



No.

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

METROPOLITAN MANILA DEVELOPMENT AUTHORITY (MMDA)

DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH)

THE REPUBLIC OF THE PHILIPPINES

THE STUDY ON DRAINAGE IMPROVEMENT IN THE CORE AREA OF METROPOLITAN MANILA, REPUBLIC OF THE PHILIPPINES

FINAL REPORT
DATABOOK II (DRAWINGS)

MARCH 2005



PACIFIC CONSULTANTS INTERNATIONAL

NIKKEN CONSULTANTS, INC

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JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
METROPOLITAN MANILA DEVELOPMENT AUTHORITY (MMDA)
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS (DPWH)
THE REPUBLIC OF THE PHILIPPINES

**THE STUDY ON
DRAINAGE IMPROVEMENT
IN THE CORE AREA OF METROPOLITAN MANILA,
REPUBLIC OF THE PHILIPPINES**

**FINAL REPORT
DATABOOK II (DRAWINGS)**

MARCH 2005

PACIFIC CONSULTANTS INTERNATIONAL
NIKKEN CONSULTANTS, INC

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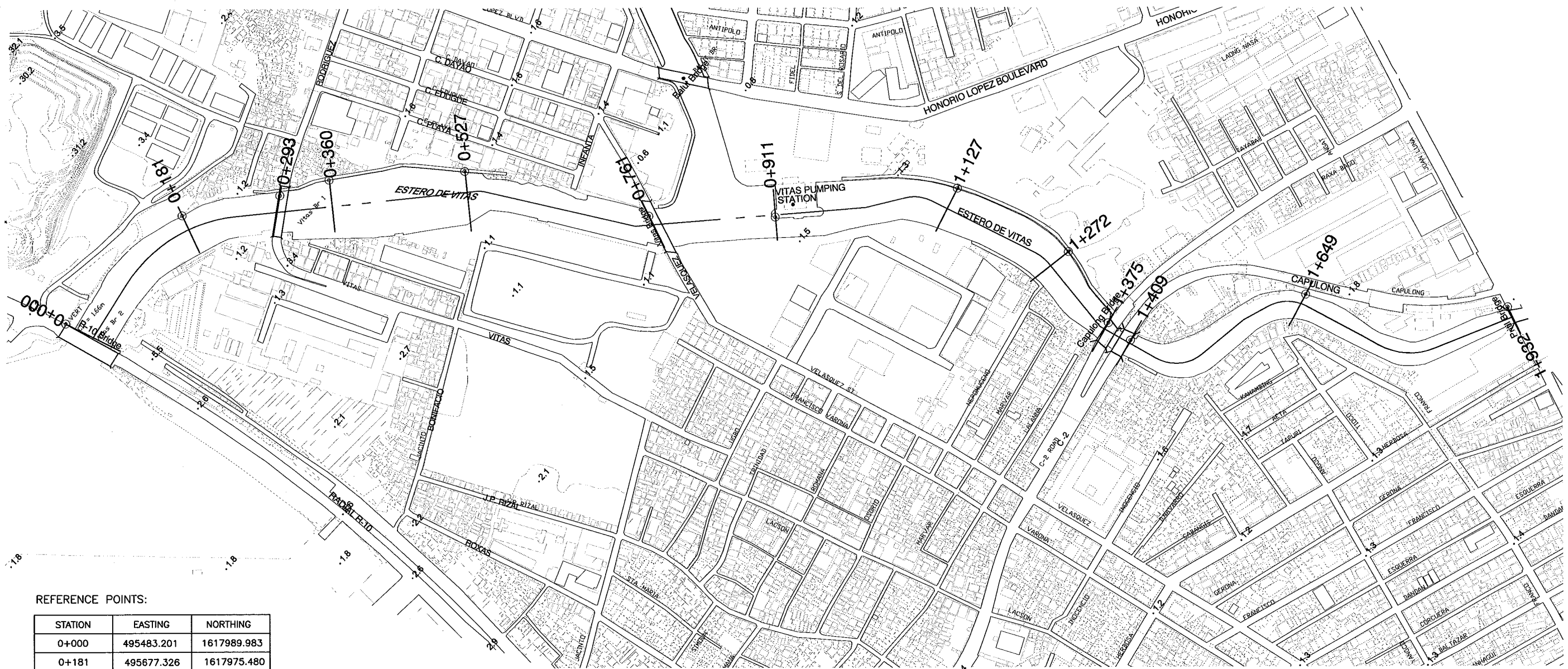
DRAWINGS FOR DRAINAGE SURVEY

DRAWING LIST

CODE NO.	ESTEROS/CREEKS NAME	STATION	CONTENTS	SHEET NO.
NE01	ESTERO DE VITAS	STA. 0+000~1+932	CROSS-SECTION LOCATION	CL-01
			LONGITUDINAL PROFILE	LP-01
			CROSS-SECTION	CS-01
NE03	CASILI CREEK	STA. 0+306~1+627	CROSS-SECTION LOCATION	CL-02
			LONGITUDINAL PROFILE	LP-02
			CROSS-SECTION	CS-02
NE04	ESTERO DE LA REINA	STA. 0+000~2+827	CROSS-SECTION LOCATION	CL-03
			LONGITUDINAL PROFILE	LP-03
			CROSS-SECTION	CS-03
NE05	ESTERO DE BINONDO	STA. 0+000~0+889	CROSS-SECTION LOCATION	CL-04
			LONGITUDINAL PROFILE	LP-04
			CROSS-SECTION	CS-04
NE11	ESTERO DE TUTUBAN	STA. 0+000~0+317	CROSS-SECTION LOCATION	CL-05
			LONGITUDINAL PROFILE	LP-05
			CROSS-SECTION	CS-05
NE15	ESTERO DE ALIX	STA. 0+000~0+197	CROSS-SECTION LOCATION	CL-06
			LONGITUDINAL PROFILE	LP-06
			CROSS-SECTION	CS-06
NE18	ESTERO DE SAMPALOC II	STA. 0+000~0+506	CROSS-SECTION LOCATION	CL-07
			LONGITUDINAL PROFILE	LP-07
			CROSS-SECTION	CS-07
NE20	ESTERO DE VALENCIA	STA. 0+000~1+091	CROSS-SECTION LOCATION	CL-08
			LONGITUDINAL PROFILE	LP-08
			CROSS-SECTION	CS-08
SE01	ESTERO DE PROVISO	STA. 0+000~0+393	CROSS-SECTION LOCATION	CL-09
			LONGITUDINAL PROFILE	LP-09
			CROSS-SECTION	CS-09
SE02	ESTERO DE TANQUE	STA. 0+000~0+309	CROSS-SECTION LOCATION	CL-10
			LONGITUDINAL PROFILE	LP-10
			CROSS-SECTION	CS-10
SE03	ESTERO DE BALETE	STA. 0+000~0+500	CROSS-SECTION LOCATION	CL-11
			LONGITUDINAL PROFILE	LP-11
			CROSS-SECTION	CS-11
SE04	ESTERO DE SANTIBAÑES	STA. 0+000~0+395	CROSS-SECTION LOCATION	CL-12
			LONGITUDINAL PROFILE	LP-12
			CROSS-SECTION	CS-12

CODE NO.	ESTEROS/CREEKS NAME	STATION	CONTENTS	SHEET NO.
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			LONGITUDINAL PROFILE	LP-13
			CROSS-SECTION	CS-13
SE06	ESTERO DE PACO	STA. 0+000~2+258	CROSS-SECTION LOCATION	CL-14
			LONGITUDINAL PROFILE	LP-14
			CROSS-SECTION	CS-14
SE07	ESTERO DE CONCORDIA	STA. 0+000~1+065	CROSS-SECTION LOCATION	CL-15
			LONGITUDINAL PROFILE	LP-15
			CROSS-SECTION	CS-15
SE08	ESTERO DE PANDACAN	STA. 0-249~3+860	CROSS-SECTION LOCATION	CL-16
			LONGITUDINAL PROFILE	LP-16
			CROSS-SECTION	CS-16
SE09	ESTERO TRIPA DE GALLINA	STA. 0-075~7+499	CROSS-SECTION LOCATION	CL-17
			LONGITUDINAL PROFILE	LP-17
			CROSS-SECTION	CS-17
SE15	ZANZIBAR CREEK	STA. 0+000~0+194	CROSS-SECTION LOCATION	CL-18
			LONGITUDINAL PROFILE	LP-18
			CROSS-SECTION	CS-18
SE20	ESTERO DE SAN ANTONIO ABAD	STA. 0+000~1+205	CROSS-SECTION LOCATION	CL-19
			LONGITUDINAL PROFILE	LP-19
			CROSS-SECTION	CS-19
SE21	LIBERTAD CHANNEL	STA. 0-886~2+625	CROSS-SECTION LOCATION	CL-20
			LONGITUDINAL PROFILE	LP-20
			CROSS-SECTION	CS-20

ESTERO DE VITAS (NE01)



REFERENCE POINTS:

STATION	EASTING	NORTHING
0+000	495483.201	1617989.983
0+181	495677.326	1617975.480
0+293	495776.826	1617904.001
0+360	495831.796	1617872.670
0+527	495952.775	1617757.548
0+761	496065.132	1617553.895
0+911	496169.351	1617439.447
1+127	496347.062	1617298.951
1+272	496381.744	1617146.064
1+375	496350.752	1617051.005
1+409	496353.443	1617016.491
1+659	496540.736	1616896.281
1+932	496697.283	1616702.913

CROSS-SECTION LOCATION

1 ESTERO DE VITAS (NE01)
TOPOGRAPHIC MAP

CL-01

SCALE : A



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REPUBLIC OF THE PHILIPPINES

JICA JAPAN INTERNATIONAL COOPERATION AGENCY
FOR
 DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
 METROPOLITAN MANILA DEVELOPMENT
AUTHORITY

PROJECT & LOCATION:

THE STUDY ON DRAINAGE IMPROVEMENT
IN THE CORE AREA OF METROPOLITAN MANILA

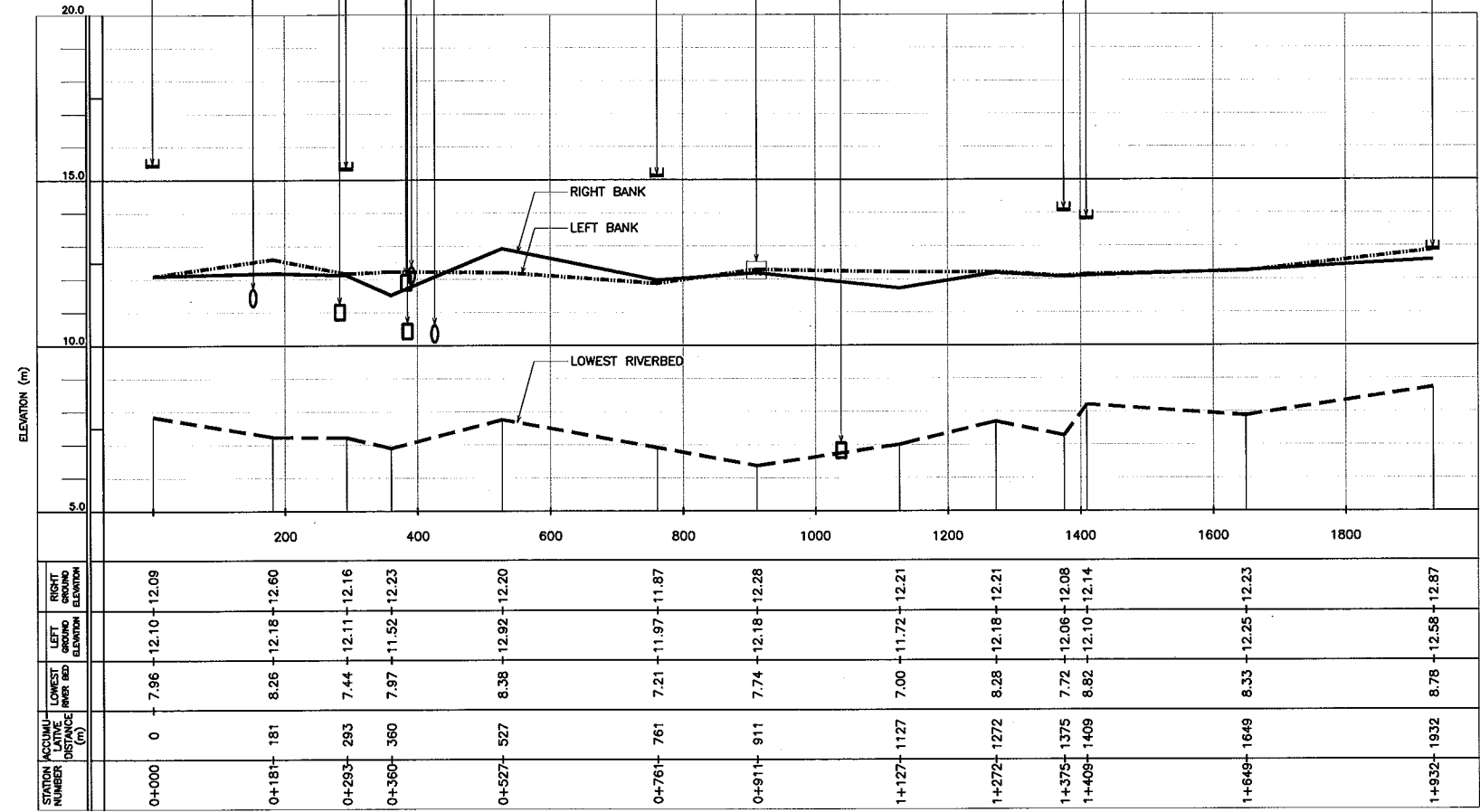
SHT. CONTENTS:

CROSS-SECTION LOCATION
ESTERO DE VITAS (NE01)
(STA. 0+000 - STA. 1+932)

SHT. NO

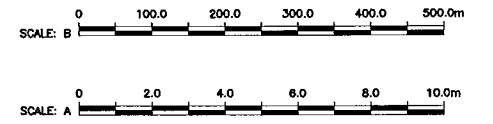
CL-01
01 01

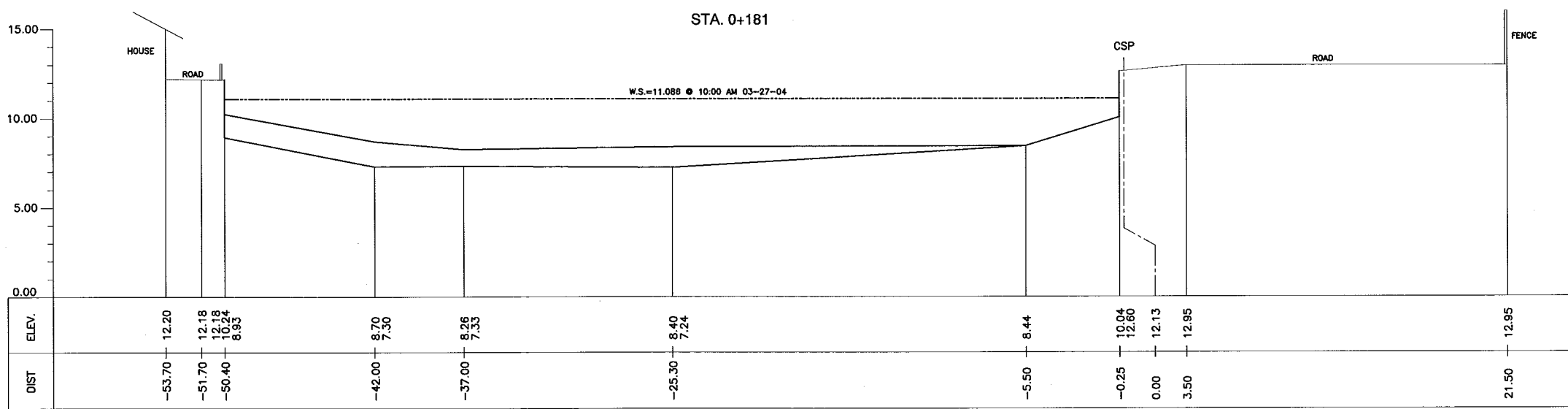
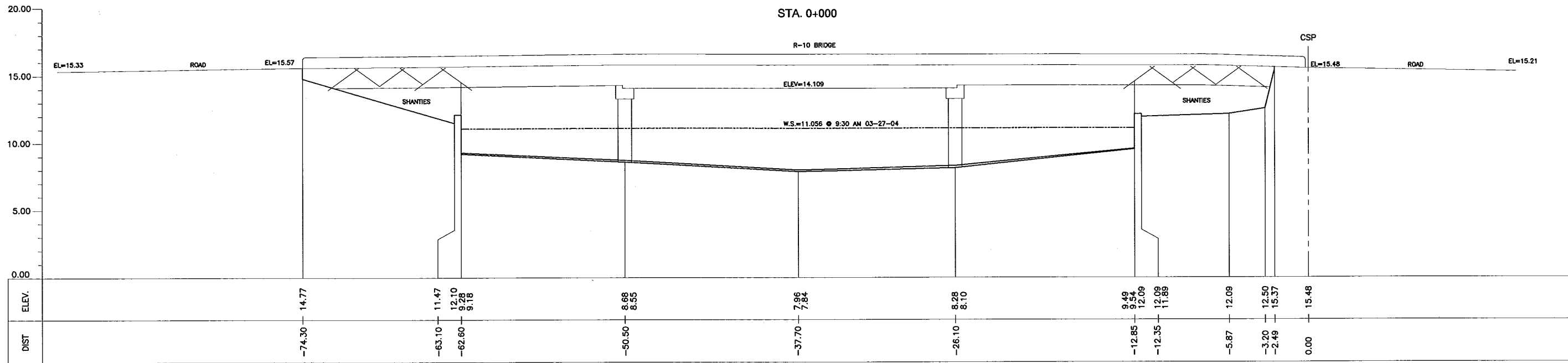
STA. 0+383 LEFT SIDE
 BOX CULVERT 700MM x 300mm
 INVERT ELEV. = 11.70
 LENGTH= 63m / WIDTH=10.83m
 STA. 0+293 (RODRIGUEZ) / ELEV.=15.31
 STA. 0+263 RIGHT SIDE
 BOX CULVERT 800MM x 650mm
 INVERT ELEV. = 10.80
 STA. 0+152 RIGHT SIDE
 RCP 1200mm INV. ELEV.=11.21
 STA. 0+000(R-10 BR.) / ELEV.=13.48
 LENGTH= 73m / WIDTH=18.42m
 STA. 0+385 LEFT SIDE
 BOX CULVERT 1750MM x 500mm
 INVERT ELEV. = 10.22
 STA. 0+391 LEFT SIDE
 RCP 750mm INV. ELEV.=11.88
 STA. 0+428 LEFT SIDE
 RCP 1050mm INV. ELEV.=10.12
 STA. 0+761(VITAS BR.)
 LENGTH= 70m / WIDTH=12.57m
 STA. 0+911 (VITAS PUMPING STATION)
 TIDE GAUGE • ELEV. 12.00m = 12.005
 STA. 1+428 (PANGANCA-EARNSHAM MANN)
 W=2.20m D=2.20m
 INV. ELEV.=7.08m
 STA. 1+375 (CAPULONG BR.1) / ELEV.=14.115
 LENGTH= 38m / WIDTH=14.94m
 STA. 1+409 (CAPULONG BR.2) / ELEV.=13.87
 LENGTH= 36m / WIDTH=14.59m
 STA. 1+932 (PRILL BR.) / ELEV.=12.93
 LENGTH= 20m / WIDTH=20.92m



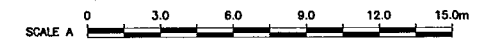
- LEGEND:
- : RIGHT BANK
 - : LEFT BANK
 - - - - -: LOWEST RIVERBED
 - : BOX CULVERT
 - ┌ : BRIDGE
 - : REINFORCE CONCRETE PIPE
 - P.S. : PUMPING STATION

1 LONGITUDINAL PROFILE
 LP-01 VER. = SCALE : A / HOR. = SCALE : B

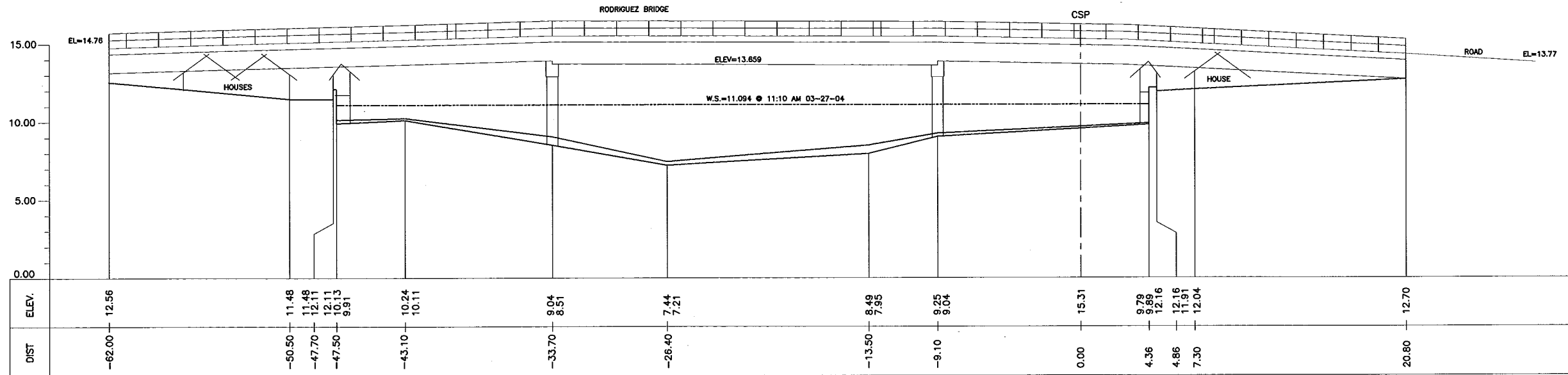




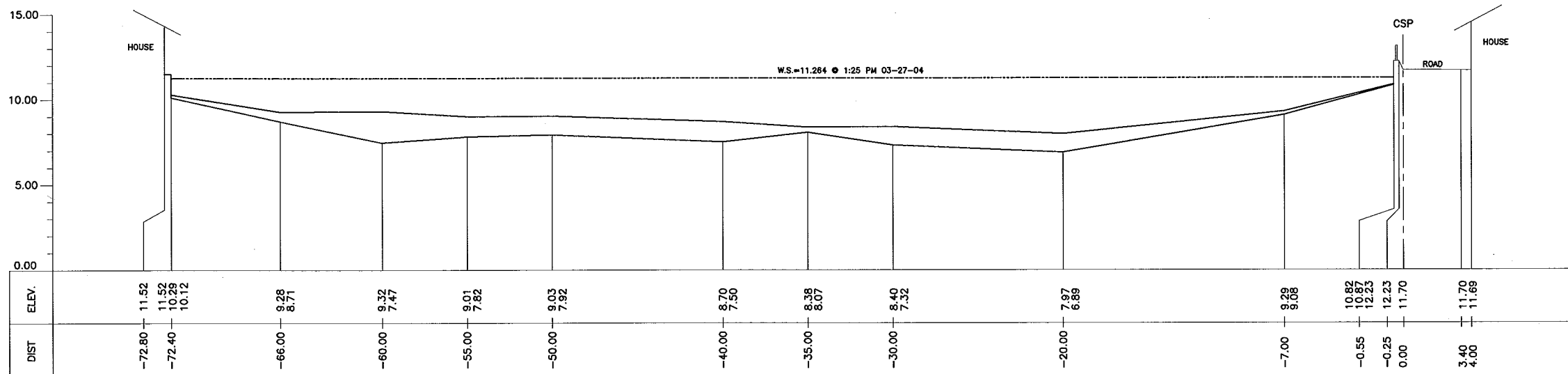
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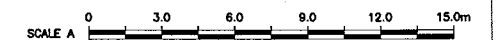
STA. 0+293



STA. 0+360

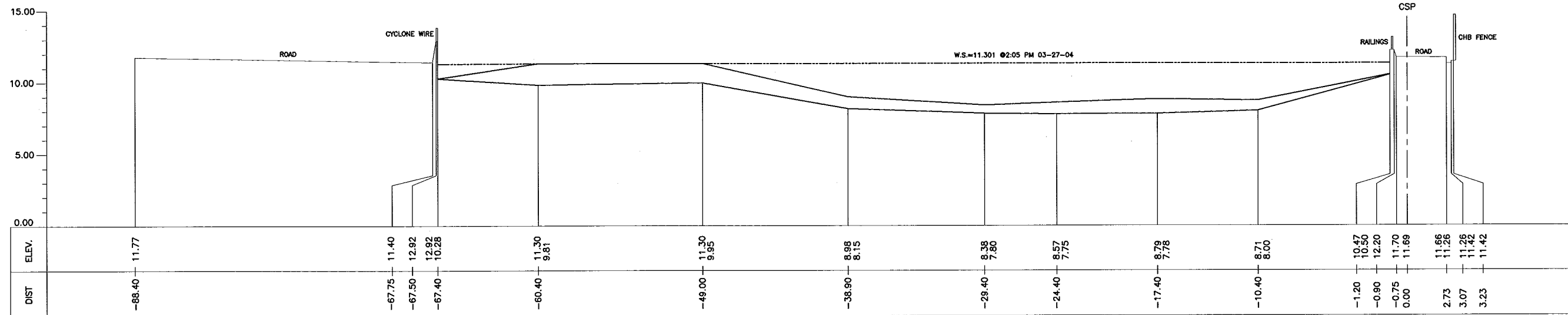


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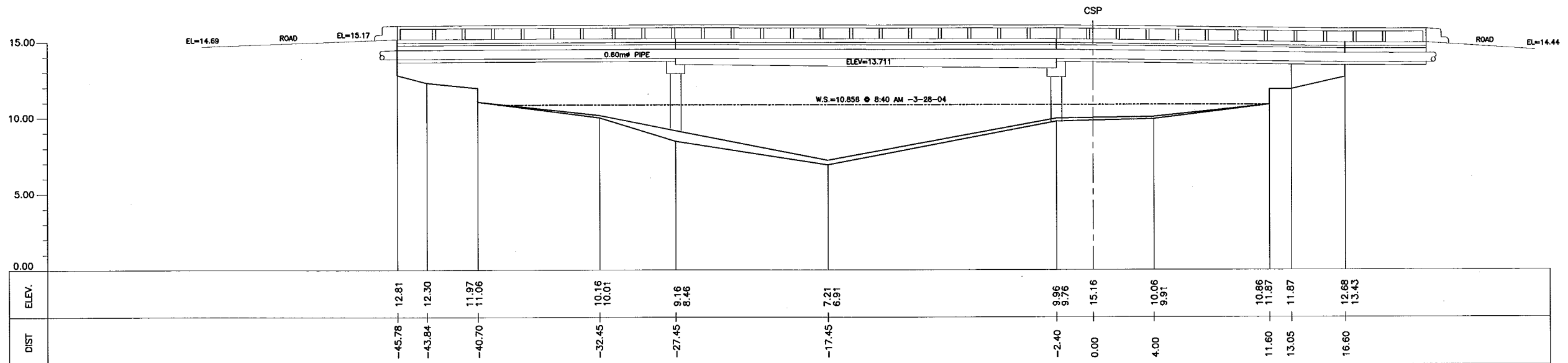


<p>CONSULTANTS</p>		<p>REPUBLIC OF THE PHILIPPINES</p>		<p>PROJECT & LOCATION:</p> <p>THE STUDY ON DRAINAGE IMPROVEMENT IN THE CORE AREA OF METROPOLITAN MANILA</p>	<p>SHT. CONTENTS:</p> <p>CROSS-SECTION ESTERO DE VITAS (NE01) (STA. 0+293 - STA. 0+360)</p>	<p>SHT. NO</p> <p>CS-01 02 06</p>
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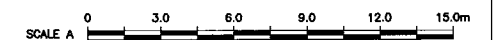
STA. 0+527



STA. 0+761



1 CROSS-SECTION
CS-01 SCALE : A



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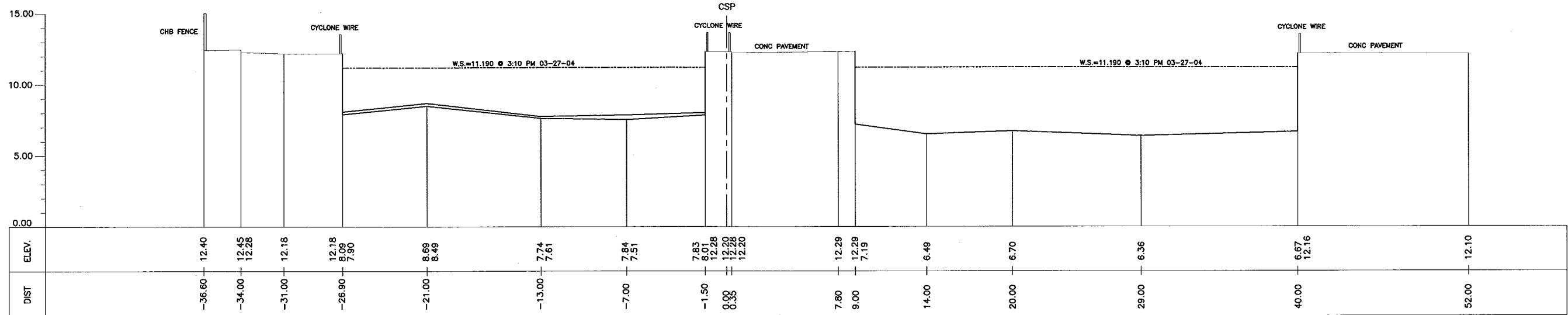
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CROSS-SECTION
ESTERO DE VITAS (NE01)
(STA. 0+527 ~ STA. 0+761)

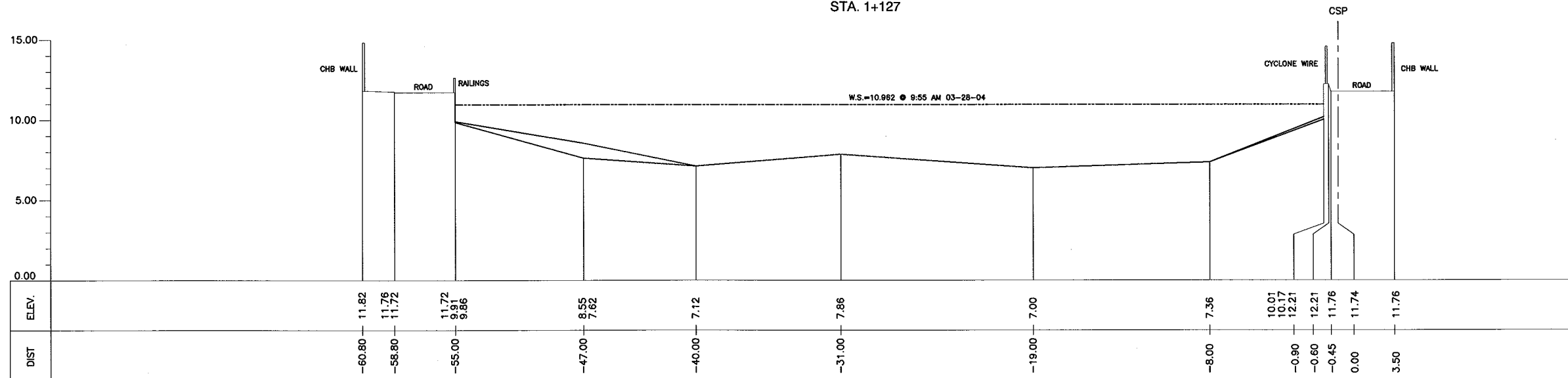
SHT. NO

CS-01
03 06

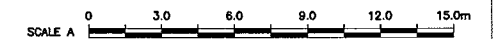
STA. 0+911



STA. 1+127



1 CROSS-SECTION
CS-01 SCALE : A



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METROPOLITAN MANILA DEVELOPMENT AUTHORITY

PROJECT & LOCATION:

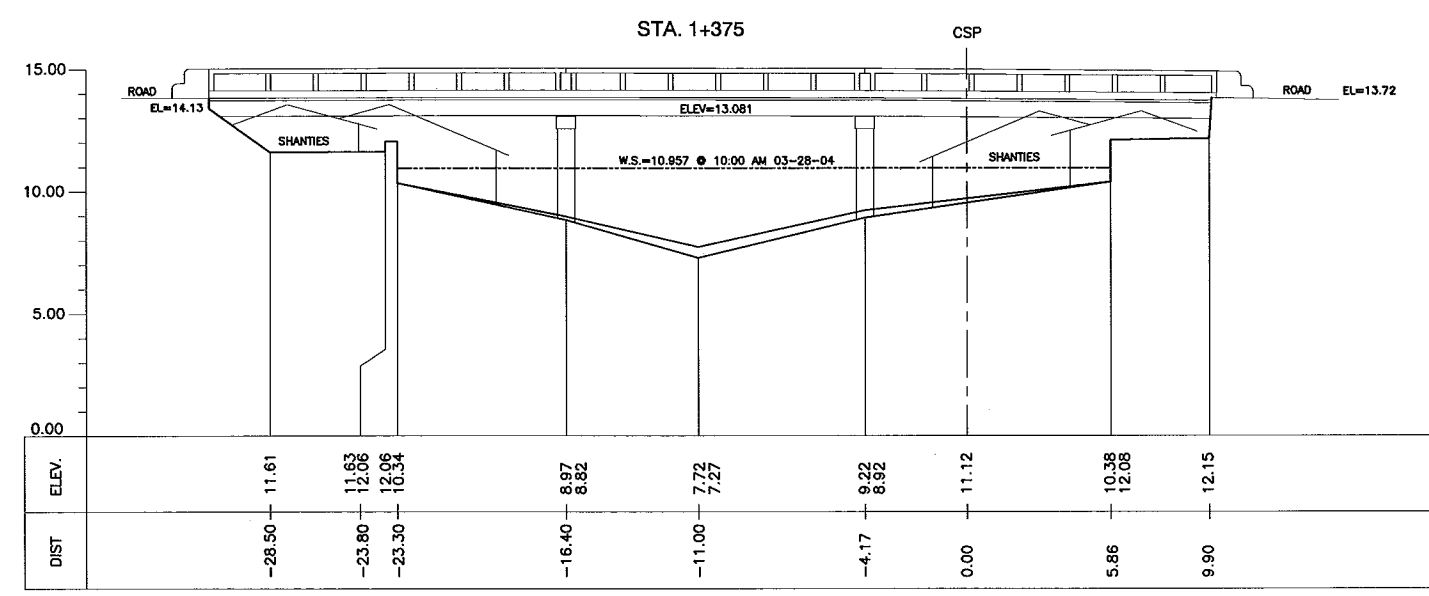
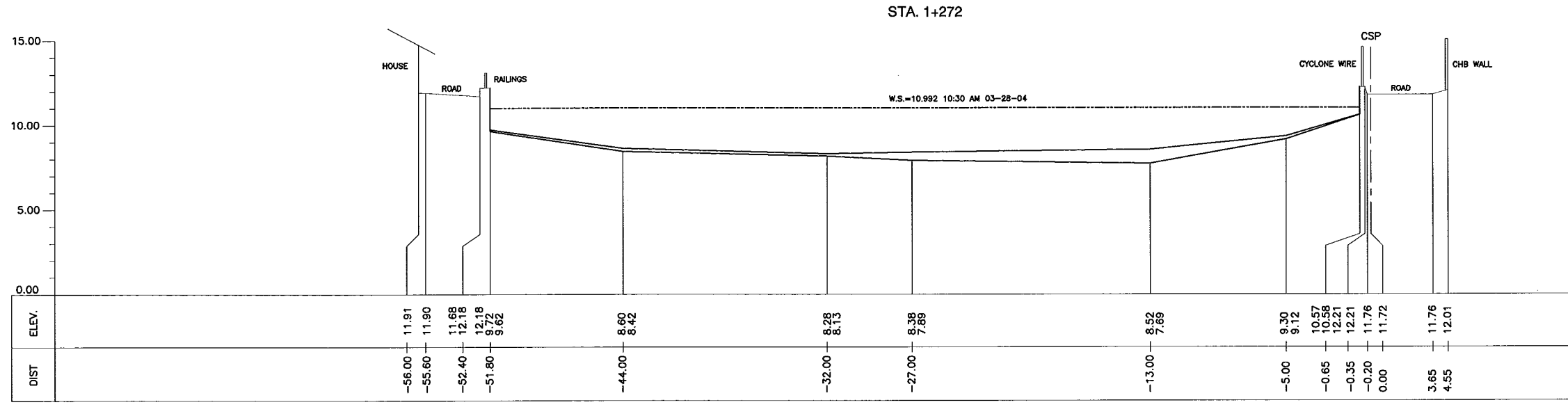
THE STUDY ON DRAINAGE IMPROVEMENT
IN THE CORE AREA OF METROPOLITAN MANILA

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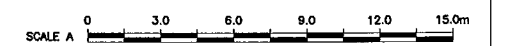
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(STA. 0+911 ~ STA. 1+127)

SHT. NO

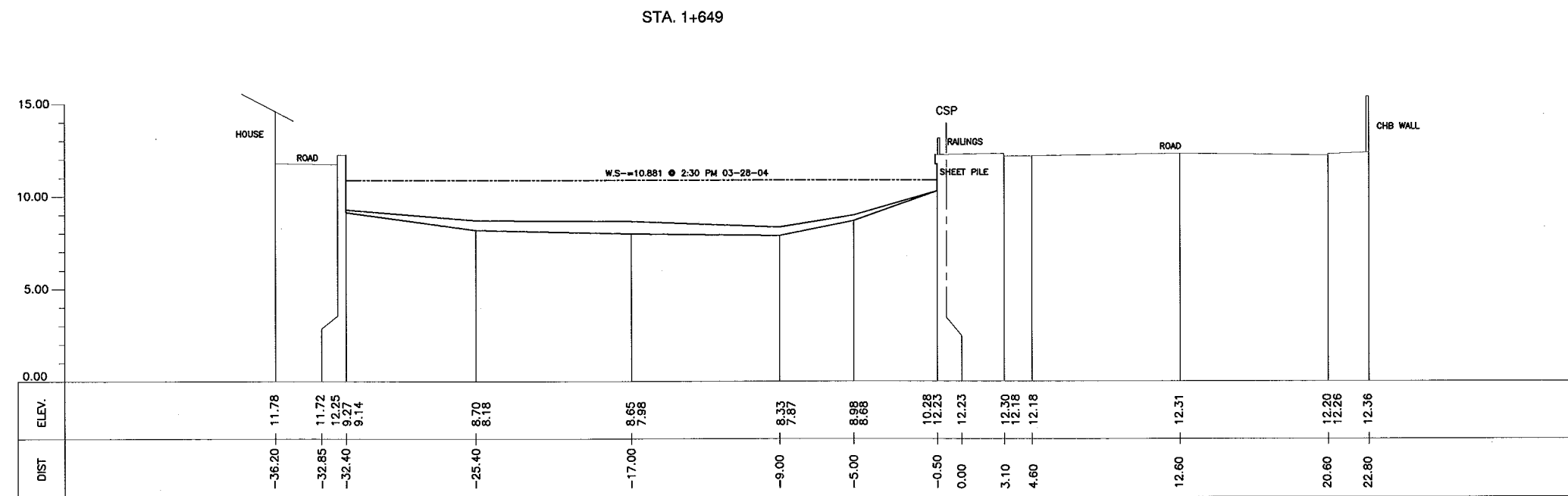
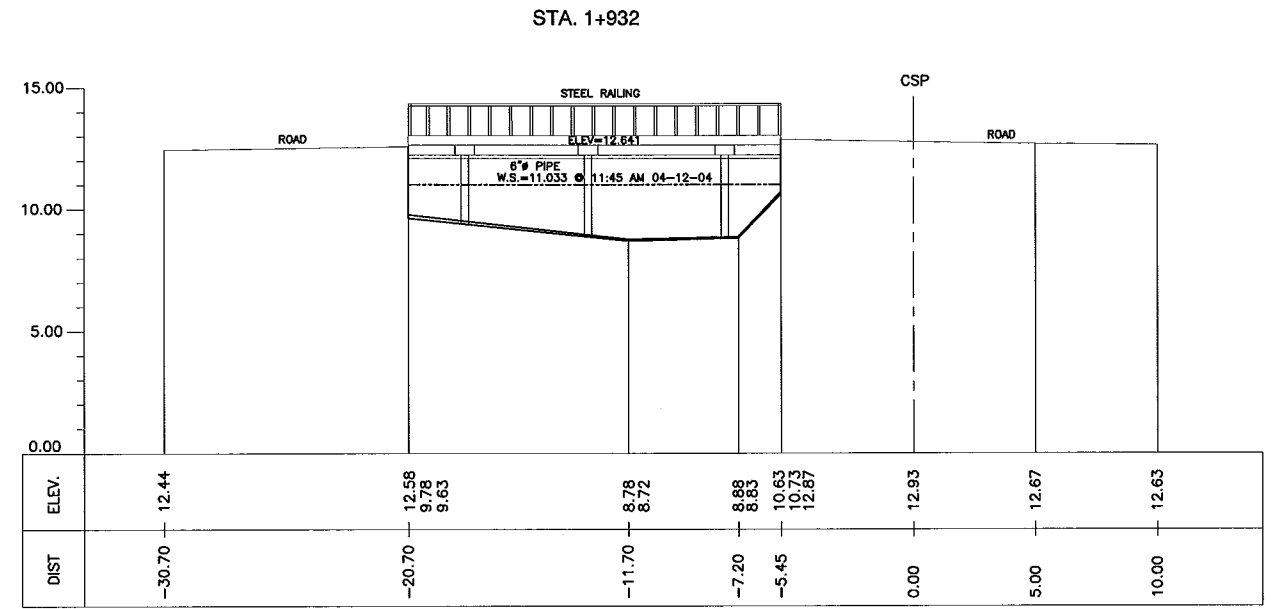
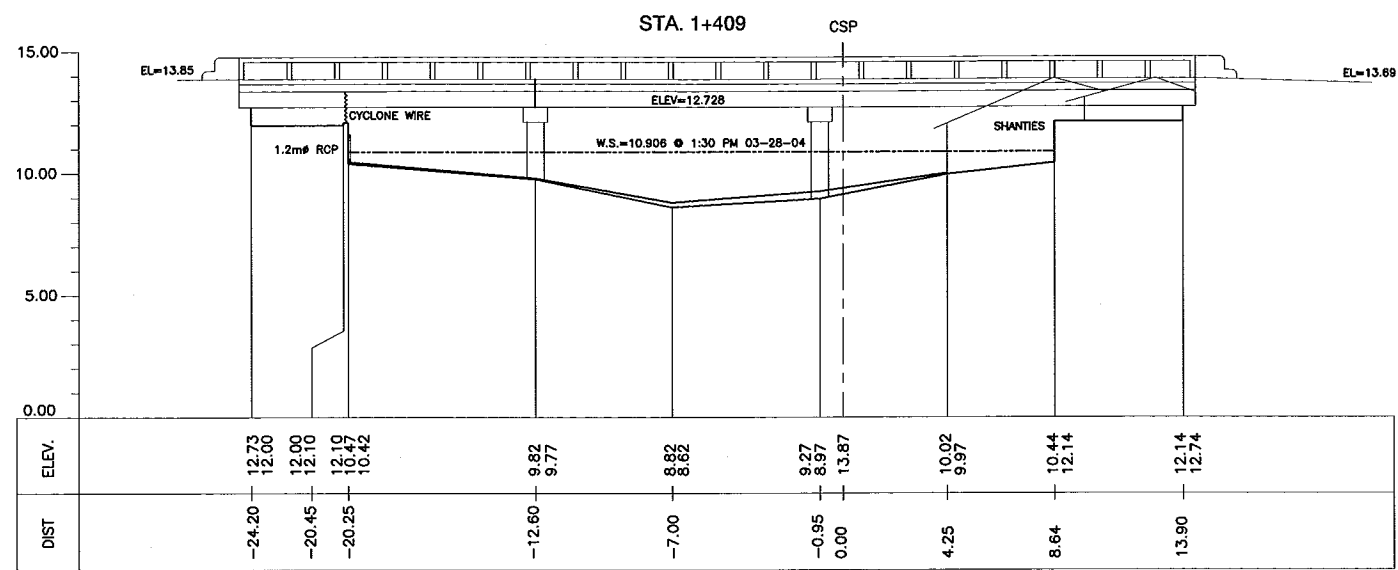
CS-01
04 05



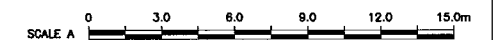
1 CROSS-SECTION
CS-01 SCALE : A



<p>CONSULTANTS</p>	<p>REPUBLIC OF THE PHILIPPINES</p>	<p>PROJECT & LOCATION:</p> <p style="text-align: center;">THE STUDY ON DRAINAGE IMPROVEMENT IN THE CORE AREA OF METROPOLITAN MANILA</p>	<p>SHT. CONTENTS:</p> <p style="text-align: center;">CROSS-SECTION ESTERO DE VITAS (NE01) (STA. 1+272 - STA. 1+375)</p>	<p>SHT. NO</p> <p style="border: 1px solid black; border-radius: 50%; padding: 2px;">CS-01 05 06</p>
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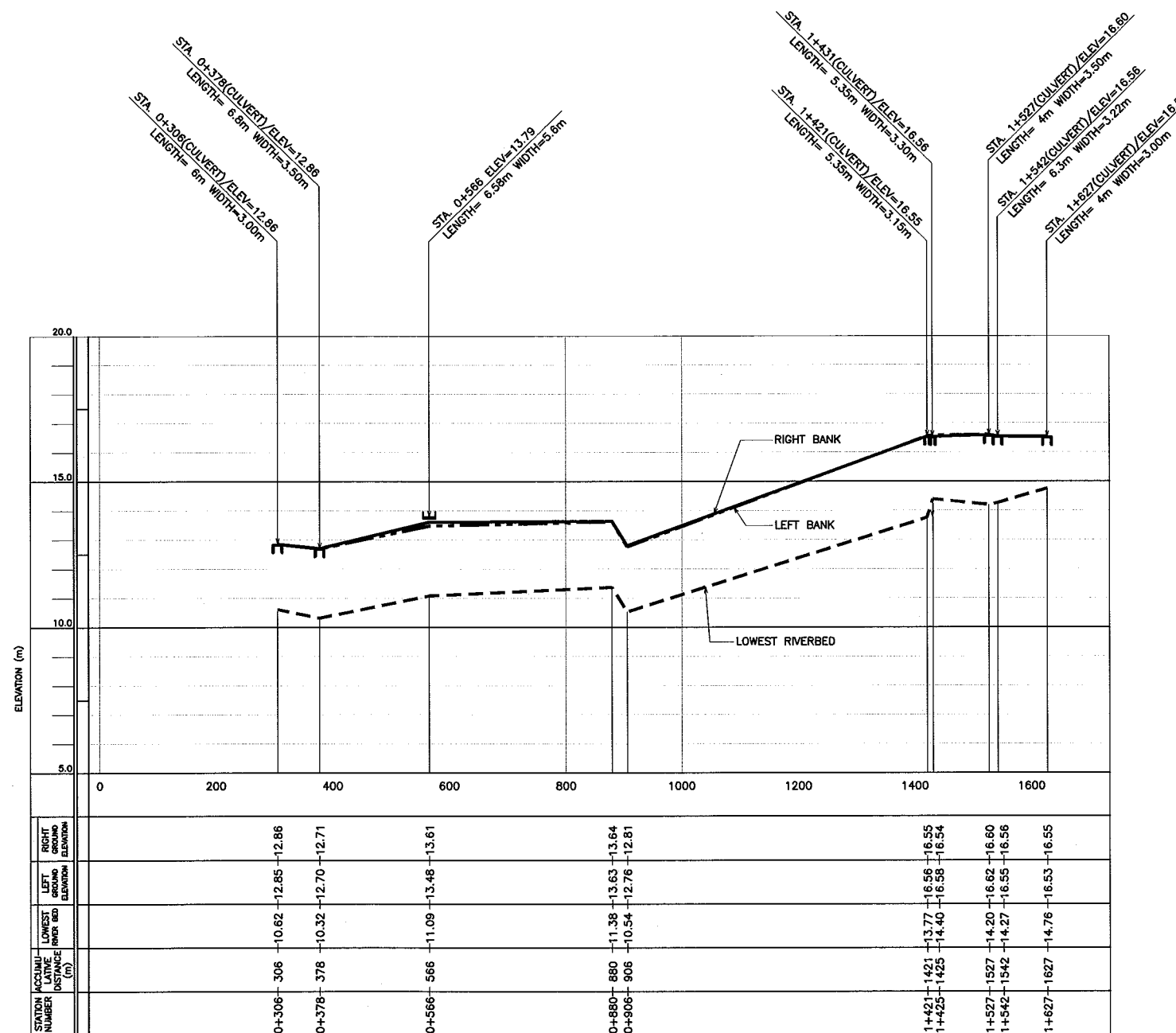


1 CROSS-SECTION
CS-01 SCALE : A



CONSULTANTS PACIFIC CONSULTANTS INTERNATIONAL IN ASSOCIATION WITH NIKKEN CONSULTANTS, INC.		REPUBLIC OF THE PHILIPPINES JICA JAPAN INTERNATIONAL COOPERATION AGENCY FOR DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS METROPOLITAN MANILA DEVELOPMENT AUTHORITY		PROJECT & LOCATION: THE STUDY ON DRAINAGE IMPROVEMENT IN THE CORE AREA OF METROPOLITAN MANILA	SHT. CONTENTS: CROSS-SECTION ESTERO DE VITAS (NE01) (STA. 1+409 ~ STA. 1+932)	SHT. NO CS-01 06 06
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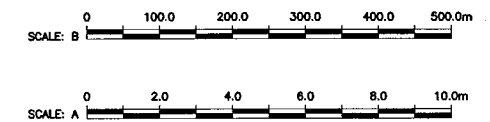
CASILI CREEK (NE03)

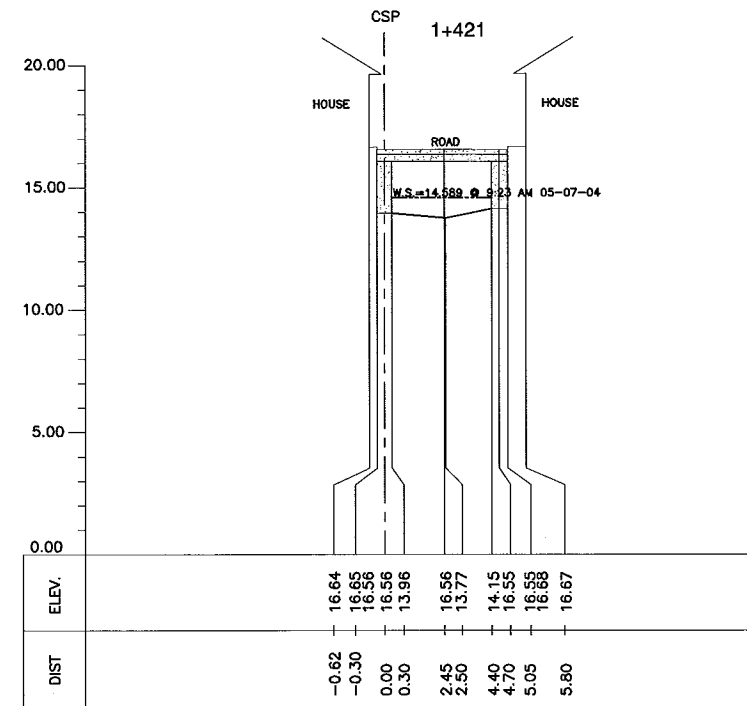
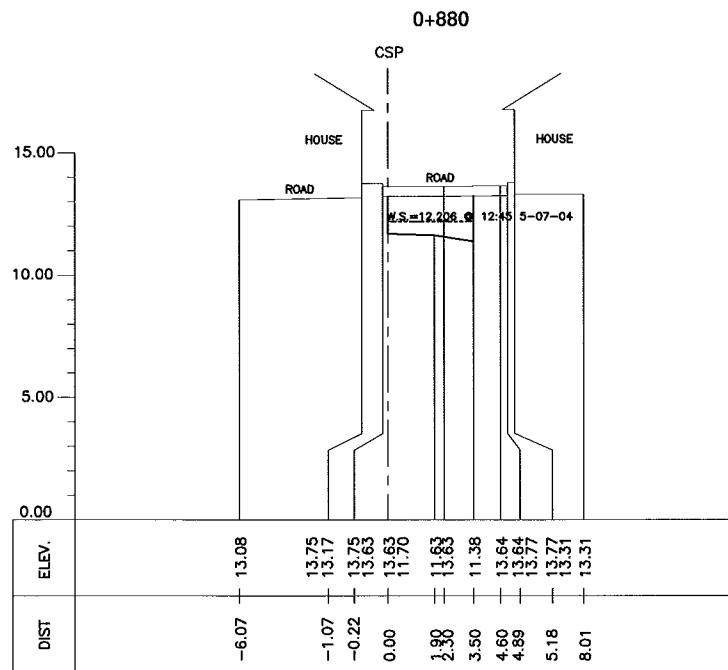
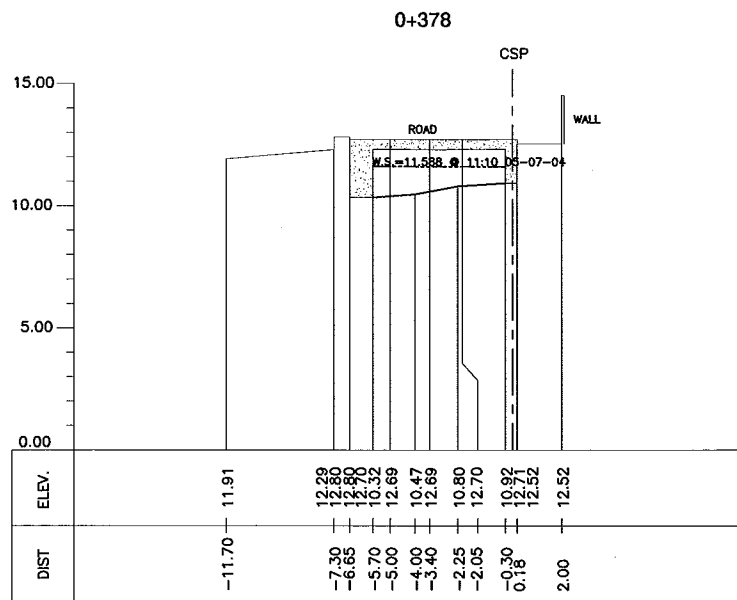
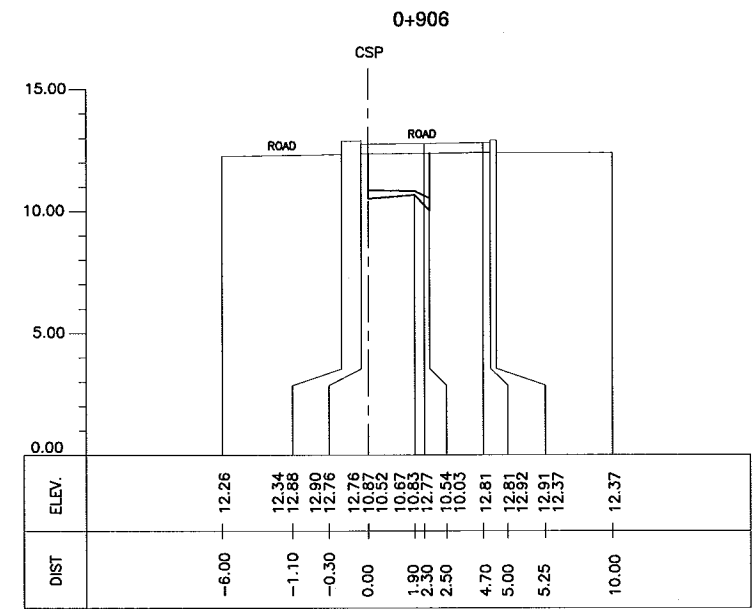
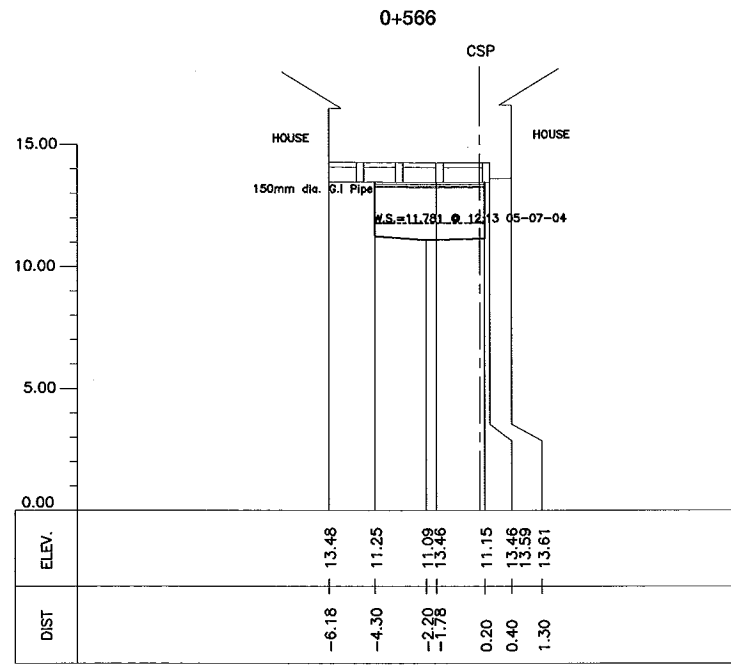
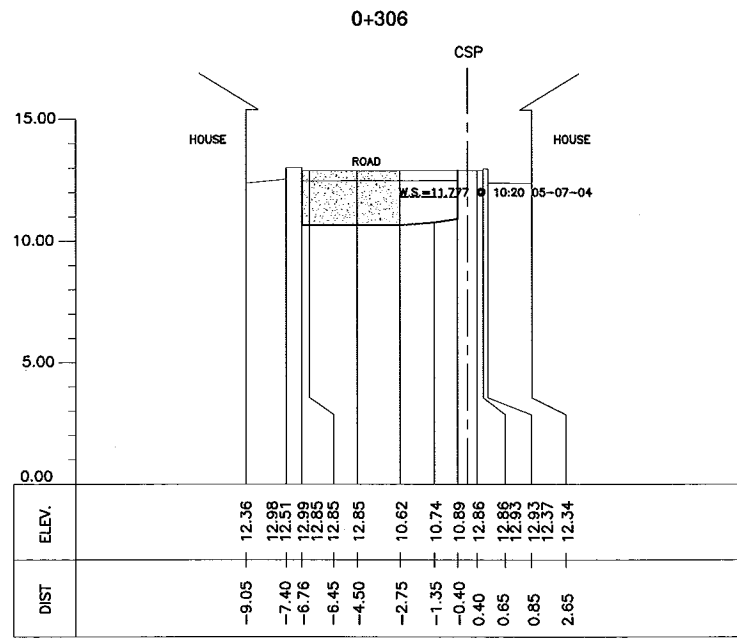


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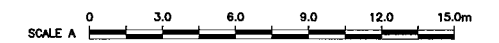
- : RIGHT BANK
- - - : LEFT BANK
- - - : LOWEST RIVERBED
- : BRIDGE
- ▭ : CULVERT

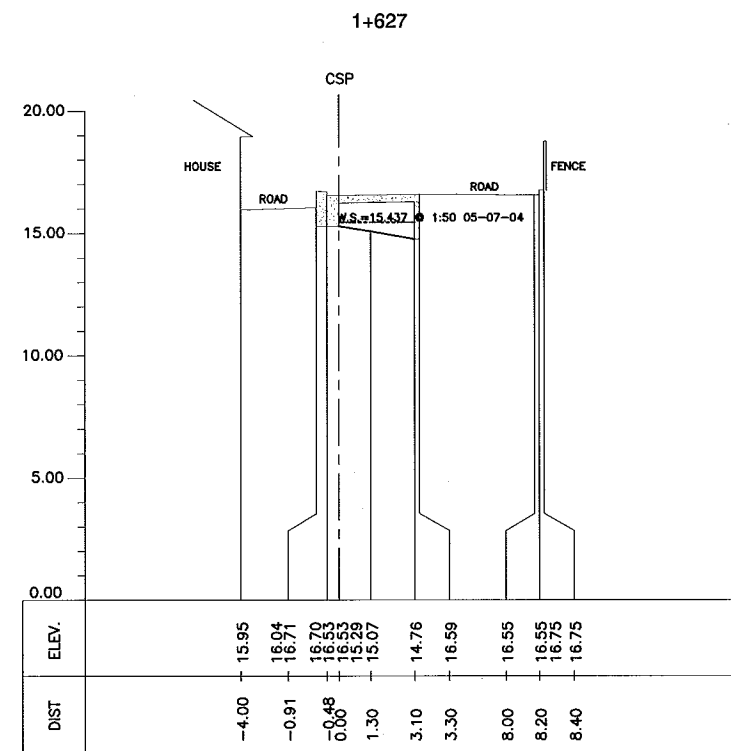
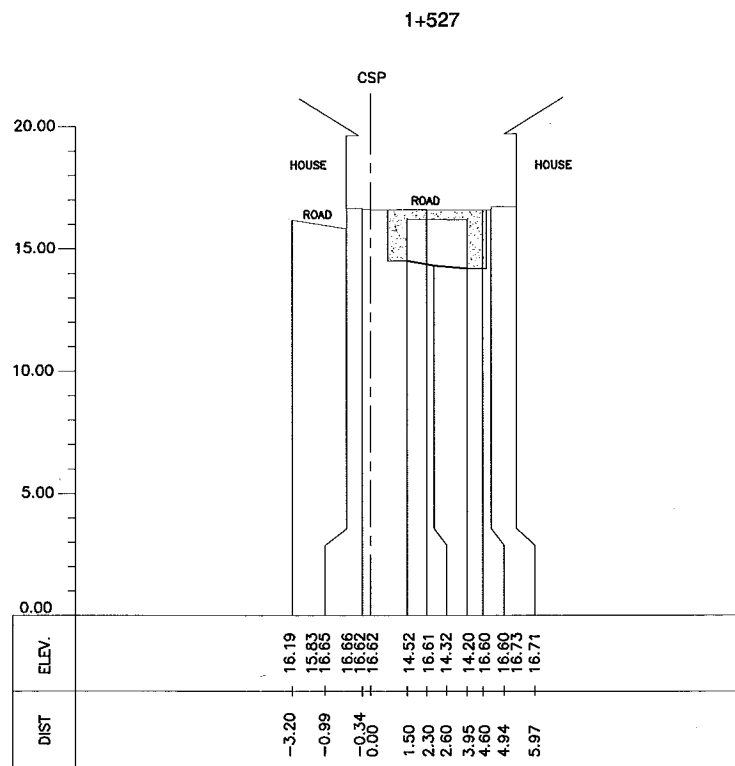
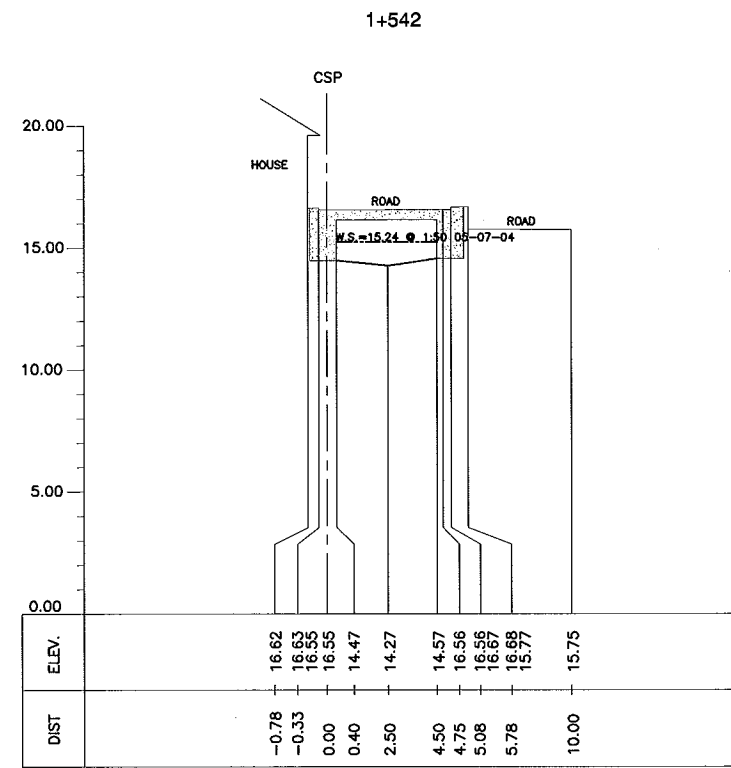
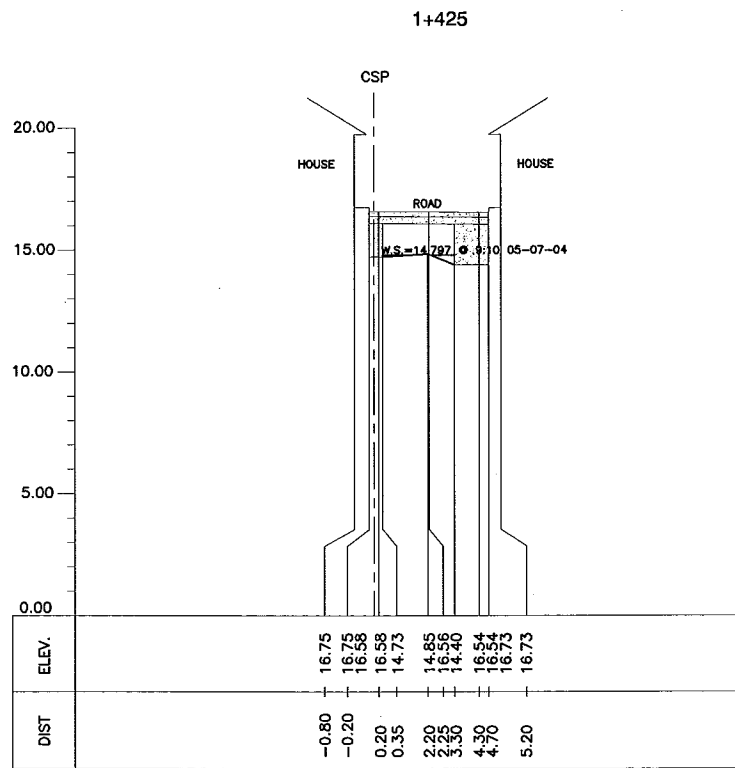
1 LONGITUDINAL PROFILE
 LP-02 VER. = SCALE : A / HOR. = SCALE : B



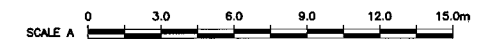


1 CROSS-SECTION
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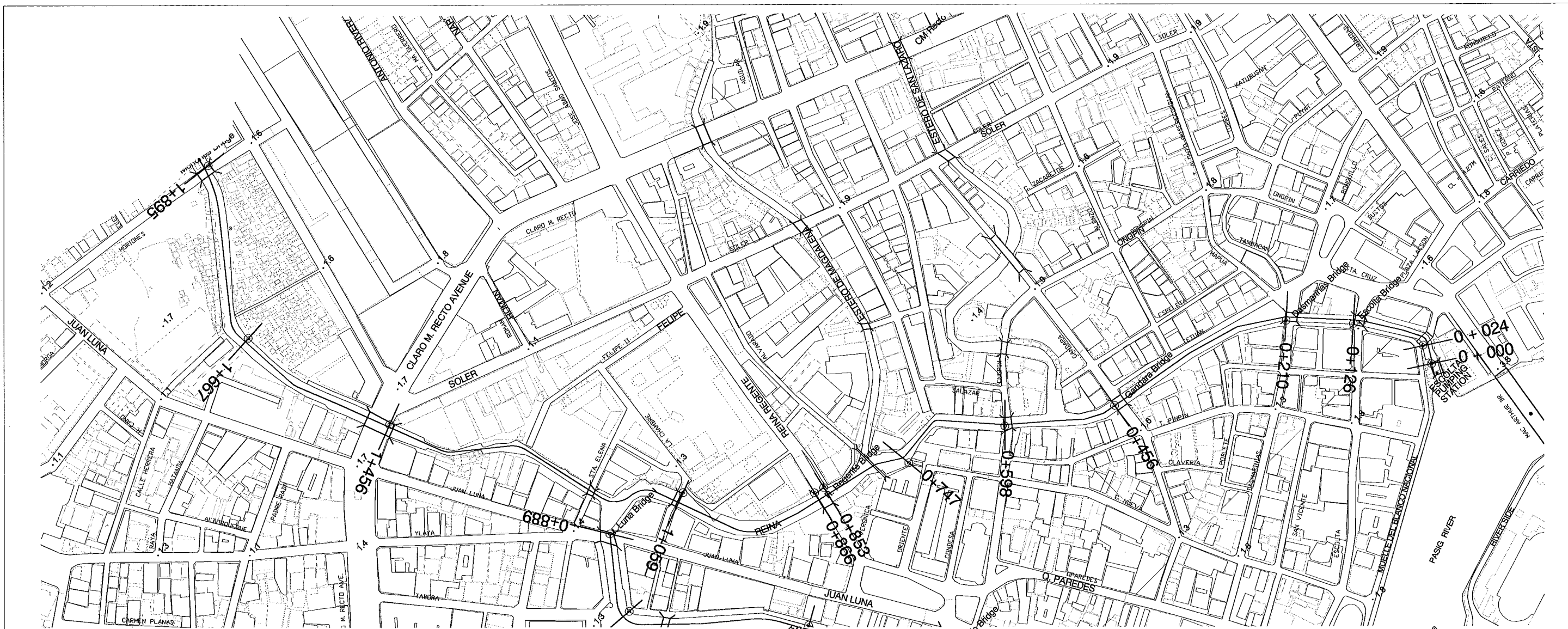


1 CROSS-SECTION
CS-02 SCALE : A



ESTERO DE LA REINA

(NE04)



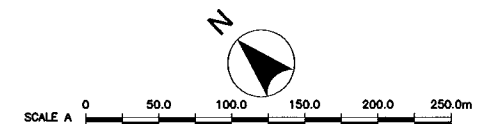
CROSS-SECTION LOCATION

REFERENCE POINTS:

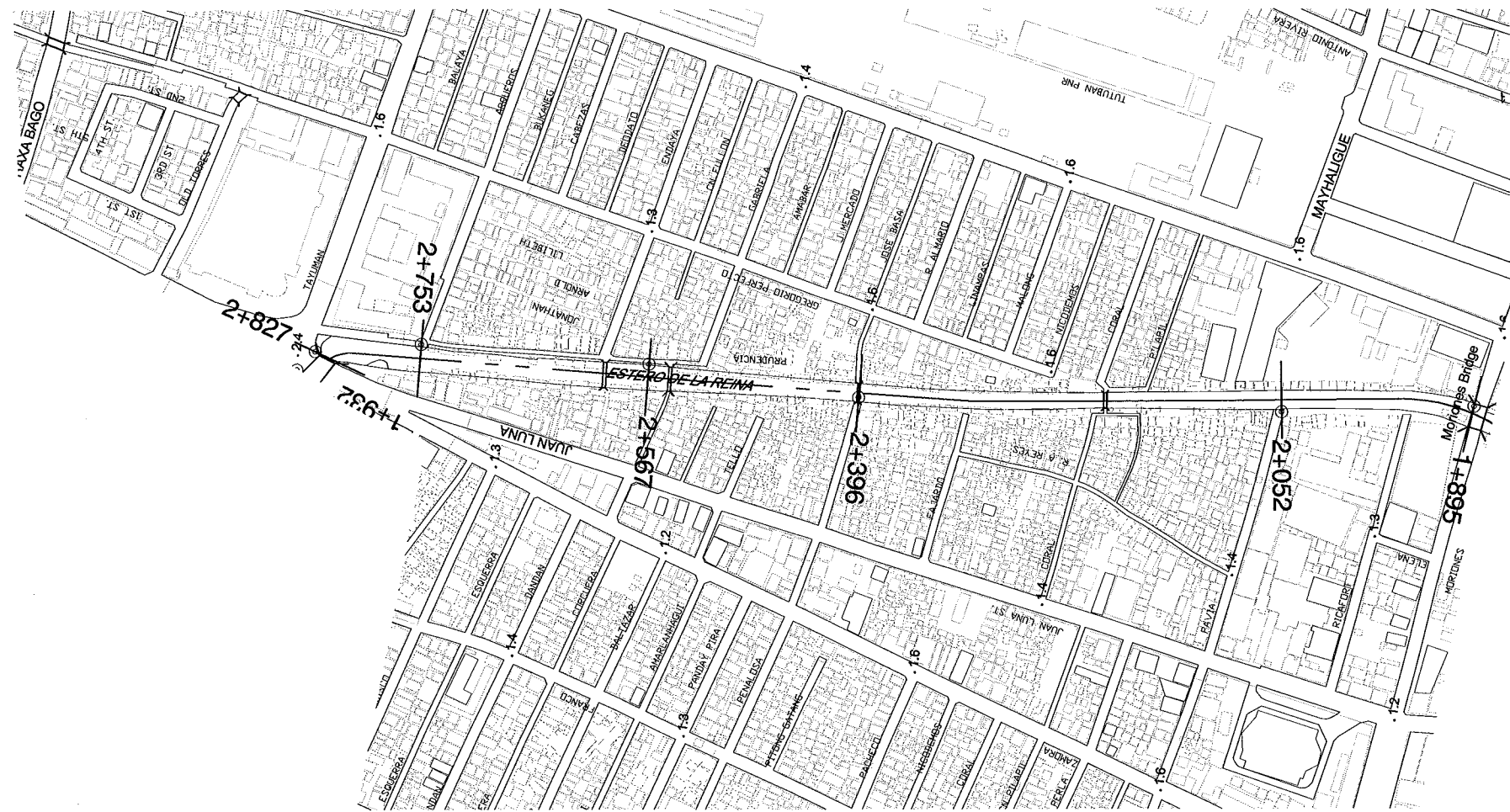
STATION	EASTING	NORTHING
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0+024	497709.077	1614517.787
0+126	497666.303	1614598.755
0+210	497609.245	1614661.244
0+456	497381.464	1614737.252
0+598	497265.769	1614815.647
0+747	497148.184	1614867.578
0+853	497050.703	1614920.812
0+866	497037.936	1614924.028
1+059	496921.046	1615040.195
1+456	496720.142	1615359.651
1+667	496670.529	1615560.940

1
CL-03

ESTERO DE LA REINA (NE04)
TOPOGRAPHIC MAP
SCALE : A



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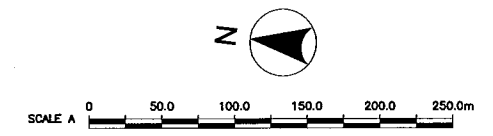


CROSS-SECTION LOCATION

REFERENCE POINTS:

STATION	EASTING	NORTHING
1+895	496787.963	1615750.309
2+052	496764.002	1615904.934
2+396	496732.659	1616247.479
2+567	496737.906	1616419.673
2+753	496730.564	1616605.209
2+827	496714.107	1616689.809

1
ESTERO DE LA REINA (NE04)
TOPOGRAPHIC MAP
CL-03 SCALE : A



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PACIFIC CONSULTANTS INTERNATIONAL
IN ASSOCIATION WITH
 NIKKEN CONSULTANTS, INC.

REPUBLIC OF THE PHILIPPINES

JAPAN INTERNATIONAL COOPERATION AGENCY
FOR
 DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
 METROPOLITAN MANILA DEVELOPMENT
AUTHORITY

PROJECT & LOCATION:

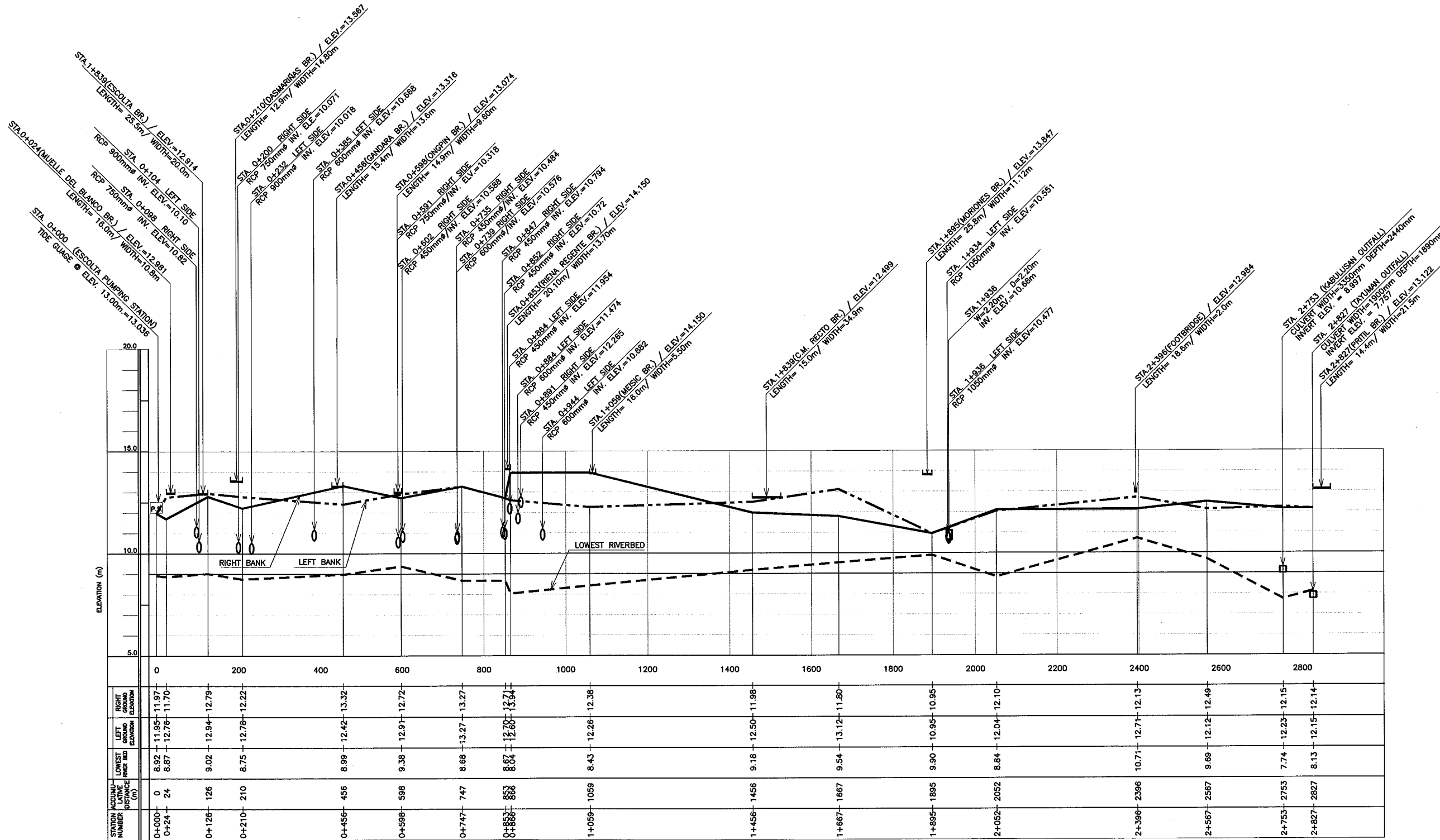
THE STUDY ON DRAINAGE IMPROVEMENT
IN THE CORE AREA OF METROPOLITAN MANILA

SHT. CONTENTS:

CROSS-SECTION LOCATION
ESTERO DE LA REINA (NE04)
(STA. 1+185 ~ STA. 2+287)

SHT. NO

CL-03
02 | 02

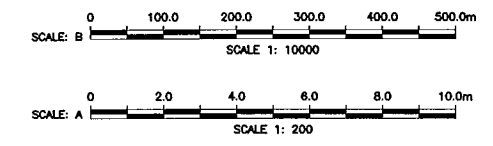


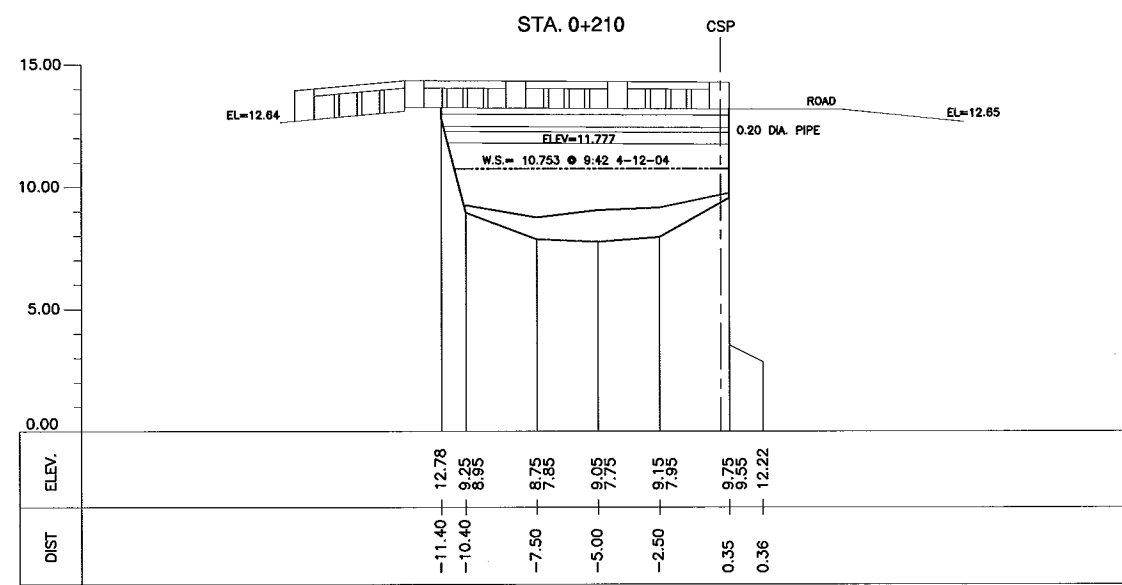
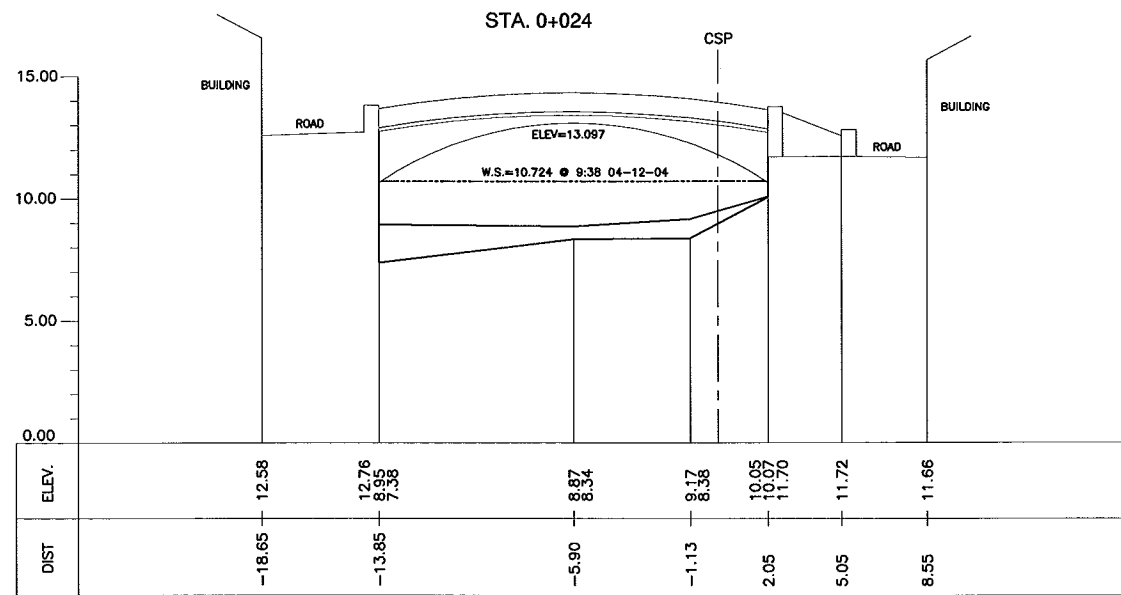
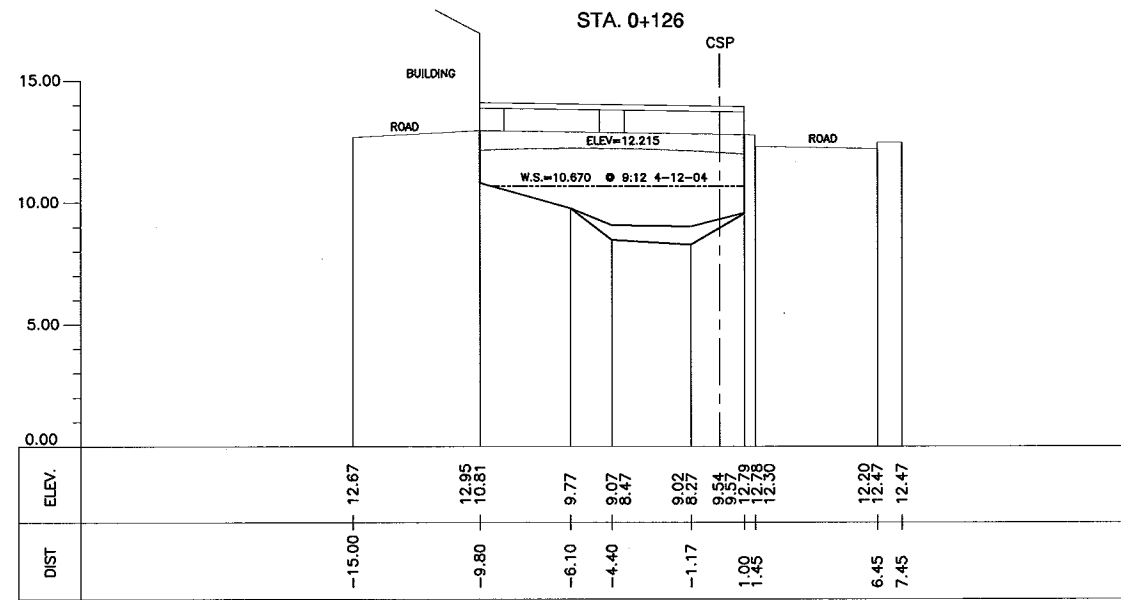
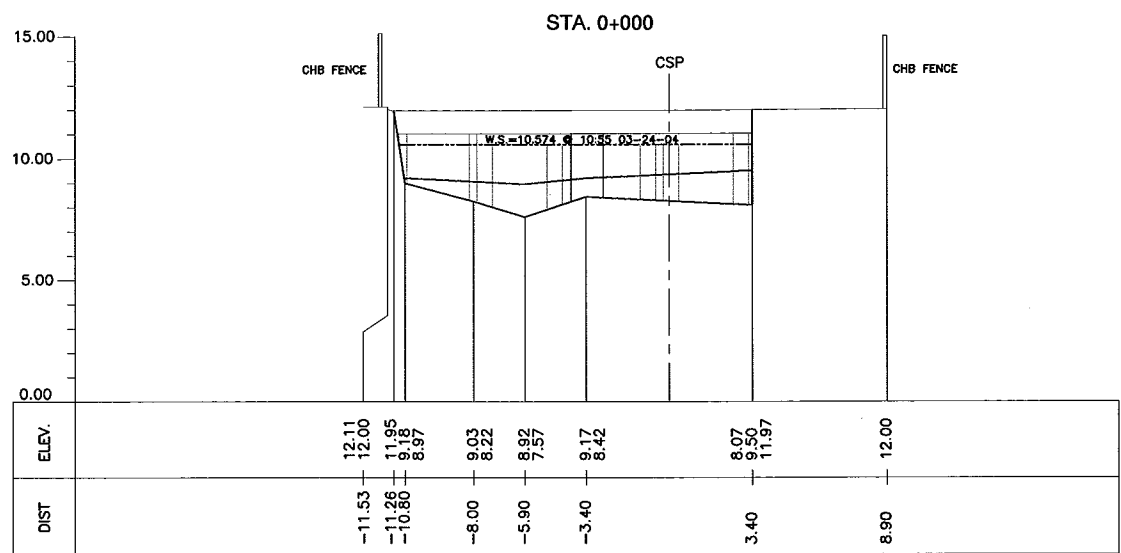
STATION NUMBER	ACCUMULATED DISTANCE (m)	LOWEST RIVER BED ELEVATION (m)	LEFT GROUND ELEVATION (m)	RIGHT GROUND ELEVATION (m)
0+000	0	8.92	11.95	11.97
0+024	24	8.87	12.76	11.70
0+126	126	9.02	12.94	12.79
0+210	210	8.75	12.78	12.22
0+456	456	8.99	12.42	13.32
0+598	598	9.38	12.91	12.72
0+747	747	8.68	13.27	13.27
0+886	886	8.67	12.80	12.71
1+059	1059	8.43	12.26	12.38
1+456	1456	9.18	12.50	11.98
1+667	1667	9.54	13.12	11.80
1+895	1895	9.90	10.95	10.95
2+052	2052	8.84	12.04	12.10
2+396	2396	10.71	12.71	12.13
2+567	2567	9.69	12.12	12.49
2+753	2753	7.74	12.23	12.15
2+827	2827	8.13	12.15	12.14

LEGEND:

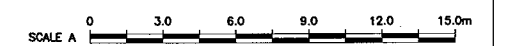
- : RIGHT BANK
- - - : LEFT BANK
- - - : LOWEST RIVERBED
- : BOX CULVERT
- ⌊ : BRIDGE
- : REINFORCE CONCRETE PIPE
- PS : PUMPING STATION

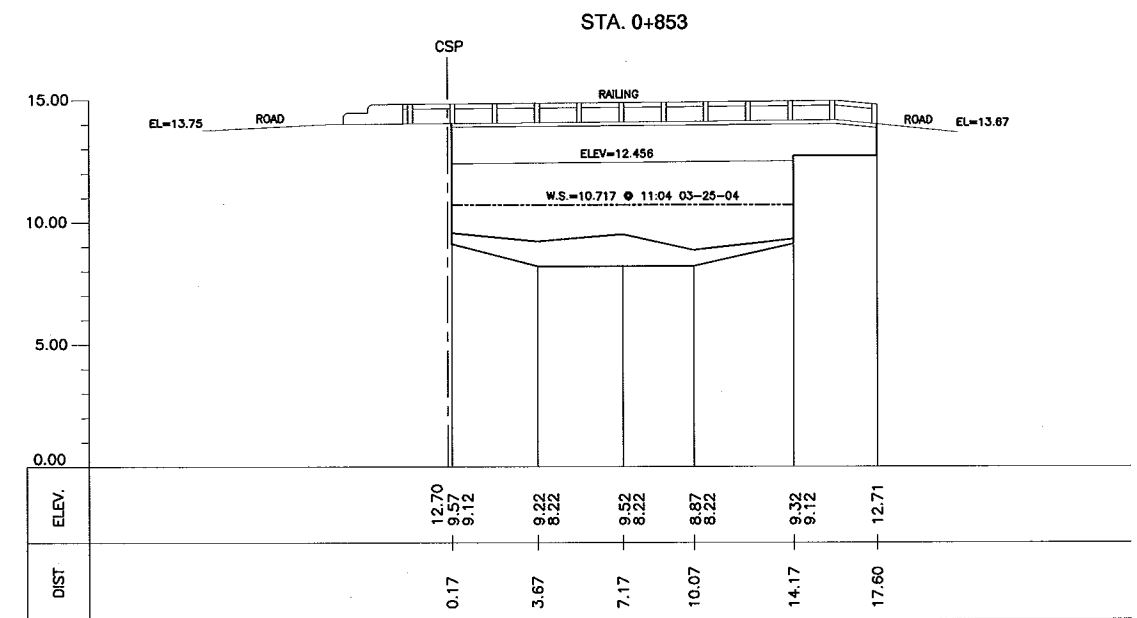
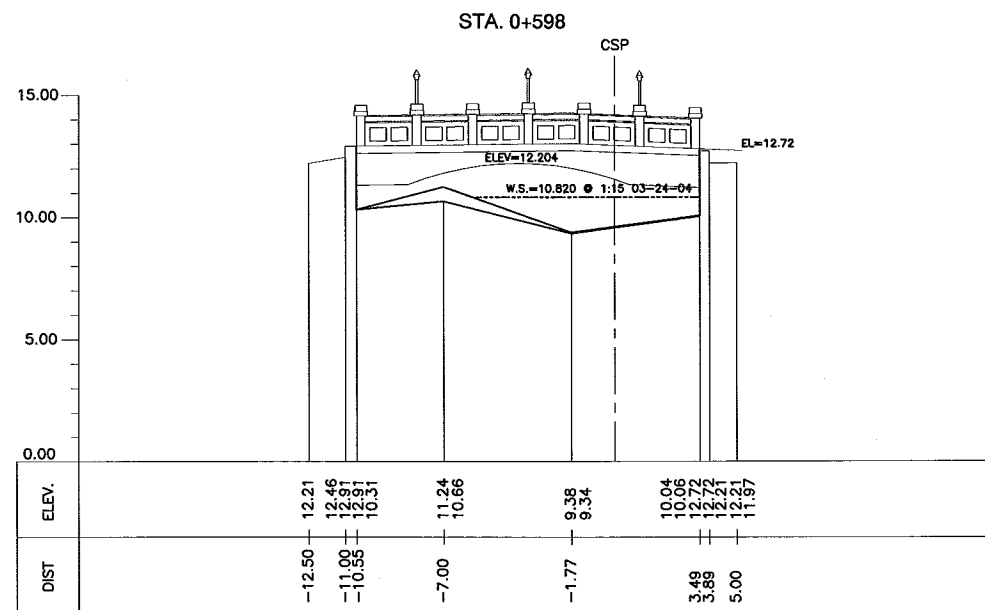
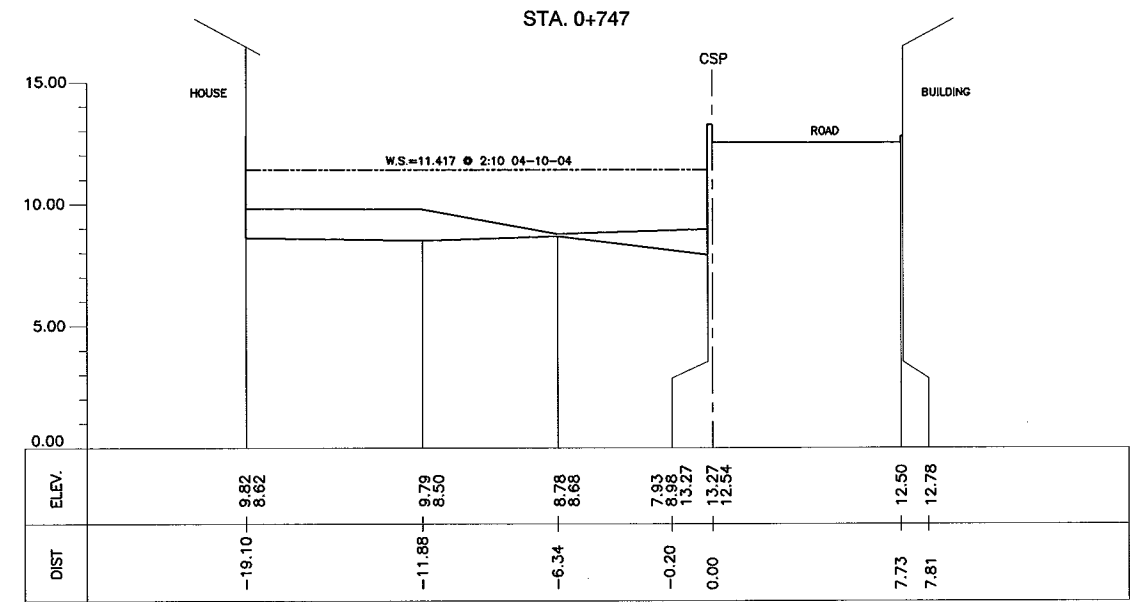
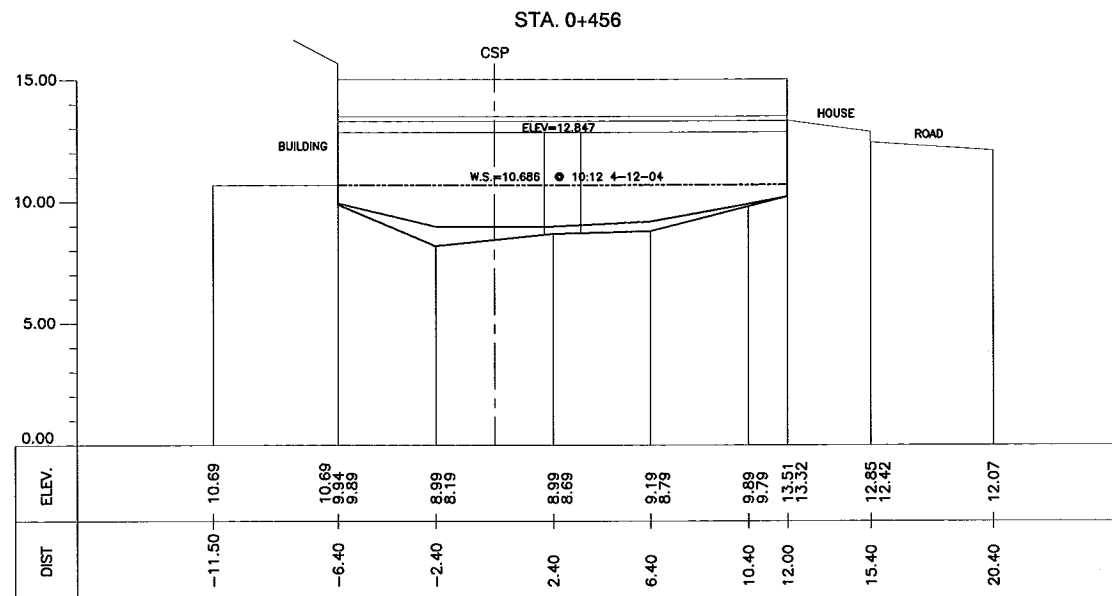
1 LONGITUDINAL PROFILE
 LP-03 VER. = SCALE : A / HOR. = SCALE : B



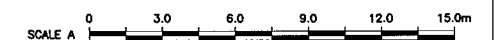


1 CROSS-SECTION
CS-03 SCALE : A





1 CROSS-SECTION
CS-03 SCALE : A



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FOR
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
METROPOLITAN MANILA DEVELOPMENT
AUTHORITY

PROJECT & LOCATION:

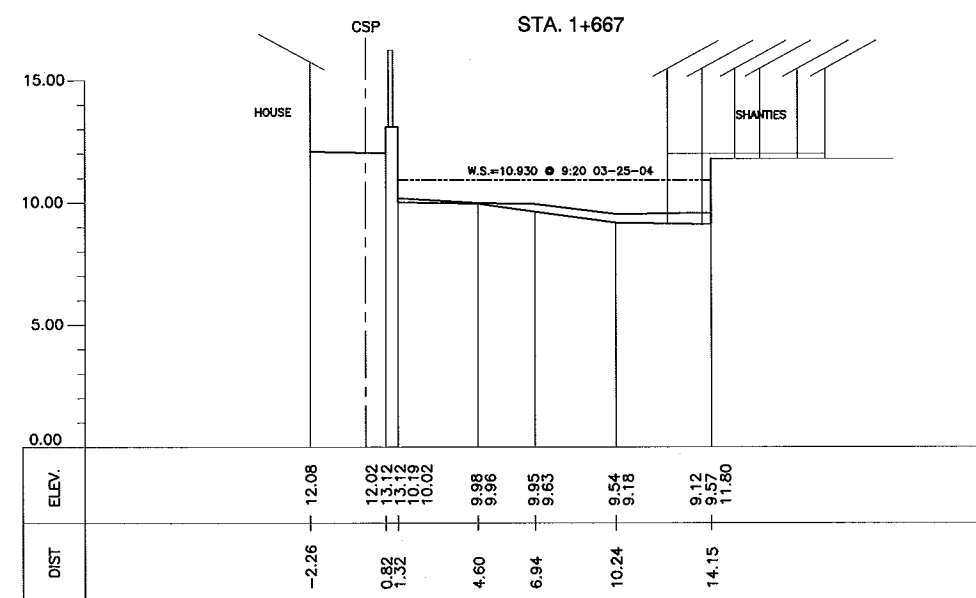
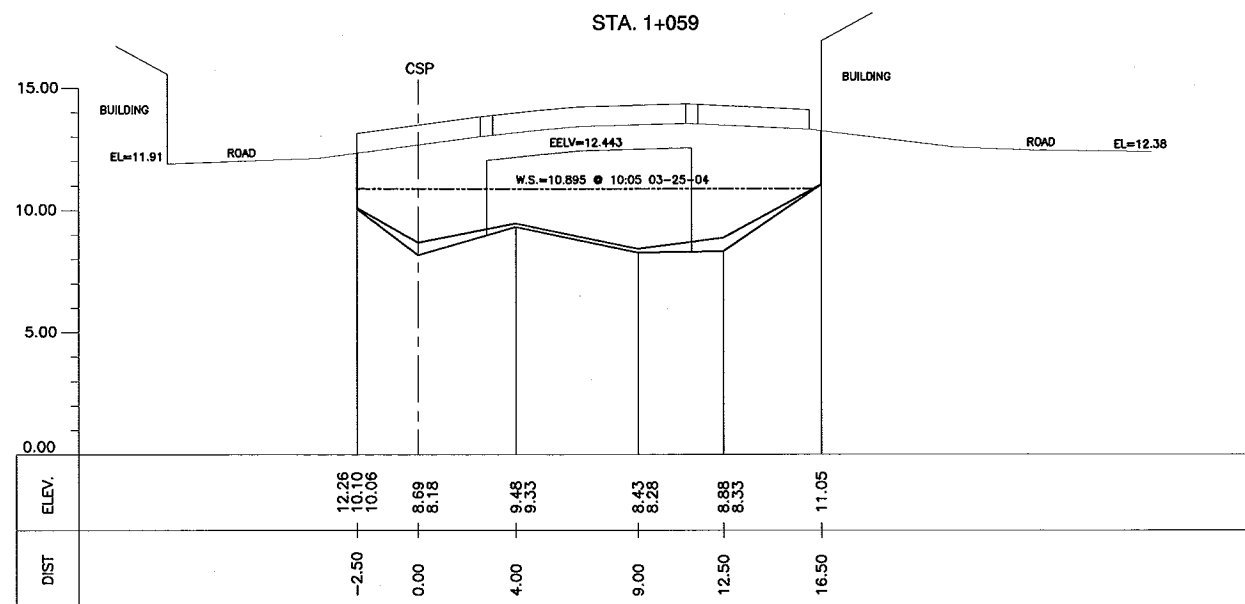
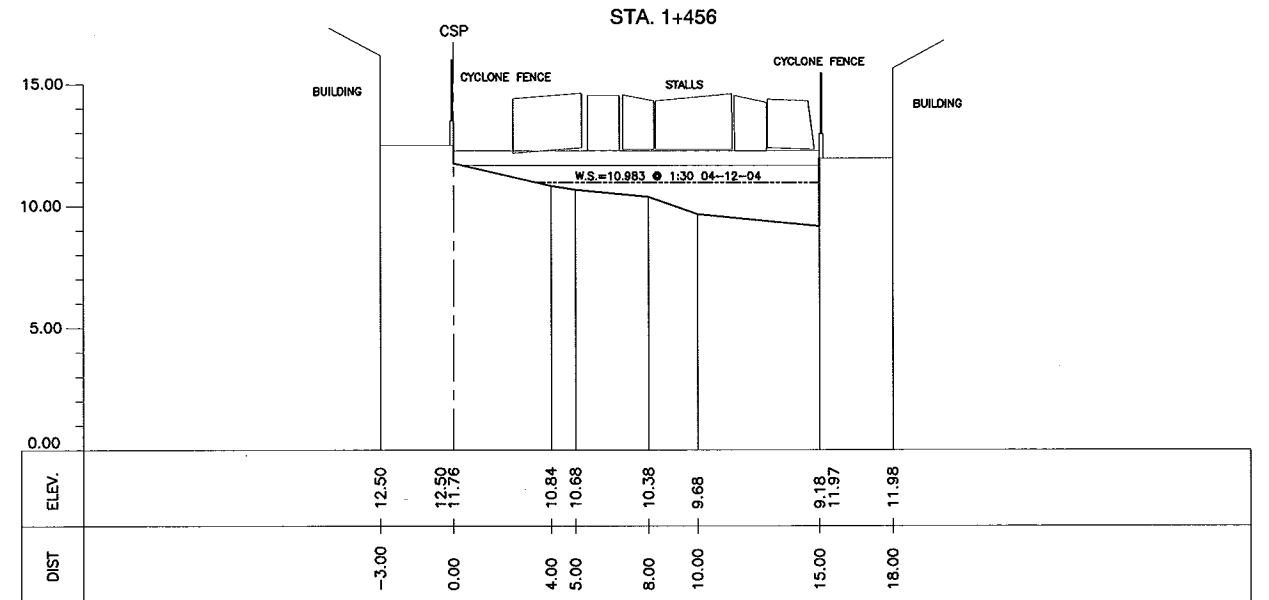
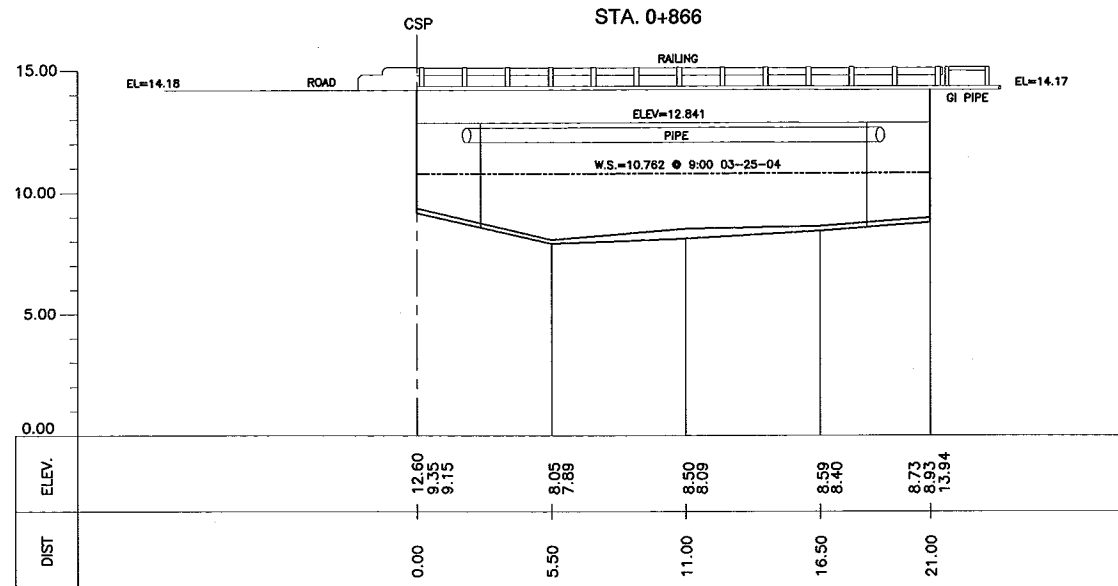
THE STUDY ON DRAINAGE IMPROVEMENT
IN THE CORE AREA OF METROPOLITAN MANILA

SHT. CONTENTS:

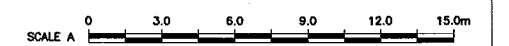
CROSS-SECTION
ESTERO DELA REINA (NE04)
(STA. 0+456- STA. 0+853)

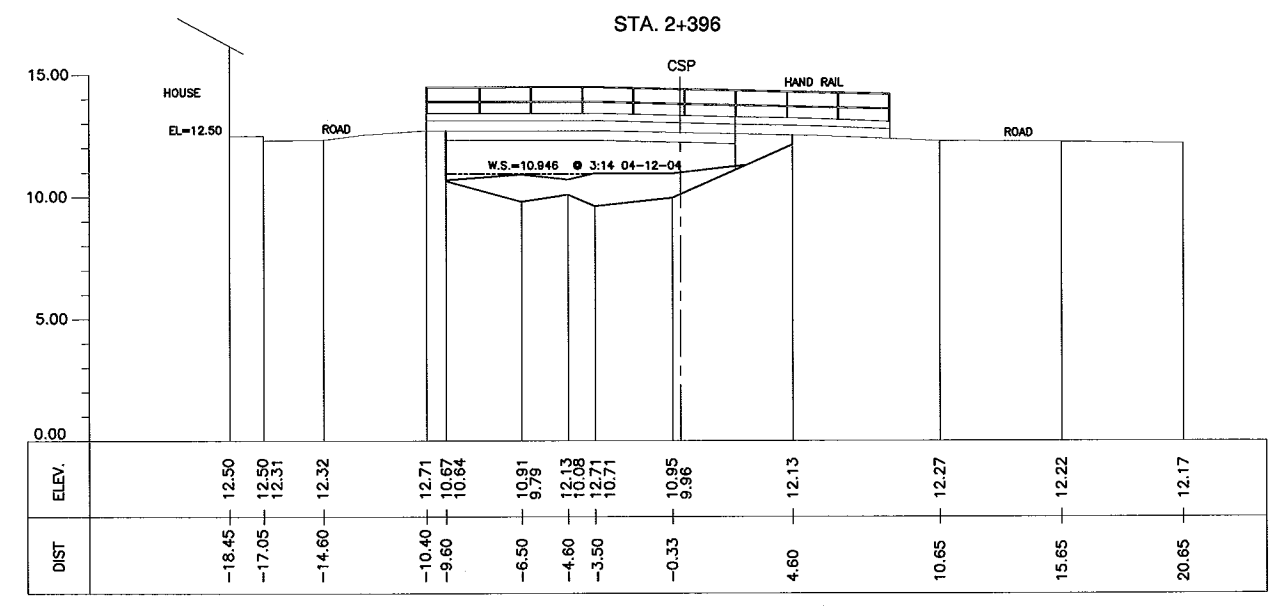
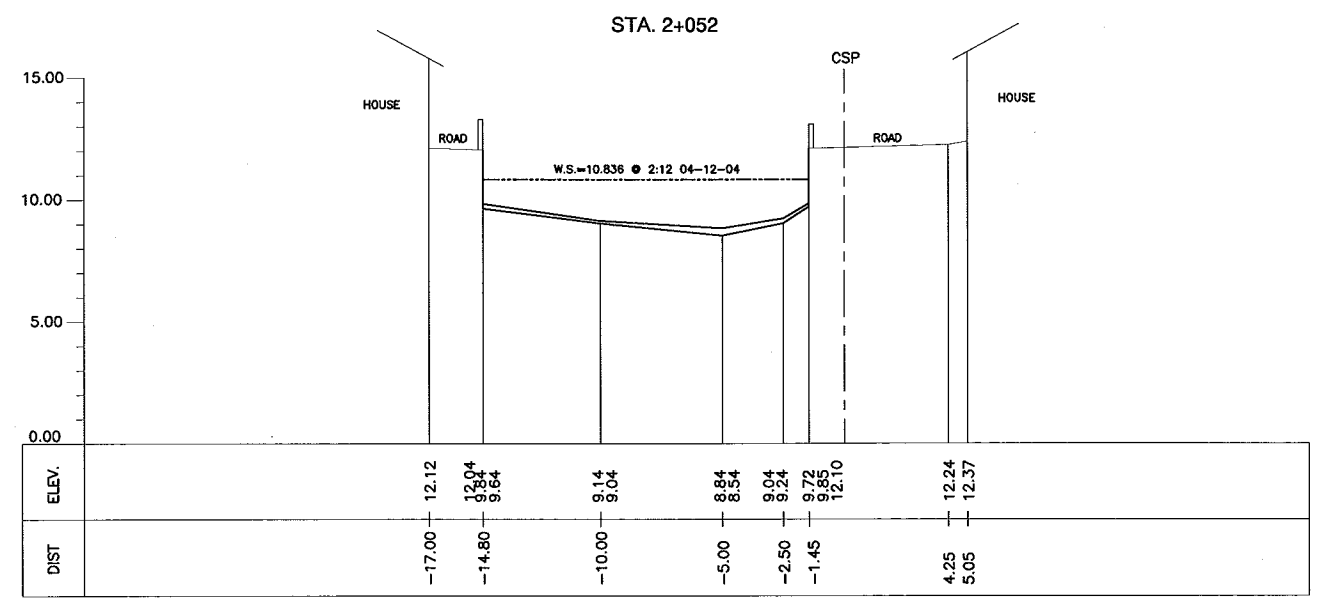
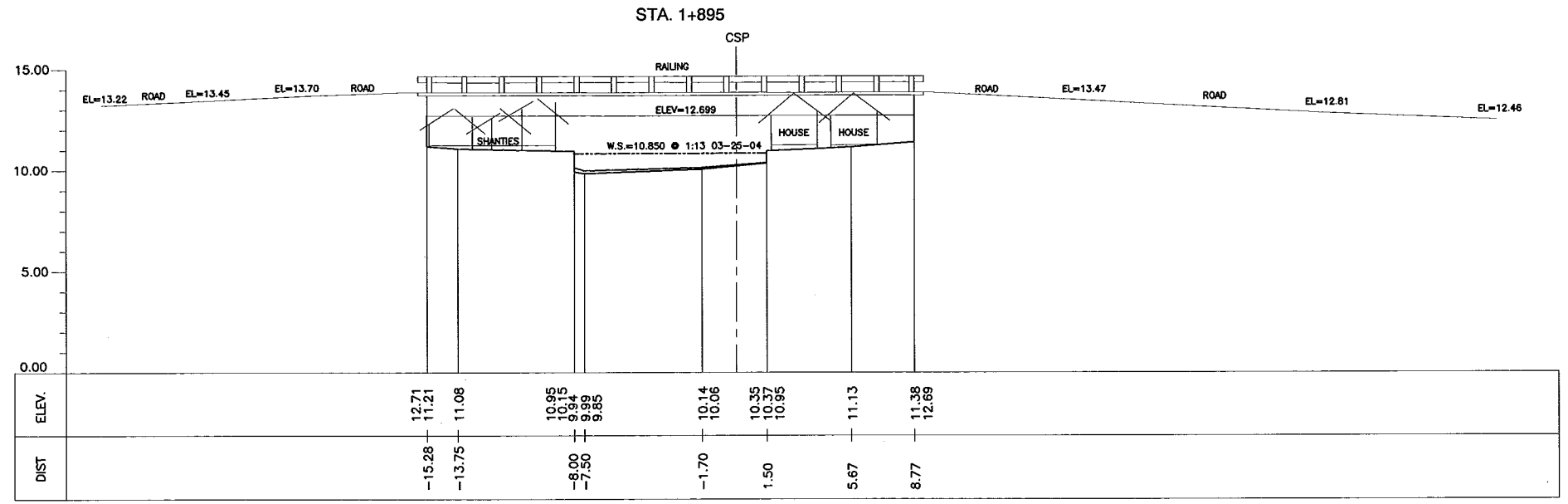
SHT. NO

CS-03
02 05

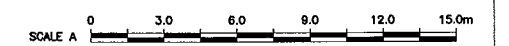


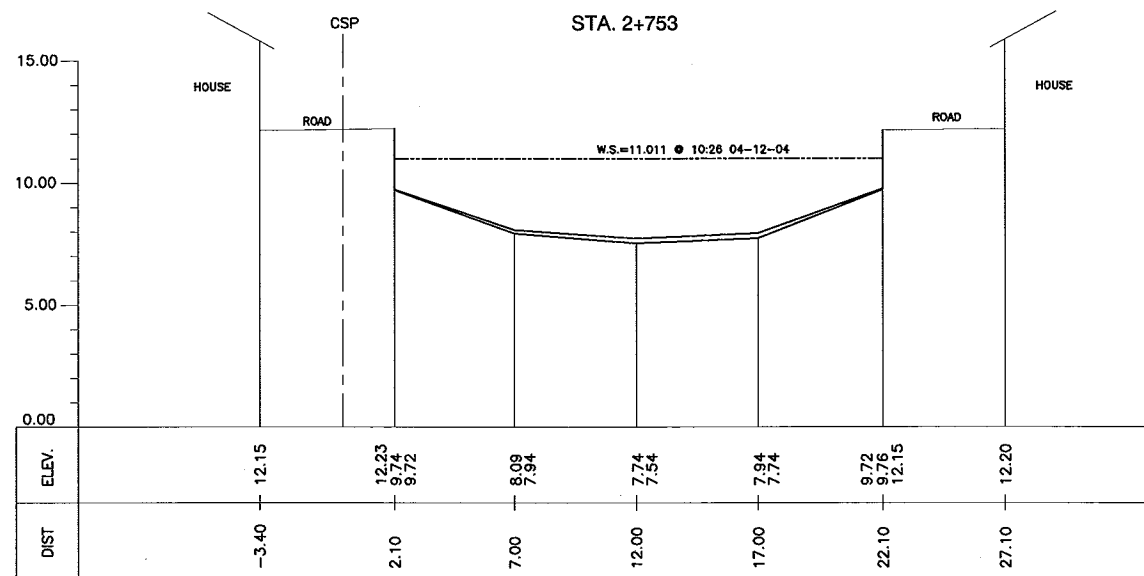
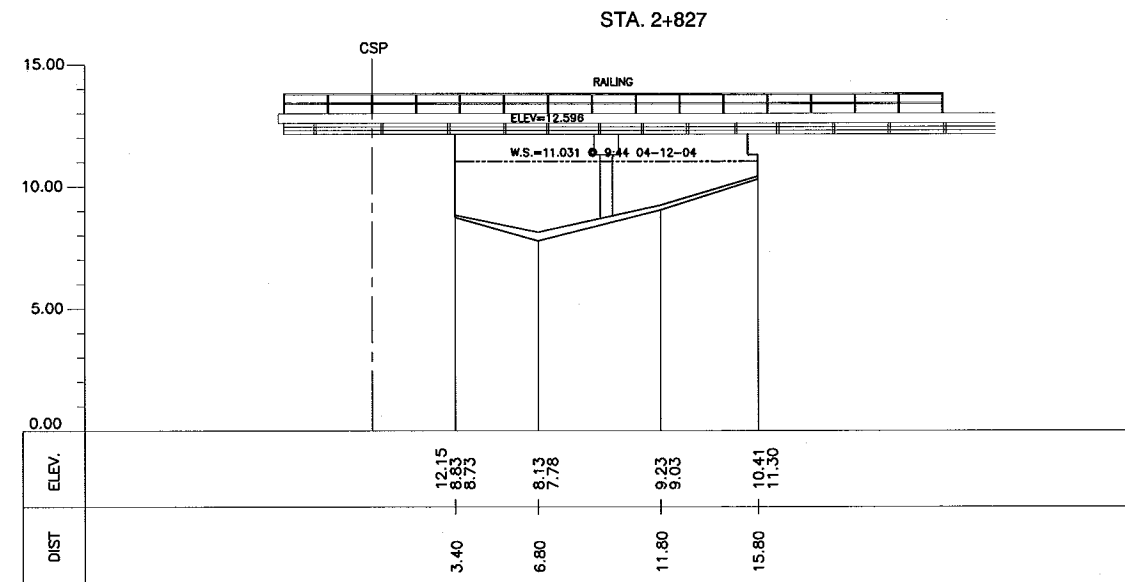
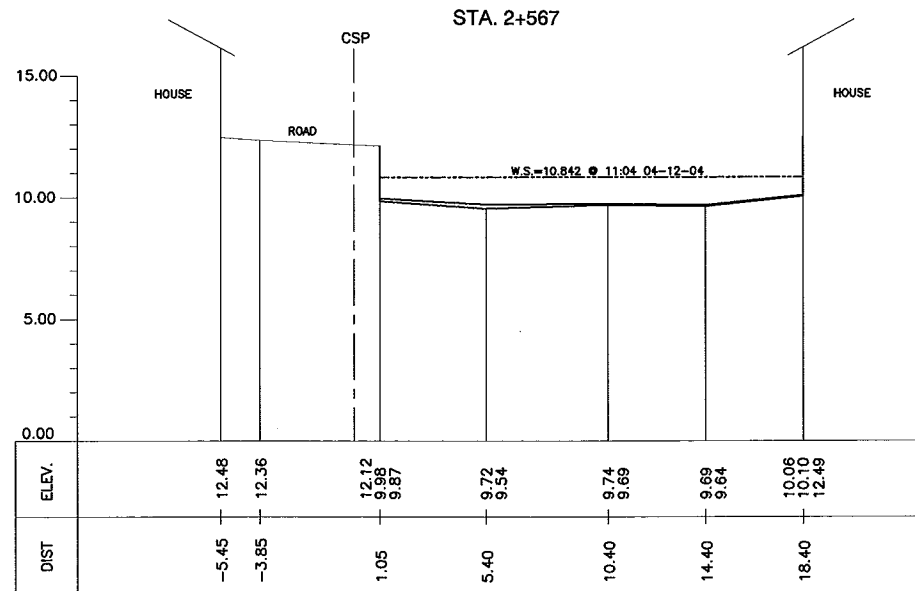
1 CROSS-SECTION
 CS-03 SCALE : A



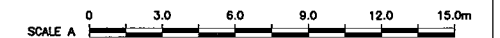


1 CROSS-SECTION
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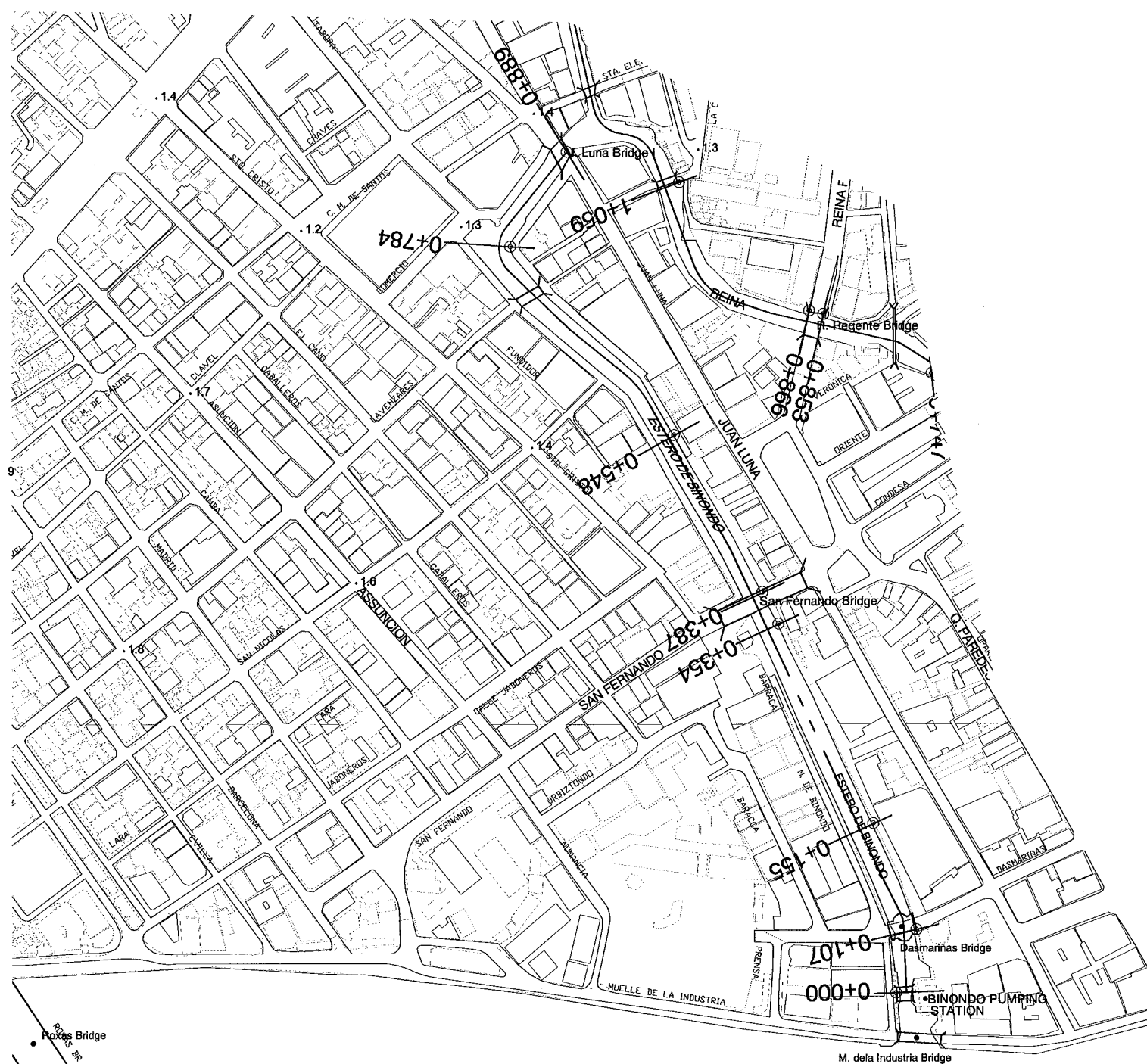


1 CROSS-SECTION
CS-03 SCALE : A



CONSULTANTS 		REPUBLIC OF THE PHILIPPINES 		PROJECT & LOCATION: THE STUDY ON DRAINAGE IMPROVEMENT IN THE CORE AREA OF METROPOLITAN MANILA	SHT. CONTENTS: CROSS-SECTION ESTERO DELA REINA (NE04) (STA. 2+567 ~ STA. 2+827)	SHT. NO CS-03 05 05
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ESTRO DE BINONDO (NE05)

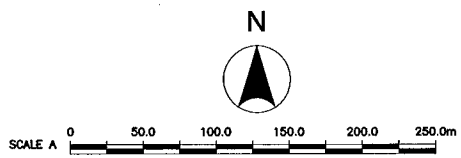


REFERENCE POINTS:

STATION	EASTING	NORTHING
STA. 0+000	497115.20	1614309.04
STA. 0+107	497133.649	1614366.0
STA. 0+155	497094.95	1614461.83
STA. 0+354	497009.70	1614641.65
STA. 0+386	496995.38	1614670.13
STA. 0+548	496915.73	1614811.81
STA. 0+784	496768.54	1614982.17
STA. 0+889	496819.66	1615067.95

PASIG RIVER
CROSS-SECTION LOCATION

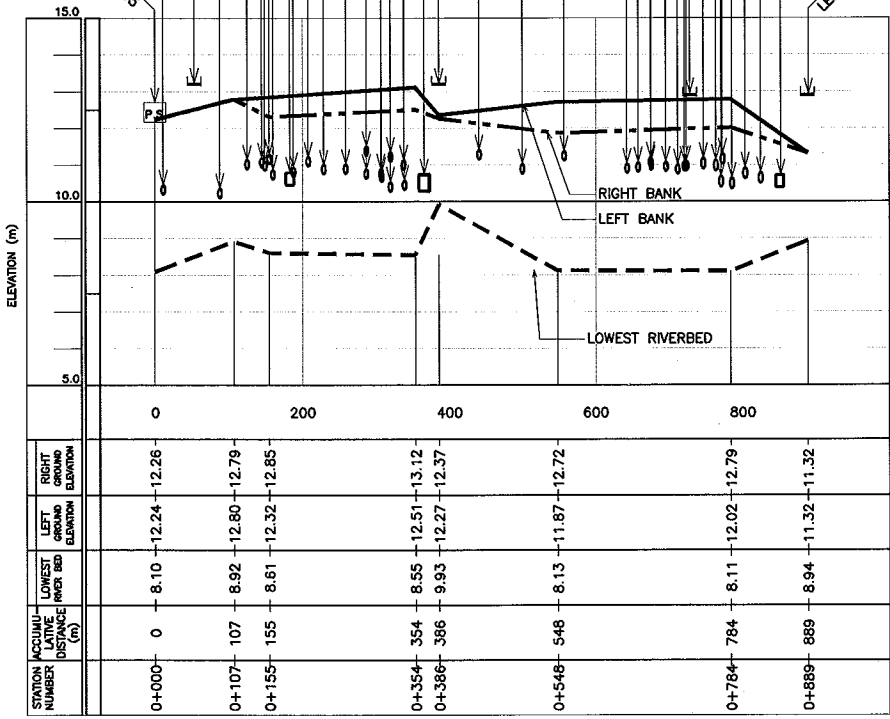
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CL-04 ESTERO DE BINONDO (NE05)
TOPOGRAPHIC MAP
SCALE : A



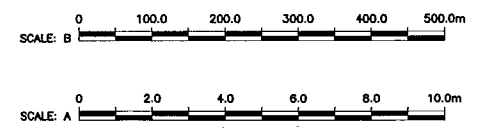
<p>CONSULTANTS</p>	<p>REPUBLIC OF THE PHILIPPINES</p>	<p>PROJECT & LOCATION:</p> <p>THE STUDY ON DRAINAGE IMPROVEMENT IN THE CORE AREA OF METROPOLITAN MANILA</p>	<p>SHT. CONTENTS:</p> <p>CROSS-SECTION LOCATION ESTERO DE BINONDO (NE05) (STA. 0+000 ~ STA. 0+889)</p>	<p>SHT. NO</p> <p>CL-04 01 01</p>
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STA. 0+320 LEFT SIDE
 RCP 600mm INV. ELEV.=11.10
 STA. 0+320 RIGHT SIDE
 RCP 600mm INV. ELEV.=10.88
 STA. 0+308 LEFT SIDE
 RCP 900mm INV. ELEV.=10.28
 STA. 0+308 RIGHT SIDE
 RCP 900mm INV. ELEV.=10.28
 STA. 0+307 RIGHT SIDE
 RCP 450mm INV. ELEV.=10.58
 STA. 0+287 LEFT SIDE
 RCP 600mm INV. ELEV.=10.85
 STA. 0+287 RIGHT SIDE
 RCP 600mm INV. ELEV.=11.27
 STA. 0+259 RIGHT SIDE
 RCP 600mm INV. ELEV.=10.84
 STA. 0+229 RIGHT SIDE
 RCP 600mm INV. ELEV.=10.78
 STA. 0+208 RIGHT SIDE
 RCP 375mm INV. ELEV.=10.77
 STA. 0+188 RIGHT SIDE
 RCP 600mm INV. ELEV.=10.88
 STA. 0+183 RIGHT SIDE
 BOX CULVERT 850mm x 800mm
 INVERT ELEV. = 10.88
 RCP 450mm INV. ELEV.=10.88
 STA. 0+160 RIGHT SIDE
 RCP 375mm INV. ELEV.=10.82
 STA. 0+155 RIGHT SIDE
 RCP 600mm INV. ELEV.=10.82
 STA. 0+149 RIGHT SIDE
 RCP 600mm INV. ELEV.=11.05
 STA. 0+145 LEFT SIDE
 RCP 300mm INV. ELEV.=10.86
 STA. 0+125 RIGHT SIDE
 RCP 450mm INV. ELEV.=10.80
 STA. 0+88 LEFT SIDE
 RCP 900mm INV. ELEV.=10.12
 STA. 0+11 RIGHT SIDE
 RCP 600mm INV. ELEV.=13.24
 LENGTH= 17m / WIDTH=10m
 STA. 0+107 (DASMARINAS BR.)
 RCP 900mm INV. ELEV.=10.21
 LENGTH= 17m / WIDTH=10m
 STA. 0+000 (BINONDO PUMPING STATION)
 TIDE GAUGE @ ELEV. 12.00m=12.05

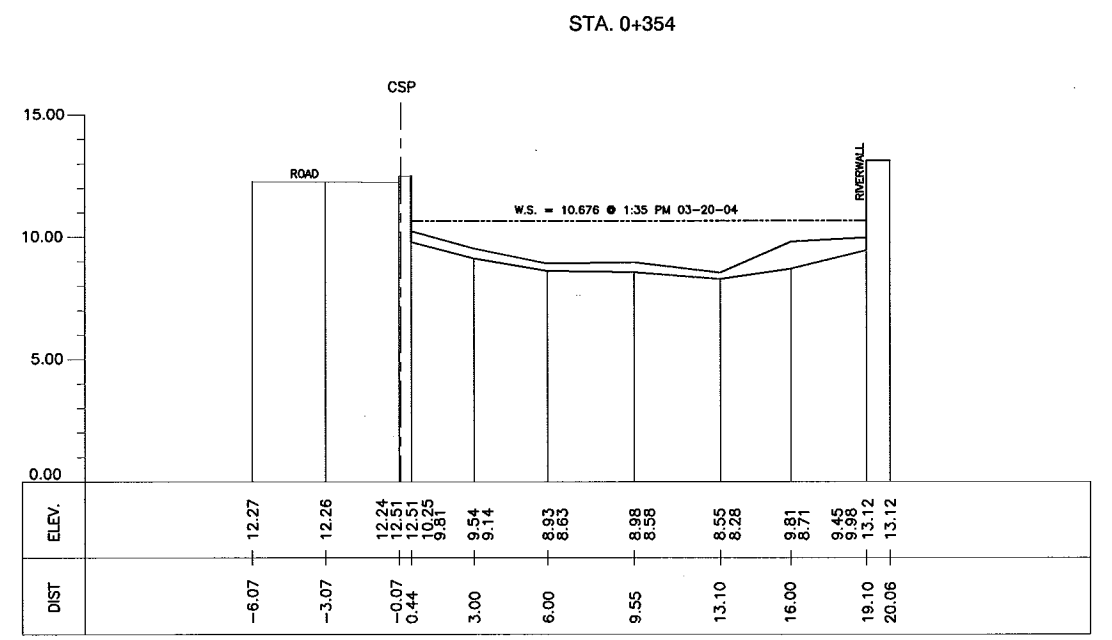
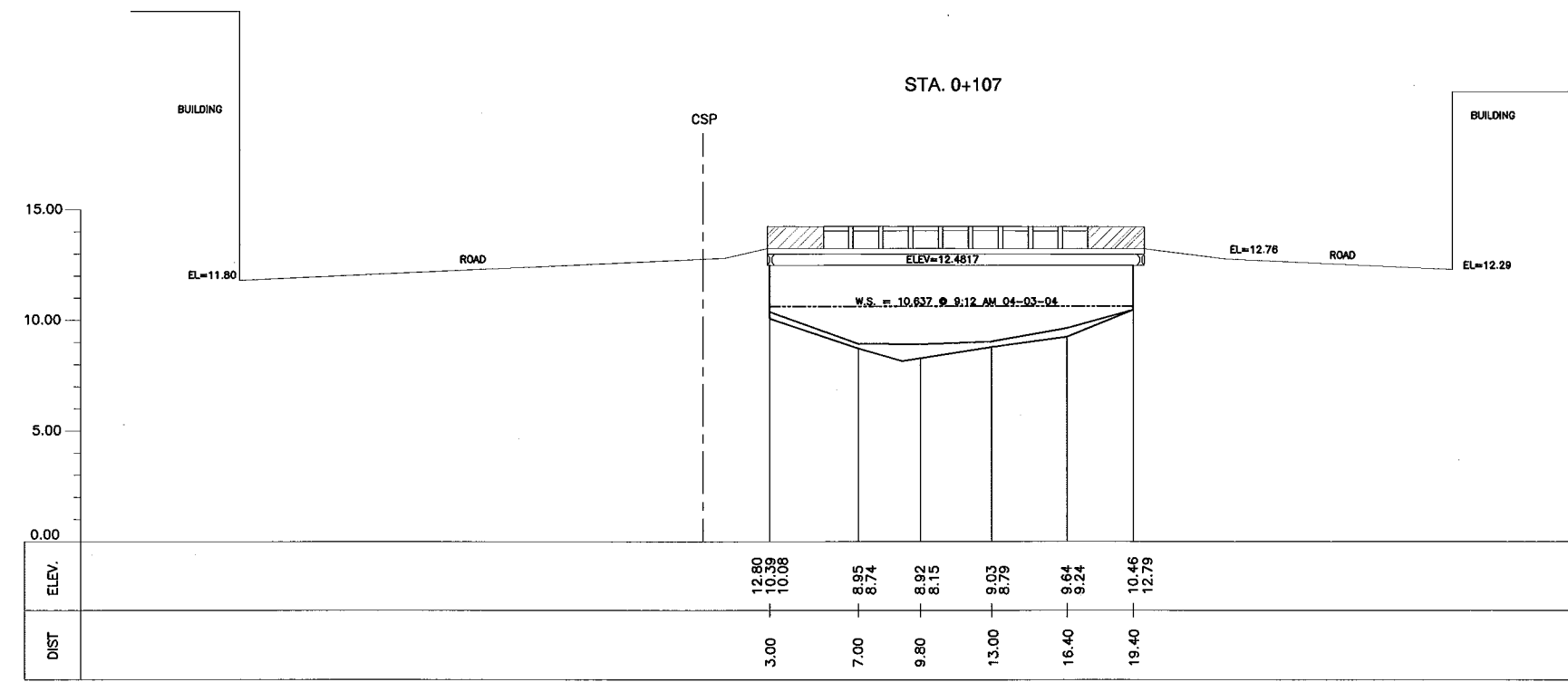
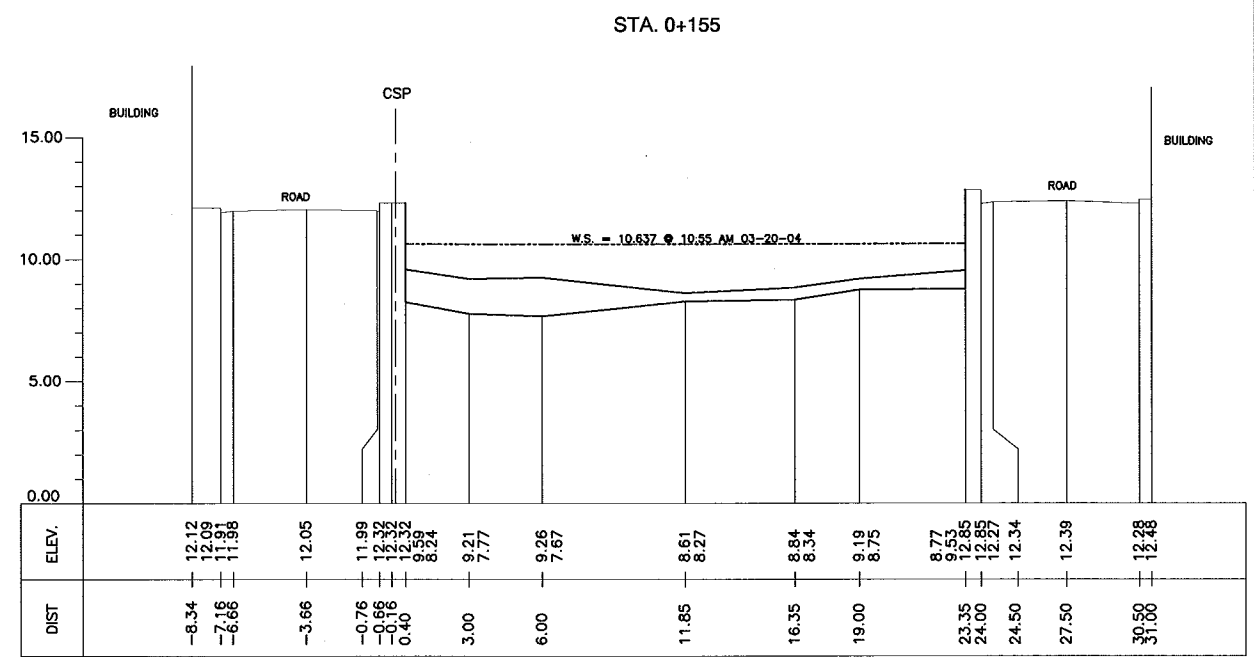
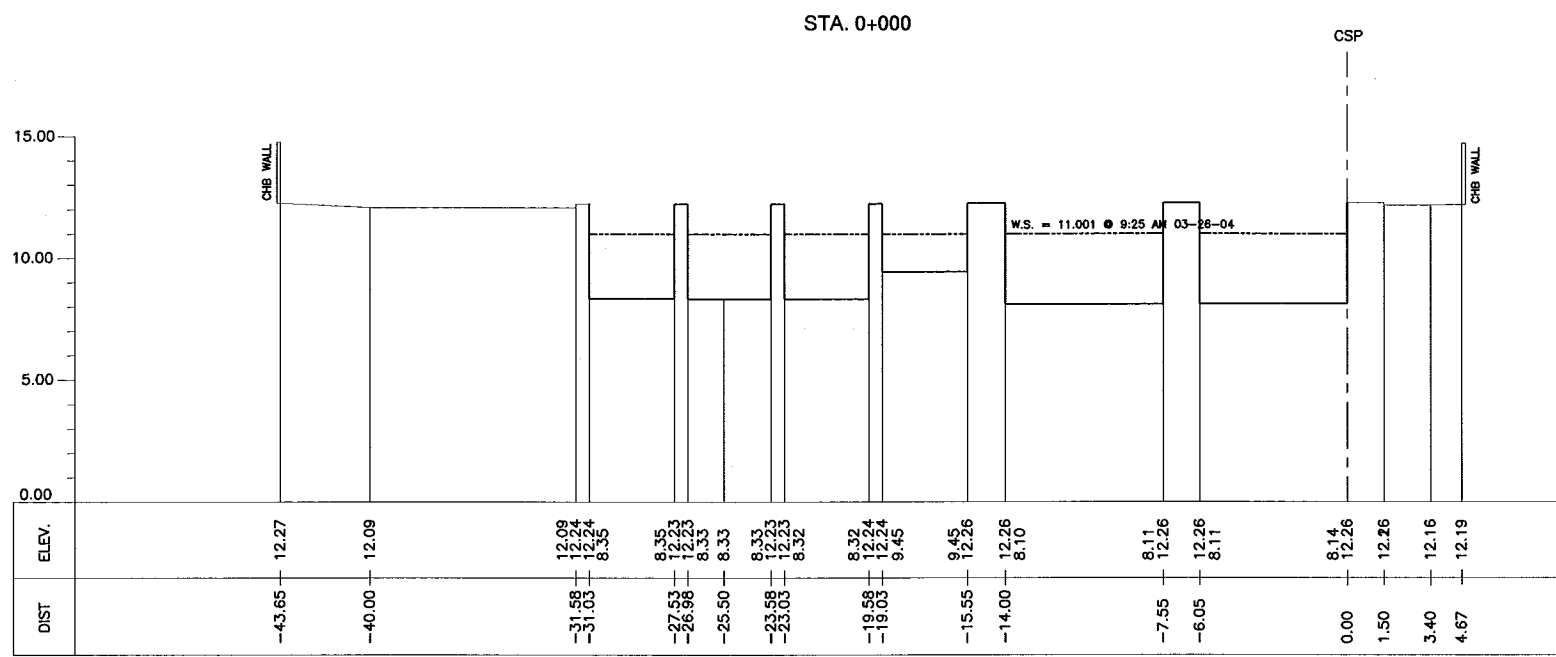
STA. 0+338 LEFT SIDE
 RCP 300mm INV. ELEV.=10.88
 STA. 0+338 RIGHT SIDE
 RCP 600mm INV. ELEV.=10.33
 STA. 0+366 RIGHT SIDE
 RCP 100mm x 800mm
 INVERT ELEV. = 10.31
 LENGTH= 15m / WIDTH=15m
 STA. 0+396 (SAN FERNANDO BR.)
 LENGTH= 15m / WIDTH=15m
 STA. 0+441 LEFT SIDE
 RCP 600mm INV. ELEV.=11.17
 STA. 0+500 RIGHT SIDE
 RCP 600mm INV. ELEV.=10.78
 STA. 0+557 RIGHT SIDE
 RCP 450mm INV. ELEV.=11.13
 STA. 0+643 RIGHT SIDE
 RCP 600mm INV. ELEV.=10.79
 STA. 0+658 LEFT SIDE
 RCP 600mm INV. ELEV.=10.85
 STA. 0+675 RIGHT SIDE
 RCP 600mm INV. ELEV.=10.88
 STA. 0+683 LEFT SIDE
 RCP 600mm INV. ELEV.=10.84
 STA. 0+712 RIGHT SIDE
 RCP 600mm INV. ELEV.=10.78
 STA. 0+721 LEFT SIDE
 RCP 600mm INV. ELEV.=10.85
 STA. 0+724 (UNKNOWIN BR.)
 RCP 600mm INV. ELEV.=10.85
 LENGTH= 24.03m / WIDTH=8.61m
 STA. 0+728.84
 RCP 600mm INV. ELEV.=10.91
 LENGTH= 24.03m / WIDTH=8.61m
 STA. 0+747 LEFT SIDE
 RCP 600mm INV. ELEV.=10.88
 STA. 0+771 LEFT SIDE
 RCP 600mm INV. ELEV.=10.42
 STA. 0+773 RIGHT SIDE
 RCP 600mm INV. ELEV.=11.03
 STA. 0+804 LEFT SIDE
 RCP 600mm INV. ELEV.=10.37
 STA. 0+804 RIGHT SIDE
 RCP 600mm INV. ELEV.=10.84
 STA. 0+825 LEFT SIDE
 RCP 600mm INV. ELEV.=10.41
 STA. 0+85 RIGHT SIDE
 RCP 600mm INV. ELEV.=10.84
 STA. 0+85 LEFT SIDE
 RCP 600mm INV. ELEV.=10.37
 STA. 0+889 (JUAN UNDA BR.)
 BOX CULVERT 1300mm x 1200mm
 INVERT ELEV. = 10.41
 LENGTH= 15m / WIDTH=14m



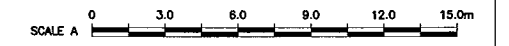
1 LONGITUDINAL PROFILE
 LP-04 VER. = SCALE : A / HOR. = SCALE : B



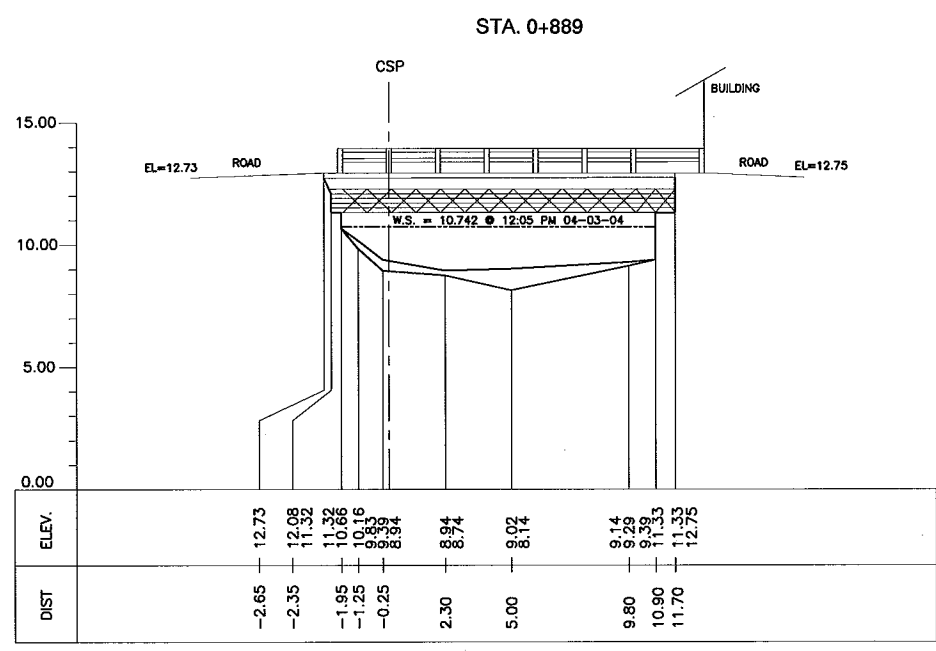
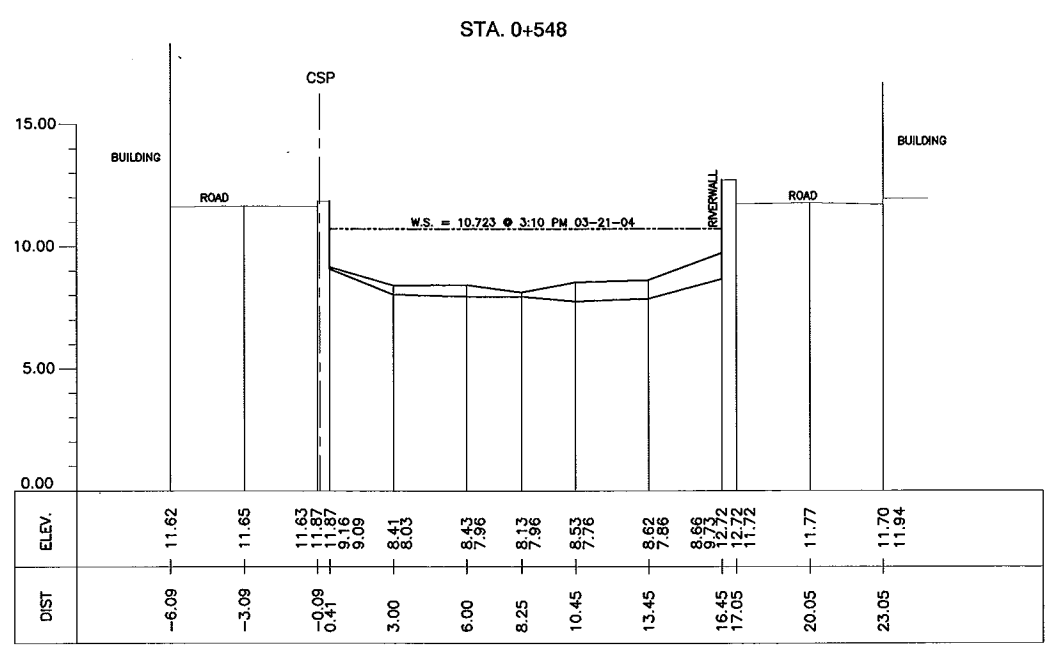
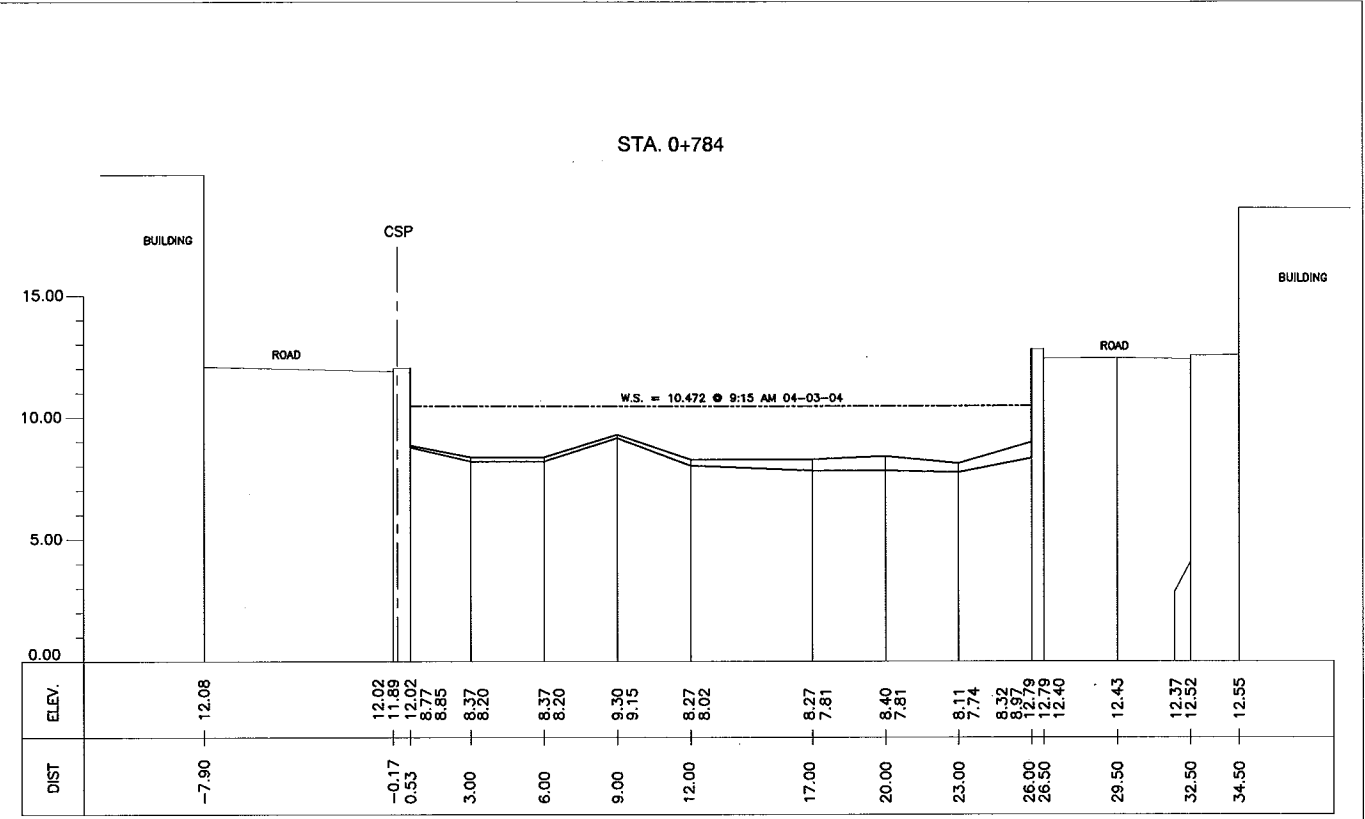
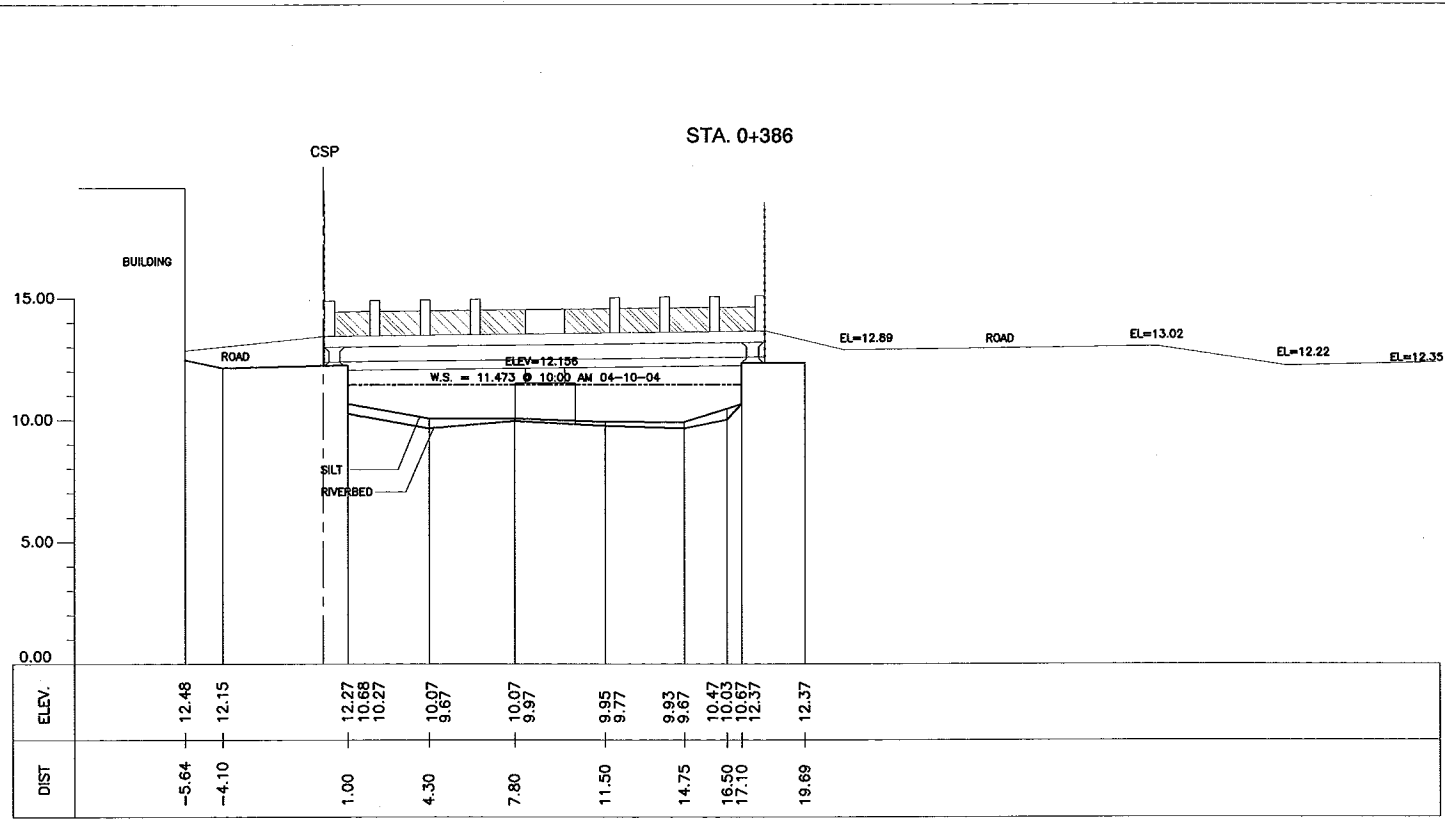
- LEGEND:
- : RIGHT BANK
 - - - : LEFT BANK
 - - - : LOWEST RIVERBED
 - : BOX CULVERT
 - : BRIDGE
 - : REINFORCE CONCRETE PIPE
 - P.S. : PUMPING STATION



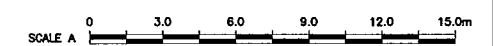
1 CROSS-SECTION
CS-04 SCALE : A



<p>CONSULTANTS</p>	<p>REPUBLIC OF THE PHILIPPINES</p>	<p>PROJECT & LOCATION:</p> <p style="text-align: center;">THE STUDY ON DRAINAGE IMPROVEMENT IN THE CORE AREA OF METROPOLITAN MANILA</p>	<p>SHT. CONTENTS:</p> <p style="text-align: center;">CROSS-SECTION ESTERO DE BINONDO (NE05) (STA. 0+000 ~ STA. 0+354)</p>	<p>SHT. NO</p> <p style="text-align: center;">CS-04 01 02</p>
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1 CROSS-SECTION
CS-04 SCALE : A



ESTERO DE TUTUBAN

(NE11)



CROSS-SECTION LOCATION

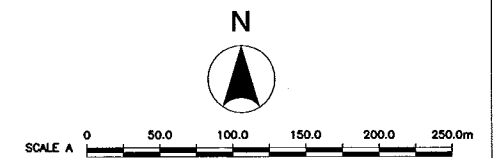
REFERENCE POINTS:

STATION	EASTING	NORTHING
STA. 0+000	497348.27	1616561.89
STA. 0+317	497264.70	1616259.02

ESTERO DE TUTUBAN (NE11)
TOPOGRAPHIC MAP

1
CL-05

SCALE : A



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 METROPOLITAN MANILA DEVELOPMENT
AUTHORITY

PROJECT & LOCATION:

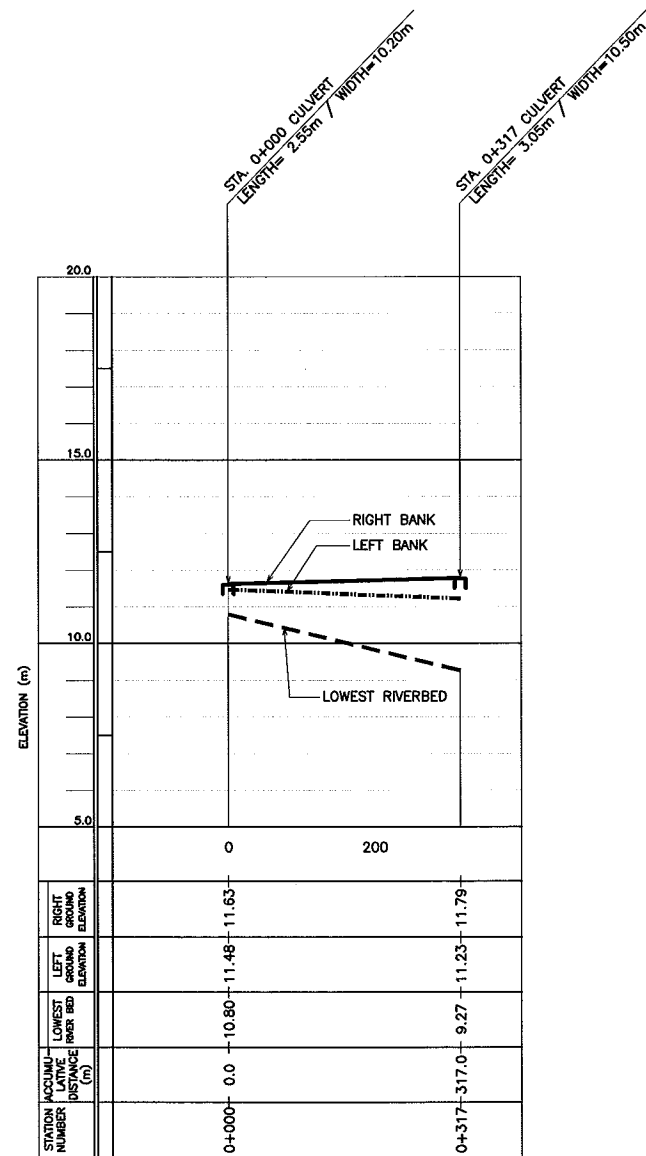
THE STUDY ON DRAINAGE IMPROVEMENT
IN THE CORE AREA OF METROPOLITAN MANILA

SHT. CONTENTS:

CROSS-SECTION LOCATION
ESTERO DE TUTUBAN (NE11)
(STA. 0+000 - STA. 0+317)

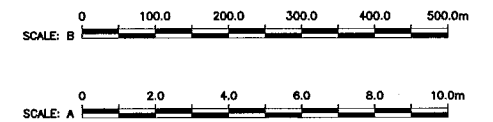
SHT. NO

CL-05
01 | 01



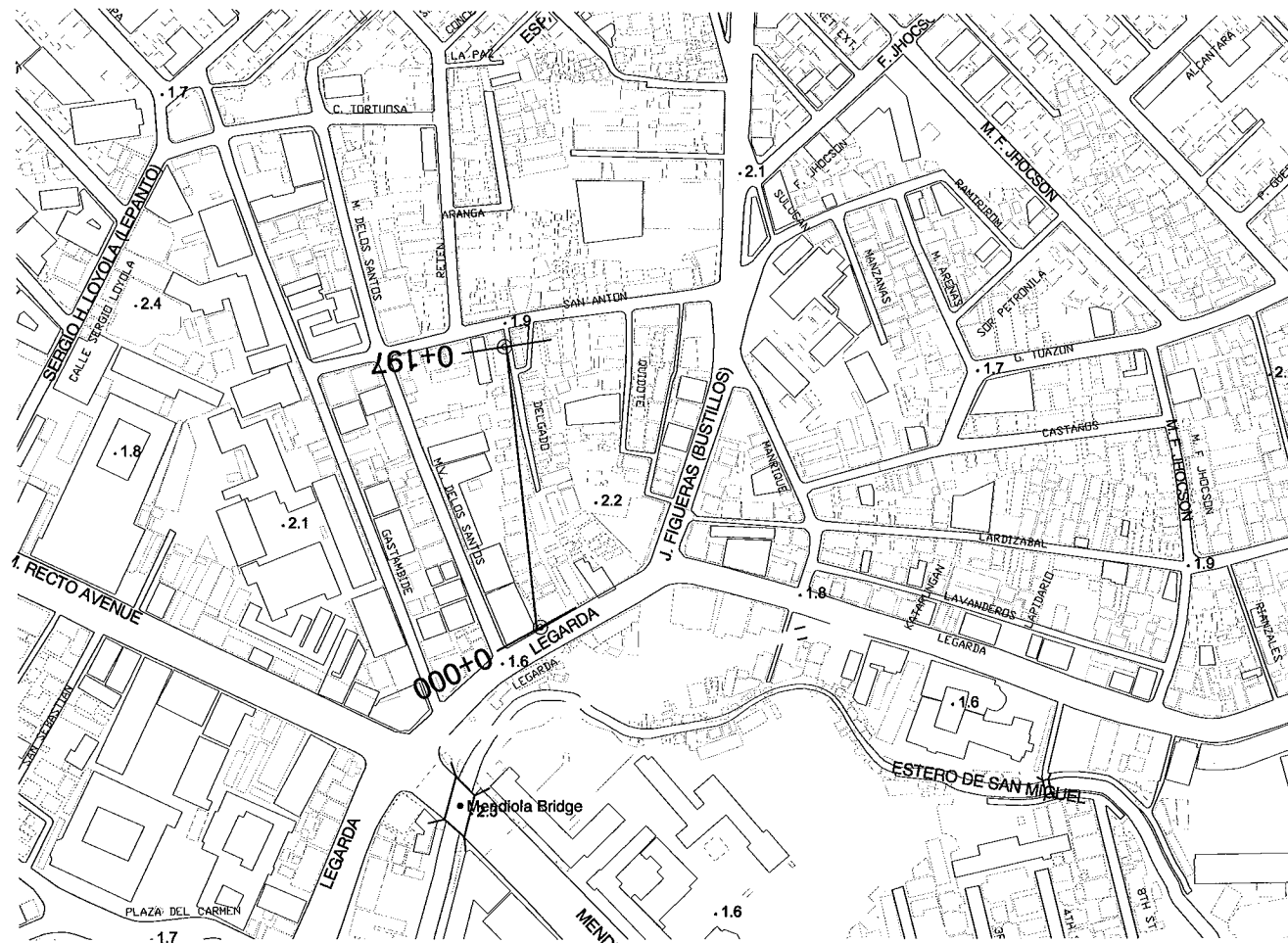
LEGEND:
 ——— : RIGHT BANK
 - - - - : LEFT BANK
 - - - - : LOWEST RIVERBED
 □ : CULVERT

1 LONGITUDINAL PROFILE
 LP-05 VER. = SCALE : A / HOR. = SCALE : B



CONSULTANTS		REPUBLIC OF THE PHILIPPINES		PROJECT & LOCATION:	SHT. CONTENTS:	SHT. NO
PACIFIC CONSULTANTS INTERNATIONAL IN ASSOCIATION WITH NIKKEN CONSULTANTS, INC.	JAPAN INTERNATIONAL COOPERATION AGENCY FOR DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	METROPOLITAN MANILA DEVELOPMENT AUTHORITY	THE STUDY ON DRAINAGE IMPROVEMENT IN THE CORE AREA OF METROPOLITAN MANILA		LONGITUDINAL PROFILE ESTERO DE TUTUBAN (NE11) (STA. 0+000~ STA. 0+317)	LP-05 01 01

ESTERO DE ALIX (NE15)

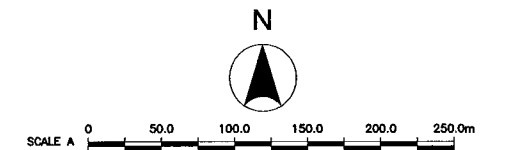


CROSS-SECTION LOCATION

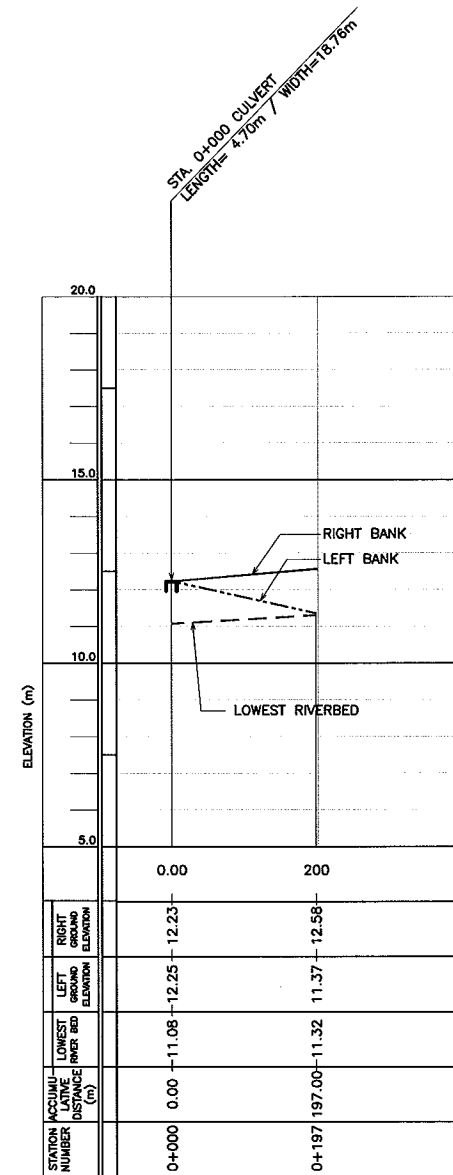
REFERENCE POINTS:

STATION	EASTING	NORTHING
STA. 0+000	498977.963	1614845.880
STA. 0+197	498953.343	1615040.948

1
ESTERO DE ALIX (NE15)
TOPOGRAPHIC MAP
CL-06 SCALE : A

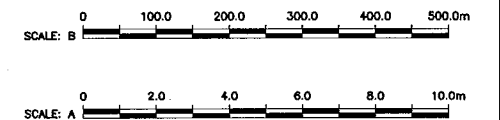


CONSULTANTS		REPUBLIC OF THE PHILIPPINES		PROJECT & LOCATION:	SHT. CONTENTS:	SHT. NO
PACIFIC CONSULTANTS INTERNATIONAL IN ASSOCIATION WITH NIKKEN CONSULTANTS, INC.	JAPAN INTERNATIONAL COOPERATION AGENCY FOR DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS	METROPOLITAN MANILA DEVELOPMENT AUTHORITY		THE STUDY ON DRAINAGE IMPROVEMENT IN THE CORE AREA OF METROPOLITAN MANILA	CROSS-SECTION LOCATION ESTERO DE ALIX (NE15) (STA. 0+000 ~ STA. 0+041)	CL-06 01 01



LEGEND:
 ——— : RIGHT BANK
 - - - - : LEFT BANK
 - - - - : LOWEST RIVERBED
 □ : CULVERT

1 LONGITUDINAL PROFILE
 LP-06 VER. = SCALE : A / HOR. = SCALE : B



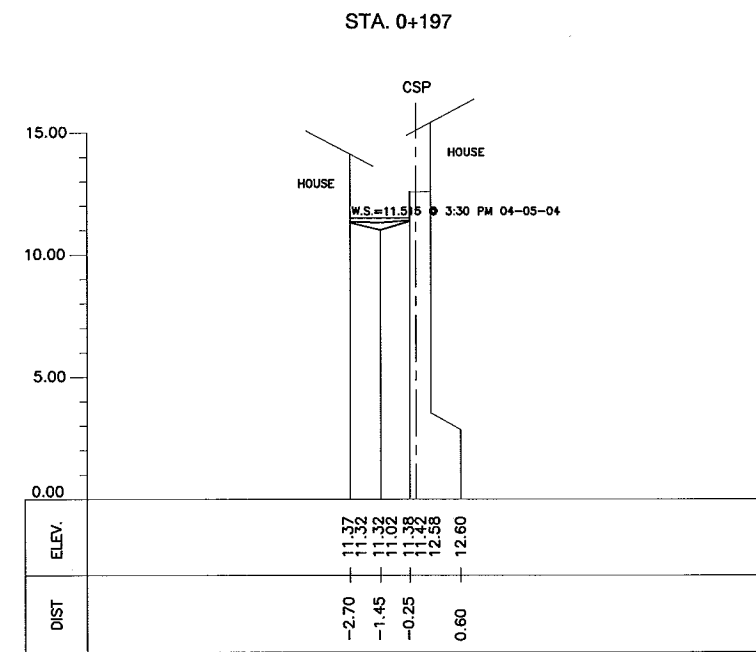
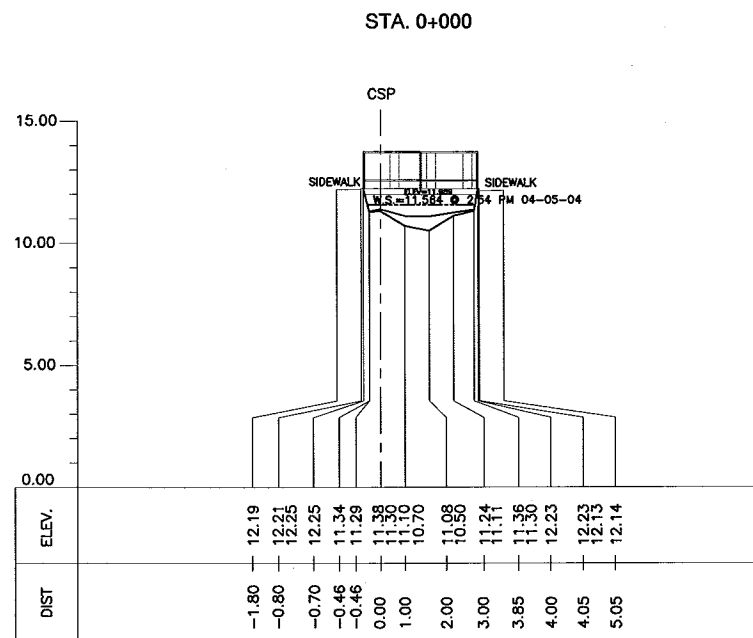
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 PACIFIC CONSULTANTS INTERNATIONAL
 IN ASSOCIATION WITH
 NIKKEN CONSULTANTS, INC.

REPUBLIC OF THE PHILIPPINES
 JICA JAPAN INTERNATIONAL COOPERATION AGENCY
 FOR
 DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
 METROPOLITAN MANILA DEVELOPMENT
 AUTHORITY

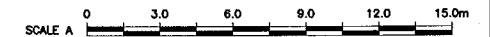
PROJECT & LOCATION:
 THE STUDY ON DRAINAGE IMPROVEMENT
 IN THE CORE AREA OF METROPOLITAN MANILA

SHT. CONTENTS:
 LONGITUDINAL PROFILE
 ESTERO DE ALIX (NE15)
 (STA. 0+000~ STA. 0+197)

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<p>CONSULTANTS</p> <p>PACIFIC CONSULTANTS INTERNATIONAL IN ASSOCIATION WITH NIKKEN CONSULTANTS, INC.</p>	<p>REPUBLIC OF THE PHILIPPINES</p> <p>JICA JAPAN INTERNATIONAL COOPERATION AGENCY FOR DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS METROPOLITAN MANILA DEVELOPMENT AUTHORITY</p>	<p>PROJECT & LOCATION:</p> <p style="text-align: center;">THE STUDY ON DRAINAGE IMPROVEMENT IN THE CORE AREA OF METROPOLITAN MANILA</p>	<p>SHT. CONTENTS:</p> <p style="text-align: center;">CROSS-SECTION ESTERO DE ALIX (NE15) (STA. 0+000 ~ STA. 0+197)</p>	<p>SHT. NO</p> <p style="border: 1px solid black; border-radius: 50%; padding: 5px; display: inline-block;">CS-06 01 01</p>
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