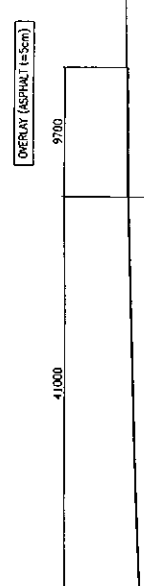


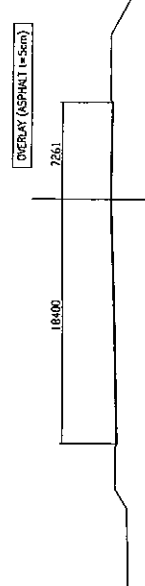
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P=11.062

DL=5.00



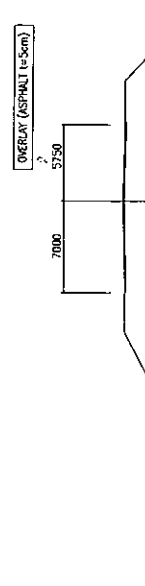
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DL=6.00



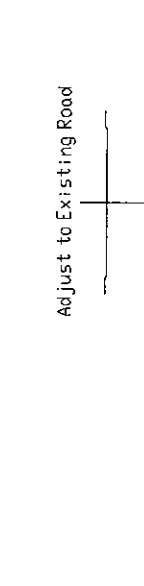
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P=12.102

DL=6.00



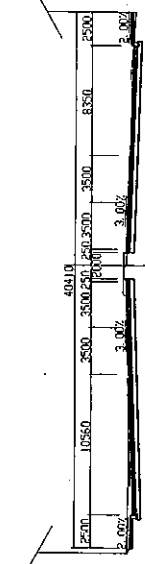
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DL=7.00



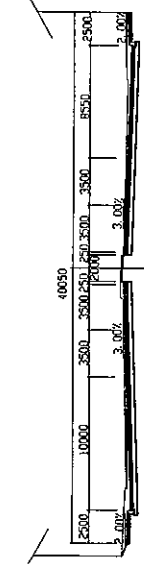
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DL=7.00



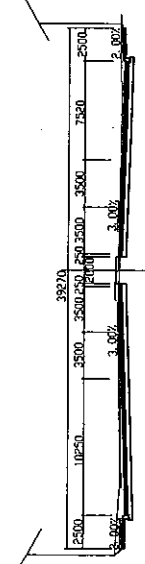
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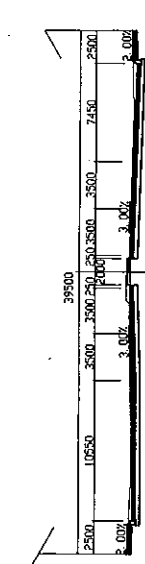
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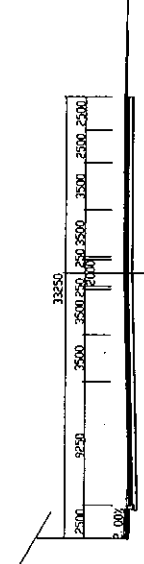
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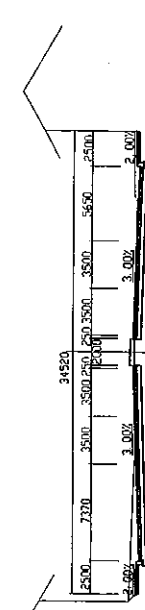
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DL=5.00



STA. 0+100
G=11.10
P=11.000

DL=5.00



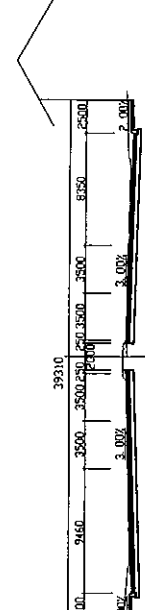
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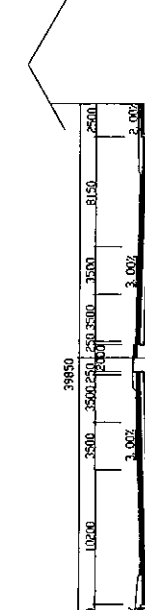
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DL=5.00



STA. 0+240
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DL=5.00



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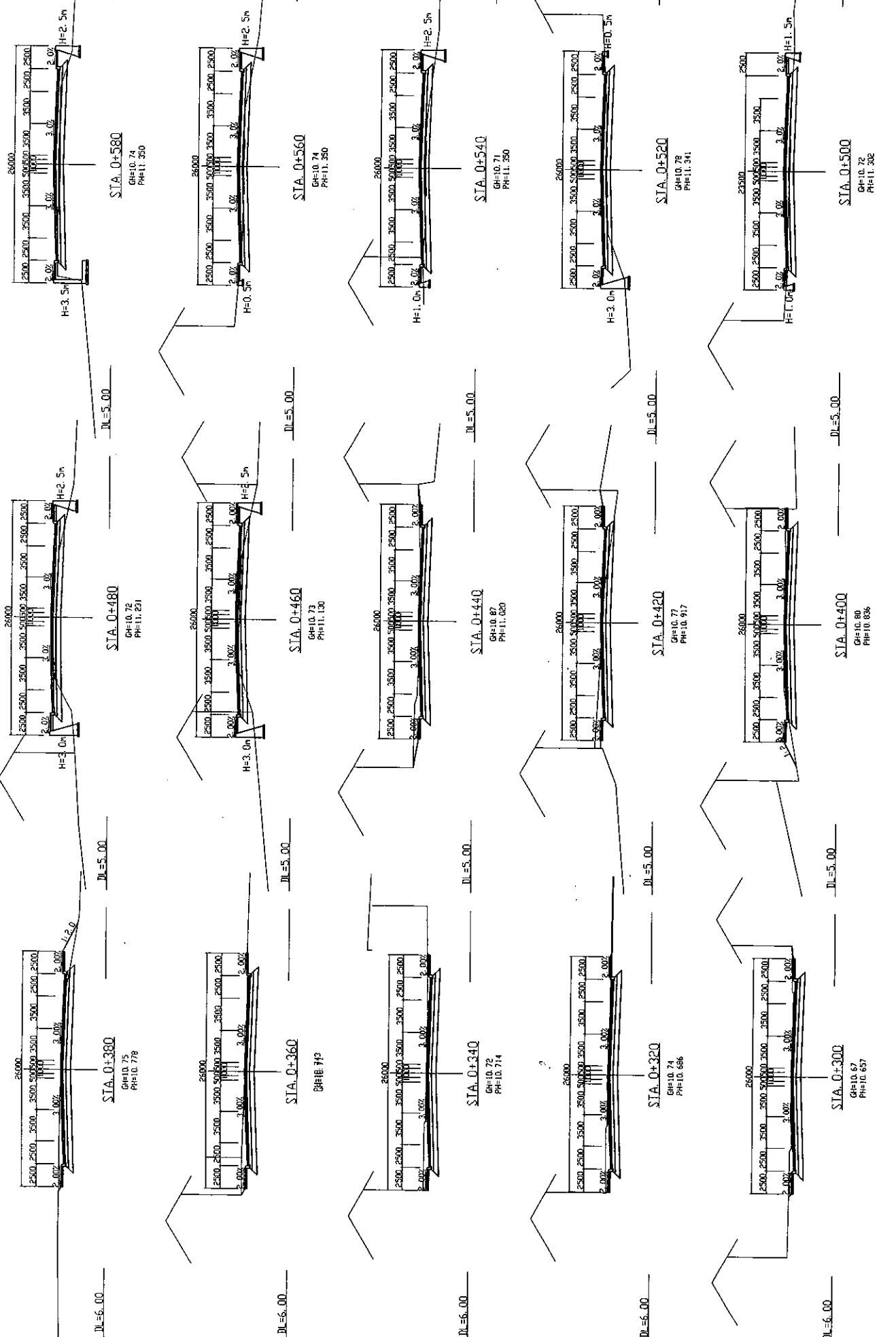
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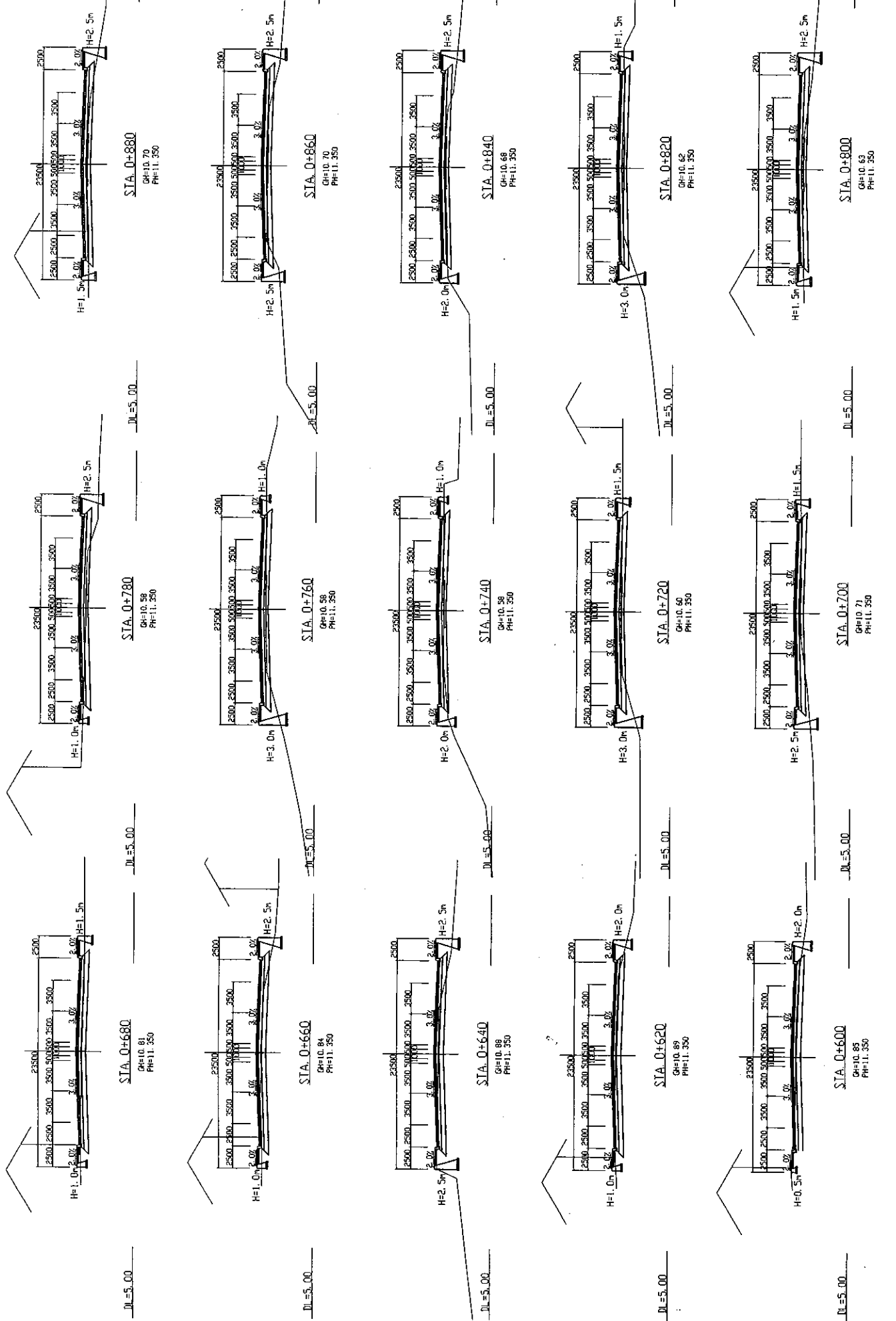
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DL=5.00

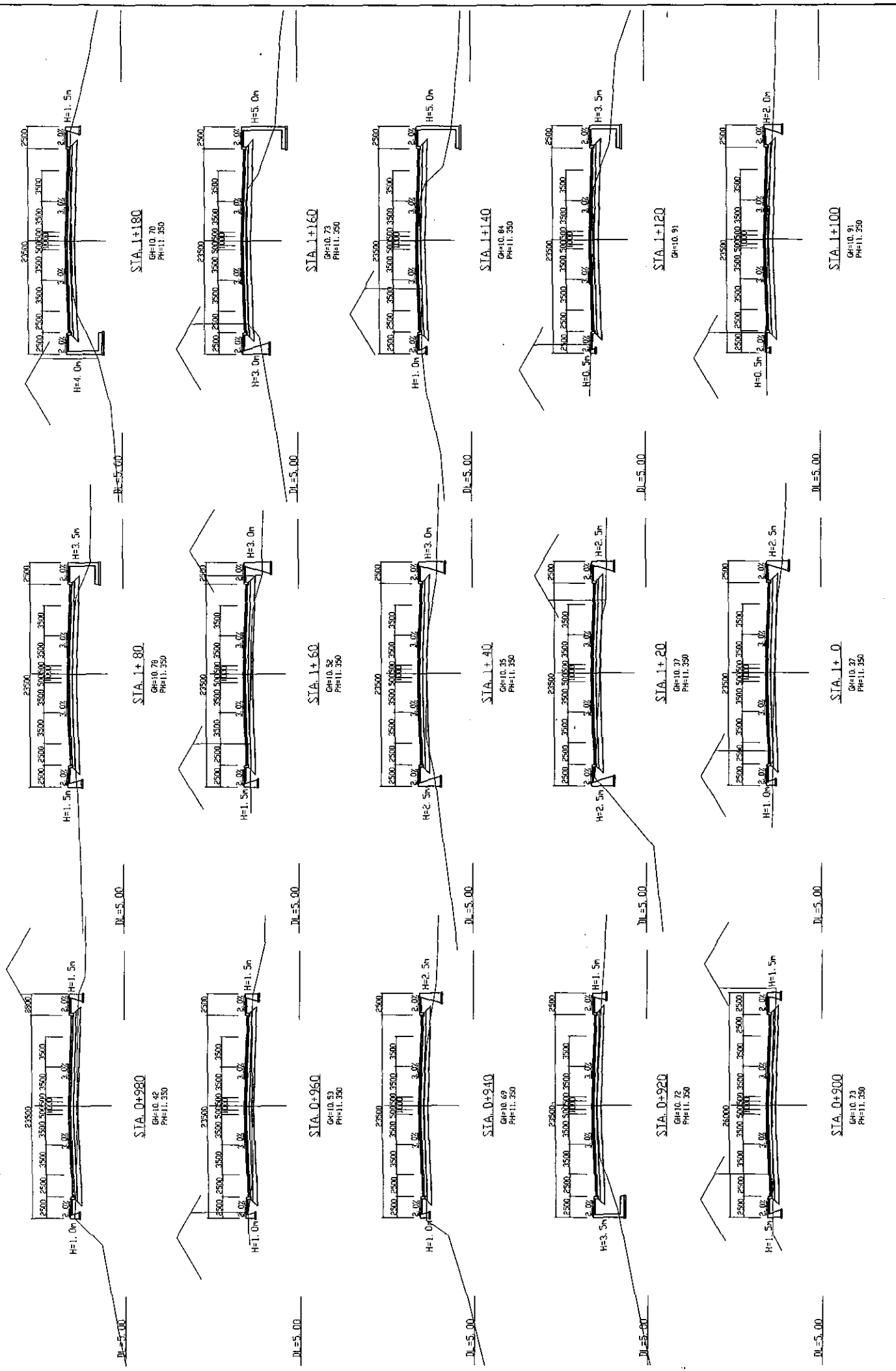
MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH/NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO.,LTD	TITLE : CROSS SECTION (STA.0+000 - STA.0+280)	SCALE	Drawing No.
				H=1/2000 V=1/200	Sheet No. CS-1



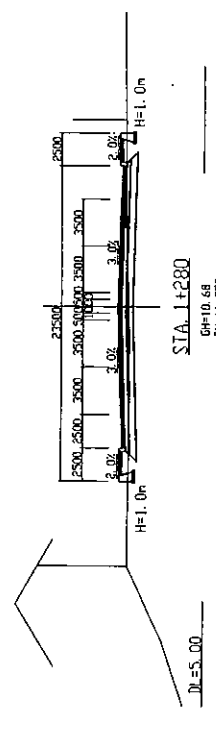
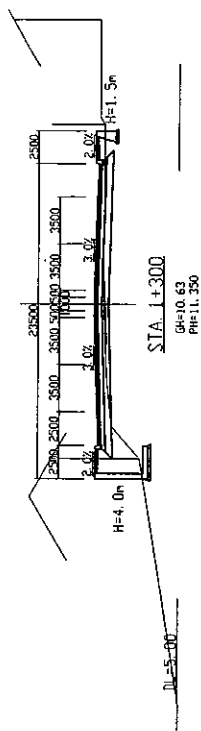
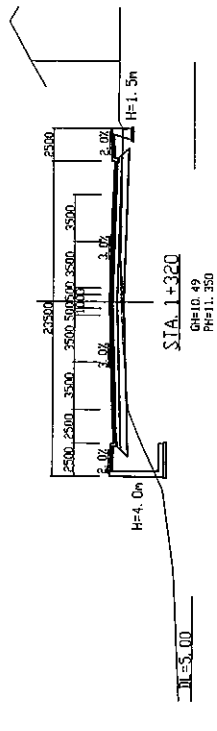
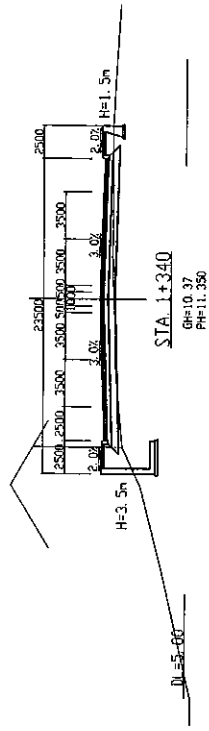
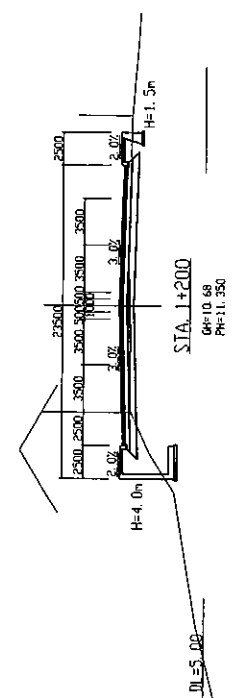
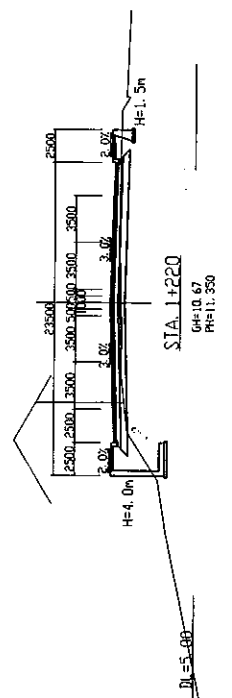
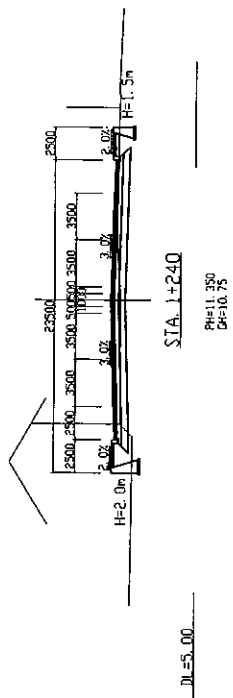
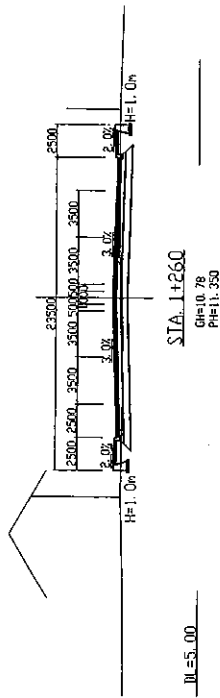
MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO., LTD	TITLE :	CROSS SECTION (STA. 0+300--STA. 0+580)	SCALE	Drawing No.
					H=1/2000 V=1/200	Sheet No. CS-2



MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO.,LTD	TITLE :	CROSS SECTION (STA.0+600--STA.0+880)	SCALE	H=1/2000 V=1/200	Drawing No.	Sheet No.
							CS-3	



MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO.,LTD	TITLE : CROSS SECTION (STA.0+900—STA.1+180)	SCALE	Drawing No.
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MINISTRY OF
PUBLIC WORKS AND TRANSPORT
(MPWT)

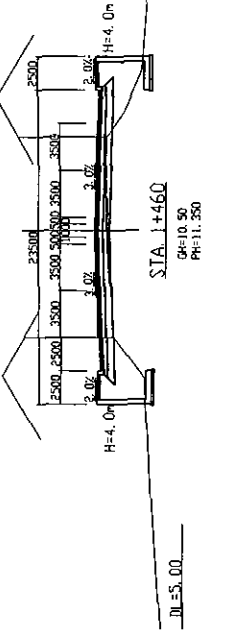
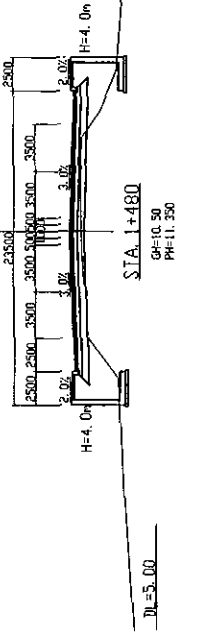
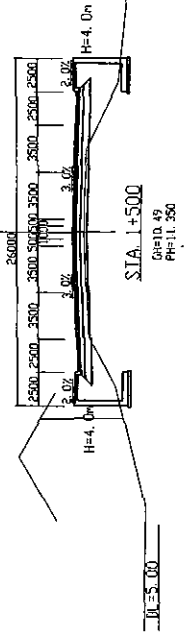
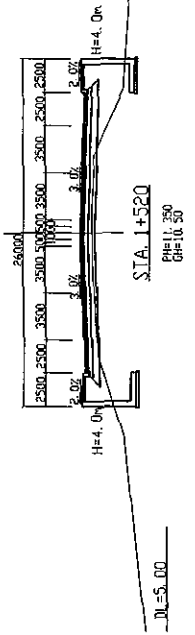
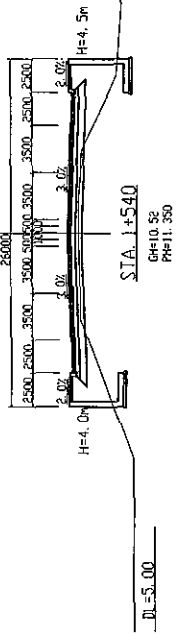
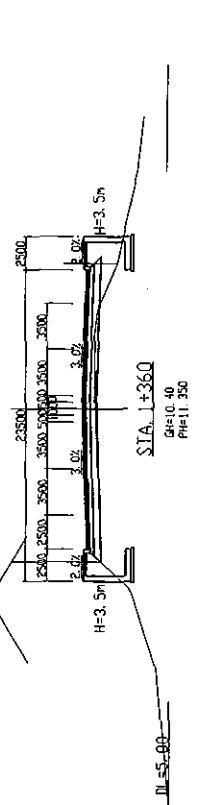
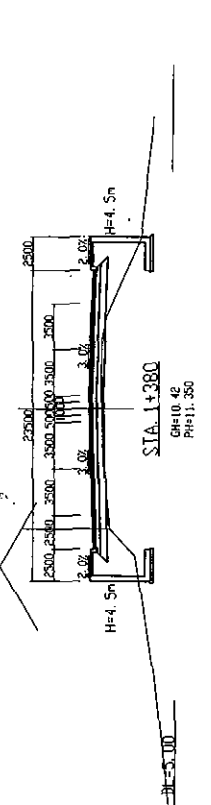
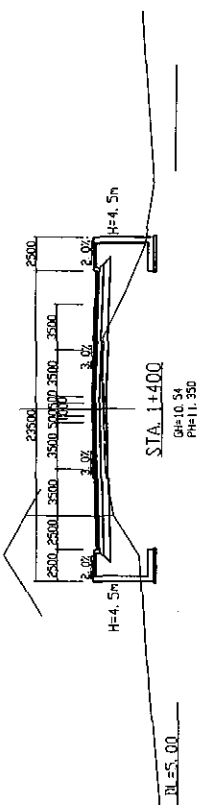
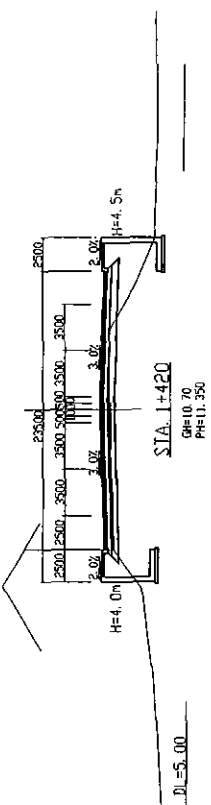
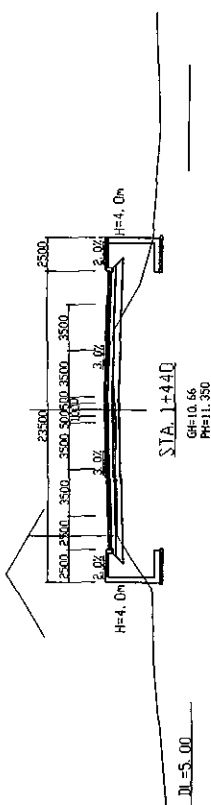
THE PROJECT FOR THE
IMPROVEMENT OF NATIONAL ROAD NO.1
(PHNOM PENH-NEAK LOUENG SECTION)
IN THE KINGDOM OF CAMBODIA

JAPAN INTERNATIONAL COOPERATION AGENCY
KATAHIRA & ENGINEERS INTERNATIONAL
CTI ENGINEERING INTERNATIONAL CO.,LTD

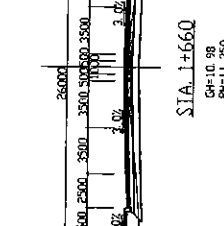
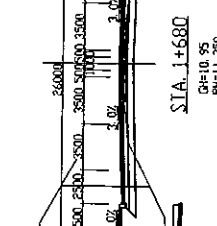
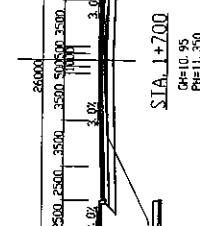
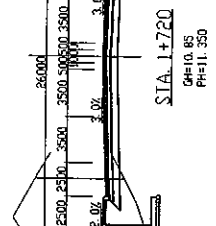
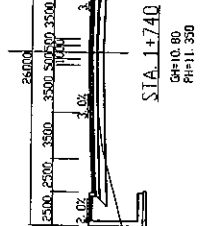
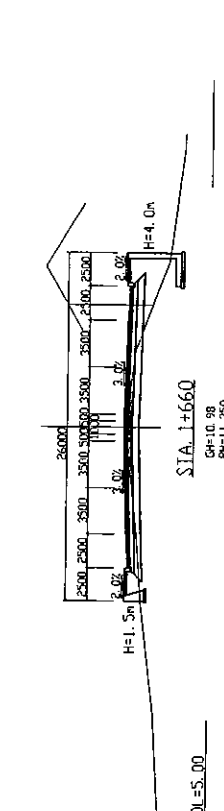
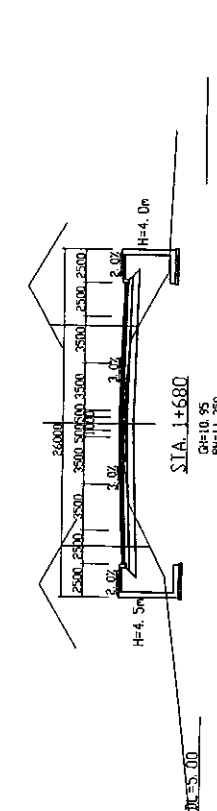
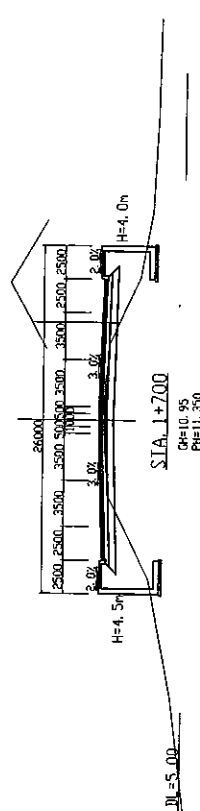
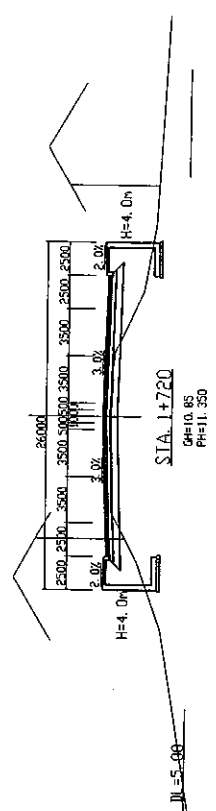
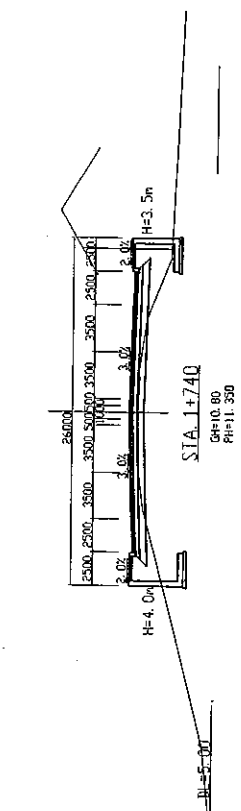
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(STA. 1+200--STA. 1+340)

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V=1/200

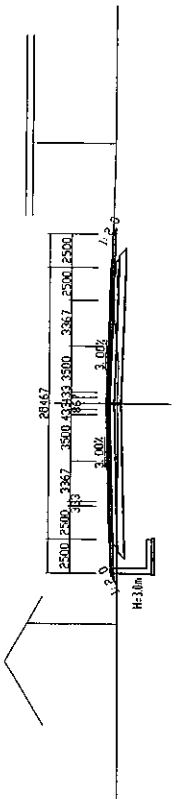
Drawing No.
Sheet No.
CS-5



MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO.,LTD	TITLE :	CROSS SECTION (STA. 1+360—STA. 1+540)	SCALE	Drawing No.
					H=1/2000 V=1/200	Sheet No. CS-6

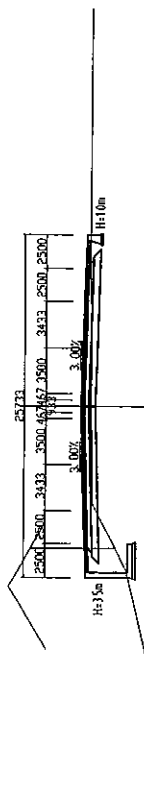


MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO.,LTD	TITLE :	SCALE	Drawing No.
			CROSS SECTION (STA. 1+560—STA. 1+740)	H=1/2000 V=1/200	Sheet No. CS-7



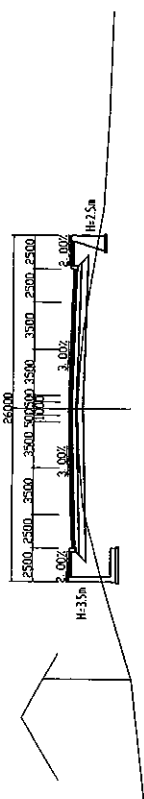
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DL=1.00



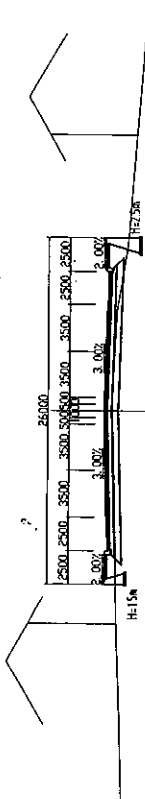
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DL=1.00



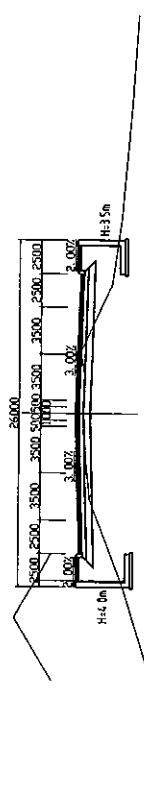
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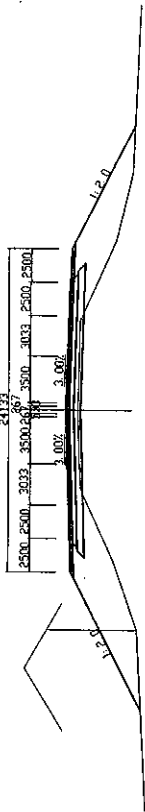
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PH=11.350

DL=1.00



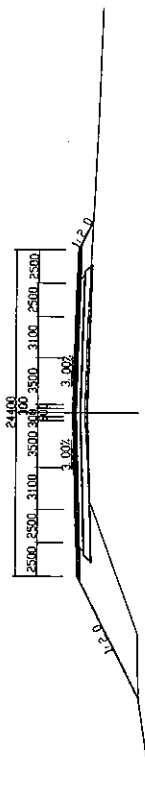
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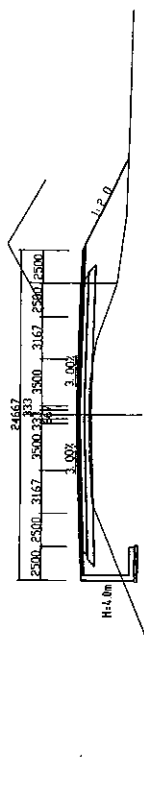
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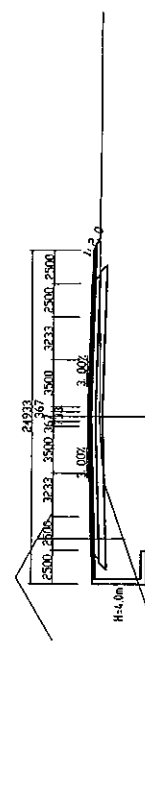
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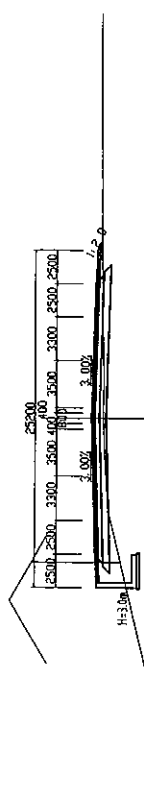
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PH=11.350

DL=1.00



STA. 1+880
GH=10.49
PH=11.350

DL=1.00



STA. 1+860
GH=10.48
PH=11.350

DL=1.00

MINISTRY OF
PUBLIC WORKS AND TRANSPORT
(MPWT)

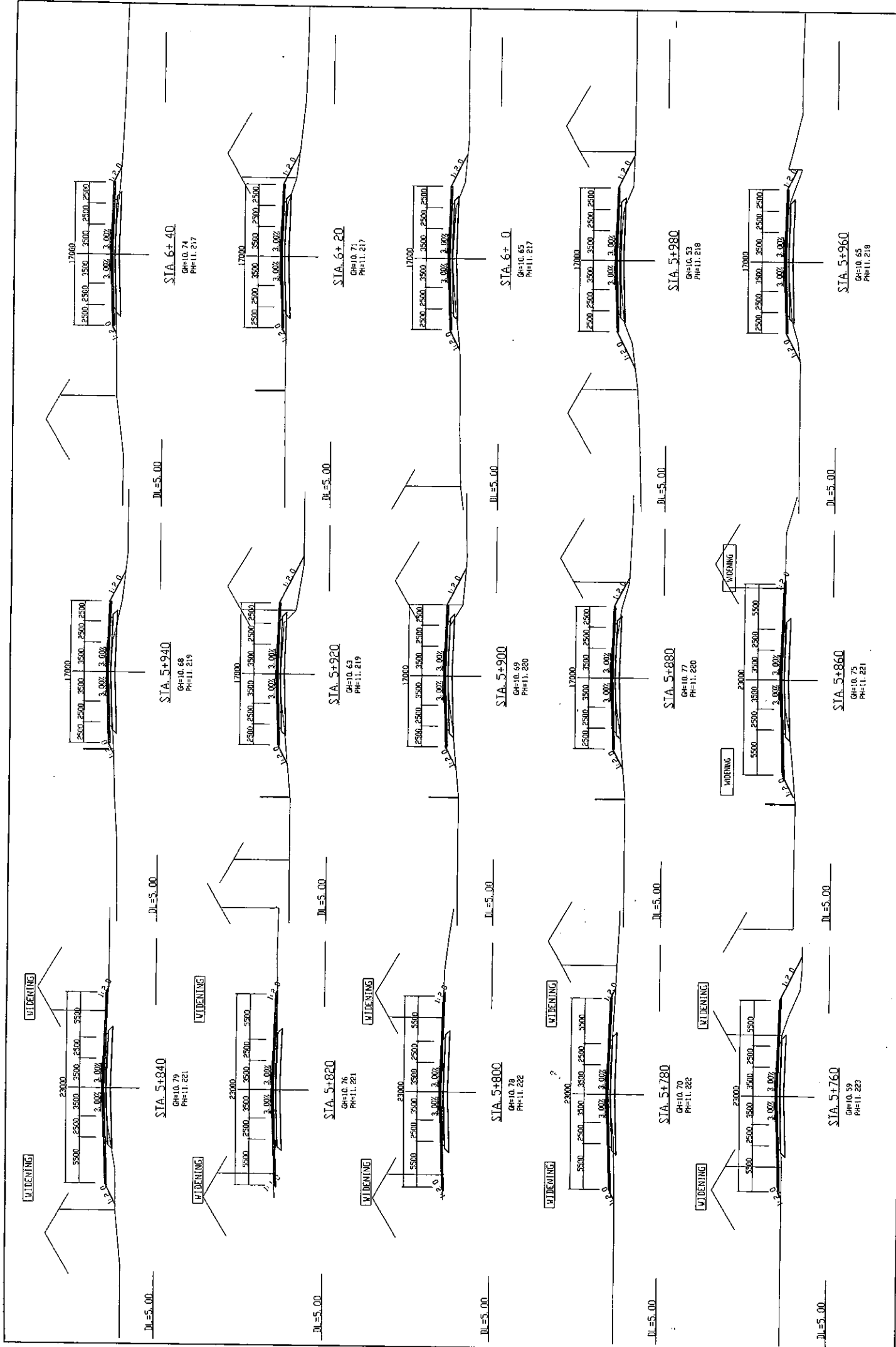
THE PROJECT FOR THE
IMPROVEMENT OF NATIONAL ROAD NO.1
(PHNOM PENH-NEAK LOUENG SECTION)
IN THE KINGDOM OF CAMBODIA

JAPAN INTERNATIONAL COOPERATION AGENCY
KATAHIRA & ENGINEERS INTERNATIONAL
CTI ENGINEERING INTERNATIONAL CO., LTD

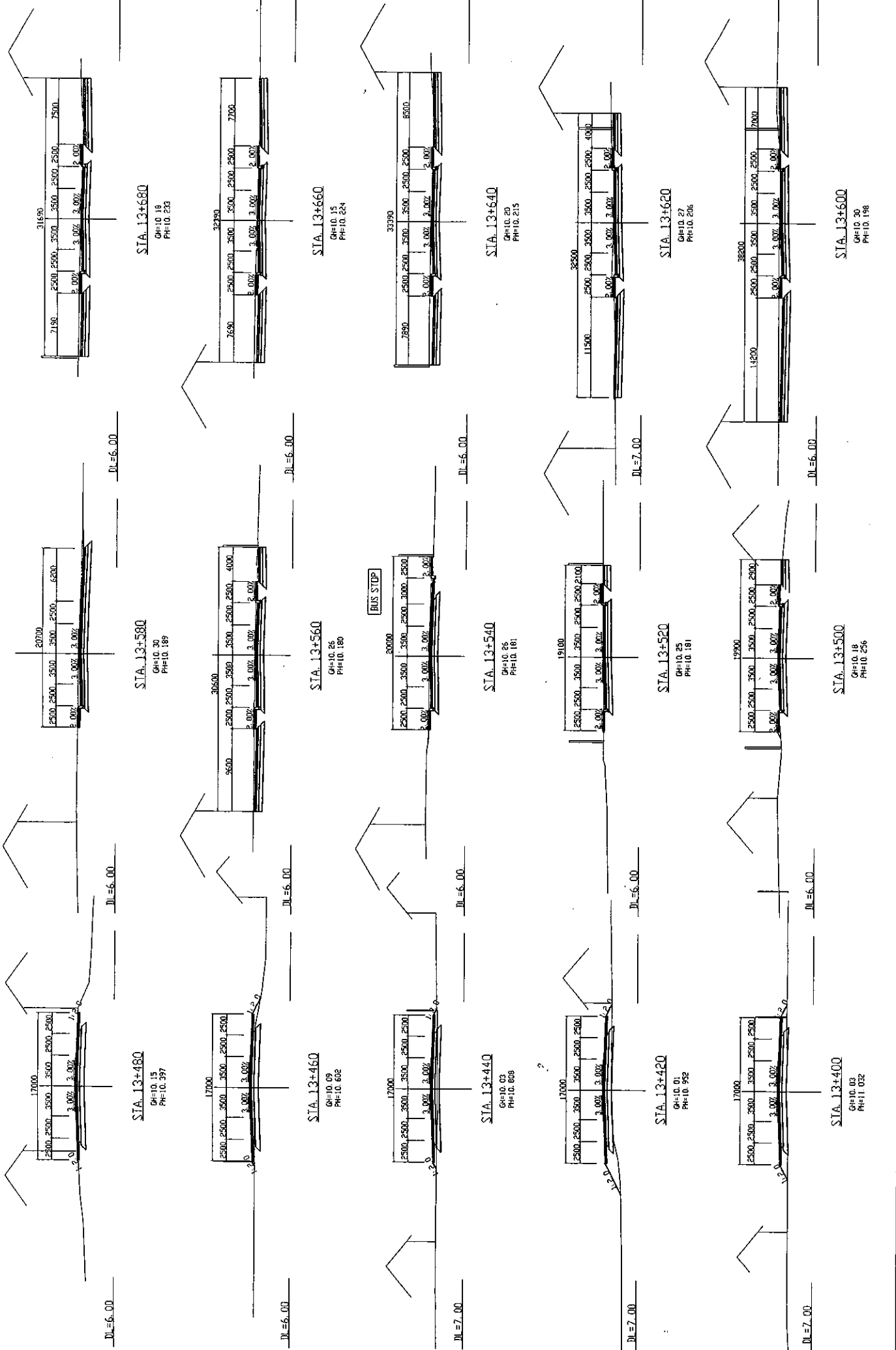
TITLE :
CROSS SECTION
(STA. 1+760 - STA. 1+940)

SCALE
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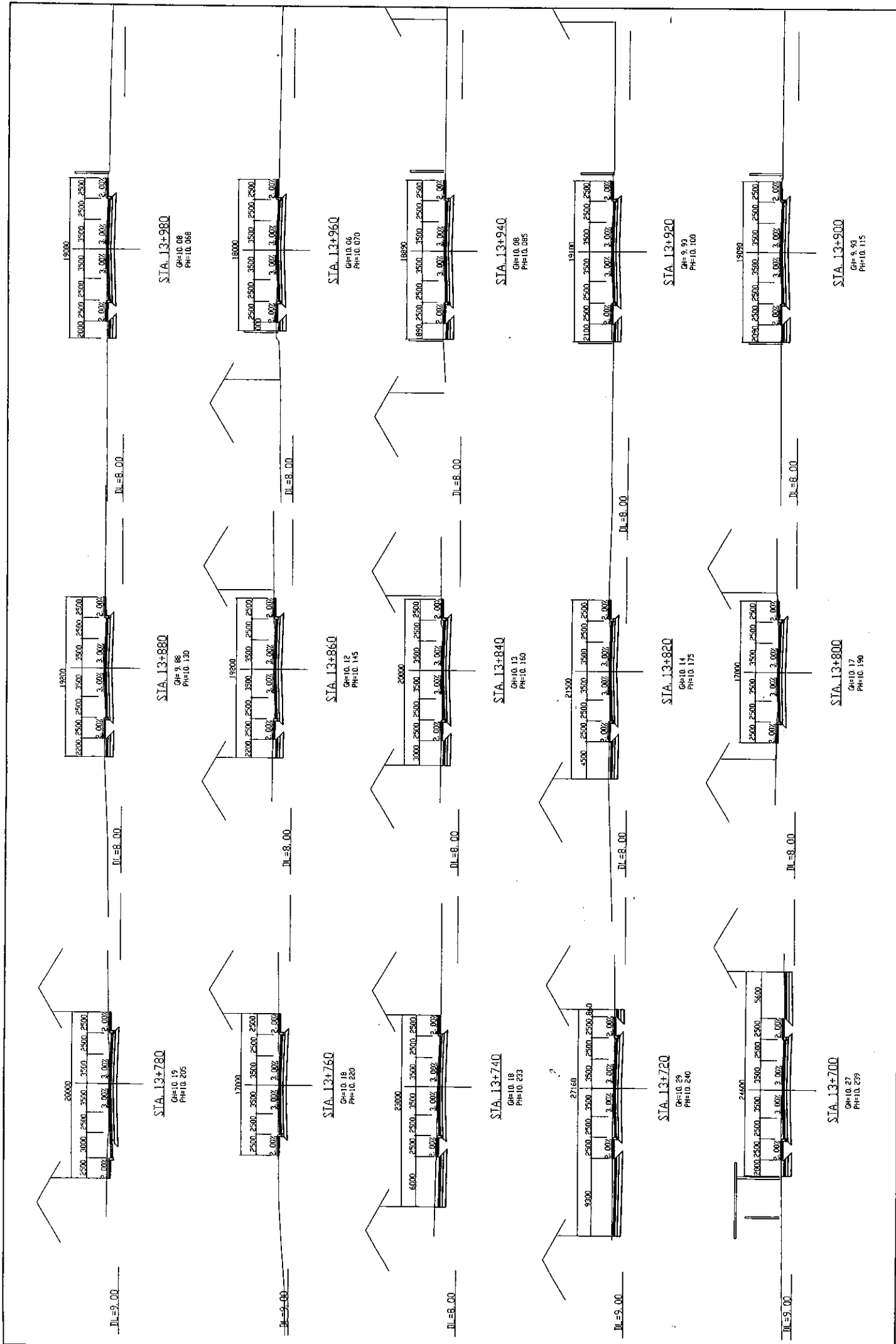
Drawing No.
Sheet No.
CS-8



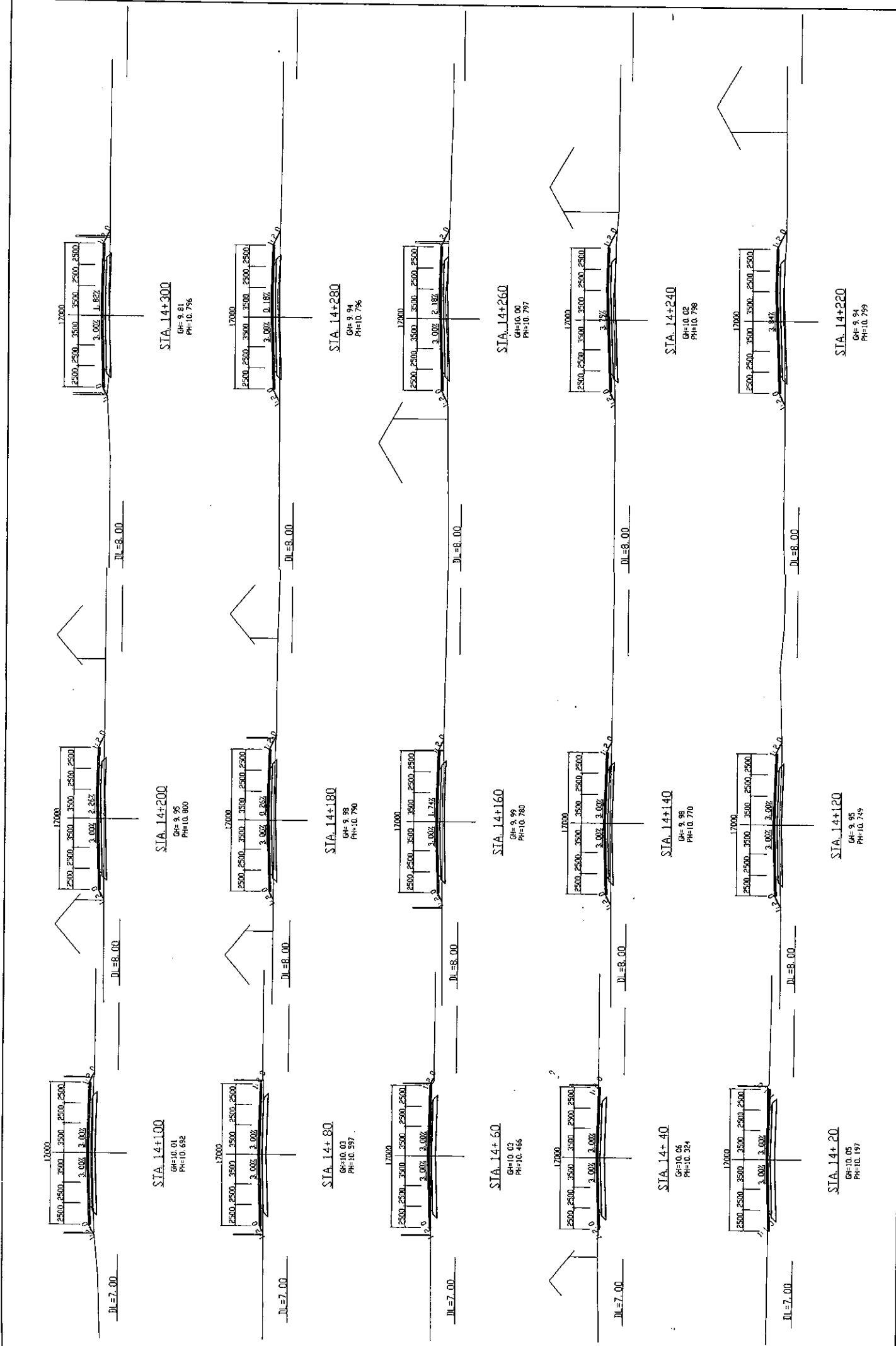
MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO.,LTD	TITLE: CROSS SECTION (STA.5+760—STA.6+040)	SCALE H=1/2000 V=1/200	Drawing No.
				Sheet No. CS-9	Drawing No.



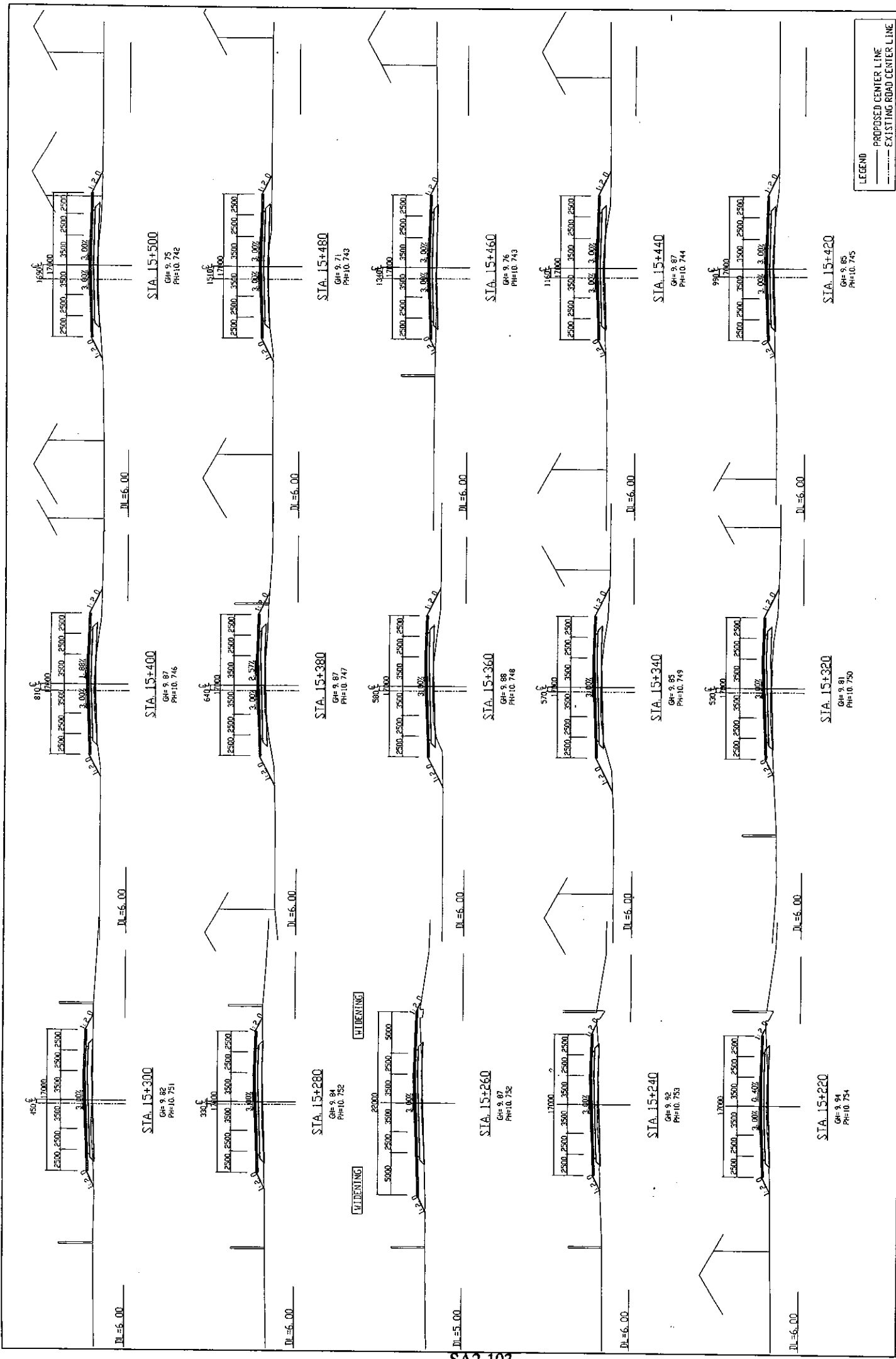
MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO.,LTD	TITLE : CROSS SECTION (STA.30+800 - STA.13+680)	SCALE	Drawing No.
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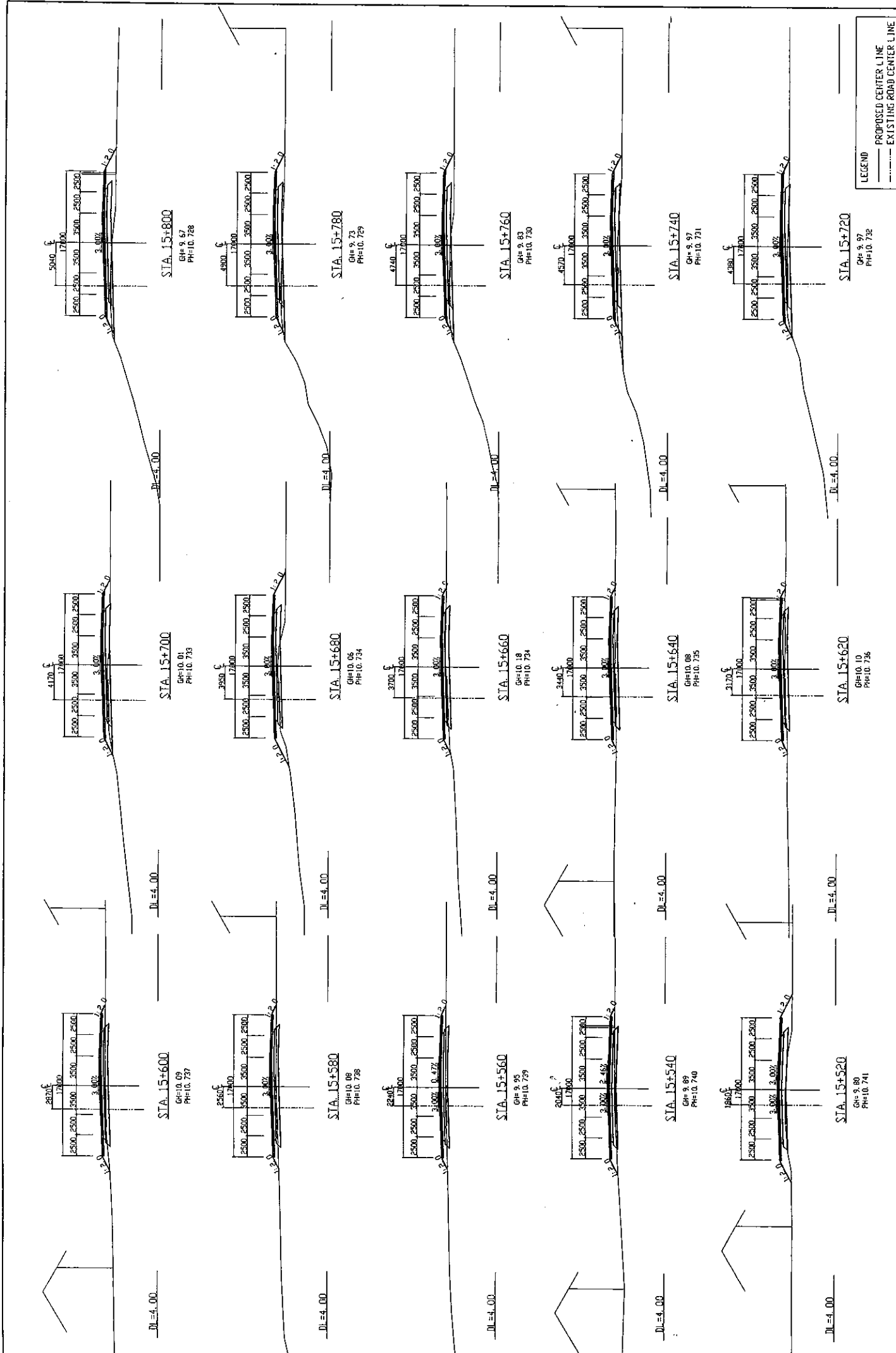
MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO.,LTD	TITLE : CROSS SECTION (STA. 13+700 - STA. 13+980)	SCALE	Drawing No.
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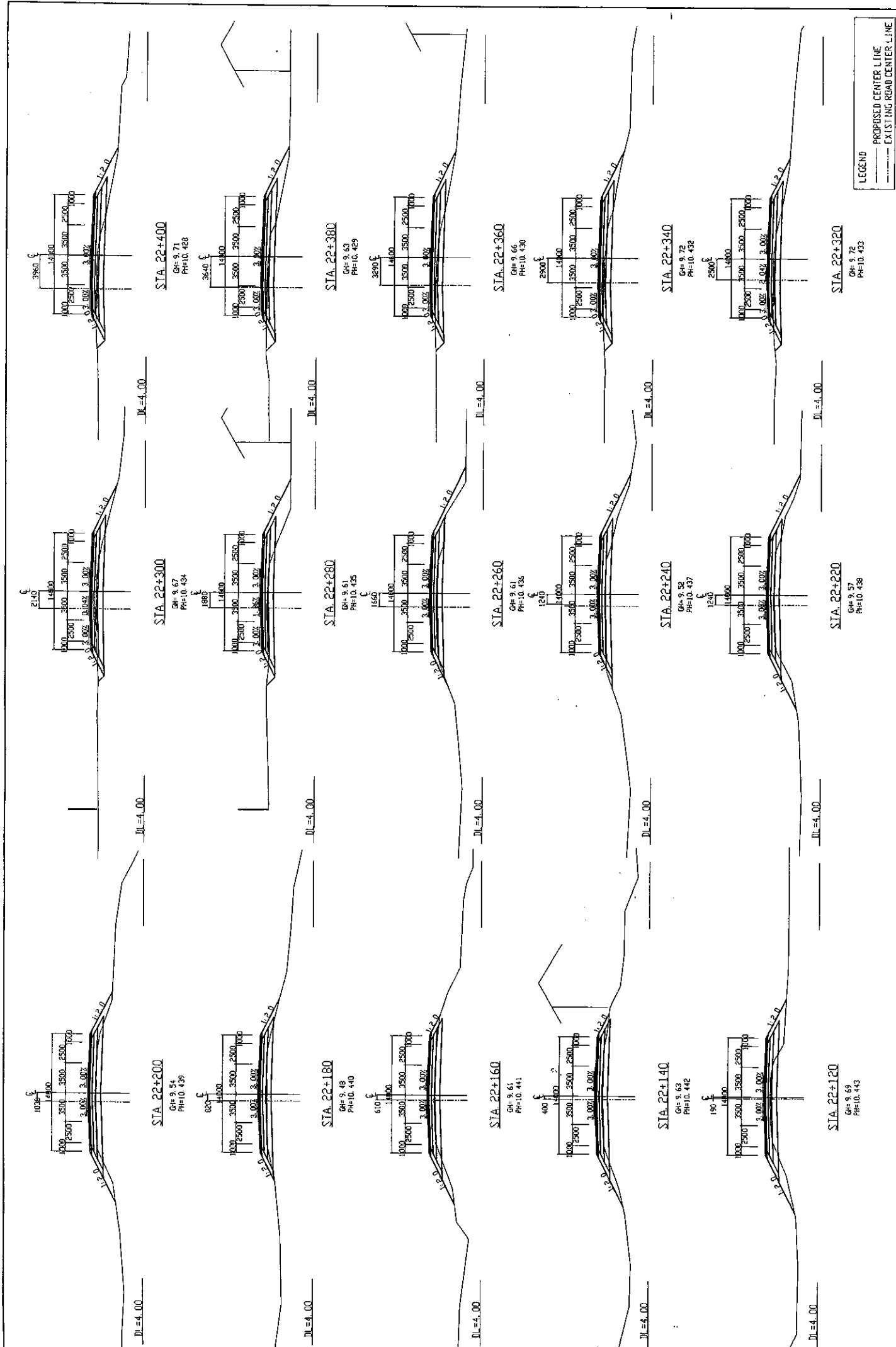
MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUJENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO.,LTD	TITLE : CROSS SECTION (STA. 14+020—STA. 14+300)	SCALE	Drawing No.
				H=1/2000 V=1/200	Sheet No. CS-12



MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUJENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO.,LTD	TITLE : CROSS SECTION (STA. 15+220--STA. 15+500)	SCALE	Drawing No.
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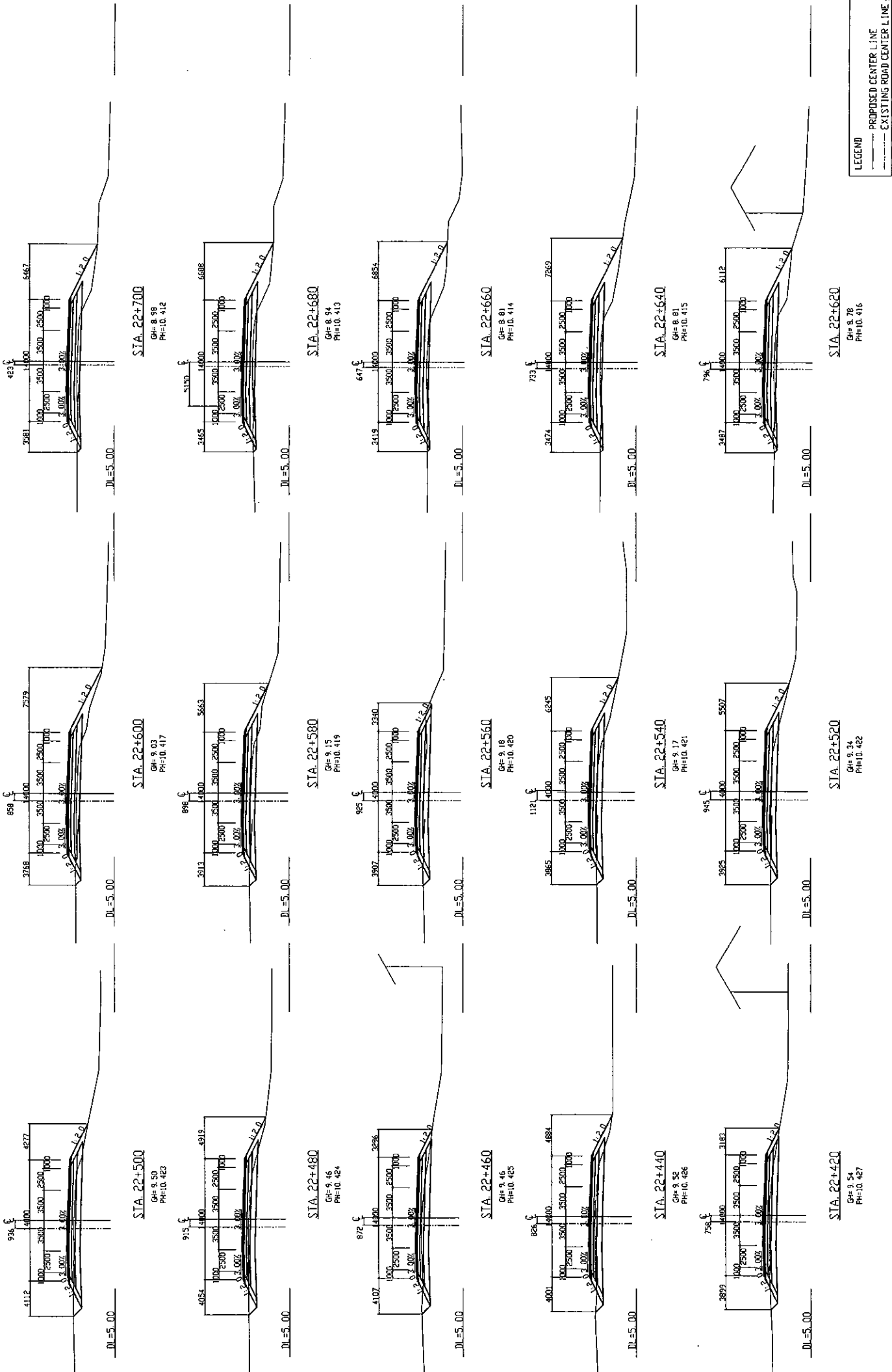
PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO.,LTD	TITLE: CROSS SECTION (STA. 15+520—STA. 15+800)	SCALE H=1/2000 V=1/200	Drawing No.
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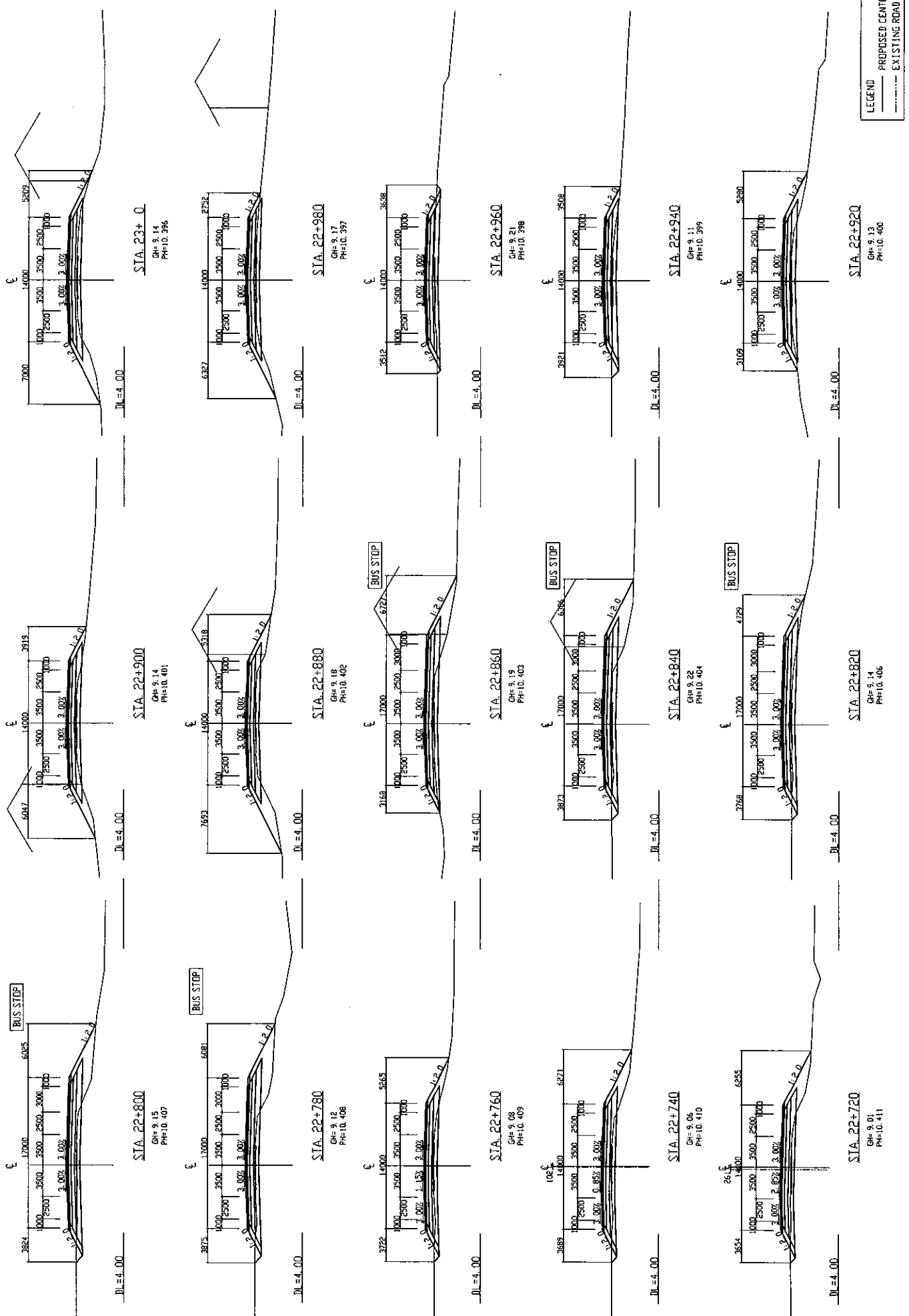
LEGEND

—	PROPOSED CENTER LINE
- - -	EXISTING ROAD CENTER LINE

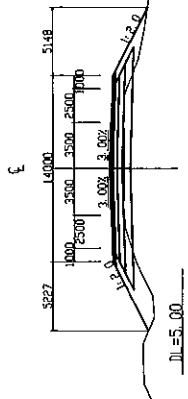
MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO.,LTD	TITLE : CROSS SECTION (STA.22+120—STA.22+400)	SCALE	Drawing No.
				H=1/2000 V=1/200	Sheet No. CS-15



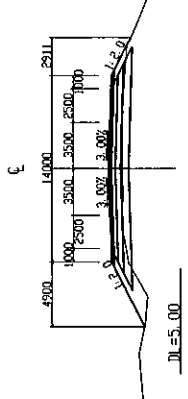
MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO., LTD	TITLE :	CROSS SECTION (STA. 22+420 - STA. 22+700)	SCALE	Drawing No.
					H=1/2000 V=1/200	Sheet No. CS-16



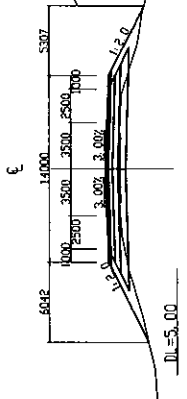
MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO., LTD	TITLE : CROSS SECTION (STA.22+720 – STA.23+000)	SCALE H=1/2000 V=1/200	Drawing No. Sheet No. CS-17



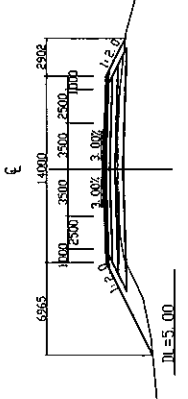
STA. 23+100
GH= 9.36
PH=10.370



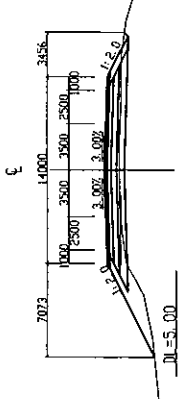
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PH=10.391



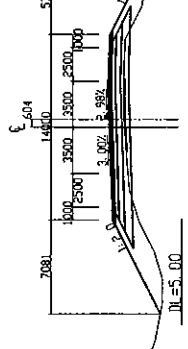
STA. 23+60
GH= 9.24
PH=10.382



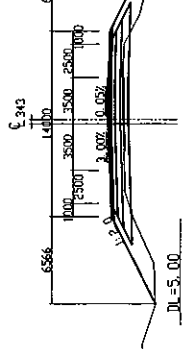
STA. 23+40
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PH=10.394



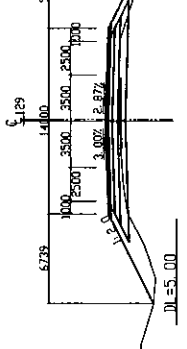
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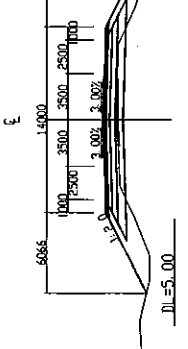
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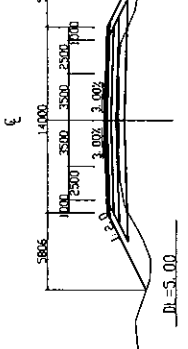
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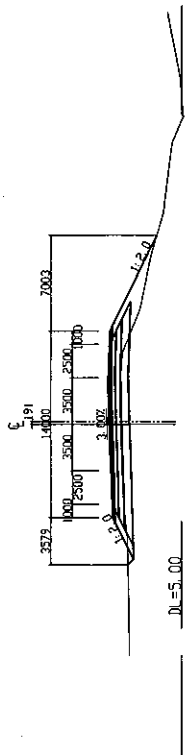
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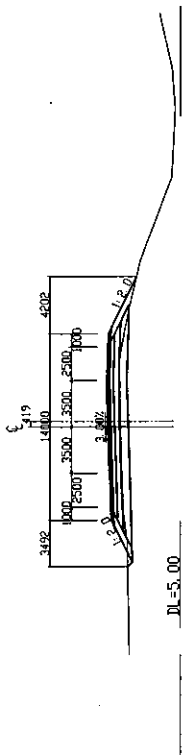
STA. 23+140
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PH=10.388



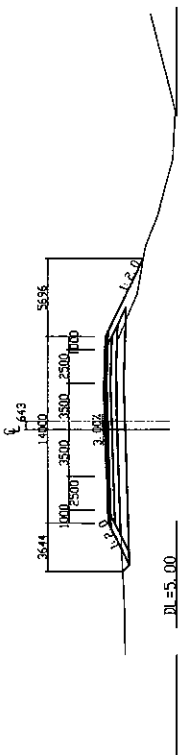
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PH=10.389



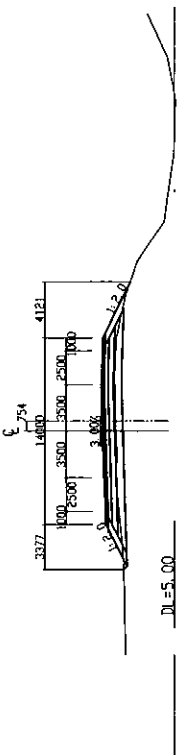
STA. 23+300
GH= 9.44
PH=10.379



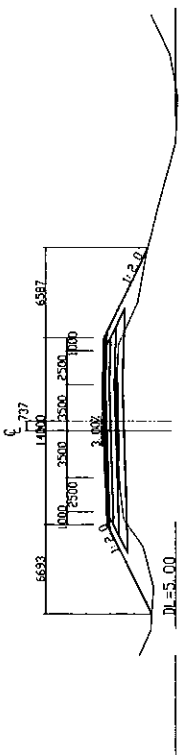
STA. 23+280
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PH=10.381



STA. 23+260
GH= 9.52
PH=10.382



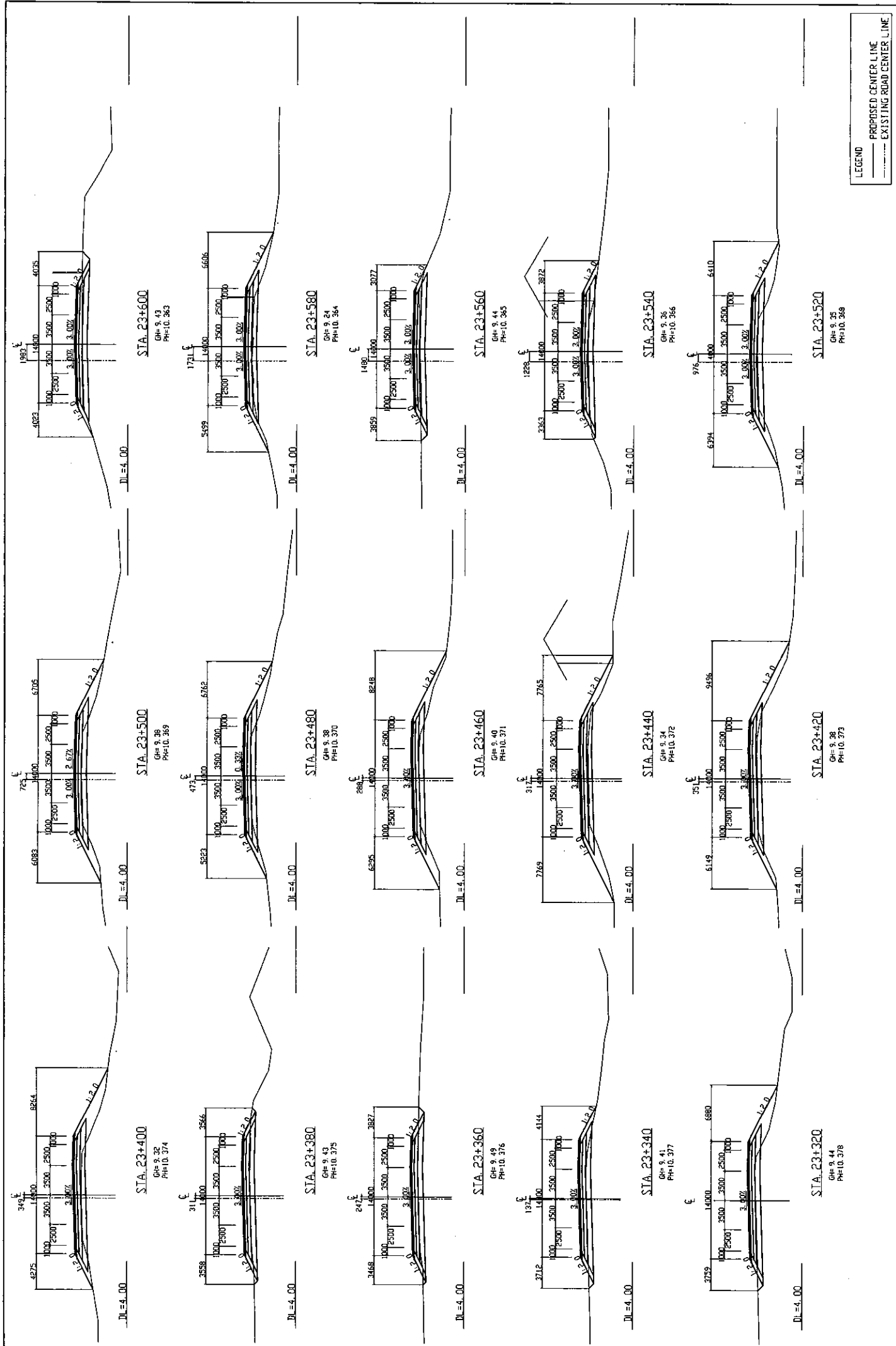
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PH=10.383



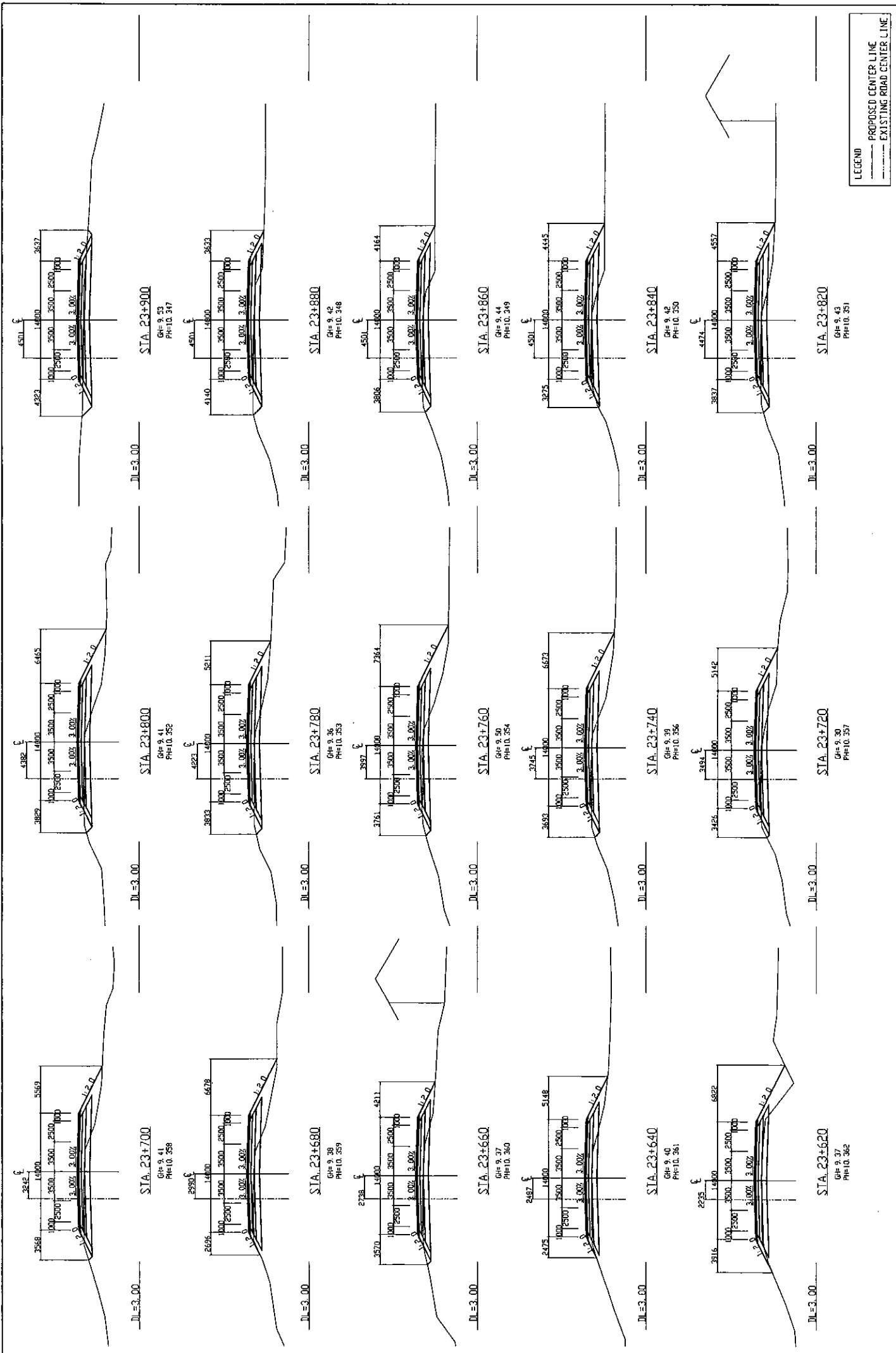
STA. 23+220
GH= 9.32
PH=10.384

LEGEND	PROPOSED CENTER LINE
	EXISTING ROAD CENTER LINE

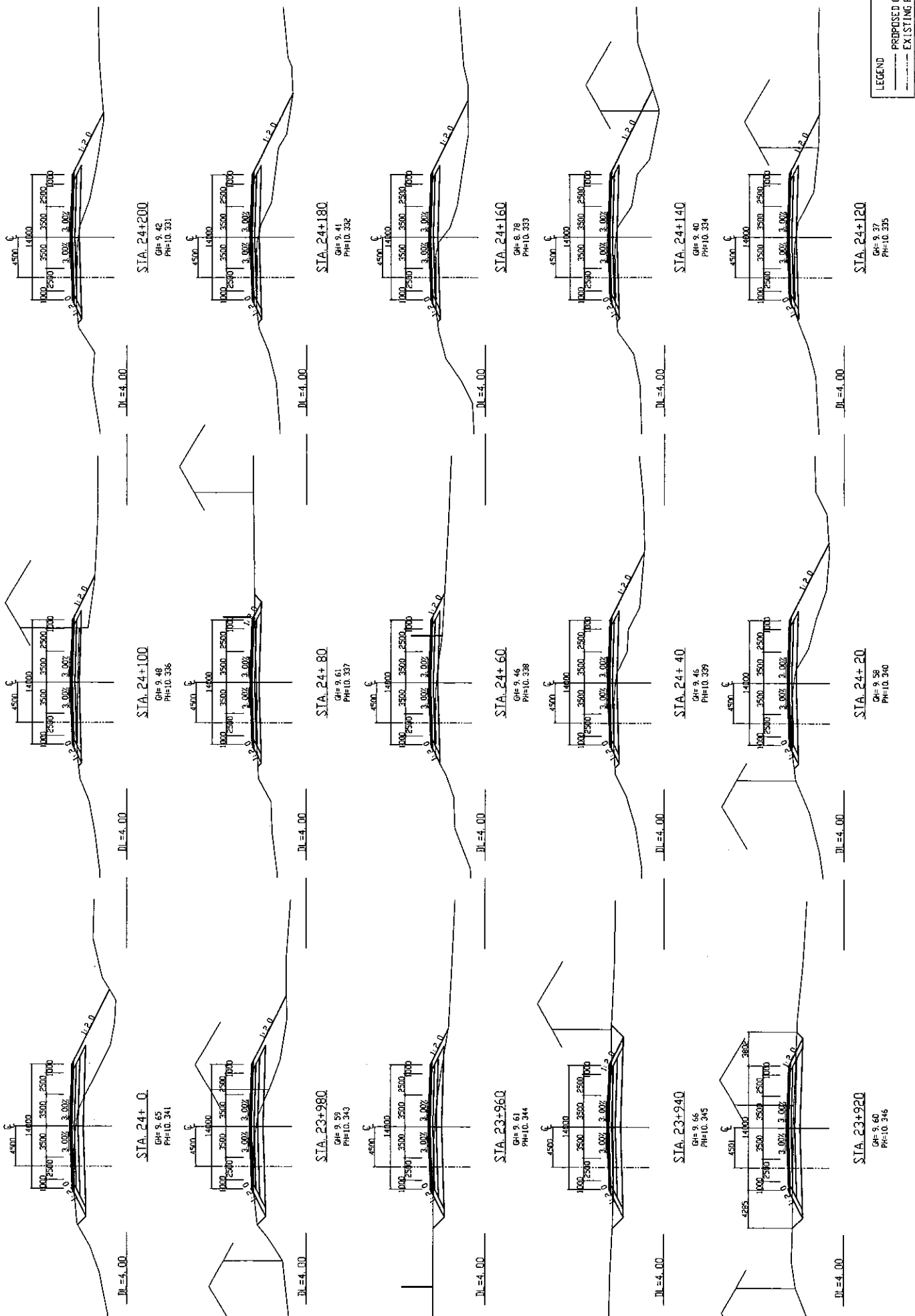
MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO.,LTD	TITLE :	CROSS SECTION (STA.23+020—STA.23+300)	SCALE	H=1/2000 V=1/200	Drawing No.	
			Sheet No.	CS-18				



MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO., LTD	Drawing No.
			Sheet No. CS-19



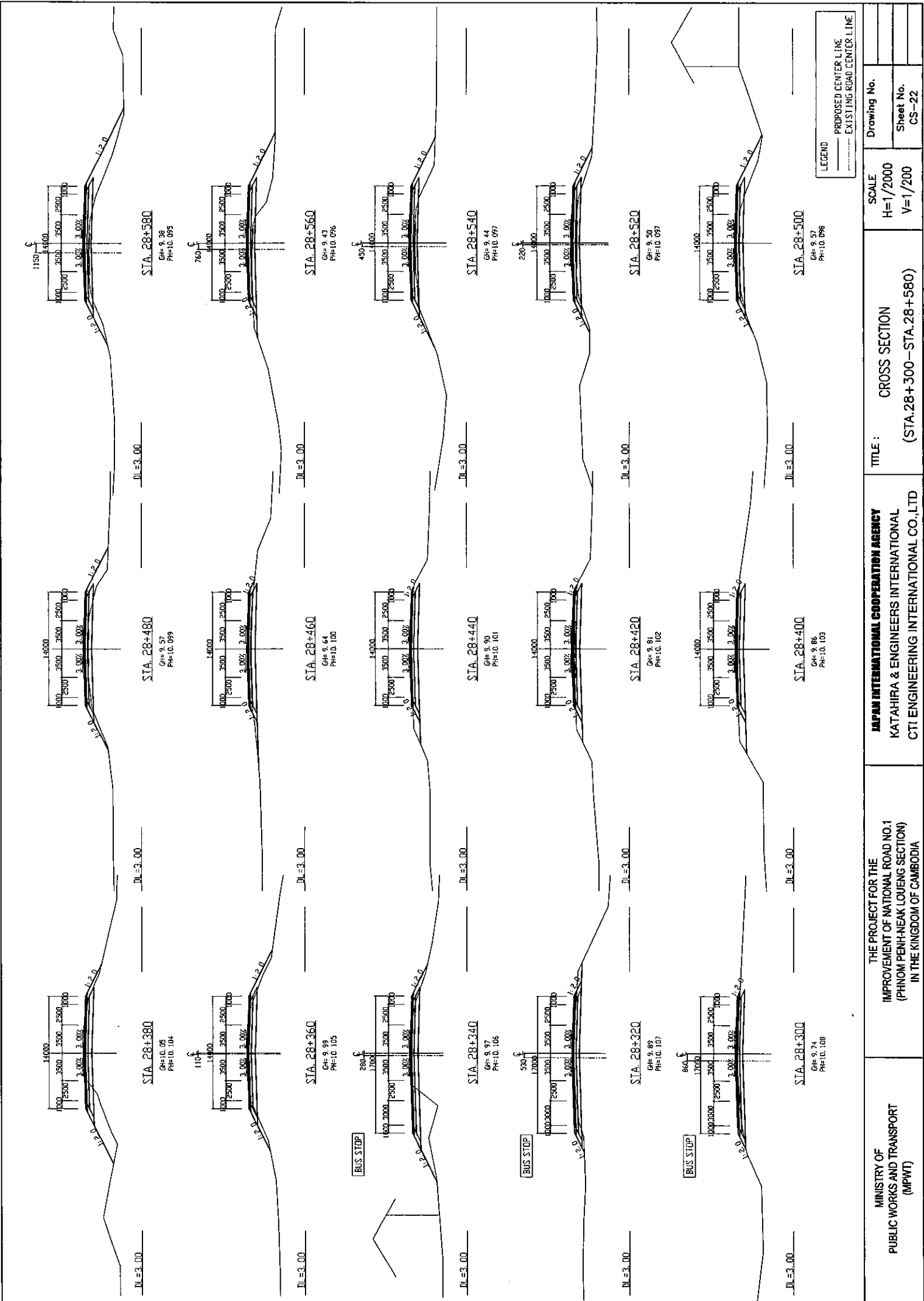
MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO.,LTD	TITLE :	CROSS SECTION (STA.23+62 - STA.23+900)
			SCALE	H=1/2000 V=1/200
			Drawing No.	
			Sheet No.	CS-20



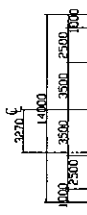
LEGEND

—	PROPOSED CENTER LINE
- - -	EXISTING ROAD CENTER LINE

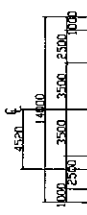
PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO.,LTD	TITLE : CROSS SECTION (STA.23+920—STA.24+200)	SCALE H=1/2000 V=1/200	Drawing No.
				Sheet No. CS-21	



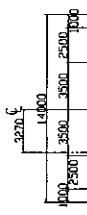
MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO.,LTD	TITLE : CROSS SECTION (STA.28+300—STA.28+580)	
			SCALE H=1/2000 V=1/200	Drawing No. Sheet No. CS-22



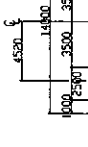
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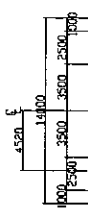
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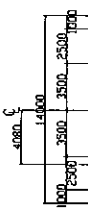
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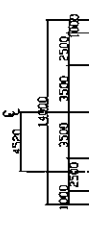
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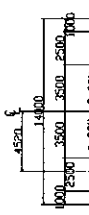
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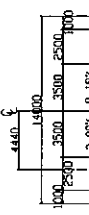
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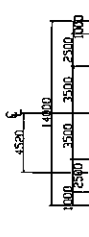
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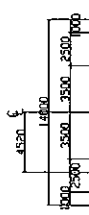
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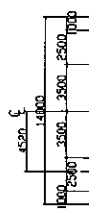
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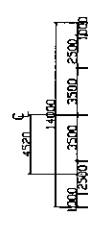
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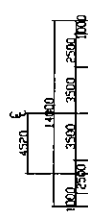
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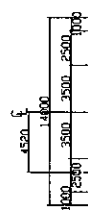
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 STA. 32+420
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DL=3.00
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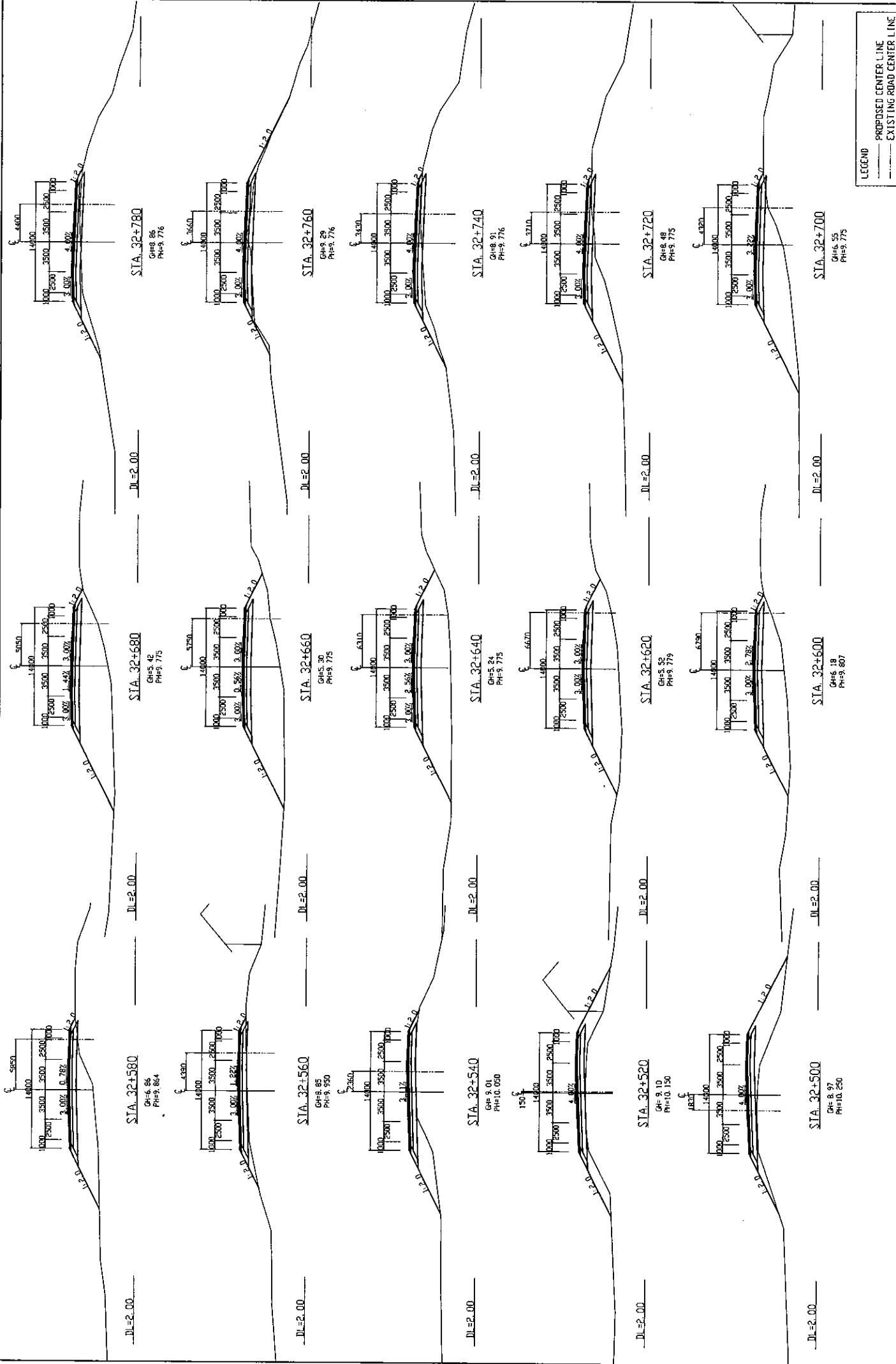
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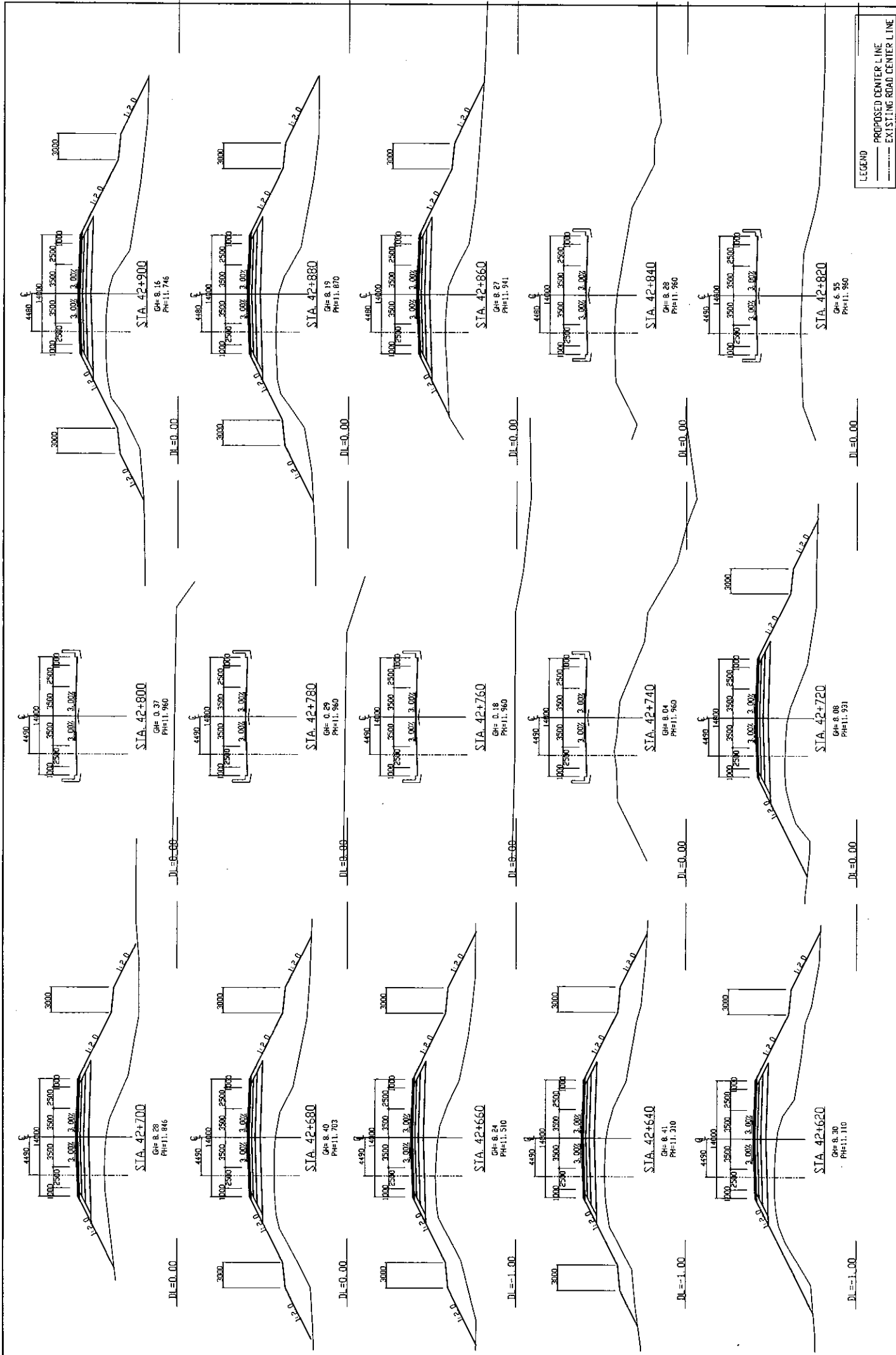
LEGEND
 ——— PROPOSED CENTER LINE
 - - - - - EXISTING ROAD CENTER LINE

MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO.,LTD	TITLE : CROSS SECTION (STA.32+200—STA.32+480)	SCALE H=1/2000 V=1/200	Drawing No. Sheet No. CS-23



LEGEND
 - - - - - PROPOSED CENTER LINE
 - - - - - EXISTING ROAD CENTER LINE

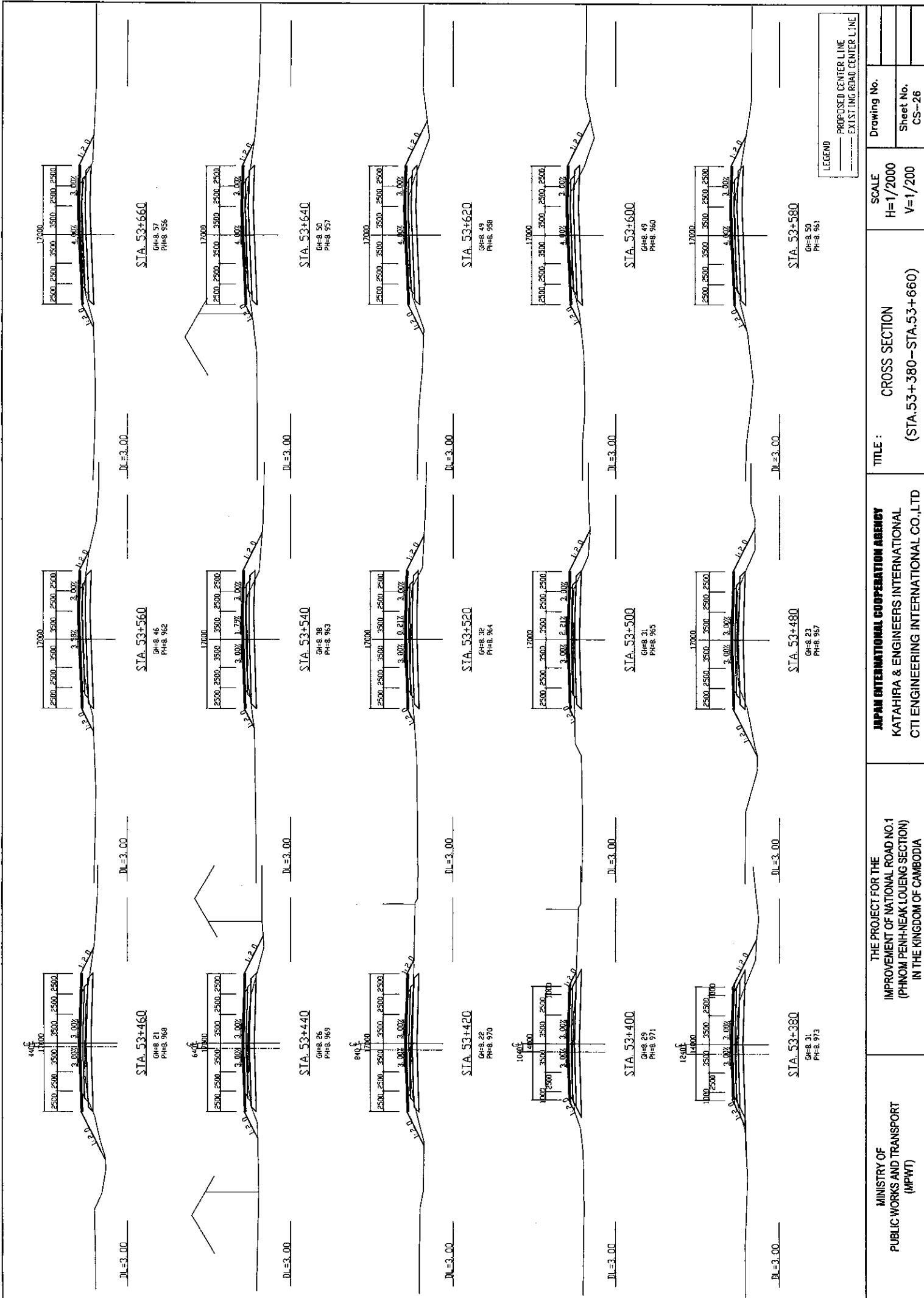
MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO.,LTD	TITLE : CROSS SECTION (STA.32+500—STA.32+780)	SCALE H=1/2000 V=1/200	Drawing No. Sheet No. CS-24



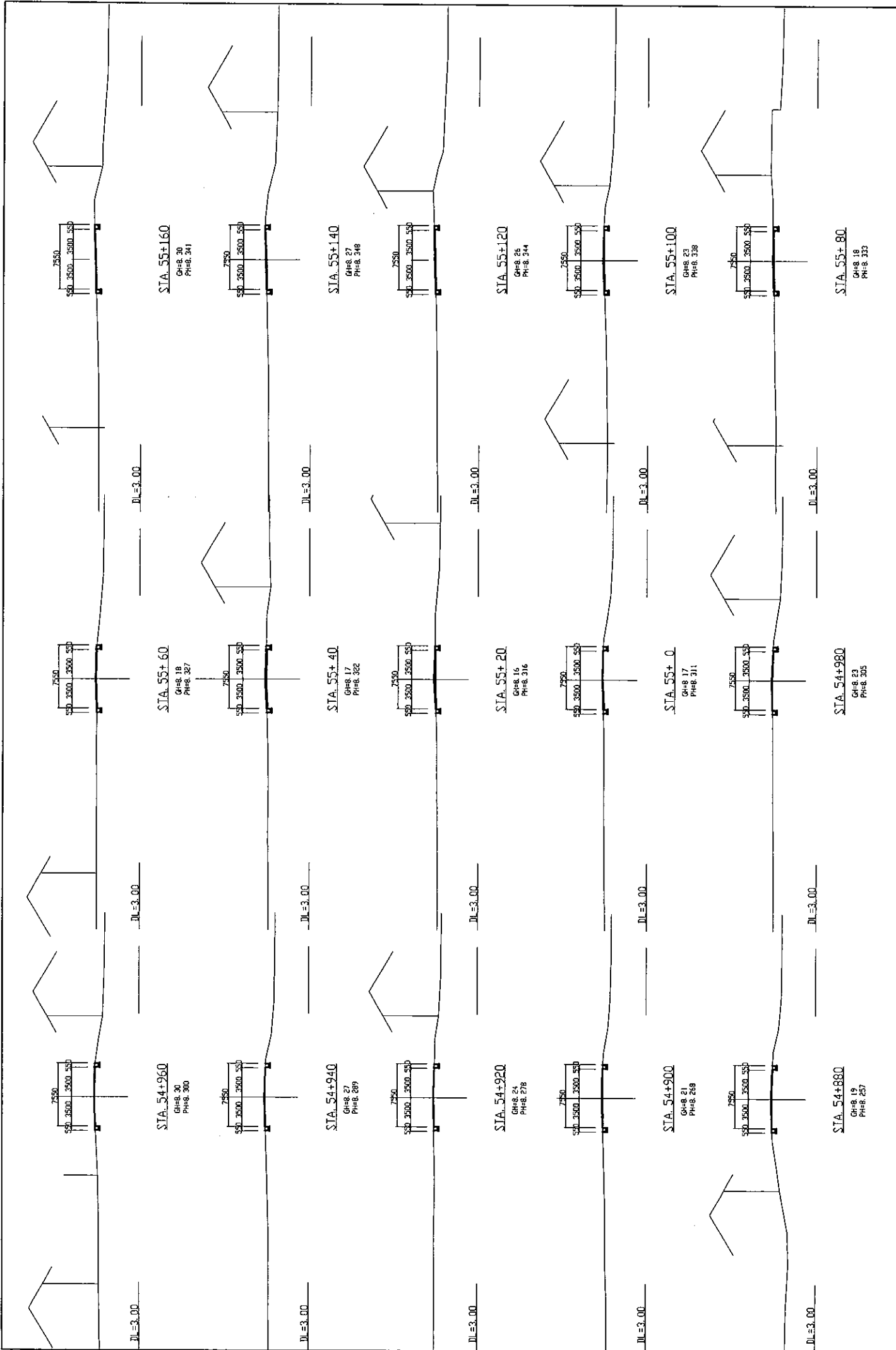
LEGEND

—	PROPOSED CENTER LINE
- - -	EXISTING ROAD CENTER LINE

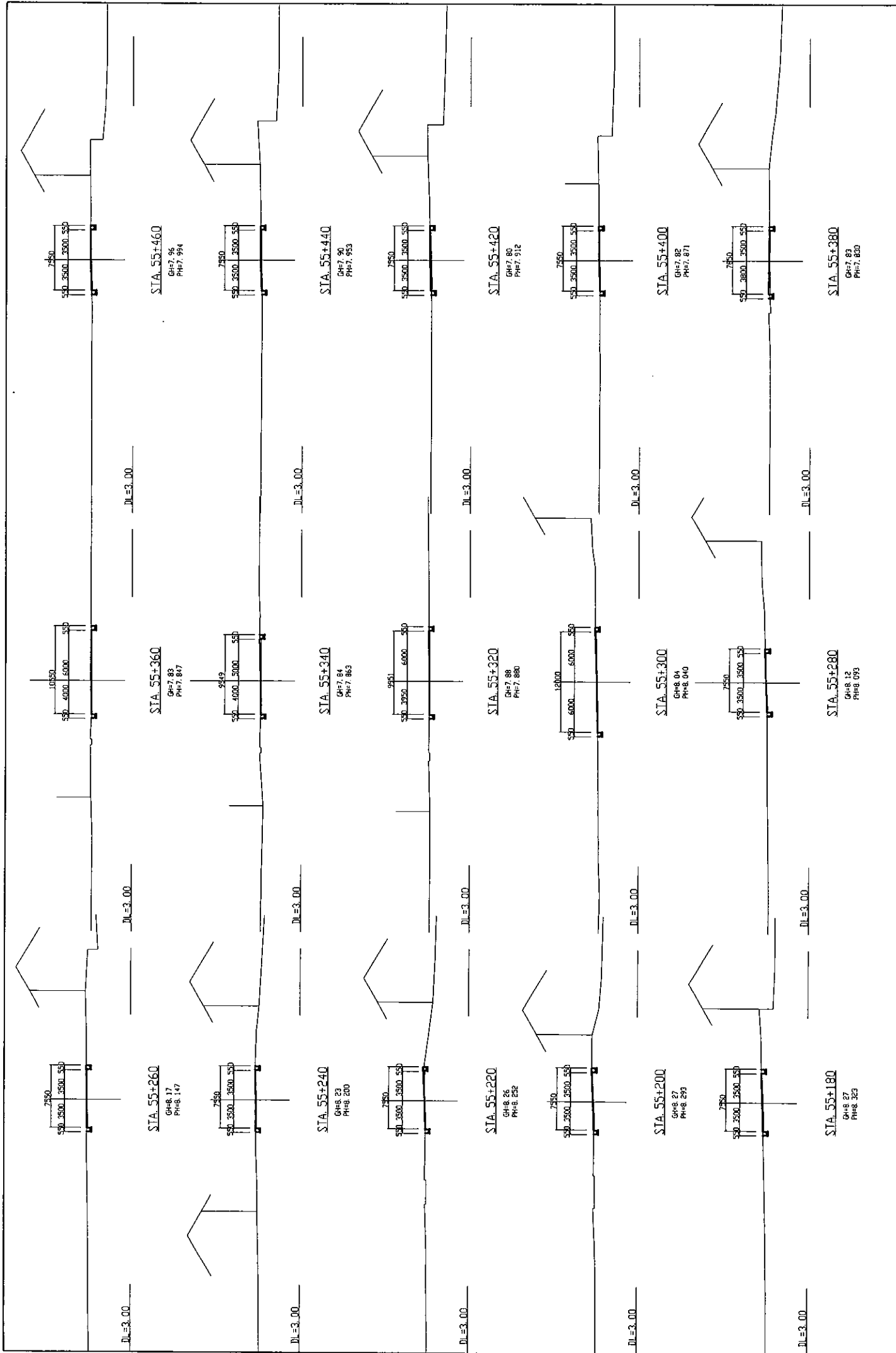
MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO.,LTD	TITLE : CROSS SECTION (STA.42+620—STA.42+900)	SCALE H=1/2000 V=1/200	Drawing No.
				Sheet No. CS-25	Drawing No.



JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO.,LTD	TITLE : CROSS SECTION (STA. 53+380--STA. 53+660)	SCALE H=1/2000 V=1/200	Drawing No.
		MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA



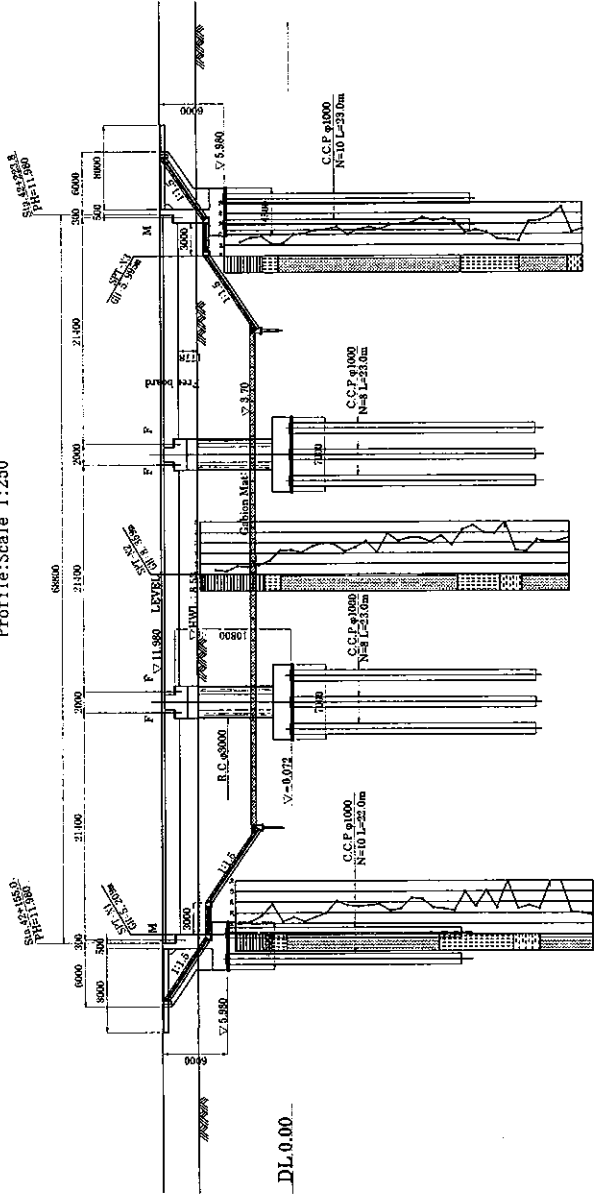
MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO.,LTD	TITLE : CROSS SECTION (STA.54+880—STA.55+160)		SCALE H=1/2000 V=1/200	Drawing No.
						Sheet No. CS-27



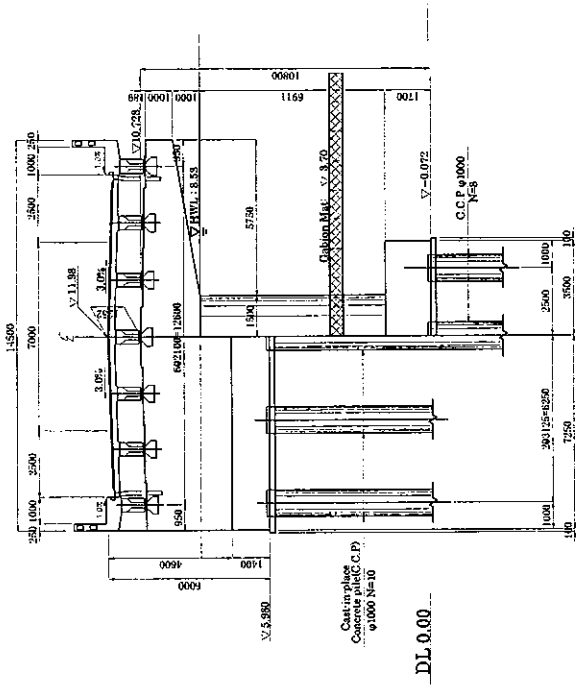
MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO.,LTD	TITLE :	CROSS SECTION (STA.55+180—STA.55+460)	SCALE	H=1/2000 V=1/200	Drawing No.	
							Sheet No. CS-28	

GENERAL VIEW OF BRIDGE NO.1

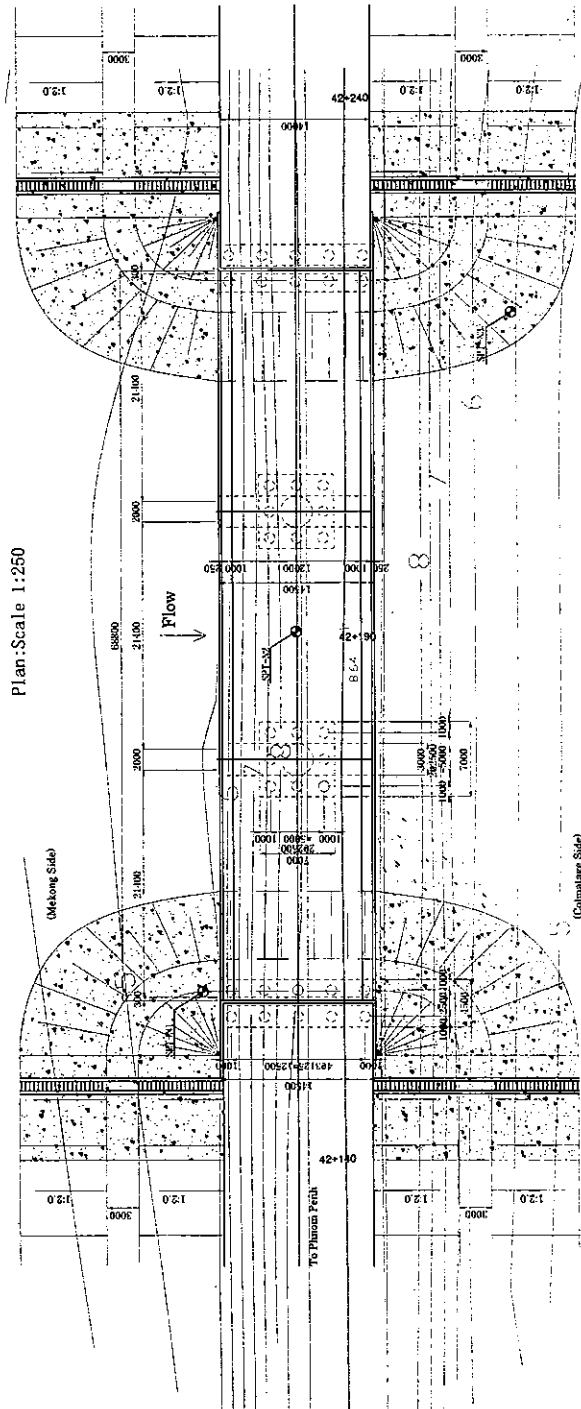
Profile: Scale 1:250



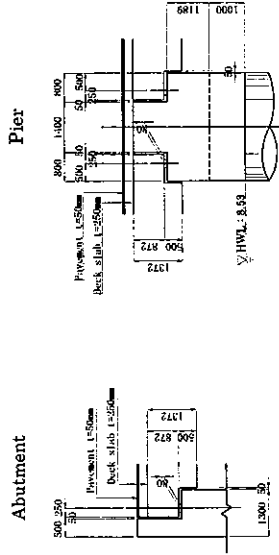
Cross Section: Scale 1:100



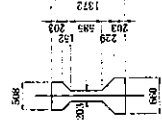
Plan: Scale 1:250



Details: Scale 1:75



Cross Section of PC Girder: Scale 1:50
AASHTO TYPE IV
(21.3m to 30.5m)



MINISTRY OF
PUBLIC WORKS AND TRANSPORT
(MPWT)

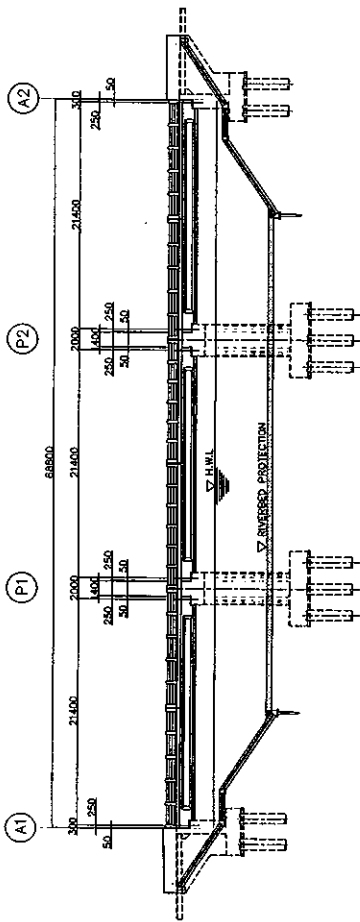
THE PROJECT FOR THE
IMPROVEMENT OF NATIONAL ROAD NO.1
(PHNOM PENH-NEAK LOUENG SECTION)
IN THE KINGDOM OF CAMBODIA

JAPAN INTERNATIONAL COOPERATION AGENCY
KATAHIRA & ENGINEERS INTERNATIONAL
CTI ENGINEERING INTERNATIONAL CO., LTD

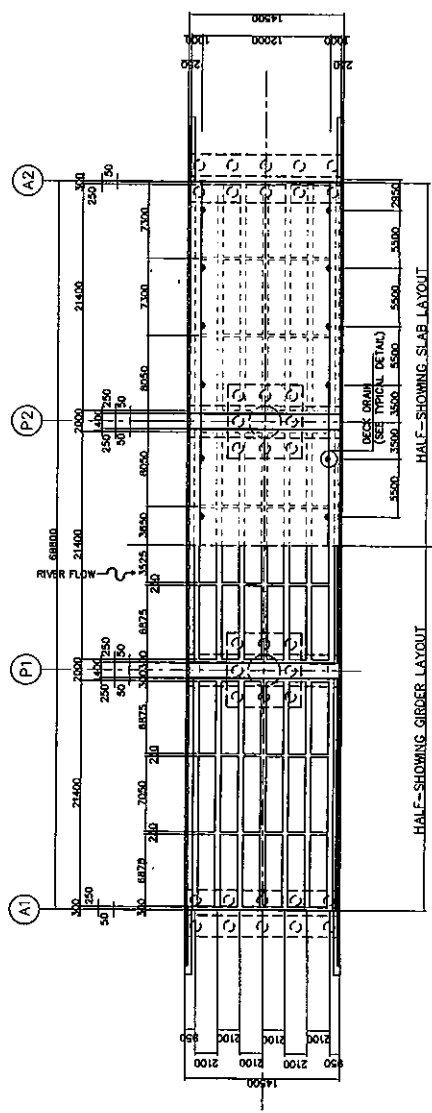
TITLE: BRIDGE
BRIDGE NO.1
GENERAL VIEW

SCALE
1/250

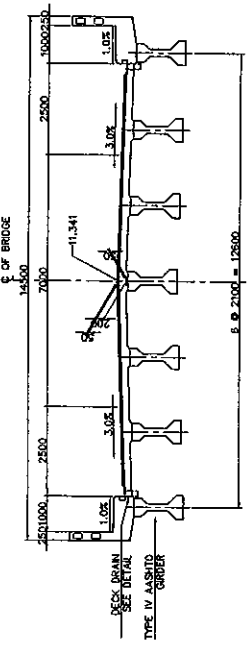
Drawing No.
Sheet No.
3/3



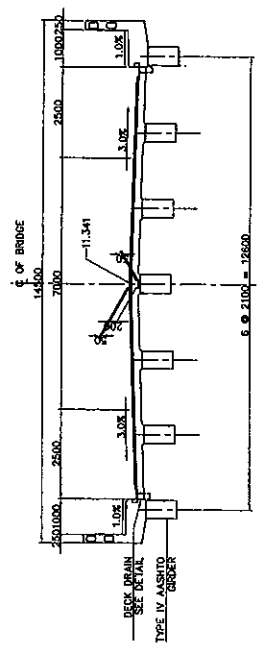
A
ELEVATION
SCALE 1 : 250



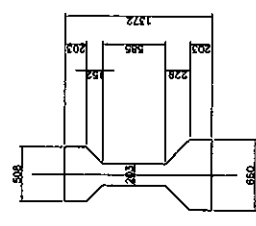
B
PLAN
SCALE 1 : 250



1
SECTION @ ABUTMENT
SCALE 1 : 75



2
SECTION @ PIER
SCALE 1 : 75



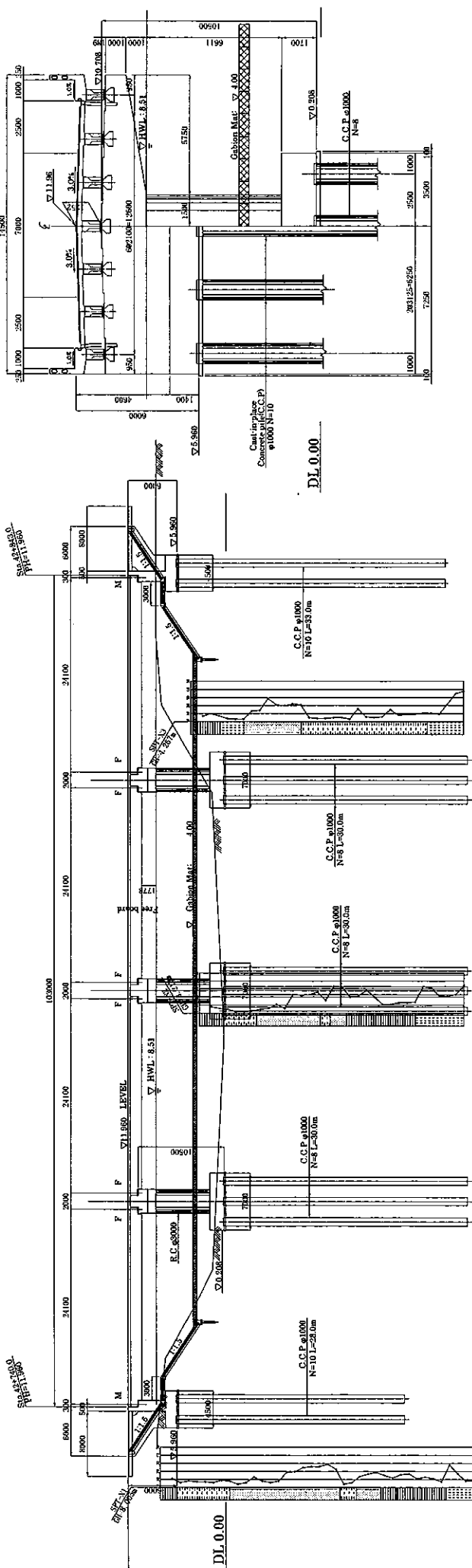
3
SECTION OF PC GIRDER
AASHTO TYPE IV
SCALE 1 : 25

SCALE AS SHOWN
BRIDGE NO. 1

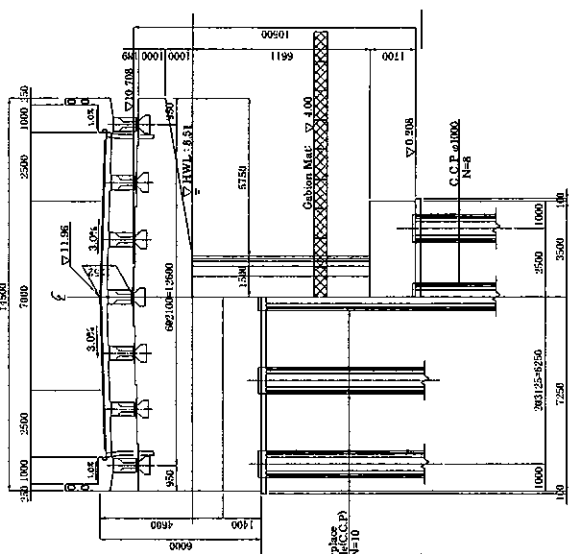
MINISTRY OF PUBLIC WORKS AND TRANSPORT (MIPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO.,LTD	TITLE :	BRIDGE NO. 1	SCALE	As Shown	Drawing No.	
			STRUCTURE DRAWING OF SUPERSTRUCTURE				Sheet No.	BR-3

GENERAL VIEW OF BRIDGE NO.2

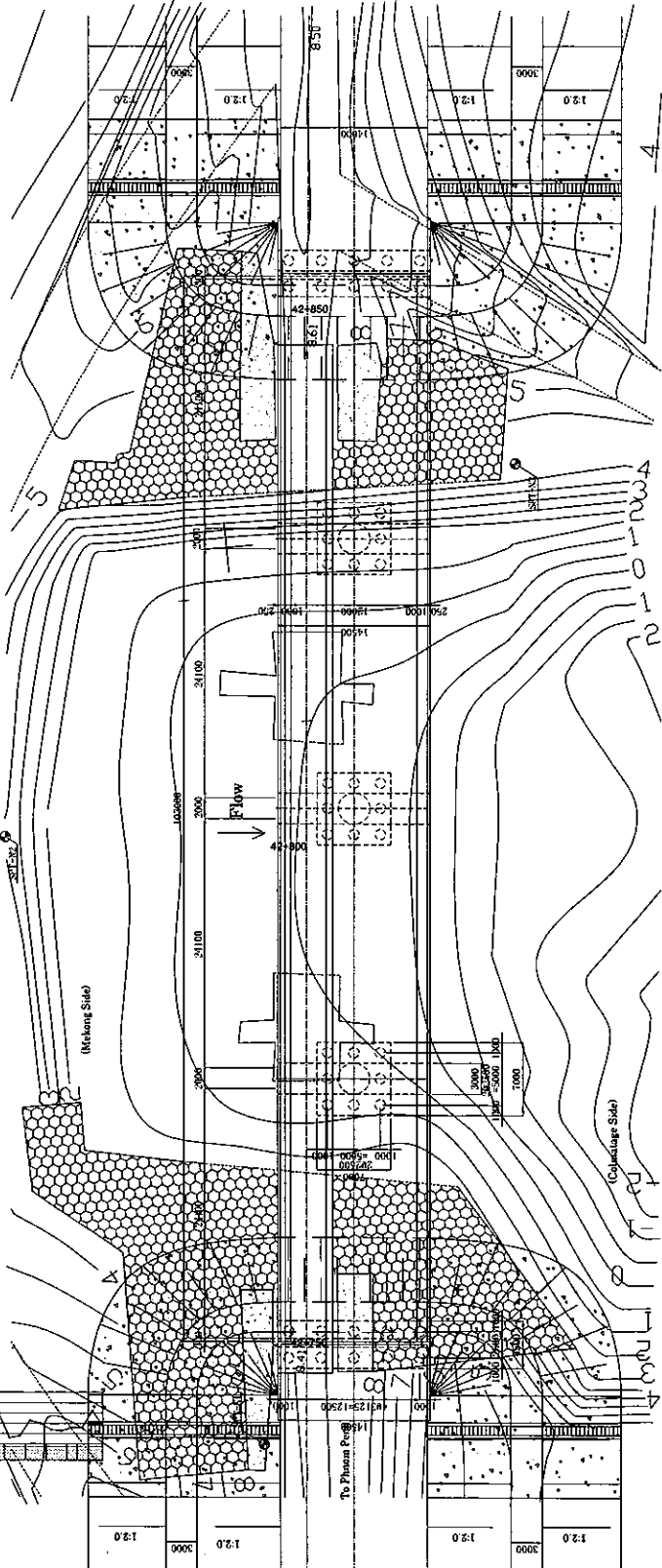
Profile: Scale 1:250



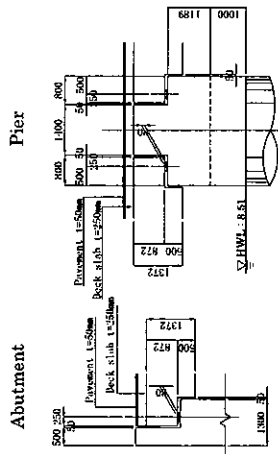
Cross Section: Scale 1:100



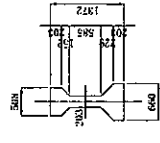
Plan: Scale 1:250



Details: Scale 1:75



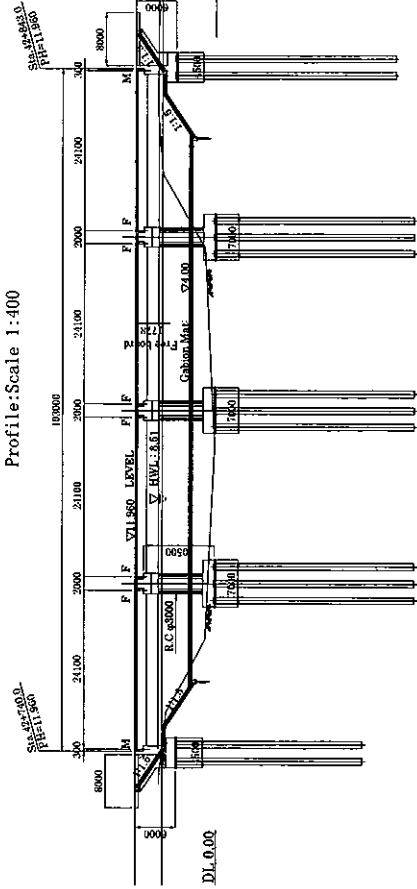
Cross Section of PC Girder: Scale 1:50
AASHTO TYPE IV
(21.3m to 30.5m)



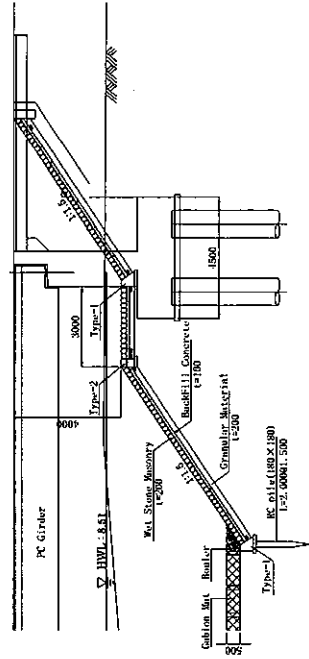
<p>MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)</p>	<p>THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA</p>	<p>JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO., LTD</p>	<p>TITLE: BRIDGE NO.2 GENERAL VIEW</p>	<p>SCALE 1/250</p>	<p>Drawing No. Sheet No. BR-6</p>
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REVTMENT AND RIVER BED PROTECTION

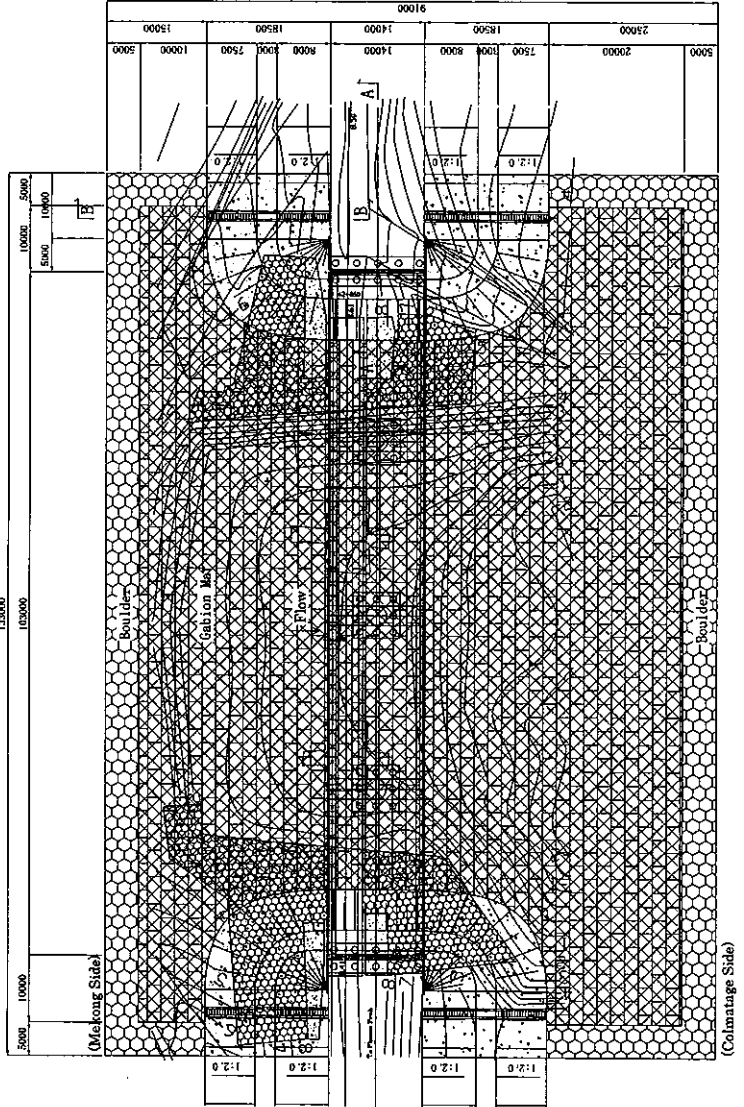
Profile: Scale 1:400



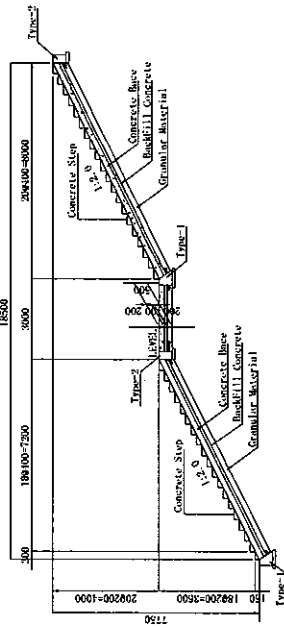
Cross Section A-A : Scale 1:100



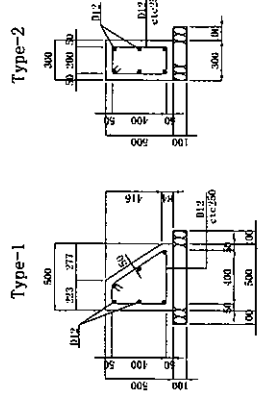
Plan: Scale 1:400



Cross Section B-B : Scale 1:100



Details: Scale 1:20



MINISTRY OF
PUBLIC WORKS AND TRANSPORT
(MPWT)

THE PROJECT FOR THE
IMPROVEMENT OF NATIONAL ROAD NO.1
(PHNOM PENH-NEAK LOUENG SECTION)
IN THE KINGDOM OF CAMBODIA

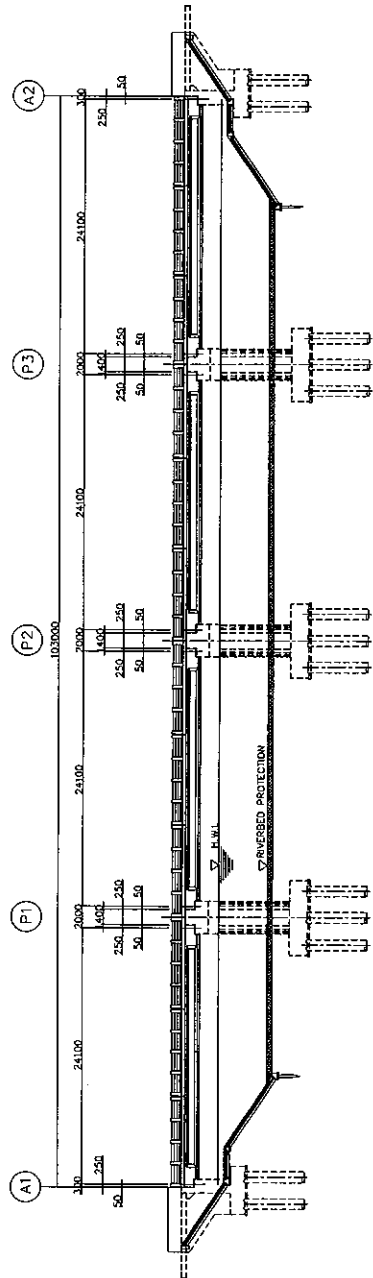
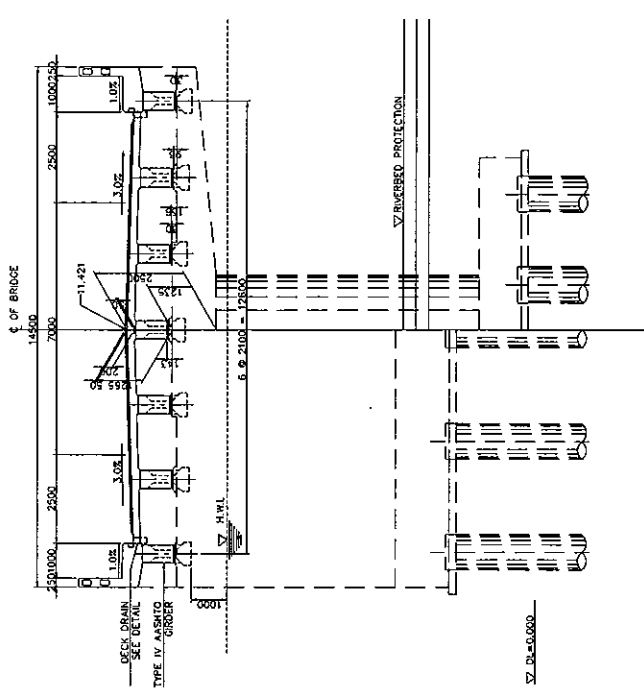
JAPAN INTERNATIONAL COOPERATION AGENCY
KATAHIRA & ENGINEERS INTERNATIONAL
CTI ENGINEERING INTERNATIONAL CO., LTD

TITLE: BRIDGE NO.2
REVTMENT AND RIVER BED
PROTECTION

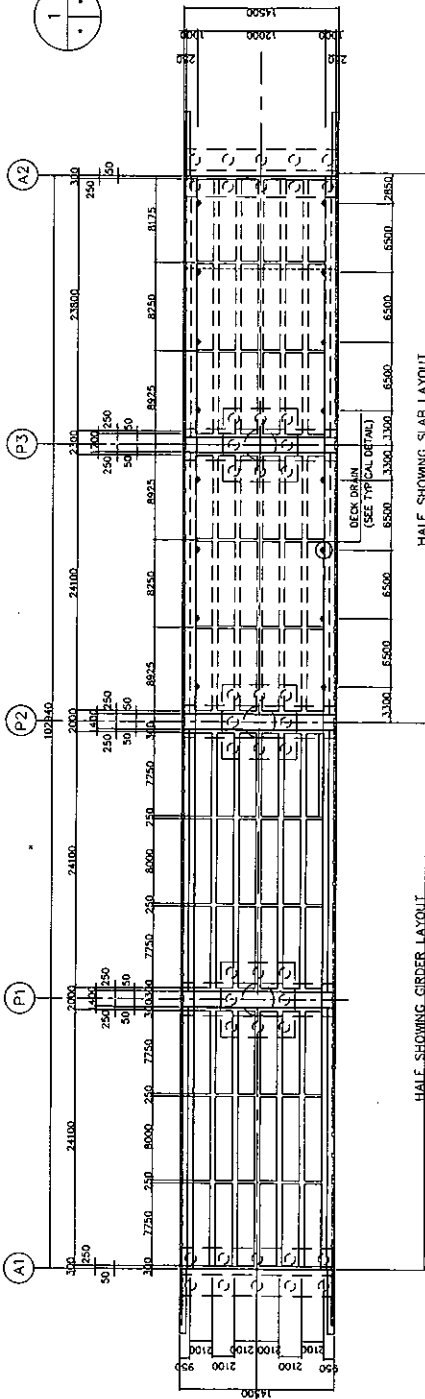
SCALE
1/400

Drawing No.

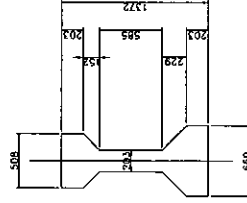
Sheet No.
BR-7



A
 ELEVATION
 SCALE 1:250



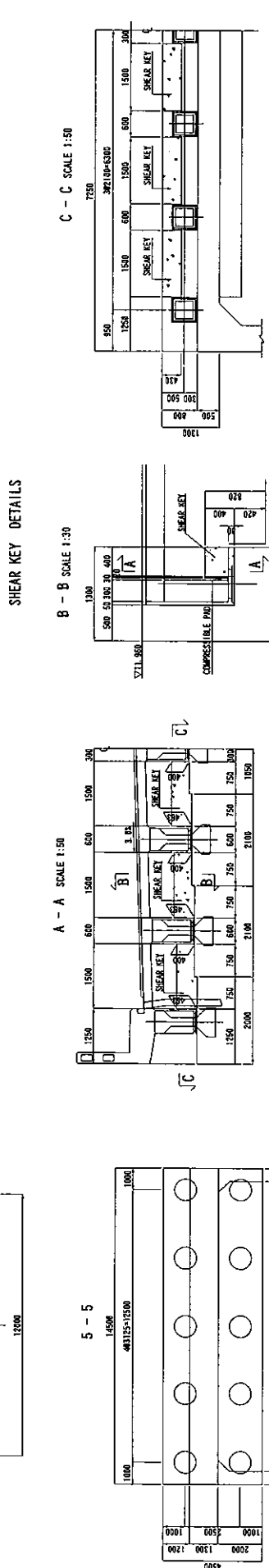
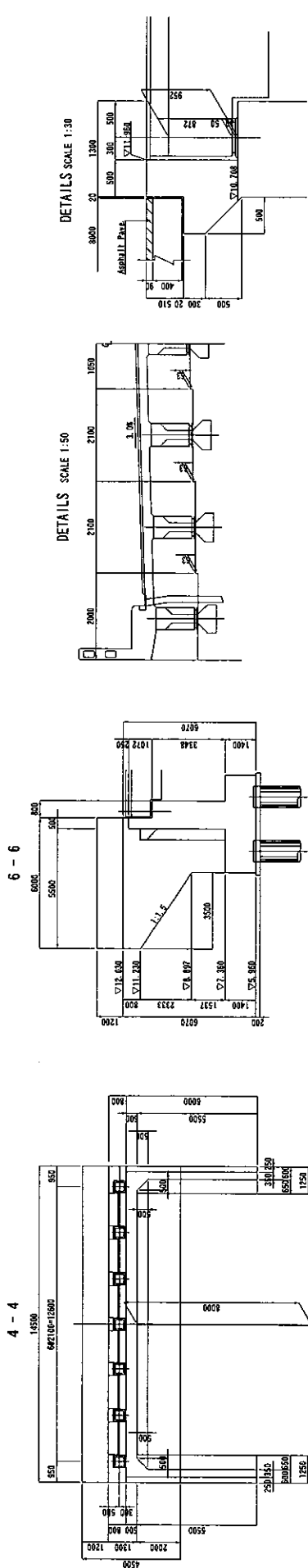
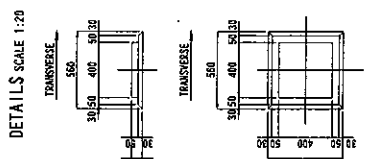
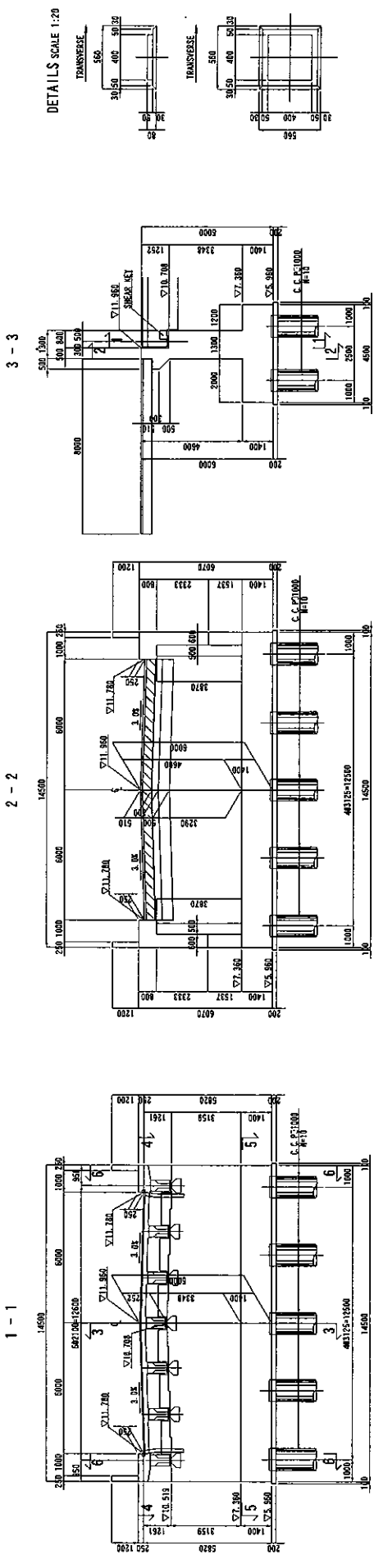
B
 PLAN
 SCALE 1:250



BRIDGE NO. 2
 AS SHOWN

Drawing No.	SCALE	TITLE:	PROJECT:	CLIENT:	DRAWING NO.
Sheet No.	As Shown	STRUCTURE DRAWING OF SUPERSTRUCTURE	IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUJENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO.,LTD	BR-6

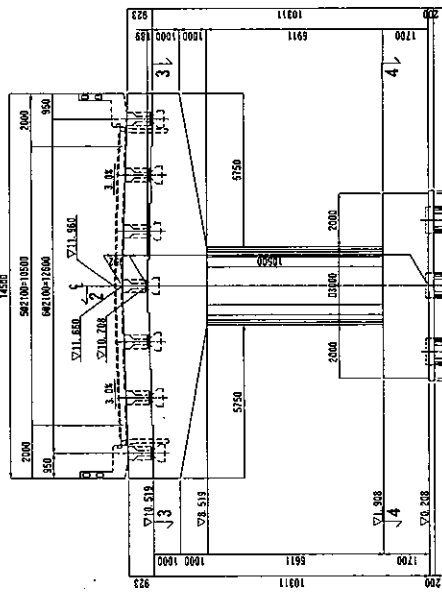
STRUCTURE DRAWING OF ABUTMENT SCALE 1:100



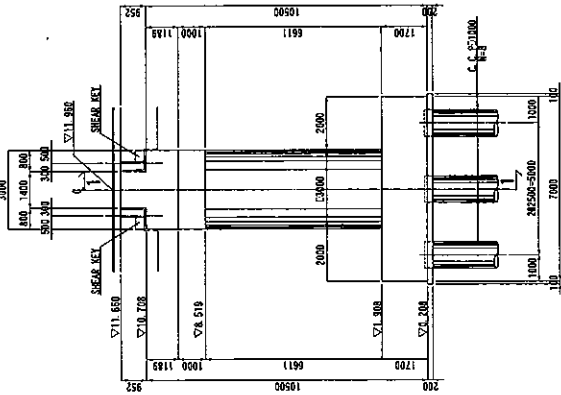
MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO.,LTD	TITLE : BRIDGE BRIDGE NO.2 STRUCTURE DRAWING OF ABUTMENT	SCALE	Drawing No.
				1/100	Sheet No. BR-9

STRUCTURE DRAWING OF PIER SCALE 1:100

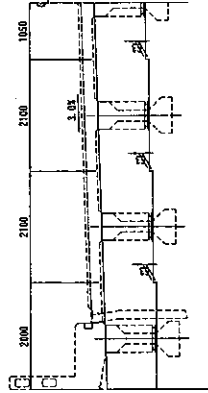
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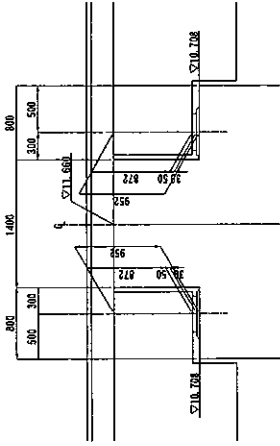
2 - 2



DETAILS SCALE 1:50

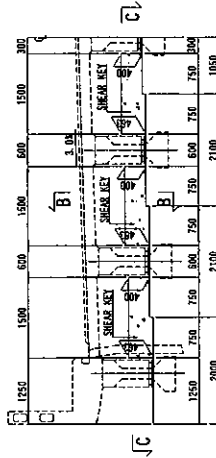


DETAILS SCALE 1:30

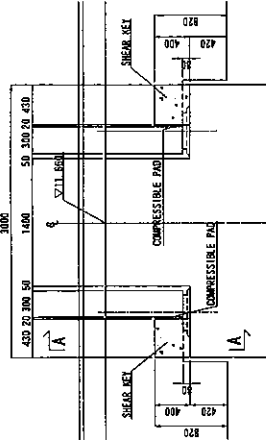


SHEAR KEY DETAILS

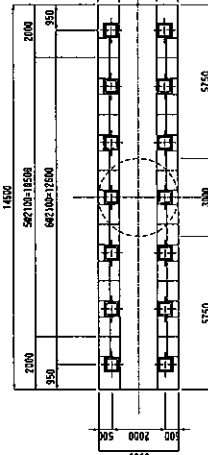
A - A SCALE 1:50



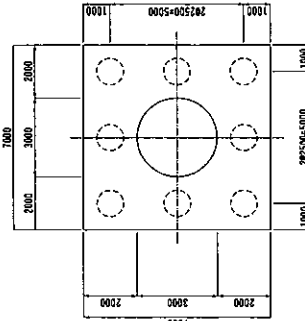
B - B SCALE 1:30



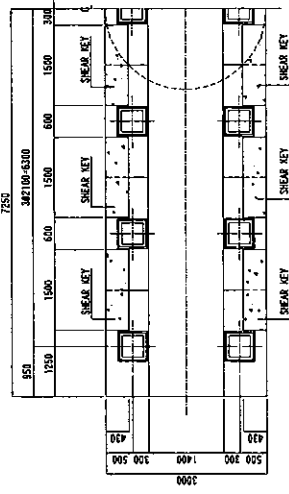
3 - 3



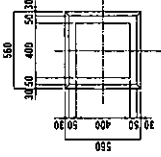
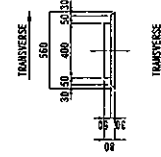
4 - 4



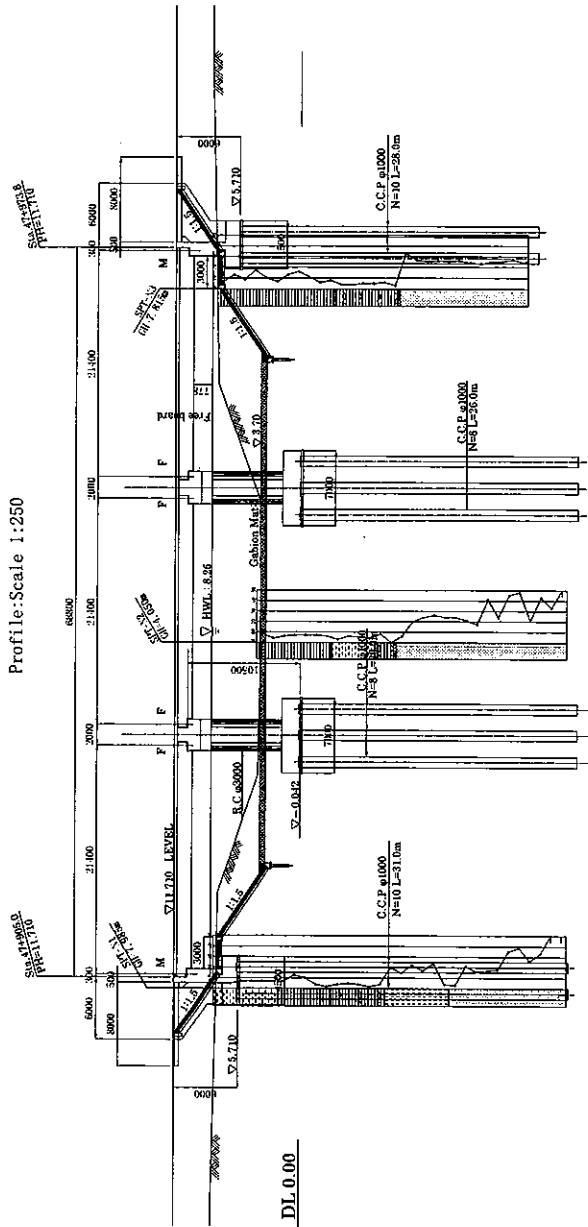
C - C SCALE 1:50



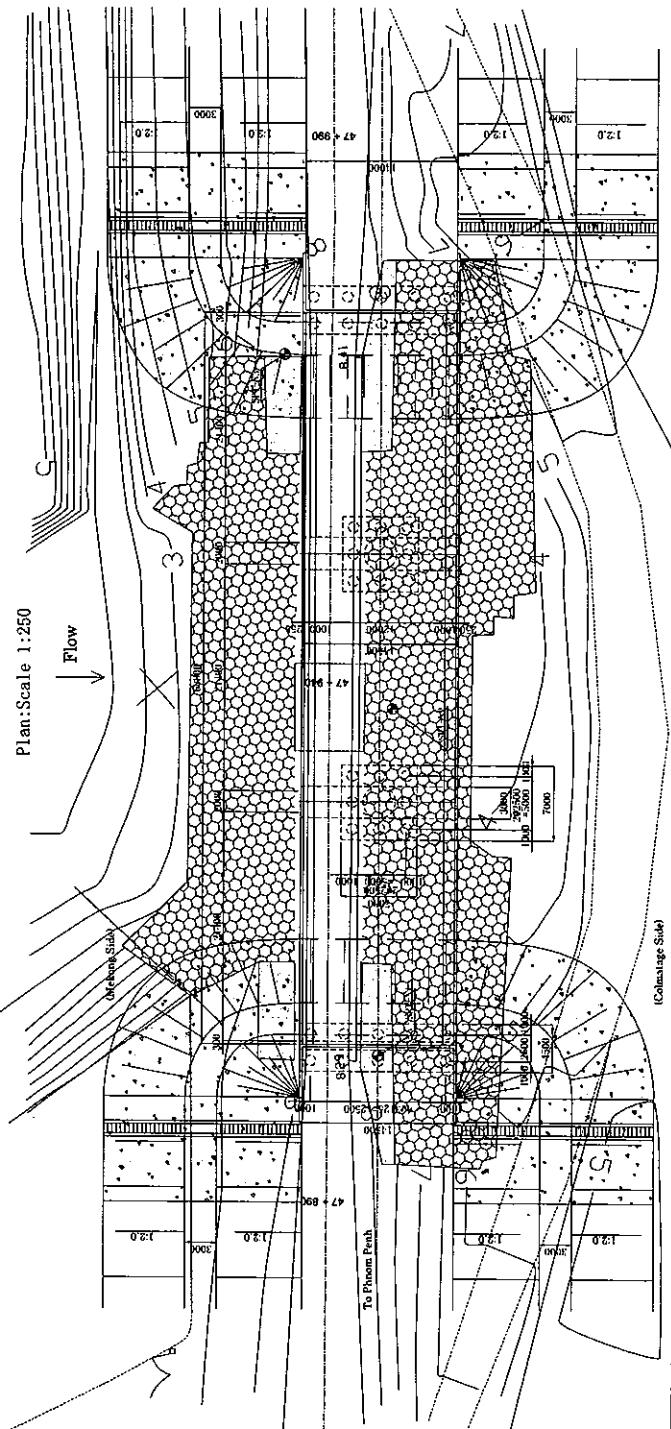
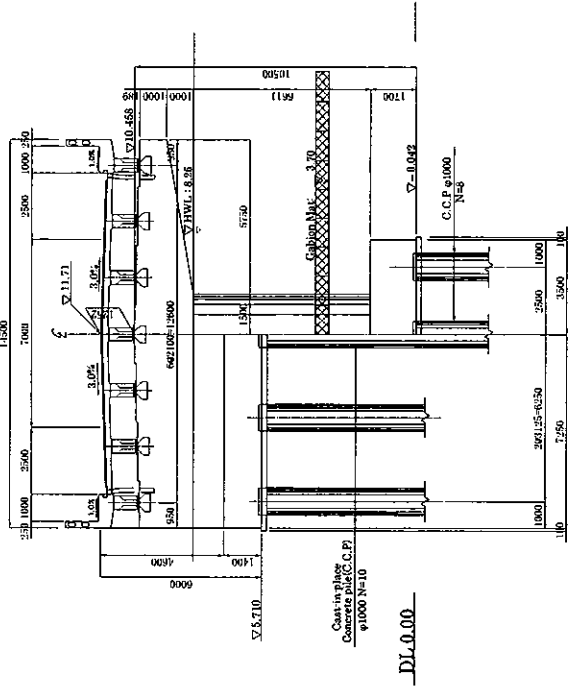
DETAILS SCALE 1:20



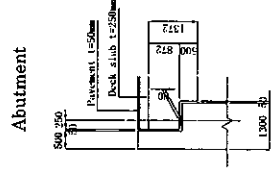
GENERAL VIEW OF BRIDGE NO.3



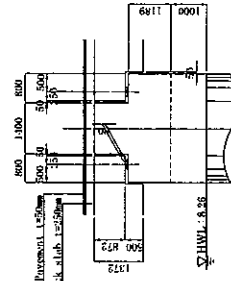
Cross Section: Scale 1:100



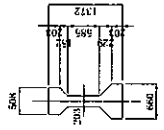
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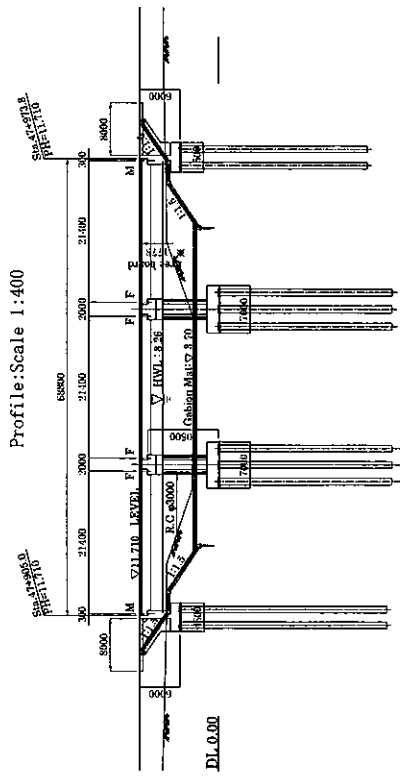


Cross Section of PC Girder: Scale 1:50
AASHTO TYPE IV
(21.5m to 30.5m)



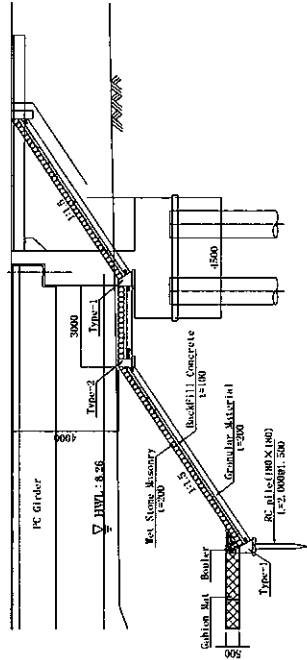
MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO.,LTD	TITLE: BRIDGE NO.3 GENERAL VIEW	
			SCALE 1/250	Drawing No.
			Sheet No.	BR-11

REVTMENT AND RIVER BED PROTECTION

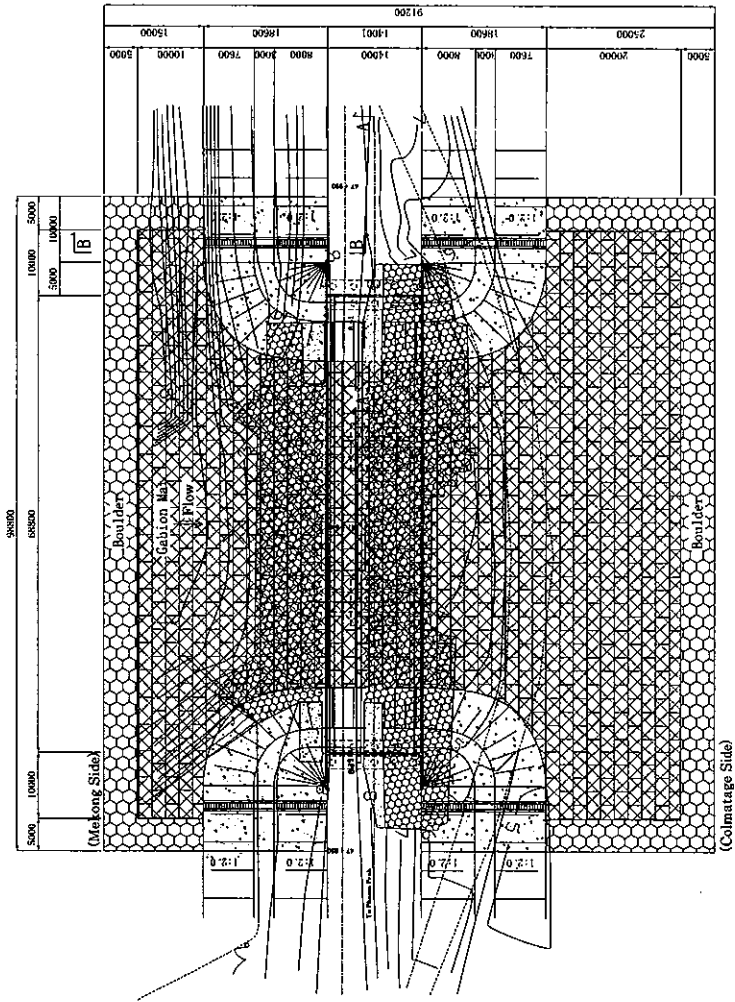


Profile: Scale 1:400

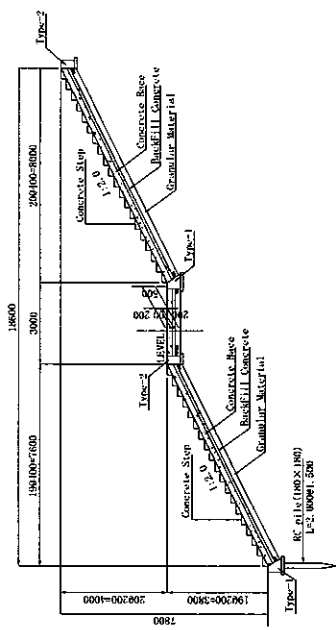
Cross Section A-A : Scale 1:100



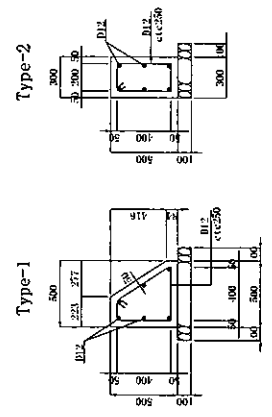
Plan: Scale 1:400



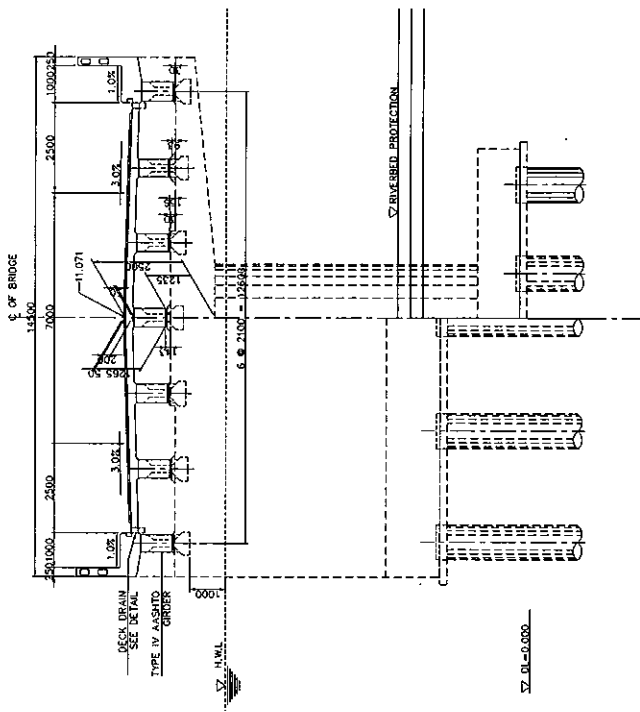
Cross Section B-B : Scale 1:100



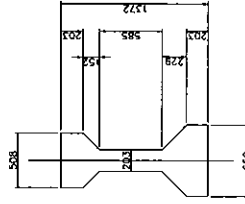
Details: Scale 1:20



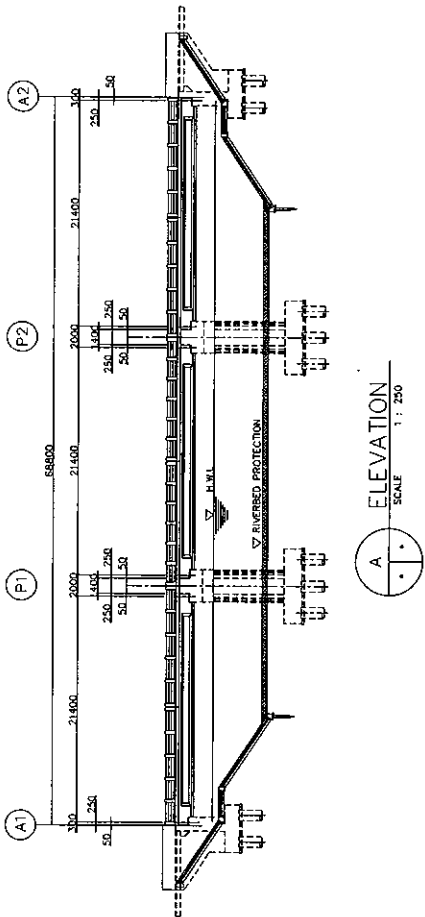
MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO.,LTD	TITLE : BRIDGE NO.3 REVTMENT AND RIVER BED PROTECTION	SCALE	1/400	Drawing No.	
				Sheet No.	BR-12		



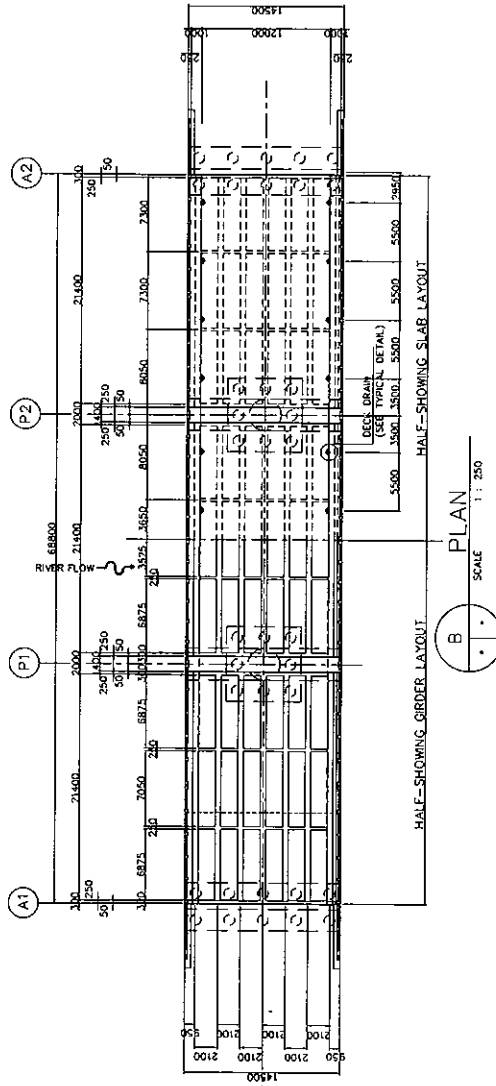
SECTION 1
SCALE 1 : 75



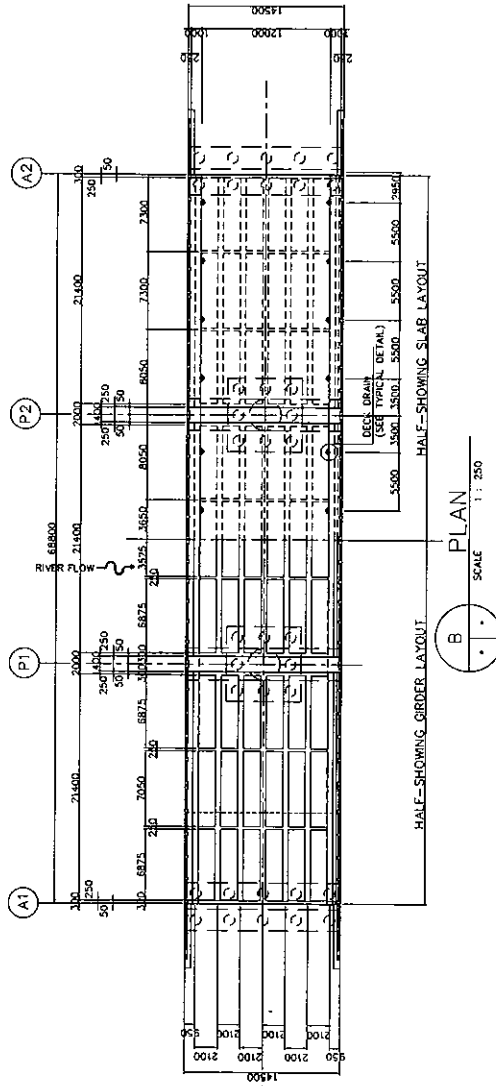
SECTION 2
SCALE 1 : 75



SECTION 3
SCALE 1 : 35



ELEVATION A
SCALE 1 : 250



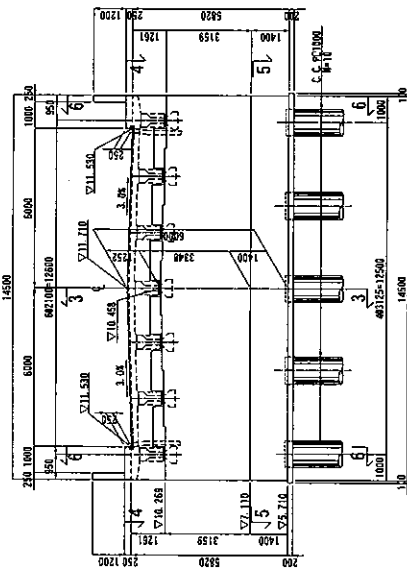
PLAN B
SCALE 1 : 250

BRIDGE NO. 3
SCALE AS SHOWN

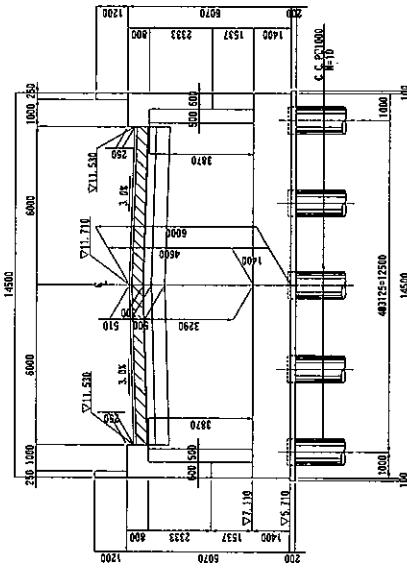
MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO.,LTD	TITLE:	BRIDGE BRIDGE NO. 3	SCALE	As Shown	Drawing No.	3-2
			STRUCTURE DRAWING OF SUPERSTRUCTURE				Sheet No. BR-13	

STRUCTURE DRAWING OF ABUTMENT SCALE 1:100

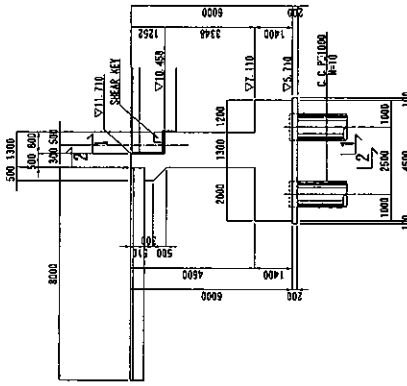
1 - 1



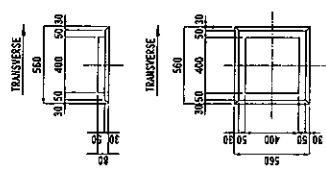
2 - 2



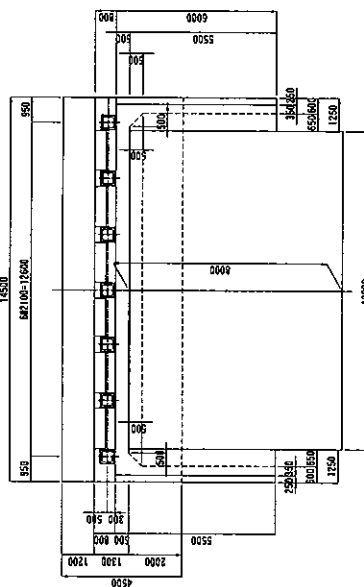
3 - 3



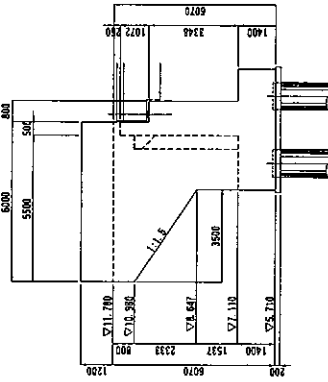
DETAILS SCALE 1:20



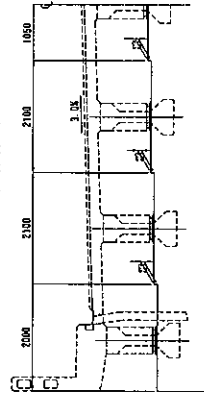
4 - 4



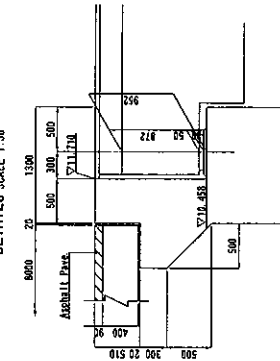
6 - 6



DETAILS SCALE 1:50

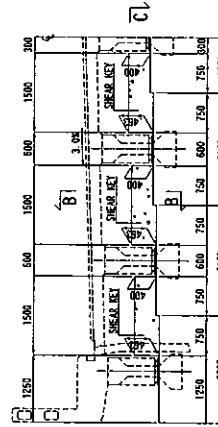


DETAILS SCALE 1:30

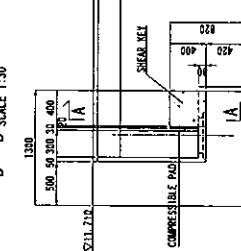


SHEAR KEY DETAILS

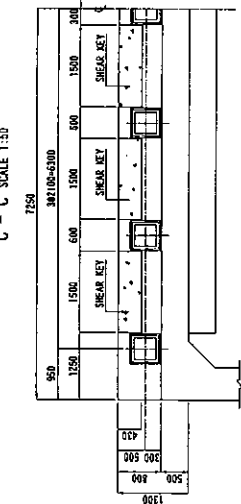
A - A SCALE 1:50



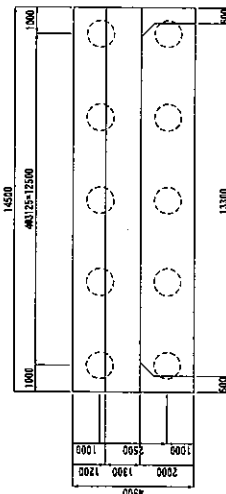
B - B SCALE 1:30



C - C SCALE 1:50



5 - 5



MINISTRY OF
PUBLIC WORKS AND TRANSPORT
(MPWT)

THE PROJECT FOR THE
IMPROVEMENT OF NATIONAL ROAD NO.1
(PHNOM PENH-NEAK LOUENG SECTION)
IN THE KINGDOM OF CAMBODIA

JAPAN INTERNATIONAL COOPERATION AGENCY
KATAHIRA & ENGINEERS INTERNATIONAL
CTI ENGINEERING INTERNATIONAL CO.,LTD

TITLE : BRIDGE
BRIDGE NO.3
STRUCTURE DRAWING OF ABUTMENT

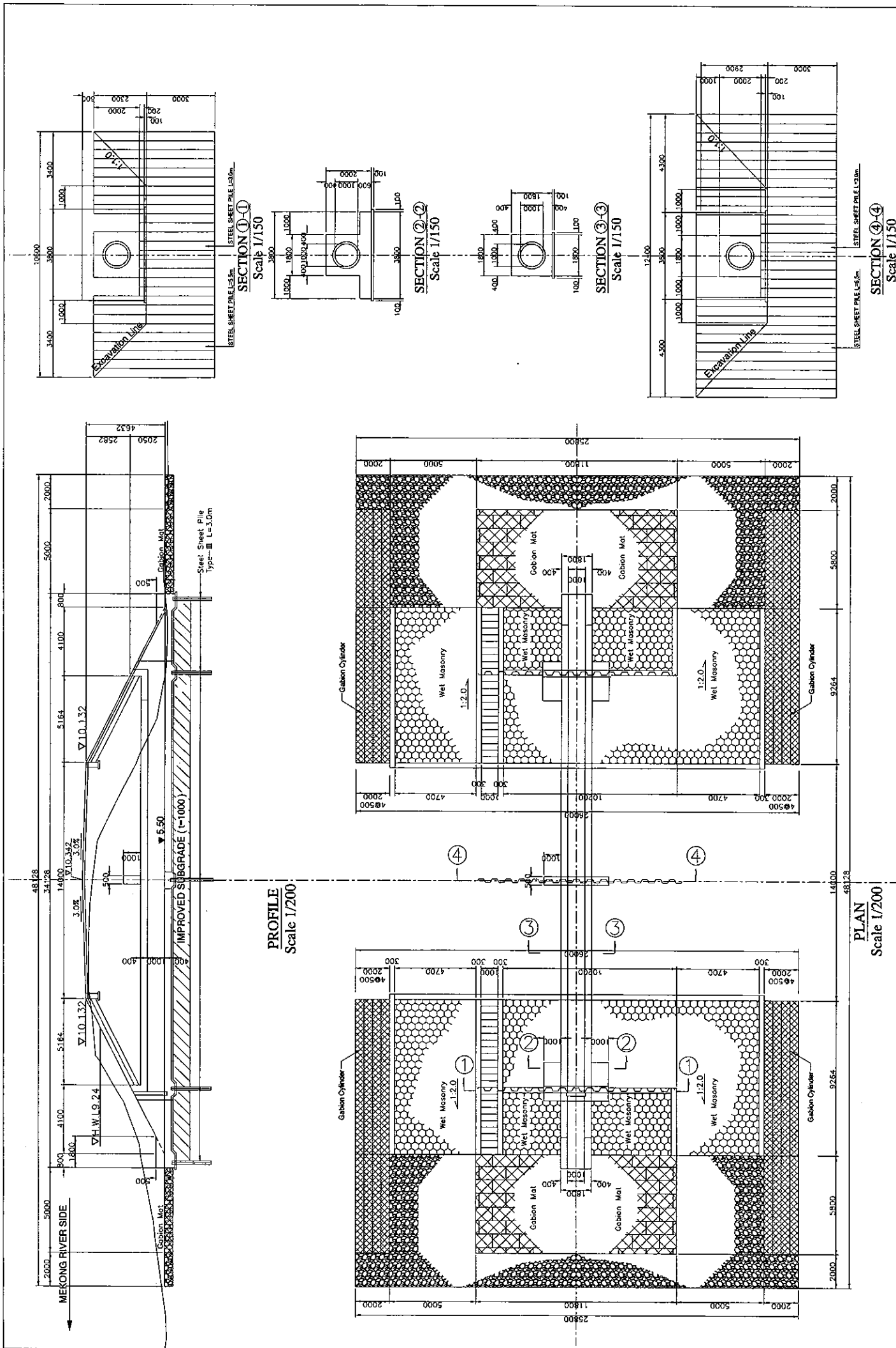
SCALE
1/100

Drawing No.

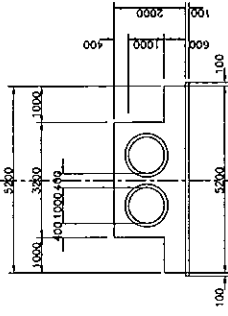
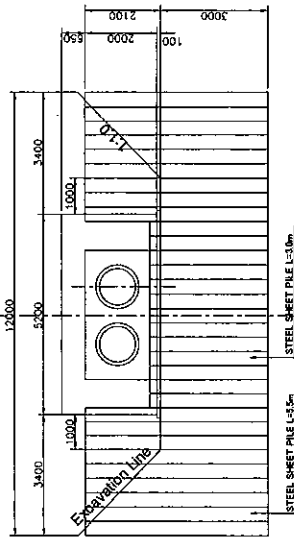
3-7

Sheet No.

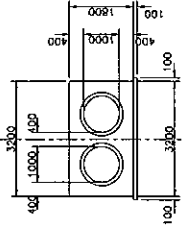
BR-14



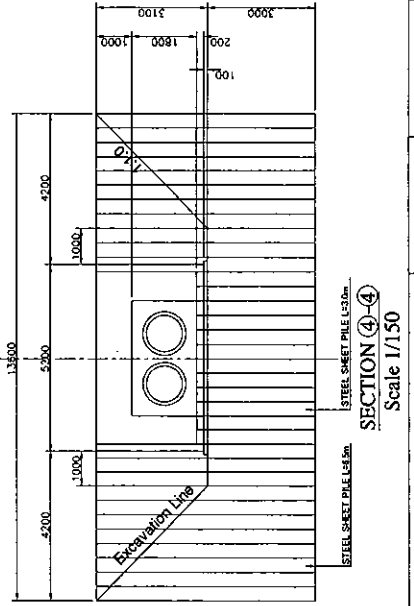
MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI Engineering International Co., Ltd.	TITLE : CROSS DRAINAGE GENERAL ARRANGEMENT PIPE CULVERT No.1 (23+983)	
			SCALE As Shown	Drawing No. Sheet No. CD-1



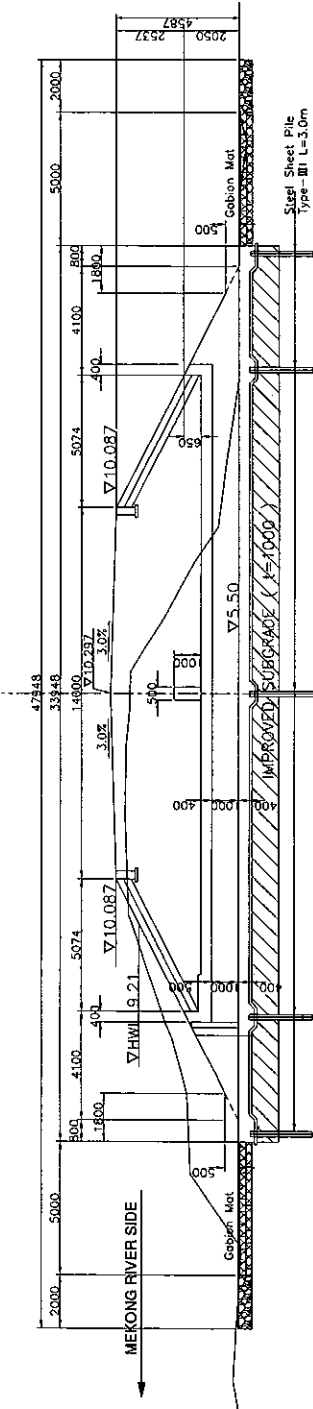
SECTION 2-2
Scale 1/150



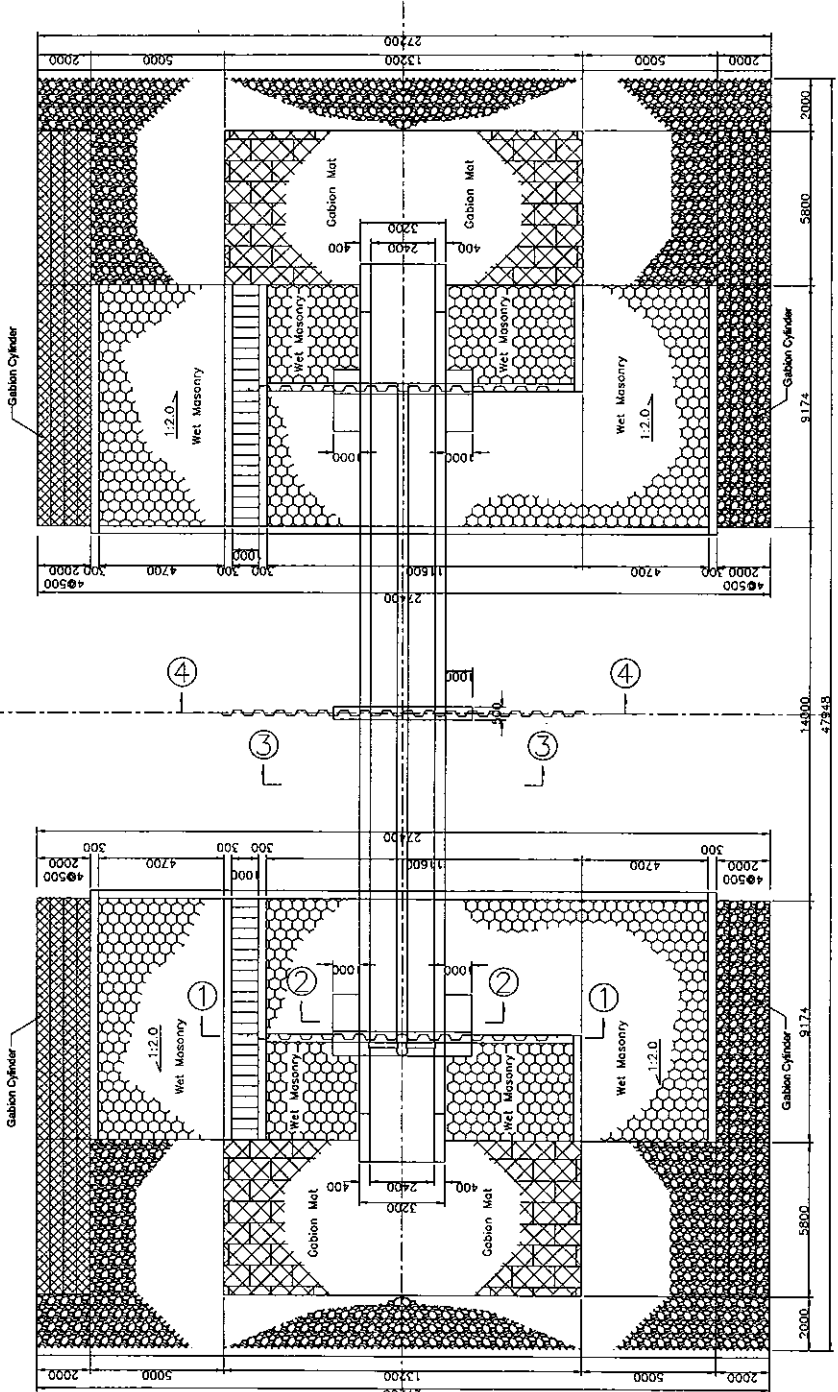
SECTION 3-3
Scale 1/150



SECTION 4-4
Scale 1/150

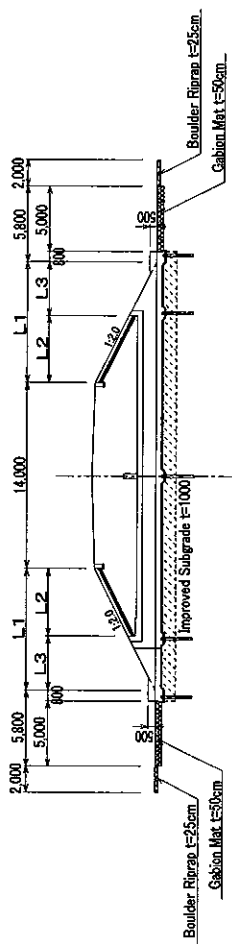


PROFILE
Scale 1/200

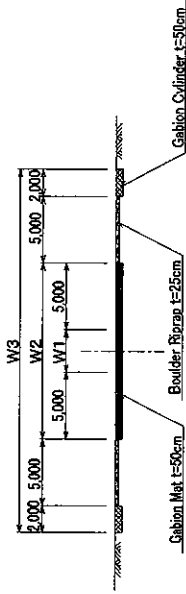


PLAN
Scale 1/200

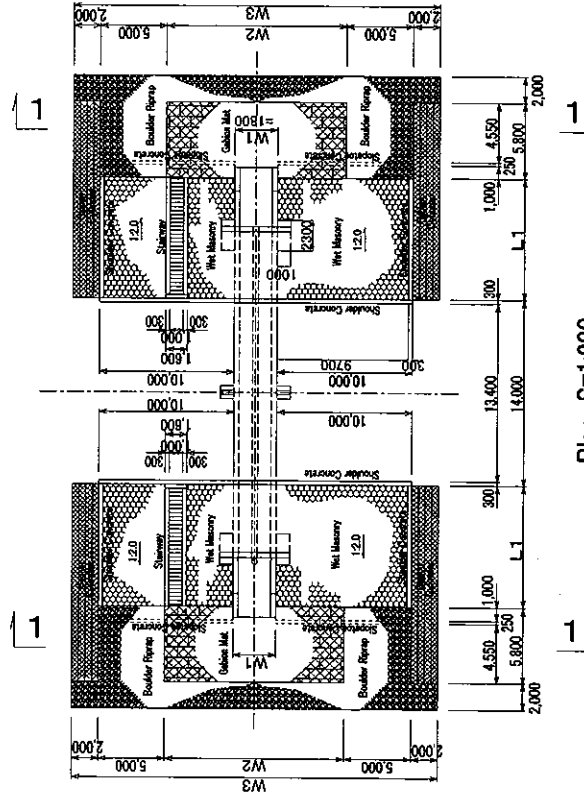
MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUNG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI Engineering International Co., Ltd.	TITLE : CROSS DRAINAGE GENERAL ARRANGEMENT PIPE CULVERT No.2 (2+823)		SCALE As Shown	Drawing No. Sheet No. CD-2



Profile S=1:200



Section 1 - 1 S=1:200



Plan S=1:200

Dimension Table

NO.	STATION	L1	L2	L3	W1	W2	W3
NO.1	23+983	9.264	5.164	4.100	1.800	11.800	25.800
NO.2	24+923	9.174	5.074	4.100	3.200	13.200	27.200

MINISTRY OF
PUBLIC WORKS AND TRANSPORT
(MPWT)

THE PROJECT FOR THE
IMPROVEMENT OF NATIONAL ROAD NO.1
(PHNOM PENH-NEAK LOUENG SECTION)
IN THE KINGDOM OF CAMBODIA

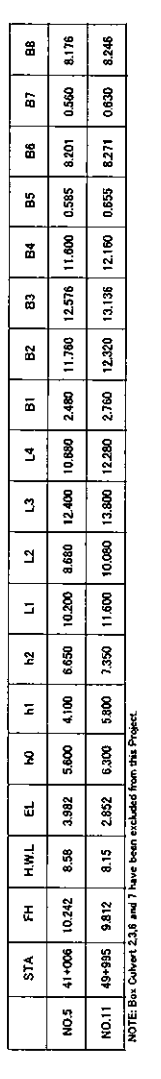
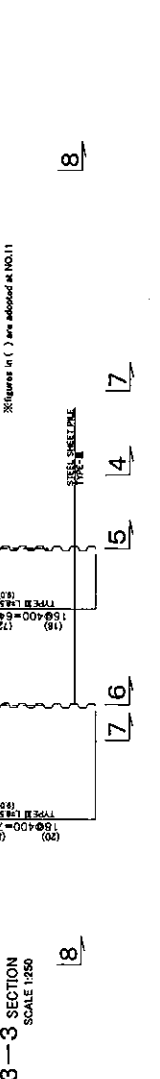
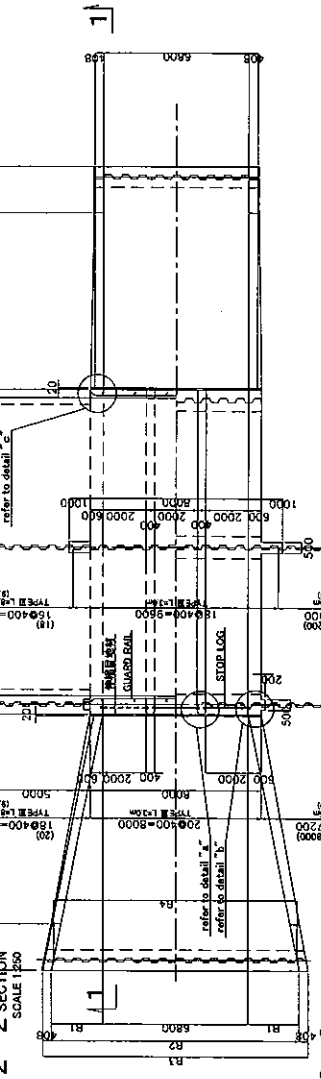
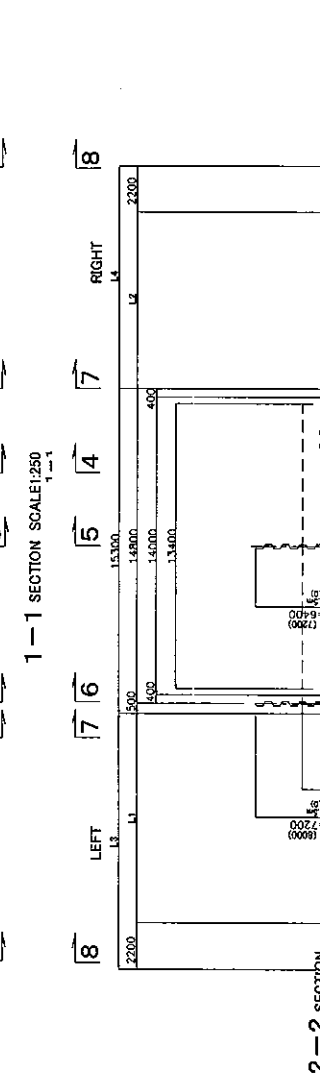
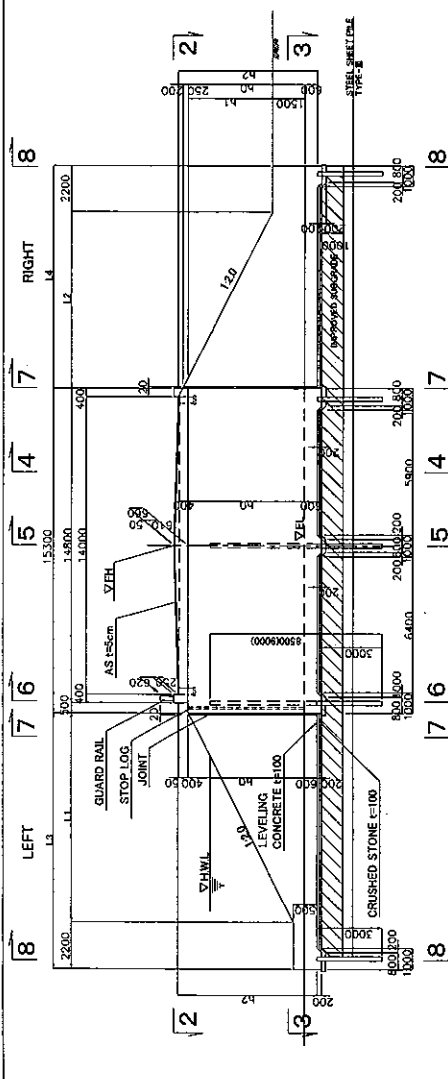
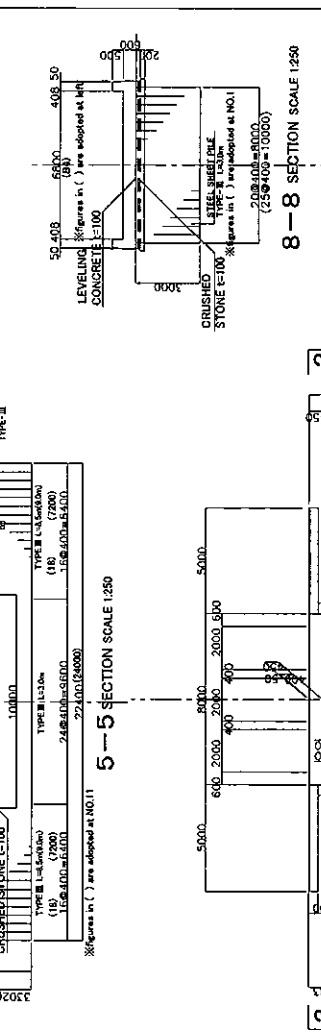
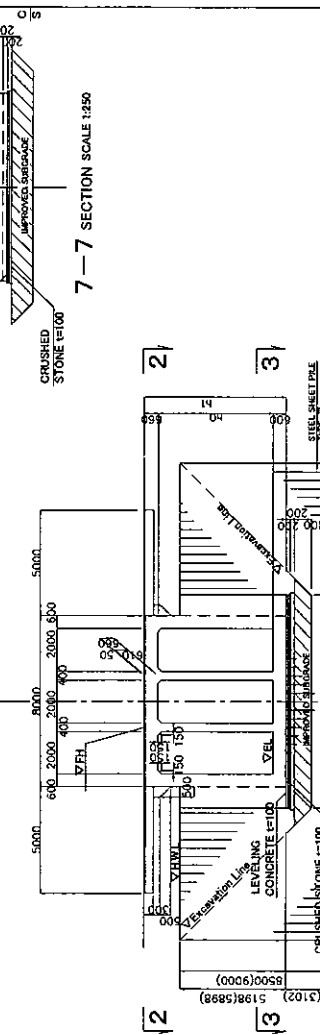
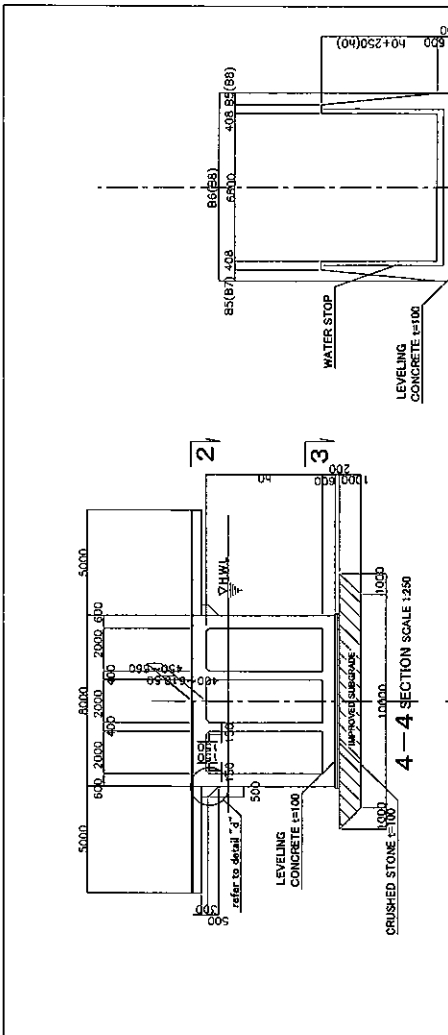
JAPAN INTERNATIONAL COOPERATION AGENCY
KATAHIRA & ENGINEERS INTERNATIONAL
CTI ENGINEERING INTERNATIONAL CO.,LTD

TITLE : CROSS DRAINAGE
INLET-OUTLET PROTECTION
(PIPE-CULVERT)

SCALE
As Shown

Drawing No.

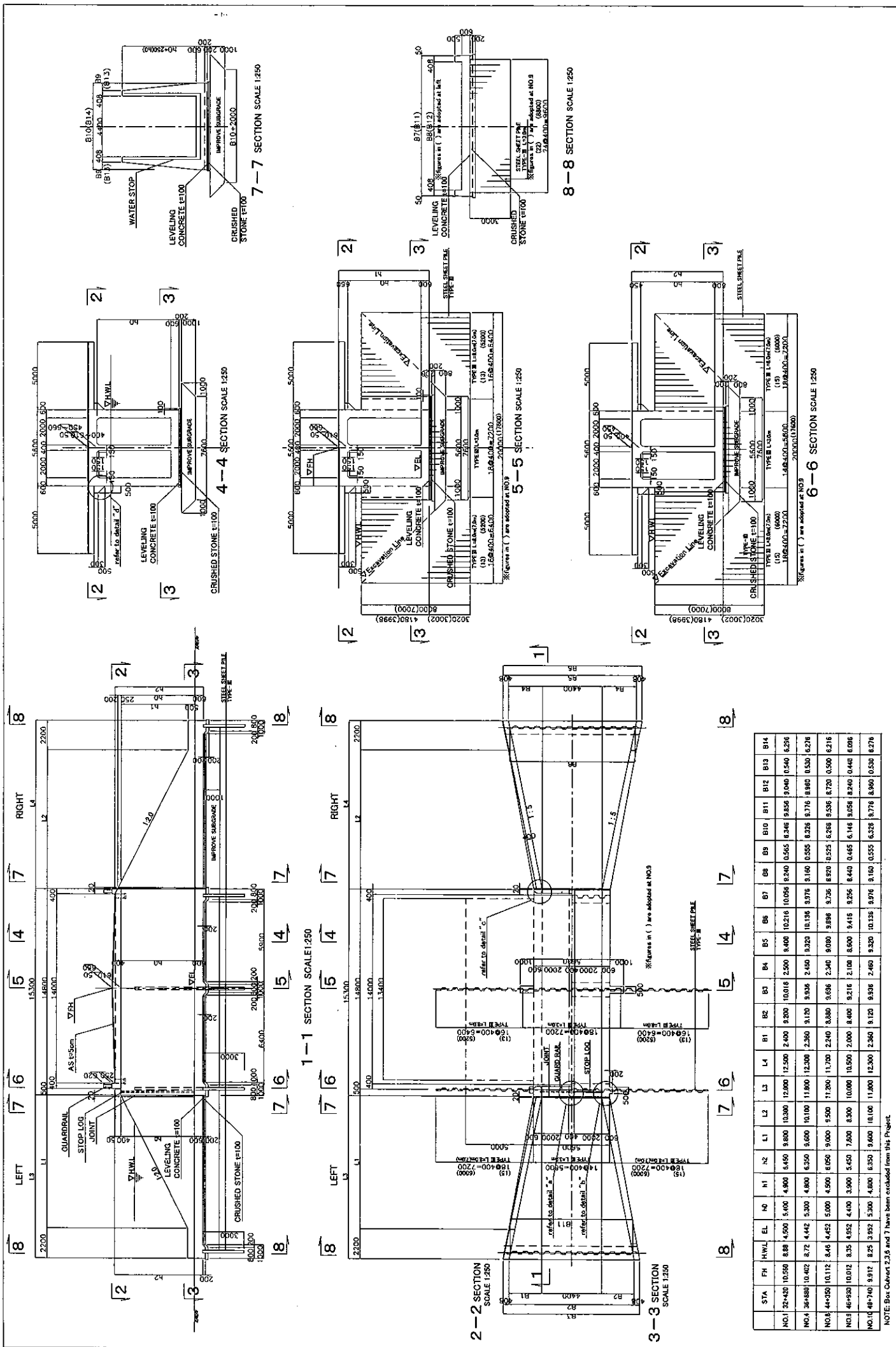
Sheet No.
CD-3



STA	FH	H.W.L	EL	h0	h1	h2	L1	L2	L3	L4	B1	B2	B3	B4	B5	B6	B7	B8	
NO.5	41+006	10.242	8.58	3.882	5.600	4.100	6.650	10.200	8.680	12.400	10.880	2.480	11.780	12.576	11.600	0.585	8.201	0.560	8.176
NO.11	49+985	9.812	8.15	2.952	6.300	5.800	7.350	11.600	10.060	13.800	12.280	2.760	12.320	13.136	12.160	0.655	8.271	0.630	8.246

NOTE: Box Culvert 2,3,6 and 7 have been excluded from this Project.

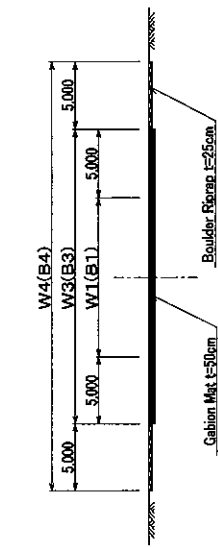
MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUJENG SECTION) IN THE KINGDOM OF CAMBODIA		JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI Engineering International Co., Ltd.	TITLE : CROSS DRAINAGE GENERAL ARRANGEMENT BOX CULVERT (THREE CELLS)	SCALE 1:250	Drawing No. Sheet No. CD-4
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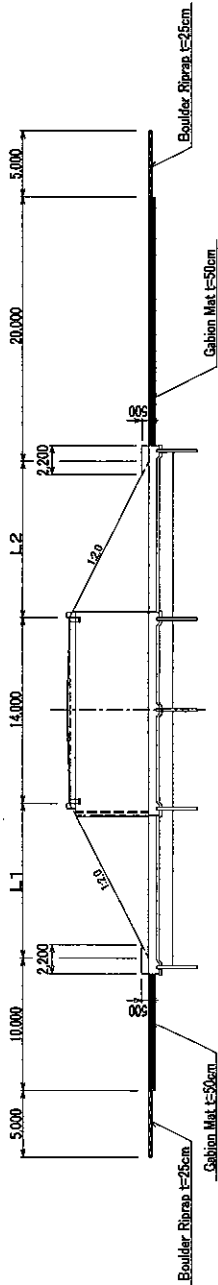
STA	FH	H/WL	EL	N0	N1	N2	L1	L2	L3	L4	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10	B11	B12	B13	B14	
NO.1	32+430	10.250	8.88	4.500	5.100	4.900	6.450	9.800	10.300	12.000	12.500	2.400	9.200	10.016	2.500	8.400	10.216	10.056	8.240	0.565	8.246	9.656	9.040	0.540	6.236
NO.4	36+880	10.402	8.72	4.442	5.300	4.800	6.500	9.000	10.100	11.800	12.300	2.360	9.120	9.936	2.400	9.320	10.196	9.976	8.160	0.555	8.228	9.716	8.868	0.530	6.278
NO.8	44+350	10.112	8.48	4.452	5.000	4.500	6.050	9.000	9.500	11.200	11.700	2.240	8.880	9.696	2.340	9.080	9.896	8.236	8.920	0.525	8.268	9.536	8.720	0.500	6.216
NO.9	46+950	10.012	8.25	4.952	4.400	3.900	5.450	7.800	8.300	10.000	10.500	2.000	8.400	9.216	2.100	8.600	9.416	8.256	8.440	0.465	8.146	9.056	8.240	0.440	6.096
NO.10	48+740	9.912	8.25	3.992	5.300	4.800	6.350	9.600	10.100	11.800	12.300	2.360	9.120	9.936	2.400	9.320	10.196	9.976	8.160	0.555	8.228	9.716	8.868	0.530	6.276

NOTE: Box Culvert 2,3,6 and 7 have been excluded from this Project.

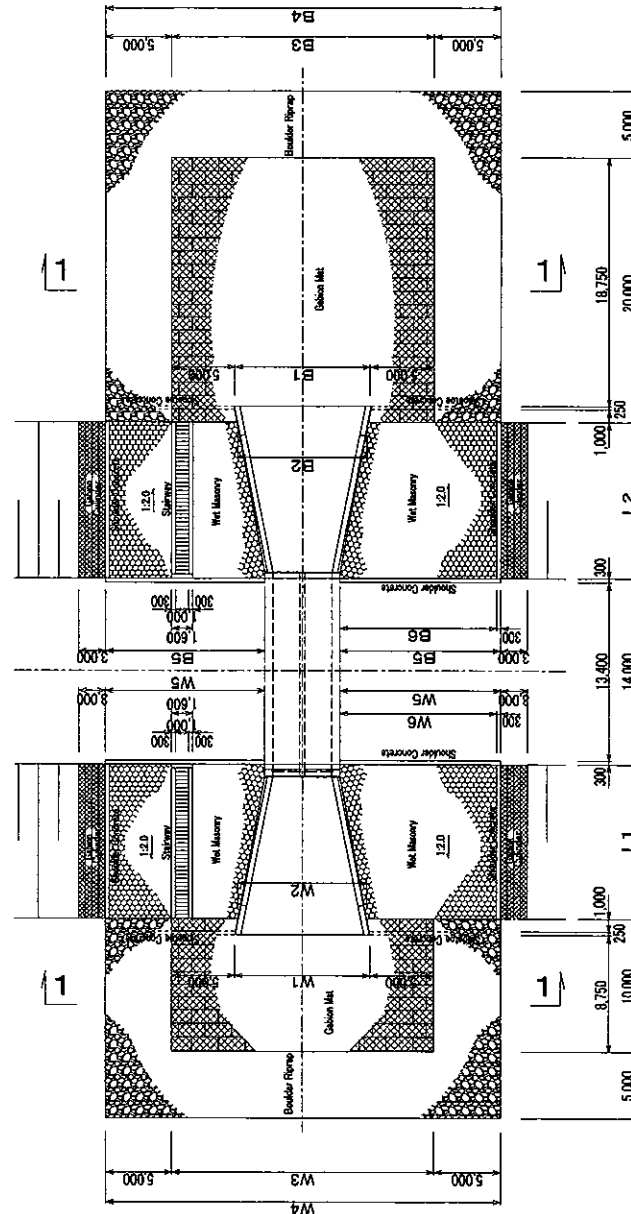
MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI Engineering International Co., Ltd.
TITLE : CROSS DRAINAGE GENERAL ARRANGEMENT BOX CULVERT (TWO CELLS)		SCALE 1:250
		Drawing No. Sheet No. CD-5



Section 1-1 S=1:200



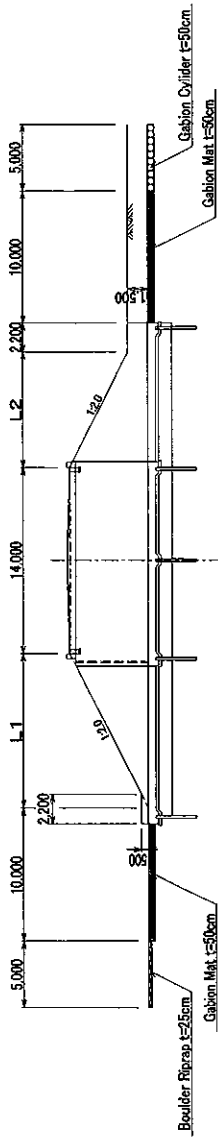
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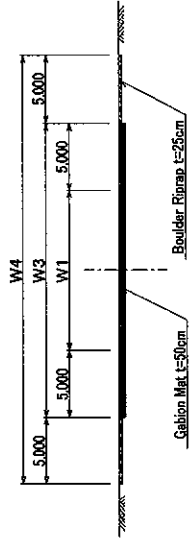
Plan S=1:200

Dimension Table

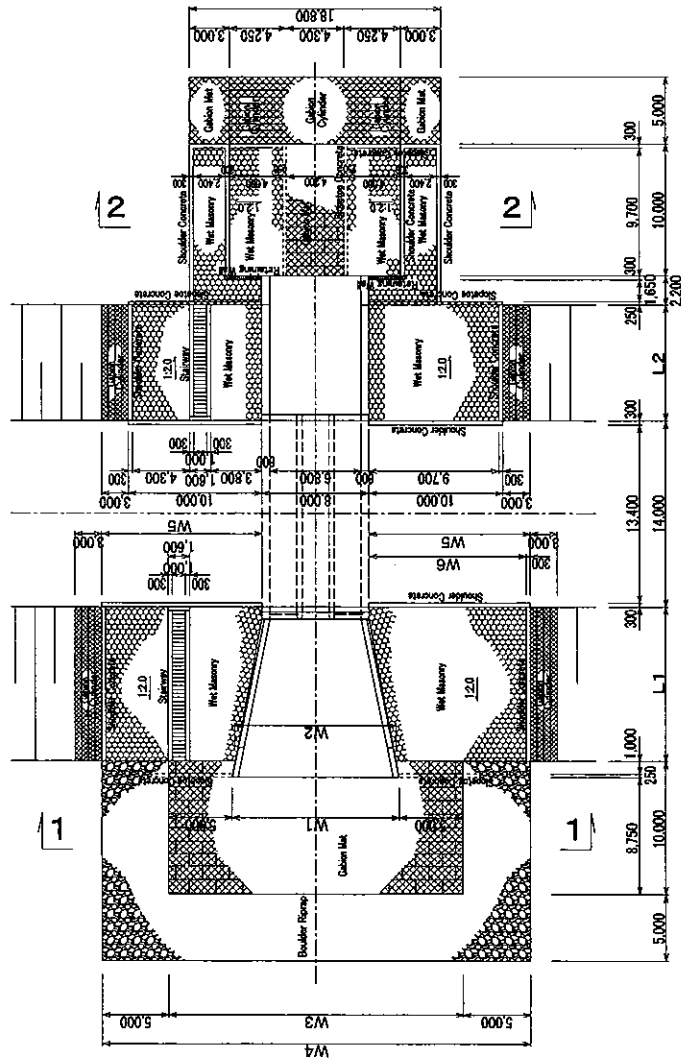
NO.	STATION	L1(L2)	W1(B1)	W2(B2)	W3(B3)	W4(B4)	W5(B5)	W6(B6)
NO.1	32+420	11.700	10.016	9.536	20.016	30.016	11.008	10.708
NO.4	36+880	11.700	10.216	9.736	20.216	30.216	11.108	10.808
NO.8	44+350	11.500	9.936	9.456	19.936	29.936	10.968	10.668
NO.9	46+930	11.500	10.136	9.656	20.136	30.136	11.068	10.768
NO.10	48+740	10.900	9.696	9.216	19.696	29.696	10.848	10.548
NO.10	48+740	10.900	9.896	9.416	19.896	29.896	10.948	10.648
NO.10	48+740	9.700	9.216	8.736	19.216	29.216	10.608	10.308
NO.10	48+740	9.700	9.416	8.936	19.416	29.416	10.708	10.408
NO.10	48+740	11.500	9.936	9.456	19.936	29.936	10.968	10.668
NO.10	48+740	11.500	10.136	9.656	20.136	30.136	11.068	10.768



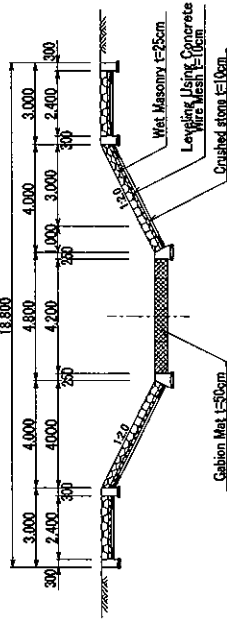
Profile S=1:200



Section 1-1 S=1:200



Plan S=1:200

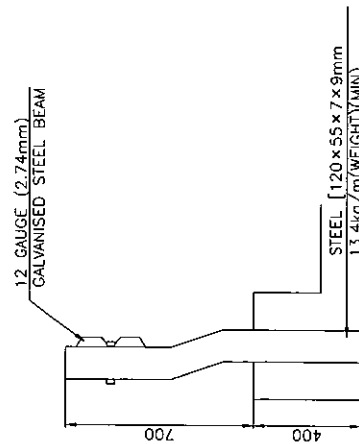
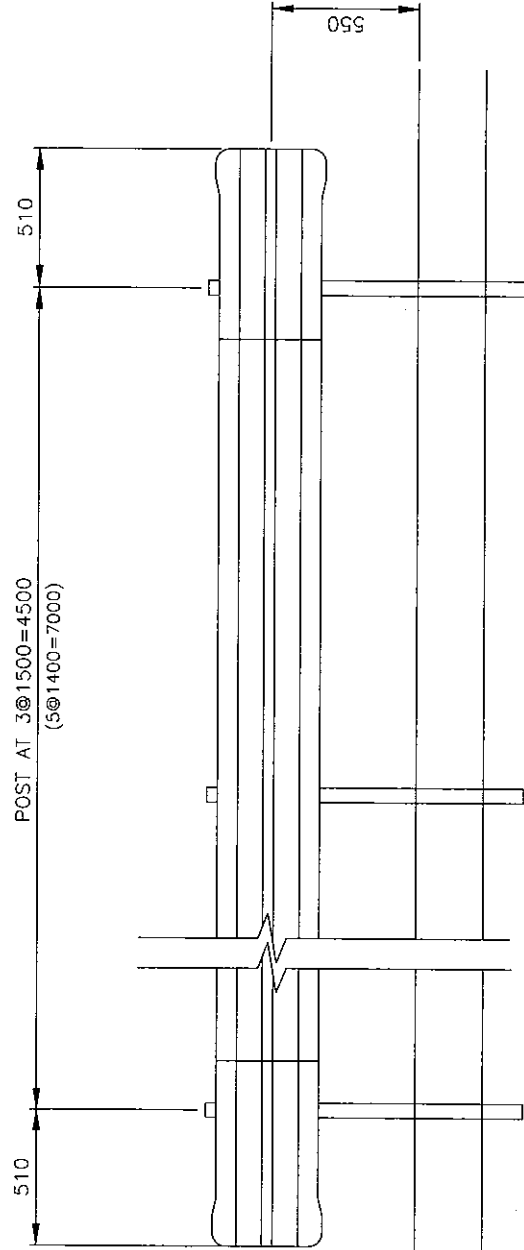
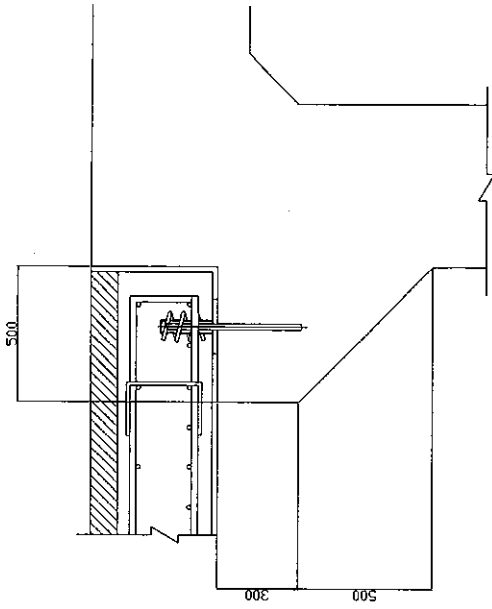
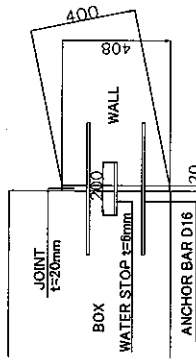
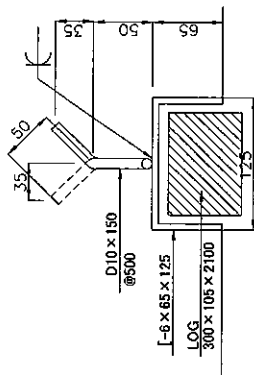
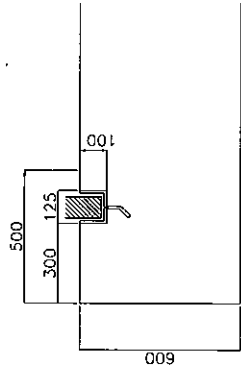
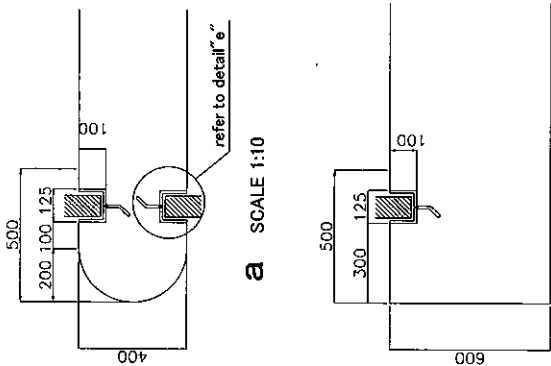


Section 2-2 S=1:100

Dimension Table

NO.	STATION	L1	L2	W1	W2	W3	W4	W5	W6
NO.5	41+006	12.100	9.080	12.576	12.076	22.576	32.576	11.068	10.788
NO.11	49+995	13.500	10.480	13.136	12.636	23.136	33.136	11.568	11.068

MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO.,LTD	TITLE : CROSS DRAINAGE	SCALE	Drawing No.
			INLET-OUTLET PROTECTION	As Shown	Sheet No.
			BOX-CULVERT (3-CELLS)		CO-7



(ALL LAPS IN DIRECTION OF TRAFFIC)

FRONT VIEW SCALE 1:10

MINISTRY OF
PUBLIC WORKS AND TRANSPORT
(MPWT)

THE PROJECT FOR
IMPROVEMENT OF NATIONAL ROAD NO.1
(PHNOM PENH-NEAK LOUENG SECTION)
IN THE KINGDOM OF CAMBODIA

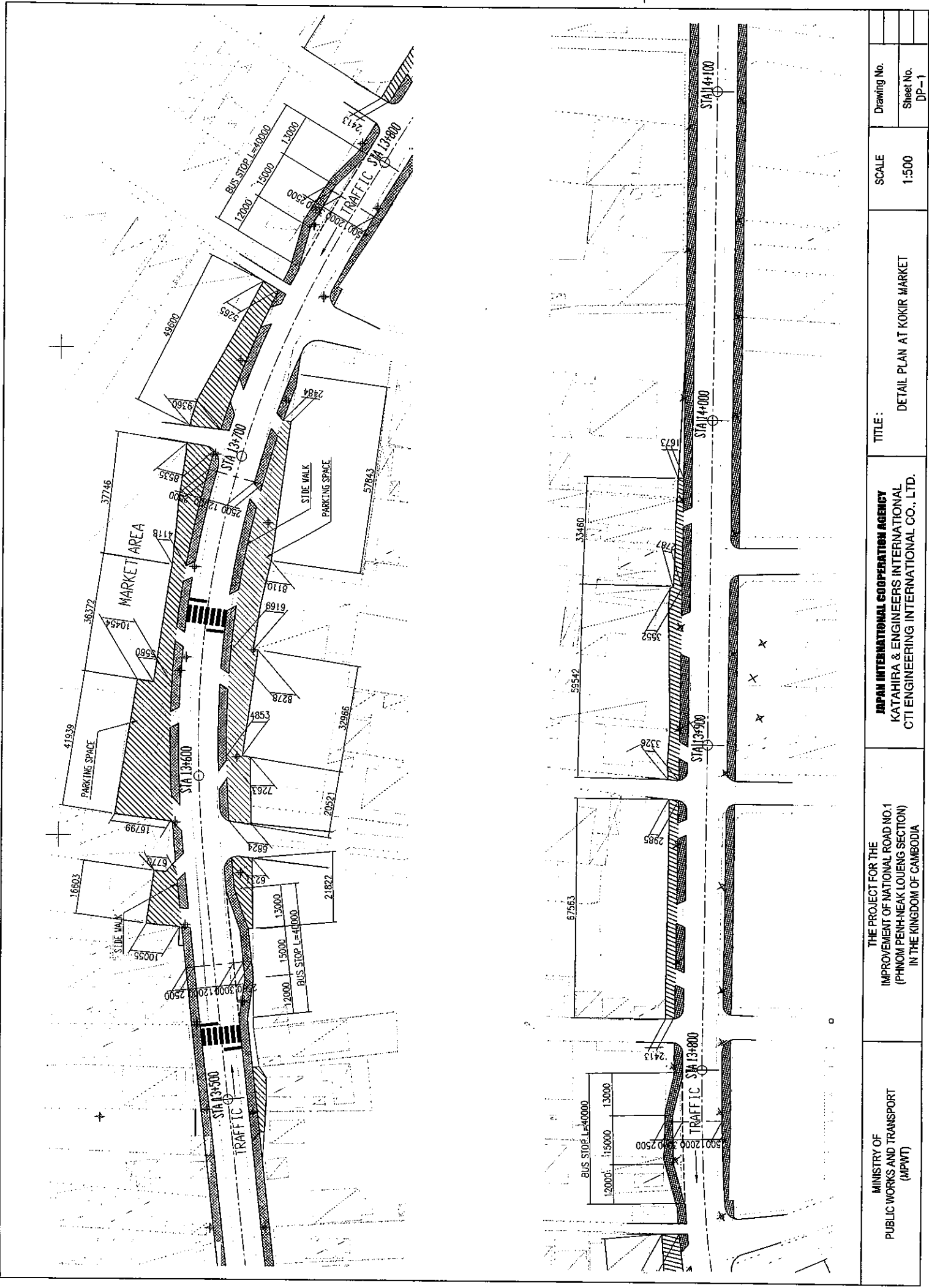
JAPAN INTERNATIONAL COOPERATION AGENCY
KATAHIRA & ENGINEERS INTERNATIONAL
CTI Engineering International Co., Ltd.

TITLE : CROSS DRAINAGE
ACCESSARY DF BOX CULVERT

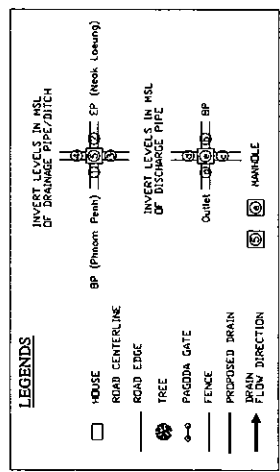
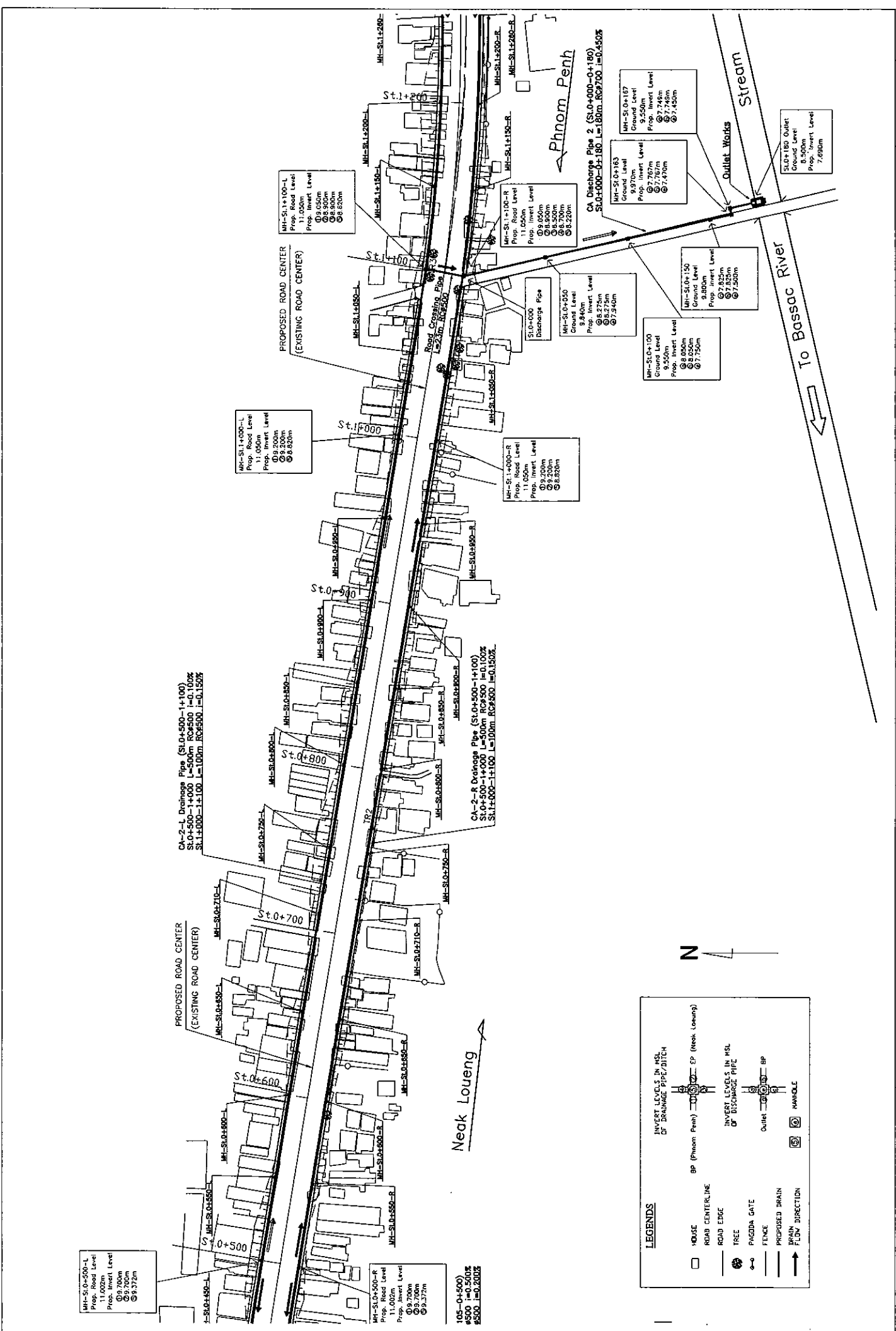
SCALE
As Shown

Drawing No.

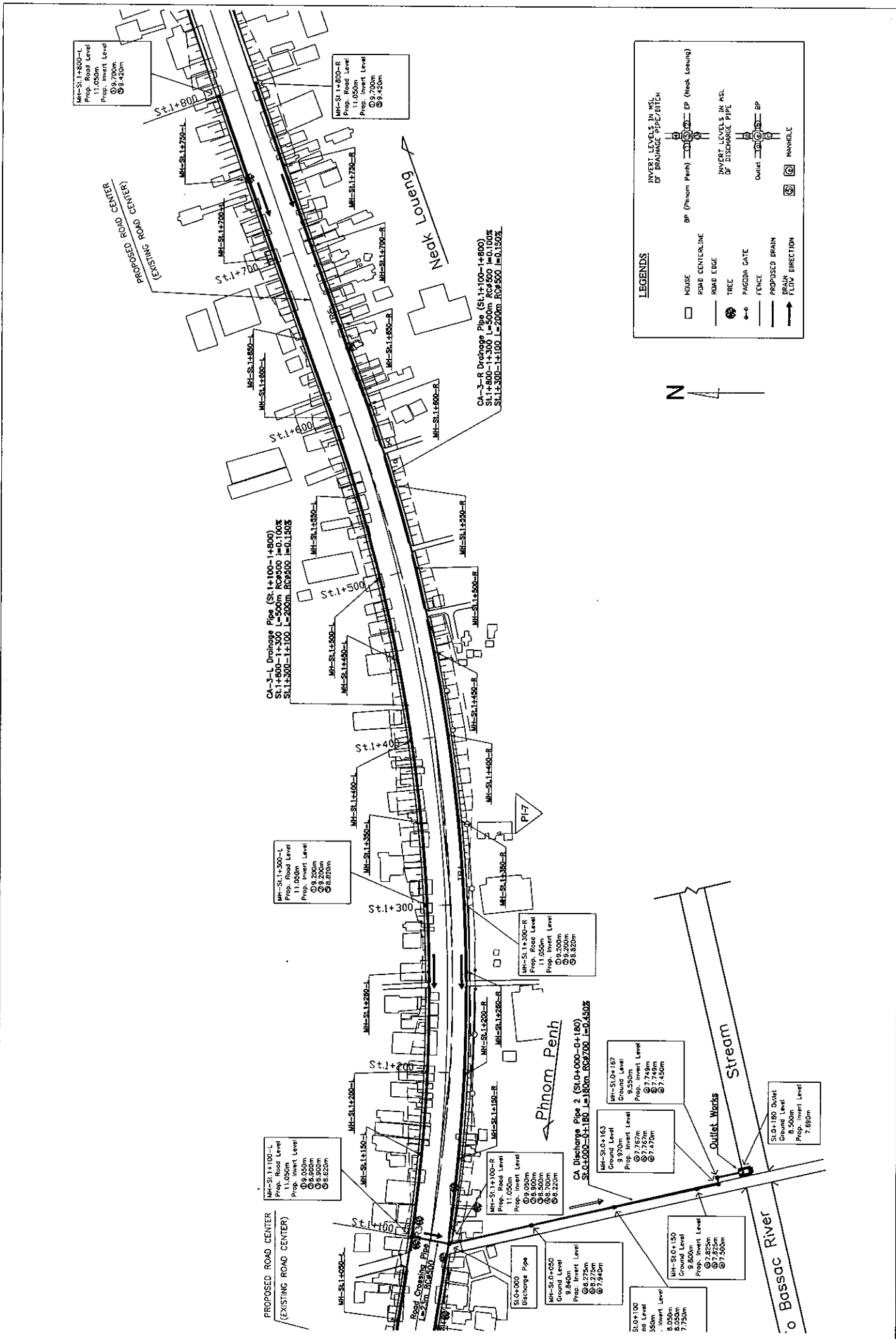
Sheet No.
CD-8



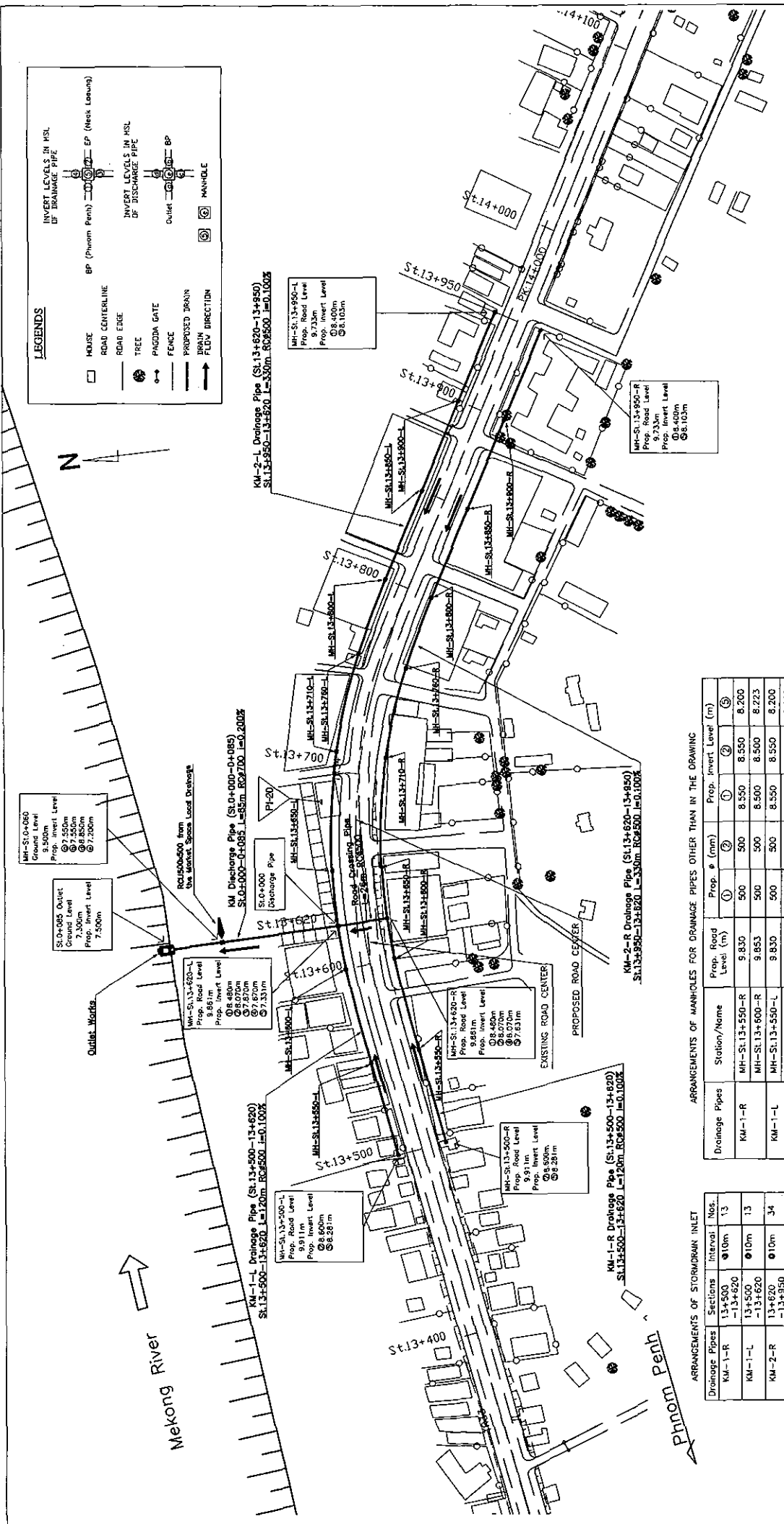
MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO., LTD.	TITLE: DETAIL PLAN AT KOKIR MARKET	SCALE	Drawing No.
				1:500	Sheet No. DP-1



MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO.,LTD	TITLE : ROAD DRAINAGE DRAINAGE SYSTEM PLAN FOR CHBAR AMPOV AREA STA.0+600-1+200	SCALE 1/2000	Drawing No.
				Sheet No. DR-2	



MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO.,LTD	TITLE :	ROAD DRAINAGE DRAINAGE SYSTEM PLAN FOR CHBAR AMPOV AREA STA.1+200-1+800
			SCALE	1/2000
			Drawing No.	
			Sheet No.	DR-3



ARRANGEMENTS OF STORMDRAIN INLET

Drainage Pipes	Sections Interval	Nos.
KM-1-R	13+500 - 13+620	13
	13+500 - 13+620	13
KM-2-R	13+620 - 13+950	34
	13+620 - 13+950	34

ARRANGEMENTS OF MANHOLES FOR DRAINAGE PIPES OTHER THAN IN THE DRAWING

Drainage Pipes	Station/Name	Prop. Road Level (m)		Prop. Invert Level (m)	
		①	②	①	②
KM-1-R	MH-SL13+550-R	9.830	500	8.550	8.200
	MH-SL13+600-R	9.853	500	8.500	8.223
KM-1-L	MH-SL13+550-L	9.830	500	8.550	8.200
	MH-SL13+600-L	9.853	500	8.500	8.223
KM-2-R	MH-SL13+650-R	9.875	500	8.100	7.645
	MH-SL13+710-R	9.895	500	8.160	7.885
KM-2-L	MH-SL13+760-R	9.875	500	8.210	7.845
	MH-SL13+800-R	9.845	500	8.250	7.815
KM-2-L	MH-SL13+850-R	9.868	500	8.300	7.978
	MH-SL13+900-R	9.770	500	8.350	7.940
KM-2-L	MH-SL13+650-L	9.875	500	8.100	7.645
	MH-SL13+710-L	9.895	500	8.160	7.885
KM-2-L	MH-SL13+760-L	9.875	500	8.210	7.845
	MH-SL13+800-L	9.845	500	8.250	7.815
KM-2-L	MH-SL13+850-L	9.868	500	8.300	7.978
	MH-SL13+900-L	9.770	500	8.350	7.940

MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)

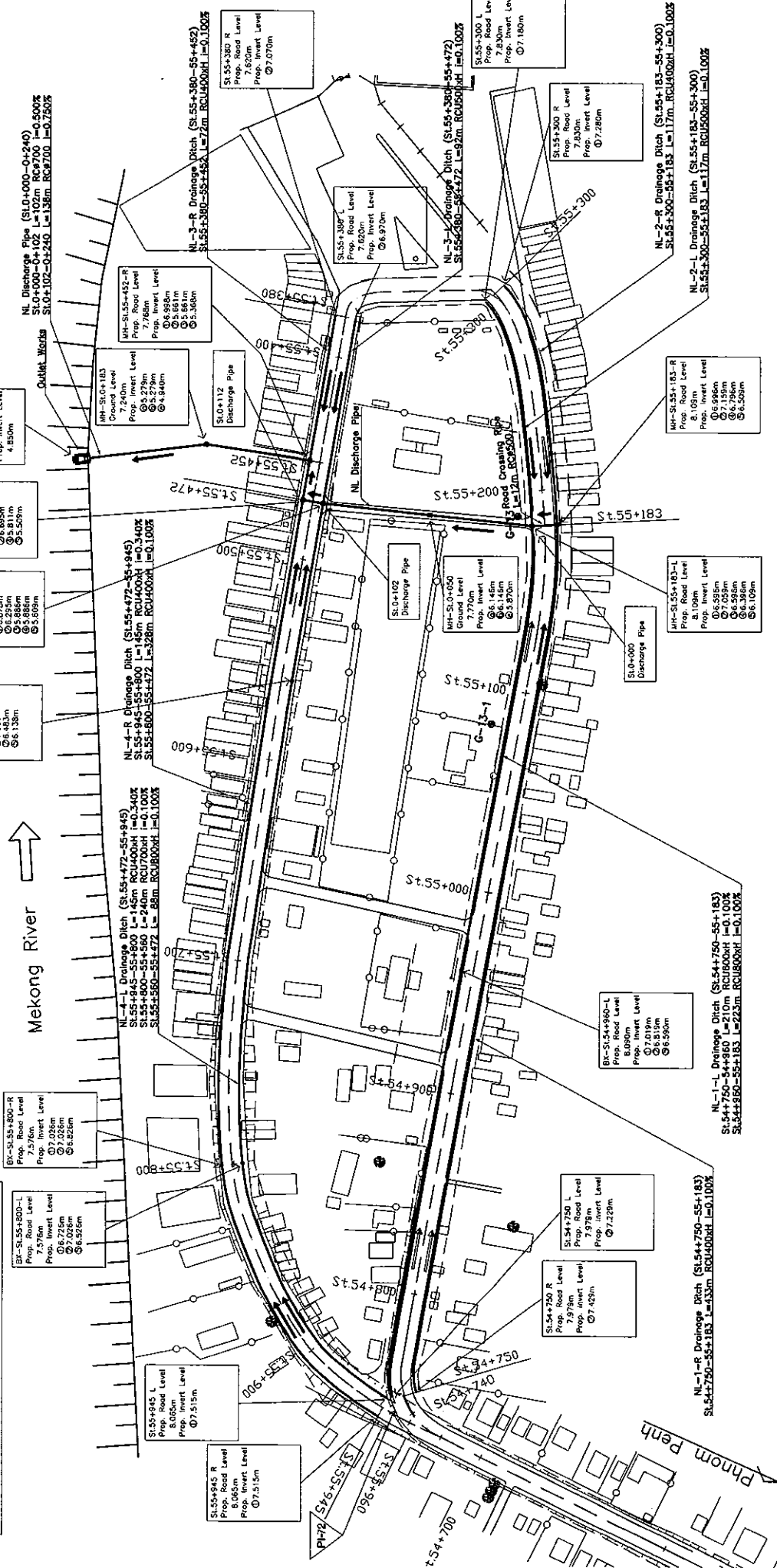
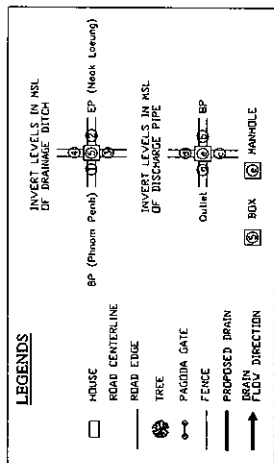
THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA

JAPAN INTERNATIONAL COOPERATION AGENCY
KATAHIRA & ENGINEERS INTERNATIONAL
CTI ENGINEERING INTERNATIONAL CO.,LTD

TITLE : ROAD DRAINAGE DRAINAGE SYSTEM PLAN FOR KOKI MARKET AREA STA.13+500-13+950

SCALE 1/2000

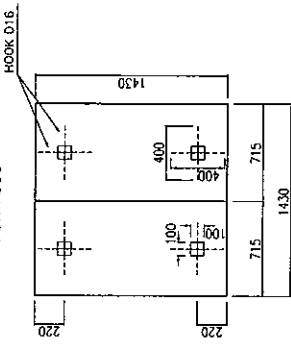
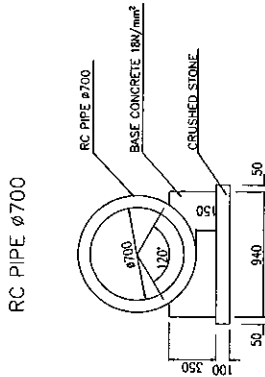
Drawing No. Street No. DR-4



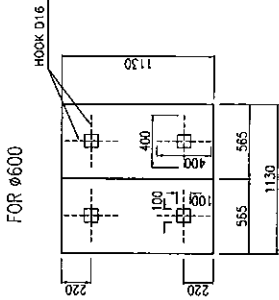
MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAM INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO.,LTD	TITLE :	ROAD DRAINAGE DRAINAGE SYSTEM PLAN FOR NEAK LOUENG AREA	SCALE	1/2000	Drawing No.	
				STA.54+750-55+300, 55+380-55+945			Sheet No.	DR-5

COMMON STRUCTURES

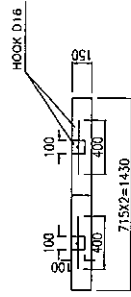
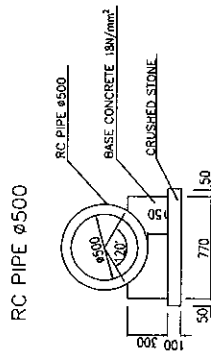
CROSS SECTION OF DISCHARGE PIPES



RC MANHOLE COVERS

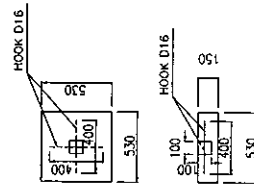


CROSS SECTION OF DRAINAGE PIPES & ROAD CROSSING PIPES

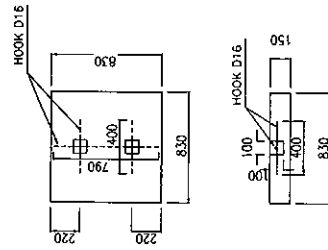


RC CONNECTION BOX COVERS

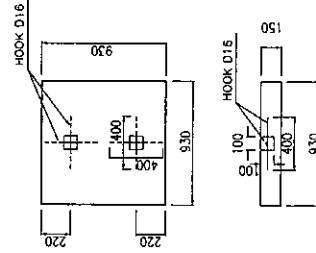
FOR BOX 400



FOR BOX 700



FOR BOX 800



MINISTRY OF
PUBLIC WORKS AND TRANSPORT
(MPWT)

THE PROJECT FOR THE
IMPROVEMENT OF NATIONAL ROAD NO.1
(PHNOM PENH - NEAK LOUENG SECTION)
IN THE KINGDOM OF CAMBODIA

JAPAN INTERNATIONAL COOPERATION AGENCY
KATAHIRA & ENGINEERS INTERNATIONAL
CTI ENGINEERING INTERNATIONAL CO.,LTD

TITLE :
ROAD DRAINAGE
COMMON STRUCTURES

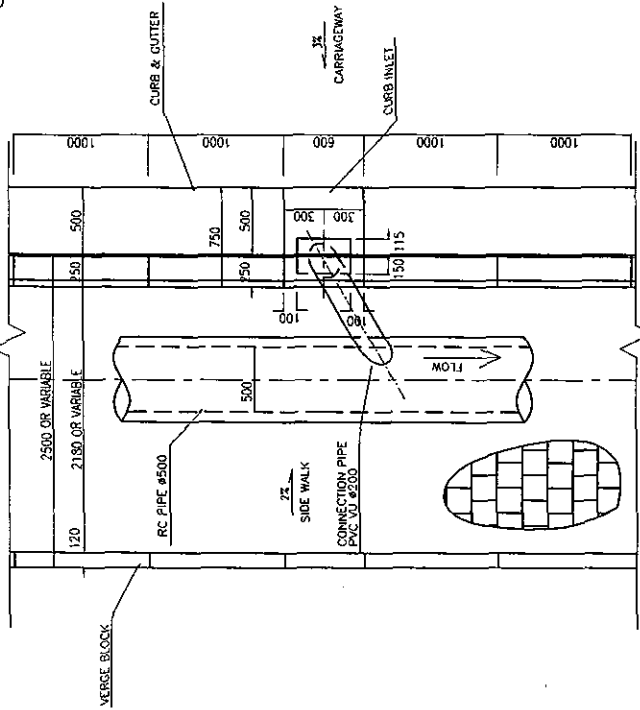
SCALE
1/40

Drawing No.

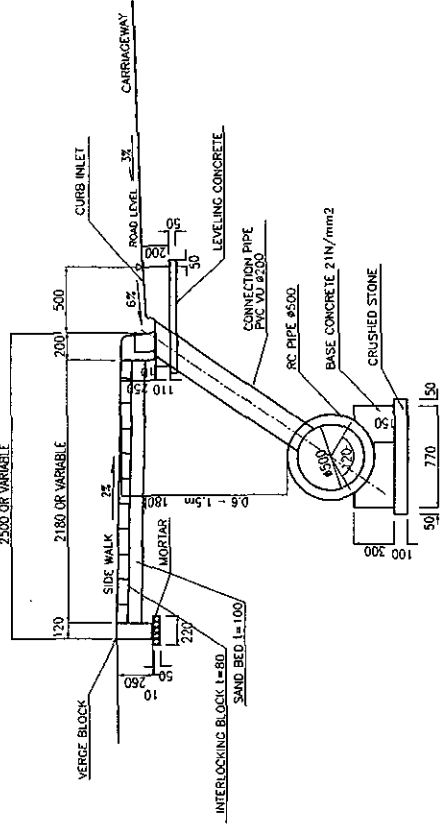
Sheet No.
DR-6

STORMDRAIN INLET

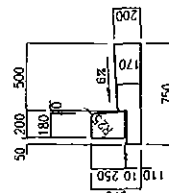
PLAN



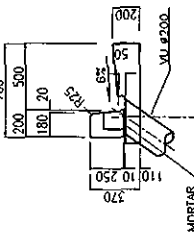
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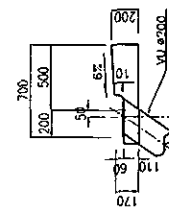
CURB & GUTTER BLOCK
SIDE



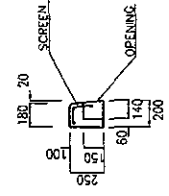
COMPOSITION
SIDE



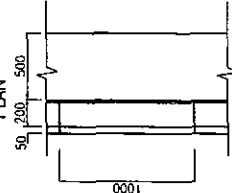
CRADLE BLOCK
SIDE



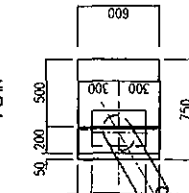
CURB INLET BLOCK
SIDE



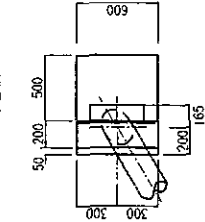
PLAN



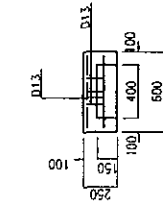
PLAN



PLAN



FRONT



ARRANGEMENTS OF STORMDRAIN INLET FOR CHBAR AMPOV AREA

Drainage Pipes	Sections	Interval	Nos.
CA-1-R	0+110 -0+500	10m	40
CA-1-L	0+110 -0+500	10m	40
CA-2-R	0+500 -1+100	10m	61
CA-2-L	0+500 -1+100	10m	61
CA-3-R	1+100 -1+800	10m	71
CA-3-L	1+100 -1+800	10m	71

ARRANGEMENTS OF STORMDRAIN INLET FOR KOKI MARKET AREA

Drainage Pipes	Sections	Interval	Nos.
KM-1-R	13+500 -13+620	10m	13
KM-1-L	13+500 -13+620	10m	13
KM-2-R	13+620 -13+950	10m	34
KM-2-L	13+620 -13+950	10m	34

MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)

THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA

JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO.,LTD

TITLE : STORMDRAIN INLET FOR CHBAR AMPOV & KOKI MARKET AREA

SCALE 1/40

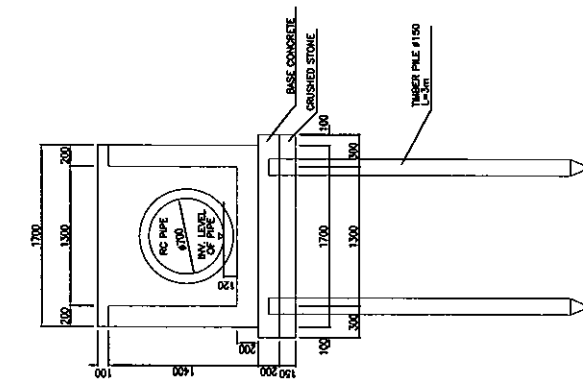
Drawing No. Sheet No. DR-7

OUTLET WORKS 1/3

DIMENSION TABLE ON DISCHARGING OUTLETS

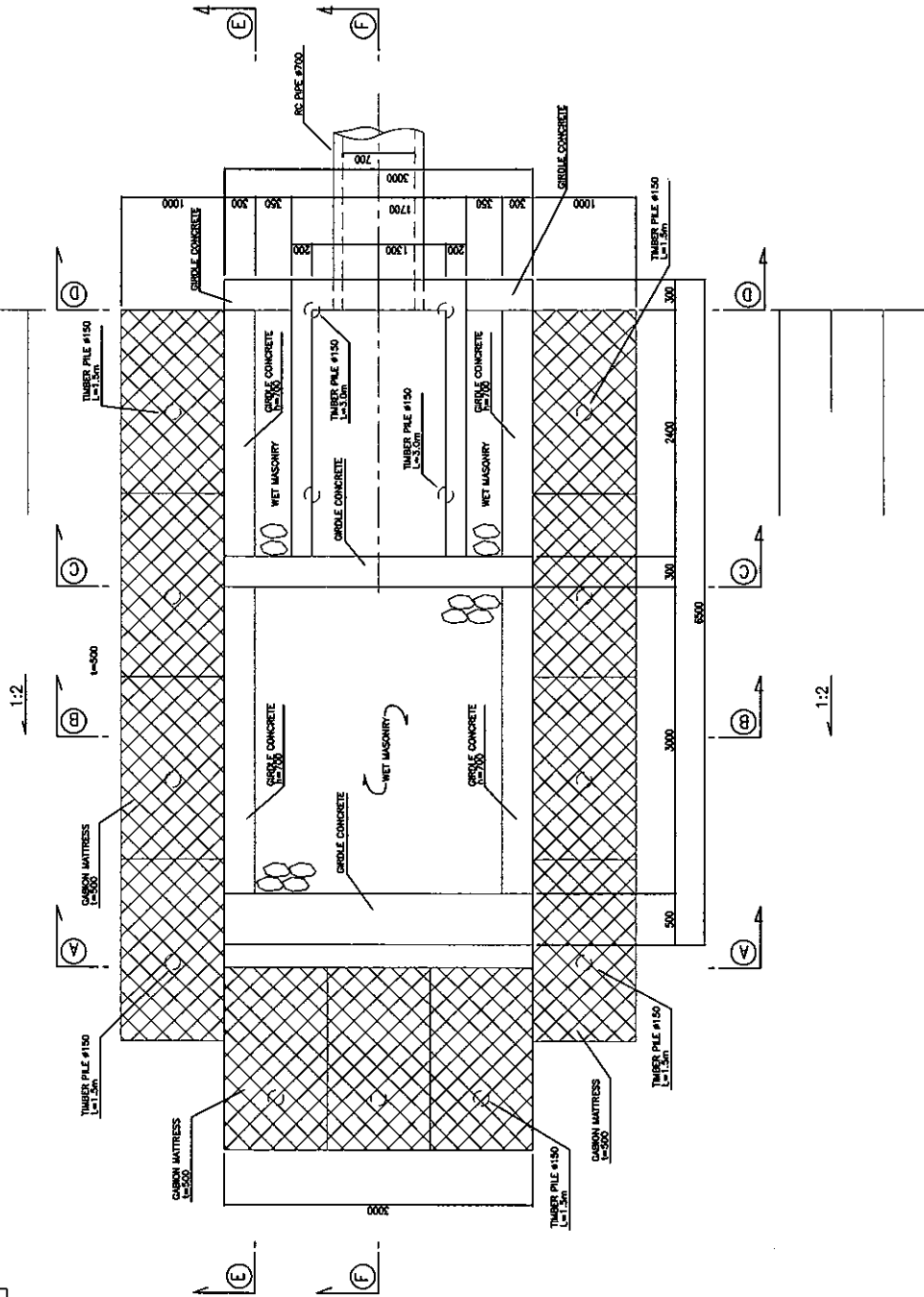
Discharge Pipes	Station	Prop. Invert Level (m)		Discharging River (m)	Design PW (m)
		Ground Level (m)	Pipe		
CA Discharge Pipe 1	SLO+140	7.500	7.500	7.300	10.18
CA Discharge Pipe 2	SLO+180	7.680	7.680	7.570	10.18
NA Discharge Pipe	SLO+085	7.300	7.500	7.380	9.72
NL Discharge Pipe	SLO+240	5.820	4.850	4.730	7.79

OUTLET FRONT



DISCHARGING RIVER

PLAN



MINISTRY OF
PUBLIC WORKS AND TRANSPORT
(MPWT)

THE PROJECT FOR THE
IMPROVEMENT OF NATIONAL ROAD NO. 1
(PHNOM PENH-NEAK LOUENG SECTION)
IN THE KINGDOM OF CAMBODIA

JAPAN INTERNATIONAL COOPERATION AGENCY
KATAHIRA & ENGINEERS INTERNATIONAL
CTI ENGINEERING INTERNATIONAL CO.,LTD

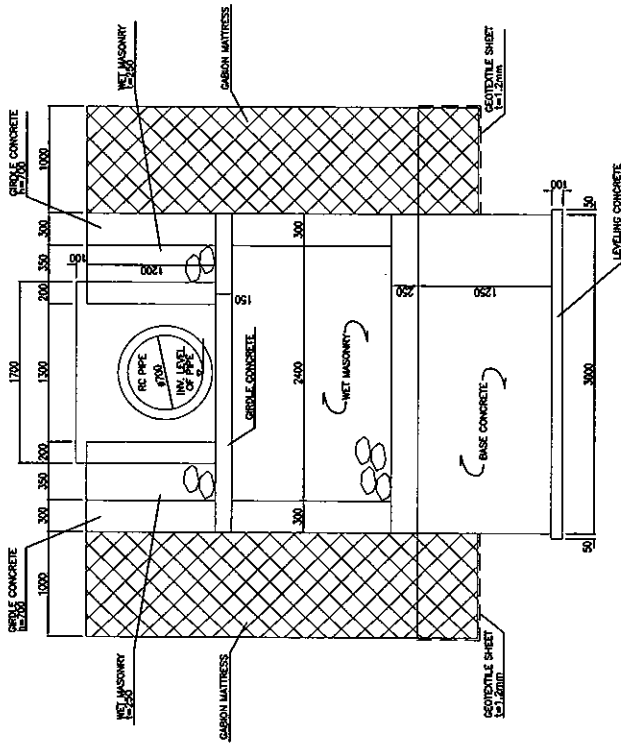
TITLE : ROAD DRAINAGE
OUTLET WORKS 1/3

SCALE
1/50

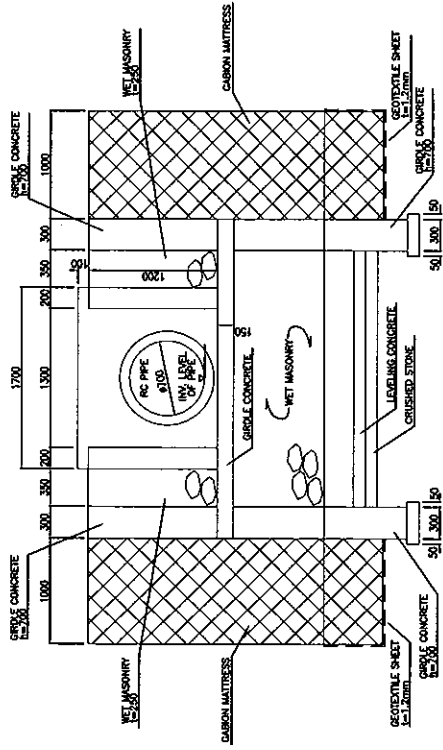
Drawing No.
Sheet No.
DR-8

OUTLET WORKS 2/3

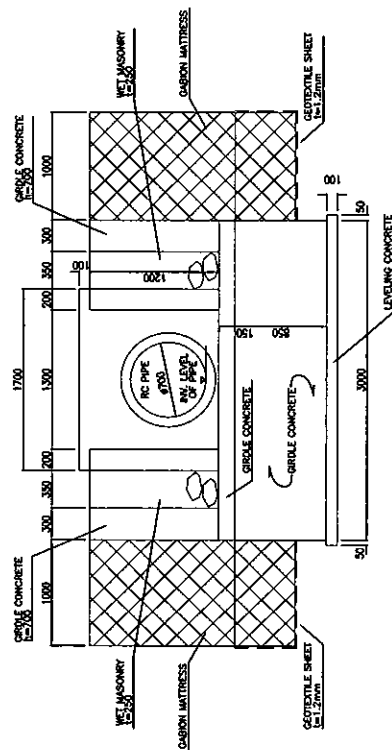
A-A SECTION



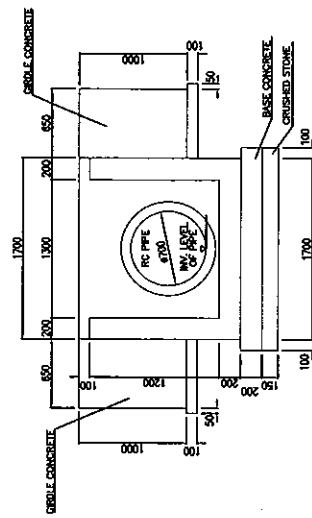
B-B SECTION



C-C SECTION

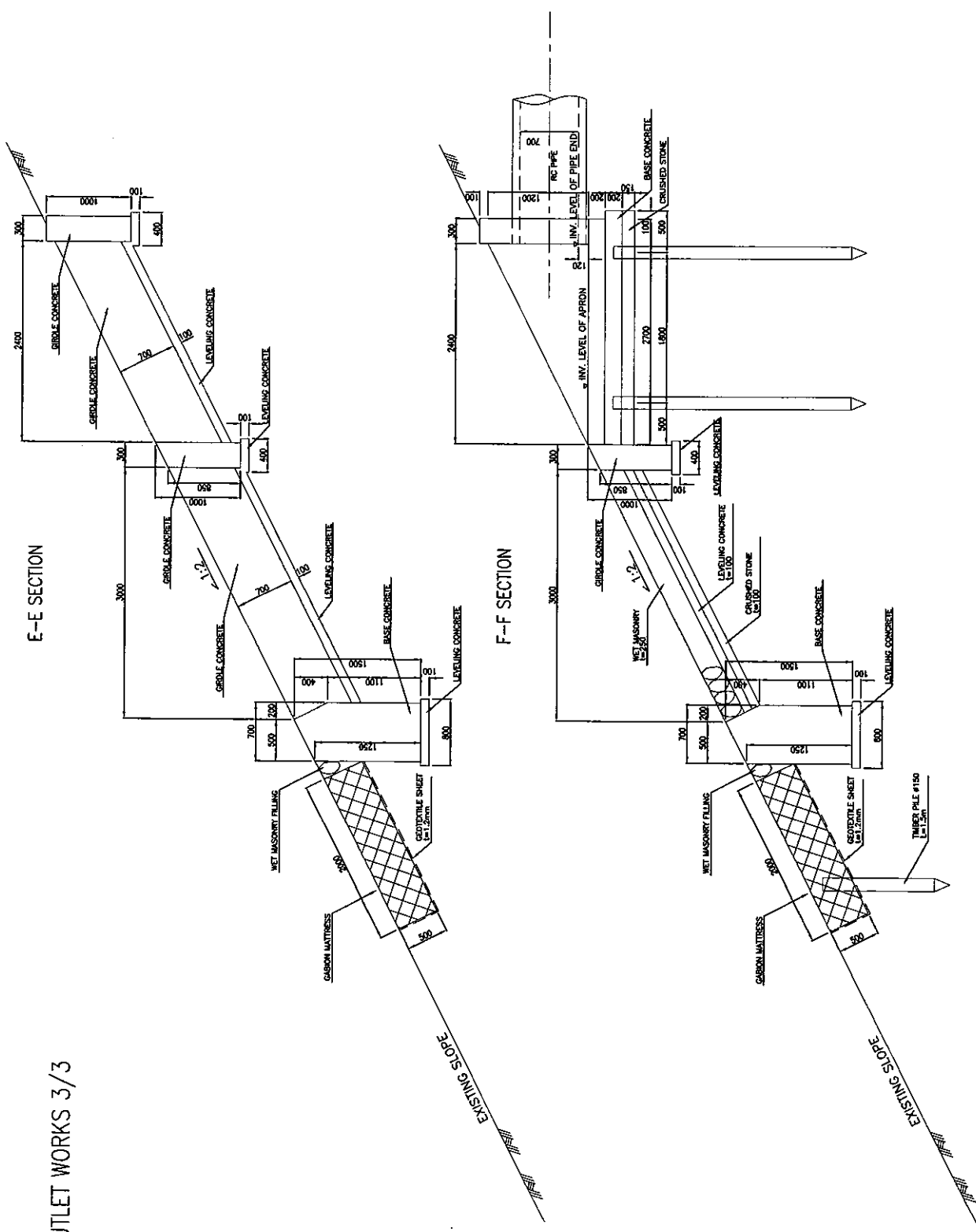


D-D SECTION

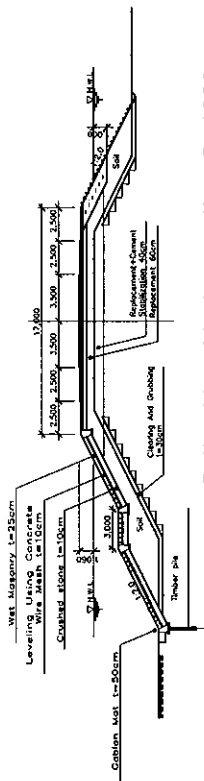


MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH--NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO.,LTD	TITLE : ROAD DRAINAGE OUTLET WORKS 2/3	SCALE	Drawing No.
				1/50	Sheet No. DR-9

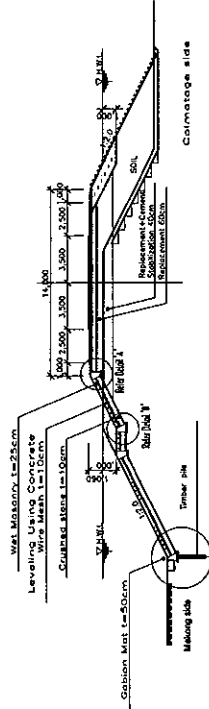
OUTLET WORKS 3/3



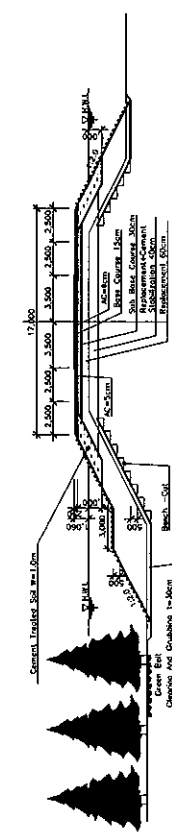
MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO.,LTD	TITLE : ROAD DRAINAGE OUTLET WORKS 3/3	SCALE	Drawing No.
				1/50	Sheet No. DR-10



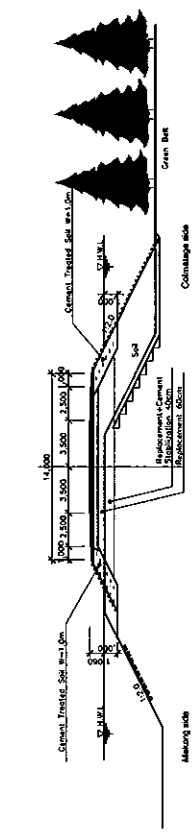
Both side widening section S=1:200



One side widening section S=1:200
Wet masonry revetment



Both side widening section S=1:200



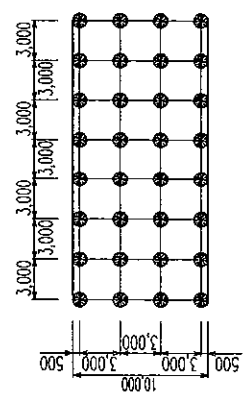
One side widening section S=1:200
Green belt with swampy tree

Schedule Of Wet Masonry

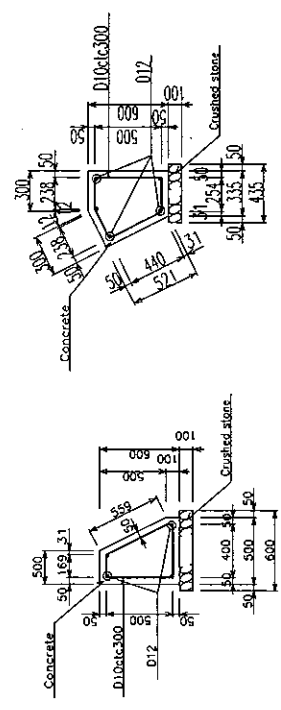
Station	Length
Sta.19+100-Sta.19+600	500m
Sta.23+100-Sta.23+280	180m
Sta.36+500-Sta.36+680	300m
Total	1,060m

Schedule Of Green Belt

Station	Length
Sta.18+500-Sta.19+100	600m
Sta.21+500-Sta.22+000	450m
Sta.32+500-Sta.33+000	500m
Sta.35+300-Sta.35+550	250m
Sta.36+100-Sta.36+500	500m
Sta.31+600-Sta.33+000	1,400m
Sta.41+500-Sta.44+350	2,850m
Sta.47+610-Sta.48+970	1,360m
Total	7,910m

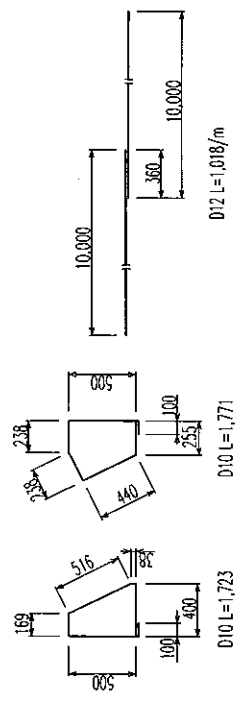


Arrangement Of Green Belt S=1:200



Detail 'B' S=1:20

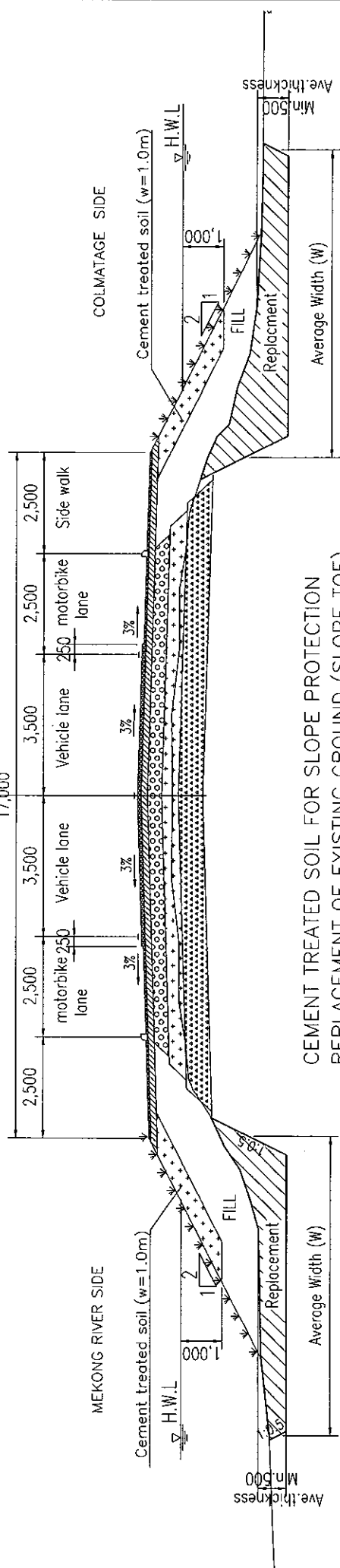
Detail 'A' S=1:20



Detail 'C' S=1:30

Arrangement Of Bars S=1:20

MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO.,LTD	TITLE :	SLOPE PROTECTION	SCALE	As Shown	Drawing No.	
							Sheet No.	M-1



CEMENT TREATED SOIL FOR SLOPE PROTECTION REPLACEMENT OF EXISTING GROUND (SLOPE TOE)

SCHEDULE LIST OF REPLACEMENT BY SOIL

Station	Mekong side				Cambodge side			
	Replacement Section	Ave. Thickness, m	Width, m	Section Area, m ²	Replacement Section	Ave. Thickness, m	Width, m	Section Area, m ²
0.30m-1.00m	700m	0.55	6.74	3.43	700m	0.91	6.46	5.88
1.00m-2.00m	1,000m	0.50	6.60	3.30	1,000m	1.40	7.82	10.95
2.00m-3.00m	1,000m	0.68	6.96	4.70	900m	1.50	5.48	2.74
3.00m-4.00m	1,000m	0.75	5.50	4.13	1,000m	1.72	6.48	7.82
4.00m-5.00m	1,000m	1.02	4.22	4.30	900m	0.65	4.32	2.81
5.00m-6.00m	1,000m	0.50	5.60	2.80	1,000m	0.50	5.42	2.71
6.00m-7.00m	1,000m	0.81	4.42	3.60	1,000m	0.50	4.38	2.19
7.00m-8.00m	1,000m	0.83	5.05	4.20	1,000m	0.50	4.92	2.46
8.00m-9.00m	800m	0.50	4.40	2.20	1,000m	0.50	6.64	3.37
9.00m-10.00m	900m	0.50	4.82	2.41	1,000m	0.50	6.37	3.19
10.00m-11.00m	1,000m	0.72	5.80	4.20	1,000m	0.37	4.58	2.81
11.00m-12.00m	800m	0.70	4.57	3.20	700m	0.96	5.03	4.85
12.00m-13.00m	900m	1.29	4.83	5.42	1,000m	1.91	7.54	14.41
13.00m-14.00m	1,000m	0.54	4.83	2.50	1,000m	1.07	4.28	4.58
14.00m-15.00m	1,000m	0.80	5.83	4.50	1,000m	0.52	4.51	2.35
15.00m-16.00m	500m	0.50	4.73	2.37	1,000m	0.50	4.77	2.39
16.00m-17.00m	200m	0.50	4.30	2.15	1,000m	0.80	7.14	5.71
17.00m-18.00m	1,000m	0.50	4.25	2.13	1,000m	0.50	4.25	2.13
18.00m-19.00m	1,000m	0.50	4.50	2.25	1,000m	1.00	7.47	7.47
19.00m-20.00m	1,000m	0.50	4.25	2.13	1,000m	1.02	4.58	4.65
20.00m-21.00m	1,000m	0.50	4.25	2.13	1,000m	0.50	4.25	2.13
21.00m-22.00m	1,000m	0.50	4.25	2.13	1,000m	0.50	4.27	2.14

SCHEDULE LIST OF REPLACEMENT BY SAND

Station	Mekong side				Cambodge side			
	Replacement Section	Ave. Thickness, m	Width, m	Section Area, m ²	Replacement Section	Ave. Thickness, m	Width, m	Section Area, m ²
2.00m-3.00m					37m	1.00	7.57	7.57
3.00m-4.00m					900m	1.40	4.78	6.71
4.00m-5.00m					100m	1.50	5.24	7.86
8.00m-9.00m	150m	1.00	5.58	5.58				
9.00m-10.00m	100m	1.00	5.27	5.27				
11.00m-12.00m	600m	1.50	6.61	9.92	300m	1.50	6.61	9.92
12.00m-13.00m	200m	1.25	7.13	10.83				

MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)

THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA

JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO., LTD.

TITLE: CEMENT TREATED SOIL REPLACEMENT OF EXISTING GROUND (SLOPE TOE)

Drawing No.

SCALE

1:100

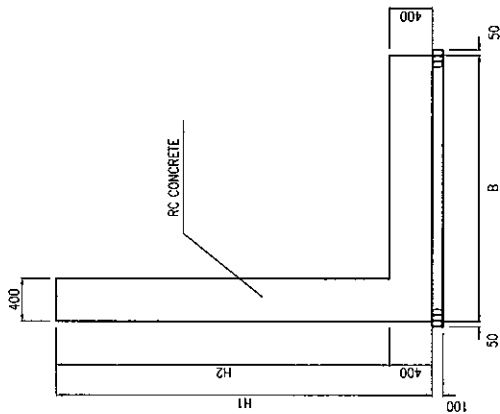
Sheet No. M-2

LIST OF CEMENT TREATED SOIL FOR SLOPE PROTECTION

Station	Road Length, m	Protection Length (both side), m	Protection Area, m ²
1.80m-3.00m	1,200	1,400	14,000
3.00m-4.00m	1,000	1,400	14,000
4.00m-5.00m	1,000	0	0
5.00m-13.50m	8,500	4,400	44,000
13.50m-14.00m	500	0	0
14.00m-15.70m	1,700	0	0
15.70m-18.00m	2,300	300	2,100
18.00m-18.840m	840	540	4,600
18.840m-22.00m	3,160	2,850	28,500
Sub-total	20,200	11,000	107,100
22.00m-24.00m	2,000	300	2,100
24.00m-31.00m	7,000	4,900	34,300
31.00m-32.00m	1,000	100	700
32.00m-33.00m	1,000	1,000	10,000
33.00m-53.40m	20,400	28,800	242,700
53.40m-54.74m	1,340	1,340	13,400
Sub-total	32,740	36,460	303,200
Total	52,940	47,460	410,300

SCHEDULE LIST OF RETAINING WALL (L-SHAPED RC)

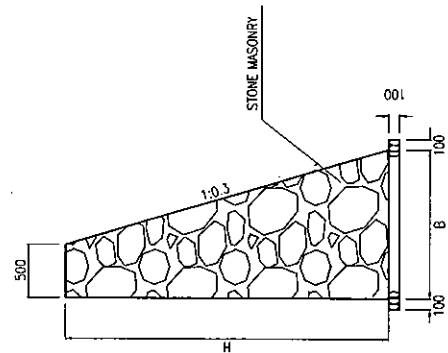
NO.	LEFT SIDE			RIGHT SIDE		
	START STATION	END STATION	HEIGHT L(m)	START STATION	END STATION	HEIGHT L(m)
1	0+565	0+586	3.5	1+065	1+085	3.5
2	0+905	0+935	3.5	1+115	1+125	3.5
3	1+170	1+230	4.0	1+125	1+165	5.0
4	1+280	1+330	4.0	1+350	1+390	3.5
5	1+330	1+375	3.5	1+390	1+430	4.0
6	1+375	1+405	4.5	1+430	1+530	4.0
7	1+405	1+560	4.0	1+530	1+590	4.5
8	1+560	1+585	5.0	1+590	1+725	4.0
9	1+585	1+635	4.5	1+725	1+775	3.5
10	1+670	1+710	4.5			
11	1+710	1+765	4.0			
12	1+785	1+850	3.5			
12	1+850	1+870	3.0			
12	1+870	1+915	4.0			



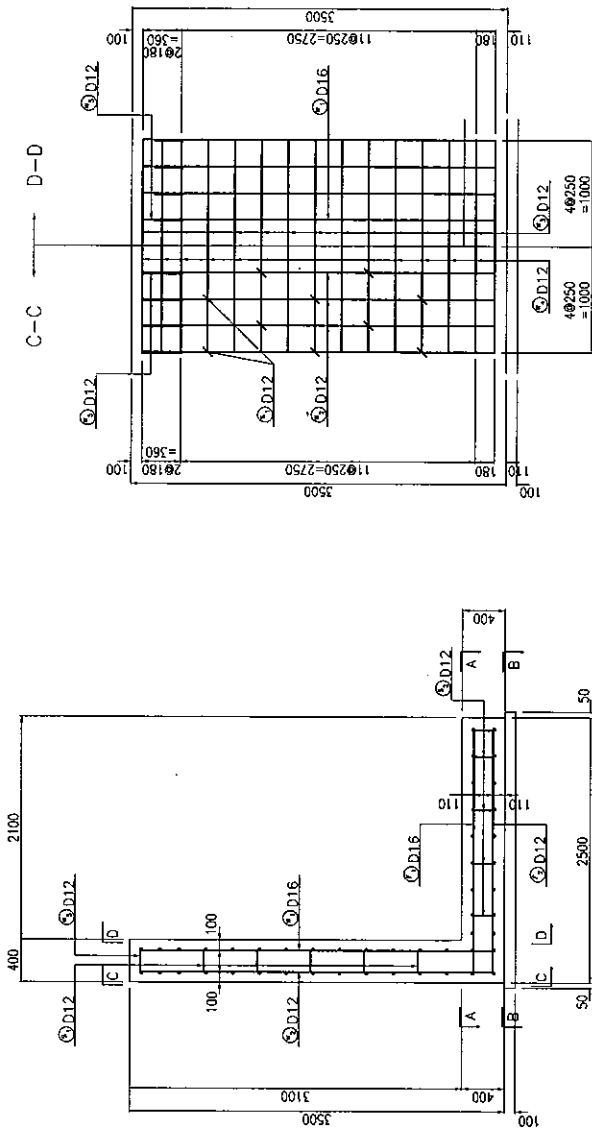
RETAINING WALL(L-SHAPED)

SCHEDULE LIST OF RETAINING WALL (STONE MASONRY)

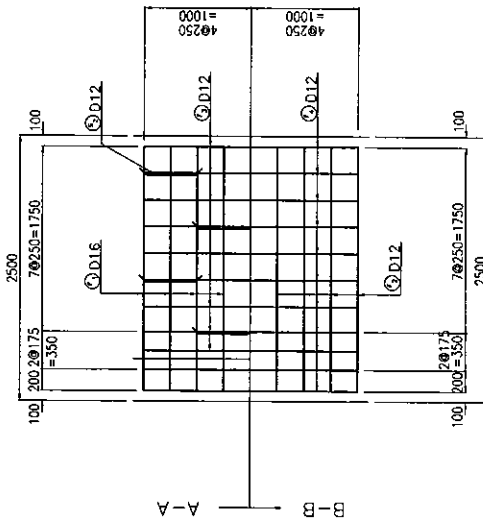
NO.	LEFT SIDE			RIGHT SIDE		
	START STATION	END STATION	HEIGHT L(m)	START STATION	END STATION	HEIGHT L(m)
1	0+450	0+490	3.0	0+460	0+485	2.5
2	0+490	0+506	1.0	0+485	0+505	1.5
3	0+506	0+530	3.0	0+505	0+530	0.5
4	0+530	0+550	1.0	0+530	0+590	2.5
5	0+550	0+565	0.5	0+590	0+630	2.0
6	0+565	0+605	0.5	0+630	0+670	2.5
7	0+605	0+630	1.0	0+670	0+725	1.5
8	0+630	0+650	2.5	0+725	0+765	1.0
9	0+650	0+690	1.0	0+765	0+880	2.5
10	0+690	0+705	2.5	0+880	0+930	1.5
11	0+705	0+725	3.0	0+930	0+945	2.5
12	0+725	0+750	2.0	0+945	0+990	1.5
13	0+750	0+775	3.0	0+990	1+035	2.5
14	0+775	0+800	1.0	1+035	1+065	3.0
15	0+800	0+810	1.5	1+065	1+095	3.5
16	0+810	0+825	3.0	1+095	1+115	2.0
17	0+825	0+850	2.0	1+115	1+248	1.5
18	0+850	0+874	2.5	1+248	1+290	1.0
19	0+874	0+905	1.5	1+290	1+350	1.5
20	0+905	1+010	1.0	1+350	1+810	2.5
21	1+010	1+050	2.5	1+810	1+830	1.0
22	1+050	1+090	1.5			
23	1+095	1+130	0.5			
24	1+130	1+150	1.0			
25	1+150	1+170	3.0			
26	1+230	1+245	2.0			
27	1+245	1+280	1.0			
28	1+635	1+670	1.5			
29	1+765	1+785	1.5			



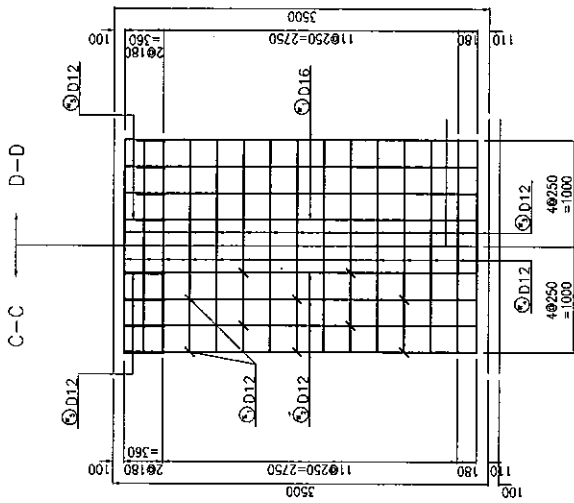
RETAINING WALL(STONE MASONRY)



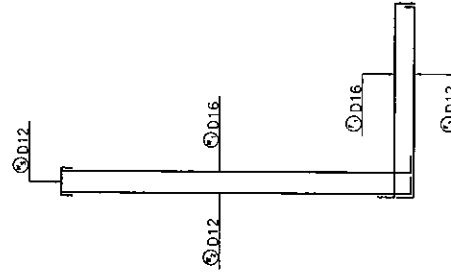
CROSS SECTION



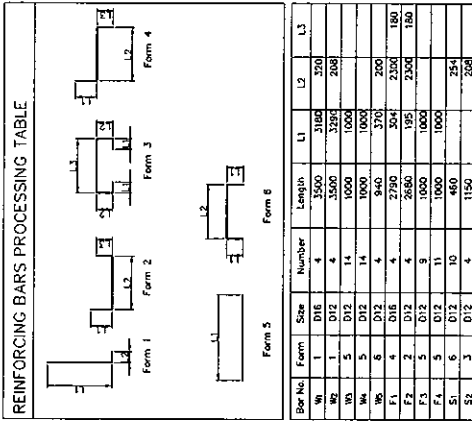
BASE REINFORCEMENT



WALL REINFORCEMENT



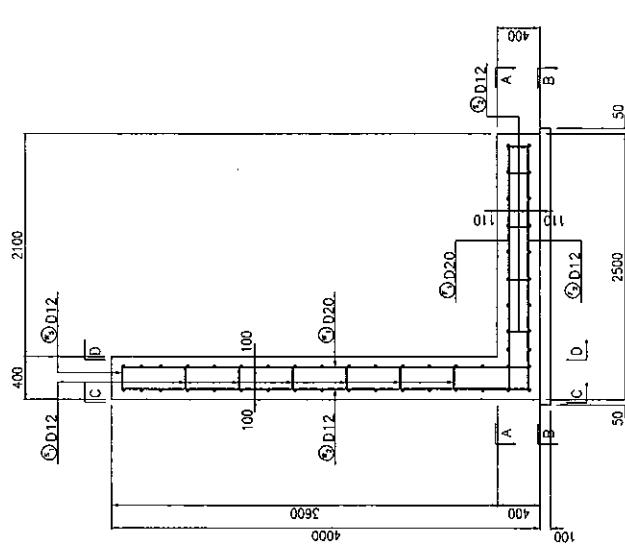
PROCESSING OF REINFORCEMENT



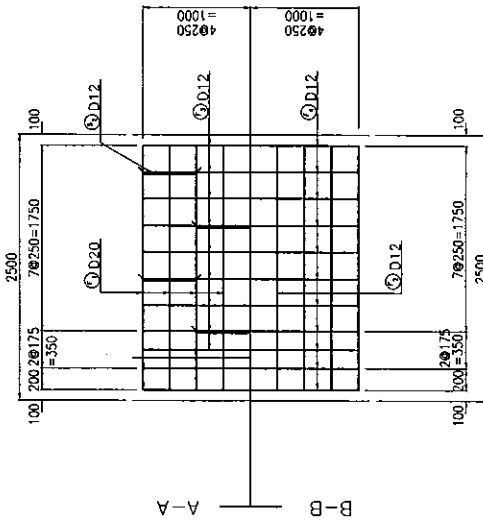
Bar No.	Form	Size	Number	Length	L1	L2	L3
W1	1	D12	4	3500	3160	370	
W2	1	D12	4	3500	3290	208	
W3	5	D12	14	1000	1000		
W4	5	D12	14	1000	1000		
W5	6	D12	4	940	370	200	
F1	4	D16	4	2790	304	2350	180
F2	2	D12	4	2680	195	2350	180
F3	5	D12	9	1000	1000		
F4	5	D12	11	1000	1000		
S1	6	D12	10	460		294	
S2	3	D12	4	1150		208	

MARK	DIA- METER	LENGTH mm	EACH	WEIGHT/A kg/m ³	WEIGHT/DNE kg	WEIGHT	REMARKS
W1	D12	3500	4	1.380	5.460	21.8	
W2	D12	3500	4	0.885	3.108	12.4	
W3	D12	1000	14	0.617	8.638	72.4	
W4	D12	1000	14	0.617	8.638	72.4	
W5	D12	940	4	0.617	2.468	17.2	
F1	D16	2790	4	1.560	6.324	51.3	
F2	D12	2680	4	0.888	2.360	9.3	
F3	D12	1000	9	0.888	8.0	8.8	
F4	D12	1000	11	0.888	9.8	10.8	
S1	D12	460	10	0.408	4.1	4.1	
S2	D12	1150	4	1.021	4.1	115.2	kg

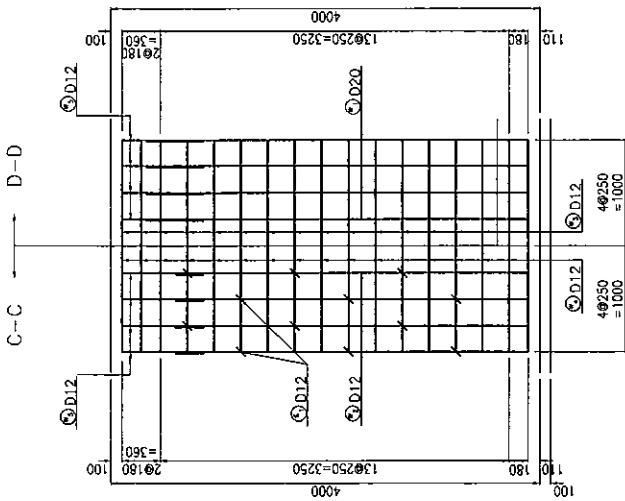
Size	φ (mm)	h (mm)	b (mm)	ρ (mm)	l (mm)
D12	12	164	240	42	410
D16	16	192	270	48	560
D20	20	236	330	60	690
D25	25	292	420	75	880
D30	30	348	510	90	1070
D35	35	404	600	105	1260
D40	40	460	690	120	1450
D45	45	516	780	135	1640
D50	50	572	870	150	1830
D55	55	628	960	165	2020
D60	60	684	1050	180	2210



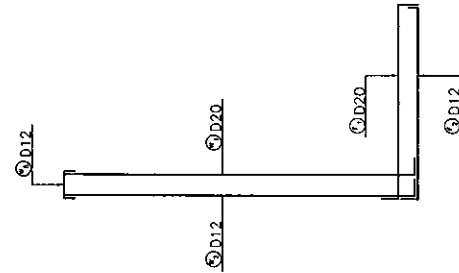
CROSS SECTION



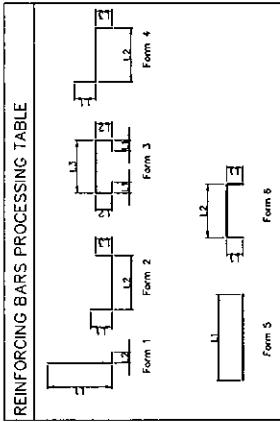
BASE REINFORCEMENT



WALL REINFORCEMENT



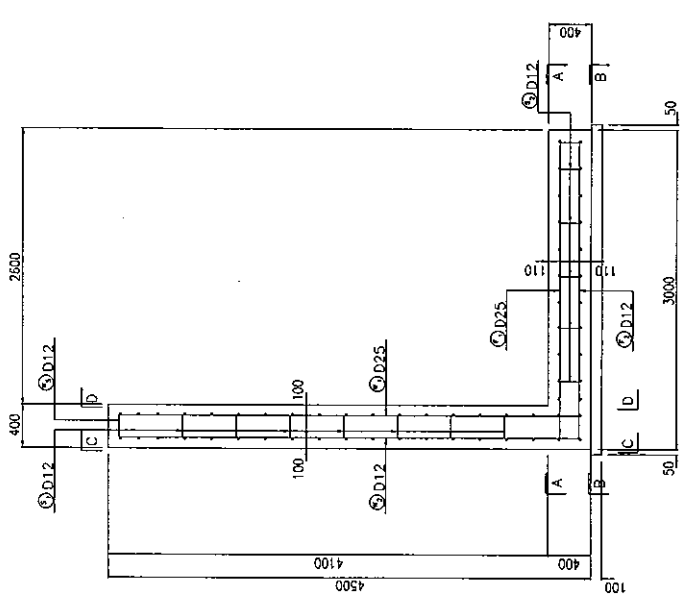
PROCESSING OF REINFORCEMENT



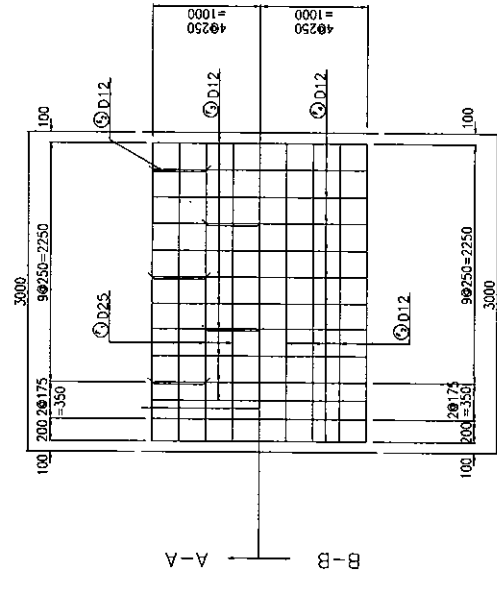
Bar No.	Form	Size	Number	Length	L1	L2	L3
W1	1	D20	4	4000	3393	437	
W2	1	D12	4	3500	3294	206	
W3	5	D12	16	1000	1000		
W4	5	D12	16	1000	1000		
W5	5	D12	4	1720	758	200	
F1	4	D20	4	2900	418	2300	180
F2	2	D12	4	2680	153	2300	180
F3	5	D12	9	1000	1000		
F4	5	D12	11	1000	1000		
S1	6	D12	12	460		255	
S2	3	D12	4	1150		209	

MARK	DIAMETER	LENGTH	EACH	WEIGHT/A	WEIGHT/DIAMETER	WEIGHT	REMARKS
W1	D20	4000	4	2.456	9.854	39.3	
W2	D12	3500	4	0.885	3.108	12.4	
W3	D12	1000	16	0.885	0.885	14.2	
W4	D12	1000	16	0.885	0.885	14.2	
W5	D12	1720	4	0.885	1.327	3.5	
F1	D20	2900	4	2.468	7.157	28.6	
F2	D12	2680	4	0.885	2.380	9.5	
F3	D12	1000	9	0.885	0.885	8.0	
F4	D12	1000	11	0.885	0.885	9.8	
S1	D12	460	12	0.403	0.403	4.8	
S2	D12	1150	4	1.021	1.021	4.1	151.3 kg

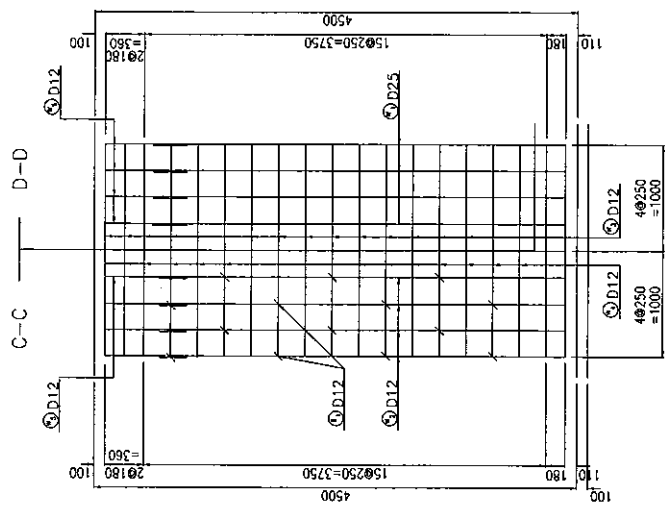
Shear	a	b	c	R	L
D12	64	161	236	42	416
D18	75	183	270	48	500
D20	84	206	320	60	600
D22	104	266	370	66	690
D25	122	308	430	78	790
D28	141	349	490	90	810
D32	151	368	540	96	1000



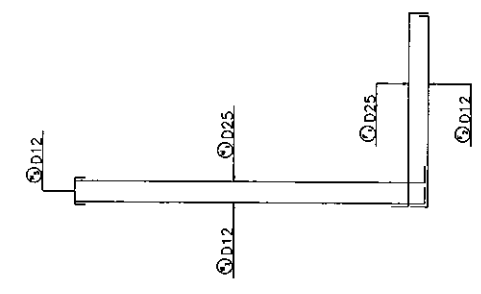
CROSS SECTION



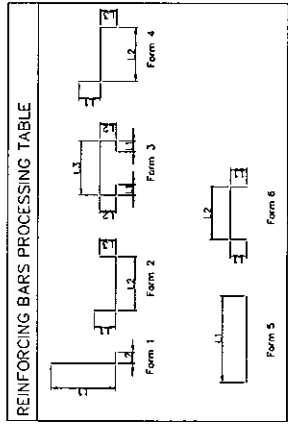
BASE REINFORCEMENT



WALL REINFORCEMENT



PROCESSING OF REINFORCEMENT



Bar No.	Form	Size	Number	Length (mm)	L1	L2	L3
W1	1	D12	4	4500	3950	550	550
W2	2	D12	4	4500	3950	550	550
W3	3	D12	18	1000	1000	1000	200
W4	4	D12	18	1000	1000	1000	200
W5	5	D12	4	1720	3250	200	200
F1	1	D12	4	3650	650	2800	180
F2	2	D12	4	3180	195	2800	180
F3	3	D12	11	1000	1000	1000	1000
F4	4	D12	13	1000	1000	1000	1000
S1	1	D12	14	450	450	250	250
S2	2	D12	5	1170	1170	212	212

MARK	DIA-METER	LENGTH (mm)	EACH	WEIGHT (kg)	WEIGHT/ONE (kg)	WEIGHT (kg)	REMARKS
W1	D12	4500	4	3.980	17.910	71.5	
W2	D12	4500	4	0.885	3.552	14.2	
W3	D12	1000	18	0.885	16.0		
W4	D12	1000	18	0.885	16.0		
W5	D12	1720	4	1.527	6.1		
F1	D12	3650	4	3.980	14.447	57.8	
F2	D12	3180	4	0.885	2.824	11.3	
F3	D12	1000	11	0.885	9.8		
F4	D12	1000	13	0.885	11.5		
S1	D12	450	14	0.885	12.39	51.2	
S2	D12	1170	5	1.038	5.19	25.2	kg

Size (mm)	Weight (kg)	Length (mm)	Weight (kg)
D12	0.885	164	0.145
D12	0.885	181	0.160
D12	0.885	200	0.176
D12	0.885	220	0.192
D12	0.885	240	0.208
D12	0.885	260	0.224
D12	0.885	280	0.240
D12	0.885	300	0.256
D12	0.885	320	0.272
D12	0.885	340	0.288
D12	0.885	360	0.304
D12	0.885	380	0.320
D12	0.885	400	0.336

MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)

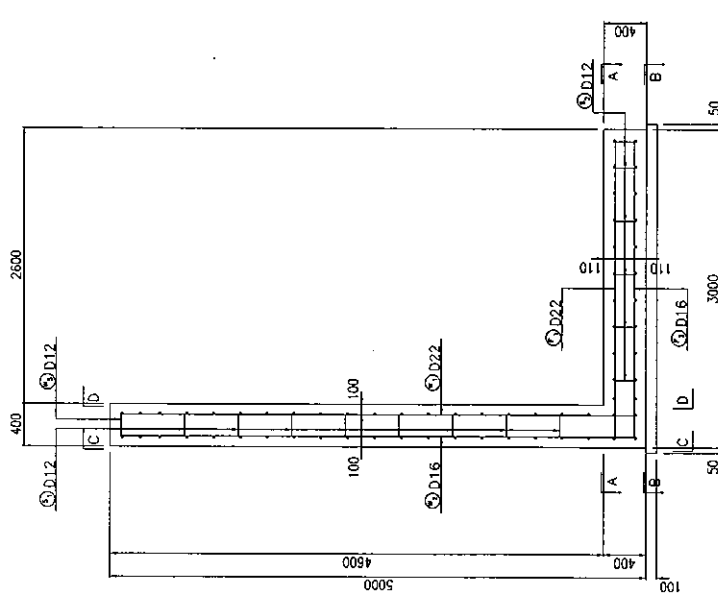
THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA

JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO., LTD.

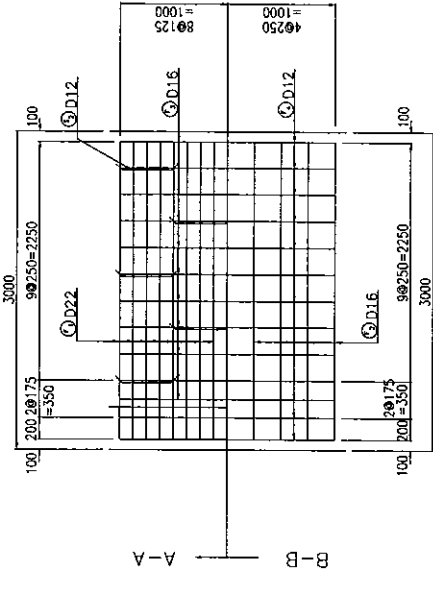
TITLE: RETAINING WALL L-SHAPED RETAINING WALL 3/4

SCALE 1:25

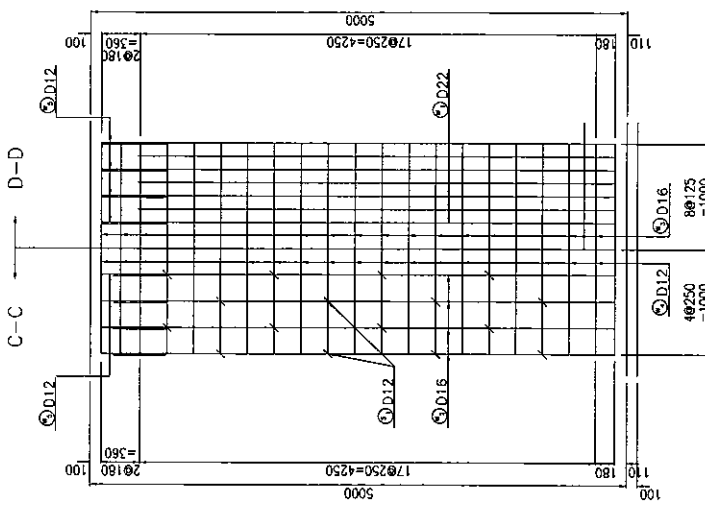
Drawing No. Sheet No. M-6



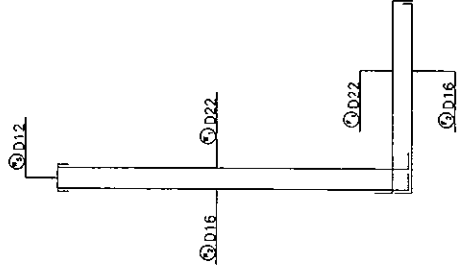
CROSS SECTION



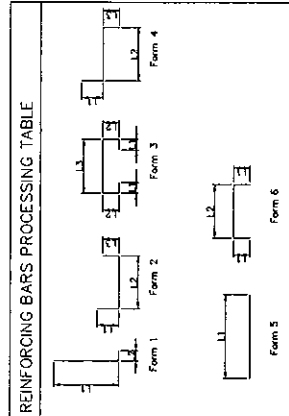
BASE REINFORCEMENT



WALL REINFORCEMENT



PROCESSING OF REINFORCEMENT

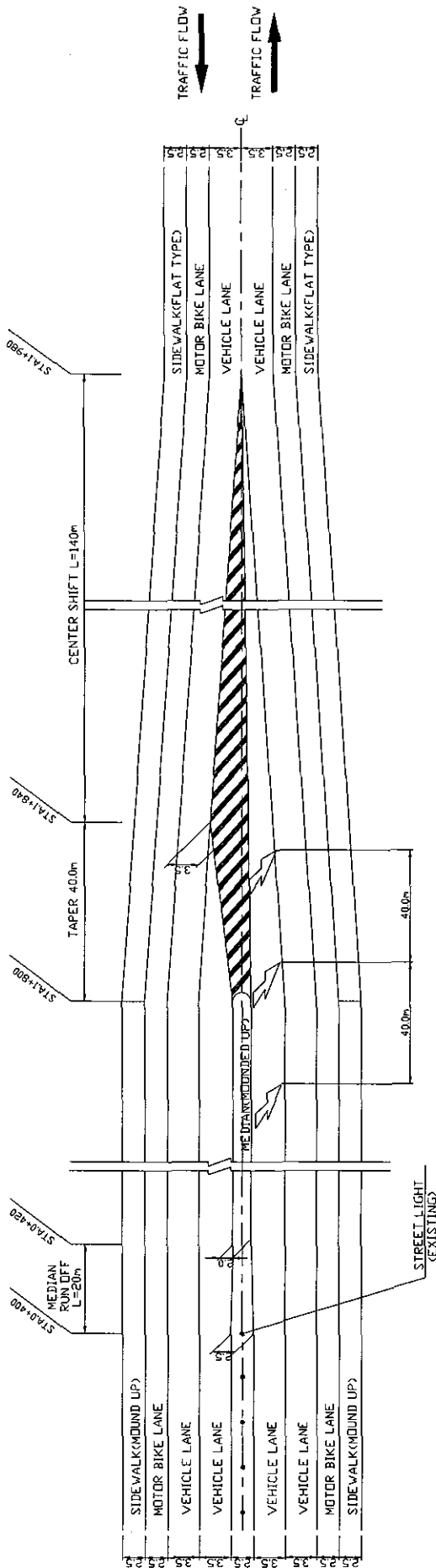


Bar No.	Form	Size	Number	Length	L1	L2	L3
W1	1	D12	8	5000	4450	550	550
W2	1	D16	4	5000	4850	320	320
W3	5	D16	20	1000	1000	1000	1000
W4	5	D12	20	1000	1000	1000	1000
W5	6	D12	4	1400	800	200	200
F1	4	D22	5	3310	528	2800	180
F2	2	D16	4	3550	304	2800	180
F3	5	D16	11	1000	1000	1000	1000
F4	5	D12	13	1000	1000	1000	1000
S1	8	D12	18	470	470	470	261
S2	3	D12	5	1160	1160	1160	212

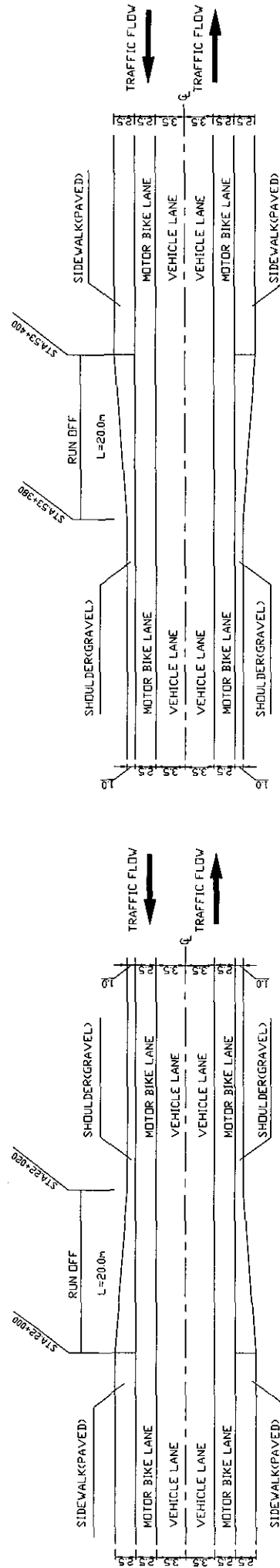
MARK	DIA- METER	LENGTH mm	EACH	WEIGHT/4 (kg/m)	WEIGHT/DNE (kg)	WEIGHT (kg)	REMARKS
W1	D22	5000	8	3.040	15.200	121.6	
W2	D16	5000	4	1.550	7.800	31.2	
W3	D16	1000	20	0.288	1.960	31.2	
W4	D12	1000	20	0.288	0.968	17.8	
W5	D16	1400	4	3.040	12.453	50.0	
F1	D22	3310	5	3.560	5.172	25.8	
F2	D16	1000	11	1.560	1.560	17.2	
F3	D16	1000	13	0.888	0.888	11.5	
S1	D12	470	18	0.417	0.417	6.7	
S2	D12	1160	5	1.030	1.030	5.2	
						353.3 kg	

Size (mm)	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)
D12	66	184	230	42	410	
D16	75	195	270	48	500	
D22	84	236	330	60	600	
D22	104	260	370	66	690	
D22	122	308	430	78	790	
D22	141	348	490	90	910	
D22	151	398	540	96	1000	

MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO., LTD.	TITLE: RETAINING WALL	SCALE	Drawing No.
			L-SHAPED RETAINING WALL 4/4	1:25	Sheet No. M-7



RUN OFF DETAIL AT STA.1+800



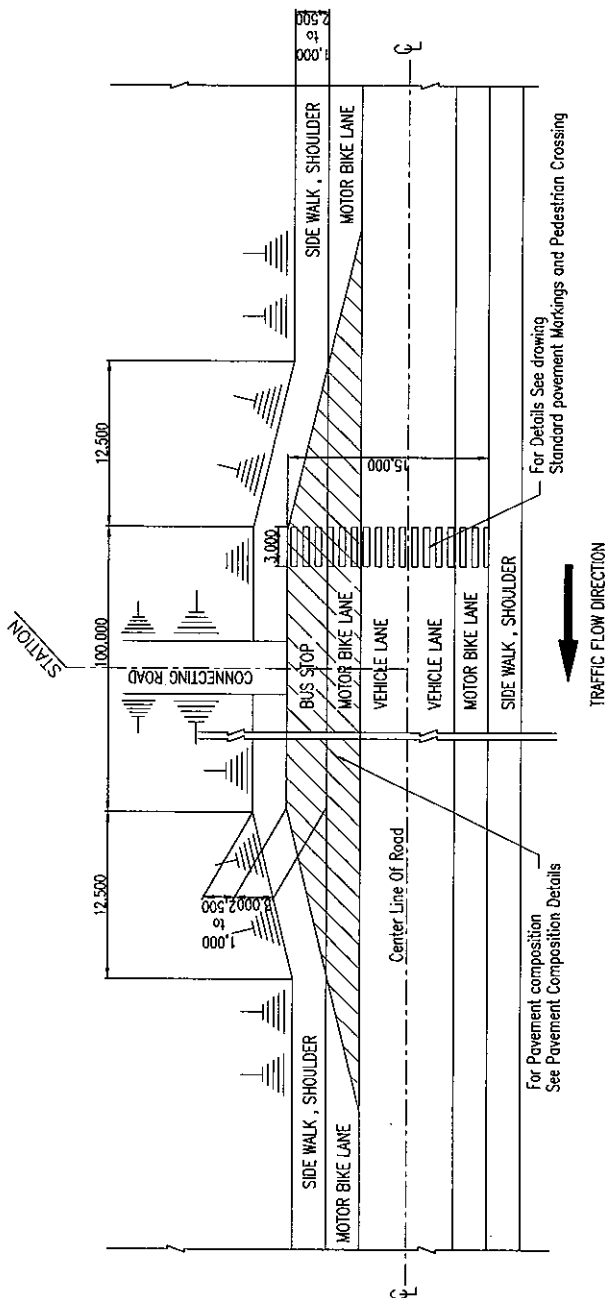
SIDEWALK RUN OFF AT STA.53+400

SIDEWALK RUN OFF AT STA.22+000

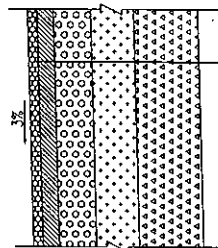
MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO., LTD.	TITLE: PLAN RUN OFF (1+800, 22+000, 53+400)	SCALE 1:500	Drawing No.
					Sheet No. M-8

SCHEDULE OF BUS STOPS

No.	STATION (km)	WIDENING SIDE	PAVEMENT TYPE
1	3+326	Left Side	TYPE-1
2	6+940	Left Side	TYPE-2
3	8+102	Left Side	TYPE-2
4	9+527	Right Side	TYPE-2
5	11+202	Left Side	TYPE-2
6	16+306	Left Side	TYPE-2
7	19+830	Right Side	TYPE-2
8	22+825	Right Side	TYPE-2
9	28+309	Left Side	TYPE-2
10	30+077	Left Side	TYPE-2
11	30+966	Left Side	TYPE-2
12	32+000	Left Side	TYPE-2
13	33+700	Left Side	TYPE-2
14	37+456	Right Side	TYPE-2
15	39+600	Left Side	TYPE-2
16	41+200	Left Side	TYPE-2
17	44+278	Left Side	TYPE-2
18	48+968	Left Side	TYPE-2
19	50+068	Left Side	TYPE-2
20	53+924	Right Side	TYPE-2
TOTAL			20

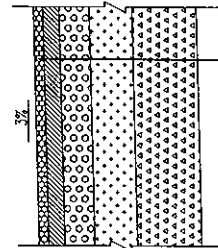


PLAN SCALE 1:400



Surface-Course (1=4cm)
 Binder-Course (1=5cm)
 Base-Course (1=15cm)
 Sub-Base Course (1=33cm)
 Sub-Grade
 Sub-Grade
 (Replacement 1=80cm or existing)

TYPE-1



Surface-Course (1=4cm)
 Binder-Course (1=5cm)
 Base-Course (1=15cm)
 Sub-Base Course (1=27/28cm)
 Sub-Grade
 Sub-Grade
 (Replacement or existing-Cement Stabilization 1=40-50cm)
 Sub-Grade
 (Replacement 1=60cm or existing)

TYPE-2

PAVEMENT COMPOSITION DETAILS SCALE 1:50

MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)

THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUJENG SECTION) IN THE KINGDOM OF CAMBODIA

JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTT ENGINEERING INTERNATIONAL CO., LTD.

TITLE:

BUS BAY & WIDENING

SCALE

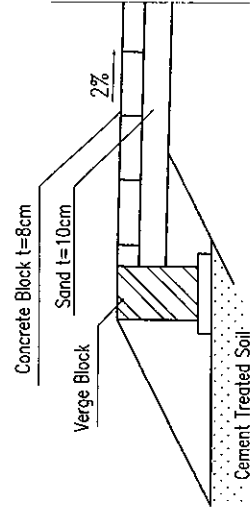
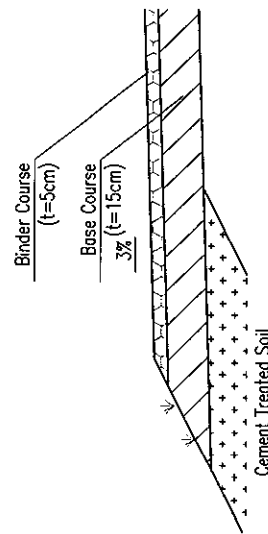
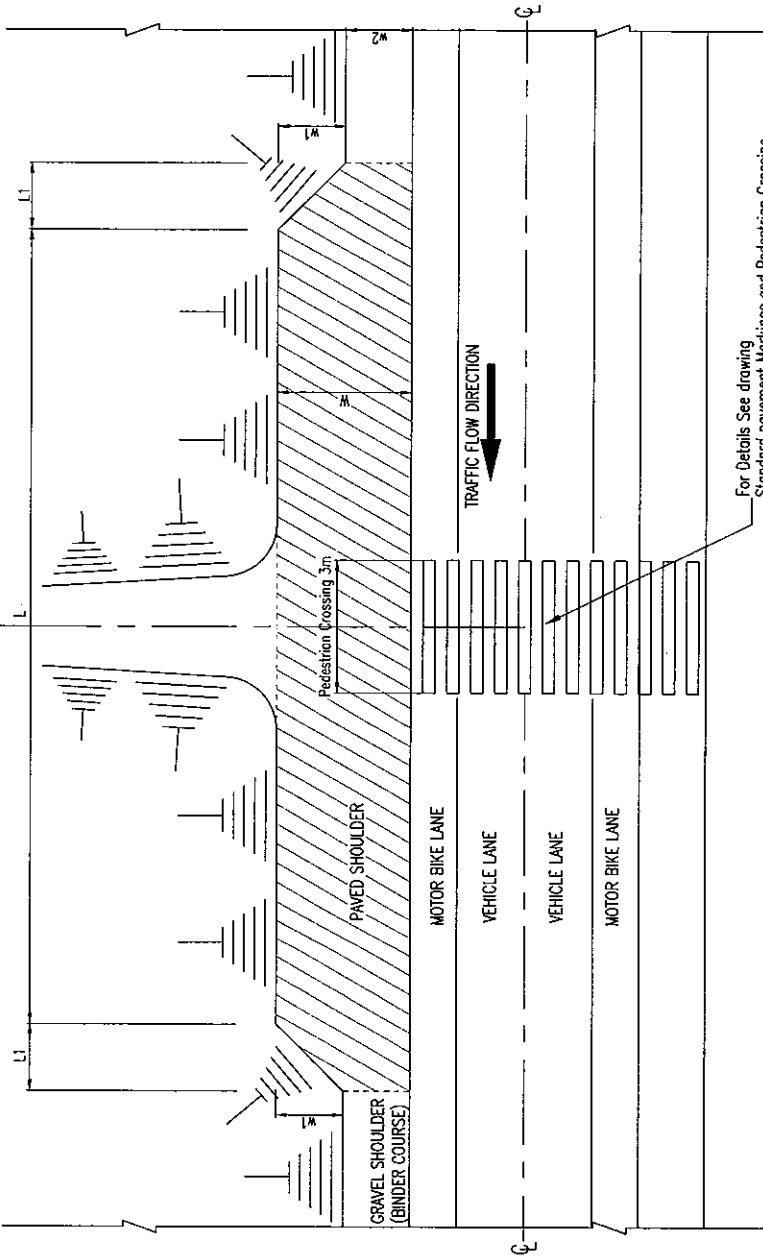
As shown

Drawing No.

Sheet No. M-9

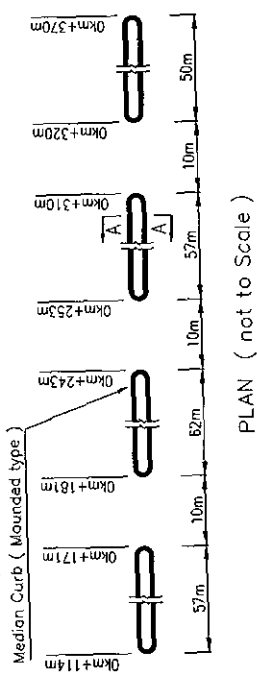
SCHEDULE OF WIDENING

No.	STATION (km)	WIDENING SIDE	PURPOSE	WIDENING DIMENSIONS					PAVEMENT	
				L (m)	W (m)	w1 (m)	w2 (m)	TYPE	TYPE	
1	1+572	Both Sides	School	300	2.5	5.0	2.5	2.5	TYPE-2	TYPE-1
2	3+918	Both Sides	School	300	2.5	5.0	2.5	2.5	TYPE-1	TYPE-1
3	4+984	Both Sides	School	300	2.5	5.0	2.5	2.5	TYPE-1	TYPE-1
4	5+800	Both Sides	Market	140.0	12.5	5.3	3.0	2.5	TYPE-1	TYPE-1
5	6+300	Left Side	Health Center	300	2.5	5.0	2.5	2.5	TYPE-1	TYPE-1
6	9+000	Both Sides	School	300	2.5	5.0	2.5	2.5	TYPE-1	TYPE-1
7	9+966	Right Side	Health Center	300	2.5	5.0	2.5	2.5	TYPE-1	TYPE-1
8	10+325	Both Sides	School	300	2.5	5.0	2.5	2.5	TYPE-1	TYPE-1
9	12+310	Both Sides	School	300	2.5	5.0	2.5	2.5	TYPE-1	TYPE-1
10	15+257	Both Sides	School	300	2.5	5.0	2.5	2.5	TYPE-1	TYPE-1
11	17+490	Right Side	School	300	2.5	5.0	2.5	2.5	TYPE-1	TYPE-1
12	17+675	Both Sides	School	900	2.5	5.0	2.5	2.5	TYPE-1	TYPE-1
13	20+540	Both Sides	School	300	2.5	5.0	2.5	2.5	TYPE-1	TYPE-1
14	25+362	Left Side	Health Center	300	2.5	3.5	2.5	1.0	TYPE-1	TYPE-1
15	25+475	Both Sides	School	300	2.5	3.5	2.5	1.0	TYPE-1	TYPE-1
16	27+362	Both Sides	School	300	2.5	3.5	2.5	1.0	TYPE-1	TYPE-1
17	28+748	Both Sides	School	300	2.5	3.5	2.5	1.0	TYPE-1	TYPE-1
18	34+830	Right Side	Health Center	300	2.5	3.5	2.5	1.0	TYPE-1	TYPE-1
19	35+032	Both Sides	School	300	2.5	3.5	2.5	1.0	TYPE-1	TYPE-1
20	35+730	Both Sides	Market	160.0	12.5	4.0	3.0	1.0	TYPE-1	TYPE-1
21	38+775	Both Sides	School	300	2.5	3.5	2.5	1.0	TYPE-1	TYPE-1
22	45+124	Both Sides	School	300	2.5	3.5	2.5	1.0	TYPE-1	TYPE-1
23	45+228	Right Side	Health Center	300	2.5	3.5	2.5	1.0	TYPE-1	TYPE-1
24	45+680	Both Sides	Market	500	12.5	4.0	3.0	1.0	TYPE-1	TYPE-1
25	51+993	Both Sides	School	300	2.5	3.5	2.5	1.0	TYPE-1	TYPE-1
26	52+311	Both Sides	School	300	2.5	3.5	2.5	1.0	TYPE-1	TYPE-1
TOTAL				46						

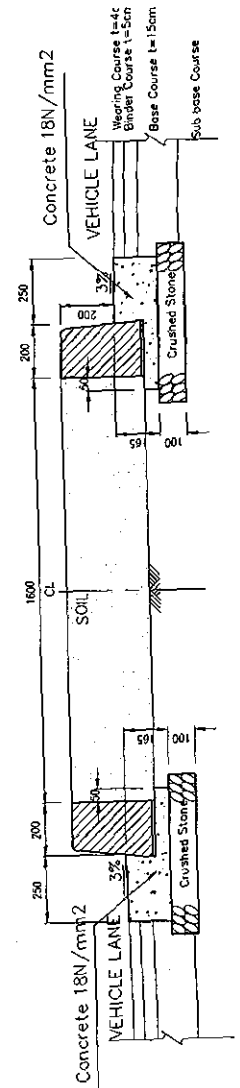


PAVEMENT COMPOSITION SCALE 1:10

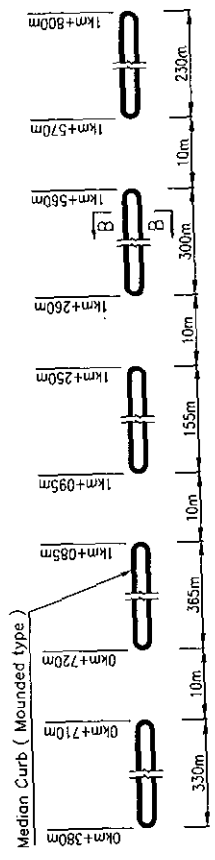
MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO., LTD.	TITLE: BUS BAY & WIDENING WIDENING OF SIDEWALK (SHOULDER) (MARKET, SCHOOL & HEALTH CENTER)	SCALE	As shown	Drawing No.
						Sheet No. M-10



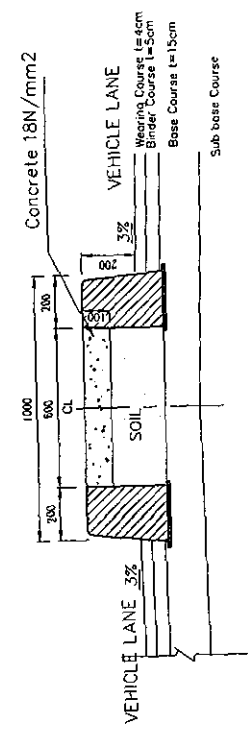
PLAN (not to Scale)



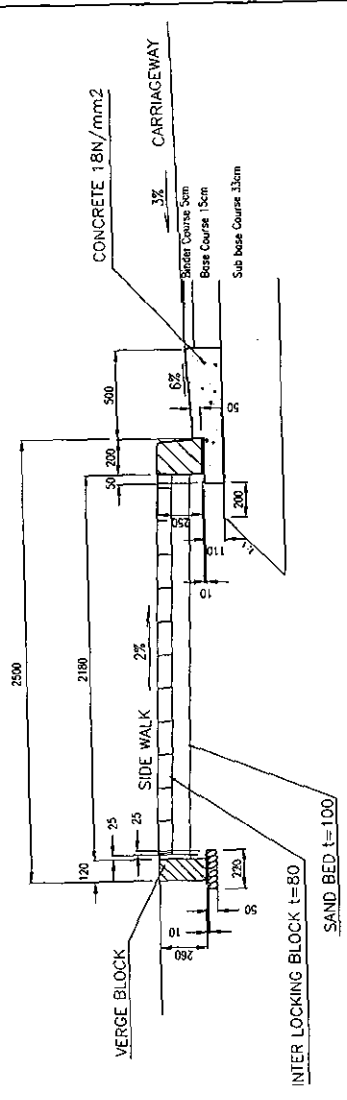
SECTION A - A S=1:20
MEDIAN(MOUNDED TYPE)
(Sta. 0km + 114m ~ 0km + 370m)



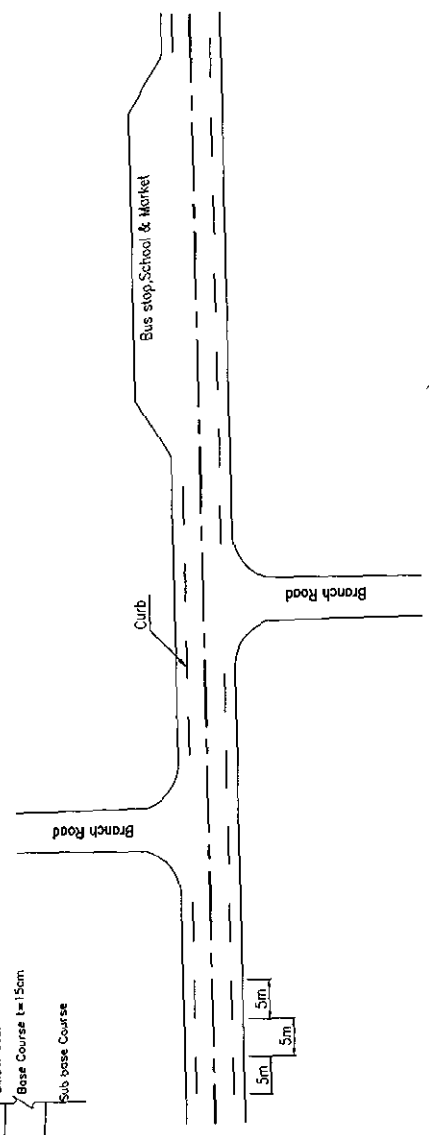
PLAN (not to Scale)



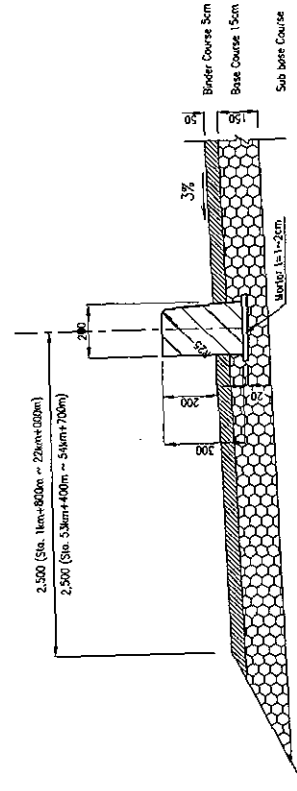
SECTION B - B S=1:20
MEDIAN(MOUNDED TYPE)
(Sta. 0km + 380m ~ 0km + 800m)



GENERAL VIEW OF MOUNDED SIDEWALK
SCALE 1:30



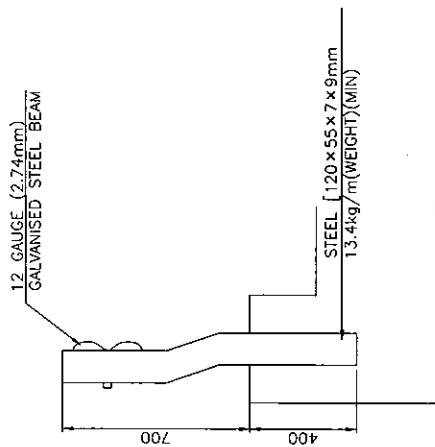
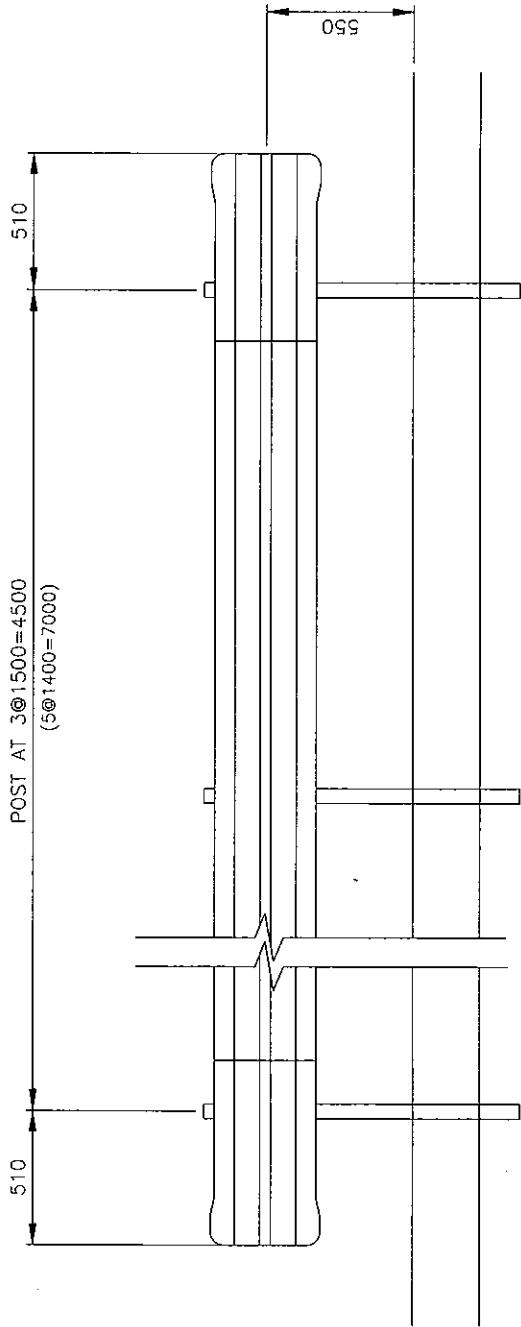
LAYOUT PLAN OF CURB (not to Scale)



DETAIL OF CURB
SCALE 1:20

SCHEDULE OF CURB	
STATION	Length of curb
1km+800m ~ 22km+000m	15,760m
53km+400m ~ 54km+700m	1,040m
TOTAL LENGTH (m)	16,800m

MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUNG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO., L.TD.	TITLE: STRUCTURE OF MEDIAN CURB STONE AND VERGE BLOCK	
			SCALE AS SHOWN	Drawing No.
				Sheet No. M-11



GARD RAIL SCALE 1:10

SCHEDULE OF GUARD RAIL

No	LEFT SIDE		LENGTH (m)	No	RIGHT SIDE		LENGTH (m)
	STARTING STATION	ENDING STATION			STARTING STATION	ENDING STATION	
1	42+125	42+155	30	1	42+125	42+155	30
2	42+224	42+254	30	2	42+224	42+254	30
3	42+710	42+740	30	3	42+710	42+740	30
4	42+843	42+873	30	4	42+843	42+873	30
5	47+875	47+905	30	5	47+875	47+905	30
6	47+973	48+003	30	6	47+973	48+003	30
		Sub Total	180m			Sub Total	180m
TOTAL (L+R)						350m	

MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)

THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA

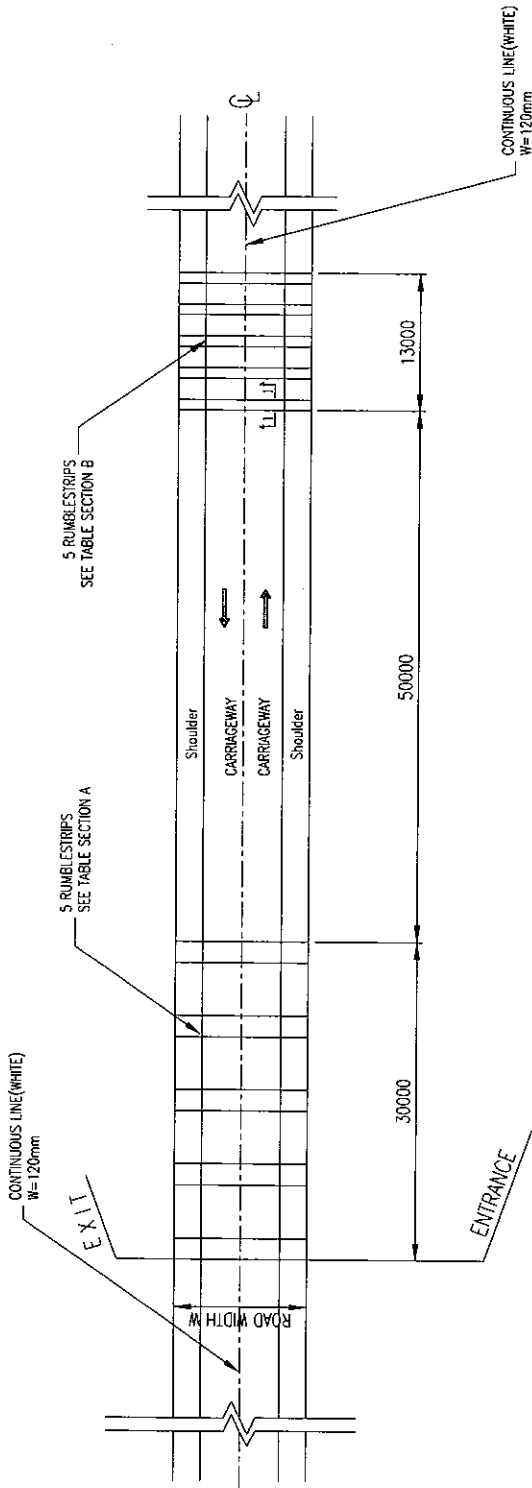
JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO., LTD.

TITLE: GUARD RAIL

SCALE: As shown

Drawing No.

Sheet No. M-12

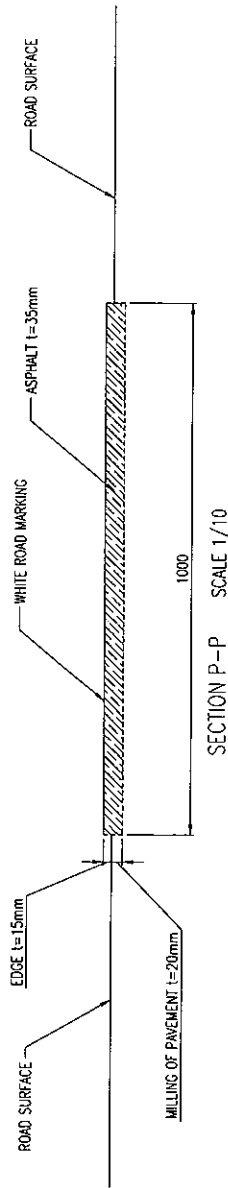


RUMBLE STRIP SCALE 1/500

SECTION	RUMBLE STRIP WIDTH	SPACE BETWEEN RUMBLE STRIPS	TOTAL LENGTH OF A SECTION
SECTION A	2m	5m	30m
SECTION B	1m	2m	13m

SCHEDULE OF RUMBLE STRIPS

No.	Location	Station		ROAD WIDTH (W)
		Entrance	Exit	
1	Prak Eng	5+700	6+000	17.0m
2	Somrong Thong	35+500	36+000	14.0m



SECTION P-P SCALE 1/10

MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)

THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA

JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTT ENGINEERING INTERNATIONAL CO., LTD.

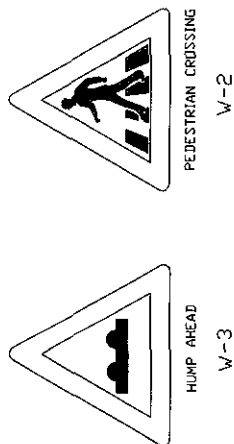
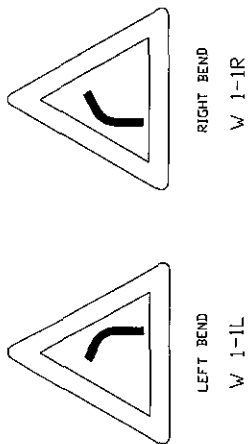
TITLE: RUMBLE STRIPS

SCALE AS SHOWN

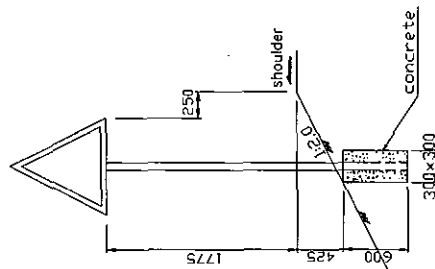
Drawing No. Sheet No. M-13

SCHEDULE OF TRAFFIC POSTS

No.	LEFT SIDE		RIGHT SIDE		
	STATION	TYPE	STATION	TYPE	
1	1+622	W-2	1	1+522	W-2
2	3+376	W-2	2	3+276	W-2
3	3+795	W1-1L	3	3+100	W1-1R
4	3+968	W-2	4	3+868	W-2
5	5+034	W-2	5	4+934	W-2
6	6+050	W-3	6	5+650	W-3
7	6+350	W-2	7	6+250	W-2
8	9+050	W-2	8	8+950	W-2
9	10+016	W-2	9	9+916	W-2
10	10+375	W-2	10	10+275	W-2
11	12+360	W-2	11	12+260	W-2
12	12+695	W1-1L	12	12+260	W1-1R
13	13+820	W1-1L	13	13+540	W1-1R
14	14+310	W1-1R	14	14+145	W1-1L
15	14+830	W1-1L	15	14+670	W1-1R
16	15+307	W-2	16	15+207	W-2
17	16+580	W1-1R	17	16+225	W1-1L
18	16+815	W1-1L	18	16+525	W1-1R
19	17+540	W-2	19	17+440	W-2
20	17+725	W-2	20	17+625	W-2
21	17+843	W-2	21	17+743	W-2
22	20+590	W-2	22	20+490	W-2
23	25+412	W-2	23	25+312	W-2
24	25+525	W-2	24	25+425	W-2
25	27+412	W-2	25	27+312	W-2
26	28+798	W-2	26	28+698	W-2
27	32+605	W1-1R	27	32+410	W1-1L
28	32+880	W1-1L	28	32+635	W1-1R
29	33+115	W1-1R	29	32+900	W1-1L
30	34+880	W-2	30	34+780	W-2
31	35+082	W-2	31	34+982	W-2
32	35+450	W-3	32	36+050	W-3
33	38+825	W-2	33	38+725	W-2
34	45+174	W-2	34	45+074	W-2
35	45+278	W-2	35	45+178	W-2
36	52+043	W-2	36	51+943	W-2
37	52+361	W-2	37	52+261	W-2
38	54+020	W1-1R	38	53+490	W1-1L
39	54+605	W1-1R	39	54+360	W1-1L

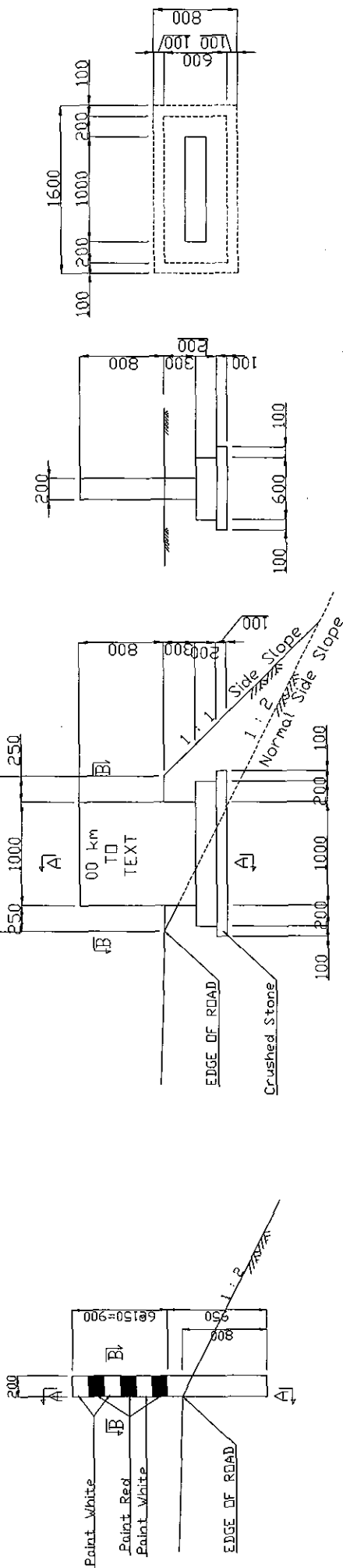


WARNING SIGNS SCALE 1:30

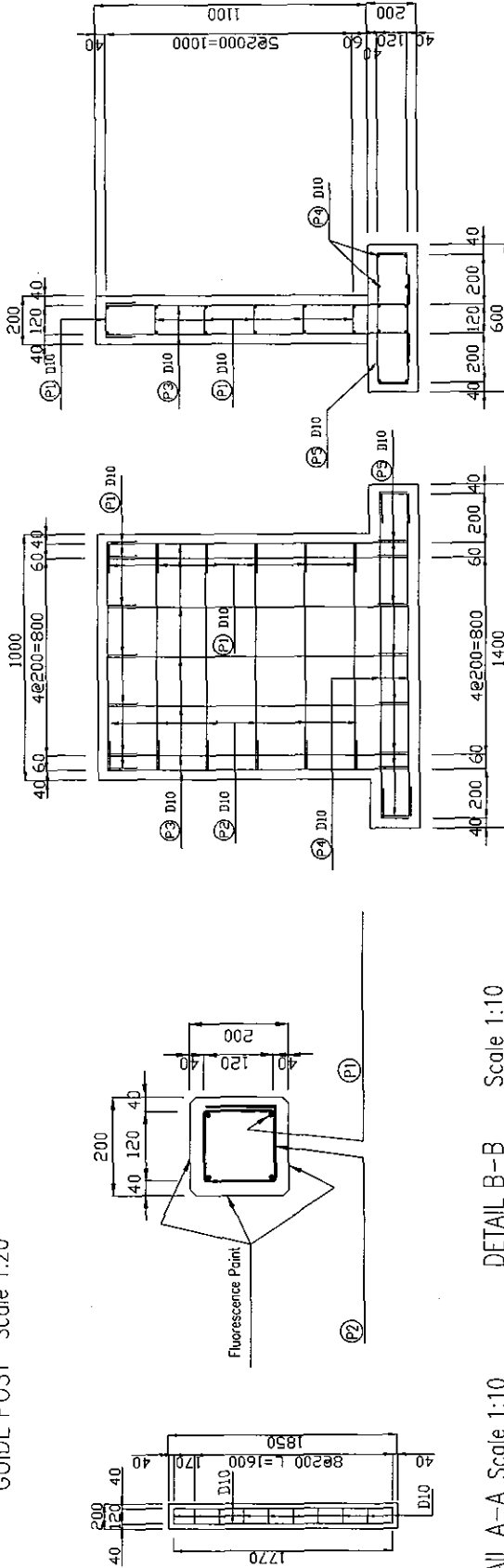


SIGN POST DETAILS SCALE 1:50

MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO., LTD.	TITLE: ROAD SIGNS	SCALE AS SHOWN	Drawing No.
					Sheet No. M-14



GUIDE POST Scale 1:20



DETAIL A-A Scale 1:10 DETAIL B-B Scale 1:10

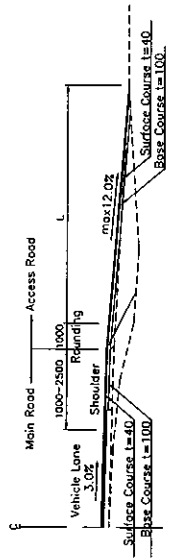
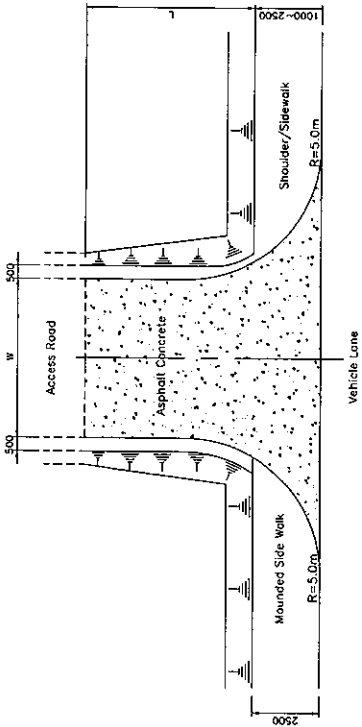
MARK	DIA- METER	LENGTH (mm)	NO.	WEIGHT/m (kg/m)	WEIGHT/ONE (kg)	WEIGHT	REMARKS	
P ₁	D10	360	7	0.616	0.222	1.6		
2	"	920	12	"	0.567	6.8		
3	"	1140	14	"	0.702	9.8		
4	"	1320	10	"	0.813	8.1		
5	"	1400	9	"	0.862	7.8		
							34.1 kg	

MARK	DIA- METER	LENGTH (mm)	NO.	WEIGHT/m (kg/m)	WEIGHT/ONE (kg)	WEIGHT	REMARKS	
P ₁	D10	1970	4	0.616	1.214	4.9		
2	"	600	10	"	0.370	3.7		
							8.6 kg	

NOTE: Kilometer Stones are to be installed at both sides of the Road at 5 Kilometers Interval

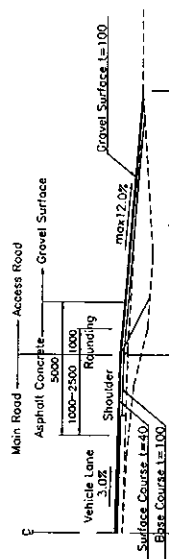
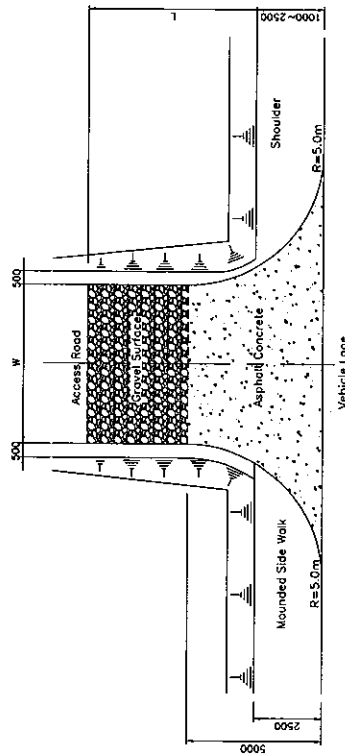
MINISTRY OF PUBLIC WORKS AND TRANSPORT (MPWT)	THE PROJECT FOR THE IMPROVEMENT OF NATIONAL ROAD NO.1 (PHNOM PENH-NEAK LOUENG SECTION) IN THE KINGDOM OF CAMBODIA	TITLE: GUIDE POST	SCALE: As shown	Drawing No.
				Sheet No. M-15

RANK-A JUNCTION



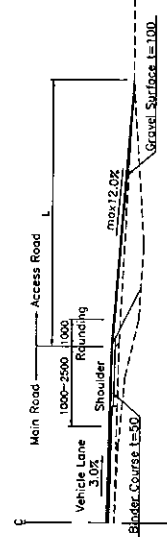
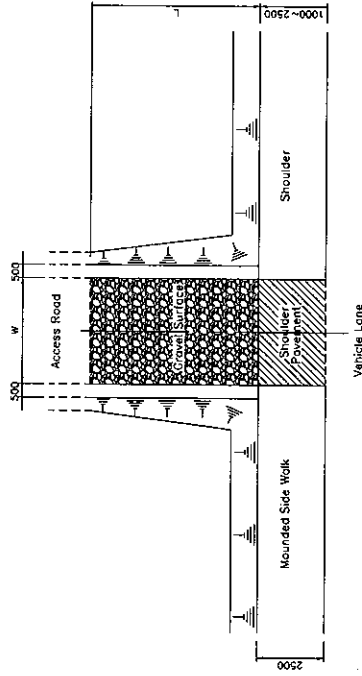
RANK-A PROFILE

RANK-B JUNCTION



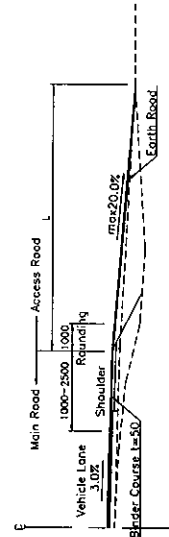
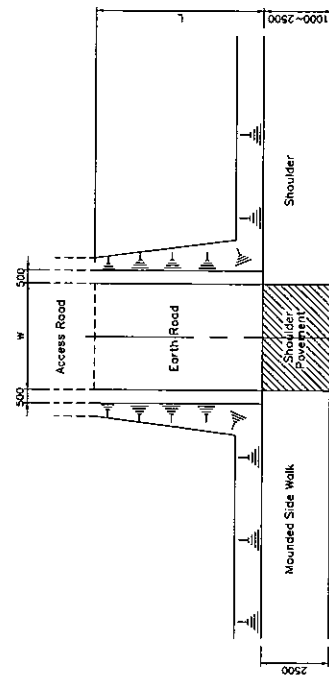
RANK-B PROFILE

RANK-C JUNCTION



RANK-C PROFILE

RANK-D JUNCTION



RANK-D PROFILE

MINISTRY OF
PUBLIC WORKS AND TRANSPORT
(MPWT)

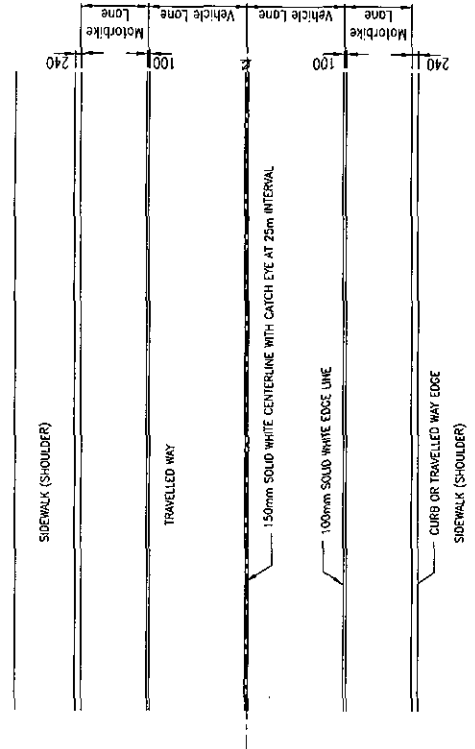
THE PROJECT FOR THE
IMPROVEMENT OF NATIONAL ROAD NO.1
(PHNOM PENH-NEAK LOUJENG SECTION)
IN THE KINGDOM OF CAMBODIA

JAPAN INTERNATIONAL COOPERATION AGENCY
KATAHIRA & ENGINEERS INTERNATIONAL
CTI ENGINEERING INTERNATIONAL CO., LTD.

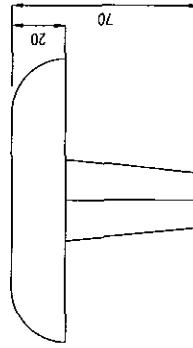
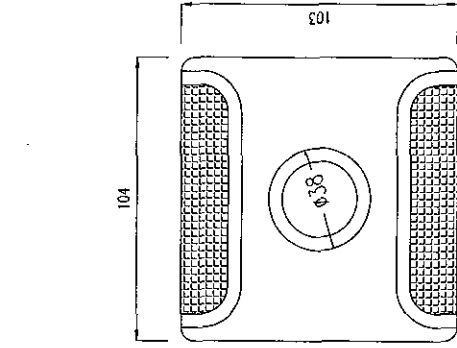
TITLE :
CONNECTING ROADS

SCALE
1:100

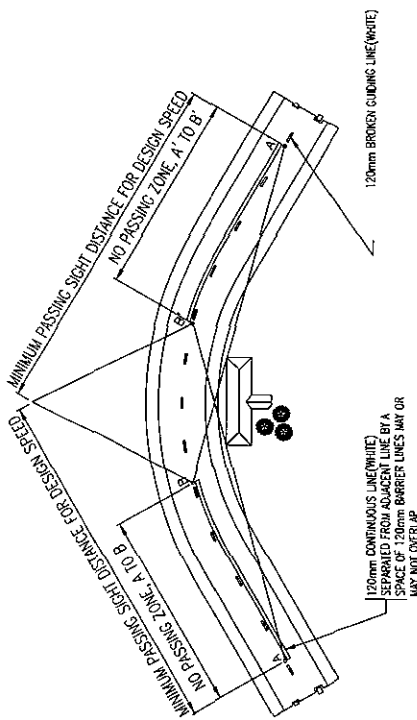
Drawing
No.
Sheet No.
M-16



CENTER & EDGE LINE MARKINGS RURAL HIGHWAY,
TWO LANE
S=1/100



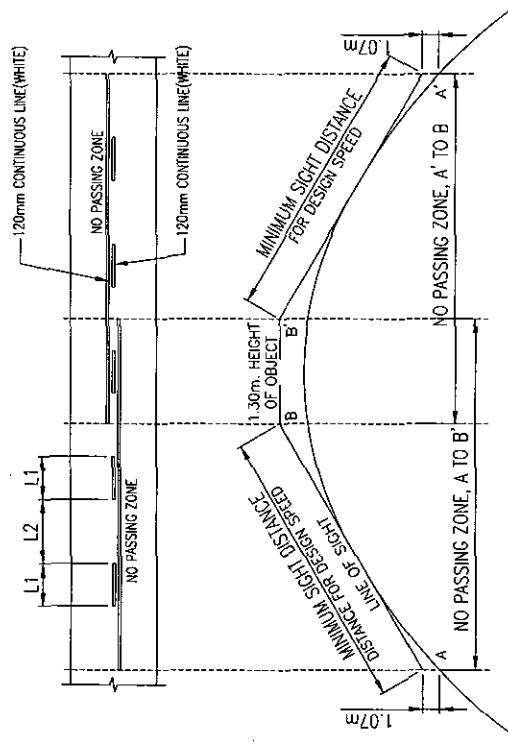
Note: To be installed at every 25 meters from Sta. +800 to Sta. 54+700



A, A' BEGIN NO - PASSING ZONE SIGHT DISTANCE BECOMES LESS THAN THE MINIMUM AS MEASURED BETWEEN POINTS ON CENTERLINE.

B, B' END NO - PASSING ZONE SIGHT DISTANCE AGAIN EXCEEDS THE MINIMUM REQUIRED LENGTH.

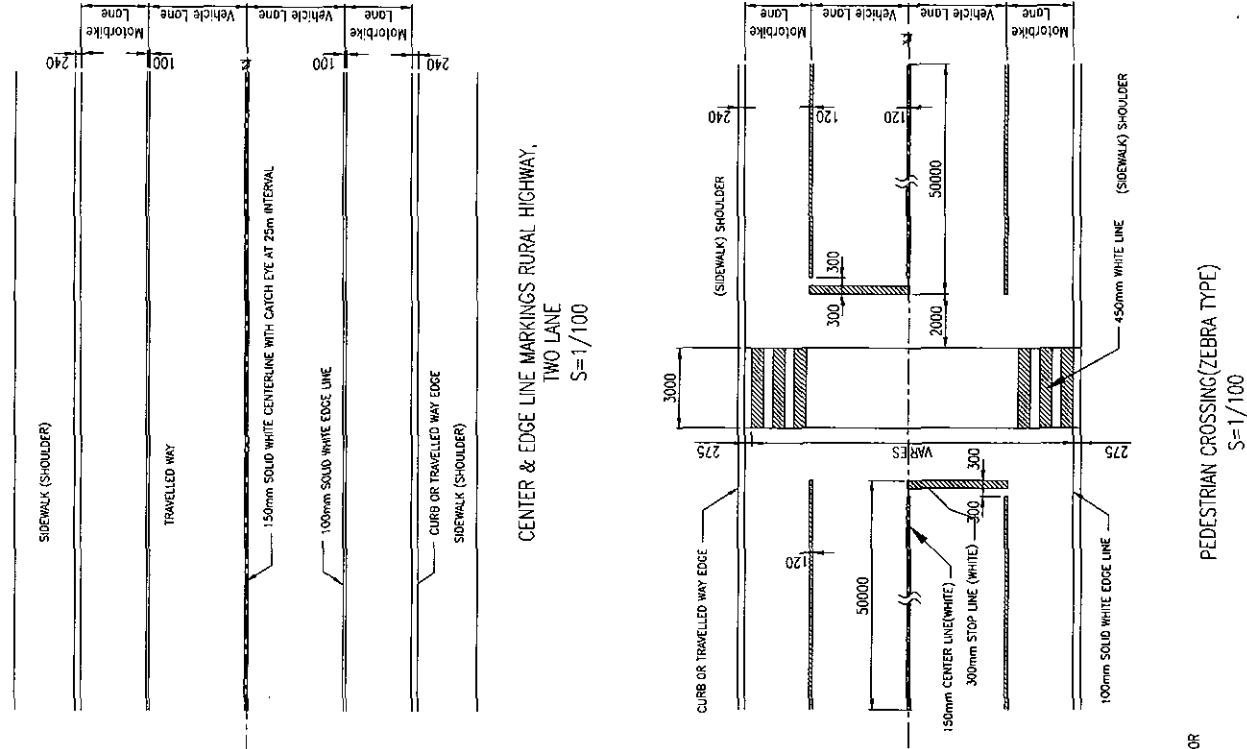
METHOD OF LOCATING AND DETERMINING THE LIMIT OF NO - PASSING ZONES ON HORIZONTAL CURVES



A, A' BEGIN NO PASSING ZONE SIGHT DISTANCE BECOMES LESS THAN MINIMUM MEASURED BETWEEN POINTS 1.30m. ABOVE PAVEMENT

B, B' END NO PASSING ZONE SIGHT DISTANCE AGAIN EXCEEDS MINIMUM REQUIRED LENGTH

METHOD OF LOCATING AND DETERMINING THE LIMIT OF NO - PASSING ZONES ON VERTICAL CURVES



PEDESTRIAN CROSSING (ZEBRA TYPE)
S=1/100

NOTES:
PAVEMENT MARKINGS SHALL BE PLACED IN ACCORDANCE WITH THE LATEST CAMBODIA ROAD DESIGN GUIDE ON PAVEMENT MARKINGS.

MINISTRY OF
PUBLIC WORKS AND TRANSPORT
(MPWT)

THE PROJECT FOR THE
IMPROVEMENT OF NATIONAL ROAD NO.1
(PHNOM PENH-NEAK LOUNG SECTION)
IN THE KINGDOM OF CAMBODIA

JAPAN INTERNATIONAL COOPERATION AGENCY
KATAHIRA & ENGINEERS INTERNATIONAL
CTI ENGINEERING INTERNATIONAL CO., LTD.

TITLE:
STANDARD PAVEMENT MARKINGS

SCALE
AS SHOWN

Drawing No.
Sheet No.
M-17