

5. Outline Design Drawing

LIST OF DRAWINGS

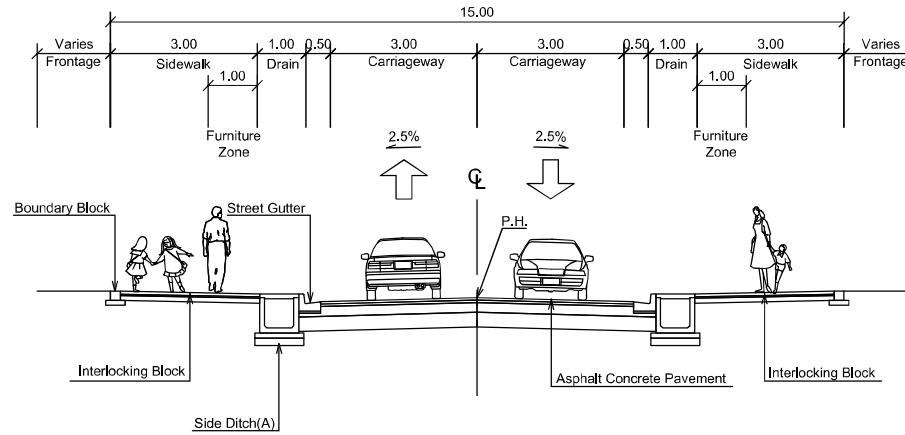
No.	DWG No.	TITLE	No.	DWG No.	TITLE
01	LD01	List of Drawings	41	CS03	Cross Sections (3) No.2 Acholi Rd. (1)
02	LM01	Location Map	42	CS04	Cross Sections (4) No.2 Acholi Rd. (2)
03	TC01	Typical Cross Sections (1) Type A - Type B	43	CS05	Cross Sections (5) No.2 Acholi Rd. (3)
04	TC02	Typical Cross Sections (2) Type C - Type D	44	CS06	Cross Sections (6) No.2 Acholi Rd. (4)
05	TC03	Typical Cross Sections (3) Type E	45	CS07	Cross Sections (7) No.2 Acholi Rd. (5)
06	PP01	Plan and Profile (1) Kampala Rd.-Andrea Olal Rd.-Nehru Rd.-Gulu Av.-Prince Rd. (1)	46	CS08	Cross Sections (8) No.3 Lagara Rd.
07	PP02	Plan and Profile (2) Kampala Rd.-Andrea Olal Rd.-Nehru Rd.-Gulu Av.-Prince Rd. (2)	47	CS09	Cross Sections (9) No.4 Coronation Rd.
08	PP03	Plan and Profile (3) Kampala Rd.-Andrea Olal Rd.-Nehru Rd.-Gulu Av.-Prince Rd. (3)	48	CS10	Cross Sections (10) No. 5 Andrea Olal Rd.
09	PP04	Plan and Profile (4) Labwor Rd.-Awere Rd. (1)	49	CS11	Cross Sections (11) No. 6 Nehru Rd.
10	PP05	Plan and Profile (5) Labwor Rd.-Awere Rd. (2)	50	CS12	Cross Sections (12) No.7 Gulu Av. (1)
11	PP06	Plan and Profile (6) Lagara Rd.-Coronation Rd.	51	CS13	Cross Sections (13) No.7 Gulu Av. (2)
12	PP07	Plan and Profile (7) Awich Rd.-Queens Av.	52	CS14	Cross Sections(14) No.8 Awich Rd.
13	PP08	Plan and Profile (8) Keyo Rd.-Aliker Rd.	53	CS15	Cross Sections(15) No.9 Qunees Av.
14	PP09	Plan and Profile (9) Oliya Rd.	54	CS16	Cross Sections(16) No.10 Keyo Rd.
15	PP10	Plan and Profile (10) Acholi Rd. (1)	55	CS17	Cross Sections(17) No.11 Aliker Rd.
16	PP11	Plan and Profile (11) Acholi Rd. (2)	56	CS18	Cross Sections(18) No.12 Labwor Rd.
17	PP12	Plan and Profile (12) Jomo Kenyatta Rd.	57	CS19	Cross Sections(19) No.13 Awere Rd. (1)
18	PP13	Plan and Profile (13) Bank Lane	58	CS20	Cross Sections(20) No.13 Awere Rd. (2)
19	PP14	Plan and Profile (14) Market St.	59	CS21	Cross Sections(21) No.14 Oliya Rd.
20	PP15	Plan and Profile (15) Harley Rd.	60	CS22	Cross Sections(22) No.17 Jomo Kenyatta Rd. (1)
21	JC01	Typical Layout of Roundabout	61	CS23	Cross Sections(23) No.17 Jomo Kenyatta Rd. (2)
22	PV01	Pavement Schedule	62	CS24	Cross Sections(24) No.18 Bank Lane (1)
23	PV02	Detail of Kerb	63	CS25	Cross Sections(25) No.18 Bank Lane (2)
24	PV03	Sidewalk General Section and Roadside Access for Vehicles	64	CS26	Cross Sections(26) No.19 Market St.
25	DR01	Drainage System	65	CS27	Cross Sections(27) No.20 Harley Rd.
26	DR02	Drainage Structures (1) Street Gutter,U-Ditch	66	CS28	Cross Sections(28) No.21 Prince Rd. (1)
27	DR03	Drainage Structures (2) Block	67	CS29	Cross Sections(29) No.21 Prince Rd. (2)
28	DR04	Drainage Structures (3) Block			
29	DR05	Drainage Structures (4) Catch Pit			
30	DR06	Drainage Structures (5) Open Channel, Pipe Culvert			
31	DR07	Drainage Structures (6) Energy Dissipator			
32	DR08	Drainage Structures (7) Box Culvert (Gulu Av.)			
33	DR09	Drainage Structures (8) Box Culvert (Awere Rd.)			
34	RW01	Stone Masonry Gravity Wall			
35	TS01	Traffic Safety Facilities (1) Road Markings And Raised Crosswalk			
36	TS02	Traffic Safety Facilities (2) Traffic Signs			
37	AW01	Ancillary Works (1) Project Monument			
38	AW02	Ancillary Works (2) Planting Works			
39	CS01	Cross Sections(1) No.1 Kampala Rd.(1)			
40	CS02	Cross Sections(2) No.1 Kampala Rd.(2)			

Notes:

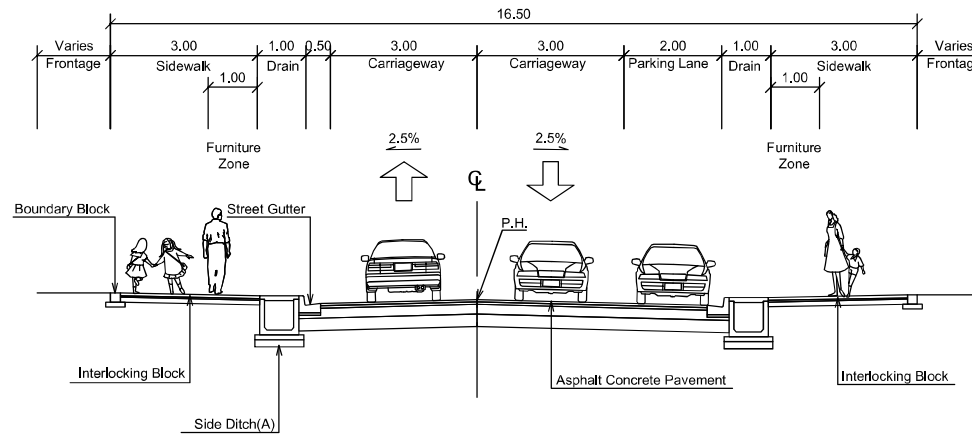
	Client		Consultant		Project:	The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads		
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)		EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.		Job:	List of Drawings		
					Scale:	NA	Drawing No.:	LD01

TYPICAL CROSS SECTIONS (1)

TYPE A



TYPE B



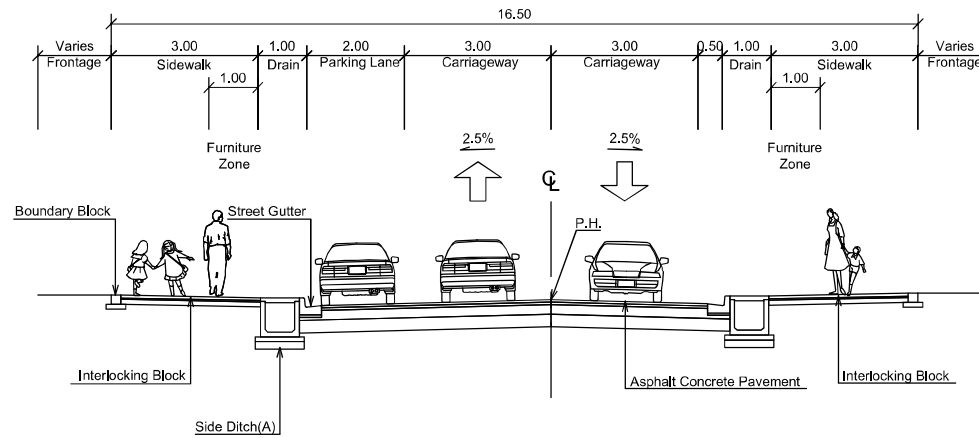
List of Project Road and Design Cross Section

Road No.	Road Name	Type of Cross Section
1	Kamoaia Rd	Type B
2	Achoii Rd (CBD)	Type E
	Achoii Rd (others)	Type A
3	Lagara Rd	Type A
4	Coronation Rd.	Type A
5	Andrea Gial Rd.	Type A
6	Nehru Rd.	Type A
7	Gulu Ave.	Type A
8	Awich Rd.	Type B
9	Queens Ave.	Type A
10	Keyo Rd.	Type C
11	Aliker Rd.	Type A
12	Labwor Rd.	Type A
13	Awere Rd.	Type A
14	Oliya Rd.	Type A
17	Jomo Kenyatta Rd.	Type A
18	Bank Lane	Type C
19	Market St.	Type D
20	Harley Rd.	Type A
21	Prince Rd.	(Overlay)

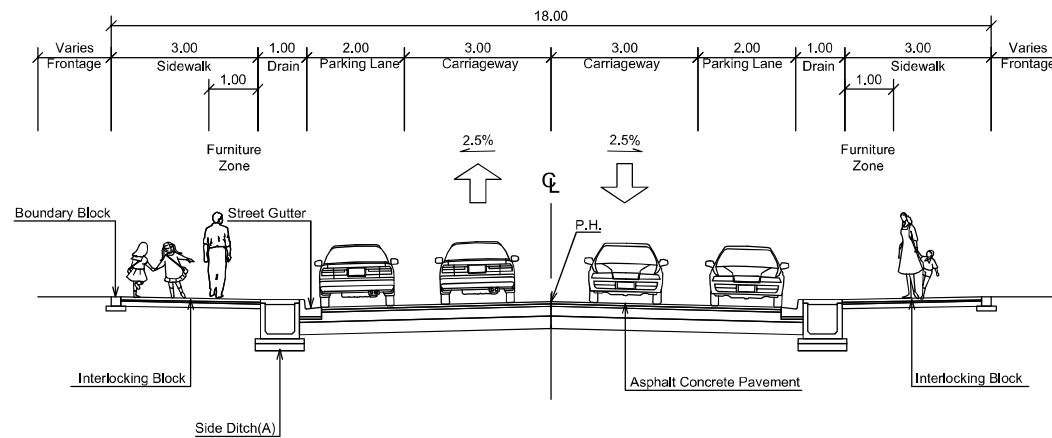
Notes:	Client	Consultant	Project:	The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads		
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job:	Typical Cross Sections (1) Type A-Type B		
			Scale:	1/100	Drawing No.:	TC01
				Date:		

TYPICAL CROSS SECTIONS (2)

TYPE C



TYPE D



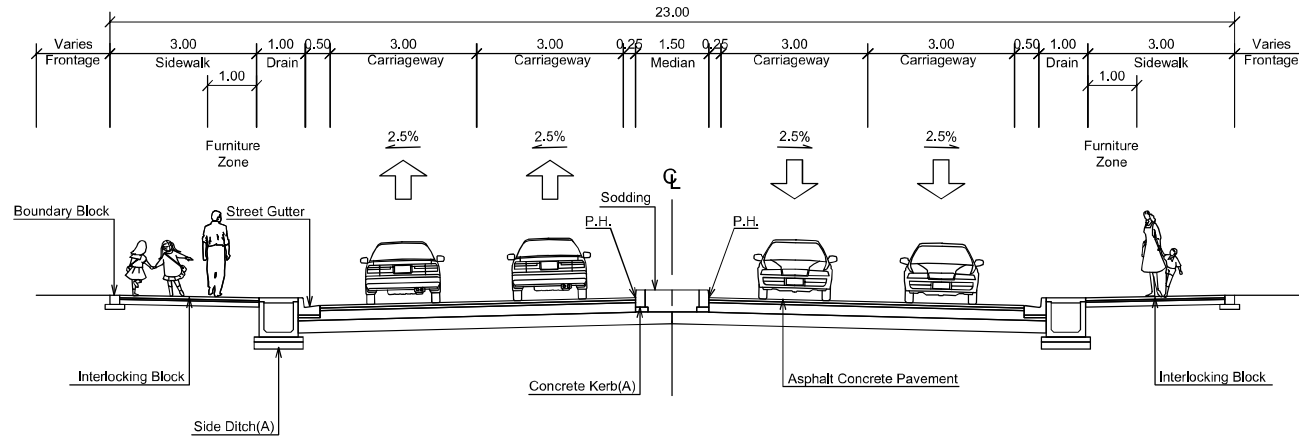
List of Project Road and Design Cross Section

Road No.	Road Name	Type of Cross Section
1	Kamoola Rd	Type B
2	Achoii Rd (CBD)	Type E
	Achoii Rd (others)	Type A
3	Lagara Rd	Type A
4	Coronation Rd.	Type A
5	Andrea Gial Rd.	Type A
6	Nehru Rd.	Type A
7	Gulu Ave.	Type A
8	Awich Rd.	Type B
9	Queens Ave.	Type A
10	Keyo Rd.	Type C
11	Aliker Rd.	Type A
12	Labwor Rd.	Type A
13	Awere Rd.	Type A
14	Oliya Rd.	Type A
17	Jomo Kenyatta Rd.	Type A
18	Bank Lane	Type C
19	Market St.	Type D
20	Harley Rd.	Type A
21	Prince Rd.	(Overlay)

Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads		
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Typical Cross Sections (2) Type C-Type D		
			Scale: 1/100	Drawing No.: TC02	Date:

TYPICAL CROSS SECTIONS (3)

TYPE E



List of Project Road and Design Cross Section

Road No.	Road Name	Type of Cross Section
1	Kamoola Rd	Type B
2	Achoii Rd (CBD)	Type E
	Achoii Rd. (others)	Type A
3	Lagara Rd.	Type A
4	Coronation Rd.	Type A
5	Andrew Olal Rd.	Type A
6	Nehru Rd.	Type A
7	Gulu Ave.	Type A
8	Awich Rd.	Type B
9	Queens Ave.	Type A
10	Keyo Rd.	Type C
11	Aliker Rd.	Type A
12	Labwor Rd.	Type A
13	Awera Rd.	Type A
14	Oliya Rd.	Type A
17	Jomo Kenyatta Rd.	Type A
18	Bank Lane	Type C
19	Market St.	Type D
20	Harley Rd.	Type A
21	Prince Rd.	(Overlay)

Notes:	Client	Consultant	Project:	The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads			
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job:	Typical Cross Sections (3) Type E			
			Scale:	1/100	Drawing No.:	TC03	Date:

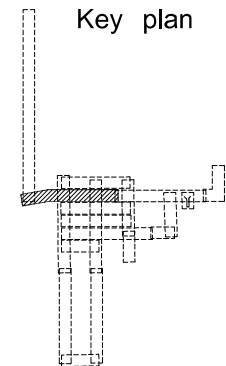
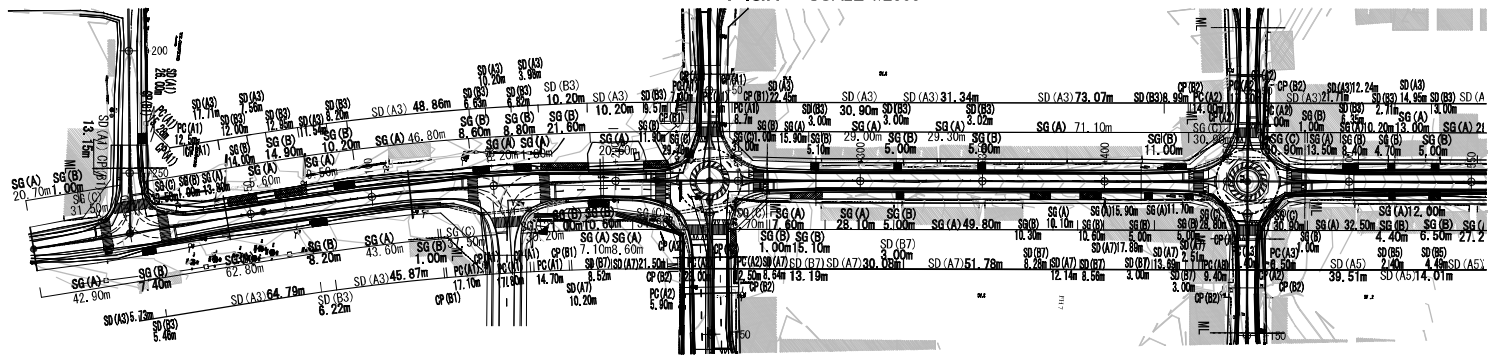
PLAN AND PROFILE(1)

No.1 Kampala Rd. - No. 5 Andrea Olal Rd.

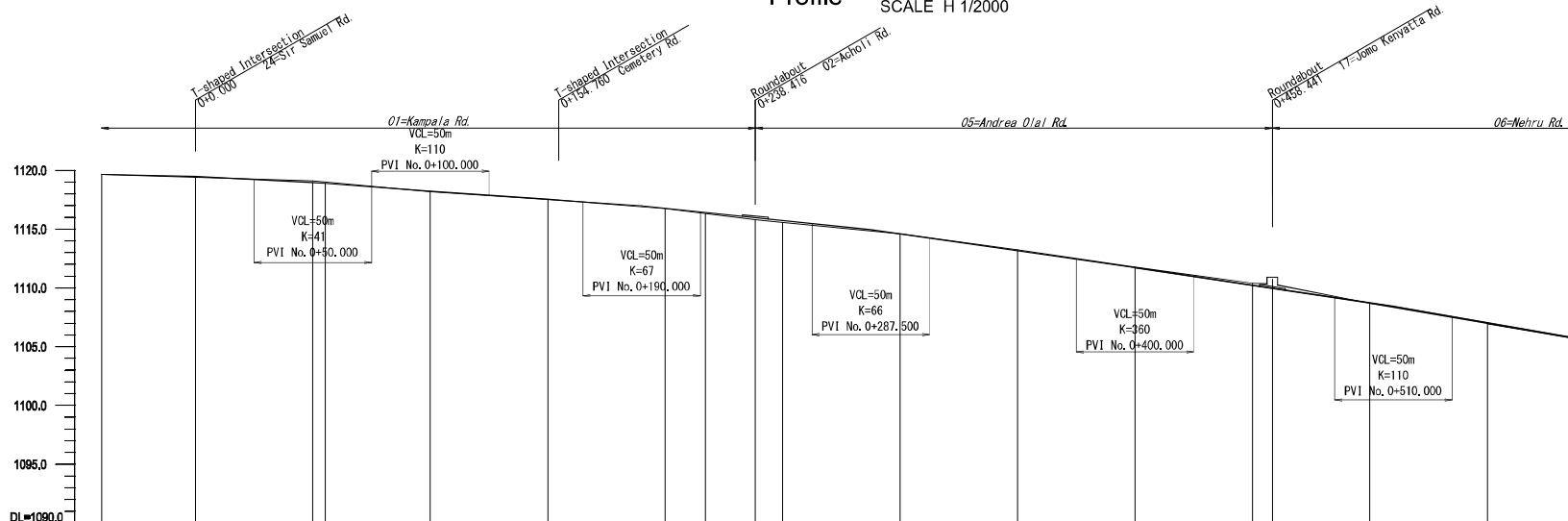
Key plan



Plan SCALE 1/2000



Profile SCALE V 1/400 H 1/2000



GRADIENT	100.00%	-0.600%	-1.800%	-1.350%	-1.000%	-1.100%	-2.860%	-1.117%	-3.000%	-1.084%	-3.460%
PROPOSED HEIGHT	1118.117	1118.117	1118.079	1118.245	1117.541	1116.954	1114.931	1114.585	1113.166	1111.727	1107.052
GROUND HEIGHT	1118.676	1118.676	1118.600	1118.270	1117.562	1116.957	1114.621	1114.621	1113.246	1111.778	1108.691
STATION	0+000	0+000	50+000	100+000	150+000	200+000	250+000	300+000	350+000	400+000	500+000

Legend

Symbol	Name
SG(A)	Street Gutter(A)
SG(B)	Street Gutter(B)
SG(C)	Street Gutter(C)
SD(A)	Side Ditch(A)
SD(B)	Side Ditch(B)
PC(A)	Pipe Culvert(A)
CP(A)	Catch Pit(A)
CP(B)	Catch Pit(B)
OC(A)	Open Channel(A)

n by Dimension of Side Ditch

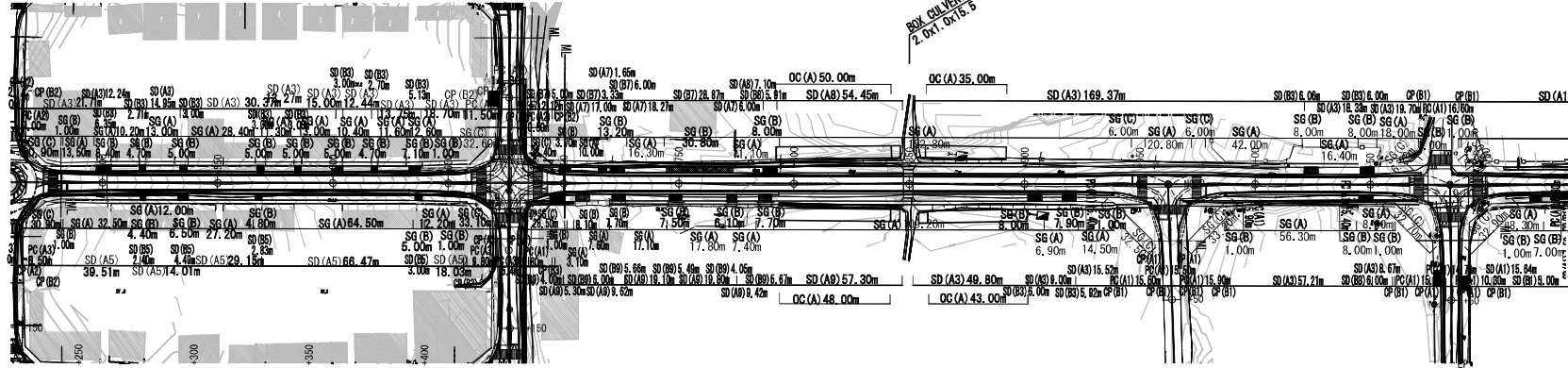
Notes:	Client	Consultant	Project:	The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads		
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job:	Plan and Profile (1) No.1 Kampala Rd. - No. 5 Andrea Olal Rd.		
			Scale:	H:1/2000 V:1/400	Drawing No.:	PP01
				Date:		

PLAN AND PROFILE(2)

No. 6 Nehru Rd. - No.7 Gulu Av

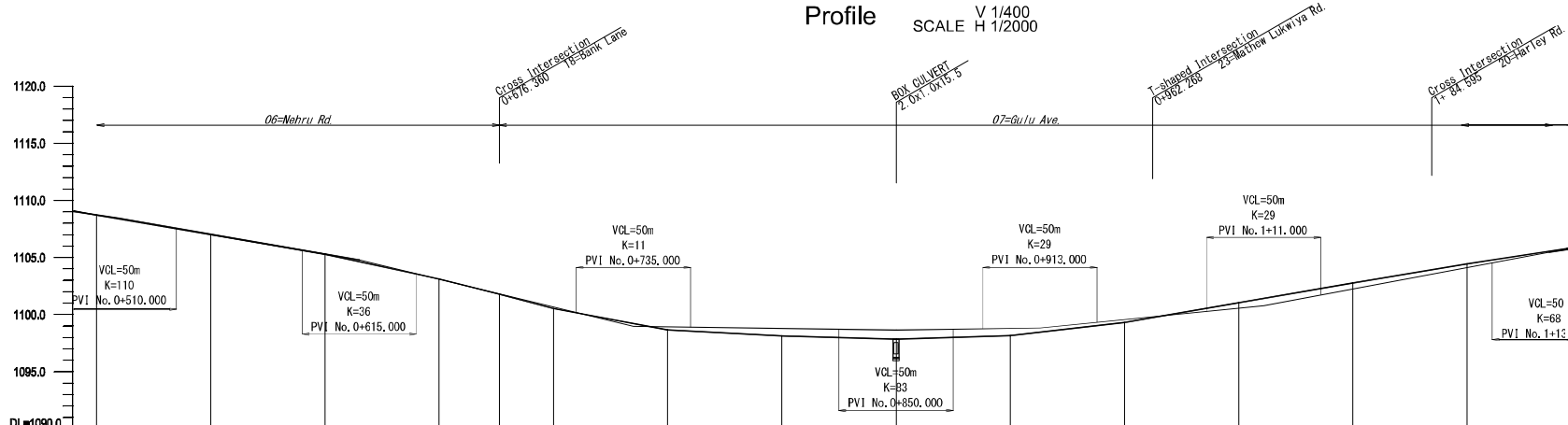
Plan SCALE 1/2000

Key plan



Profile

SCALE V 1/400
H 1/2000



GRADIENT	$\frac{-1.008433}{L=105.000m}$	$\frac{-3.460\%}{L=105.000m}$	$\frac{-1.008803}{L=115.000m}$	$\frac{-4.840\%}{L=115.000m}$	$\frac{-0.300\%}{L=115.000m}$	$\frac{0.300\%}{L=63.000m}$	$\frac{2.000\%}{L=98.000m}$	$\frac{3.740\%}{L=125.000m}$	$\frac{-1.005473}{L=125.000m}$												
PROPOSED HEIGHT	1108.293	1108.407	1107.632	1105.308	1104.717	1103.103	1101.833	1100.689	1098.955	1088.830	1088.688	1088.688	1088.821	1088.945	1088.833	1088.573	1100.633	1100.938	1102.258	1104.128	1105.425
GROUND HEIGHT	1108.715	1108.407	1103.690	1105.303	1103.143	1101.801	1100.527	1098.663	1098.101	1088.141	1087.889	1088.171	1088.321	1088.521	1089.521	1101.047	1101.647	1102.770	1104.477	1104.128	1105.425
STATION	500.000	510.000	550.000	600.000	615.000	650.000	675.301	700.000	735.000	750.000	800.000	850.000	900.000	915.000	950.000	1000.000	1040.000	1080.000	1100.000	1100.000	1135.000

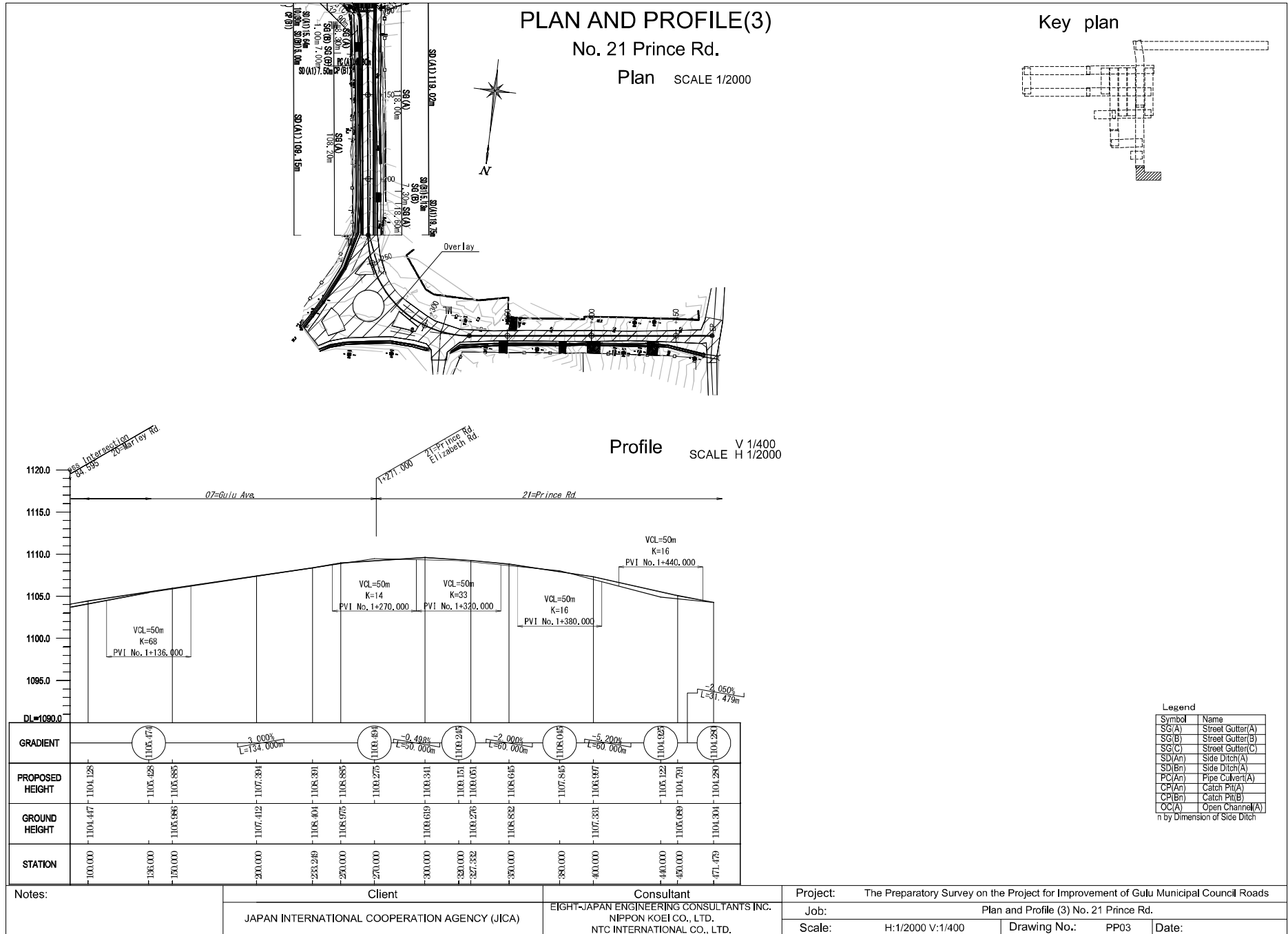
Legend

Symbol	Name
SG(A)	Street Gutter(A)
SG(B)	Street Gutter(B)
SG(C)	Street Gutter(C)
SD(A)	Side Ditch(A)
SD(B)	Side Ditch(B)
PC(A)	Pipe Culvert(A)
CP(A)	Catch Pit(A)
OC(A)	Open Channel(A)

n by Dimension of Side Ditch

Notes:	Client	Consultant	Project:	The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads		
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job:	Plan and Profile (2) No. 6 Nehru Rd.- No.7 Gulu Av		
			Scale:	H:1/2000 V:1/400	Drawing No.:	PP02
			Date:			

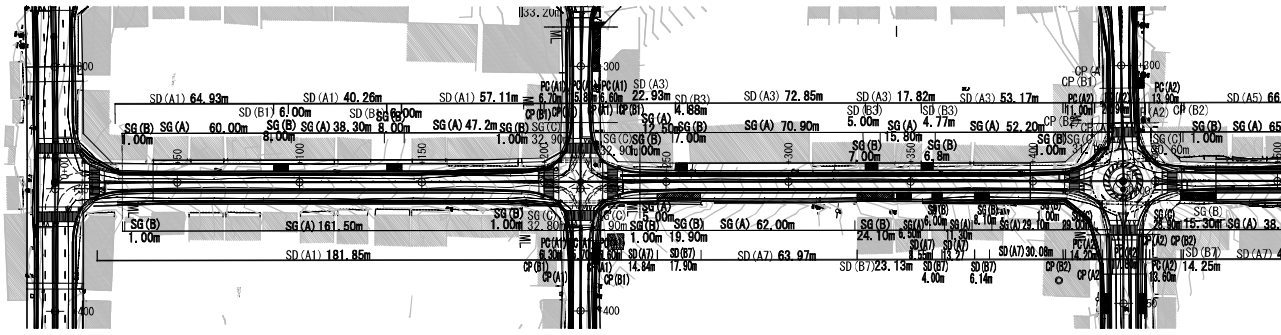
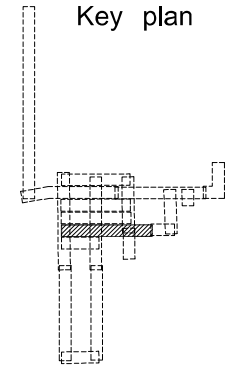
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PLAN AND PROFILE(4)

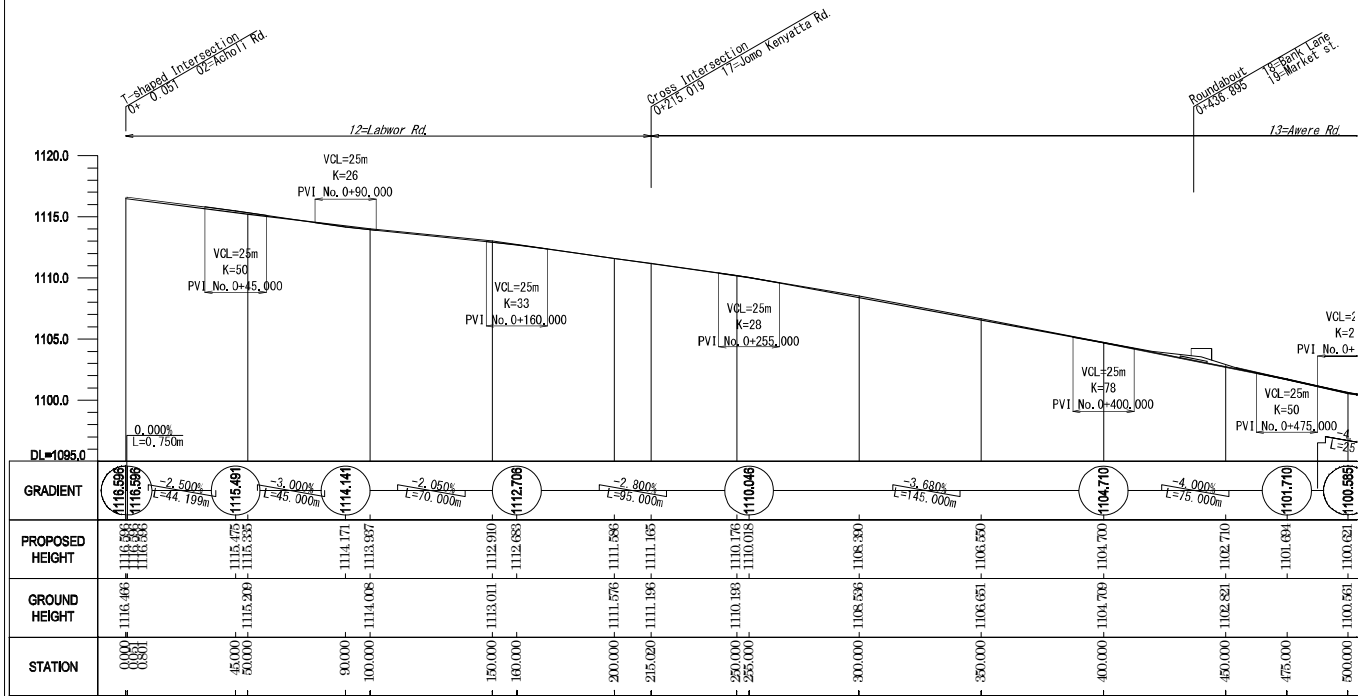
No.12 Labwor Rd. - No.13 Awere Rd.(1)

Plan SCALE 1/2000



Profile

SCALE V 1/400
SCALE H 1/2000



Legend

Symbol	Name
SG(A)	Street Gutter(A)
SG(B)	Street Gutter(B)
SG(C)	Street Gutter(C)
SD(A)	Side Ditch(A)
SD(B)	Side Ditch(B)
CP(A)	Pipe Culvert(A)
CP(B)	Catch Pit(A)
OC(A)	Open Channel(A)

n by Dimension of Side Ditch

Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads	
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job:	Plan and Profile (4) No.12 Labwor Rd.- No.13 Awere Rd.(1)
			Scale:	H:1/2000 V:1/400
			Drawing No.:	PP04
			Date:	

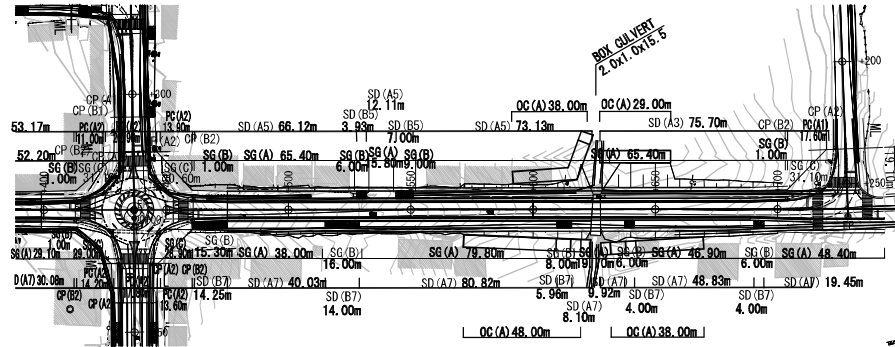
PLAN AND PROFILE(5)

No.12 Labwor Rd. - No.13 Awere Rd.(2)

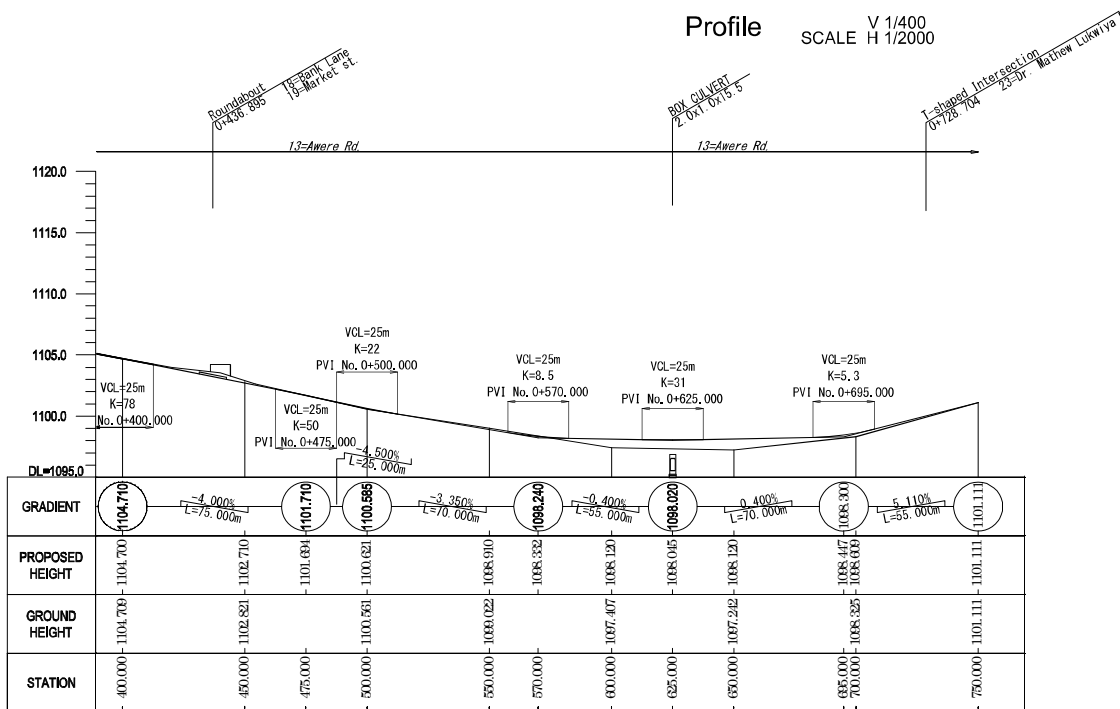
Key plan



Plan SCALE 1/2000



Profile SCALE V 1/400 H 1/2000



Legend

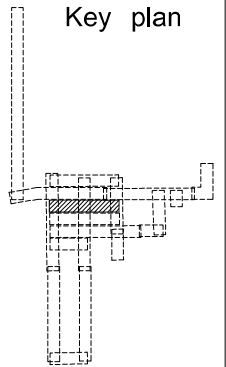
Symbol	Name
SG(A)	Street Gutter(A)
SG(B)	Street Gutter(B)
SG(C)	Street Gutter(C)
SD(A)	Side Ditch(A)
SD(B)	Side Ditch(B)
PCI(A)	Pipe Culvert(A)
CP(A)	Catch Pit(A)
CP(B)	Catch Pit(B)
OC(A)	Open Channel(A)

n by Dimension of Side Ditch

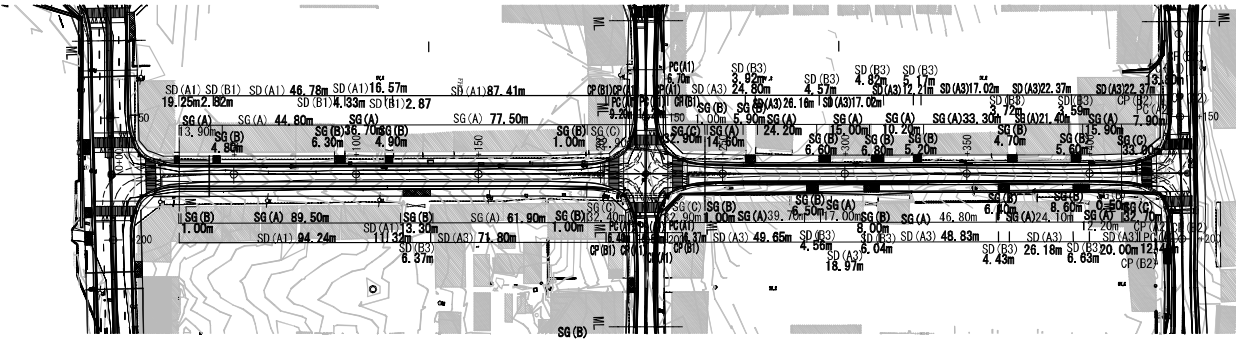
Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads		
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job:	Plan and Profile (5) No.12 Labwor Rd. - No.13 Awere Rd.(2)	
			Scale:	H:1/2000 V:1/400	Drawing No.: PP05
				Date:	

PLAN AND PROFILE(7)

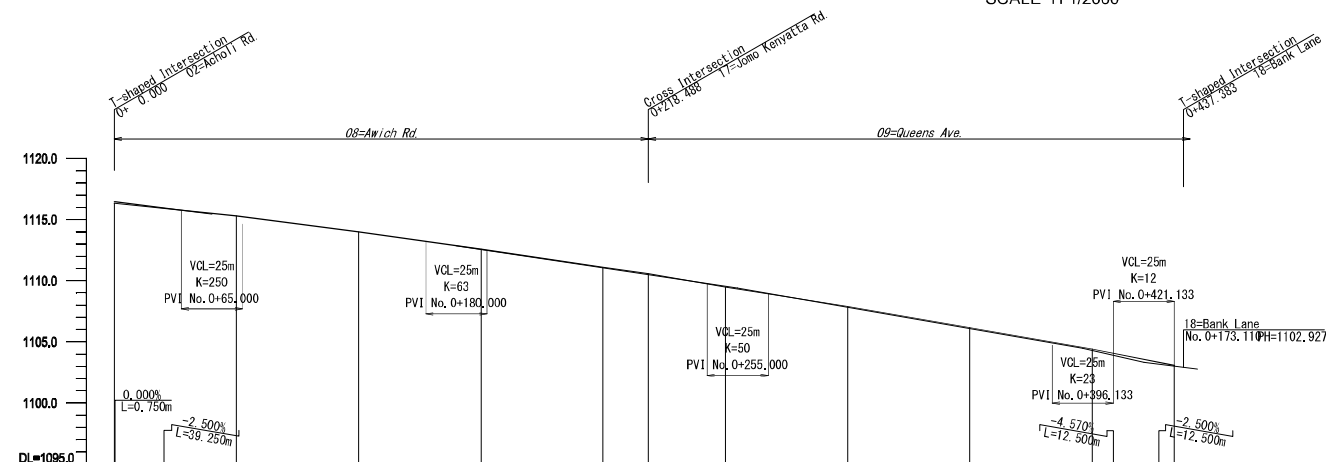
No.8 Awich Rd. - No.9 Quees Av.



Plan SCALE 1/2000



Profile SCALE V 1/400
SCALE H 1/2000



GRADIENT	0.000% $L=0.750m$ -2.500% $L=39.250m$ -3.600% $L=100.000m$ -1.128805 $L=175.000m$ -3.000% $L=175.000m$ -3.500% $L=141.130m$ -4.570% $L=12.500m$ -2.500% $L=12.500m$												
PROPOSED HEIGHT	1116.447	1116.447	1116.42	1116.205	1116.95	1116.82	1116.95	1111.06	1110.51	1107.80	1106.00	1104.42	1103.21
GROUND HEIGHT	1116.39	1116.39	1116.28	1116.28	1116.20	1116.28	1116.28	1111.06	1116.73	1107.80	1106.71	1104.42	1103.07
STATION	8.950	4.00	39.250	100.000	146.000	160.000	200.000	216.488	255.000	300.000	390.000	396.533	409.033

Legend

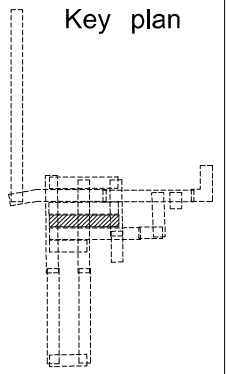
Symbol	Name
SG(A)	Street Gutter(A)
SG(B)	Street Gutter(B)
SG(C)	Street Gutter(C)
SD(A)	Side Ditch(A)
SD(B)	Side Ditch(B)
PCI(A)	Pipe Culvert(A)
CP(A)	Catch Pit(A)
CP(B)	Catch Pit(B)
OC(A)	Open Channel(A)

n by Dimension of Side Ditch

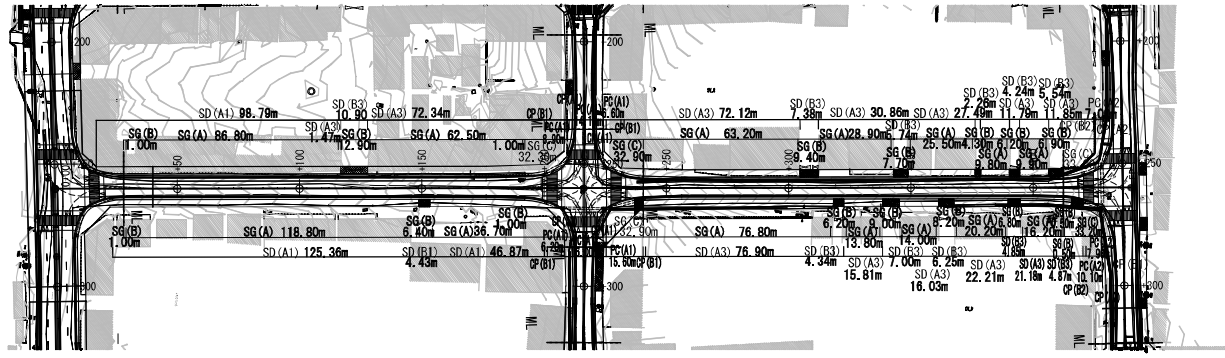
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Notes:	Client	Consultant	Project:	
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job:	The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads Plan and Profile (7) No.8 Awich Rd.- No.9 Quees Av.
			Scale:	H:1/2000 V:1/400 Drawing No.: PP07 Date:

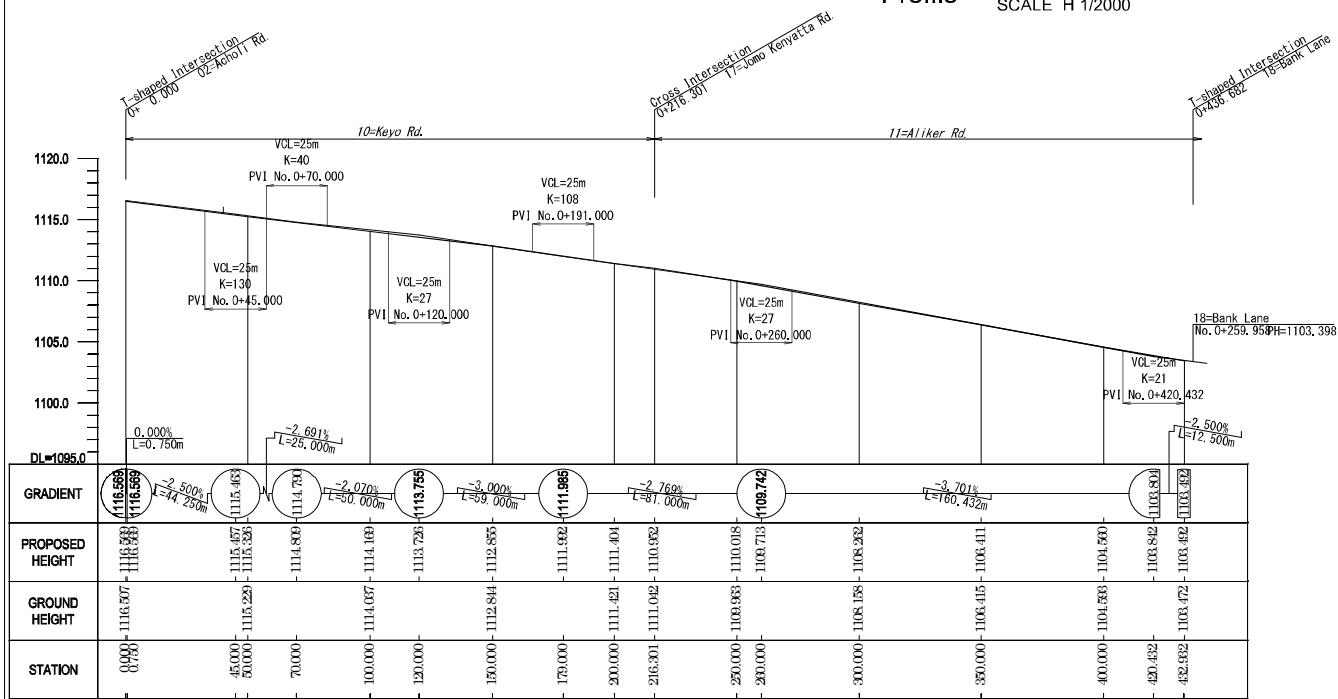
PLAN AND PROFILE(8) No.10 Keyo Rd. - No.11 Aliko Rd.



Plan SCALE 1/2000



Profile SCALE V 1/400
SCALE H 1/2000



Legend

Symbol	Name
SG(A)	Street Gutter(A)
SG(B)	Street Gutter(B)
SG(C)	Street Gutter(C)
SD(A)	Side Ditch(A)
SD(B)	Side Ditch(B)
PCI(A)	Pipe Culvert(A)
CP(A)	Catch Pit(A)
CP(B)	Catch Pit(B)
OC(A)	Open Channel(A)

n by Dimension of Side Ditch

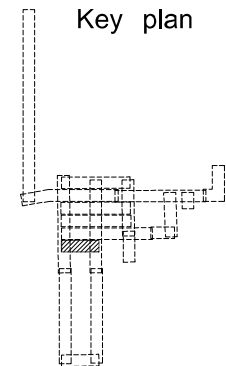
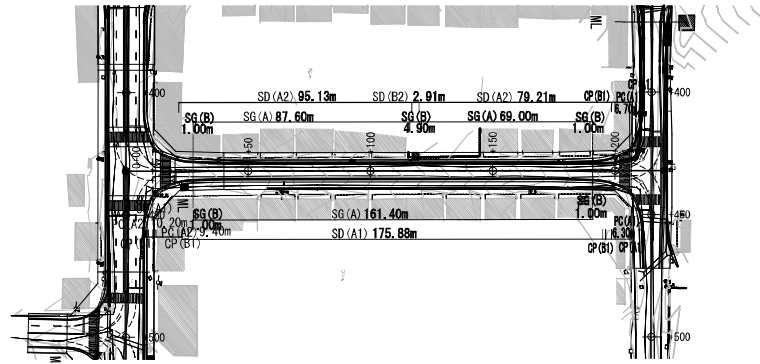
Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads	
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job:	Plan and Profile (8) No.10 Keyo Rd.- No.11 Aliko Rd.
			Scale:	H:1/2000 V:1/400
			Drawing No.:	PP08
			Date:	

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PLAN AND PROFILE(9)

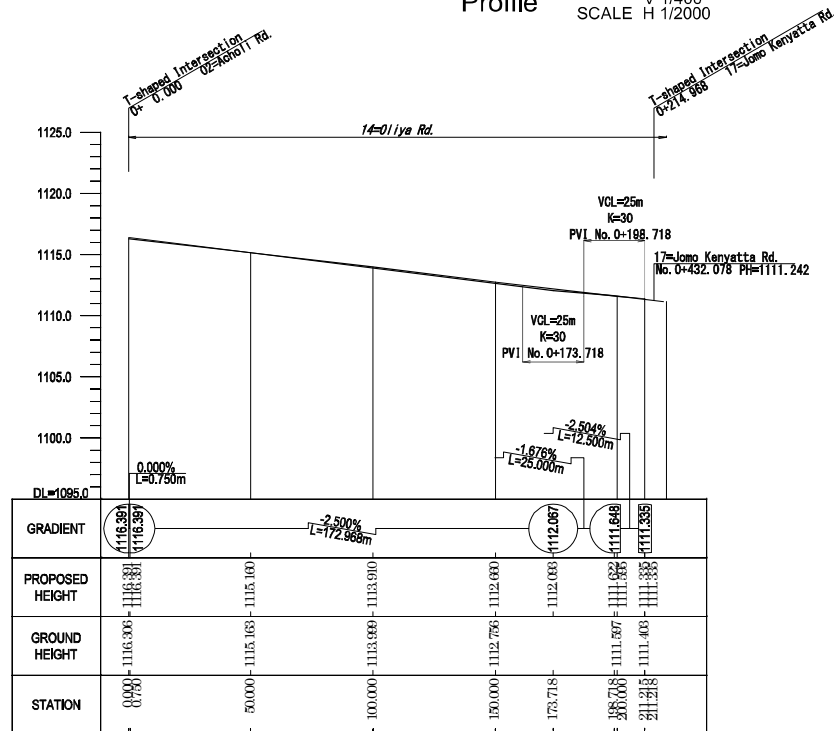
No.14 Oliya Rd.

Plan SCALE 1/2000



Profile

V 1/400
SCALE H 1/2000



Legend

Symbol	Name
SG(A)	Street Gutter(A)
SG(B)	Street Gutter(B)
SG(C)	Street Gutter(C)
SD(A)	Side Ditch(A)
SD(B)	Side Ditch(B)
PC(A)	Pipe Culvert(A)
CP(A)	Catch Pit(A)
CP(B)	Catch Pit(B)
OC(A)	Open Channel(A)

n by Dimension of Side Ditch

Notes:

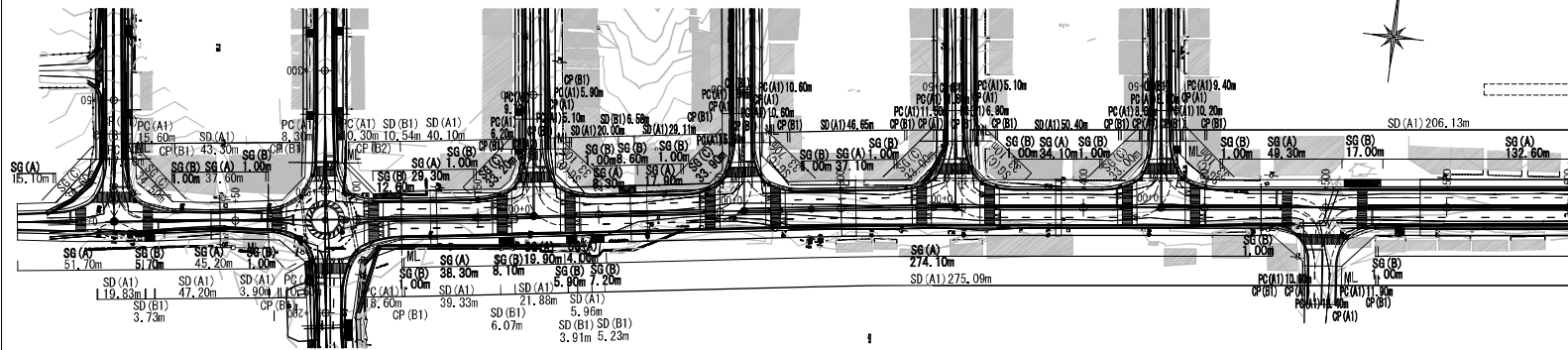
	Client	Consultant	Project:	The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads			
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job:	Plan and Profile (9) No.14 Oliya Rd.			
			Scale:	H:1/2000 V:1/400	Drawing No.:	PP09	Date:

PLAN AND PROFILE(10)

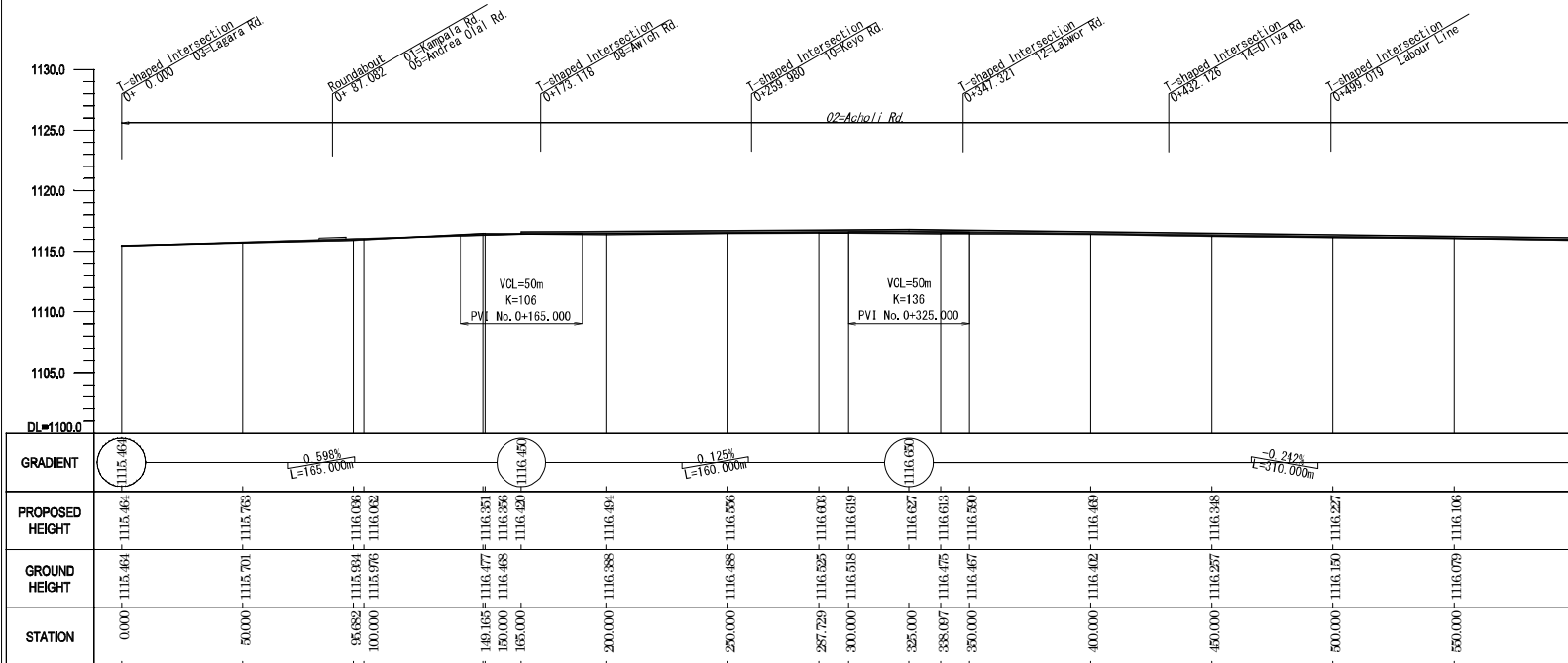
No.2 Acholi Rd.(1)

Plan SCALE 1/2000

Key plan



Profile SCALE V 1/400 H 1/2000



Legend

Symbol	Name
SG(A)	Street Gutter(A)
SG(B)	Street Gutter(B)
SG(C)	Street Gutter(C)
SD(A)	Side Ditch(A)
SD(B)	Side Ditch(B)
PC(A)	Pipe Culvert(A)
CP(A)	Catch Pit(A)
CP(B)	Catch Pit(B)
OC(A)	Open Channel(A)

n by Dimension of Side Ditch

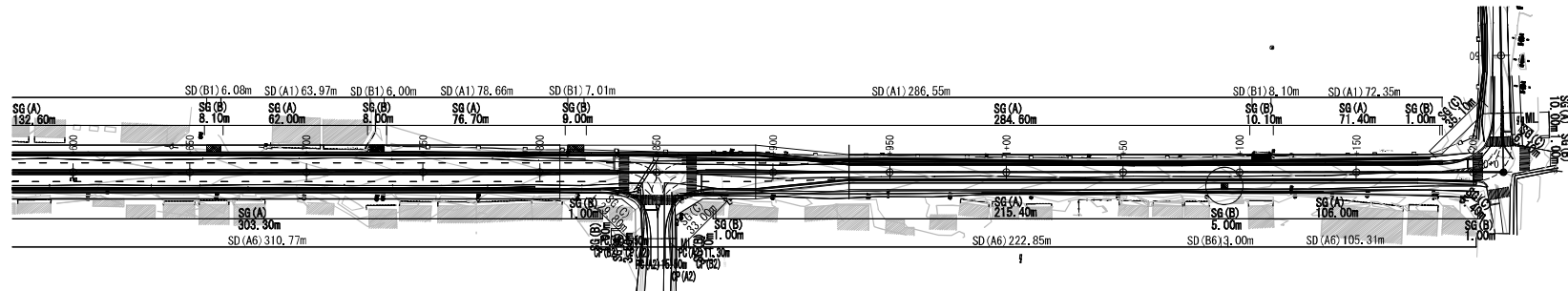
Notes:	Client	Consultant	Project:	The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads		
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job:	Plan and Profile (10) No.2 Acholi Rd.(1)		
			Scale:	H:1/2000 V:1/400	Drawing No.:	PP10
			Date:			

PLAN AND PROFILE(11)

No.2 Acholi Rd.(2)

Key plan

Plan SCALE 1/2000



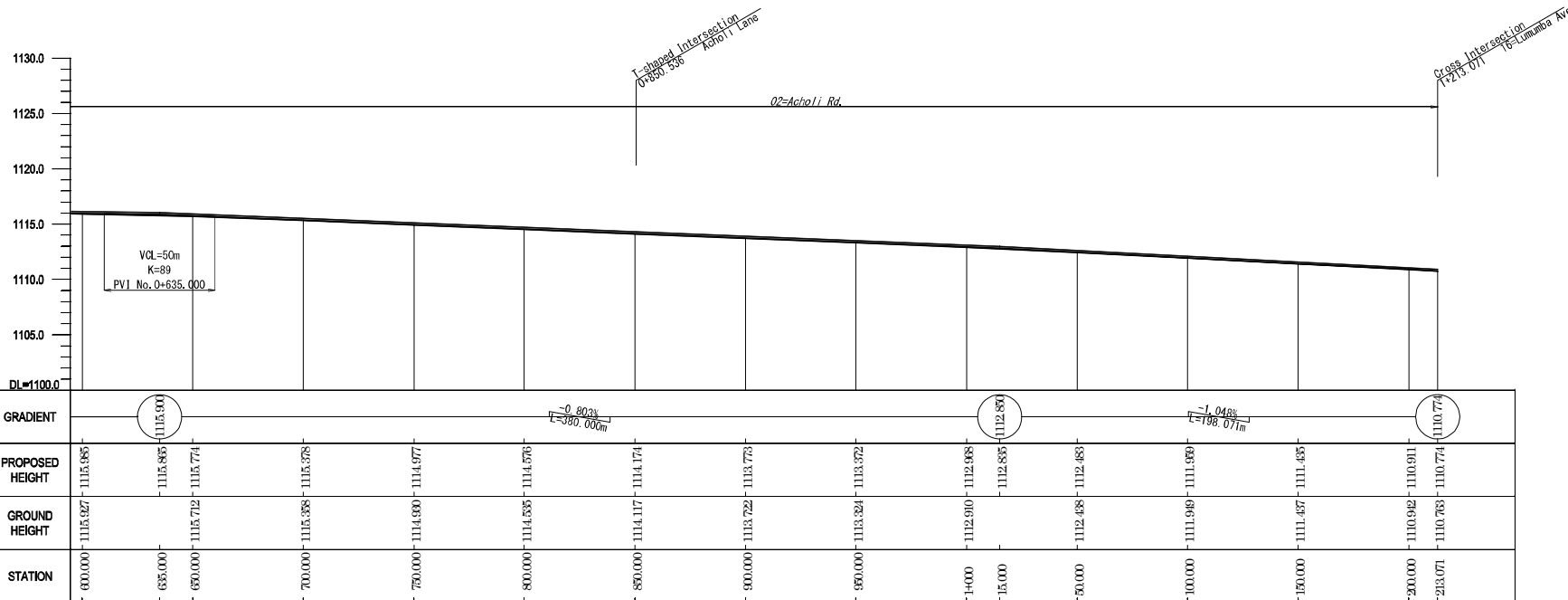
Legend

Symbol	Name
SG(A)	Street Gutter(A)
SG(B)	Street Gutter(B)
SG(C)	Street Gutter(C)
SD(A)	Side Ditch(A)
SD(B)	Side Ditch(B)
PC(A)	Pipe Culvert(A)
CP(A)	Catch Pit(A)
CP(B)	Catch Pit(B)
OC(A)	Open Channel(A)

n by Dimension of Side Ditch

Profile

SCALE V 1/400
SCALE H 1/2000



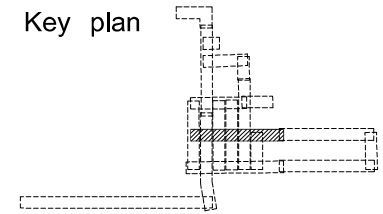
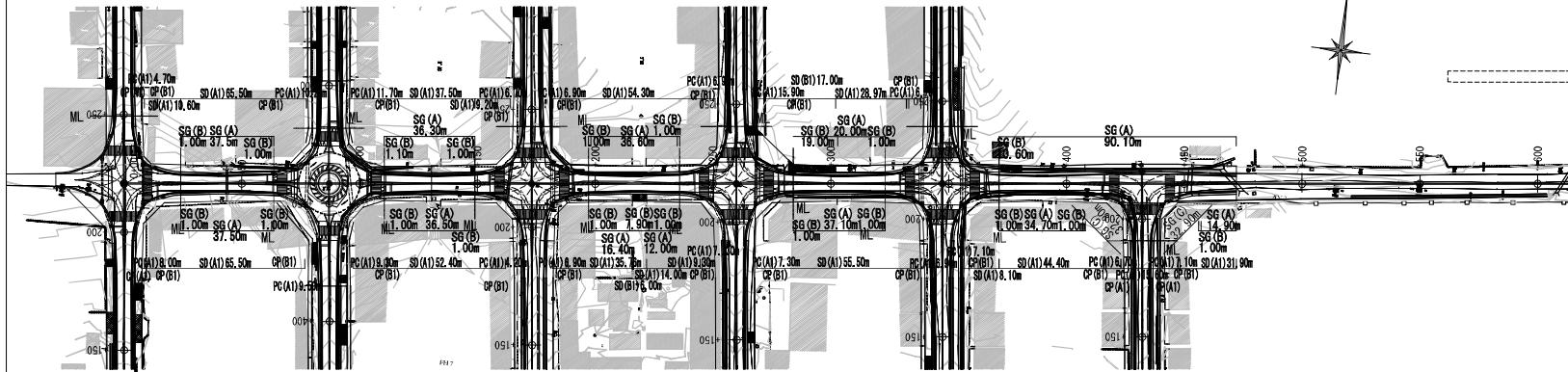
Notes:	Client	Consultant	Project:	The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads		
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job:	Plan and Profile (11) No.2 Acholi Rd.(2)		
			Scale:	H:1/2000 V:1/400	Drawing No.:	PP11
			Date:			

PLAN AND PROFILE(12)

No.17 Jomo Kenyatta Rd.

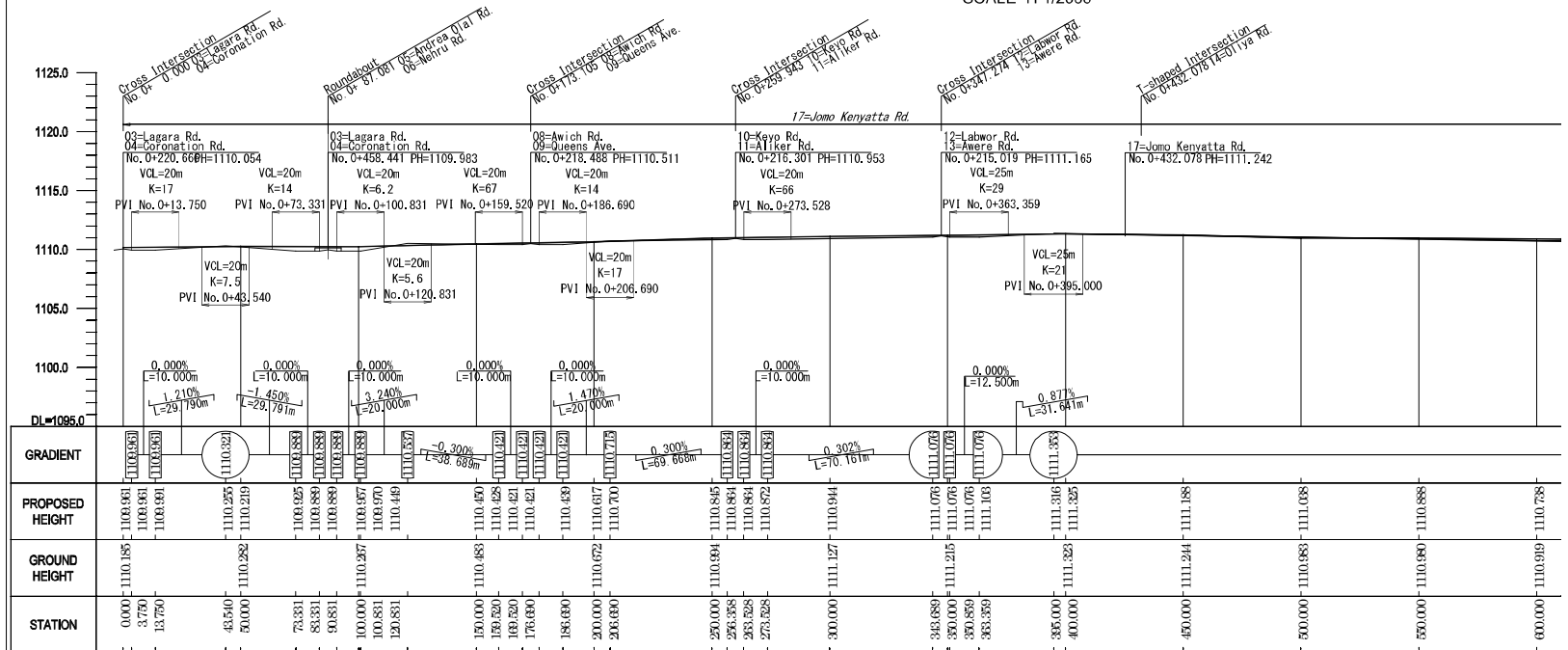
Plan SCALE 1/2000

Key plan



Profile

SCALE V 1/400
SCALE H 1/2000



Legend

Symbol	Name
SG(A)	Street Gutter(A)
SG(B)	Street Gutter(B)
SG(C)	Street Gutter(C)
SD(A)	Side Ditch(A)
SD(B)	Side Ditch(B)
PC(A)	Pipe Culvert(A)
CP(A)	Catch Pit(A)
OC(A)	Open Channel(A)

n by Dimension of Side Ditch

Notes:	Client	Consultant	Project:	The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads		
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job:	Plan and Profile (12) No.17 Jomo Kenyatta Rd.		
			Scale:	H:1/2000 V:1/400	Drawing No.:	PP12
			Date:			

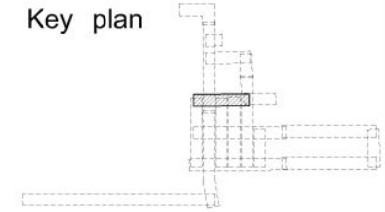
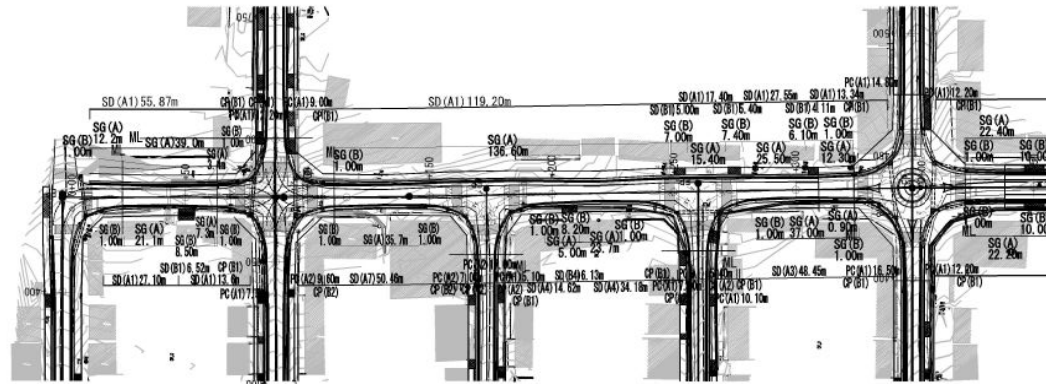
Appendix-148

PLAN AND PROFILE(13)

No.18 Bank Lane

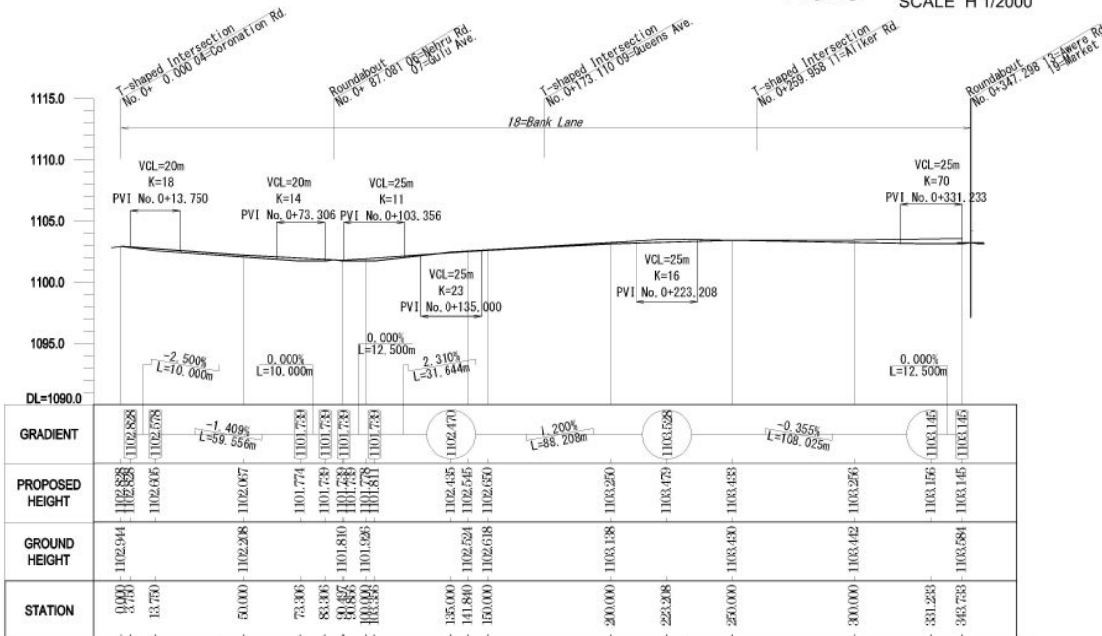
Key plan

Plan SCALE 1/2000



Profile

V 1/400
SCALE H 1/2000



Legend

Symbol	Name
SG(A)	Street Gutter(A)
SG(B)	Street Gutter(B)
SG(C)	Street Gutter(C)
SD(A)n	Side Ditch(A)
SD(B)n	Side Ditch(B)
PC(A)n	Pipe Culvert(A)
CP(A)n	Catch Pit(A)
CP(B)n	Catch Pit(B)
OC(A)	Open Channel(A)

n by Dimension of Side Ditch

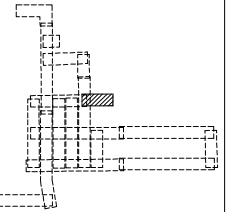
Appendix-149

Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads		
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Plan and Profile (13) No.18 Bank Lane		
			Scale: H:1/2000 V:1/400	Drawing No.:	PP13
				Date:	

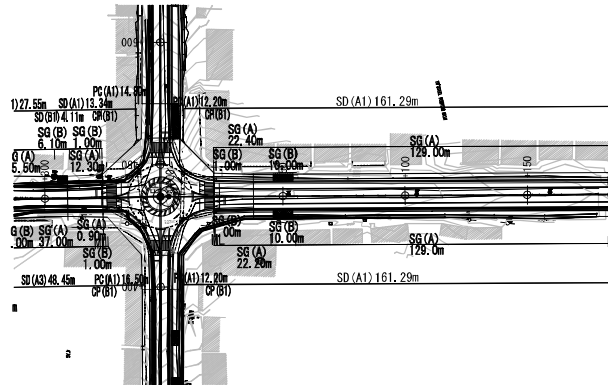
PLAN AND PROFILE(14)

No.19 Market St.

Key plan

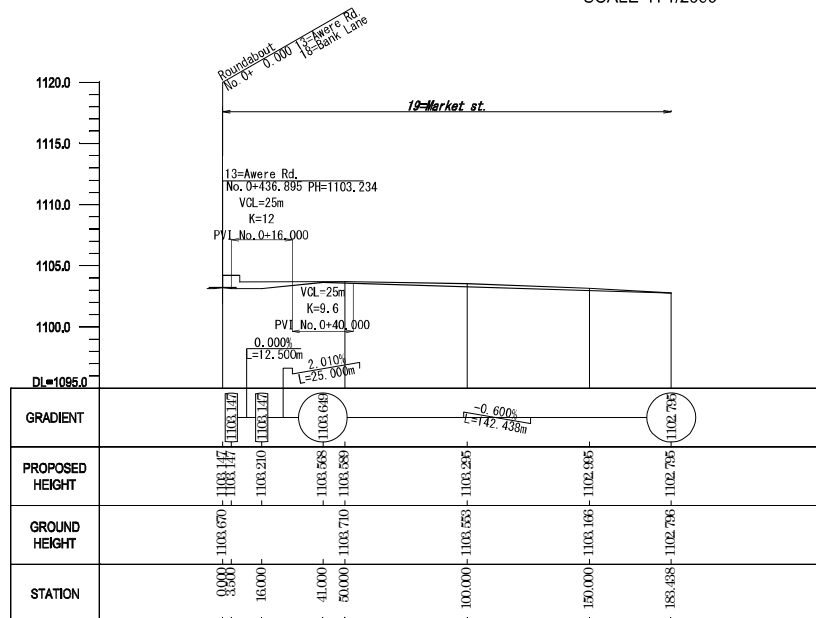


Plan SCALE 1/2000



Profile

V 1/400
SCALE H 1/2000



Legend

Symbol	Name
SG(A)	Street Gutter(A)
SG(B)	Street Gutter(B)
SG(C)	Street Gutter(C)
SD(A)	Side Ditch(A)
SD(B)	Side Ditch(B)
PCI(A)	Pipe Culvert(A)
CP(A)	Catch Pit(A)
CP(B)	Catch Pit(B)
OC(A)	Open Channel(A)

n by Dimension of Side Ditch

Notes:

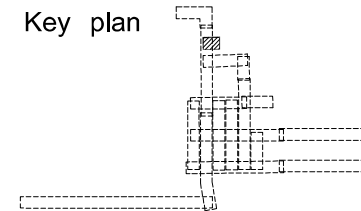
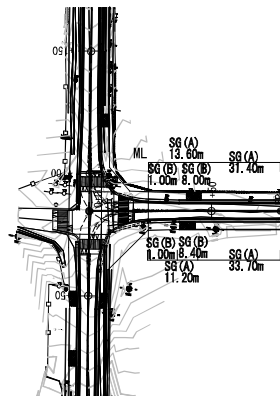
Notes:	Client	Consultant	Project:	The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads		
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job:	Plan and Profile (14) No.19 Market St.		
			Scale:	H:1/2000 V:1/400	Drawing No.:	PP14
				Date:		

PLAN AND PROFILE(15)

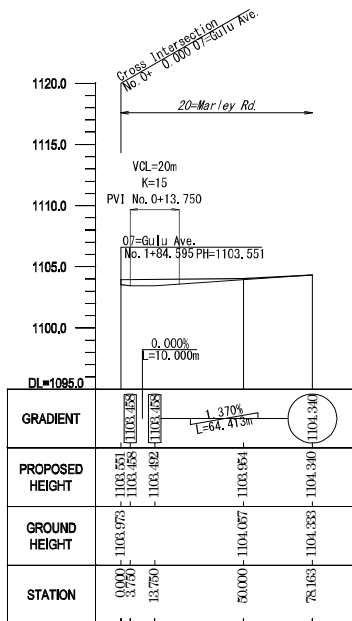
No.20 Harley Rd.

Key plan

Plan SCALE 1/2000



Profile SCALE V 1/400 H 1/2000



Legend

Symbol	Name
SG(A)	Street Gutter(A)
SG(B)	Street Gutter(B)
SG(C)	Street Gutter(C)
SD(A)n	Side Ditch(A)
SD(B)n	Side Ditch(B)
PC(A)n	Pipe Culvert(A)
CP(A)n	Catch Pit(A)
CP(B)n	Catch Pit(B)
OC(A)	Open Channel(A)

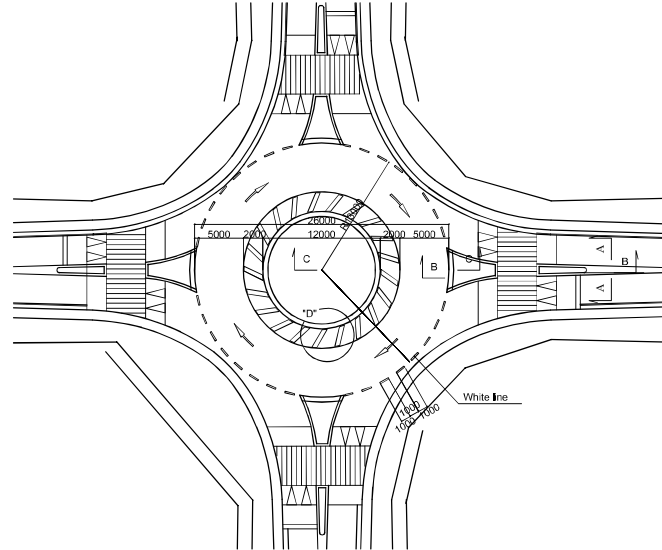
n by Dimension of Side Ditch

Appendix-151

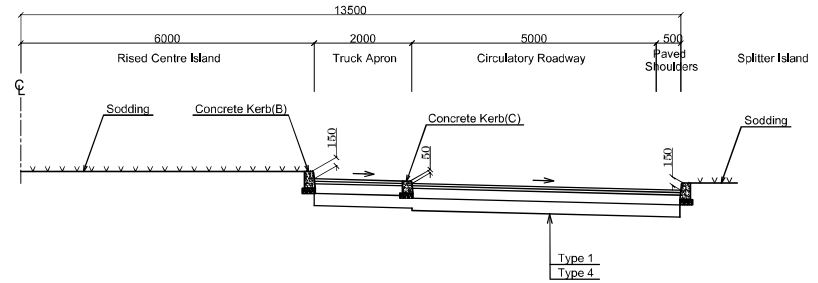
Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads		
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Plan and Profile (15) No.20 Harley Rd.		
			Scale: H:1/2000 V:1/400	Drawing No.: PP15	Date:

TYPICAL LAYOUT OF ROUNDABOUT

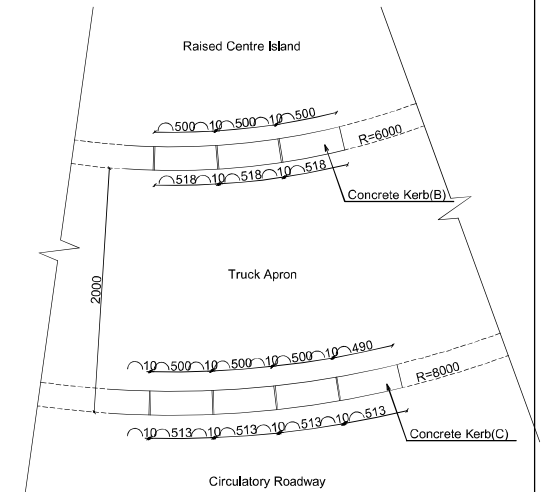
Roundabout Layout
plan SCALE 1/500



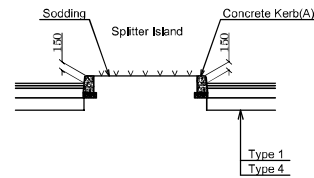
Section SCALE 1/100
C-C



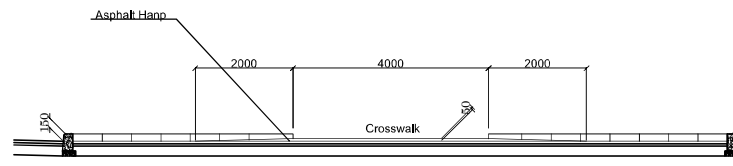
Detail of "D"
plan SCALE 1/40



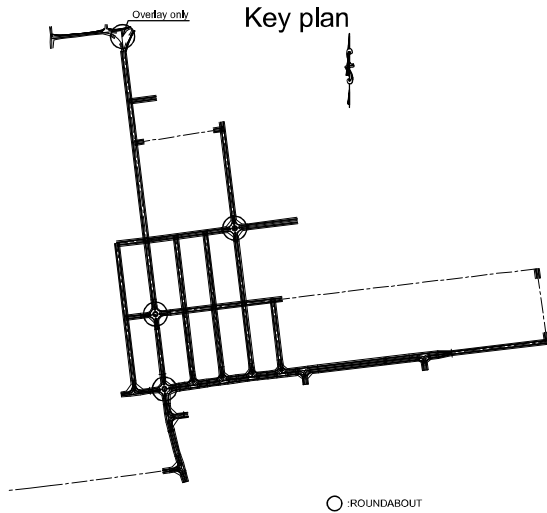
Section SCALE 1/100
A-A



B-B



Key plan



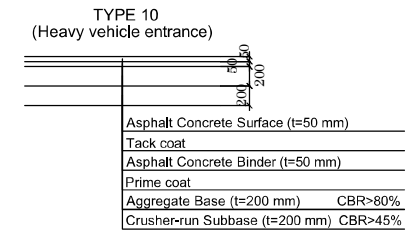
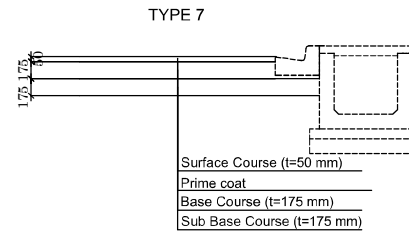
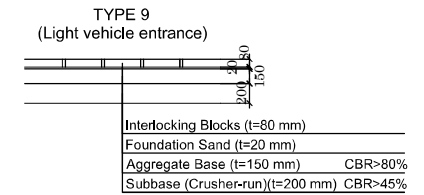
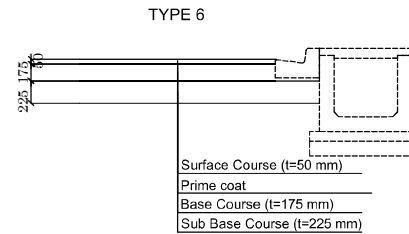
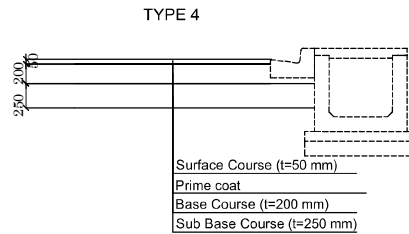
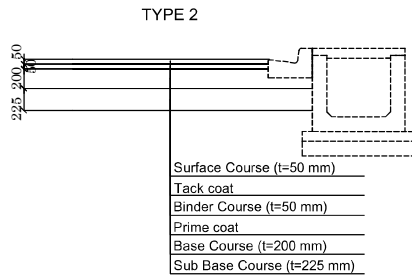
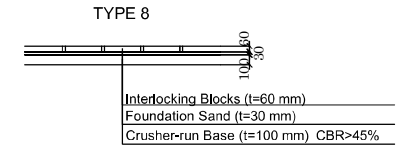
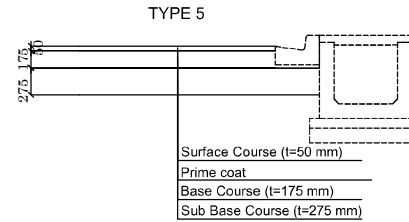
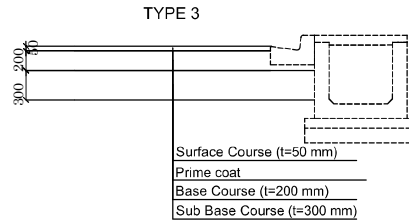
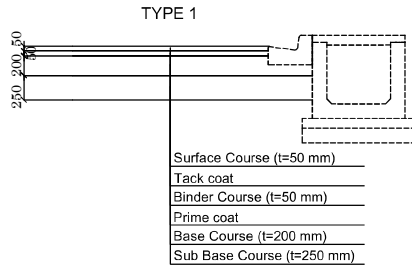
Notes:

Client	Consultant	Project:	The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads		
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job:	Typical Layout of Roundabout		
		Scale:	As Shown	Drawing No.:	JC01
				Date:	

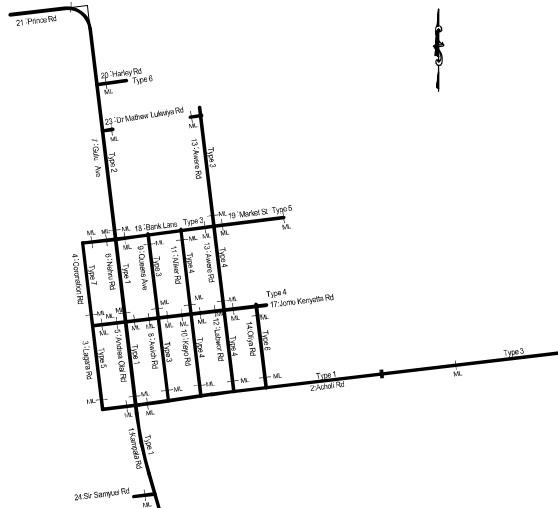
PAVEMENT SCHEDULE SCALE 1/50

Carriageway

Sidewalk



Key Plan of Pavement Schedule

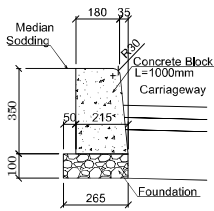


Road No.	Road Name	Type of Pavement	Road No.	Road Name	Type of Pavement	Road No.	Road Name	Type of Pavement
1	Kampala Rd	Type 1	8	Awich Rd	Type 3	17	Jose Kavatta Rd. (CBD)	Type 4
2	Acholi Rd. (CBD)	Type 1	9	Queens Ave.	Type 3	18	Bank Lane	Type 3
	Acholi Rd. (others)	Type 3	10	Keys Rd.	Type 4	19	Market St.	Type 5
3	Lazara Rd.	Type 5	11	Aliker Rd.	Type 4	20	Harley Rd.	Type 6
4	Coronation Rd.	Type 7	12	Labwor Rd.	Type 4	21	Prince Rd.	(Overlay)
5	Andrea Dial Rd.	Type 1	13	Awers Rd. (CBD)	Type 4			
6	Neiru Rd.	Type 1		Awers Rd. (others)	Type 3			
7	Gulu Ave.	Type 2	14	Oliya Rd.	Type 6			

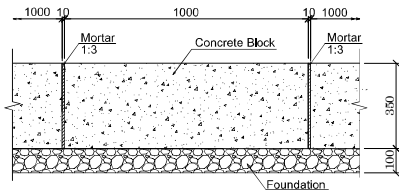
Notes:	Client	Consultant	Project:	The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads		
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job:	Pavement Schedule		
			Scale:	1/50	Drawing No.:	PV/01

DETAIL OF KERB SCALE 1/20

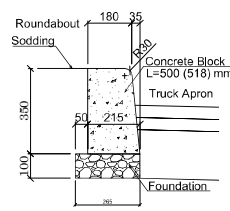
Concrete Kerb(A)
For Median
Section



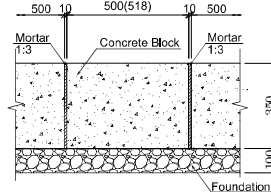
Side Elevation



Concrete Kerb(B)
For Roundabout
Section

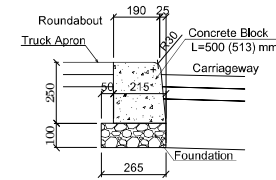


Side Elevation

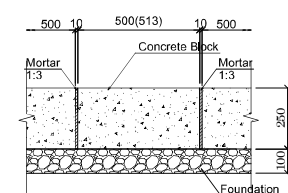


NOTE : () shows length of front side.

Concrete Kerb(C)
For Roundabout
Section

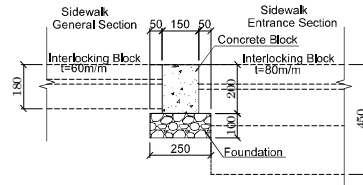


Side Elevation

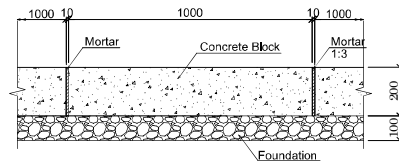


NOTE : () shows length of front side.

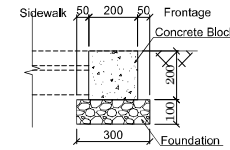
Partition Block
Section



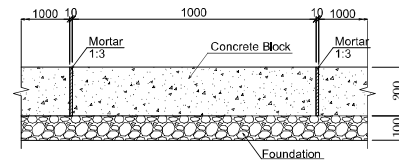
Side Elevation



Boundary Block
Section



Side Elevation



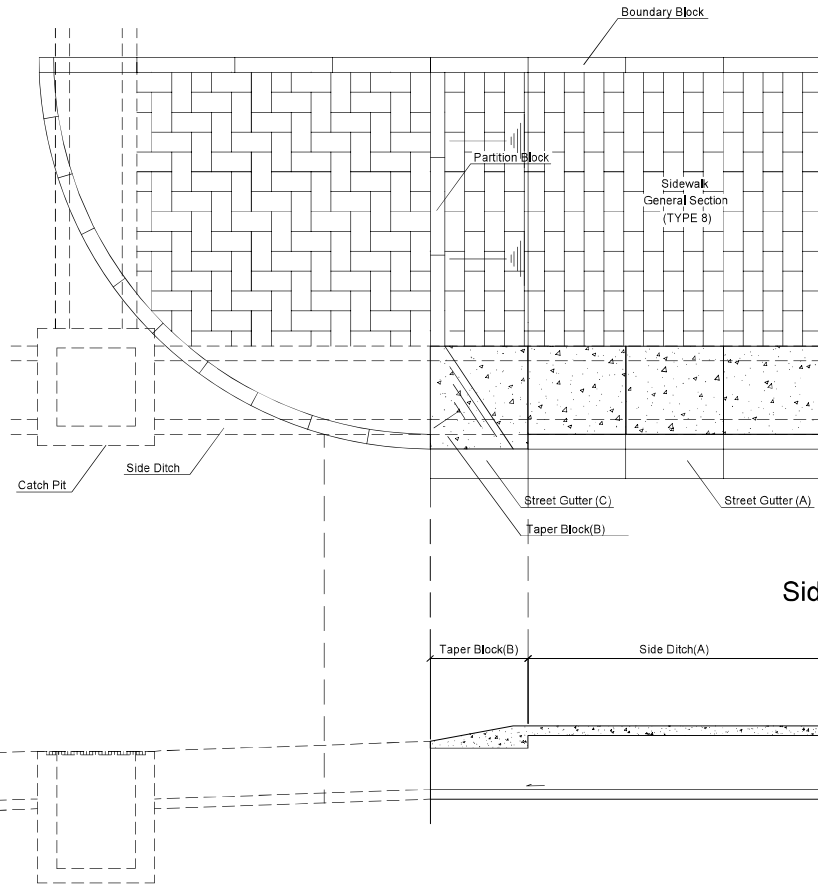
Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads		
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Detail of Kerb		
			Scale: 1/20	Drawing No.: PV02	Date:

SIDEWALK SCALE 1/50

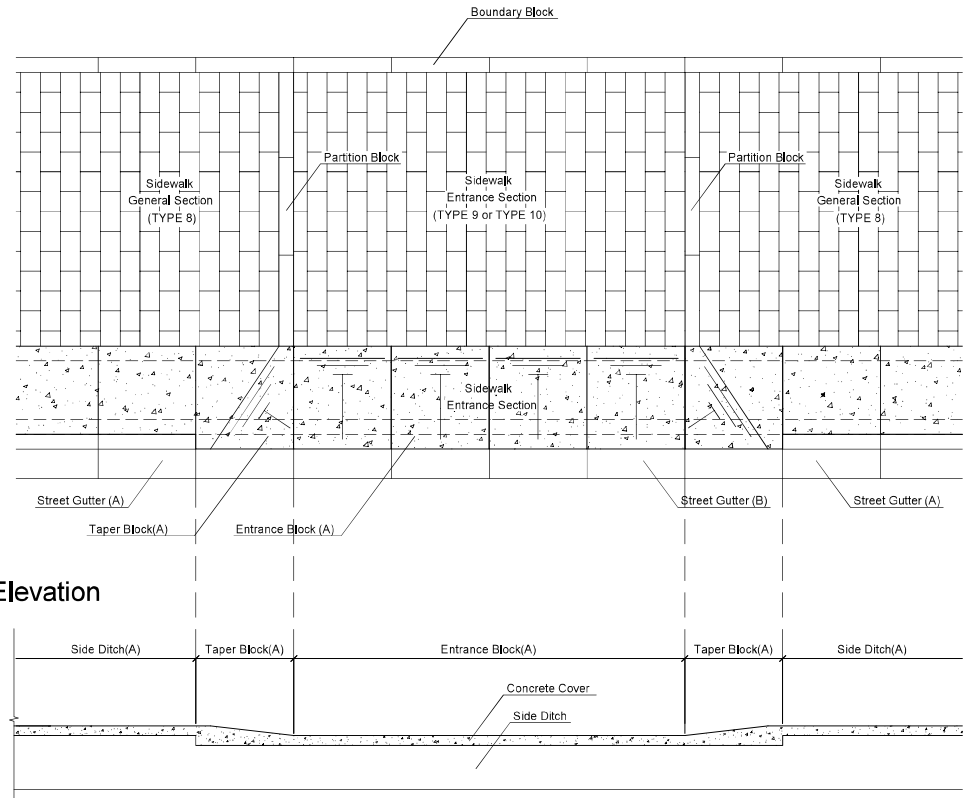
General Section and Roadside Access for Vehicles

Plan

Corner Section

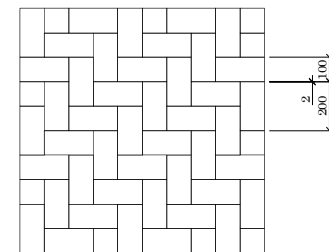


Entrance Section



Side Elevation

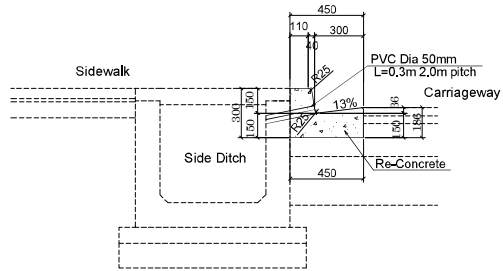
ILB Layout Plan SCALE 1/20



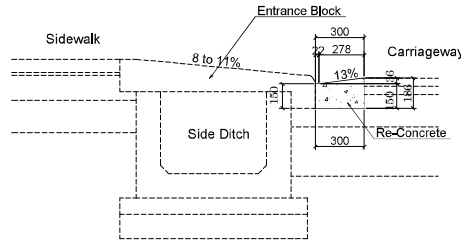
Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads		
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Sidewalk		
			Scale: 1/20 1/50	Drawing No.: PV03	Date:

DRAINAGE STRUCTURES(1) SCALE 1/30

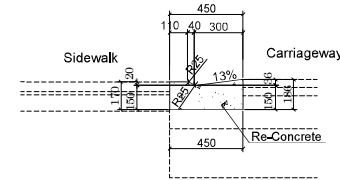
Street Gutter(A)
Generic Section



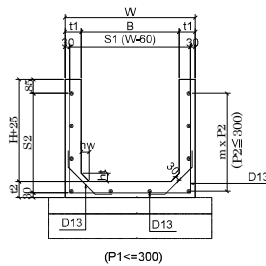
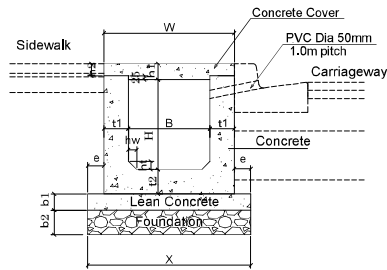
Street Gutter(B)
Entrance Section



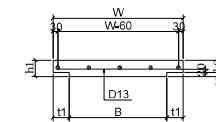
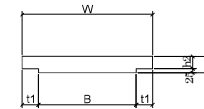
Street Gutter(C)
Sidewalk Rolling-In Section



Side Ditch(A)
Section



Concrete Cover of Side Ditch
Section

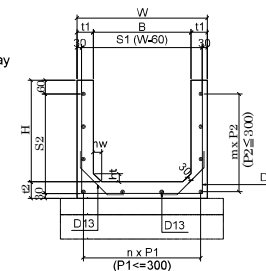
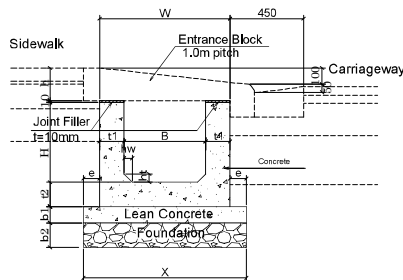


Plan

Dimensions

TYPE OF CONCRETE COVER	Dimension of Cover				
	B	W	t1	h1	h2
CONCRETE COVER B=500	0.500	0.800	0.150	0.100	0.075
CONCRETE COVER B=600	0.600	0.900	0.150	0.100	0.075
CONCRETE COVER B=800	0.800	1.200	0.150	0.100	0.075
CONCRETE COVER B=1200	1.200	1.500	0.150	0.100	0.075

Side Ditch(B)
Section



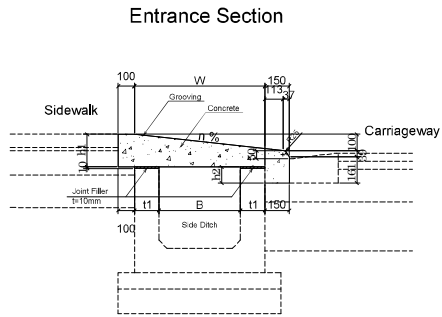
Dimension of Side Ditch (A)(B)

TYPE OF SIDE DITCH	SYMBOL IN PLAN AND PROFILE DRAINAGE	B	W	H	t1	t2	hw	ht	h1	h2
SIDE DITCH (A) (B) B=500 H=500	SD(A1) SD(B1)	500	800	500	150	150	50	50	100	75
SIDE DITCH (A) (B) B=600 H=1000	SD(A2) SD(B2)	600	900	1000	150	150	50	50	100	75
SIDE DITCH (A) (B) B=600 H=1200	SD(A3) SD(B3)	600	900	1200	150	150	50	50	100	75
SIDE DITCH (A) (B) B=800 H=1300	SD(A4) SD(B4)	800	1200	1300	150	150	50	50	100	75
SIDE DITCH (A) (B) B=800 H=1200	SD(A5) SD(B5)	800	1200	1200	150	150	50	50	100	75
SIDE DITCH (A) (B) B=900 H=1300	SD(A6) SD(B6)	900	1200	1300	150	150	50	50	100	75
SIDE DITCH (A) (B) B=900 H=1400	SD(A7) SD(B7)	900	1200	1400	150	150	50	50	100	75
SIDE DITCH (A) (B) B=1000 H=1600	SD(A8) SD(B8)	1000	1200	1600	150	150	50	50	100	75
SIDE DITCH (A) (B) B=1200 H=2000	SD(A9) SD(B9)	1200	1500	2000	150	150	50	50	100	75

Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads	
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Drainage Structures(1)	
			Scale: 1/30	Drawing No.: DR02

DRAINAGE STRUCTURES (2) SCALE 1/30

Entrance Block(A)

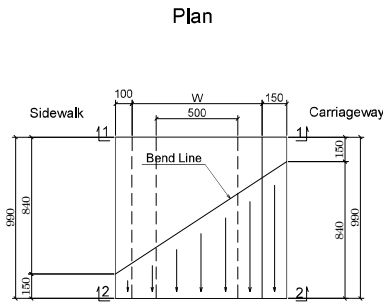


Dimensions

TYPE OF BLOCK	W	B	t1	h1	h2	n
	mm	mm	mm	mm	mm	%
ENTRANCE BLOCK (A) B=500	800	500	150	200	100	11
ENTRANCE BLOCK (A) B=600	900	600	150	200	100	10
ENTRANCE BLOCK (A) B=900	1 200	900	150	250	50	8
ENTRANCE BLOCK (A) B=1200	1 500	1 200	150	250	50	6

Taper Block(A)

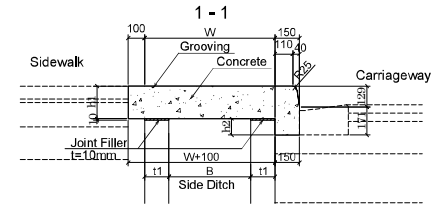
Roadside Access for Vehicles



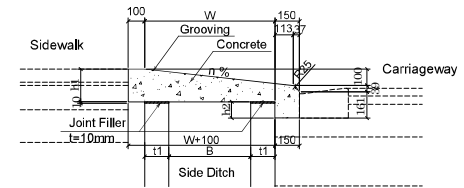
Dimensions

TYPE OF BLOCK	W	B	t1	h1	h2	n
	mm	mm	mm	mm	mm	%
TAPER BLOCK (A) B=500	800	500	150	200	100	11
TAPER BLOCK (A) B=600	900	600	150	200	100	10
TAPER BLOCK (A) B=900	1 200	900	150	250	50	8
TAPER BLOCK (A) B=1200	1 500	1 200	150	250	50	6

Section



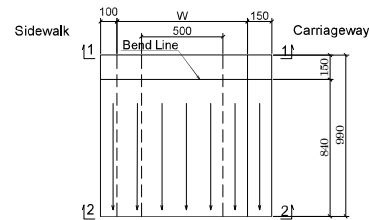
2 - 2



Taper Block(B)

Sidewalk Rolling-In Section

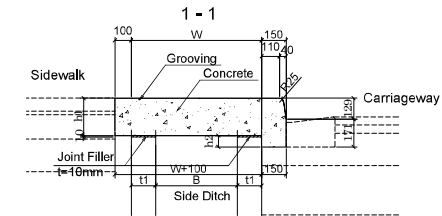
Plan



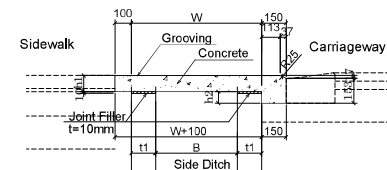
Dimensions

TYPE OF BLOCK	W	B	t1	h1	h2	n
	mm	mm	mm	mm	mm	%
TAPER BLOCK(B) B=500	800	500	150	200	100	11
TAPER BLOCK(B) B=600	900	600	150	200	100	10
TAPER BLOCK(B) B=900	1 200	900	150	250	50	8
TAPER BLOCK(B) B=1200	1 500	1 200	150	250	50	6

Section



2 - 2

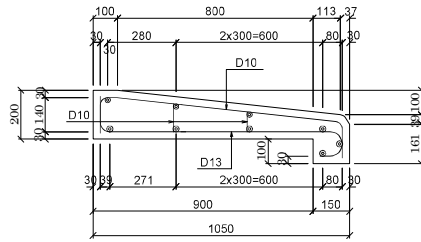


Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads	
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Drainage Structures(2)	
			Scale: 1/30	Drawing No.: DR03

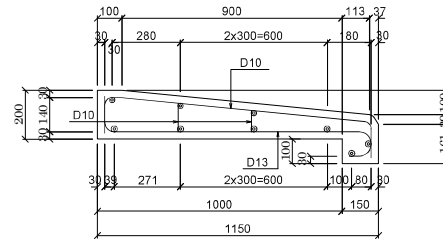
DRAINAGE STRUCTURES (3) SCALE 1/20

Entrance Block(A)

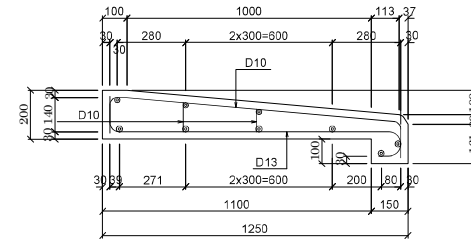
B=800



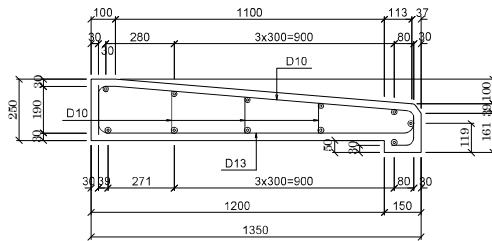
B=900



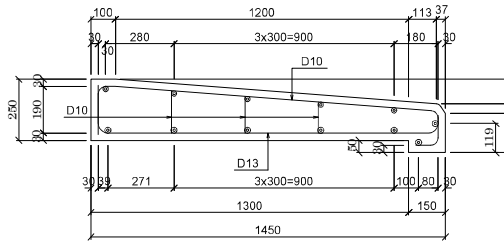
B=1000



B=1100



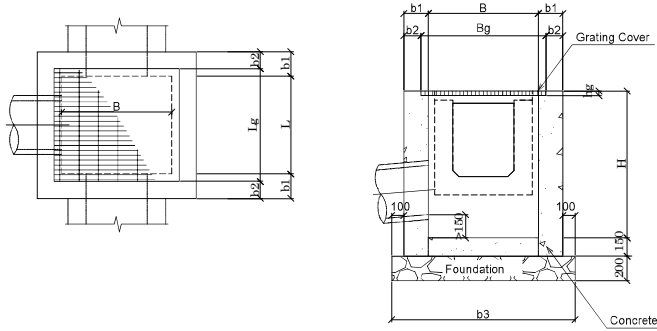
B=1200



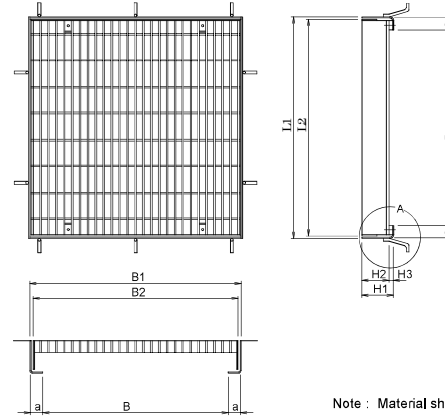
Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads	
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Drainage Structures (3)	
			Scale: 1/20	Drawing No.: DR04

DRAINAGE STRUCTURES (4)

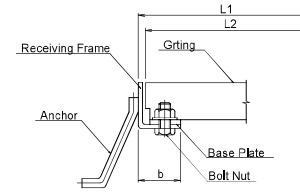
Catch Pit (A) Scale 1/50



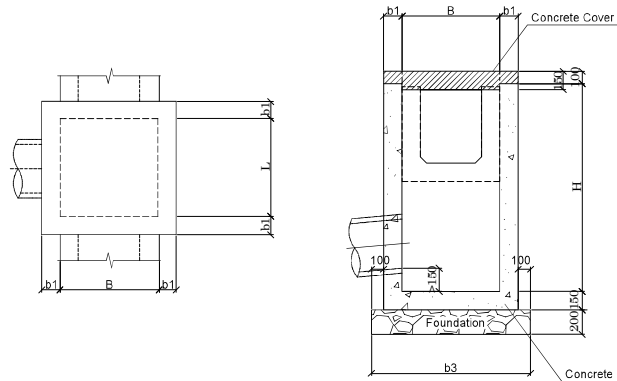
Grating Cover Scale 1/20



Detail of A Scale 1/5



Catch Pit (B) Scale 1/50



CATCH PIT (A) Per: 1Unit

TYPE OF CATCH PIT	DIMENSIONS								
	B	L	H	b1	b2	b3	Lg	Bg	hg
	mm	mm	mm	mm	mm	mm	mm	mm	mm
CB (A) B= 800 L= 800 H= 1500	800	800	1500	150	88	1300	924	924	148
CB (A) B= 1200 L= 1200 H= 1800	1200	1200	1800	200	138	1800	1324	1330	168
CB (A) B= 1600 L= 1600 H= 2200	1600	1600	2200	200	138	2200	1724	1726	170

CATCH PIT (B) Per: 1Unit

TYPE OF CATCH PIT	DIMENSIONS				
	B	L	H	b1	b3
	mm	mm	mm	mm	mm
CB (B) B= 800 L= 800 H= 1650	800	800	1650	150	1300
CB (B) B= 1200 L= 1200 H= 1950	1200	1200	1950	200	1800
CB (B) B= 1600 L= 1600 H= 2350	1600	1600	2350	200	2200

GRATING COVER

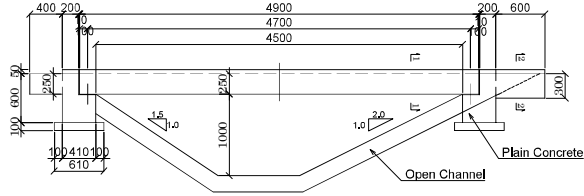
DIMENSIONS										
L	B	L1	B1	L2	B2	H1	H2	H3	a	b
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
800	800	924	924	900	900	148	130	18	60	60
1200	1200	1324	1330	1300	1300	168	150	18	60	60
1600	1600	1724	1726	1700	1700	170	150	20	61	61

Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads	
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Drainage Structures (4)	
			Scale: As Shown	Drawing No.: DR05

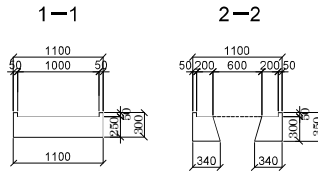
DRAINAGE STRUCTURES (5)

Open Channel

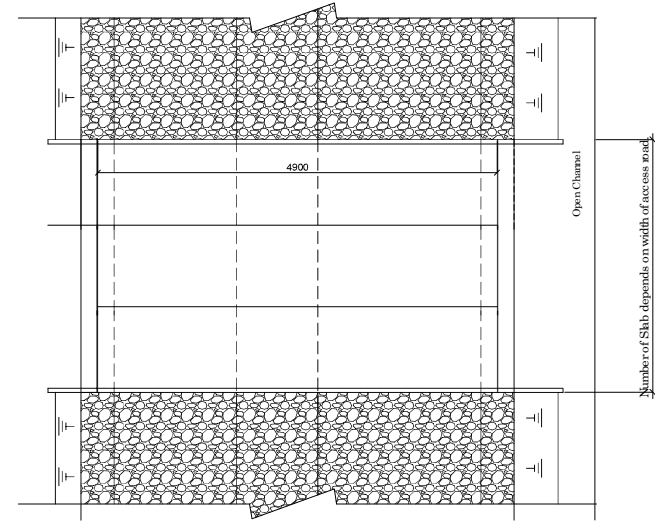
Side Elevation SCALE 1/60



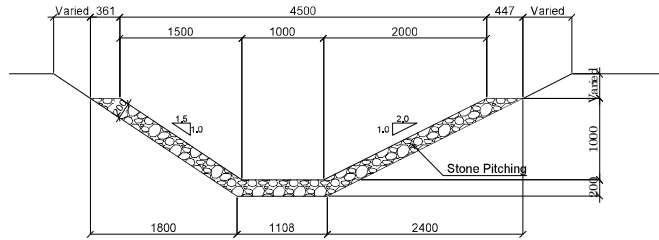
Section SCALE 1/60



Plan SCALE 1/60

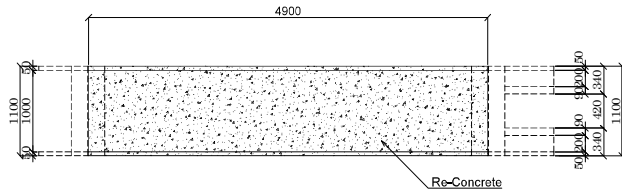


Side Elevation SCALE 1/60

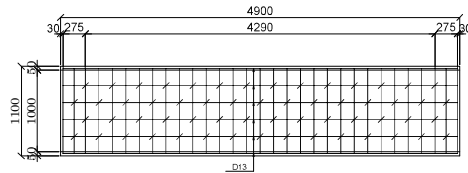


Access Road Slab

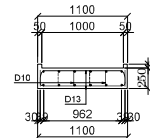
Section SCALE 1/60



Plan SCALE 1/60

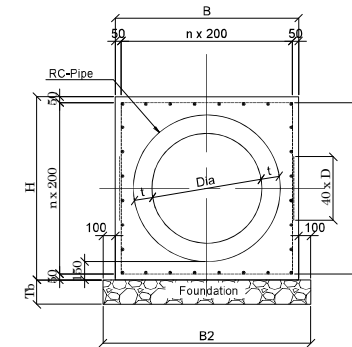


Section SCALE 1/60



Pipe Culvert

Section SCALE 1/40



Dimensions

Dia	t	B	H	B2	Tb	n	L	D	Hex	Hp	Bb	Bt
600	100	1100	1100	1300	200	5	2000	1500	1400	450	1700	3100
900	150	1500	1500	1700	250	7	2000	2000	2000	450	2100	4100
1200	200	1900	1900	2100	250	9	2000	2500	2550	450	2500	6050

Notes:

Client

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

Consultant

EIGHT-JAPAN ENGINEERING CONSULTANTS INC.
NIPPON KOEI CO., LTD.
NTC INTERNATIONAL CO., LTD.

Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads

Job: Drainage Structures (5)

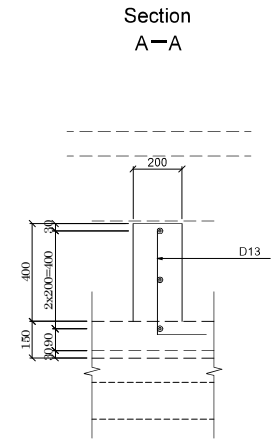
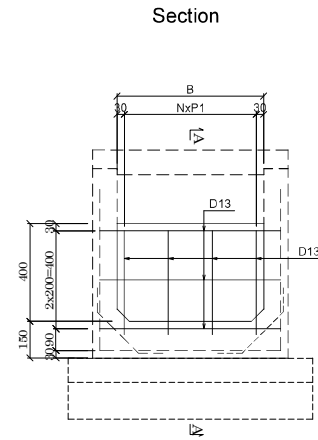
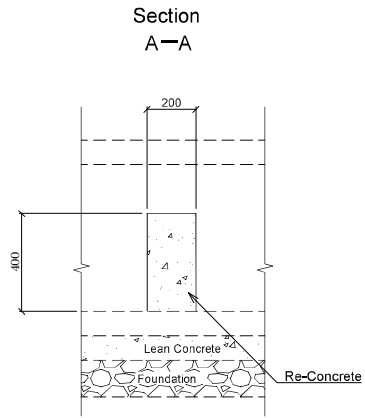
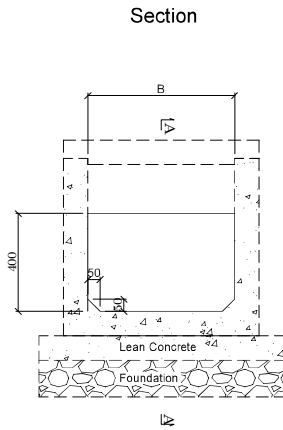
Scale: 1/40 1/60

Drawing No.: DR06

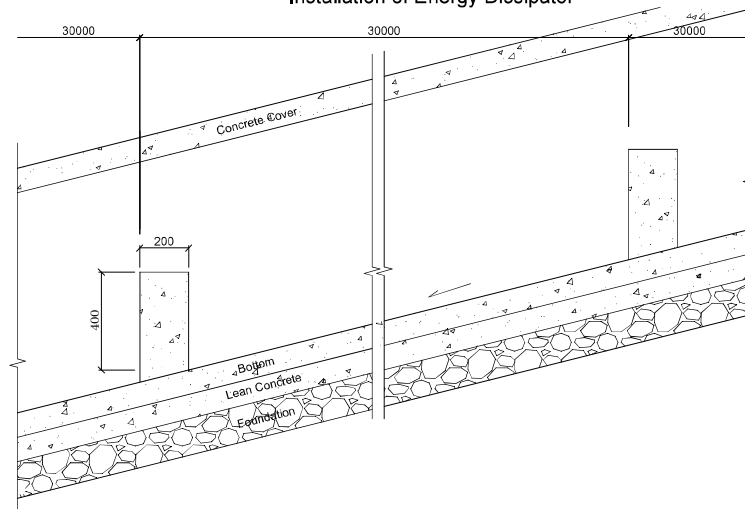
Date:

DETAIL OF DRAINAGE (6) SCALE 1/20

Energy Dissipator



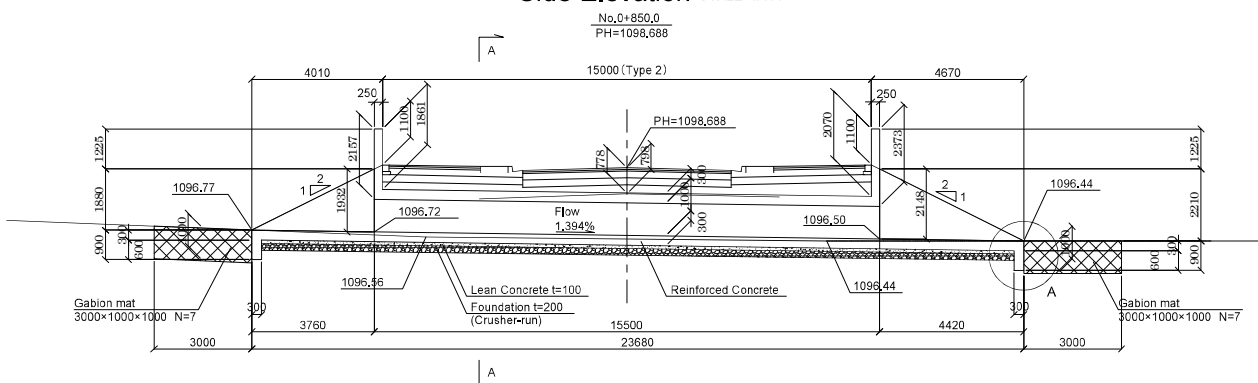
Installation of Energy Dissipator



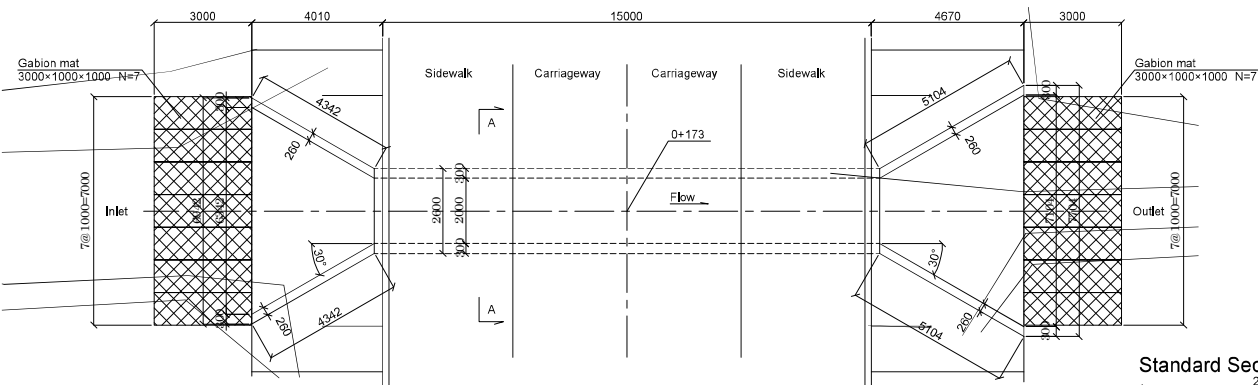
Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads	
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Drainage Structures (6)	Date:
			Scale: 1/20	Drawing No.: DR07

DRAINAGE STRUCTURES (7) Box Culvert No.7 Gulu Av.

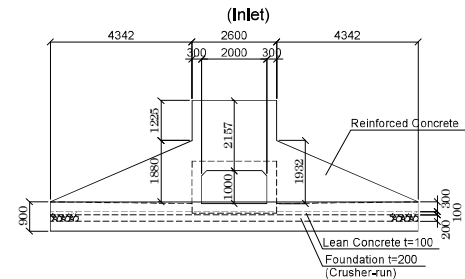
Side Elevation SCALE 1/150



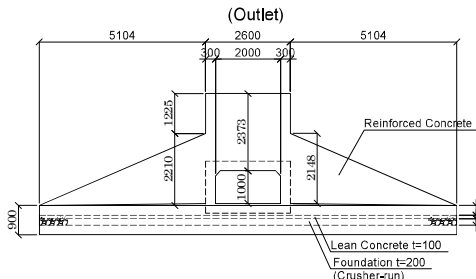
Plan SCALE 1/150



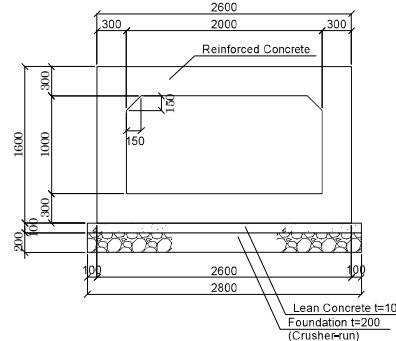
Front Elevation (Inlet) SCALE 1/150



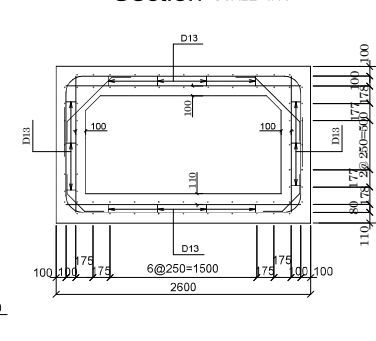
Front Elevation (Outlet) SCALE 1/150



Standard Section SCALE 1/50

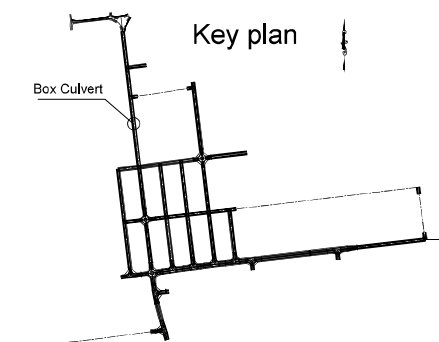


Section SCALE 1/50

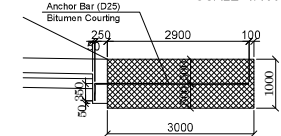


DESIGN CRITERIA

LOCATION	07. Gulu Ave.	
INSIDE DIMENSION	WIDTH	2.00 m
	HEIGHT	1.00 m
TOTAL BOX CULVERT LENGTH	15.50 m	
LIVE LOAD	T-TYPE LIVE LOAD	
UNIT WEIGHT	REINFORCED CONCRETE	24.5 kN/m ³
	SOIL	18 kN/m ³
CONCRETE DESIGN STRENGTH	24 N/mm ²	
ALLOWABLE STRESS		
COMPRESSIVE STRESS DUE TO BENDING	8 N/mm ²	
SHEARING STRESS	0.39 N/mm ²	
TENSILE STRESS (SD345)	160 N/mm ²	
COEFFICIENT OF EARTH PRESSURE	0.5	
IMPACT COEFFICIENT	-	
SEISMIC COEFFICIENT	-	
ANGLE OF SKEW	90°0'0"	
RADIUS OF CURVATURE	R= ∞	
GRADIENT OF BOX CULVERT	i=1.394%	



'A' SCALE 1/100



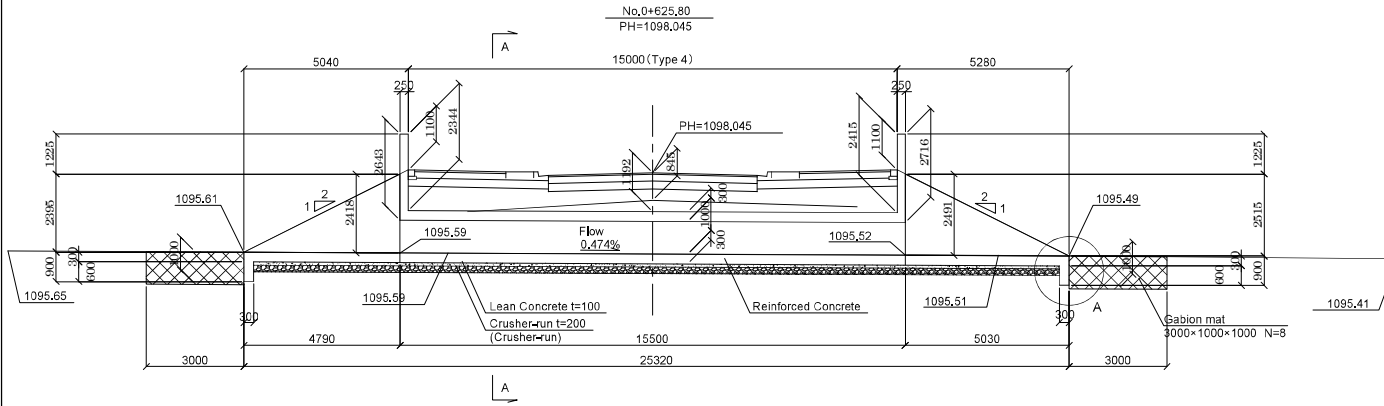
Appendix-163

Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads		
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Drainage Structures (7) Box Culvert No.7 Gulu Av.		
			Scale: As Shown	Drawing No.: DR08	Date:

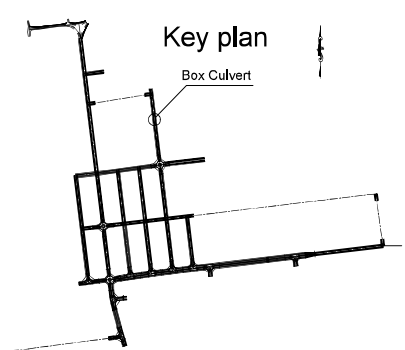
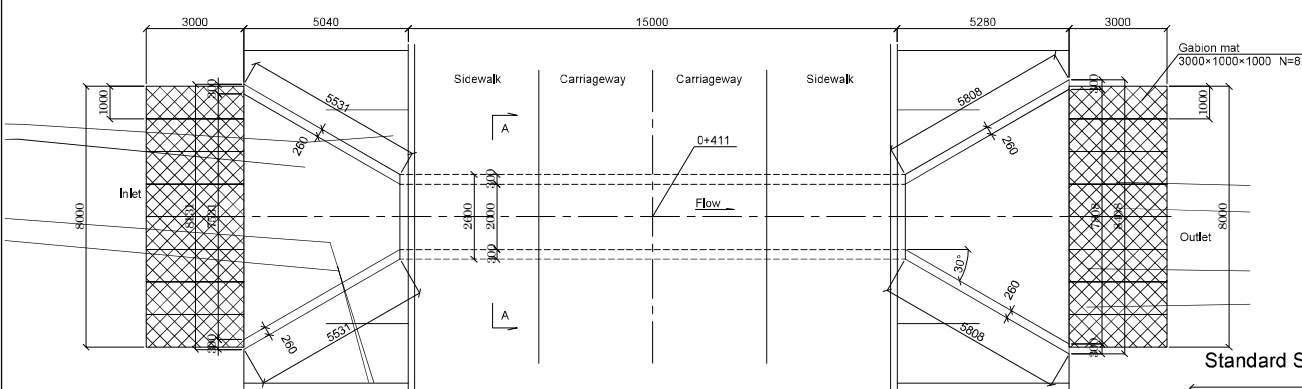
DRAINAGE STRUCTURES (8)

Box Culvert No.13 Awere Rd.

Side Elevation SCALE 1/150



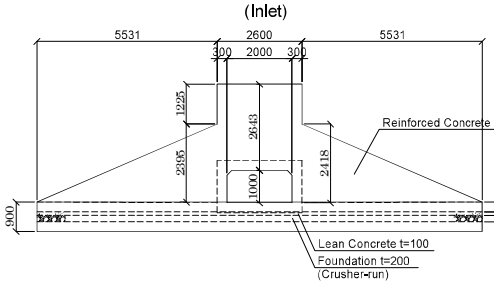
Plan SCALE 1/150



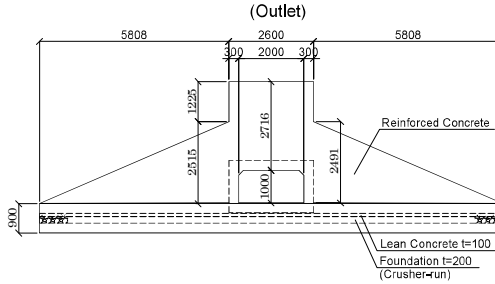
DESIGN CRITERIA

LOCATION	13:Awere Rd.	
INSIDE DIMENSION	WIDTH	2.00 m
	HEIGHT	1.00 m
TOTAL BOX CULVERT LENGTH	15.50 m	
LIVE LOAD	T-TYPE LIVE LOAD	
UNIT WEIGHT	REINFORCED CONCRETE	24.5 kN/m ³
	SOIL	18 kN/m ³
CONCRETE DESIGN STRENGTH	24 N/mm ²	
ALLOWABLE STRESS		
COMPRESSIVE STRESS DUE TO BENDING	8 N/mm ²	
SHEARING STRESS (SD345)	0.39 N/mm ²	
TENSILE STRESS (SD345)	160 N/mm ²	
COEFFICIENT OF EARTH PRESSURE	0.5	
IMPACT COEFFICIENT	-	
SEISMIC COEFFICIENT	-	
ANGLE OF SKEW	90°0'0"	
RADIUS OF CURVATURE	R= ∞	
GRADIENT OF BOX CULVERT	i=0.474%	

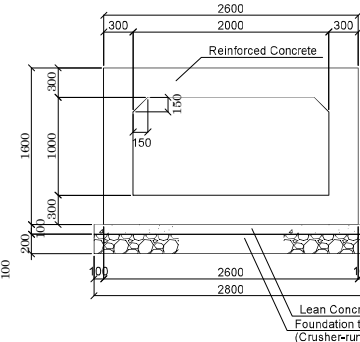
Front Elevation (Inlet) SCALE 1/150



Front Elevation (Outlet) SCALE 1/150

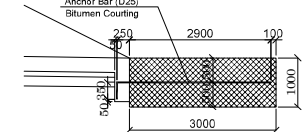


Standard Section SCALE 1/50



Section SCALE 1/50

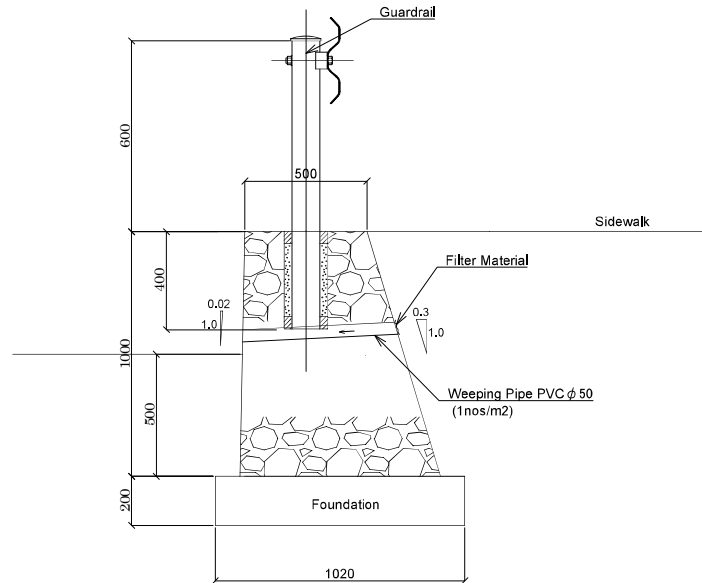
'A' SCALE 1/100



Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads		
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job:	Drainage Structures (8) Box Culvert No.13 Awere Rd.	
			Scale:	As Shown	Drawing No.:
					DR09

STONE MASONRY GRAVITY WALL

Section SCALE 1/20



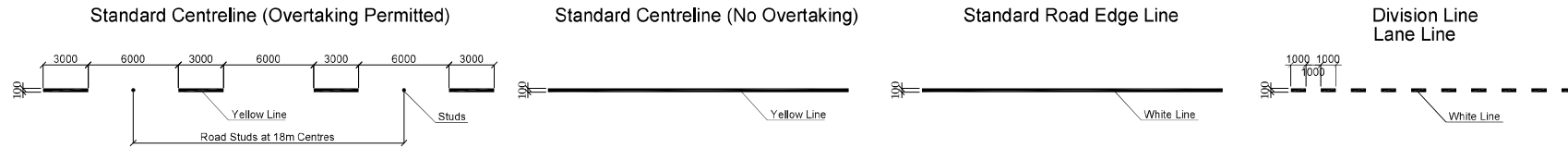
Appendix-165

Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads		
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Stone Masonry Gravity Wall		
			Scale: 1/20	Drawing No.: RW01	Date:

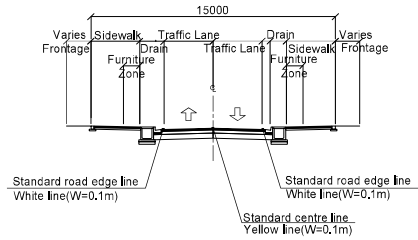
TRAFFIC SAFETY FACILITIES (1) SCALE 1/150

Road Markings And Raised Crosswalk

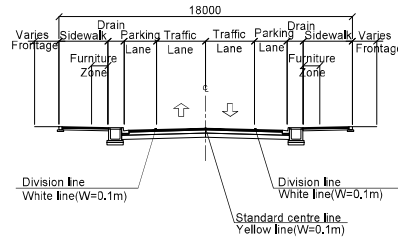
Lane Marking



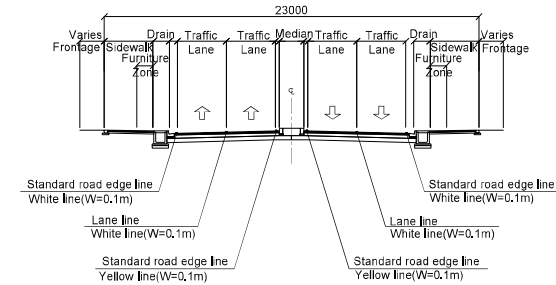
2Lane Type



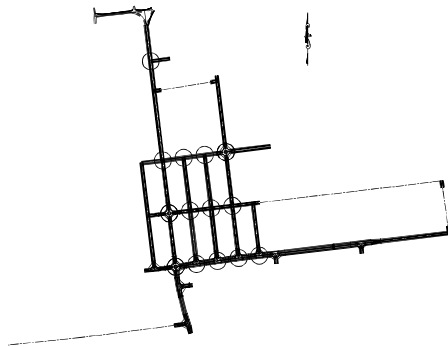
2Lane with Parking Lane Type



4Lane with Median Island Type

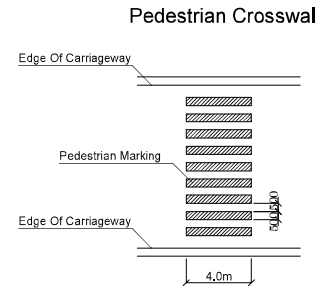


Key plan of Crosswalk

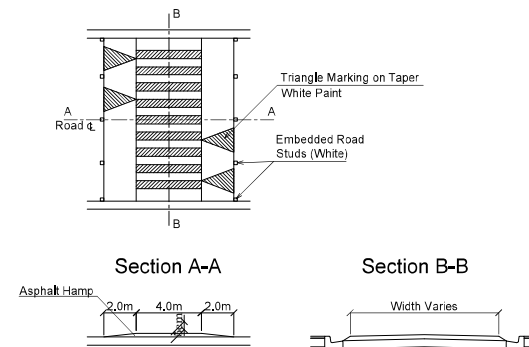


○ Raised Crosswalk

Crosswalk



Raised Crosswalk

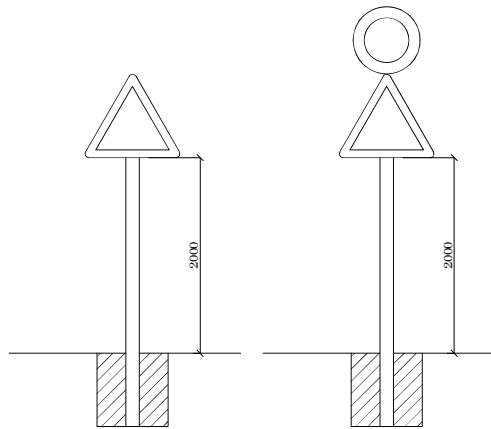


Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads	
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Traffic Safety Facilities (1) Road Markings And Raised Crosswalk	
			Scale: 1/150	Drawing No.: TS01

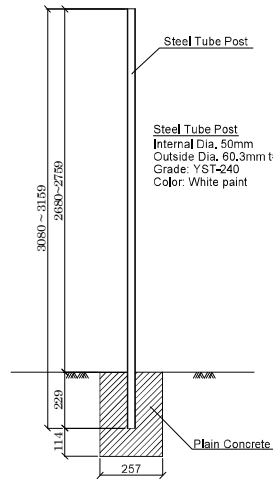
TRAFFIC SAFETY FACILITIES (2)

Traffic Signs

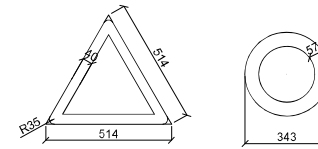
Typical Elevations SCALE 1/50



Steel Tube Post SCALE 1/20



Sign Size SCALE 1/20

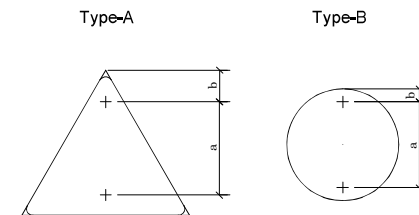


Note: The Types Of Sines Are As Shown In The Standard Designs.

Road Sign Schedule

Type	Road Sign	Type	Road Sign
Information / Guidance	G41.1 to G42 Advance Direction Signs City Center, New Market, Taxi Park, etc.	R41	No Right Turn
	P4 Parking	R43	No overtaking
Warning	V44 Crossroad	R47	No Parking
	V45 Side road	R49	Speed limit
	V46 Side road	R51	Stop
	V46 T-junction	R52	Give Way
	V49 Roundabout	R74	Ahead or Turn Left
	V13 Dual Carriageway End	R74	Ahead or Turn Right
	V14 Dual Carriageway Start	R77	Roundabout
	V24 Hump		
	V43 Pedestrian Crossing		
	V45 Children in the road		

Sign Mounting Details SCALE 1/130



Position of Holes
(mm)

Sign Type / Dimension	A	B	C
a	500	480	—
b	170	70	—

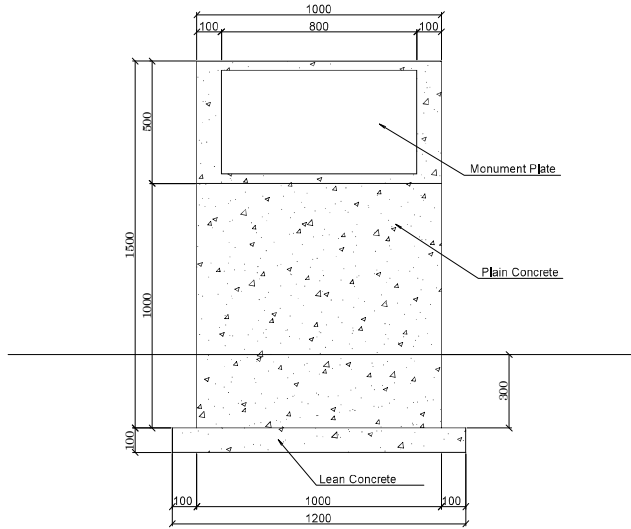
Note: Hole Size To Suit Ø10mm Bolt

Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads		
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Traffic Safety Facilities (2) Traffic Signs		
			Scale: As Shown	Drawing No.: TS02	Date:

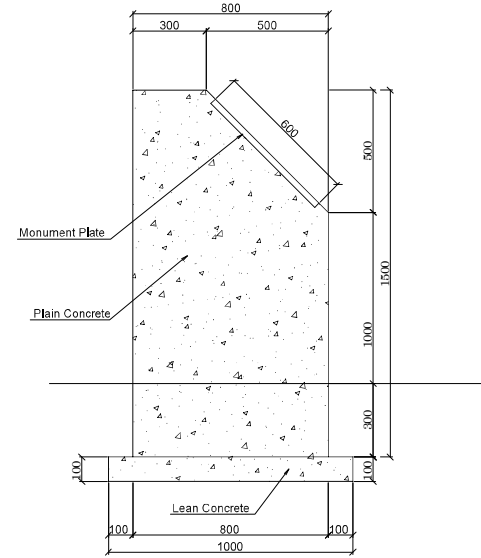
ANCILLARY WORKS (1) SCALE 1/20

Project Monument

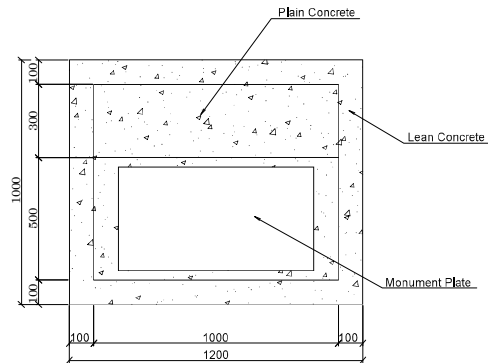
Front View



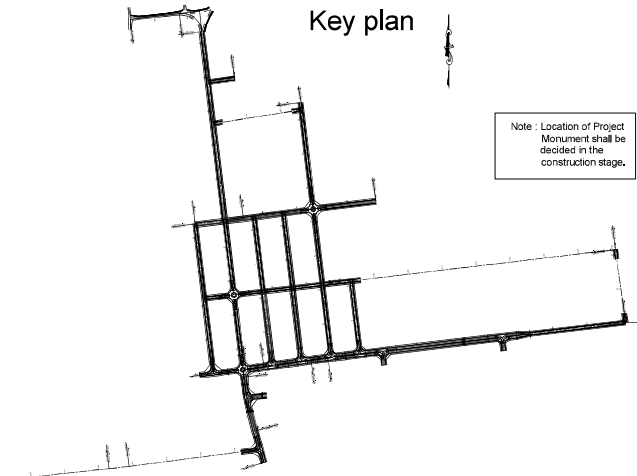
Side View



Plan



Key plan



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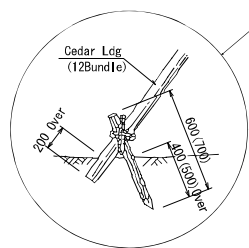
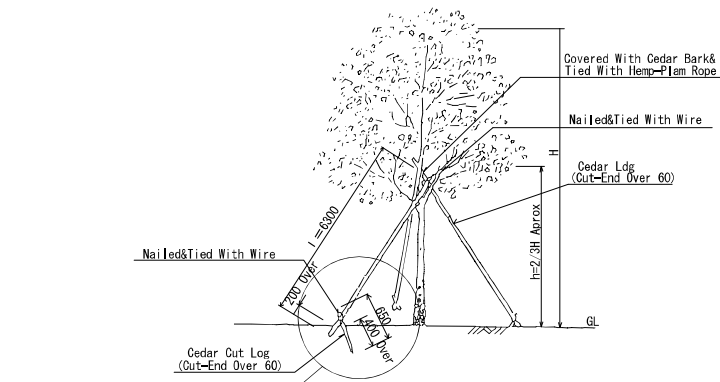
Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads		
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Ancillary Works (1) Project Monument		
			Scale: 1/20	Drawing No.: AW01	Date:

ANCILLARY WORKS (2)

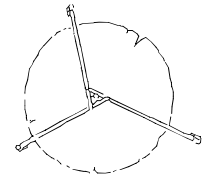
Planting Works

Pyramid Type

Detail of Three-Legged Log Pole
Front View



Plan

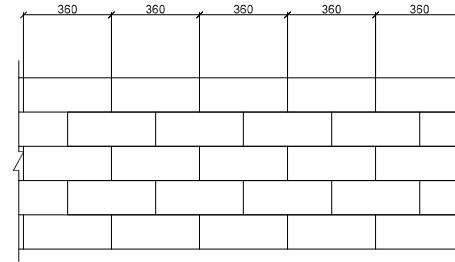


Note: The code and the value in () three-legged bamboo pole. (O-pp, O-I type.)

Note: 1. The stakes must be preservative treated.

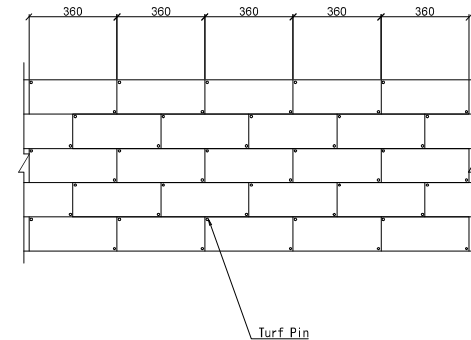
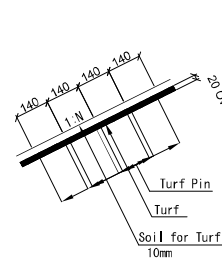
Detail of Solid Sodding (Non Slit)

SCALE 1/20



Sodding for Slope Surface (Non Slit)

SCALE 1/20

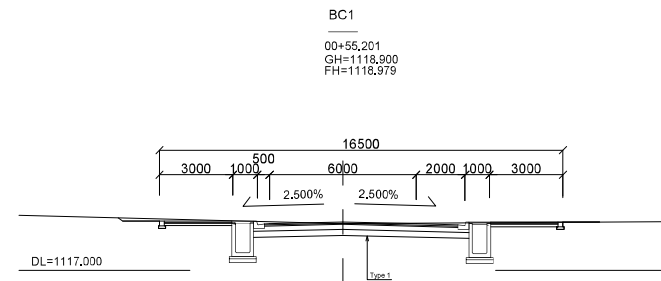
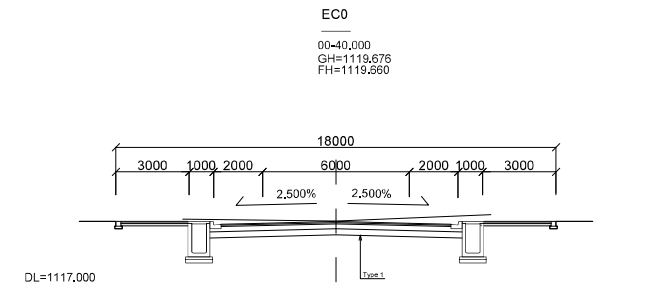
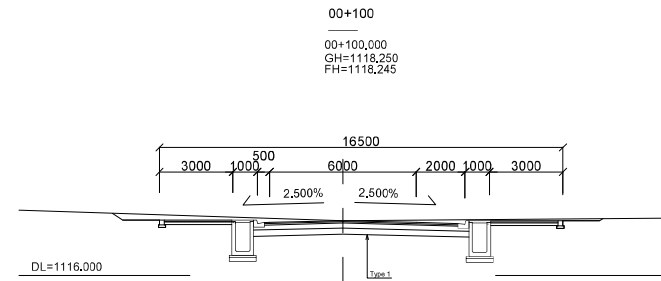
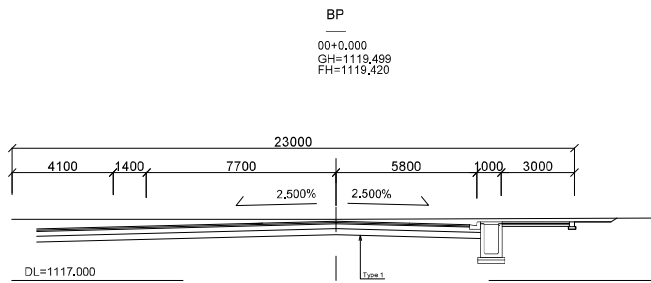
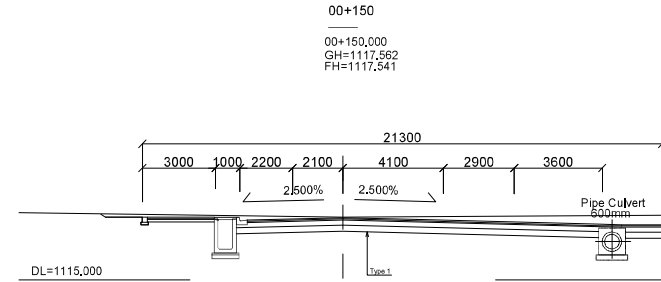
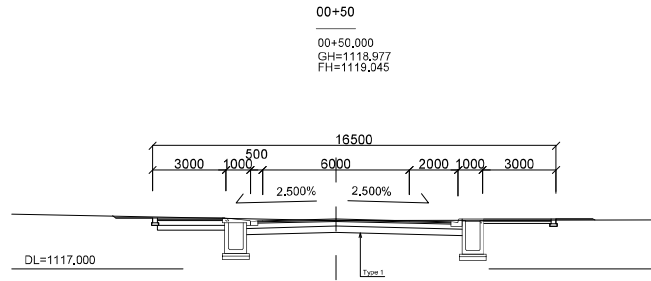


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Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads		
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Ancillary Works (2) Planting Works		
			Scale: NON SCALE, 1/20	Drawing No.: AW02	Date:

CROSS SECTIONS (1) (No.1 Kampala Rd.) (1)

SCALE 1/200



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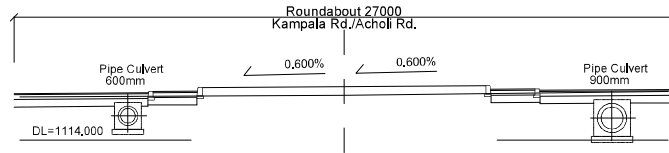
Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads		
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Cross Sections (1) (No.1 Kampala Rd.) (1)		
			Scale: 1/200	Drawing No.: CS01	Date:

CROSS SECTIONS (2) (No.1 Kampala Rd.) (2)

SCALE 1/200

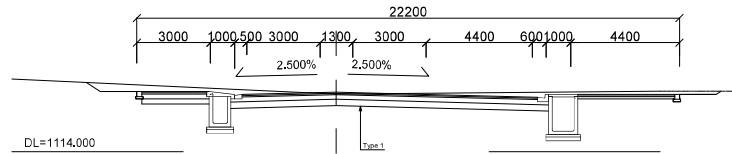
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FH=1115.985



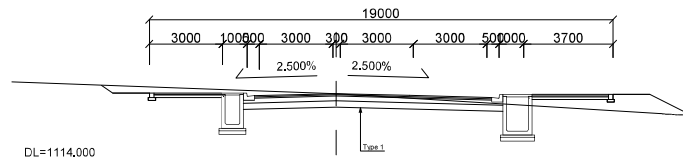
EC1

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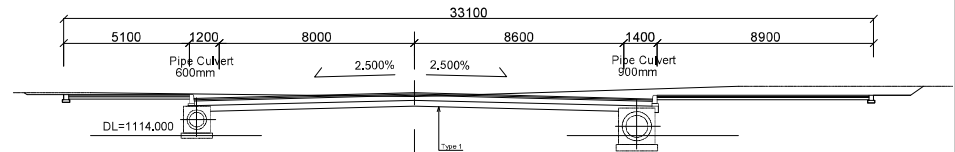
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00+250

00+250.000
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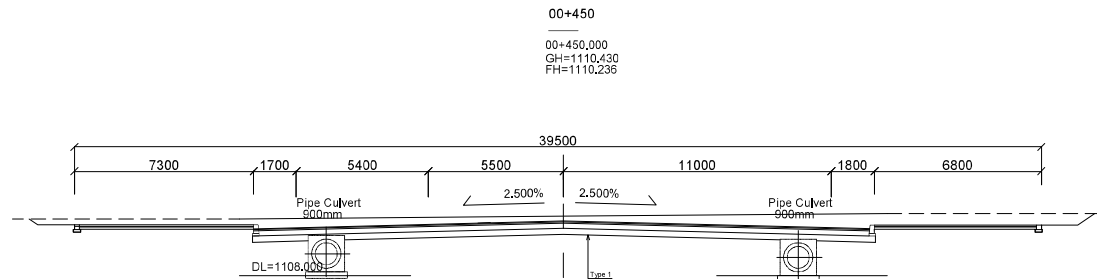
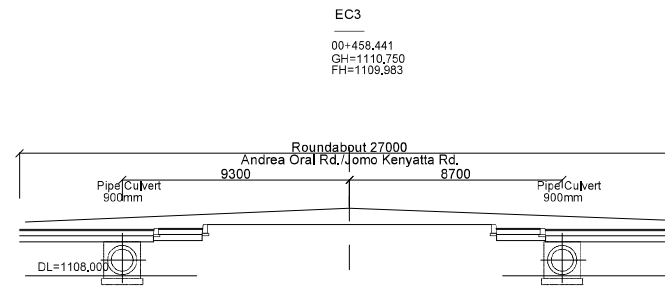
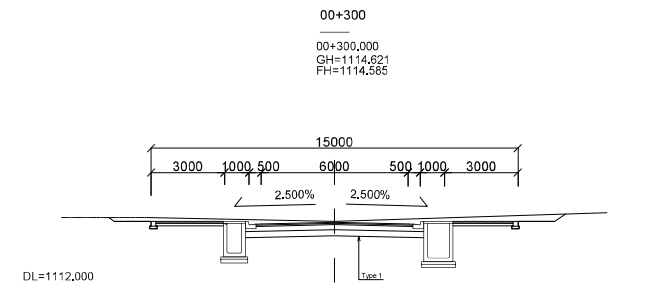
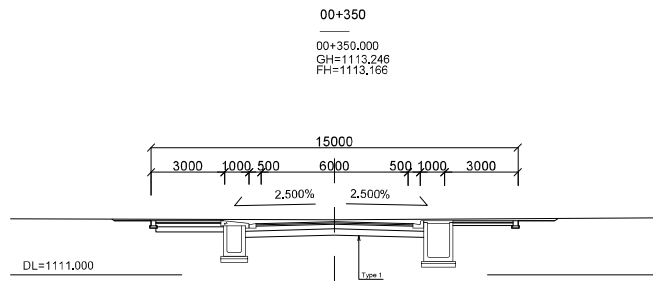
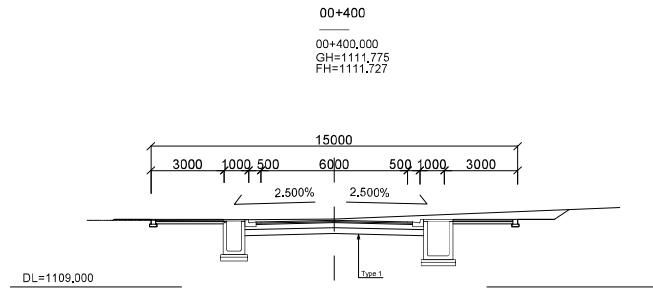


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Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads	
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Cross Sections (2) (No.1 Kampala Rd.) (2)	
			Scale: 1/200	Drawing No.: CS02

CROSS SECTIONS (10) SCALE 1/200

(No.5 Andrea Olal Rd.)

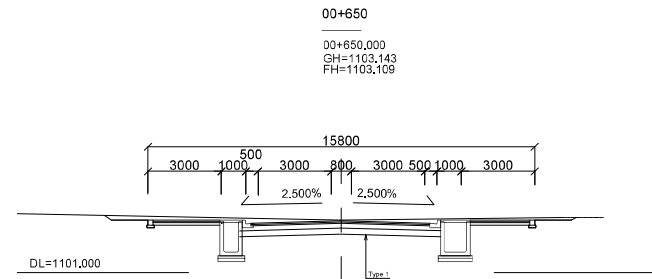
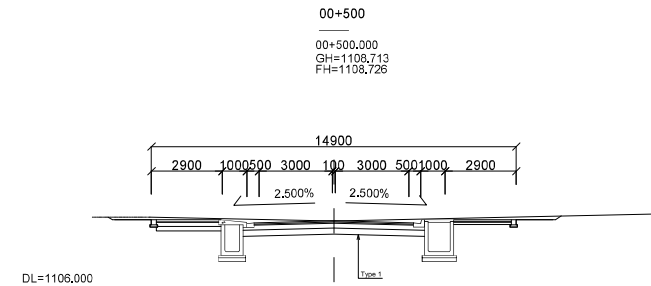
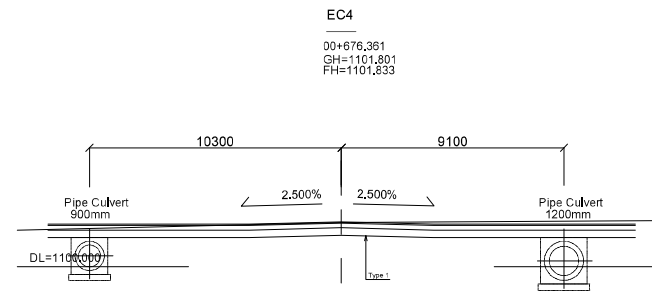
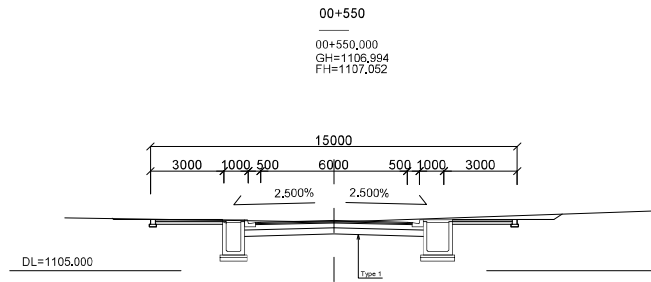
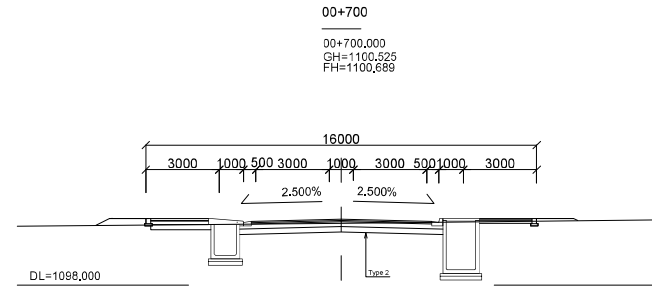
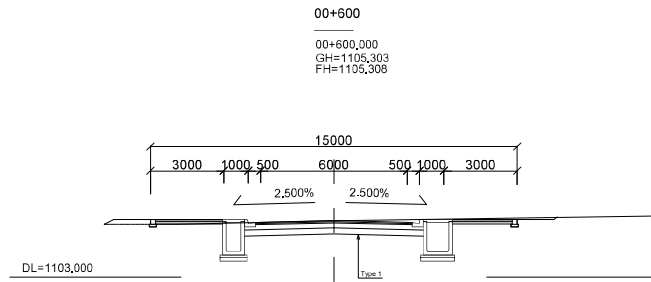


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Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads	
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Cross Sections (10) (No.5 Andrea Olal Rd.)	
			Scale: 1/200	Drawing No.: CS10

CROSS SECTIONS (11) SCALE 1/200

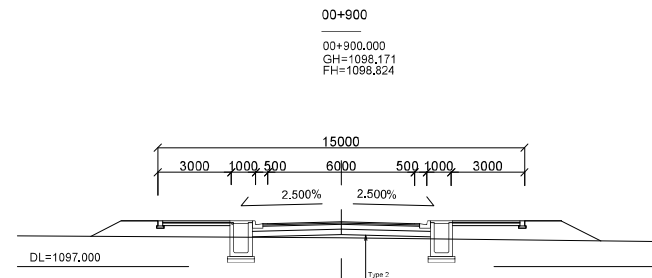
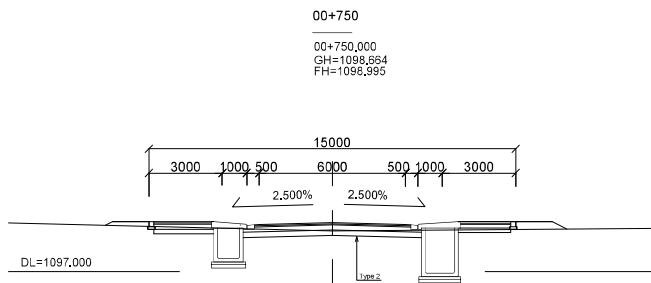
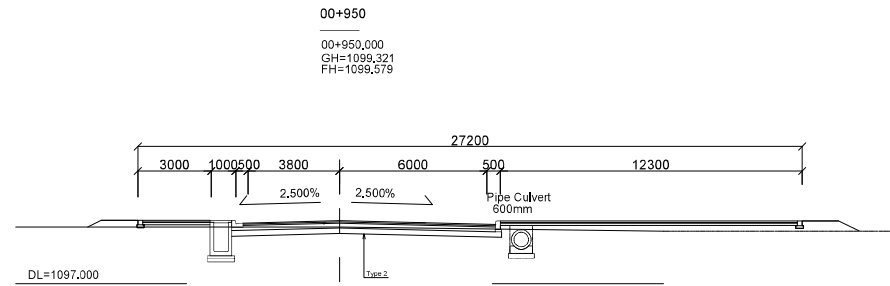
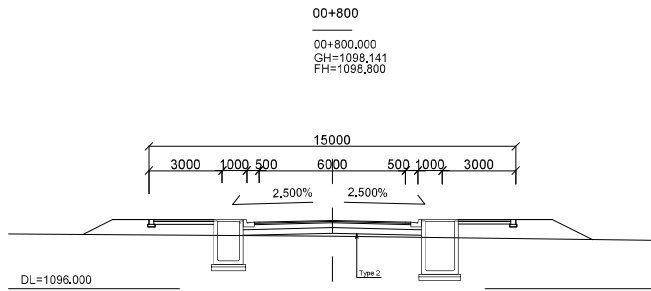
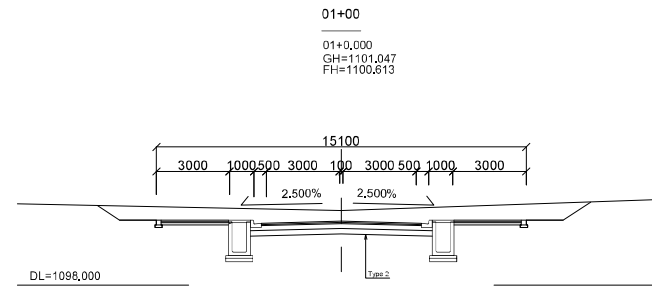
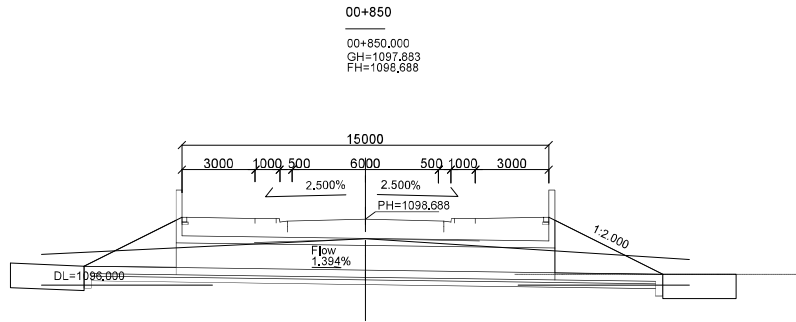
(No.6 Nehru Rd.)



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Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads	
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Cross Sections (11) (No.6 Nehru Rd.)	
			Scale: 1/200	Drawing No.: CS11

CROSS SECTIONS (12) SCALE 1/200 (No.7 Gulu Ave.) (1)

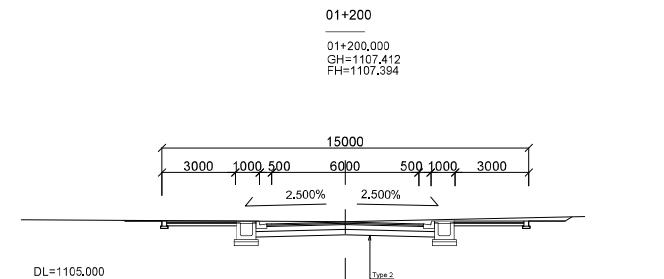
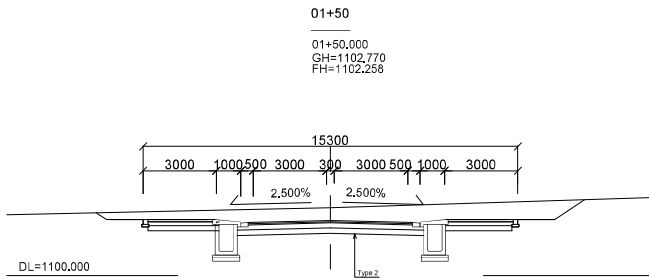
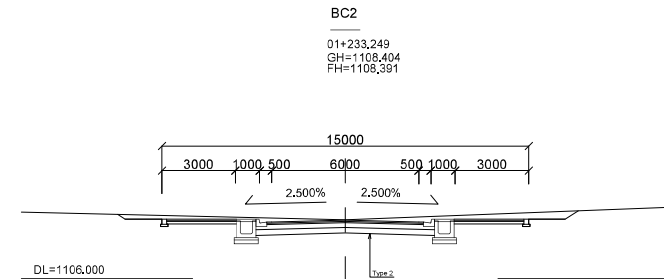
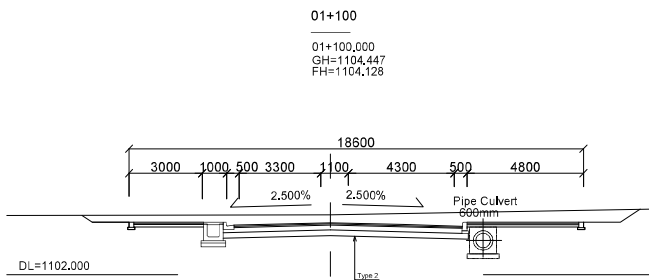
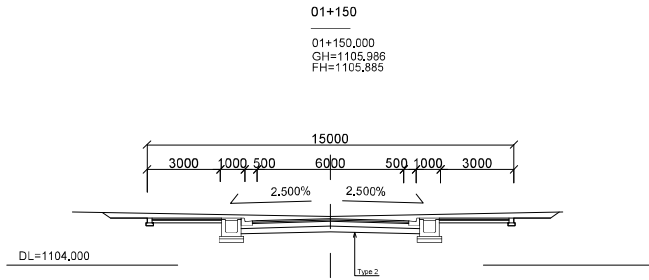


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Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads		
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Cross Sections (12) (No.7 Gulu Ave.) (1)		
			Scale: 1/200	Drawing No.: CS12	Date:

CROSS SECTIONS (13) SCALE 1/200

(No.7 Gulu Ave.) (2)

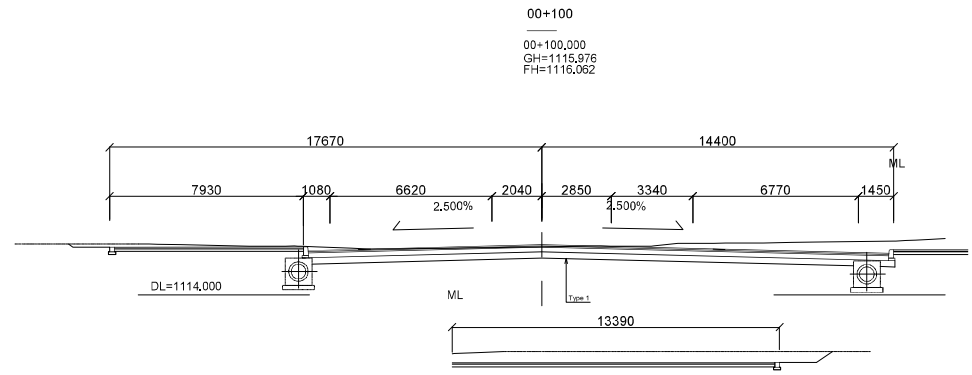
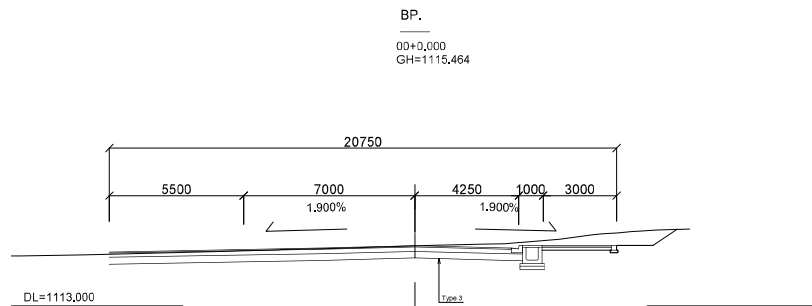
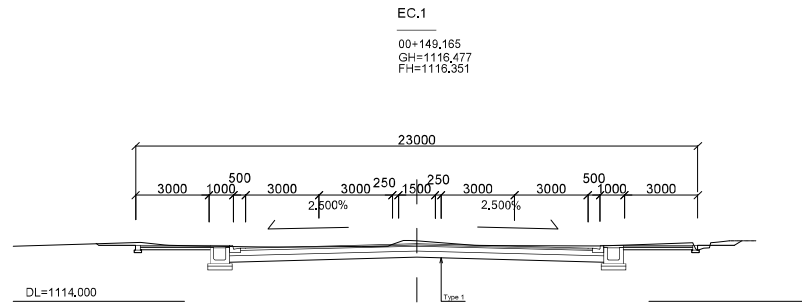
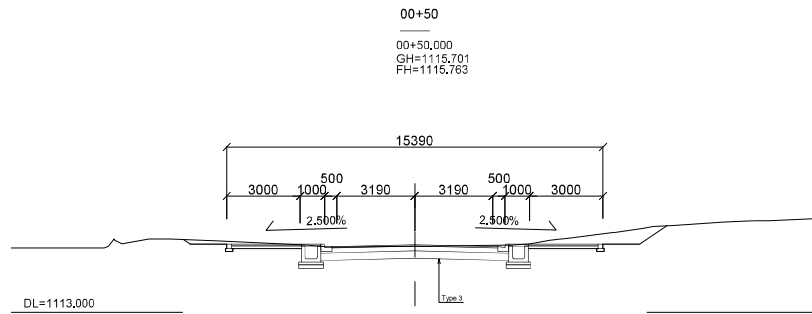
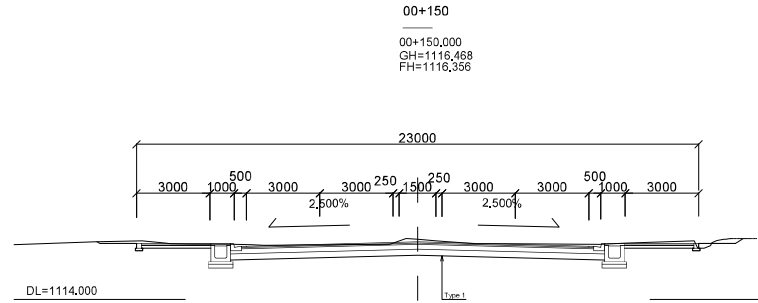
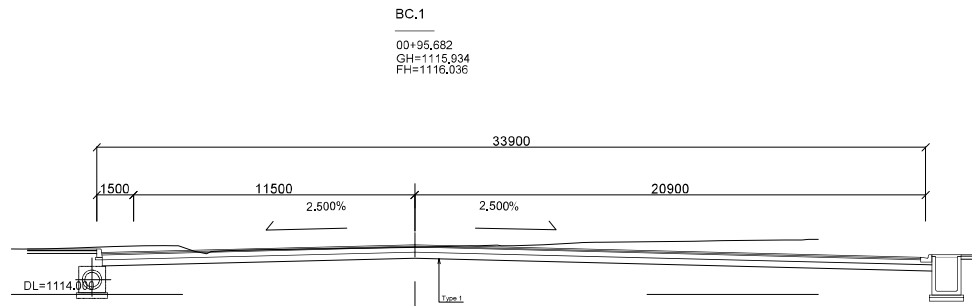


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Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads	
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Cross Sections (13) (No.7 Gulu Ave.) (2)	
			Scale: 1/200	Drawing No.: CS13

CROSS SECTIONS (3) (No.2 Acholi Rd.) (1)

SCALE 1/200

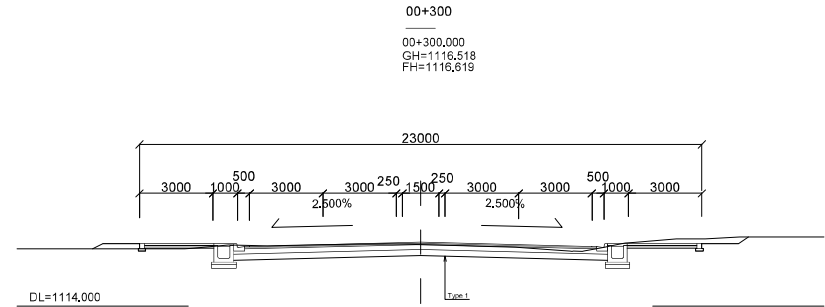
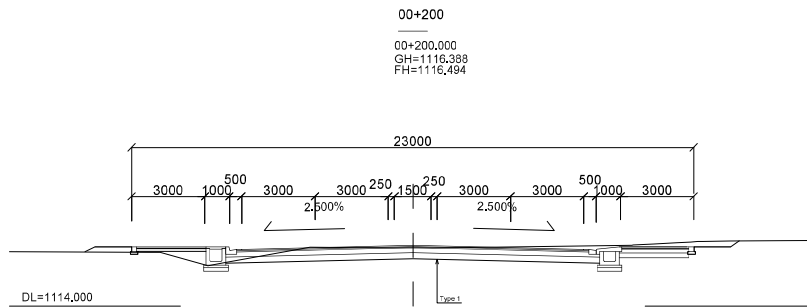
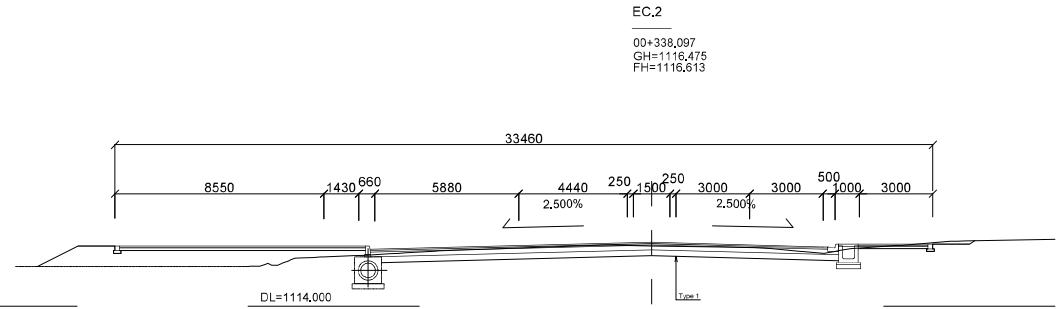
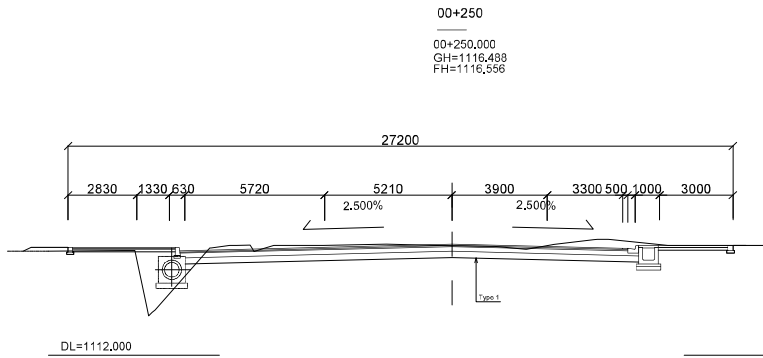
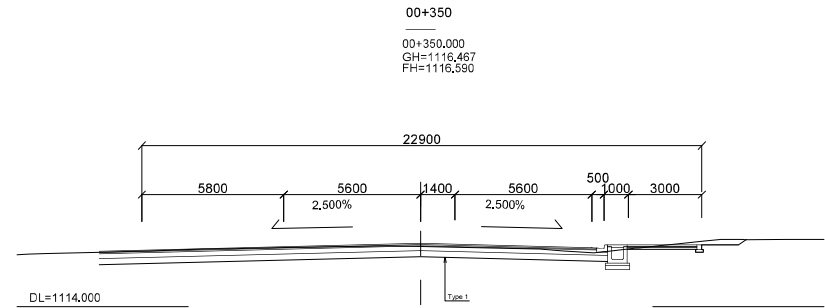
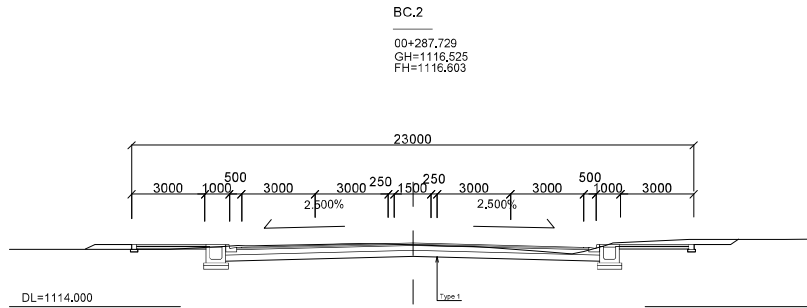


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Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads		
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Cross Sections (3) (No.2 Acholi Rd.) (1)		
			Scale: 1/200	Drawing No.: CS03	Date:

CROSS SECTIONS (4) (No.2 Acholi Rd.) (2)

SCALE 1/200



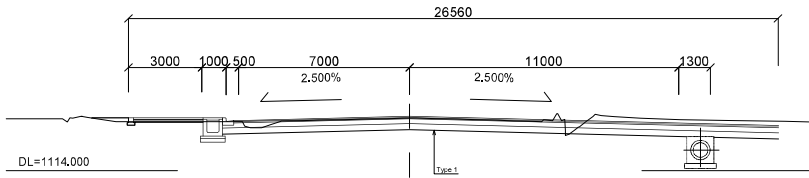
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Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads	
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Cross Sections (4) (No.2 Acholi Rd.) (2)	
			Scale: 1/200	Drawing No.: CS04

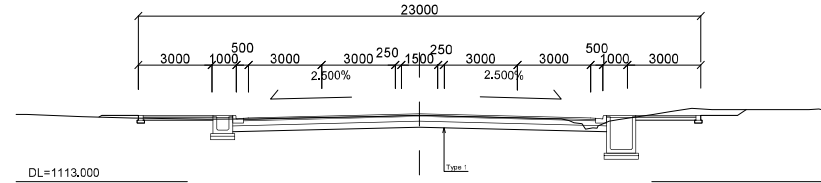
CROSS SECTIONS (5) (No.2 Acholi Rd.) (3)

SCALE 1/200

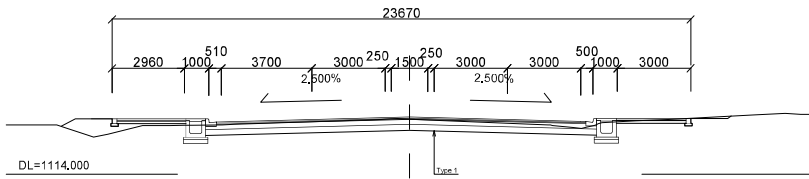
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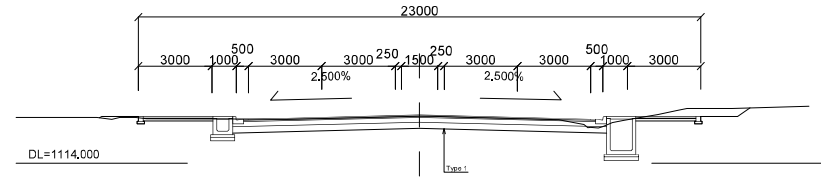
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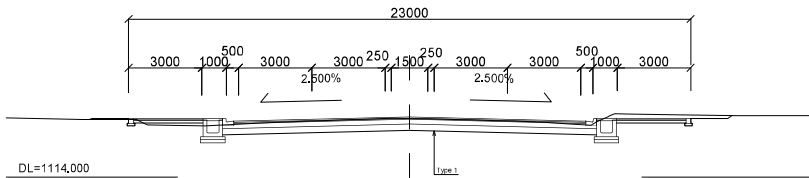
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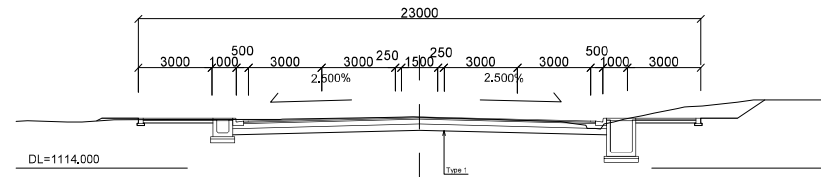
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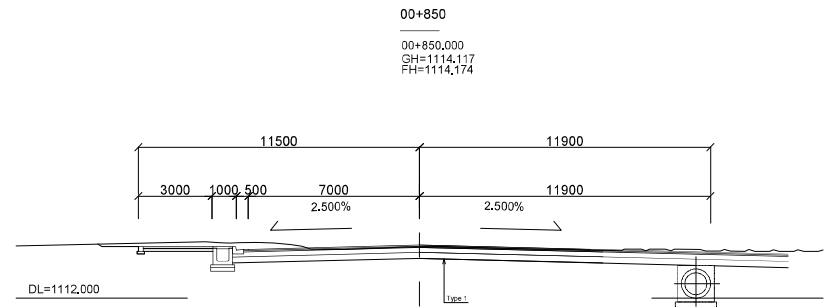
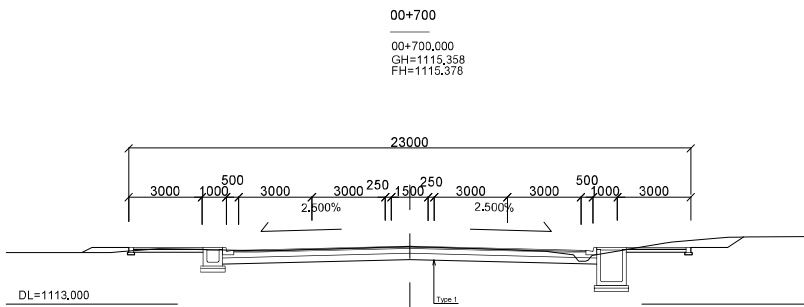
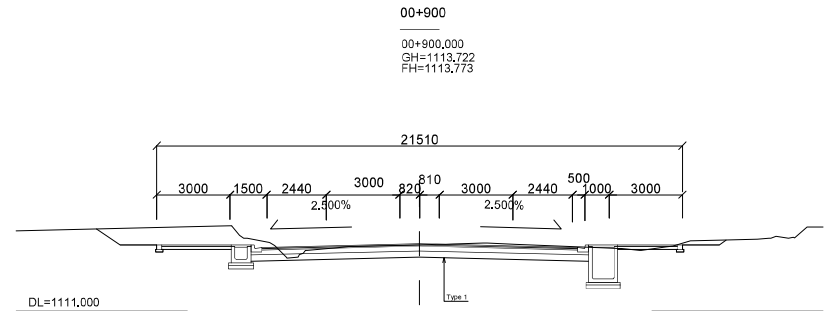
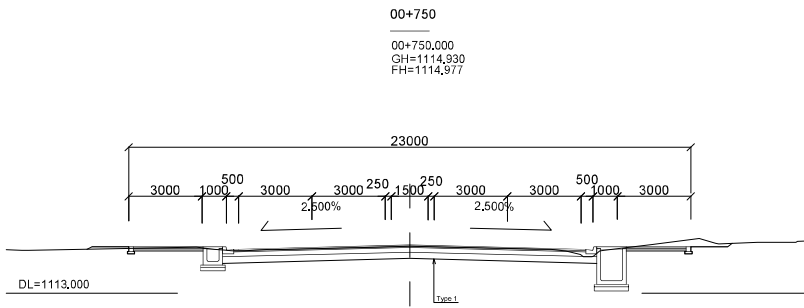
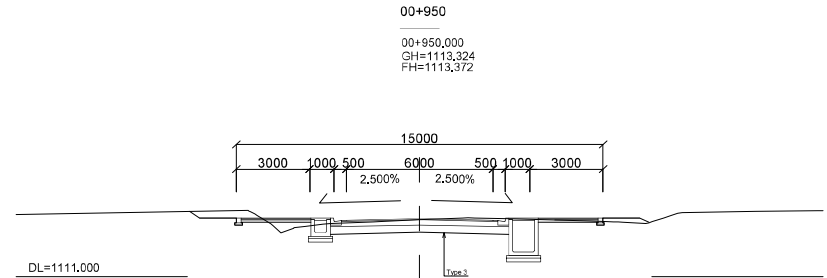
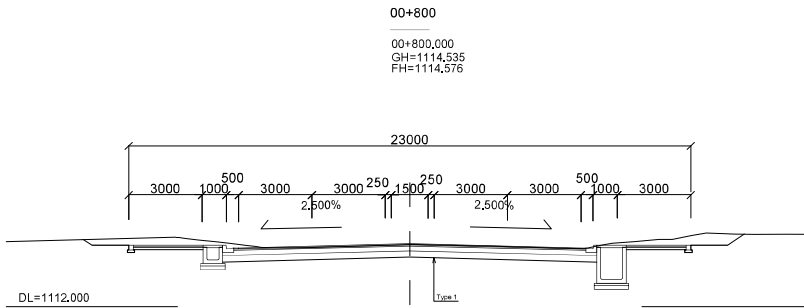


Appendix-178

Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads	
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Cross Sections (5) (No.2 Acholi Rd.) (3)	
			Scale: 1/200	Drawing No.: CS05

CROSS SECTIONS (6) (No.2 Acholi Rd.) (4)

SCALE 1/200

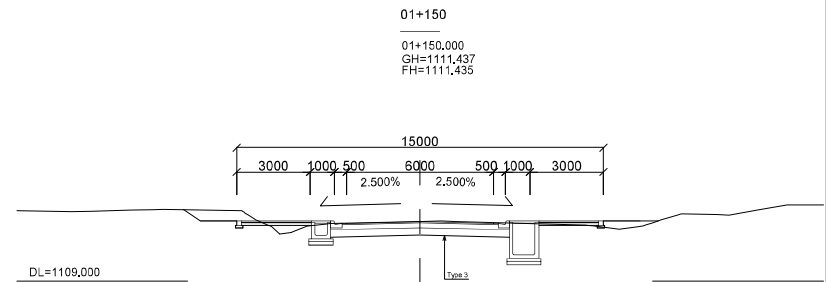
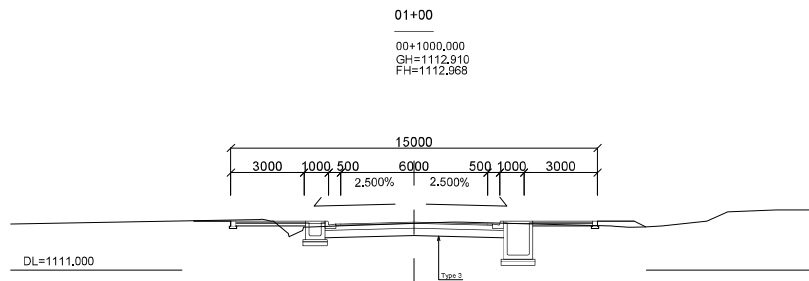
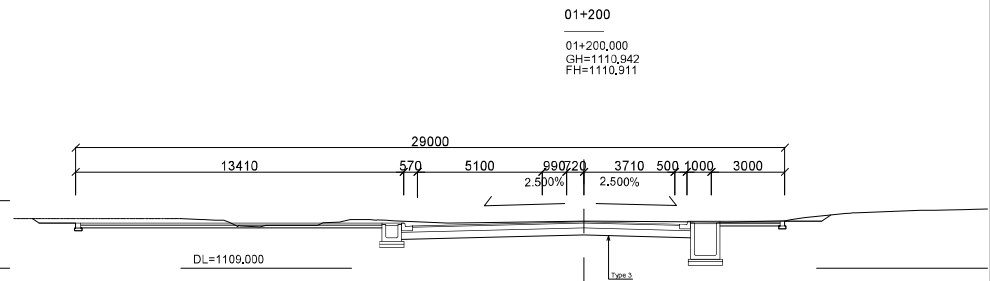
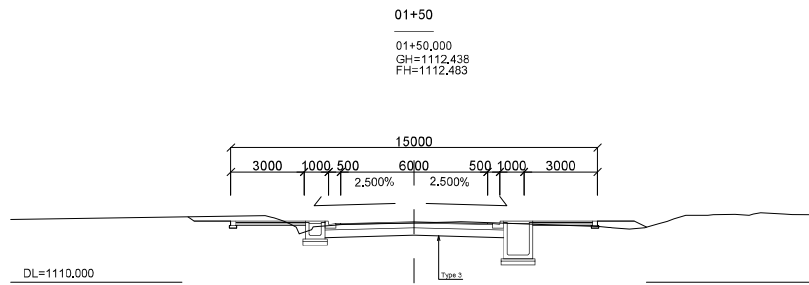
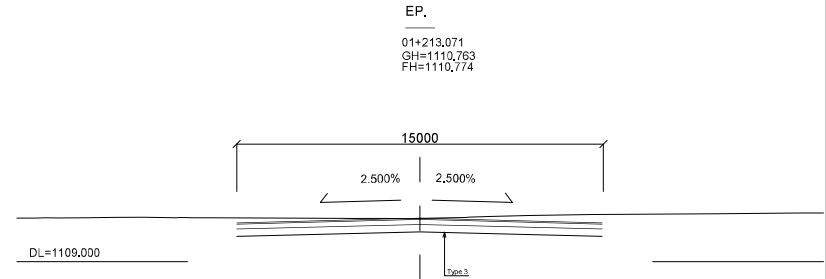
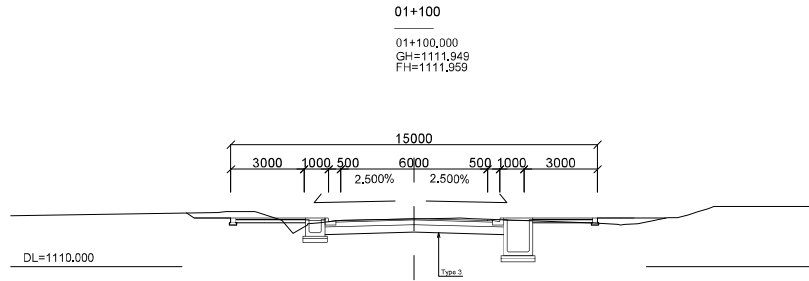


Appendix-179

Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads	
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Cross Sections (6) (No.2 Acholi Rd.) (4)	
			Scale: 1/200	Drawing No.: CS06

CROSS SECTIONS (7) SCALE 1/200

(No.2 Acholi Rd.) (5)

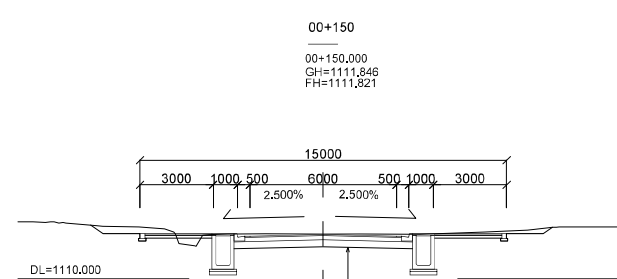
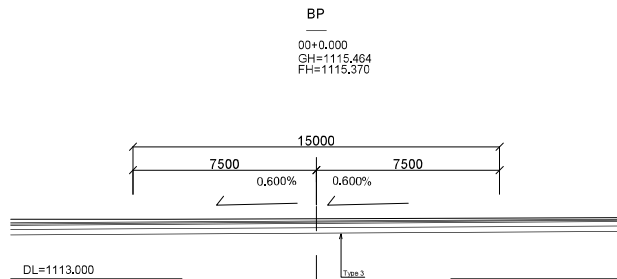
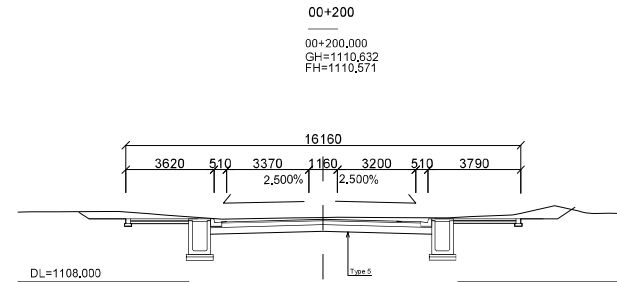
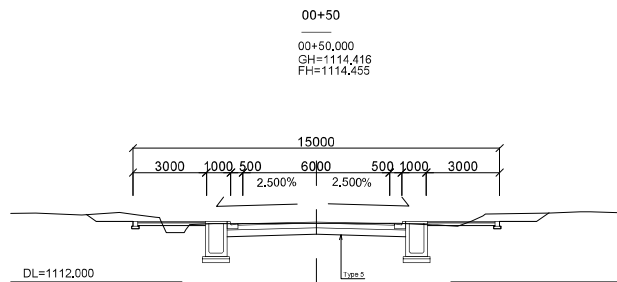
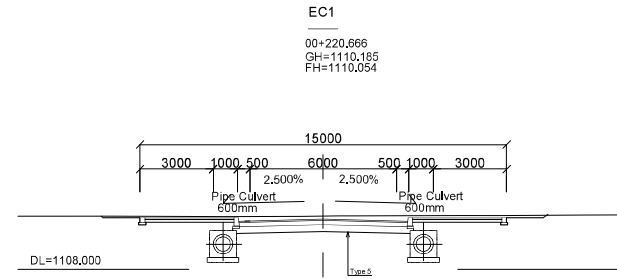
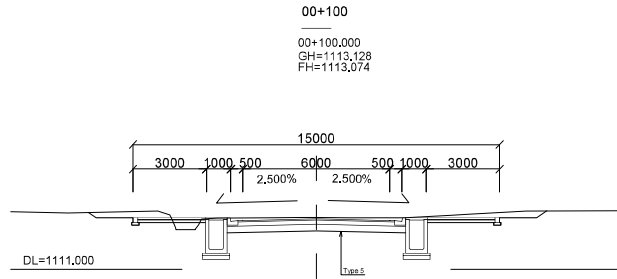


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Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads	
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Cross Sections (7) (No.2 Acholi Rd.) (5)	
			Scale: 1/200	Drawing No.: CS07

CROSS SECTIONS (8) (No.3 Lagara Rd.)

SCALE 1/200

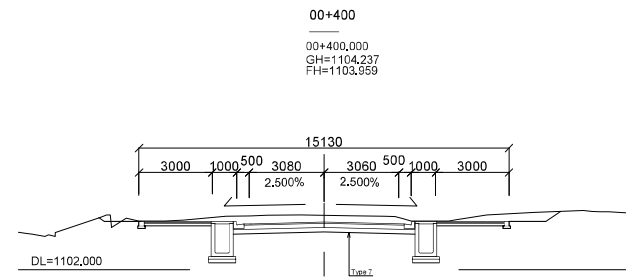
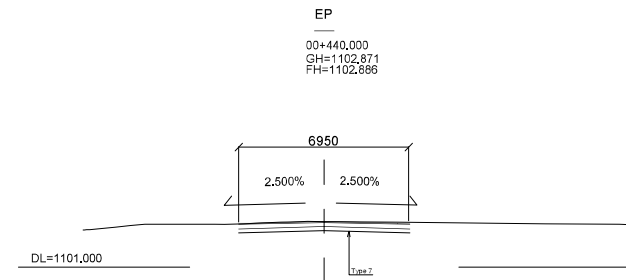
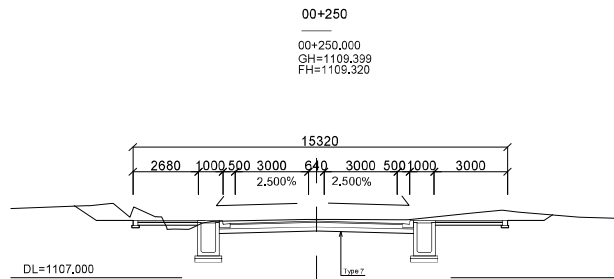
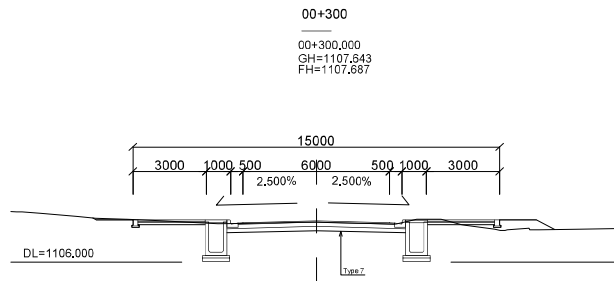
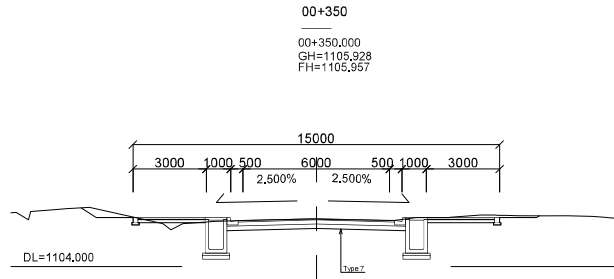


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Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads	
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Cross Sections (8) (No.3 Lagara Rd.)	
			Scale: 1/200	Drawing No.: CS08

CROSS SECTIONS (9) (No.4 Coronation Rd.)

SCALE 1/200

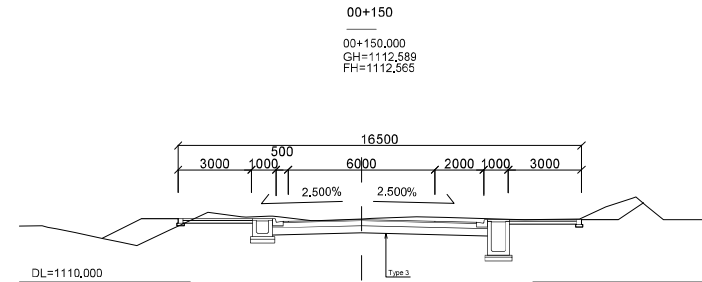
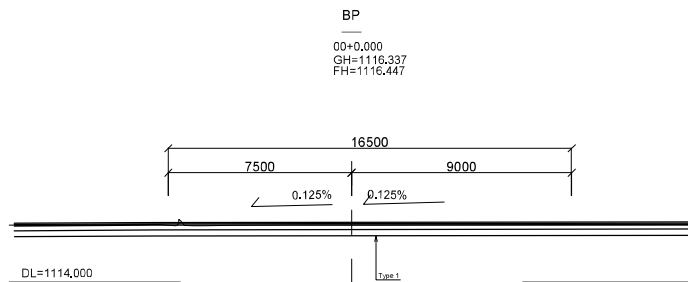
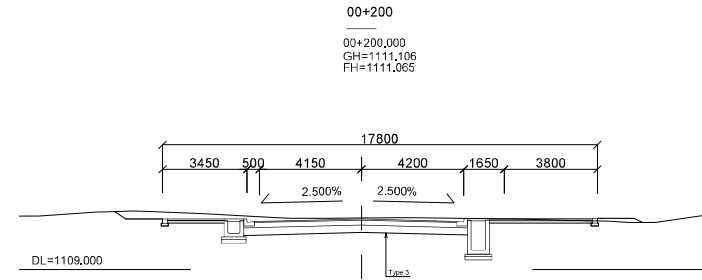
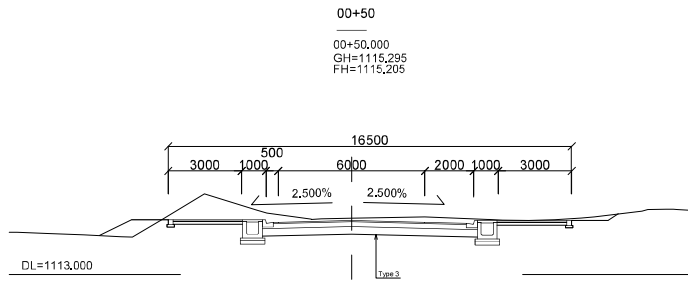
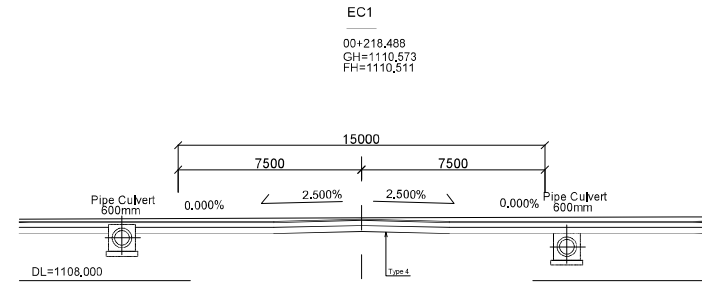
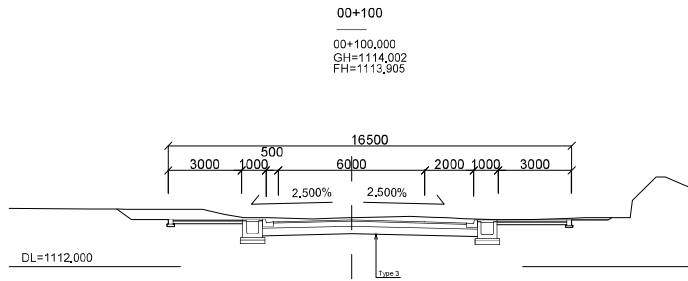


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Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads	
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Cross Sections (9) (No.4 Coronation Rd.)	
			Scale: 1/200	Drawing No.: CS09

CROSS SECTIONS (14) SCALE 1/200

(No.8 Awich Rd.)

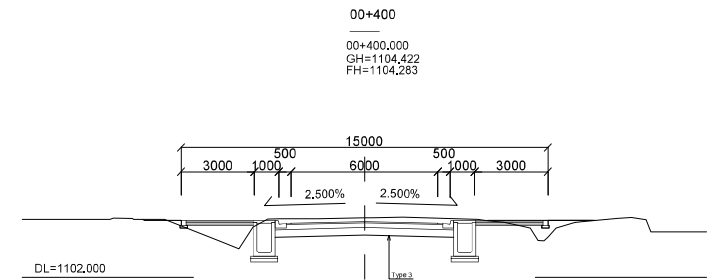
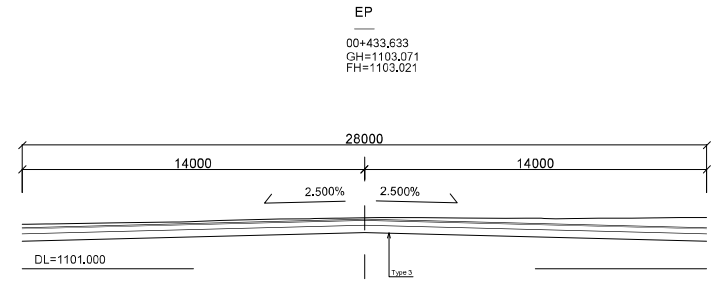
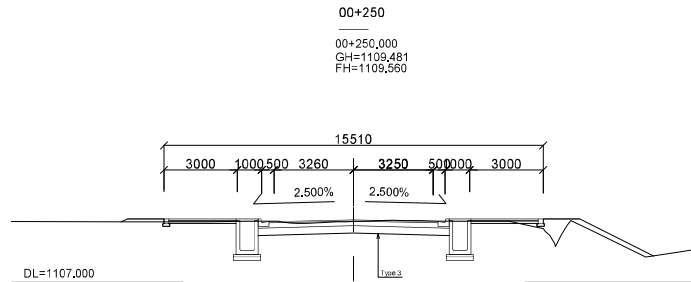
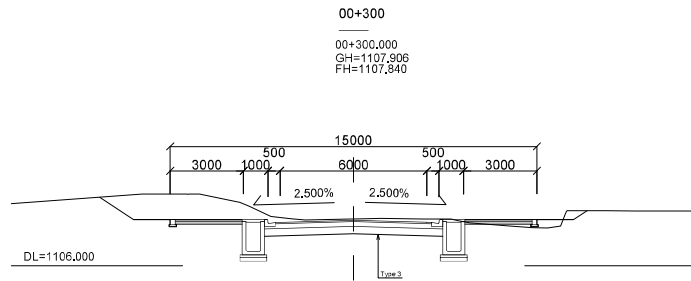
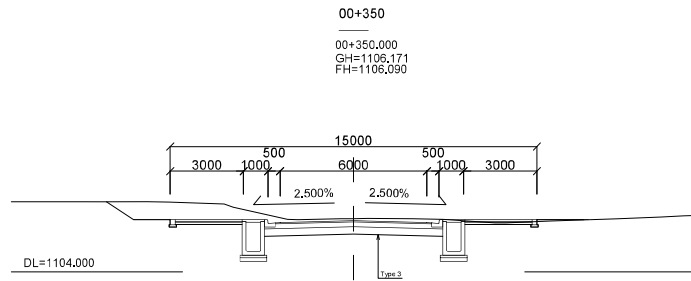


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Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads	
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Cross Sections (14) (No.8 Awich Rd.)	
			Scale: 1/200	Drawing No.: CS14

CROSS SECTIONS (15) SCALE 1/200

(No.9 Queens Ave.)

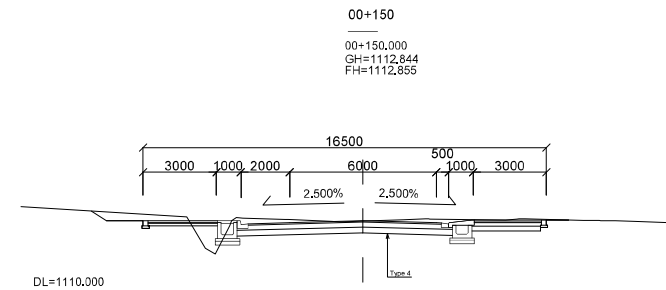
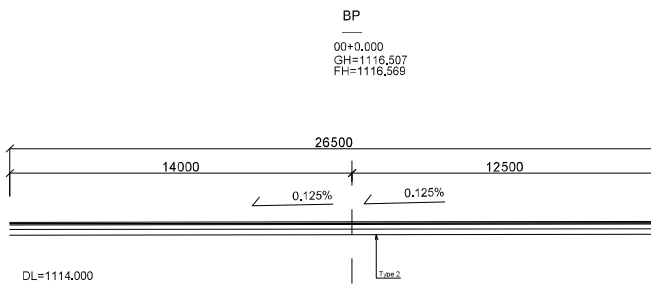
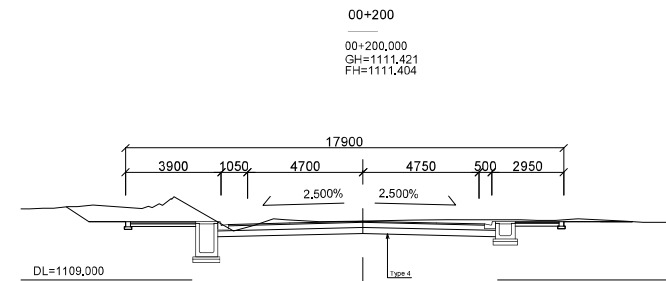
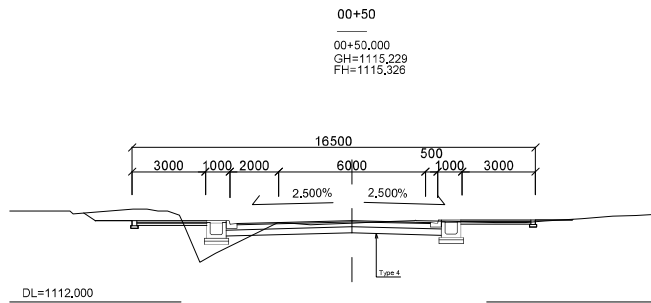
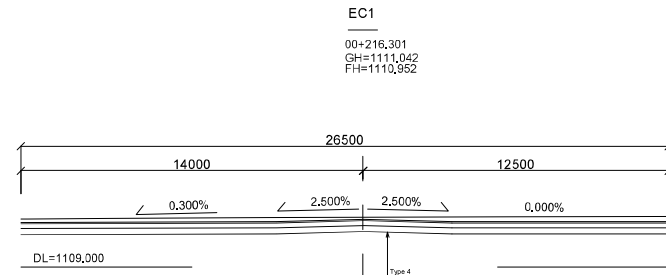
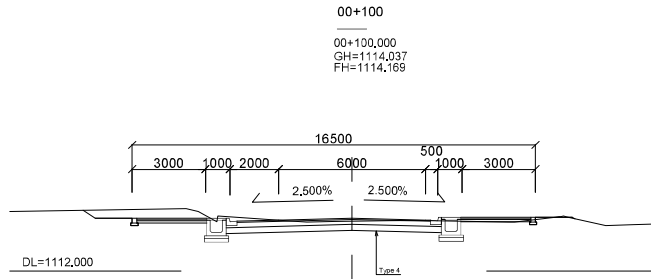


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Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads	
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Cross Sections (15) (No.9 Queens Ave.)	
			Scale: 1/200	Drawing No.: CS15

CROSS SECTIONS (16) SCALE 1/200

(No.10 Keyo Rd.)

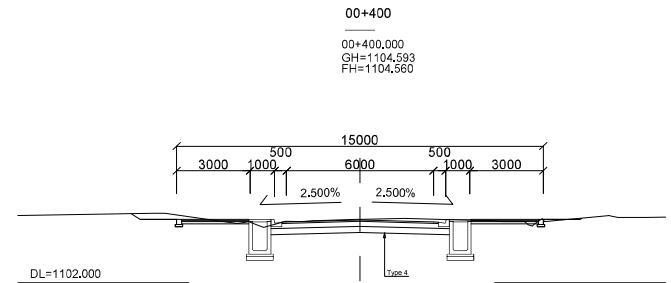
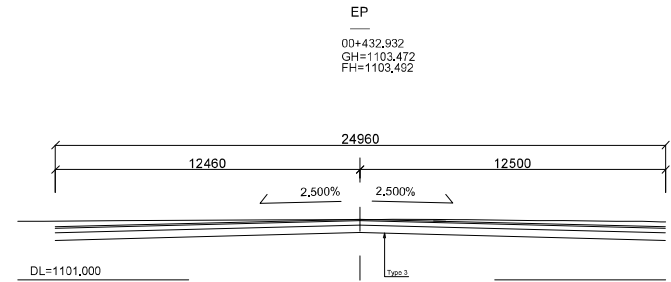
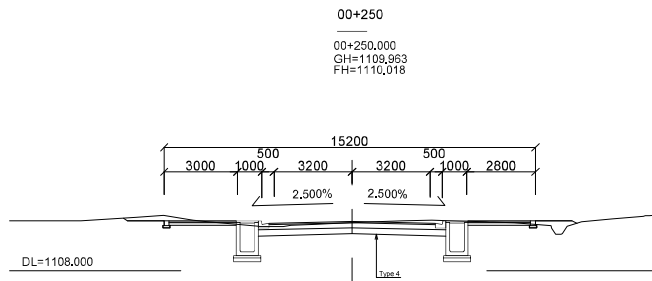
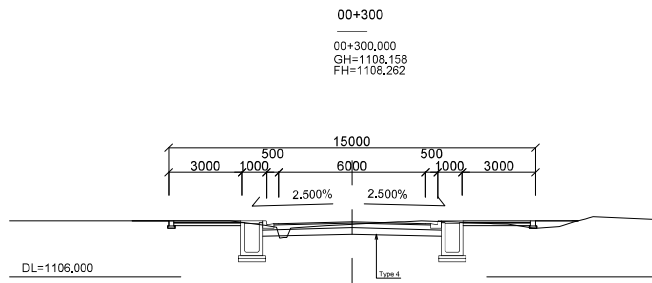
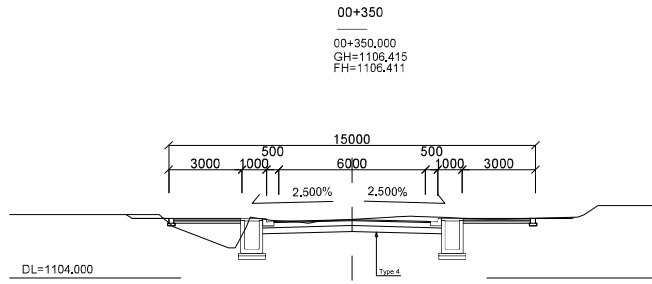


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Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads	
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Cross Sections (16) (No.10 Keyo Rd.)	
			Scale: 1/200	Drawing No.: CS16

CROSS SECTIONS (17) SCALE 1/200

(No.11 Aiker Rd.)

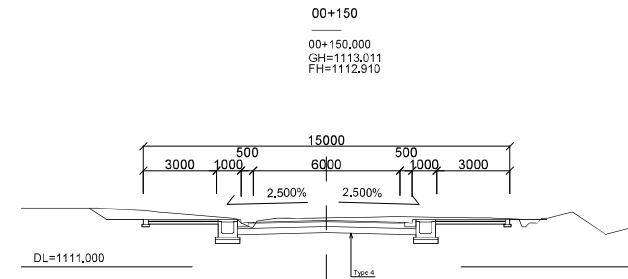
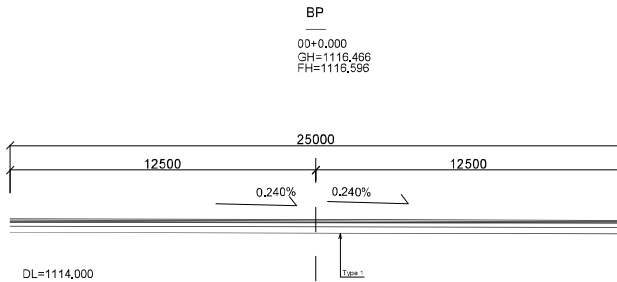
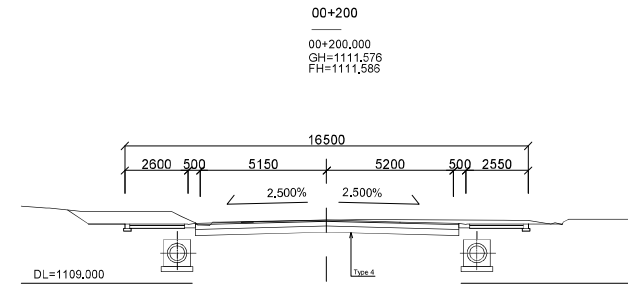
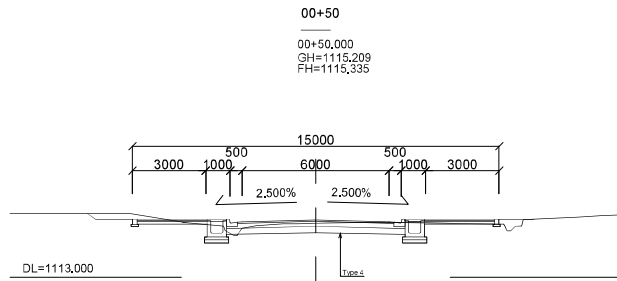
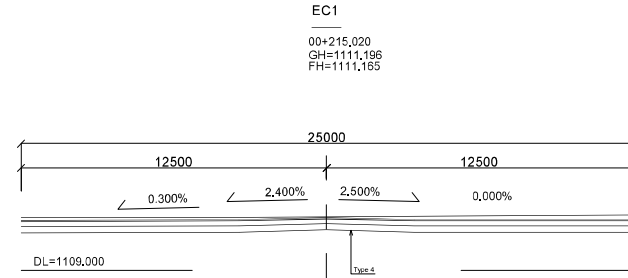
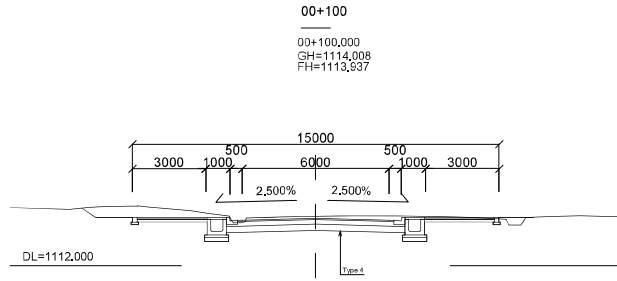


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Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads	
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Cross Sections (17) (No.11 Aiker Rd.)	
			Scale: 1/200	Drawing No.: CS17

CROSS SECTIONS (18) SCALE 1/200

(No.12 Labwor Rd.)

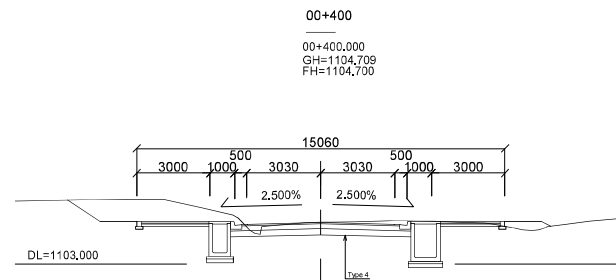
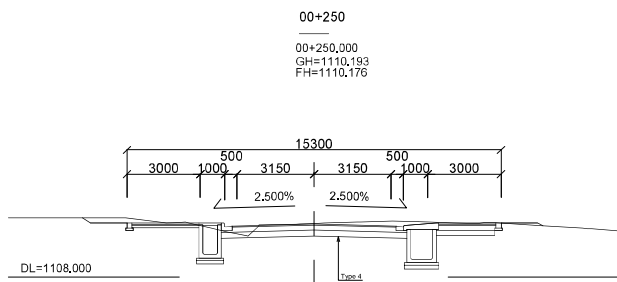
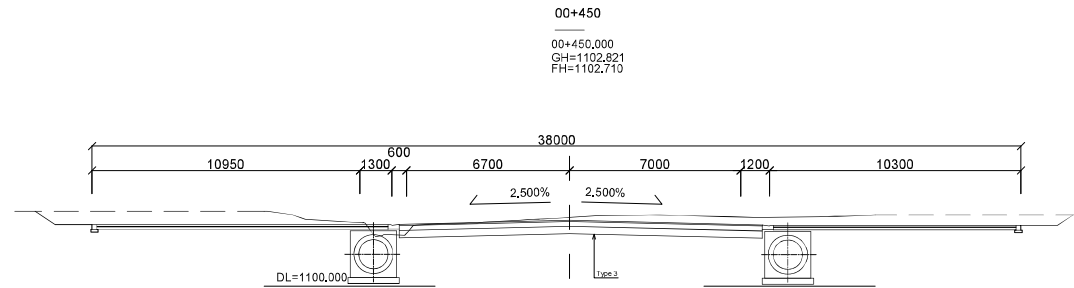
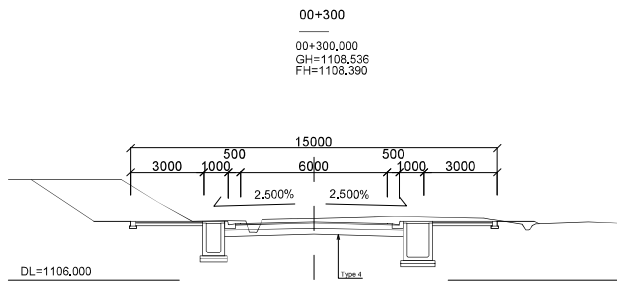
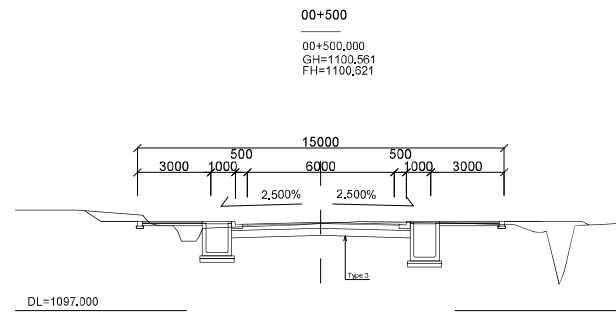
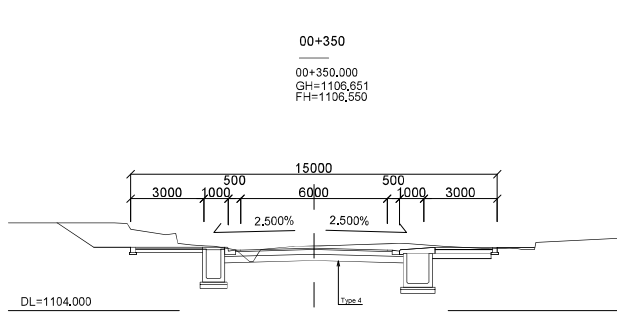


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Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads	
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Cross Sections (18) (No.12 Labwor Rd.)	
			Scale: 1/200	Drawing No.: CS18

CROSS SECTIONS (19) SCALE 1/200

(No.13 Awere Rd.) (1)



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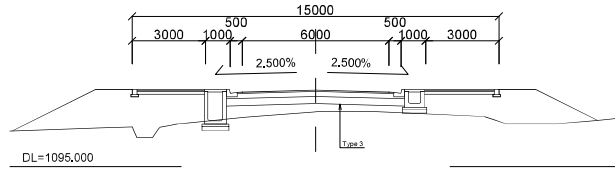
Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads		
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Cross Sections (19) (No.13 Awere Rd.) (1)		
			Scale: 1/200	Drawing No.: CS19	Date:

CROSS SECTIONS (20) SCALE 1/200

(No.13 Awere Rd.) (2)

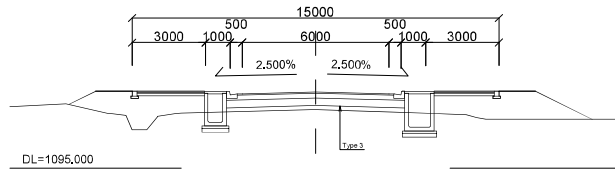
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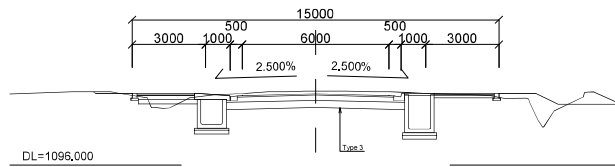
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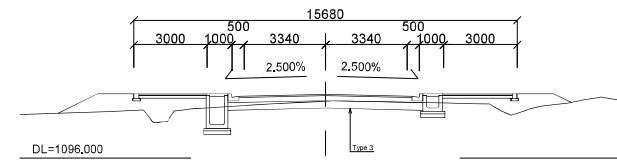
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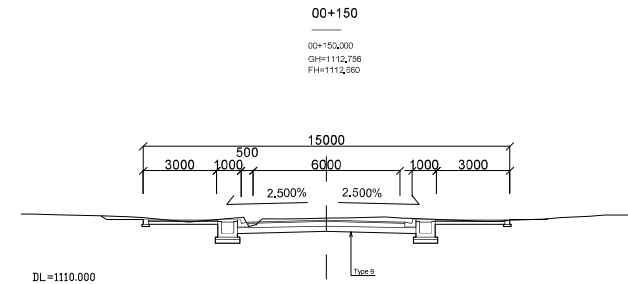
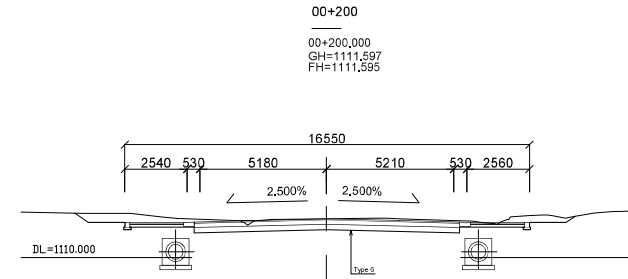
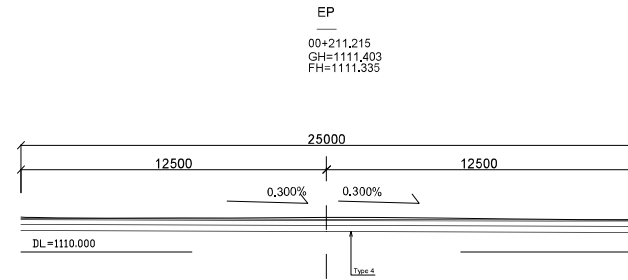
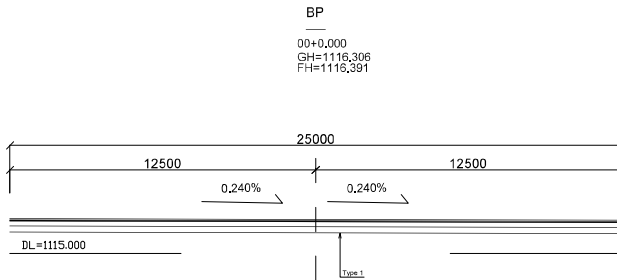
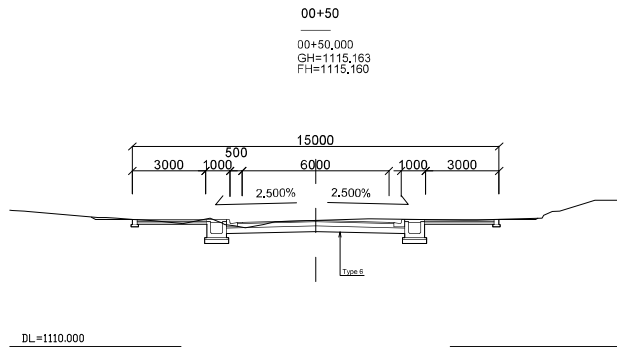
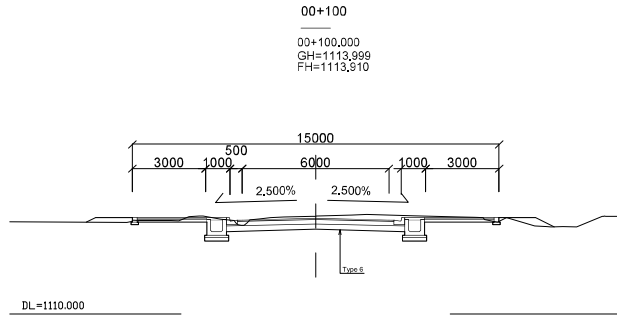


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Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads		
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Cross Sections (20) (No.13 Awere Rd.) (2)		
			Scale: 1/200	Drawing No.: CS20	Date:

CROSS SECTIONS (21) SCALE 1/200

(No.14 Oliya Rd.)

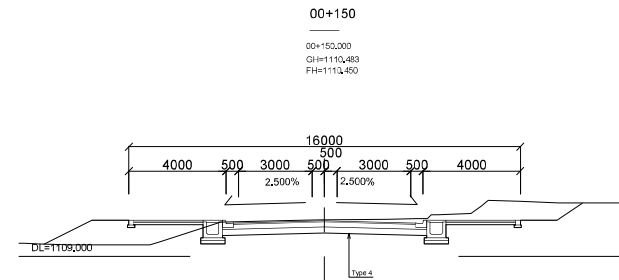
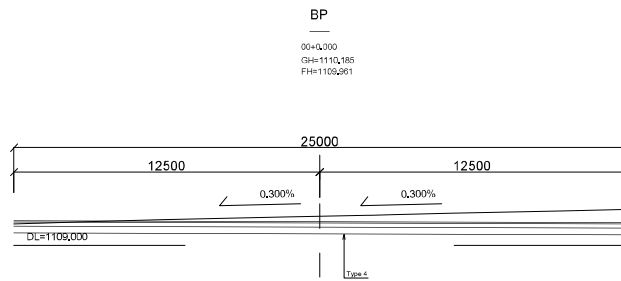
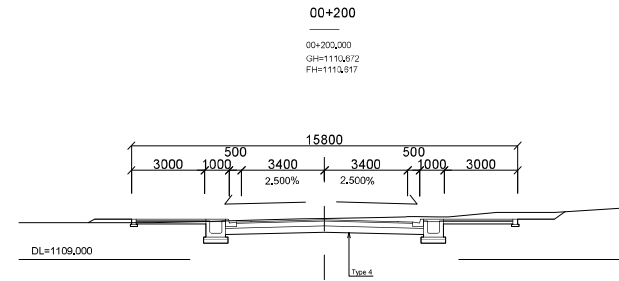
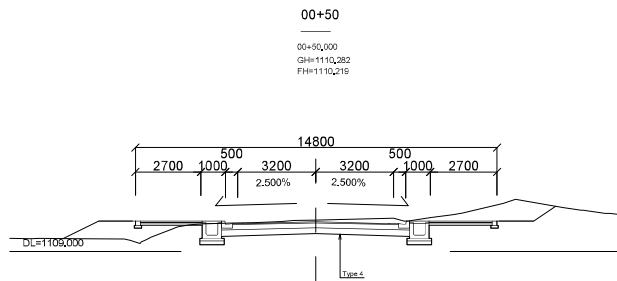
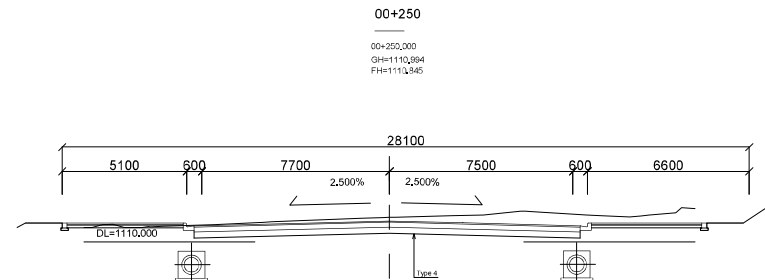
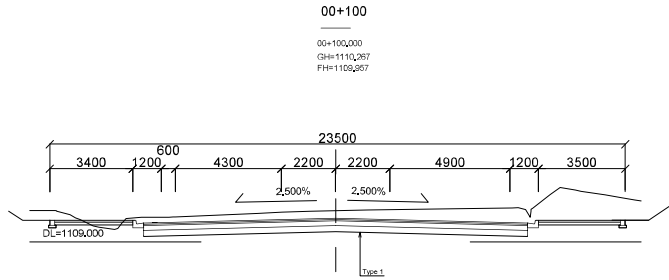


Appendix-190

Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads	
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Cross Sections (21) (No.14 Oliya Rd.)	
			Scale: 1/200	Drawing No.: CS21

CROSS SECTIONS (22) SCALE 1/200

(No.17 Jomo Kenyatta Rd.)(1)

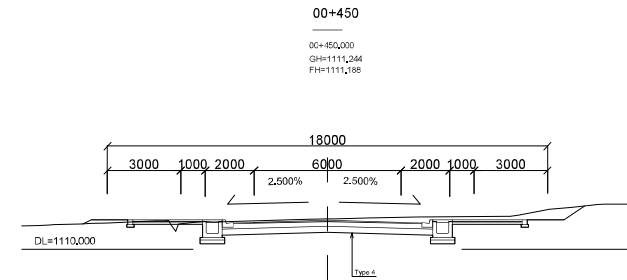
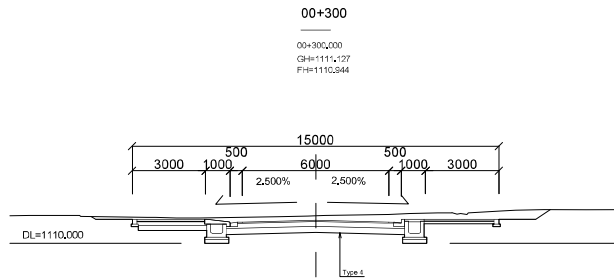
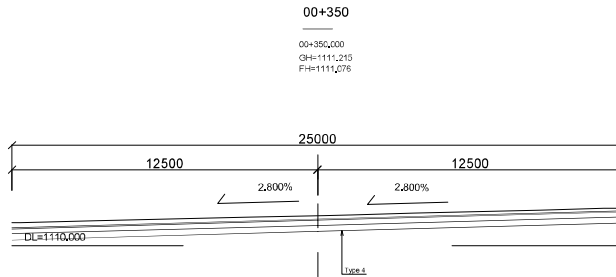
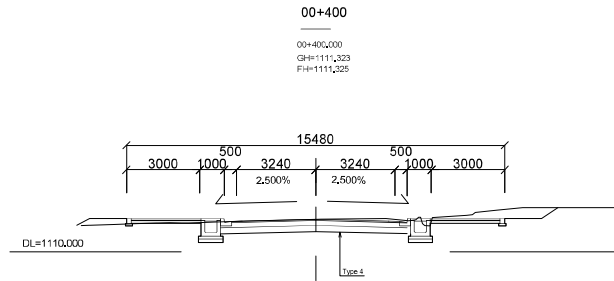


Appendix-191

Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads	
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Cross Sections (22) (No.17 Jomo Kenyatta Rd.)(1)	
			Scale: 1/200	Drawing No.: CS22

CROSS SECTIONS (23) SCALE 1/200

(No.17 Jomo Kenyatta Rd.)(2)

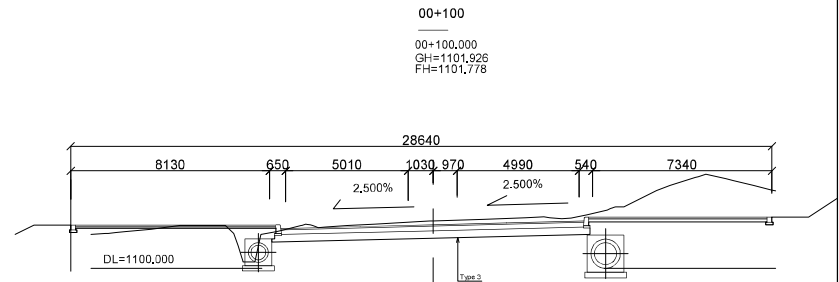
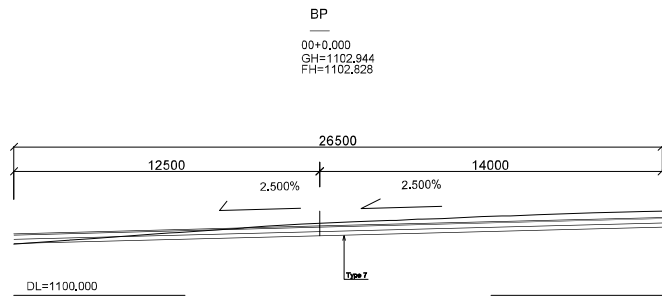
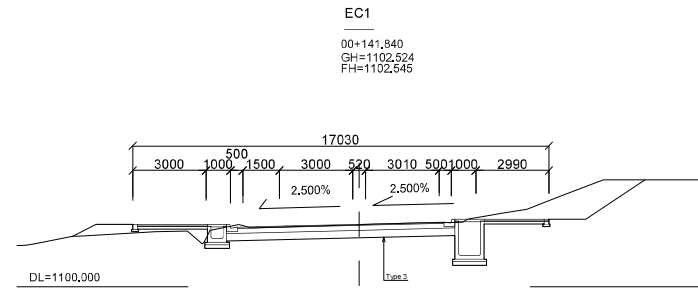
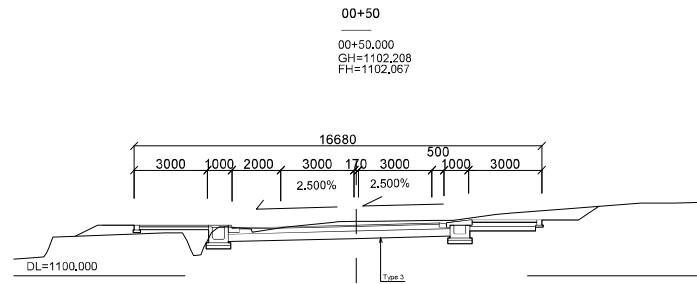
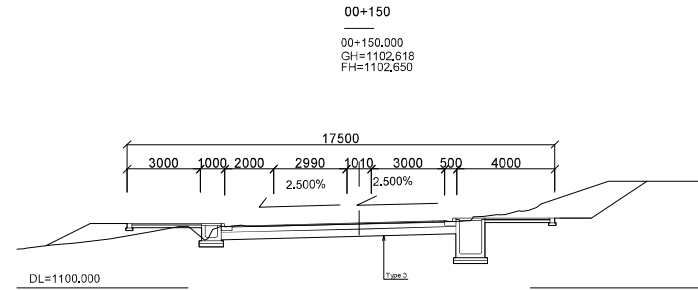
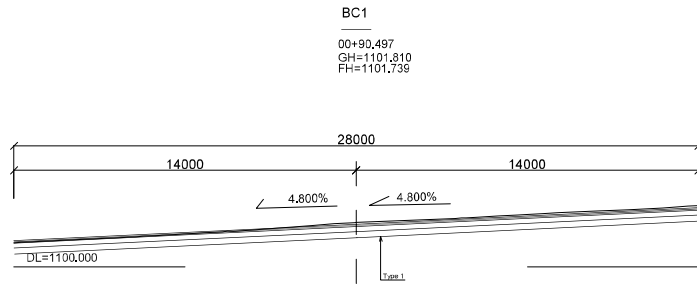


Appendix-192

Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads	
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Cross Sections (23) (No.17 Jomo Kenyatta Rd.)(2)	
			Scale: 1/200	Drawing No.: CS23

CROSS SECTIONS (24) (No.18 Bank Lane)(1)

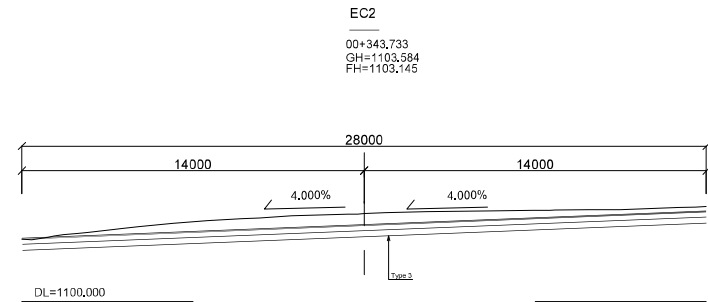
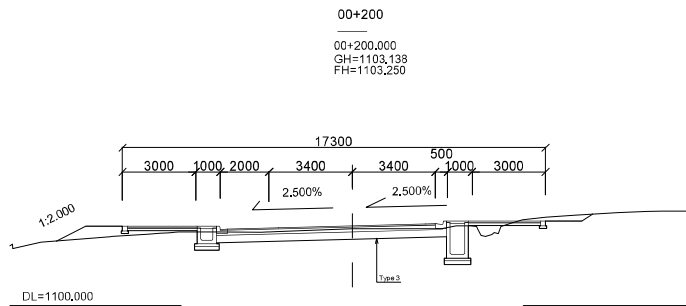
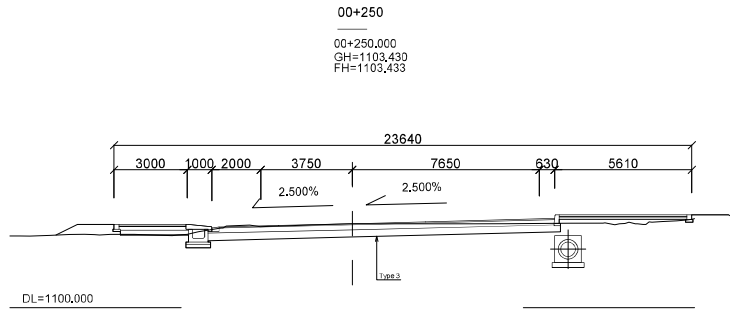
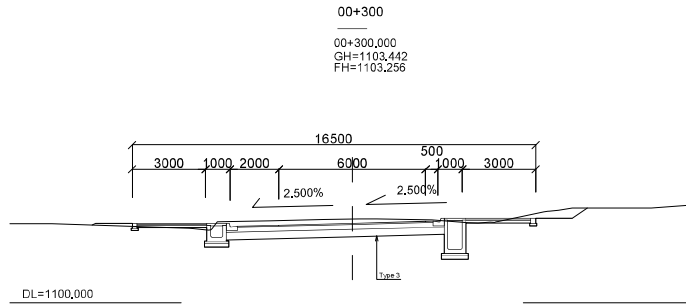
SCALE 1/200



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Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads	
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Cross Sections (24) (No.18 Bank Lane)(1)	
			Scale: 1/200	Drawing No.: CS24

CROSS SECTIONS (25) SCALE 1/200 (No.18 Bank Lane)(2)

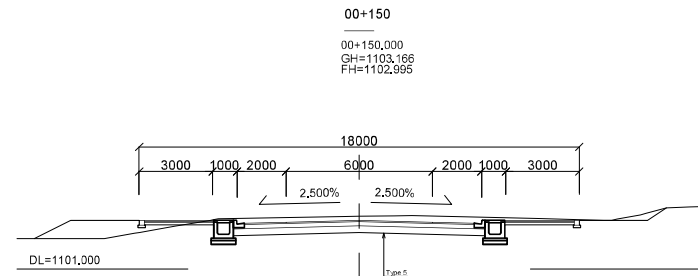
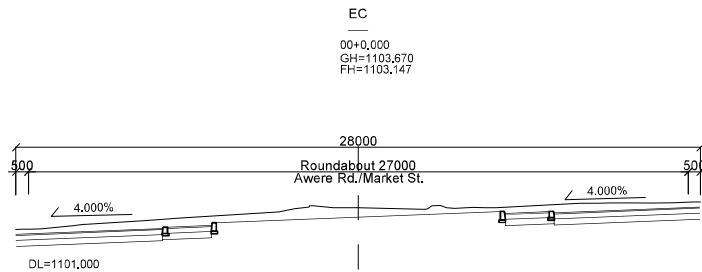
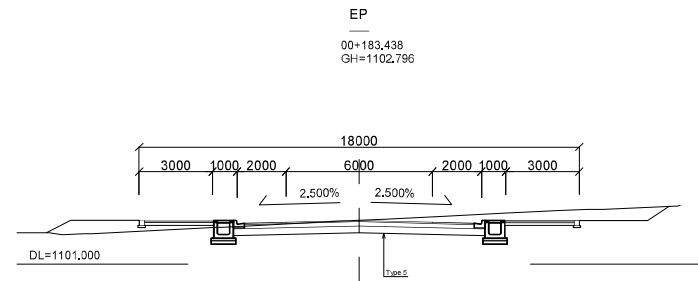
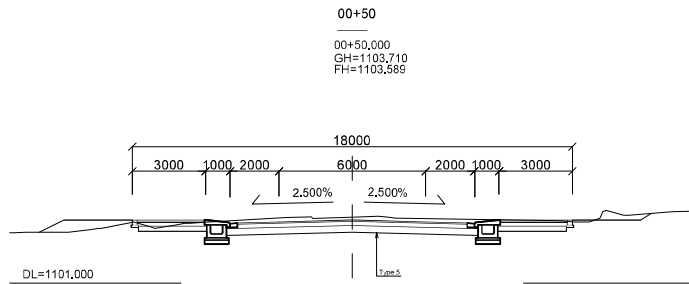
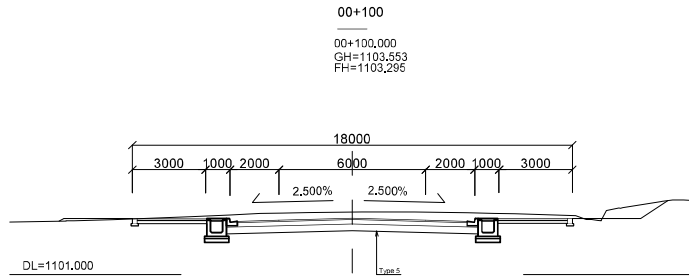


Appendix-194

Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads	
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Cross Sections (25) (No.18 Bank Lane)(2)	
			Scale: 1/200	Drawing No.: CS25

CROSS SECTIONS (26) SCALE 1/200

(No.19 Market St.)

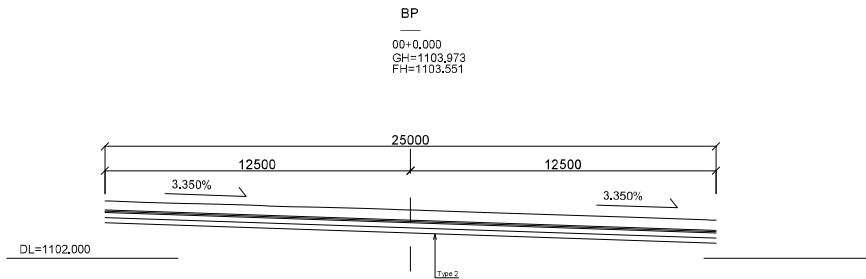
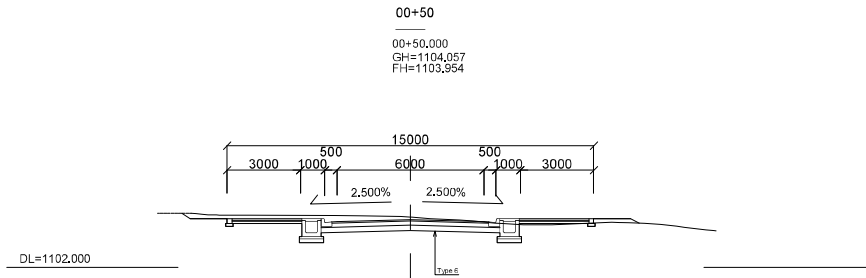
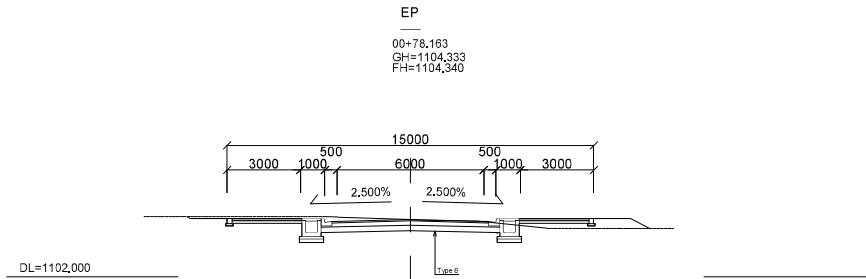


Appendix-195

Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads	
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Cross Sections (26) (No.19 Market st.)	
			Scale: 1/200	Drawing No.: CS26

CROSS SECTIONS (27) SCALE 1/200

(No.20 Harley Rd.)

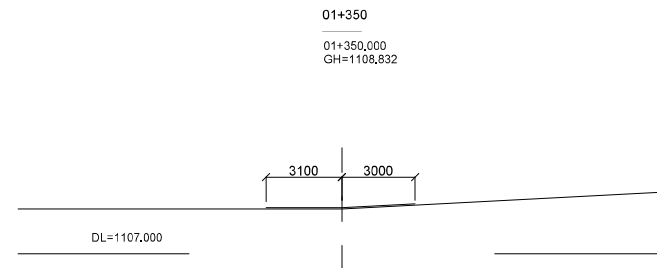
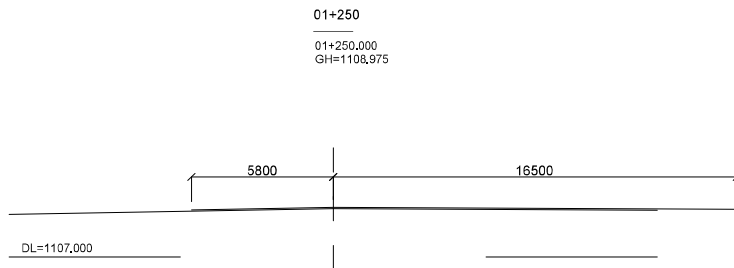
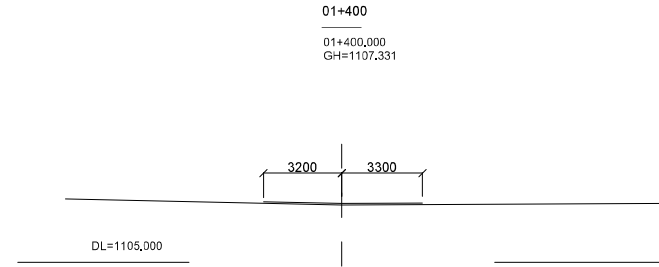
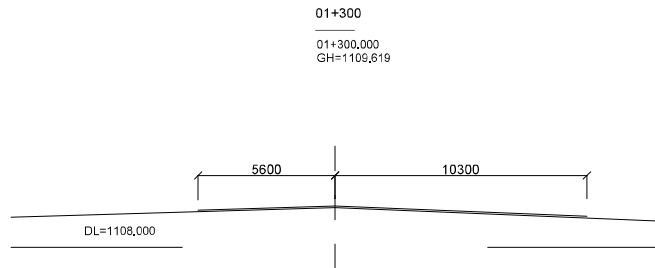
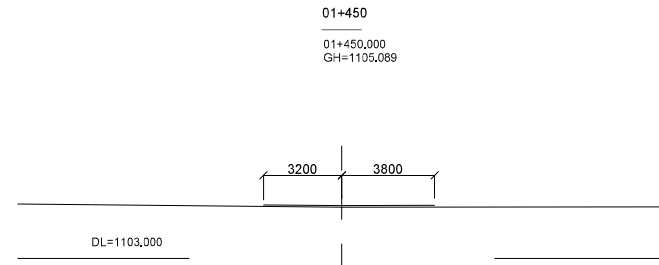
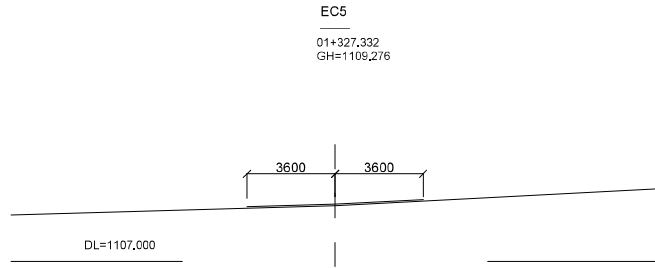


Appendix-196

Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads	
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Cross Sections (27) (No.20 Harley Rd.)	
			Scale: 1/200	Drawing No.: CS27

CROSS SECTIONS (28) SCALE 1/200

(No.21 Prince Rd.) (1)

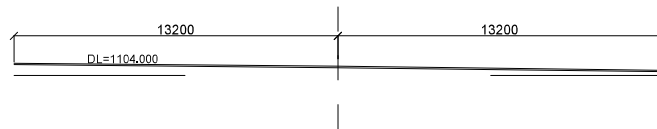


Appendix-197

Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads	
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD. NTC INTERNATIONAL CO., LTD.	Job: Cross Sections (28) (No.21 Prince Rd.) (1)	
			Scale: 1/200	Drawing No.: CS28

CROSS SECTIONS (29) SCALE 1/200
 (No.21 Prince Rd.) (2)

EP
 01+471.479
 GH=1104.304



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Notes:	Client	Consultant	Project: The Preparatory Survey on the Project for Improvement of Gulu Municipal Council Roads		
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	EIGHT-JAPAN ENGINEERING CONSULTANTS INC. NIPPON KOEI CO., LTD.	Job: Cross Sections (29) (No.21 Prince Rd.) (2)		
		NTC INTERNATIONAL CO., LTD.	Scale: 1/200	Drawing No.: CS29	Date:

6. Reference

6.1 Outline of the result of the geological survey

CLIENT: EIGHT JAPAN ENGINEERING CONSULTANTS LTD
PROJECT IMPROVEMENT AND REHABILITATION OF GULU MUNICIPAL ROADS

CONTRACTOR:



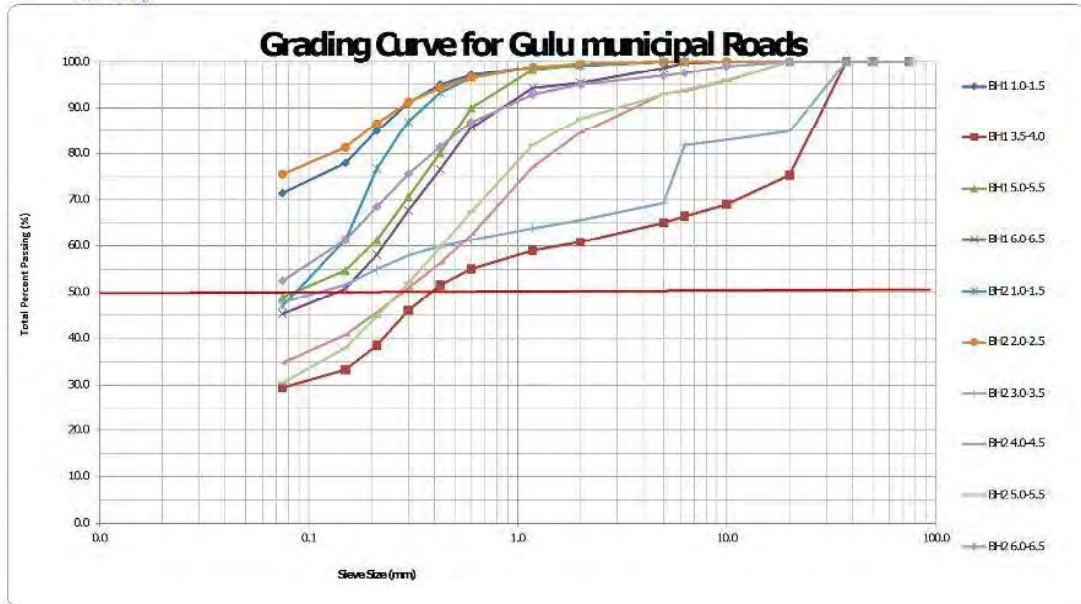
SOIL INVESTIGATION FOR THE GULU MUNICIPAL ROADS

SUMMARY OF BOREHOLES' CLASSIFICATION TEST RESULTS

BH No.	Depth (m)	Particle Description	Soil Index Properties																							
			% Passing Sieve (mm)														GM	NM C (%)	Bulk Density (g/cm ³)	Unit Weight (kN/m ³)	PLASTICITY				UCS Classification	
			75.0	50.0	37.5	20.0	10.0	6.3	5.0	2.0	1.18	0.600	0.425	0.300	0.212	0.150					0.075	LL	PL	PI		LS
BH1	1.0-1.5	Sandy CLAY	100	100	100	100	100	100	100	99	99	97	95	91	85	78	71	0.35	30.5	2.065	20.237	41.5	21.0	20.8	10.0	CI
BH1	2.5-4.0	Clayey gravelly SAND	100	100	100	75	69	66	65	61	59	55	52	46	39	33	29	1.58	11.6	1.978	19.384	46.8	13.7	23.1	8.9	CI
BH1	5.0-5.5	Clayey SAND	100	100	100	100	100	100	100	99	98	90	80	71	61	55	49	0.72	18.0	2.407	23.589	45.7	21.7	24.0	9.0	CI
BH1	6.0-6.5	Clayey SAND	100	100	100	100	100	100	99	95	91	86	76	68	58	51	45	0.83	23.4	2.036	19.953	49.4	26.8	22.6	3.5	CI
BH2	1.0-1.5	Clayey SAND	100	100	100	100	100	100	99	99	96	93	87	77	61	47	0.60	22.8	1.980	19.404	23.7	12.5	11.2	4.1	CI	
BH2	2.0-2.5	Sandy CLAY	100	100	100	100	100	100	100	99	97	94	91	87	81	75	0.31	31.6	1.981	19.414	63.2	24.1	38.8	19.5	CH	
BH2	3.0-3.5	Gravelly sandy CLAY	100	100	100	85	83	82	69	66	64	61	60	58	55	52	48	1.27	21.9	2.164	21.207	52.4	26.5	25.9	14.1	CH
BH2	4.0-4.5	Gravelly clayey SAND	100	100	100	100	96	94	93	85	77	62	56	51	46	41	35	1.24	15.1	2.253	22.079	36.5	21.6	14.9	3.5	CI
BH2	5.0-5.5	Gravelly clayey SAND	100	100	100	100	96	94	95	88	82	67	60	52	45	38	30	1.22	10.9	2.319	22.726	34.7	18.6	16.1	3.3	CI
BH2	6.0-6.5	Sandy CLAY	100	100	100	100	99	97	97	95	93	87	81	75	68	61	52	0.71	17.8	2.136	20.933	39.8	21.5	18.3	5.6	CI

Keys:

- LL Liquid Limit
- PL Plastic Limit
- PI Plasticity Index
- LS Linear Shrinkage
- CH Clay with high plasticity
- CL Clay with low plasticity
- CI Clay with Intermediate plasticity





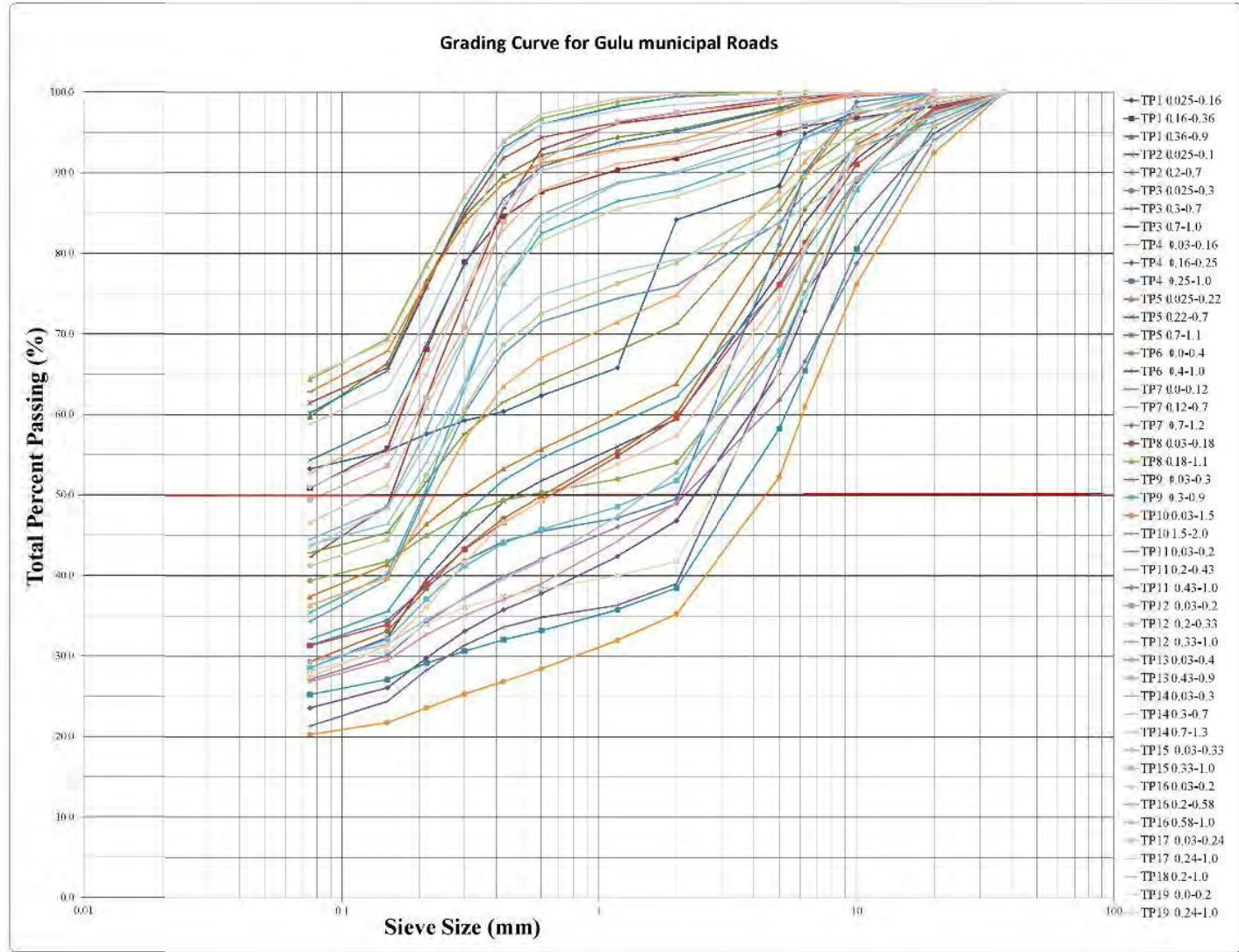
CLIENT: EIGHT JAPAN ENGINEERING CONSULTANTS LTD
 PROJECT: IMPROVEMENT AND REHABILITATION OF GULU MUNICIPALROADS

SUMMARY OF TRIAL PITTS' CLASSIFICATION TEST RESULTS

Swamp NO.	Depth(m)	Location	Layer type	% passing the given standard sieves											GM	FM	FP	LL	PL	PI	LS	MDD	OMC	CBR				AASHTO Classification			
				37.5	20	10	6.3	5.0	2.0	1.18	0.600	0.425	0.300	0.212										0.150	0.075	93%	95%	98%	Swell	Class	GI
				mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm										mm	%	%	%	%	15 Blows		
TP1	0.025-0.16	Sir Samuel Baker Road	Base	100	99	98	95	88	84	74	62	60	59	58	55	53	1.02	751	642	26.5	14.4	12.0	5.1	1881.0	12.1	9	13.0	16	0.140	A-6	(3)
	0.16-0.36		Sub-base	100	98	97	96	95	92	90	88	85	79	68	56	51	0.73	1398	812	30.0	14.0	16.0	6.4	1950.0	9.5	8	9.0	11	0.130	A-6	(5)
	0.36-0.9		Sub-grade	100	100	100	99	98	95	94	92	90	85	77	66	60	0.55	2134	1383	40.4	17.3	23.1	8.8	1840.0	17.3	8	10.0	13	0.359	A-6	(11)
TP2	0.025-0.1		Base	100	99	92	84	78	59	56	52	49	45	40	32	29	1.63	552	304	25.7	15.0	10.7	2.7	2198.0	11.3	9	38.0	70	0.090	A-2-4	(1)
	0.2-0.7		Sub-grade	100	100	100	100	100	99	98	96	97	86	76	65	60	0.47	1617	1013	35.4	18.4	16.8	6.4	1920.6	8.3	4	6.0	10	0.700	A-6	(8)
TP3	0.025-0.3		Base	100	99	93	85	80	60	55	50	47	43	38	33	29	1.63	715	420	29.0	14.7	14.3	8.9	1972.0	8.3	10	20.0	31	0.019	A-2-6	(0)
	0.3-0.7		Sub-base	100	100	100	99	99	97	96	93	86	74	62	49	42	0.75	1185	539	26.9	14.2	12.7	5.3	1868.0	13.1	4	7.0	12	0.330	A-6	(2)
TP4	0.03-0.16		Sub-grade	100	100	100	98	98	95	94	91	88	79	67	59	56	0.61	1216	744	26.9	13.6	13.3	6.5	1843.0	15.5	6	7.0	8	0.010	A-6	(4)
	0.16-0.25		Base	100	100	95	80	85	71	68	60	52	58	52	45	43	1.24	1765	1184	44.3	16.9	27.7	8.8	2074.0	8.2	26	35.0	42	0.120	A-7-6	(7)
	0.25-1.0		Sub-base	100	98	89	73	65	47	42	38	36	33	30	26	24	1.94	404	232	24.5	13.8	10.7	4.0	1940.0	11.5	9	15.0	19	0.060	A-2-4	(1)
TP5	0.025-0.22		Sub-grade	100	96	81	65	58	38	36	33	32	31	29	27	25	2.09	868	660	54.4	28.2	26.2	11.1	2085.0	6.1	27	35.0	43	0.079	A-2-7	(1)
	0.22-0.7		Base	100	100	98	90	83	64	60	56	53	50	46	41	37	1.45	1051	706	49.8	22.0	18.9	10.4	1971.0	14.3	8	15.0	27	0.315	A-6	(2)
	0.7-1.1	Sub-base	100	100	100	99	98	95	94	91	87	79	69	59	54	0.64	1228	736	28.4	14.7	13.3	7.8	1980.0	10.3	8	12.0	15	0.060	A-6	(4)	
TP6	0.0-0.4	Sub-grade	100	100	100	99	99	97	96	94	92	85	76	66	61	0.49	2369	1342	47.1	22.9	25.1	10.2	1830.0	12.1	9	10.0	11	0.000	A-7-6	(13)	
	0.4-1.0	Base	100	98	89	77	70	54	52	50	49	48	45	42	39	1.57	1193	933	43.7	24.0	23.7	12.1	2048.0	14.9	25	26.0	28	0.130	A-7-6	(4)	
TP7	0.0-0.12	Sub-grade	100	95	84	75	67	39	36	35	34	31	28	24	21	2.06	736	451	40.6	19.5	21.1	8.2	2118.0	10.1	14	21.0	32	0.110	A-2-6	(2)	
	0.12-0.7	Base	100	97	89	80	76	62	59	55	52	48	42	36	32	1.54	1029	605	33.9	15.0	18.8	7.5	2000.0	10.5	12	20.0	24	0.020	A-2-6	(1)	
	0.7-1.2	Sub-base	100	100	100	99	98	94	93	91	89	84	76	68	63	0.54	1771	1220	37.9	18.5	19.4	9.6	1875.0	12.2	2	4.0	6	0.120	A-6	(10)	
TP8	0.03-0.18	Sub-grade	100	100	99	90	81	50	47	46	44	42	39	34	31	1.75	972	670	46.7	25.3	21.4	10.4	1870.0	14.6	14	17.0	31	0.040	A-2-7	(1)	
	0.18-1.1	Base	100	98	91	81	76	60	55	49	47	45	39	34	31	1.62	718	456	31.8	17.2	14.6	6.4	2001.0	9.6	12	15.0	16	0.150	A-2-6	(0)	
			Sub-grade	100	100	100	100	100	99	97	94	87	79	69	64	0.42	2008	1335	44.1	23.3	20.8	12.5	1759.0	18.3	9	10.0	14	0.470	A-7-6	(12)	

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TP9	0.03-0.3	Nehru Road	Base	100	99	88	75	65	42	40	38	37	36	34	31	28	1.93	777	571	46.2	26.0	20.3	7.5	1905.0	13.3	15	21.0	24	0.120	A-2-7	(0)
	0.3-0.9		Sub-grade	100	100	97	94	92	88	86	82	76	63	51	40	35	1.00	1020	438	24.1	11.7	12.4	4.7	1962.0	11.1	7	10.0	13	0.040	A-2-6	(1)
TP10	0.03-1.5	Gulu Avenue	Base	100	93	76	61	52	35	32	28	27	25	24	22	20	2.18	577	411	40.5	20.3	20.3	10.3	2002.0	11.7	14	22.0	28	0.210	A-2-6	(-2)
	1.5-2.0		Sub-grade	100	96	93	87	84	76	74	72	68	60	50	39	34	1.22	953	457	27.4	14.1	13.3	4.6	1900.0	12.3	4	5.4	8	0.130	A-2-6	(1)
TP11	0.03-0.2	Prince Road	Base	100	98	95	90	79	72	55	51	49	47	43	39	36	1.43	694	483	33.8	20.3	13.5	6.8	1900.0	15.5	18	24.0	31	0.020	A-2-6	(1)
	0.2-0.43		Sub-base	100	94	79	67	62	49	46	42	40	37	34	30	27	1.84	817	526	37.9	18.5	19.4	7.4	1900.0	15.5	18	24.0	31	0.050	A-2-6	(0)
	0.43-1.0		Sub-grade	100	100	99	95	93	87	86	83	79	70	59	47	42	0.92	1126	565	26.4	12.8	13.5	5.5	1898.0	13.0	3	4.0	5	0.000	A-6	(2)
TP12	0.03-0.2	Dr.Mathew Road	Base	100	100	88	75	68	52	49	46	44	41	37	32	29	1.76	696	435	31.2	16.0	15.2	8.7	2000.0	10.1	9	15.0	19	0.140	A-2-6	(0)
	0.2-0.33		Sub-base	100	99	97	91	88	75	71	67	64	57	48	40	36	1.25	820	444	25.2	13.0	12.2	3.7	2099.0	7.5	14	19.0	23	0.000	A-6	(1)
	0.33-1.0		Sub-grade	100	99	96	94	93	90	89	85	80	69	58	49	44	0.86	1364	715	30.0	14.0	16.1	7.8	1915.0	11.2	3	4.0	6	0.039	A-6	(3)
TP13	0.03-0.4		Base	100	98	89	77	70	49	44	39	37	35	33	29	27	1.87	533	367	28.3	14.6	13.7	4.9	2020.0	13.3	11	20.0	40	0.000	A-2-6	(-1)
	0.43-0.9		Sub-grade	100	96	93	90	87	79	76	73	69	61	52	44	41	1.11	1521	864	41.1	20.2	21.0	8.6	1990.0	10.7	8	8.0	9	0.160	A-7-6	(4)
TP14	0.03-0.3	Awere Road	Base	100	93	89	80	76	59	55	51	48	43	38	32	30	1.63	673	395	27.5	14.2	13.3	5.1	2000.0	11.7	16	23.0	30	0.000	A-2-6	(0)
	0.3-0.7		Sub-base	100	100	98	96	94	90	89	84	76	64	54	46	44	0.90	1378	721	30.7	14.3	16.4	8.4	1950.0	9.3	6	8.0	10	0.070	A-6	(3)
	0.7-1.3		Sub-grade	100	100	100	98	97	92	91	88	83	75	67	58	53	0.72	2227	1336	39.8	14.5	25.4	7.0	1808.0	13.5	7	9.0	11	0.200	A-6	(9)
TP15	0.03-0.33		Base	100	100	94	80	73	53	47	42	40	37	35	32	29	1.78	990	694	39.6	15.9	23.7	10.6	2002.0	9.9	19	27.0	35	0.140	A-2-6	(1)
	0.33-1.0		Sub-grade	100	100	100	99	99	98	96	92	84	71	62	54	49	0.69	1849	998	43.0	22.9	20.2	11.3	1780.0	17.8	3	4.5	7	0.050	A-7-6	(7)
TP16	0.03-0.2	Acholi Road	Base	100	99	95	89	84	68	65	62	60	57	54	50	48	1.25	982	763	32.1	16.1	16.0	7.0	1870.0	15.0	8	10.0	11	0.710	A-6	(4)
	0.2-0.58		Sub-base	100	97	94	93	91	87	86	82	77	70	61	51	47	0.89	1416	809	32.5	15.1	17.3	5.8	1812.0	16.2	5	7.0	10	0.000	A-6	(4)
	0.58-1.0		Sub-grade	100	94	89	86	84	79	78	75	71	63	56	48	44	1.06	1587	925	39.4	18.2	21.2	7.5	1926.0	16.1	8	9.0	11	0.110	A-6	(5)
TP17	0.03-0.24		Base	100	100	93	81	74	57	54	49	47	42	36	31	27	1.68	887	494	30.9	12.9	18.0	5.3	2048.0	9.4	22	37.0	45	0.000	A-2-6	(0)
	0.24-1.0		Sub-grade	100	100	100	100	99	98	98	96	93	82	72	63	59	0.50	2041	1250	38.1	16.9	21.3	8.9	1730.0	17.6	5	6.0	6	0.130	A-6	(9)
TP18	0.2-1.0	Tax Park	Sub-grade	100	100	100	100	100	99	97	94	87	78	69	65	0.42	1784	1187	39.7	21.3	18.3	8.3	1710.0	18.3	9	11.0	12	0.130	A-6	(10)	
TP19	0.0-0.2	Jomo Kenyatta Road	Base	86	75	69	65	62	54	51	49	47	45	41	36	33	1.66	876	596	35.9	17.8	18.0	5.6	1912.0	14.0	10	16.0	23	0.390	A-2-6	(1)
	0.24-1.0		Sub-grade	100	99	98	96	96	94	93	90	86	75	65	55	51	0.69	1489	841	34.3	17.8	16.5	10.1	2118.0	10.1	14	21.0	32	0.031	A-6	(5)



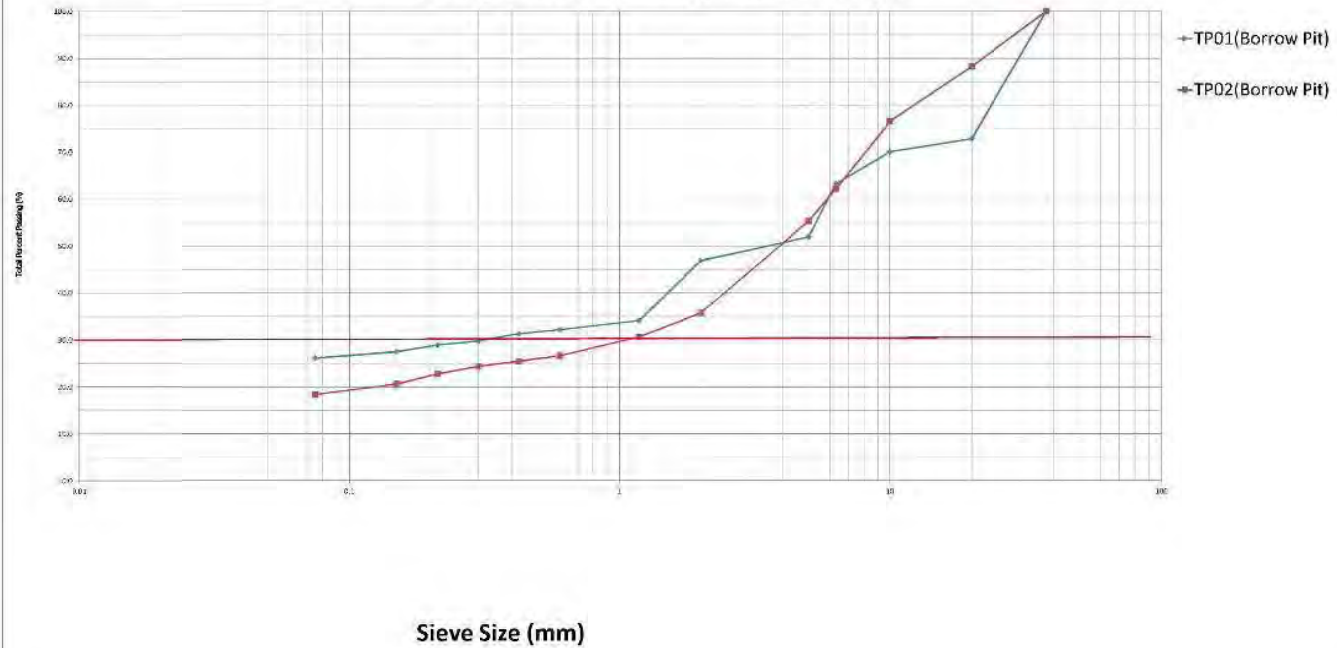


CLIENT: EIGHT JAPAN ENGINEERING CONSULTANTS LTD
 PROJECT: IMPROVEMENT AND REHABILITATION OF GULU MUNICIPALROADS

SUMMARY OF BORROW AREA' CLASSIFICATION TEST RESULTS

Swamp No.	Depth(m)	Location	Layer type	% passing the given standard sieves											GM	PI	IP	LL	PL	PI	LS	MDE	OMC	CBR				AASHTO Classification			
				37.5	20	10	6.3	5.0	2.0	1.18	0.600	0.425	0.300	0.212										0.150	0.075	95%	90%	98%	Swell	Class	GI
				mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm										mm	mm	%	%	%	%	kg/m ³	%
TP1	0.2-0.7	Laloo Borrow pit	-	100	73	70	63	52	47	34	32	31	30	29	27	26	1.96	647	325	64.2	21.1	20.1	11.4	1948.1	13.4	33	30.0	60	0.100	A-2-7	(1)
TP2	0.2-0.7		-	100	88	77	62	55	36	31	27	25	24	23	21	18	2.20	485	334	41.9	23.5	18.2	6.9	2040.0	8.2	38	30.0	68	0.050	A-2-7	(3)

Grading Curve for Gulu municipal Roads borrow pits





SUMMARY OF CONSOLIDATION TEST RESULTS

Sample Source	Depth(m)	Pre-Consolidation pressure (kN/m ²)	Overburden Pressure (kN/m ²)	Compression Index, C _c	Coefficient of Volume Compressibility M _v			Coefficient of Consolidation C _v (m ² /yr)			Permeability, k(m/s) x10 ⁹		
					Min	Max	Ave	Min	Max	Ave	Min	Max	Ave
BH01	4.0-4.5	190.0	83.93972	0.188	0.067	0.352	0.208	0.398	4.70	1.959	0.824	36.180	14.450
BH01	4.5-5.0	200.0	93.129045	0.228	0.072	0.327	0.202	1.099	13.74	5.049	2.464	139.800	42.290
BH2	2.7-3.0	180.0	51.888443	0.221	0.073	0.347	0.204	0.435	4.54	2.673	0.983	43.210	19.570



EXCELLENCE THROUGH PRECISION AND INTEGRITY

TEN PERCENT FINES VALUE				
Project:	IMPROVEMENT AND REHABILITATION OF GULU MUNICIPAL ROADS			
Client	EIGHT JAPAN ENGINEERING CONSULTANTS LTD			
Sample no.	Testing Condition	Unsoaked		
KIDERE QUARRY				
Sampling Date:	22/4/2015	Test Method:	BS 812 : Part 111 : 1990	
Testing Date:	17/5/2015	Technician:	Arthur M	
Rock Description:	Gneiss			
Specimen no :	1	2	3	
Maximum force, f	KN	200	200	200
Weight of specimen, M_1	g	2652.6	2646	2552
Mass passing 2.36 mm sieve, M_2	g	204.2	210	209
Mass retained on 2.36 mm sieve, M_3	g	2448.4	2436	2343
Is weight difference within Standard?		OK	OK	OK
Percentage passing sieve 2.36mm, $m = (m_2/m_1) * \%$		7.7	7.9	8.2
TFV, $F = (14f / (M + 4))$	KN	239	235	230
Reported TFV	KN	235		
Specification for Heavy duty concrete floor finishes		Min 150 k N (BS 882:1992)		



LOS ANGELES ABRASION VALUE (LAAV)

Project:	IMPROVEMENT AND REHABILITATION OF GULU MUNICIPAL ROADS				
Client:	EIGHT JAPAN ENGINEERING CONSULTANTS LTD	Sample Reference: KIDERE QUARRY			
Material Type:	Hand Crushed Aggregates	Description: 19/12.5 & 12.5/9.5 Aggts			
Location:	Moroto Road				
Test Method:	ASTMC 131-89	Date Sampled:			
Technician:	Arthur.	Date Tested: 15/5/2015			
Test	Total Mass used M₁ (g)	Mass Retained on 1.7mm sieve M₂ (g)	Mass passing 1.7 mm (M₁-M₂) (g)	LAA (%)	Accepted LAAV (%)
1	5000	4104.7	895.3	17.9	18.1
2	5000	4089.3	910.7	18.2	
3	5000	4096.3	903.7	18.1	
ISA and IRC Specifications					Max 35%

