NIPPON KOEI CO.,LTD.

QUANTITY CALCULATION COVER SHEET

Project	Detailed Design on Port Reactivation Project in La Union Province	**Project Code**	JC1N004/2N001
Work Section Title	West Revetment	**Pay Item No. (BOQ)**	2E-010703
Quantity Item	Elas Tigh Board	**Unit**	~~No.~~ m^2

Calculation Procedure Applied

Elas Tigh Board will be used as a joint filter.
This arrangement is planned every 20 m.

References, Calculation Base and Revisions

Rev	Prepared by	Prepared Date	No. of Pages	Checked by	Checked Date	Reviewed by	Reviewed Date	Superseded by Calc No.
0	Karla García			Iinuma		Ando		
1								
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NIPPON KOEI CO.,LTD.

Project	Detailed Design on Port Reactivation Project in La Union Provi	Calc. File No.	
Section	West Revetment	Calc. Index No.	
Subject	Elas Tigh Board	Page No.	Rev.

References/

$$A = \frac{1}{2}(0.5 + 1.5) \times 2 = 2.0\ m^2$$

$$7 0.5 \div 2.0 = 3.5 \rightarrow 3$$

$$2.0 \times 3 = \boxed{6.0}\ m^2$$

Prepared by	Checked by

NIPPON KOEI CO.,LTD.

QUANTITY CALCULATION COVER SHEET

Project	Detailed Design on Port Reactivation Project in La Union Province	**Project Code**	JC1N004/2N001
Work Section Title	West Revetment	**Pay Item No. (BOQ)**	2E-01/0501
Quantity Item	Rubble stone (Break water)	**Unit**	~~No~~ m^3

Calculation Procedure Applied

Volume of rubble stone for break water was computed based on the drawing.

References, Calculation Base and Revisions

Rev	Prepared by	Prepared Date	No. of Pages	Checked by	Checked Date	Reviewed by	Reviewed Date	Superseded by Calc No.
0	Karla García			Iinuma		Ando		
1								
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NIPPON KOEI CO.,LTD.

Project	Detailed Design on Port Reactivation Project in La Union Provi	Calc. File No.	
Section	West Revetment	Calc. Index No.	
Subject	Rubble stone (Break water)	Page No.	Rev.

References/

$$A = \frac{1}{2}(5.0 + 26.0) \times 8.0 = 124\ m^2$$

$$V = 124 \times (58 + 22 + 8 + 8 + 5)$$

$$= 12524$$

$$\fallingdotseq \boxed{12600}\ m^3$$

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QUANTITY CALCULATION COVER SHEET

Project	Detailed Design on Port Reactivation Project in La Union Province	**Project Code**	JC1N004/2N001
Work Section Title	West Revetment	**Pay Item No. (BOQ)**	2E-010802
Quantity Item	Armor stone (Break water)	**Unit**	~~No~~ m^3

Calculation Procedure Applied

Volume of armor stone for break water was computed based on the drawing.

References, Calculation Base and Revisions

Rev	Prepared by	Prepared Date	No. of Pages	Checked by	Checked Date	Reviewed by	Reviewed Date	Superseded by Calc No.
0	Karla Garcia			Iinuma		Ando		
1								
2								
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NIPPON KOEI CO.,LTD.

Project	Detailed Design on Port Reactivation Project in La Union Provi	Calc. File No.	
Section	West Revetment	Calc. Index No.	
Subject	Armor stone (Break water)	Page No.	Rev.

References/

$A = 1.0 \times 170 = 170\ m^2$

$V = 170 \times (5) + 22 + 4 + 1/6 + 13 + 5 + 15)$

$= 2159$

$\simeq \boxed{2160}\ m^3$

Prepared by	Checked by

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QUANTITY CALCULATION COVER SHEET

Project	Detailed Design on Port Reactivation Project in La Union Province	**Project Code**	JC1N004/2N001
Work Section Title	East Revetment	**Pay Item No. (BOQ)**	2E-02010/
Quantity Item	Rubble Mound (lower)	**Unit**	m^3

Calculation Procedure Applied

1. Calculation of Areas of Sections (Excel)
2. Average of Areas of Sections (Excel)
3. Calculation of Volume : Average of Areas of Sections times distance between Sections (Excel)

References, Calculation Base and Revisions

See the item of offshore dumping of east revetment (2A-11).

Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
	by	Date		by	Date	by	Date	
0	Karla Garcia			M. Inoma		Mr. Ando		
1								
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Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	East Revetment	Calc. Index No.	
Subject	Rubble Mound (lower)	Page No.	Rev.

References/ Notes

harbor side 1766.57 m^3

sea side 21,095.32 m^3

total 22,861.89 m^3

≒ 22,900 m^3

Prepared by		Checked by	
	/ /200		/ /200

FN: Calculation_Sheet

○East Revetment

5. Lower Rubble Mound (harbor side)

Section No.	Area (m^2)	Average Area of 2 Sections (m^2)	Distance Between Sections (m)	Volume (m^3)
No.0	43.35			
		43.35	3.00	130.05
No.0+3.00	43.35			
		42.10	2.00	84.19
No.1	40.84			
		35.65	9.00	320.85
No.1+9.00	30.46			
		27.14	6.60	179.09
No.1+15.60	23.81			
		19.79	9.40	185.98
No.2	15.76			
		15.38	1.00	15.38
No.2+1.00	15.00			
		13.58	4.00	54.30
No.2+6.00	12.16			
		12.15	20.00	243.00
No.3	12.15			
		12.15	25.00	303.75
No.4	12.15			
		12.15	3.00	36.45
No.4+3.00	12.15			
		7.95	10.00	79.50
No.4+13.00	3.75			
		3.75	12.00	45.00
No.5	3.75			
		3.75	18.00	67.50
No.5+18.00	3.75			
		2.24	7.00	15.68
No.6	0.73			
		0.44	3.00	1.32
No.6+3.00	0.15			
		0.15	22.00	3.30
No.7	0.15			
		0.15	8.00	1.20
No.7+8.00	0.15			
		0.08	1.67	0.13
No.7+9.67	0.00			
Total			164.67	1,766.67

○East Revetment

6. Lower Rubble Mound (sea side)

Section No.	Area (m^2)	Average Area of 2 Sections (m^2)	Distance Between Sections (m)	Volume (m^3)
No.0-12.50	0.00			
		26.04	12.50	325.50
No.0'	52.08			
No.0	263.00			
		263.00	3.00	789.00
No.0+3.00	263.00			
		258.96	2.00	517.92
No.1	254.92			
		237.33	9.00	2,135.93
No.1+9.00	219.73			
		207.43	6.60	1,369.04
No.1+15.60	195.13			
		178.50	9.40	1,677.85
No.2	161.86			
		160.15	1.00	160.15
No.2+1.00	158.44			
		151.72	4.00	606.88
No.2+5.00	145.00			
		145.00	20.00	2,900.00
No.3	145.00			
		145.00	25.00	3,625.00
No.4	145.00			
		145.00	3.00	435.00
No.4+3.00	145.00			
		120.00	10.00	1,200.00
No.4+13.00	95.00			
		95.00	12.00	1,140.00
No.5	95.00			
		95.00	18.00	1,710.00
No.5+18.00	95.00			
		79.29	7.00	555.00
No.6	63.57			
		57.29	3.00	171.86
No.6+3.00	51.00			
		51.00	22.00	1,122.00
No.7	51.00			
		51.00	8.00	408.00
No.7+8.00	51.00			
		44.99	2.00	89.98
No.7+10.00	38.98			
		19.49	8.00	155.92
No.7+18.00	0.00			
Total			185.50	21,095.02

NIPPON KOEI CO.,LTD.

QUANTITY CALCULATION COVER SHEET

Project	Detailed Design on Port Reactivation Project in La Union Province	**Project Code**	JC1N004/2N001
Work Section Title	East Revetment	**Pay Item No. (BOQ)**	2E-020/02
Quantity Item	Rubble Mound (upper)	**Unit**	m^3

Calculation Procedure Applied

1. Calculation of Areas of Sections (Excel)
2. Average of Areas of Sections (Excel)
3. Calculation of Volume : Average of Areas of Sections times distance between Sections (Excel)

References, Calculation Base and Revisions

See the item of offshore dumping of east revetment (2A-11)

Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
	by	Date		by	Date	by	Date	
0	[signature]			Mr. Inuma		Mr. Ando		
1								
2								
3								

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	East Revetment	Calc. Index No.	
Subject	Rubble Mound (upper)	Page No.	Rev.

References/ Notes

harbor side 13,556.62 m^3

sea side 12,005.40 m^3

total 25,562.02 m^3

≒ 25,600 m^3

	Prepared by	Checked by
	/ /200	/ /200

FN: Calculation_Sheet

○East Revetment

7. Upper Rubble Mound (harbor side)

Section No.	Area (m^2)	Average Area of 2 Sections (m^2)	Distance Between Sections (m)	Volume (m^3)
No.0	53.90			
		53.90	5.00	269.50
No.1	53.90			
		53.90	25.00	1,347.50
No.2	53.90			
		53.90	25.00	1,347.50
No.3	53.90			
		53.90	25.00	1,347.50
No.4	53.90			
		53.90	25.00	1,347.50
No.5	53.90			
		53.90	25.00	1,347.50
No.6	53.90			
		53.90	25.00	1,347.50
No.7	53.90			
		53.90	8.00	431.20
No.7+8.00	53.90			
		55.10	2.00	110.20
No.7+10.00	56.30			
		61.35	8.00	490.80
No.7+18.00	66.40			
		66.40	7.00	464.80
No.8	66.40			
		66.40	25.00	1,660.00
No.9	66.40			
		66.40	25.00	1,660.00
No.10	66.40			
		66.40	1.00	66.40
No.10+1.00	66.40			
		33.20	9.60	318.72
No.10+10.60	0.00			
Total			240.60	13,556.62

○East Revetment

8. Upper Rubble Mound (sea side)

Section No.	Area (m^2)	Average Area of 2 Sections (m^2)	Distance Between Sections (m)	Volume (m^3)
No.0	47.25			
		47.25	5.00	236.25
No.1	47.25			
		47.25	25.00	1,181.25
No.2	47.25			
		47.25	25.00	1,181.25
No.3	47.25			
		47.25	25.00	1,181.25
No.4	47.25			
		47.25	25.00	1,181.25
No.5	47.25			
		47.25	25.00	1,181.25
No.6	47.25			
		47.25	25.00	1,181.25
No.7	47.25			
		47.25	8.00	378.00
No.7+8.00	47.25			
		48.47	2.00	96.93
No.7+10.00	49.68			
		54.84	8.00	438.72
No.7+18.00	60.00			
		60.00	7.00	420.00
No.8	60.00			
		60.00	25.00	1,500.00
No.9	60.00			
		60.00	25.00	1,500.00
No.10	60.00			
		60.00	1.00	60.00
No.10+1.00	60.00			
		30.00	9.60	288.00
No.10+10.60	0.00			
Total			240.60	12,005.40

NIPPON KOEI CO.,LTD.

QUANTITY CALCULATION COVER SHEET

Project	Detailed Design on Port Reactivation Project in La Union Province	**Project Code**	JC1N004/2N001
Work Section Title	East Revetment	**Pay Item No. (BOQ)**	2E-020/03
Quantity Item	Leveling of Rubble Mound	**Unit**	m^2

Calculation Procedure Applied

1. Calculation of Lengths of Sections (Excel)
2. Average of Lengths of Sections (Excel)
3. Calculation of Area : Average of Lengths of Sections times distance between Sections (Excel)

References, Calculation Base and Revisions

See the item of offshore dumping of east revetment (2A-11)

Rev	Prepared by	Prepared Date	No. of Pages	Checked by	Checked Date	Reviewed by	Reviewed Date	Superseded by Calc No.
0	Karla Garcia			H. Tsuma		Mr. Ando		
1								
2								
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Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	East Revetment	Calc. Index No.	
Subject	Leveling of Rubble Mound	Page No.	Rev.

References/ Notes

Final 924.0 m^2

Rough 11,708.11 m^2

total 12,632.40 m^2

$\simeq$ 12,700.0 m^2

		Prepared by		Checked by	
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○East Revetment

9. Final Trimming of Rubble Mound

Section No.	Length (m)	Average Length of 2 Sections (m)	Distance Between Sections (m)	Area (m^2)
No.0	4.00			
		4.00	5.00	20.00
No.1	4.00			
		4.00	25.00	100.00
No.2	4.00			
		4.00	25.00	100.00
No.3	4.00			
		4.00	25.00	100.00
No.4	4.00			
		4.00	25.00	100.00
No.5	4.00			
		4.00	25.00	100.00
No.6	4.00			
		4.00	25.00	100.00
No.7	4.00			
		4.00	25.00	100.00
No.8	4.00			
		4.00	25.00	100.00
No.9	4.00			
		4.00	25.00	100.00
No.10	4.00			
		4.00	1.00	4.00
No.10+1.00	4.00			
Total			*231.00*	*924.00*

○East Revetment

10. Rough Trimming of Rubble Mound

Section No.	Length (m)	Average Length of 2 Sections (m)	Distance Between Sections (m)	Area (m^2)
No.0-12.50	0.00			
		7.51	12.50	93.88
No.0'	15.02			
No.0	74.57			
		74.57	3.00	223.71
No.0+3.00	74.57			
		74.15	2.00	148.29
No.1	73.72			
		71.83	9.00	646.43
No.1+9.00	69.93			
		68.55	6.60	452.40
No.1+15.60	67.16			
		65.19	9.40	612.74
No.2	63.21			
		63.00	1.00	63.00
No.2+1.00	62.79			
		61.95	4.00	247.78
No.2+5.00	61.10			
		61.10	20.00	1,222.00
No.3	61.10			
		61.10	25.00	1,527.50
No.4	61.10			
		61.10	3.00	183.30
No.4+3.00	61.10			
		57.74	10.00	577.40
No.4+13.00	54.38			
		54.38	12.00	652.56
No.5	54.38			
		54.38	18.00	978.84
No.5+18.00	54.38			
		51.53	7.00	360.68
No.6	48.67			
		48.16	3.00	144.47
No.6+3.00	47.64			
		47.64	22.00	1,048.08
No.7	47.64			
		47.64	8.00	381.12
No.7+8.00	47.64			
		46.98	2.00	93.95
No.7+10.00	46.31			
		37.12	8.00	296.92
No.7+18.00	27.92			
		27.92	7.00	195.44
No.8	27.92			
		27.92	25.00	698.00
No.9	27.92			
		27.92	25.00	698.00
No.10	27.92			
		27.92	1.00	27.92
No.10+1.00	27.92			
		13.96	9.60	134.02
No.10+10.60	0.00			
Total			253.10	11,708.40

NIPPON KOEI CO.,LTD.

QUANTITY CALCULATION COVER SHEET

Project	Detailed Design on Port Reactivation Project in La Union Province	**Project Code**	JC1N004/2N001
Work Section Title	East Revetment	**Pay Item No. (BOQ)**	2E-020104
Quantity Item	Geotextile Sheet	**Unit**	m^2

Calculation Procedure Applied

1. Calculation of Lengths of Sections
2. Average of Lengths of Sections.
3. Calculation of Volume : Average of Lengths of Sections times distance between Sections (Excel)

References, Calculation Base and Revisions

See the item of offshore dumping of east revetment. (2A-11)

Rev	Prepared by	Prepared Date	No. of Pages	Checked by	Checked Date	Reviewed by	Reviewed Date	Superseded by Calc No.
0	Kola Garcia			Mr. Inuma		Mr. Ando		
1								
2								
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○East Revetment

13. Filter Fabric

Section No.	Length (m)	Average Length of 2 Sections (m)	Distance Between Sections (m)	Area (m^2)
No.0	48.51			
		48.51	3.00	145.53
No.0+3.00	48.51			
		48.32	2.00	96.63
No.1	48.12			
		47.24	9.00	425.16
No.1+9.00	46.36			
		45.72	6.60	301.75
No.1+15.60	45.08			
		44.16	9.40	415.10
No.2	43.24			
		43.15	1.00	43.15
No.2+1.00	43.05			
		42.66	4.00	170.62
No.2+5.00	42.26			
		42.26	20.00	845.20
No.3	42.26			
		42.26	25.00	1,056.50
No.4	42.26			
		42.26	3.00	126.78
No.4+3.00	42.26			
		40.70	10.00	407.00
No.4+13.00	39.14			
		39.14	12.00	469.68
No.5	39.14			
		39.14	18.00	704.52
No.5+18.00	39.14			
		38.05	7.00	266.32
No.6	36.95			
		36.49	3.00	109.46
No.6+3.00	36.02			
		36.02	22.00	792.44
No.7	36.02			
		36.02	8.00	288.16
No.7+8.00	36.02			
		35.55	2.00	71.10
No.7+10.00	35.08			
		25.54	8.00	204.32
No.7+18.00	16.00			
		16.00	7.00	112.00
No.8	16.00			
		16.00	25.00	400.00
No.9	16.00			
		16.00	25.00	400.00
No.10	16.00			
		15.50	1.00	15.50
No.10+1.00	15.00			
		7.50	9.60	72.00
No.10+10.60	0.00			
Total			240.60	7,938.91

≒ 7940 ㎡

NIPPON KOEI CO.,LTD.

QUANTITY CALCULATION COVER SHEET

Project	Detailed Design on Port Reactivation Project in La Union Province	**Project Code**	JC1N004/2N001
Work Section Title	East Revetment	**Pay Item No. (BOQ)**	2E-020201
Quantity Item	Armor Stone	**Unit**	m^3

Calculation Procedure Applied

1. Calculation of Areas of Sections (Excel)
2. Average of Areas of Sections (Excel)
3. Calculation of Volume : Average of Areas of Sections times distance between Sections (Excel)

References, Calculation Base and Revisions

See the item of offshore dumping of east revetment (2A-11).

Rev	Prepared by	Prepared Date	No. of Pages	Checked by	Checked Date	Reviewed by	Reviewed Date	Superseded by Calc No.
0	Karla Garcia			Mr. Inuma		Mr. Ando		
1								
2								
3								

○East Revetment

11. Armor Stone

Section No.	Area (m^2)	Average Area of 2 Sections (m^2)	Distance Between Sections (m)	Volume (m^3)
No.0-12.50	0.00			
		8.06	12.50	100.69
No.0'	16.11			
No.0	39.00			
		39.00	3.00	117.00
No.0+3.00	39.00			
		38.78	2.00	77.55
No.1	38.55			
		37.54	9.00	337.82
No.1+9.00	36.52			
		35.78	6.60	236.15
No.1+15.60	35.04			
		33.98	9.40	319.41
No.2	32.92			
		32.81	1.00	32.81
No.2+1.00	32.69			
		32.24	4.00	128.96
No.2+5.00	31.79			
		31.79	20.00	635.80
No.3	31.79			
		31.79	25.00	794.75
No.4	31.79			
		31.79	3.00	95.37
No.4+3.00	31.79			
		29.99	10.00	299.90
No.4+13.00	28.19			
		28.19	12.00	338.28
No.5	28.19			
		28.19	18.00	507.42
No.5+18.00	28.19			
		26.93	7.00	188.48
No.6	25.66			
		25.12	3.00	75.36
No.6+3.00	24.58			
		24.58	22.00	540.76
No.7	24.58			
		24.58	8.00	196.64
No.7+8.00	24.58			
		24.58	2.00	49.16
No.7+10.00	24.58			
		20.78	8.00	166.24
No.7+18.00	16.98			
		16.98	7.00	118.86
No.8	16.98			
		16.98	25.00	424.50
No.9	16.98			
		16.98	25.00	424.50
No.10	16.98			
		15.70	1.00	15.70
No.10+1.00	14.42			
		7.21	9.60	69.22
No.10+10.60	0.00			
Total			253.10	6,291.31

≒ 6300 m^3

NIPPON KOEI CO.,LTD.

QUANTITY CALCULATION COVER SHEET

Project	Detailed Design on Port Reactivation Project in La Union Province	**Project Code**	JC1N004/2N001
Work Section Title	East Revetment	**Pay Item No. (BOQ)**	2E-020202
Quantity Item	Leveling of Armor Stone	**Unit**	m^2

Calculation Procedure Applied

1. Calculation of Lengths of Sections (Excel)
2. Average of Lengths of Sections (Excel)
3. Calculation of Area : Average of Lengths of Sections times distance between Sections (Excel)

References. Calculation Base and Revisions

See the item of offshore dumping of east revetment (2A – 11).

Rev	Prepared by	Prepared Date	No. of Pages	Checked by	Checked Date	Reviewed by	Reviewed Date	Superseded by Calc No.
0	Kenji Gondo			Mr. Izuma		Mr. Ando		
1								
2								
3								

○East Revetment

12. Trimming of Armor Stone

Section No.	Length (m)	Average Length of 2 Sections (m)	Distance Between Sections (m)	Area (m^2)
No.0-12.50	0.00			
		8.60	12.50	107.44
No.0'	17.19			
No.0	40.06			
		40.06	3.00	120.18
No.0+3.00	40.06			
		39.83	2.00	79.66
No.1	39.60			
		38.59	9.00	347.31
No.1+9.00	37.58			
		36.84	6.60	243.11
No.1+15.60	36.09			
		35.03	9.40	329.28
No.2	33.97			
		33.86	1.00	33.86
No.2+1.00	33.75			
		33.30	4.00	133.18
No.2+5.00	32.84			
		32.84	20.00	656.80
No.3	32.84			
		32.84	25.00	821.00
No.4	32.84			
		32.84	3.00	98.52
No.4+3.00	32.84			
		31.04	10.00	310.40
No.4+13.00	29.24			
		29.24	12.00	350.88
No.5	29.24			
		29.24	18.00	526.32
No.5+18.00	29.24			
		27.98	7.00	195.86
No.6	26.72			
		26.18	3.00	78.53
No.6+3.00	25.63			
		25.63	22.00	563.86
No.7	25.63			
		25.63	8.00	205.04
No.7+8.00	25.63			
		25.27	2.00	50.54
No.7+10.00	24.91			
		21.47	8.00	171.76
No.7+18.00	18.03			
		18.03	7.00	126.21
No.8	18.03			
		18.03	25.00	450.75
No.9	18.03			
		18.03	25.00	450.75
No.10	18.03			
		17.13	1.00	17.13
No.10+1.00	16.23			
		8.12	9.60	77.90
No.10+10.60	0.00			
Total			*253.10*	*6,546.27*

≒ 6550 ㎡

NIPPON KOEI CO.,LTD.

QUANTITY CALCULATION COVER SHEET

Project	Detailed Design on Port Reactivation Project in La Union Province	**Project Code**	JC1N004/2N001
Work Section Title	East Revetment	**Pay Item No. (BOQ)**	2E-020301
Quantity Item	Concrete Wall	**Unit**	m^3

Calculation Procedure Applied

Length of East Revetment is 250 m. But this includes No.29 Caisson, which Length is 20m. So, actual Length of East Revetment is 230 m. Concrete volume is calculated as cross section multiplied by Length.

References, Calculation Base and Revisions

See the item of offshore dumping of east revetment (2A-11)

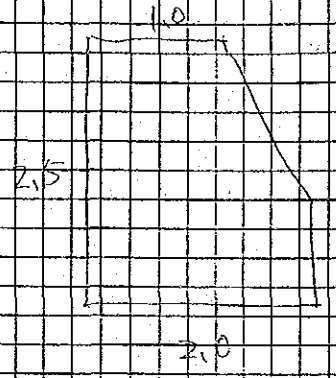
Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
	by	Date		by	Date	by	Date	
0	Kaila Garcia			Mr. Inoma		Mr. Ando		
1								
2								
3								

FN : Calculation_Cover_Sheet_020504_seg cover

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	Concrete Wall	Calc. Index No.	
Subject	Concrete Volume	Page No.	Rev.

References/ Notes

Cross Section



$A = 2.0 \times 2.5 - 1.5 \times 1.0 \div 2$

$= 4.25$

$L = 230\ m$

$V = 4.25 \times 230 = 977.5$

$\fallingdotseq \boxed{980\ m^3}$

	Prepared by		Checked by	
		/ /200		/ /200

FN: Calculation_Sheet

NIPPON KOEI CO.,LTD.

QUANTITY CALCULATION COVER SHEET

Project	Detailed Design on Port Reactivation Project in La Union Province	**Project Code**	JC1N004/2N001
Work Section Title	East Revetment	**Pay Item No. (BOQ)**	2E-020302
Quantity Item	Form of Concrete Wall	**Unit**	m^2

Calculation Procedure Applied

Total area is calculated as unit area multiplied by length, 230 m

References, Calculation Base and Revisions

See the item of offshore dumping of east revetment (2A-11).

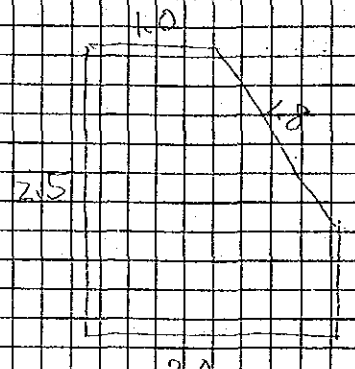
Rev	Prepared by	Prepared Date	No. of Pages	Checked by	Checked Date	Reviewed by	Reviewed Date	Superseded by Calc No.
0	Karla Goda			Mr. Inuma		Mr. Ando		
1								
2								
3								

NIPPON KOEI CO.,LTD.

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	Concrete Wall	Calc. Index No.	
Subject	Form of Concrete Wall	Page No.	Rev.

References/ Notes

Cross Section



$$A = (2.5 + 1.0 + 1.8) \times 2.30$$

$$= 12.19$$

$$\simeq 12.20 \text{ m}^2$$

	Prepared by		Checked by	
		/ /200		/ /200

FN: Calculation_Sheet

NIPPON KOEI CO.,LTD.

QUANTITY CALCULATION COVER SHEET

Project	Detailed Design on Port Reactivation Project in La Union Province	**Project Code**	JC1N004/2N001
Work Section Title	East Revetment	**Pay Item No. (BOQ)**	2E-020303
Quantity Item	Elas Tigh Board	**Unit**	m^2

Calculation Procedure Applied

Elas Tigh Board is used in Construction Joint, every 20m.

References, Calculation Base and Revisions

See the item of offshore dumping of east revetment. (2A-11)

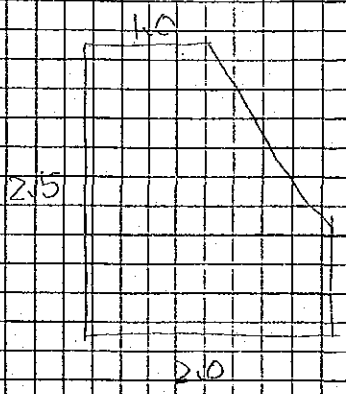
Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
	by	Date		by	Date	by	Date	
0	Karla Garcia			Mr. Inuma		Mr. Ando		
1								
2								
3								

FN : Calculation_Cover_Sheet_020504_seg cover

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	Fast Revetment	Calc. Index No.	
Subject	Elas Tigh Board	Page No.	Rev.

References/ Notes

Cross Section



$A = 2.0 \times 2.5 - 1.5 \times 1.0 \div 2$

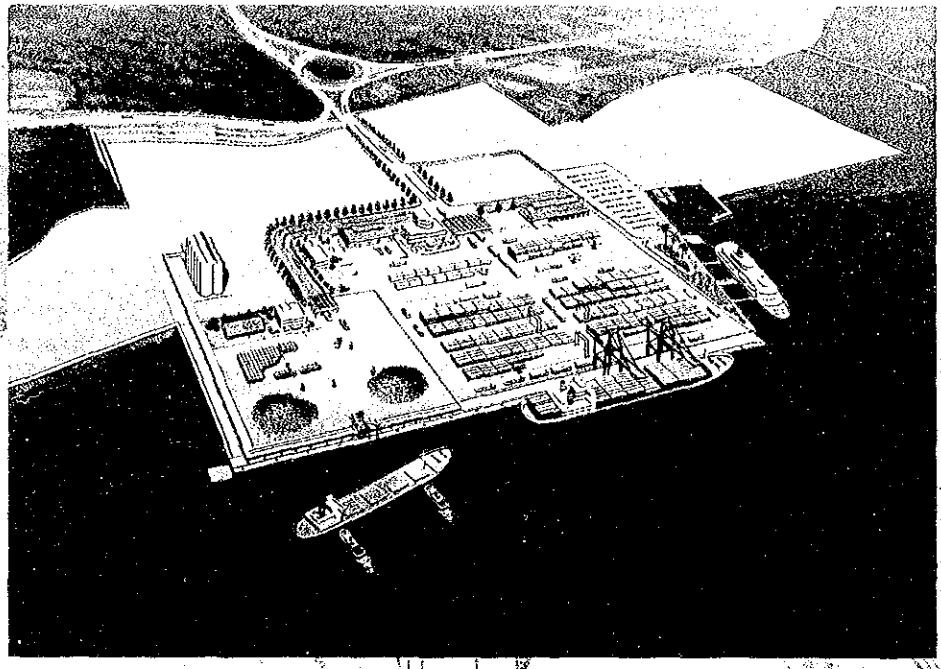
$= 4.25$

$N = 230 \div 20 = 11.5 \rightarrow 11$

$A_T = 4.25 \times 11 = 46.75$

$\approx 47 \text{ m}^2$

Prepared by		Checked by	
	/ /200		/ /200



JICA