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	ACCESS BRIDGE	**Pay Item No. (BOQ)**	2D - 0701
Quantity Item	CONCRETE	**Unit**	m^3

Calculation Procedure Applied

Access bridge concrete was computed for Platform 1 and Platform 2.
Volume was computed per one block and then, multiplied to the total number of blocks.

References, Calculation Base and Revisions

References : Tender Drawings :
DW - QW - 02 - 026 Structure of Connection Plate

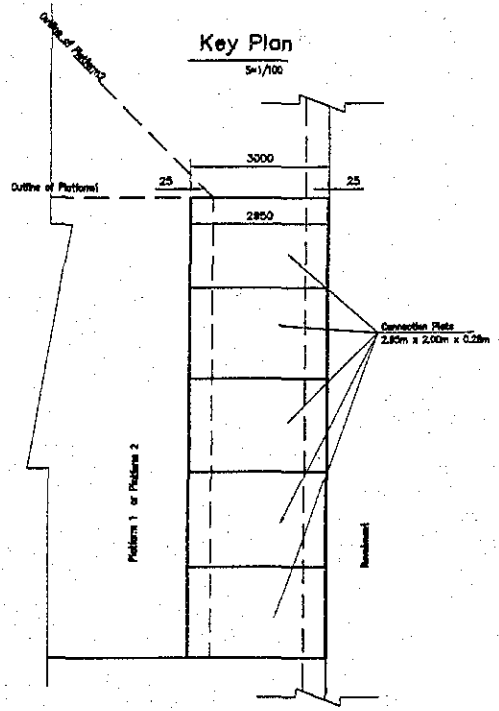
Rev	Prepared by	Prepared Date	No. of Pages	Checked by	Checked Date	Reviewed by	Reviewed Date	Superseded by Calc No.
0	Karla Garcia			Mr. Inuma		Mr. Ando		
1								
2								
3								

FN : Calculation_Cover_Sheet_020504_seg cover

STRUCTURE OF CONNECTION PLATE

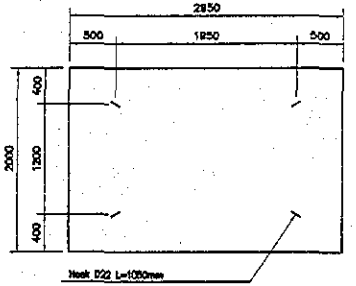
Key Plan

S=1/100



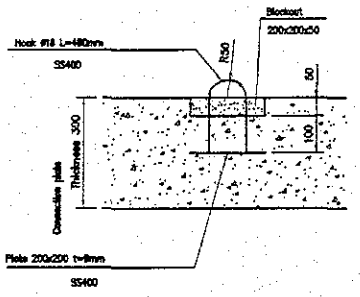
Arrangement Plan of Hooks

S=1/50



Structure of Hooks

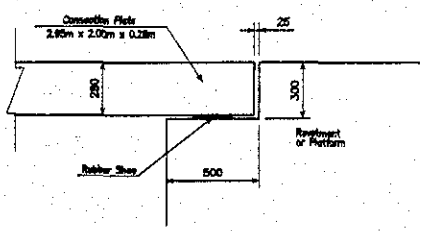
Free Scale



Hook (Quantity for one Plate)
1.58 kg/m x 0.46 m x 4 pieces = 3 kg

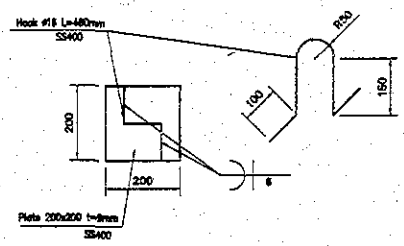
Detail of part "b"

Free Scale



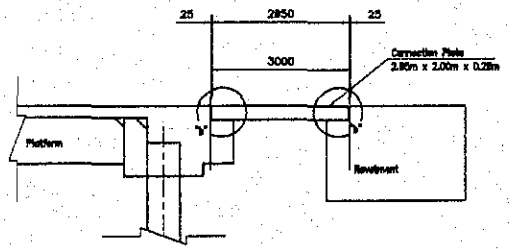
Detail of Hook

Free Scale



Cross Section

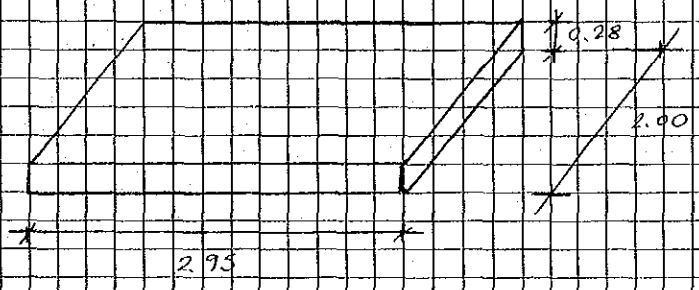
S=1/100



JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	DETAILED DESIGN ON PORT REACTIVATION PROJECT IN LA UNION PROVINCE OF THE REPUBLIC OF EL SALVADOR	DESIGNED BY :	SECTION : QUAYWALL WORK	DATE : JULY/2002
COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)	NIPPON KOEI CO., LTD.	CHECKED BY :	SUB-SECTION : PASSENGER BERTH	SCALE : INDICATED
		APPROVED BY :	TITLE : STRUCTURE OF CONNECTION PLATE	DRAWING NO. DW-QW-02-026

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	ACCESS BRIDGE	Calc. Index No.	
Subject	CONCRETE	Page No.	Rev.

References/ Notes



No Blocks = (5)(2) = 10

Concrete Volume per 1 Block:

$V = (2.00\,m)(2.95\,m)(0.28\,m) = 1.652\ m^3$

$V_T = (1.652\ m^3)(10) = 16.52\ m^3$

$\simeq \boxed{16.60\ m^3}$

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	ACCESS BRIDGE	**Pay Item No. (BOQ)**	2D - 0702
Quantity Item	FORM	**Unit**	m2

Calculation Procedure Applied

Access bridge form was computed for Platform 1 and Platform 2.

Area was computed per one block and then, multiplied by the total number of blocks.

References, Calculation Base and Revisions

References : Tender Drawings :

DW - QW - 02 - 026 Structure of Connection Plate

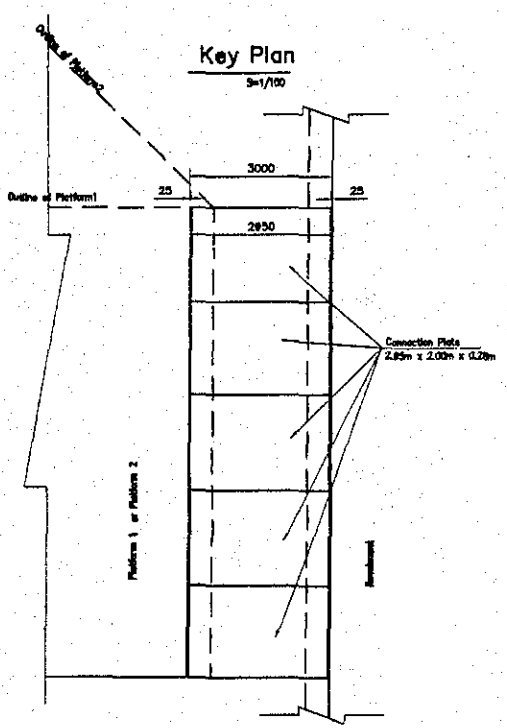
Rev	Prepared by	Prepared Date	No. of Pages	Checked by	Checked Date	Reviewed by	Reviewed Date	Superseded by Calc No.
0	Karla Garcia			Mr. Inuma		Mr. Ando		
1								
2								
3								

FN : Calculation_Cover_Sheet_020504_seg cover

STRUCTURE OF CONNECTION PLATE

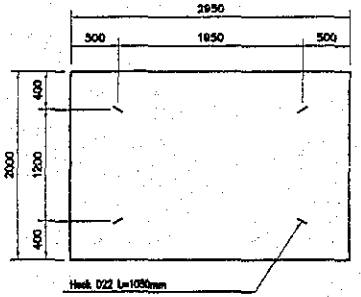
Key Plan

S=1/100



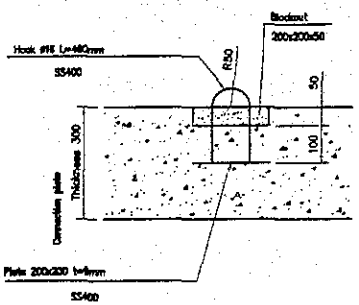
Arrangement Plan of Hooks

S=1/50



Structure of Hooks

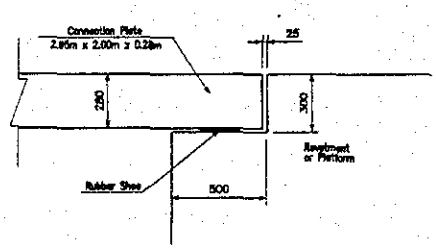
Free Scale



Hook (Quantity for one Plate)
1.58 kg/m x 0.46 m x 4 pieces = 3 kg

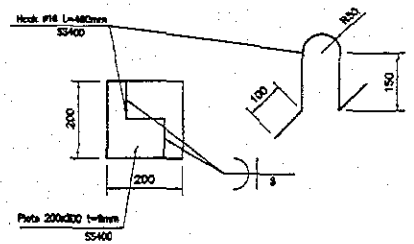
Detail of part "b"

Free Scale



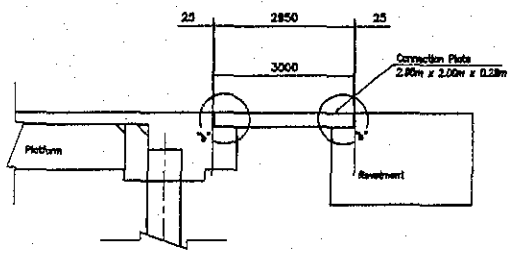
Detail of Hook

Free Scale



Cross Section

S=1/100



REV. NO.	DATE	COORDINATE	BY	APPROVED	DATE		

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)

DETAILED DESIGN ON PORT REACTIVATION PROJECT IN LA UNION PROVINCE OF THE REPUBLIC OF EL SALVADOR

NIPPON KOEI CO., LTD.

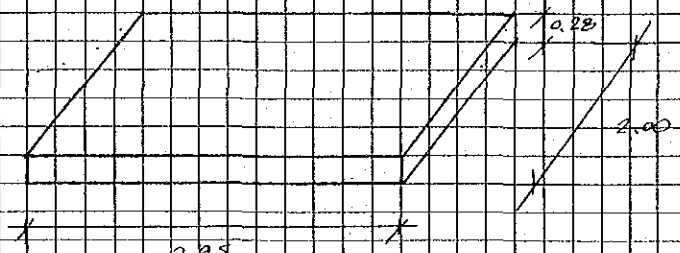
DESIGNED BY :
CHECKED BY :
APPROVED BY :

SECTION : QUAYWALL WORK
SUB-SECTION : PASSENGER BERTH
TITLE : STRUCTURE OF CONNECTION PLATE

DATE : JULY/2002
SCALE : INDICATED
DRAWING NO. : DW-QW-02-026

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	ACCESS BRIDGE	Calc. Index No.	
Subject	FORM	Page No.	Rev.

References/ Notes



No. Blocks = 10

form per 1 Block :

$$A = \left[(2.00\,m)(2) + (2.45\,m)(2) \right] (0.28\,m)$$

$$A = 2.772\ m^2$$

$$A_T = (2.772\ m^2)(10) = 27.72\ m^2$$

$$\simeq \boxed{27.80\ m^2}$$

		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	ACCESS BRIDGE	**Pay Item No. (BOQ)**	2D-0703
Quantity Item	REINFORCEMENT	**Unit**	Kg

Calculation Procedure Applied

Reinforcement access bridge was computed for connection plate of Platform 1 and Platform 2. Reinforcement was computed summarizing all bar lenghts of each type of diameter.

References, Calculation Base and Revisions

Reference. Tender Drawings :

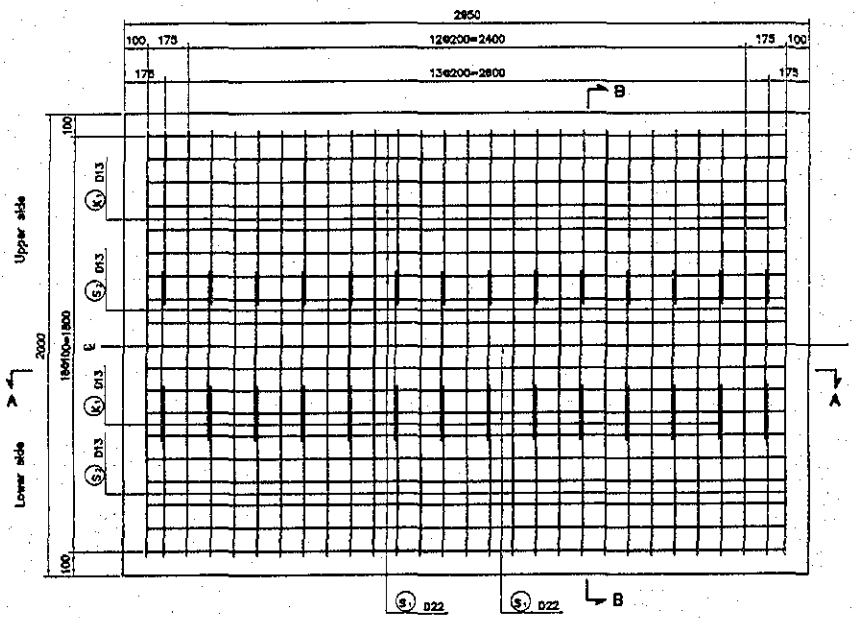
DW-QW-02-027 Bar Arrangement for Connection Plate

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								

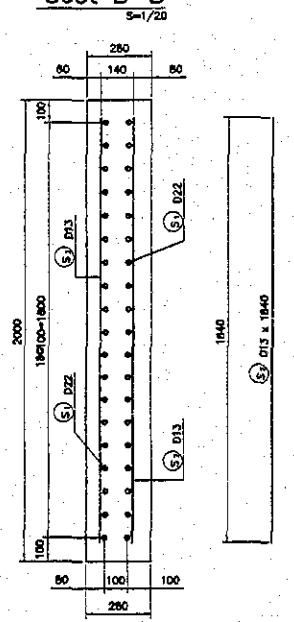
FN : Calculation_Cover_Sheet_020504_seg cover

BAR ARRANGEMENT FOR CONNECTION PLATE

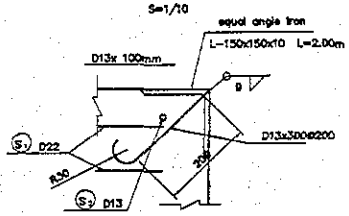
Plan
S=1/20



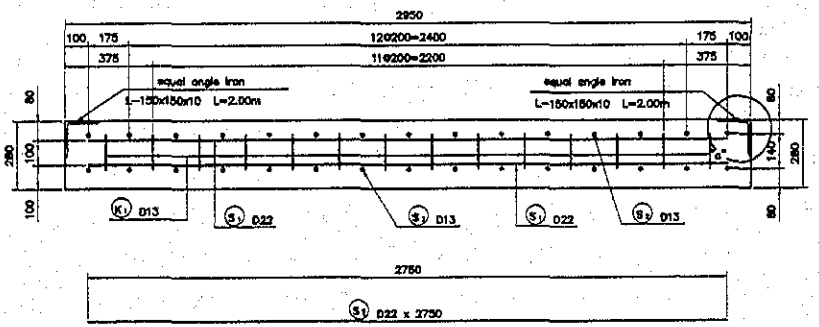
Sect B–B
S=1/20

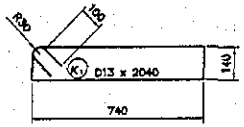


Detail of part "a"
S=1/10



Sect A–A
S=1/20





BAR SCHEDULE FOR CONNECTION PLATE
(Quantity for one plate)

	BAR No.	DIA	LENGTH (mm)	UNIT WT (kg/m)	Q.T.Y	WEIGHT (kg)	TOTAL WT. (kg)	SHAPE
	S1	D 22	2,750	3.04	38	8.360	318	
	S2	D 13	1,840	0.995	30	1.831	55	
					D13		55 kg	
					D19		318 kg	
					TOTAL		373 kg	
	K1	D 13	2,040	0.995	42	2.030	85	
					D13		85 kg	
					TOTAL		85 kg	
TOTAL					D13		140 kg	
					D19		318 kg	
					TOTAL		458 kg	
	equal angle iron (L-150 x 150 x 10 L=2.00m)							
	22.8 kg /m x 2.00 m x 2 places = 91.6 kg							
	D 13	300	0.995	10	0.298	3		
	concrete volume 1.652 m3							
	form 2.772 m2							

REV. NO.	DATE	DESCRIPTION	BY	APPROVED	DATE				

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)

DETAILED DESIGN ON PORT REACTIVATION PROJECT IN LA UNION PROVINCE OF THE REPUBLIC OF EL SALVADOR

NIPPON KOEI CO., LTD.

DESIGNED BY :
CHECKED BY :
APPROVED BY :

SECTION : QUAYWALL WORK
SUB-SECTION : PASSENGER BERTH
TITLE :

BAR ARRANGEMENT FOR CONNECTION PLATE

DATE : JULY/2002
SCALE : INDICATED
DRAWING NO. DW-QW-02-027

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	ACCESS BRIDGE	Calc. Index No.	
Subject	REINFORCEMENT	Page No.	Rev.

References/ Notes

No. Blocks = 10

Reinforcement per 1 Block :

W = 458 kg (See attached drawing)

W_T = (458 kg) (10)

= [4,580 kg]

		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	ACCESS BRIDGE	**Pay Item No. (BOQ)**	2D-0704
Quantity Item	LIFTING BAR & PLATE	**Unit**	Kg

Calculation Procedure Applied

Lifting bar and plate was computed for connection plate of platform 1 and Platform 2.

They were computed summarizing the number of plates and lifting bar lenght in one block. The result was multiplied by the total of blocks. (See the attached drawing).

References, Calculation Base and Revisions

References: Tender Drawings:

DWG-GNL-02-026 Shucture of Connection Plate

Rev	Prepared by	Prepared Date	No. of Pages	Checked by	Checked Date	Reviewed by	Reviewed Date	Superseded by Calc No.
0	Karla Garcia			Mr. Tsuma		Mr. Ando		
1								
2								
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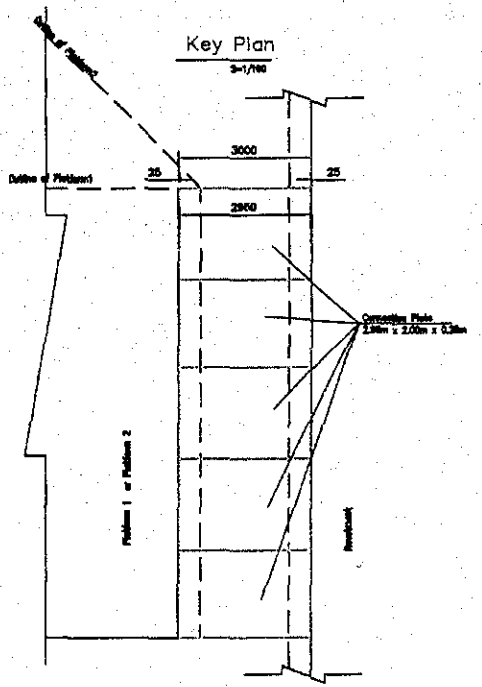
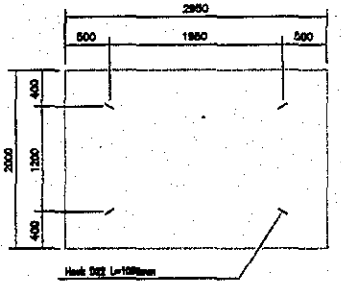
FN : Calculation_Cover_Sheet_020504_seg cover

STRUCTURE OF CONNECTION PLATE

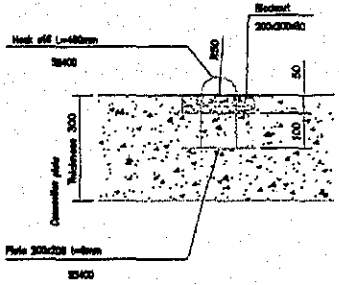
Key Plan



Arrangement Plan of Hooks

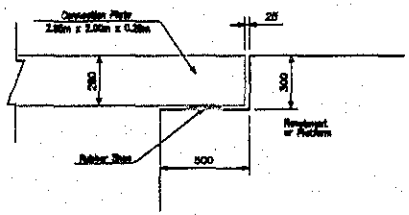


Structure of Hooks

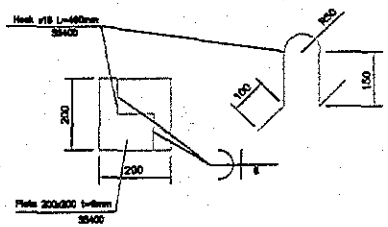


Hook (Quantity for one Plate)
1.56 kg/m x 0.46 m x 4 pieces = 3 kg

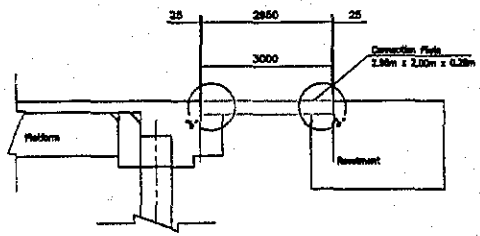
Detail of part "b"



Detail of Hook



Cross Section



NIPPON KOEI CO.,LTD.

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	ACCESS BRIDGE	Calc. Index No.	
Subject	LIFTING BAR & PLATE	Page No.	Rev.

References/ Notes

No Blocks = 10

Lifting Bar (Ø16):

$W = (1.56\ kg/m)(0.46\ m)(4) = 2.87\ kg$

Plate:

$W = (0.20m)(0.20m)(0.009\ m)(7850\ kg/m^3)(4)$

$= 11.30\ kg$

$W_T = (2.87\ kg + 11.30\ kg)(10)$

$= 141.70\ kg \approx \boxed{142\ kg}$

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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	ACCESS BRIDGE	**Pay Item No. (BOQ)**	2D-0705
Quantity Item	CORNER ANGLE & RE-BAR	**Unit**	Kg

Calculation Procedure Applied

Corner angle and Re-bar was computed for connection plate of Platform 1 and Platform 2. They were computed summerizing the number of angles and lenght of re-bar in one block. The result was multiplied by the total of blocks. (See the attached drawing).

References, Calculation Base and Revisions

References: Tinder Drawings:

DW-GW-02-027 Bar Arrangement for Connection Plate

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								
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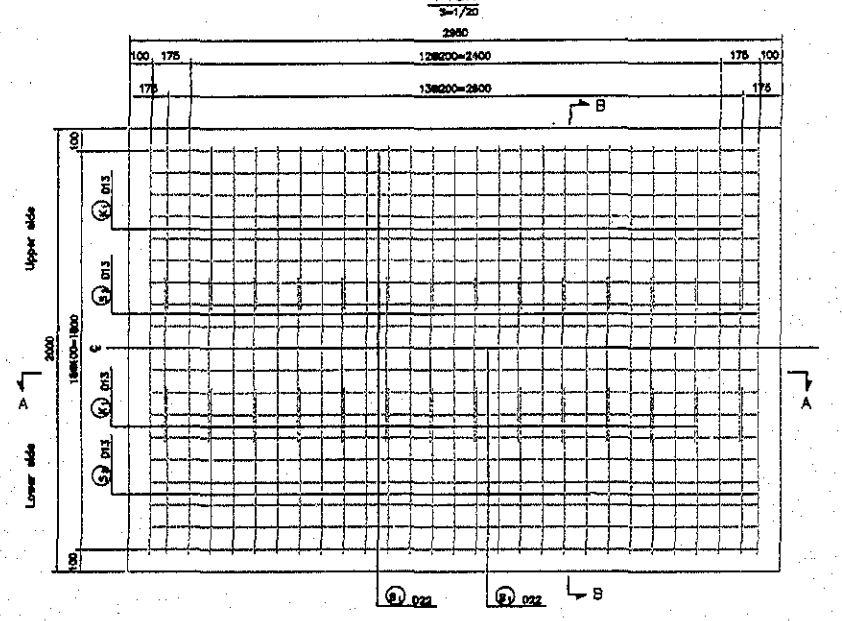
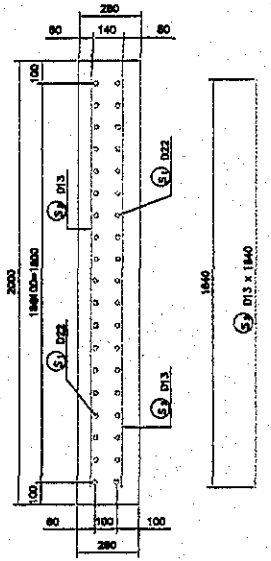
BAR ARRANGEMENT FOR CONNECTION PLATE

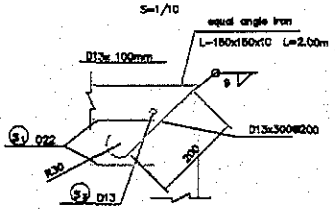
Plan
S=1/20



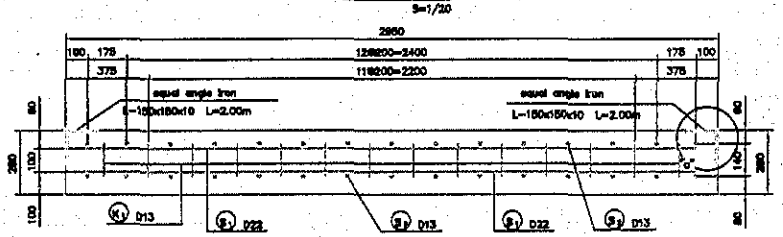
Sect B-B
S=1/20

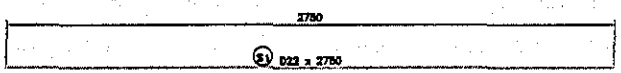


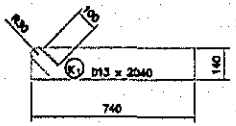
Detail of part "a"
S=1/10



Sect A-A
S=1/20







BAR SCHEDULE FOR CONNECTION PLATE
(Quantity for one plate)

BAR No.	DIA	LENGTH (mm)	UNIT WT (kg/m)	Q'TY	WEIGHT (kg)	TOTAL WT. (kg)	SHAPE
S1	D 22	2,790	3.04	38	8.360	318	
S2	D 13	1,840	0.995	30	1.831	55	
			D13		55 kg		
			D19		318 kg		
			TOTAL		373 kg		
K1	D 13	2,040	0.995	42	2.030	85	
			D13		85 kg		
			TOTAL		85 kg		
TOTAL			D13		140 kg		
			D19		318 kg		
			TOTAL		458 kg		
equal angle iron (L-150 x 120 x 10 L=2.00m)							
22.9 kg /m x 2.00 m x 2 pieces = 91.6 kg							
	D 13	300	0.995	10	0.299	3	
concrete volume 1.652 m3							
form 2.772 m2							

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	ACCESS BRIDGE	Calc. Index No.	
Subject	CORNER ANGLE & RE-BAR	Page No.	Rev.

References/ Notes

No. Blocks = 10

Corner Angle & Re-bar per 1 Block:

Corner Angle = 91.60 Kg

Re-bar :

DIB → $(0.995)(0.30)(19)(2) = 11.343$ Kg

$W_T = (91.60 \text{ Kg} + 11.343 \text{ Kg})(10)$

$= 1029.43$ Kg

$\approx \boxed{1030 \text{ Kg}}$

	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	ACCESS BRIDGE	**Pay Item No. (BOQ)**	2D-0706
Quantity Item	RUBBER SHOE	**Unit**	m

Calculation Procedure Applied

Rubber shoe lenght was computed for connection plate. Lenght was computed along one block and multiplied by the total of blocks.

References, Calculation Base and Revisions

References: Tender Drawings:

DW – QW – 02– 026 Stucture of Connection Plate

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		
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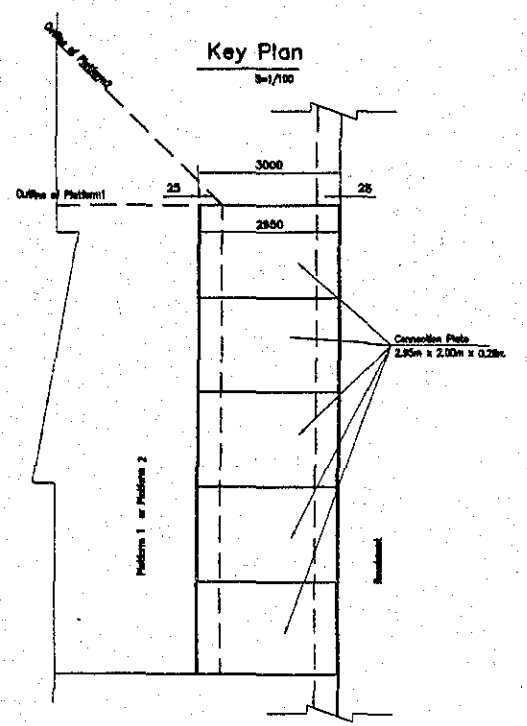
STRUCTURE OF CONNECTION PLATE

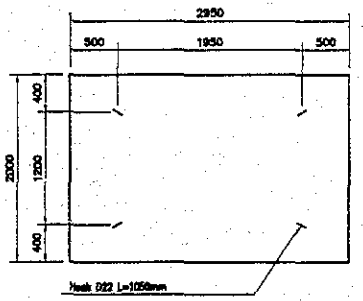
Key Plan

S=1/100



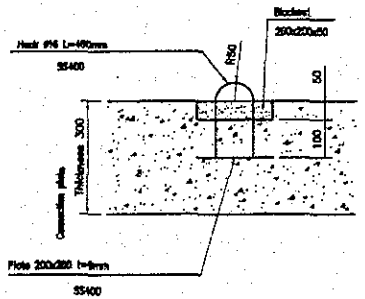
Arrangement Plan of Hooks

S=1/30



Structure of Hooks

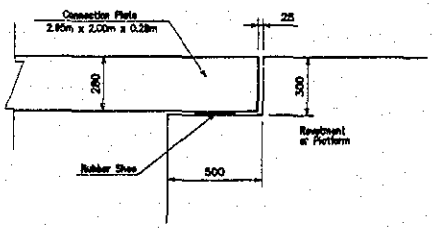
Free Scale



Hook (Quantity for one Plate)
1.58 kg/m x 0.46 m x 4 pieces = 3 kg

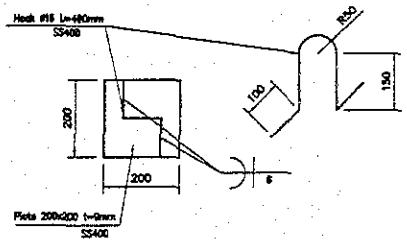
Detail of part "b"

Free Scale



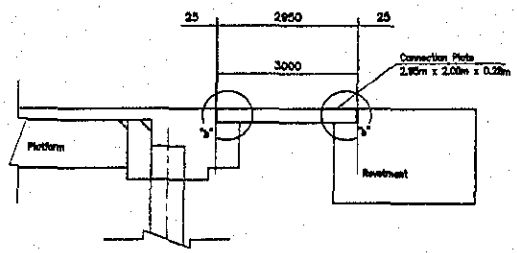
Detail of Hook

Free Scale



Cross Section

S=1/100



JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) / COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)	DETAILED DESIGN ON PORT REACTIVATION PROJECT IN LA UNION PROVINCE OF THE REPUBLIC OF EL SALVADOR	NIPPON KOEI CO., LTD.	DESIGNED BY : / CHECKED BY : / APPROVED BY :	SECTION : QUAYWALL WORK / SUB-SECTION : PASSENGER BERTH / TITLE : STRUCTURE OF CONNECTION PLATE	DATE : JULY/2002 / SCALE : INDICATED / DRAWING NO. DW-GW-02-026

NIPPON KOEI CO.,LTD.

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	ACCESS BRIDGE	Calc. Index No.	
Subject	RUBBER SHOE	Page No.	Rev.

References/ Notes

No. Blocks = 10

Rubber shoe per 1 Block:

$L = (2.00\,m)(2) = 4\,m$

$L_T = (4\,m)(10) = \boxed{40\,m}$

		Prepared by		Checked by	
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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	LADDER	**Pay Item No. (BOQ)**	2D-08
Quantity Item		**Unit**	Nos

Calculation Procedure Applied

Ladder was computed per unit in Passenger Berth.

References, Calculation Base and Revisions

References: Tender Drawings.

DW-QW-02-005 Details Layout Plan Passenger Berth

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		
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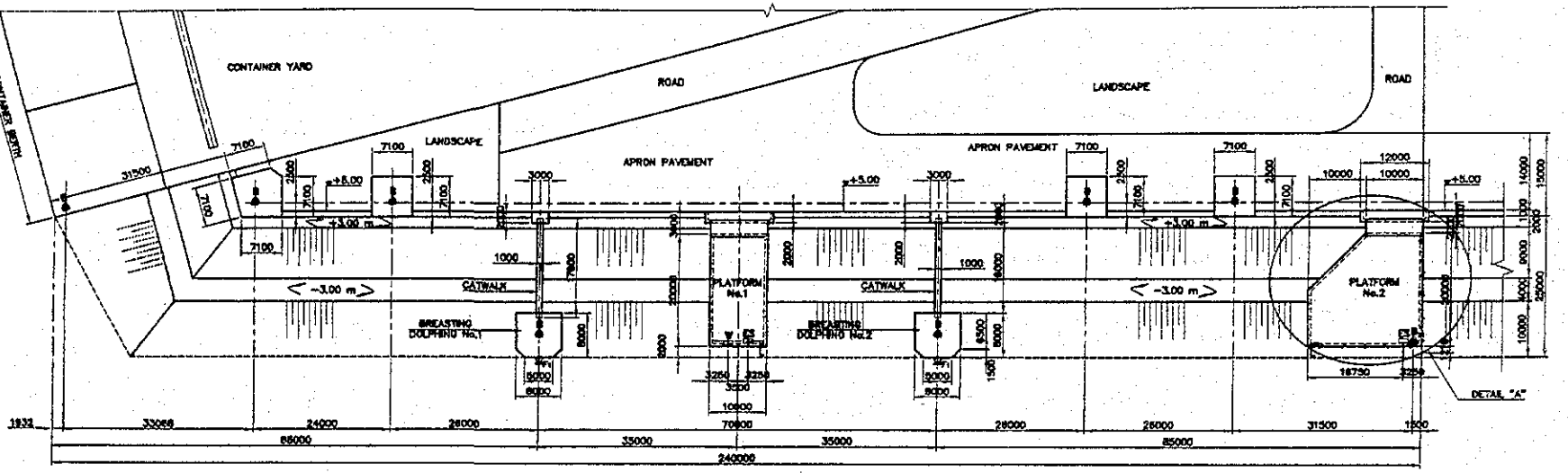

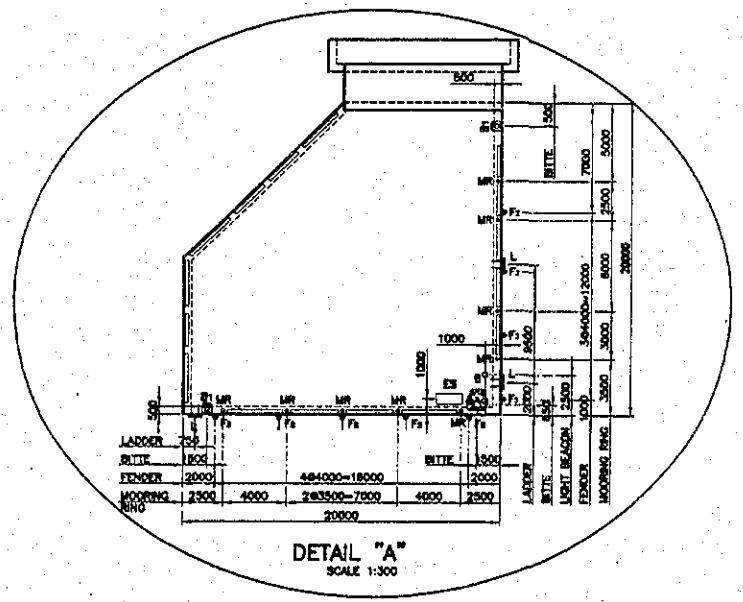

LEGEND:

ES	ELECTRIC SERVICE
W	WATER (HAIDLANT, FIREFITING)
F_1	FENDER (H=800)
F_2	FENDER (H=150)
B	BOLLARD (1000 KN)
B_1	BOLLARD (150 KN)
L	LADDER
MR	MOORING RING

REV. NO.	DATE	COMMENTS	BY	APPROVED	DATE

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)

DETAILED DESIGN ON PORT REACTIVATION PROJECT IN LA UNION PROVINCE OF THE REPUBLIC OF EL SALVADOR

NIPPON KOEI CO., LTD.

DESIGNED BY : A. MORIOKA
CHECKED BY : N. NISHIMURA
APPROVED BY : T. ONUKI

SECTION : QUAYWALL WORK
SUB-SECTION : PASSENGER BERTH
TITLE :

DETAIL LAYOUT PLAN PASSENGER BERTH

DATE : JULY/2002
SCALE : INDICATED
DRAWING NO. DW-QW-02-005

NIPPON KOEI CO.,LTD.

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

References/ Notes

$N_{OS} = 4$

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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(01
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 west revetment (2A-10)

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

References/ Notes

harbor side 9,228.33 m^3

sea side 40,054.25 m^3

total 49,282.58 m^3

$\Rightarrow$ 49,300 m^3

	Prepared by	Checked by
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FN: Calculation_Sheet

○West 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.0-39.20	0.00			
		90.05	34.20	3,079.54
No0-5.00	180.09			
		180.09	5.00	900.45
No.0'	180.09			
		117.73	0.00	0.00
No.0	55.36			
		55.36	0.61	33.77
No.0+0.61	55.36			
		62.73	8.13	509.95
No.1	70.09			
		62.64	8.13	509.26
No.2+0.43'	55.19			
		55.59	0.00	0.00
No.2+0.43	55.99			
		46.30	8.86	410.17
No.2+9.29	36.60			
		31.21	6.21	193.81
No.2+15.50	25.82			
		24.30	2.00	48.59
No.2+17.50	22.77			
		22.77	7.50	170.78
No.3	22.77			
		22.77	25.00	569.25
No.4	22.77			
		22.77	9.80	223.15
No.4+9.80	22.77			
		19.38	9.00	174.38
No.4+14.86	15.98			
		15.98	10.14	162.04
No.5	15.98			
		15.98	15.00	239.70
No.5+15.00	15.98			
		15.98	2.00	31.96
No.5+17.00	15.98			
		15.98	8.00	127.84
No.6	15.98			
		15.98	25.00	399.50
No.7	15.98			
		15.98	15.00	239.70
No.7+15.00	15.98			
		15.98	6.00	95.88
No.7+21.00	15.98			
		15.98	4.00	63.92
No.8	15.98			
		15.98	25.00	399.50
No.9	15.98			
		15.98	25.00	399.50
No.10	15.98			
		15.98	10.00	159.80
No.10+10.00	15.98			
		10.34	6.00	62.04
No.10+16.00	4.70			
		2.65	9.00	23.85
No.11	0.60			
Total				9,228.33

○West 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	243.20			
		243.20	0.61	148.35
No.0+0.61	243.20			
		276.01	16.00	4,416.16
No.1	308.82			
		281.73	16.00	4,507.68
No.2+0.43	254.64			
		254.64	0.00	0.00
No.2+0.43	254.64			
		186.90	8.86	1,655.93
No.2+9.29	119.16			
		141.87	6.21	881.01
No.2+15.50	164.58			
		159.30	2.00	318.59
No.2+17.50	154.01			
		154.01	7.50	1,155.08
No.3	154.01			
		154.01	25.00	3,850.25
No.4	154.01			
		154.01	9.80	1,509.30
No.4+9.80	154.01			
		154.01	9.00	1,386.09
No.4+14.86	154.01			
		141.32	10.14	1,432.98
No.5	128.63			
		128.63	15.00	1,929.45
No.5+15.00	128.63			
		128.63	2.00	257.26
No.5+17.00	128.63			
		128.63	8.00	1,029.04
No.6	128.63			
		128.63	25.00	3,215.75
No.7	128.63			
		128.63	15.00	1,929.45
No.7+15.00	128.63			
		128.63	6.00	771.78
No.7+21.00	128.63			
		128.63	4.00	514.52
No.8	128.63			
		128.63	25.00	3,215.75
No.9	128.63			
		128.63	25.00	3,215.75
No.10	128.63			
		128.63	10.00	1,286.30
No.10+10.00	128.63			
		115.38	6.00	692.25
No.10+16.00	102.12			
		81.78	9.00	736.02
No.11	61.44			
Total				40,054.75

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-010/02
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 west revetment (2A-10)

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

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

References/ Notes

harbor side 15,972.66 m^3

sea side 14,118.93 m^3

total 30,091.59 m^3

$\fallingdotseq$ **30,100** m^3

Prepared by		Checked by	
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FN: Calculation_Sheet

○West 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.0-17.00	0.00			
		54.03	12.00	648.36
No.0-5.00	108.06			
		108.06	5.00	540.30
No.0'	108.06			
		73.83	0.00	0.00
No.0	39.60			
		39.60	0.61	24.16
No.0+0.61	39.60			
		44.95	7.06	317.31
No.1	50.29			
		44.95	7.06	317.31
No.2+0.43'	39.60			
		39.60	0.00	0.00
No.2+0.43	39.60			
		39.60	8.86	350.86
No.2+9.29	39.60			
		39.60	6.21	245.92
No.2+15.50	39.60			
		39.60	2.00	79.20
No.2+17.50	39.60			
		39.60	7.50	297.00
No.3	39.60			
		39.60	25.00	990.00
No.4	39.60			
		39.60	9.80	388.08
No.4+9.80	39.60			
		39.60	9.00	356.40
No.4+14.86	39.60			
		39.60	10.14	401.54
No.5	39.60			
		39.60	15.00	594.00
No.5+15.00	39.60			
		39.60	2.00	79.20
No.5+17.00	39.60			
		39.60	8.00	316.80
No.6	39.60			
		39.60	25.00	990.00
No.7	39.60			
		39.60	15.00	594.00
No.7+15.00	39.60			
		39.60	6.00	237.60
No.7+21.00	39.60			
		39.60	4.00	158.40
No.8	39.60			
		39.60	25.00	990.00
No.9	39.60			
		39.60	25.00	990.00
No.10	39.60			
		39.60	10.00	396.00
No.10+10.00	39.60			
		46.75	6.00	280.50
No.10+16.00	53.90			
		53.90	9.00	485.10
No.11	53.90			
		60.17	12.50	752.13
No.11+12.50	66.44			
		66.44	5.30	352.13
No.11+17.80	66.44			
		66.44	3.00	199.32
No.11+20.80	66.44			
		66.44	4.20	279.05
No.12	66.44			
		66.44	25.00	1,661.00
No.13	66.44			
		66.44	11.00	730.84
No.13+11.00	66.44			
		66.44	14.00	930.16
No.14	66.44			
Total				15,972.66

○West 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	37.37			
		37.37	0.61	22.80
No.0+0.61	37.37			
		42.41	12.00	508.92
No.1	47.45			
		42.41	12.00	508.92
No.2+0.43'	37.37			
		37.37	0.00	0.00
No.2+0.43	37.37			
		37.37	8.86	331.10
No.2+9.29	37.37			
		37.37	6.21	232.07
No.2+15.50	37.37			
		37.37	2.00	74.74
No.2+17.50	37.37			
		37.37	7.50	280.28
No.3	37.37			
		37.37	25.00	934.25
No.4	37.37			
		37.37	9.80	366.23
No.4+9.80	37.37			
		37.37	9.00	336.33
No.4+14.86	37.37			
		37.37	10.14	378.93
No.5	37.37			
		37.37	15.00	560.55
No.5+15.00	37.37			
		37.37	2.00	74.74
No.5+17.00	37.37			
		37.37	8.00	298.96
No.6	37.37			
		37.37	25.00	934.25
No.7	37.37			
		37.37	15.00	560.55
No.7+15.00	37.37			
		37.37	6.00	224.22
No.7+21.00	37.37			
		37.37	4.00	149.48
No.8	37.37			
		37.37	25.00	934.25
No.9	37.37			
		37.37	25.00	934.25
No.10	37.37			
		37.37	10.00	373.70
No.10+10.00	37.37			
		42.31	6.00	253.86
No.10+16.00	47.25			
		47.25	9.00	425.25
No.11	47.25			
		53.63	12.50	670.31
No.11+12.50	60.00			
		60.00	5.30	318.00
No.11+17.80	60.00			
		60.00	3.00	180.00
No.11+20.80	60.00			
		60.00	4.20	252.00
No.12	60.00			
		60.00	25.00	1,500.00
No.13	60.00			
		60.00	11.00	660.00
No.13+11.00	60.00			
		60.00	14.00	840.00
No.14	60.00			
Total				14,118.93

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-0/0/03
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 Areas : Average of Lengths of Sections times distance between Sections (Excel)

References, Calculation Base and Revisions

See the item of offshore dumping of west revetment (2A-10)

Rev	Prepared by	Prepared Date	No. of Pages	Checked by	Checked Date	Reviewed by	Reviewed Date	Superseded by Calc No.
0	Karla Gonda			Hi. Inuma		Hi. Ando		
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NIPPON KOEI CO.,LTD.

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	West Revetment	Calc. Index No.	
Subject	Leveling of Rubble Mound	Page No.	Rev.

References/ Notes

Final trimming 1,263.32 m^2

Rough trimming 19,543.63 m^2

total 20,806.95 m^2

≒ 20,900 m^2

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	/ /200	/ /200

FN: Calculation_Sheet

○West 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	8.44	33.76
No.1	4.00			
		4.00	7.05	28.20
No.2	4.00			
		4.00	300.34	1,201.36
No.14	4.00			
Total			315.83	1,263.32

○West 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.0-39.20	0.00			
		25.49	34.20	871.76
No.0'-5.00	50.98			
		59.87	5.00	299.35
No.0'	50.98			
		59.77	0.00	0.00
No.0	68.76			
		75.75	0.61	46.21
No.0+0.61	68.55			
		69.25	16.00	1,108.00
No.1	82.74			
		77.25	16.00	1,236.00
No.2+0.43'	69.95			
		70.86	0.00	0.00
No.2+0.43	71.76			
		68.40	8.86	605.98
No.2+9.29	65.03			
		62.93	6.21	390.80
No.2+15.50	60.83			
		60.16	2.00	120.31
No.2+17.50	59.48			
		59.48	7.50	446.10
No.3	59.48			
		59.48	25.00	1,487.00
No.4	59.48			
		59.48	9.80	582.90
No.4+9.80	59.48			
		59.48	9.00	535.32
No.4+14.86	59.48			
		59.48	10.14	603.13
No.5	59.48			
		59.48	15.00	892.20
No.5+15.00	59.48			
		59.48	2.00	118.96
No.5+17.00	59.48			
		59.48	8.00	475.84
No.6	59.48			
		59.48	25.00	1,487.00
No.7	59.48			
		59.48	15.00	892.20
No.7+15.00	59.48			
		59.48	6.00	356.88
No.7+21.00	59.48			
		59.48	4.00	237.92
No.8	59.48			
		59.48	25.00	1,487.00
No.9	59.48			
		59.48	25.00	1,487.00
No.10	59.48			
		59.48	10.00	594.80
No.10+10.00	59.48			
		57.43	6.00	344.58
No.10+16.00	55.38			
		52.35	9.00	471.15
No.11	49.32			
		39.62	12.50	495.25
No.11+12.50	29.92			
		29.92	5.30	158.58
No.11+17.80	29.92			
		29.92	3.00	89.76
No.11+20.80	29.92			
		29.92	4.20	125.66
No.12	29.92			
		29.92	25.00	748.00
No.13	29.92			
		29.92	11.00	329.12
No.13+11.00	29.92			
		29.92	14.00	418.88
No.14	29.92			
Total				19,543.63

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-010104
Quantity Item	Geotextile Sheet	**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 west revetment (2A-10)

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

FN : Calculation_Cover_Sheet_020504_neg cover

○West Revetment

12. Filter Fabric

Section No.	Length (m)	Average Length of 2 Sections (m)	Distance Between Sections (m)	Area (m^2)
No.0	41.03			
		40.93	0.61	24.97
No.0+0.61	40.83			
		44.65	3.53	157.61
No.1	48.47			
		46.07	3.53	162.63
No.2+0.43'	43.67			
		43.65	0.00	0.00
No.2+0.43	43.63			
		42.19	8.86	373.80
No.2+9.29	40.75			
		39.78	6.21	247.00
No.2+15.50	38.80			
		38.49	2.00	76.97
No.2+17.50	38.17			
		38.17	7.50	286.28
No.3	38.17			
		38.17	25.00	954.25
No.4	38.17			
		38.17	9.80	374.07
No.4+9.80	38.17			
		40.12	9.00	361.08
No.4+14.86	36.61			
		36.61	10.14	371.23
No.5	36.61			
		36.61	15.00	549.15
No.5+15.00	36.61			
		36.61	2.00	73.22
No.5+17.00	36.61			
		36.61	8.00	292.88
No.6	36.61			
		36.61	25.00	915.25
No.7	36.61			
		36.61	15.00	549.15
No.7+15.00	36.61			
		36.61	6.00	219.66
No.7+21.00	36.61			
		36.61	4.00	146.44
No.8	36.61			
		36.61	25.00	915.25
No.9	36.61			
		36.61	25.00	915.25
No.10	36.61			
		36.61	10.00	366.10
No.10+10.00	36.61			
		37.11	6.00	222.66
No.10+16.00	37.61			
		36.71	9.00	330.35
No.11	35.80			
		25.90	12.50	323.75
No.11+12.50	16.00			
		16.00	5.30	84.80
No.11+17.80	16.00			
		16.00	3.00	48.00
No.11+20.80	16.00			
		16.00	4.20	67.20
No.12	16.00			
		16.00	25.00	400.00
No.13	16.00			
		16.00	11.00	176.00
No.13+11.00	16.00			
		16.00	14.00	224.00
No.14	16.00			
Total				10,208.99

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-01/02 01
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 west revetment (2A-10)

Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
	by	Date		by	Date	by	Date	
0	Koika Gonda			M. Inuma		M. Ando		
1								
2								
3								

FN : Calculation_Cover_Sheet_020504_seg cover

○West 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	32.94			
		32.94	0.61	20.09
No.0+0.61	32.94			
		40.20	20.19	811.54
No.1	47.45			
		43.23	22.60	976.89
No.2+0.43'	39.00			
		39.00	0.00	0.00
No.2+0.43	39.00			
		37.50	8.86	332.25
No.2+9.29	36.00			
		34.99	6.21	217.26
No.2+15.50	33.97			
		33.65	2.00	67.29
No.2+17.50	33.32			
		33.32	7.50	249.90
No.3	33.32			
		33.32	25.00	833.00
No.4	33.32			
		33.32	9.80	326.54
No.4+9.80	33.32			
		32.51	9.00	292.59
No.4+14.86	31.70			
		31.70	10.14	321.44
No.5	31.70			
		31.70	15.00	475.50
No.5+15.00	31.70			
		31.70	2.00	63.40
No.5+17.00	31.70			
		31.70	8.00	253.60
No.6	31.70			
		31.70	25.00	792.50
No.7	31.70			
		31.70	15.00	475.50
No.7+15.00	31.70			
		31.70	6.00	190.20
No.7+21.00	31.70			
		31.70	4.00	126.80
No.8	31.70			
		31.70	25.00	792.50
No.9	31.70			
		31.70	25.00	792.50
No.10	31.70			
		31.70	10.00	317.00
No.10+10.00	31.70			
		28.73	6.00	172.38
No.10+16.00	25.76			
		24.30	9.00	218.70
No.11	22.84			
		19.01	12.50	237.63
No.11+12.50	15.18			
		15.18	5.30	80.45
No.11+17.80	15.18			
		15.18	3.00	45.54
No.11+20.80	15.18			
		15.18	4.20	63.76
No.12	15.18			
		13.42	25.00	335.50
No.13	11.66			
		11.40	11.00	125.35
No.13+11.00	11.13			
		11.13	14.00	155.82
No.14	11.13			
Total				10,163.40

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	West Revetment	**Pay Item No. (BOQ)**	2E-0/0202
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 Areas : Average of Lengths of Sections times distance between Sections (Excel)

References, Calculation Base and Revisions

See the item of offshore dumping of west revetment (02A-10).

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

FN : Calculation_Cover_Sheet_020504_seg cover

○West 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	37.55			
		37.55	0.61	22.91
No.0+0.61	37.55			
		41.41	20.19	836.07
No.1	45.27			
		44.46	22.60	1,004.80
No.2+0.43	43.65			
		43.65	0.00	0.00
No.2+0.43	43.65			
		41.98	8.86	371.94
No.2+9.29	40.31			
		39.19	6.21	243.34
No.2+15.50	38.06			
		37.70	2.00	75.40
No.2+17.50	37.34			
		37.34	7.50	280.05
No.3	37.34			
		37.34	25.00	933.50
No.4	37.34			
		37.34	9.80	365.93
No.4+9.80	37.34			
		36.44	9.00	327.92
No.4+14.86	35.53			
		35.53	10.14	360.27
No.5	35.53			
		35.53	15.00	532.95
No.5+15.00	35.53			
		35.53	2.00	71.06
No.5+17.00	35.53			
		35.53	8.00	284.24
No.6	35.53			
		35.53	25.00	888.25
No.7	35.53			
		35.53	15.00	532.95
No.7+15.00	35.53			
		35.53	6.00	213.18
No.7+21.00	35.53			
		35.53	4.00	142.12
No.8	35.53			
		35.53	25.00	888.25
No.9	35.53			
		35.53	25.00	888.25
No.10	35.53			
		35.53	10.00	355.30
No.10+10.00	35.53			
		32.28	6.00	193.68
No.10+16.00	29.03			
		27.45	9.00	247.05
No.11	25.87			
		21.85	12.50	273.06
No.11+12.50	17.82			
		17.82	5.30	94.45
No.11+17.80	17.82			
		17.82	3.00	53.46
No.11+20.80	17.82			
		17.82	4.20	74.84
No.12	17.82			
		17.61	25.00	440.25
No.13	17.40			
		16.64	11.00	183.04
No.13+11.00	15.88			
		15.88	14.00	222.32
No.14	15.88			
Total				11,400.82

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-010301
Quantity Item	Concrete Block (A)	**Unit**	m^3

Calculation Procedure Applied

Calculation is carried out based on the attached drawing.

References, Calculation Base and Revisions

DW-QW-03-001

DW-QW-03-002

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

FN : Calculation_Cover_Sheet_020504_veg
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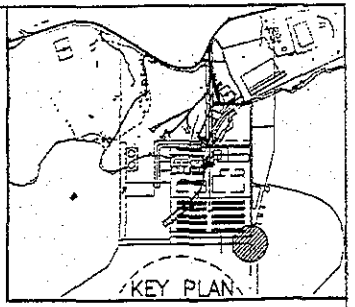
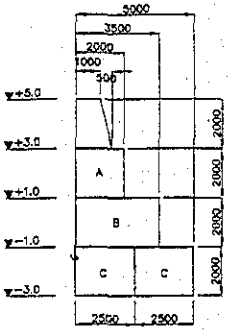
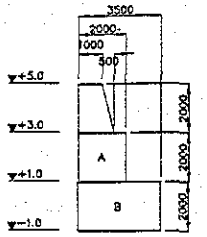
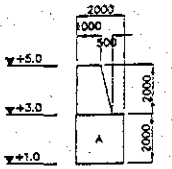
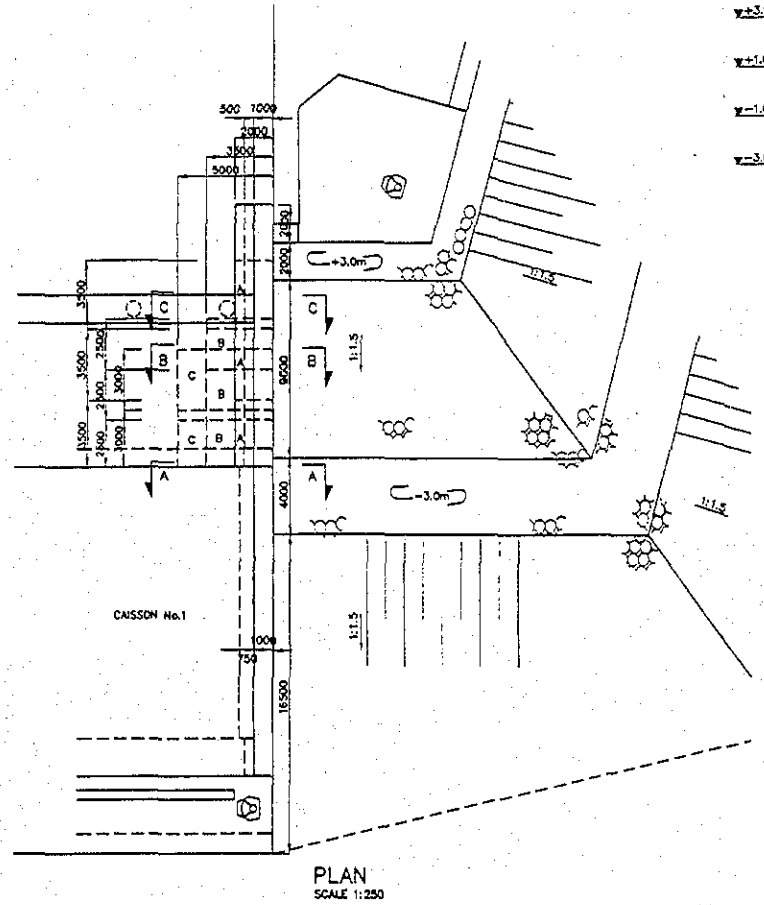
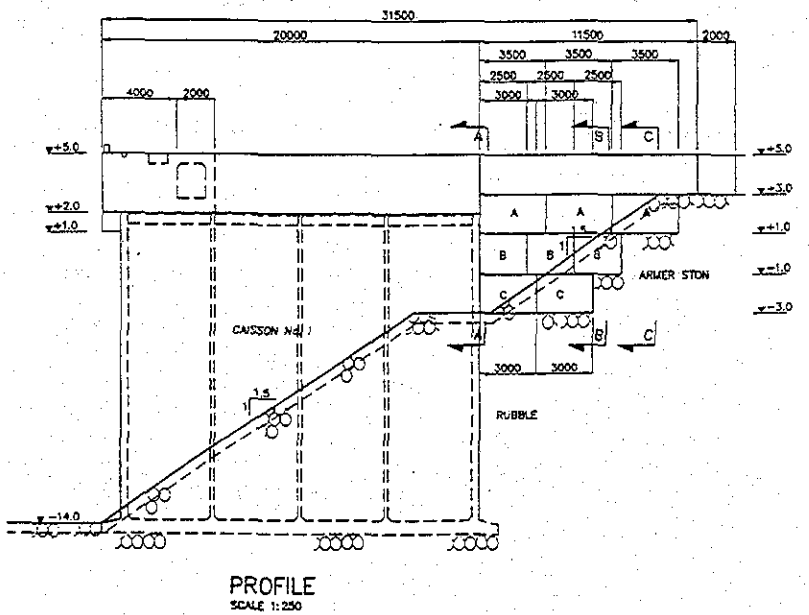




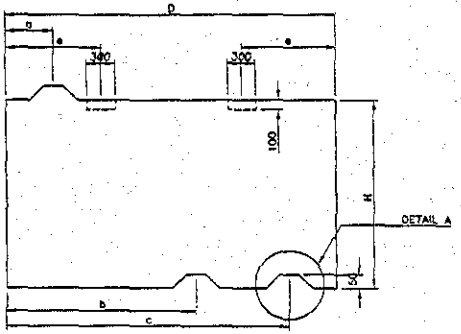




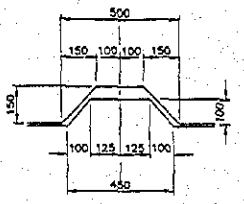




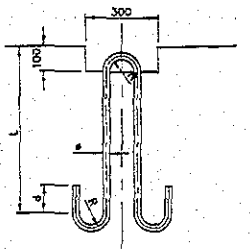
	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)	DETAILED DESIGN ON PORT REACTIVATION PROJECT IN LA UNION PROVINCE OF THE REPUBLIC OF EL SALVADOR NIPPON KOEI CO., LTD.	SECTION : REVETMENT WORK SUB-SECTION : TRANSITIONAL PART (N.E.) TITLE : PLAN–PROFILE AND STANDARD SECTION (I)	DATE : JULY/2002 SCALE : INDICATED DRAWING NO. DW–RV–03–001



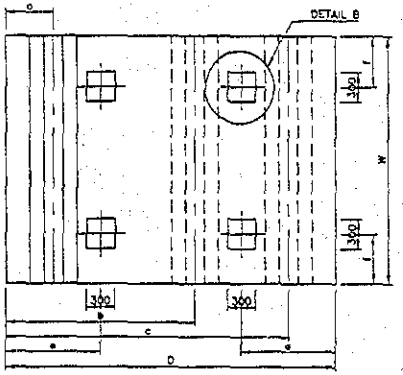
SIDE VIEW
SCALE 1:50



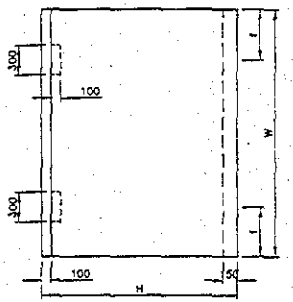
DETAIL A
SCALE 1:20



DETAIL B OF LIFTING BAR
SCALE 1:20



PLAN
SCALE 1:50



FRONT VIEW
SCALE 1:50

DIMENSION OF LIFTING BAR

BLOCK	A	B	C
D	2000	3500	2500
W	3500	2500	3000
H	2000	2000	2000
a	–	500	500
b	500	2000	–
c	–	3000	–
e	1000	1000	1000
f	1000	500	1500

DIMENSION OF CONCRETE BLOCK

BLOCK	A	B	C
ø	28	32	30
R	56	64	60
d	120	130	120
L	710	650	650
l	1924	1862	1823

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)

DETAILED DESIGN ON PORT REACTIVATION PROJECT IN LA UNION PROVINCE OF THE REPUBLIC OF EL SALVADOR

NIPPON KOEI CO., LTD.

DESIGNED BY :
CHECKED BY :
APPROVED BY :

SECTION : REVETMENT WORK
SUB-SECTION : TRANSITIONAL PART (N.E.)
TITLE :
DETAIL OF CONCRETE BLOCKS

DATE : JULY/2002
SCALE : INDICATED
DRAWING NO. DW-RV-03-002

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	West Revetment	Calc. Index No.	
Subject	Concrete Block (A)	Page No.	Rev.

References/ Notes

$V = 2.0 \times 3.5 \times 2.0 = 14.0 \ m^3$

$14.0 \times 3 \text{ pieces} = \boxed{42.0 \ m^3}$

	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	West Revetment	**Pay Item No. (BOQ)**	2E-01/03-02
Quantity Item	Concrete Block B	**Unit**	m^3

Calculation Procedure Applied

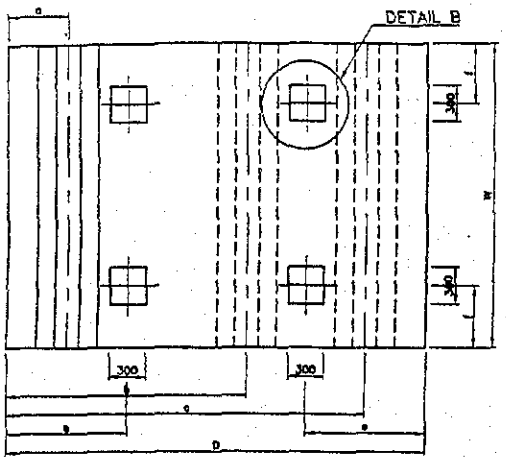
Calculation is carried out based on the attached drawing.

References, Calculation Base and Revisions

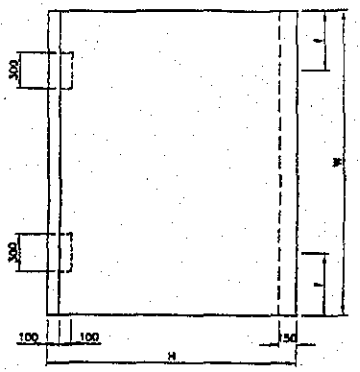
DW - 2W - 03 - 002

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

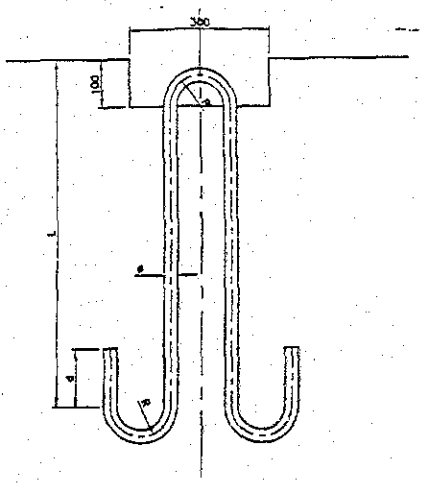
FN : Calculation_Cover_Sheet_020504_seg cover



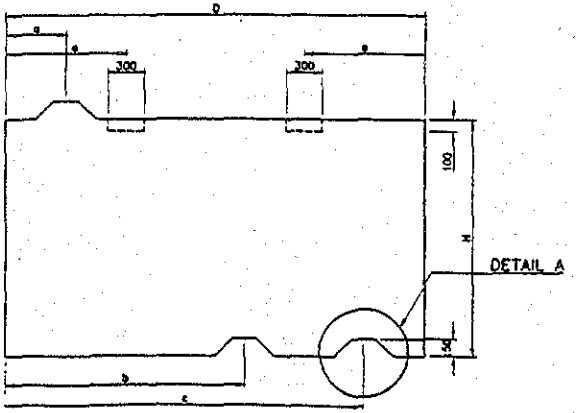
PLAN
SCALE 1:40



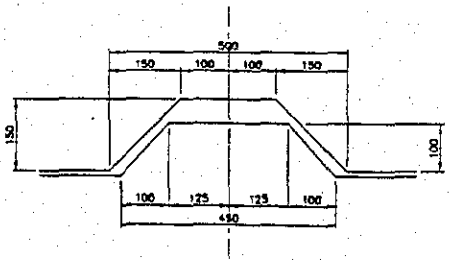
FRONT VIEW
SCALE 1:40



DETAIL B LIFTING BAR
SCALE 1:10



SIDE VIEW
SCALE 1:40



DETAIL A
SCALE 1:10

DIMENSION OF CONCRETE BLOCK

BLOCK	A	B	C
D	2000	3500	2500
W	3500	2500	3000
H	2000	2000	2000
a	–	500	500
b	500	2000	–
c	–	3000	–
e	1000	1000	1000
f	1000	500	1500

DIMENSION OF LIFTING BAR

BLOCK	A	B	C
ø	28	32	30
R	56	64	60
d	120	130	120
L	710	650	650
l	1924	1862	1823

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)

DETAILED DESIGN ON PORT REACTIVATION PROJECT IN LA UNION PROVINCE OF THE REPUBLIC OF EL SALVADOR

NIPPON KOEI CO., LTD.

SECTION : QUAYWALL WORK
SUB-SECTION : TRANSITIONAL PART
TITLE :

DETAIL OF CONCRETE BLOCKS

DATE : MARCH/
SCALE : INDICATE

NIPPON KOEI CO.,LTD.

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	West Revetment	Calc. Index No.	
Subject	Concrete Block B	Page No.	Rev.

References/ Notes

$V = 3.5 \times 2.5 \times 2.0 = 17.5\ m^3$

$17.5 \times 3\ \text{pieces} = \boxed{52.5}\ m^3$

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	West Revetment	**Pay Item No. (BOQ)**	25-010303
Quantity Item	Concrete Block C.	**Unit**	m^3

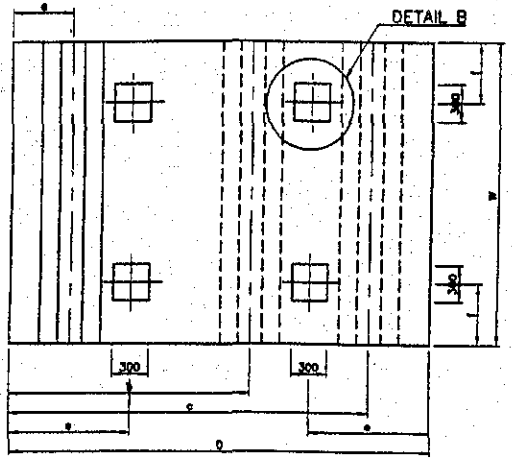
Calculation Procedure Applied

Calculation is carried out based on the attached drawing.

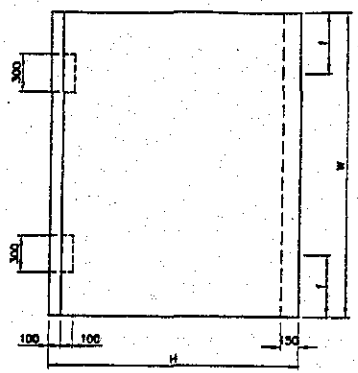
References, Calculation Base and Revisions

DW-GN-03-002

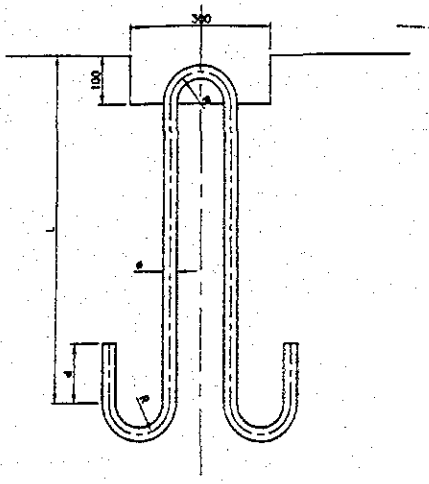
Rev	Prepared by	Prepared Date	No. of Pages	Checked by	Checked Date	Reviewed by	Reviewed Date	Superseded by Calc No.
0	Karla Garcia			Mr. Inuma		Mr. Ando		
1								
2								
3								



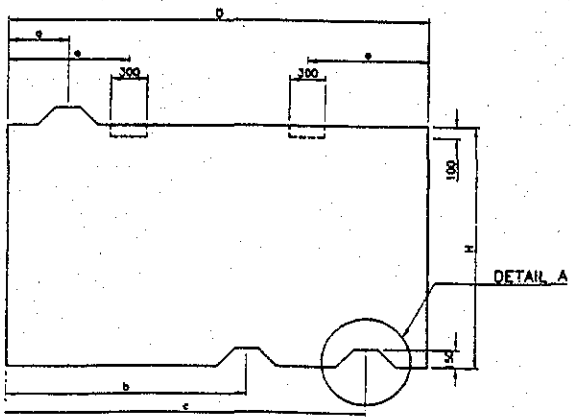
PLAN
SCALE 1:40



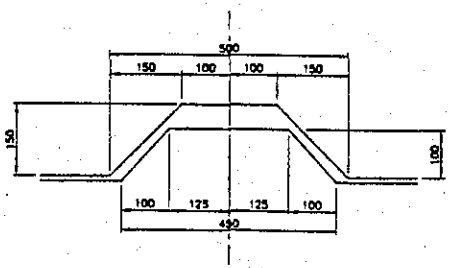
FRONT VIEW
SCALE 1:40



DETAIL B LIFTING BAR
SCALE 1:10



SIDE VIEW
SCALE 1:40



DETAIL A
SCALE 1:10

DIMENSION OF CONCRETE BLOCK

BLOCK	A	B	C
D	2000	3500	2500
W	3500	2500	3000
H	2000	2000	2000
a	–	500	500
b	500	2000	–
c	–	3000	–
e	1000	1000	1000
f	1000	500	1500

DIMENSION OF LIFTING BAR

BLOCK	A	B	C
ϕ	28	32	30
R	56	64	60
d	120	130	120
L	710	650	650
l	1924	1862	1823

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)
DETAILED DESIGN ON PORT REACTIVATION PROJECT IN LA UNION PROVINCE OF THE REPUBLIC OF EL SALVADOR
NIPPON KOEI CO., LTD.
SECTION : QUAYWALL WORK
SUB-SECTION : TRANSITIONAL PART
TITLE : DETAIL OF CONCRETE BLOCKS
DATE : MARCH/200
SCALE : INDICATED
DW-QW-03-

NIPPON KOEI CO.,LTD.

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	West Revetment	Calc. Index No.	
Subject	Concrete Block C	Page No.	Rev.

References/ Notes

$V = 2.5 \times 3.0 \times 2.0 = 15.0\ m^3$

$15.0 \times 4\ \text{pieces} = \boxed{60.0}\ m^3$

	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	West Revetment	**Pay Item No. (BOQ)**	2E-01/02c4
Quantity Item	Form for A	**Unit**	M^2

Calculation Procedure Applied

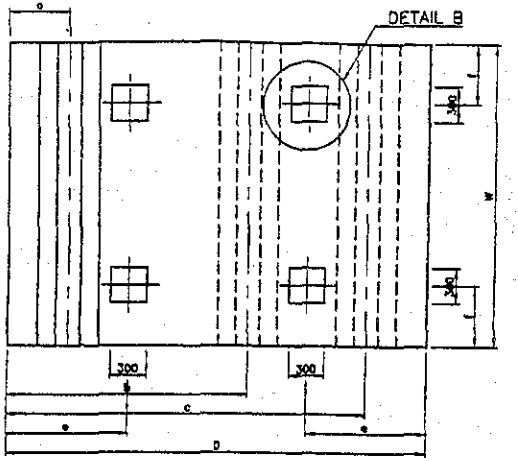
Calculation is carried out based on the attached drawing.

References, Calculation Base and Revisions

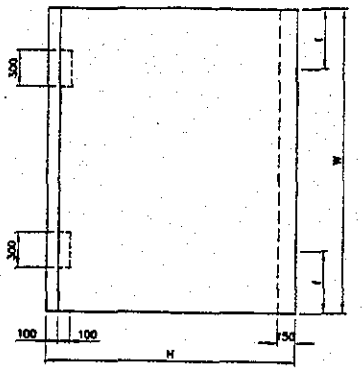
DW - QW - 03 - 002

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

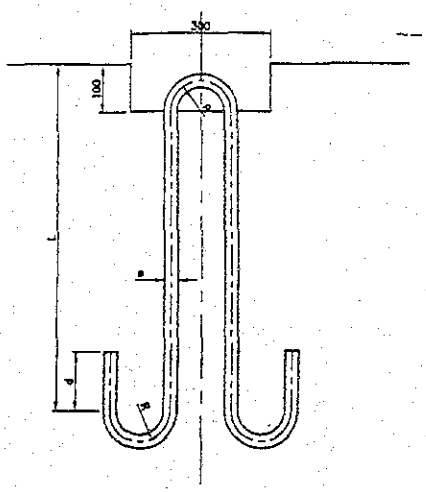
FN : Calculation_Cover_Sheet_020504_seg cover



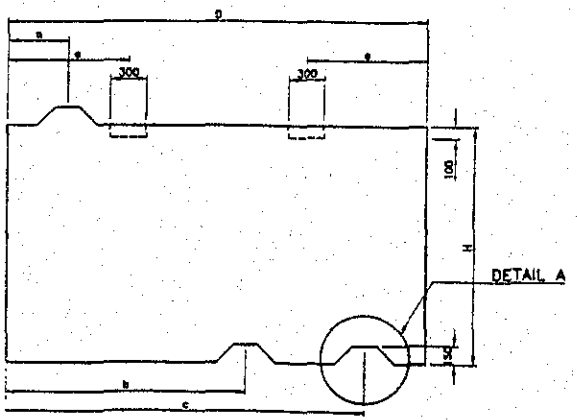
PLAN
SCALE 1:40



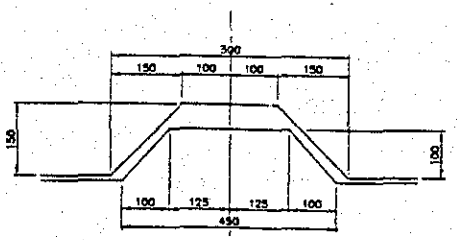
FRONT VIEW
SCALE 1:40



DETAIL B LIFTING BAR
SCALE 1:10



SIDE VIEW
SCALE 1:40



DETAIL A
SCALE 1:10

DIMENSION OF CONCRETE BLOCK

BLOCK	A	B	C
D	2000	3500	2500
W	3500	2500	3000
H	2000	2000	2000
a	–	500	500
b	500	2000	–
c	–	3000	–
e	1000	1000	1000
f	1000	500	1500

DIMENSION OF LIFTING BAR

BLOCK	A	B	C
ϕ	28	32	30
R	56	64	60
d	120	130	120
L	710	650	650
l	1924	1862	1823

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)

DETAILED DESIGN ON PORT REACTIVATION PROJECT IN LA UNION PROVINCE OF THE REPUBLIC OF EL SALVADOR

NIPPON KOEI CO., LTD.

QUAYWALL WORK
TRANSITIONAL PART

DETAIL OF CONCRETE BLOCKS

MARCH/2003

INDICATED

DW-QW-03

450

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	West Revetment	Calc. Index No.	
Subject	Form for Concrete Block A	Page No.	Rev.

References/ Notes

$$A = 2.0 \times 3.5 + (2.0 + 3.5) \times 2 \times 2.0$$

$$= 29.0 \text{ m}^2$$

29.0×3 pieces $= \boxed{87.0 \text{ m}^2}$

	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	West Revetment	**Pay Item No. (BOQ)**	2E-0/0305
Quantity Item	Form for B	**Unit**	m^2

Calculation Procedure Applied

Calculation is carried out based on the attached drawing.

References, Calculation Base and Revisions

DW - QW - 03 - 002

Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
	by	Date		by	Date	by	Date	
0	Karla Gonia			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	West Revetment	Calc. Index No.	
Subject	Form for Concrete Block B	Page No.	Rev.

References/ Notes

$A = 3.5 \times 2.5 + (3.5 + 2.5) \times 2 \times 2.0$

$= 39.8\ m^2$

$39.8 \times 3\ \text{pieces} = \boxed{98.4}\ m^2$

	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	West Revetment	**Pay Item No. (BOQ)**	2E-0/0306
Quantity Item	Form for 'C'	**Unit**	m^2

Calculation Procedure Applied

Calculation is carried out based on the attached drawing.

References, Calculation Base and Revisions

DW-GW-03-002

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

Project	Detalled Design on Port Reactivation Project in La Union	Calc. File No.	
Section	West Revetment	Calc. Index No.	
Subject	Form for Concrete Block C	Page No.	Rev.

References/ Notes

$A = 2.5 \times 3.0 + (2.5 + 3.0) \times 2 \times 2.0$

$= 29.5\ m^2$

$29.5 \times 4\ \text{pieces} = \boxed{118}\ m^2$

	Prepared by		Checked by	
		/ /200		/ /200

FN: Calculation_Sheet