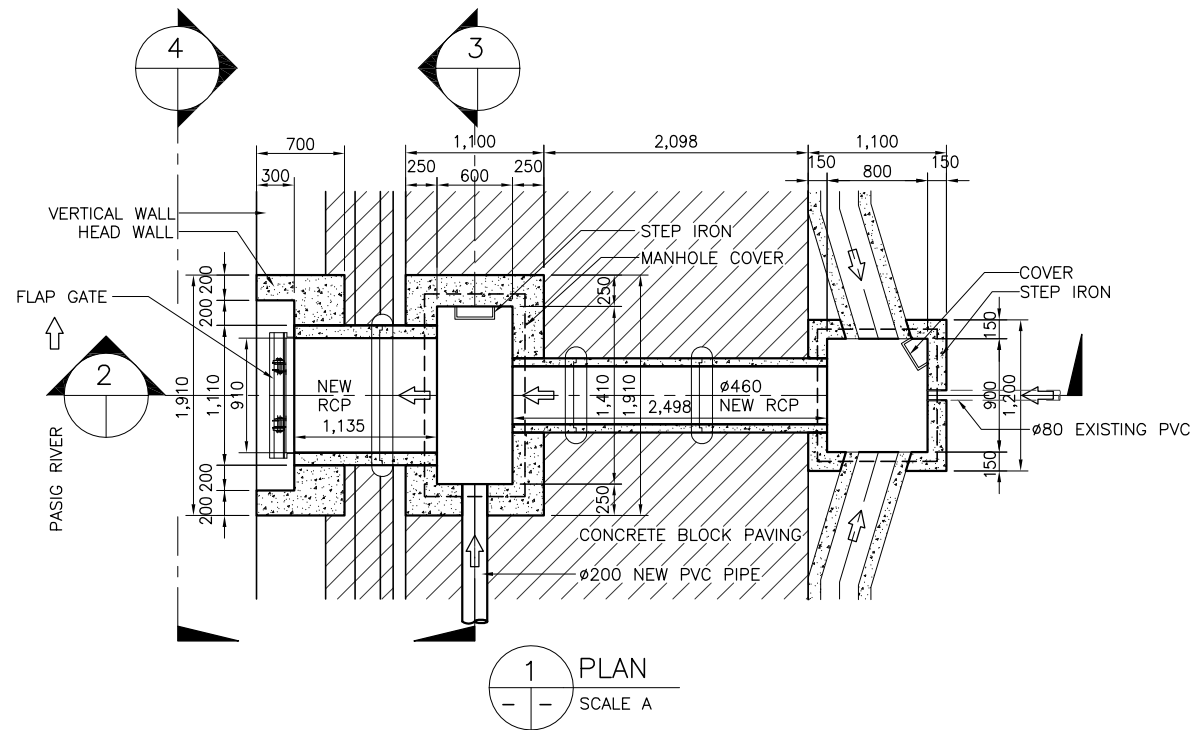


REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

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SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN			REPUBLIC OF THE PHILIPPINES				PROJECT & LOCATION		SHEET CONTENTS		SHEET NO.	
	DESIGNED BY:	CHECKED BY:	SUBMITTED BY:		REVIEWED BY:	RECOMMENDING APPROVAL:		APPROVED BY:		PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	PLAN & PROFILE OF COLLECTOR PIPE	
	KOHEI TAKAYAMA <small>STRUCTURAL ENGINEER IV</small>	TOSHIKI KAWAKAMI <small>THE CHECKER</small>	SHUJI KAKU <small>TEAM LEADER</small>		PERFECTO L. ZAPLAN, JR. <small>CHIEF, HYDRAULIC DIVISION, BOD</small>	PATRICK B. GATAN <small>PROJECT DIRECTOR PMO - MFCP</small>	GILBERTO S. REYES <small>DIRECTOR BOD</small>	RAUL C. ASIS <small>UNDERSECRETARY FOR TECHNICAL SERVICES</small>	ROGELIO L. SINGSON <small>SECRETARY</small>			



REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

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SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY

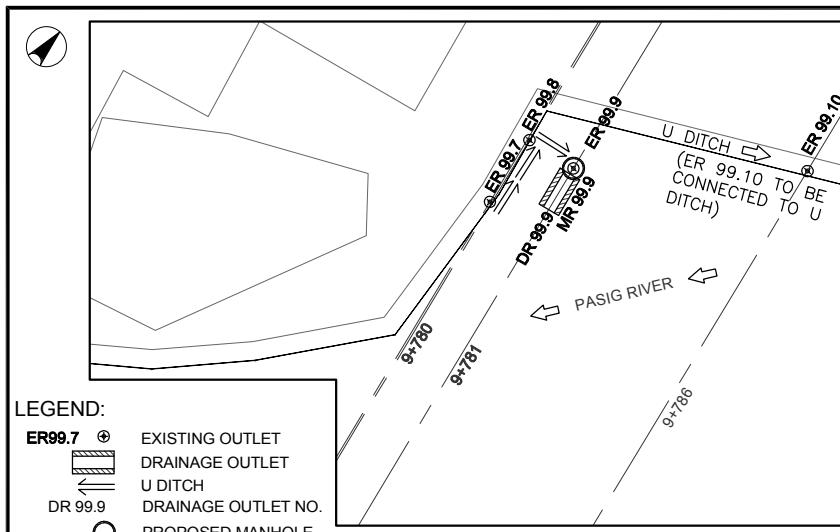
APPROVED BY: RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION: PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

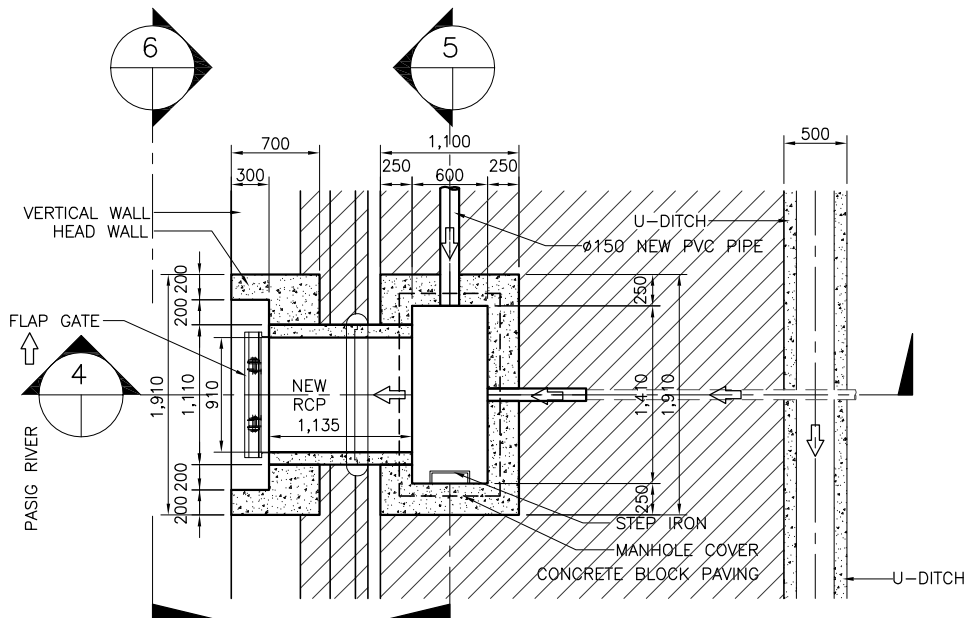
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SHEET NO.: LP-DR/DO/99.1

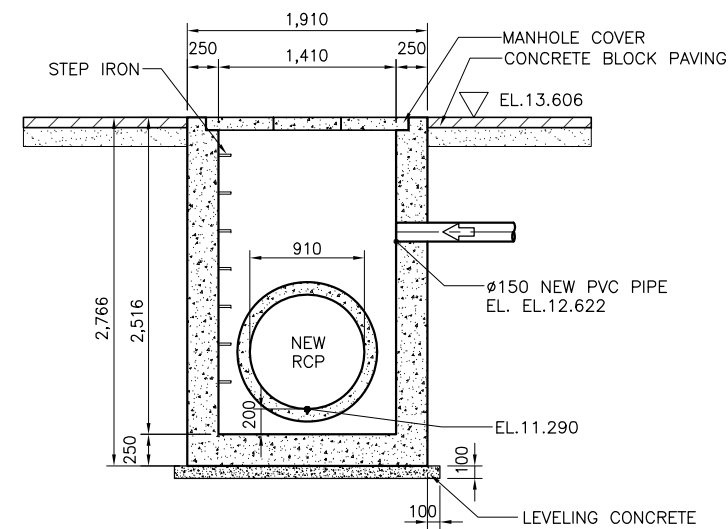


- LEGEND:**
- ER 99.7 ⊕ EXISTING OUTLET
 - DR 99.9 ⊕ DRAINAGE OUTLET
 - U DITCH
 - DR 99.9 ⊕ DRAINAGE OUTLET NO.
 - PROPOSED MANHOLE

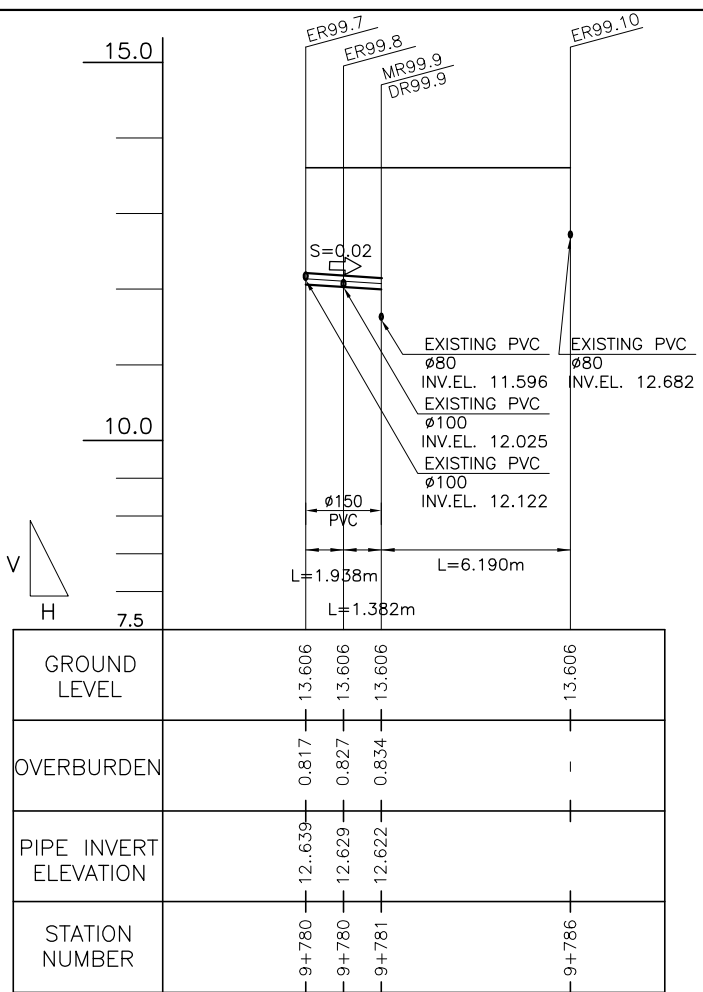
1 DRAINAGE PLAN
SCALE A



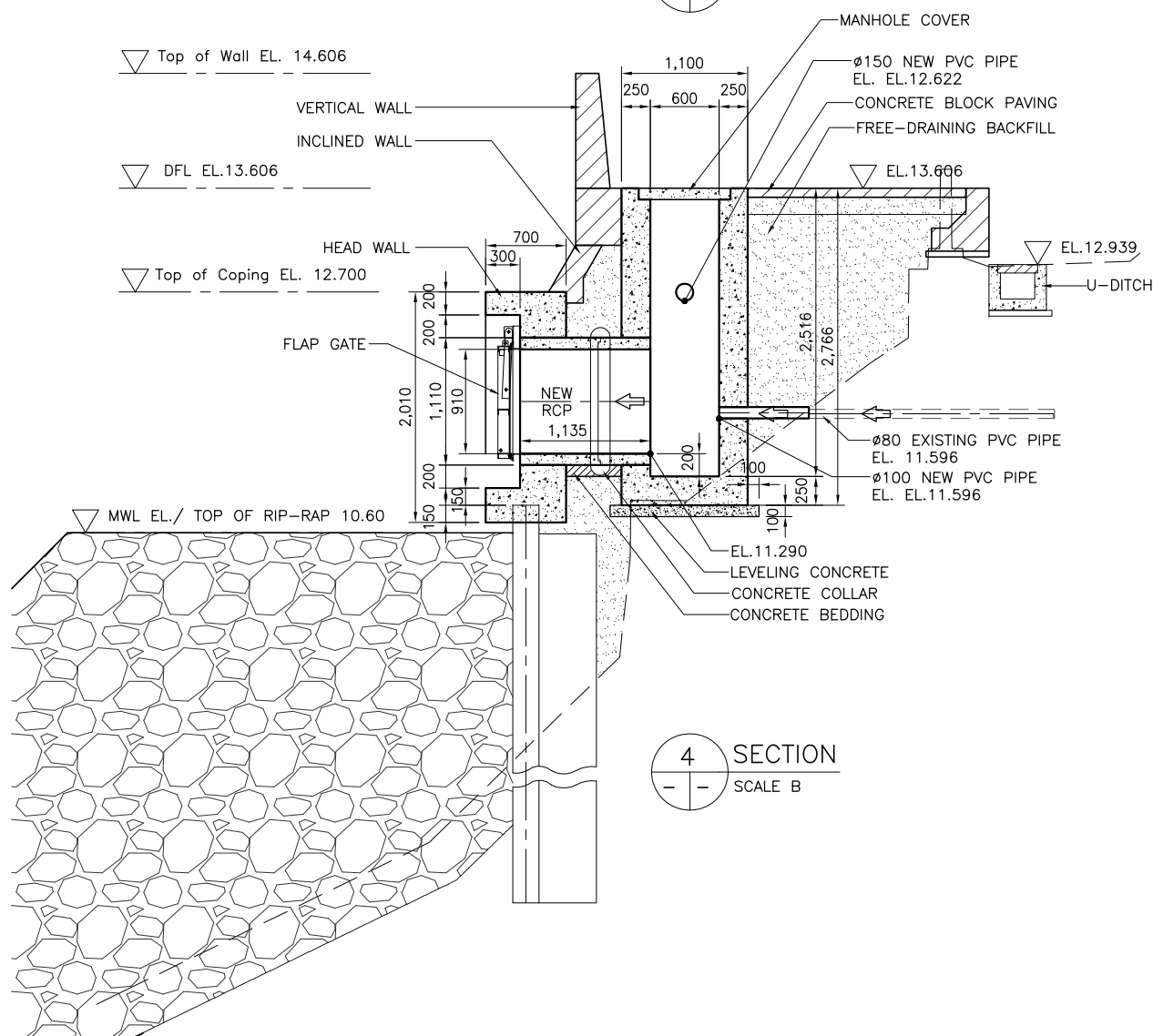
3 PLAN
SCALE B



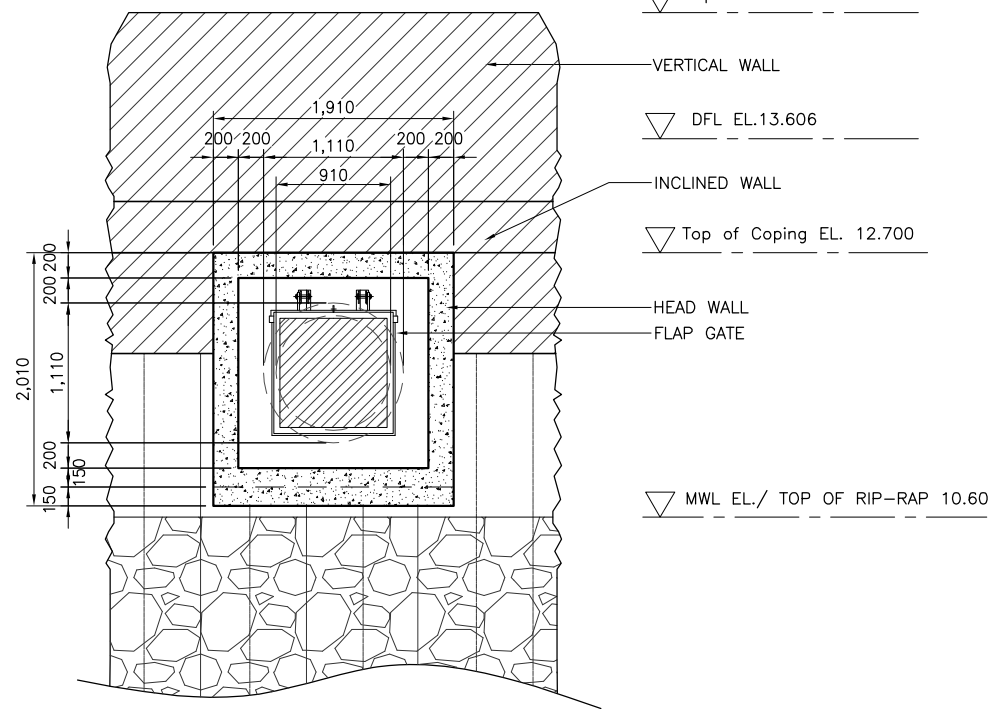
5 SECTION (MR99.9)
SCALE B



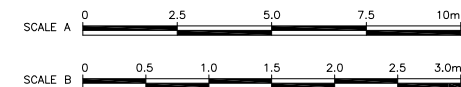
2 PROFILE
SCALE A



4 SECTION
SCALE B



6 ELEVATION
SCALE B



NOTE:
PURSUANT TO SECTION 4 OF ANNEX 'A' OF THE REVISED IMPLEMENTING RULES AND REGULATIONS OF R.A. 9184, APPROVAL BY THE AUTHORIZED DPWH OFFICIALS 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 TRANSFER ANY PART OF THAT RESPONSIBILITY TO THE APPROVING OFFICIALS.

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN

REPUBLIC OF THE PHILIPPINES



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

CHECKED BY: TOSHIKI KAWAKAMI
THE CHECKER

SUBMITTED BY: SHUJI KAKU
TEAM LEADER



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS
AND HIGHWAYS

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

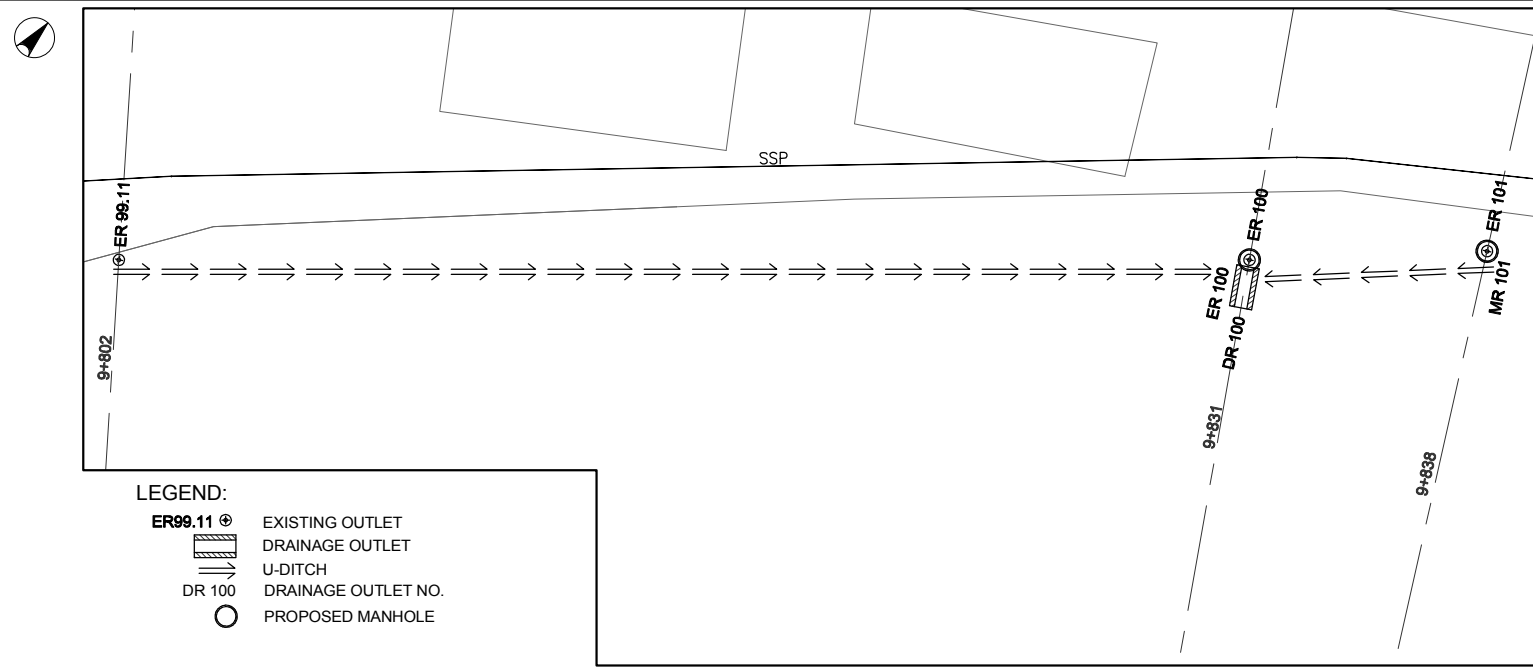
APPROVED BY: RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION
PASIG-MARIKINA
RIVER CHANNEL
IMPROVEMENT
PROJECT (PHASE III),
METRO MANILA

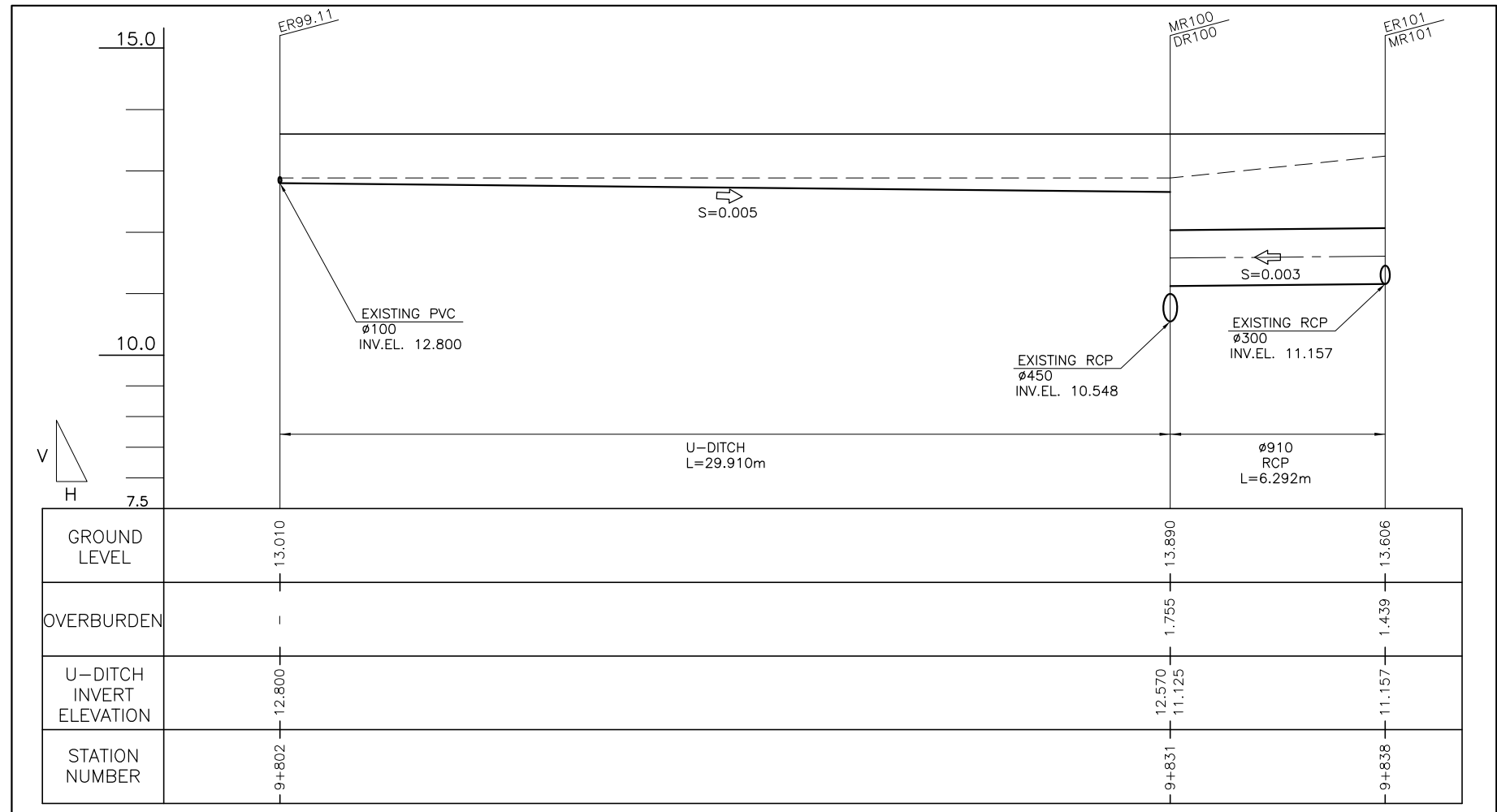
SHEET CONTENTS
DETAIL OF DRAINAGE
OUTLET- DR99.9 &
MANHOLE MR99.9
STA. 9+781 RB

SHEET NO.
LP-DR
DO/99.9

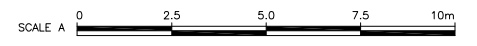


- LEGEND:
- ER99.11 ⊕ EXISTING OUTLET
 - DRAINAGE OUTLET
 - U-DITCH
 - DR 100 DRAINAGE OUTLET NO.
 - PROPOSED MANHOLE

1 DRAINAGE PLAN
SCALE A



2 PROFILE
SCALE A

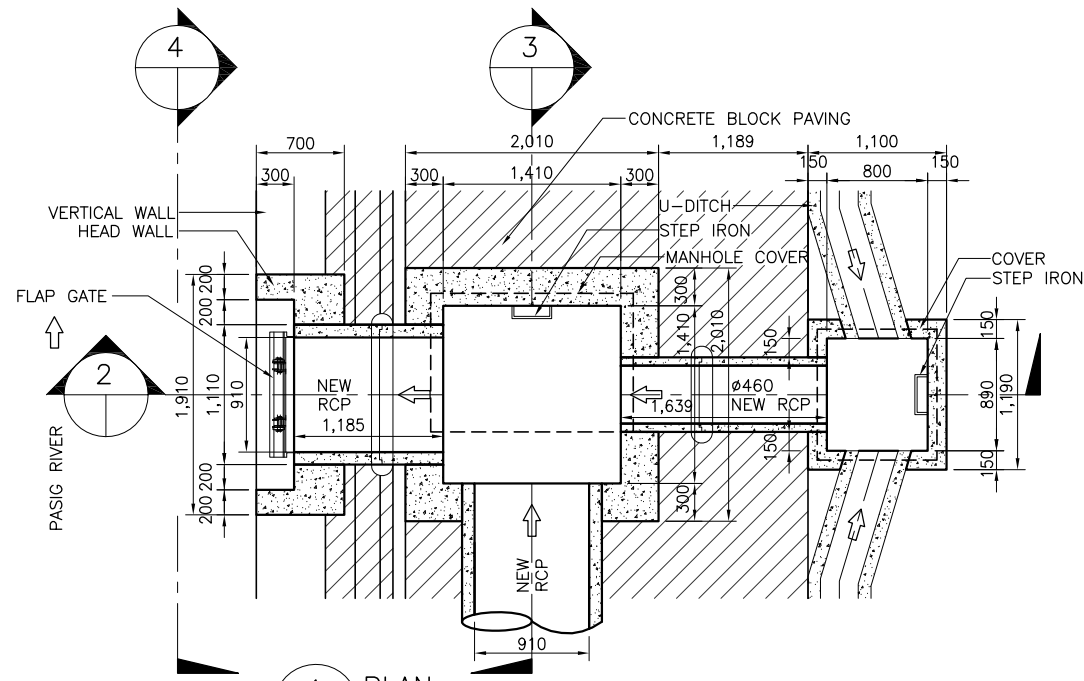


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NO.	DESCRIPTION	APPROVED	DATE

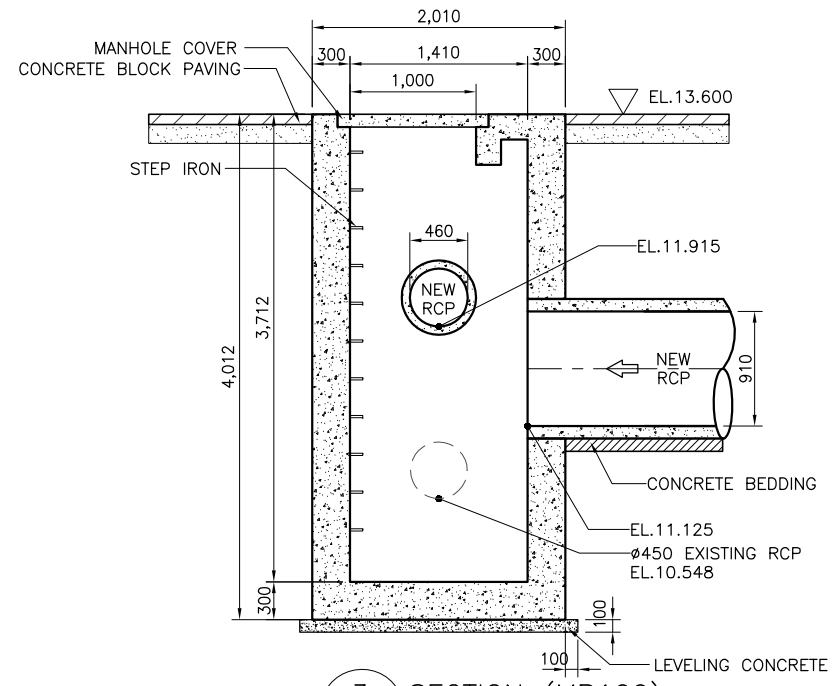
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SHUJI KAKU
TEAM LEADER

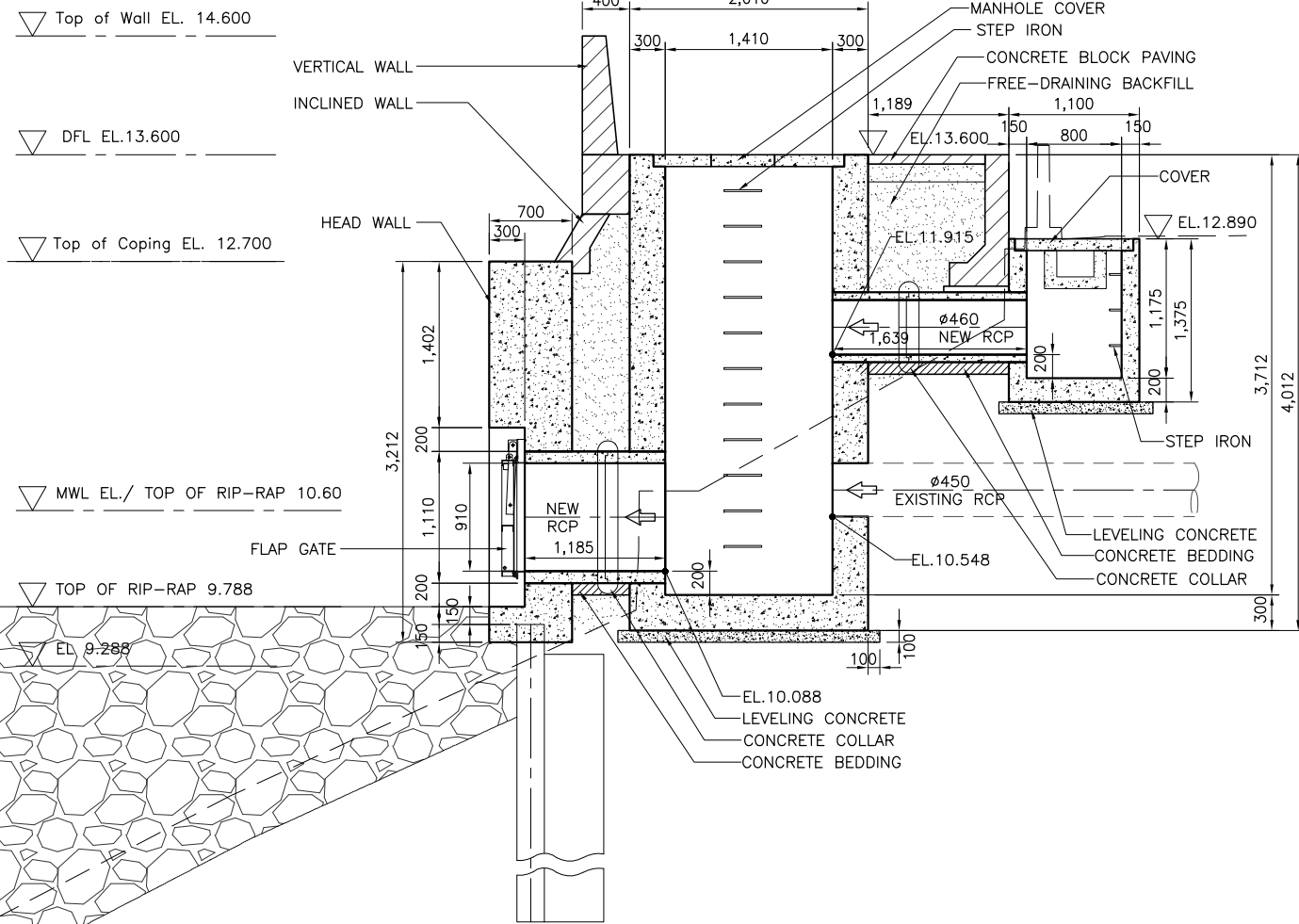
JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN 			REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS 				PROJECT & LOCATION PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA		SHEET CONTENTS PLAN & PROFILE OF COLLECTOR PIPE/ U-DITCH	SHEET NO.
DESIGNED BY:	CHECKED BY:	SUBMITTED BY:	REVIEWED BY:	RECOMMENDING APPROVAL:		APPROVED BY:				
KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	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	RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES	ROGELIO L. SINGSON SECRETARY			



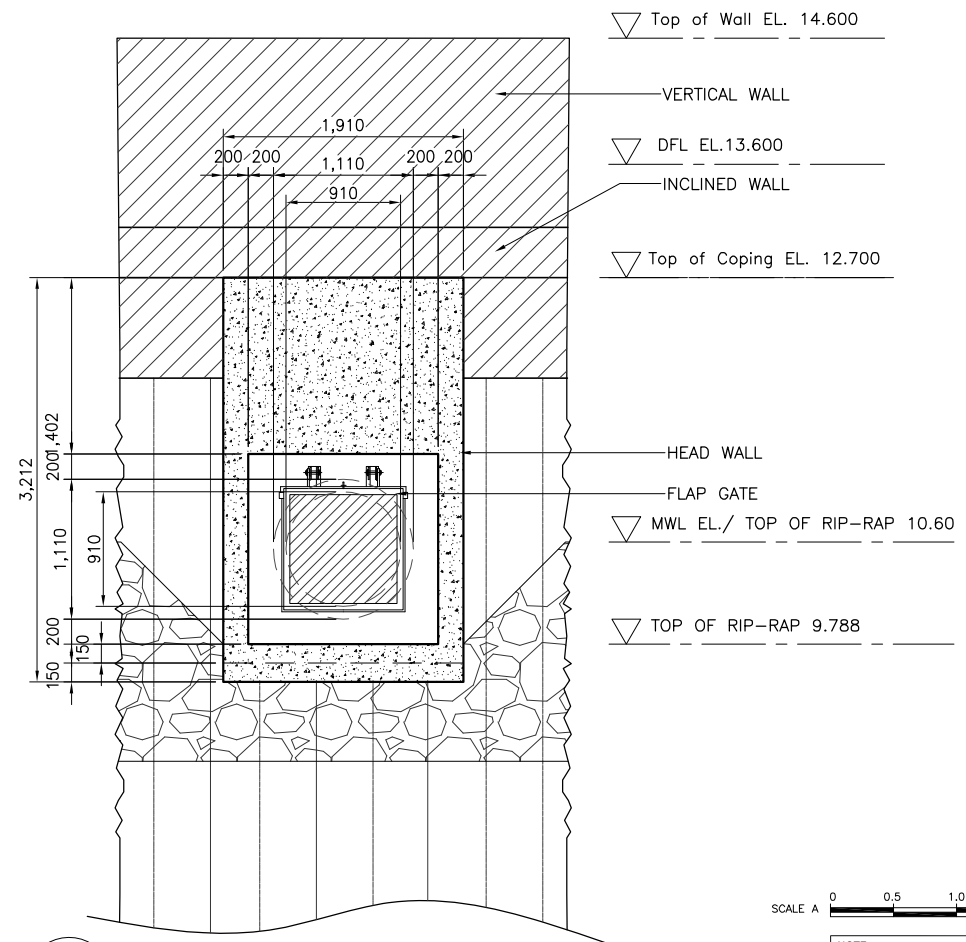
1 PLAN
SCALE A



3 SECTION (MR100)
SCALE A



2 SECTION
SCALE A



4 ELEVATION
SCALE A

SCALE A 0 0.5 1.0 1.5 2.0 2.5 3.0m

NOTE:
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SHUJI KAKU
TEAM LEADER

REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN



DESIGNED BY: KOHEI TAKAYAMA
STRUCTURAL ENGINEER IV

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

REVIEWED BY: PERFECTO L. ZAPLAN, JR.
CHIEF, HYDRAULIC DIVISION, BOD

RECOMMENDING APPROVAL: PATRICK B. GATAN
PROJECT DIRECTOR
PMO - MFCP

GILBERTO S. REYES
DIRECTOR
BOD

SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY

RAUL C. ASIS
UNDERSECRETARY
FOR TECHNICAL SERVICES

APPROVED BY: ROGELIO L. SINGSON
SECRETARY

PROJECT & LOCATION

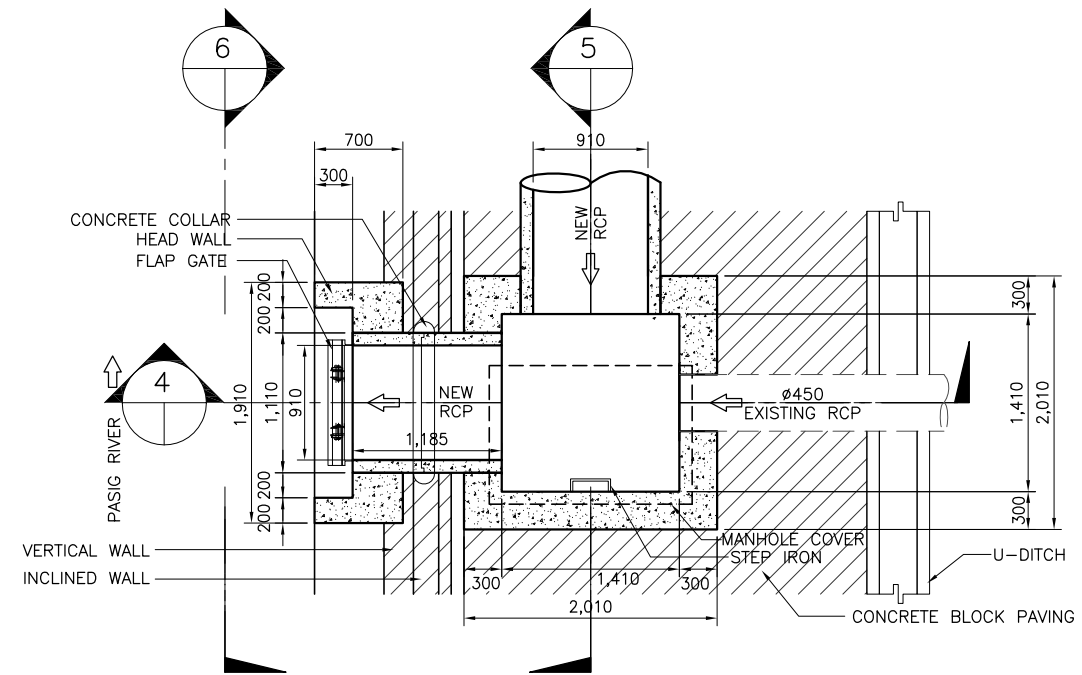
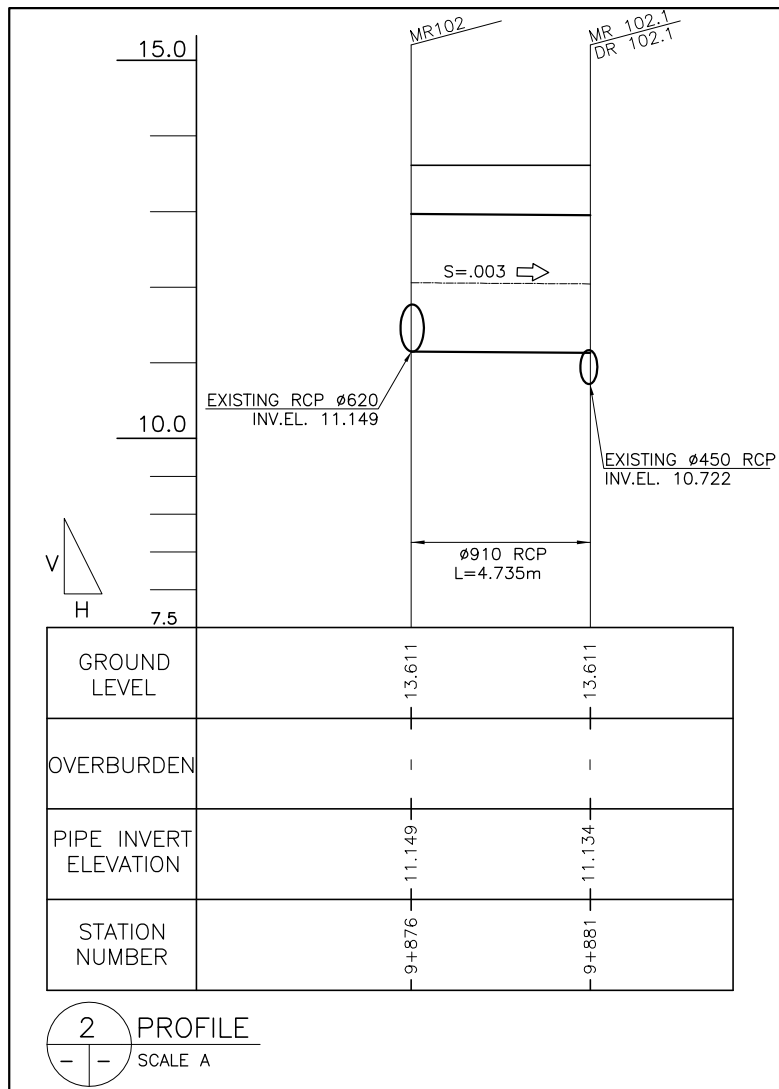
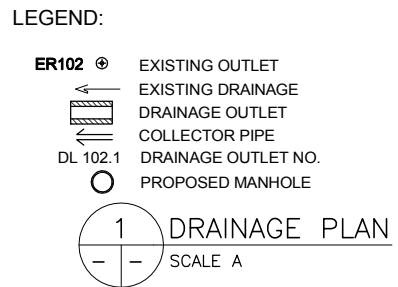
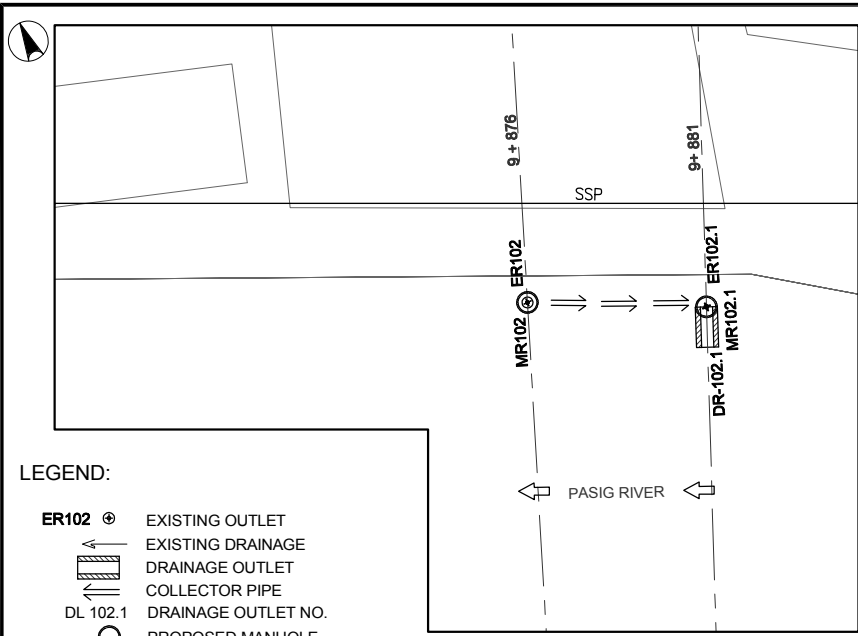
PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA

SHEET CONTENTS

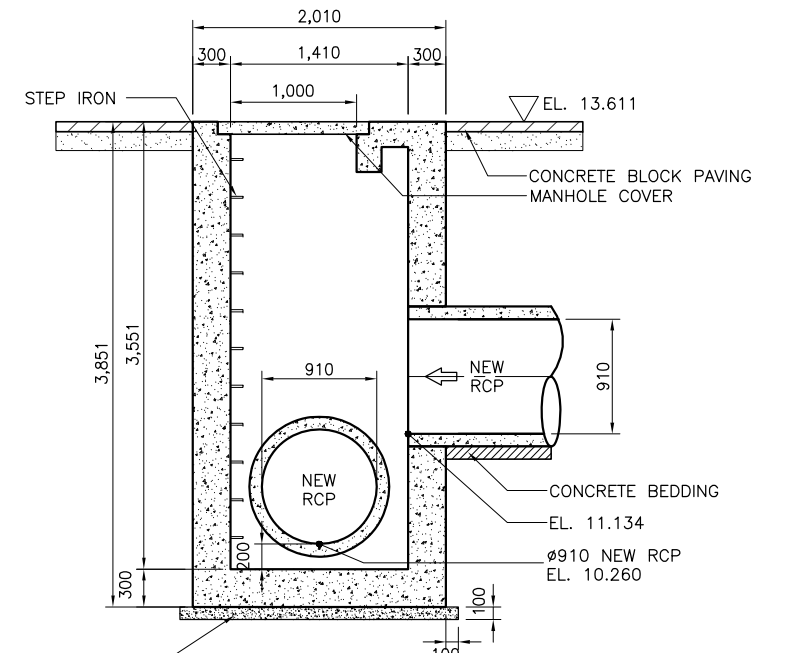
DETAIL OF DRAINAGE OUTLET- DR100 & MANHOLE MR100 STA. 9+831 RB

SHEET NO.

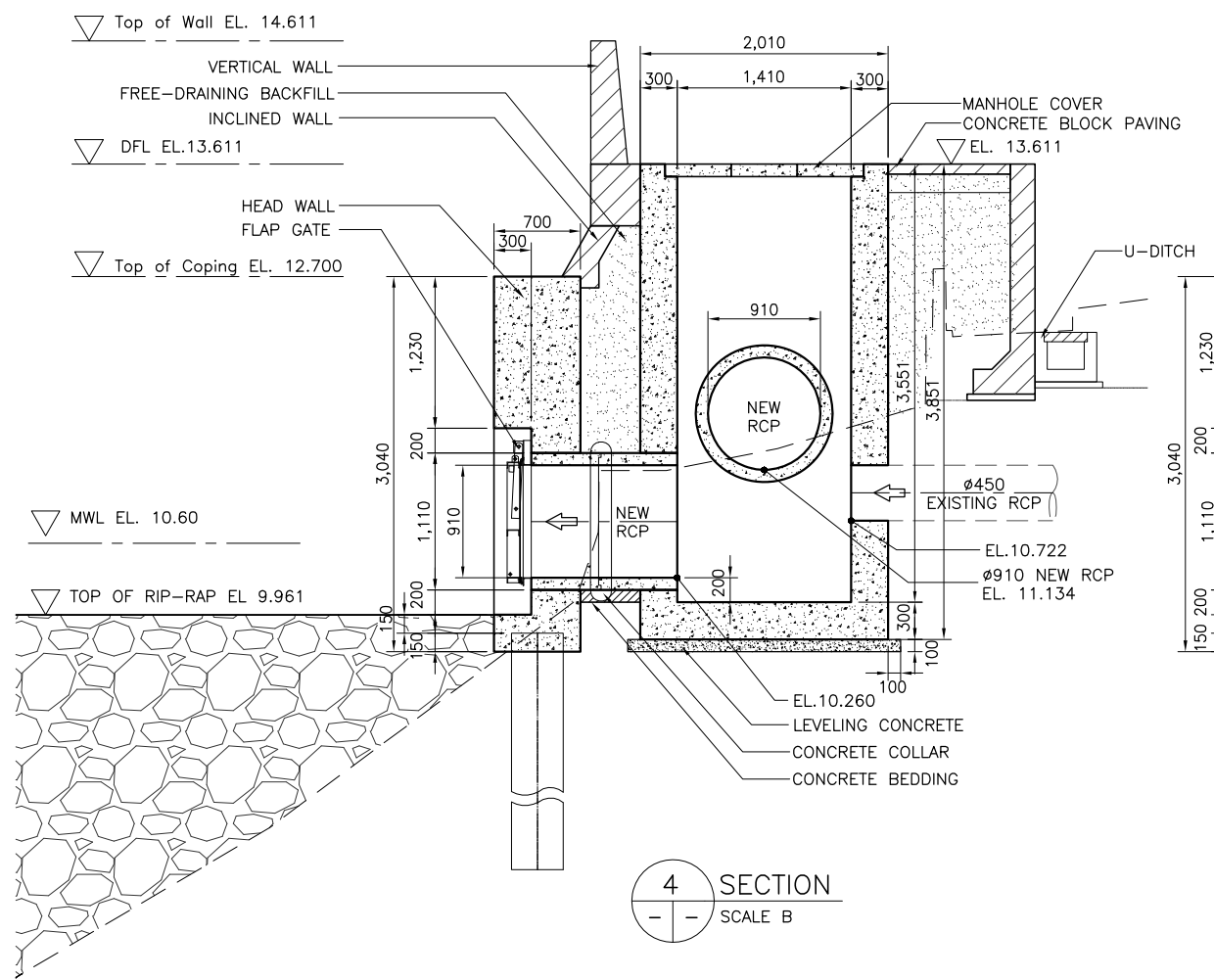




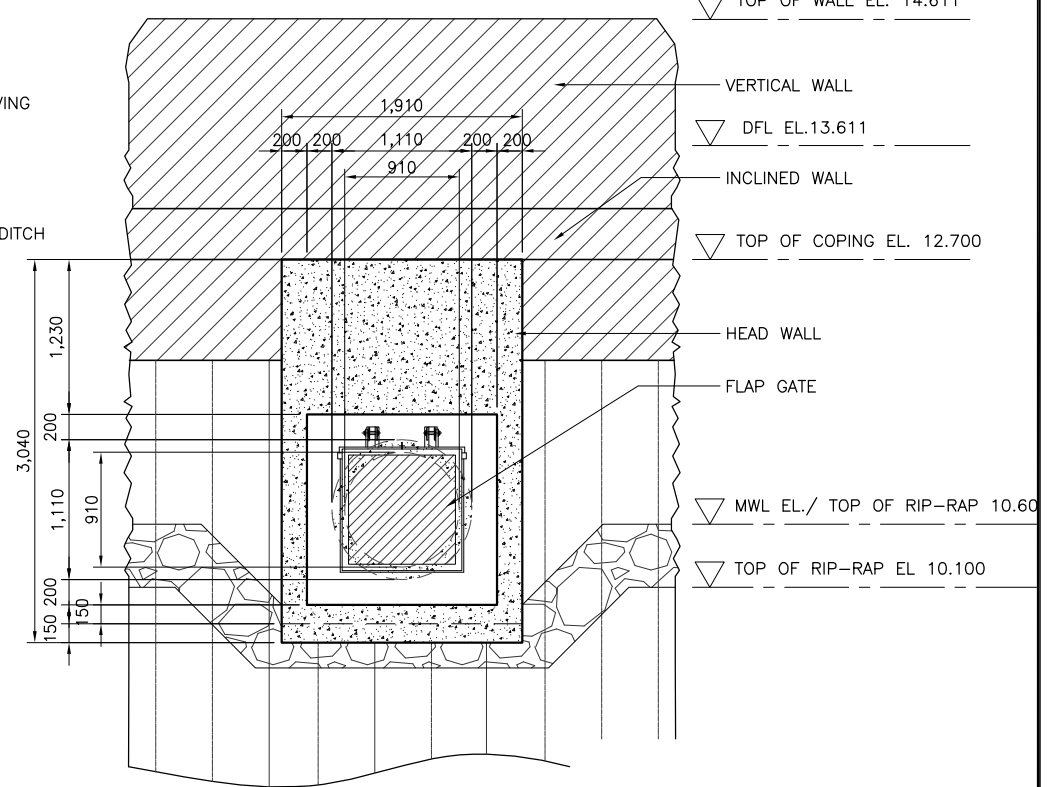
3 PLAN
SCALE B



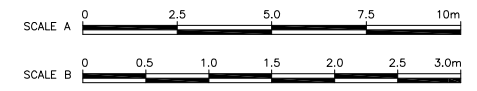
5 SECTION (MR102.1)
SCALE B



4 SECTION
SCALE B



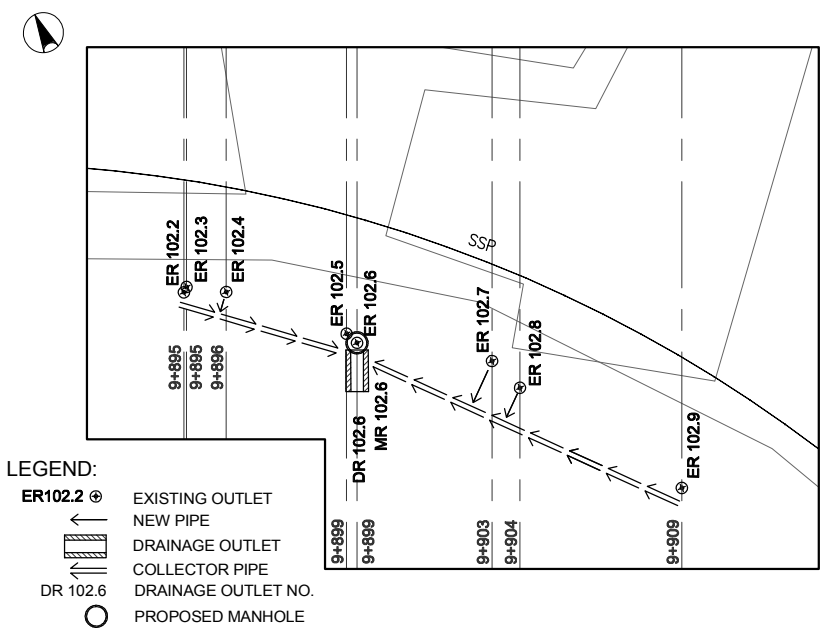
6 ELEVATION
SCALE B



REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

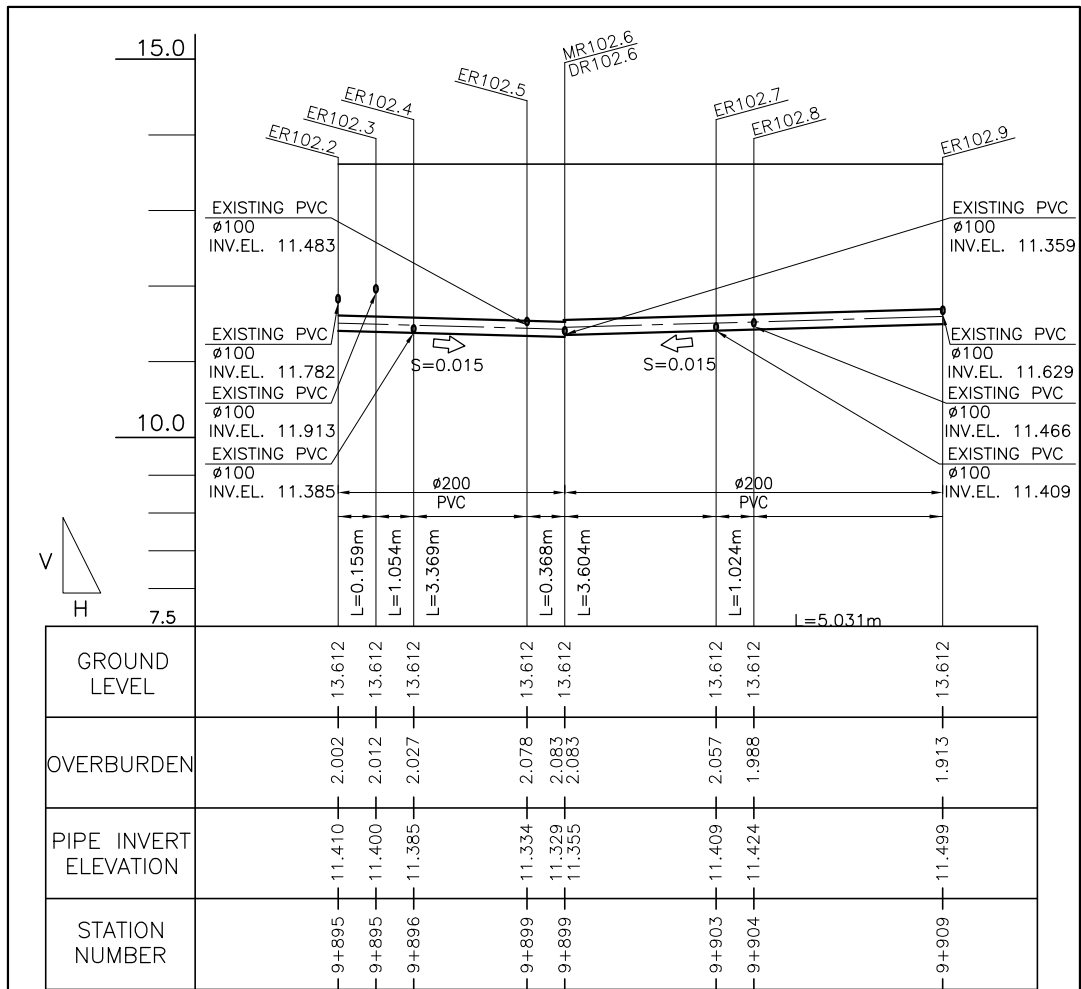
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SHUJI KAKU
TEAM LEADER



- LEGEND:**
- ER102.2 ⊕ EXISTING OUTLET
 - ← NEW PIPE
 - ▭ DRAINAGE OUTLET
 - ▭ COLLECTOR PIPE
 - DR 102.6 DRAINAGE OUTLET NO.
 - PROPOSED MANHOLE

1 DRAINAGE PLAN
SCALE A



2 PROFILE
SCALE A

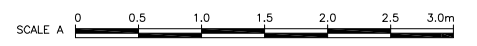
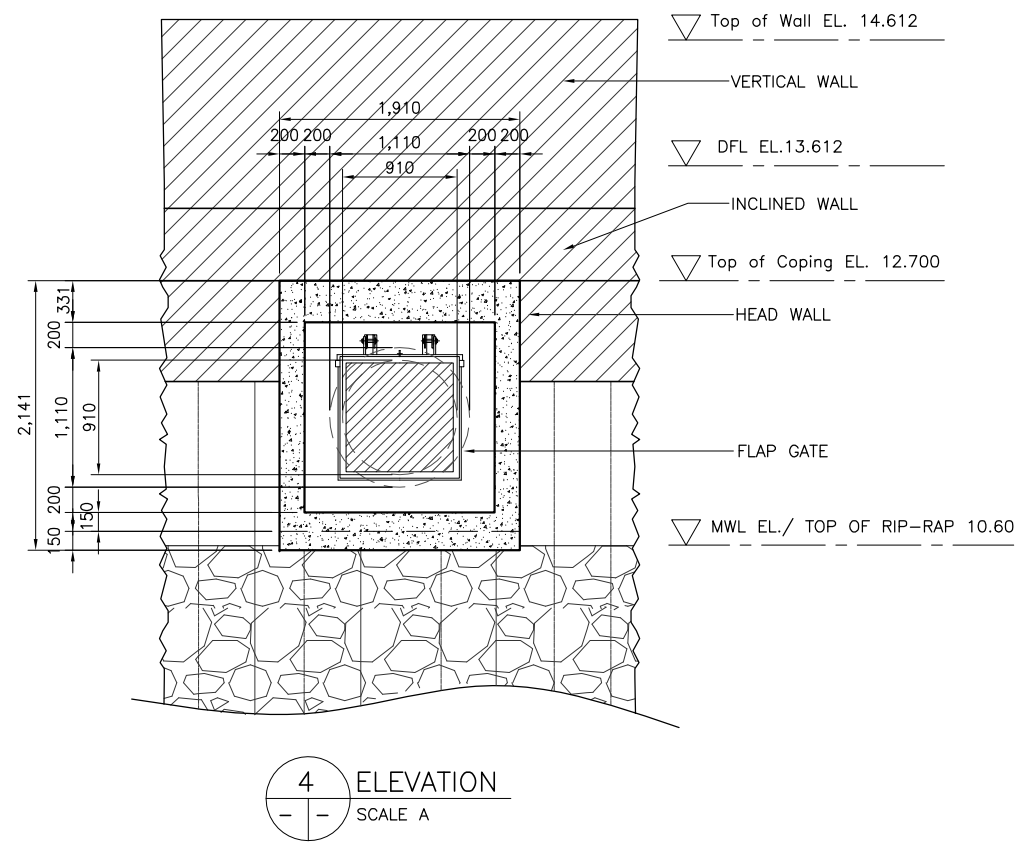
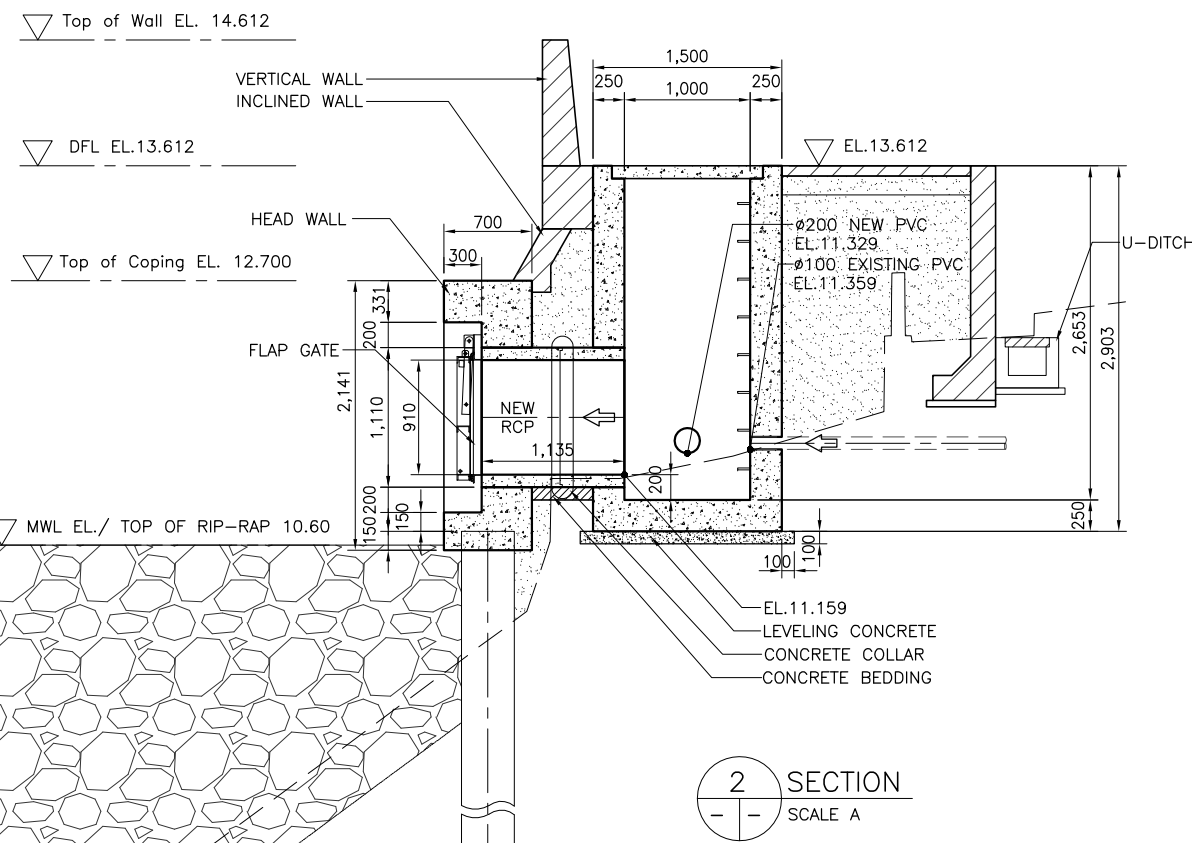
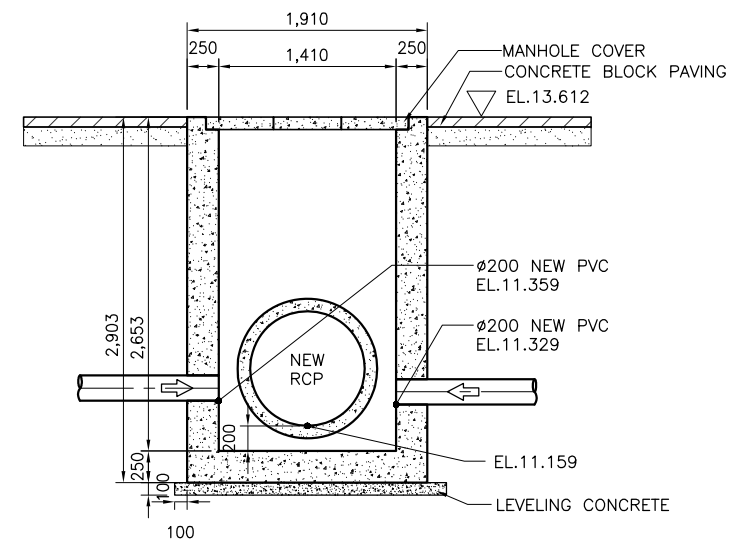
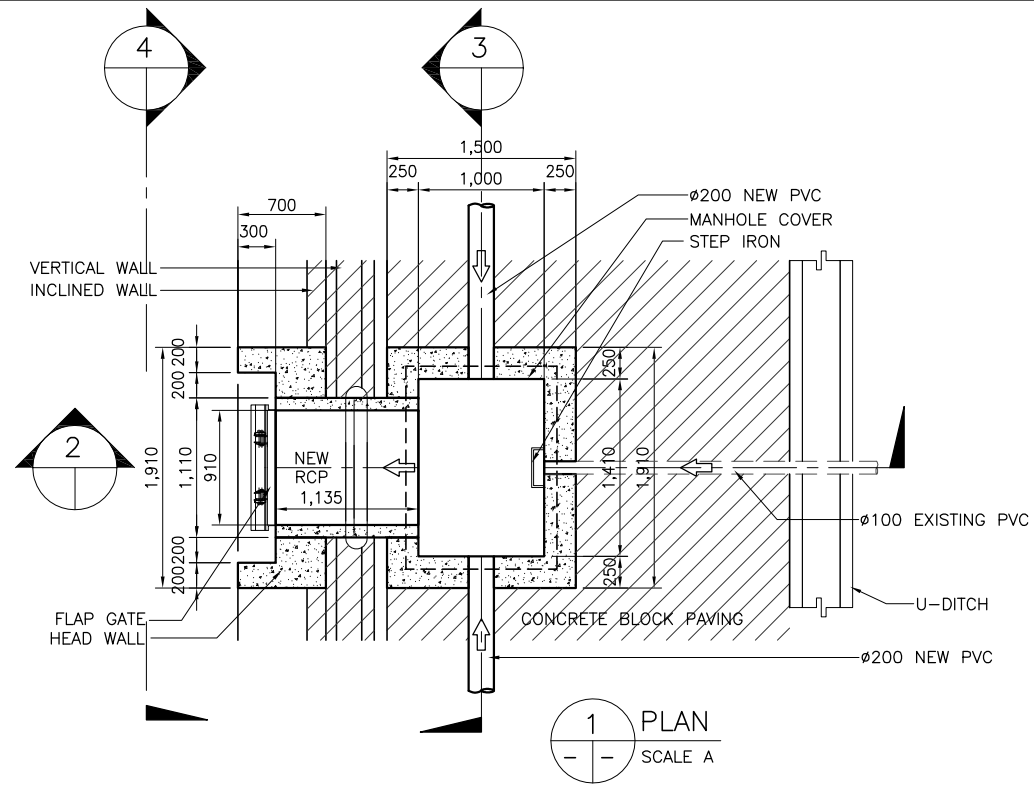


REVISIONS			
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SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN			REPUBLIC OF THE PHILIPPINES				PROJECT & LOCATION		SHEET CONTENTS		SHEET NO.
	DESIGNED BY:	CHECKED BY:	SUBMITTED BY:		REVIEWED BY:	RECOMMENDING APPROVAL:	APPROVED BY:		PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	PLAN & PROFILE OF COLLECTOR PIPE	
	KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	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	SEE COVER SHEET FOR THE SIGNATURE OF THE UNDERSECRETARY RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES			



REVISIONS			
NO.	DESCRIPTION	APPROVED	DATE

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SHUJI KAKU
TEAM LEADER

JICA CONSULTANT FOR DETAILED ENGINEERING DESIGN			REPUBLIC OF THE PHILIPPINES				PROJECT & LOCATION	SHEET CONTENTS	SHEET NO.
	DESIGNED BY:	CHECKED BY:	SUBMITTED BY:		REVIEWED BY:	RECOMMENDING APPROVAL:	PASIG-MARIKINA RIVER CHANNEL IMPROVEMENT PROJECT (PHASE III), METRO MANILA	DETAIL OF DRAINAGE OUTLET- DR102.6 & MANHOLE MR102.6 STA. 9+895 RB	
	KOHEI TAKAYAMA STRUCTURAL ENGINEER IV	TOSHIKI KAWAKAMI THE CHECKER	SHUJI KAKU TEAM LEADER		PERFECTO L. ZAPLAN, JR. CHIEF, HYDRAULIC DIVISION, BOD	PATRICK B. GATAN PROJECT DIRECTOR PMO - MFCP			
					RAUL C. ASIS UNDERSECRETARY FOR TECHNICAL SERVICES	ROGELIO L. SINGSON SECRETARY			