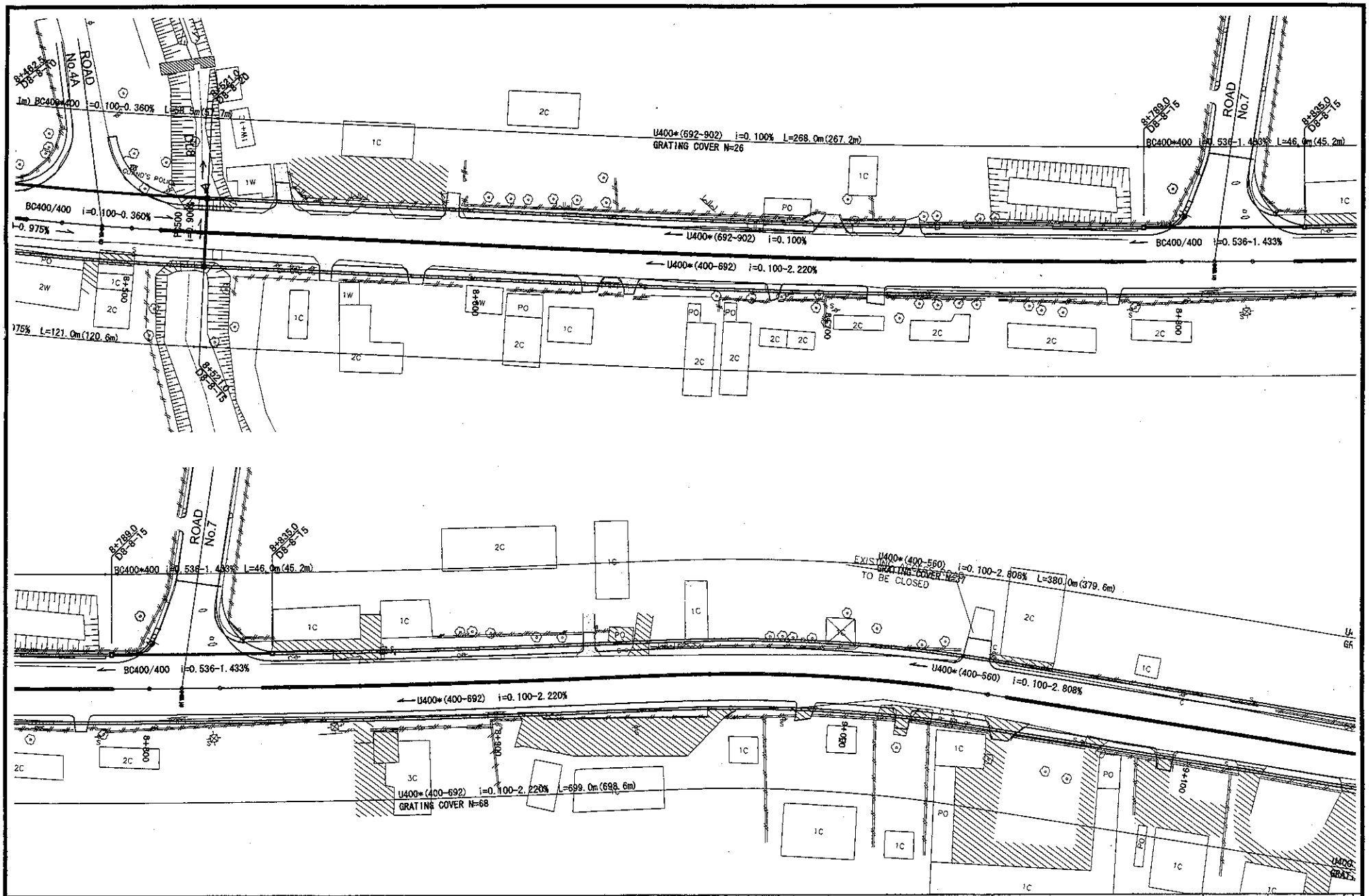
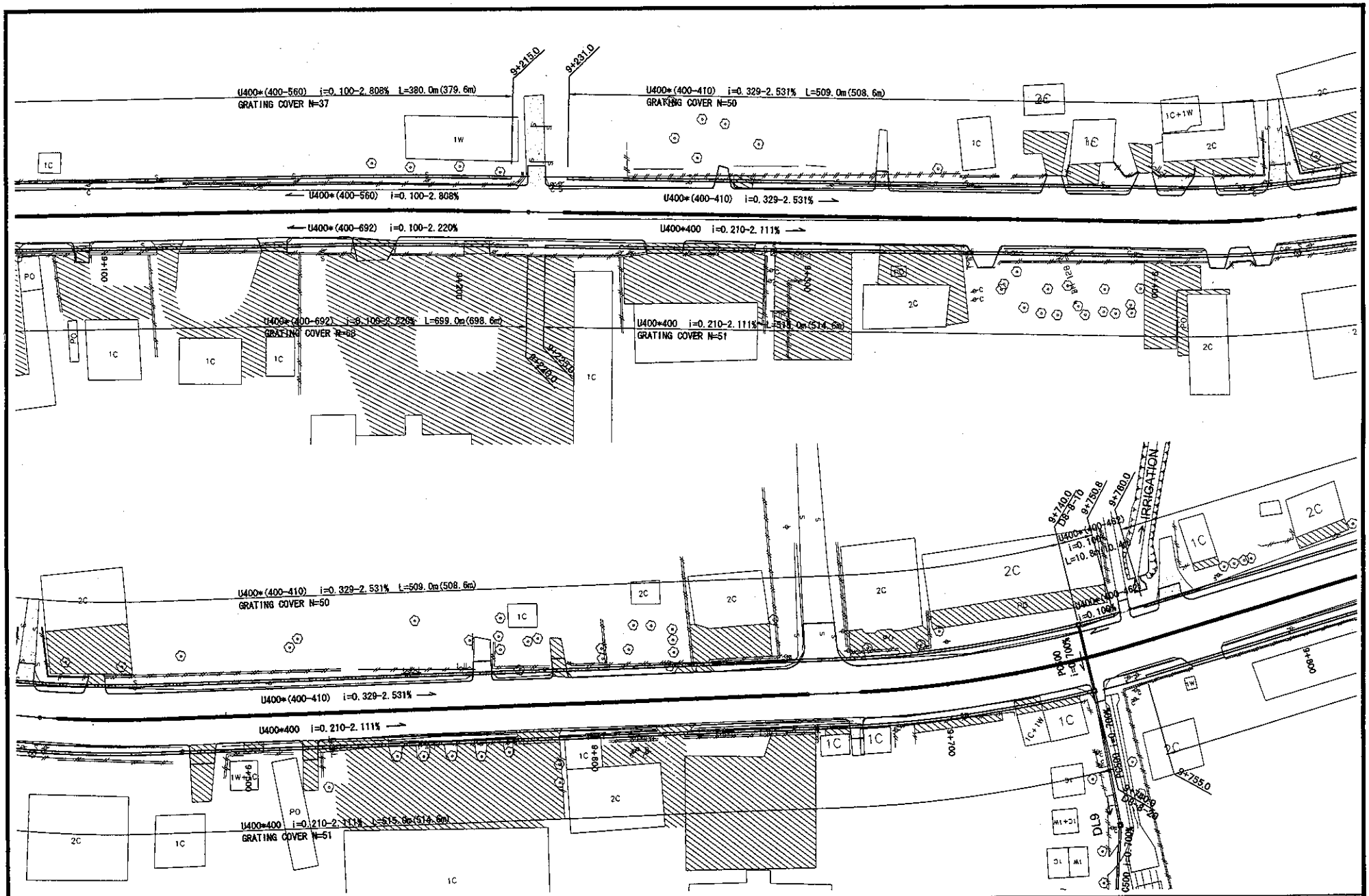
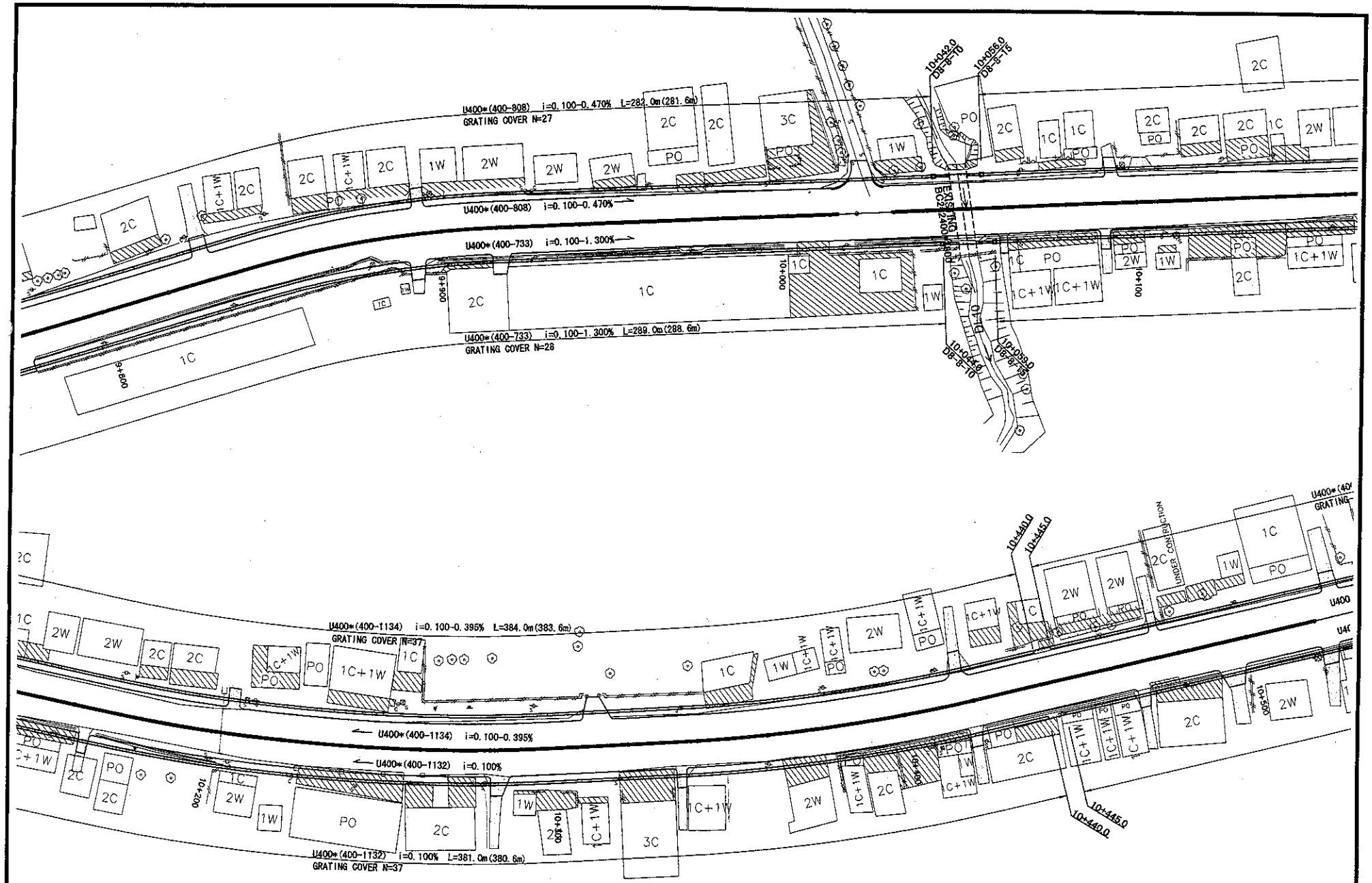


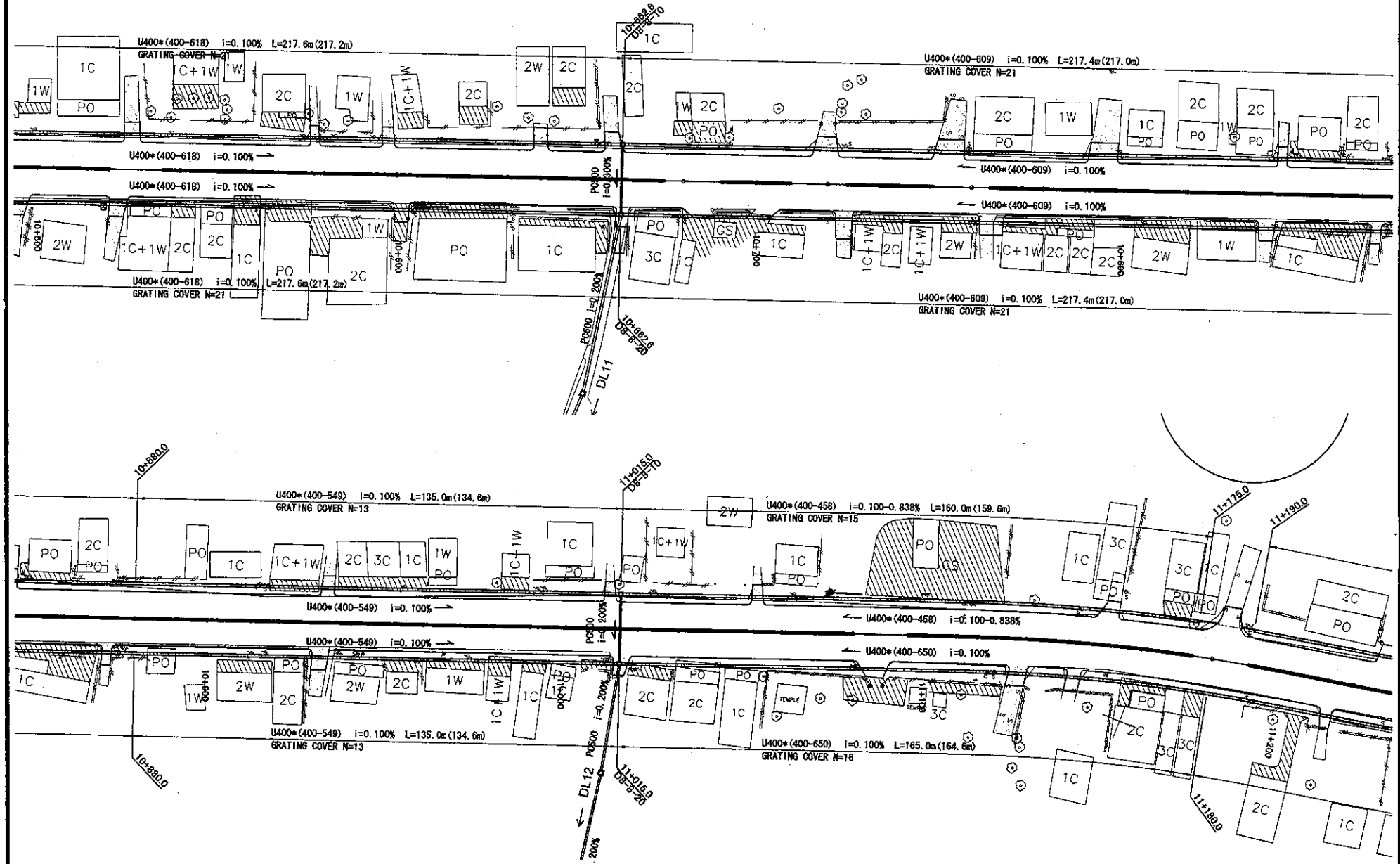
ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	PROPOSED OVERALL DRAINAGE PLAN (18/40)	SCALE: 1:1000	DRAWING No: DR-21



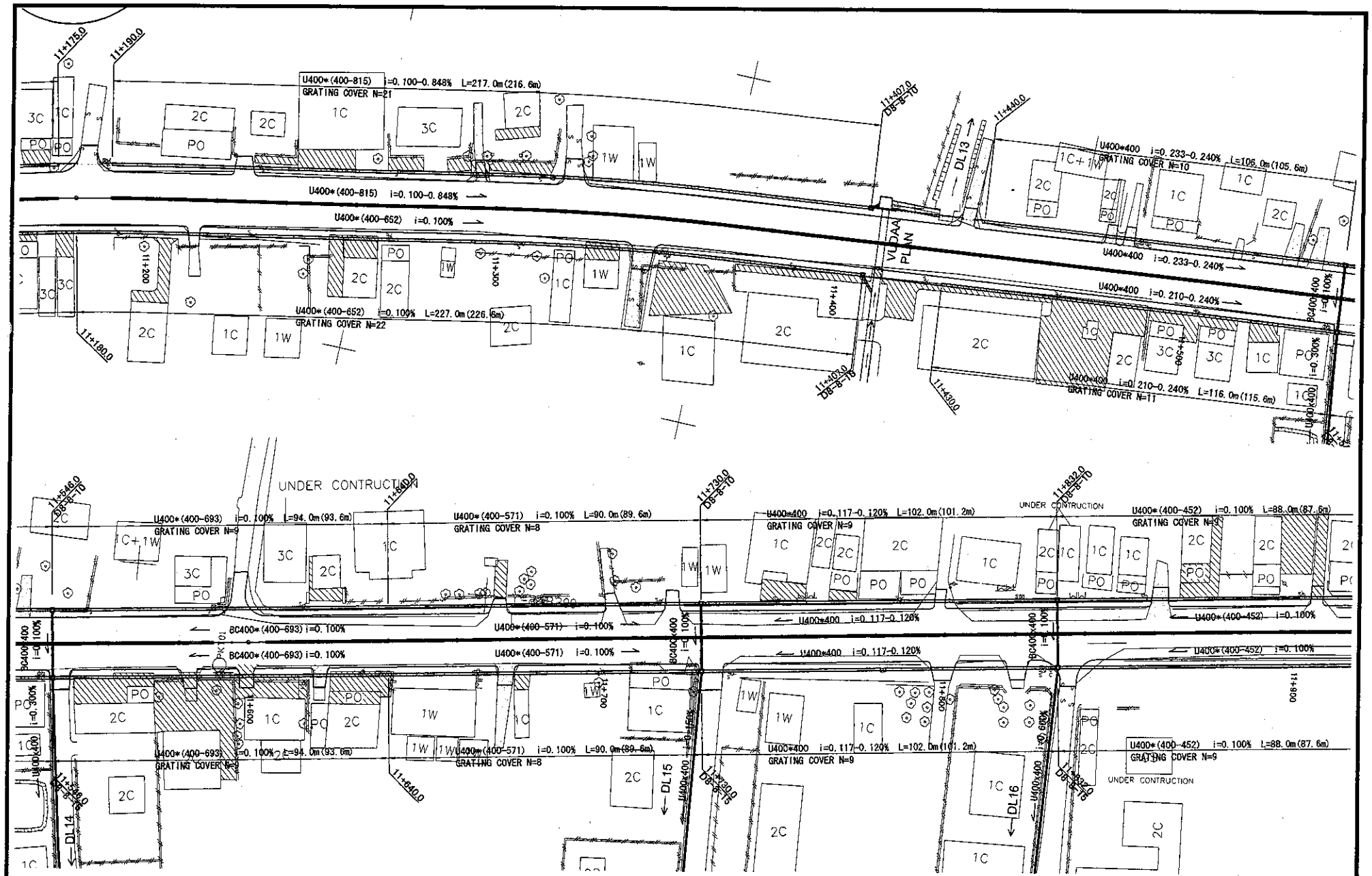
ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	PROPOSED OVERALL DRAINAGE PLAN (19/40)	SCALE: 1:1000	DRAWING No: DR-22 Rv.



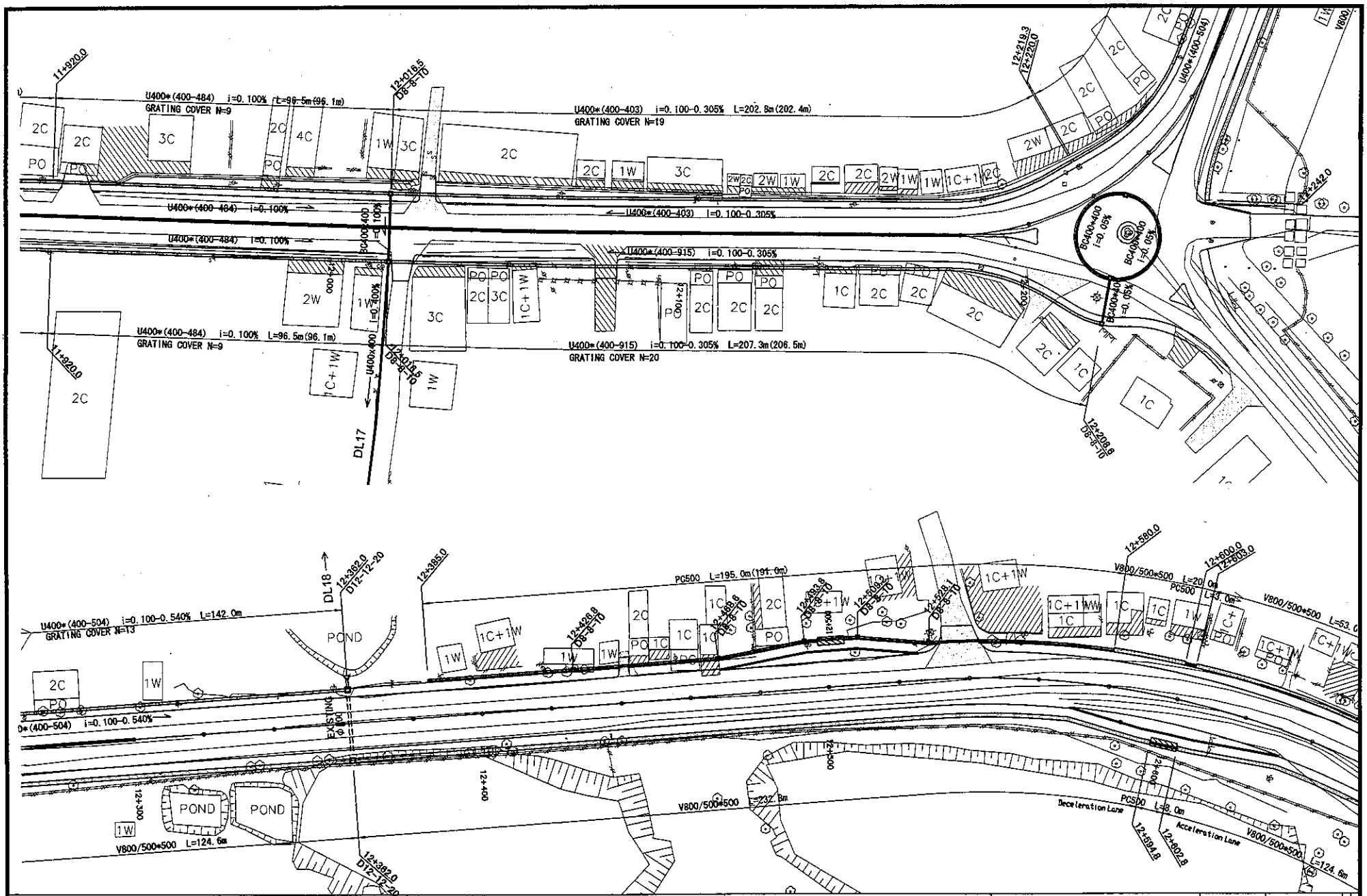
ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	PROPOSED OVERALL DRAINAGE PLAN (20/40)	SCALE: 1:1000	DRAWING No: DR-23 Rv.



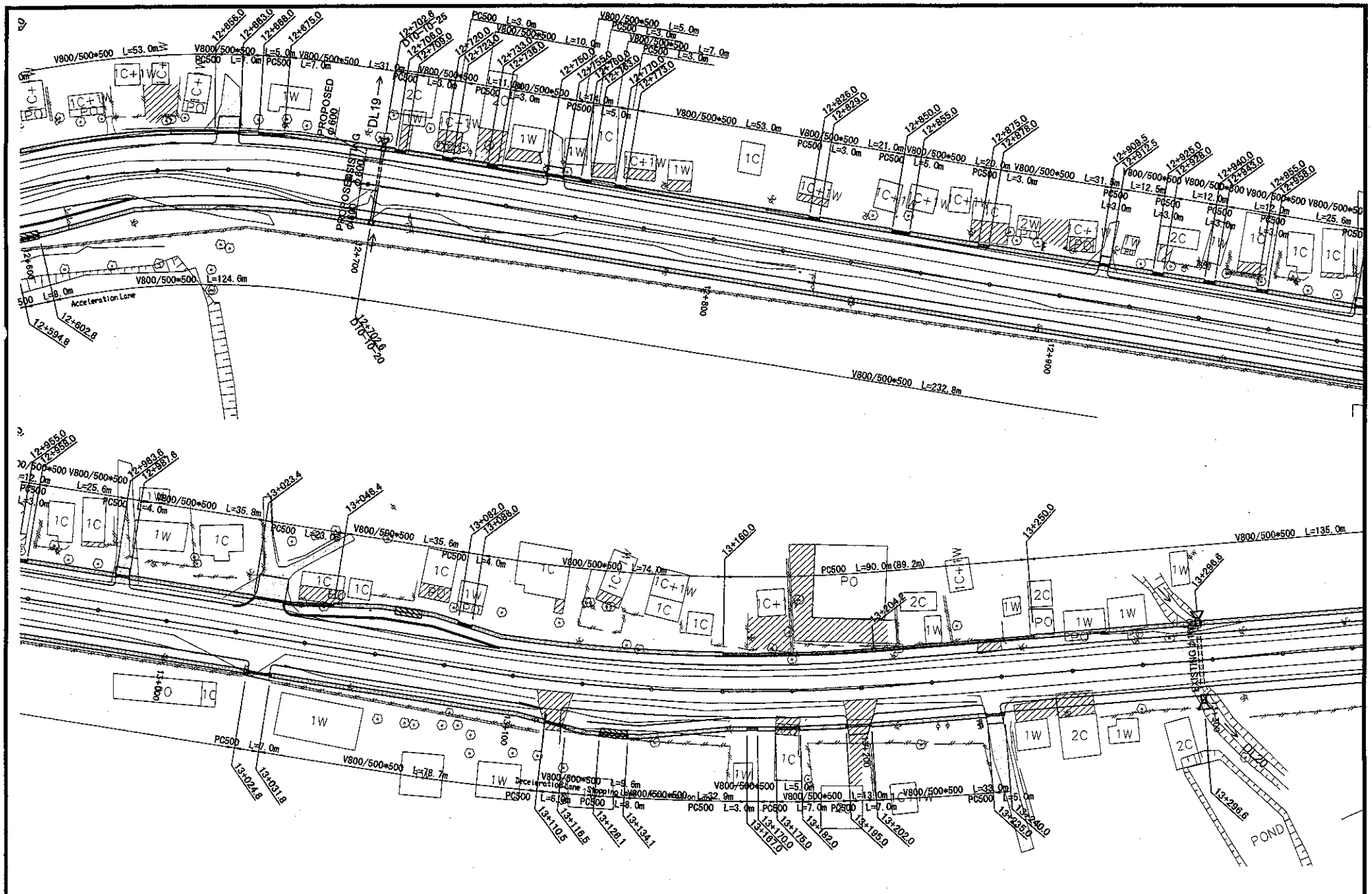
ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	PROPOSED OVERALL DRAINAGE PLAN (21/40)	SCALE : 1:1000	DRAWING No: DR-24



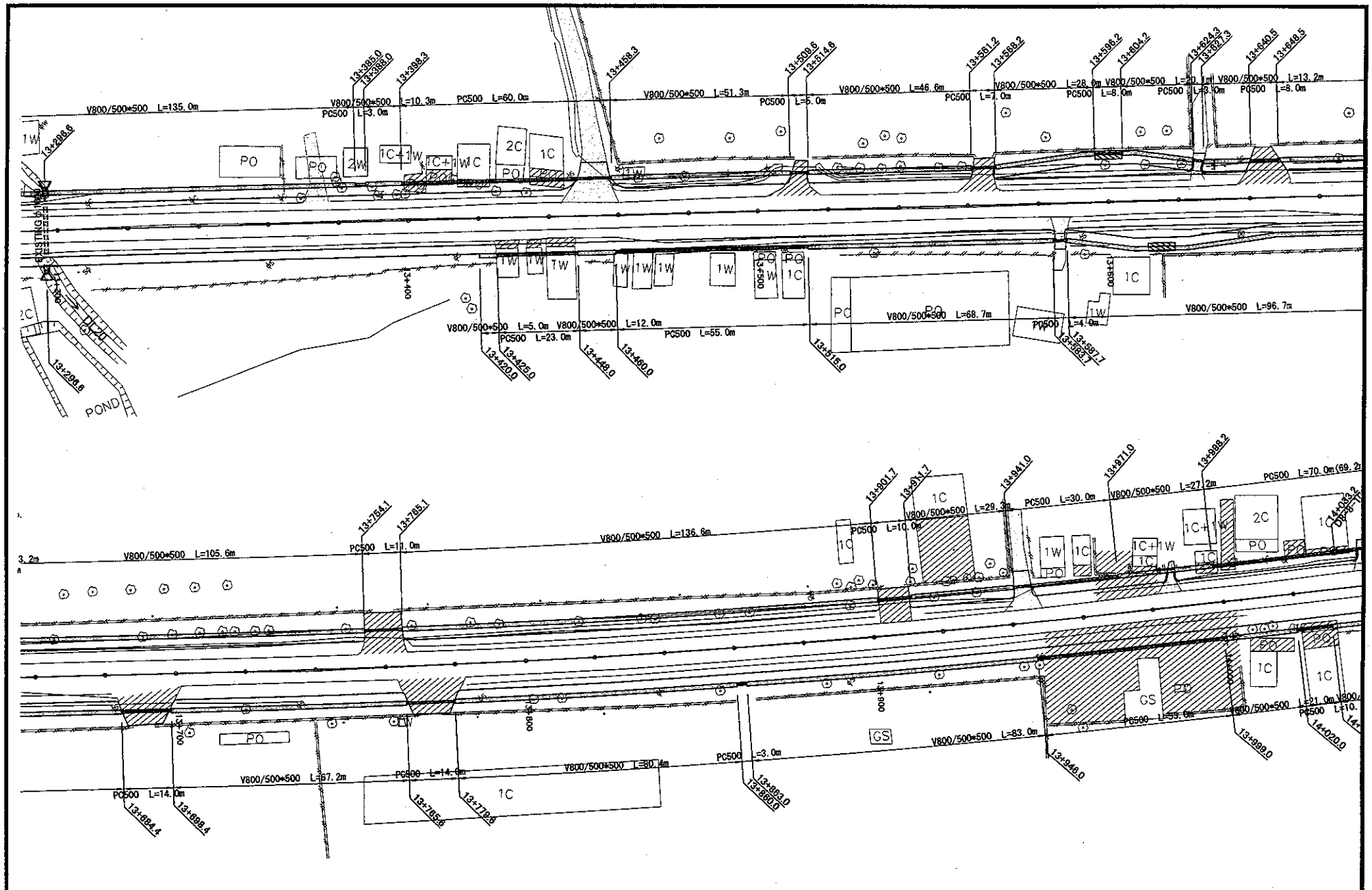
ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	PROPOSED OVERALL DRAINAGE PLAN (22/40)	SCALE: 1:1000	DRAWING No: DR-25



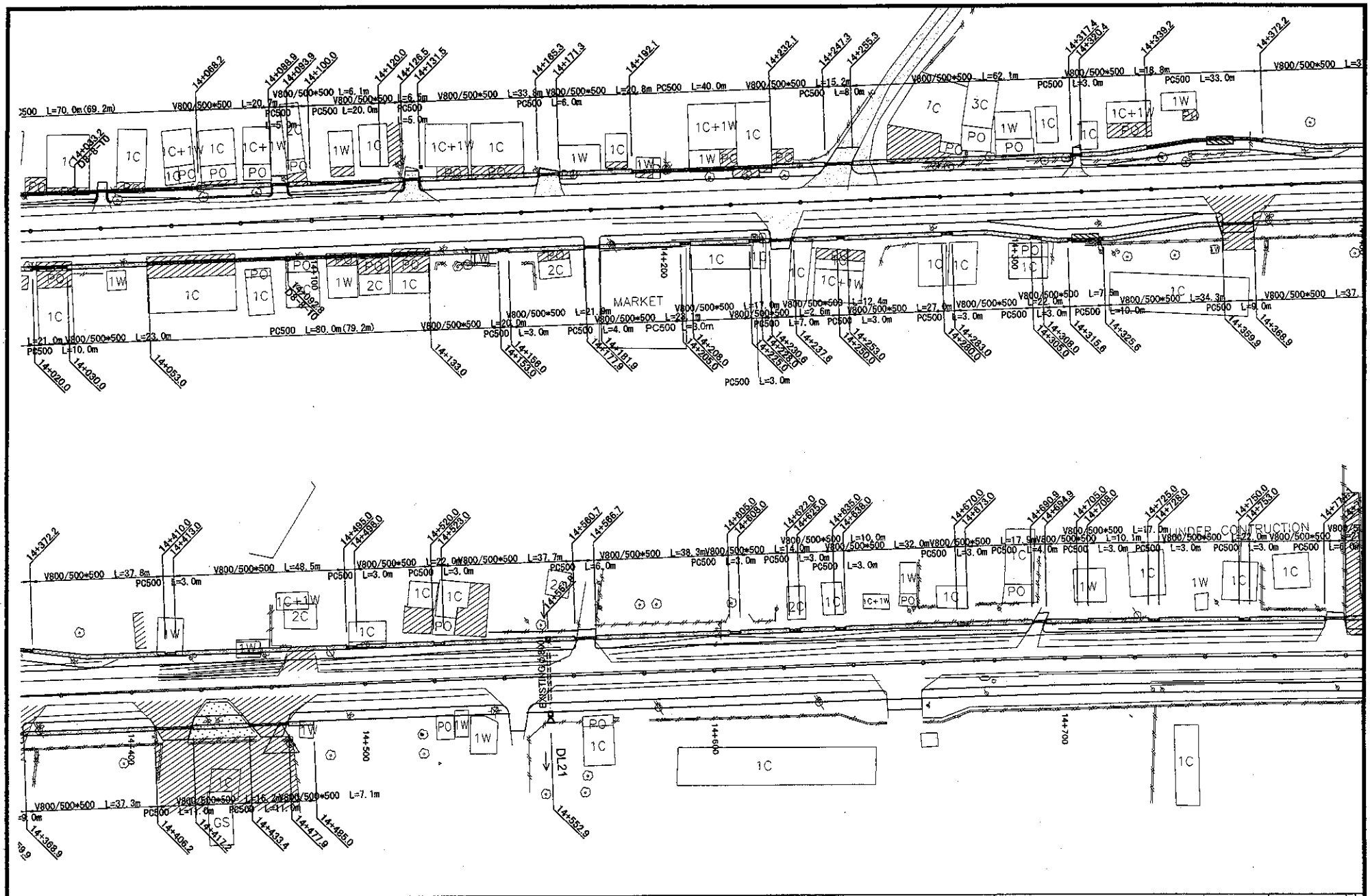
ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	PROPOSED OVERALL DRAINAGE PLAN (23/40)	SCALE: 1:1000	DRAWING No: DR-26



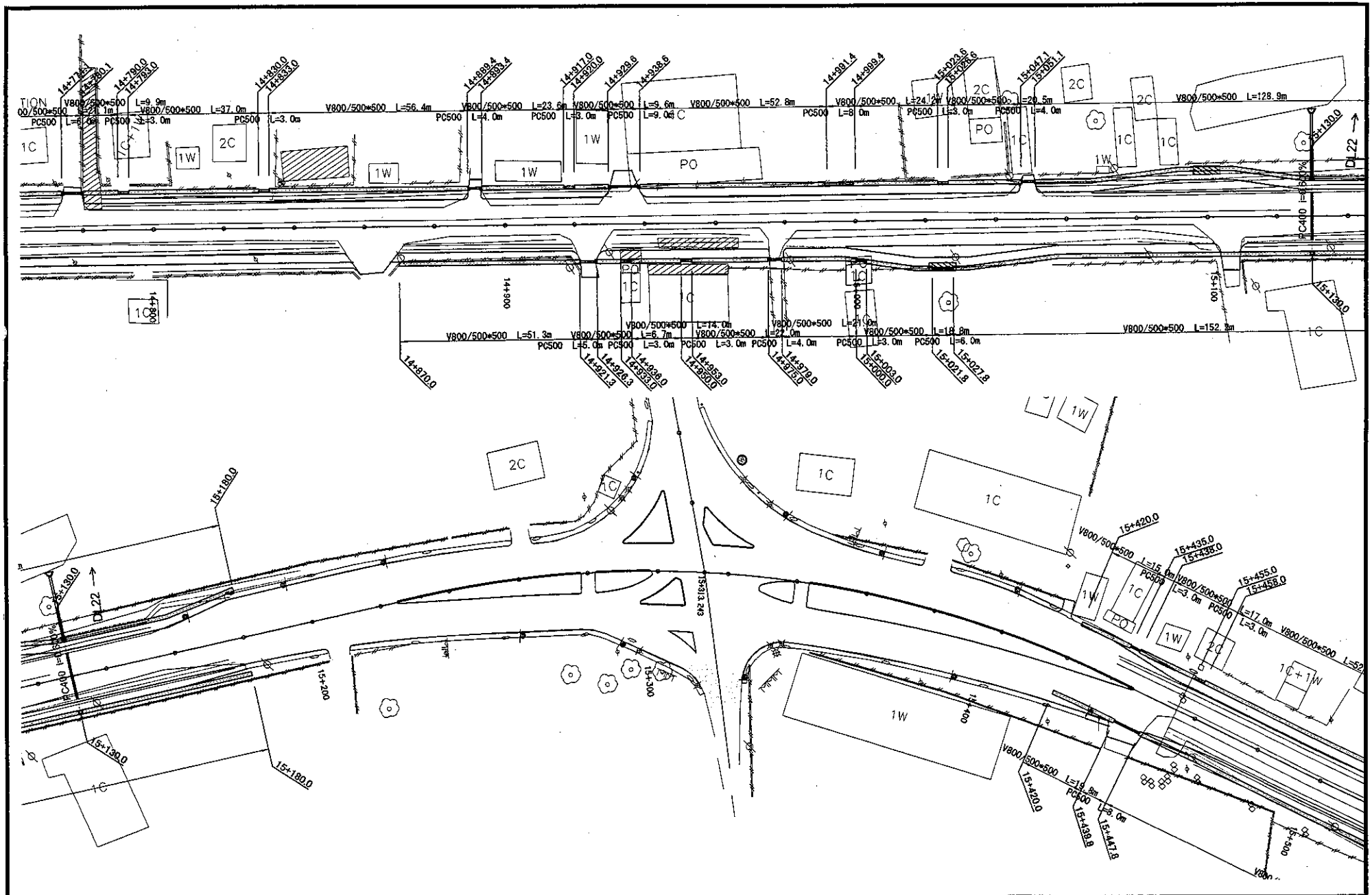
ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	PROPOSED OVERALL DRAINAGE PLAN (24/40)	SCALE: 1:1000	DRAWING No: DR-27



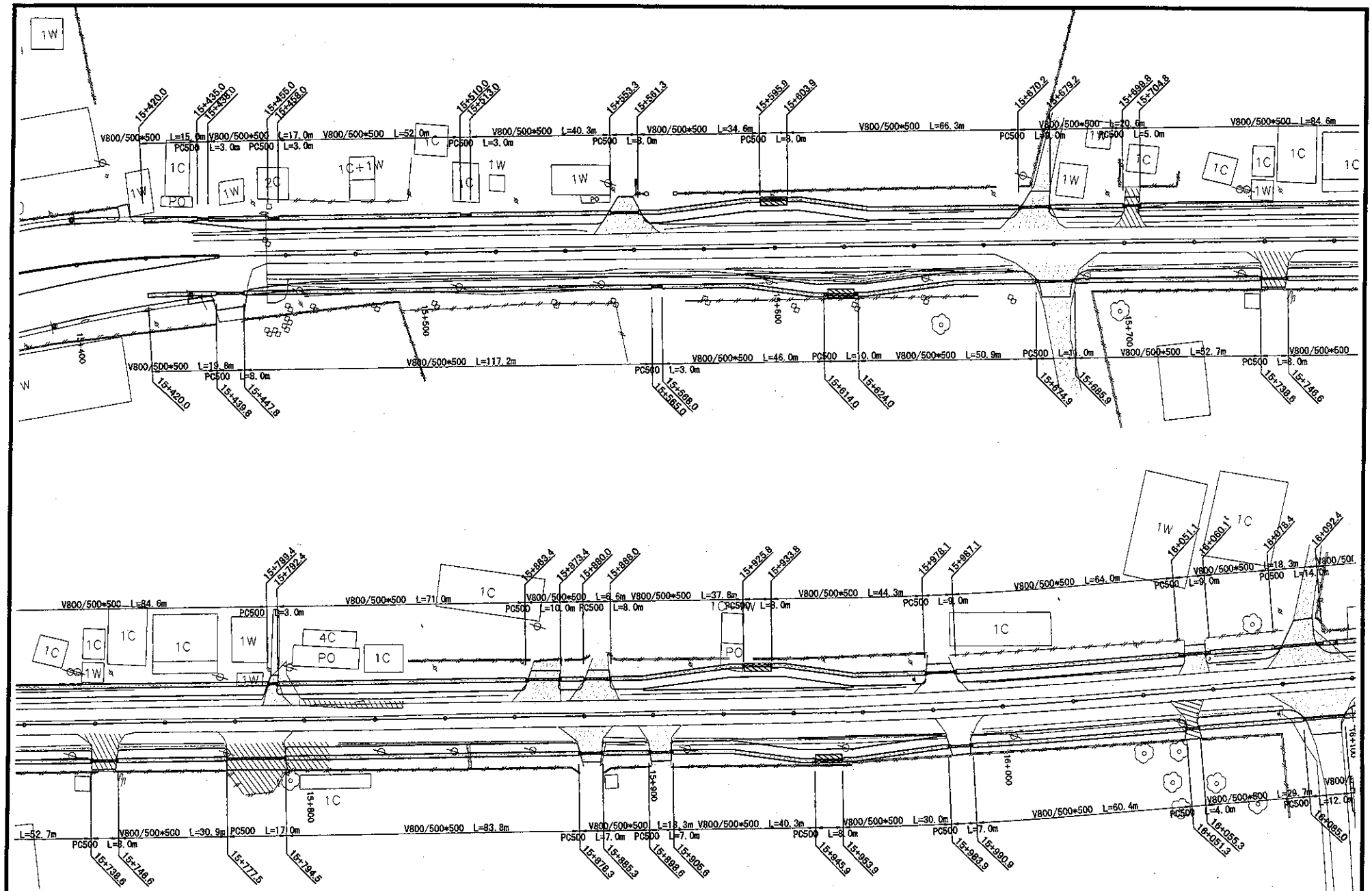
ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	PROPOSED OVERALL DRAINAGE PLAN (25/40)	SCALE: 1:1000	DRAWING No: DR-28



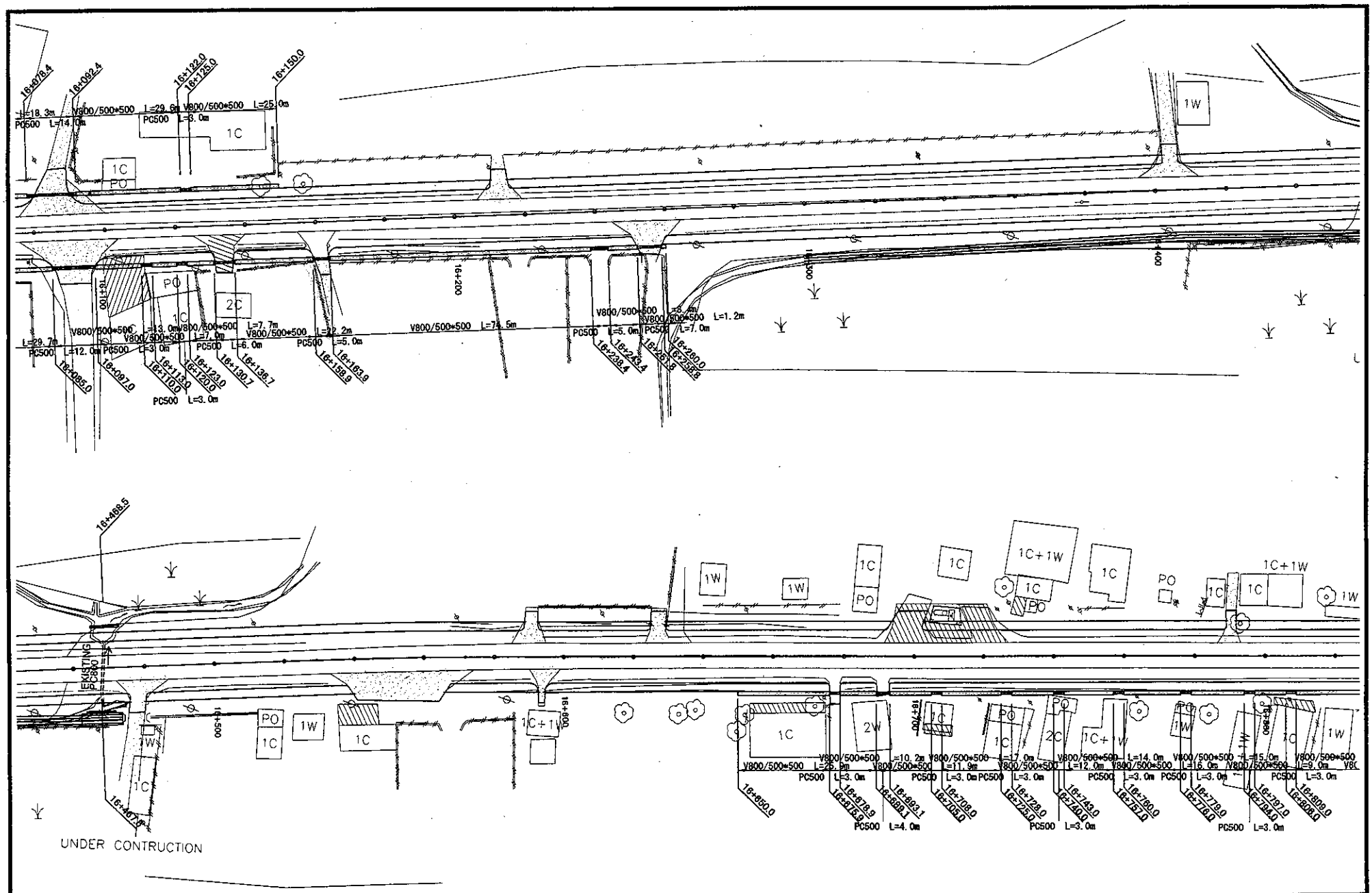
ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	PROPOSED OVERALL DRAINAGE PLAN (26/40)	SCALE: 1:1000	DRAWING No: DR-29 Rv.



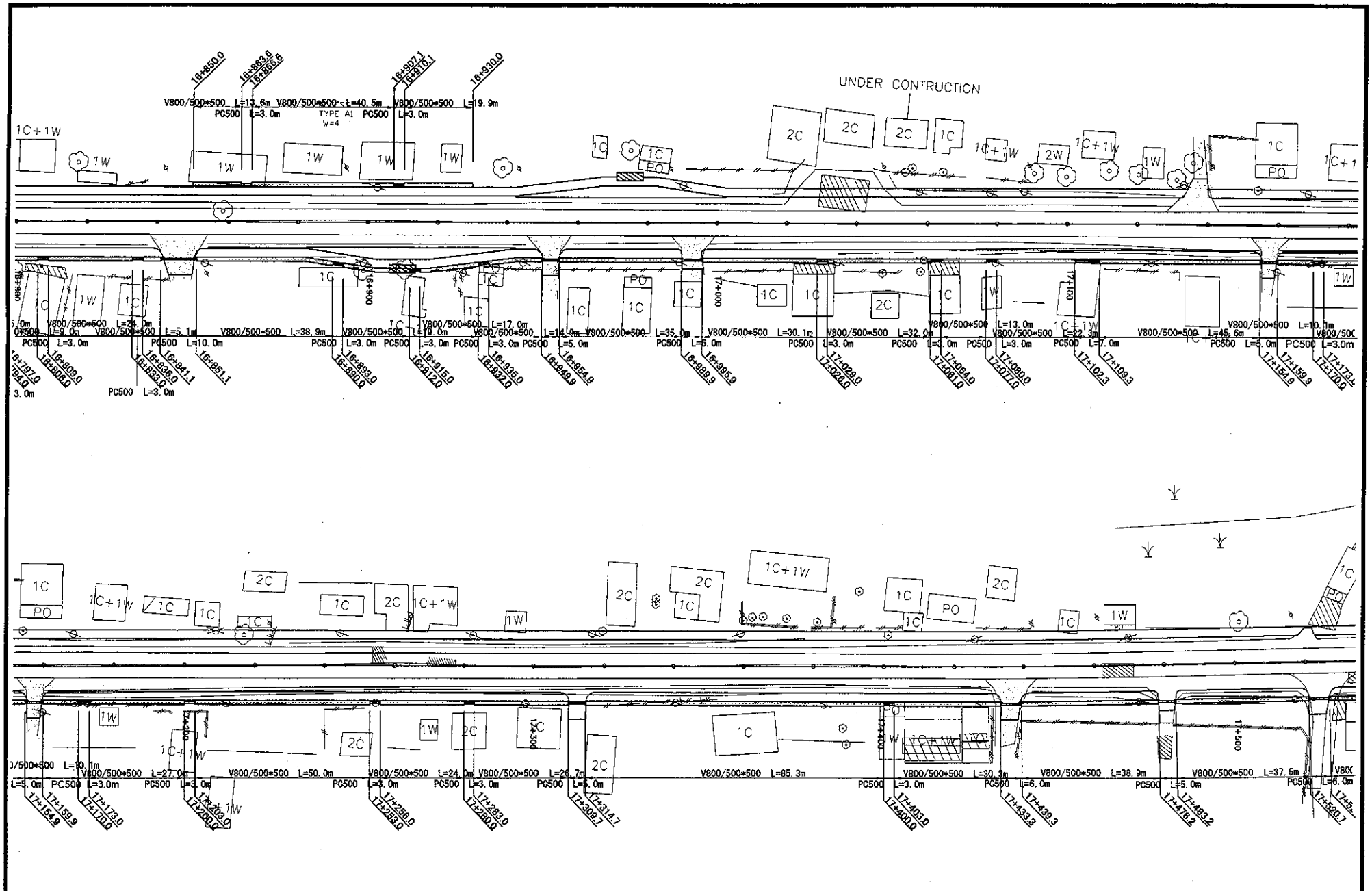
ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	PROPOSED OVERALL DRAINAGE PLAN (27/40)	SCALE : 1:1000	DRAWING No: DR-30 Rv.



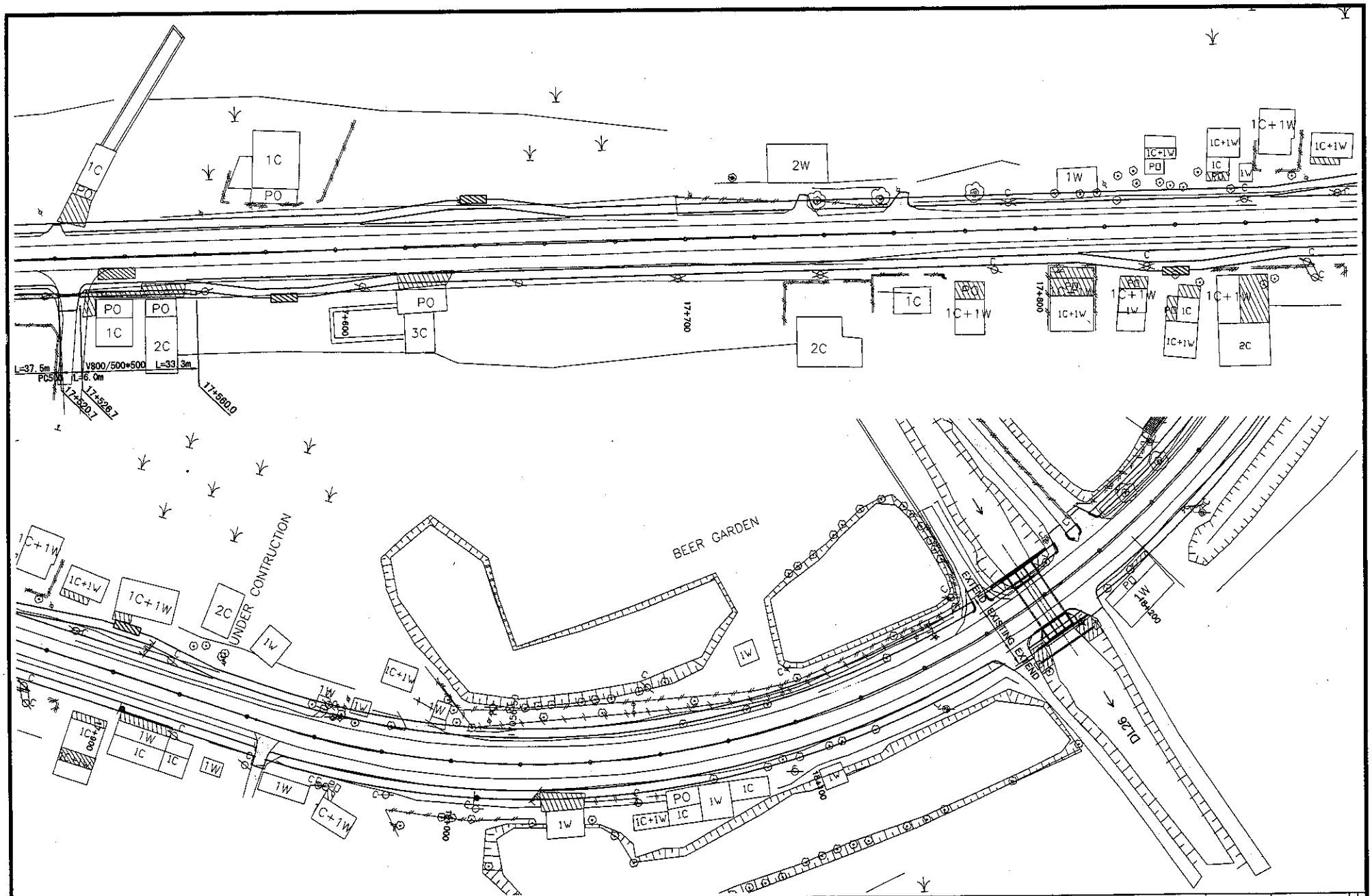
ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	PROPOSED OVERALL DRAINAGE PLAN (28/40)	SCALE : 1:1000	DRAWING No: DR-31 Rv.



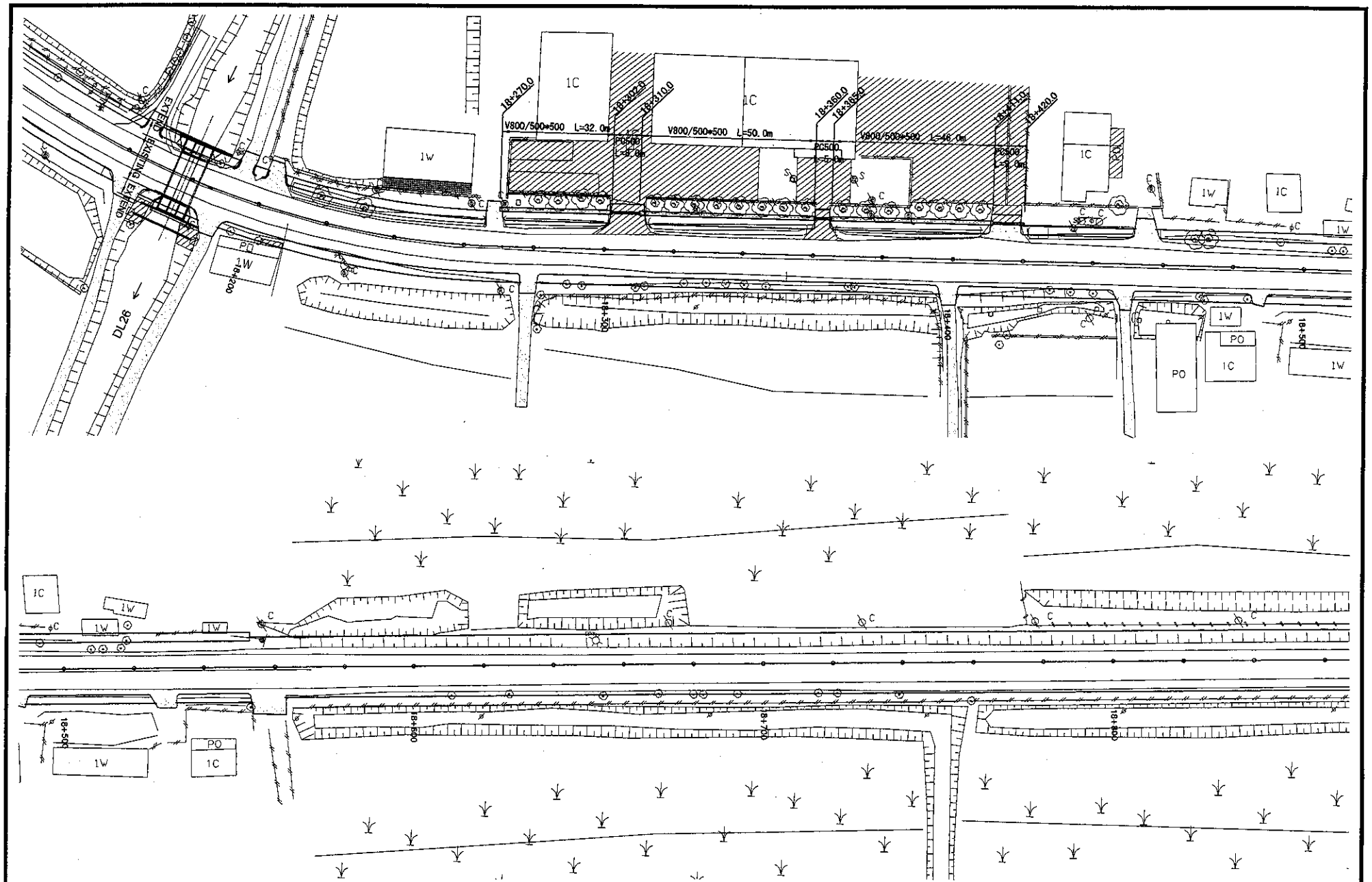
ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	PROPOSED OVERALL DRAINAGE PLAN (29/40)	SCALE: 1:1000	DRAWING No: DR-32 Rv.



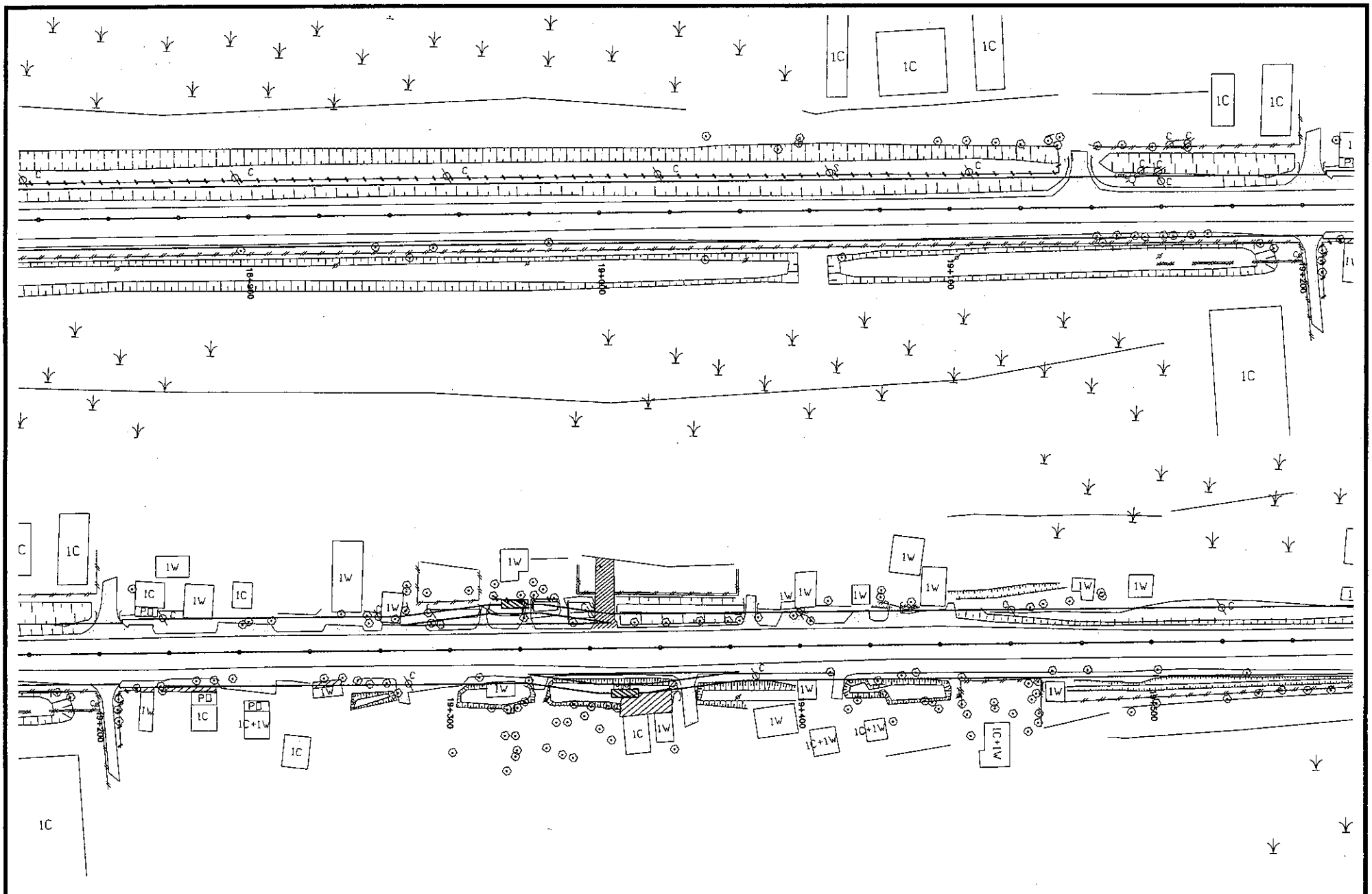
ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	PROPOSED OVERALL DRAINAGE PLAN (30/40)	SCALE: 1:1000	DRAWING No: DR-33



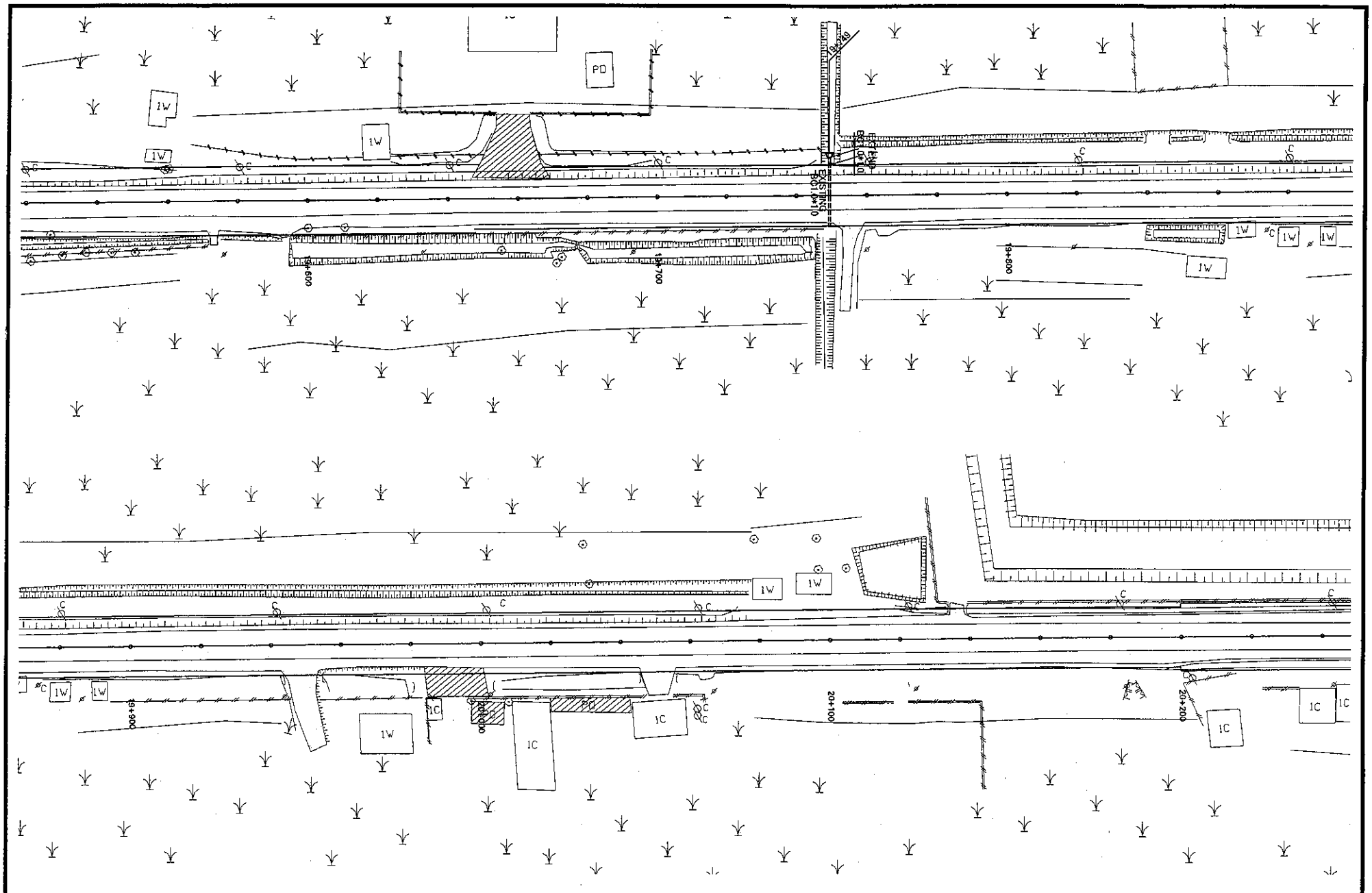
ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	PROPOSED OVERALL DRAINAGE PLAN (31/40)	SCALE: 1:1000	DRAWING No: DR-34



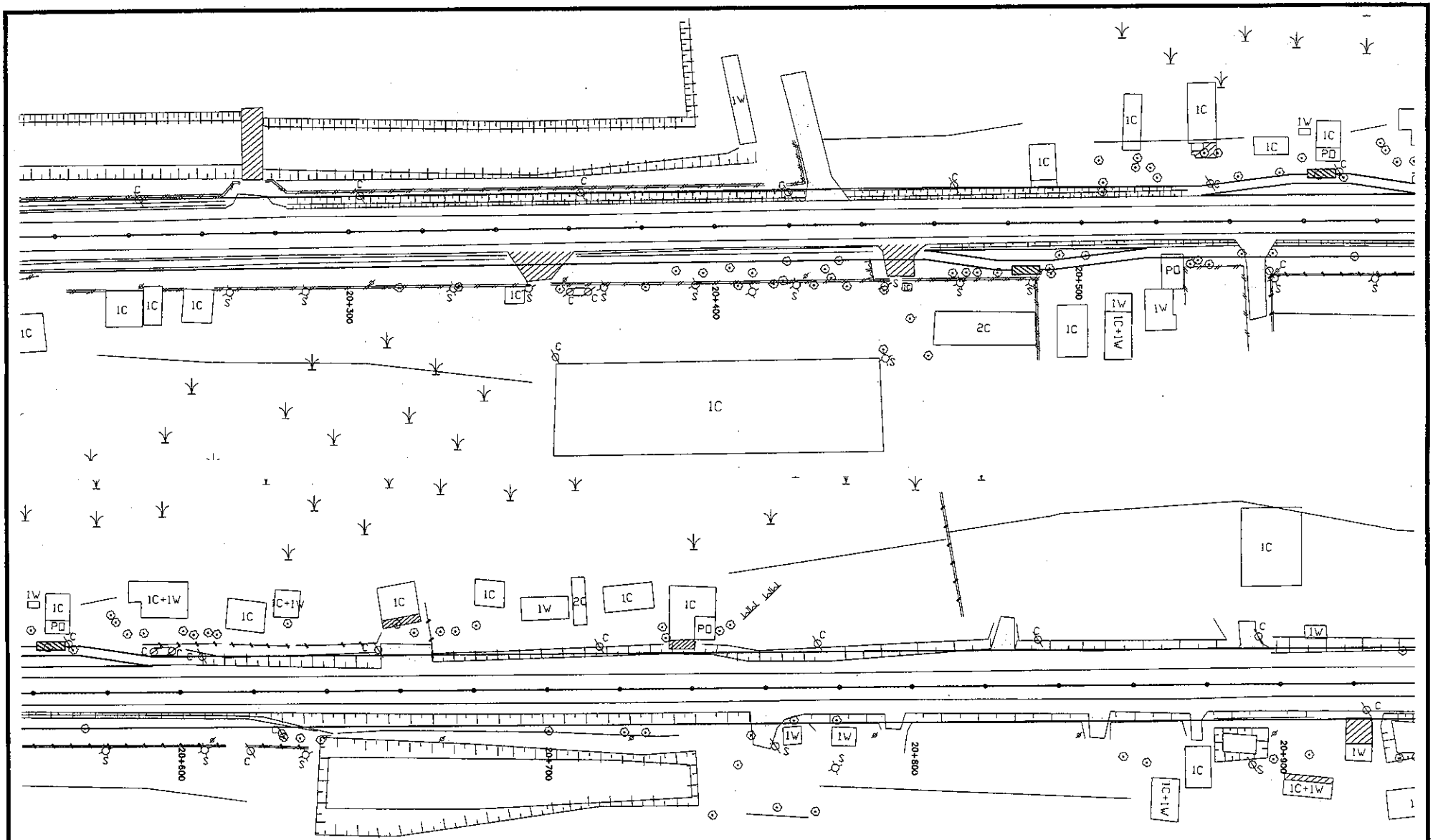
ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	PROPOSED OVERALL DRAINAGE PLAN (32/40)	SCALE: 1:1000	DRAWING No: DR-35 Rv.



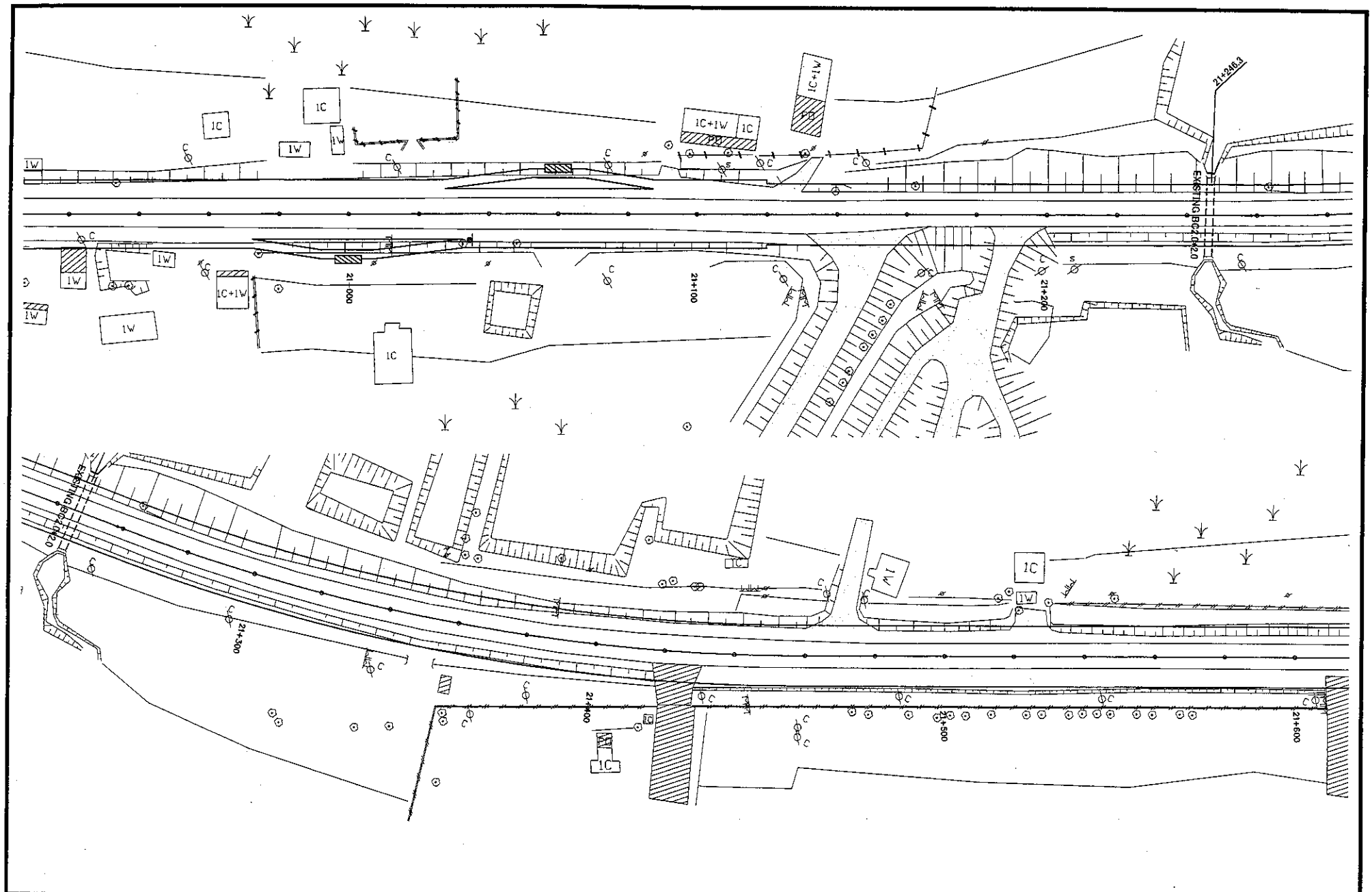
ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	PROPOSED OVERALL DRAINAGE PLAN (33/40)	SCALE: 1:1000	DRAWING No: DR-36 Rv.



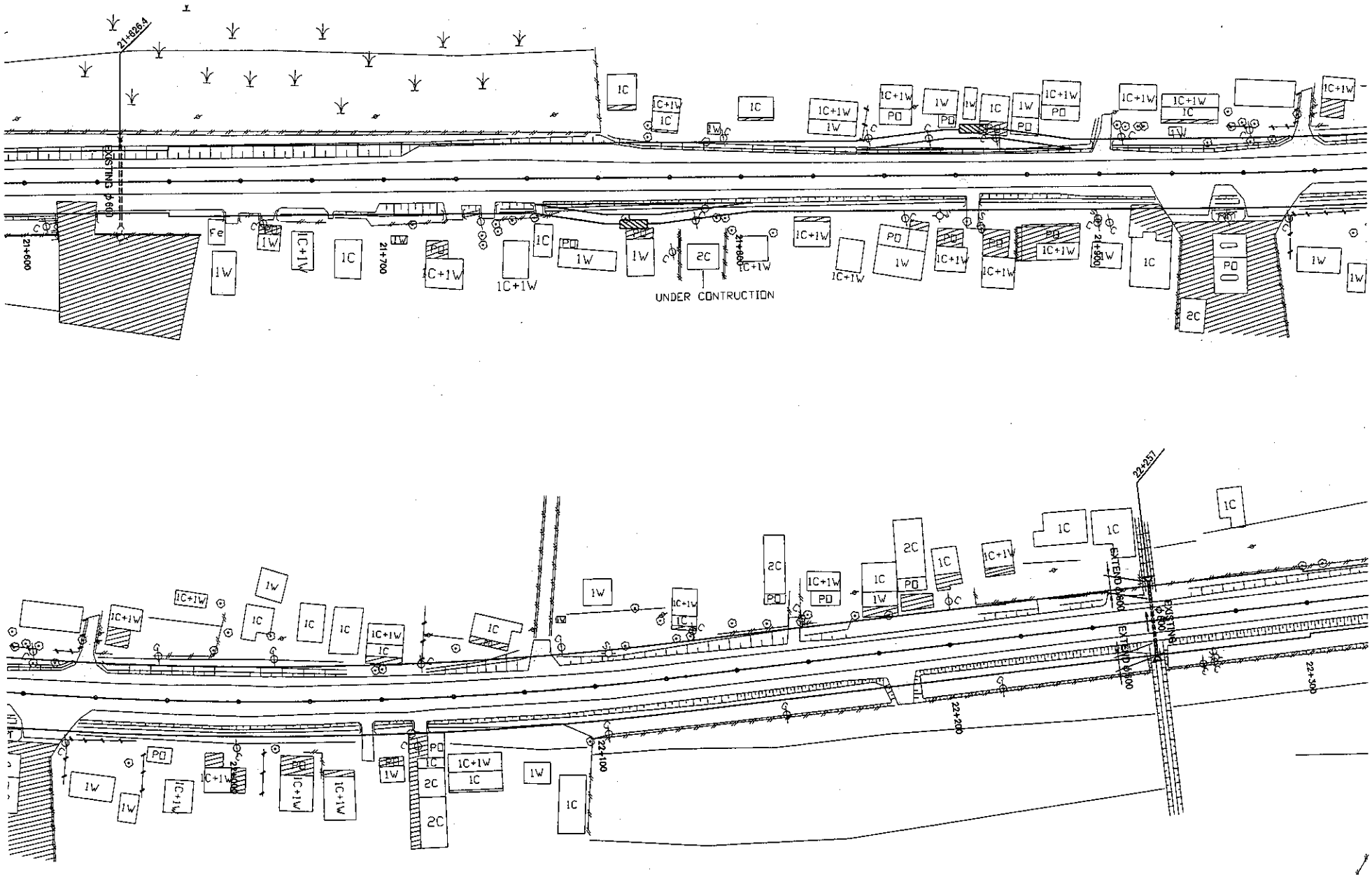
ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	PROPOSED OVERALL DRAINAGE PLAN (34/40)	SCALE : 1:1000	DRAWING No: DR-37 Rv.



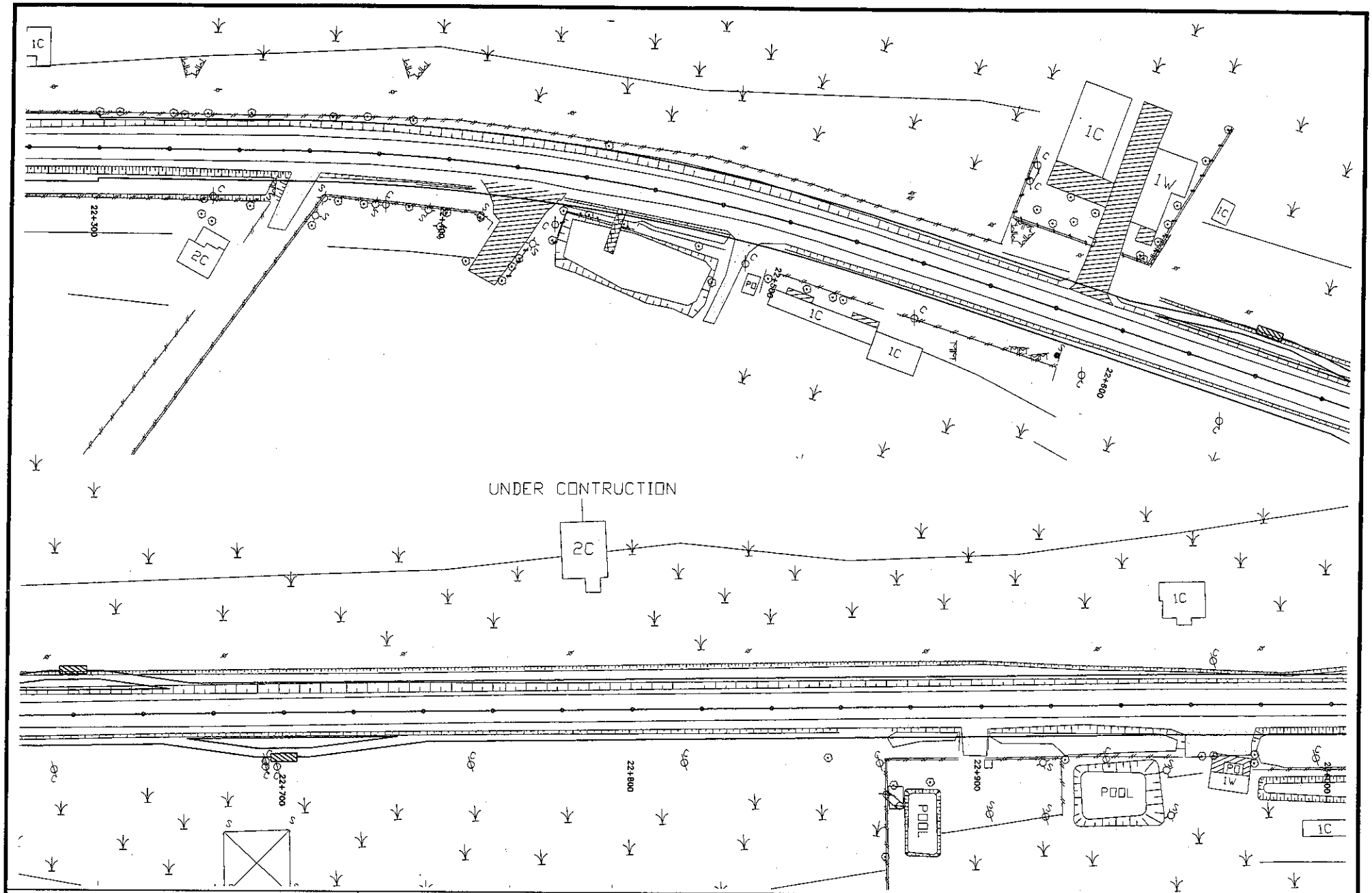
ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	PROPOSED OVERALL DRAINAGE PLAN (35/40)	SCALE : 1:1000	DRAWING No: DR-38



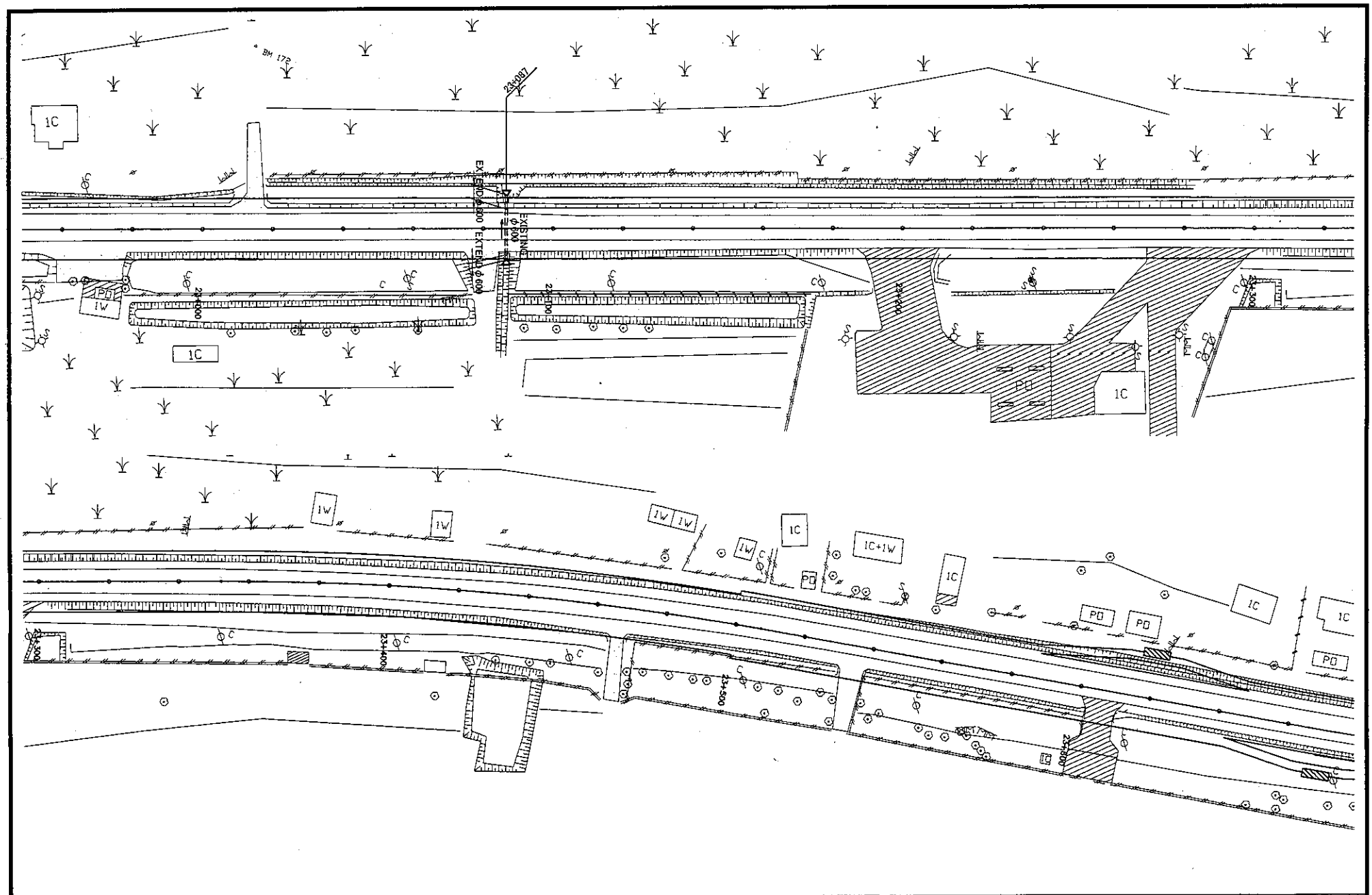
ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	PROPOSED OVERALL DRAINAGE PLAN (36/40)	SCALE : 1:1000	DRAWING No: DR-39 Rv.



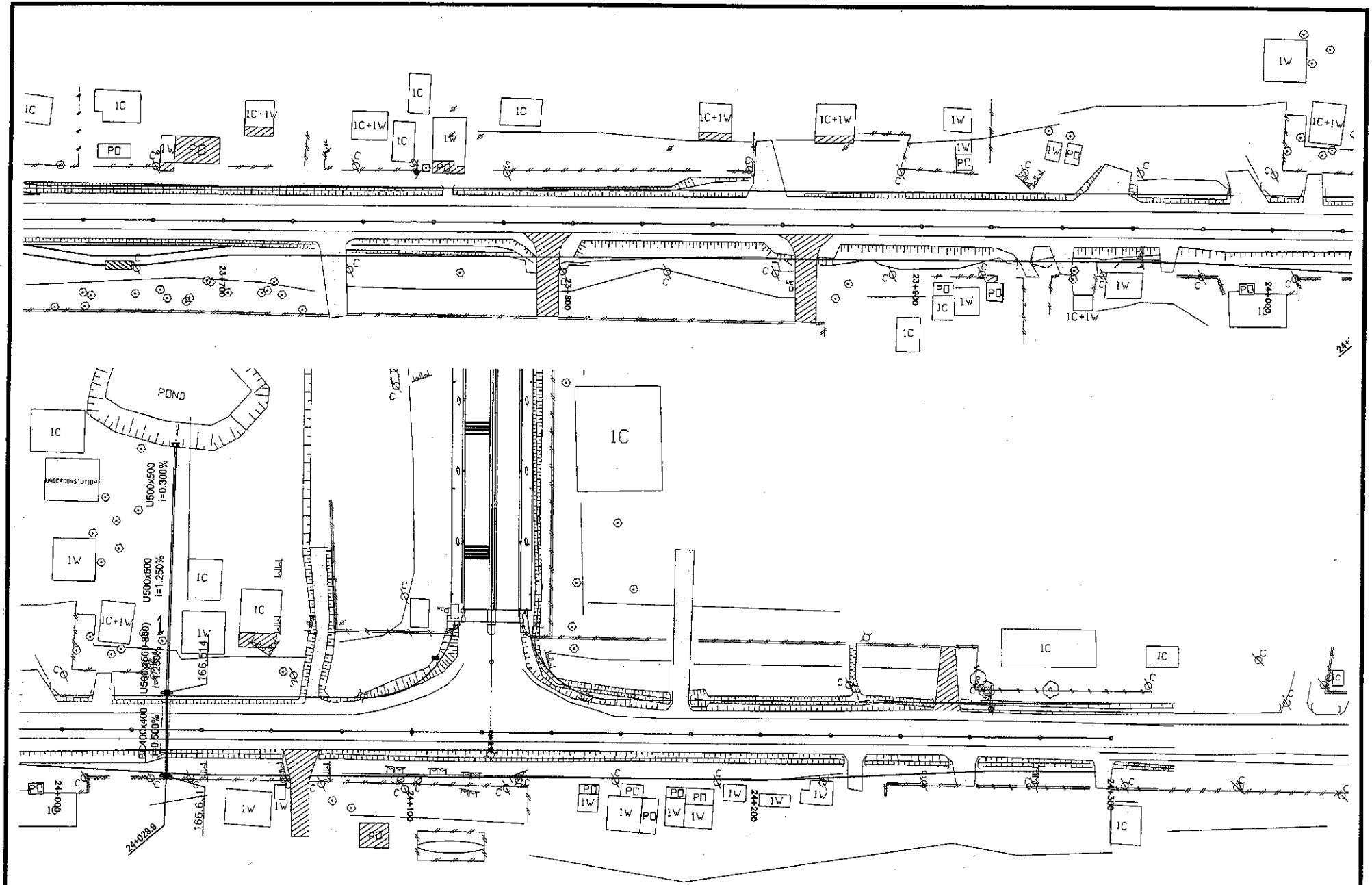
ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	PROPOSED OVERALL DRAINAGE PLAN (37/40)	SCALE: 1:1000	DRAWING No: DR-40 Rv.



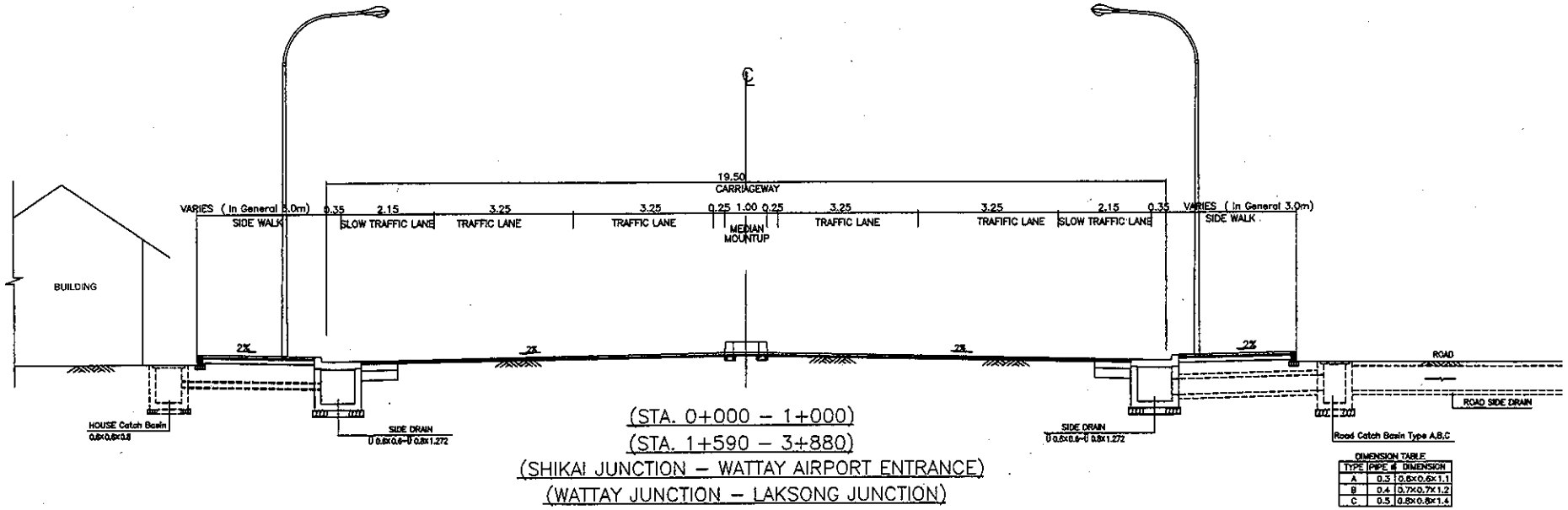
ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	PROPOSED OVERALL DRAINAGE PLAN (38/40)	SCALE: 1:1000	DRAWING No: DR-41 Rv.



ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	PROPOSED OVERALL DRAINAGE PLAN (39/40)	SCALE : 1:1000	DRAWING No: DR-42 Rv.



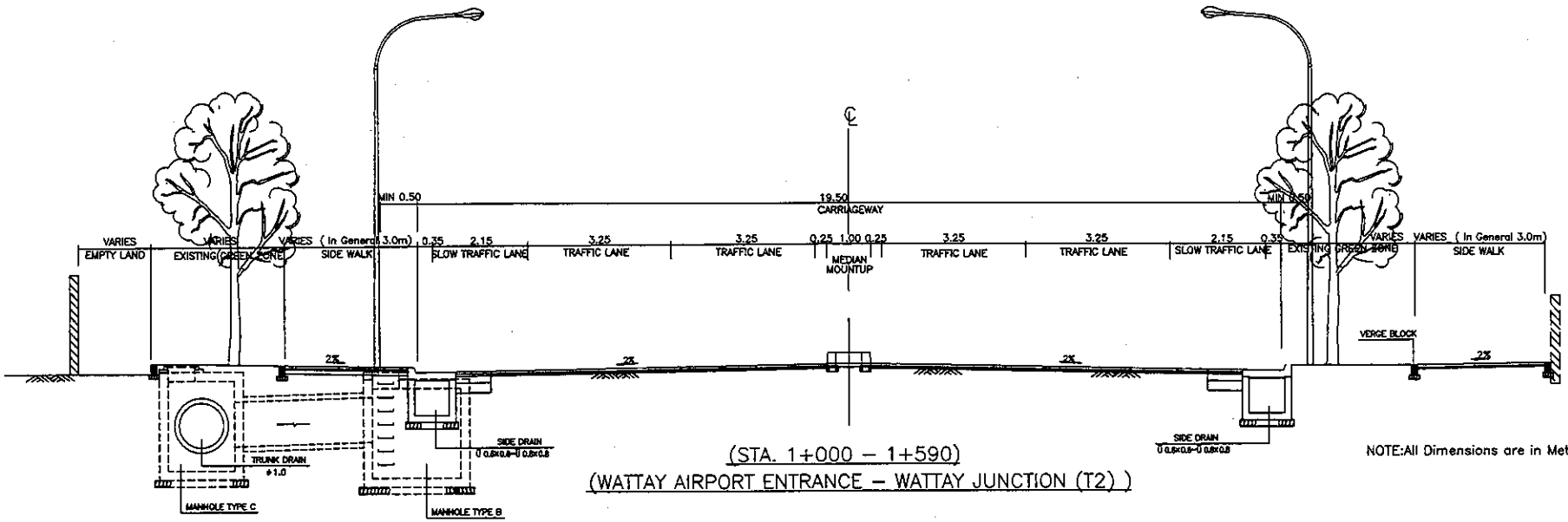
ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	PROPOSED OVERALL DRAINAGE PLAN (40/40)	SCALE : 1:1000	DRAWING No: DR-43 Rv.



(STA. 0+000 – 1+000)
(STA. 1+590 – 3+880)
(SHIKAI JUNCTION – WATTAY AIRPORT ENTRANCE)
(WATTAY JUNCTION – LAKSONG JUNCTION)

DIMENSION TABLE

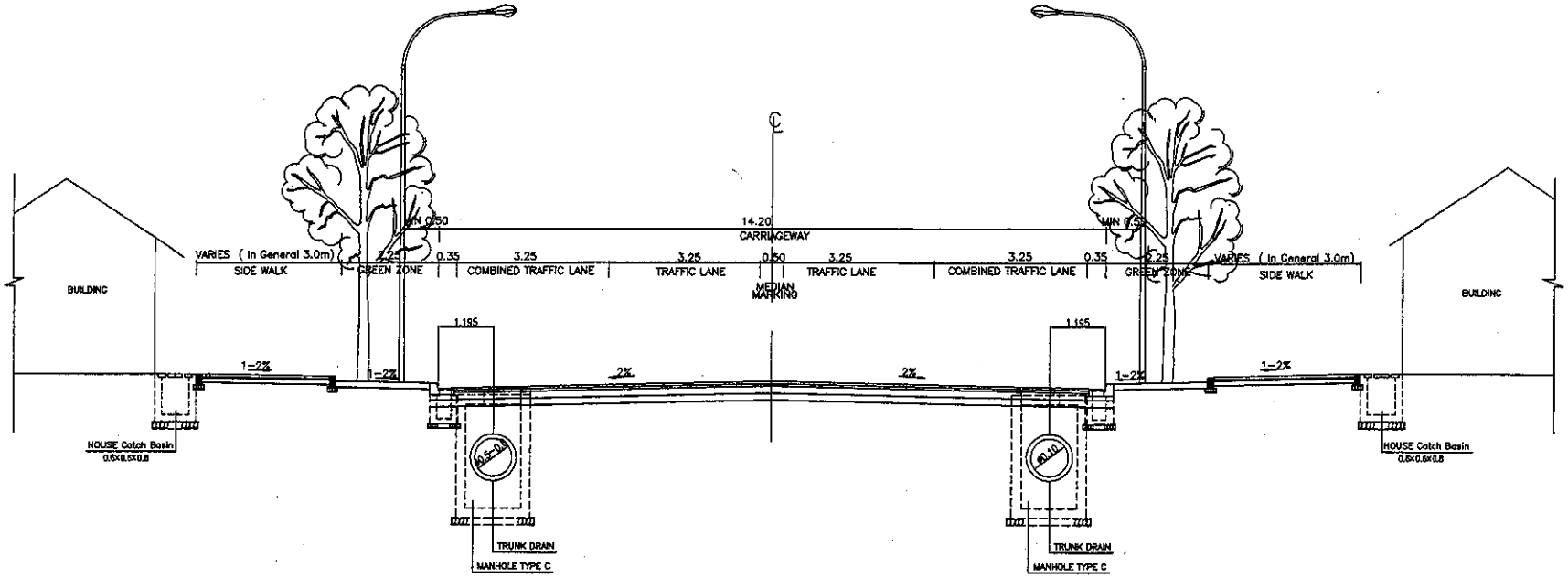
TYPE	PIPE ø	DIMENSION
A	0.3	0.6×0.6×1.1
B	0.4	0.7×0.7×1.2
C	0.5	0.8×0.8×1.4



(STA. 1+000 – 1+590)
(WATTAY AIRPORT ENTRANCE – WATTAY JUNCTION (T2))

NOTE:All Dimensions are in Meters.

ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	TITLE: DRAINAGE TYPICAL CROSS SECTION (1/10)	SCALE : S=1:100	DRAWING No: DR-44 Rv.

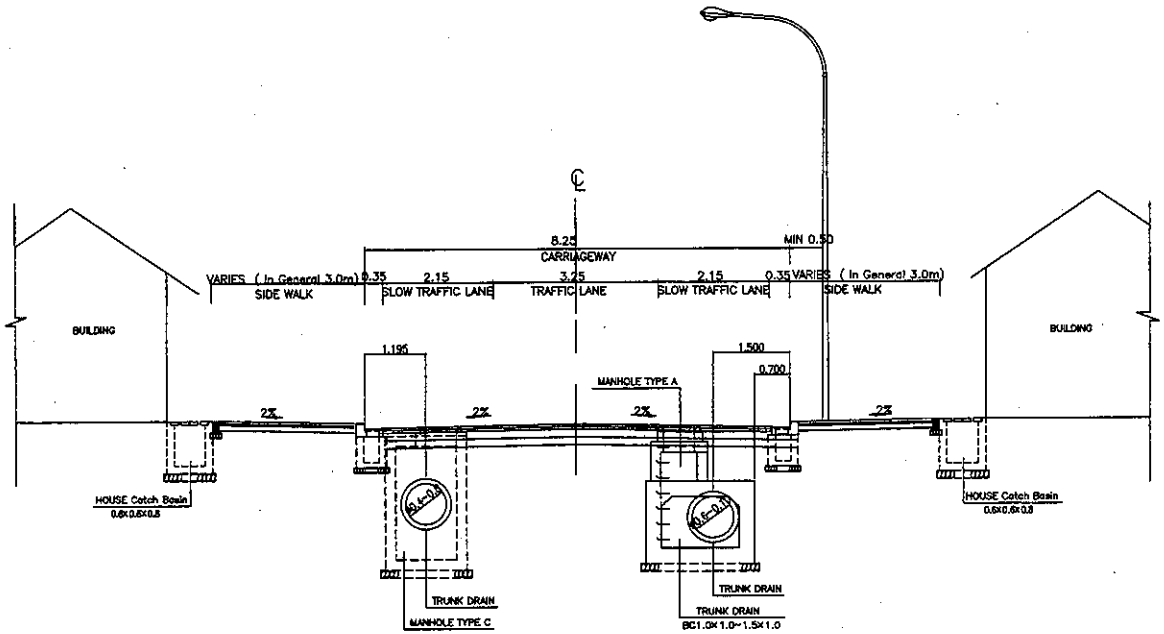


NOTE:All Dimensions are in Meters.

(STA. 3+880 – 4+800)

(LAKSONG JUNCTION – ROAD 4A JUNCTION)

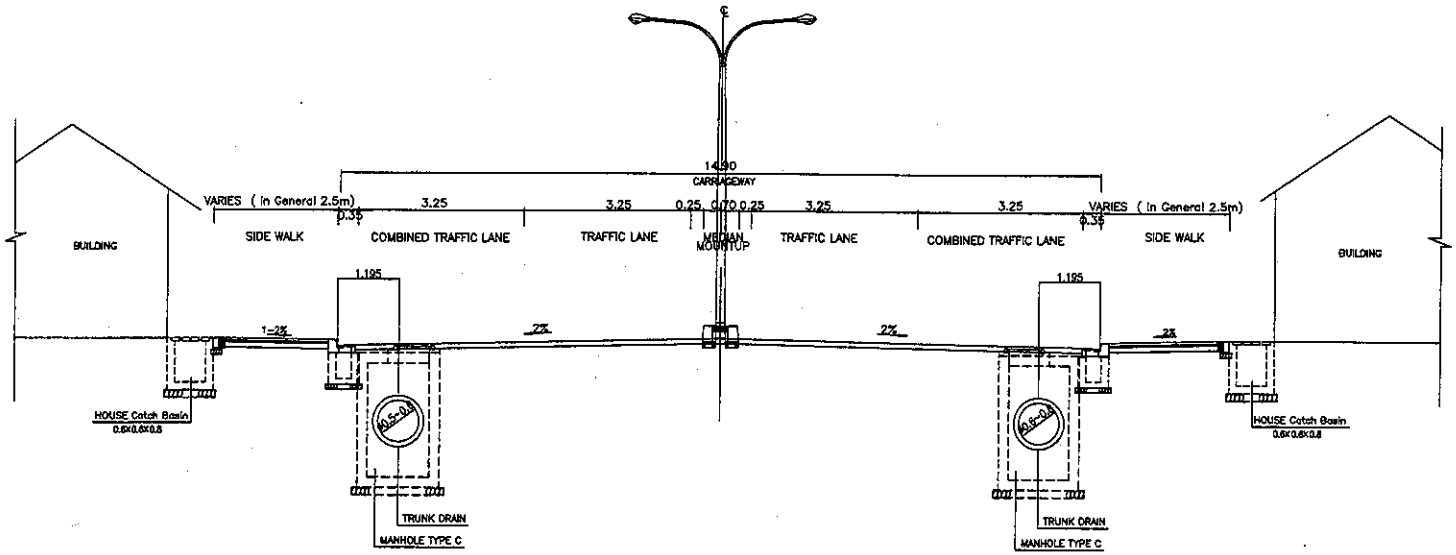
ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	TITLE: DRAINAGE TYPICAL CROSS SECTION (2/10)	SCALE : S=1:100	DRAWING No: DR-45 Rv.



NOTE:All Dimensions are in Meters.

(STA. 4+800 – 6+900)
(ROAD 4A JUNCTION. – SIMUANG JUNCTION)

ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	TITLE: DRAINAGE TYPICAL CROSS SECTION (3/10)	SCALE : S=1:100	DRAWING No: DR-46 Rv.

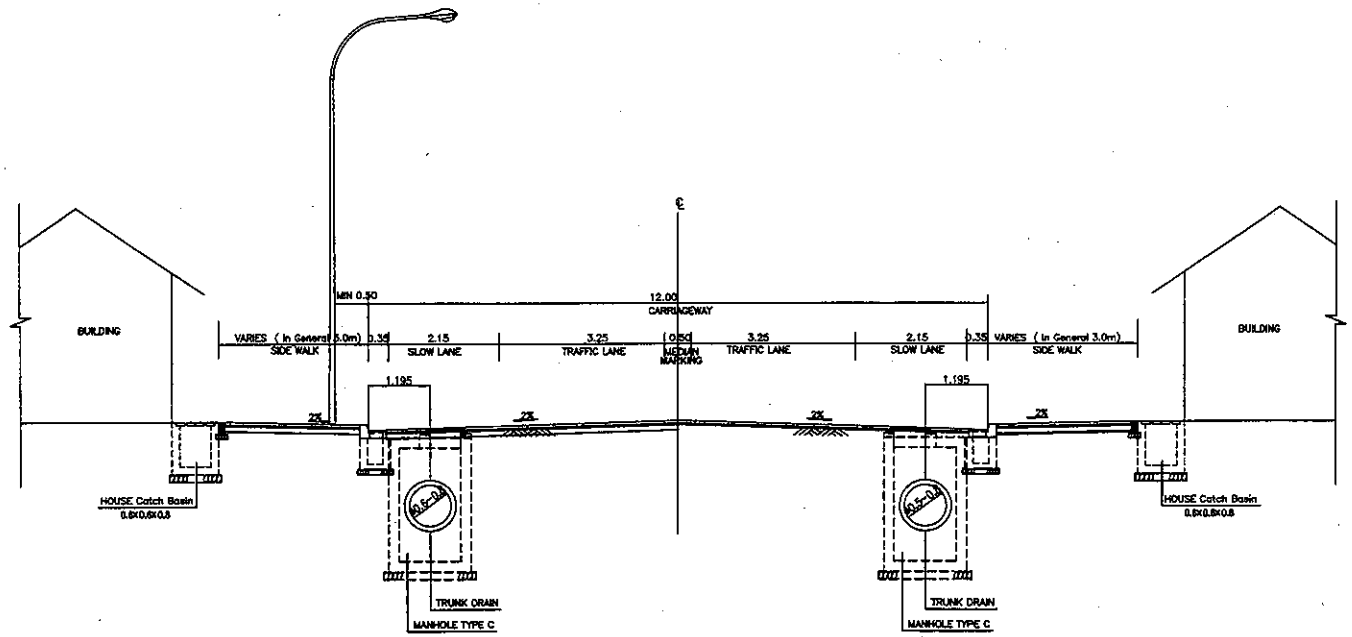


NOTE:All Dimensions are in Meters.

(STA. 6+900 – 7+185)

(SIMUANG JUNCTION – THATKHAO JUNCTION)

ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	TITLE: DRAINAGE TYPICAL CROSS SECTION (4/10)	SCALE : S=1:100	DRAWING No: DR-47 Rv.

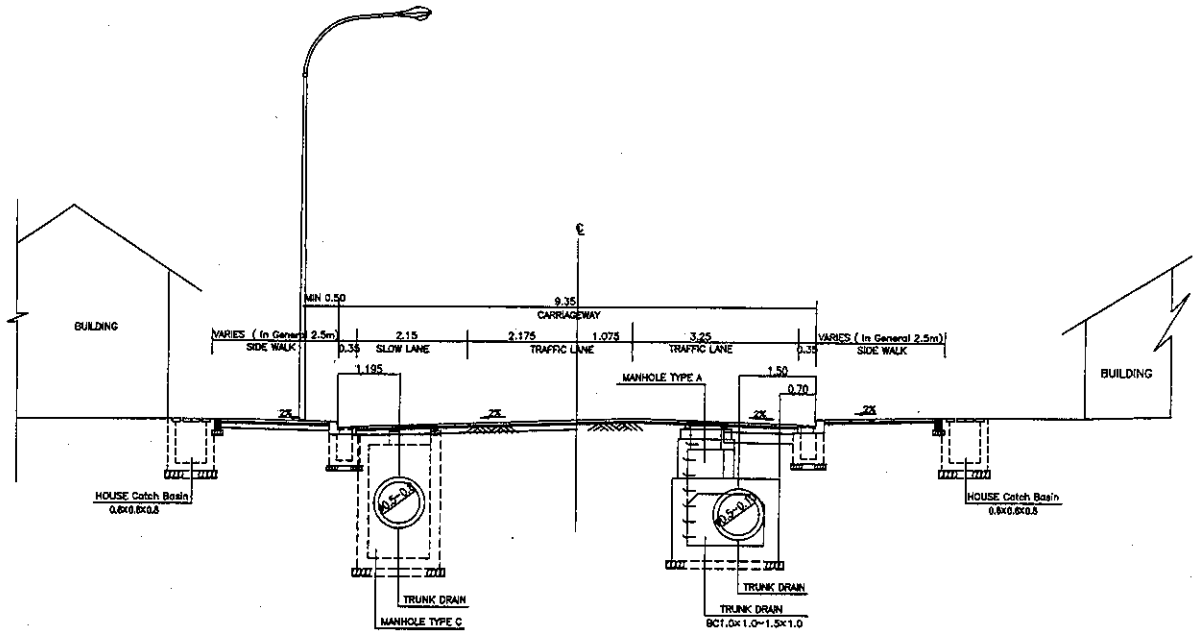


NOTE:All Dimensions are in Meters.

(A) (STA. 0+000 – 1+050)

(LAKSONG JCT – ROAD 4A JCT)

ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	TITLE: DRAINAGE TYPICAL CROSS SECTION (5/10)	SCALE : S=1:100	DRAWING No: DR-48 RV.

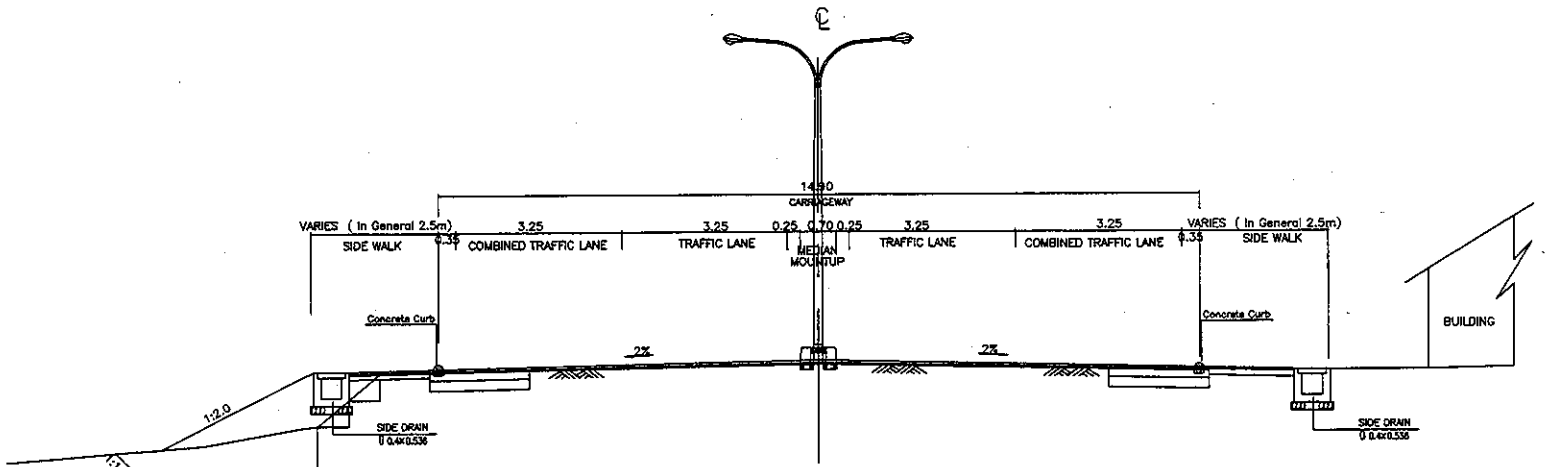


NOTE:All Dimensions are in Meters.

(A) (STA. 1+050 – 3+220)

(ROAD 4A JCT – THATKHAO JUNCTION)

ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	TITLE: DRAINAGE TYPICAL CROSS SECTION (6/10)	SCALE : S=1:100	DRAWING No: DR-49 Rv.

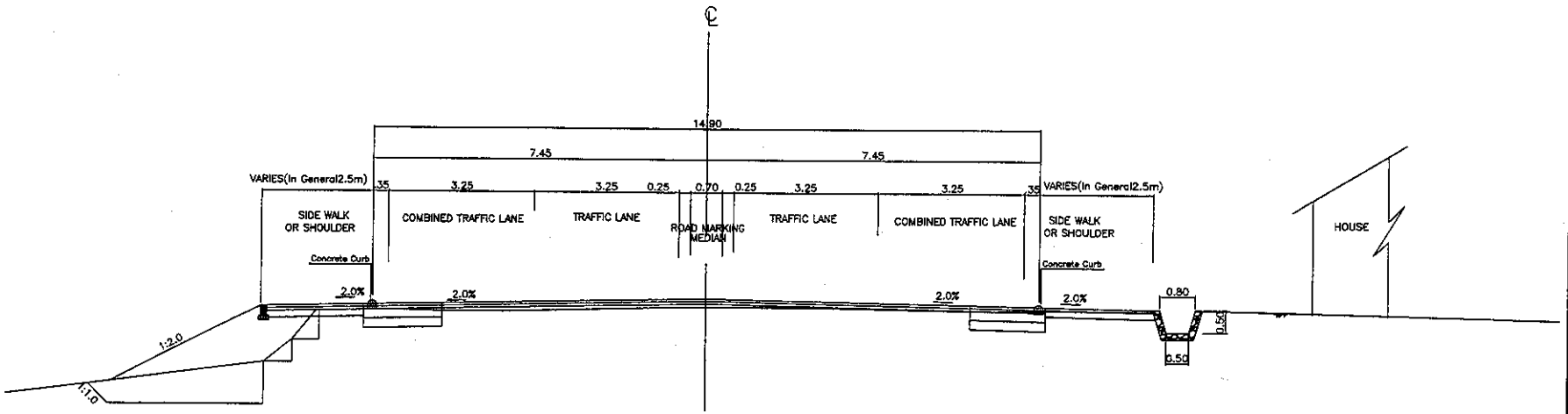


(STA. 7+185 – 12+300)

(THATKHAO JUNCTION – CHINAIMO JUNCTION)

NOTE:All Dimensions are in Meters.

ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	TITLE: DRAINAGE TYPICAL CROSS SECTION (7/10)	SCALE : S=1:100	DRAWING No: DR-50 Rv.



(STA. 12+300 – 18+500)
(CHINAIMO JUNCTION – BEER LAO)

NOTE:All Dimensions are in Meters.

ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	TITLE: DRAINAGE TYPICAL CROSS SECTION (8/10)	SCALE: S=1:100	DRAWING No: DR-51 Rv.

CA1 SECTION DRAINAGE LIST

UNIT : m

LEFT SIDE STATION	LENGTH	REMARKS	LATERAL STATION	LENGTH	REMARKS	RIGHT SIDE STATION	LENGTH	REMARKS
-0+044.5 ~ 0+000.0	44.500	U500*400				-0+083.0 ~ 0+000.0	83.000	U500*400
0+000.0 ~ 0+280.0	280.000	U600*(400-470)				0+000.0 ~ 0+280.0	280.000	U600*(400-470)
0+280.0 ~ 0+976.0	696.000	U800*(470-1011)				0+280.0 ~ 1+020.0	740.000	U800*(470-1011)
0+976.0 ~ 1+020.0	44.000	BC800*800	1+020.0 ~	22.510	BC800*800			
1+020.0 ~ 1+420.0	400.000	U500*400				1+020.0 ~ 1+420.0	400.000	U500*400
1+420.0 ~ 1+569.5	149.500	U800*800		22.400 +5.000		1+420.0 ~ 1+569.5	149.500	U800*800
1+020.0 ~ 1+569.5	549.500 +4.730	PC1000	1+569.5 ~		BC800*800	1+569.5 ~ 1+582.0	12.500	U500*400
1+569.5 ~	14.800	PC1000						
1+587.0			Hong Wattay Canal Connection					
~ 1+613.0	23.000	BC800*800	1+613.0 ~	22.900	BC800*800			
1+613.0 ~ 2+048.0	435.000	U800*(500-988)				1+609.0 ~ 2+053.5	444.500	U800*(500-988)
2+048.0 ~ 2+160.0	112.000	U600*400				2+053.5 ~ 2+160.0	106.500	U600*400
2+160.0 ~ 2+370.0	210.000	U500*(400-622)				2+160.0 ~ 2+370.0	210.000	U500*(400-622)
2+370.0 ~ 2+600.0	230.000	U800*(500-741)	2+604.0 ~	19.050	BC800*800	2+370.0 ~ 2+604.0	234.000	U800*(500-741)
2+600.0 ~	3.200	BC800*800						
2+604.0			DL0 Connection			2+604.0		
~ 2+610.0	5.200	BC500*800						
2+610.0 ~ 2+745.0	135.000	U600*400				2+604.0 ~ 3+085.0	481.000	U600*800
2+745.0 ~ 3+075.5	330.500	U600*800						
3+075.5 ~	8.800	BC800*800	3+085.0 ~	19.100	BC800*800			
3+085.0			DL1 Connection			3+085.0		

Lateral Pipe 5Locations

CA2 SECTION DRAINAGE LIST

UNIT : m

LEFT SIDE STATION	LENGTH	REMARKS	LATERAL STATION	LENGTH	REMARKS	RIGHT SIDE STATION	LENGTH	REMARKS
3+097.0 ~ 3+201.5	104.500	U800*400				3+093.0 ~ 3+205.0	112.000	U600*400
3+201.5 ~	2.500	BC800*800	3+205.0 ~	19.100	BC800*800			
3+205.0			DL2 Connection			3+205.0		
~ 3+210.5	4.200	BC800*800				3+205.0 ~ 3+440.0	235.000	U800*(993-1079)
3+210.5 ~ 3+440.0	229.500	U800*(993-1079)						
3+440.0 ~ 3+700.0	260.000	U500*(700-1008)				3+440.0 ~ 3+700.0	260.000	U500*(700-1008)
3+700.0 ~ 3+877.5	177.500	U600*400				3+700.0 ~ 3+853.0	153.000	U600*400

CA3 SECTION DRAINAGE LIST

ROAD-1

LEFT SIDE STATION	LENGTH	REMARKS	LATERAL STATION	LENGTH	REMARKS	RIGHT SIDE STATION	LENGTH	REMARKS
3+960.0 ~ 4+203.0	243.000	PC500				3+890.0 ~ 4+456.0	566.000	PC1000
4+203.0 ~ 4+457.0	254.000	PC500						
Existing Pipe to be Used		PC500				Existing Pipe to be Used		PC1000
Existing Pipe to be Used		PC800						
4+609.0			HongPasak Connection			4+804.0		
4+629.0						4+820.0		
Existing Pipe to be Used		PC800				Existing Pipe to be Used		PC800

Lateral Pipe 0Locations

ROAD-1A

LEFT SIDE STATION	LENGTH	REMARKS	LATERAL STATION	LENGTH	REMARKS	RIGHT SIDE STATION	LENGTH	REMARKS
-0+005.0 ~ 0+300.0	305.000	PC800				0+085.0 ~ 0+342.0	277.000	PC500
						0+342.0 ~ 0+542.0	200.000	PC800
0+300.0 ~ 0+800.0	500.000	PC800				0+542.0 ~ 0+800.0	258.000	PC800
0+800.0			HongPasak Connection			0+800.0		
0+800.0						0+815.0		
Existing Pipe to be Used		PC800				0+815.0 ~ 1+015.0	200.000	PC800

Lateral Pipe 0Locations

CA4 SECTION DRAINAGE LIST

ROAD-1

UNIT : m

LEFT SIDE STATION	LENGTH	REMARKS	LATERAL STATION	LENGTH	REMARKS	RIGHT SIDE STATION	LENGTH	REMARKS
4+815.0 ~ 4+955.0	140.000	PC800				4+825.0 ~ 4+955.0	130.000	PC800
4+955.0 ~ 5+778.0	840.800	PC800				4+955.0 ~ 5+235.0	280.000	BC1.0*1.0
						5+235.0 ~ 5+778.0	543.000	BC1.5*1.0
Existing Pipe to be Used		PC1500						
5+842.0 ~ 6+013.0	171.000	BC1.5*1.5				5+830.0 ~ 6+020.0	190.000	PC800
Existing Pipe to be Used		PC1500						
6+032.0			DL3 Connection			6+032.0		
6+048.0 ~ 6+060.0	14.000	PC400				Existing Pipe to be Used		PC1500
6+060.0 ~ 6+365.0	305.000	PC800				6+060.0 ~ 6+358.0	298.000	PC1000
						6+358.0 ~ 6+463.0	105.000	PC800
6+365.0 ~ 6+615.0	250.000	PC800				6+463.0 ~ 5+615.0	152.000	PC800

Lateral Pipe 3Locations

ROAD-1A

LEFT SIDE STATION	LENGTH	REMARKS	LATERAL STATION	LENGTH	REMARKS	RIGHT SIDE STATION	LENGTH	REMARKS
						1+060.0 ~ 1+150.0	90.000	PC800
1+065.0 ~ 1+710.0	645.000	PC800				1+150.0 ~ 1+440.0	290.000	PC800
						1+440.0 ~ 1+710.0	270.000	BC1.0*1.0
1+710.0 ~ 2+060.0	350.000	PC800				1+710.0 ~ 2+057.9	350.000	BC1.5*1.0
Existing Pipe to be Used		PC1500				Existing Pipe to be Used		PC1500
						2+120.0 ~ 2+316.0	196.000	PC800
2+320.0			DL3 Connection			2+320.0		
						Existing Pipe to be Used		PC1200
2+340.0 ~ 2+473.0	133.000	PC500				2+335.0 ~ 2+470.0	135.000	PC500

Lateral Pipe 2Locations

CA5 SECTION DRAINAGE LIST

ROAD-1

UNIT : m

LEFT SIDE STATION	LENGTH	REMARKS	LATERAL STATION	LENGTH	REMARKS	RIGHT SIDE STATION	LENGTH	REMARKS
6+621.0 ~ 6+820.0	199.000	PC500				6+621.0 ~ 6+820.0	199.000	PC800
6+825.0 ~ 6+967.0	142.000	PC500				6+820.0 ~ 6+995.0	175.000	PC800
6+967.0 ~ 7+165.0	198.000	PC500				6+995.0 ~ 7+170.0	175.000	PC800

Lateral Pipe 1Locations

ROAD-1A

LEFT SIDE STATION	LENGTH	REMARKS	LATERAL STATION	LENGTH	REMARKS	RIGHT SIDE STATION	LENGTH	REMARKS
2+500.0 ~ 2+640.0	140.000	PC500				2+490.0 ~ 2+640.0	150.000	PC800
2+640.0 ~ 2+650.0	10.000	PC800						
2+650.0			DL4 Connection					
2+650.0								
2+650.0 ~ 2+660.0	10.000	PC800						
2+660.0 ~ 2+810.0	150.000	PC500				2+660.0 ~ 2+815.0	155.000	PC500
2+828.0 ~ 3+045.0	217.000	PC500				2+822.0 ~ 3+045.0	223.000	PC500
3+045.0 ~ 3+055.0	11.500	PC800						
3+055.0			DL5 Connection					
3+055.0								
3+055.0 ~ 3+060.0	8.500	PC1000						
3+060.0 ~ 3+180.0	100.000	PC800				3+060.0 ~ 3+180.0	100.000	PC1000

Lateral Pipe 4Locations

ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	TITLE: DRAINAGE TYPICAL CROSS SECTION (9/10)	SCALE :	DRAWING No: DR-52 Rv.

CA6 SECTION DRAINAGE LIST

UNIT : m

LEFT SIDE			CENTRAL			RIGHT SIDE		
STATION	LENGTH	REMARKS	STATION	LENGTH	REMARKS	STATION	LENGTH	REMARKS
7+185.0			DL6 Connection					
7+189.4 ~ 7+208.0	9,000	PC500				7+189.4 ~ 7+216.0	15,800	PC500
7+208.0 ~ 7+280.0	72,000	U400=815				7+216.0 ~ 7+280.0	64,000	U400=815
7+280.0 ~ 7+510.0	230,000	U400=(400~405)				7+280.0 ~ 7+510.0	230,000	U400=(400~405)

Lateral Pipe 0 Locations

CA7 SECTION DRAINAGE LIST

UNIT : m

LEFT SIDE			CENTRAL			RIGHT SIDE		
STATION	LENGTH	REMARKS	STATION	LENGTH	REMARKS	STATION	LENGTH	REMARKS
7+510.0 ~ 7+850.0	340,000	U400=(400~488)				7+510.0 ~ 7+858.0	348,000	U400=(400~599)
7+850.0			DL7 Connection					
7+850.0 ~ 8+400.0	540,000	U400=(400~1403)				7+858.0 ~ 8+402.0	532,000	U400=(400~1141)

Lateral Pipe 0 Locations

CA8 SECTION DRAINAGE LIST

UNIT : m

LEFT SIDE			CENTRAL			RIGHT SIDE		
STATION	LENGTH	REMARKS	STATION	LENGTH	REMARKS	STATION	LENGTH	REMARKS
8+400.0 ~ 8+452.5	52,500	U400=(400~402)				8+400.0 ~ 8+521.0	121,000	U400=(400~402)
8+452.5 ~ 8+521.0	68,500	BC400=400						
8+521.0			DL8 Connection					
8+521.0 ~ 8+728.0	258,000	U400=(402~602)				8+521.0 ~ 8+720.0	698,000	U400=(400~602)
8+728.0 ~ 8+835.0	48,000	BC400=400						
8+835.0 ~ 9+215.0	380,000	U400=(400~580)						

Lateral Pipe 1 Locations

CA9 SECTION DRAINAGE LIST

UNIT : m

LEFT SIDE			CENTRAL			RIGHT SIDE		
STATION	LENGTH	REMARKS	STATION	LENGTH	REMARKS	STATION	LENGTH	REMARKS
9+231.0 ~ 9+740.0	509,000	U400=(400~410)				9+225.0 ~ 9+740.0	515,000	U400=400
9+740.0			DL9 Connection					
9+740.0 ~ 9+780.0	10,800	U400=(400~462)						

Lateral Pipe 1 Locations

CA10 SECTION DRAINAGE LIST

UNIT : m

LEFT SIDE			CENTRAL			RIGHT SIDE		
STATION	LENGTH	REMARKS	STATION	LENGTH	REMARKS	STATION	LENGTH	REMARKS
9+760.0 ~ 10+042.0	282,000	U400=(400~808)				9+765.0 ~ 10+044.0	289,000	U400=(400~730)
10+050.0			DL10 Connection					
10+050.0 ~ 10+440.0	384,000	U400=(400~1134)				10+050.0 ~ 10+440.0	381,000	U400=(400~1122)

Lateral Pipe 0 Locations

CA11 SECTION DRAINAGE LIST

UNIT : m

LEFT SIDE			CENTRAL			RIGHT SIDE		
STATION	LENGTH	REMARKS	STATION	LENGTH	REMARKS	STATION	LENGTH	REMARKS
10+445.0 ~ 10+662.5	217,500	U400=(400~618)				10+445.0 ~ 10+662.5	217,500	U400=(400~618)
10+662.5			DL11 Connection					
10+662.5 ~ 10+880.0	217,400	U400=(400~809)				10+662.5 ~ 10+880.0	217,400	U400=(400~809)

Lateral Pipe 1 Locations

CA12 SECTION DRAINAGE LIST

UNIT : m

LEFT SIDE			CENTRAL			RIGHT SIDE		
STATION	LENGTH	REMARKS	STATION	LENGTH	REMARKS	STATION	LENGTH	REMARKS
10+880.0 ~ 11+015.0	135,000	U400=(400~549)				10+880.0 ~ 11+015.0	135,000	U400=(400~549)
11+015.0			DL12 Connection					
11+015.0 ~ 11+173.0	158,000	U400=(400~456)				11+015.0 ~ 11+170.0	155,000	U400=(400~556)

Lateral Pipe 1 Locations

CA13 SECTION DRAINAGE LIST

UNIT : m

LEFT SIDE			CENTRAL			RIGHT SIDE		
STATION	LENGTH	REMARKS	STATION	LENGTH	REMARKS	STATION	LENGTH	REMARKS
11+190.0 ~ 11+407.0	217,000	U400=(400~815)				11+190.0 ~ 11+467.0	227,000	U400=(400~657)
11+472.0			DL13 Connection					
11+440.0 ~ 11+546.0	106,000	U400=400				11+430.0 ~ 11+546.0	116,000	U400=400
11+546.0			DL14 Connection					
11+546.0 ~ 11+640.0	94,000	U400=(400~803)				11+546.0 ~ 11+640.0	94,000	U400=(400~583)
11+640.0 ~ 11+730.0	90,000	U400=(400~571)				11+640.0 ~ 11+730.0	90,000	U400=(400~571)
11+730.0			DL15 Connection					
11+730.0 ~ 11+832.0	102,000	U400=400				11+730.0 ~ 11+832.0	102,000	U400=400
11+832.0			DL16 Connection					
11+832.0 ~ 11+920.0	88,000	U400=(400~452)				11+832.0 ~ 11+920.0	88,000	U400=(400~452)
11+920.0 ~ 12+016.5	96,500	U400=(400~464)				11+920.0 ~ 12+016.5	96,500	U400=(400~464)
12+016.5			DL17 Connection					
12+016.5 ~ 12+218.3	202,800	U400=(400~602)				12+016.5 ~ 12+209.5	207,300	U400=(400~615)

Lateral Pipe 4 Locations

CA14 SECTION DRAINAGE LIST

UNIT : m

LEFT SIDE			CENTRAL			RIGHT SIDE		
STATION	LENGTH	REMARKS	STATION	LENGTH	REMARKS	STATION	LENGTH	REMARKS
12+220.0 ~ 12+362.0	142,000	U400=(400~604)				12+242.0 ~ 12+362.0	124,600	V
12+362.0			DL18 Connection					
12+365.0 ~ 12+530.0	165,000	V & PC500				12+362.0 ~ 12+530.0	168,000	V & PC500

Lateral Pipe 0 Locations

CA15 SECTION DRAINAGE LIST

UNIT : m

LEFT SIDE			CENTRAL			RIGHT SIDE		
STATION	LENGTH	REMARKS	STATION	LENGTH	REMARKS	STATION	LENGTH	REMARKS
12+530.0 ~ 12+702.8	172,800	V & PC500				12+532.0 ~ 12+702.8	172,800	V & PC500
12+702.8			DL19 Connection					
12+702.8 ~ 12+985.0	282,400	V & PC500				12+702.8 ~ 12+985.0	282,400	V & PC500

Lateral Pipe 0 Locations

CA16 SECTION DRAINAGE LIST

UNIT : m

LEFT SIDE			CENTRAL			RIGHT SIDE		
STATION	LENGTH	REMARKS	STATION	LENGTH	REMARKS	STATION	LENGTH	REMARKS
12+965.0 ~ 13+296.6	331,600	V & PC500				12+965.0 ~ 13+240.0	275,000	V & PC500
13+296.6			DL20 Connection					
13+296.6 ~ 14+150.0	853,400	V & PC500				13+420.0 ~ 14+150.0	730,000	V & PC500

Lateral Pipe 0 Locations

CA17 SECTION DRAINAGE LIST

UNIT : m

LEFT SIDE			CENTRAL			RIGHT SIDE		
STATION	LENGTH	REMARKS	STATION	LENGTH	REMARKS	STATION	LENGTH	REMARKS
14+150.0 ~ 14+552.9	402,900	V & PC500				14+150.0 ~ 14+485.0	335,000	V & PC500
14+552.9			DL21 Connection					
14+552.9 ~ 14+785.0	232,100	V & PC500						

Lateral Pipe 0 Locations

CA18 SECTION DRAINAGE LIST

UNIT : m

LEFT SIDE			CENTRAL			RIGHT SIDE		
STATION	LENGTH	REMARKS	STATION	LENGTH	REMARKS	STATION	LENGTH	REMARKS
14+785.0 ~ 15+130.0	345,000	V & PC500				14+870.0 ~ 15+130.0	260,000	V & PC500
15+130.0			DL22 Connection					
15+130.0 ~ 15+180.0	50,000	V & PC500				15+130.0 ~ 15+180.0	50,000	V & PC500
15+420.0 ~ 15+920.0	500,000	V & PC500				15+420.0 ~ 15+920.0	500,000	V & PC500

Lateral Pipe 1 Locations

CA19 SECTION DRAINAGE LIST

UNIT : m

LEFT SIDE			CENTRAL			RIGHT SIDE		
STATION	LENGTH	REMARKS	STATION	LENGTH	REMARKS	STATION	LENGTH	REMARKS
15+920.0 ~ 16+150.0	230,000	V & PC500				15+920.0 ~ 16+260.0	340,000	V & PC500
16+488.5			DL24 Connection					
16+850.0 ~ 16+930.0	80,000	V & PC500				16+850.0 ~ 17+000.0	350,000	V & PC500

Lateral Pipe 0 Locations

CA20 SECTION DRAINAGE LIST

UNIT : m

LEFT SIDE			CENTRAL			RIGHT SIDE		
STATION	LENGTH	REMARKS	STATION	LENGTH	REMARKS	STATION	LENGTH	REMARKS
						17+000.0 ~ 17+650.0	650,000	V & PC500

Lateral Pipe 0 Locations

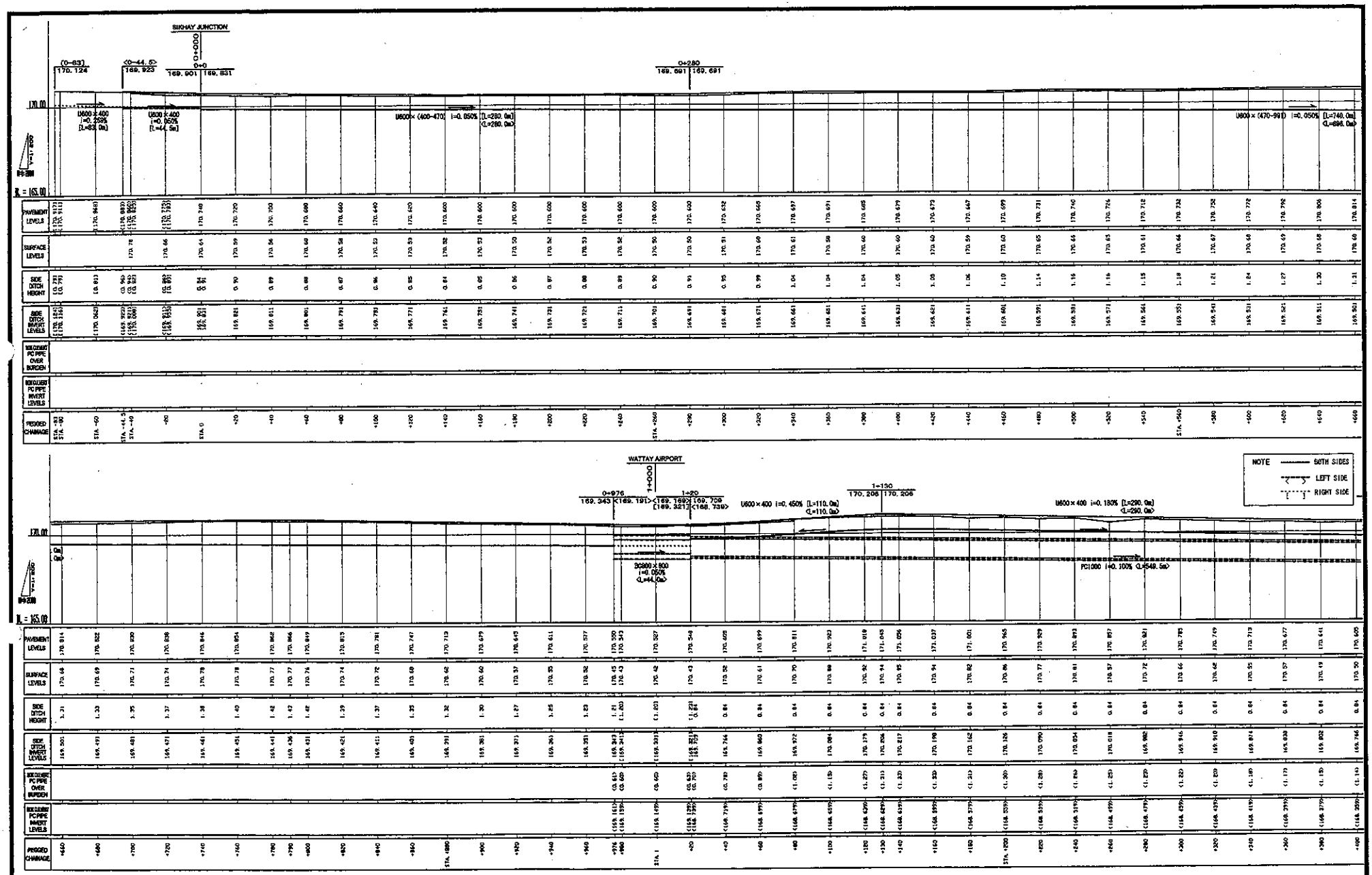
CA21 SECTION DRAINAGE LIST

UNIT : m

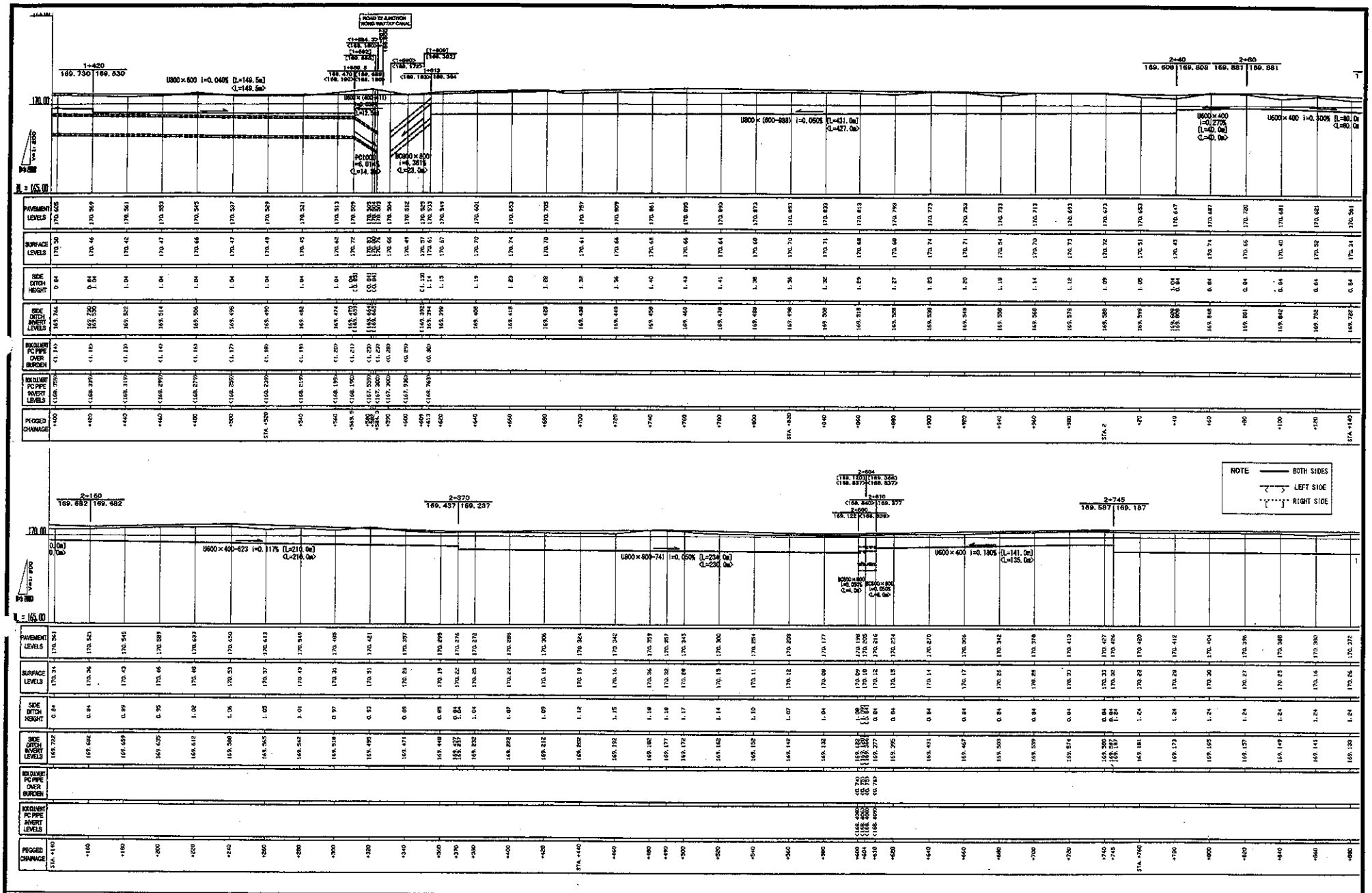
LEFT SIDE			CENTRAL			RIGHT SIDE		
STATION	LENGTH	REMARKS	STATION	LENGTH	REMARKS	STATION	LENGTH	REMARKS
18+180.0			DL26 Connection					
18+270.0 ~ 18+420.0	150,000	V & PC500						

Lateral Pipe 0 Locations

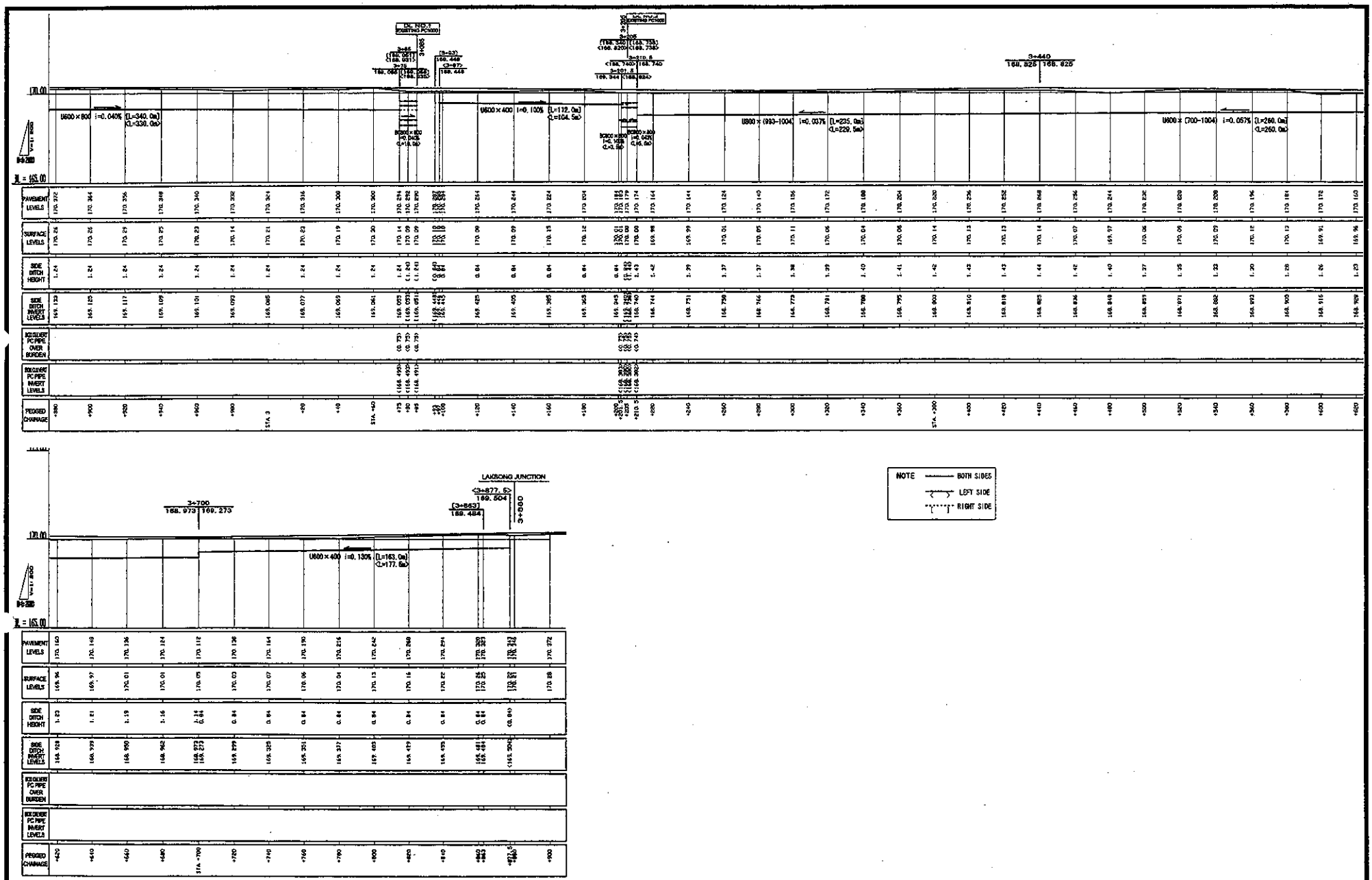
ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	TITLE: DRAINAGE TYPICAL CROSS SECTION (10/10)	SCALE :	DRAWING No: DR-53 Rv.



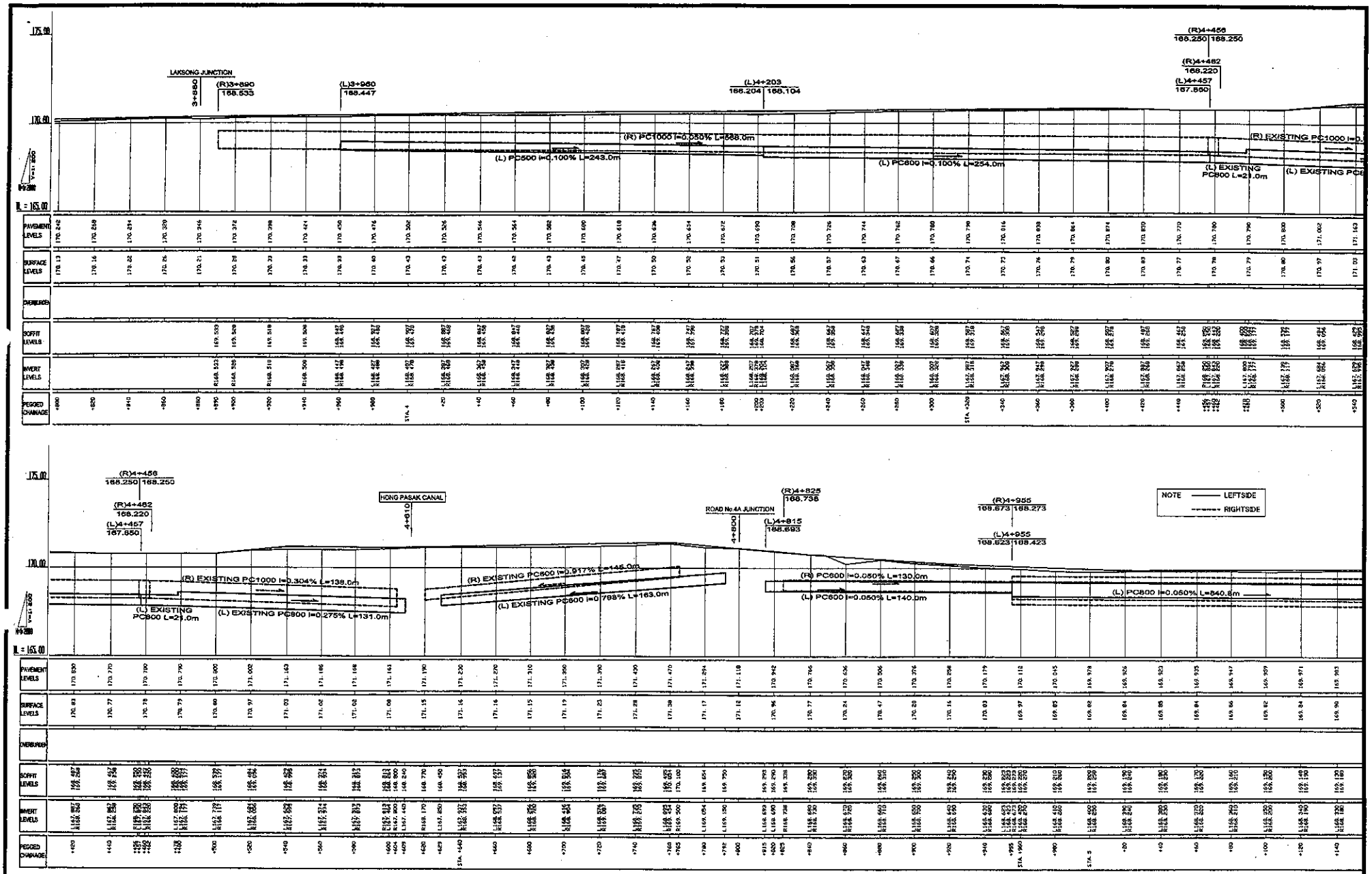
ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	TITLE: DRAINAGE PROFILE (1/18)	SCALE: H=1:2000 V=1:200	DRAWING No: DR-54 Rv.



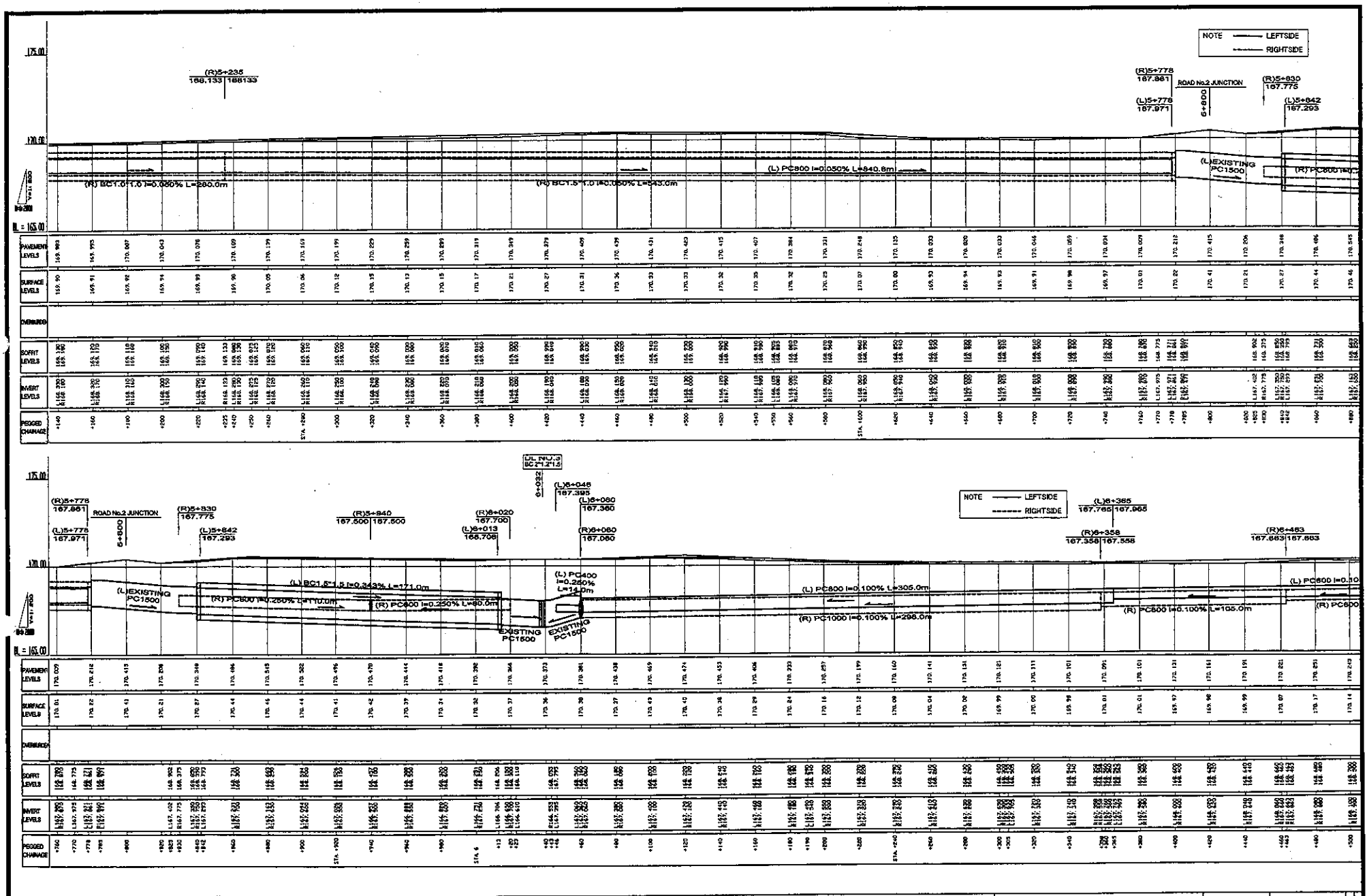
ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	TITLE: DRAINAGE PROFILE (2/18)	SCALE: H=1:2000 V=1:200	DRAWING No: DR-55 Rv.



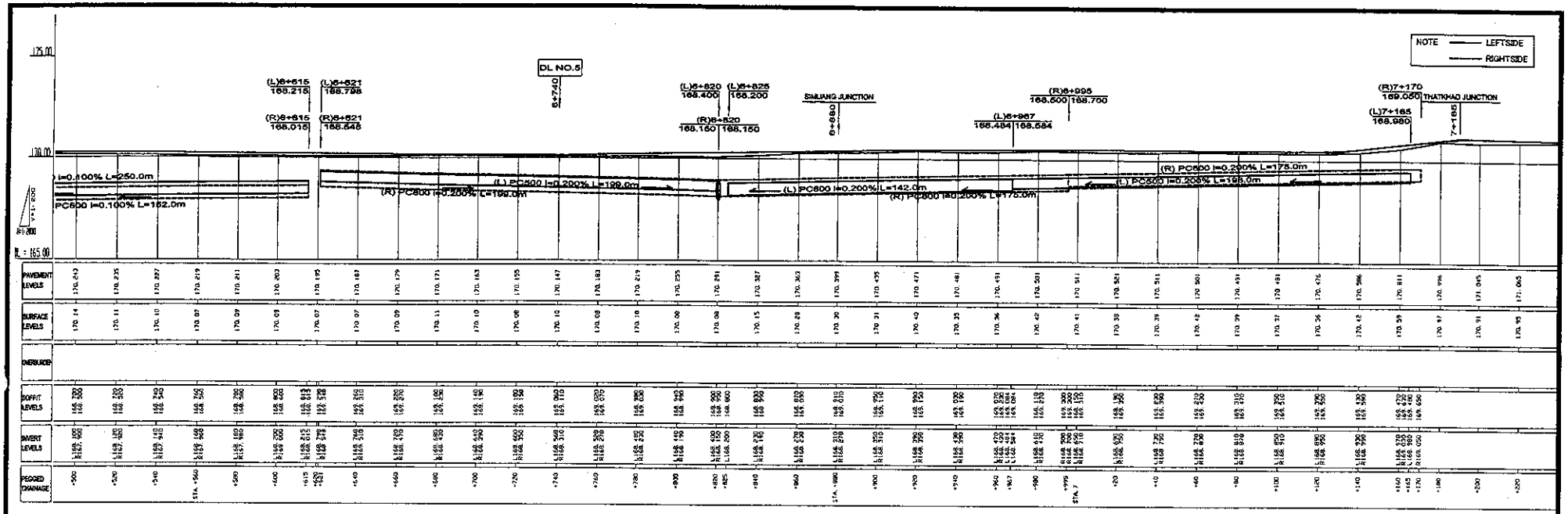
ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	TITLE: DRAINAGE PROFILE (3/18)	SCALE: H=1:2000 V=1:200	DRAWING No: DR-56 Rv.



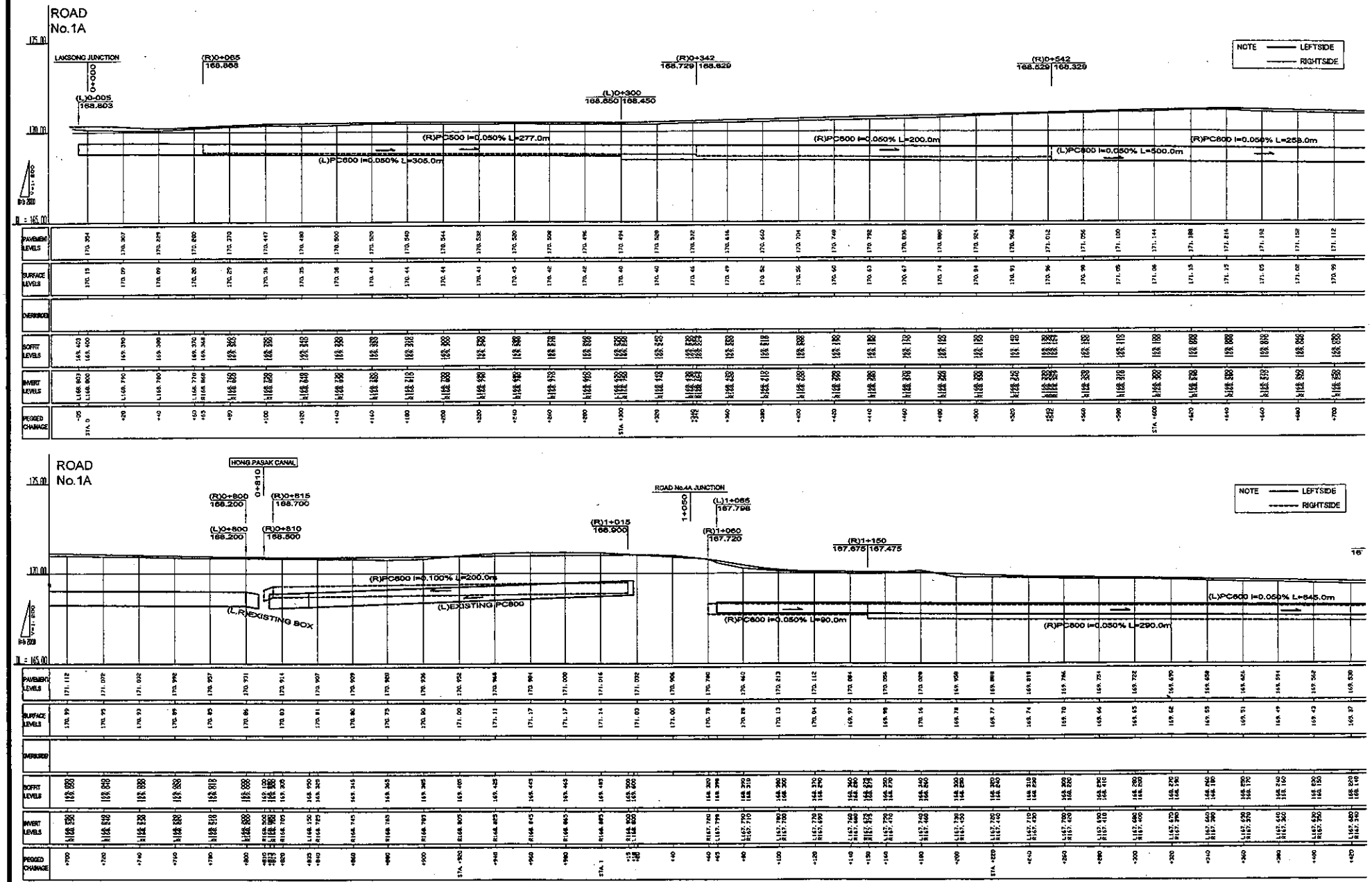
ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	TITLE: DRAINAGE PROFILE (4/18)	SCALE: H=1:2000 V=1:200	DRAWING No: DR-57 Rv.



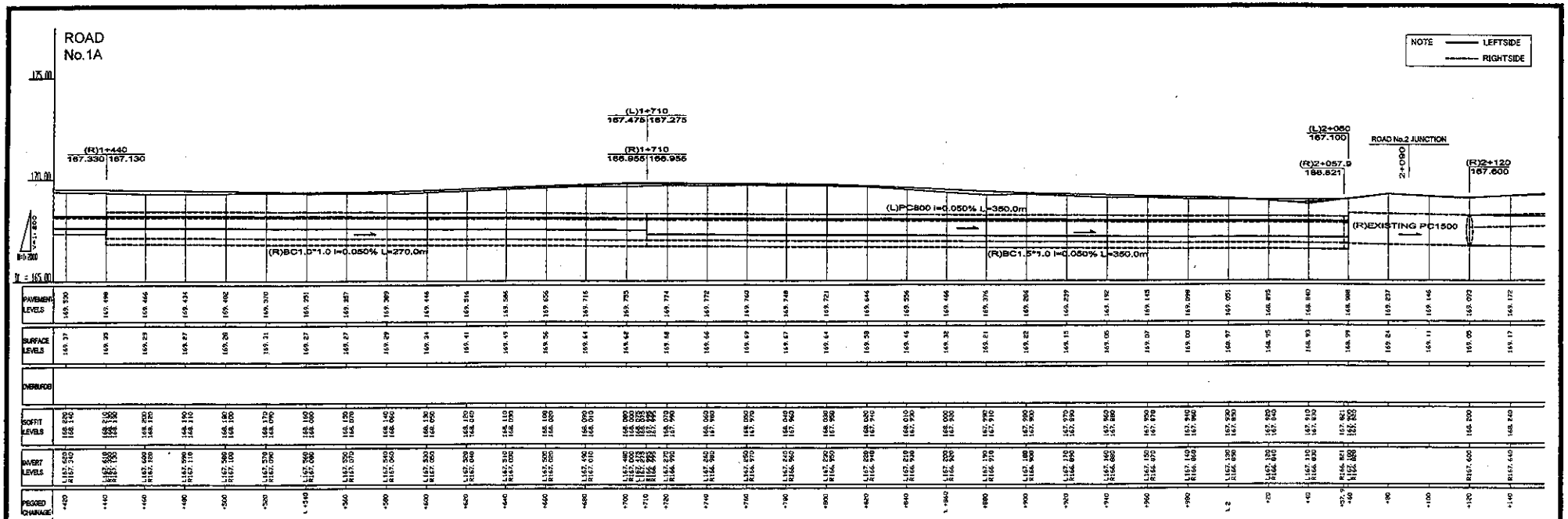
ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	TITLE: DRAINAGE PROFILE (5/18)	SCALE: H=1:2000 V=1:200	DRAWING No: DR-58 Rv.

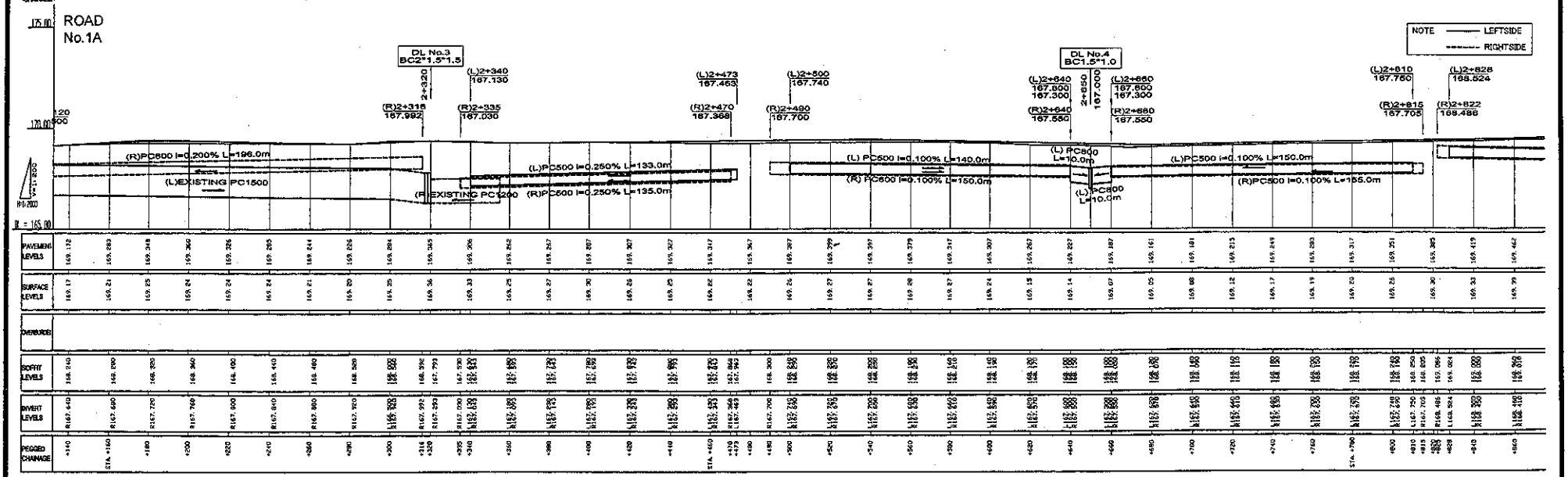


ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	TITLE: DRAINAGE PROFILE (6/18)	SCALE: H=1:2000 V=1:200	DRAWING No: DR-59 Rv.

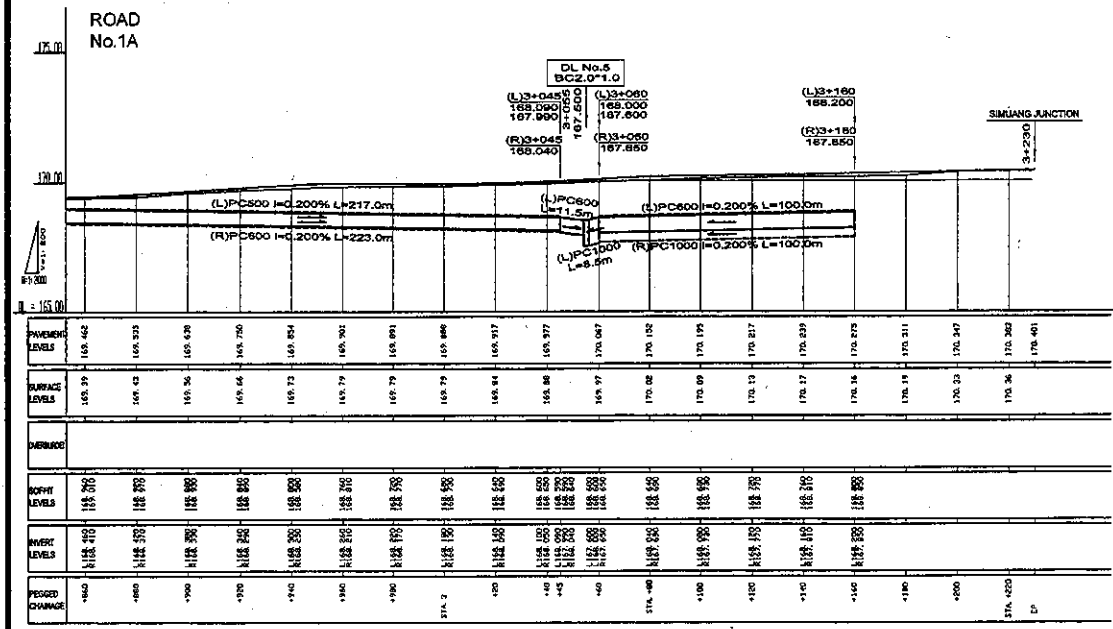


ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	TITLE: DRAINAGE PROFILE (7/18) (R1A)	SCALE: H=1:2000 V=1:200	DRAWING No: DR-60 Rv.



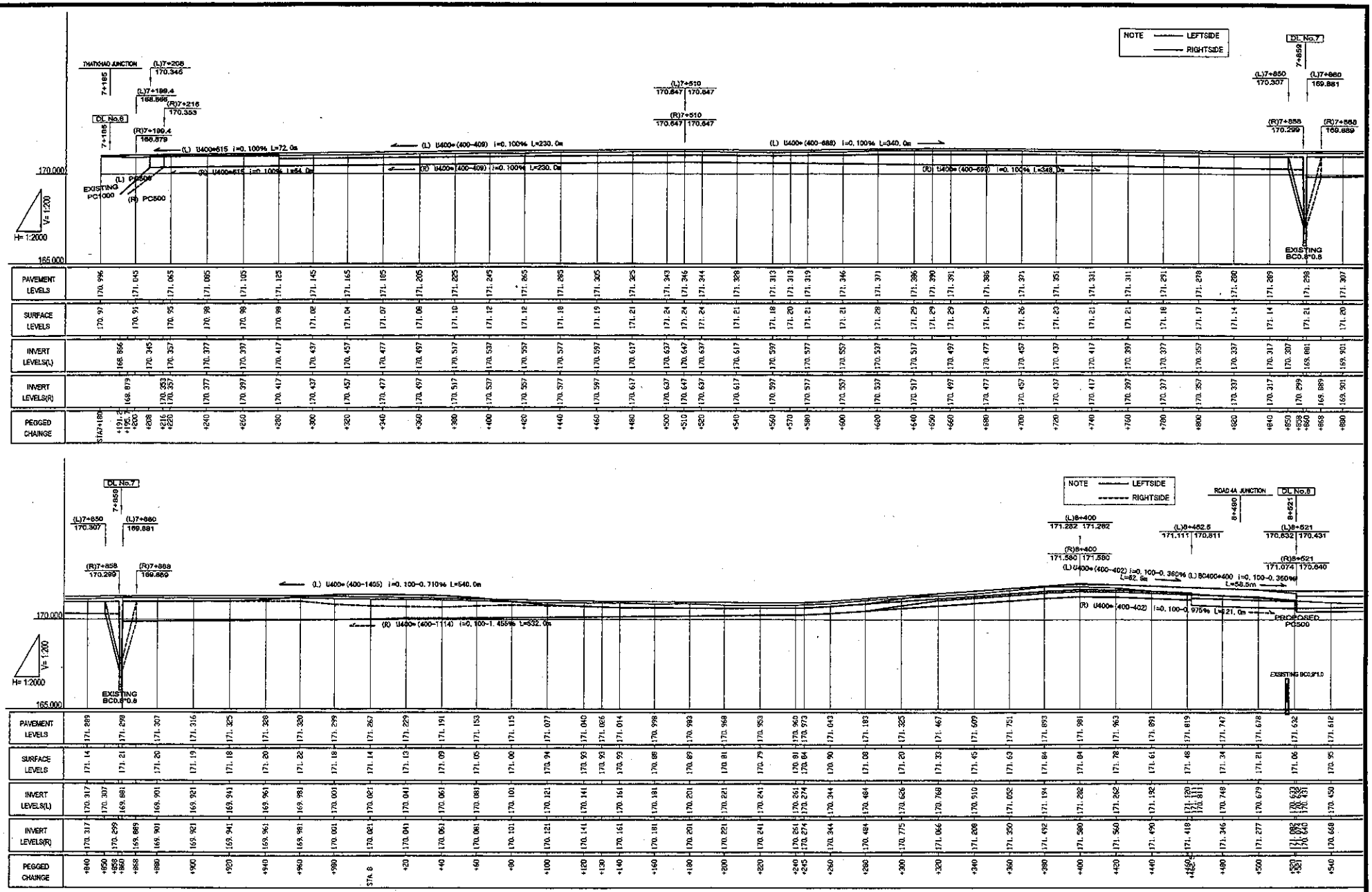


ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	TITLE: DRAINAGE PROFILE (8/18) (R1A)	SCALE : H=1:2000 V=1:200	DRAWING No: DR-61	Rv.



NOTE
LEFTSIDE
RIGHTSIDE

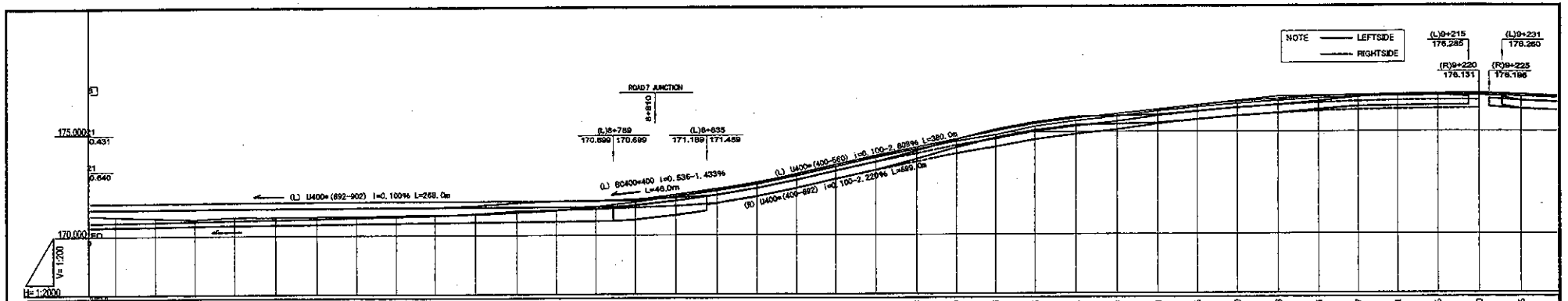
ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	TITLE: DRAINAGE PROFILE (9/18) (R1A)	SCALE : H=1:2000 V=1:200	DRAWING No: DR-62	Rv.

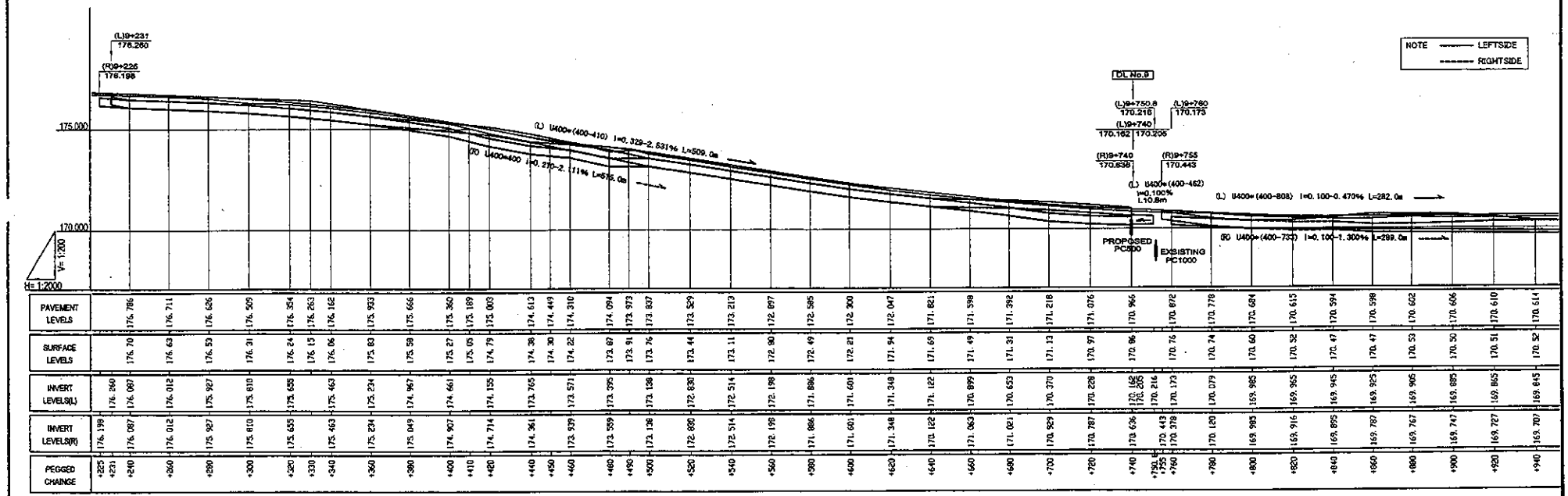


ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	TITLE: DRAINAGE PROFILE (10/18)

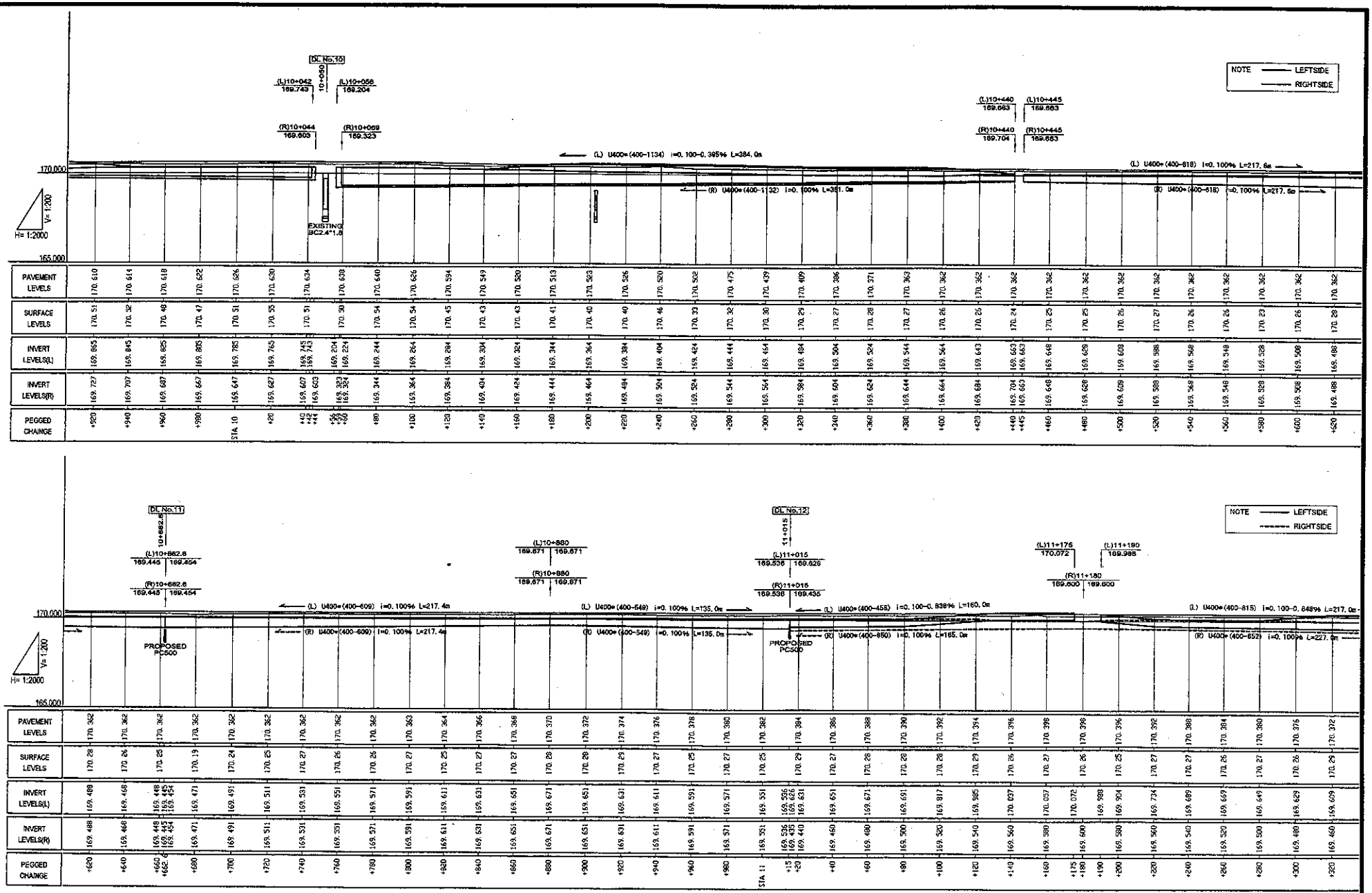
SCALE :	DRAWING No:
H=1:2000 V=1:200	DR-63

Rv.

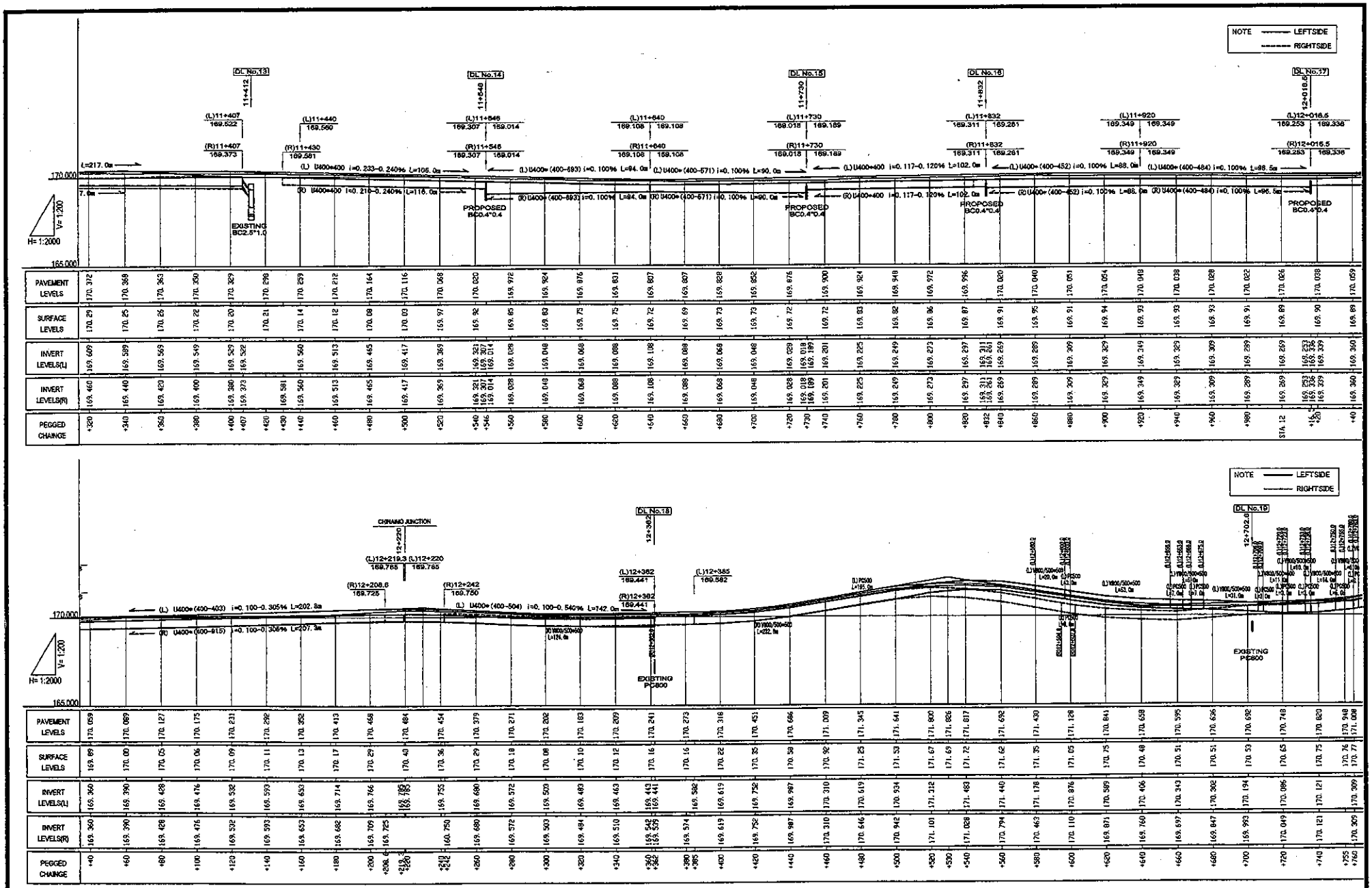




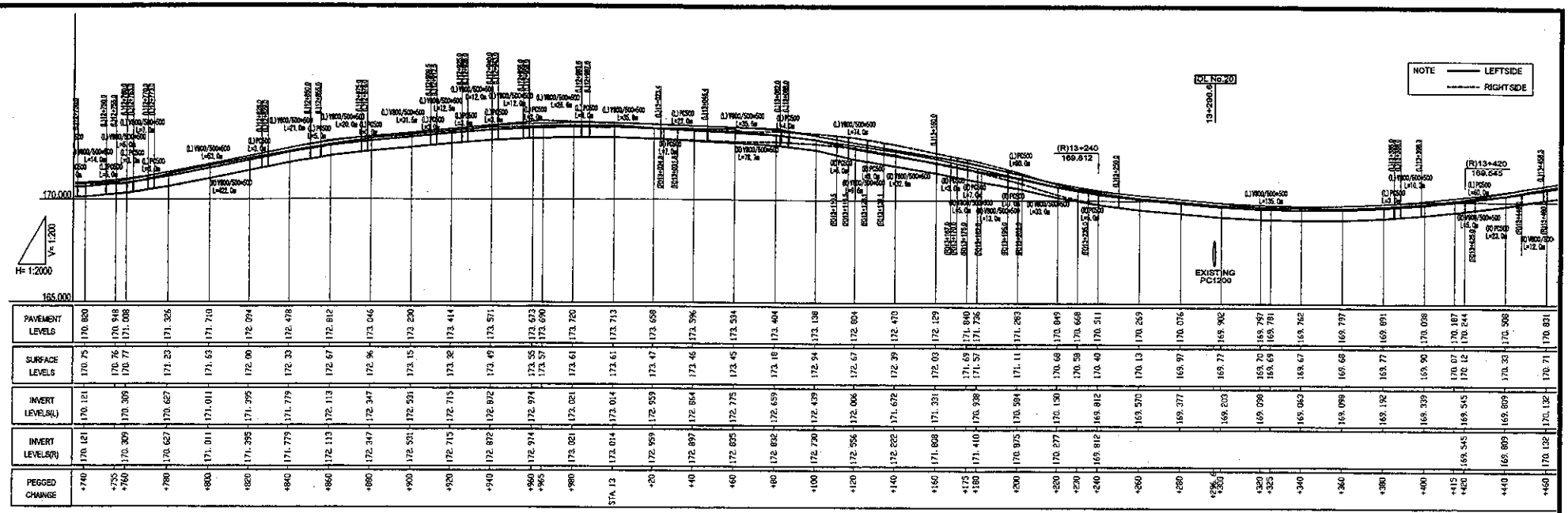
ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	TITLE: DRAINAGE PROFILE (11/18)	SCALE: H=1:2000 V=1:200	DRAWING No: DR-64 Rv.



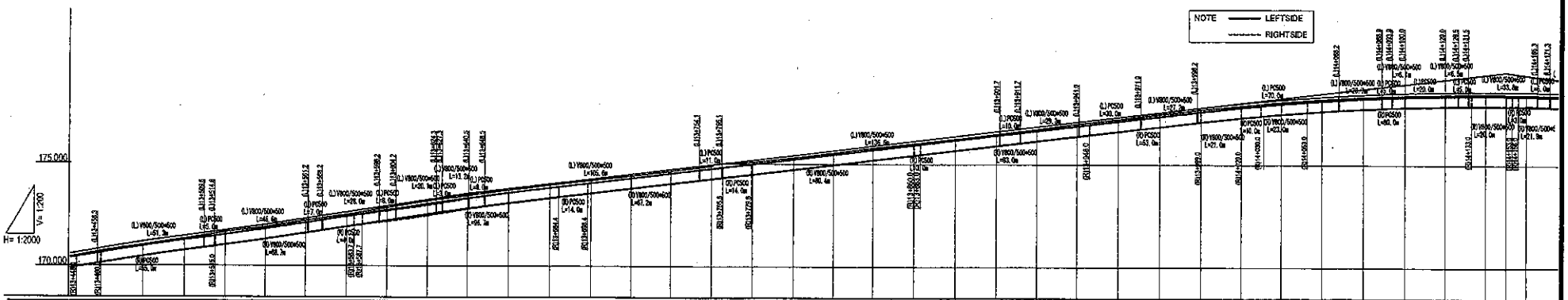
ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	TITLE: DRAINAGE PROFILE (12/18)	SCALE: H=1:2000 V=1:200	DRAWING No: DR-65 Rv.



ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	TITLE: DRAINAGE PROFILE (13/18)	SCALE: H=1:2000 V=1:200	DRAWING No: DR-66 Rv.

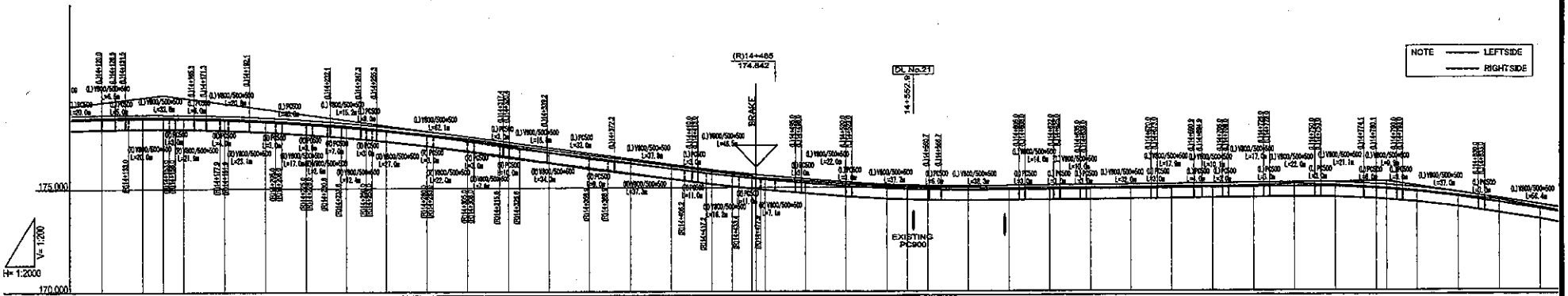


PEGGED CHAINAGE	PAVEMENT LEVELS	SURFACE LEVELS	INVERT LEVELS(L)	INVERT LEVELS(R)
+740	170.820	170.75	170.121	170.121
+755	170.918	170.76	170.309	170.309
+760	171.008	170.77	170.627	170.627
+780	171.326	171.23	171.011	171.011
+800	171.710	171.53	171.395	171.395
+820	172.094	172.00	171.779	171.779
+840	172.478	172.33	172.113	172.113
+860	172.812	172.67	172.347	172.347
+880	173.046	172.96	172.531	172.531
+900	173.200	173.15	172.715	172.715
+920	173.414	173.32	172.872	172.872
+940	173.511	173.49	172.974	172.974
+960	173.673	173.55	173.021	173.021
+965	173.690	173.57	173.014	173.014
+980	173.720	173.61	172.959	172.959
STA.13	173.713	173.61	172.864	172.897
+20	173.658	173.47	172.775	172.835
+40	173.596	173.46	172.659	172.832
+60	173.534	173.45	172.439	172.730
+80	173.404	173.18	172.006	172.556
+100	173.138	172.54	171.672	172.222
+120	172.804	172.67	171.331	171.808
+140	172.470	172.39	170.938	171.410
+160	172.129	172.03	170.594	170.975
+175	171.840	171.63	170.130	170.277
+180	171.756	171.57	169.812	169.812
+200	171.283	171.11	169.570	169.570
+220	170.849	170.68	169.377	169.377
+230	170.668	170.59	169.203	169.203
+240	170.511	170.40	169.098	169.098
+260	170.259	170.13	169.063	169.063
+280	170.076	169.97	169.098	169.098
+296.5	169.902	169.77	169.192	169.192
+300	169.797	169.70	169.339	169.339
+320	169.781	169.69	169.545	169.545
+323	169.762	169.67	169.809	169.809
+340	169.797	169.68	170.132	170.132
+360	169.691	169.77		
+380	170.038	169.90		
+400	170.187	170.07		
+415	170.244	170.12		
+420	170.508	170.33		
+440	170.831	170.71		
+460				

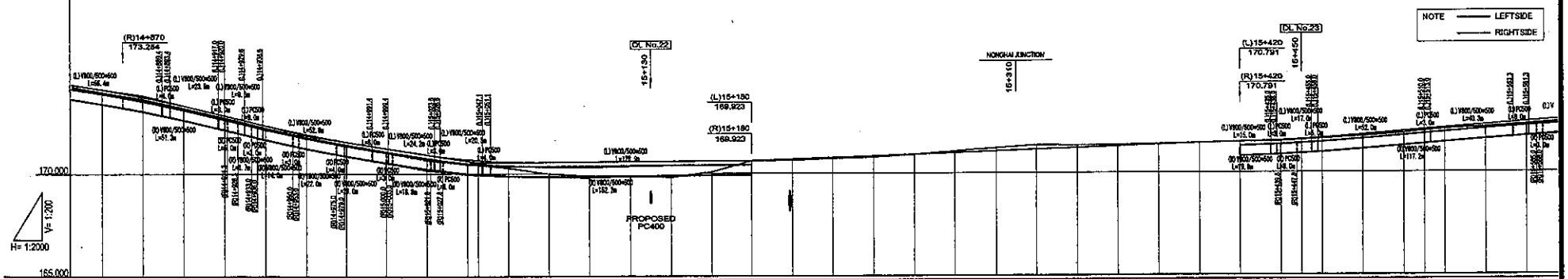


PEGGED CHAINAGE	PAVEMENT LEVELS	SURFACE LEVELS	INVERT LEVELS(L)	INVERT LEVELS(R)
+460	170.831	170.71	170.132	170.132
+480	171.163	171.01	170.464	170.464
+500	171.455	171.32	170.756	170.756
+520	171.727	171.63	171.028	171.028
+540	172.007	171.89	171.308	171.308
+560	172.305	172.21	171.606	171.606
+580	172.611	172.50	171.912	171.912
+600	172.917	172.83	172.180	172.180
+620	173.214	173.16	172.455	172.455
+640	173.494	173.41	172.777	172.777
+660	173.757	173.69	173.058	173.058
+680	174.003	173.93	173.304	173.304
+700	174.240	174.17	173.541	173.541
+720	174.477	174.39	173.778	173.778
+740	174.714	174.63	174.015	174.015
+760	174.951	174.87	174.252	174.252
+780	175.187	175.09	174.488	174.488
+800	175.424	175.31	174.725	174.725
+820	175.661	175.55	174.962	174.962
+840	175.898	175.79	175.199	175.199
+860	176.135	176.02	175.436	175.436
+880	176.372	176.24	175.673	175.673
+900	176.609	176.48	175.910	175.910
+920	176.844	176.72	176.145	176.145
+940	177.078	176.98	176.379	176.379
+960	177.312	177.21	176.613	176.613
+980	177.545	177.46	176.846	176.846
STA.14	177.778	177.69	177.079	177.079
+20	177.994	177.88	177.295	177.295
+40	178.176	178.06	177.477	177.477
+60	178.325	178.21	177.626	177.626
+80	178.440	178.32	177.741	177.741
+100	178.522	178.39	177.823	177.823
+120	178.570	178.44	177.871	177.871
+140	178.584	178.47	177.885	177.885
+150	178.578	178.45		
+160	178.564	178.43	177.865	177.865

ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	TITLE: DRAINAGE PROFILE (14/18)	SCALE: H=1:2000 V=1:200	DRAWING No: DR-67	Rv.

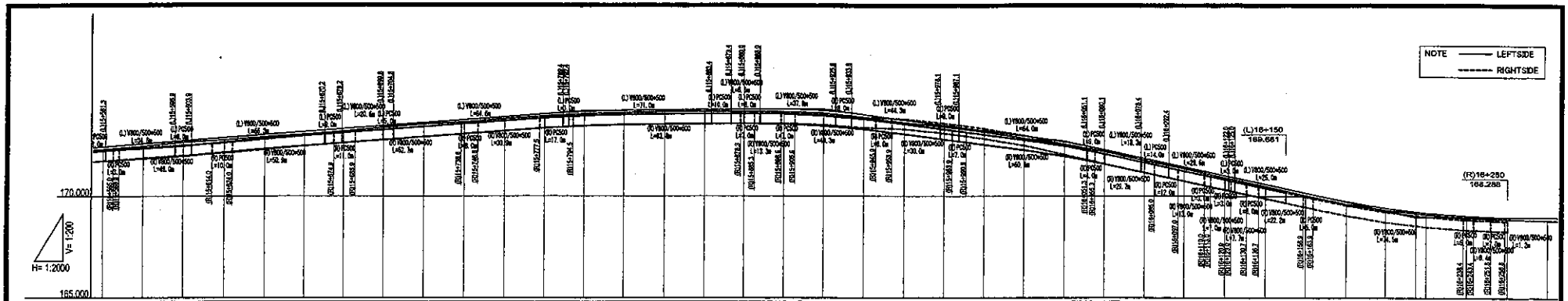


PEGGED CHAINGE	PAVEMENT LEVELS	SURFACE LEVELS	INVERT LEVELS(L)	INVERT LEVELS(R)
+120	178.570	178.44	177.871	177.871
+140	178.584	178.47	177.885	177.885
+150	178.578	178.45	177.865	177.865
+160	178.564	178.43	177.812	177.812
+180	178.511	178.38	177.725	177.725
+200	178.424	178.29	177.605	177.605
+220	178.304	178.16	177.451	177.451
+240	178.150	178.02	177.263	177.263
+250	177.962	177.82	177.041	177.041
+280	177.740	177.59	176.786	176.764
+300	177.485	177.38	176.514	176.454
+320	177.213	177.10	176.212	176.210
+340	176.941	176.84	175.910	175.970
+360	176.669	176.58	175.674	175.698
+380	176.397	176.32	175.426	175.426
+400	176.125	176.04	175.172	175.173
+420	175.872	175.78	174.957	174.957
+430	175.759	175.67	174.894	174.894
+440	175.656	175.56	174.842	174.842
+460	175.593	175.46		
+485				
+500	175.425	175.33	174.728	
+520	175.271	175.17	174.572	
+540	175.156	175.06	174.457	
+550	175.115	175.01		
+560	175.086	174.97	174.387	
+580	175.061	174.98	174.362	
+600	175.075	174.94	174.376	
+620	175.095	174.99	174.396	
+640	175.115	174.99	174.416	
+660	175.135	174.99	174.436	
+680	175.155	175.04	174.456	
+700	175.175	175.02	174.476	
+720	175.195	175.06	174.496	
+740	175.215	175.10	174.516	
+760	175.199	175.07	174.500	
+780	175.113	174.95	174.414	
+785	175.080	174.91		
+800	174.955	174.80	174.256	
+820	174.726	174.59	174.027	
+840	174.435	174.35	173.736	
+860	174.127	174.00	173.428	

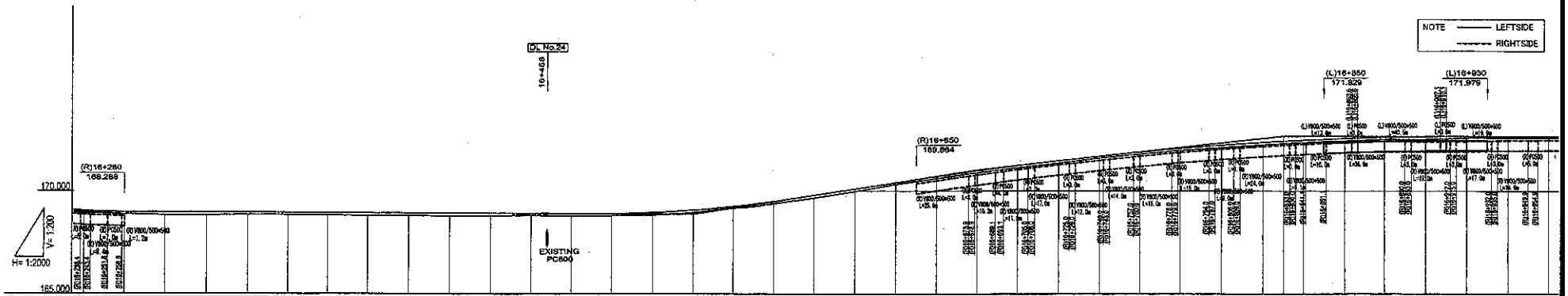


PEGGED CHAINGE	PAVEMENT LEVELS	SURFACE LEVELS	INVERT LEVELS(L)	INVERT LEVELS(R)
+860	174.127	174.00	173.428	
+870	173.953	173.67	173.064	173.254
+880	173.763	173.22	172.636	172.636
+900	173.335	172.75	172.152	172.152
+920	172.851	172.26	171.668	171.668
+940	172.367	171.78	171.236	171.236
+960	171.935	171.43	170.863	170.863
+980	171.562	171.08	170.544	170.535
STA.15	171.243	170.76	170.235	170.175
+20	170.934	170.48	170.004	169.962
+40	170.703	170.43	169.881	169.881
+45	170.663	170.28	169.863	169.863
+60	170.580	170.00	169.820	169.875
+80	170.562	169.89	169.815	169.887
+100	170.574	169.87	169.864	169.899
+120	170.586	169.82	169.899	169.911
+130	170.598	169.82	169.911	169.923
+140	170.610	170.07	169.923	
+160	170.622	170.61	169.923	
+180	170.697	170.64		
+200	170.771	170.71		
+220	170.846	170.78		
+240	170.920	170.91		
+260	170.995	171.07		
+280	171.069	171.22		
+300	171.144	171.36		
+320	171.218	171.34		
+340	171.293	171.36		
+360	171.367	171.39		
+380	171.442	171.44		
+400	171.490	171.49		
+415			170.791	170.791
+420				
+440	171.559	171.51	170.860	170.860
+450	171.608	171.57	170.970	170.970
+460	171.669	171.63		
+480	171.820	171.73	171.121	171.121
+500	171.988	171.90	171.289	171.289
+510	172.068	171.99	171.449	171.449
+520	172.147	172.09		
+540	172.297	172.19	171.598	171.598
+560	172.443	172.32	171.744	171.744

ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	TITLE: DRAINAGE PROFILE (15/18)	SCALE: H=1:2000 V=1:200	DRAWING No: DR-68 Rv.

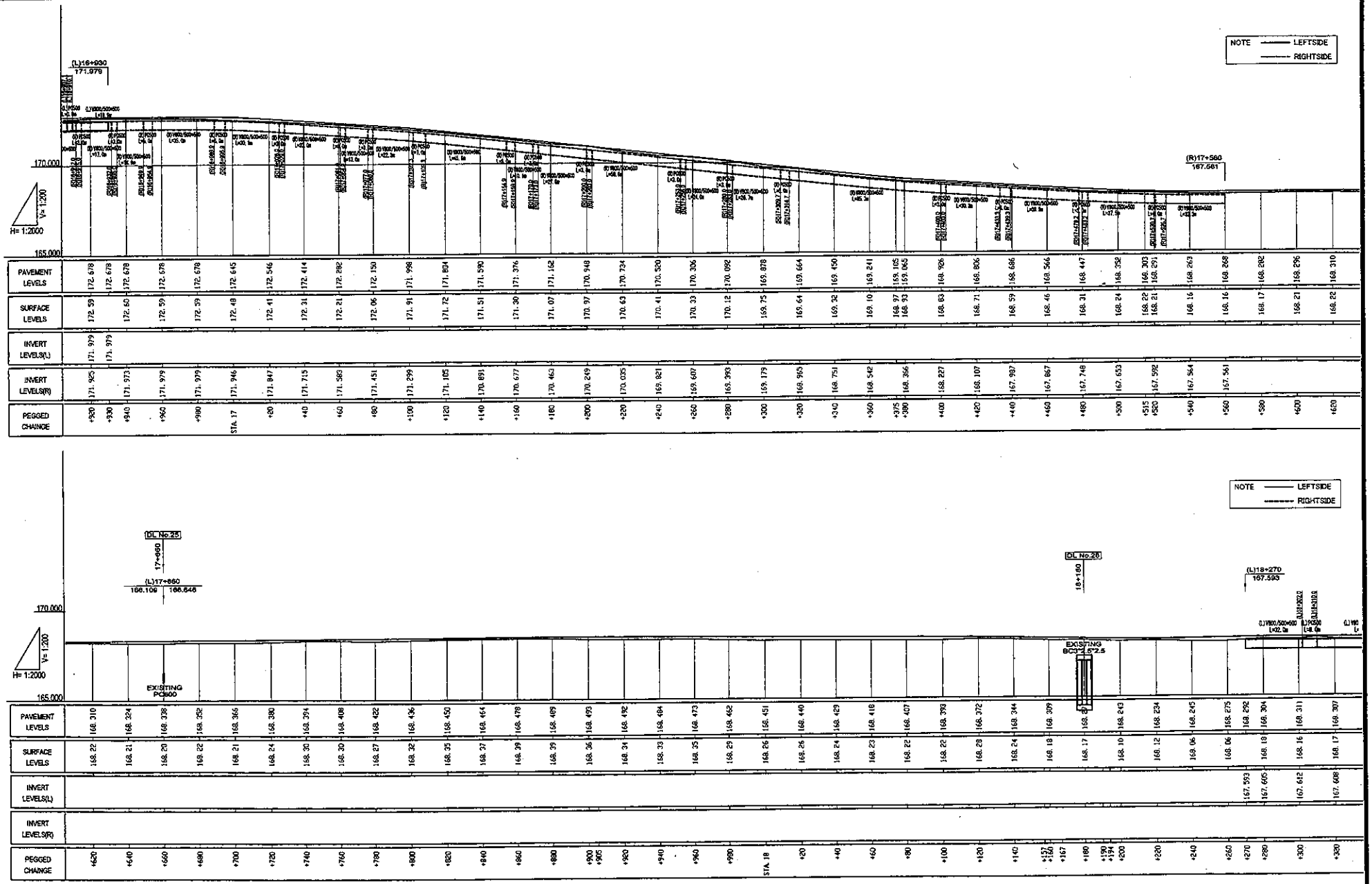


PEGGED CHAINGE	PAVEMENT LEVELS	SURFACE LEVELS	INVERT LEVELS(L)	INVERT LEVELS(R)
+560	172.443	172.32	171.744	171.744
+580	172.589	172.46	171.699	171.690
+600	172.735	172.65	171.976	172.010
+620	172.881	172.77	172.153	172.122
+640	173.027	172.92	172.328	172.300
+660	173.173	173.05	172.474	172.474
+680	173.319	173.19	172.620	172.620
+700	173.465	173.37	172.766	172.766
+720	173.611	173.53	172.912	172.912
+740	173.757	173.64	173.058	173.058
+760	173.903	173.81	173.204	173.204
+780	174.044	173.94	173.345	173.345
+800	174.147	174.05	173.448	173.448
+820	174.208	174.10	173.509	173.509
+840	174.231	174.14	173.532	173.532
+860	174.249	174.16	173.550	173.550
+880	174.267	174.17	173.568	173.568
+900	174.285	174.17	173.585	173.585
+920	174.290	174.11	173.471	173.531
+940	174.028	173.90	173.306	173.378
+960	173.756	173.63	173.057	173.305
+980	173.492	173.41	172.795	173.095
STA. 16	173.232	173.16	172.533	172.931
+20	172.972	172.86	172.273	172.497
+40	172.671	172.57	171.972	172.047
+60	172.268	172.21	171.589	171.589
+80	171.864	171.77	171.165	171.165
+100	171.440	171.36	170.741	170.741
+120	171.016	170.91	170.317	170.317
+140	170.592	170.49	169.893	169.893
+150	170.380	170.49	169.681	169.681
+160	170.168	170.05	169.469	169.469
+180	169.767	169.64	169.068	169.068
+200	169.447	169.35	168.748	168.748
+215	169.262	169.18	168.563	168.563
+220	169.211	169.13	168.512	168.512
+240	169.057	168.95	168.358	168.358
+260	168.987	168.89	168.288	168.288
+280	168.976	168.89		

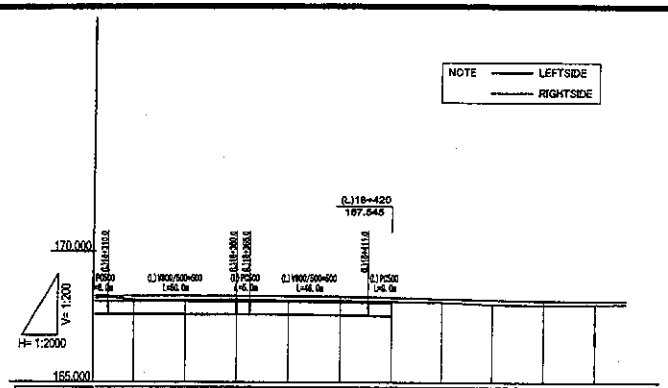


PEGGED CHAINGE	PAVEMENT LEVELS	SURFACE LEVELS	INVERT LEVELS(L)	INVERT LEVELS(R)
+240	169.057	168.95		168.358
+260	168.987	168.89		168.288
+280	168.976	168.83		
+300	168.968	168.82		
+320	168.960	168.85		
+340	168.952	168.84		
+360	168.944	168.84		
+380	168.936	168.79		
+400	168.928	168.81		
+420	168.920	168.79		
+440	168.912	168.80		
+460	168.904	168.81		
+467	168.896	168.77		
+468				
+480	168.896	168.79		
+500	168.953	168.82		
+520	169.069	168.95		
+540	169.231	169.16		
+560	169.496	169.38		
+580	169.796	169.66		
+600	170.104	169.98		
+620	170.412	170.33		
+640	170.563	170.61		
+650	170.709	170.69		169.864
+660	170.984	171.13		170.010
+680	171.237	171.36		170.285
+700	171.468	171.64		170.538
+720	171.688	171.79		170.769
+740	171.896	171.98		170.989
+760	172.079	172.12		171.197
+780	172.238	172.26		171.380
+800	172.372	172.31		171.539
+820	172.420	172.37		171.673
+830	172.482	172.45		171.783
+840	172.528	172.52	171.829	171.869
+850	172.548	172.53	171.869	171.930
+860	172.629	172.59	171.930	171.914
+880	172.666	172.60	171.967	171.925
+900	172.678	172.59	171.979	171.973
+920	172.678		171.979	171.979
+940	172.678			
+960	172.678			

ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	TITLE: DRAINAGE PROFILE (16/18)	SCALE: H=1:2000 V=1:200	DRAWING No: DR-69 Rv.

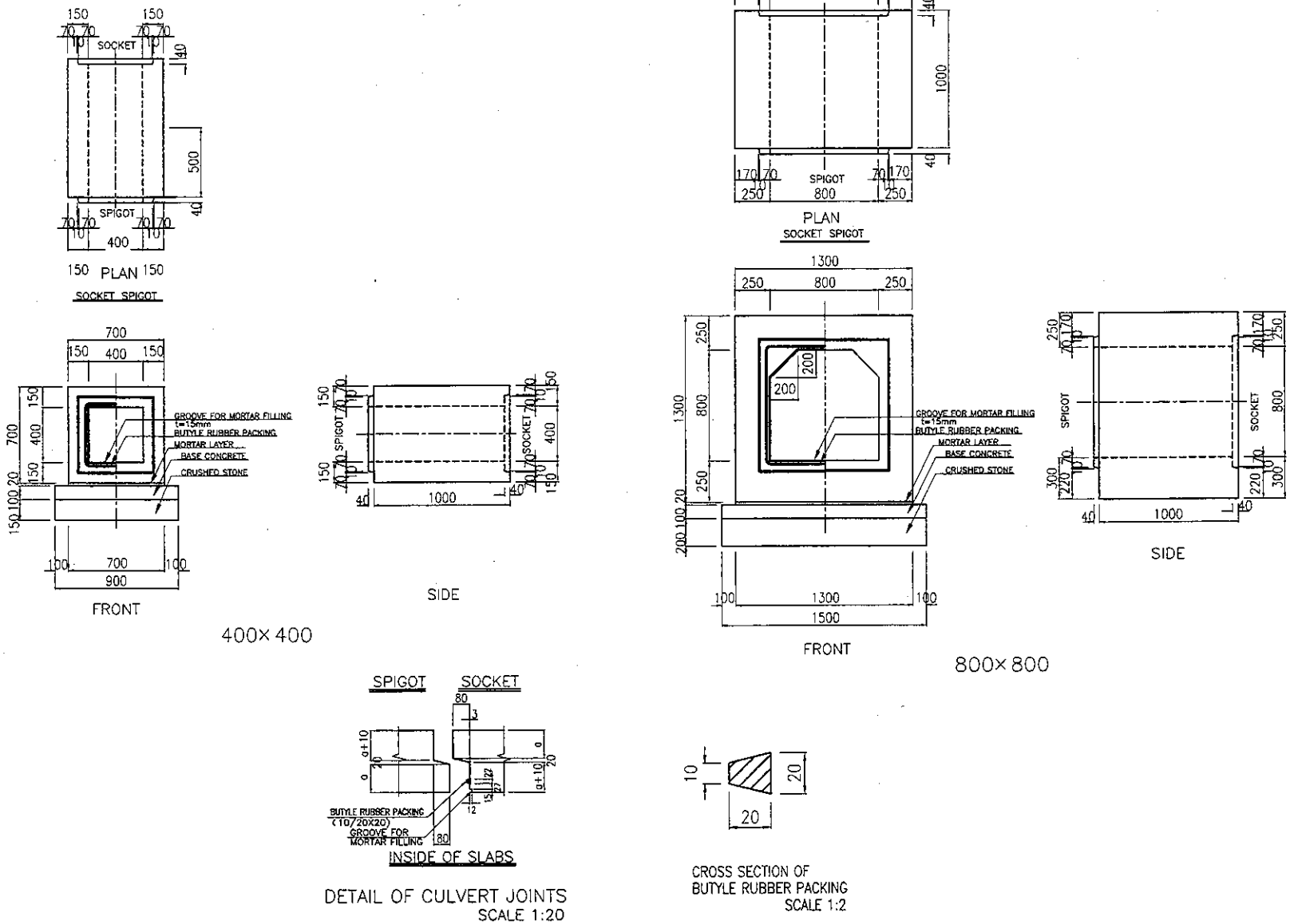


ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	TITLE: DRAINAGE PROFILE (17/18)	SCALE : H=1:2000 V=1:200	DRAWING No: DR-70 Rv.



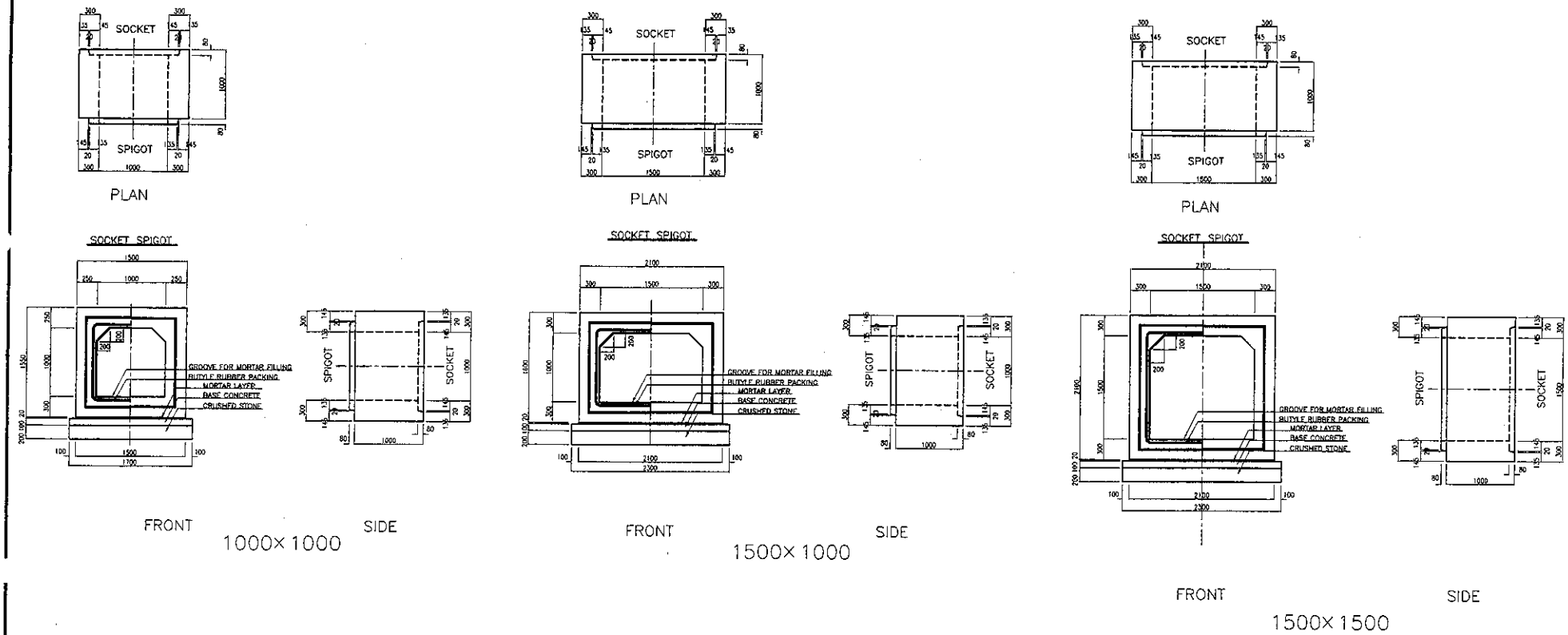
PEGGED CHAINGE	+320	+340	+360	+380	+400	+420	+440	+460	+480	+500
PAVEMENT LEVELS	168.307	168.303	168.299	168.290	168.272	168.244	168.207	168.171	168.147	168.135
SURFACE LEVELS	168.17	168.14	168.18	168.14	168.13	168.10	168.09	167.99	167.97	168.00
INVERT LEVELS(L)	167.609	167.604	167.600	167.591	167.573	167.545				
INVERT LEVELS(R)										

ROADS DEPARTMENT, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO, LTD	TITLE: DRAINAGE PROFILE (18/18)	SCALE: H=1:2000 V=1:200	DRAWING No: DR-71	Rv.



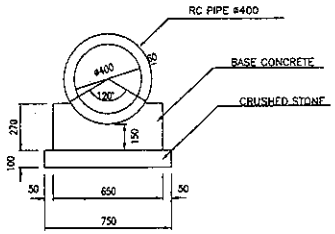
PRECAST REINFORCED BOX CULVERTS (1/2)

DEPARTMENT OF ROADS, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO,LTD	TITLE: STRUCTURAL DRAWING OF PRECAST REINFORCED BOX CULVERTS (1/2) 0.4*0.4,0.8*0.8	SCALE: 1:30	DRAWING No: DR-72 Rv.

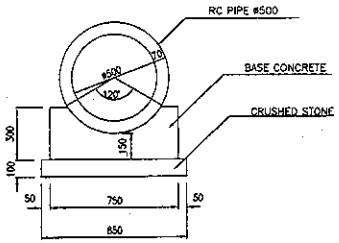


PRECAST REINFORCED BOX CULVERTS (2/2)

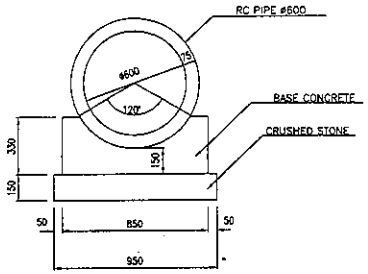
DEPARTMENT OF ROADS, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO,LTD	TITLE: STRUCTURAL DRAWING OF PRECAST REINFORCED BOX CULVERTS (2/2) 1.0*1.0,1.5*1.0,1.5*1.5	SCALE: 1:60	DRAWING No: DR-73 Rv.



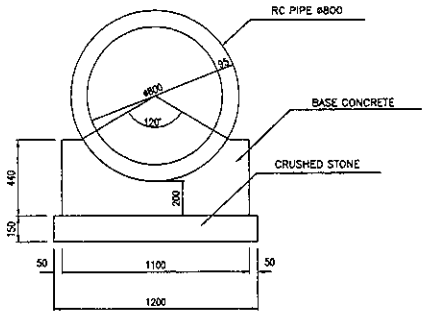
FOR ø400



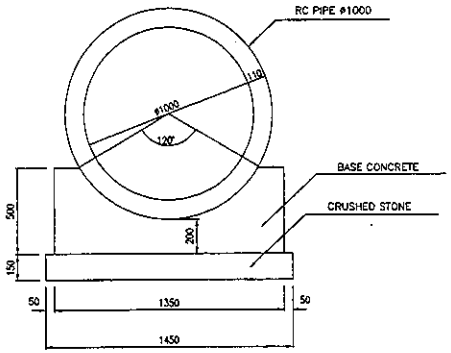
FOR ø500



FOR ø600



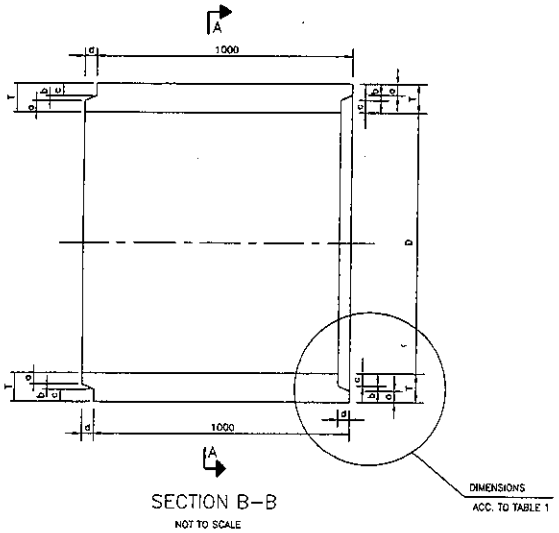
FOR ø800



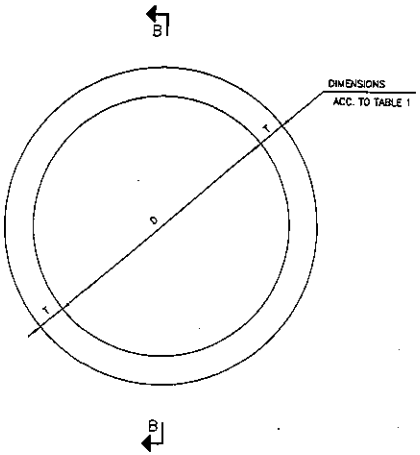
FOR ø1000

GENERAL CROSS SECTION

DEPARTMENT OF ROADS, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO,LTD	TITLE: RC PIPE IN 120° FOUNDATION	SCALE : 1:30	DRAWING No: DR-74 Rv.



SECTION B–B
NOT TO SCALE



SECTION A–A
NOT TO SCALE

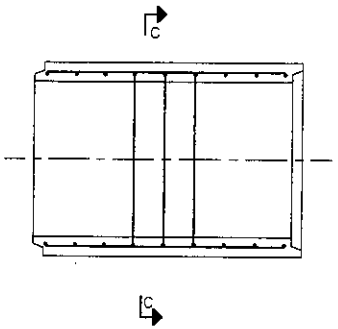
SOCKET AND SPIGOT TYPE
DIMENSIONS

TABLE 1

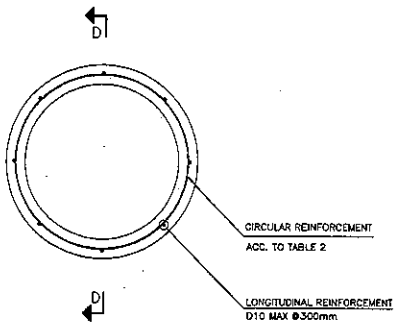
INSIDE DIAMETER D mm	WALL THICKNESS T mm	DIMENSIONS OF PIPE END DETAILS IN mm SOCKET AND SPIGOT			
		a	b	c	d
300	50	19	8	23	30
400	60	23	10	27	30
500	70	28	10	32	40
600	75	28	15	32	40
800	95	38	15	42	45
1000	110	43	20	47	45

TABLE 2

INSIDE DIAMETER D mm	MIN. CIRCULAR REINFORCEMENT (mm²/m)		CRUSHING LOAD TO PRODUCE 0.30mm CRACK WIDTH AND 310mm CRACKLENGTH kg/m	ULTIMATE CRUSHING LOAD kg/m	ULTIMATE STRENGTH FOR 152 X 304mm CONCRETE CYLINDER AT 28 DAY AGE MPa (N/mm²)
	INNER CAGE	OUTER CAGE			
300	150	–	3,060	4,590	30
400	250	–	4,080	6,120	
500	380	–	5,100	7,650	
600	570	–	6,120	9,180	
800	560	410	8,160	12,240	
1000	700	520	10,200	15,300	

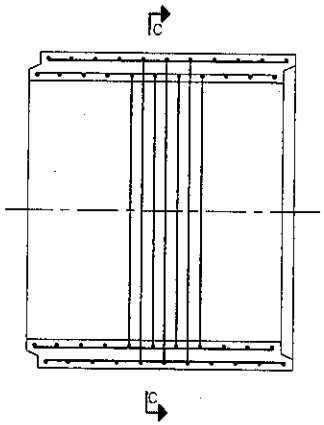


SECTION D–D
NOT TO SCALE

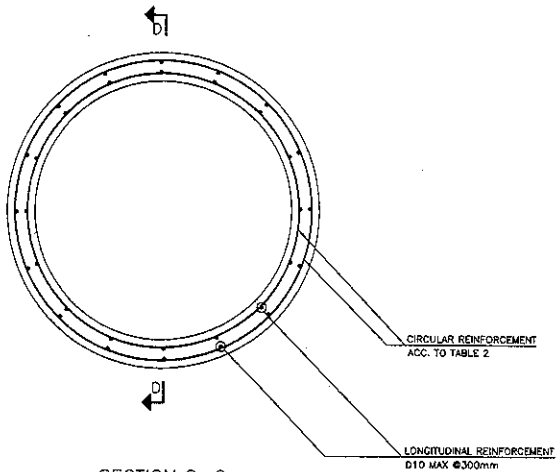


SECTION C–C
NOT TO SCALE

FOR ø300, 400, 500 and 600mm



SECTION D–D
NOT TO SCALE

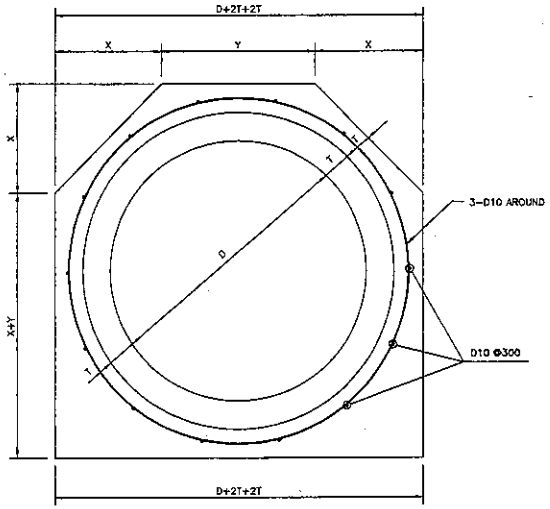


SECTION C–C
NOT TO SCALE

FOR ø800 and 1000mm

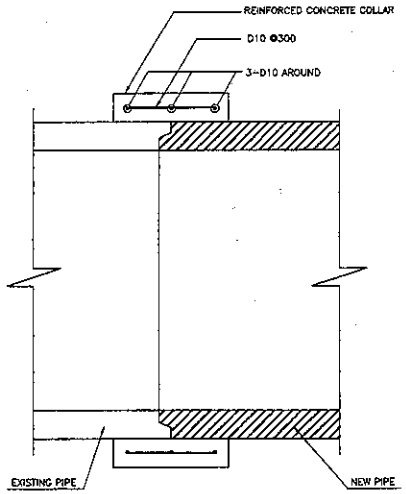
REINFORCEMENT

DEPARTMENT OF ROADS, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO,LTD	TITLE: DETAIL OF PRECAST REINFORCED CONCRETE PIPE	SCALE : Non scale	DRAWING No: DR-75 Rv.



TRANSVERSE SECTION

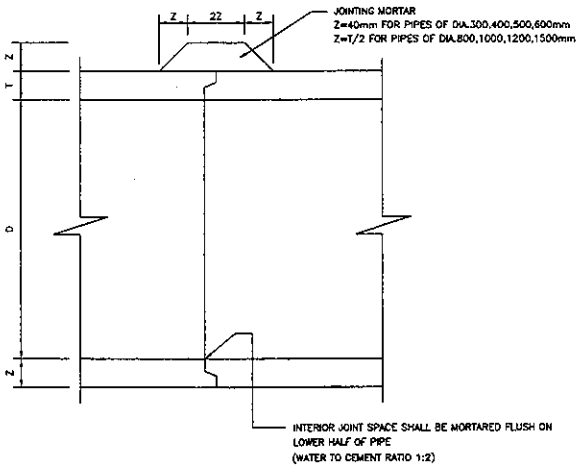
NOT TO SCALE



LONGITUDINAL SECTION

NOT TO SCALE

DETAIL OF PIPE EXTENSION

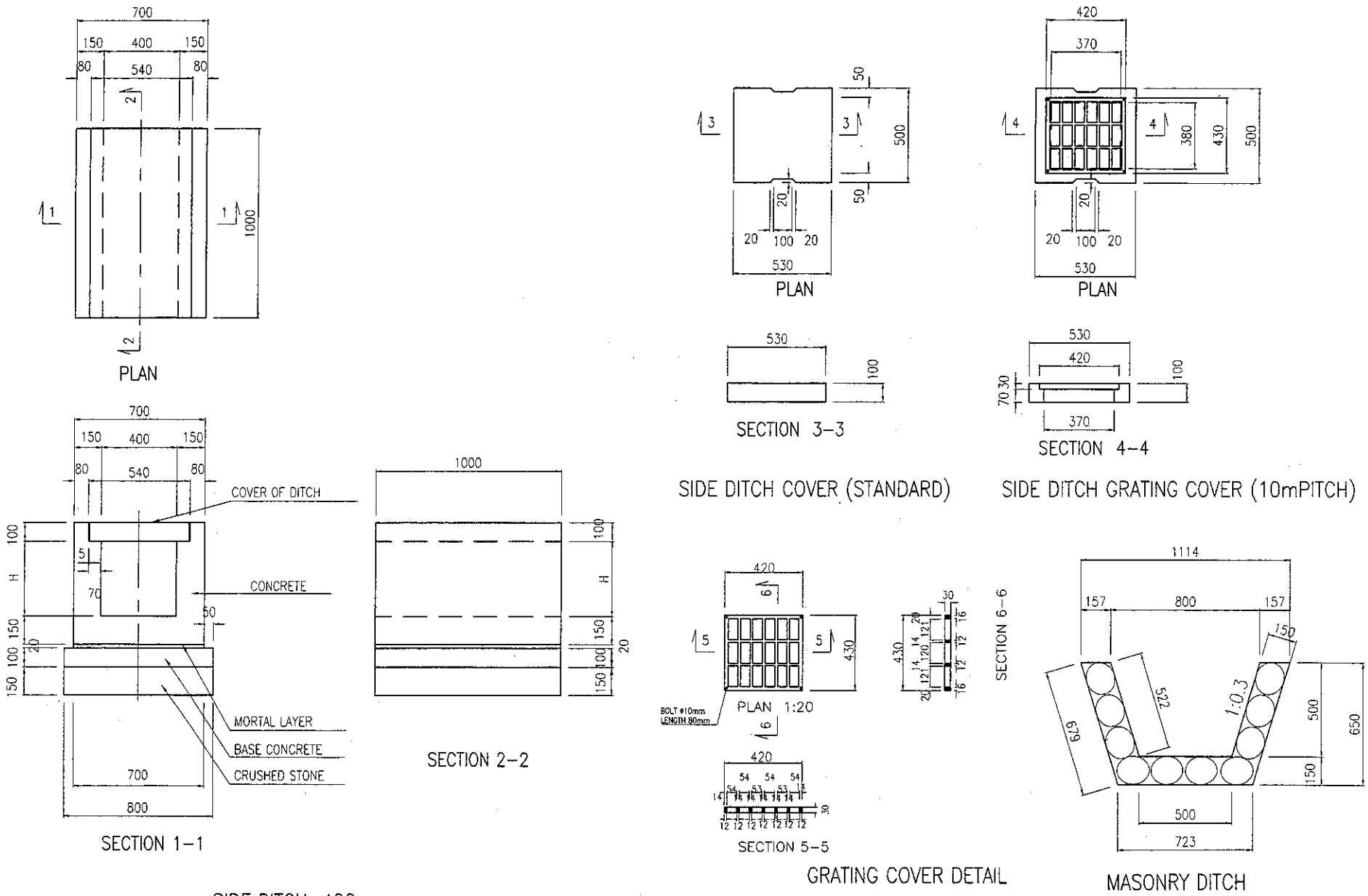


DETAIL OF PIPE CONNECTION JOINT

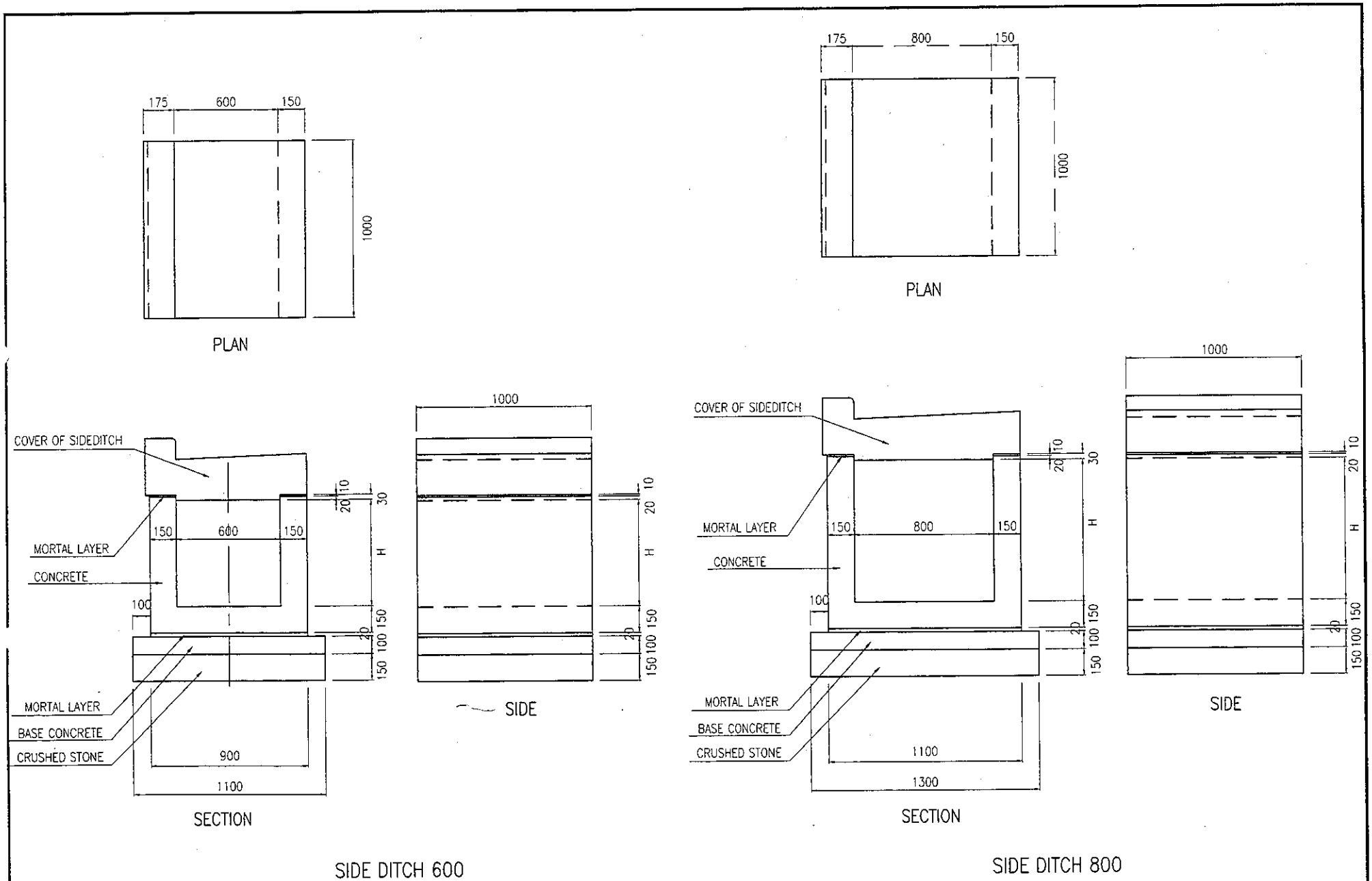
TABLE 3

INSIDE DIAMETER D mm	X mm	Y mm
300	150	200
400	195	250
500	240	300
600	250	400
800	340	500
1000	420	600

DEPARTMENT OF ROADS, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO,LTD	TITLE: REINFORCED CONCRETE PIPE JOINT	SCALE : Non scale	DRAWING No: DR-76 Rv.



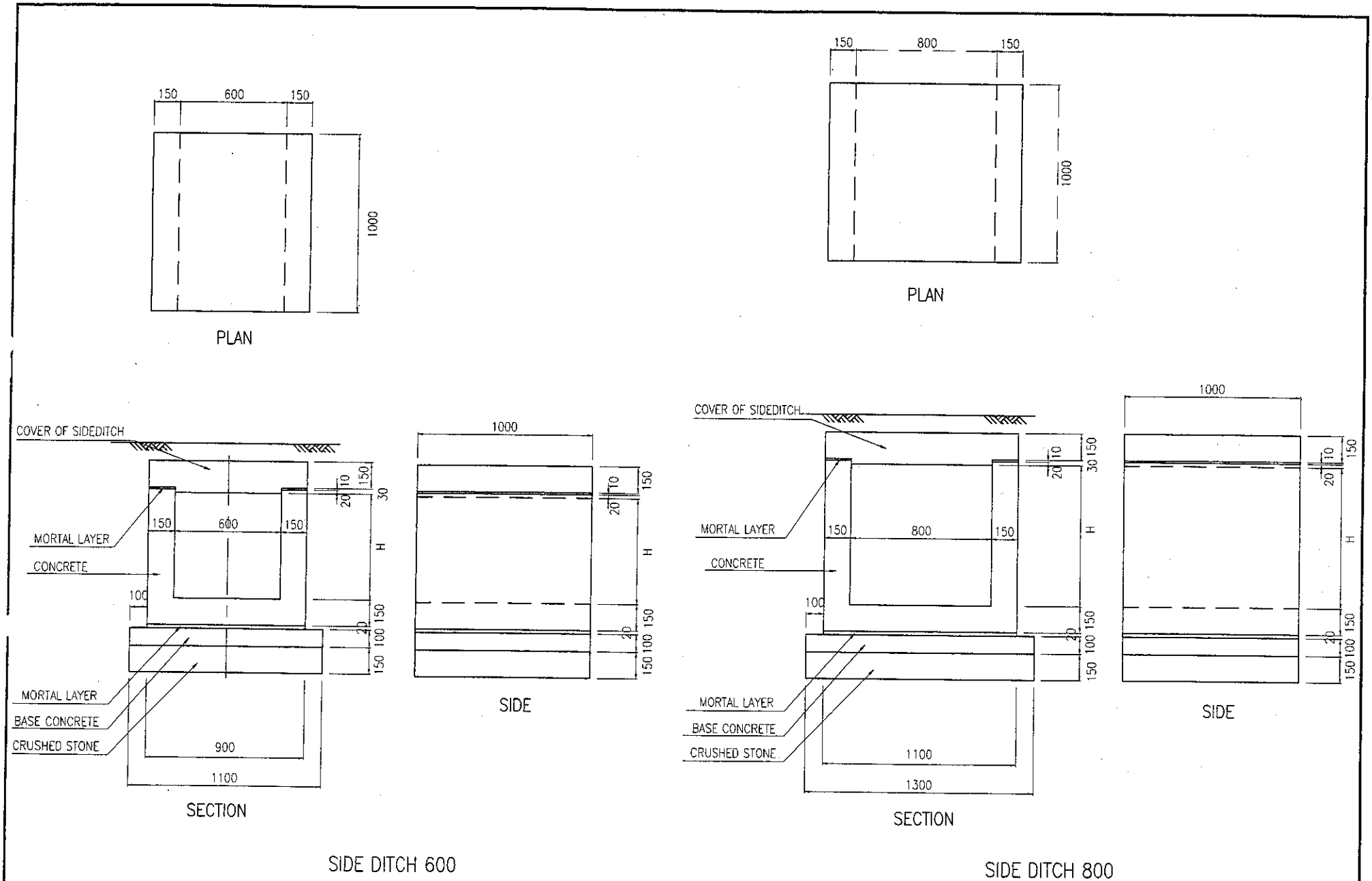
DEPARTMENT OF ROADS, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO,LTD	TITLE: STRUCTURAL DRAWING OF PRECAST REINFORCED DITCH(1/4)	SCALE : 1:20	DRAWING No: DR-77	Rv.



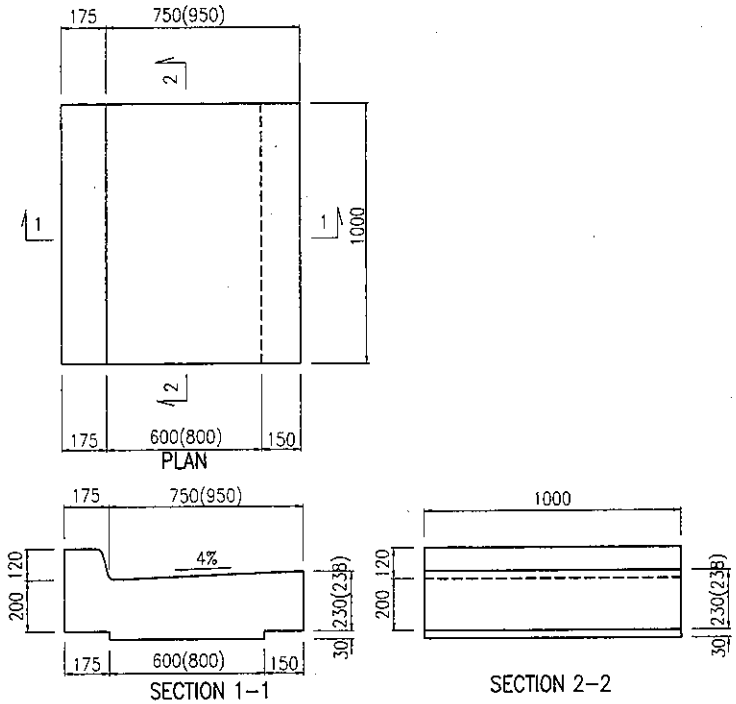
SIDE DITCH 600

SIDE DITCH 800

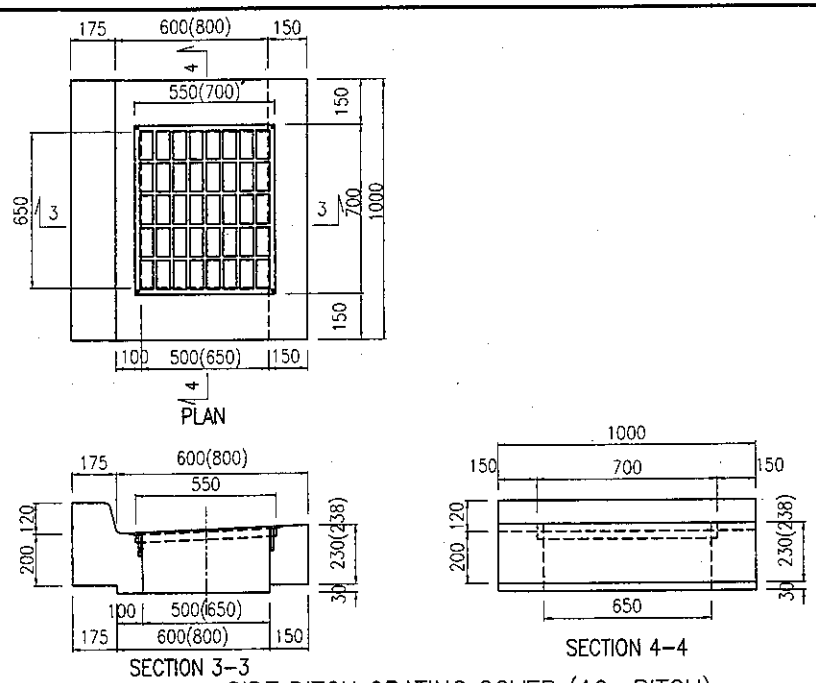
DEPARTMENT OF ROADS, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO,LTD	TITLE: STRUCTURAL DRAWING OF PRECAST REINFORCED DITCH(2/4)	SCALE: 1:20	DRAWING No: DR-78 Rv.



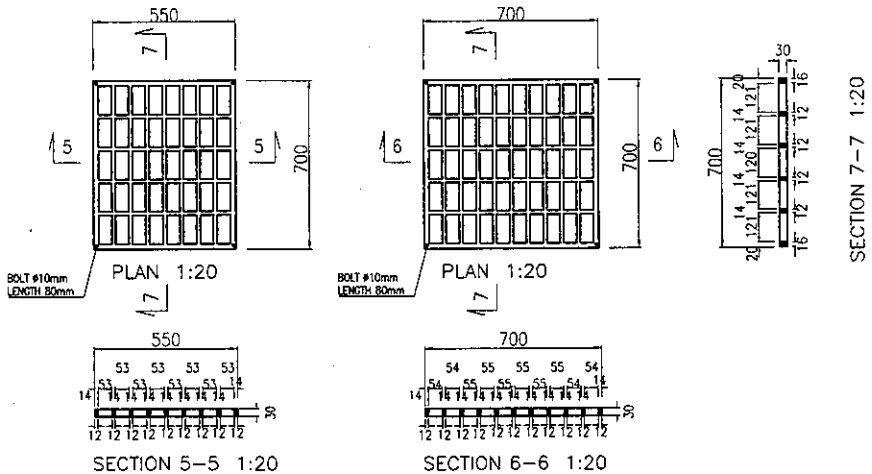
DEPARTMENT OF ROADS, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO,LTD	TITLE: STRUCTURAL DRAWING OF PRECAST REINFORCED DITCH(3/4)	SCALE: 1:20	DRAWING No: DR-79 Rv.



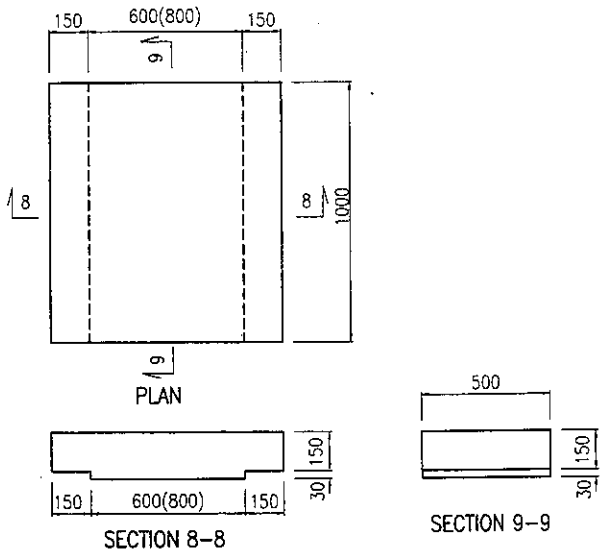
SIDE DITCH COVER (STANDARD)



SIDE DITCH GRATING COVER (10mPITCH)



GRATING COVER DETAIL



SIDE DITCH COVER

DEPARTMENT OF ROADS, MINISTRY OF COMMUNICATION TRANSPORT, POST AND CONSTRUCTION LAO PEOPLE'S DEMOCRATIC REPUBLIC	BASIC DESIGN STUDY ON THE PROJECT FOR THE IMPROVEMENT OF THE VIENTIANE NO.1 ROAD IN THE LAO PEOPLE'S DEMOCRATIC REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY KATAHIRA & ENGINEERS INTERNATIONAL CTI ENGINEERING INTERNATIONAL CO,LTD	TITLE: STRUCTURAL DRAWING OF PRECAST REINFORCED DITCH(4/4)	SCALE: 1:20	DRAWING No: DR-80 Rv.