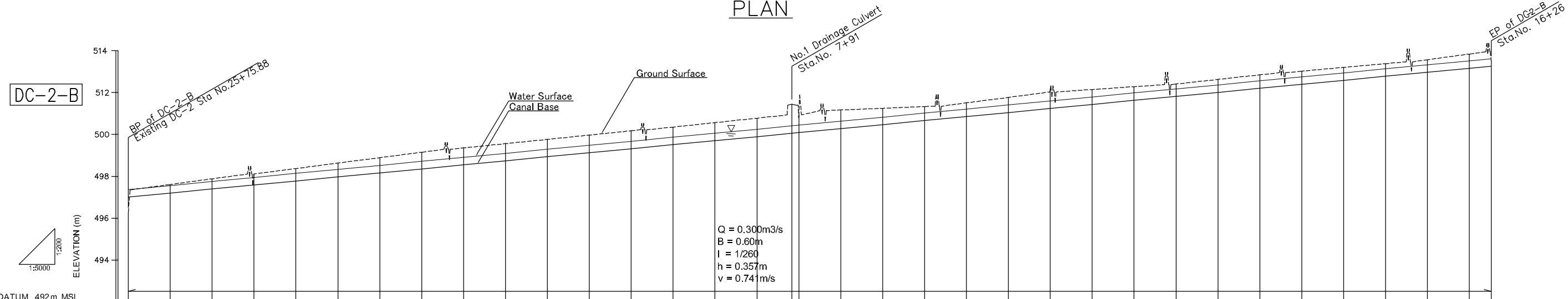


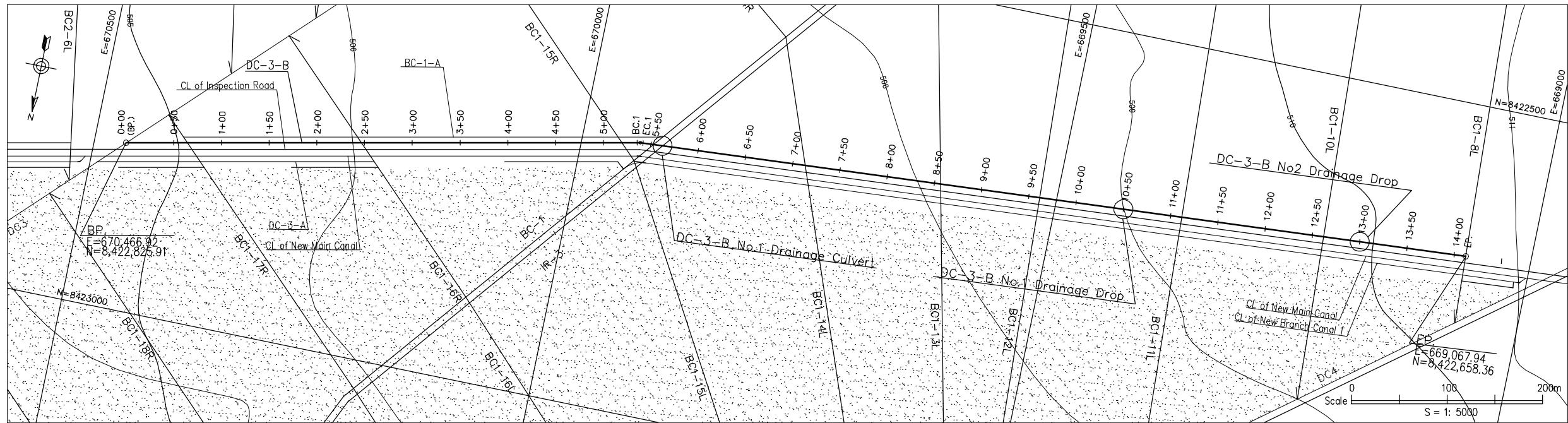
PLAN



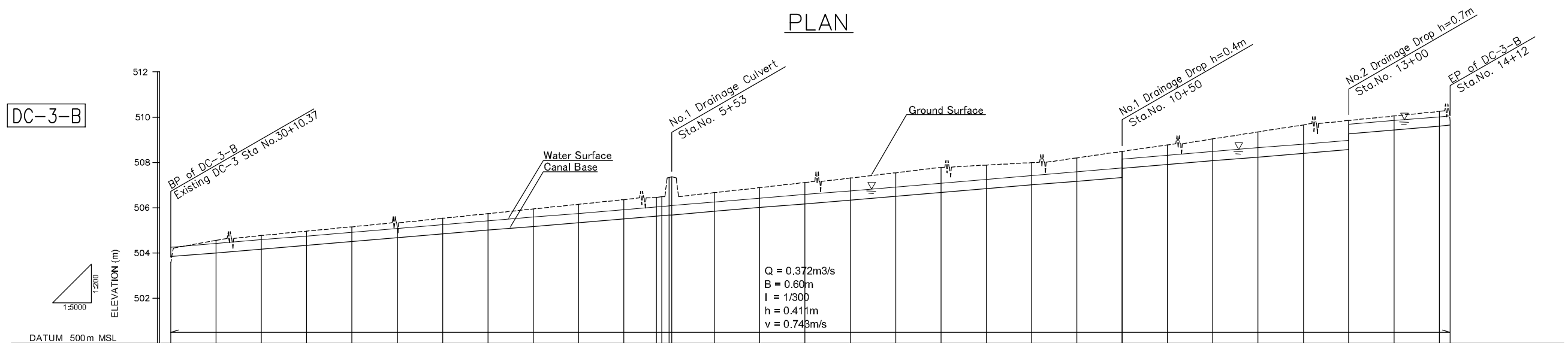
PROFILE

STATION No.	0+00	0+50	1+00	1+50	2+00	2+50	3+00	3+50	4+00	4+50	5+00	5+50	6+00	6+50	7+00	7+50	7+91	8+00	8+50	9+00	9+50	10+00	10+50	11+00	11+50	12+00	12+50	13+00	13+50	14+00	14+50	15+00	16+00	16+26	
WATER SURFACE ELEVATION	497.37	497.56	497.75	497.94	498.14	498.33	498.52	498.71	498.91	499.10	499.29	499.48	499.67	499.87	500.06	500.25	500.41	500.44	500.64	500.83	501.02	501.21	501.41	501.60	501.79	501.98	502.17	502.37	502.56	502.75	502.94	503.14	503.33	503.52	503.62
CANAL BASE ELEVATION	497.01	497.20	497.39	497.59	497.78	497.97	498.16	498.36	498.55	498.74	498.93	499.13	499.32	499.51	499.70	499.89	500.05	500.09	500.28	500.47	500.66	500.86	501.05	501.24	501.43	501.63	501.82	502.01	502.20	502.39	502.59	502.78	502.97	503.16	503.28
GROUND SURFACE ELEVATION	496.25	497.61	497.88	498.11	498.37	498.63	498.89	499.15	499.36	499.56	499.76	499.97	500.17	500.35	500.57	500.78	501.44	500.90	501.17	501.25	501.33	501.51	501.77	502.14	502.15	502.28	502.41	502.63	502.85	503.02	503.20	503.38	503.57	503.84	503.50
ACCUMULATED DISTANCE	0.00	50.00	100.00	150.00	200.00	250.00	300.00	350.00	400.00	450.00	500.00	550.00	600.00	650.00	700.00	750.00	791.61	800.00	850.00	900.00	950.00	1,000.00	1,050.00	1,100.00	1,150.00	1,200.00	1,250.00	1,300.00	1,350.00	1,400.00	1,450.00	1,500.00	1,550.00	1,600.00	1,625.96
DISTANCE	0.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	41.61	8.39	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	25.96

THE REPUBLIC OF MALAWI	
THE PROJECT FOR REHABILITATION OF BWANJE VALLEY IRRIGATION SYSTEM	
TITLE OF DRAWING PLAN AND PROFILE OF DRAINAGE CANAL DC-2-B FOR 210HA AREA	
DRAWING NO.	ID-33
NIPPON KOEI CO., LTD.	



PLAN



STATION No.	0+00	0+50	1+00	1+50	2+00	2+50	3+00	3+50	4+00	4+50	5+00	5+50	6+00	6+50	7+00	7+50	8+00	8+50	9+00	9+50	10+00	10+50	11+00	11+50	12+00	12+50	13+00	13+50	14+00	14+12	
WATER SURFACE ELEVATION	504.25	504.42	504.58	504.75	504.92	505.08	505.25	505.42	505.58	505.75	505.92	506.04	506.25	506.42	506.58	506.75	506.92	507.08	507.25	507.42	507.58	507.75	507.91	508.08	508.24	508.41	508.58	508.75	508.91	509.06	509.21
CANAL BASE ELEVATION	503.84	504.01	504.17	504.34	504.51	504.67	504.84	505.01	505.17	505.34	505.51	505.67	505.84	506.01	506.17	506.34	506.51	506.67	506.84	507.01	507.17	507.34	507.51	507.67	507.84	508.01	508.17	508.34	508.51	508.67	508.84
GROUND SURFACE ELEVATION	503.57	504.56	504.77	504.96	505.16	505.08	505.53	505.74	505.95	506.15	506.36	506.48	506.67	506.89	507.11	507.31	507.55	507.78	507.88	507.99	508.20	508.49	508.49	508.78	509.04	509.35	509.66	509.85	510.06	510.26	510.46
ACCUMULATED DISTANCE	0.00	50.00	100.00	150.00	200.00	250.00	300.00	350.00	400.00	450.00	500.00	541.80	600.00	650.00	700.00	750.00	800.00	850.00	900.00	950.00	1,000.00	1,050.00	1,100.00	1,150.00	1,200.00	1,250.00	1,300.00	1,350.00	1,400.00	1,412.08	
DISTANCE	0.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	38.80	60.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	50.00	12.08	

PROFILE

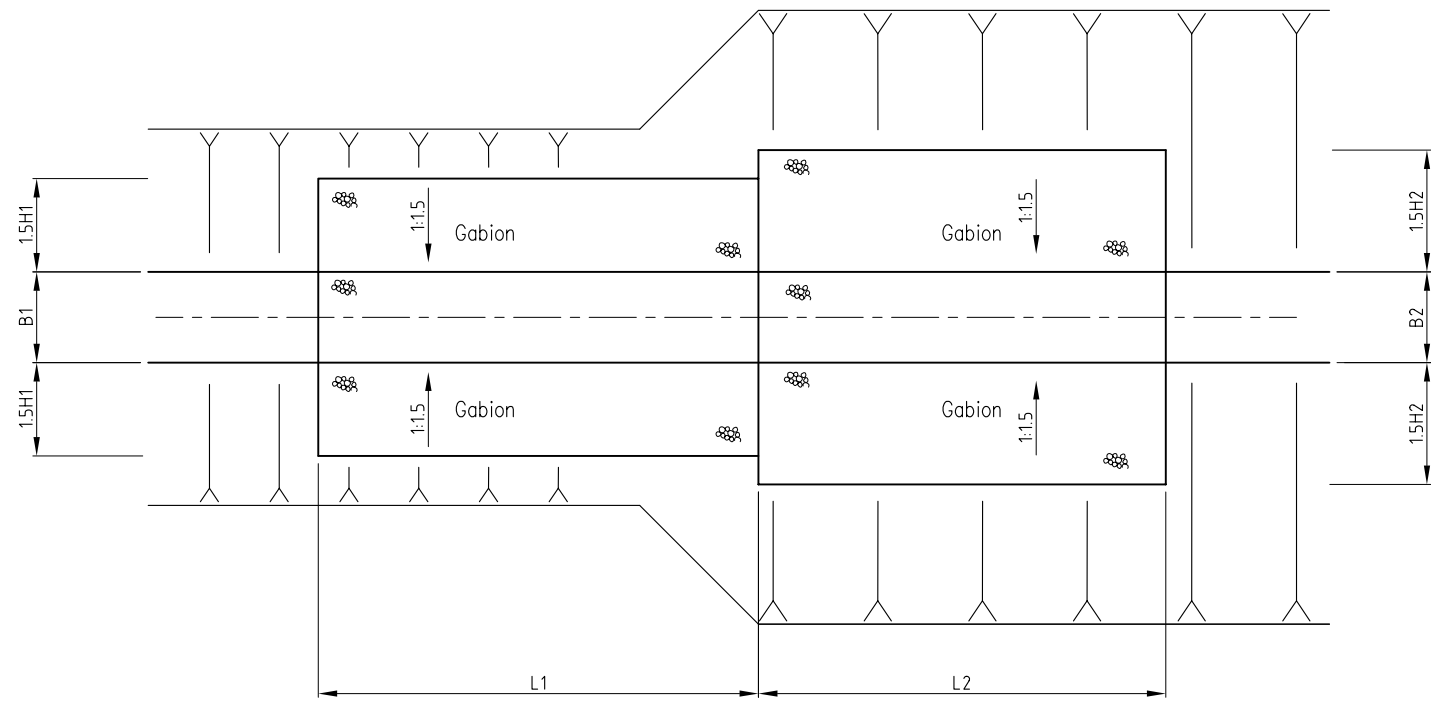
THE REPUBLIC OF MALAWI

THE PROJECT FOR REHABILITATION OF
BWANJE VALLEY IRRIGATION SYSTEM

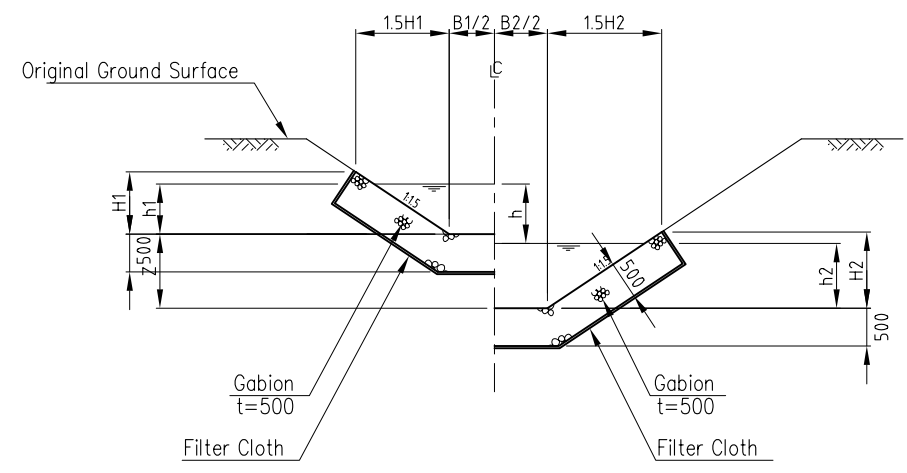
TITLE OF DRAWING
PLAN AND PROFILE OF DRAINAGE
CANAL DC-3-B FOR 210HA AREA

DRAWING NO.	ID-34
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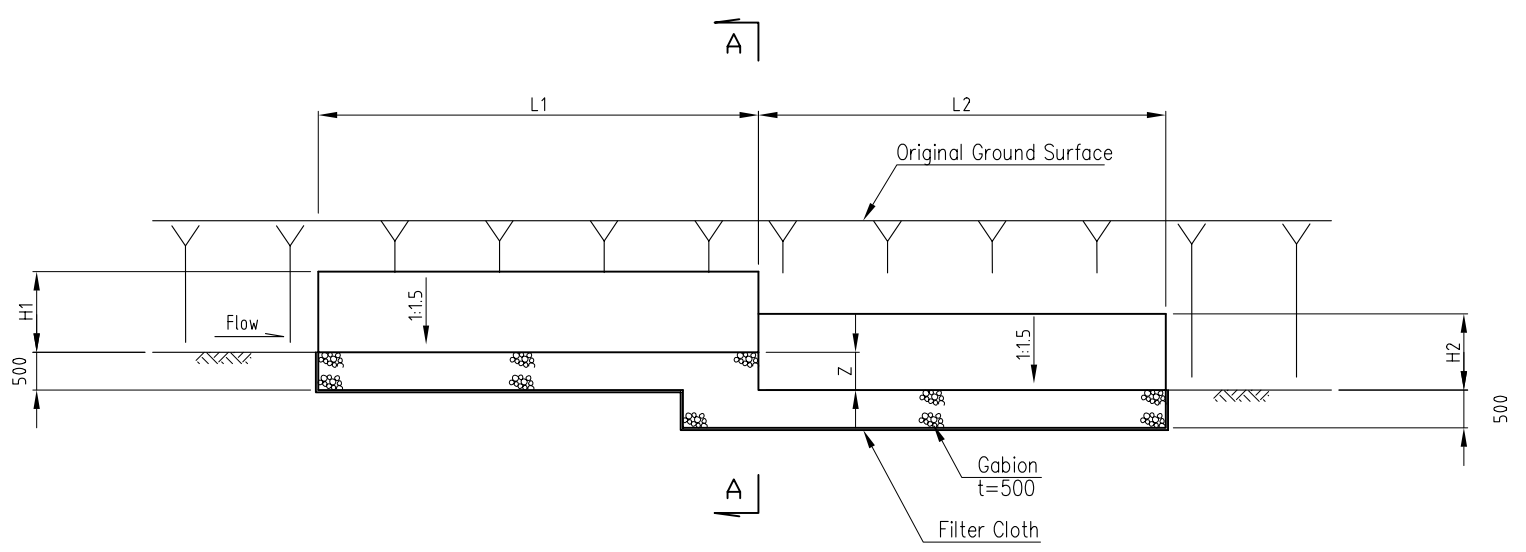
NIPPON KOEI CO., LTD.



PLAN



SECTION A-A



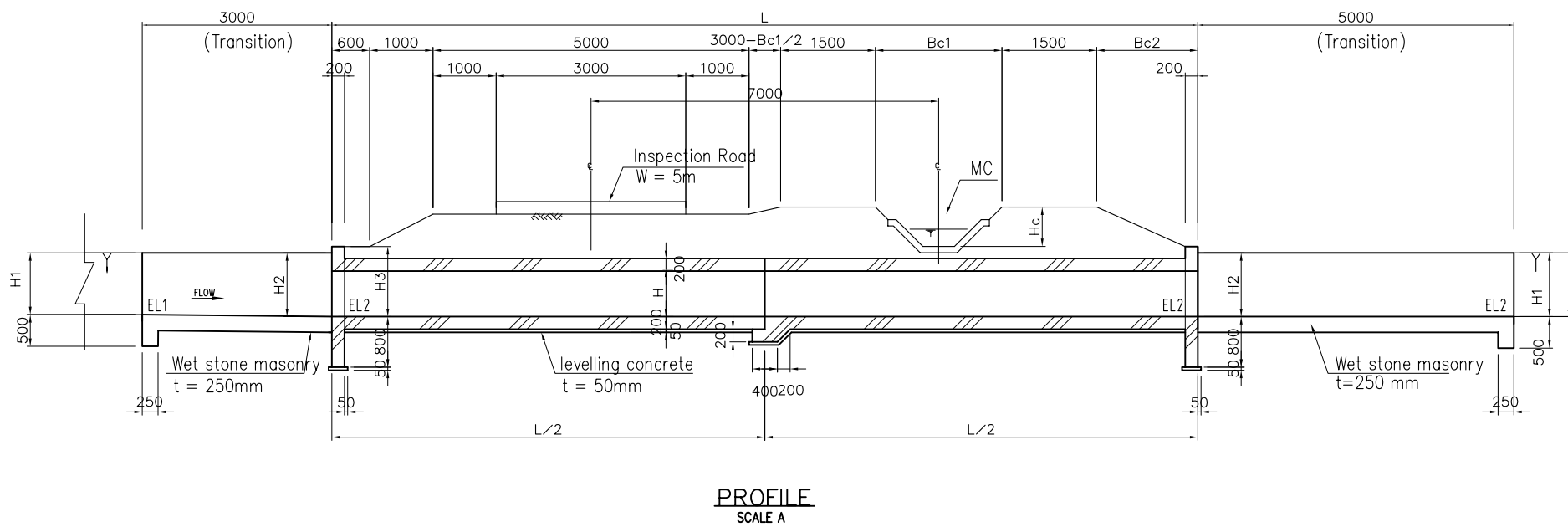
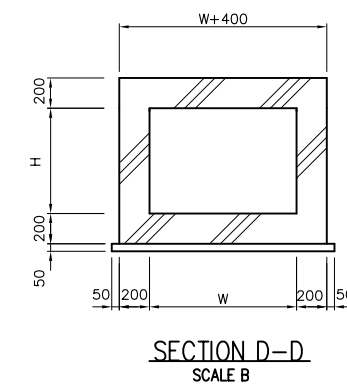
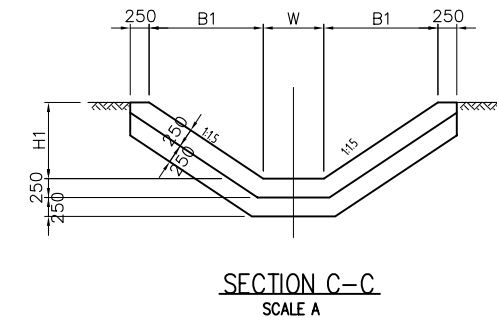
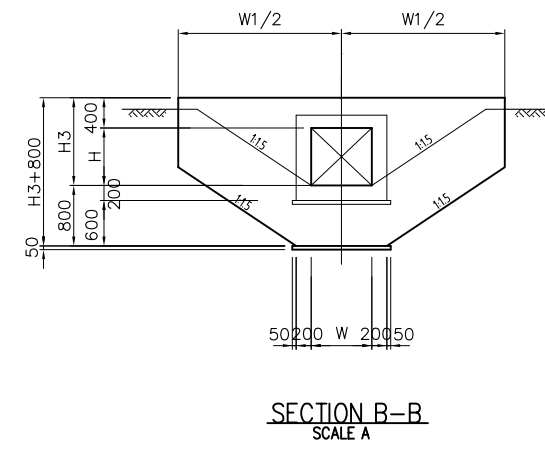
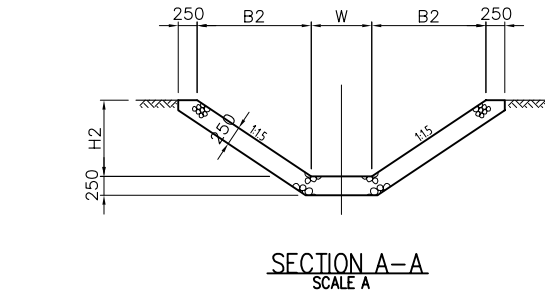
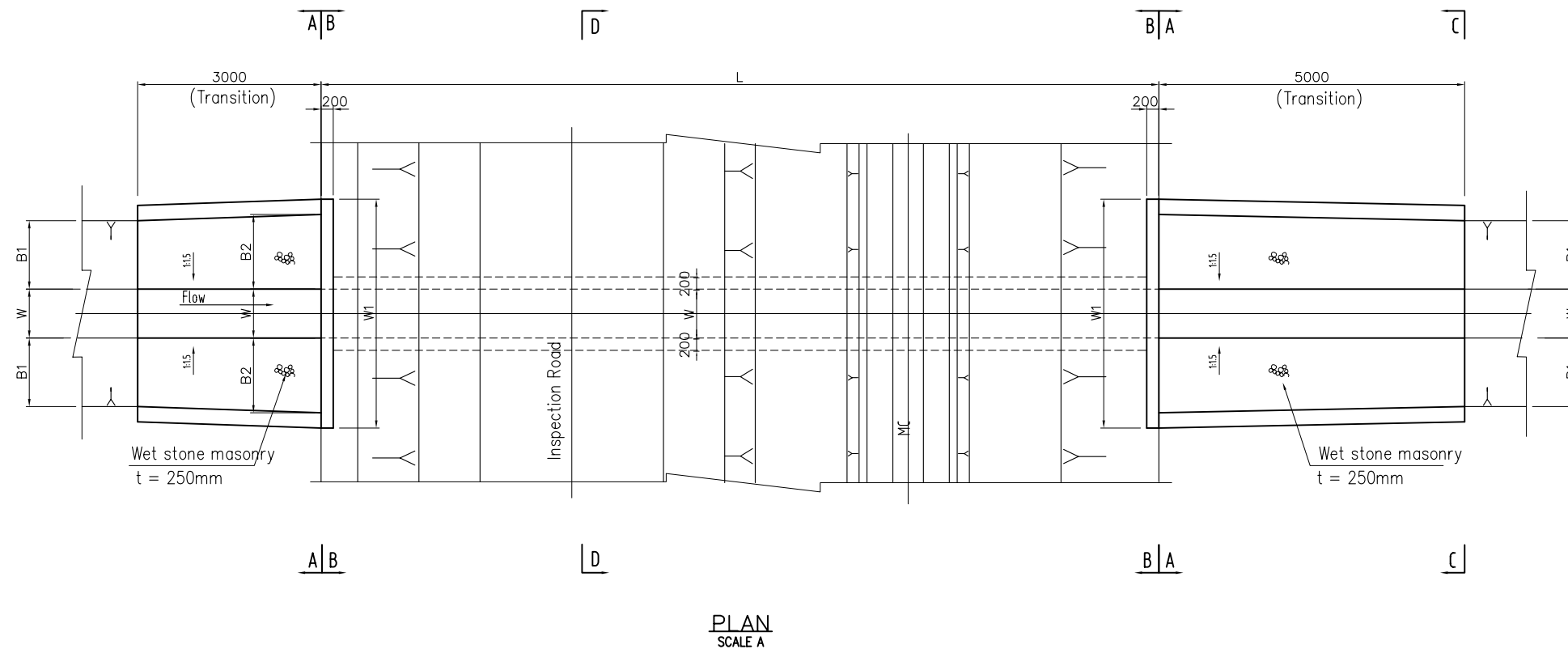
PROFILE(h=0.7m)

DIMENSION TABLE FOR DRAINAGE DROP

Drainage Canal	Drop No.	Sta. No.	EL1 (m)	EL2 (m)	h1 (mm)	h2 (mm)	H1 (mm)	H2 (mm)	B1 (mm)	B2 (mm)	h (mm)	Z (mm)	L1 (mm)	L2 (mm)
DC-3-B	No.1	10+50.00	507.74	507.34	411	411	700	700	600	600	400	400	2000	3000
	No.2	13+00.00	509.27	508.57	411	411	700	700	600	600	700	700	2000	3000

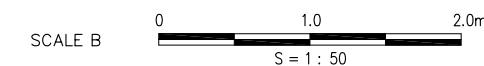


THE REPUBLIC OF MALAWI	
THE PROJECT FOR REHABILITATION OF BWANJE VALLEY IRRIGATION SYSTEM	
TITLE OF DRAWING	
DRAINAGE DROP	
DRAWING NO.	ID-35
NIPPON KOEI CO., LTD.	



DIMENSION TABLE FOR DRAINAGE CULVERT

Drainage Culvert	Sta. No.	Drainage Canal	Drainage Culvert											Main Canal				
			W (mm)	H (mm)	L (mm)	B1 (mm)	B2 (mm)	H1 (mm)	H2 (mm)	H3 (mm)	W1 (mm)	EL1 (m)	EL2 (m)	GL (m)	Bc1 (mm)	Bc2 (mm)	Hc (mm)	ELc (m)
No.1	25+56.98	DC-4	800	1000	17000	1755	1830	1170	1220	1400	5000	509.54	509.49	510.71	4000	2400	1300	511.17
No.2	40+71.78	DC-3	800	800	18000	990	1095	660	730	1200	3500	503.47	503.40	504.13	4000	3400	1300	504.76
No.3	57+35.00	DC-2	800	1000	17000	1635	1710	1090	1140	1400	4800	496.17	496.12	497.26	3200	2800	1300	497.84

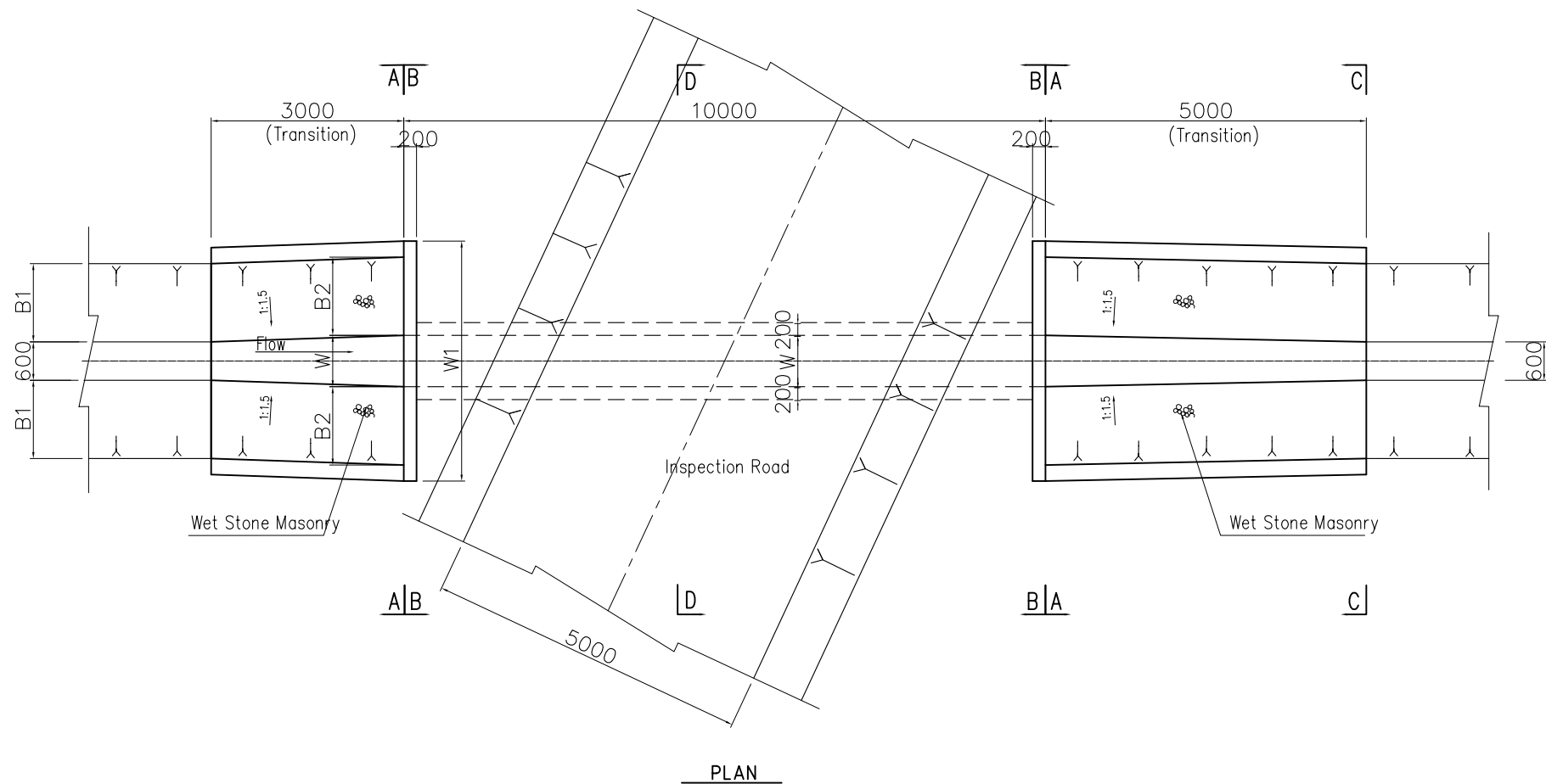


THE REPUBLIC OF MALAWI

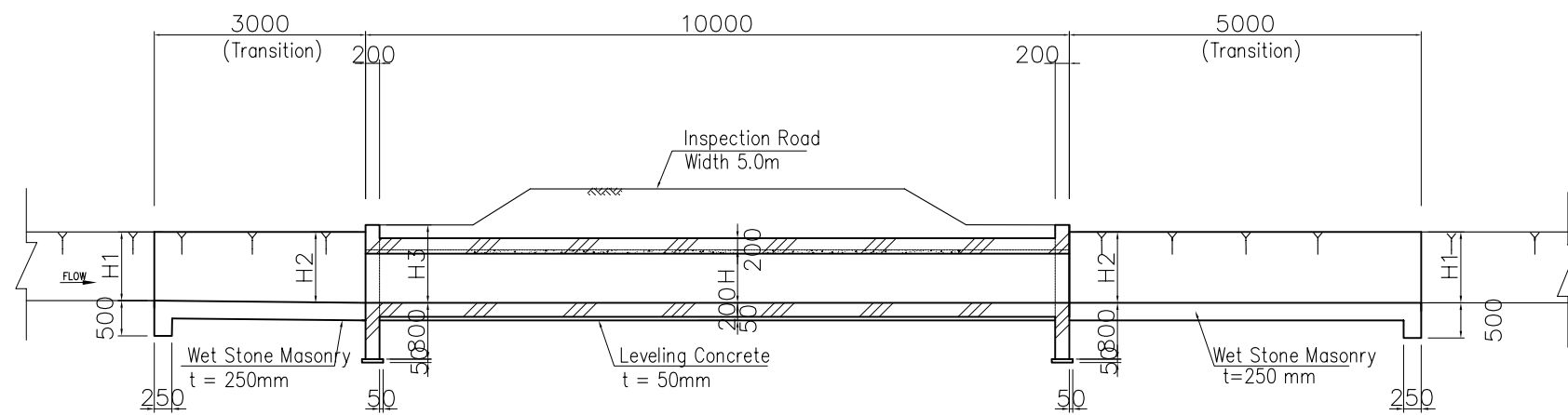
THE PROJECT FOR REHABILITATION OF BWANJE VALLEY IRRIGATION SYSTEM

TITLE OF DRAWING
DRAINAGE CULVERT

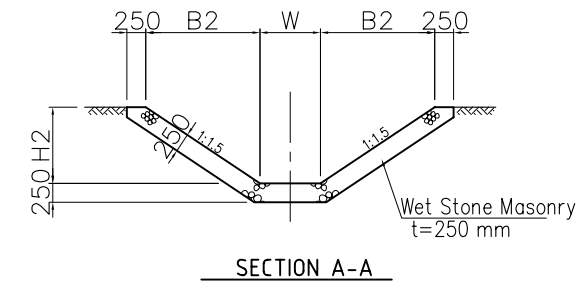
DRAWING NO. ID-36
NIPPON KOEI CO., LTD.



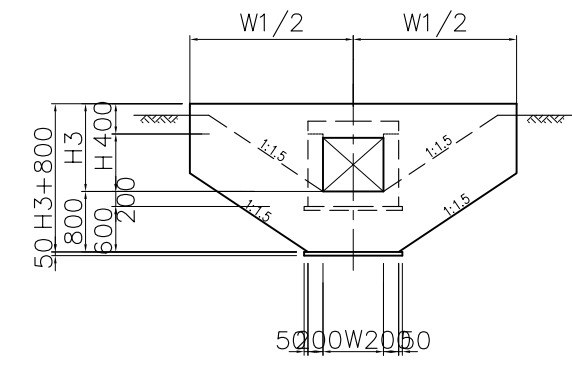
PLAN



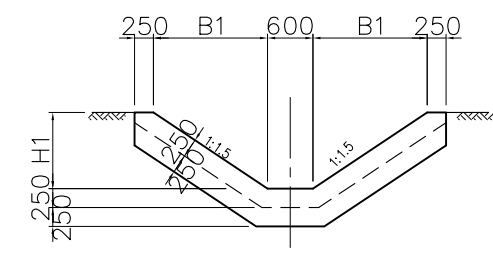
PROFILE



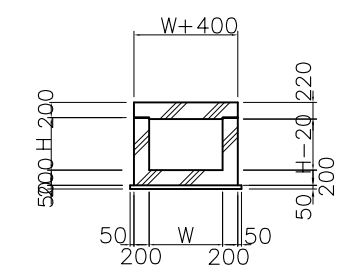
SECTION A-A



SECTION B-B



SECTION C-C



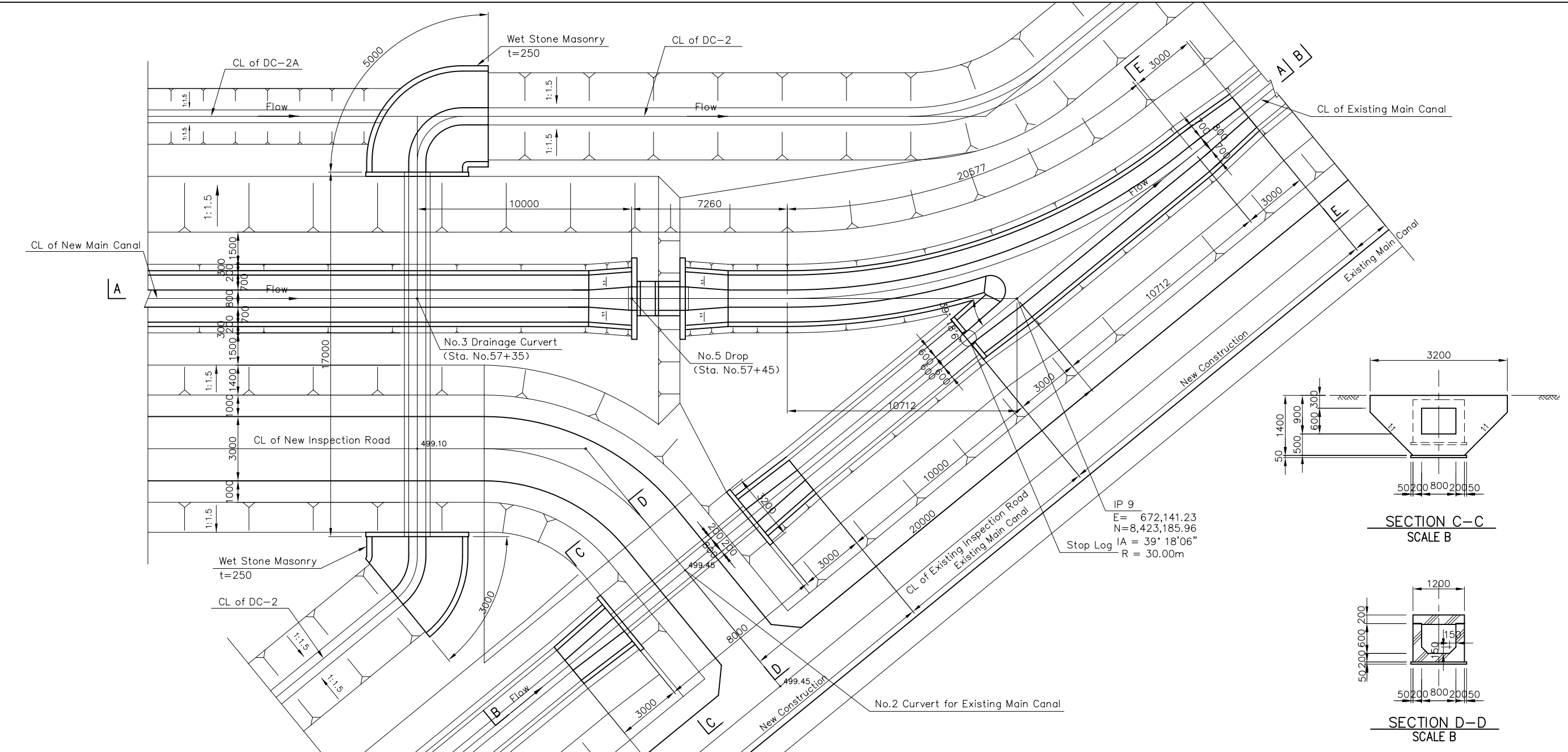
SECTION D-D

DIMENSION TABLE FOR DRAINAGE CULVERT FOR DC-2-B, 3-B

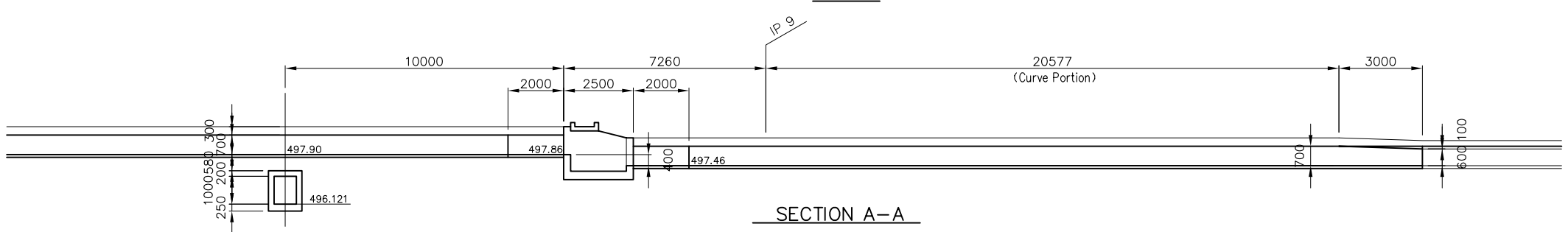
Drainage Canal	Sta. No.	W (mm)	H (mm)	h (mm)	B1 (mm)	B2 (mm)	H1 (mm)	H2 (mm)	H3 (mm)	W1 (mm)	EL1 (m)	EL2 (m)	GL (m)
DC-2-B	7+91.61	800	1000	1000	2224	2272	1390	1420	1500	5900	500.05	500.02	501.44
DC-3-B	5+52.85	800	1000	1000	2688	2736	1680	1710	1800	6800	505.68	505.65	507.36



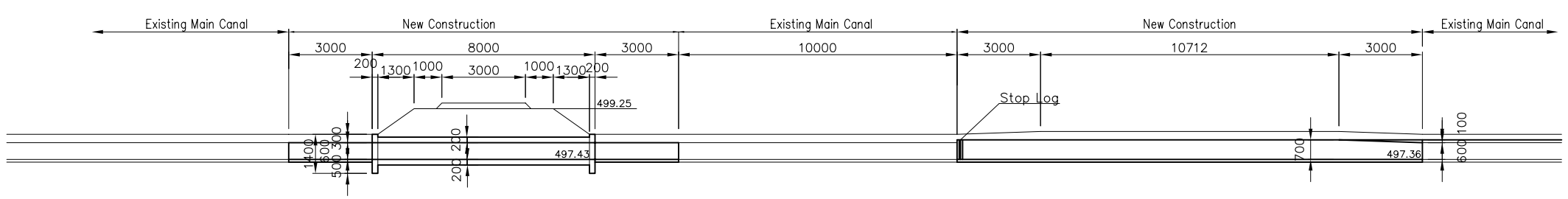
THE REPUBLIC OF MALAWI	
THE PROJECT FOR REHABILITATION OF BWANJE VALLEY IRRIGATION SYSTEM	
TITLE OF DRAWING DRAINAGE CULVERT FOR DC-2-B,3-B	
DRAWING NO.	ID-37
NIPPON KOEI CO., LTD.	



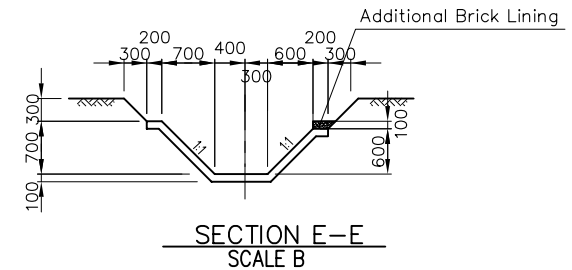
PLAN



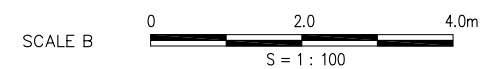
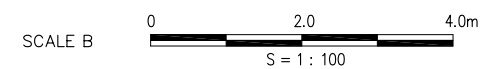
SECTION A-A



SECTION B-B

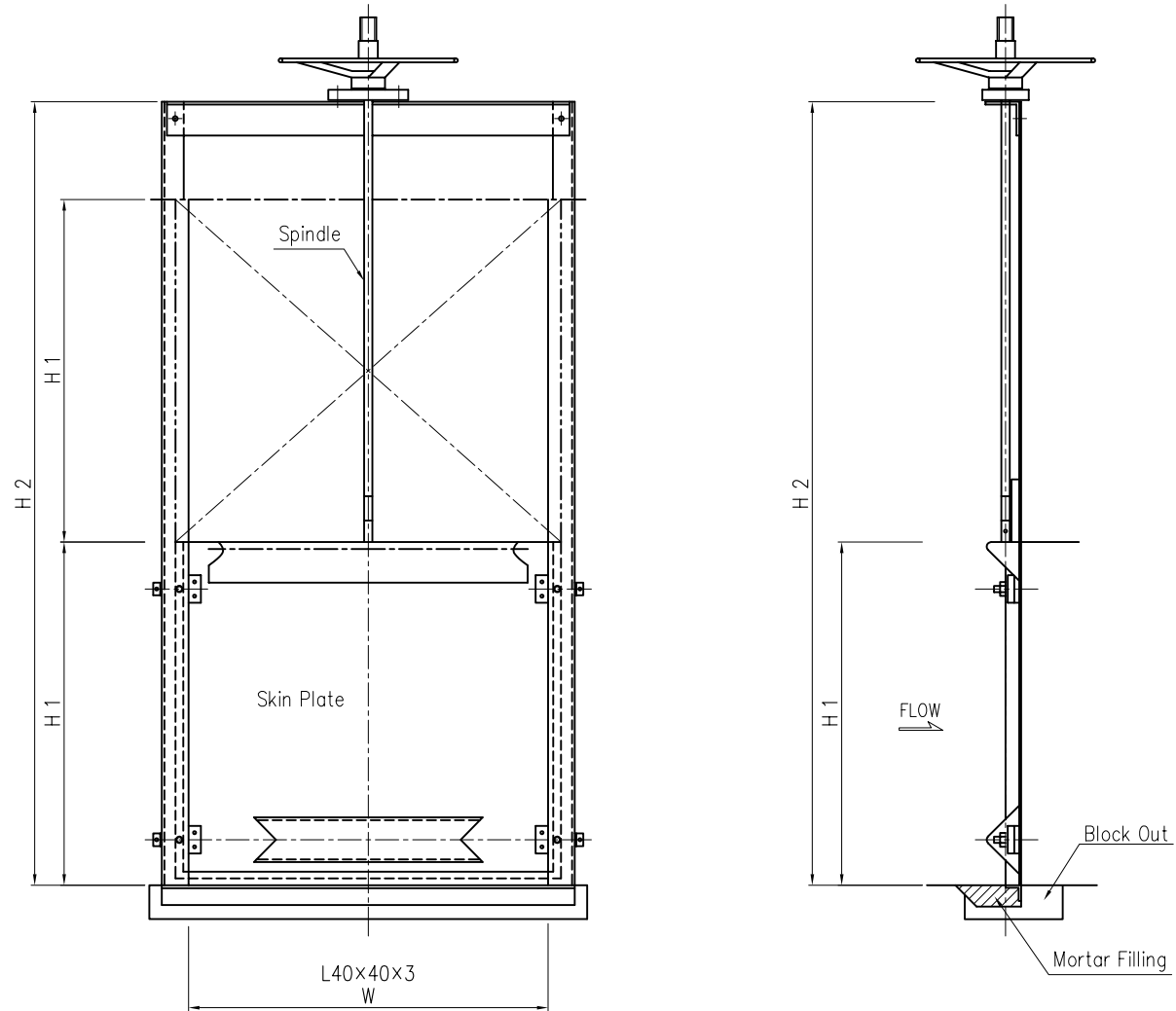


SECTION E-E SCALE B



THE REPUBLIC OF MALAWI	
THE PROJECT FOR REHABILITATION OF BWANJE VALLEY IRRIGATION SYSTEM	
TITLE OF DRAWING	
END POINT OF MC	
DRAWING NO.	ID-38
NIPPON KOEI CO., LTD.	

CONTROL GATE FOR GATE STRUCTURE AND BIFURCATION

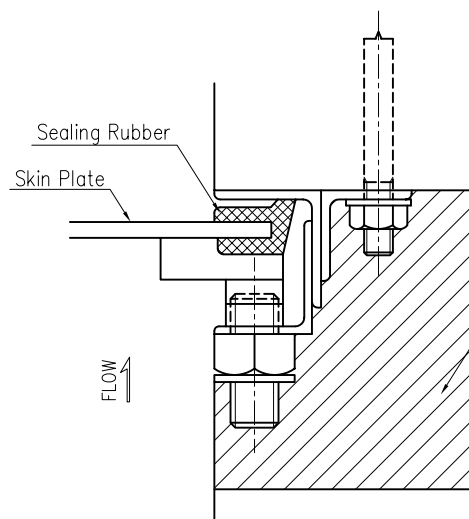


ELEVATION

SECTION

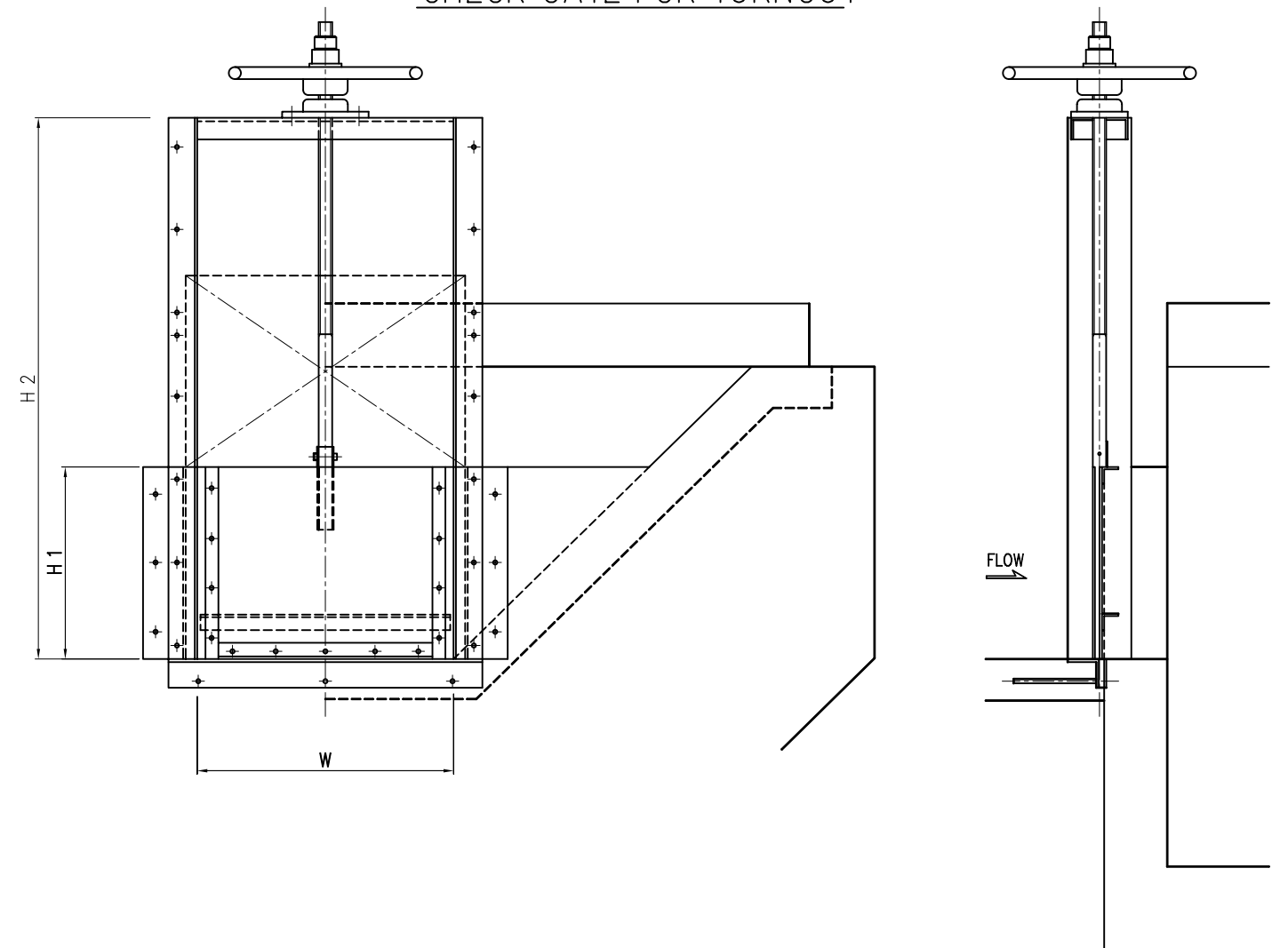
DIMENSION TABLE FOR CONTROL GATE

Name of Canal	Name of Structure	Sta. No.	Name of Diversion Canal	Dimension of Gate		
				W (m)	H1 (m)	H2 (m)
MC	Gate Structure	0+09.62	MC	2.00	1.00	2.30
			Existing Main Canal	2.00	1.00	2.30
	No.1 Bifurcation	25+75.00	MC	1.45	0.85	1.90
			BC-1	0.60	0.85	1.90
	No.2 Bifurcation	40+93.03	MC	1.04	0.70	1.70
			BC-2	0.55	0.70	1.70



SEALING DETAIL

CHECK GATE FOR TURNOUT

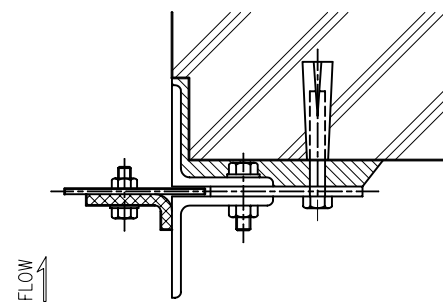


ELEVATION

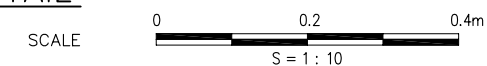
SECTION

DIMENSION TABLE FOR CHECK GATE

Name of Canal	Name of Turnout	Sta. No.	Name of Tertiary Canal	Dimension of Gate		
				W (m)	H1 (m)	H2 (m)
BC-1	TO-7	0+14.30	BC-1-7L	0.60	0.48	1.30
	TP-10	2+18.44	BC-1-10L	0.60	0.48	1.30
	TO-11	3+68.51	BC-1-11L	0.60	0.48	1.30
	TO-12	5+18.75	BC-1-12L	0.60	0.48	1.30
	TO-13	6+19.96	BC-1-13L	0.60	0.48	1.30
	TO-14	7+60.48	BC-1-14L	0.60	0.48	1.30
BC-2	TO-15	9+57.09	BC-1-15L&R	0.60	0.48	1.30
	TO-6	0+18.33	BC-2-6L	0.60	0.42	1.20
	TO-9	2+64.57	BC-2-9L	0.60	0.42	1.20
	TO-10	4+01.47	BC-2-10L	0.60	0.42	1.20
	TO-11	5+38.30	BC-2-11L	0.60	0.42	1.20
	TO-12	6+75.29	BC-2-12L	0.60	0.42	1.20
	TO-13	8+13.08	BC-2-13L	0.60	0.42	1.20



SEALING DETAIL



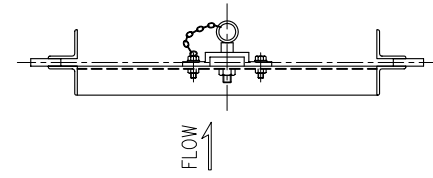
THE REPUBLIC OF MALAWI

THE PROJECT FOR REHABILITATION OF BWANJE VALLEY IRRIGATION SYSTEM

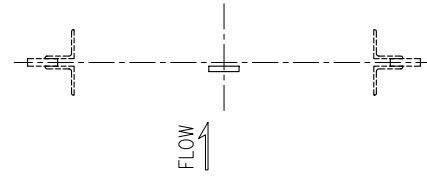
TITLE OF DRAWING
GATES FOR CANAL STRUCTURES (1/2)

DRAWING NO. ID-39

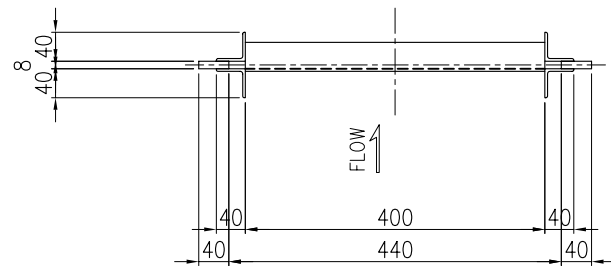
NIPPON KOEI CO., LTD.



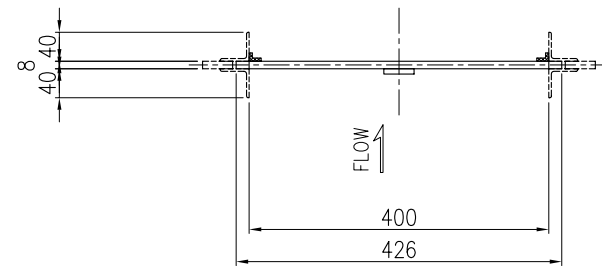
SECTION A-A



SECTION D-D



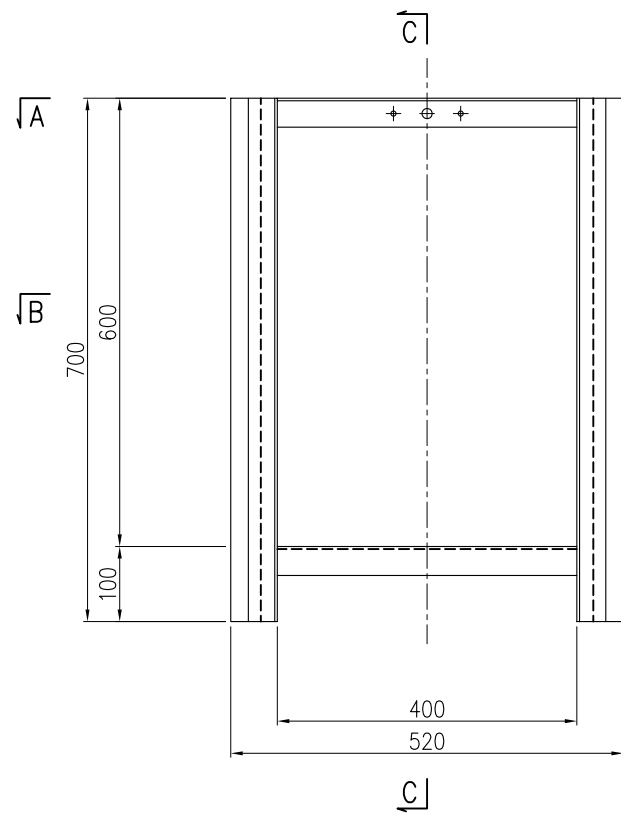
SECTION B-B



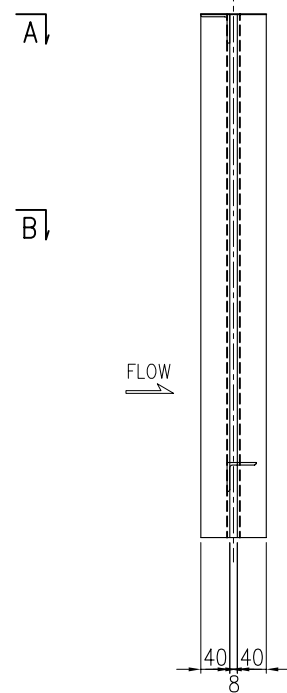
SECTION E-E

DIMENSION TABLE FOR HANDSTOP

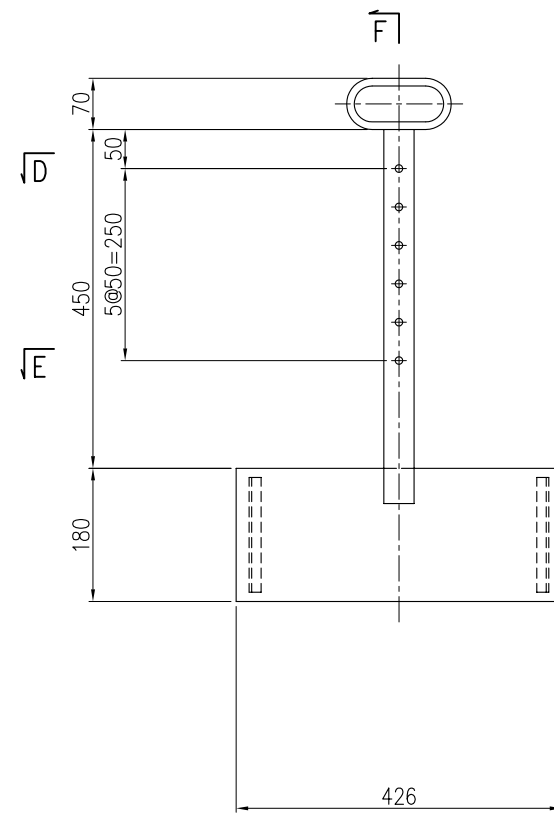
Name of Canal	Name of Turnout	Sta. No.	Name of Tertiary Canal	No. of Handstop
BC-1	TO-7	0+14.30	BC-1-7L	1
	TP-10	2+18.44	BC-1-10L	1
	TO-11	3+68.51	BC-1-11L	1
	TO-12	5+18.75	BC-1-12L	1
	TO-13	6+19.96	BC-1-13L	1
	TO-14	7+60.48	BC-1-14L	1
BC-2	TO-15	9+57.09	BC-1-15L BC-1-15R	1 1
	TO-6	0+18.33	BC-2-6L	1
	TO-9	2+64.57	BC-2-9L	1
	TO-10	4+01.47	BC-2-10L	1
	TO-11	5+38.30	BC-2-11L	1
	TO-12	6+75.29	BC-2-12L	1
	TO-13	8+13.08	BC-2-13L	1



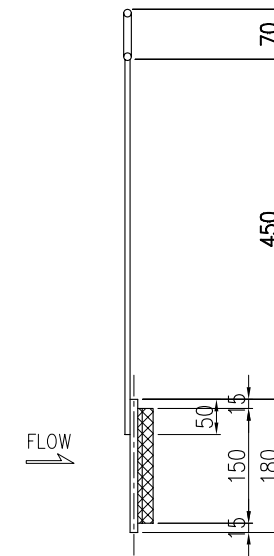
FRAME



SECTION C-C

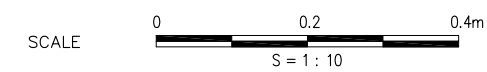


BLADE

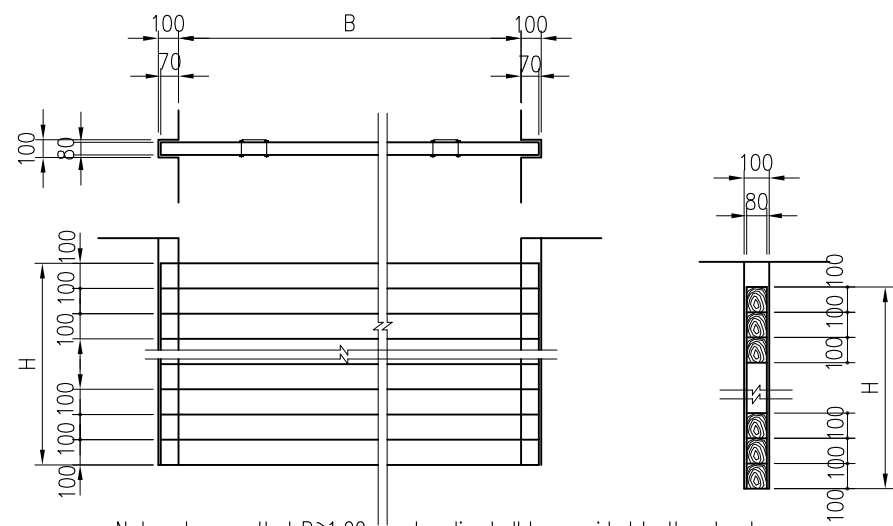


SECTION F-F

HANDSTOP FOR TURNOUT

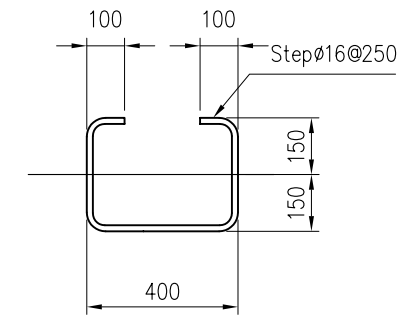


THE REPUBLIC OF MALAWI	
THE PROJECT FOR REHABILITATION OF BWANJE VALLEY IRRIGATION SYSTEM	
TITLE OF DRAWING GATES FOR CANAL STRUCTURES (2/2)	
DRAWING NO.	ID-40
NIPPON KOEI CO., LTD.	

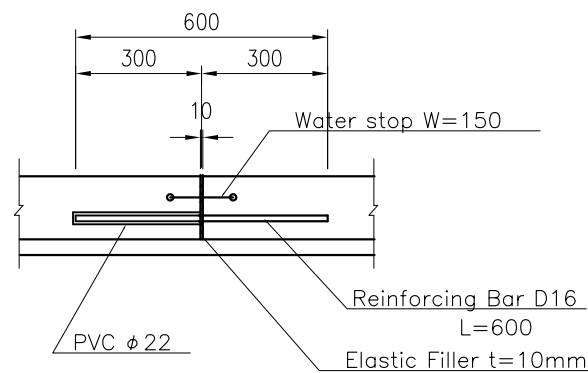


Note : In case that $B \geq 1.00\text{m}$, a handle shall be provided to the stop log

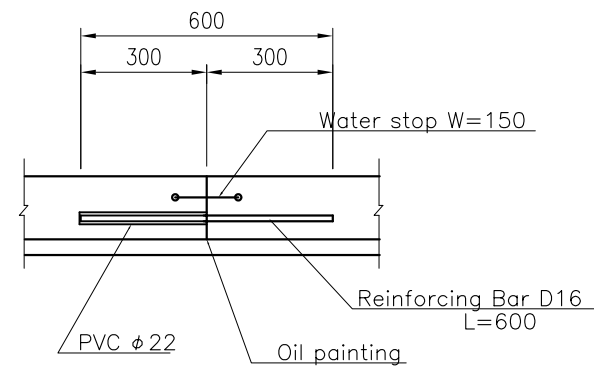
STOP LOG
NOT TO SCALE



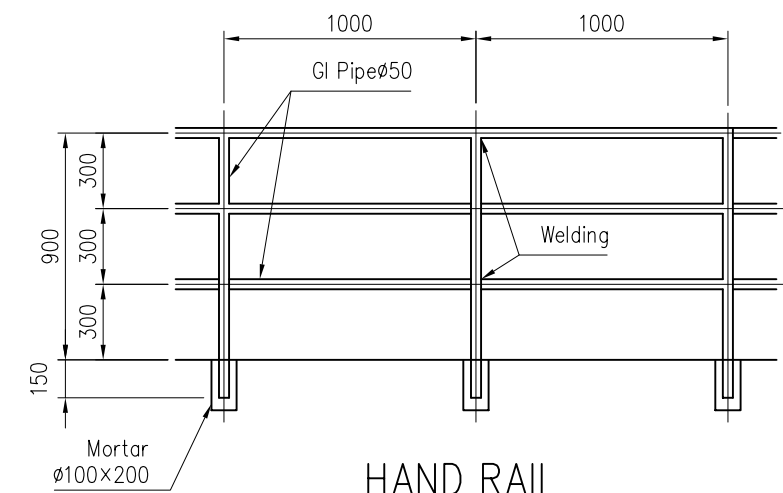
DETAIL OF STEP
SCALE A



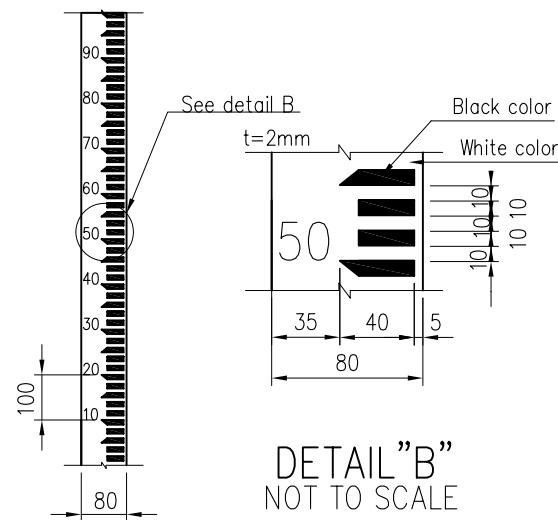
EXPANTION JOINT
SCALE B



CONTRACTION JOINT
SCALE B

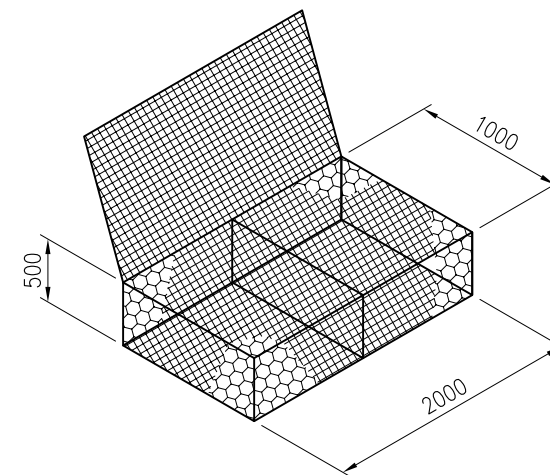


HAND RAIL
SCALE B

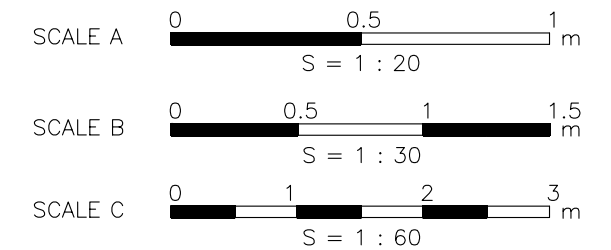


STAFF GAUGE
NOT TO SCALE

DETAIL "B"
NOT TO SCALE



GABION
NOT TO SCALE



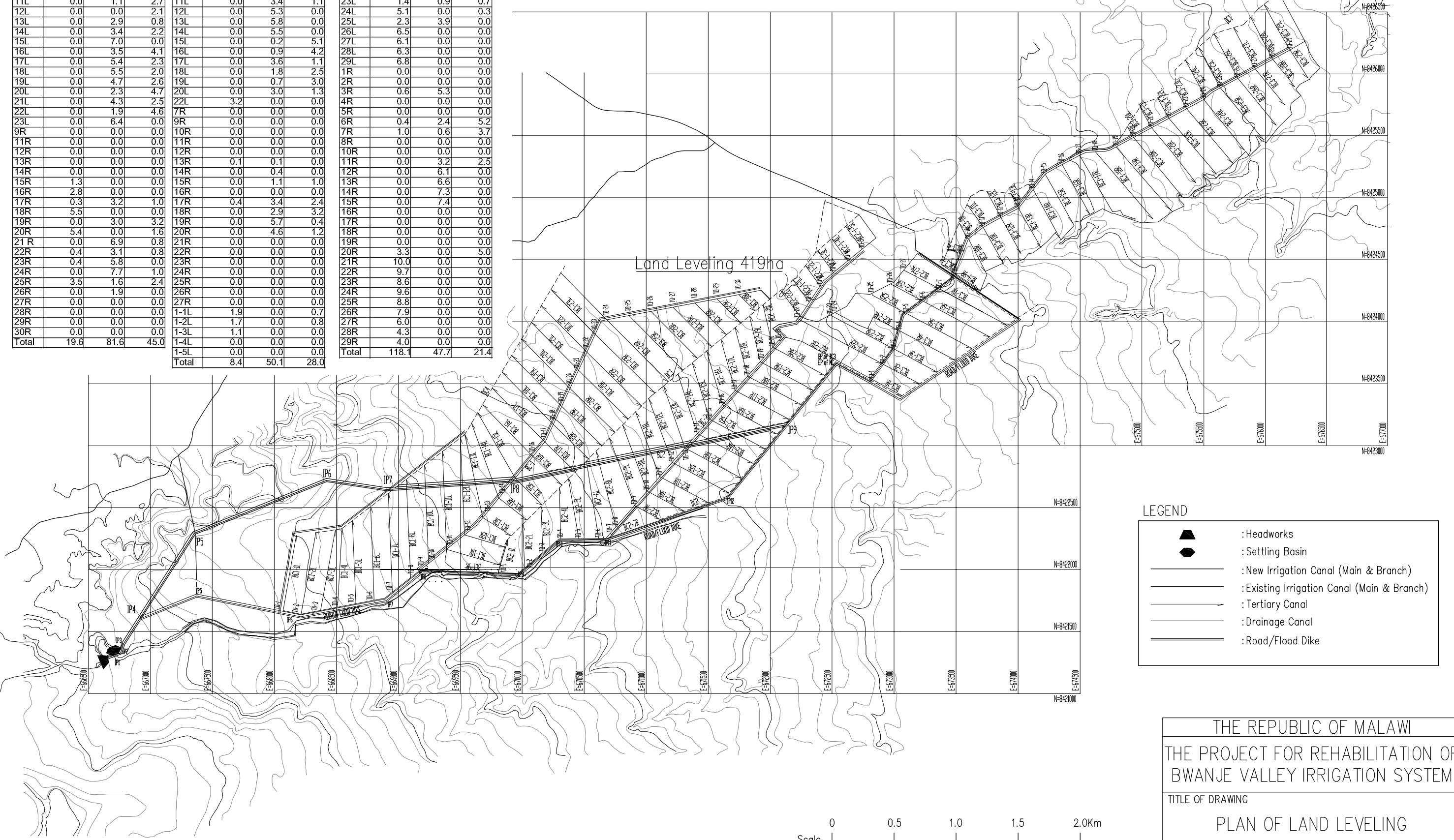
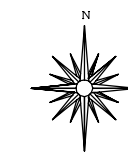
THE REPUBLIC OF MALAWI	
THE PROJECT FOR REHABILITATION OF BWANJE VALLEY IRRIGATION SYSTEM	
TITLE OF DRAWING MISCELLANEOUS WORKS	
DRAWING NO.	ID-41
NIPPON KOEI CO., LTD.	

BC1			
Block No.	Target Area (ha)		
	Lesser Degree	Middle Degree	Greater Degree
1L	0.0	0.0	0.0
2L	0.0	0.0	0.0
3L	0.0	0.0	0.0
4L	0.0	0.0	0.0
5L	0.0	0.0	0.0
6L	0.0	0.0	0.0
7L	0.0	0.0	0.1
8L	0.0	0.0	1.1
10L	0.0	0.0	2.4
11L	0.0	1.1	2.7
12L	0.0	0.0	2.1
13L	0.0	2.9	0.8
14L	0.0	3.4	2.2
15L	0.0	7.0	0.0
16L	0.0	3.5	4.1
17L	0.0	5.4	2.3
18L	0.0	5.5	2.0
19L	0.0	4.7	2.6
20L	0.0	2.3	4.7
21L	0.0	4.3	2.5
22L	0.0	1.9	4.6
23L	0.0	6.4	0.0
9R	0.0	0.0	0.0
11R	0.0	0.0	0.0
12R	0.0	0.0	0.0
13R	0.0	0.0	0.0
14R	0.0	0.0	0.0
15R	1.3	0.0	0.0
16R	2.8	0.0	0.0
17R	0.3	3.2	1.0
18R	5.5	0.0	0.0
19R	0.0	3.0	3.2
20R	5.4	0.0	1.6
21R	0.0	6.9	0.8
22R	0.4	3.1	0.8
23R	0.4	5.8	0.0
24R	0.0	7.7	1.0
25R	3.5	1.6	2.4
26R	0.0	1.9	0.0
27R	0.0	0.0	0.0
28R	0.0	0.0	0.0
29R	0.0	0.0	0.0
30R	0.0	0.0	0.0
Total	19.6	81.6	45.0

BC2			
Block No.	Target Area (ha)		
	Lesser Degree	Middle Degree	Greater Degree
1L	0.0	0.0	0.0
2L	0.0	0.0	0.0
3L	0.0	0.0	0.0
4L	0.0	0.0	0.0
5L	0.0	0.0	0.0
6L	0.0	0.3	0.0
8L	0.0	1.4	0.0
9L	0.0	0.0	0.0
10L	0.0	0.0	0.0
11L	0.0	3.4	1.1
12L	0.0	5.3	0.0
13L	0.0	5.8	0.0
14L	0.0	5.5	0.0
15L	0.0	0.2	5.1
16L	0.0	0.9	4.2
17L	0.0	3.6	1.1
18L	0.0	1.8	2.5
19L	0.0	0.7	3.0
20L	0.0	3.0	1.3
22L	3.2	0.0	0.0
7R	0.0	0.0	0.0
9R	0.0	0.0	0.0
10R	0.0	0.0	0.0
11R	0.0	0.0	0.0
12R	0.0	0.0	0.0
13R	0.1	0.1	0.0
14R	0.0	0.4	0.0
15R	0.0	1.1	1.0
16R	0.0	0.0	0.0
17R	0.4	3.4	2.4
18R	0.0	2.9	3.2
19R	0.0	5.7	0.4
20R	0.0	4.6	1.2
21R	0.0	0.0	0.0
22R	0.0	0.0	0.0
23R	0.0	0.0	0.0
24R	0.0	0.0	0.0
25R	0.0	0.0	0.0
26R	0.0	0.0	0.0
27R	0.0	0.0	0.0
1-1L	1.9	0.0	0.7
1-2L	1.7	0.0	0.8
1-3L	1.1	0.0	0.0
1-4L	0.0	0.0	0.0
1-5L	0.0	0.0	0.0
Total	8.4	50.1	28.0

BC3			
Block No.	Target Area (ha)		
	Lesser Degree	Middle Degree	Greater Degree
8L	0.0	0.0	0.0
9L	0.0	0.0	0.0
10L	0.0	0.0	0.0
11L	4.6	0.0	0.0
12L	0.8	1.5	0.6
13L	0.0	0.4	1.1
20L	0.0	0.0	2.3
21L	3.3	0.0	0.0
22L	0.7	2.1	0.0
23L	1.4	0.9	0.7
24L	5.1	0.0	0.3
25L	2.3	3.9	0.0
26L	6.5	0.0	0.0
27L	6.1	0.0	0.0
28L	6.3	0.0	0.0
29L	6.8	0.0	0.0
1R	0.0	0.0	0.0
2R	0.0	0.0	0.0
3R	0.6	5.3	0.0
4R	0.0	0.0	0.0
5R	0.0	0.0	0.0
6R	0.4	2.4	5.2
7R	1.0	0.6	3.7
8R	0.0	0.0	0.0
10R	0.0	0.0	0.0
11R	0.0	3.2	2.5
12R	0.0	6.1	0.0
13R	0.0	6.6	0.0
14R	0.0	7.3	0.0
15R	0.0	7.4	0.0
16R	0.0	0.0	0.0
17R	0.0	0.0	0.0
18R	0.0	0.0	0.0
19R	0.0	0.0	0.0
20R	3.3	0.0	5.0
21R	10.0	0.0	0.0
22R	9.7	0.0	0.0
23R	8.6	0.0	0.0
24R	9.6	0.0	0.0
25R	8.8	0.0	0.0
26R	7.9	0.0	0.0
27R	6.0	0.0	0.0
28R	4.3	0.0	0.0
29R	4.0	0.0	0.0
Total	118.1	47.7	21.4

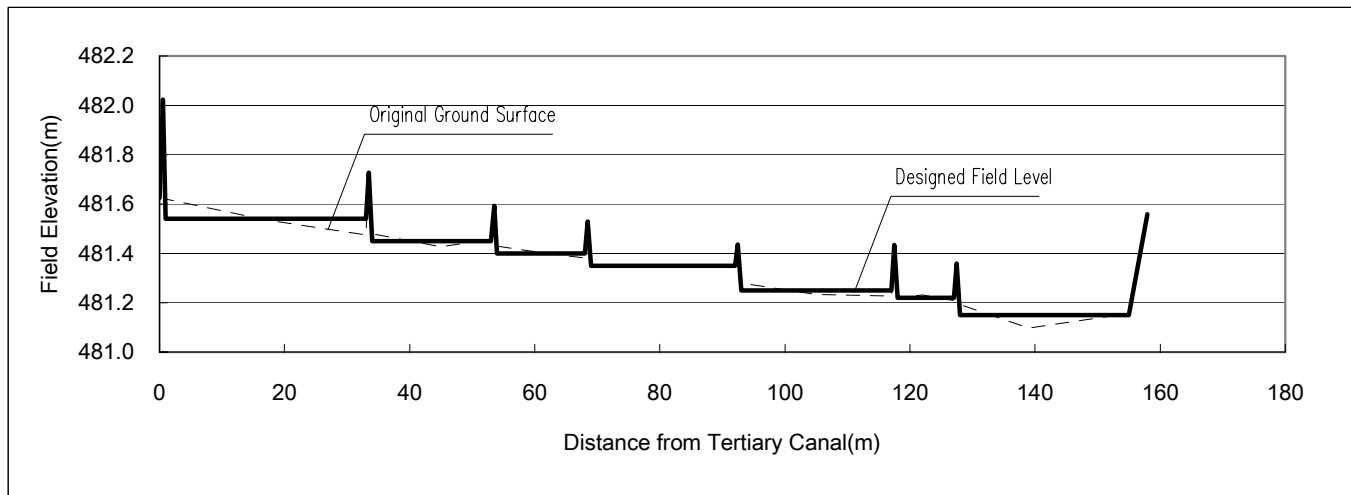
Branch Canal Area	Target Area (ha)		
	Lesser Degree	Middle Degree	Greater Degree
BC1	19.6	81.6	45.0
BC2	8.4	50.1	28.0
BC3	118.1	47.7	21.4
Total	146.1	179.4	94.4



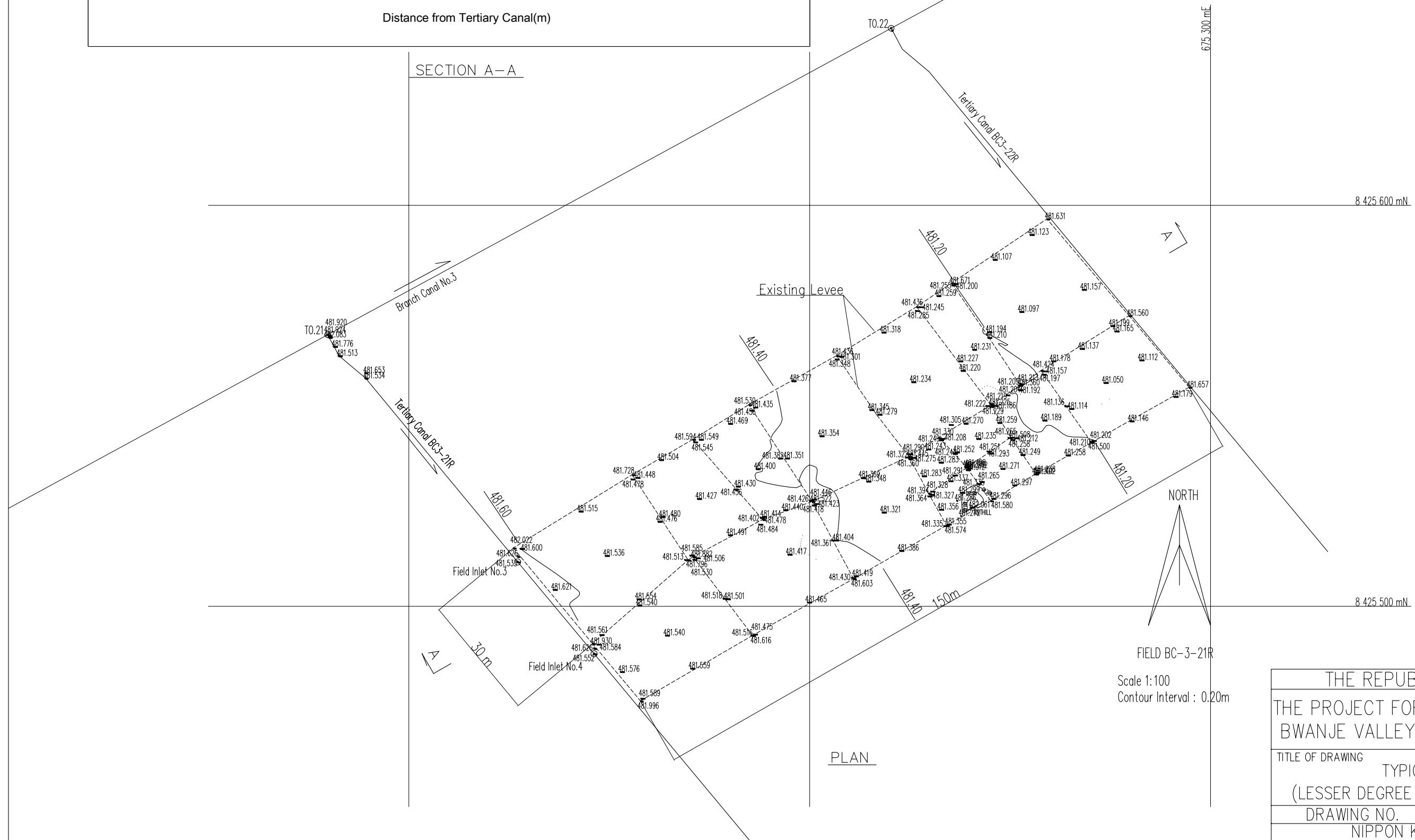
LEGEND	
	: Headworks
	: Settling Basin
	: New Irrigation Canal (Main & Branch)
	: Existing Irrigation Canal (Main & Branch)
	: Tertiary Canal
	: Drainage Canal
	: Road/Flood Dike



THE REPUBLIC OF MALAWI	
THE PROJECT FOR REHABILITATION OF BWANJE VALLEY IRRIGATION SYSTEM	
TITLE OF DRAWING	
PLAN OF LAND LEVELING	
DRAWING NO.	OF-01
NIPPON KOEI CO., LTD.	

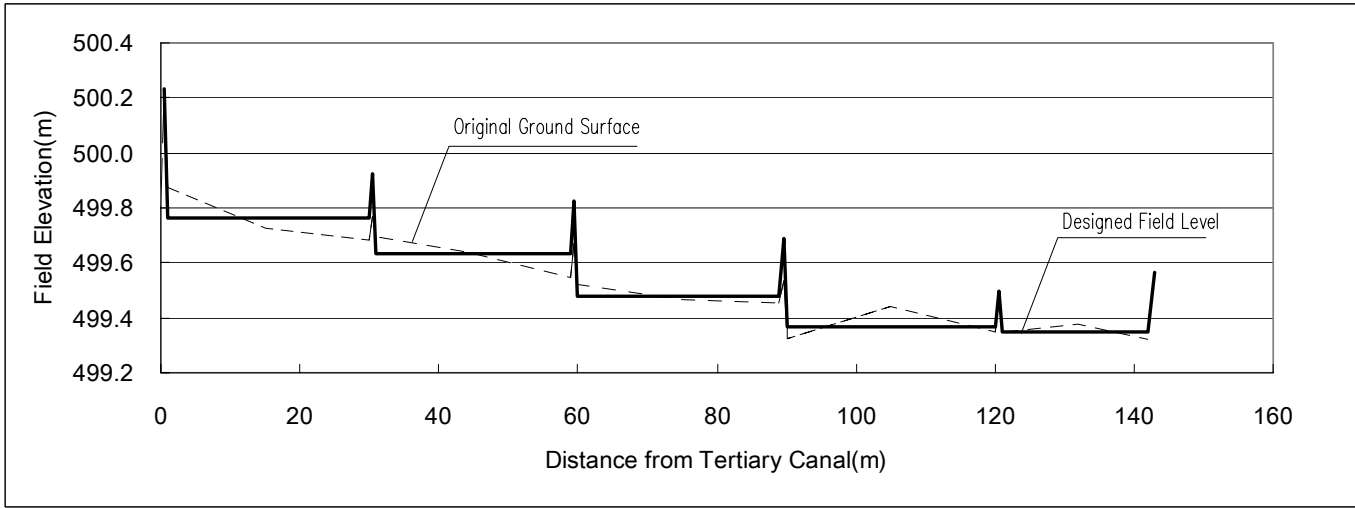


SECTION A-A

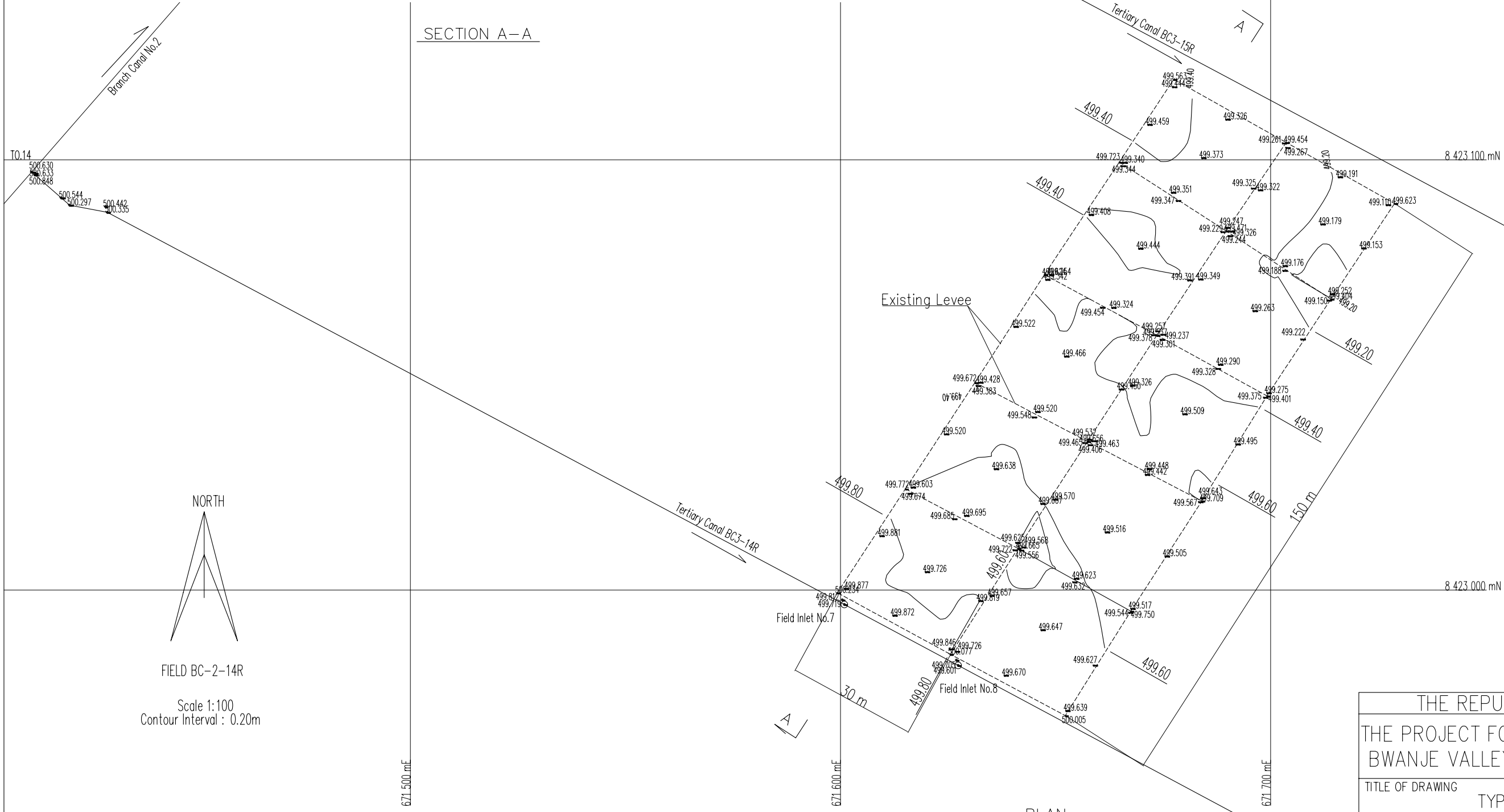


Scale 1:100
Contour Interval : 0.20m

THE REPUBLIC OF MALAWI	
THE PROJECT FOR REHABILITATION OF BWANJE VALLEY IRRIGATION SYSTEM	
TITLE OF DRAWING TYPICAL PLAN (LESSER DEGREE IN LEVELING VOLUME)	
DRAWING NO.	OF-02
NIPPON KOEI CO., LTD.	



SECTION A-A

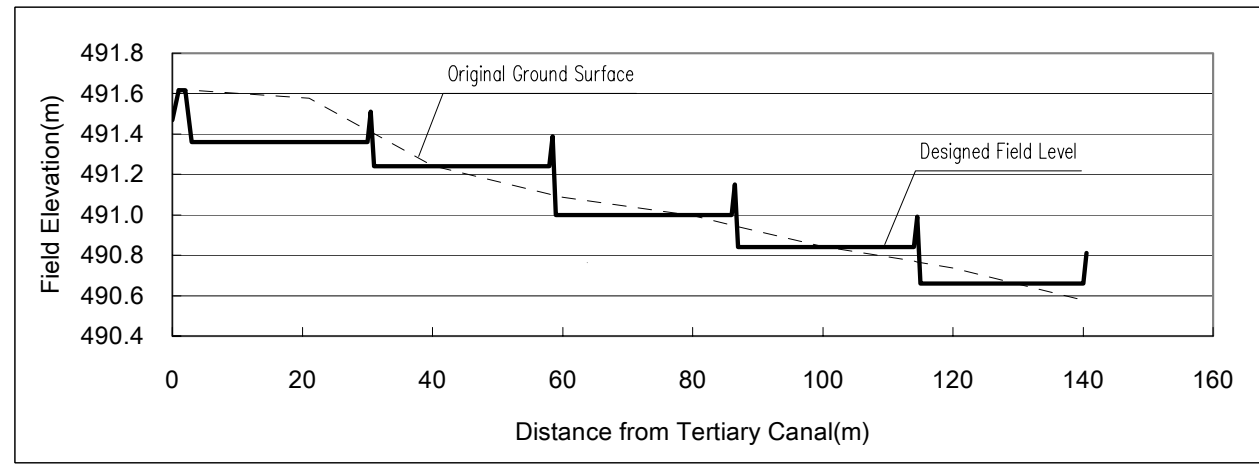


NORTH

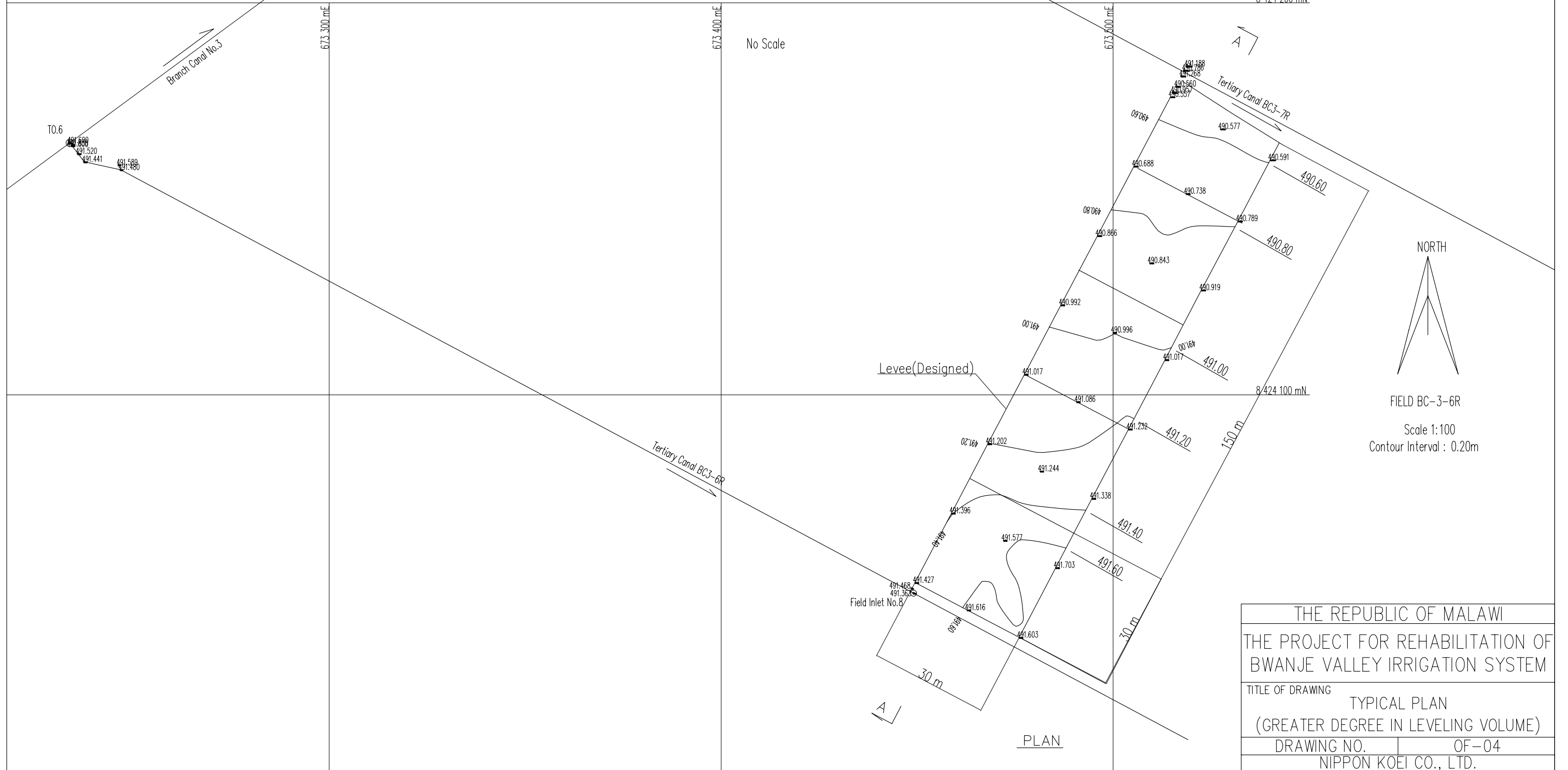
FIELD BC-2-14R
Scale 1:100
Contour Interval : 0.20m

PLAN

THE REPUBLIC OF MALAWI	
THE PROJECT FOR REHABILITATION OF BWANJE VALLEY IRRIGATION SYSTEM	
TITLE OF DRAWING	
TYPICAL PLAN	
(MIDDLE DEGREE IN LEVELING VOLUME)	
DRAWING NO.	OF-03
NIPPON KOEI CO., LTD.	



SECTION A-A



THE REPUBLIC OF MALAWI	
THE PROJECT FOR REHABILITATION OF BWANJE VALLEY IRRIGATION SYSTEM	
TITLE OF DRAWING	
TYPICAL PLAN	
(GREATER DEGREE IN LEVELING VOLUME)	
DRAWING NO.	OF-04
NIPPON KOEI CO., LTD.	