

Appendix-11: 概略図面集



REPUBLIC OF KIRIBATI
MINISTRY OF PUBLIC WORKS & UTILITIES

THE PREPARATORY SURVEY ON
THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY
ON TARAWA TO ADAPT CLIMATE CHANGE

THE DRAWINGS

DECEMBER 2015



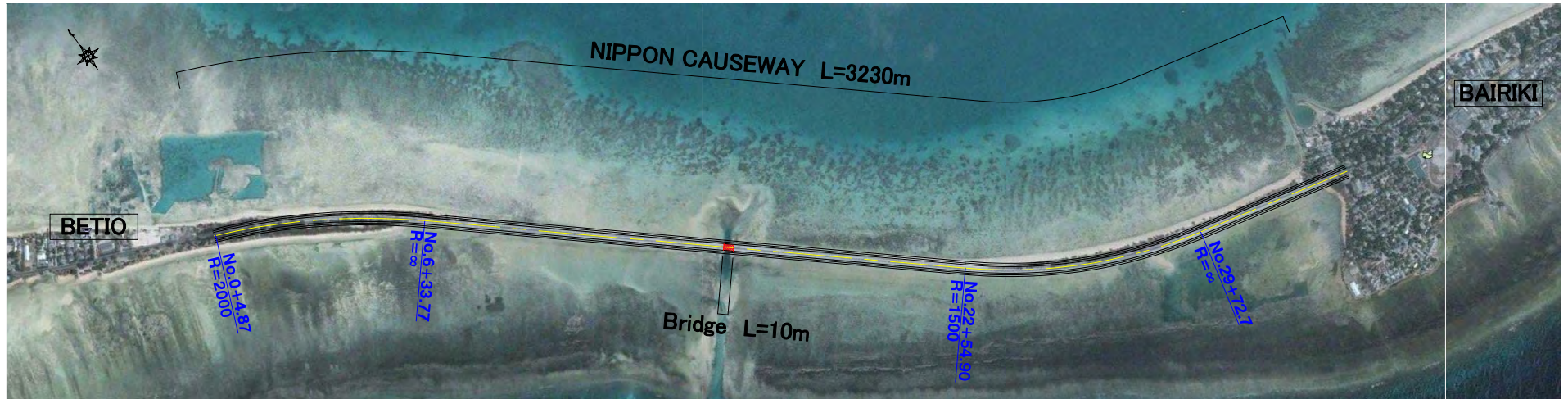
JAPAN INTERNATIONAL COOPERATION SYSTEM

CTI ENGINEERING INTERNATIONAL Co.,LTD.

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LOCATION MAP



MINISTRY OF PUBLIC WORKS & UTILITIES
(MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON
THE PROJECT FOR RECONSTRUCTION OF
NIPPON CAUSEWAY ON TARAWA
TO ADAPT CLIMATE CHANGE
IN KIRIBATI REPUBLIC



JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
LOCATION MAP

SCALE	DRG. No.
AS SHOWN	LM-1
DATE	SHEET No.
Mar. 2016	1

HORIZONTAL ALIGNMENT (1)

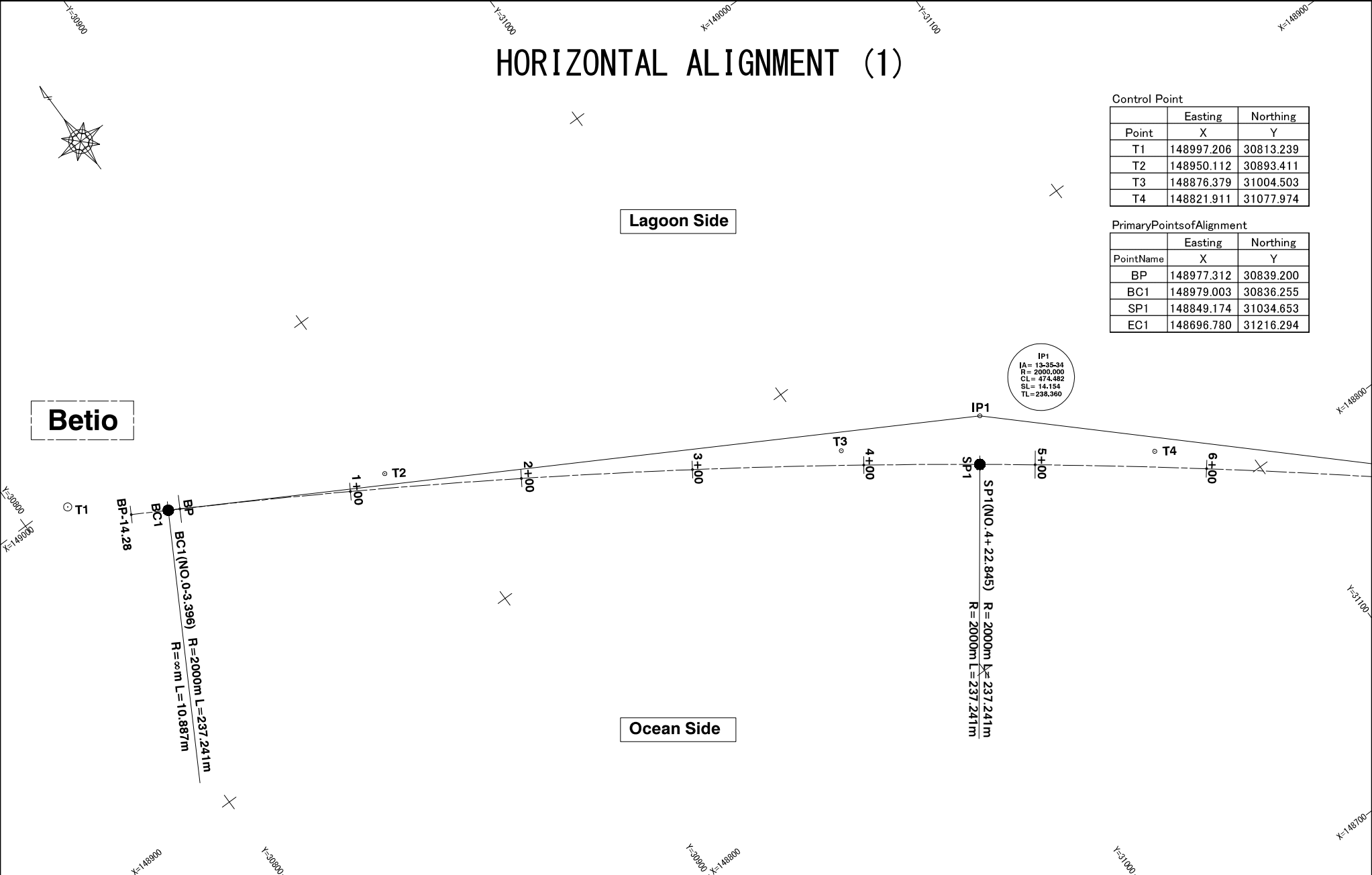
Control Point

Point	Easting	Northing
T1	148997.206	30813.239
T2	148950.112	30893.411
T3	148876.379	31004.503
T4	148821.911	31077.974

Primary Points of Alignment

Point Name	Easting	Northing
BP	148977.312	30839.200
BC1	148979.003	30836.255
SP1	148849.174	31034.653
EC1	148696.780	31216.294

IP1
 IA= 13-35-34
 R= 2000.000
 CL= 474.482
 SL= 14.154
 TL= 238.360



AP11-4

	Approved by Project Manager:	THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY	Designed		TITLE: HORIZONTAL ALIGNMENT (1)	SCALE	DRG. No.	
				CTI ENGINEERING INTERNATIONAL CO., LTD.	Checked			DATE	SHEET No.
					Approved			Mar. 2016	2

HORIZONTAL ALIGNMENT (2)

	Easting	Northing
Point	X	Y
T5	148754.606	31159.823
T6	148658.331	31264.540
T7	148541.657	31387.974

Lagoon Side

Ocean Side

EC1 EC1 (NO. 9+21.086) R= ∞ m L=1625.057m
R=2000m L=237.241m

AP11-5



MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)

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Project Manager:

THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC



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CTI ENGINEERING INTERNATIONAL CO., LTD.

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Checked
Approved

TITLE:
HORIZONTAL ALIGNMENT (2)

SCALE	DRG. No.
	HA-1--9
DATE	SHEET No.
Mar. 2016	3

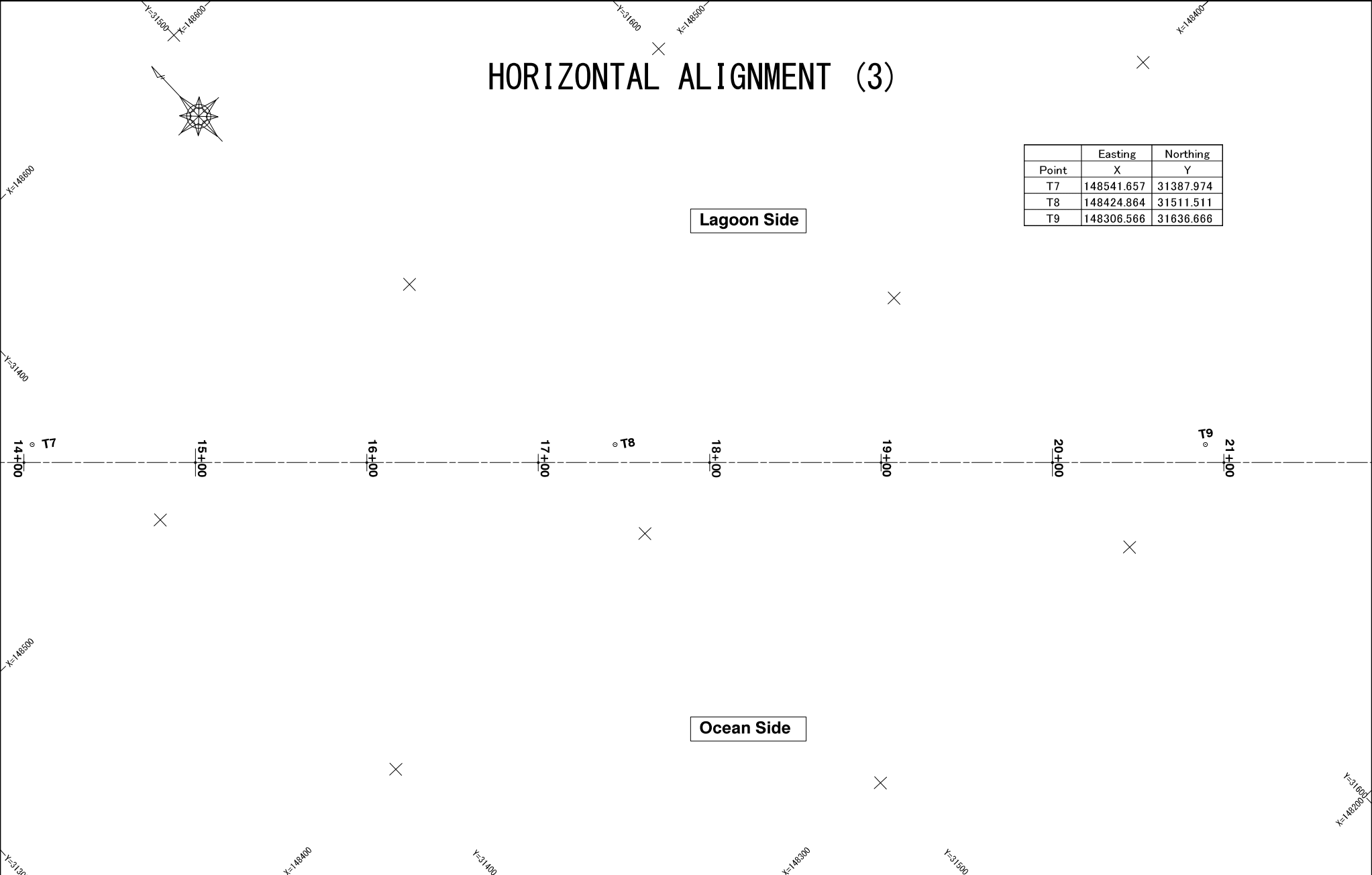
HORIZONTAL ALIGNMENT (3)

Point	Easting	Northing
	X	Y
T7	148541.657	31387.974
T8	148424.864	31511.511
T9	148306.566	31636.666

Lagoon Side

Ocean Side

AP11-6



MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)

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JAPAN INTERNATIONAL COOPERATION AGENCY
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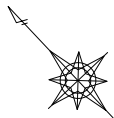
Designed	
Checked	
Approved	

TITLE:
HORIZONTAL ALIGNMENT (3)

SCALE	DRG. No.
	HA-1--9
DATE	SHEET No.
Mar. 2016	4

AP11-7

HORIZONTAL ALIGNMENT (4)

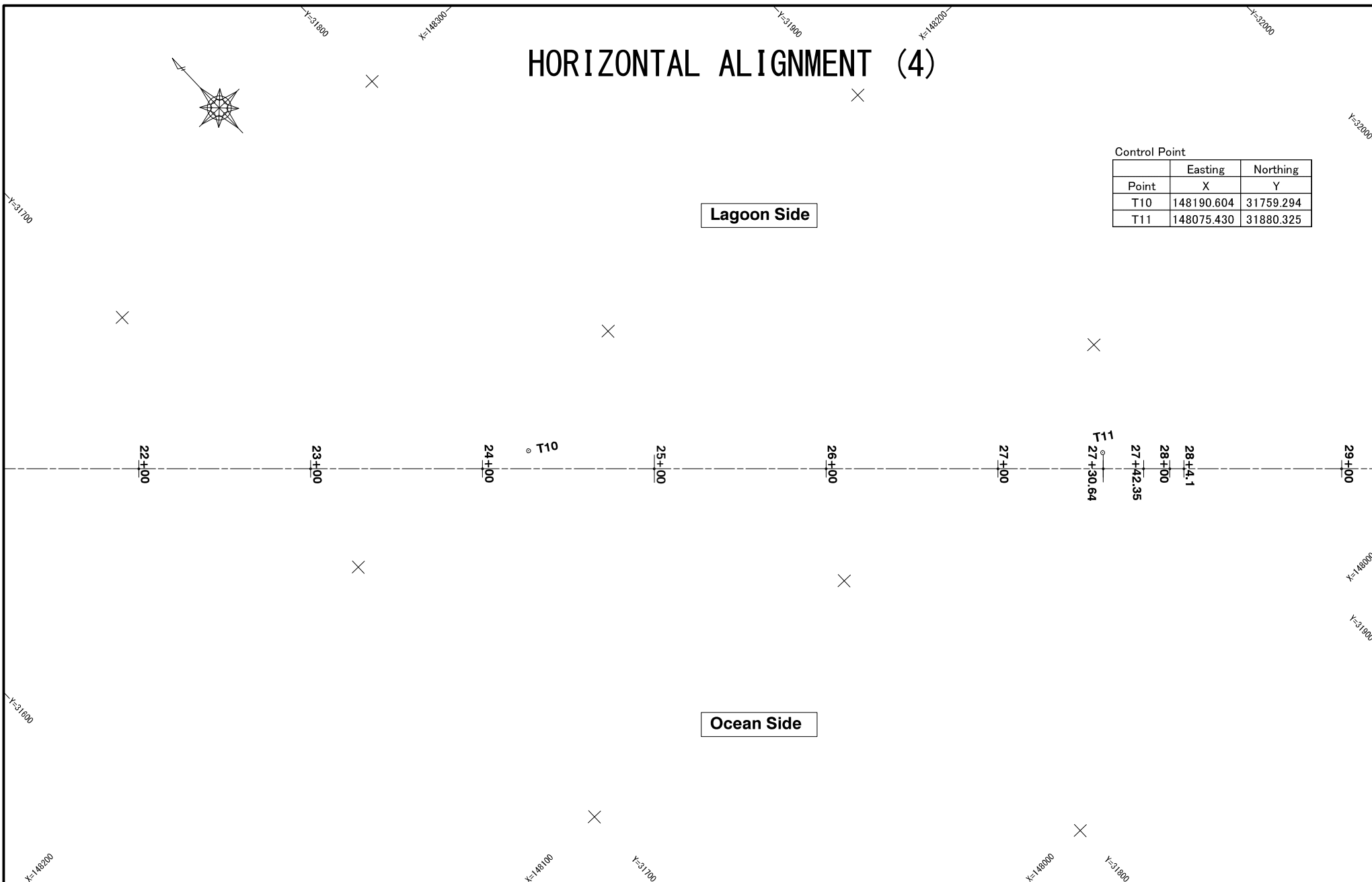


Lagoon Side

Ocean Side

Control Point

	Easting	Northing
Point	X	Y
T10	148190.604	31759.294
T11	148075.430	31880.325



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TO ADAPT CLIMATE CHANGE
IN KIRIBATI REPUBLIC

JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

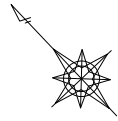
Designed
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TITLE:
HORIZONTAL ALIGNMENT (4)

SCALE	DRG. No.
DATE	SHEET No.
Mar. 2016	5

AP11-8

HORIZONTAL ALIGNMENT (5)



Control Point

Point	Easting	Northing
	X	Y
T12	148003.655	31957.253
T13	147941.694	32022.659
T14	147824.966	32146.018



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TO ADAPT CLIMATE CHANGE
IN KIRIBATI REPUBLIC



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TITLE:
HORIZONTAL ALIGNMENT (5)

SCALE	DRG. No.
	HA-1--9
DATE	SHEET No.
Mar. 2018	6

HORIZONTAL ALIGNMENT (6)

Lagoon Side

Ocean Side

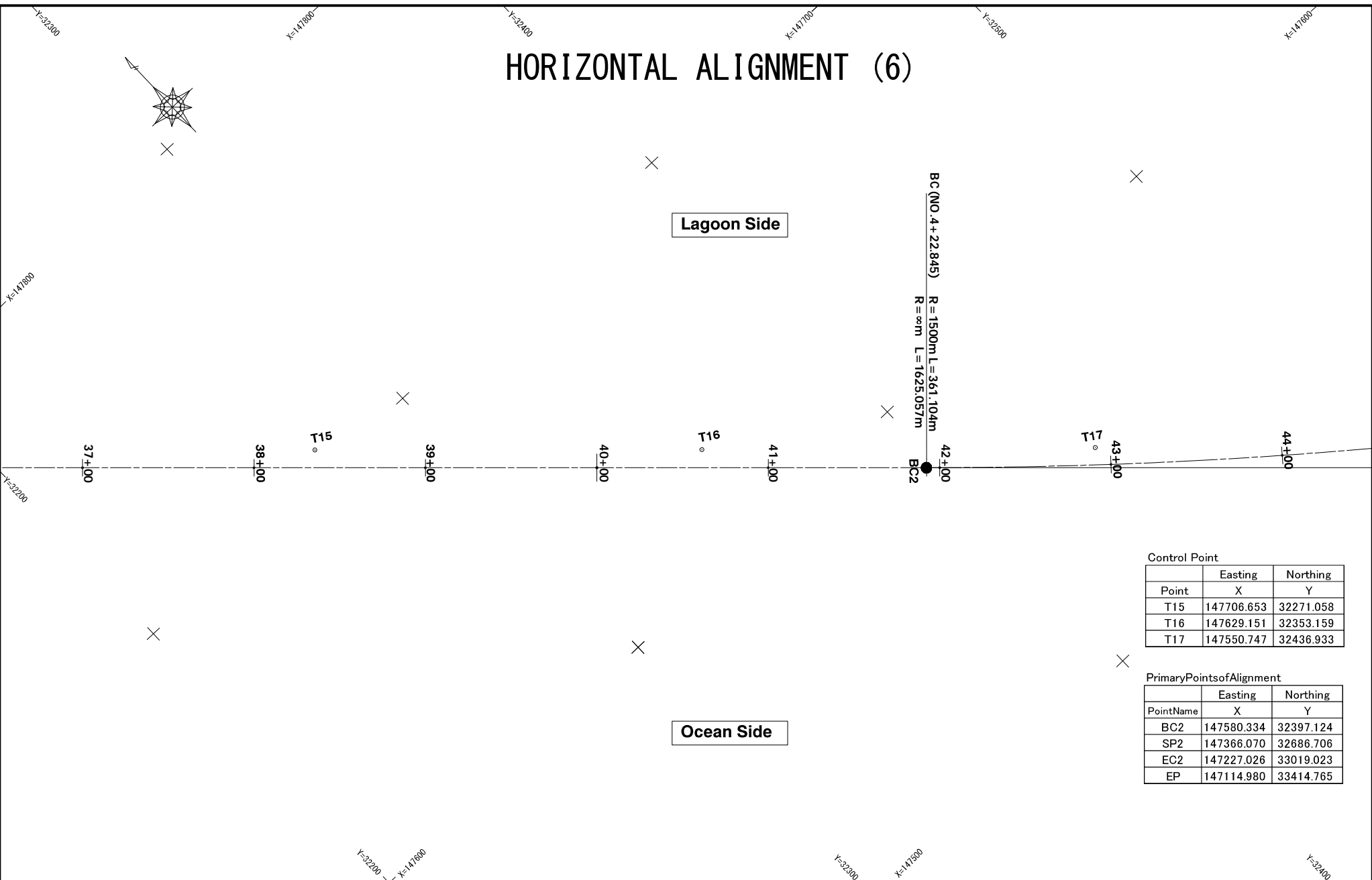
BC (NO. 4+22.845) R = 1500m L = 361.104m
 R = ∞m L = 1625.057m
 BC2

Control Point

Point	Easting X	Northing Y
T15	147706.653	32271.058
T16	147629.151	32353.159
T17	147550.747	32436.933

Primary Points of Alignment

Point Name	Easting X	Northing Y
BC2	147580.334	32397.124
SP2	147366.070	32686.706
EC2	147227.026	33019.023
EP	147114.980	33414.765



AP11-9



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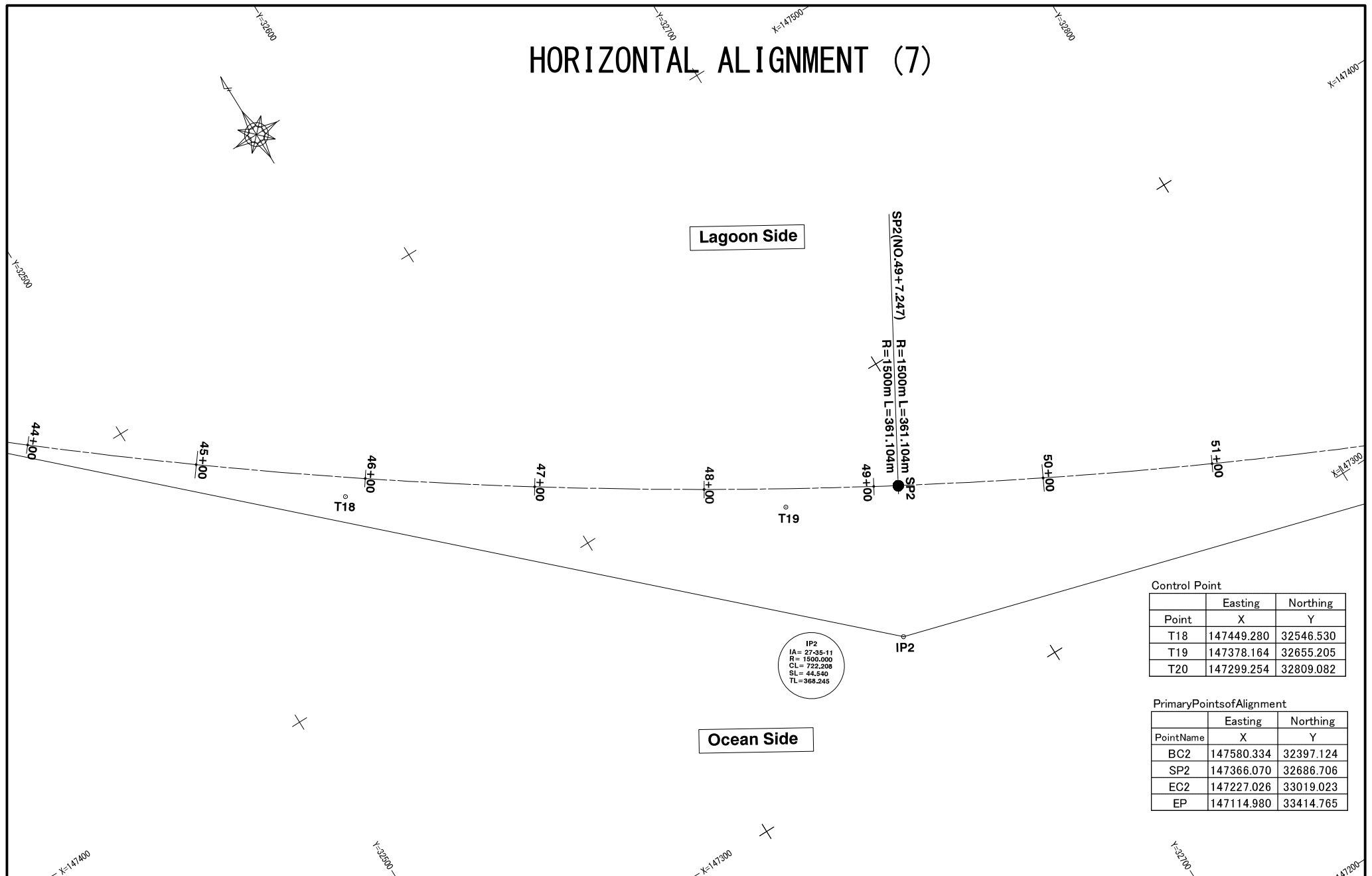
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 CTI ENGINEERING INTERNATIONAL CO., LTD.

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 Checked
 Approved

TITLE:
 HORIZONTAL ALIGNMENT (6)

SCALE	DRG. No.
DATE	SHEET No.
Mar. 2018	7

HORIZONTAL ALIGNMENT (7)



Control Point

Point	Easting X	Northing Y
T18	147449.280	32546.530
T19	147378.164	32655.205
T20	147299.254	32809.082

IP2
 IA= 27.95-11
 R= 1500.000
 CL= 722.208
 SL= 44.540
 TL= 365.245

Primary Points of Alignment

PointName	Easting X	Northing Y
BC2	147580.334	32397.124
SP2	147366.070	32686.706
EC2	147227.026	33019.023
EP	147114.980	33414.765

AP11-10



MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)

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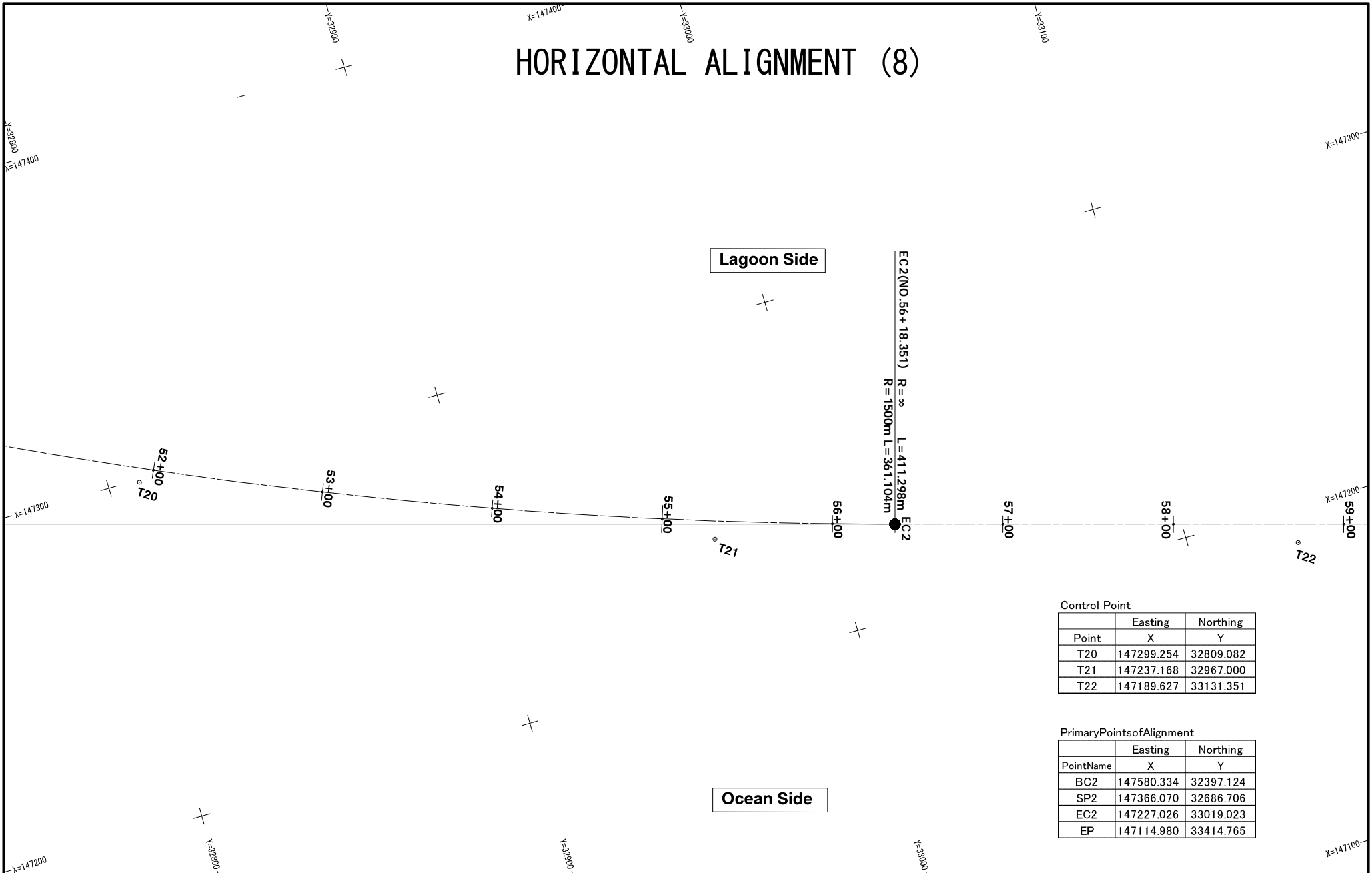
JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

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Approved

TITLE:
HORIZONTAL ALIGNMENT (7)

SCALE	DRG. No.
	HA-1-9
DATE	SHEET No.
Mar. 2018	8

HORIZONTAL ALIGNMENT (8)



EC2 (NO. 56 + 18.351) R = ∞ L = 411.298m
 R = 1500m L = 361.104m

Control Point

Point	Easting X	Northing Y
T20	147299.254	32809.082
T21	147237.168	32967.000
T22	147189.627	33131.351

Primary Point of Alignment

Point Name	Easting X	Northing Y
BC2	147580.334	32397.124
SP2	147366.070	32686.706
EC2	147227.026	33019.023
EP	147114.980	33414.765

AP11-11



MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)

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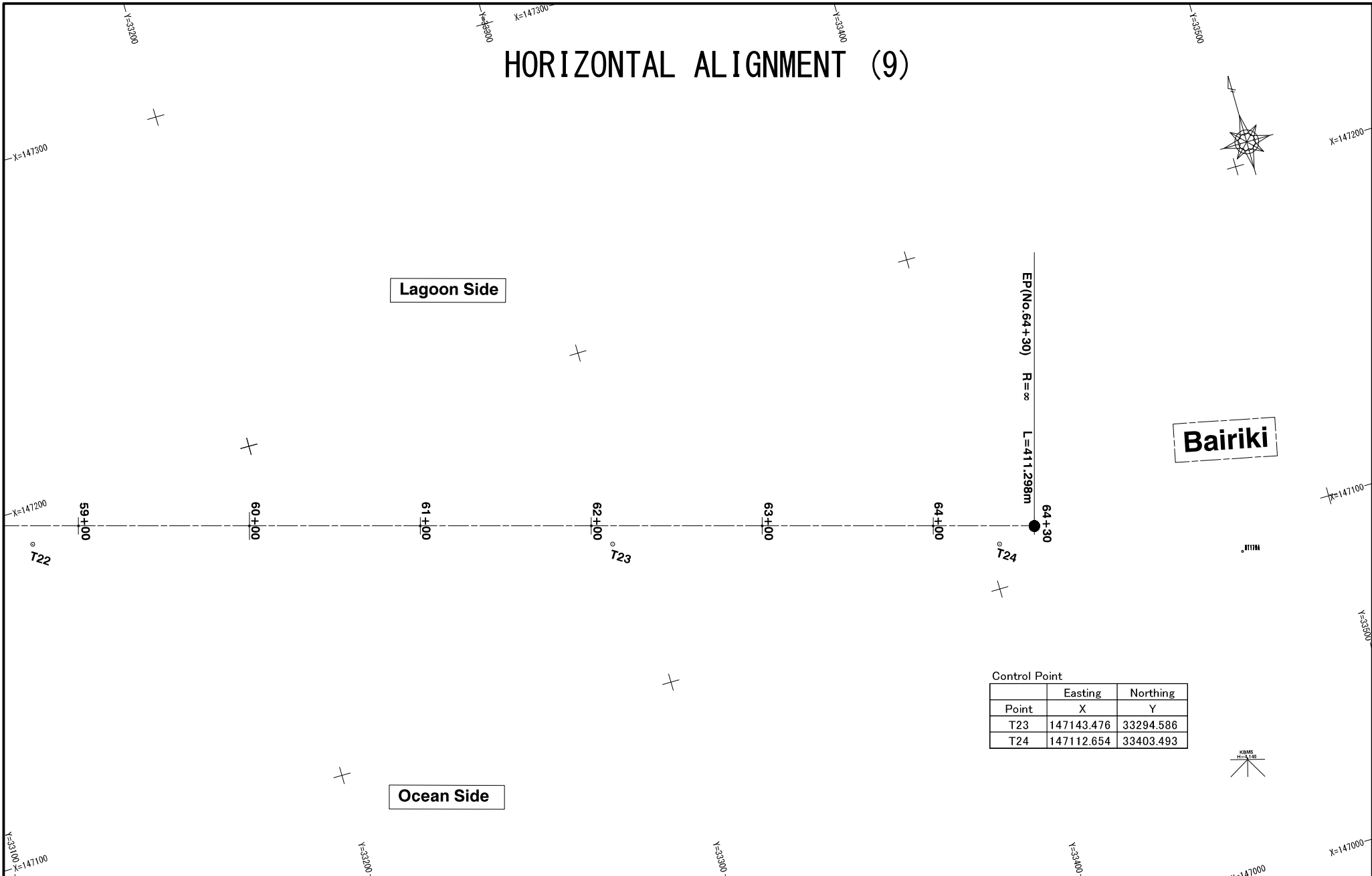
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TITLE:
 HORIZONTAL ALIGNMENT (8)

SCALE	DRG. No.
DATE	SHEET No.
Mar. 2018	9

HORIZONTAL ALIGNMENT (9)



Control Point

Point	Easting		Northing	
	X	Y	X	Y
T23	147143.476	33294.586		
T24	147112.654	33403.493		

AP11-12



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TO ADAPT CLIMATE CHANGE
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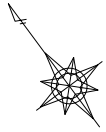
JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
HORIZONTAL ALIGNMENT (9)

SCALE	DRG. No.
DATE	SHEET No.
Mar. 2018	10

PLAN (1)

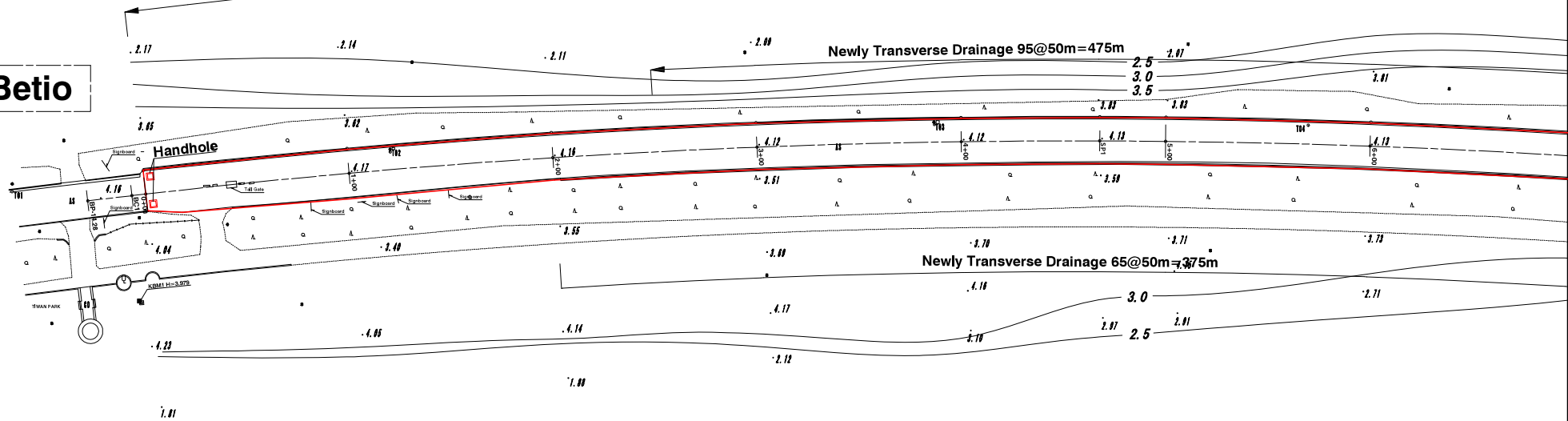


Lagoon Side

IP1
 IA= 13-35-34
 R= 2000.000
 CL= 474.482
 SL= 14.154
 TL= 238.360

Nippon Causeway L=3230m

Betio



Ocean Side

AP11-13



MINISTRY OF PUBLIC WORKS & UTILITIES
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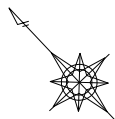
JAPAN INTERNATIONAL COOPERATION AGENCY
 CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
 Checked
 Approved

TITLE:
 PLAN (1)

SCALE	DRG. No.
	PL1-9
DATE	SHEET No.
Mar. 2016	11

PLAN (2)



Lagoon Side

Nippon Causeway L=3230m

Utilities Connection Section

L=20m

Present Sloop Maintained (Option-1)L=250m

Parapet (TYPE-1)L=1600m

Newly Transverse Drainage 95@50m=475m

Transverse Drainage

Transverse Drainage

Transverse Drainage

Handhole

Newly Transverse Drainage 95@50m=475m

Transverse Drainage

Transverse Drainage

Transverse Drainage

Transverse Drainage

Transverse Drainage

Transverse Drainage

Parapet (TYPE-2)L=942.35m

Present Sloop Maintained (Option-1)L=150m

Overlaid with Fabrimat 25cm(Option-2)L=787.35m

Ocean Side

AP11-14



MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)

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THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC



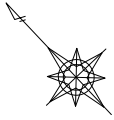
JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
PLAN (2)

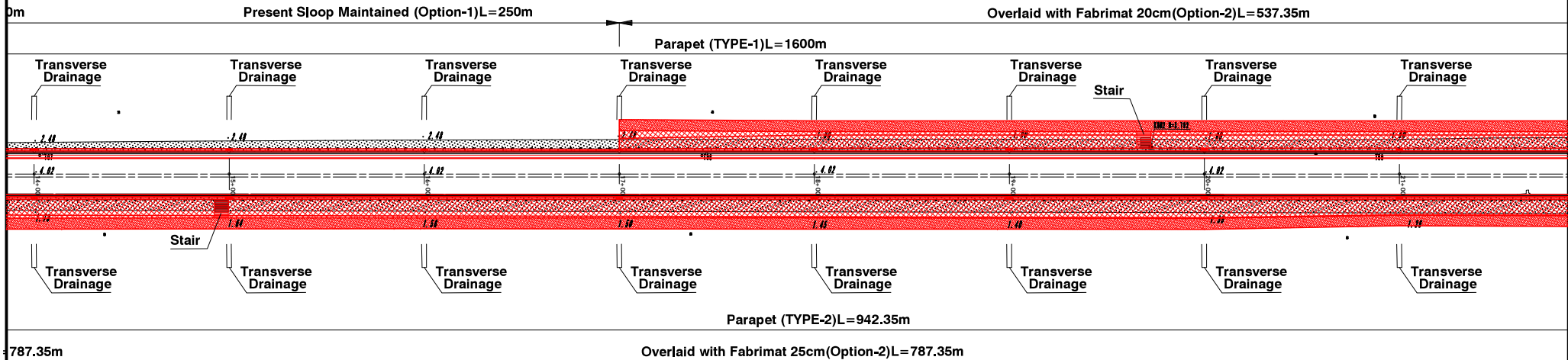
SCALE	DRG. No.
	PL1--9
DATE	SHEET No.
Mar. 2016	12

PLAN (3)



Lagoon Side

Nippon Causeway L=3230m

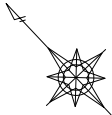


Ocean Side

AP11-15

<p>MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)</p>	<p>Approved by</p>	<p>THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC</p>	<p>JAPAN INTERNATIONAL COOPERATION AGENCY CTI ENGINEERING INTERNATIONAL CO., LTD.</p>	Designed		<p>TITLE:</p> <p>PLAN (3)</p>	SCALE	DRG. No.
	<p>Project Manager:</p>			Checked			DATE	SHEET No.
				Approved			Mar. 2016	13

PLAN (4)

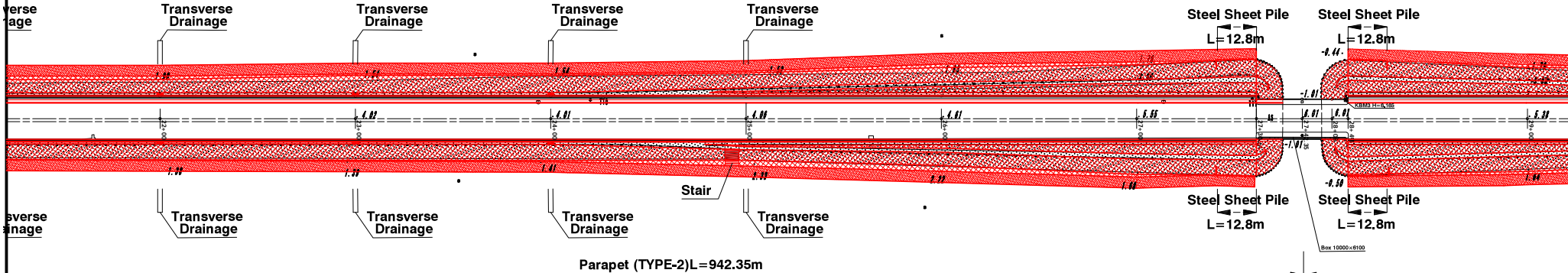


Lagoon Side

Nippon Causeway L=3230m

Overlaid with Fabrimat 20cm(Option-2)L=537.35m

Parapet (TYPE-1)L=1600m



Parapet (TYPE-2)L=942.35m

Overlaid with Fabrimat 25cm(Option-2)L=787.35m

Ocean Side

No. 27 + 37.35
No. 27 + 47.35
Bridge
L=10m

AP11-16



MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC



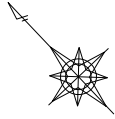
JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
PLAN (4)

SCALE	DRG. No.
	PL1-9
DATE	SHEET No.
Mar. 2018	14

PLAN (5)

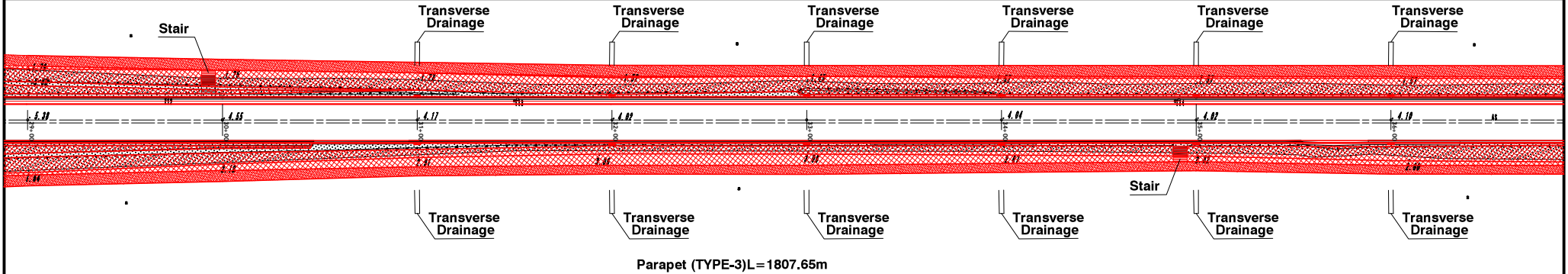


Lagoon Side

Nippon Causeway L=3230m

Overlaid with Fabrimat 15cm(Option-2)L=802.65m

Parapet (TYPE-1)L=1600m



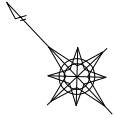
Overlaid with Fabrimat 30cm + Steel Sheet Pile (Option-3) L=1082.65m

Ocean Side

AP11-17

<p>MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)</p>	<p>Approved by</p>	<p>THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC</p>	<p>JAPAN INTERNATIONAL COOPERATION AGENCY CTI ENGINEERING INTERNATIONAL CO., LTD.</p>	Designed		<p>TITLE:</p> <p>PLAN (5)</p>	SCALE	DRG. No.
	<p>Project Manager:</p>			Checked			DATE	SHEET No.
				Approved			Mar. 2016	15

PLAN (6)



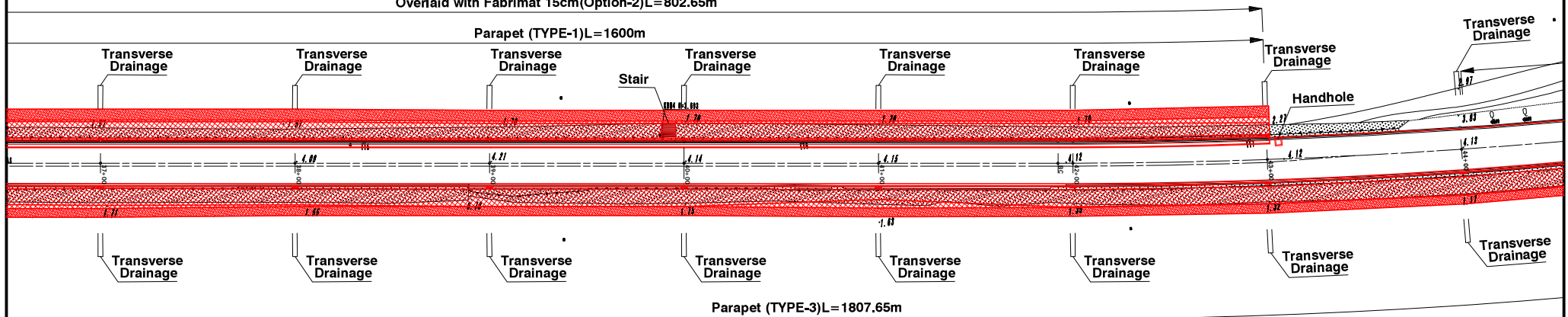
Lagoon Side

Nippon Causeway L=3230m

Utilities Connection Section
L=20m

Overlaid with Fabrimat 15cm (Option-2) L=802.65m

Parapet (TYPE-1) L=1600m



Parapet (TYPE-3) L=1807.65m

Overlaid with Fabrimat 30cm + Steel Sheet Pile (Option-3) L=1082.65m

Ocean Side

AP11-18



MINISTRY OF PUBLIC WORKS & UTILITIES
(MPWU)

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THE PREPARATORY SURVEY ON
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TO ADAPT CLIMATE CHANGE
IN KIRIBATI REPUBLIC



JAPAN INTERNATIONAL COOPERATION AGENCY
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Checked
Approved

TITLE:
PLAN (6)

SCALE	DRG. No.
	PL1--9
DATE	SHEET No.
Mar. 2018	16

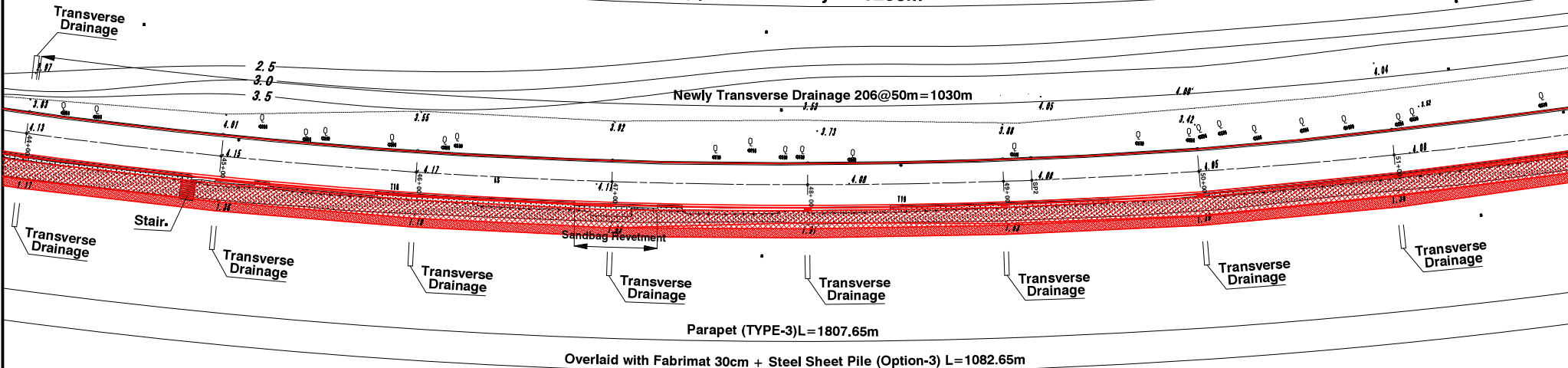
PLAN (7)



Lagoon Side

Nippon Causeway L=3230m

Newly Transverse Drainage 206@50m=1030m



Ocean Side

AP11-19



MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC



JAPAN INTERNATIONAL COOPERATION AGENCY
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TITLE:
PLAN (7)

SCALE	DRG. No.
	PL1--9
DATE	SHEET No.
Mar. 2018	17

PLAN (8)

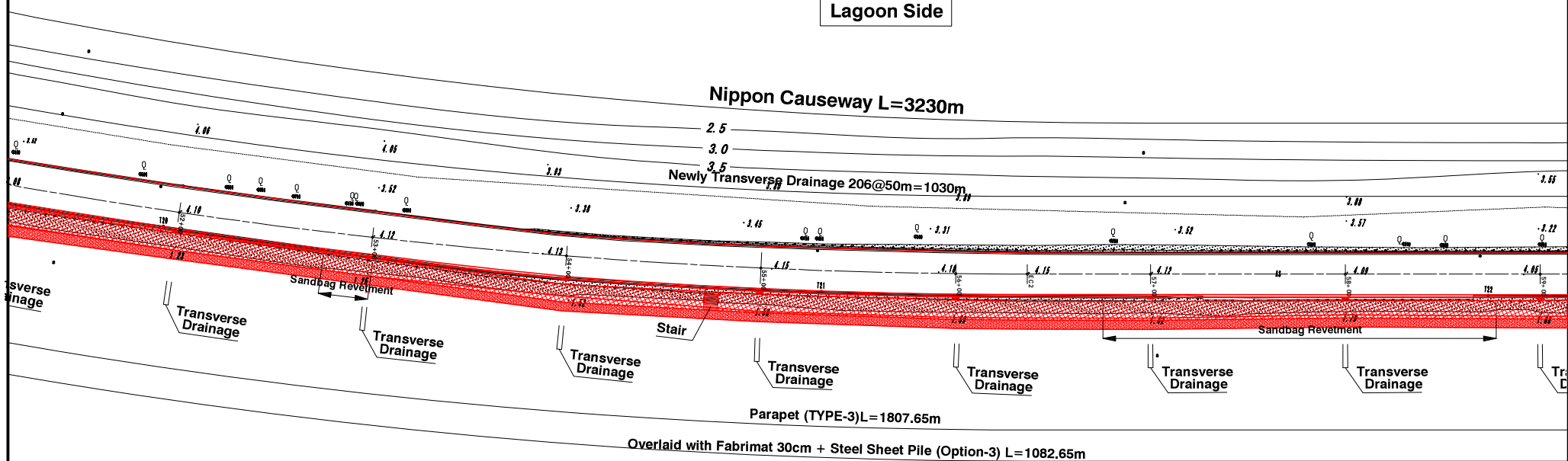


Lagoon Side

Nippon Causeway L=3230m

Newly Transverse Drainage 206@50m=1030m

AP11-20



Ocean Side



MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)

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THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC



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CTI ENGINEERING INTERNATIONAL CO., LTD.

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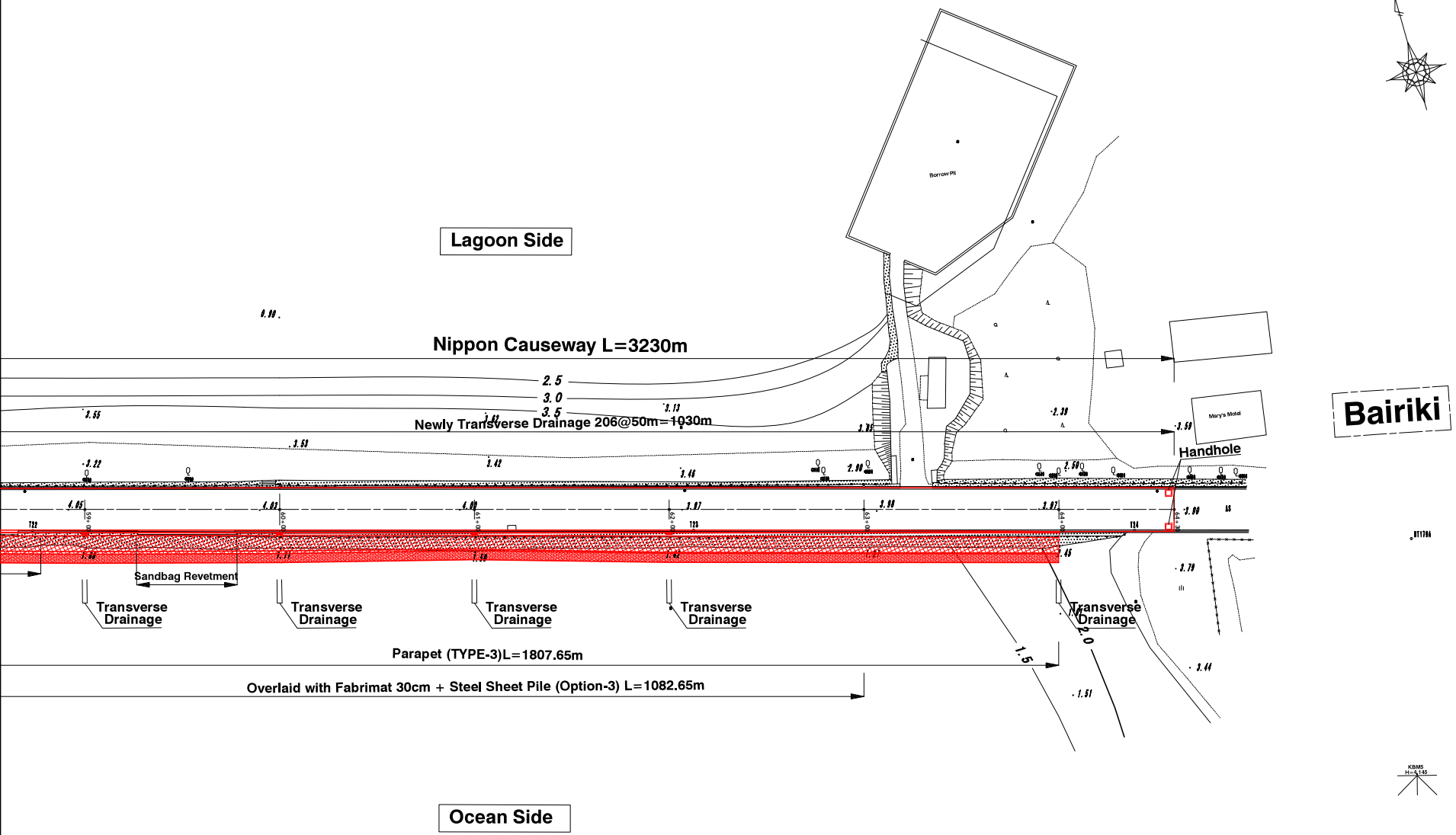
TITLE:
PLAN (8)

SCALE	DRG. No.
DATE	SHEET No.
Mar. 2016	18

PLAN (9)



AP11-21



Bairiki

KIMS
H-0155

<p>MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)</p>	Approved by	THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY CTI ENGINEERING INTERNATIONAL CO., LTD.	Designed		TITLE: PLAN (9)	SCALE	DRG. No.
	Project Manager:			Checked			DATE	SHEET No.
				Approved			Mar. 2016	19

PROFILE (2)

Nippon Causeway L=3230m

- Parapet Height
- Proposed Height
- Foot Protection Cement Bag Top Height
- Foot Protection Cement Bag Bottom Height
- Revetment Bottom Height (Ocean Side)
- Revetment Bottom Height (Lagoon Side)



Superelevation	i=2.0%																					
Gradient	LEVEL																					
Revetment Bottom Height (Lagoon Side)																						
Revetment Bottom Height (Ocean Side)																						
Parapet Height (Lagoon Side)																						
Parapet Height (Ocean Side)																						
Proposed Height	4.41			4.41			4.41			4.41			4.41			4.41			4.41			4.41
Ground Height	4.13	4.13	4.14	4.14	4.14	4.14	4.14	4.15	4.16	4.08	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02
Cumulative Distance	300.000	320.000	340.000	350.000	360.000	380.000	400.000	420.000	426.700	440.000	450.000	460.000	471.086	480.000	500.000	520.000	540.000	550.000	560.000	580.000	600.000	
Distance	20.000	20.000	20.000	10.000	10.000	20.000	20.000	20.000	6.700	13.300	10.000	10.000	11.086	8.914	20.000	20.000	20.000	10.000	10.000	20.000	20.000	
Station	No. 6	No. 6+20	No. 6+40	No. 7	No. 7+10	No. 7+30	No. 8	No. 8+20	No. 8+26.7	No. 8+40	No. 9	No. 9+10	EC1	No. 9+30	No. 10	No. 10+20	No. 10+40	No. 11	No. 11+10	No. 11+30	No. 12	
Horizontal Alignment	<p style="text-align: center;">TP1 IA=1335-34 R1=2000,000 CL=474,482 TL=238,360 SL=14,154</p>																					

AP11-23

PROFILE (3)

Revetment Measures(OceanSide) Option-1 L=150m

Revetment Measures(LagoonSide)
Opton-2(Overlay20cm) L=537,35m

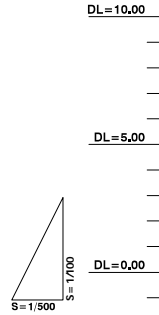
Revetment Measures(LagoonSide)Opton-1 L=250m

Revetment Measures(OceanSide) Option-2(Overlay25cm) L=787,35m

Parapet(LagoonSide)TYPE-1 L=787,35m

Parapet(OceanSide)TYPE-2 L=937,35m

- Parapet Height
- - - Proposed Height
- - - - - Foot Protection Cement Bag Top Height
- - - - - Foot Protection Cement Bag Bottom Height
- Revetment Bottom Height (Ocean Side)
- - - Revetment Bottom Height (Lagoon Side)



Superelevation	i=2.0%																					
Gradient	LEVEL																					
Revetment Bottom Height (Lagoon Side)																		2.44		2.44		1.86
Revetment Bottom Height (Ocean Side)	1.89			1.80			1.72				1.63				1.55					1.49		1.44
Parapet Height (Lagoon Side)	5.00			5.00			5.00				5.00				5.00					5.00		5.00
Parapet Height (Ocean Side)	5.00			5.00			5.00				5.00				5.00					5.00		5.00
Proposed Height	4.41			4.41			4.41				4.41				4.41					4.41		4.41
Ground Height	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02
Cumulative Distance	600.000	620.000	640.000	660.000	680.000	700.000	720.000	740.000	760.000	780.000	800.000	820.000	840.000	860.000	880.000	900.000	920.000	940.000	960.000	980.000	1000.000	
Distance	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000	20.000
Station	No. 12	No. 12+20	No. 12+40	No. 13	No. 13+10	No. 13+30	No. 14	No. 14+20	No. 14+40	No. 15	No. 15+10	No. 15+30	No. 16	No. 16+20	No. 16+40	No. 17	No. 17+10	No. 17+30	No. 18			
Horizontal Alignment																						

AP11-24



MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON
THE PROJECT FOR RECONSTRUCTION OF
NIPPON CAUSEWAY ON TARAWA
TO ADAPT CLIMATE CHANGE
IN KIRIBATI REPUBLIC



JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
PROFILE (3)

SCALE
DRG. No.
DATE
SHEET No.
Mar. 2018
22

PROFILE (4)

Nippon Causeway L=3230m

Revetment Measures(LagoonSide)Option-2(Overlay20cm) L=537.35m

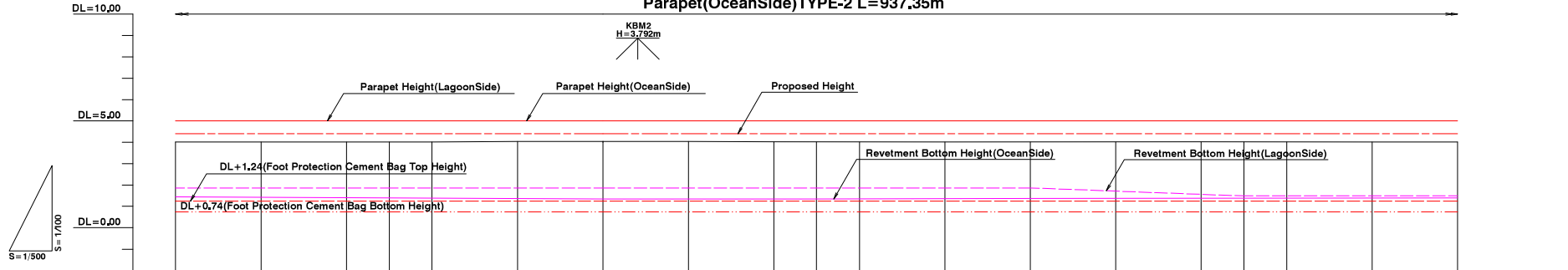
Revetment Measures(OceanSide) Option-2(Overlay25cm) L=787.35m

Parapet(LagoonSide)TYPE-1 L=787.35m

Parapet(OceanSide)TYPE-2 L=937.35m

KBM2
H=3.792m

- Parapet Height
- - - Proposed Height
- - - - - Foot Protection Cement Bag Top Height
- - - - - Foot Protection Cement Bag Bottom Height
- - - - - Revetment Bottom Height (Ocean Side)
- - - - - Revetment Bottom Height (Lagoon Side)



Superelevation	i=2.0%																				
Gradient	LEVEL																			4.41	
Revetment Bottom Height (Lagoon Side)	1.86		1.86		1.86		1.86		1.86		1.86		1.86		1.49		1.49		1.49		1.49
Revetment Bottom Height (Ocean Side)	1.44		1.39		1.34		1.35		1.37		1.38		1.38		1.38		1.38		1.40		1.40
Parapet Height (Lagoon Side)	5.00		5.00		5.00		5.00		5.00		5.00		5.00		5.00		5.00		5.00		5.00
Parapet Height (Ocean Side)	5.00		5.00		5.00		5.00		5.00		5.00		5.00		5.00		5.00		5.00		5.00
Proposed Height	4.41		4.41		4.41		4.41		4.41		4.41		4.41		4.41		4.41		4.41		4.41
Ground Height	4.02	4.02	4.02	4.02	4.02	4.03	4.03	4.03	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.01	4.01
Cumulative Distance	900.000	920.000	940.000	950.000	960.000	980.000	1000.000	1020.000	1040.000	1050.000	1060.000	1080.000	1100.000	1120.000	1140.000	1150.000	1160.000	1180.000	1200.000	1200.000	1200.000
Distance	20.000	20.000	20.000	10.000	10.000	20.000	20.000	20.000	20.000	10.000	10.000	20.000	20.000	20.000	20.000	10.000	10.000	20.000	20.000	20.000	20.000
Station	No. 18	No. 18+20	No. 18+40	No. 19	No. 19+10	No. 19+30	No. 20	No. 20+20	No. 20+40	No. 21	No. 21+10	No. 21+30	No. 22	No. 22+20	No. 22+40	No. 23	No. 23+10	No. 23+30	No. 24	No. 24	No. 24
Horizontal Alignment	—																				

AP11-25



MINISTRY OF PUBLIC WORKS & UTILITIES
(MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON
THE PROJECT FOR RECONSTRUCTION OF
NIPPON CAUSEWAY ON TARAWA
TO ADAPT CLIMATE CHANGE
IN KIRIBATI REPUBLIC



JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
PROFILE (4)

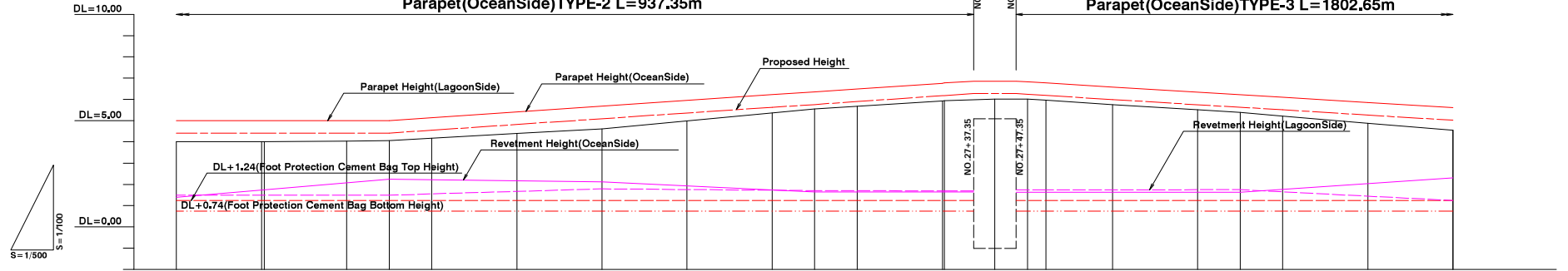
SCALE	DRG. No.
DATE	PF-1-11
Mar. 2018	SHEET No.
	23

PROFILE (5)

KBM3
H=6.165m

Nippon Causeway L=3230m

- Parapet Height
- - - Proposed Height
- - - Foot Protection Cement Bag Top Height
- - - Foot Protection Cement Bag Bottom Height
- - - Revetment Bottom Height (Ocean Side)
- - - Revetment Bottom Height (Lagoon Side)



Superelevation	i=2.0%																						
Gradient	4.41		LEVEL																6.27		6.27		
Revetment Bottom Height (Lagoon Side)	1.49		1.49		1.79		1.71		1.69	1.69		1.74	1.74		1.75		1.24						
Revetment Bottom Height (Ocean Side)	1.40		2.24		2.12		1.64		1.64	1.64		1.63	1.63		1.63		2.31						
Parapet Height (Lagoon Side)	5.00		5.00	5.14	5.41	5.68	5.95	6.22	6.35	6.49	6.76	6.77	6.77	6.86	6.83	6.78	6.78	6.58	6.34	6.22	6.11	5.85	5.61
Parapet Height (Ocean Side)	5.00		5.00	5.14	5.41	5.68	5.95	6.22	6.35	6.49	6.76	6.77	6.77	6.86	6.83	6.78	6.78	6.58	6.34	6.22	6.10	5.85	5.61
Proposed Height	4.41		4.41	4.55	4.82	5.09	5.36	5.63	5.76	5.90	6.17	6.18	6.18	6.27	6.24	6.19	6.19	5.99	5.75	5.63	5.51	5.26	5.02
Ground Height	4.01	4.01	4.04	4.06	4.17	4.39	4.61	4.99	5.36	5.55	5.68	5.93	5.94	5.94	6.01	6.01	5.96	5.76	5.51	5.38	5.21	4.88	4.55
Cumulative Distance	1200,000	1220,000	1240,000	1250,000	1260,000	1280,000	1300,000	1320,000	1340,000	1350,000	1360,000	1380,000	1380,500	1392,350	1400,000	1404,100	1404,300	1420,000	1440,000	1450,000	1460,000	1480,000	1500,000
Distance	20,000	20,000	19,400	10,000	10,000	20,000	20,000	20,000	10,000	10,000	10,000	20,000	0,500	11,710	7,650	4,100	0,200	15,700	20,000	10,000	10,000	20,000	20,000
Station	No. 24	No. 24+20	No. 24+40	No. 25	No. 25+10	No. 25+30	No. 26	No. 26+20	No. 26+40	No. 27	No. 27+10	No. 27+30	No. 27+35	No. 27+47.35	No. 28	No. 28+10	No. 28+30	No. 28+20	No. 28+40	No. 29	No. 29+10	No. 29+30	No. 30
Horizontal Alignment																							

AP11-26



MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC



JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
PROFILE (5)

SCALE	DRG. No.
DATE	SHEET No.
Mar. 2018	24

PROFILE (6)

Nippon Causeway L=3230m

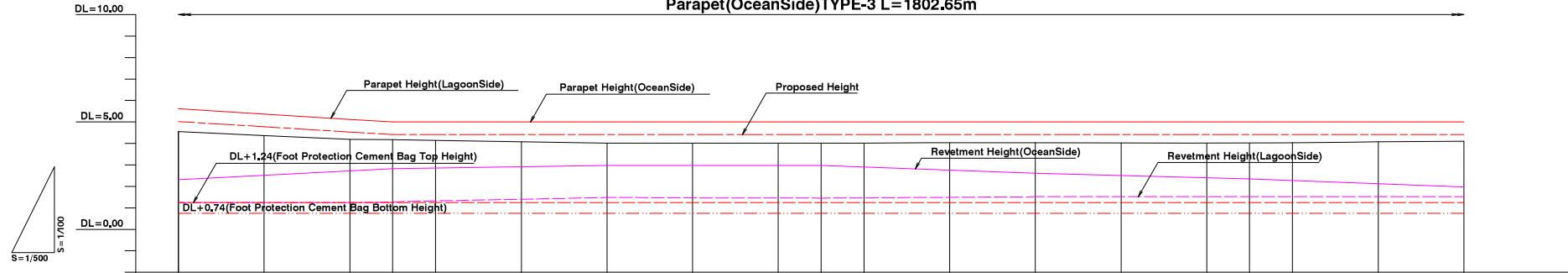
Revetment Measures(LagoonSide)Opton-2(Overlay20cm) L=802.65m

Revetment Measures(OceanSide) Option-3(Overlay30cm) L=1700m

Parapet(LagoonSide)TYPE-1 L=802.65m

Parapet(OceanSide)TYPE-3 L=1802.65m

- Parapet Height
- - - Proposed Height
- - - Foot Protection Cement Bag Top Height
- - - Foot Protection Cement Bag Bottom Height
- - - Revetment Bottom Height (Ocean Side)
- - - Revetment Bottom Height (Lagoon Side)



Superelevation	i=2,0%																			
Gradient	L=152,65m i=1,22%										LEVEL									
Revetment Bottom Height (Lagoon Side)	1.24				1.24					1.48										1.52
Revetment Bottom Height (Ocean Side)	2.31				2.83					2.97										2.61
Parapet Height (Lagoon Side)	5.68	5.37	5.12	5.00						5.00										5.00
Parapet Height (Ocean Side)	5.61	5.37	5.12	5.00						5.00										5.00
Proposed Height	5.02	4.78	4.53	4.41						4.41										4.41
Ground Height	4.55	4.37	4.19	4.17	4.14	4.08	4.02	4.02	4.02	4.02	4.02	4.02	4.02	4.03	4.04	4.03	4.02	4.02	4.04	4.07
Cumulative Distance	1500,000	1520,000	1540,000	1550,000	1560,000	1580,000	1600,000	1620,000	1640,000	1650,000	1660,000	1680,000	1700,000	1720,000	1740,000	1750,000	1760,000	1780,000	1800,000	
Distance	20,000	20,000	20,000	10,000	10,000	20,000	20,000	20,000	20,000	10,000	10,000	20,000	20,000	20,000	20,000	10,000	10,000	20,000	20,000	20,000
Station	No. 30	No. 30+20	No. 30+40	No. 31	No. 31+10	No. 31+30	No. 32	No. 32+20	No. 32+40	No. 33	No. 33+10	No. 33+30	No. 34	No. 34+20	No. 34+40	No. 35	No. 35+10	No. 35+30	No. 36	
Horizontal Alignment																				

AP11-27



MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC



JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
PROFILE (6)

SCALE	DRG. No.
DATE	PF-1-11
Mar. 2018	SHEET No.
	25

PROFILE (7)

Nippon Causeway L=3230m

Revetment Measures(LagoonSide)Opton-2(Overlay20cm) L=802.65m

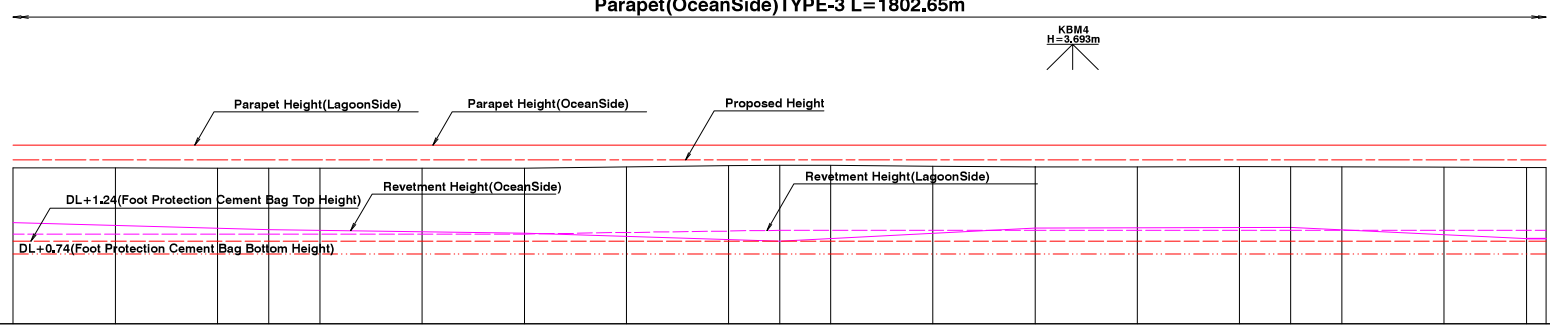
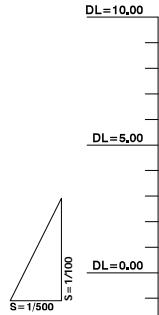
Revetment Measures(OceanSide) Option-3(Overlay30cm) L=1700m

Parapet(LagoonSide)TYPE-1 L=802.65m

Parapet(OceanSide)TYPE-3 L=1802.65m

KBM4
H=3.693m

- Parapet Height
- - - Proposed Height
- - - Foot Protection Cement Bag Top Height
- - - Foot Protection Cement Bag Bottom Height
- Revetment Bottom Height (Ocean Side)
- - - Revetment Bottom Height (Lagoon Side)



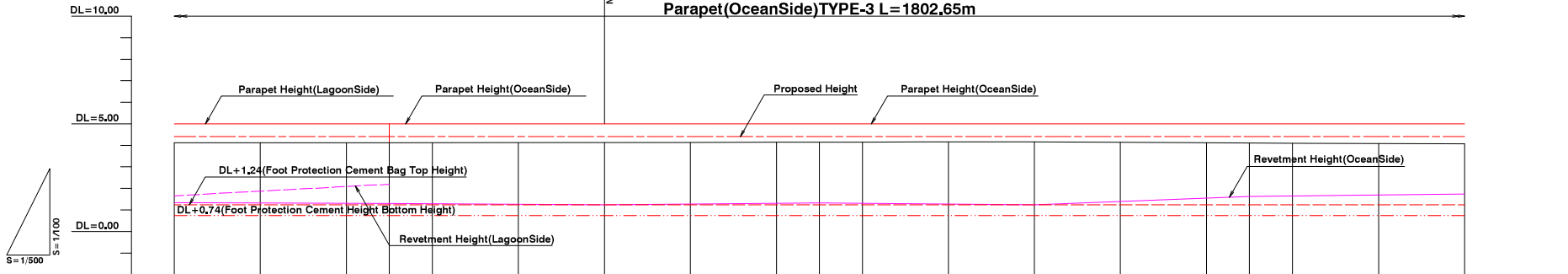
Superelevation	i=2,0%																				
Gradient	LEVEL																				
Revetment Bottom Height (Lagoon Side)	1.52		1.52		1.52		1.66		1.66		1.66		1.66		1.66		1.66		1.66		1.66
Revetment Bottom Height (Ocean Side)	1.97		1.69		1.55		1.24		1.75		1.78		1.34		1.34						
Parapet Height (Lagoon Side)	5.00		5.00		5.00		5.00		5.00		5.00		5.00		5.00		5.00		5.00		5.00
Parapet Height (Ocean Side)	5.00		5.00		5.00		5.00		5.00		5.00		5.00		5.00		5.00		5.00		5.00
Proposed Height	4.41		4.41		4.41		4.41		4.41		4.41		4.41		4.41		4.41		4.41		4.41
Ground Height	4.10	4.10	4.09	4.09	4.09	4.09	4.14	4.19	4.21	4.20	4.17	4.14	4.14	4.15	4.15	4.14	4.13	4.12	4.12	4.12	4.12
Cumulative Distance	1800.000	1820.000	1840.000	1850.000	1860.000	1880.000	1900.000	1920.000	1940.000	1950.000	1960.000	1980.000	2000.000	2020.000	2040.000	2050.000	2060.000	2096.143	2100.000	2100.000	2100.000
Distance	20.000	20.000	20.000	10.000	10.000	20.000	20.000	20.000	10.000	10.000	20.000	20.000	20.000	20.000	10.000	10.000	10.000	16.143	3.857	3.857	3.857
Station	No. 36	No. 36+20	No. 36+40	No. 37	No. 37+10	No. 37+30	No. 38	No. 38+20	No. 38+40	No. 39	No. 39+10	No. 39+30	No. 40	No. 40+20	No. 40+40	No. 41	No. 41+10	No. 41+30	8+2	8+2	8+2
Horizontal Alignment																					

AP11-28

PROFILE (8)

Nippon Causeway L=3230m

- Parapet Height
- - - - - Proposed Height
- - - - - Foot Protection Cement Bag Top Height
- - - - - Foot Protection Cement Bag Bottom Height
- - - - - Revetment Bottom Height (Ocean Side)
- - - - - Revetment Bottom Height (Lagoon Side)



Revetment Measures(LagoonSide)Opton-2(Overlay20cm)
L=802.65m

Revetment Measures(OceanSide) Option-3(Overlay30cm) L=1700m

Parapet(LagoonSide)TYPE-1 L=802.65m

Parapet(OceanSide)TYPE-3 L=1802.65m

Superelevation	i=2.0%																			
Gradient	LEVEL																			
Revetment Bottom Height (Lagoon Side)	1.66		2.20																4.41	
Revetment Bottom Height (Ocean Side)	1.34		1.30		1.24		1.33		1.24		1.63		1.75							
Parapet Height (Lagoon Side)	5.00		5.00																	
Parapet Height (Ocean Side)	5.00		5.00		5.00		5.00		5.00		5.00		5.00		5.00		5.00		5.00	
Proposed Height	4.41		4.41		4.41		4.41		4.41		4.41		4.41		4.41		4.41		4.41	
Ground Height	4.12		4.12		4.12		4.12		4.12		4.13		4.13		4.14		4.15		4.15	
Cumulative Distance	2100.000		2120.000		2140.000		2150.000		2160.000		2180.000		2200.000		2220.000		2240.000		2250.000	
Distance	3.857		20.000		20.000		10.000		10.000		20.000		20.000		20.000		20.000		10.000	
Station	No.42		No.42+20		No.42+40		No.43		No.43+10		No.43+30		No.44		No.44+20		No.44+40		No.45	
Horizontal Alignment	IP2 IA=2735-11 RI=1500.000 CL=722.208 TL=368.245 SL=44.540																			

API1-29



MINISTRY OF PUBLIC WORKS & UTILITIES
(MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON
THE PROJECT FOR RECONSTRUCTION OF
NIPPON CAUSEWAY ON TARAWA
TO ADAPT CLIMATE CHANGE
IN KIRIBATI REPUBLIC



JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
PROFILE (8)

SCALE	DRG. No.
DATE	PF-1-11
Mar. 2018	SHEET No.
	27

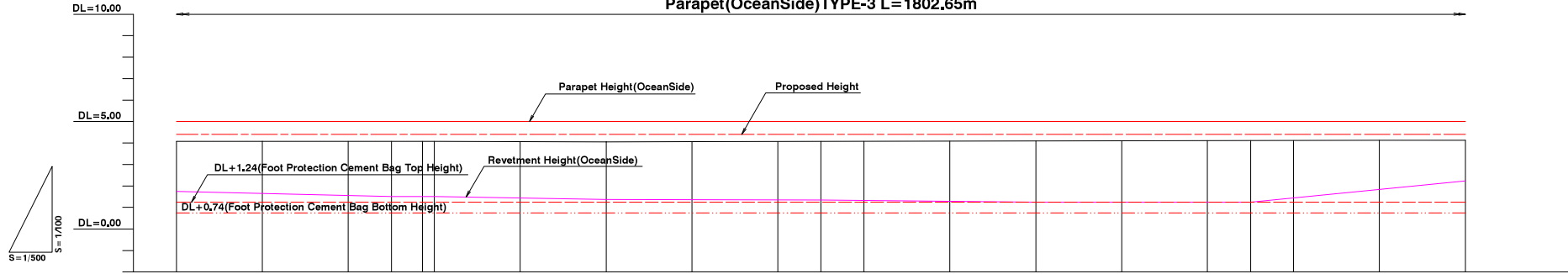
PROFILE (9)

Nippon Causeway L=3230m

Revetment Measures(OceanSide) Option-3(Overlay30cm) L= 1700m

Parapet(OceanSide)TYPE-3 L= 1802.65m

- Parapet Height
- - - Proposed Height
- - - - - Foot Protection Cement Bag Top Height
- - - - - Foot Protection Cement Bag Bottom Height
- Revetment Bottom Height (Ocean Side)
- - - Revetment Bottom Height (Lagoon Side)



Superelevation	2.0% i=2.0%																			
Gradient	LEVEL																			
Revetment Bottom Height (Lagoon Side)																				
Revetment Bottom Height (Ocean Side)	1.75			1.51	1.51		1.38			1.34			1.24			1.24			2.24	
Parapet Height (Lagoon Side)																				
Parapet Height (Ocean Side)	5.00			5.00	5.00		5.00			5.00			5.00			5.00			5.00	
Proposed Height	4.41			4.41	4.41		4.41			4.41			4.41			4.41			4.41	
Ground Height	4.08	4.08	4.08	4.08	4.08	4.08	4.06	4.05	4.06	4.07	4.08	4.08	4.09	4.10	4.11	4.12	4.12	4.12	4.13	4.13
Cumulative Distance	-2400.000	-2420.000	-2440.000	-2460.000	-2457.247	-2460.000	-2480.000	-2500.000	-2520.000	-2540.000	-2560.000	-2560.000	-2580.000	-2600.000	-2620.000	-2640.000	-2660.000	-2660.000	-2680.000	-2700.000
Distance	20.000	20.000	20.000	10.000	7.247	2.753	20.000	20.000	20.000	20.000	10.000	10.000	20.000	20.000	20.000	20.000	10.000	10.000	20.000	20.000
Station	No. 48	No. 48+20	No. 48+40	No. 49	SP2	No. 49+10	No. 49+30	No. 50	No. 50+20	No. 50+40	No. 51	No. 51+10	No. 51+30	No. 52	No. 52+20	No. 52+40	No. 53	No. 53+10	No. 53+30	No. 54
Horizontal Alignment	<small> 1P2 IA=27-35-11 RI=1500, 000 CL=722, 208 TL=366, 245 SL=44, 540 </small>																			

AP11-30

 MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)	Approved by Project Manager:	THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC	 JAPAN INTERNATIONAL COOPERATION AGENCY CTI ENGINEERING INTERNATIONAL CO., LTD.	Designed	TITLE: PROFILE (9)	SCALE	DRG. No.
				Checked		DATE	SHEET No.
				Approved		Mar. 2018	28

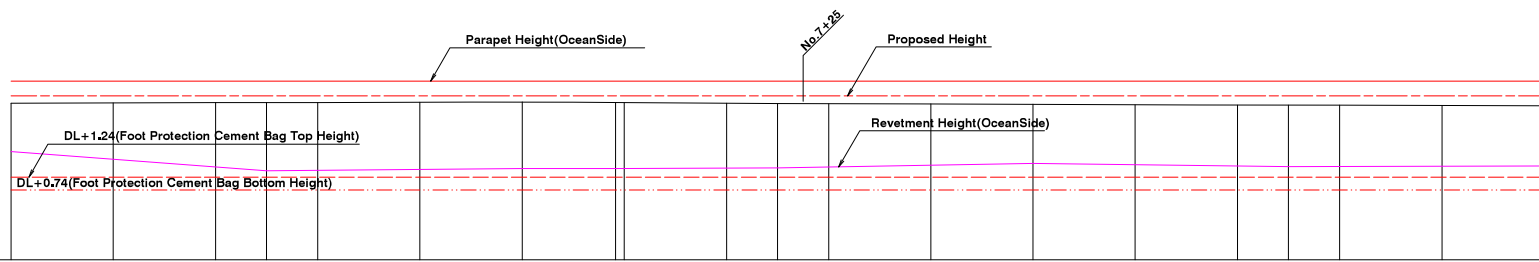
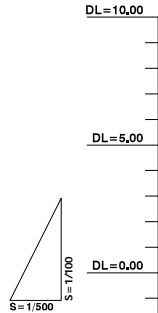
PROFILE (10)

Nippon Causeway L=3230m

Revetment Measures(OceanSide) Option-3(Overlay30cm) L=1700m

Parapet(OceanSide)TYPE-3 L= 1802,65m

- Parapet Height
- - - Proposed Height
- - - Foot Protection Cement Bag Top Height
- - - Foot Protection Cement Bag Bottom Height
- Revetment Bottom Height (Ocean Side)
- - - Revetment Bottom Height (Lagoon Side)



Superelevation	i = 2.0%																			
Gradient	LEVEL																			
Revetment Bottom Height (Lagoon Side)																				
Revetment Bottom Height (Ocean Side)	2.24		1.48		1.57	1.58		1.59		1.77		1.65							1.68	
Parapet Height (Lagoon Side)																				
Parapet Height (Ocean Side)	5.00		5.00		5.00	5.00		5.00		5.00		5.00							5.00	
Proposed Height	4.41		4.41		4.41	4.41		4.41		4.41		4.41							4.41	
Ground Height	4.13	4.14	4.15	4.15	4.16	4.17	4.18	4.15	4.15	4.13	4.12	4.11	4.10	4.09	4.07	4.06	4.05	4.05	4.04	4.03
Cumulative Distance	-2700.000	-2720.000	-2740.000	-2750.000	-2760.000	-2780.000	-2800.000	-2818.351	-2820.000	-2840.000	-2850.000	-2860.000	-2880.000	-2900.000	-2920.000	-2940.000	-2950.000	-2960.000	-2980.000	-3000.000
Distance	20.000	20.000	20.000	10.000	10.000	20.000	20.000	18.351	1.649	20.000	10.000	10.000	20.000	20.000	20.000	20.000	10.000	10.000	20.000	20.000
Station	No. 54	No. 54+20	No. 54+40	No. 55	No. 55+10	No. 55+30	No. 56	562 No. 56+20	No. 56+40	No. 57	No. 57+10	No. 57+30	No. 58	No. 58+20	No. 58+40	No. 59	No. 59+10	No. 59+30	No. 60	
Horizontal Alignment	TP2 JA=27.36-11 R1=1500.000 CL=722.208 TL=386.245 SL=44.540																			

AP11-31



MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC



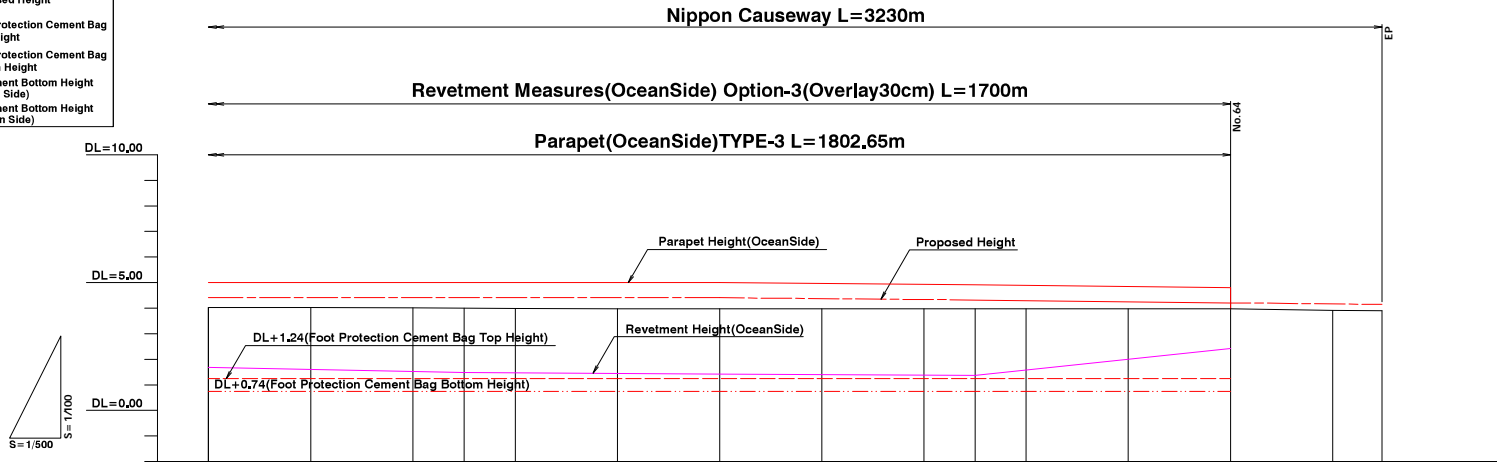
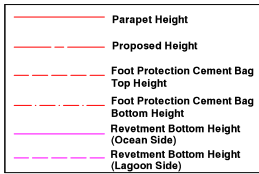
JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
PROFILE (10)

SCALE	DRG. No.
DATE	PF-1-11
Mar. 2018	SHEET No.
	29

PROFILE (11)



Superelevation															
Gradient															
Revetment Bottom Height (Lagoon Side)															
Revetment Bottom Height (Ocean Side)	1.68		1.49		1.42		1.37		2.42						
Parapet Height (Lagoon Side)															
Parapet Height (Ocean Side)	5.00		5.00		5.00		4.91		4.80						
Proposed Height	4.41		4.41		4.41		4.32		4.21				4.15		
Ground Height	4.03	4.02	4.01	4.00	3.99	3.98	3.97	3.97	3.98	3.98	3.98	3.97	3.97	3.92	3.90
Cumulative Distance	3000.000	3020.000	3040.000	3050.000	3060.000	3080.000	3100.000	3120.000	3140.000	3150.000	3160.000	3180.000	3200.000	3220.000	3229.649
Distance	20.000	20.000	20.000	10.000	10.000	20.000	20.000	20.000	20.000	10.000	10.000	20.000	20.000	20.000	9.649
Station	No. 60	No. 60+20	No. 60+40	No. 61	No. 61+10	No. 61+30	No. 62	No. 62+5	No. 62+20	No. 62+40	No. 63	No. 63+10	No. 63+30	No. 64	EP
Horizontal Alignment															

AP11-32



MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON
THE PROJECT FOR RECONSTRUCTION OF
NIPPON CAUSEWAY ON TARAWA
TO ADAPT CLIMATE CHANGE
IN KIRIBATI REPUBLIC



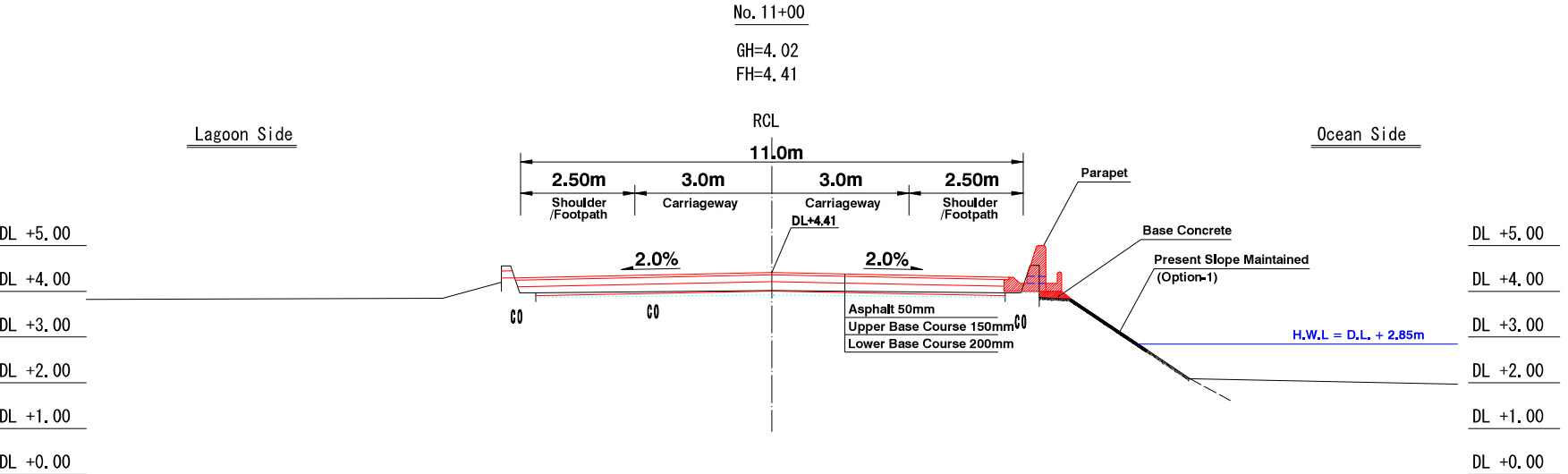
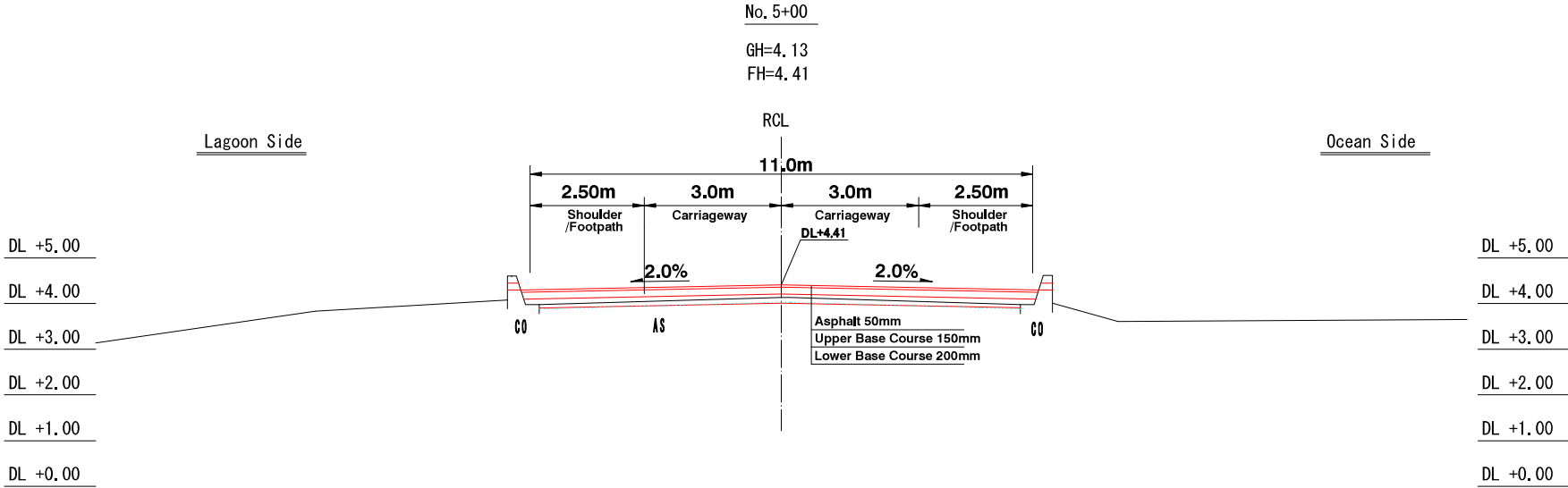
JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
PROFILE (11)

SCALE	DRG. No.
DATE	SHEET No.
Mar. 2018	30

TYPICAL CROSS SECTION (1)



AP11-33



MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC



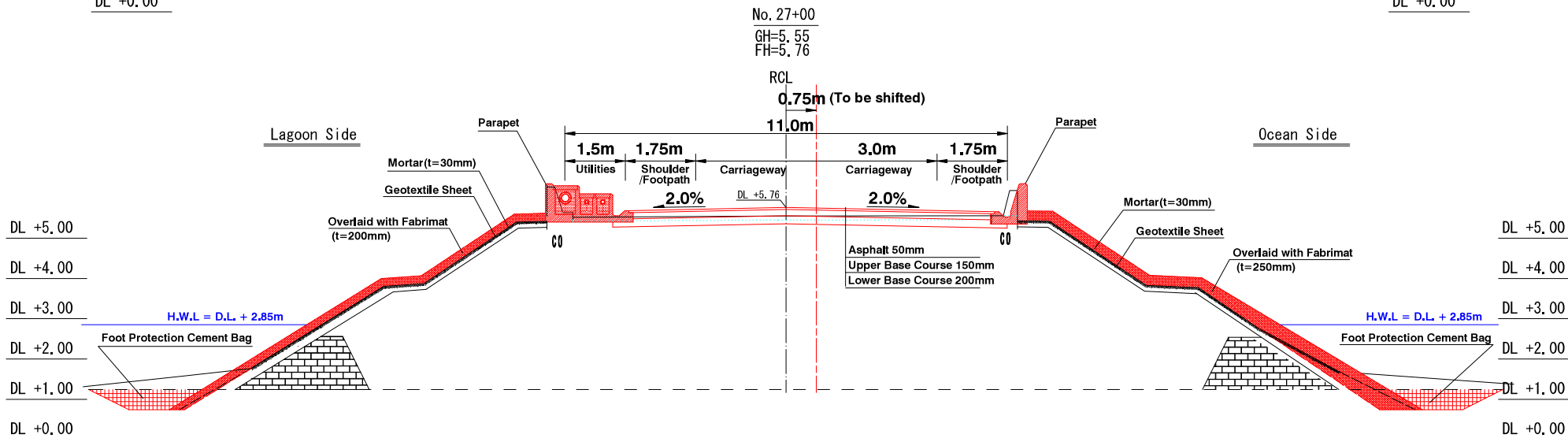
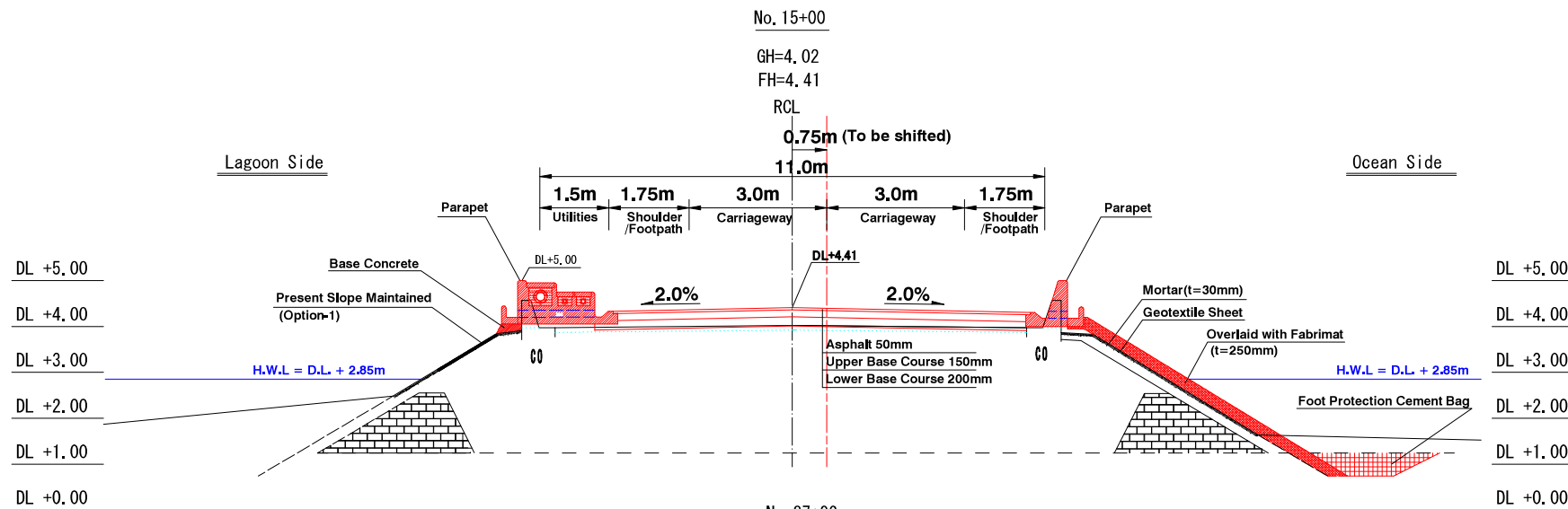
JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
TYPICAL CROSS SECTION (1)

SCALE	DRG. No.
DATE	SHEET No.
Mar. 2016	31

TYPICAL CROSS SECTION (2)



AP11-34



MINISTRY OF PUBLIC WORKS & UTILITIES
(MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON
THE PROJECT FOR RECONSTRUCTION OF
NIPPON CAUSEWAY ON TARAWA
TO ADAPT CLIMATE CHANGE
IN KIRIBATI REPUBLIC



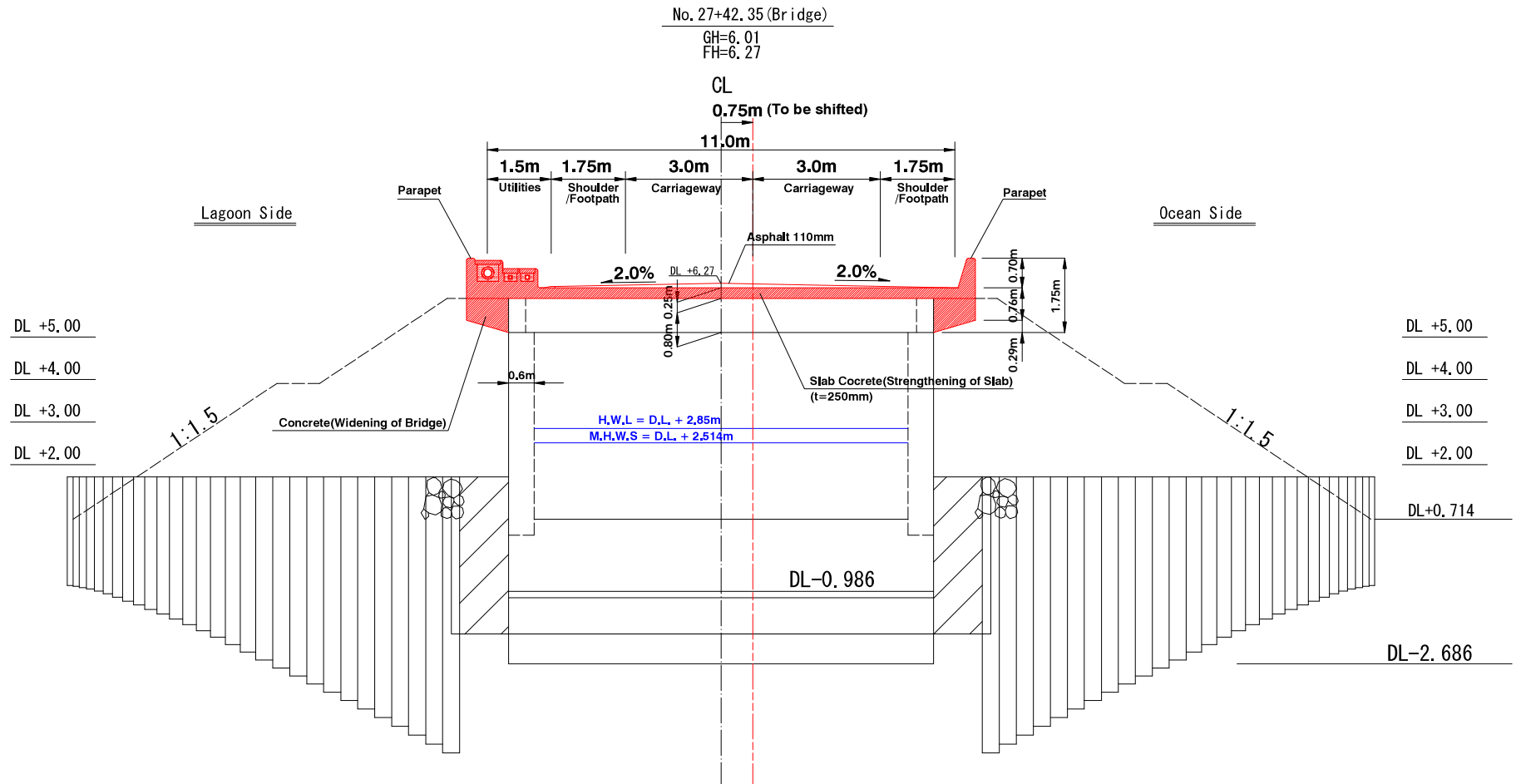
JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
TYPICAL CROSS SECTION (2)

SCALE	DRG. No.
DATE	SHEET No.
Mar. 2018	32

TYPICAL CROSS SECTION (3)



AP11-35



MINISTRY OF PUBLIC WORKS & UTILITIES
(MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON
THE PROJECT FOR RECONSTRUCTION OF
NIPPON CAUSEWAY ON TARAWA
TO ADAPT CLIMATE CHANGE
IN KIRIBATI REPUBLIC



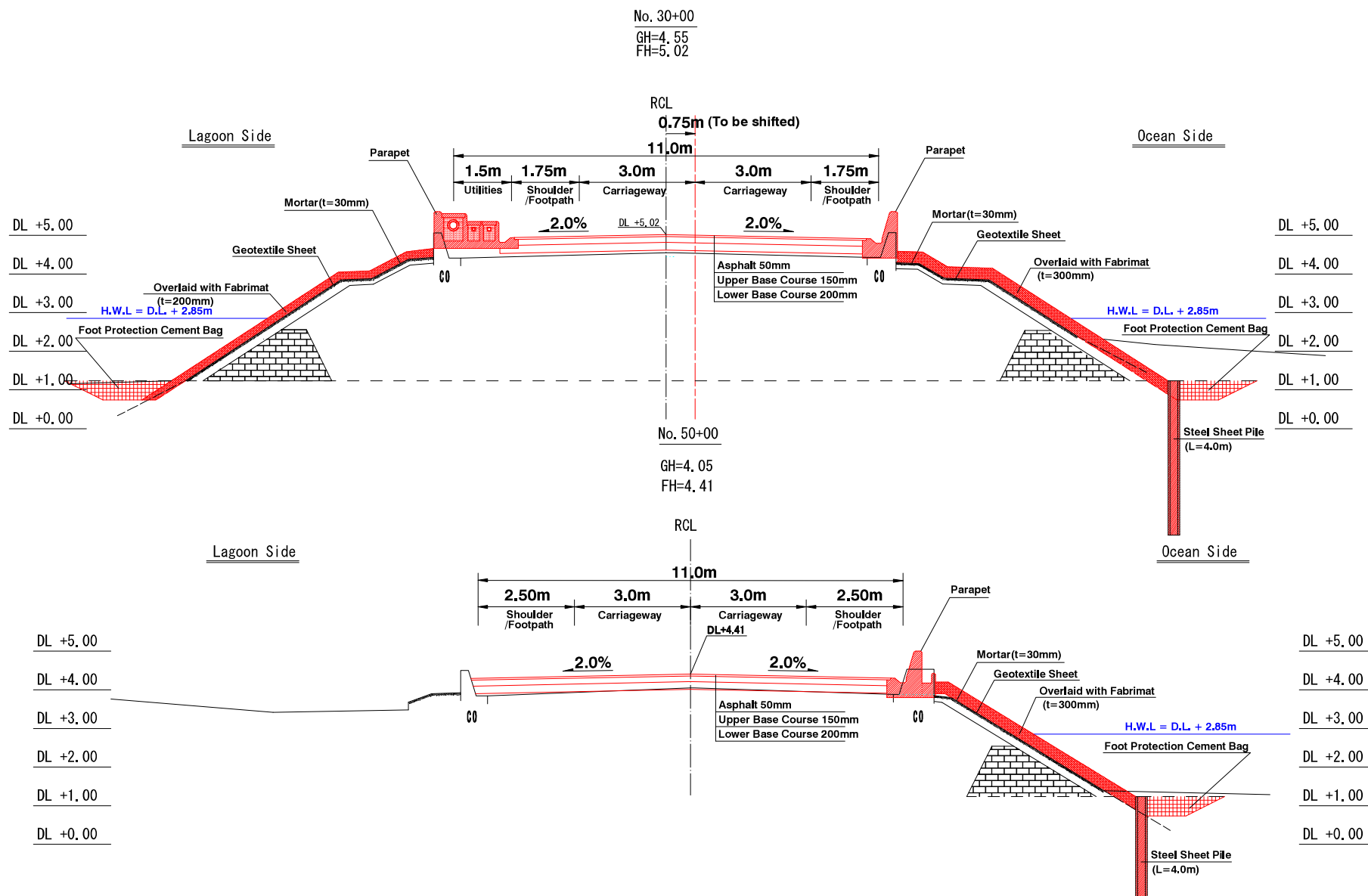
JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
TYPICAL CROSS SECTION (3)

SCALE	DRG. No.
	TCS-1-4
DATE	SHEET No.
Mar. 2016	33

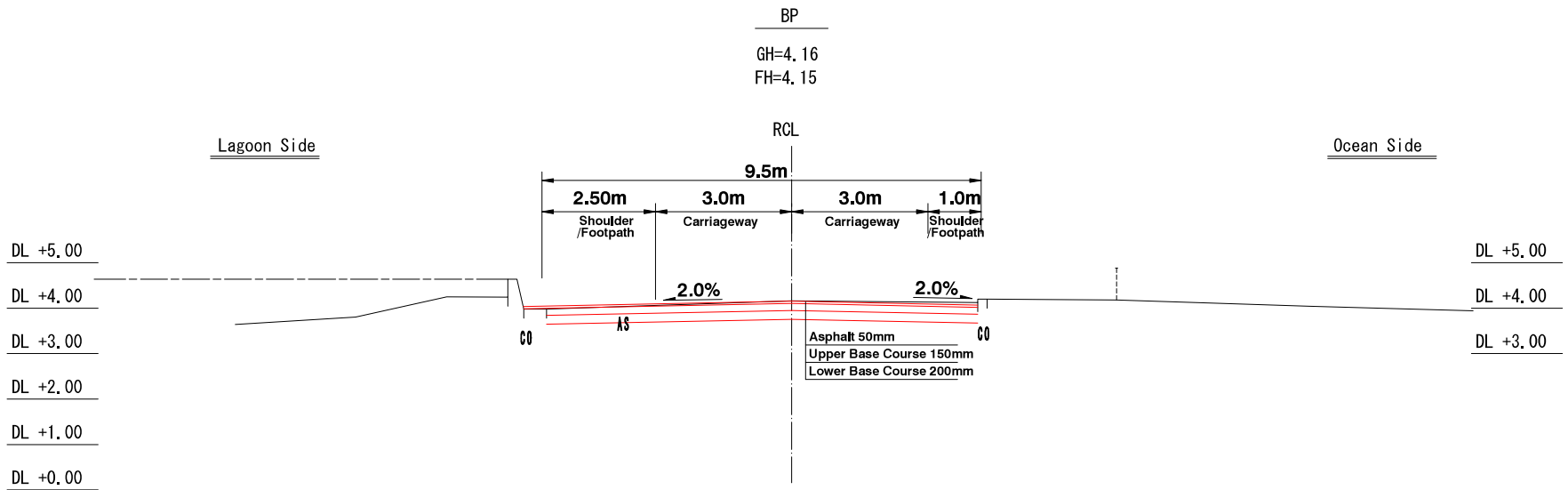
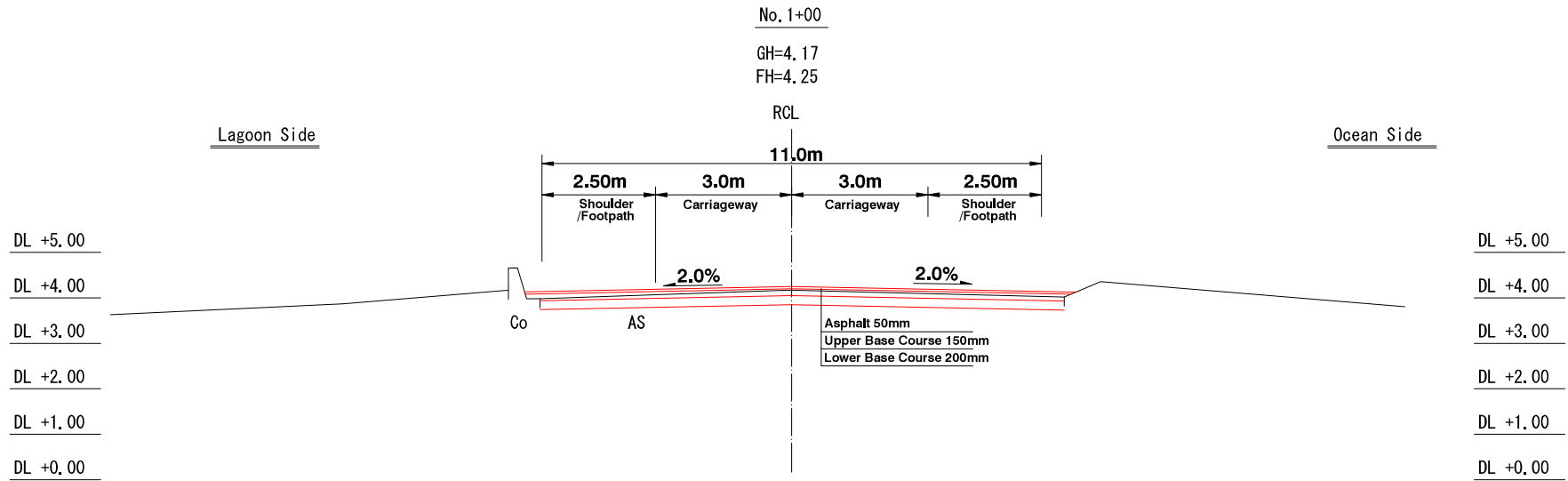
TYPICAL CROSS SECTION (4)



AP11-36

	Approved by Project Manager:	THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC	JAPAN INTERNATIONAL COOPERATION AGENCY CTI ENGINEERING INTERNATIONAL CO., LTD.	Designed		TITLE: TYPICAL CROSS SECTION (4)	SCALE	DRG. No.
				Checked			DATE	SHEET No.
				Approved			Mar. 2016	34

CROSS SECTION (1)



AP11-37



MINISTRY OF PUBLIC WORKS & UTILITIES
(MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON
THE PROJECT FOR RECONSTRUCTION OF
NIPPON CAUSEWAY ON TARAWA
TO ADAPT CLIMATE CHANGE
IN KIRIBATI REPUBLIC



JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
CROSS SECTION (1)

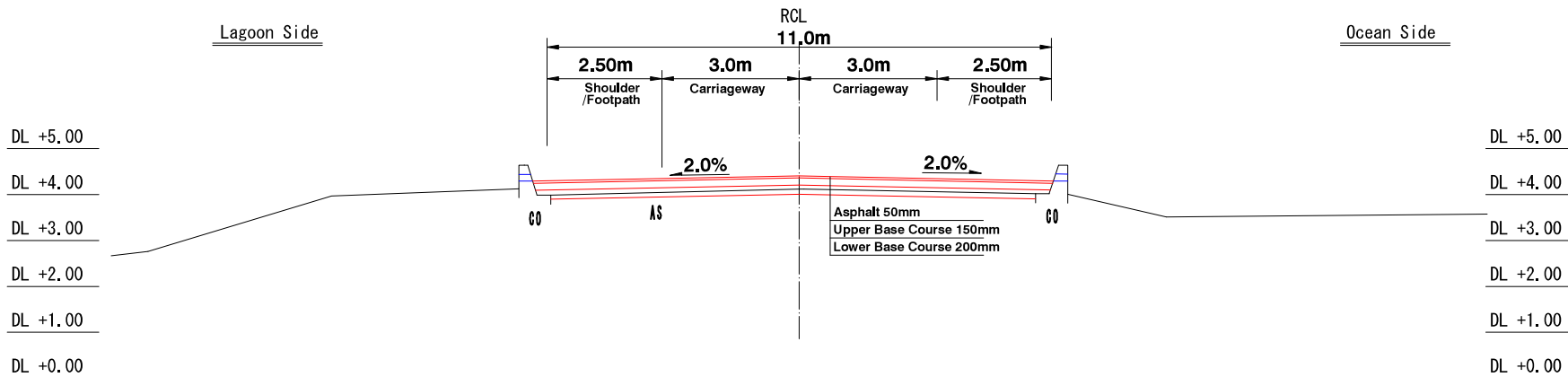
SCALE	DRG. No.
	CS-1-37
DATE	SHEET No.
Mar. 2018	35

CROSS SECTION (2)

No. 3+00

GH=4, 12

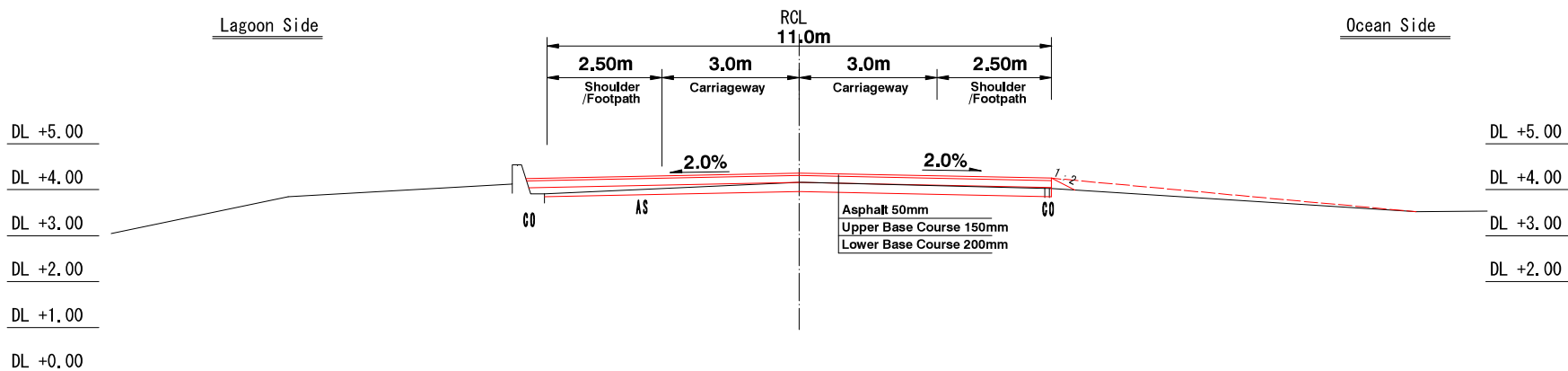
FH=4, 41



No. 2+00

GH=4, 16

FH=4, 36



MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON
THE PROJECT FOR RECONSTRUCTION OF
NIPPON CAUSEWAY ON TARAWA
TO ADAPT CLIMATE CHANGE
IN KIRIBATI REPUBLIC



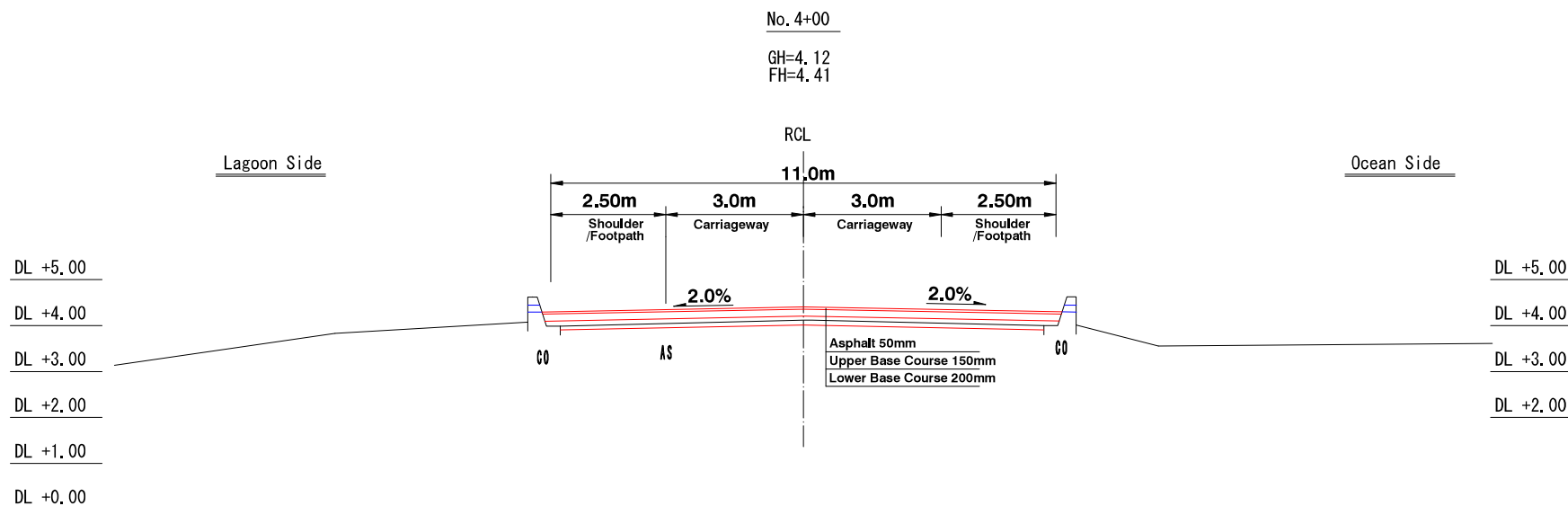
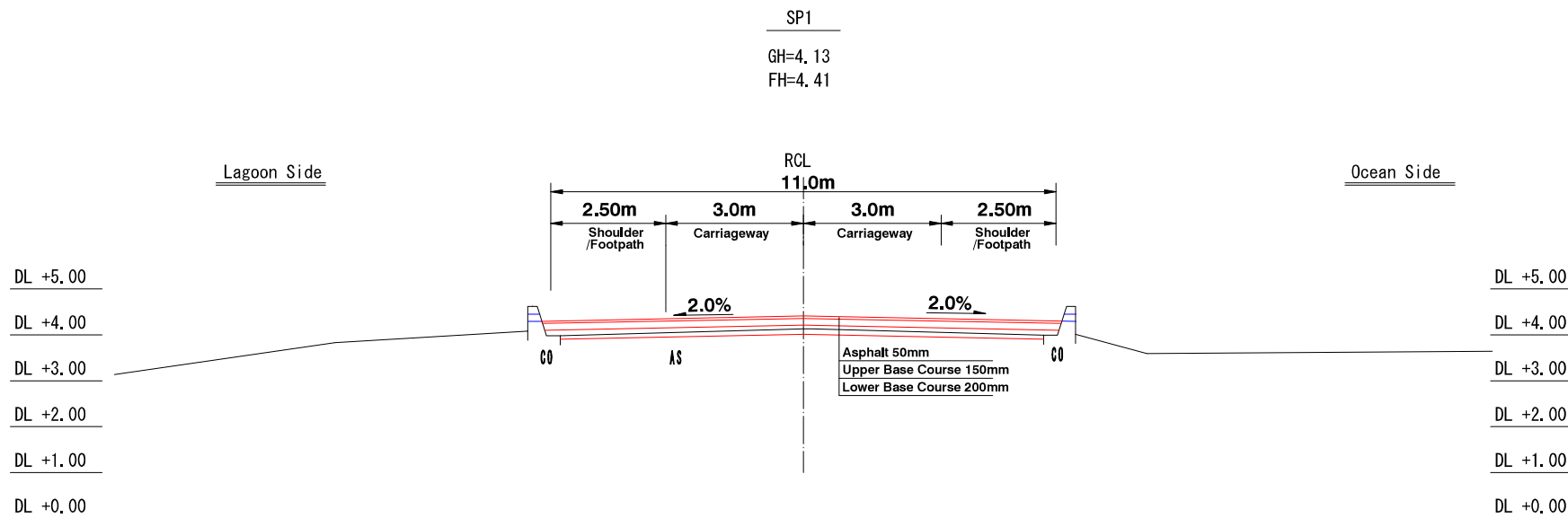
JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
CROSS SECTION (2)

SCALE	DRG. No.
DATE	SHEET No.
Mar. 2018	36

CROSS SECTION (3)



AP11-39



MINISTRY OF PUBLIC WORKS & UTILITIES
(MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON
THE PROJECT FOR RECONSTRUCTION OF
NIPPON CAUSEWAY ON TARAWA
TO ADAPT CLIMATE CHANGE
IN KIRIBATI REPUBLIC



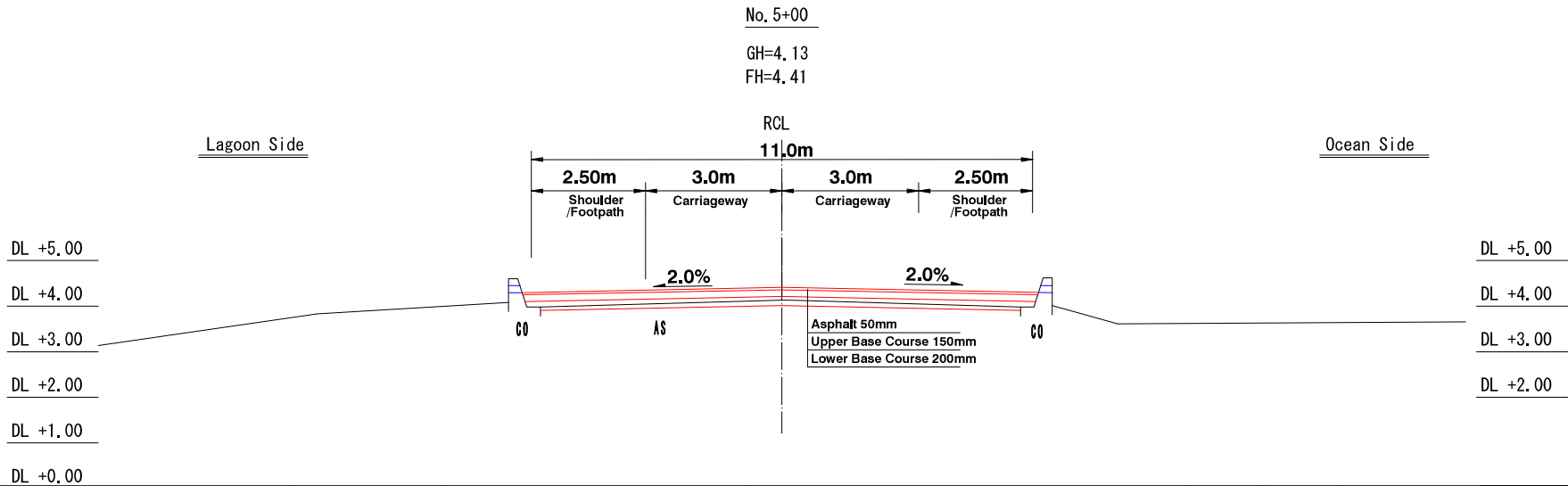
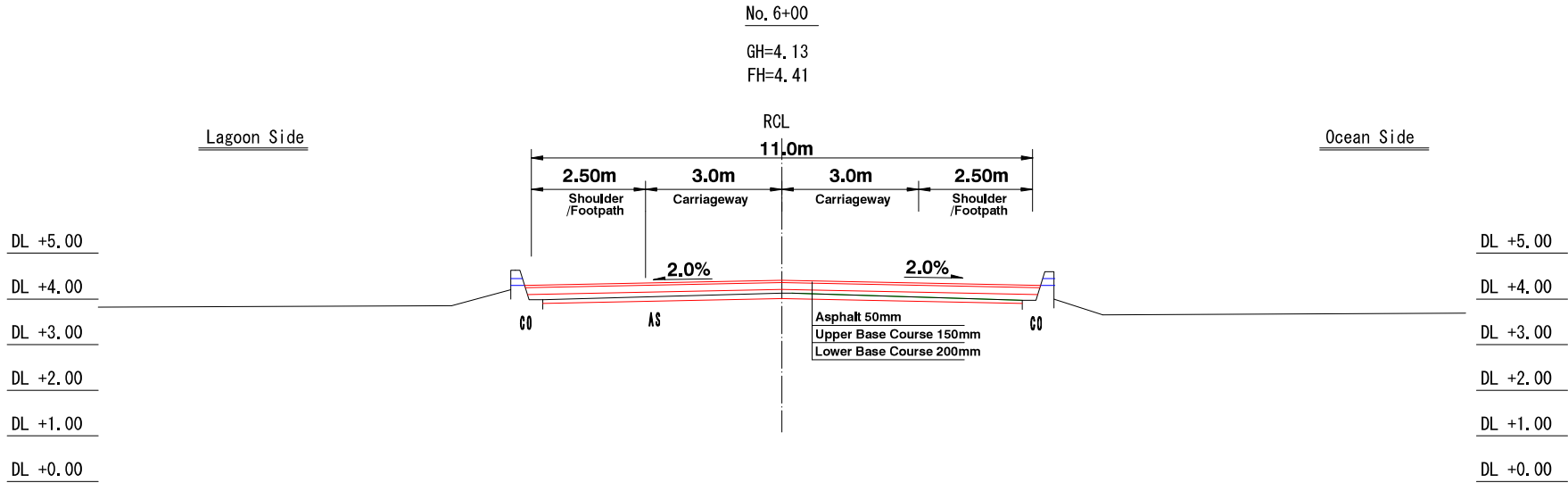
JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
CROSS SECTION (3)

SCALE	DRG. No.
	CS-1-37
DATE	SHEET No.
Mar. 2018	37

CROSS SECTION (4)



AP11-40



MINISTRY OF PUBLIC WORKS & UTILITIES
(MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON
THE PROJECT FOR RECONSTRUCTION OF
NIPPON CAUSEWAY ON TARAWA
TO ADAPT CLIMATE CHANGE
IN KIRIBATI REPUBLIC



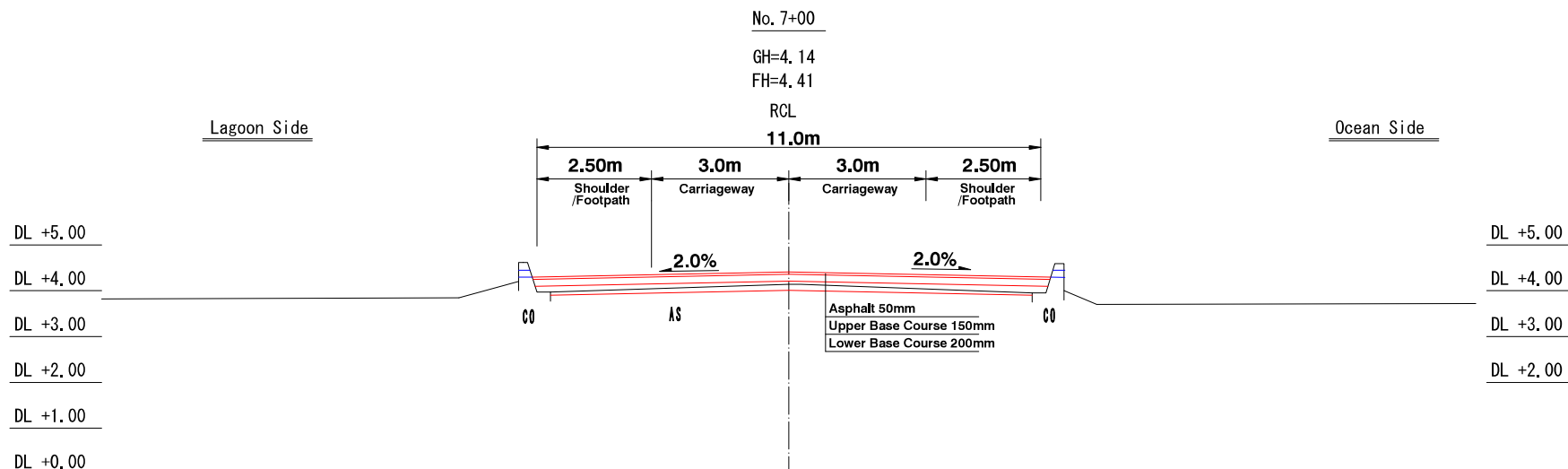
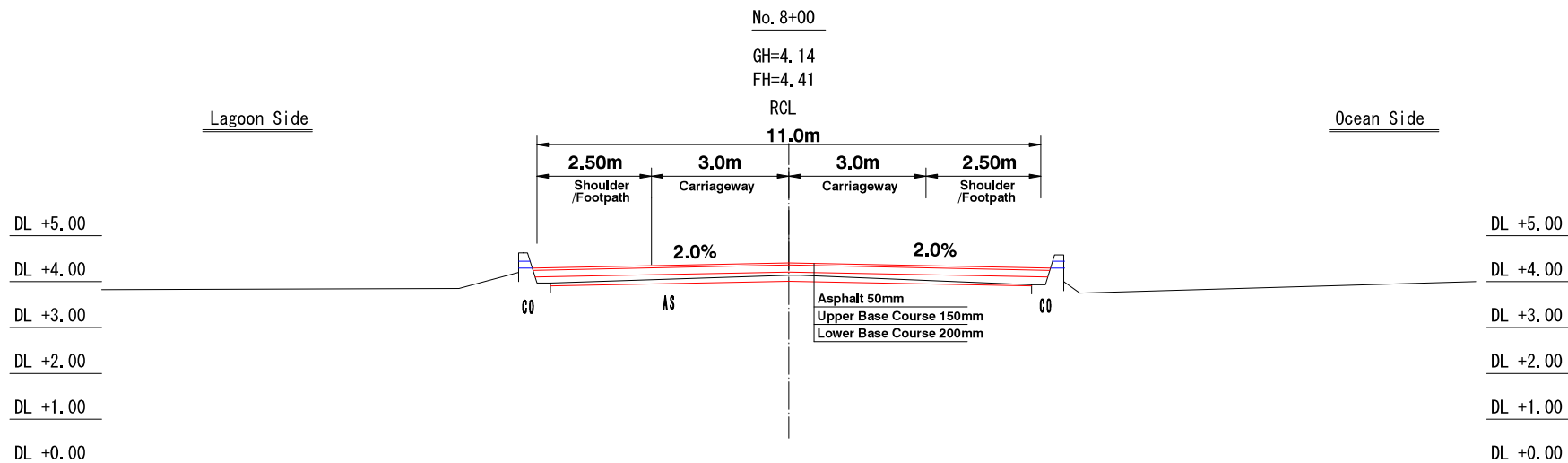
JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
CROSS SECTION (4)

SCALE	DRG. No.
DATE	SHEET No.
Mar. 2016	38

CROSS SECTION (5)



AP11-41



MINISTRY OF PUBLIC WORKS & UTILITIES
(MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON
THE PROJECT FOR RECONSTRUCTION OF
NIPPON CAUSEWAY ON TARAWA
TO ADAPT CLIMATE CHANGE
IN KIRIBATI REPUBLIC



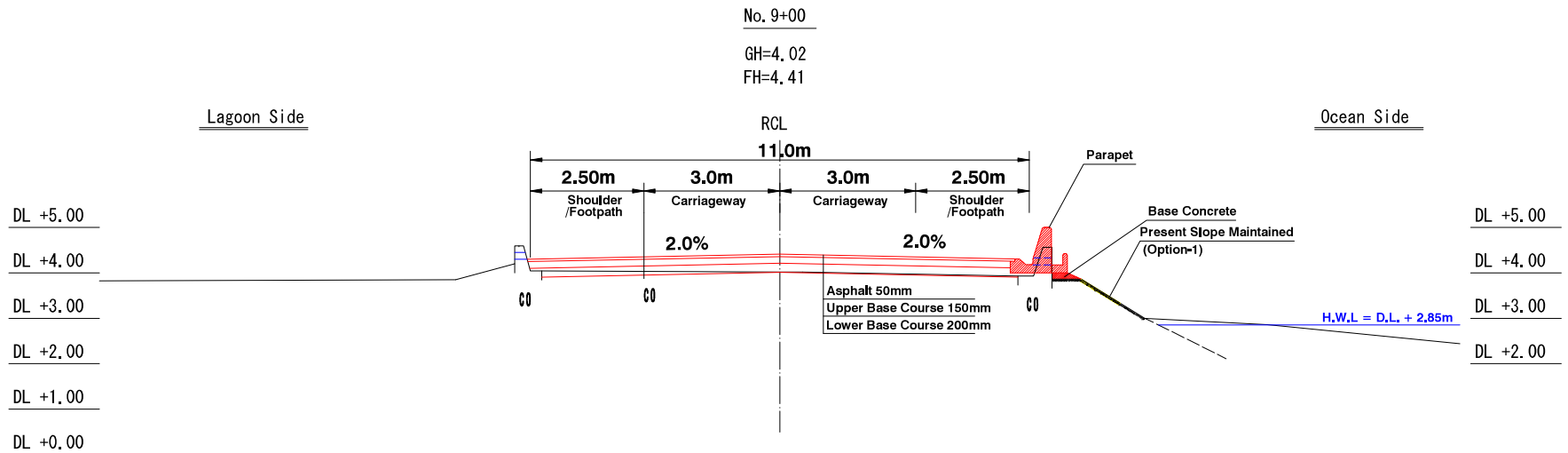
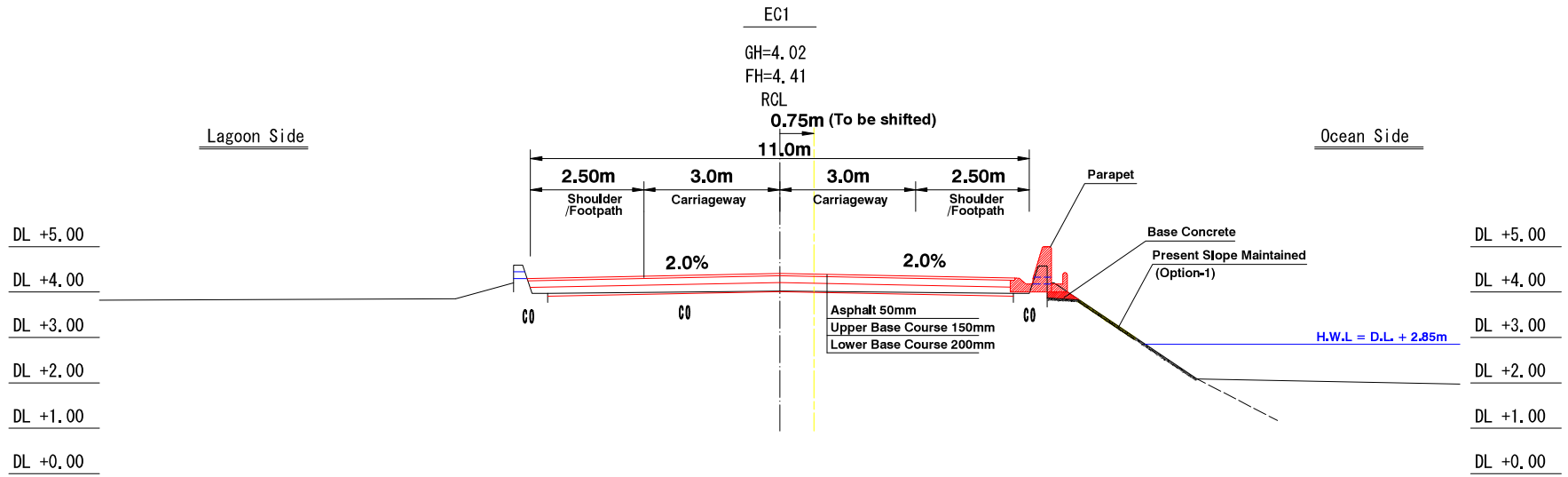
JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
CROSS SECTION (5)

SCALE	DRG. No.
	CS-1-37
DATE	SHEET No.
Mar. 2016	39

CROSS SECTION (6)



AP11-42



MINISTRY OF PUBLIC WORKS & UTILITIES
(MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON
THE PROJECT FOR RECONSTRUCTION OF
NIPPON CAUSEWAY ON TARAWA
TO ADAPT CLIMATE CHANGE
IN KIRIBATI REPUBLIC



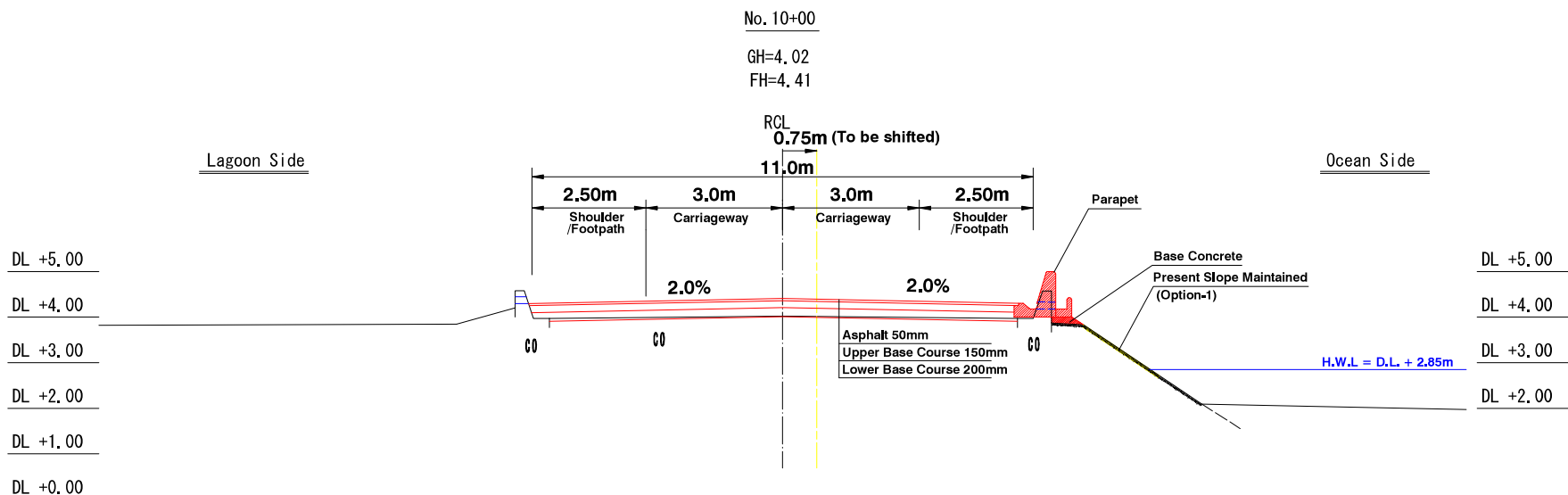
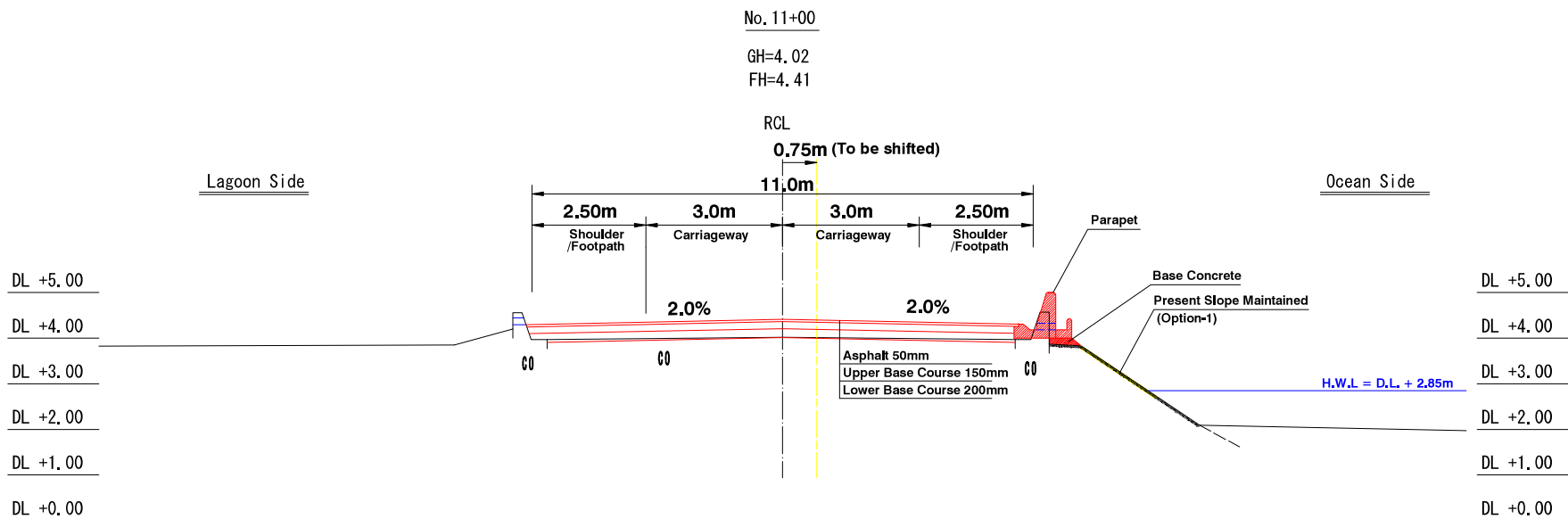
JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
CROSS SECTION (6)

SCALE	DRG. No.
	CS-1-37
DATE	SHEET No.
Mar. 2018	40

CROSS SECTION (7)



AP11-43



MINISTRY OF PUBLIC WORKS & UTILITIES
(MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON
THE PROJECT FOR RECONSTRUCTION OF
NIPPON CAUSEWAY ON TARAWA
TO ADAPT CLIMATE CHANGE
IN KIRIBATI REPUBLIC



JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
CROSS SECTION (7)

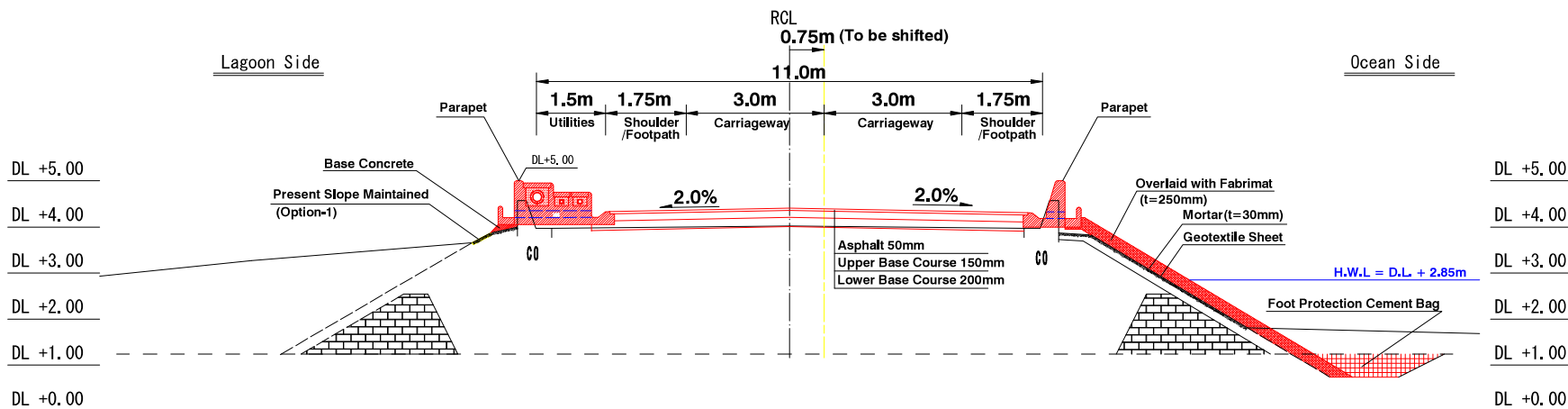
SCALE	DRG. No.
	CS-1-37
DATE	SHEET No.
Mar. 2016	41

CROSS SECTION (8)

No. 13+00

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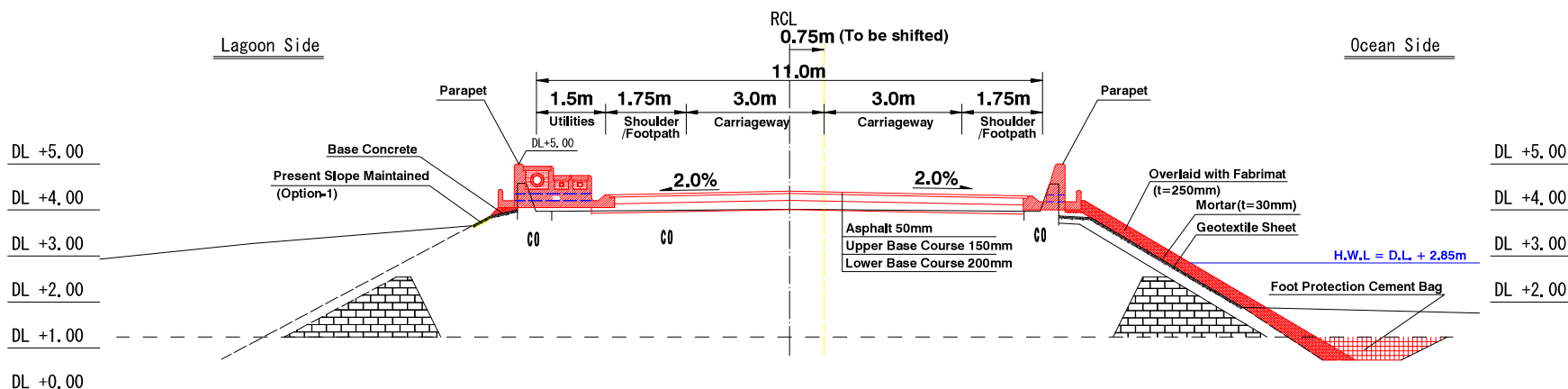
FH=4.41



No. 12+00

GH=4.02

FH=4.41



AP11-44

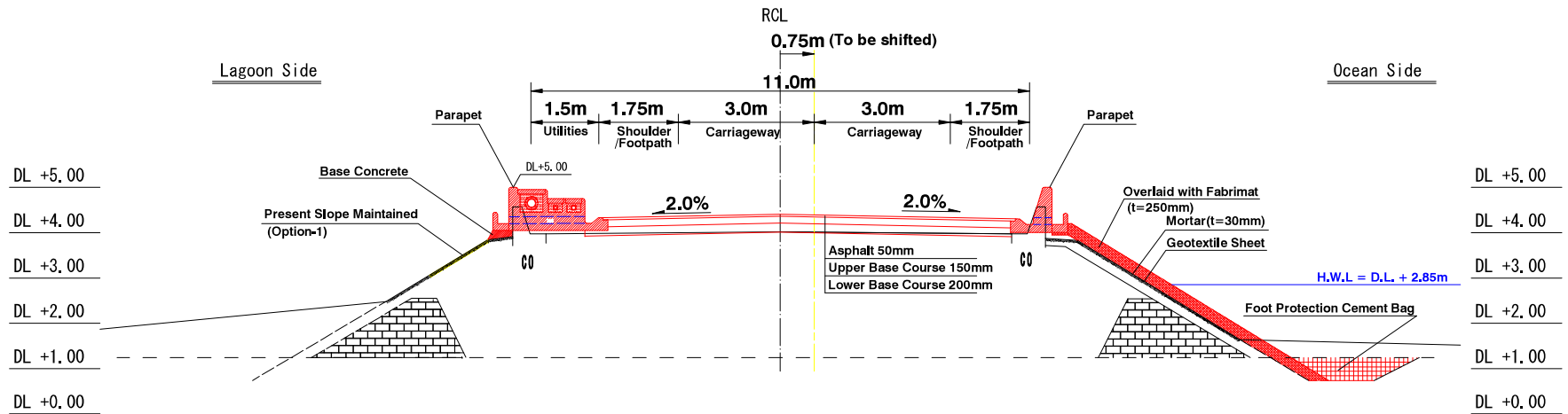
<p>MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)</p>	<p>Approved by</p> <p>Project Manager:</p>	<p>THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC</p>	<p>JAPAN INTERNATIONAL COOPERATION AGENCY</p> <p>CTI ENGINEERING INTERNATIONAL CO., LTD.</p>	Designed		<p>TITLE:</p> <p>CROSS SECTION (8)</p>	SCALE	DRG. No.
				Checked			DATE	SHEET No.
				Approved			Mar. 2018	42

CROSS SECTION (9)

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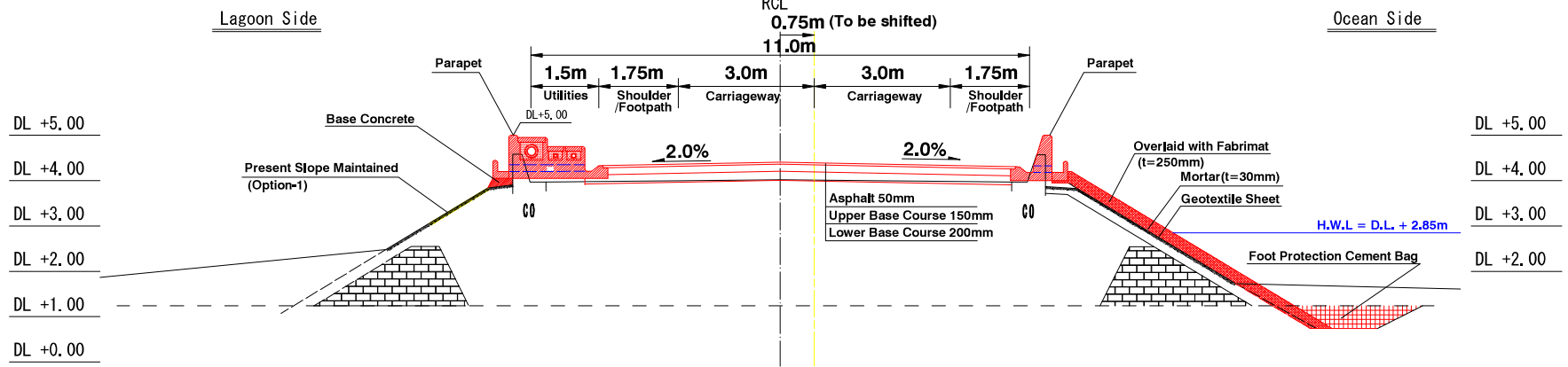


No. 14+00

GH=4.02

FH=4.41

RCL



AP11-45



MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC



JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
CROSS SECTION (9)

SCALE	DRG. No.
DATE	SHEET No.
Mar. 2018	43

CROSS SECTION (10)

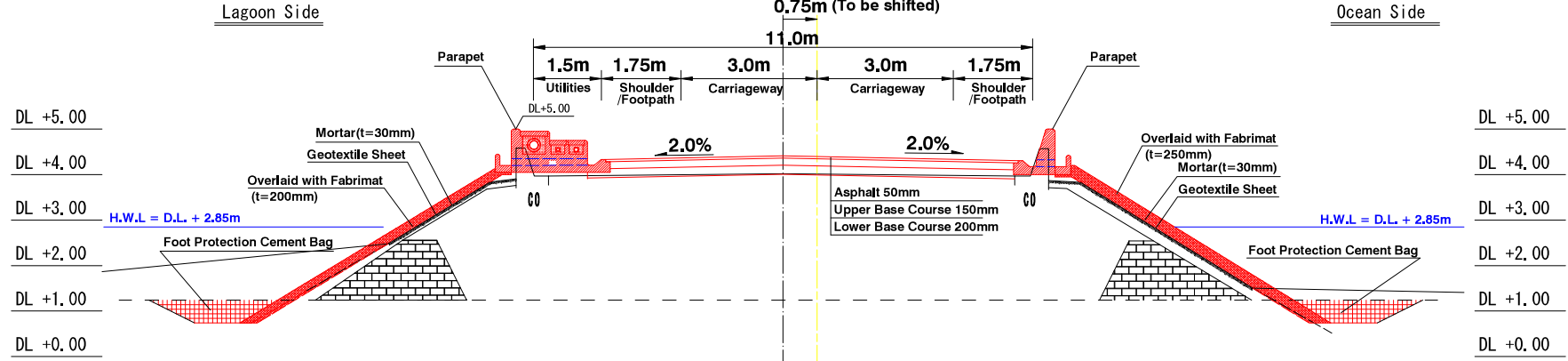
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FH=4.41

RCL

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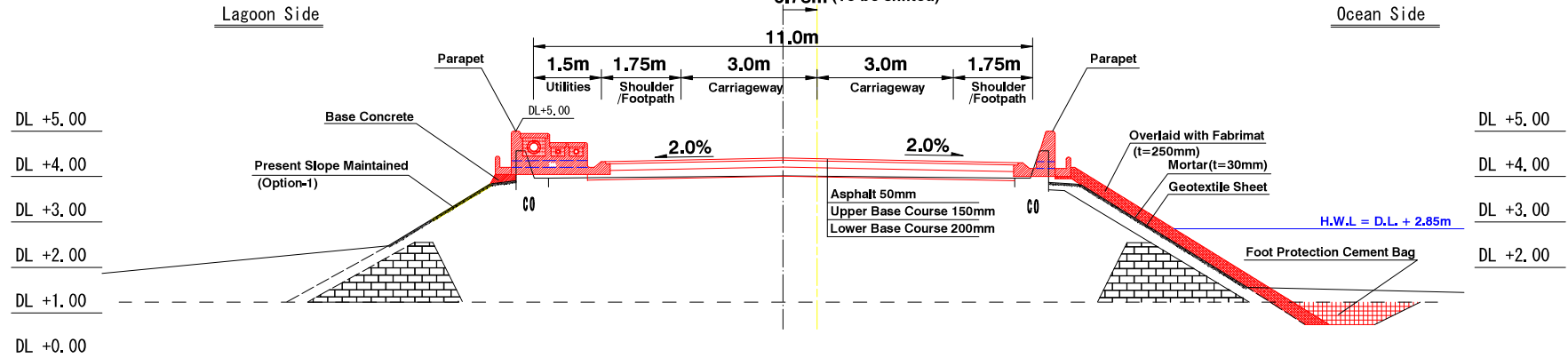
No. 16+00

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FH=4.41

RCL

0.75m (To be shifted)



AP11-46



MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC



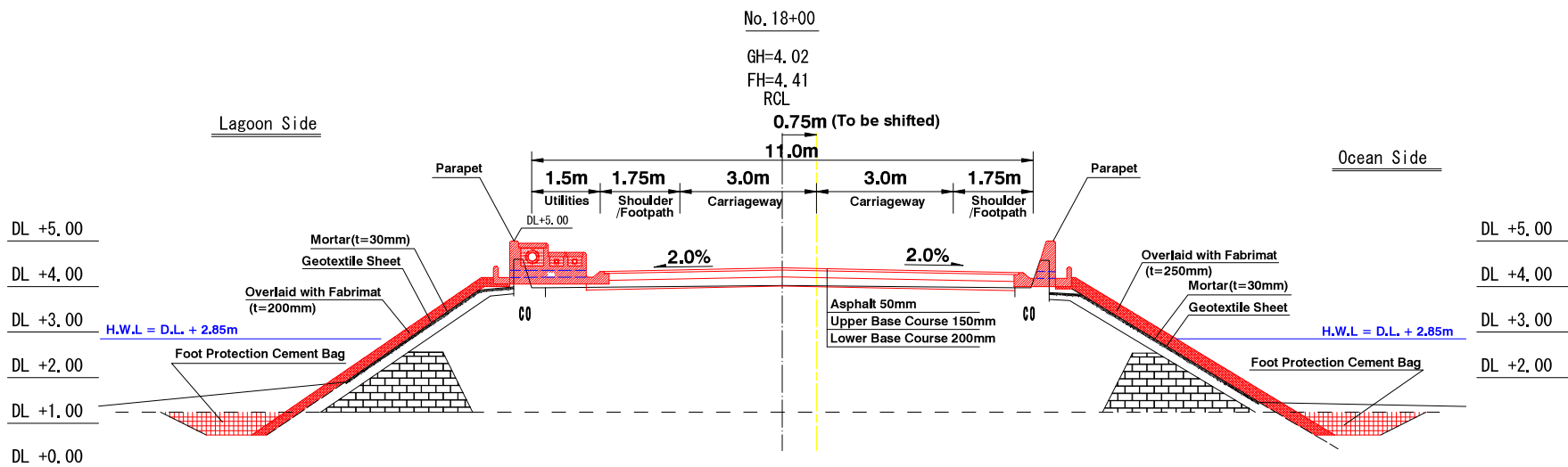
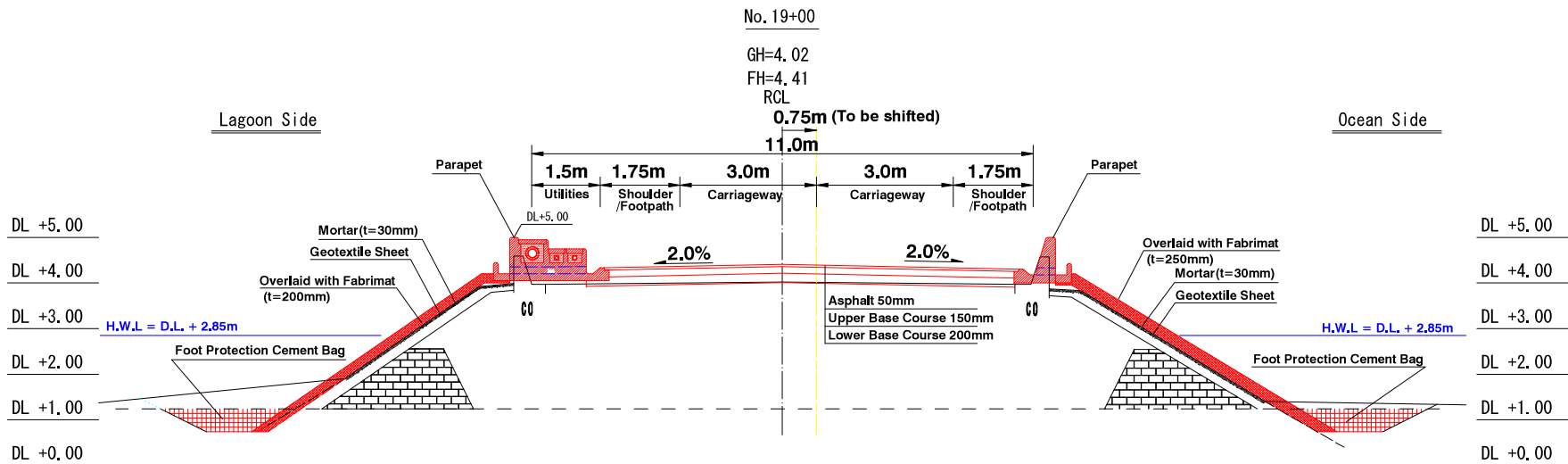
JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
CROSS SECTION (10)

SCALE	DRG. No.
DATE	CS-1-37
Mar. 2016	SHEET No.
	44

CROSS SECTION (11)



AP11-47



MINISTRY OF PUBLIC WORKS & UTILITIES
(MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON
THE PROJECT FOR RECONSTRUCTION OF
NIPPON CAUSEWAY ON TARAWA
TO ADAPT CLIMATE CHANGE
IN KIRIBATI REPUBLIC



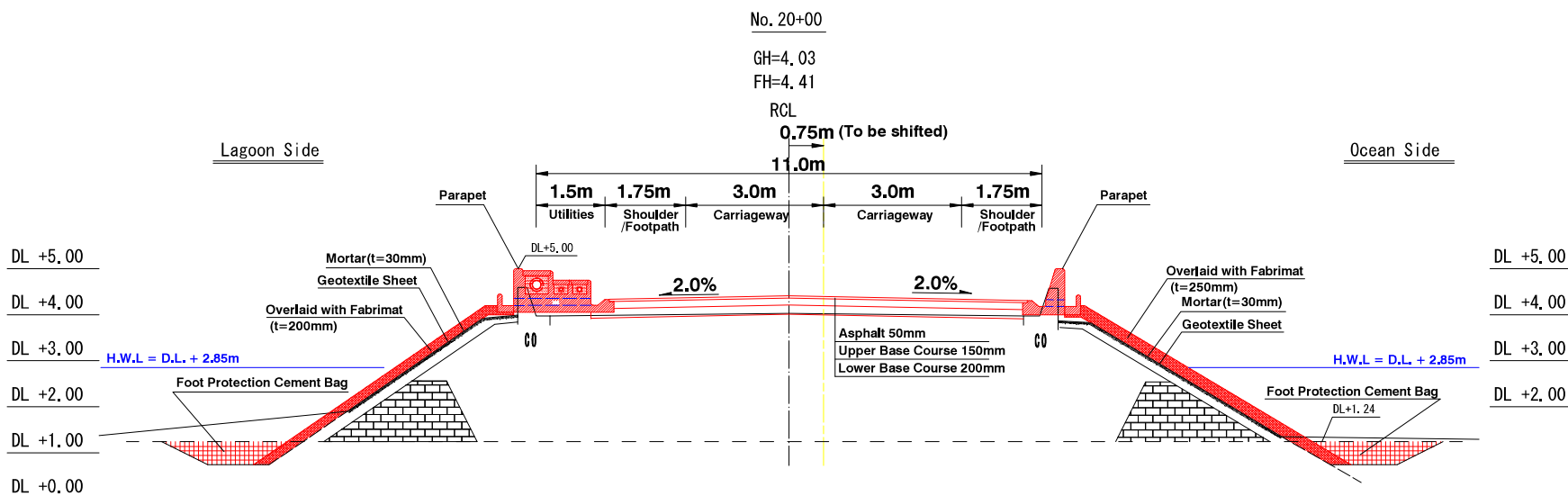
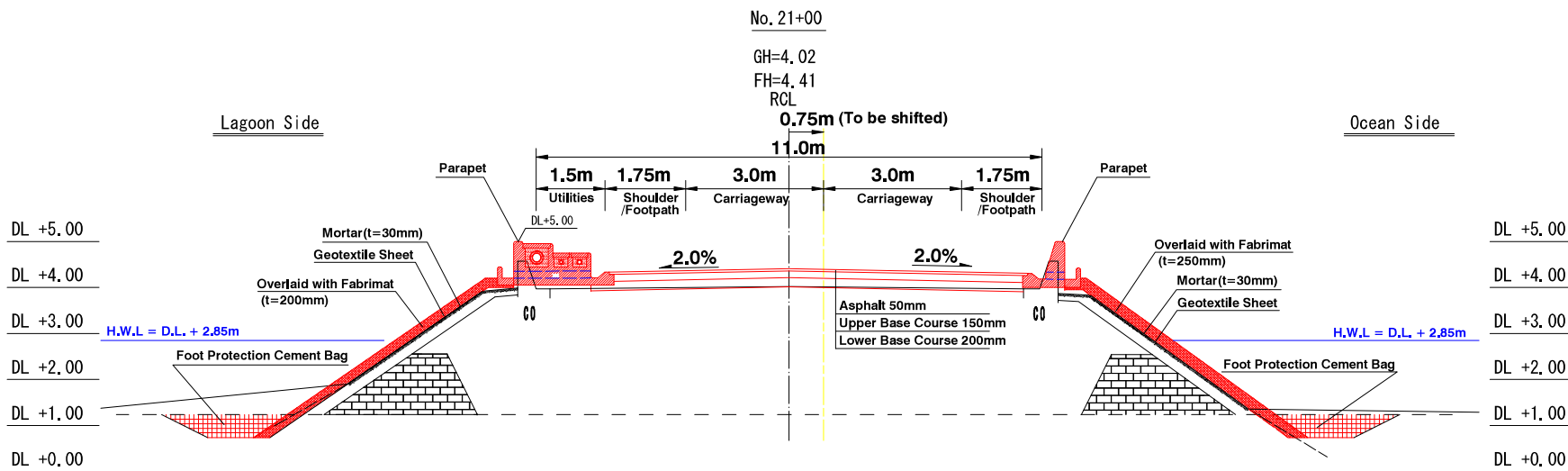
JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
CROSS SECTION (11)

SCALE	DRG. No.
DATE	SHEET No.
Mar. 2018	45

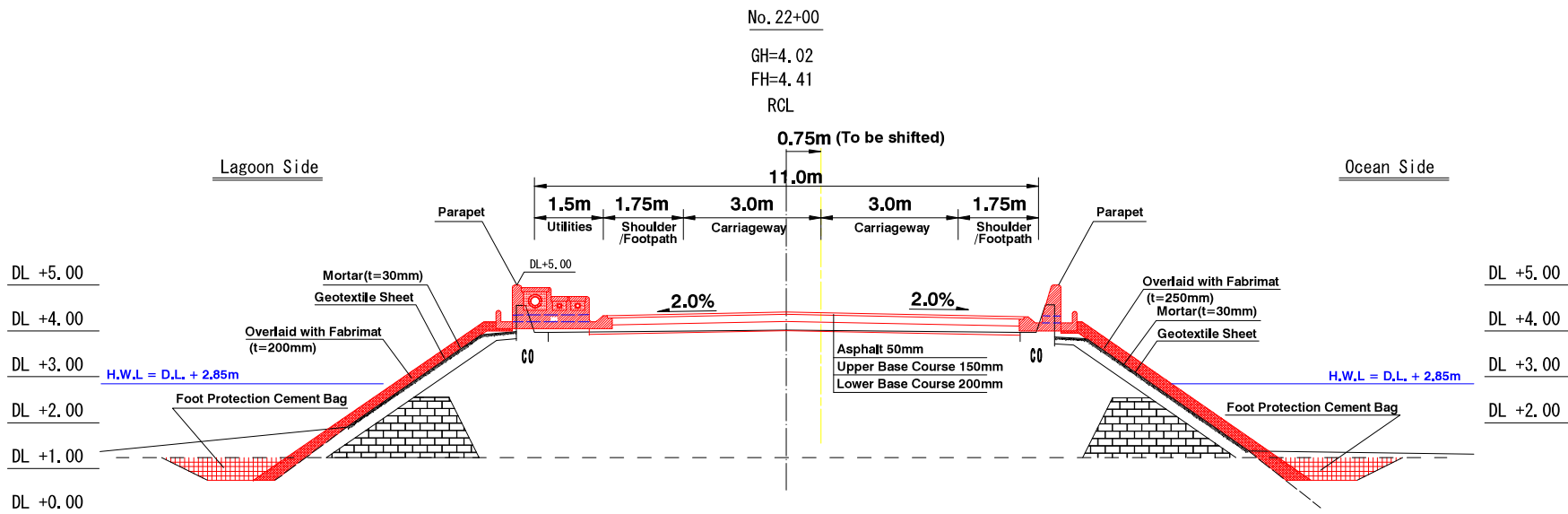
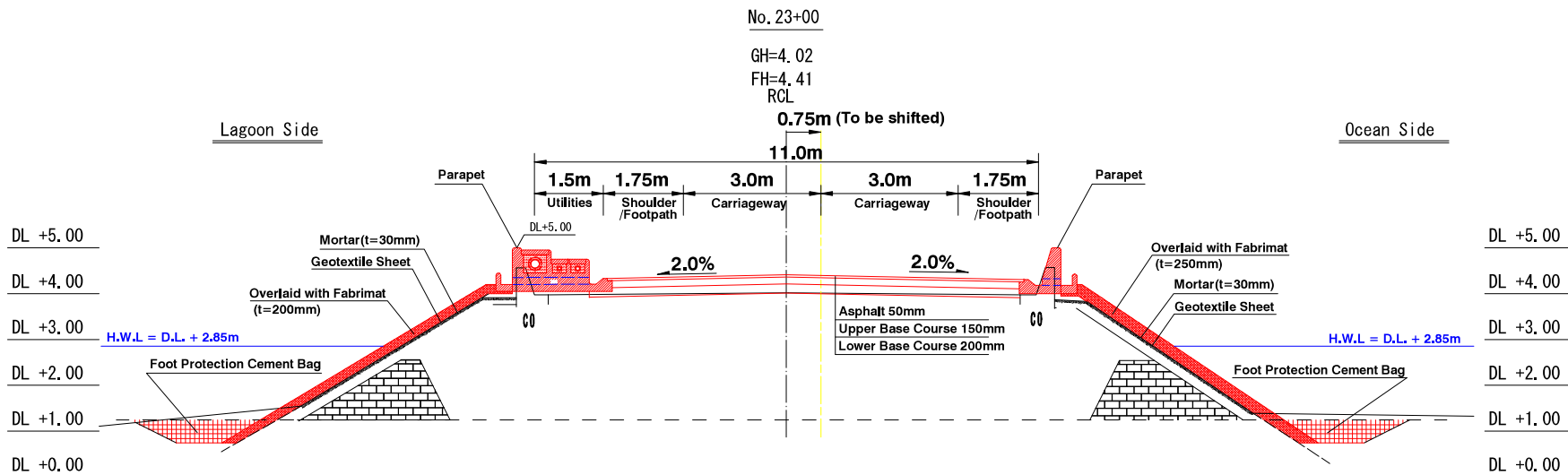
CROSS SECTION (12)



AP11-48

<p>MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)</p>	Approved by	<p>THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC</p>	<p>JAPAN INTERNATIONAL COOPERATION AGENCY CTI ENGINEERING INTERNATIONAL CO., LTD.</p>	Designed	<p>TITLE: CROSS SECTION (12)</p>	SCALE	DRG. No.
	Project Manager:			Checked		DATE	SHEET No.
				Approved		Mar. 2016	46

CROSS SECTION (13)



AP11-49

 <p>MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)</p>	Approved by	<p>THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC</p>	 <p>JAPAN INTERNATIONAL COOPERATION AGENCY CTI ENGINEERING INTERNATIONAL CO., LTD.</p>	Designed	<p>TITLE: CROSS SECTION (13)</p>	SCALE	DRG. No.
	Project Manager:			Checked		DATE	SHEET No.
	Approved			Mar. 2018		47	

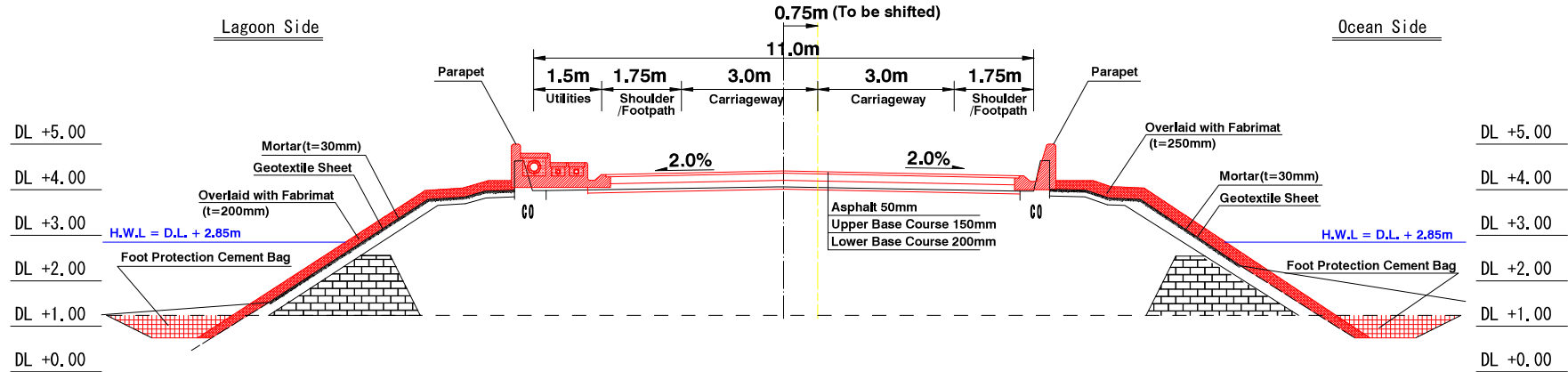
CROSS SECTION (14)

No. 25+00

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FH=4.41

RCL

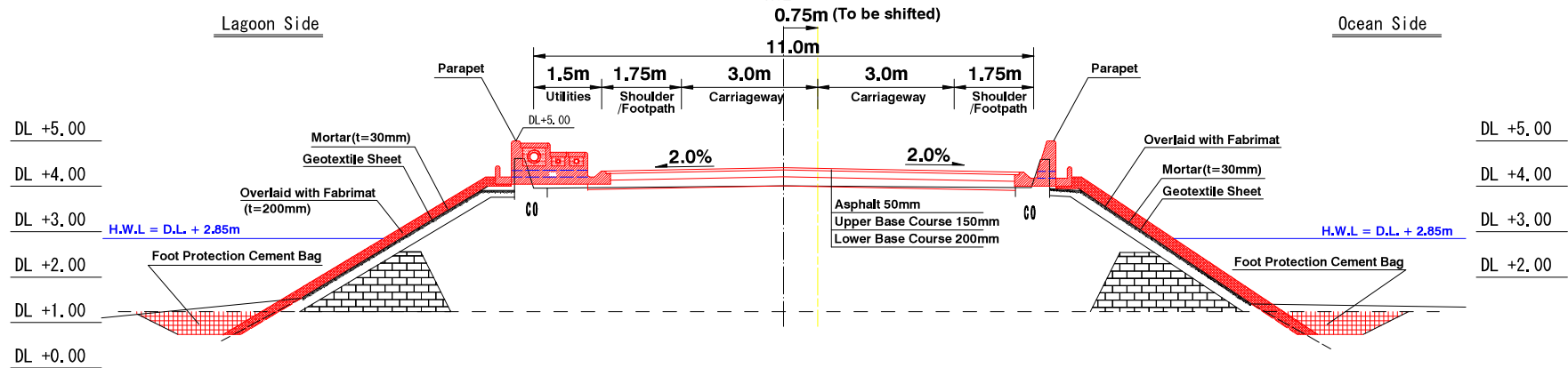


No. 24+00

GH=4.01

FH=4.41

RCL



AP11-50



MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC



JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
CROSS SECTION (14)

SCALE	DRG. No.
DATE	CS-1-37
Mar. 2016	SHEET No.
	48

CROSS SECTION (15)

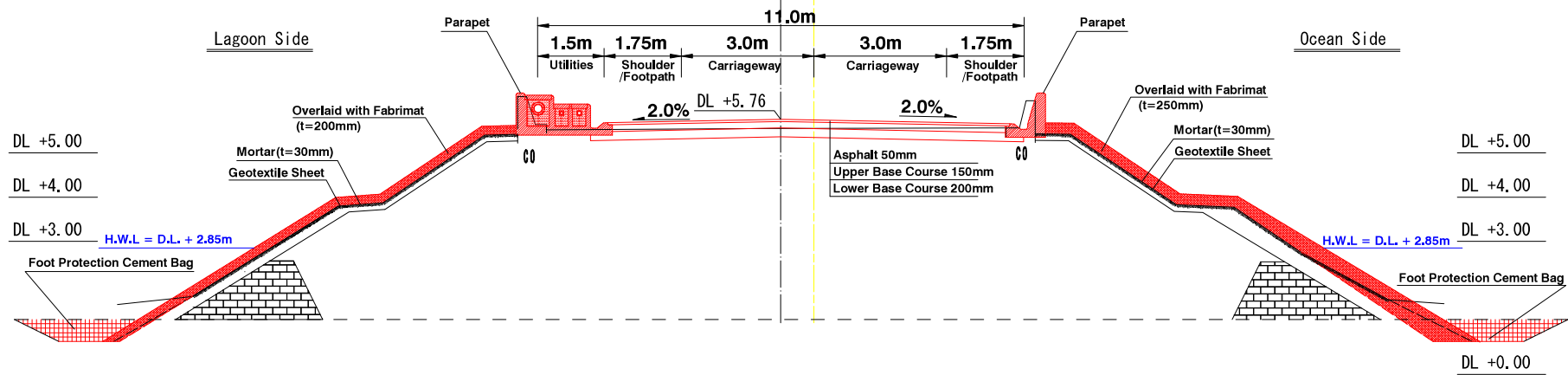
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FH=5.76

RCL

0.75m (To be shifted)



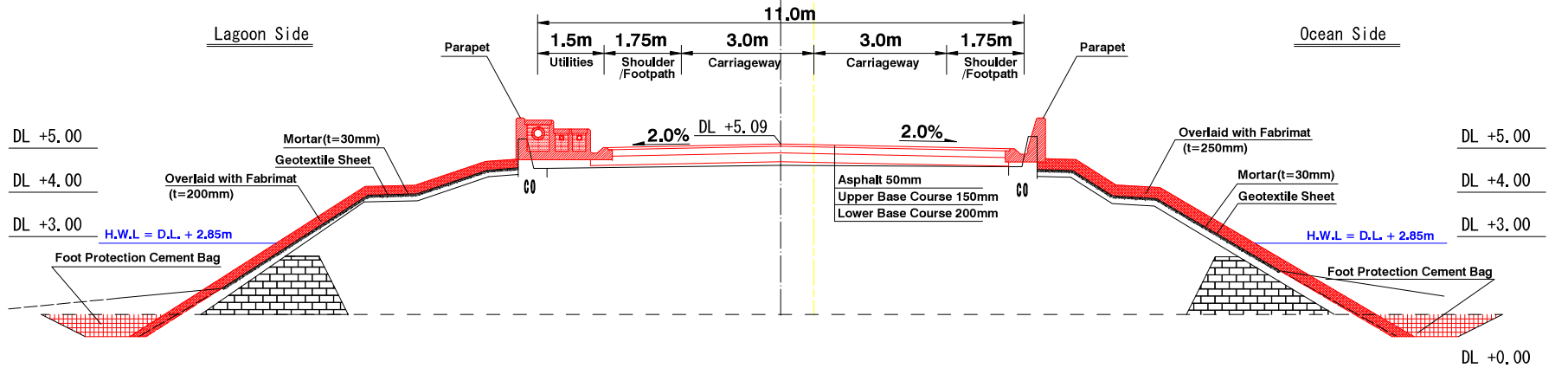
No. 26+00

GH=4.61

FH=5.09

RCL

0.75m (To be shifted)



AP11-51



MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON
THE PROJECT FOR RECONSTRUCTION OF
NIPPON CAUSEWAY ON TARAWA
TO ADAPT CLIMATE CHANGE
IN KIRIBATI REPUBLIC



JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
CROSS SECTION (15)

SCALE	DRG. No.
DATE	CS-1-37
Mar. 2016	SHEET No.
	49

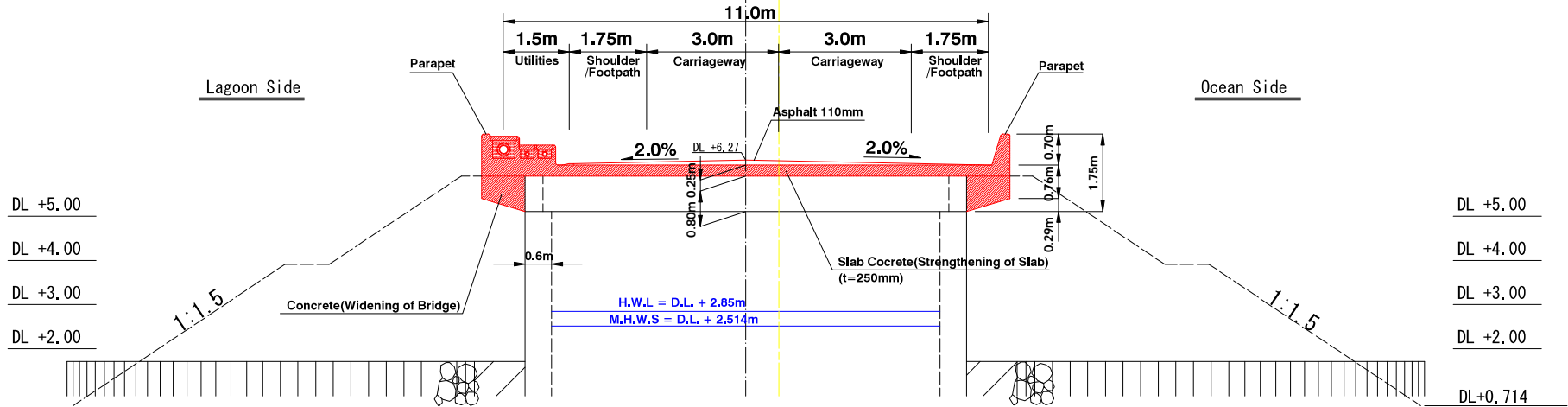
CROSS SECTION (16)

No. 27+42.35 (Bridge)

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FH=6.27

CL

0.75m (To be shifted)

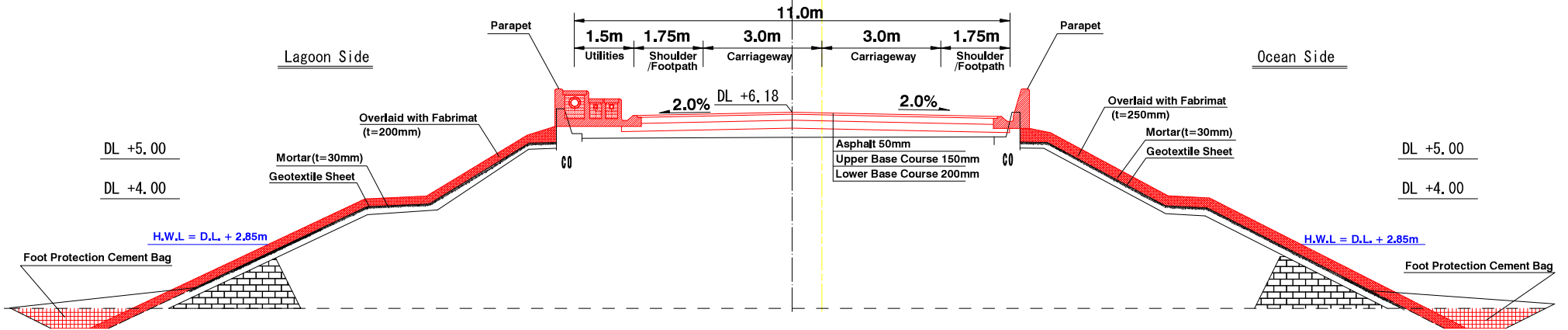


No. 27+30.64

GH=5.55
FH=6.18

RCL

0.75m (To be shifted)



AP11-52



MINISTRY OF PUBLIC WORKS & UTILITIES
(MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON
THE PROJECT FOR RECONSTRUCTION OF
NIPPON CAUSEWAY ON TARAWA
TO ADAPT CLIMATE CHANGE
IN KIRIBATI REPUBLIC



JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

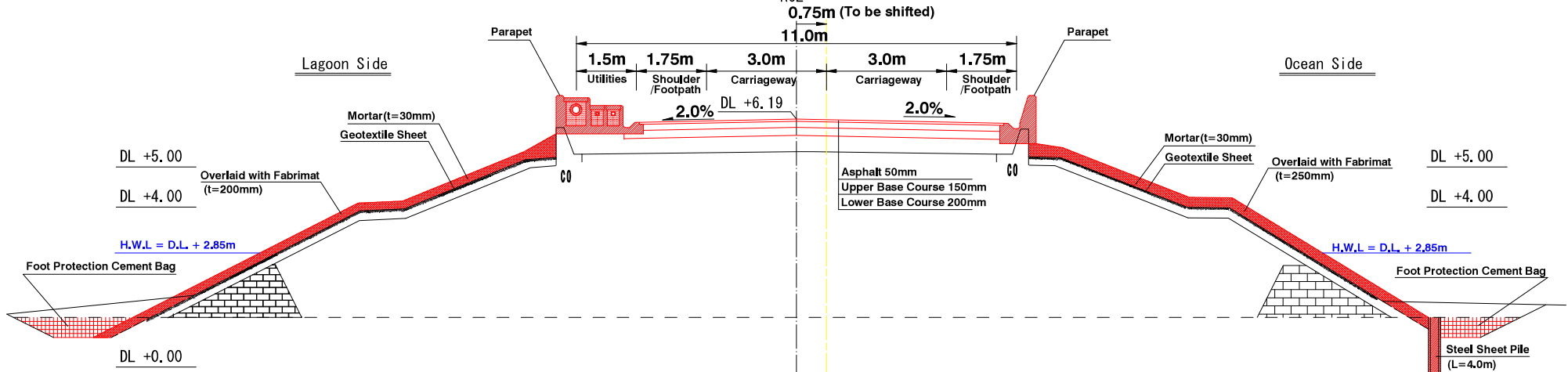
Designed
Checked
Approved

TITLE:
CROSS SECTION (16)

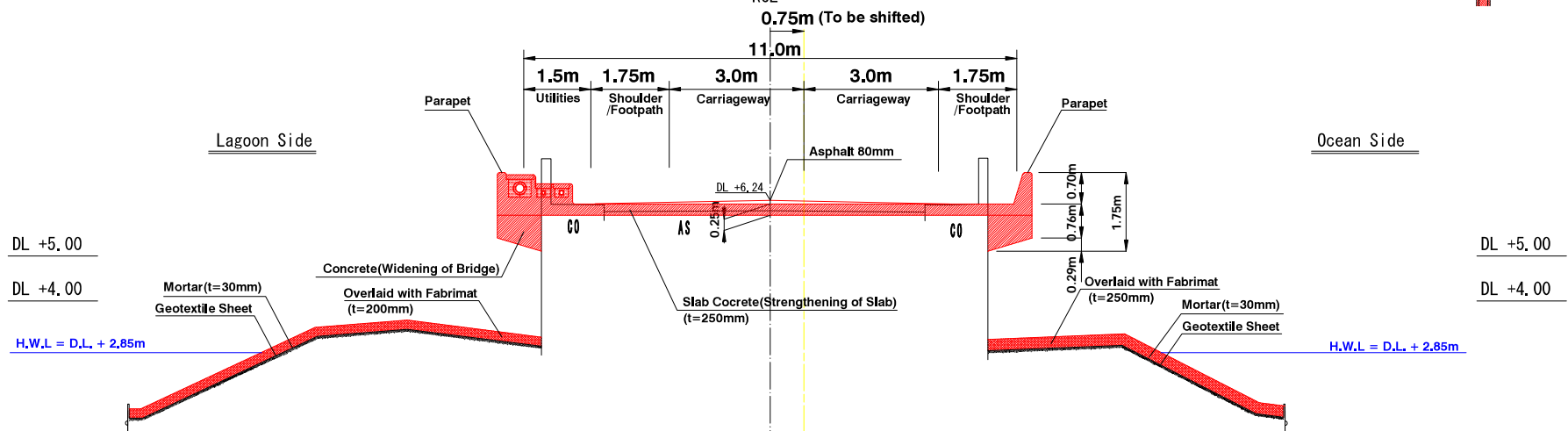
SCALE	DRG. No.
	CS-1-37
DATE	SHEET No.
Mar. 2016	50

CROSS SECTION (17)

No. 28+4. 10
 GH=5. 38
 FH=6. 19
 RCL



No. 28+00
 GH=6. 01
 FH=6. 24
 RCL



AP11-53



MINISTRY OF PUBLIC WORKS & UTILITIES
(MPWU)

Approved by
 Project Manager:

THE PREPARATORY SURVEY ON
 THE PROJECT FOR RECONSTRUCTION OF
 NIPPON CAUSEWAY ON TARAWA
 TO ADAPT CLIMATE CHANGE
 IN KIRIBATI REPUBLIC



JAPAN INTERNATIONAL COOPERATION AGENCY
 CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
 Checked
 Approved

TITLE:
 CROSS SECTION (17)

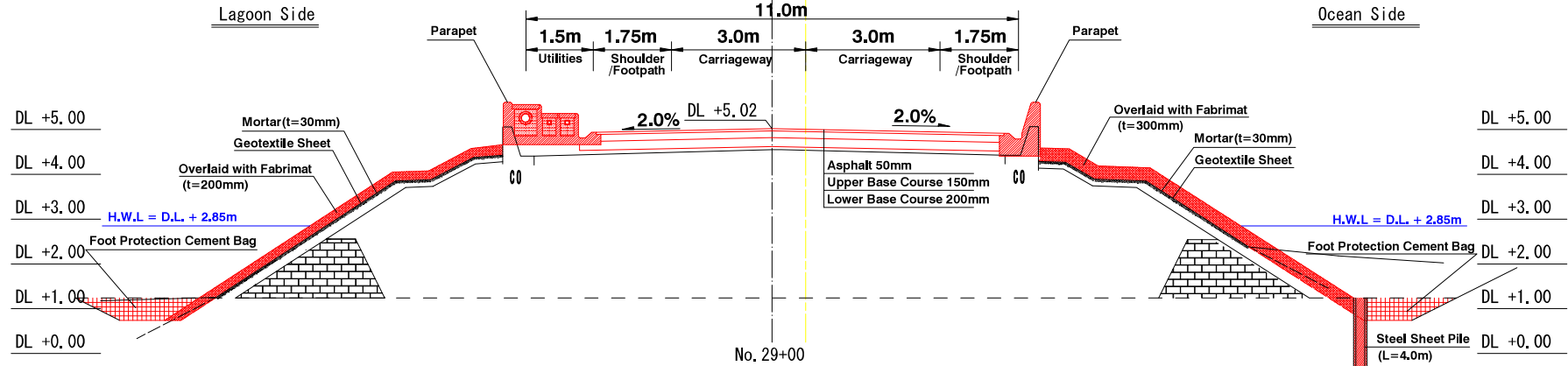
SCALE	DRG. No.
DATE	CS-1-37
Mar. 2016	SHEET No.
	51

CROSS SECTION (18)

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FH=5.02
RCL

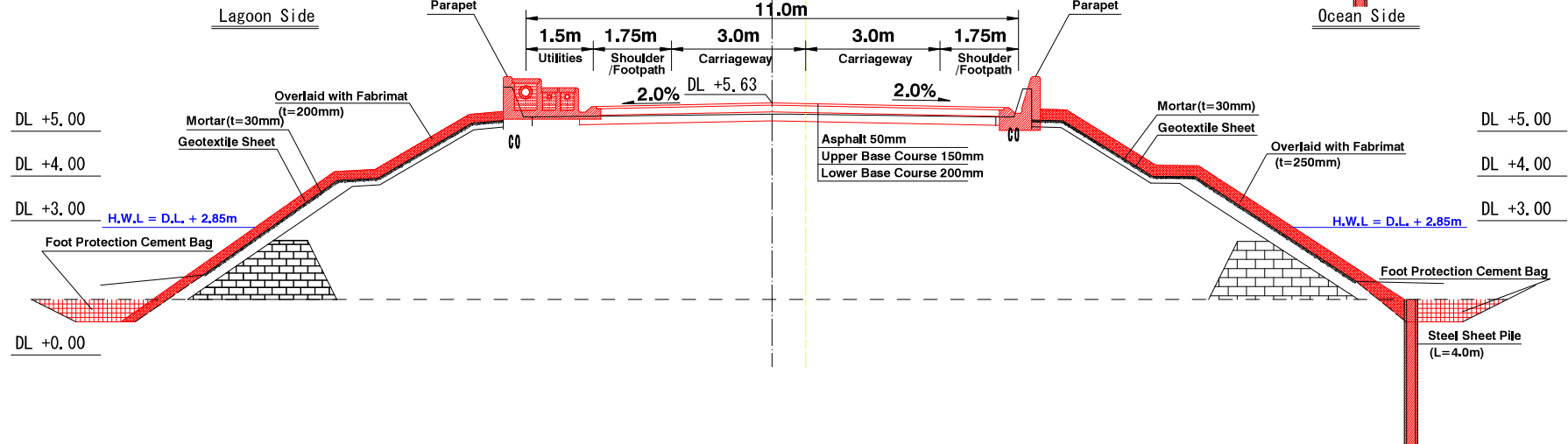
0.75m (To be shifted)



No. 29+00

GH=5.38
FH=5.63
RCL

0.75m (To be shifted)



AP11-54



MINISTRY OF PUBLIC WORKS & UTILITIES
(MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON
THE PROJECT FOR RECONSTRUCTION OF
NIPPON CAUSEWAY ON TARAWA
TO ADAPT CLIMATE CHANGE
IN KIRIBATI REPUBLIC



JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
CROSS SECTION (18)

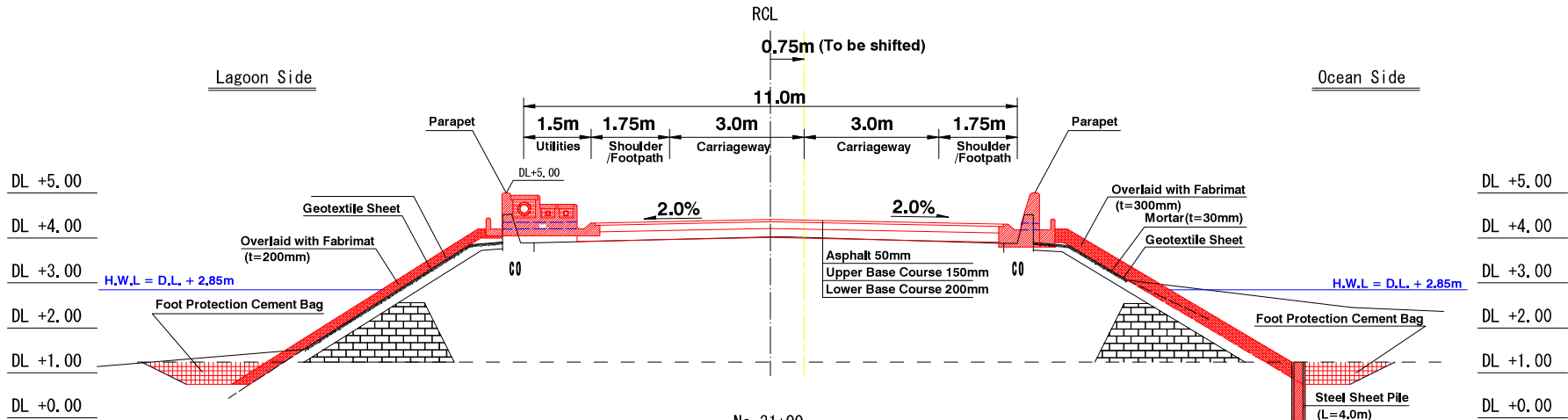
SCALE	DRG. No.
	CS-1-37
DATE	SHEET No.
Mar. 2016	52

CROSS SECTION (19)

No. 32+00

GH=4.02

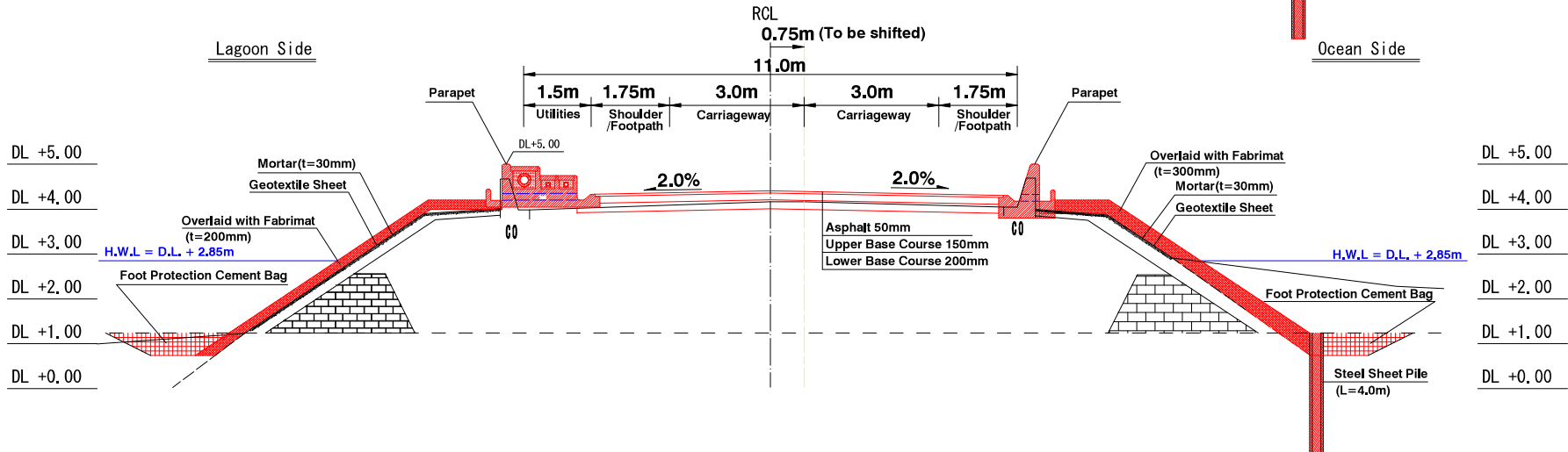
FH=4.41



No. 31+00

GH=4.17

FH=4.41



AP11-55



MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC



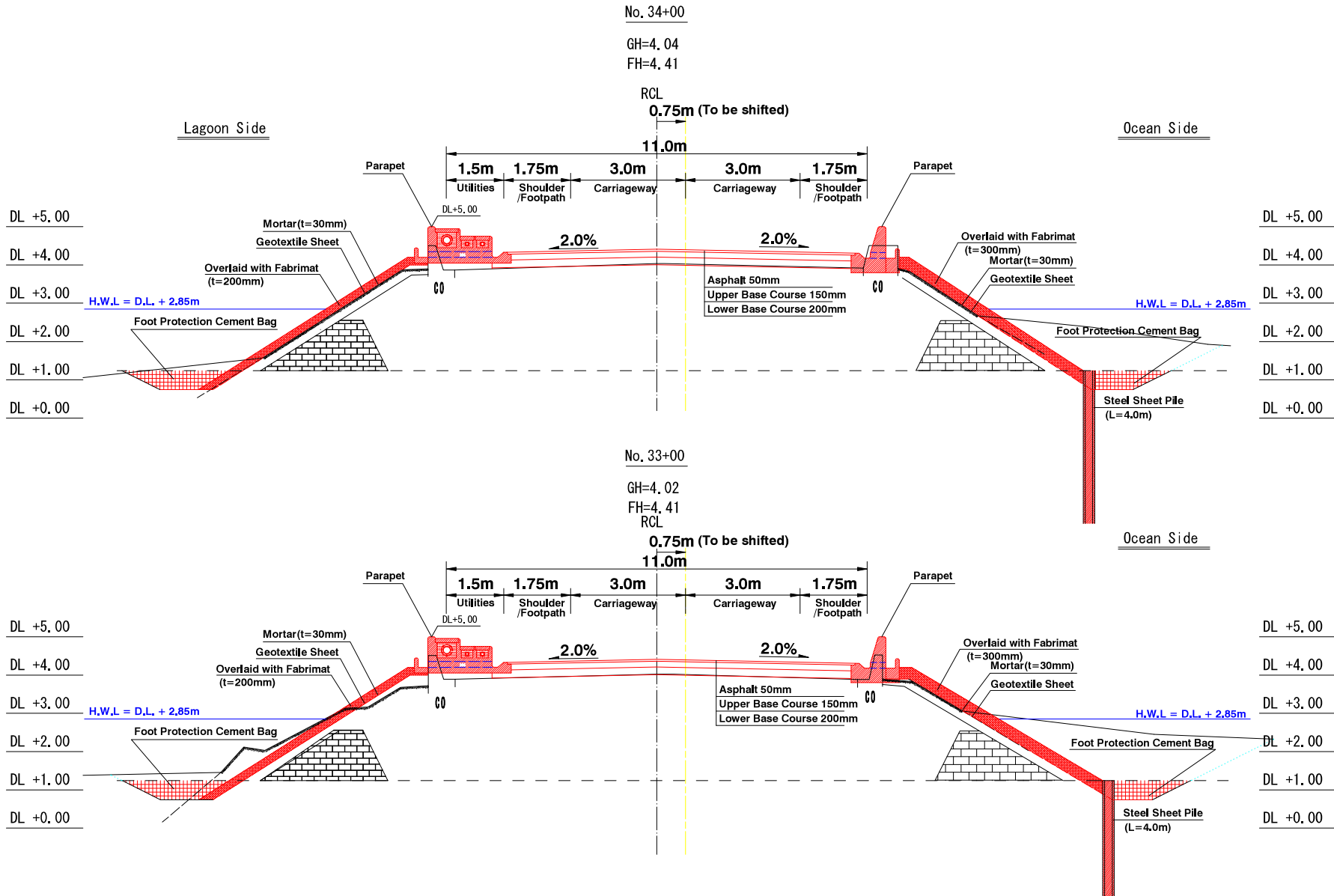
JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
CROSS SECTION (19)

SCALE	DRG. No.
DATE	CS-1-37
Mar. 2016	SHEET No.
	53

CROSS SECTION (20)



AP11-56



MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)

Approved by
 Project Manager:

THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC



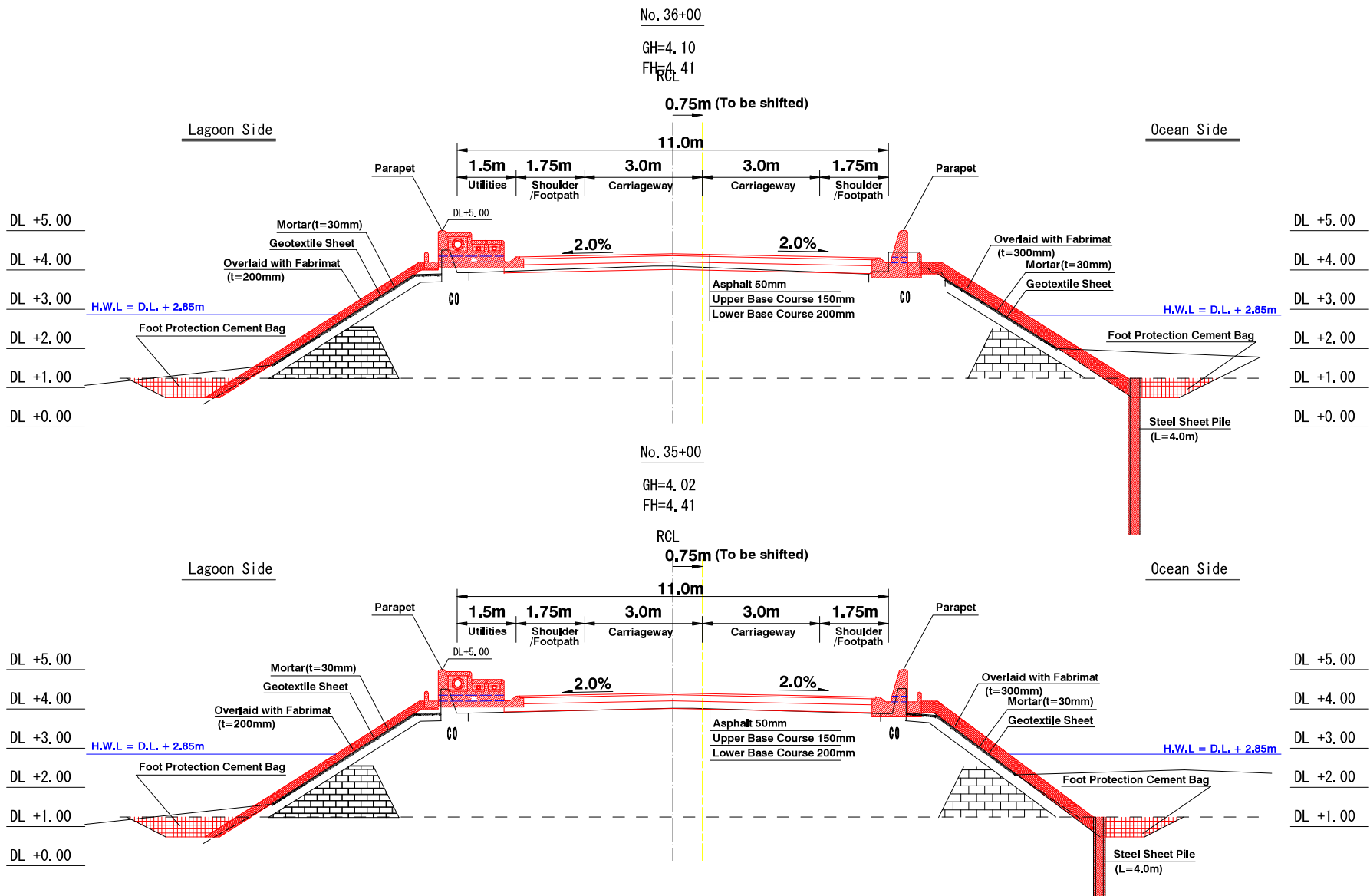
JAPAN INTERNATIONAL COOPERATION AGENCY
 CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
 Checked
 Approved

TITLE:
 CROSS SECTION (20)

SCALE	DRG. No.
DATE	SHEET No.
Mar. 2018	54

CROSS SECTION (21)



AP11-57



MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)

Approved by
 Project Manager:

THE PREPARATORY SURVEY ON
 THE PROJECT FOR RECONSTRUCTION OF
 NIPPON CAUSEWAY ON TARAWA
 TO ADAPT CLIMATE CHANGE
 IN KIRIBATI REPUBLIC



JAPAN INTERNATIONAL COOPERATION AGENCY
 CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
 Checked
 Approved

TITLE:
 CROSS SECTION (21)

SCALE	DRG. No.
DATE	SHEET No.
Mar. 2018	55

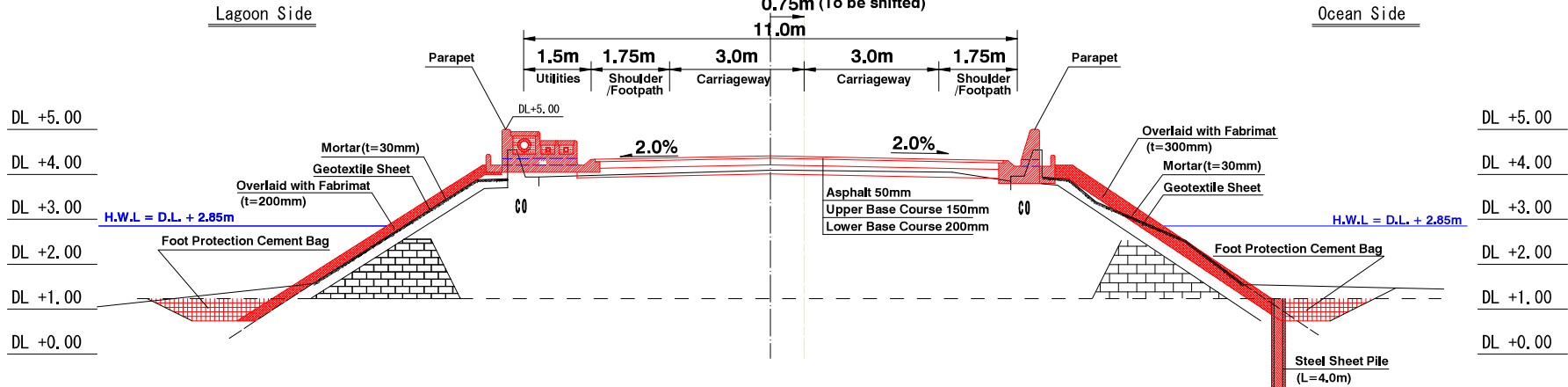
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No. 38+00

GH=4.09

FH=4.41

RCL
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11.0m

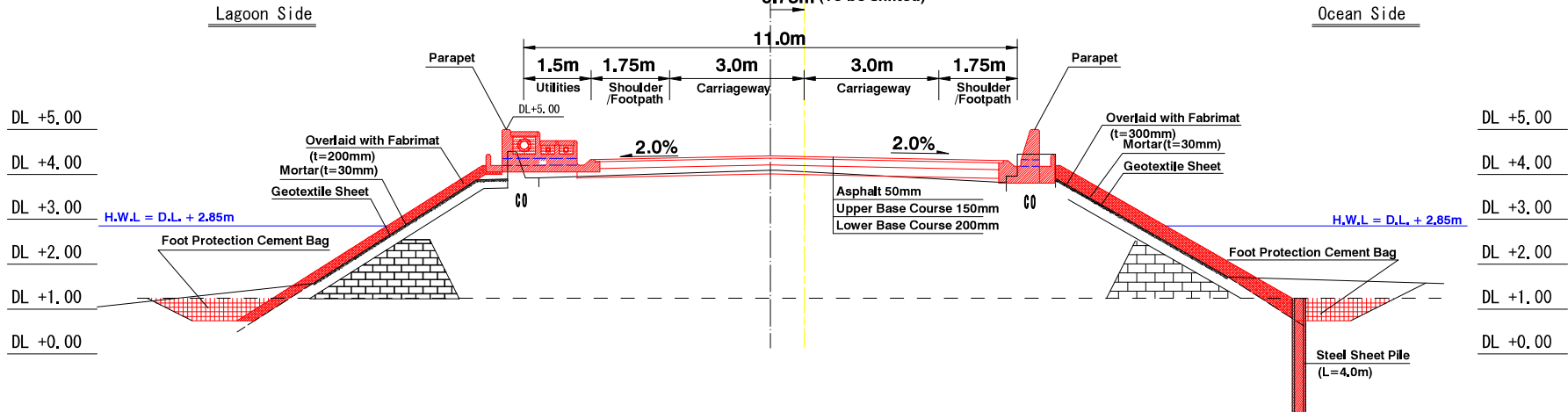


No. 37+00

GH=4.09

FH=4.41

RCL
0.75m (To be shifted)
11.0m



AP11-58



MINISTRY OF PUBLIC WORKS & UTILITIES
(MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON
THE PROJECT FOR RECONSTRUCTION OF
NIPPON CAUSEWAY ON TARAWA
TO ADAPT CLIMATE CHANGE
IN KIRIBATI REPUBLIC



JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
CROSS SECTION (22)

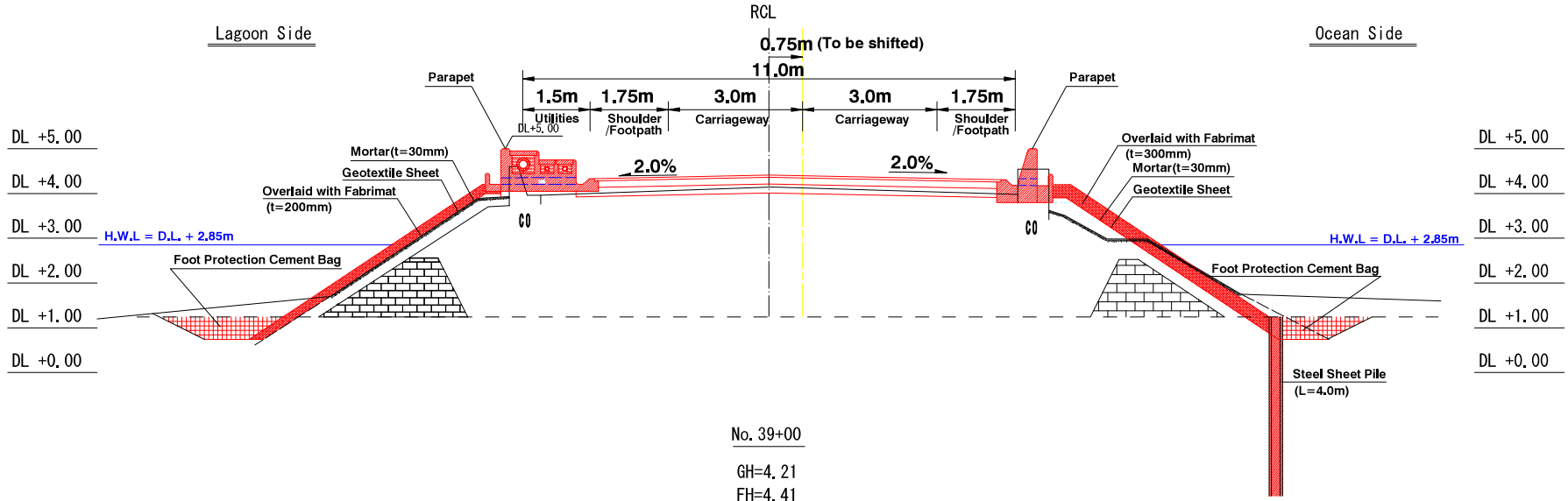
SCALE	DRG. No.
	CS-1-37
DATE	SHEET No.
Mar. 2018	56

CROSS SECTION (23)

No. 40+00

GH=4.14

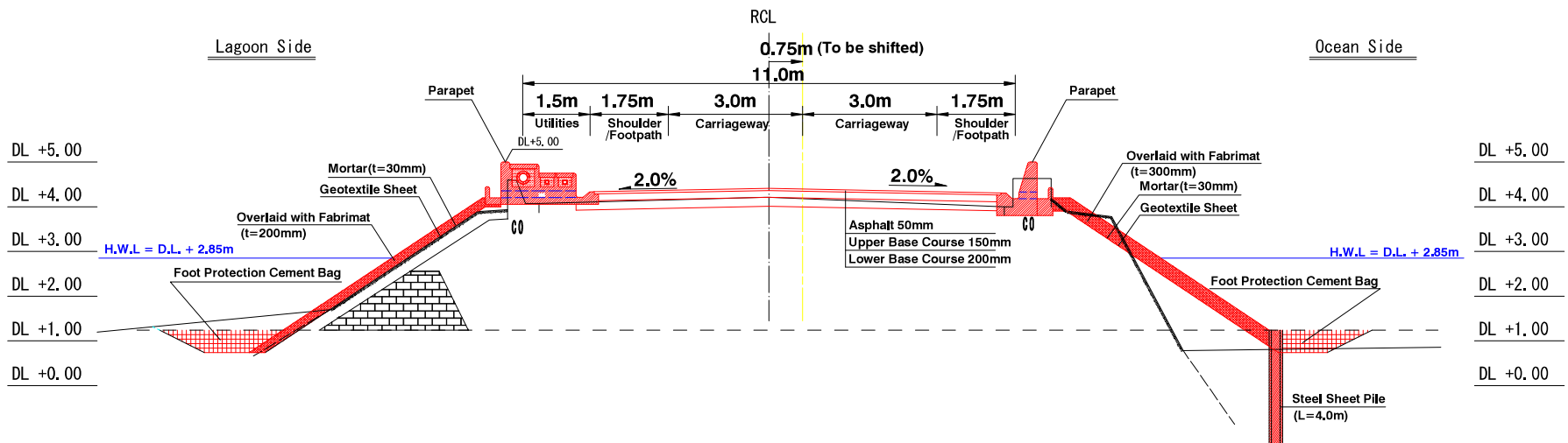
FH=4.41



No. 39+00

GH=4.21

FH=4.41



AP11-59



MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC



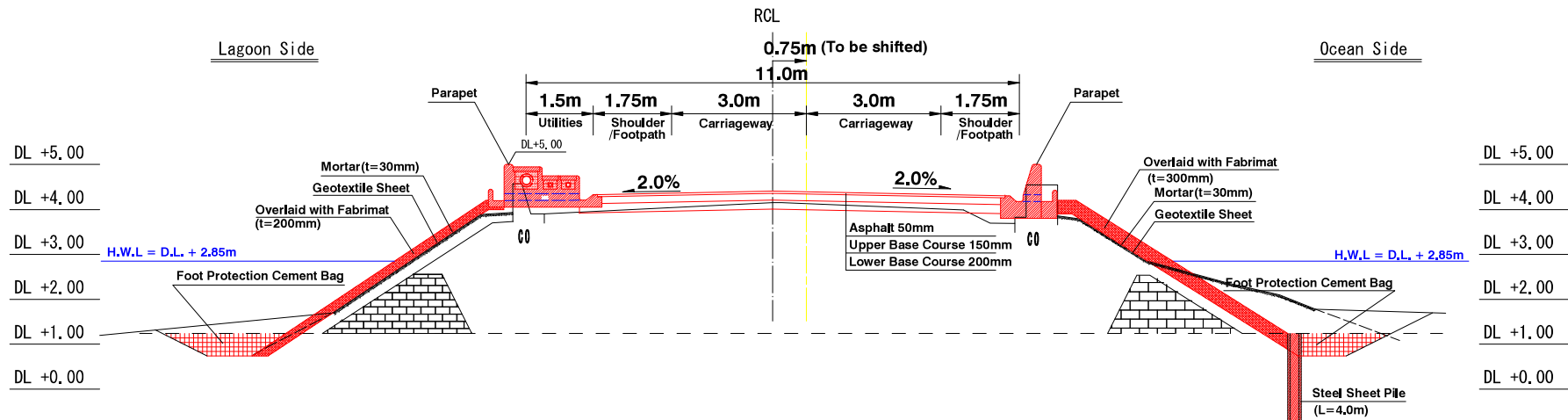
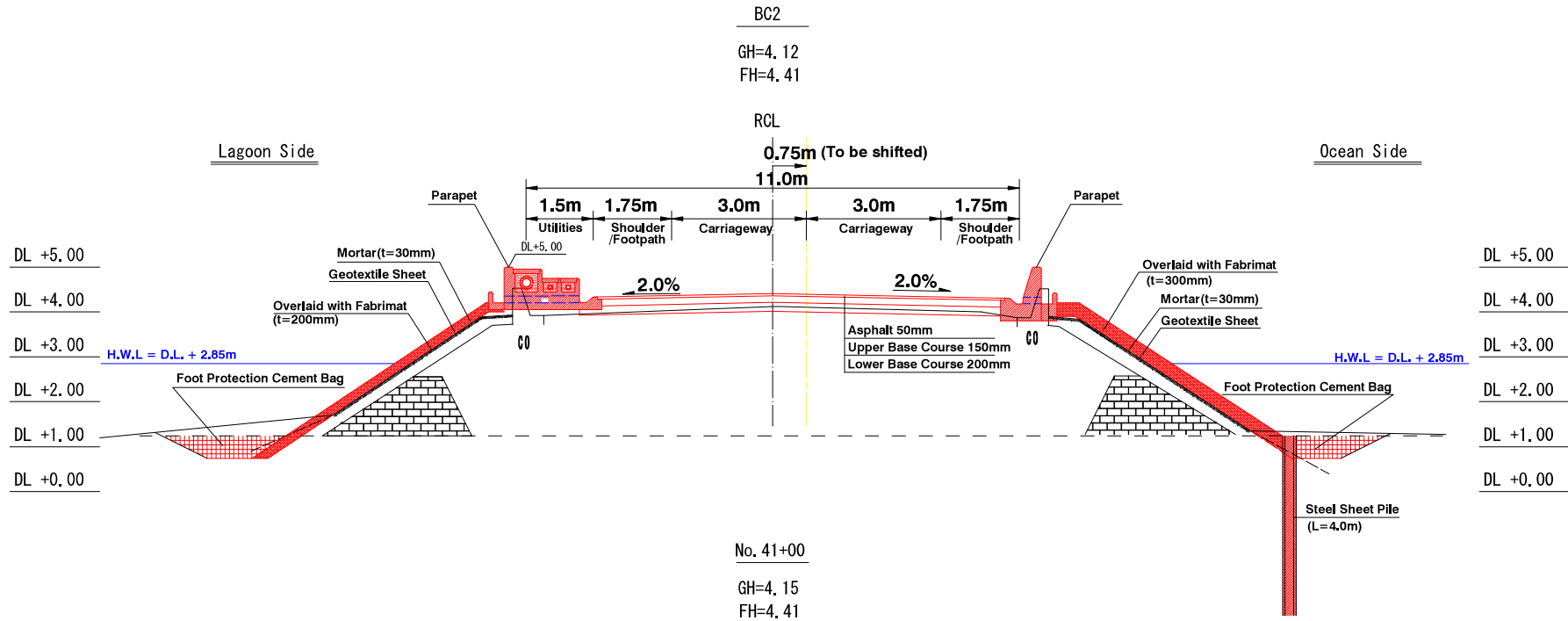
JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
CROSS SECTION (23)

SCALE	DRG. No.
	CS-1-37
DATE	SHEET No.
Mar. 2018	57

CROSS SECTION (24)



AP11-60

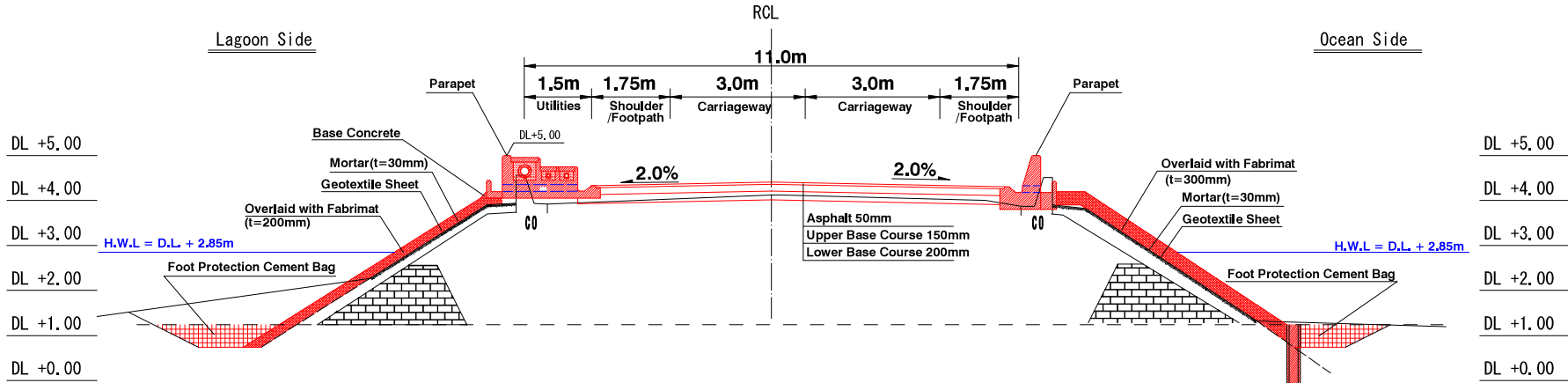
<p>MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)</p>	<p>Approved by</p> <p>Project Manager:</p>	<p>THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC</p>	<p>JAPAN INTERNATIONAL COOPERATION AGENCY</p> <p>CTI ENGINEERING INTERNATIONAL CO., LTD.</p>	<p>Designed</p>	<p>TITLE:</p> <p>CROSS SECTION (24)</p>	<p>SCALE</p>	<p>DRG. No.</p>
				<p>Checked</p>		<p>DATE</p>	<p>SHEET No.</p>
				<p>Approved</p>		<p>Mar. 2016</p>	<p>58</p>

CROSS SECTION (25)

No. 43+00

GH=4.12

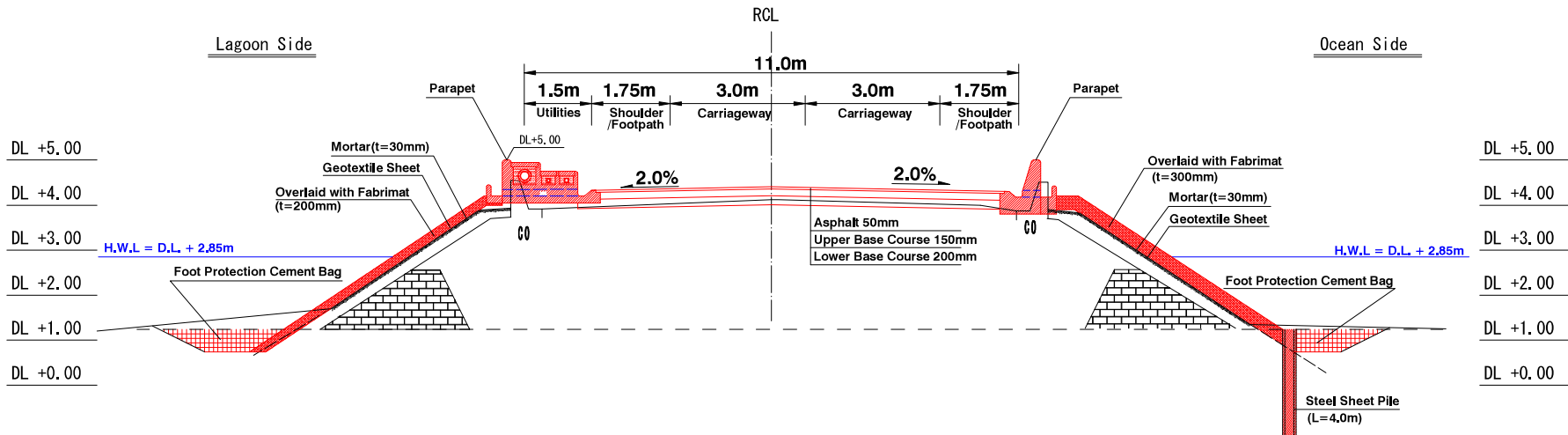
FH=4.41



No. 42+00

GH=4.12

FH=4.41



AP11-61



MINISTRY OF PUBLIC WORKS & UTILITIES
(MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON
THE PROJECT FOR RECONSTRUCTION OF
NIPPON CAUSEWAY ON TARAWA
TO ADAPT CLIMATE CHANGE
IN KIRIBATI REPUBLIC



JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
CROSS SECTION (25)

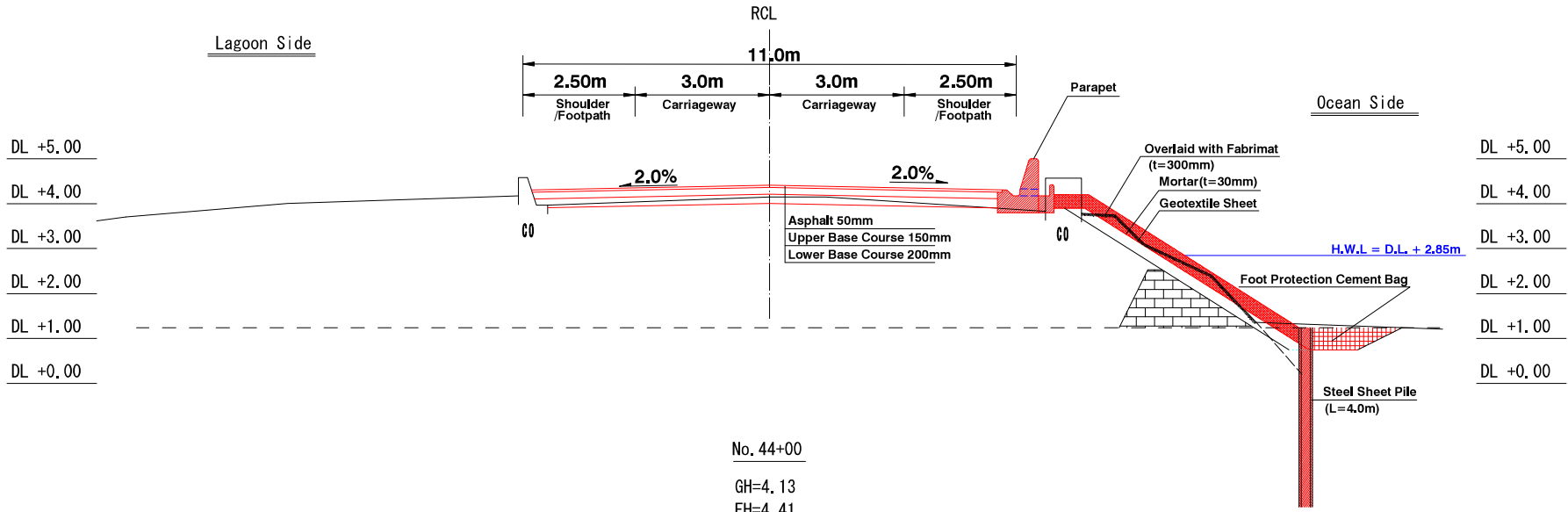
SCALE	DRG. No.
DATE	SHEET No.
Mar. 2018	59

CROSS SECTION (26)

No. 45+00

GH=4.15

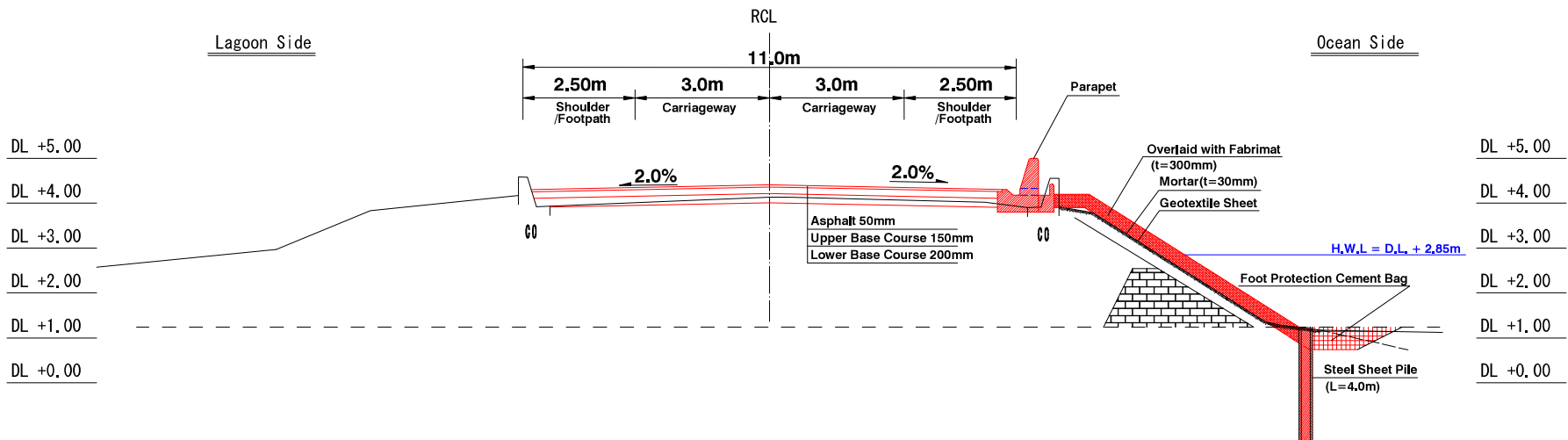
FH=4.41



No. 44+00

GH=4.13

FH=4.41



MINISTRY OF PUBLIC WORKS & UTILITIES
(MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON
THE PROJECT FOR RECONSTRUCTION OF
NIPPON CAUSEWAY ON TARAWA
TO ADAPT CLIMATE CHANGE
IN KIRIBATI REPUBLIC



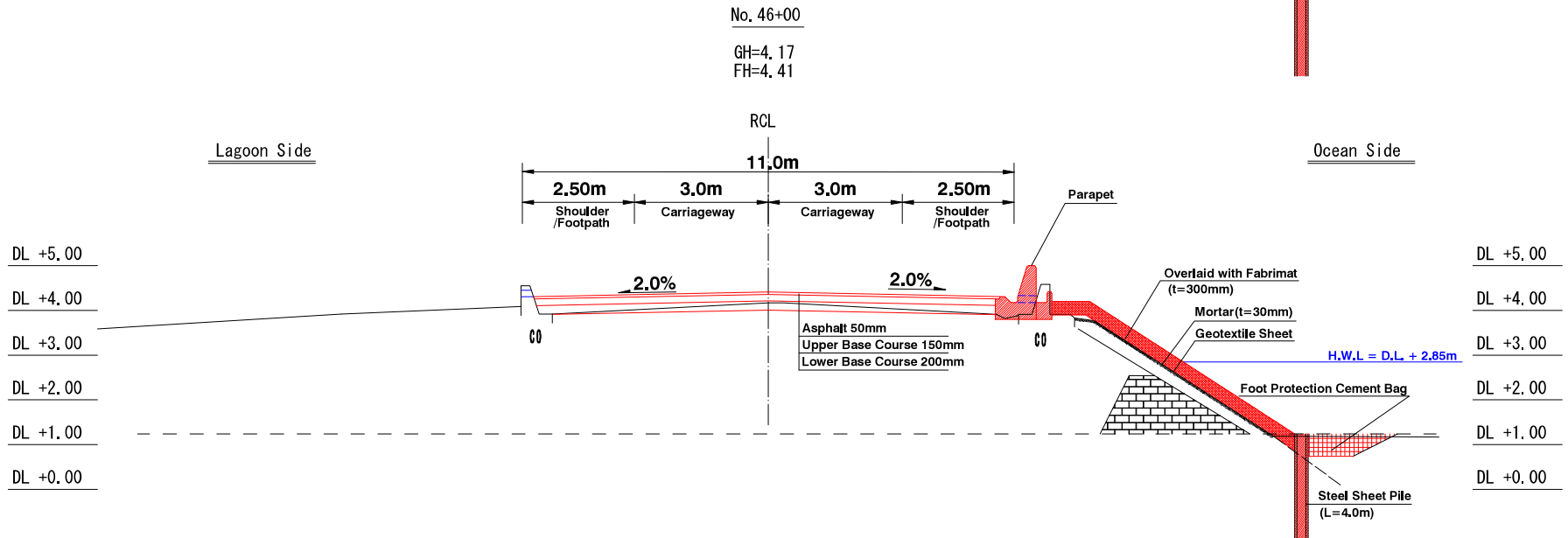
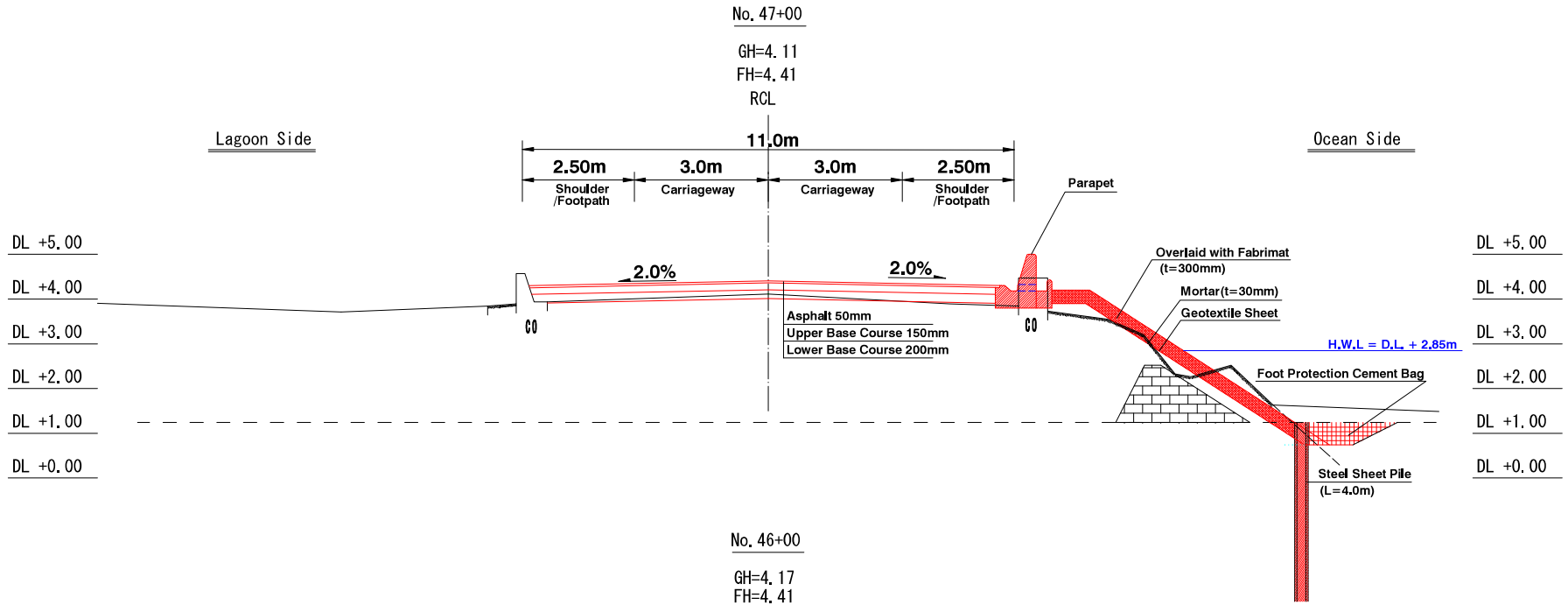
JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
CROSS SECTION (26)

SCALE	DRG. No.
DATE	SHEET No.
Mar. 2018	60

CROSS SECTION (27)



MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC



JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
CROSS SECTION (27)

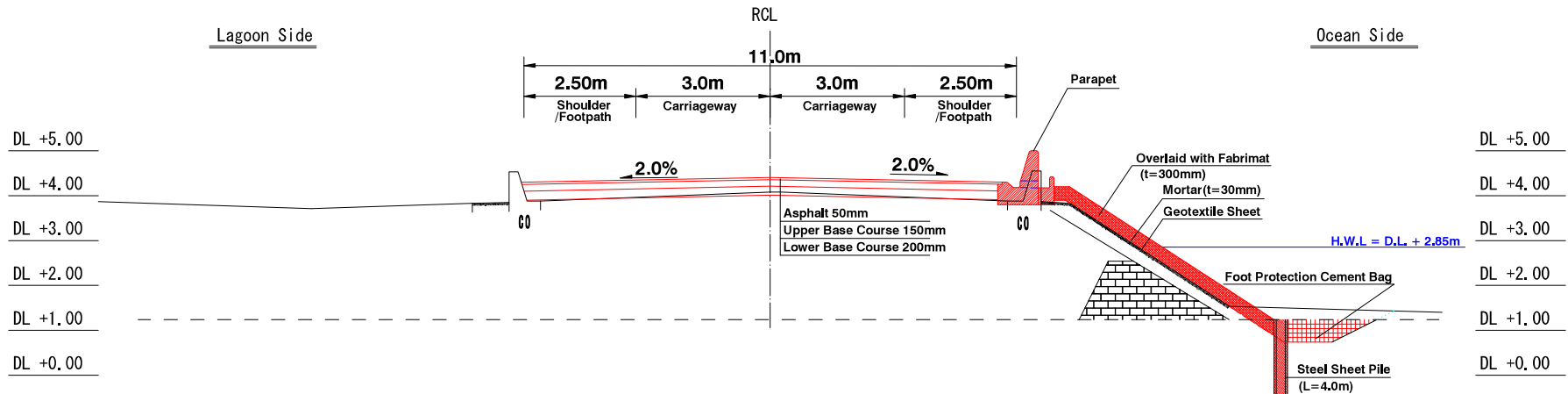
SCALE	DRG. No.
DATE	SHEET No.
Mar. 2018	61

CROSS SECTION (28)

No. 49+00

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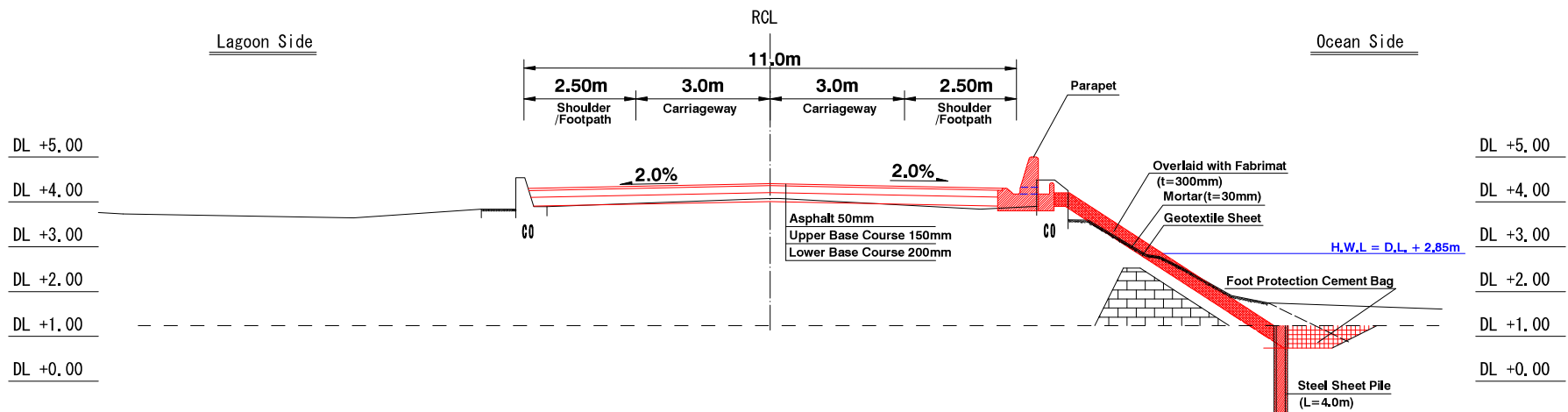
FH=4.41



No. 48+00

GH=4.08

FH=4.41



MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON
THE PROJECT FOR RECONSTRUCTION OF
NIPPON CAUSEWAY ON TARAWA
TO ADAPT CLIMATE CHANGE
IN KIRIBATI REPUBLIC



JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
CROSS SECTION (28)

SCALE	DRG. No.
DATE	SHEET No.
Mar. 2016	62

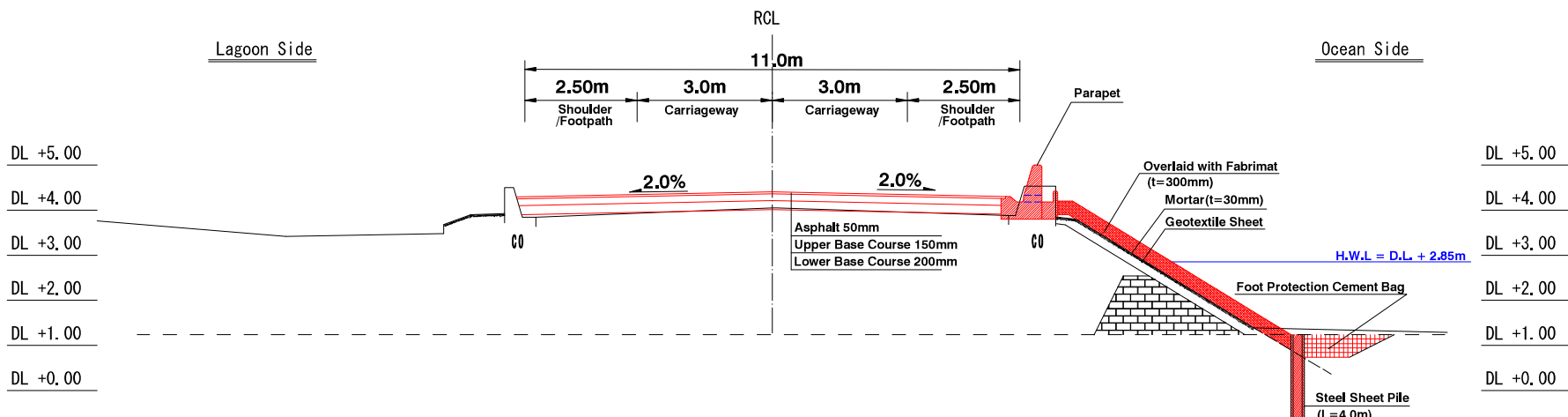
AP11-65

CROSS SECTION (29)

No. 50+00

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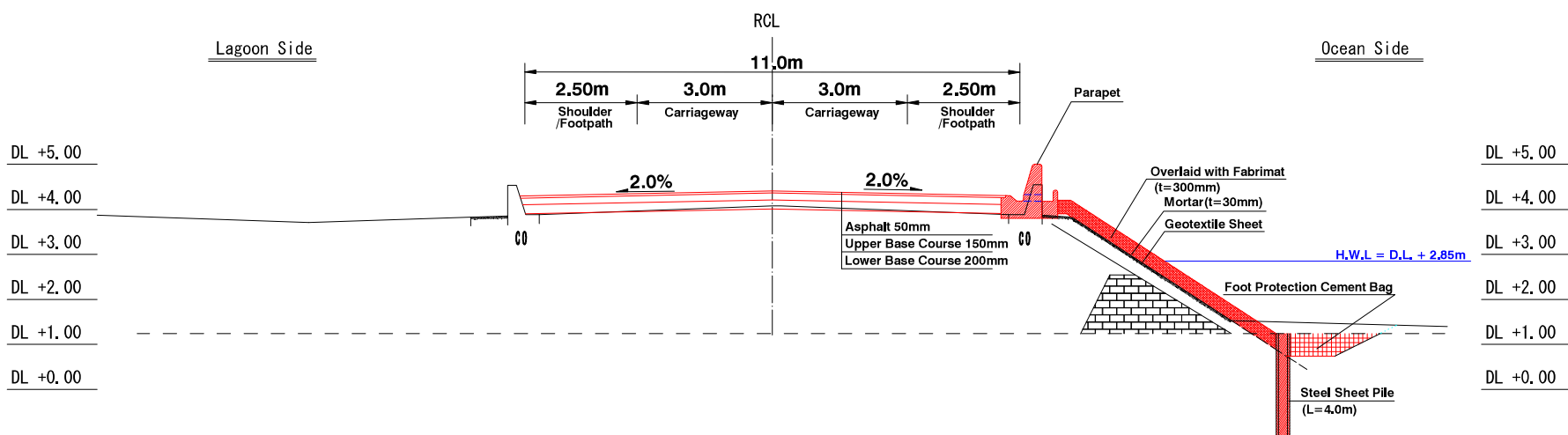
FH=4.41



SP2

GH=4.08

FH=4.41



MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC



JAPAN INTERNATIONAL COOPERATION AGENCY

CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
CROSS SECTION (29)

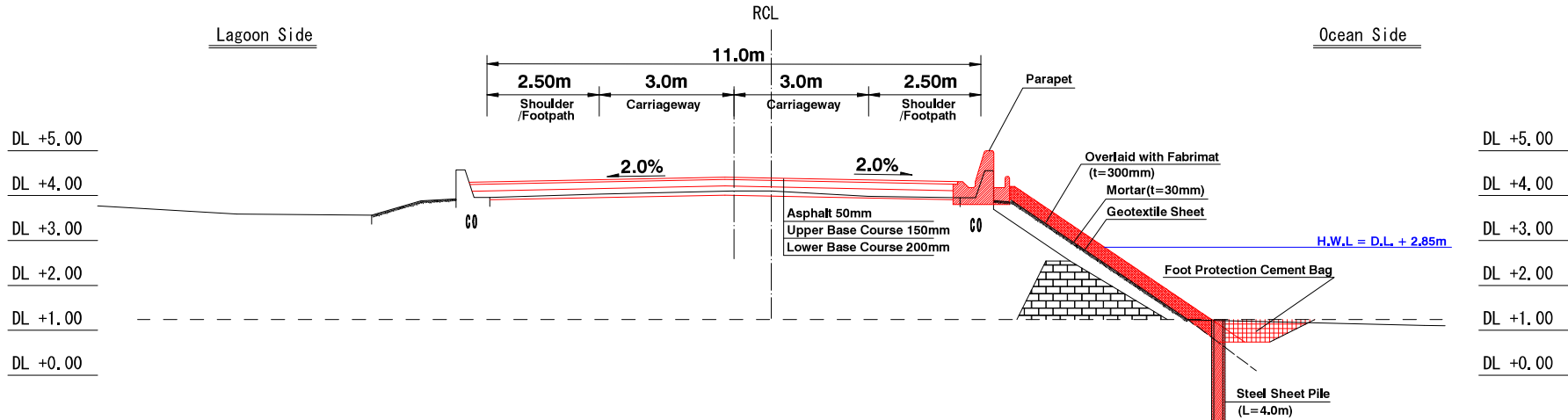
SCALE	DRG. No.
DATE	SHEET No.
Mar. 2016	63

CROSS SECTION (30)

No. 52+00

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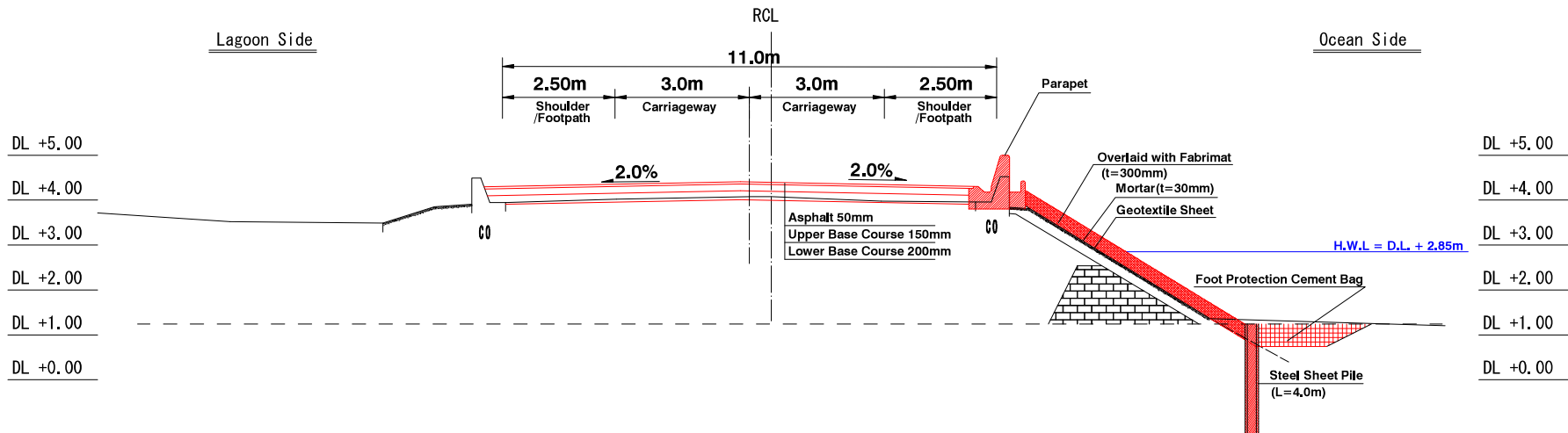
FH=4.41



No. 51+00

GH=4.08

FH=4.41



MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC



JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
CROSS SECTION (30)

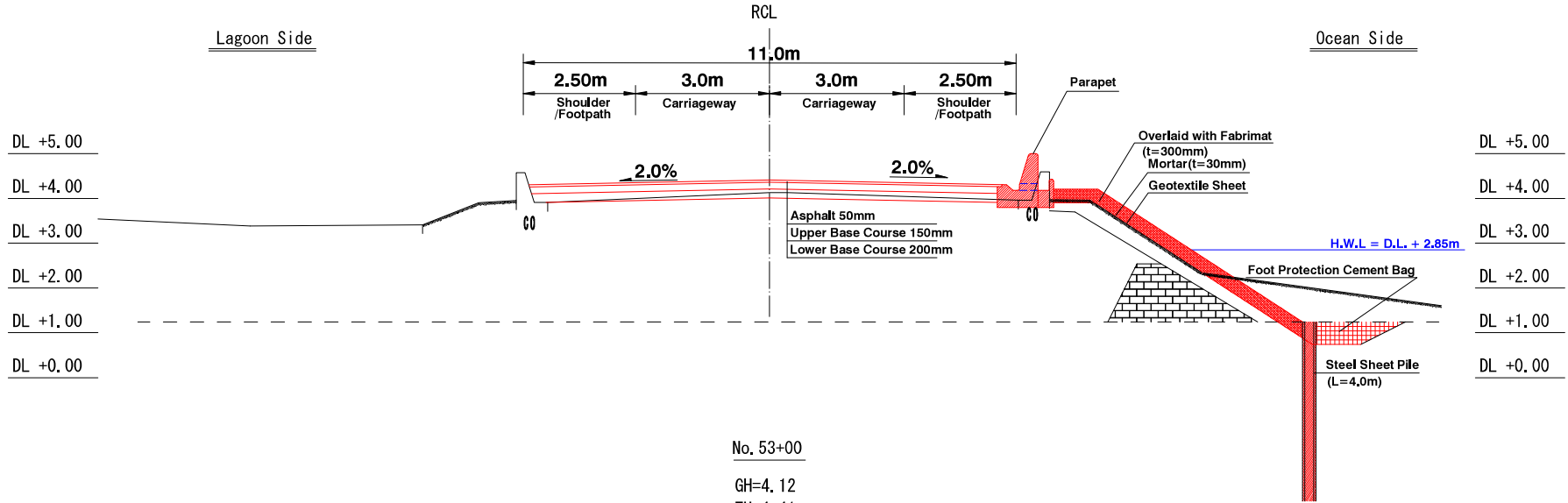
SCALE	DRG. No.
DATE	SHEET No.
Mar. 2018	64

CROSS SECTION (31)

No. 54+00

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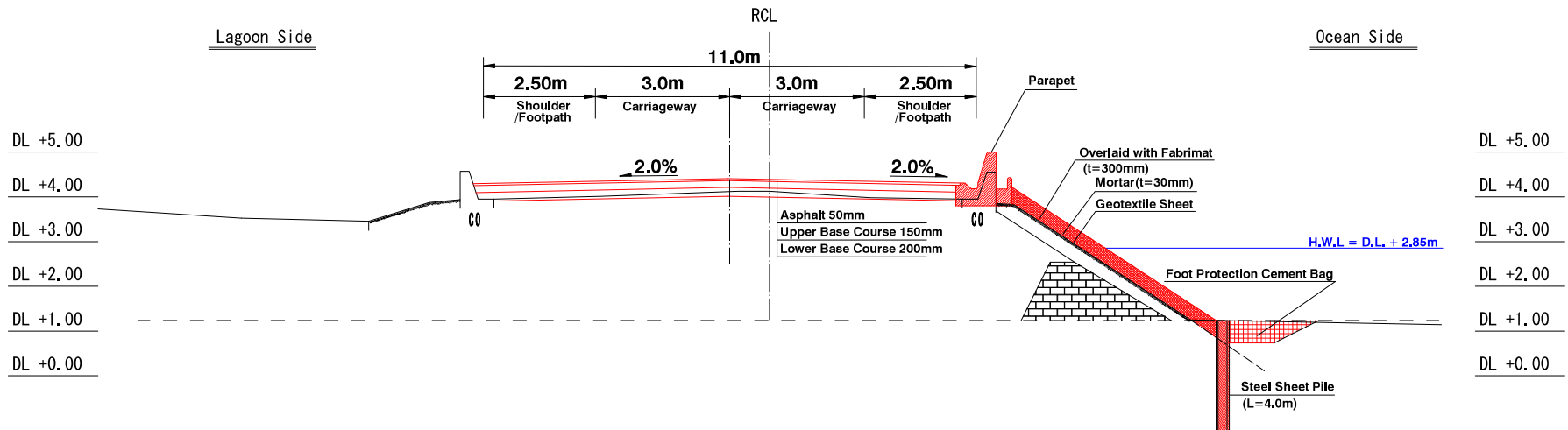
FH=4.41



No. 53+00

GH=4.12

FH=4.41



MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC



JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
CROSS SECTION (31)

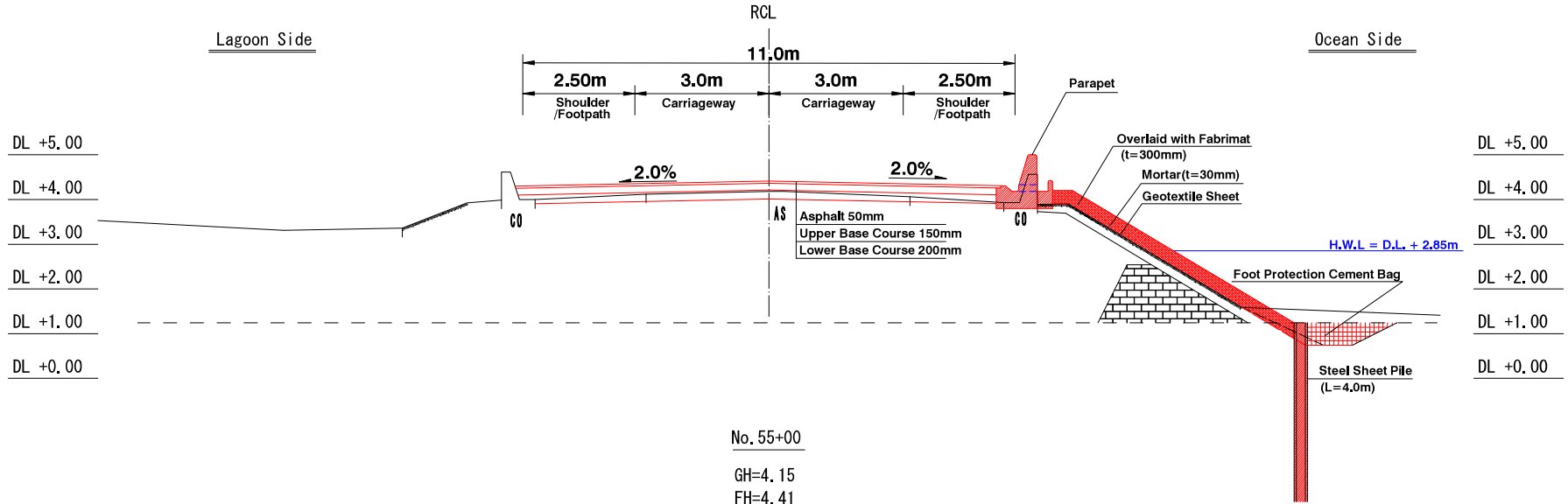
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DATE	SHEET No.
Mar. 2018	65

CROSS SECTION (32)

No. 56+00

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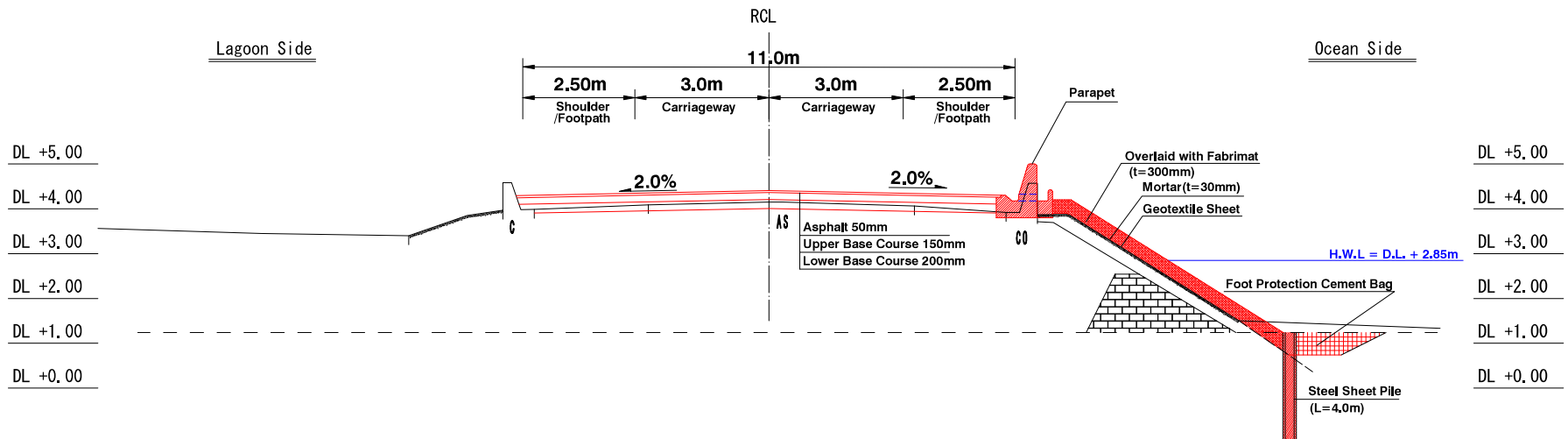
FH=4.41



No. 55+00

GH=4.15

FH=4.41



MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC



JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
CROSS SECTION (32)

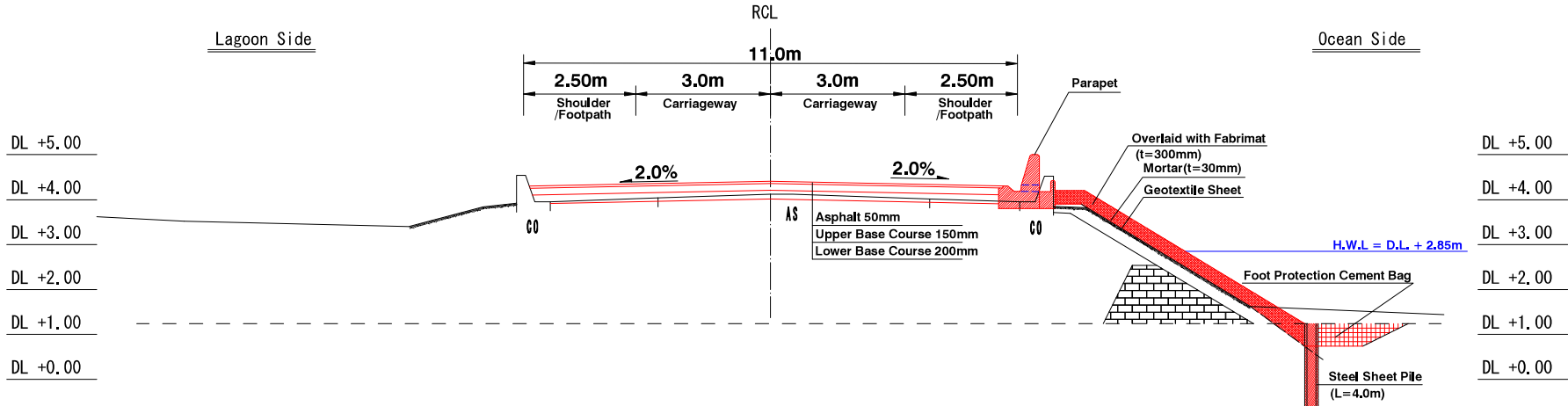
SCALE	DRG. No.
DATE	SHEET No.
Mar. 2016	66

CROSS SECTION (33)

No. 57+00

GH=4.12

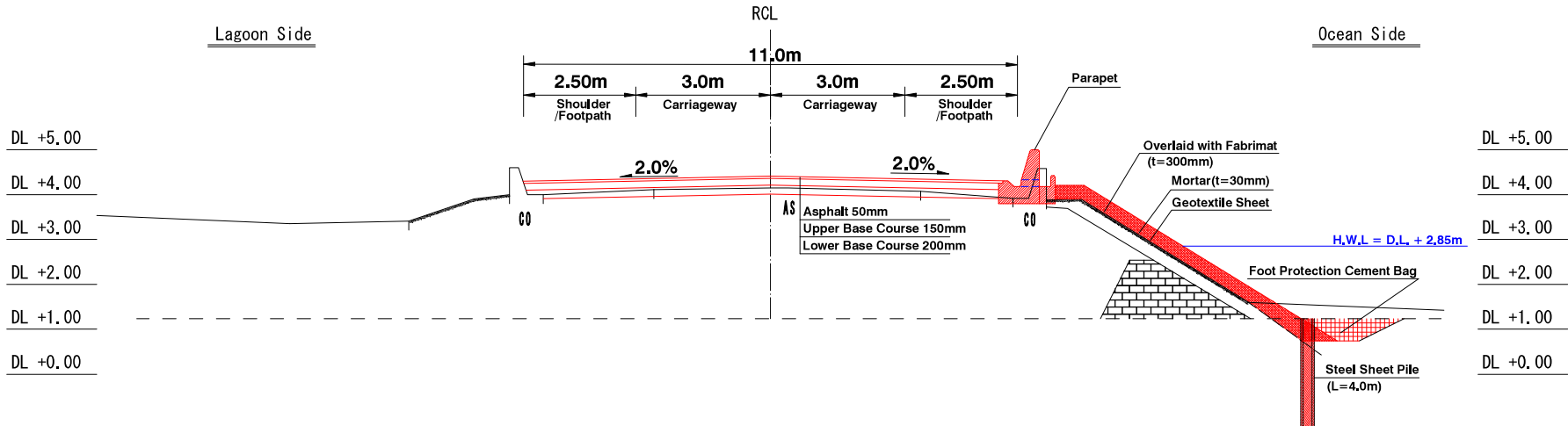
FH=4.41



EC2

GH=4.15

FH=4.41



AP11-69



MINISTRY OF PUBLIC WORKS & UTILITIES
(MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON
THE PROJECT FOR RECONSTRUCTION OF
NIPPON CAUSEWAY ON TARAWA
TO ADAPT CLIMATE CHANGE
IN KIRIBATI REPUBLIC



JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
CROSS SECTION (33)

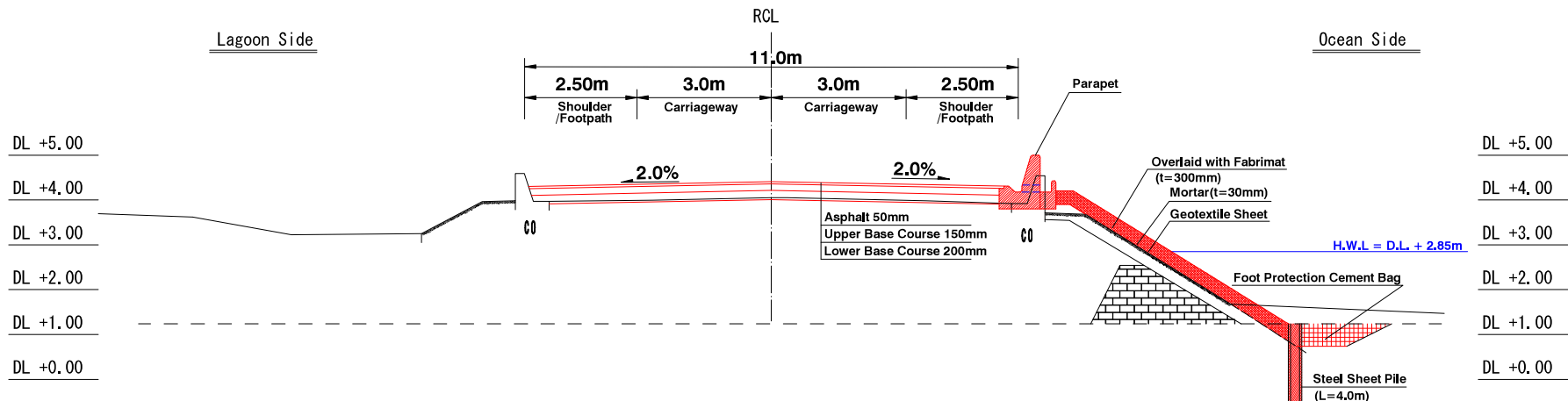
SCALE	DRG. No.
DATE	SHEET No.
Mar. 2016	67

CROSS SECTION (34)

No. 59+00

GH=4.05

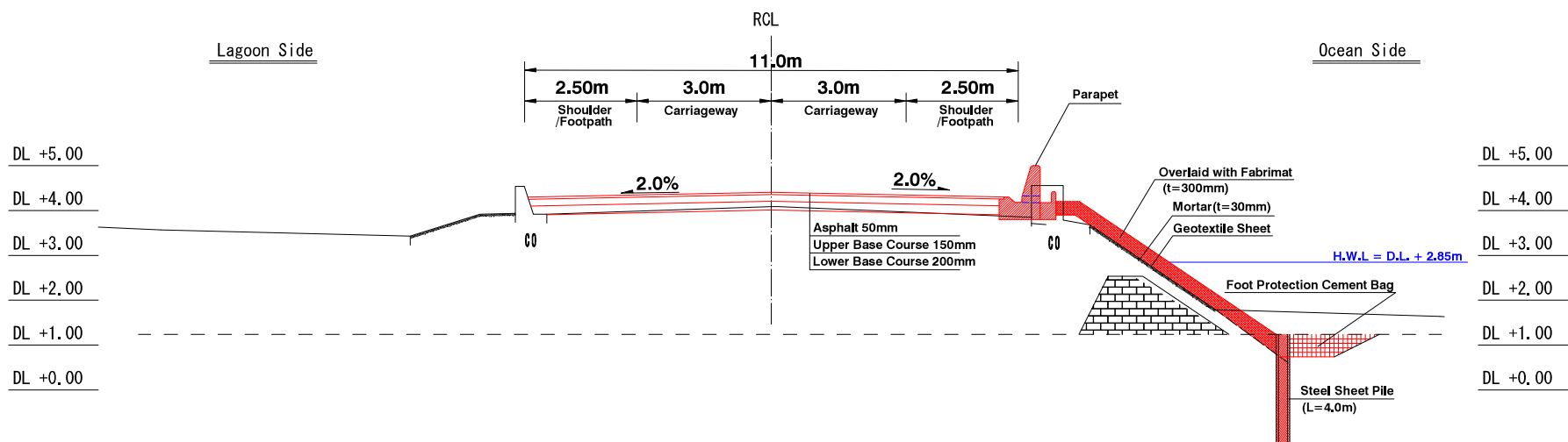
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No. 58+00

GH=4.09

FH=4.41



AP11-70

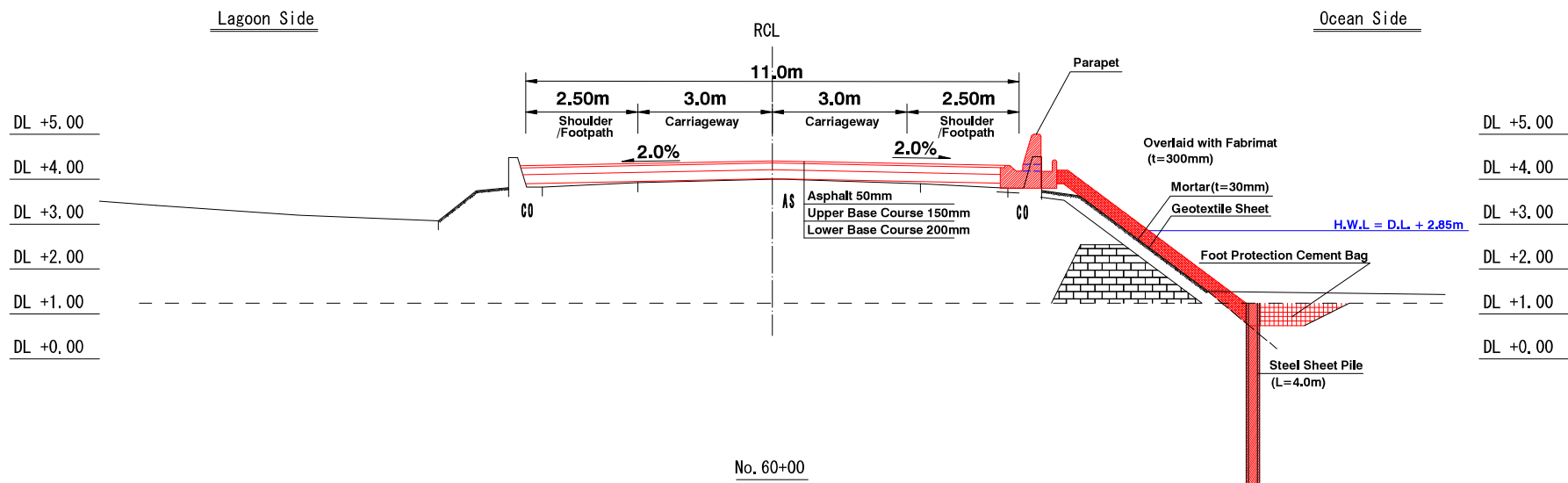
<p>MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)</p>	<p>Approved by</p> <p>Project Manager:</p>	<p>THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC</p>	<p>JAPAN INTERNATIONAL COOPERATION AGENCY</p> <p>CTI ENGINEERING INTERNATIONAL CO., LTD.</p>	<p>Designed</p>	<p>TITLE:</p> <p>CROSS SECTION (34)</p>	<p>SCALE</p>	<p>DRG. No.</p>
				<p>Checked</p>		<p>DATE</p>	<p>SHEET No.</p>
				<p>Approved</p>		<p>Mar. 2018</p>	<p>68</p>

CROSS SECTION (35)

No. 61+00

GH=4.00

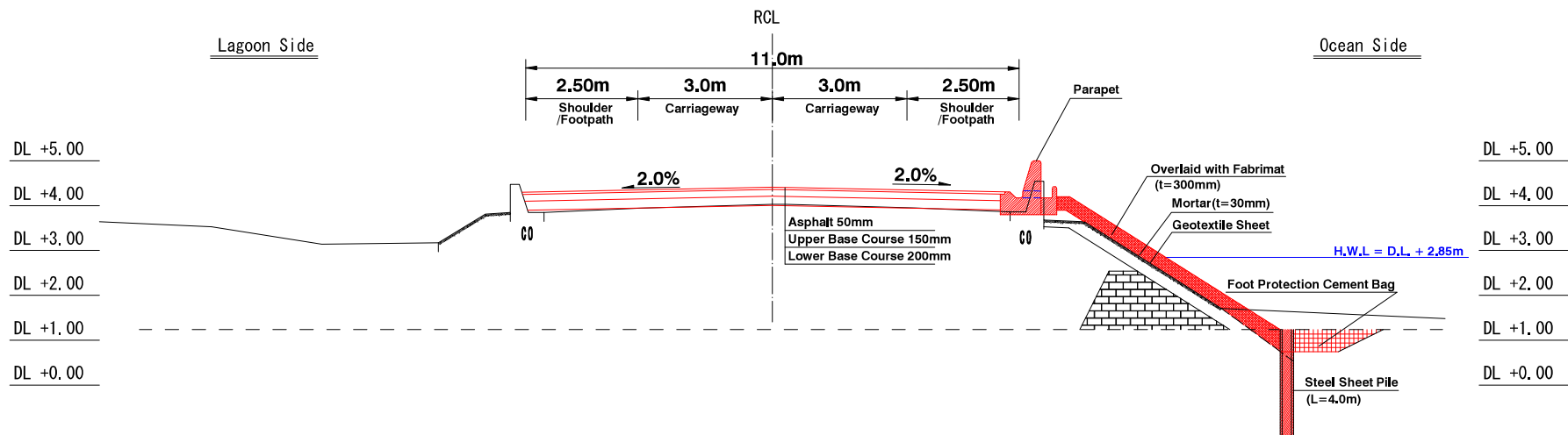
FH=4.41



No. 60+00

GH=4.03

FH=4.41



AP11-71

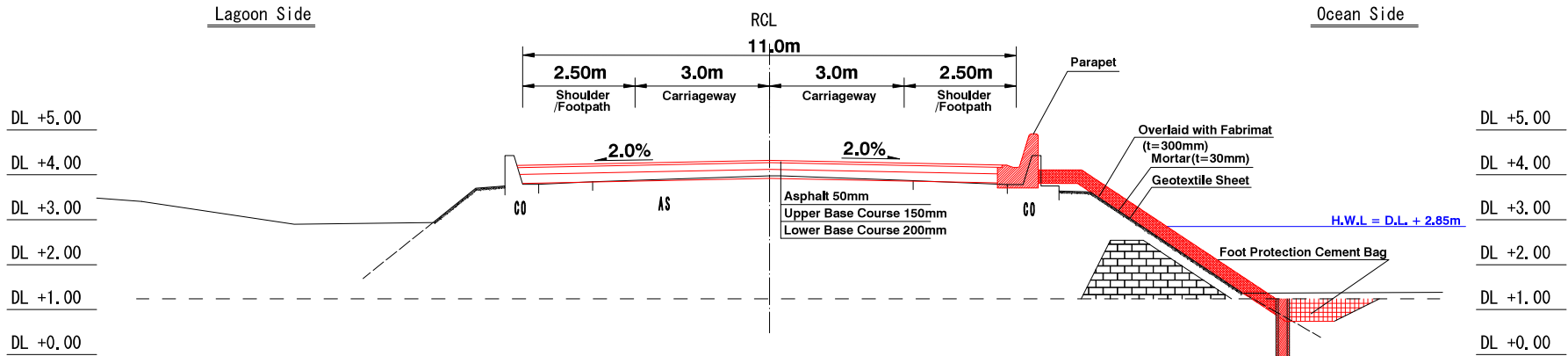
<p>MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)</p>	<p>Approved by</p> <p>Project Manager:</p>	<p>THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC</p>	<p>JAPAN INTERNATIONAL COOPERATION AGENCY</p> <p>CTI ENGINEERING INTERNATIONAL CO., LTD.</p>	<p>Designed</p>	<p>TITLE:</p> <p>CROSS SECTION (35)</p>	<p>SCALE</p>	<p>DRG. No.</p>
				<p>Checked</p>		<p>DATE</p>	<p>SHEET No.</p>
				<p>Approved</p>		<p>Mar. 2018</p>	<p>69</p>

CROSS SECTION (36)

No. 63+00

GH=3.98

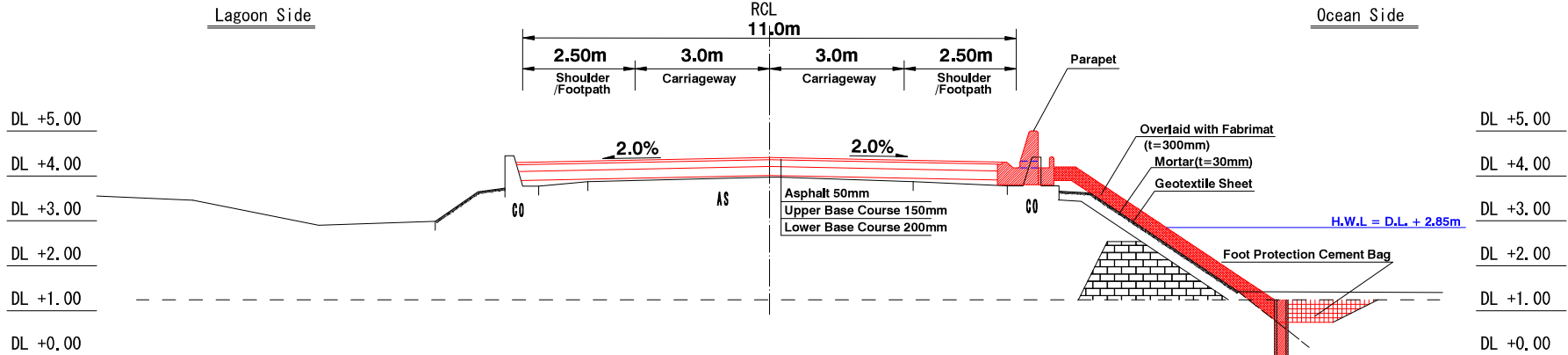
FH=4.32



No. 62+00

GH=3.97

FH=4.41



AP11-72



MINISTRY OF PUBLIC WORKS & UTILITIES
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THE PREPARATORY SURVEY ON
THE PROJECT FOR RECONSTRUCTION OF
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TO ADAPT CLIMATE CHANGE
IN KIRIBATI REPUBLIC



JAPAN INTERNATIONAL COOPERATION AGENCY

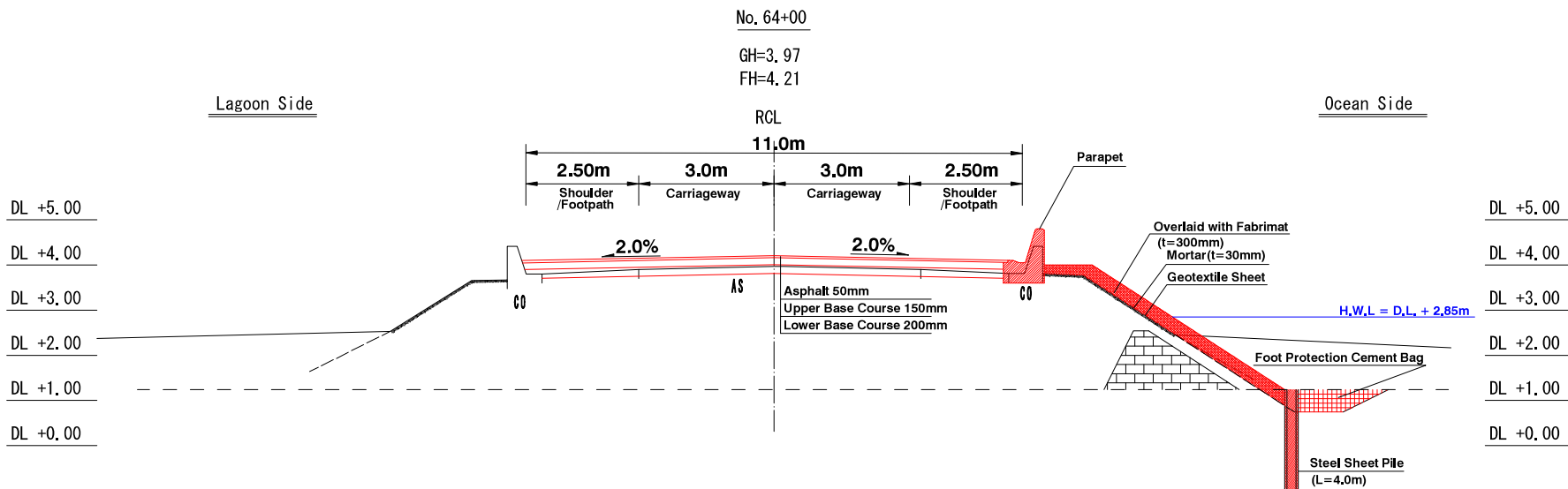
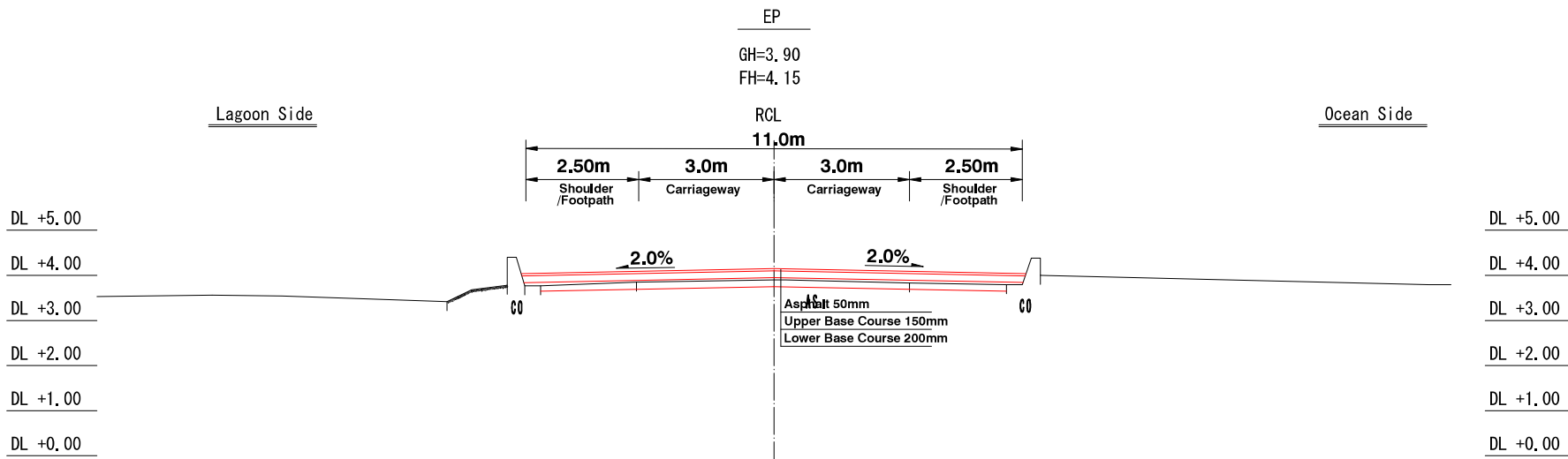
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
CROSS SECTION (36)

SCALE	DRG. No.
	CS-1-37
DATE	SHEET No.
Mar. 2016	70

CROSS SECTION (37)



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THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC



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CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

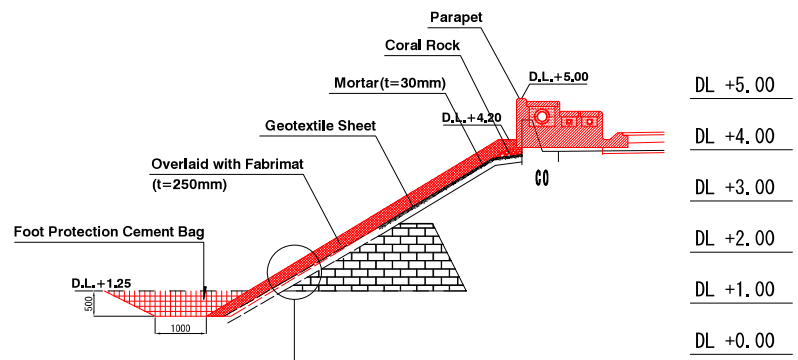
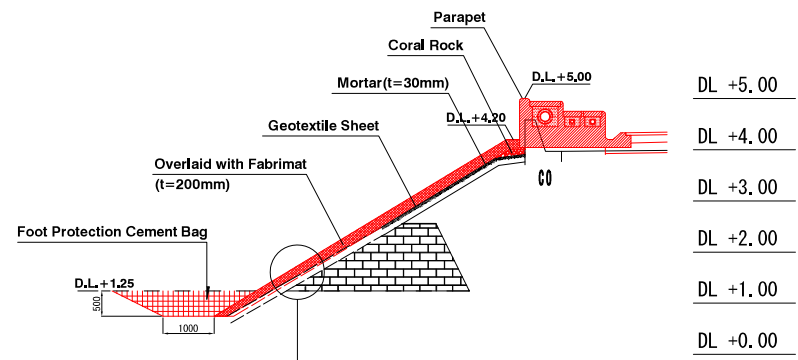
TITLE:
CROSS SECTION (37)

SCALE	DRG. No.
DATE	SHEET No.
Mar. 2018	71

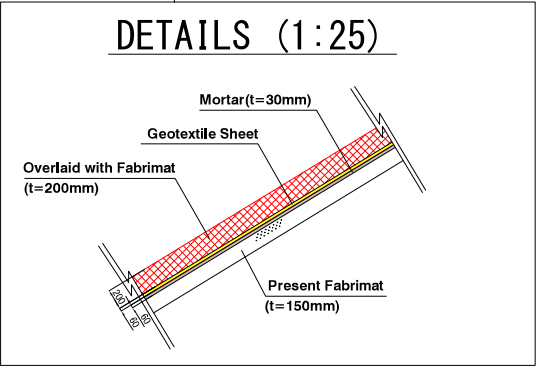
TYPICAL DRAWING OF REVETMENT STRENGTHENING (1)

Overlaid with Fabrimat (t=200mm)

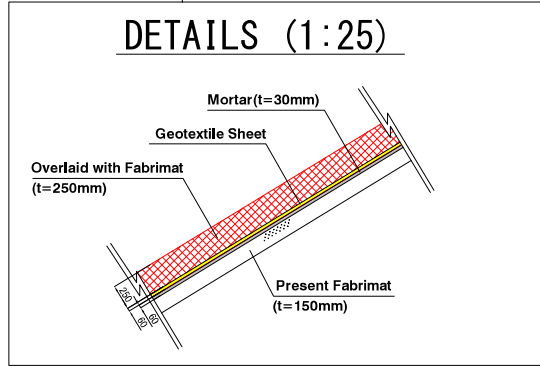
Overlaid with Fabrimat (t=250mm)



DETAILS (1:25)



DETAILS (1:25)



AP11-74



MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC



JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

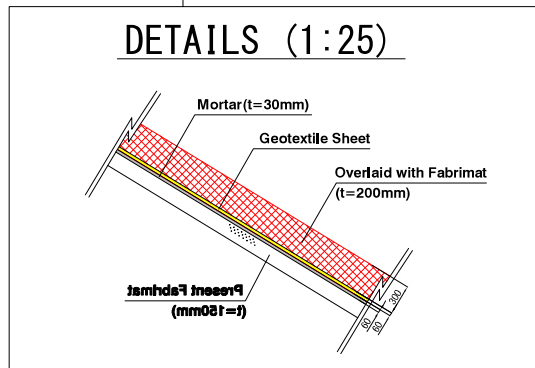
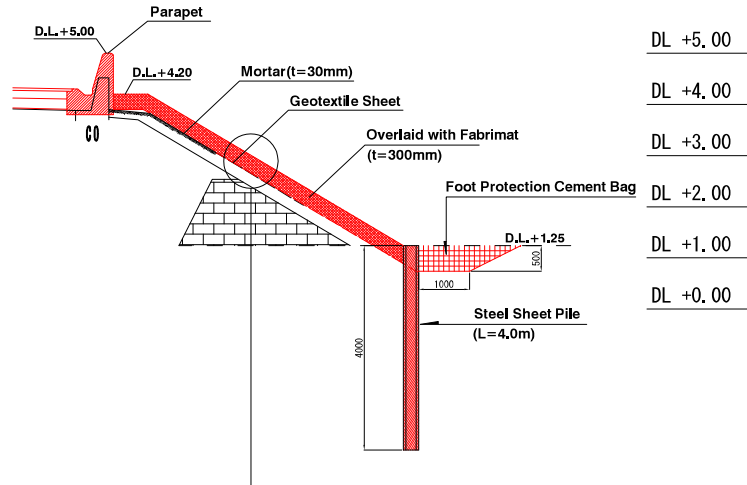
Designed
Checked
Approved

TITLE:
TYPICAL DRAWING OF REVETMENT STRENGTHENING (1)

SCALE	DRG. No.
1:50	TRS-1-2
DATE	SHEET No.
Mar. 2016	72

TYPICAL DRAWING OF REVETMENT STRENGTHENING (2)

Overlaid with Fabrimat (t=300mm)+Steel Sheet Pile



Foot Protection Cement Bags (1:25)

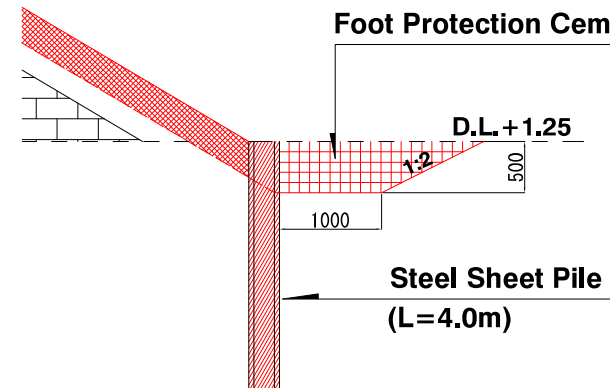
~Overlaid with Fabrimat (t=200mm, t=250mm)~

Foot Protection Cement Bag



~Overlaid with Fabrimat (t=300mm)+Steel Sheet Pile~

Foot Protection Cement Bag



AP11-75



MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)

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JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

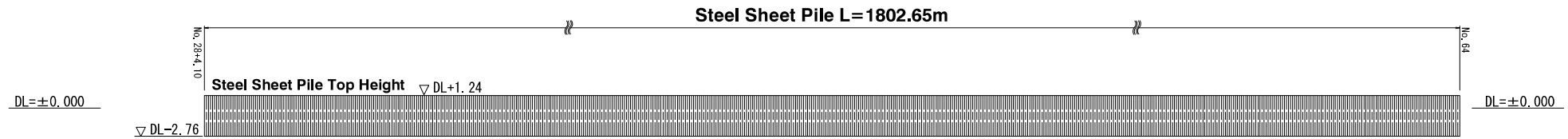
Designed
Checked
Approved

TITLE:
TYPICAL DRAWING OF REVETMENT STRENGTHENING (2)

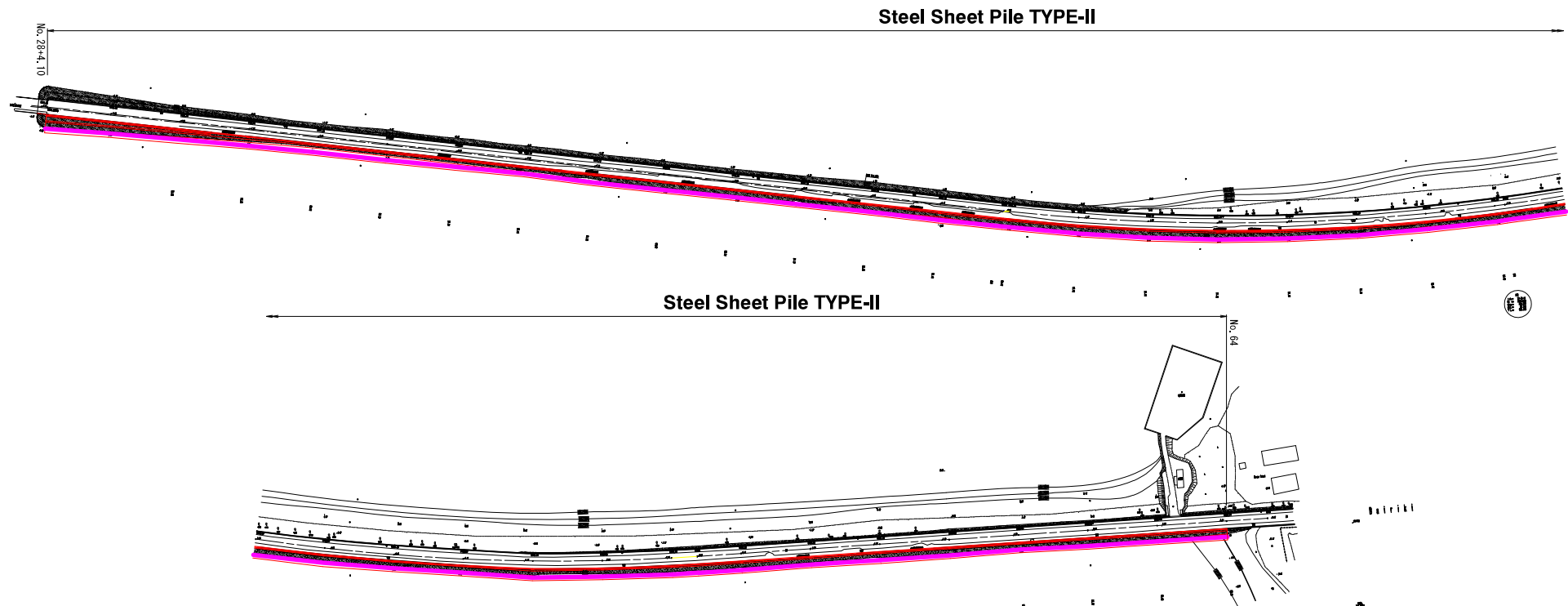
SCALE	DRG. No.
1:50	TRS-1-2
DATE	SHEET No.
Mar. 2018	73

TYPICAL DRAWING OF STEEL SHEET PILE

FRONT VIEW (No. 28+4.1~No. 64) L=1802.65m



PLAN



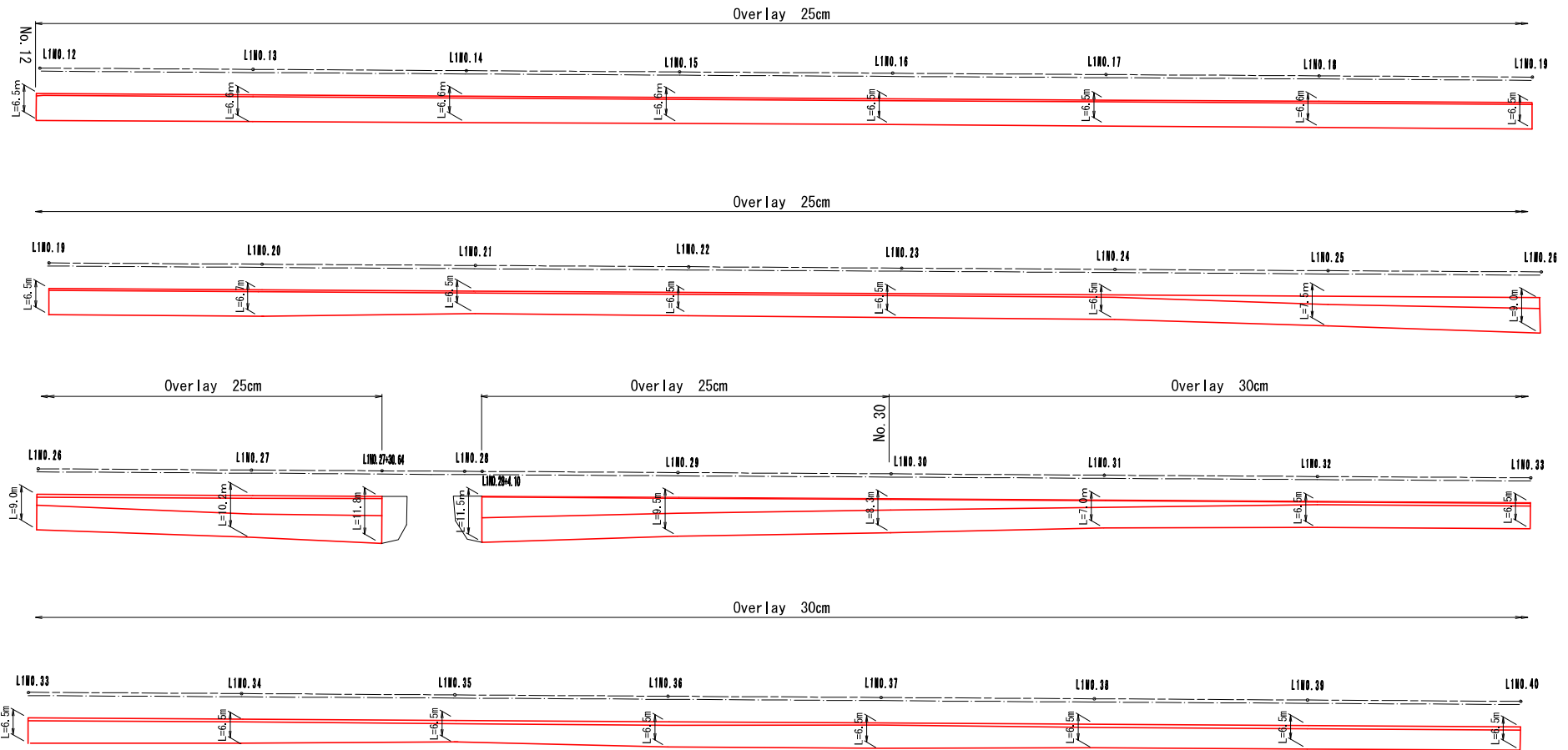
Steel Sheet Pile TYPE-II

AP11-76

 <p>MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)</p>	<p>Approved by</p> <p>Project Manager:</p>	<p>THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC</p>	 <p>JAPAN INTERNATIONAL COOPERATION AGENCY</p> <p>CTI ENGINEERING INTERNATIONAL CO., LTD.</p>	Designed		<p>TITLE:</p> <p>TYPICAL DRAWING OF STEEL SHEET PILE</p>	SCALE	DRG. No.	
					Checked			DATE	SHEET No.
					Approved			Mar. 2016	74

FABRIMAT DETAILS (1)

Ocean Side



AP11-77



MINISTRY OF PUBLIC WORKS & UTILITIES
(MPWU)

Approved by
Project Manager:

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JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

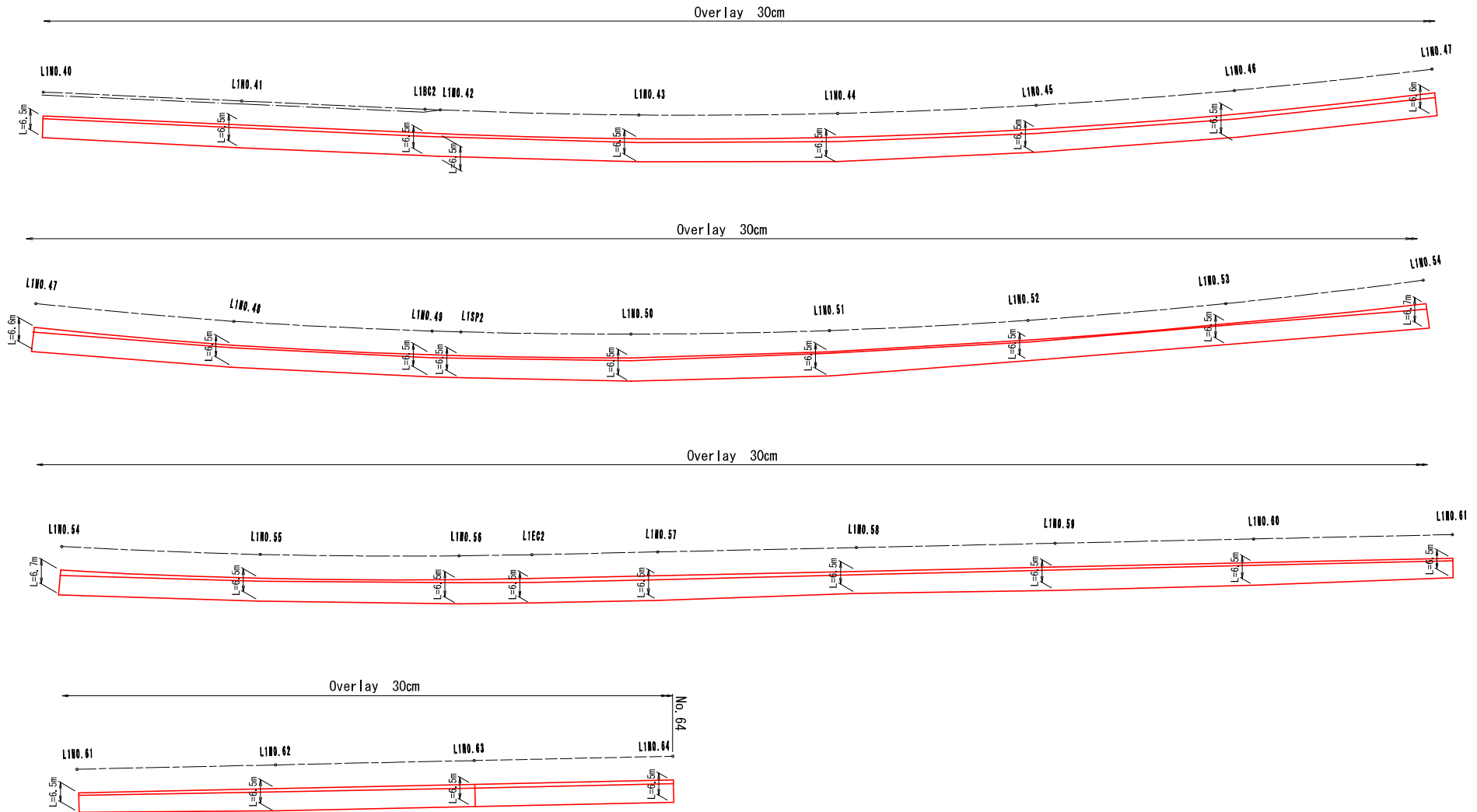
Designed
Checked
Approved

TITLE:
FABRIMAT DETAILS (1)

SCALE	DRG. No.
DATE	SHEET No.
Mar. 2018	75

FABRIMAT DETAILS (2)

Ocean Side



AP11-78



MINISTRY OF PUBLIC WORKS & UTILITIES
(MPWU)

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JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

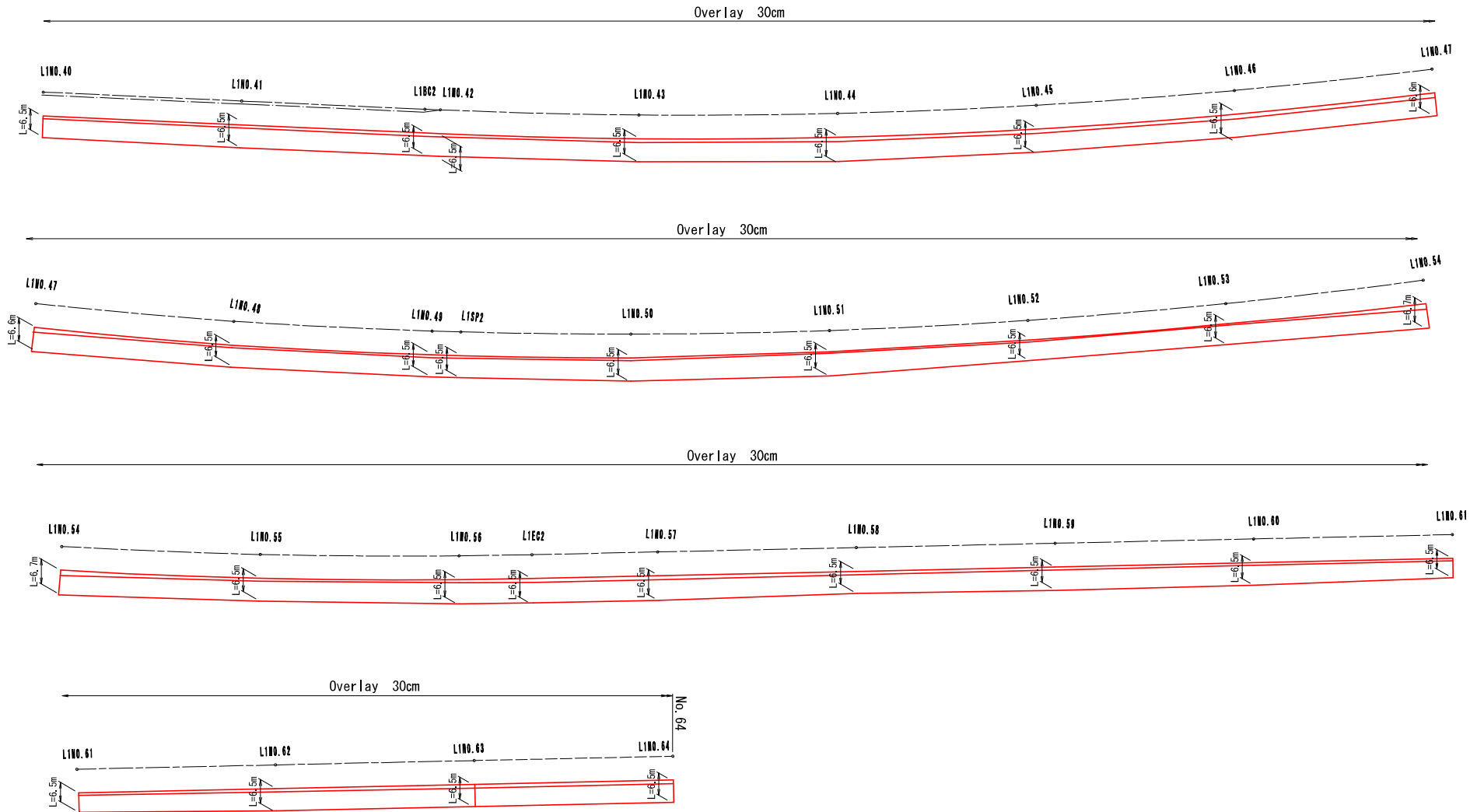
Designed
Checked
Approved

TITLE:
FABRIMAT DETAILS (2)

SCALE	DRG. No.
	FD-1-3
DATE	SHEET No.
Mar. 2018	76

FABRIMAT DETAILS (3)

Lagoon Side



AP11-79



MINISTRY OF PUBLIC WORKS & UTILITIES
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JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

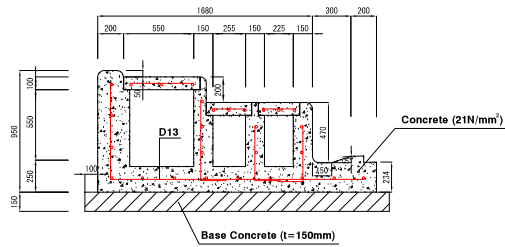
Designed
Checked
Approved

TITLE:
FABRIMAT DETAILS (3)

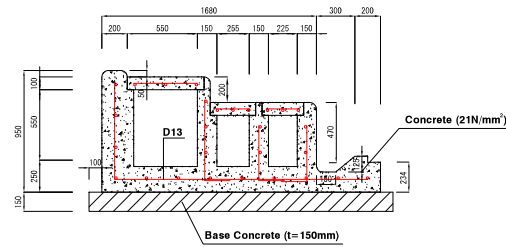
SCALE	DRG. No.
	FD-1-3
DATE	SHEET No.
Mar. 2018	77

PARAPET DETAILS (1) S=1:20

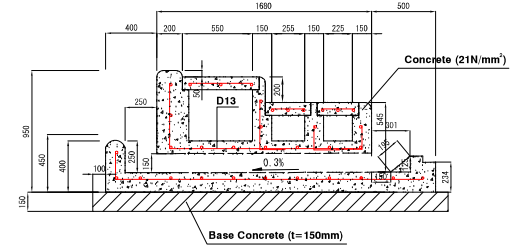
TYPE 1-1



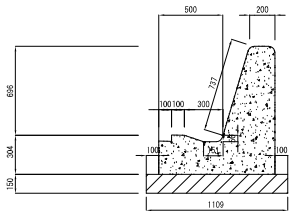
TYPE 1-2



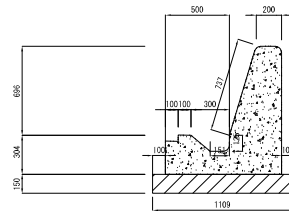
TYPE 1-3



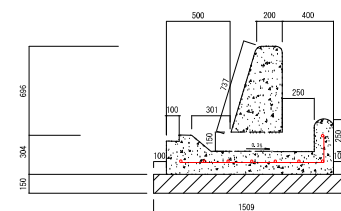
TYPE 2-1



TYPE 2-2



TYPE 2-3



AP11-80



MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)

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Project Manager:

THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC



JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

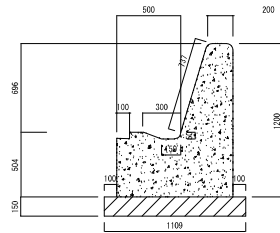
Designed
Checked
Approved

TITLE:
PARAPET DETAILS (1)

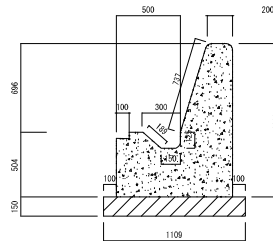
SCALE	DRG. No.
1:20	PD-1-2
DATE	SHEET No.
Mar. 2018	78

PARAPET DETAILS (2) S=1:20

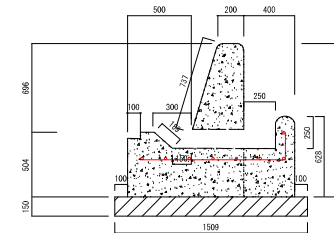
TYPE 3-1



TYPE 3-2



TYPE 3-3



AP11-81



MINISTRY OF PUBLIC WORKS & UTILITIES
(MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON
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NIPPON CAUSEWAY ON TARAWA
TO ADAPT CLIMATE CHANGE
IN KIRIBATI REPUBLIC



JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
PARAPET DETAILS (2)

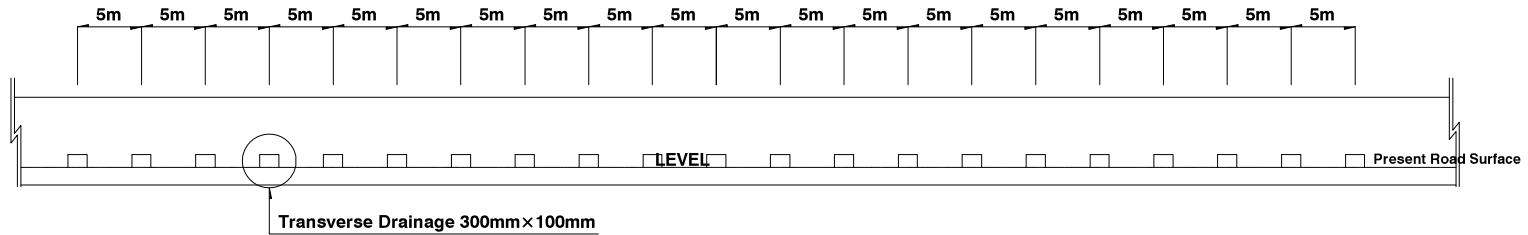
SCALE	DRG. No.
1:20	PD-1-2
DATE	SHEET No.
Mar. 2016	79

TRANSVERSE DRAINAGE DETAILS (1)

~Present Parapet Section~

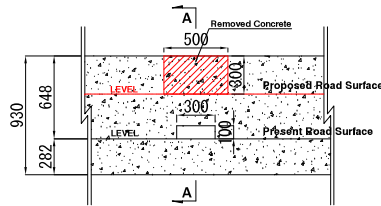


Present Transverse Drainage Overview

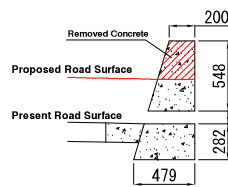


Transverse Drainage Details

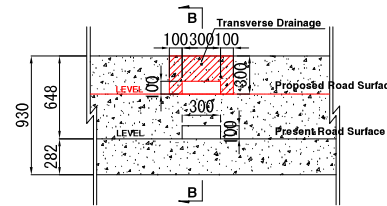
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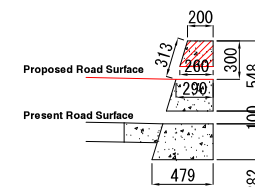
Cross Section A-A



Transverse Drainage Details



Cross Section B-B



AP11-82



MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC



JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

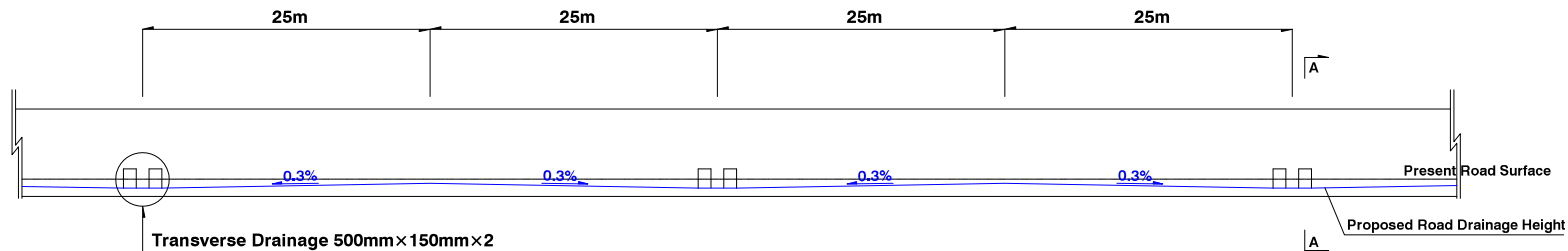
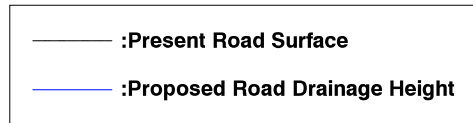
TITLE:
TYPICAL CROSS SECTION (1)

SCALE	DRG. No.
1:20	TDD-1~2
DATE	SHEET No.
Mar. 2016	80

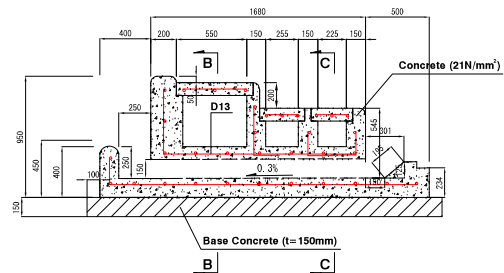
TRANSVERSE DRAINAGE DETAILS (2)

~Newly Parapet Section~

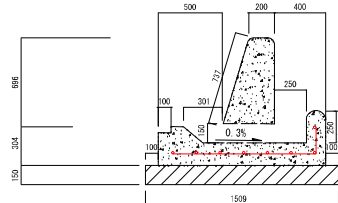
Present Transverse Drainage Overview



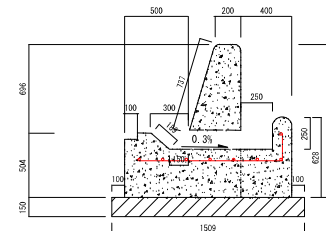
Cross Section A-A (TPYE-1)



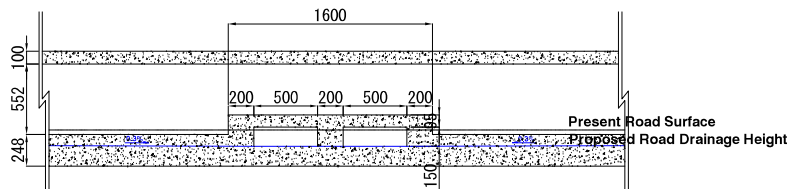
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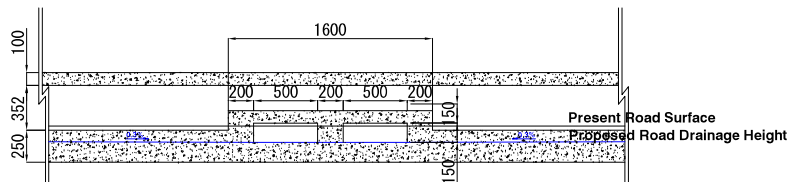
Cross Section A-A (TPYE-3)



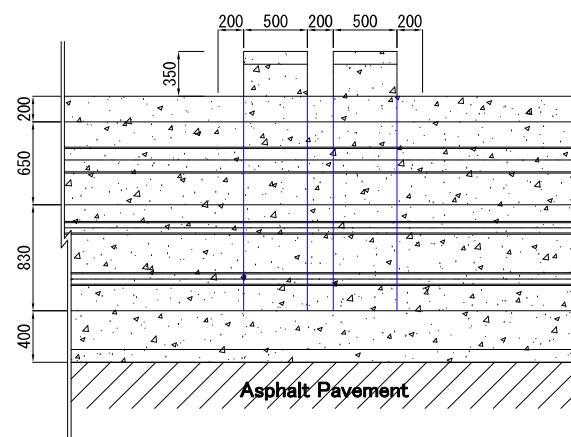
Cross Section E-B



Cross Section C-C



Plan (TYPE-3)



AP11-83



MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON
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NIPPON CAUSEWAY ON TARAWA
TO ADAPT CLIMATE CHANGE
IN KIRIBATI REPUBLIC



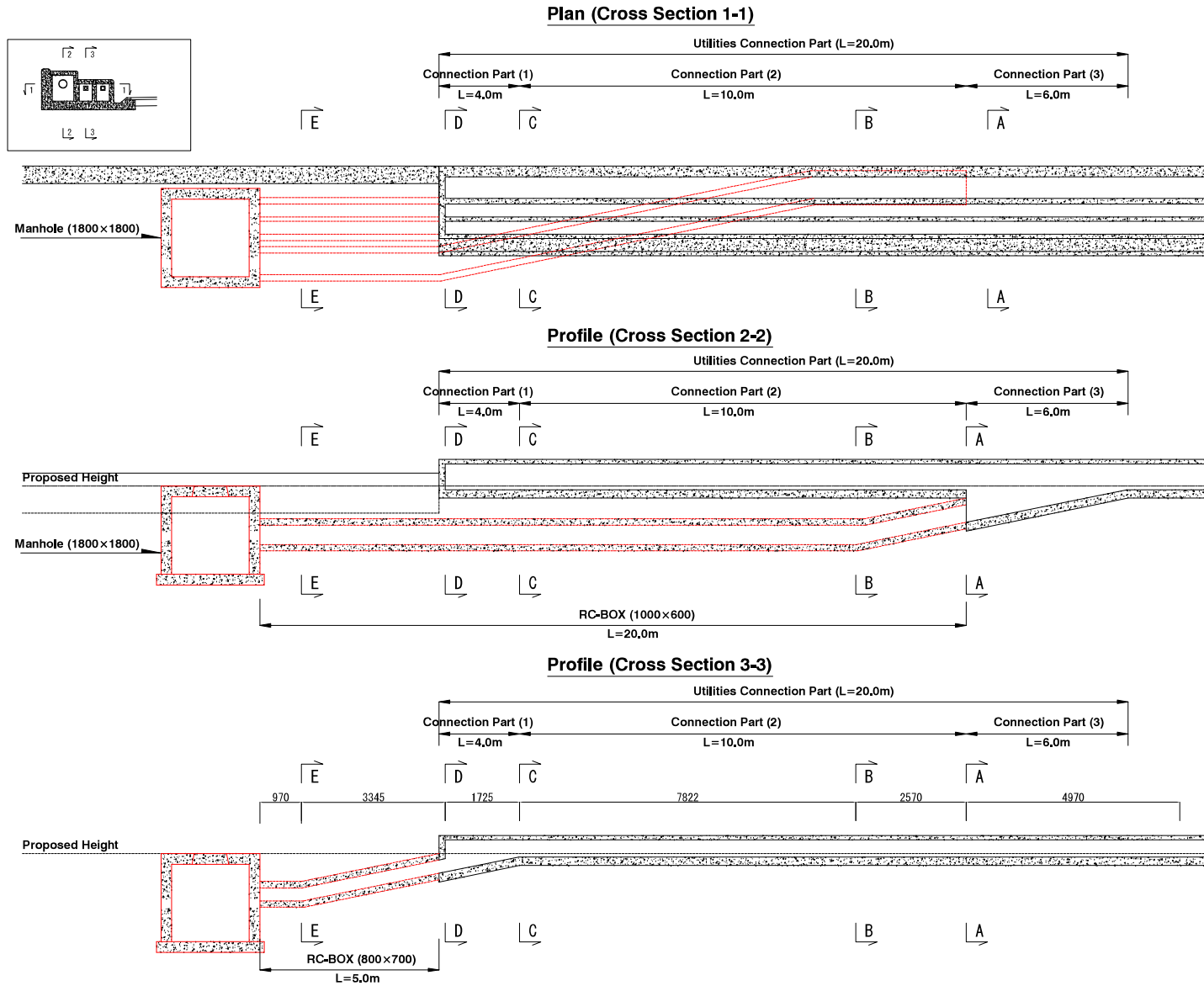
JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
TYPICAL CROSS SECTION (2)

SCALE	DRG. No.
1:20	TDD-1~2
DATE	SHEET No.
Mar. 2018	81

UTILITIES CONNECTION PART DETAILS (1)



AP11-84



MINISTRY OF PUBLIC WORKS & UTILITIES
(MPWU)

Approved by
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JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

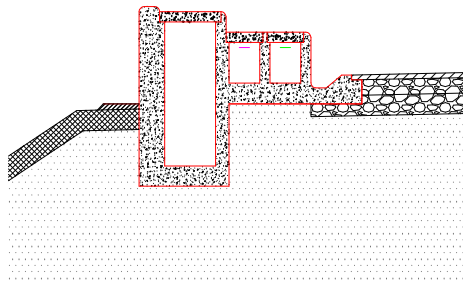
Designed
Checked
Approved

TITLE:
UTILITIES CONNECTION
PART DETAILS (1)

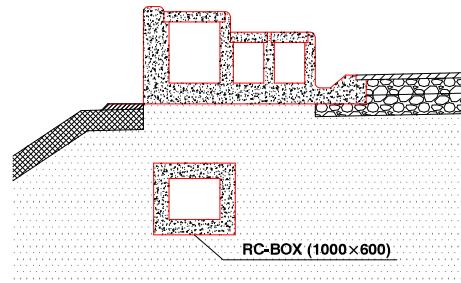
SCALE	DRG. No.
1:50	UCP-1~2
DATE	SHEET No.
Mar. 2016	82

UTILITIES CONNECTION PART DETAILS (2)

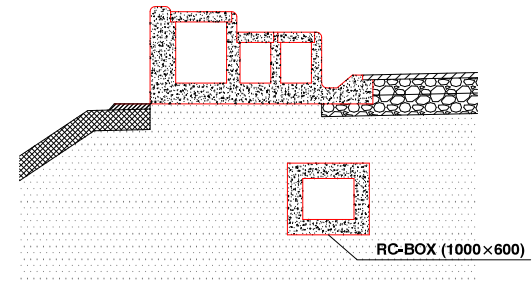
Cross Section A-A



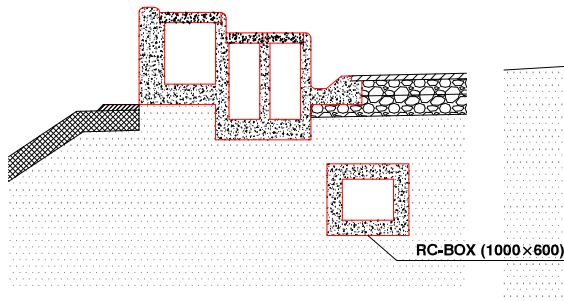
Cross Section B-B



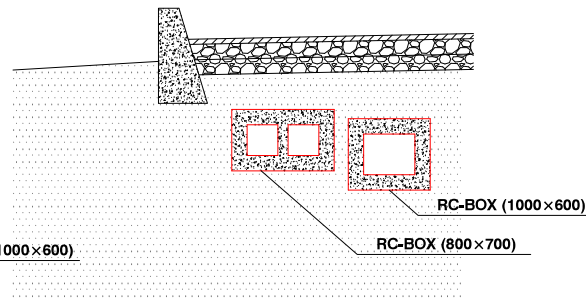
Cross Section C-C



Cross Section D-D



Cross Section E-E



AP11-85



MINISTRY OF PUBLIC WORKS & UTILITIES
(MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON
THE PROJECT FOR RECONSTRUCTION OF
NIPPON CAUSEWAY ON TARAWA
TO ADAPT CLIMATE CHANGE
IN KIRIBATI REPUBLIC



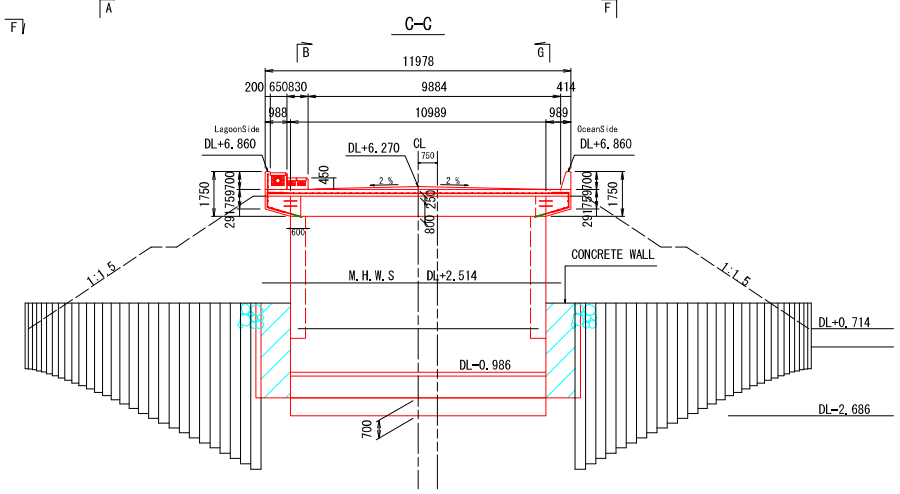
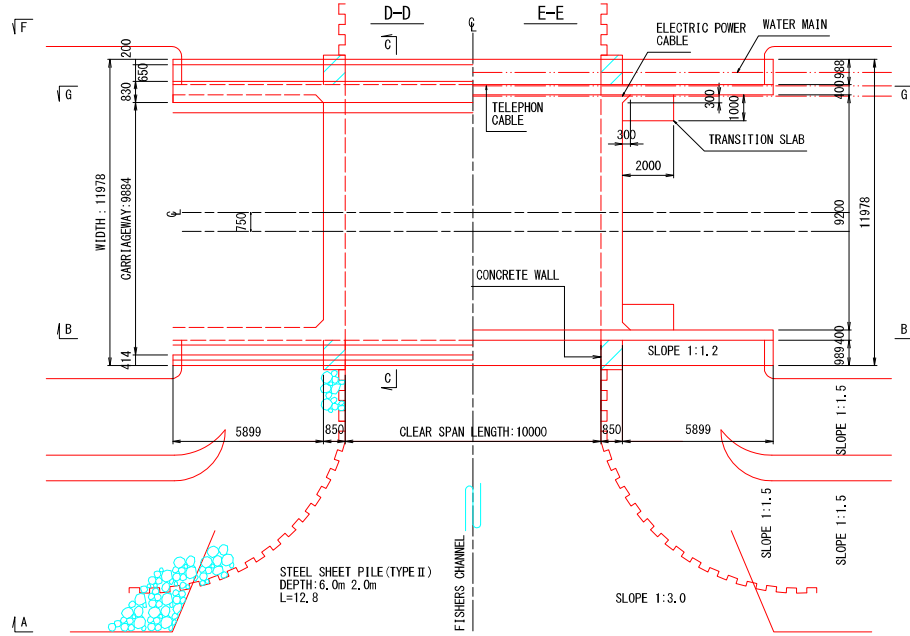
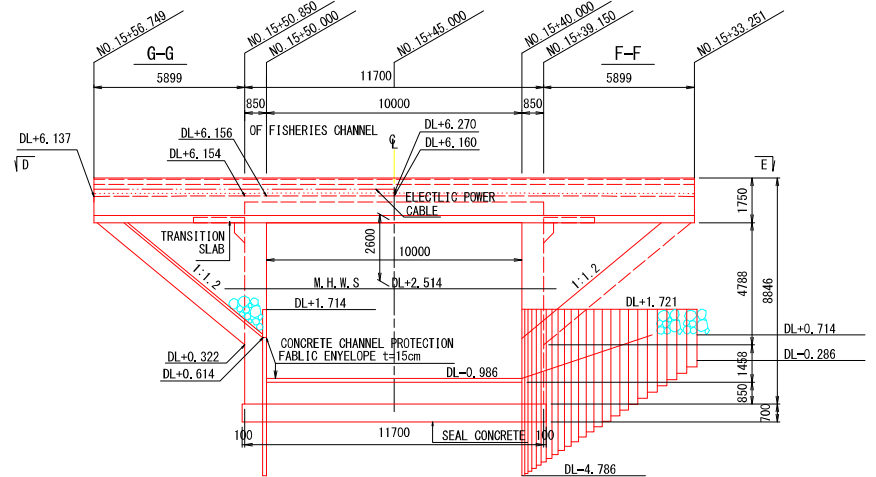
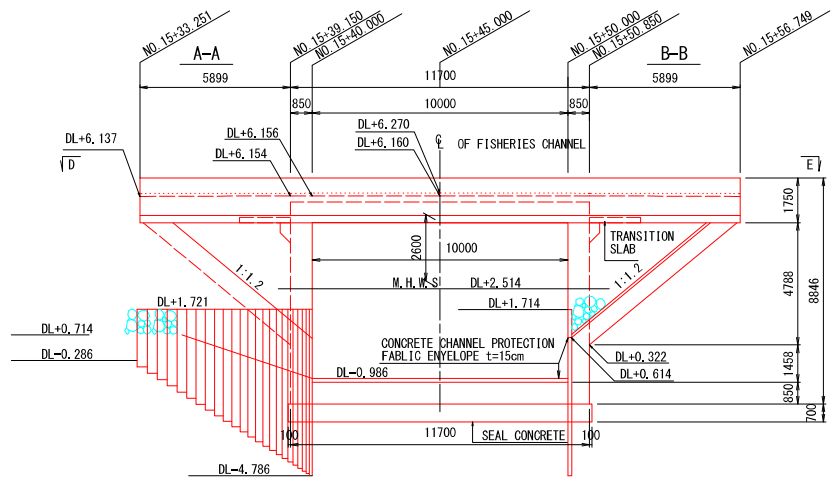
JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
UTILITIES CONNECTION
PART DETAILS (2)

SCALE	DRG. No.
1:25	UCP-1~2
DATE	SHEET No.
Mar. 2016	83

TYPICAL DRAWING OF BRIDGE STRENGTHENING



GENERAL NOTES

- UNLESS OTHERWISE SHOWN ALL DIMENSIONS ARE IN MILLIMETERS.
- CONCRETE SHALL BE:
 - ALL BLOC CONCRETE EXCEPT SEAL CONG. : (A) (225-240kg/cm³)
 - SEAL CONCRETE : (S) (225-180kg/cm³)
- ALL CORNERS OF CONCRETE SHALL BE PROVIDED WITH 2cm CHAMFER
- REINFORCING BARS SHALL BE S303, JIS R 5211.
- ALL RE-BAR SPACING REFER TO CENTER TO CENTER DISTANCE.
- NO NEEP HOLE SHALL BE PROVIDED.

LOADING SPECIFICATION

TL-20, CONFORMING TO 'THE STANDARD SPECIFICATION FOR HIGHWAY BRIDGES' ADOPTED BY JAPAN ROAD ASSOCIATION (JRA)

AP11-86



MINISTRY OF PUBLIC WORKS & UTILITIES (MPWU)

Approved by 10m
Project Manager:

THE PREPARATORY SURVEY ON THE PROJECT FOR RECONSTRUCTION OF NIPPON CAUSEWAY ON TARAWA TO ADAPT CLIMATE CHANGE IN KIRIBATI REPUBLIC



JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

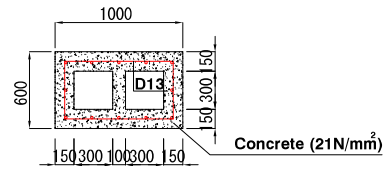
Designed
Checked
Approved

TITLE:
TYPICAL DRAWING OF BRIDGE STRENGTHENING

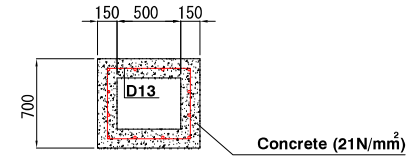
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DATE	SHEET No.
Mar. 2018	84

TYPICAL DRAWING OF STRUCTURES (1)

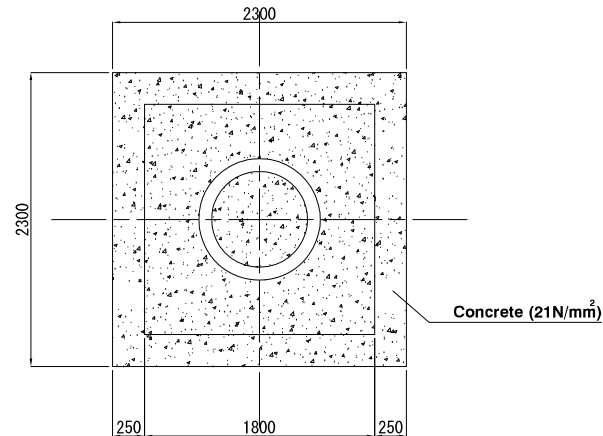
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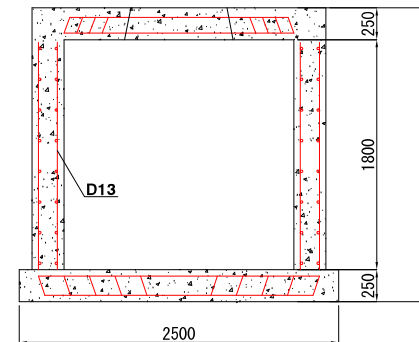
RC-BOX (800 × 700)



Manhole (1800 × 1800)



Plan



Cross Section

AP11-87



MINISTRY OF PUBLIC WORKS & UTILITIES
(MPWU)

Approved by
Project Manager:

THE PREPARATORY SURVEY ON
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NIPPON CAUSEWAY ON TARAWA
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IN KIRIBATI REPUBLIC



JAPAN INTERNATIONAL COOPERATION AGENCY
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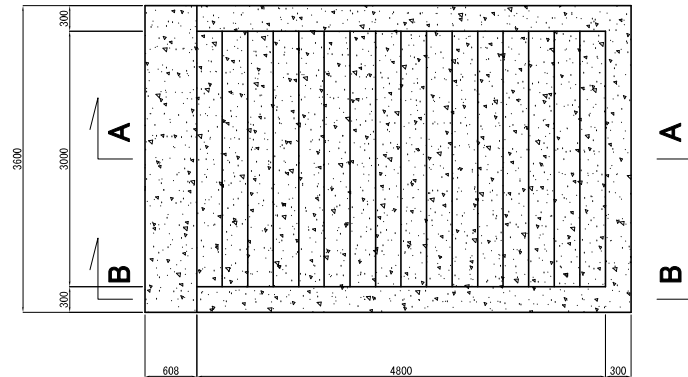
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TYPICAL DRAWING OF
STRUCTURES (1)

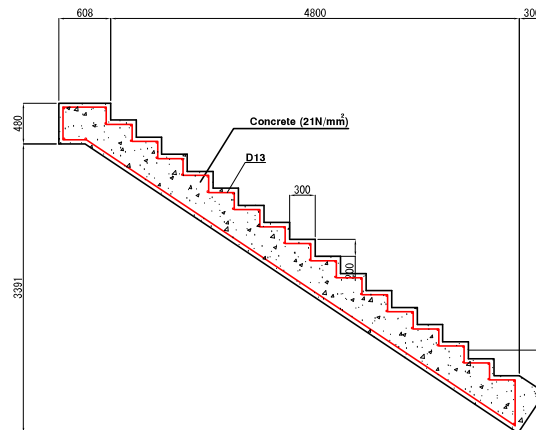
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DATE	SHEET No.
Mar. 2016	85

TYPICAL DRAWING OF STRUCTURES (2)

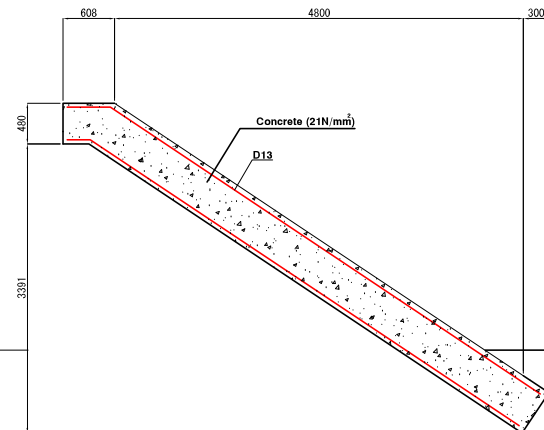
STAIR



Cross Section A-A



Cross Section B-B



AP11-88



MINISTRY OF PUBLIC WORKS & UTILITIES
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Approved by
Project Manager:

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JAPAN INTERNATIONAL COOPERATION AGENCY
CTI ENGINEERING INTERNATIONAL CO., LTD.

Designed
Checked
Approved

TITLE:
TYPICAL DRAWING OF
STRUCTURES (2)

SCALE	DRG. No.
1:30	TDS-1~2
DATE	SHEET No.
Mar. 2016	86