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	STEEL PIPE PILE FOR CRANE RAIL FOUNDATION	**Pay Item No. (BOQ)**	2C-1301
Quantity Item	STEEL PIPE PILE	**Unit**	Nos

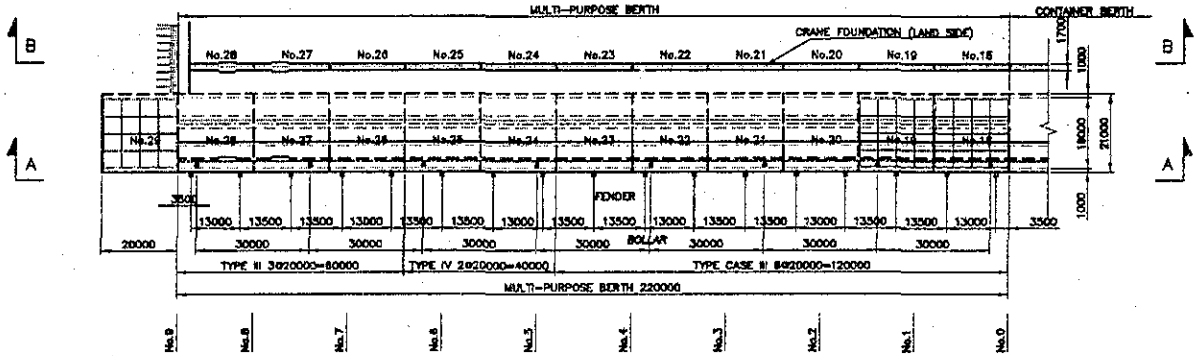
Calculation Procedure Applied

Pile lenght and weight was computed for each type of pile, including diameter and thickness.
lenght was computed by Intellicad and multiplied to the total number of pile in Multipurpose Berth.
The unit and total weight for each type of pile was computed using Weight Tables.

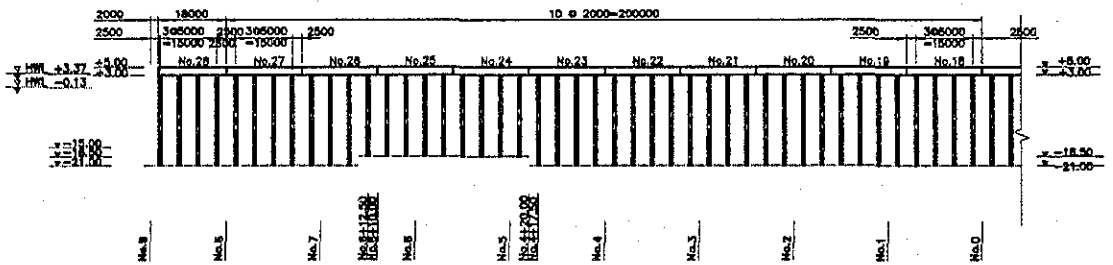
References, Calculation Base and Revisions

References : Tender Drawings:
- DW-QW-01-002 Plan and Profile Multipurpose Berth
- DW-QW-01-056 Crane foundation (land Side)

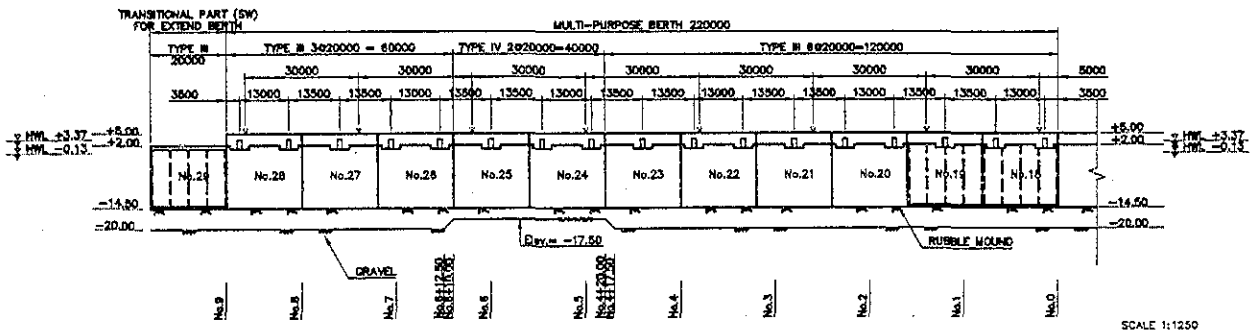
Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
	by	Date		by	Date	by	Date	
0	Karla García			Mr. Inuma		Mr. Ando		
1								
2								
3								



PLAN



PROFILE B-B



PROFILE A-A

SCALE 1:1250

0 50 100

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

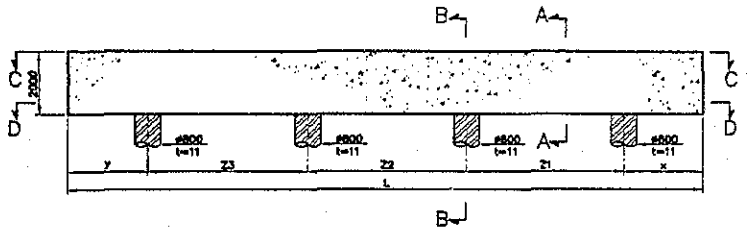
NIPPON KOEI CO., LTD.

DESIGNED BY :
CHECKED BY :
APPROVED BY :

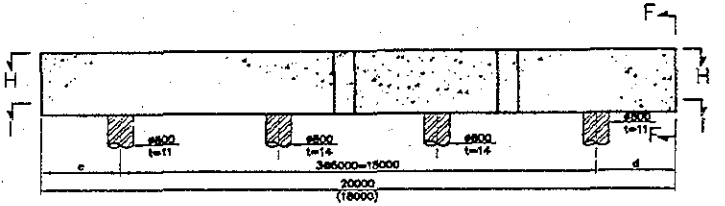
SECTION : QUAYWALL WORK
SUB-SECTION : CONTAINER AND MULTI-PURPOSE BERTH
TITLE :

PLAN AND PROFILE
MULTI-PURPOSE BERTH

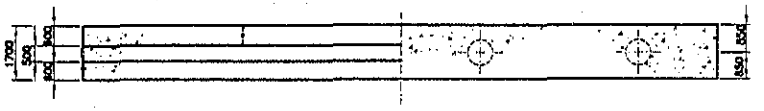
DATE : JULY/2002
SCALE : 1 : 1250
DRAWING NO. DW-QW-01-002



SECTION E–E
SCALE 1:150

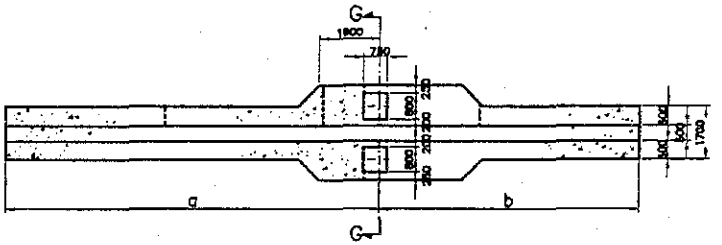


SECTION J–J
SCALE 1:150



C–C

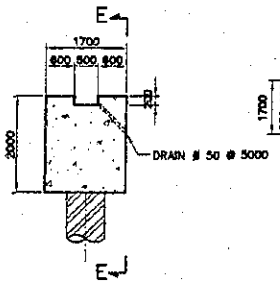
D–D
SCALE 1:150



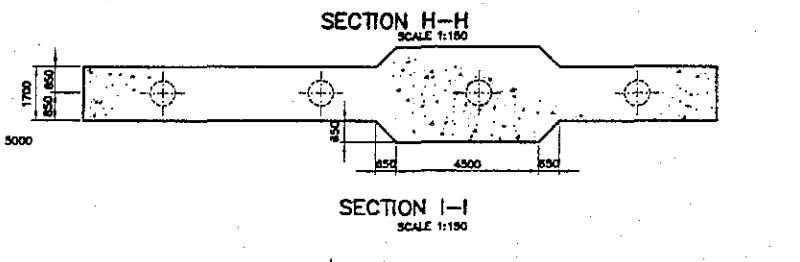
SECTION H–H
SCALE 1:150

VARIABLE LENGHT OF CRANE FOUNDATION

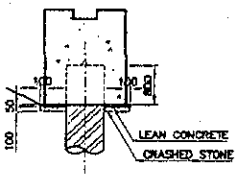
	LENGTH (L)	a	b	c	d	X	Y	Z1	Z2	Z3
No.1	18000	—	—	—	—	1000	2000	5000	5000	5000
No.2	20000	—	—	—	—	2500	3000	5000	4500	5000
No.3~ No.13	20000	—	—	—	—	2500	2500	2500	2500	—
No.14	20000	8600	11400	2500	2500	—	—	—	—	—
No.15	20000	11400	8600	2500	2500	—	—	—	—	—
No.16	20000	8600	11400	2500	2500	—	—	—	—	—
No.17	20000	11400	8600	2500	2500	—	—	—	—	—
No.18~ No.26	20000	—	—	—	—	2500	2500	2500	2500	—
No.27	20000	8600	11400	2500	2500	—	—	—	—	—
No.28	18000	9400	8600	1000	2000	—	—	—	—	—



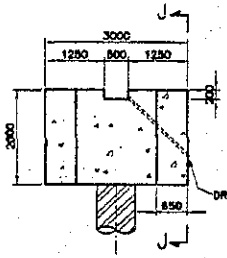
SECTION A–A
SCALE 1:100



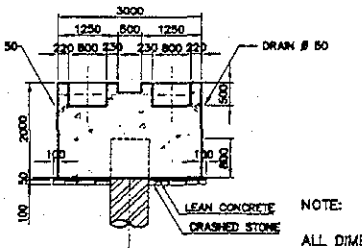
SECTION I–I
SCALE 1:150



SECTION B–B
SCALE 1:100



SECTION F–F
SCALE 1:100



SECTION G–G
SCALE 1:100

NOTE:

ALL DIMENSIONS ARE IN MILLIMETER.

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 : CONTAINER AND MULTI-PURPOSE BERTH
TITLE :

CRANE FOUNDATION (LAND SIDE)

DATE : JULY/2002
SCALE : INDICATED
DRAWING NO. DW-QW-01-056

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	STEEL PIPE PILE FOR CRANE RAIL FOUNDATION	Calc. Index No.	
Subject	STEEL PIPE PILE	Page No.	Rev.

References/ Notes

Multi-Purpose Berth:

Nb piles = 44 ; ϕ = 800 mm

L_1 = 24.00 m ; L_2 = 21.50 m ; t = 11 mm ; t_2 = 14 mm

For t = 11 mm ; ϕ = 800 mm ; L_1 = 24.00 m ; No piles = 29

⇒ w = 214 kg/m

⇒ Unit weight = (214 kg/m)(24.00 m) = 5,136 kg

⇒ W = (5,136 kg)(29) = 148,944 kg

⇒ L = (24.00 m)(29) = 696 m

No pile = 29

W = 148,944 kg

L = 696 m

For t = 11 mm ; ϕ = 800 mm ; L_2 = 21.50 m ; No piles = 9

⇒ Unit weight = (214 kg/m)(21.50 m) = 4,601 kg

⇒ W = (4,601 kg)(9) = 41,409 kg

⇒ L = (21.5 m)(9) = 193.50 m ≈ 194 m

No piles = 9

W = 41,409 kg

L = 194 m

For t = 14 mm ; ϕ = 800 m ; L_1 = 24 m ; No piles = 6

⇒ w = 271 kg/m

⇒ Unit weight = (271 kg/m)(24) = 6,504 kg

⇒ W = (6,504 kg)(6) = 39,024 kg

⇒ L = (24.00 m)(6) = 144 m

No piles = 6

W = 39,024 kg

L = 144 m

W_T = 279,377 kg

L_T = 1,034 m

		Prepared by		Checked by	
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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	STEEL PIPE PILE FOR CRANE RAIL FOUNDATION	**Pay Item No. (BOQ)**	2C-1302
Quantity Item	STEEL PLATE	**Unit**	kg

Calculation Procedure Applied

Steel plates will be used for connection between steel pipe pile and re-bar.

References, Calculation Base and Revisions

References : Tender Drawings :

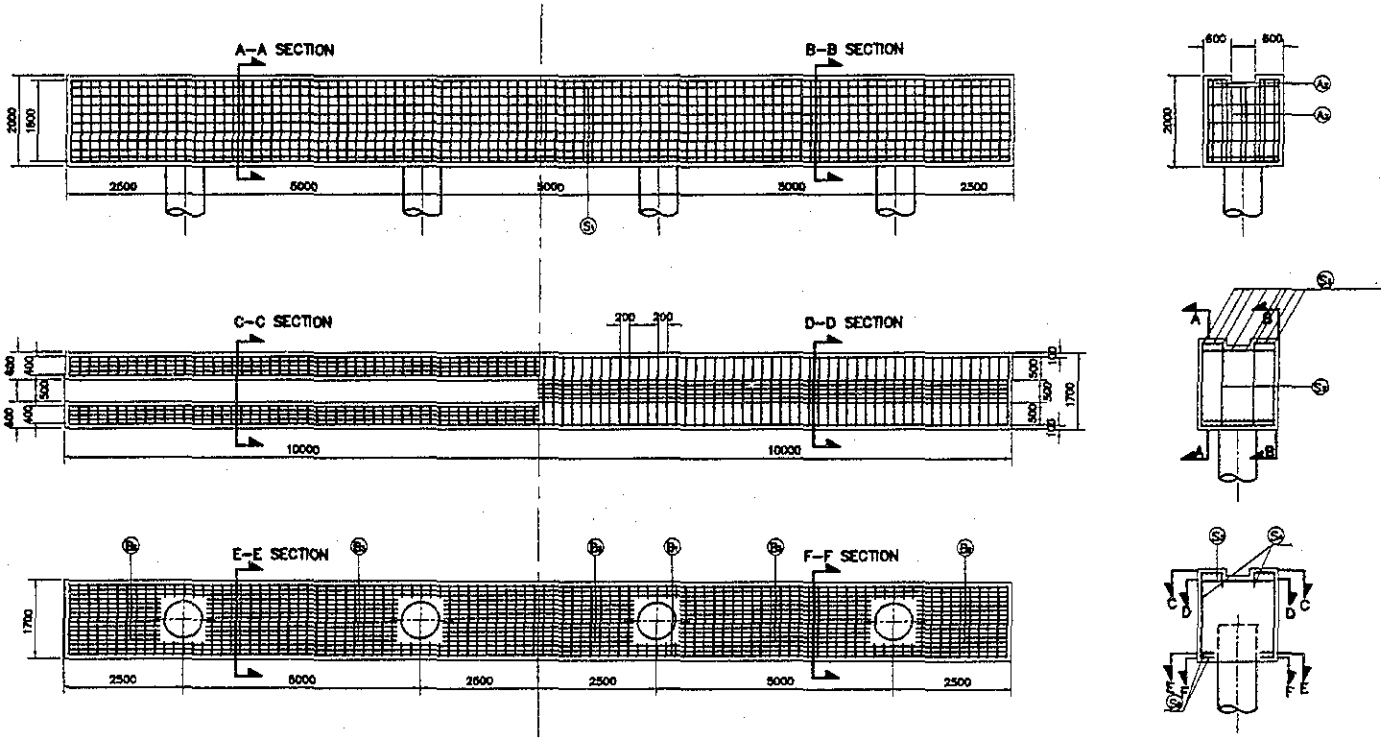
DW-QW-01-057 Reinforcement of Crane Foundation (1)

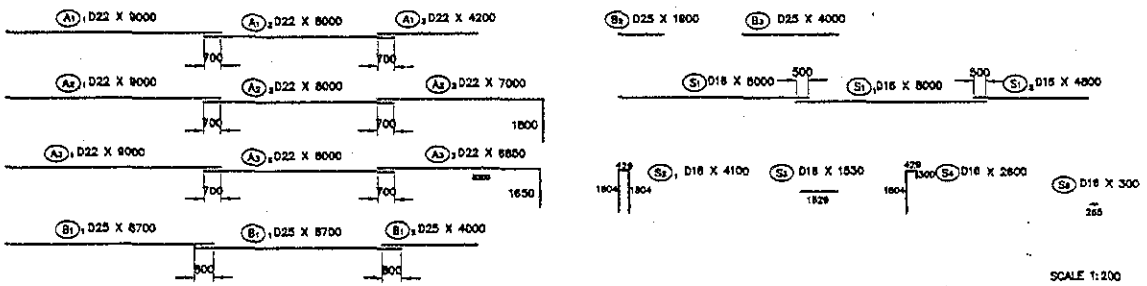
Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
	by	Date		by	Date	by	Date	
0	Karla Garcia			Mr. Inuma		Mr. Ando		
1								
2								
3								

FN : Calculation_Cover_Sheet_020504_seg cover

REINFORCEMENT OF CRANE FOUNDATION
(TYPICAL SECTION)

SCALE 1:1000

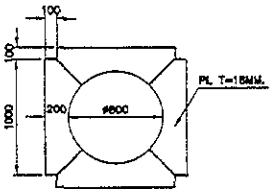




SCALE 1:200

PLATE DETAIL

SCALE 1:40

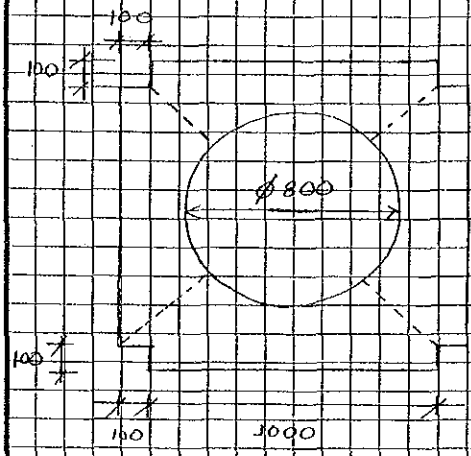


NOTES:
1- ALL DIMENSIONS ARE IN MILLIMETER
2- THIS REINFORCEMENT IS APPLIED TO TYPICAL SECTION. THOUGH ANOTHER SECTION WILL BE ALMOST SAME, SHOP DRAWINGS SHALL BE PREPARED BY THE CONTRACTOR.
3- JOIN POINTS OF REINFORCING BAR SHOULD BE TAKEN INTO ACCOUNT, AS THEY ARE NOT CONCENTRATED ON THE SMALL AREA.

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 : CONTAINER AND MULTI-PURPOSE BERTH	SCALE : INDICATED
		APPROVED BY :	TITLE : REINFORCEMENT OF CRANE FOUNDATION (1)	DRAWING NO. DW-QW-01-057

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	STEEL PIPE PILE FOR GRANE RAIL FOUNDATION	Calc. Index No.	
Subject	STEEL PLATE	Page No.	Rev.

References/ Notes



$$A = 1.20 \times 1.20 - 0.10 \times 0.10 \times 4 - (0.40)^2 \times \pi$$

$$= 0.8976$$

$$= 0.898$$

$$W = 0.898 \times 0.016 \times 7850$$

$(m^2)\,(0.016m)($

$$= 112.78$$

$$\simeq 112.80 \text{ kg}$$

$$W_T = 112.80 \times 9 \times 11$$

$$= 9,963.20 \text{ kg}$$

$$\simeq \boxed{9,970 \text{ kg}}$$

		Prepared by		Checked by	
			/ /200		/ /200

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	CONCRETE FOR CRANE RAIL FOUNDATION	**Pay Item No. (BOQ)**	2C - 1401
Quantity Item	Concrete (Multi-purpose berth)	**Unit**	m^3

Calculation Procedure Applied

Concrete volume of crane rail foundation was computed on each type. Crane accessories were considered in the calculation. See the attached summary.

References, Calculation Base and Revisions

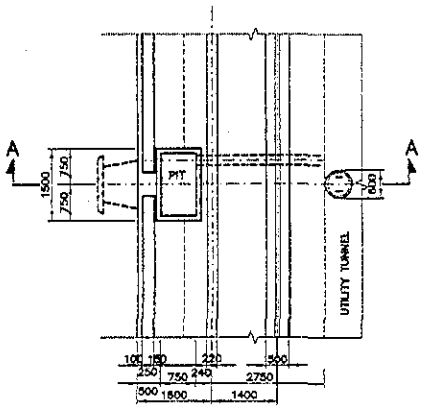
References: Tindir Drawings:

DW-QW-01-045 Detail of Coping (1)
DW-QW-01-056 Conc foundation (land side)
DW-QW-01-059 Detail of Anchor - Tack up Plate
DW-QW-01-060 Detail of Conc End Stopper.

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								

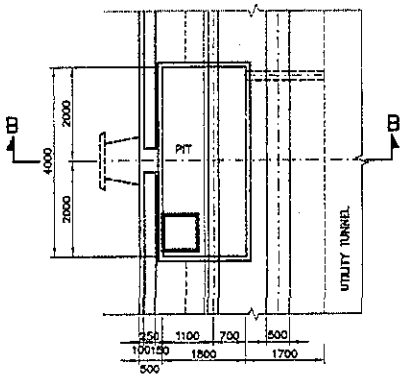
FN : Calculation_Cover_Sheet_020504_seg cover

WATER HAIDLANT & FIRE FITING PIT CAISSON
No.3 No.7 No.11 No.15 No.19 No.23 No.27



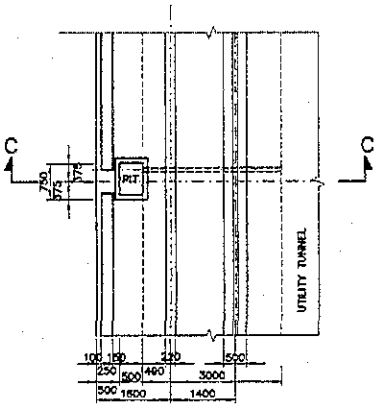
PLAN

ELECTRIC CABLEJUNCTION PIT
CAISSON No.12 No.20



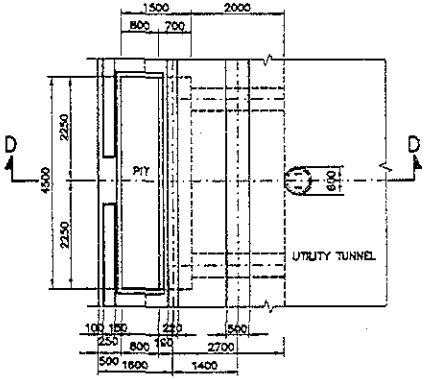
PLAN

ELECTRIC SERVICE PIT CAISSON
No.2 No.14 No.16 No.26 No.28

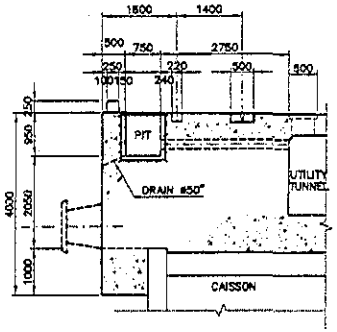


PLAN

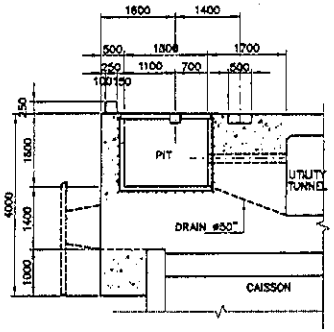
LOADING PIT (MULTI-PURPOSE BERTH)
CAISSON No.21 No.22 No.23 No.24 No.25



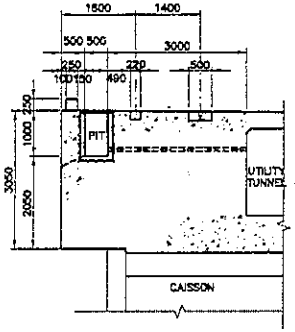
PLAN



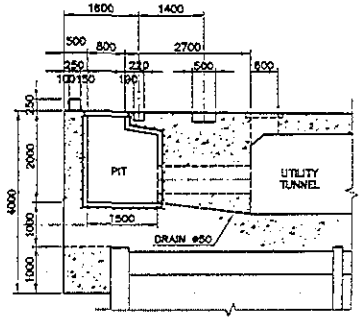
SECTION A-A



SECTION B-B



SECTION C-C



SECTION D-D

NOTE:
-DETAIL OF ELECTRIC SERVICE PIT IS SHOWN IN DW-??
-DETAIL OF ELECTRIC CABLE JUNCTION IS SHOWN IN DW-??
-DETAIL OF WATER HYDRANT FIREFIGHTING IS SHOWN IN DW-??

REV. NO.	DATE	COORDINATE	BY	APPROVED	DATE

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)
NIPPON KOEI CO., LTD.

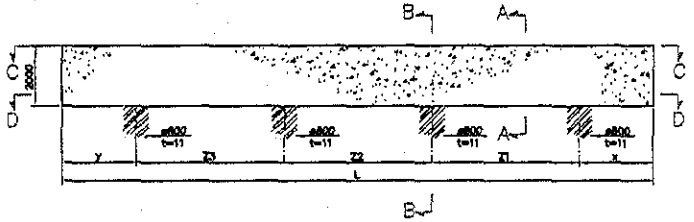
DETAILED DESIGN ON PORT REACTIVATION PROJECT IN LA UNION PROVINCE OF THE REPUBLIC OF EL SALVADOR

DESIGNED BY :
CHECKED BY :
APPROVED BY :

SECTION : QUAYWALL WORK
SUB-SECTION : CONTAINER AND MULTI-PURPOSE BERTH
TITLE :

DETAIL OF COPING (4)

DATE : JULY/2002
SCALE : 1 : 100
DRAWING NO. : DW-QW-01-045



SECTION E–E
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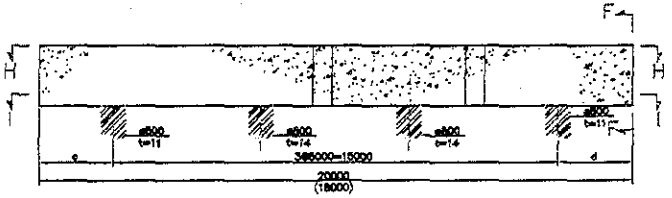
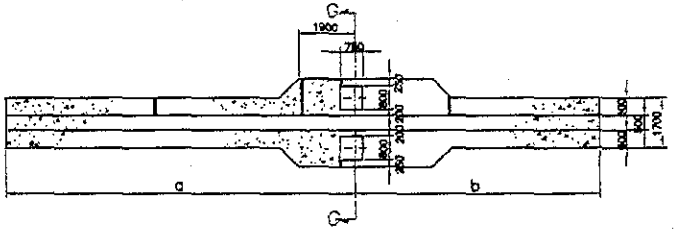


SECTION J–J
SCALE 1:150

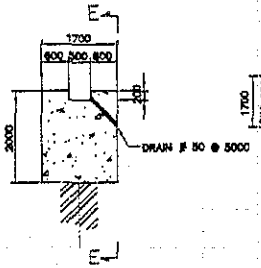
C–C D–D
SCALE 1:150



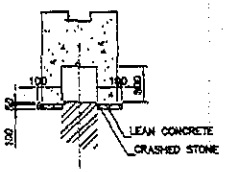
SECTION H–H
SCALE 1:150

VARIABLE LENGHT OF CRANE FOUNDATION

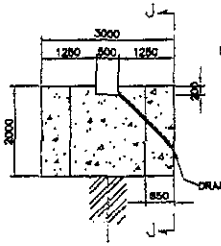
	LENGTH (L)	a	b	c	d	X	Y	Z1	Z2	Z3
No.1	18000	—	—	—	—	1000	2000	5000	5000	5000
No.2	20000	—	—	—	—	2500	3000	5000	4500	5000
No.3~ No.13	20000	—	—	—	—	2500	2500	2500	2500	—
No.14	20000	8600	11400	2500	2500	—	—	—	—	—
No.15	20000	11400	8600	2500	2500	—	—	—	—	—
No.16	20000	8600	11400	2500	2500	—	—	—	—	—
No.17	20000	11400	8600	2500	2500	—	—	—	—	—
No.18~ No.26	20000	—	—	—	—	2500	2500	2500	2500	—
No.27	20000	8600	11400	2500	2500	—	—	—	—	—
No.28	18000	9400	8600	1000	2000	—	—	—	—	—



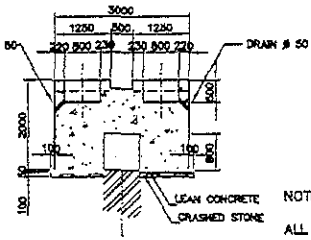
SECTION A–A
SCALE 1:100



SECTION B–B
SCALE 1:100



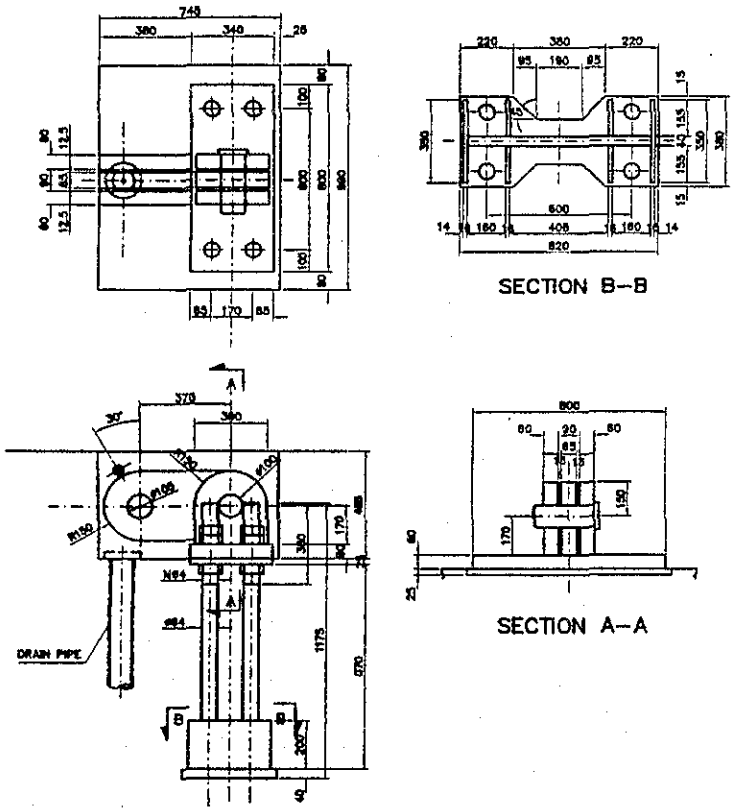
SECTION F–F
SCALE 1:100



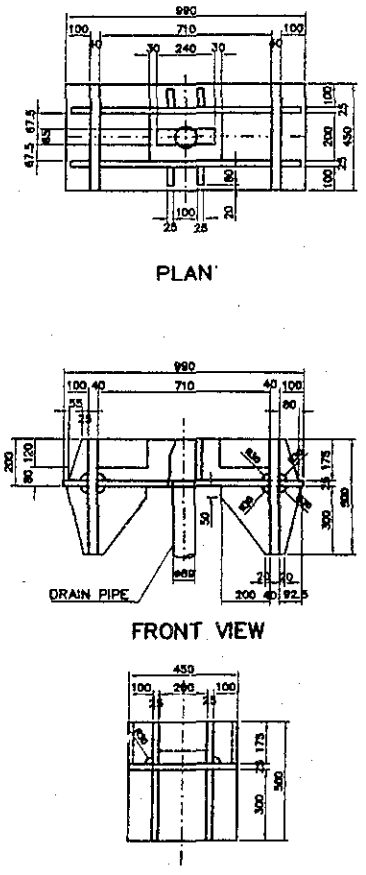
SECTION G–G
SCALE 1:100

NOTE:
ALL DIMENSIONS ARE IN MILLIMETER.

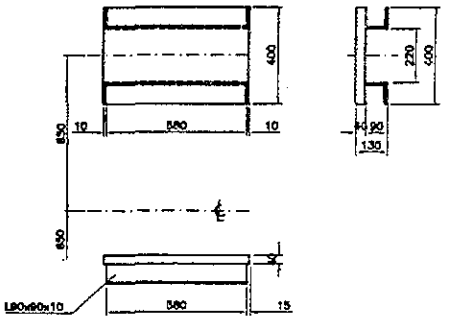
DETAIL OF ANCHORING FRAME
SCALE 1:20



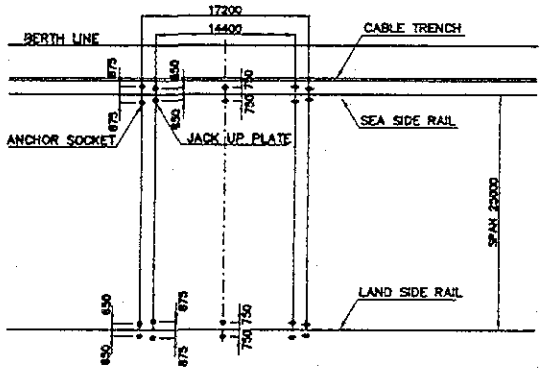
DETAIL OF SOCKET BLOCK
SCALE 1:20



DETAIL OF JACK UP PLATE
SCALE 1:20



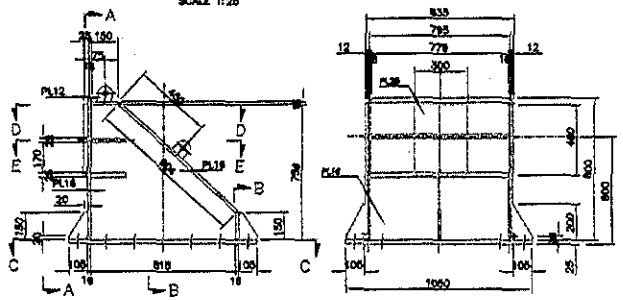
PLAN OF ANCHOR AND JACK UP PLATE
SCALE 1:500



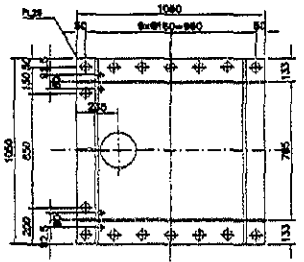
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) / COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)	DETAILED DESIGN ON PORT REACTIVATION PROJECT IN LA UNION PROVINCE OF THE REPUBLIC OF EL SALVADOR	NIPPON KOEI CO., LTD.	SECTION : QUAYWALL WORK SUB-SECTION : CONTAINER AND MULTI-PURPOSE BERTH TITLE : DETAIL OF ANCHOR-JACK UP PLATE & SOCKET BLOCK
			DATE : JULY/2002 SCALE : INDICATED DRAWING NO. DW-QW-01-059

DETAIL OF CRANE STOPPER EAST SIDE (CONTAINER)

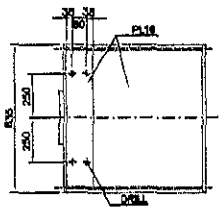
CRANE STOPPER
SCALE 1:25



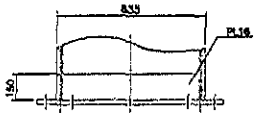
A–A



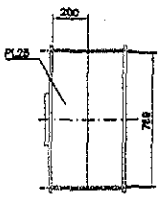
C–C



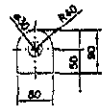
D–D



B–B

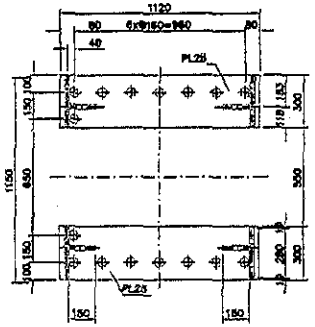


E–E



SCALE 1:10

STOPPER BASE
SCALE 1:25



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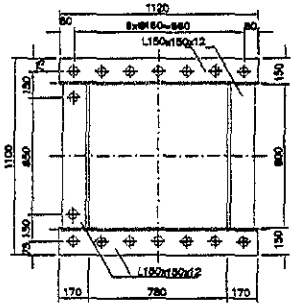
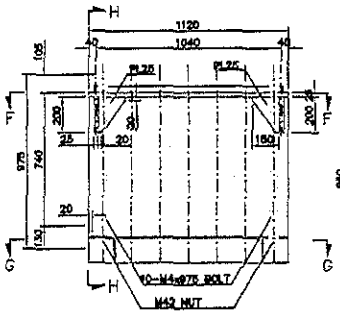
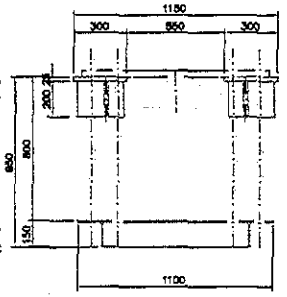
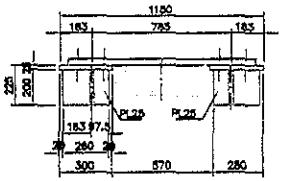


G–G



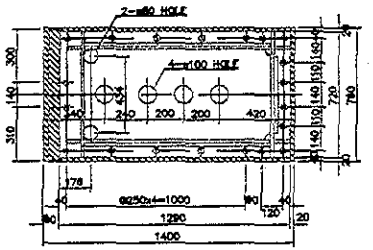


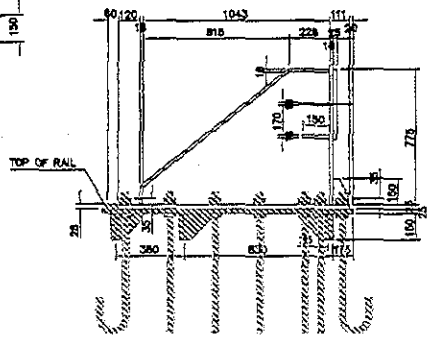
H–H

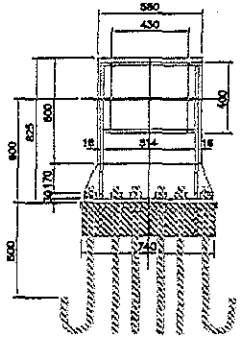


J–J

DETAILS OF CRANE STOPPER WEST SIDE (CONTAINER)
SCALE 1:25







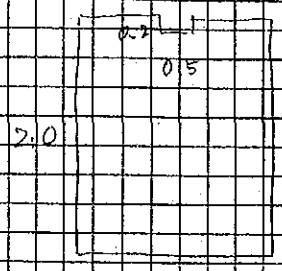
Concrete Volume of Crane Rail Foundation

			anchoring fram	socket block	stopper	Volume	
Container Berth	No.1	56.3			0.73	55.6	
	No.2	66				66.0	
	No.3	66				66.0	
	No.4	66				66.0	
	No.5	66				66.0	
	No.6	66				66.0	
	No.7	66				66.0	
	No.8	66				66.0	
	No.9	66				66.0	
	No.10	66				66.0	
	No.11	66				66.0	
	No.12	66				66.0	
	No.13	66				66.0	
	No.14	79.4	1.68	0.14		77.6	
	No.15	79.4	1.68	0.14		77.6	
	No.16	79.4	1.68	0.14		77.6	
	No.17	79.4	1.68	0.14	0.73	76.9	
	Total					1,160	m3
Multi-purpose Berth	No.18	66				66.0	
	No.19	66				66.0	
	No.20	66				66.0	
	No.21	66				66.0	
	No.22	66				66.0	
	No.23	66				66.0	
	No.24	66				66.0	
	No.25	66				66.0	
	No.26	66				66.0	
	No.27	79.4	1.68	0.14		77.6	
	No.28	79.4	1.68	0.14	0.73	76.9	
	Total					750	m3

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	CONCRETE FOR CRANE RAIL FOUNDATION	Calc. Index No.	
Subject	Concrete (Multi-purpose berth)	Page No. 1	Rev.

References/ Notes

No. 18 ~ No. 26



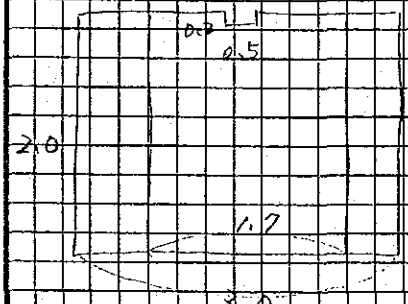
$2.0 \times 1.7 \times 20.0 = 68.0\ m^3$

Rail pit

$0.2 \times 0.5 \times 20.0 = 2.0\ m^3$

$68.0 - 2.0 = 66.0\ m^3$

No. 27



$2.0 \times 1.7 \times 14.2$
$+ 4.5 \times 3.0 \times 2.0$
$+ (1.7 + 3.0) \times 0.65 \div 2 \times 2.0 \times 2$
$= 81.4\ m^3$

Rail pit

$0.2 \times 0.5 \times 20 = 2.0\ m^3$

Anchoring frame

$0.8 \times 0.25 \times 1.4 \times 2 = 1.68\ m^3$

Socket block

$0.45 \times 1.0 \times 0.3 \times 11 = 0.135$

$\approx 0.14\ m^3$

	Prepared by		Checked by	
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FN: Calculation_Sheet

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	CONCRETE FOR CRANE RAIL FOUNDATION	Calc. Index No.	
Subject	Concrete (Multi-purpose berth)	Page No. 2	Rev.

References/ Notes

[No. 28]

2.0 × 1.7 × 12.2 + 4.5 × 3.0 × 2.0
+ (1.7 + 3.0) × 0.65 ÷ 2 × 2.0 × 2
= 77.6 m³ ——— 72.8 m³

Rail pit
0.2 × 0.5 × 18 = 1.8 m³

Anchoring frame
1.68 m³

Socket block
0.14 m³

Stopper
0.8 × 1.4 × 0.65 × 1 = 0.73 m³

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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	CONCRETE FOR CRANE RAIL FOUNDATION	**Pay Item No. (BOQ)**	2C-1402
Quantity Item	Elas Tigh Board (Multi-purpose berth)	**Unit**	m^2

Calculation Procedure Applied

Elas tigh board will be used for construction joints.

This calculation was computed for Multi-purpose berth based on every 20 m pitch.

References, Calculation Base and Revisions

References : Tender Drawings :

DW-QW-01-056 Crane foundation (Land Side)

(Same as "Concrete" (Concrete for Crane Rail foundation))

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

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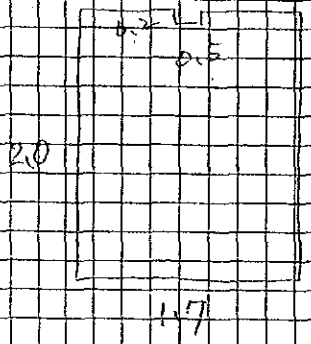
Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	CONCRETE FOR CRANE RAIL FOUNDATION	Calc. Index No.	
Subject	Elas Tigh Board (Multi-purpose berth)	Page No.	Rev.

References/ Notes

L = 220 m.

220 ÷ 20 − 1 = 10



$A = 2.0 \times 1.7 - 0.5 \times 0.2$

$= 3.3\ m^2$

$3.3 \times 10 = 33.0\ m^2$

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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	CONCRETE FOR CRANE RAIL FOUNDATION	**Pay Item No. (BOQ)**	2C - 1403
Quantity Item	Reinforcement : Multi-purpose berth	**Unit**	t

Calculation Procedure Applied

Total weight of reinforcement for crane rail foundation was computed by using Excel.

This calculation was carried out based on typical section.

References, Calculation Base and Revisions

References : Tender Drawings

SW - SY1 - 01 - 057 Reference : Crane Foundation (1)

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0	Khaka Garcia			Mr. Inuma		Mr. Ando		
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3								

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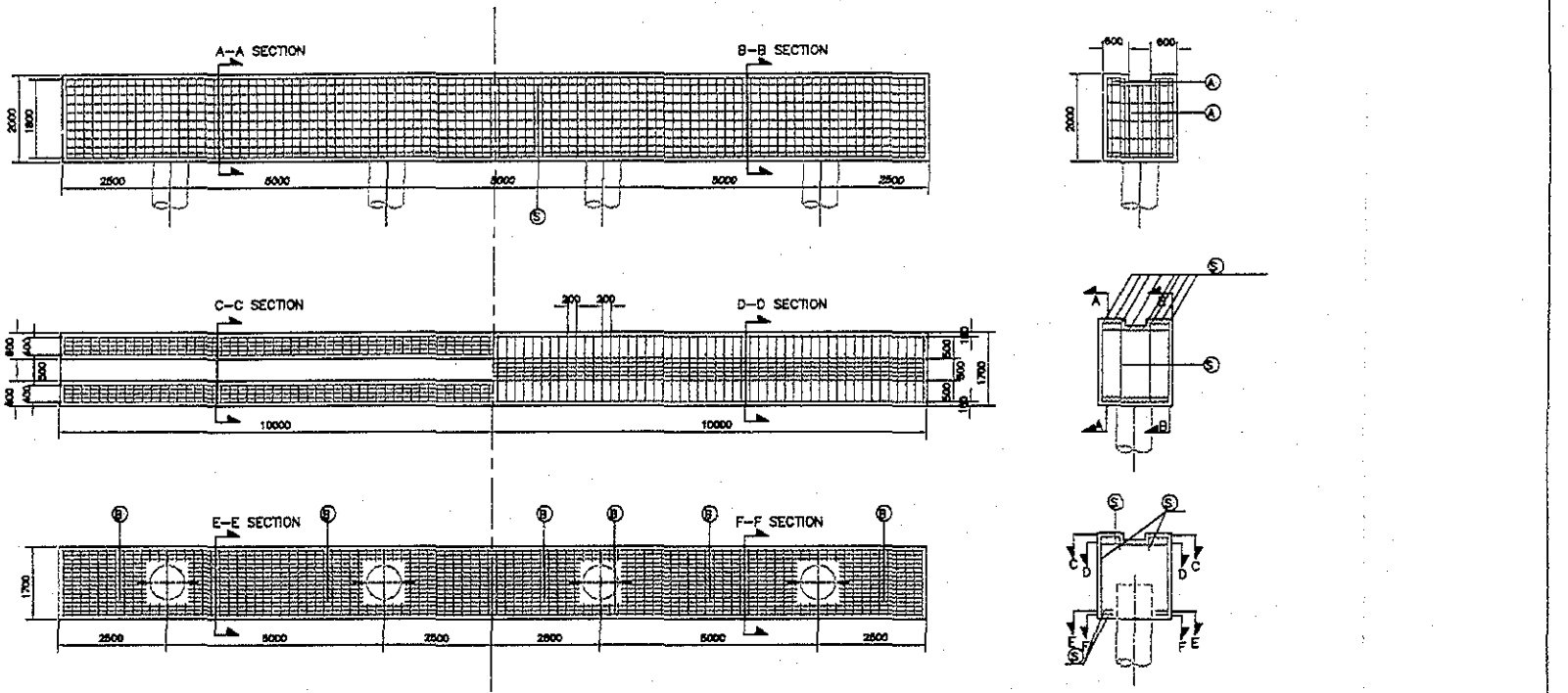
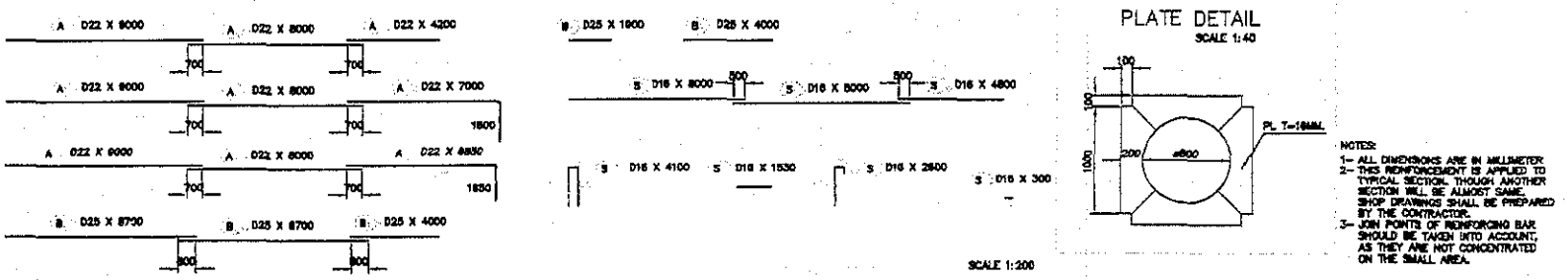
REINFORCEMENT OF CRANE FOUNDATION (TYPICAL SECTION)

SCALE 1:1000





SCALE 1:200

PLATE DETAIL

SCALE 1:40

NOTES:
1- ALL DIMENSIONS ARE IN MILLIMETER.
2- THIS REINFORCEMENT IS APPLIED TO TYPICAL SECTION. THOUGH ANOTHER SECTION WILL BE ALMOST SAME. SHOP DRAWINGS SHALL BE PREPARED BY THE CONTRACTOR.
3- JOIN POINTS OF REINFORCING BAR SHOULD BE TAKEN INTO ACCOUNT, AS THEY ARE NOT CONCENTRATED ON THE SMALL AREA.

TABLE OF REINFORCEMENT

No.	D	L (m)	Qty	W/bar (kg)	W (kg)	Remarks
A1-1	D22	9.00	8	27.36	218.88	
A1-2	D22	8.00	8	24.32	194.56	
A1-3	D22	4.20	8	12.768	102.144	
A2-1	D22	9.00	4	27.36	109.44	
A2-2	D22	8.00	4	24.32	97.28	
A2-3	D22	7.00	4	21.28	85.12	
A3-1	D22	9.00	4	27.36	109.44	
A3-2	D22	8.00	4	24.32	97.28	
A3-3	D22	6.85	4	20.824	83.296	
B1-1	D25	8.70	24	34.626	831.024	
B1-2	D25	4.00	12	15.92	191.04	
B2	D25	1.90	40	7.562	302.48	
B3	D25	4.00	60	15.92	955.2	
S1-1	D16	8.00	32	12.48	399.36	
S1-2	D16	4.80	16	7.488	119.808	
S2	D16	4.10	160	6.396	1023.36	
S3	D16	1.53	260	2.3868	620.568	
S4	D16	2.60	40	4.056	162.24	
S5	D16	0.30	80	0.468	37.44	
				Total / Block	5740.0 kg	
	Container Berth		17 Block	Total	97.60 t	
	Multi-purpose Berth		11 Block	Total	63.20 t	

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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	CONCRETE FOR CRANE RAIL FOUNDATION	**Pay Item No. (BOQ)**	8C - 1404
Quantity Item	Form (Multi-purpose berth)	**Unit**	m^2

Calculation Procedure Applied

Form for crane rail foundation was computed for every type of Multi-purpose berth. Crane accessories were considered in the calculation. (Refer to attached summary.)

References, Calculation Base and Revisions

References : Tender Drawings

[illegible] - [illegible] - 045 Detail of Coping (4)
[illegible] - [illegible] - 053 Crane Foundation (Land Side)
[illegible] - [illegible] - 053 Detail of Anchor – Jack up Plate & Sockel Block
[illegible] - [illegible] - 053 Details of Crane End Stopper

(Same as "Concrete (Concrete for Crane Rail foundation)")

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

Form of Crane Rail Foundation

			anchoring fram	socket block	Stopper	sqm	
Container Berth	No.1	77.5			2.86	80.4	
	No.2	88				88	
	No.3	88				88	
	No.4	88				88	
	No.5	88				88	
	No.6	88				88	
	No.7	88				88	
	No.8	88				88	
	No.9	88				88	
	No.10	88				88	
	No.11	88				88	
	No.12	88				88	
	No.13	88				88	
	No.14	90.2	8.68	0.87		99.8	
	No.15	90.2	8.68	0.87		99.8	
	No.16	90.2	8.68	0.87		99.8	
	No.17	90.2	8.68	0.87	2.86	102.6	
	End Block					0	
	Total					1,540	m2
Multi-purpose Berth	No.18	88				88	
	No.19	88				88	
	No.20	88				88	
	No.21	88				88	
	No.22	88				88	
	No.23	88				88	
	No.24	88				88	
	No.25	88				88	
	No.26	88				88	
	No.27	90.2	8.68	0.87		99.8	
	No.28	82.5	8.68	0.87	2.86	94.9	
	End Block					0	
	Total					990	m2

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	CONCRETE FOR CRANE RAIL FOUNDATION	Calc. Index No.	
Subject	Form (Multi-purpose berth)	Page No.	Rev.

References/ Notes

(No. 18 ~ No. 26)

Side $2.0 \times 20.0 \times 2 = 80.0\ m^2$

Rail pit $0.2 \times 20.0 \times 2 = 8.0\ m^2$

total $88.0\ m^2$

(No. 27)

Side $(14.2 + 0.92 + 4.5) \times 2.0 \times 2$

$= 89.2\ m^2$ ⟶ $90.2\ m^2$

Rail pit $0.2 \times 20.0 \times 2 = 8.0\ m^2$

Anchoring frame $(0.8 \times 2 + 0.95 \times 2) \times 1.4 \times 2$

$= 8.68\ m^2$

Socket block $(0.45 \times 2 + 1.0 \times 2) \times 0.3 \times 1$

$= 0.87\ m^2$

(No. 28)

Side $2.0 \times 18.0 \times 2 = 72.0\ m^2$

Rail pit $0.2 \times 18.0 \times 2 = 7.2\ m^2$

End $2.0 \times 1.7 - 0.2 \times 0.5 = 3.3\ m^2$

total $82.5\ m^2$

Anchoring frame $8.68\ m^2$

Socket block $0.87\ m^2$

Stopper $(0.8 \times 2 \times 1.4 \times 2) \times 0.45 = 2.02\ m^2$

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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	CONCRETE FOR CRANE RAIL FOUNDATION	**Pay Item No. (BOQ)**	2C - 1405
Quantity Item	Crushed Stone	**Unit**	m^3

Calculation Procedure Applied

Volume of crushed stone for crane rail foundation was computed based on 10cm thick.

References, Calculation Base and Revisions

References: Tender Drawings:

DW-GW-01-056 Crane Foundation (land Side)

(Same as Concrete (Concrete for Crane Rail foundation))

Rev	Prepared by	Prepared Date	No. of Pages	Checked by	Checked Date	Reviewed by	Reviewed Date	Superseded by Calc No.
0	Karla Garcia			Mr. Inoma		Mr. Ando		
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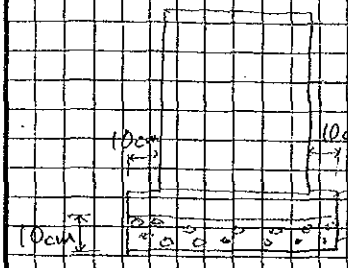
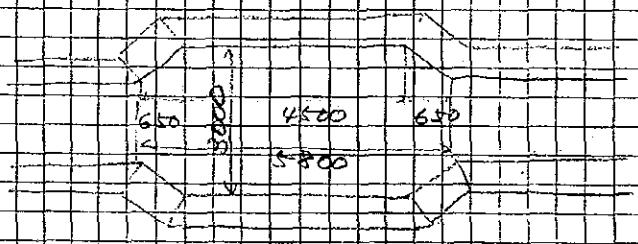
Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	CONCRETE FOR CRANE RAIL FOUNDATION	Calc. Index No.	
Subject	Crushed Stone	Page No.	Rev.

References/ Notes





$L = 220 + 2 = 218$ m

Width (3m) $\quad 8 \times 4 = 32$ m

Normal (1.7m) $\quad 218 - 32 = 186$ m

$A_1 = 186 \times 1.9 = 353.4$ m^2

$A_2 = \{4.5 \times (8 + 0.2) + (1.9 + 3.2) \times 0.65\} \times 4$

$= 120.9$ m^2

Reduction

Steel pipe $\quad N = 44$

$A_3 = \pi \times (0.4)^2 \times 44 = 22.1$ m^2

$A = 353.4 + 120.9 - 22.1 = 452.2$ m^2

$V = 452.2 \times 0.1 = \boxed{45.2}$ m^3

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FN: Calculation_Sheet

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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	CONCRETE FOR CRANE RAIL FOUNDATION	**Pay Item No. (BOQ)**	2C - 1906
Quantity Item	Leveling of Crushed Stone	**Unit**	m^2

Calculation Procedure Applied

As area of leveling of crushed stone was the same as crushed stone, calculation was omitted in this part.

References. Calculation Base and Revisions

References: Tender Drawings:

DW - QN - 01 - 056 Crane foundation (land side)

(Same as "Concrete" (Concrete for Crane Rail foundation);

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0	Karla Gonca			Mr. Inuma		Mr. Ando		
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Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	CONCRETE FOR CRANE RAIL FOUNDATION	Calc. Index No.	
Subject	Leveling of Crushed Stone	Page No.	Rev.

References/ Notes

$A = \boxed{41.9}\ m^2$

See crushed stone in detail.

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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	CONCRETE FOR CRANE RAIL FOUNDATION	**Pay Item No. (BOQ)**	2C - 1407
Quantity Item	Lean Concrete	**Unit**	m^3

Calculation Procedure Applied

Volume of lean concrete was computed by using the same area as crushed stone.

Thickness was to be 5cm.

References, Calculation Base and Revisions

References : Tender Drawings :

DW - QW - 01 - 056 Crane foundation (Land Side)

(Same as "Concrete" (Concrete for Crane Rail foundation))

Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
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0	Karla Gonia			Mr. Inuma		Mr. Ando		
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Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	Crane Rail Foundation	Calc. Index No.	
Subject	Lean Concrete	Page No.	Rev.

References/ Notes

$A = 14.9\ m^2$

$t = 0.05\ m$

$V = 14.9 \times 0.05 = 20.95$

$\approx \boxed{21.0}\ m^3$

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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	CONCRETE FOR CRANE RAIL FOUNDATION	**Pay Item No. (BOQ)**	2C - 1408
Quantity Item	CRANE DRAIN PIPE	**Unit**	Lm

Calculation Procedure Applied

Crane drain pipe was computed multiplying the lenght of crane pipe to the number of pipe contained in one crane and multiplied to the total of caissons in Container and Multipurpose Berth.
The lenght was computed with zero decimal for total.

Reterences, Calculation Base and Revisions

Reference : Tender Drawing
DW - QW - 01 - 037/56 Crane foundation (Land Side)
(Same as "Concrete" (Concrete for Crane Rail foundation)).

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0	Karla Garcia	07 June 2002		Mr. Inuma		Mr. Ando		
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Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	CONCRETE FOR CRANE RAIL FOUNDATION	Calc. Index No.	
Subject	C2 AXIS = DRAIN PIPE	Page No.	Rev.

References/ Notes

Container Berth :

$L_1 = 0.85\ m$
$L_2 = 1.76\ m$
$L_3 = 0.31\ m$

L_1 = No = 47
L_2 = No = 4
L_3 = No = 8

No 1 :

$L = (0.85m)(3) = 2.55m$

No 2 – 13

$L = (0.85m)(3)(12) = 30.6\ m$

No 14 – 17

$L = [(0.85m)(2) + 1.76m + (0.31m)(2)](4) = 16.32\ m$

$L = 49.47\ m \simeq 50\ m$

L_1 $L = 50\ m$

Multipurpose Berth :

No 18 – 26

$L = (0.85m)(3)(9) = 22.95\ m$

L_1 = No = 31
L_2 = No = 2
L_3 = No = 4

No 27

$L = (0.85\ m)(2) + 1.76\ m + (0.31\ m)(2) = 4.08\ m$

No 28

$L = (0.85\ m)(2) + 1.76\ m + (0.31\ m)(2) = 4.08\ m$

$L = 31.1\ m \simeq 32\ m$

$L = 32\ m$

Container + Multipurpose : L_1 = No = 78
L_2 = No = 6
L_3 = No = 12

$L_T = 82\ m$

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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	Crane Rail with Accessories	Pay Item No. (BOQ)	2C-1501
Quantity Item	Crane Rail with Accessories	Unit	m

Calculation Procedure Applied

Length of crane rail was computed for Multi-purpose Berth.

References, Calculation Base and Revisions

References: Tender Drawings:

DW-QW-01-044 Detail of Coping (3)

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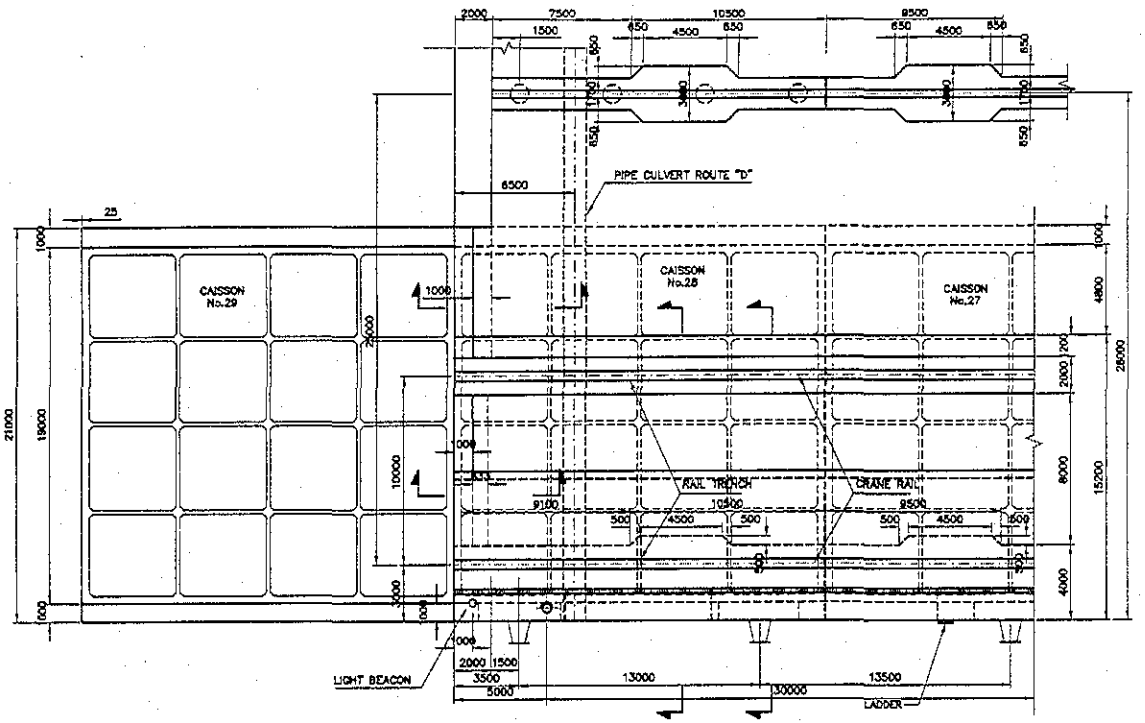

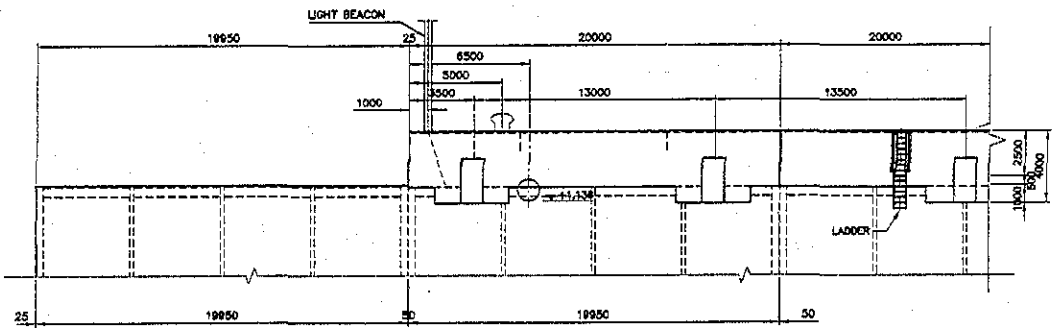

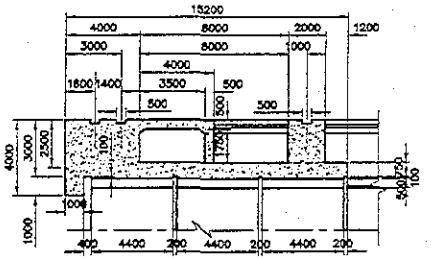

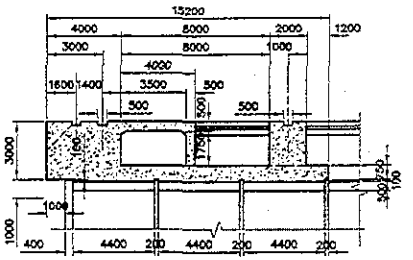

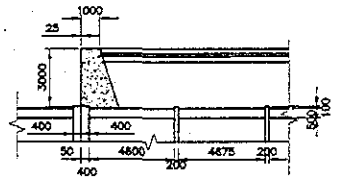

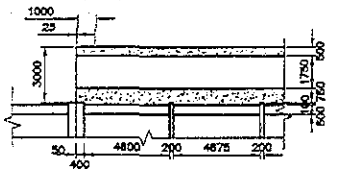

NOTES: ALL DIMENSIONS ARE IN MILLIMETER

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 : CONTAINER AND MULTI-PURPOSE BERTH TITLE : DETAIL OF COPING (3)	DATE : JULY/2002 SCALE : 1 : 250 DRAWING NO: DW-QW-01-044	

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	Crane Rail with Accessories	Calc. Index No.	
Subject	Crane Rail with Accessories	Page No.	Rev.

References/ Notes

No. of Crane Rail Foundation

End Block

2m

$L = 220 \times 3 - 2 = 658$ m

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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	Crane Rail with Accessories	**Pay Item No. (BOQ)**	2C-1502
Quantity Item	Asphalt Mixture	**Unit**	m^3

Calculation Procedure Applied

Volume of asphalt mixture was computed by multiplying typical section area by length.

References, Calculation Base and Revisions

References: Tender Drawings:
DW-GW-01-058 Detail of Crane Rail

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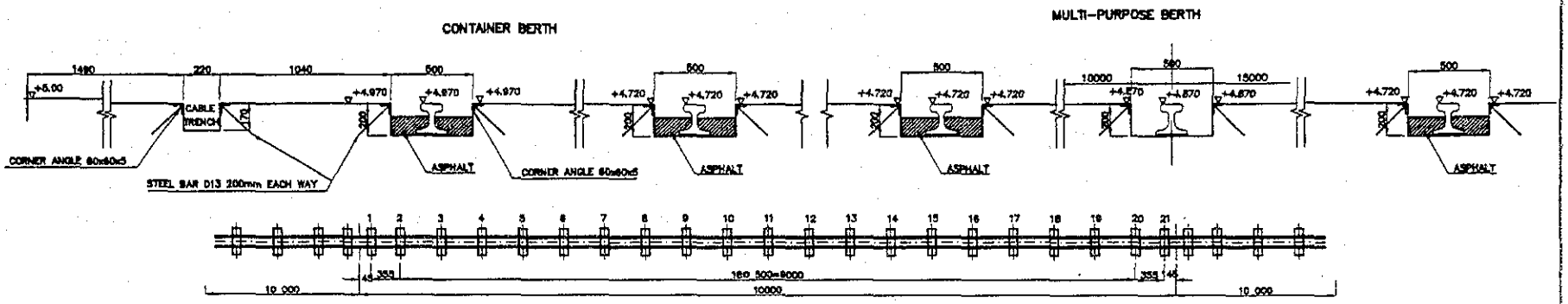
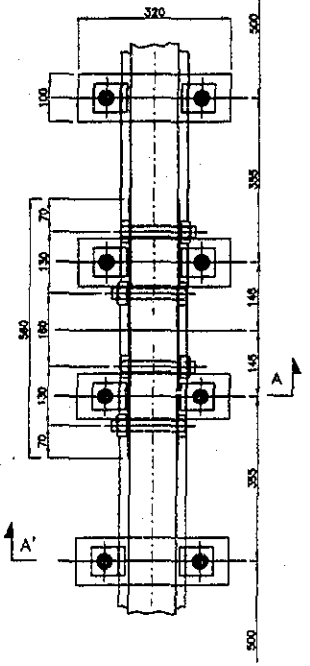
PLAN OF RAIL AND DECK ELEVATION

SCALE 1:25



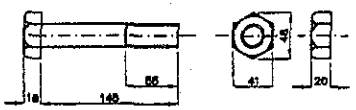
PLAN OF JOINT

SCALE 1:100



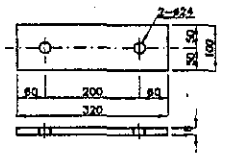
⑤ HEX. BOLT & NUT

SCALE 1:5



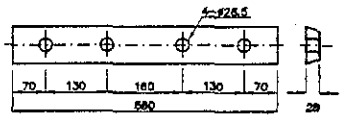
③ BASE PLATE

SCALE 1:10



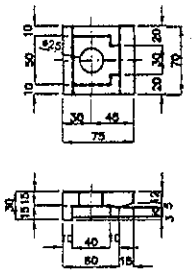
④ JOINT PLATE

SCALE 1:10



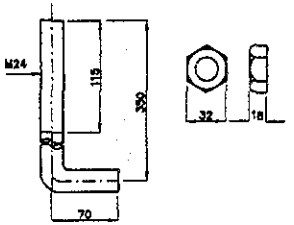
① RAIL CLIP

SCALE 1:5



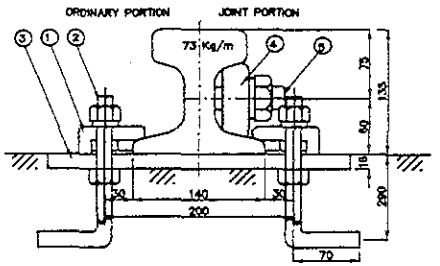
② ANCHOR BOLT & NUT

SCALE 1:5



SECTION A'–A

SCALE 1:10

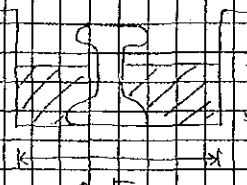


JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) / COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)	DETAILED DESIGN ON PORT REACTIVATION PROJECT IN LA UNION PROVINCE OF THE REPUBLIC OF EL SALVADOR	NIPPON KOEI CO., LTD.	SECTION : QUAYWALL WORK SUB-SECTION : CONTAINER AND MULTI-PURPOSE BERTH TITLE : DETAIL OF CRANE RAIL	DATE : JULY/2002 SCALE : INDICATED DRAWING NO. DW-QW-01-058

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	Crane Rail with Accessories	Calc. Index No.	
Subject	Asphalt Mixture	Page No.	Rev.

References/ Notes

Typical Section



$A = 0.5 \times 0.1 = 0.05\ m^2$

$L = 658\ m$

$V = 0.05 \times 658 = \boxed{32.9\ m^3}$

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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	Crane Rail with Accessories	**Pay Item No. (BOQ)**	2C-1503
Quantity Item	Corner Angle	**Unit**	kg

Calculation Procedure Applied

Weight of corner angle for crane rail was computed by multiplying unit weight by length.

References. Calculation Base and Revisions

References: Tender Drawings:

DW-QW-01-058 Detail of Crane Rail

(Same as "Asphalt Mixture" (Crane Rail with Accesories))

Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
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Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	Crane Rail with Accessories	Calc. Index No.	
Subject	Corner Angle	Page No.	Rev.

References/ Notes

Crane rail pit

L = 6.58 m.

L = 60 × 60 × 5

unit weight 4.55 kg/m

L = 6.58 × 2 = 13.16 m.

W = 4.55 × 13.16

= [59.90] kg

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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	Crane Rail with Accessories	**Pay Item No. (BOQ)**	2C-1504
Quantity Item	Re-Bar	**Unit**	kg

Calculation Procedure Applied

Weight of re-bar for crane rail was computed by multiplying unit weight by total length. Re-Bar was to be welded with corner angle.

References, Calculation Base and Revisions

Reference: Timar Drawings:

DW-GW-01-058 Detail of crane Rail

(Some as "Asphalt Mixture" (Crane Rail with Accesories))

Rev	Prepared by	Prepared Date	No. of Pages	Checked by	Checked Date	Reviewed by	Reviewed Date	Superseded by Calc No.
0	Karla Gonia			Mr. Inuma		Mr. Ando		
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Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	Crane Rail with Accessories	Calc. Index No.	
Subject	Re-Bar.	Page No.	Rev.

References/ Notes

Corner angle $L = 1316$ m.

Re-Bar pitch 20cm

$a = 0.25$ cm

$N = 1316 \div 0.2 = 6580$

$L = 0.25 \times 6580 = 1645$ m

D13 0.995 kg/m

$W = 0.995 \times 1645 = 1636.8$

$\fallingdotseq$ 1640 kg

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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	Cable Trench	**Pay Item No. (BOQ)**	2C-1601
Quantity Item	Corner Angle.	**Unit**	kg.

Calculation Procedure Applied

Weight of corner angle for cable trench was computed by multiplying unit weight by total length.

Peferences, Calculation Base and Revisions

Refrences: Tender Drowings:

~~DW-QW-01-042 Detail of Coping (1)~~

DW-QW-01-058 Detail of Crane Rail

Rev	Prepared by	Prepared Date	No. of Pages	Checked by	Checked Date	Reviewed by	Reviewed Date	Superseded by Calc No.
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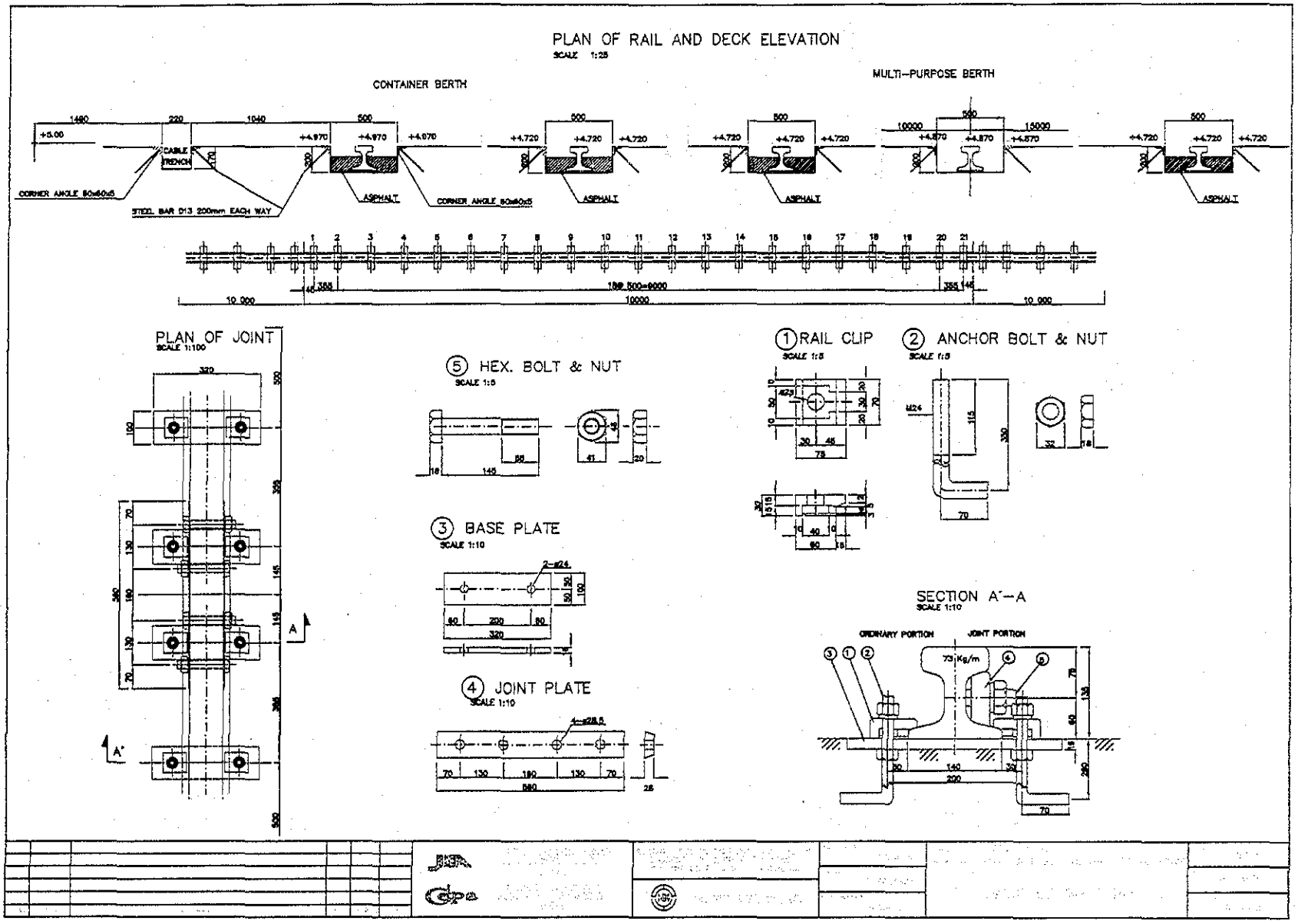
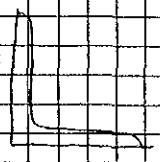

PLAN OF RAIL AND DECK ELEVATION
SCALE 1:25
CONTAINER BERTH
MULTI-PURPOSE BERTH
CABLE TRENCH
CORNER ANGLE 80x60x5
STEEL BAR D13 200mm EACH WAY
ASPHALT
10,000
10000
PLAN OF JOINT
SCALE 1:100
A
A'
5 HEX. BOLT & NUT
SCALE 1:5
3 BASE PLATE
SCALE 1:10
4 JOINT PLATE
SCALE 1:10
1 RAIL CLIP
SCALE 1:5
2 ANCHOR BOLT & NUT
SCALE 1:5
SECTION A'-A
SCALE 1:10
ORDINARY PORTION
JOINT PORTION
73 Kg/m

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	Cable Trench	Calc. Index No.	
Subject	Corner Angle	Page No.	Rev.

References/ Notes

L = 658 × 2 = 1316 m



L 60×60×5

unit weight 4.55 kg/m

W = 4.55 × 1316 = 5988

≒ 5990 kg

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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	Cable Trench	**Pay Item No. (BOQ)**	2C-1602
Quantity Item	Re-Bar	**Unit**	Kg

Calculation Procedure Applied

Weight of re-bar for cable trench was computed by multiplying unit weight by total length. Re-bar was to be welded with corner angle.

References, Calculation Base and Revisions

References : Tender Drawings :

DW-QW-01-058 Detail of Crane Rail

(Same as Corner Angle (Cable Trench))

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Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	Cable Trench	Calc. Index No.	
Subject	Re - Bar	Page No.	Rev.

References/ Notes

L = 1316 m.

N = 1316 ÷ 0.2 = 6580

D13 unit weight 0.995 kg/m.

a = 0.25 m

W = 0.995 × 0.25 × 6580

= 1636.8

≒ 1640 kg

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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	End Stopper	**Pay Item No. (BOQ)**	2C - 1701
Quantity Item	Sand	**Unit**	m^3

Calculation Procedure Applied

2 holes were to be prepared for End Stopper and to be filled with sand until End stopper will be set.

References, Calculation Base and Revisions

References : Tender Drawings :

DW - QW - 01 - 060 Details of Crane End Stopper

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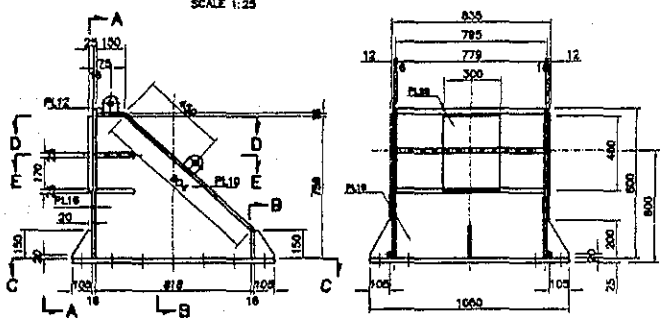
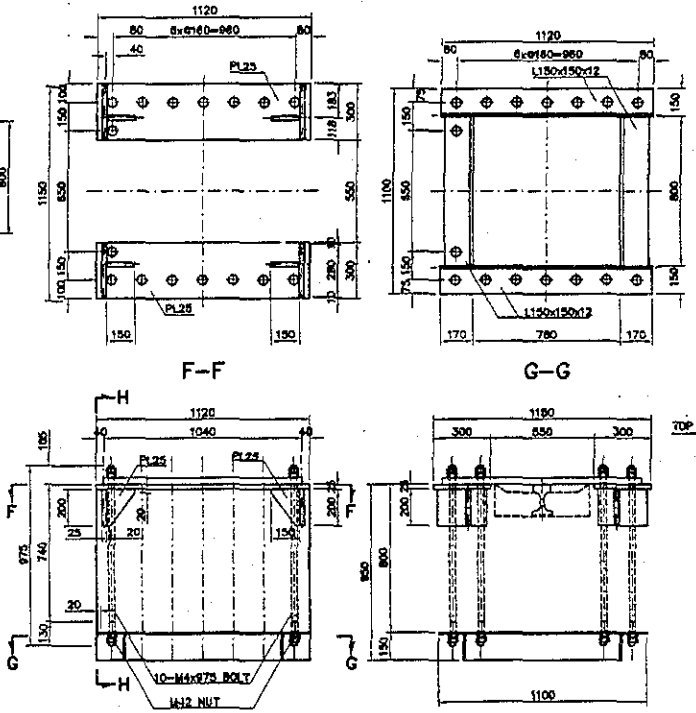
DETAIL OF CRANE STOPPER EAST SIDE (CONTAINER)

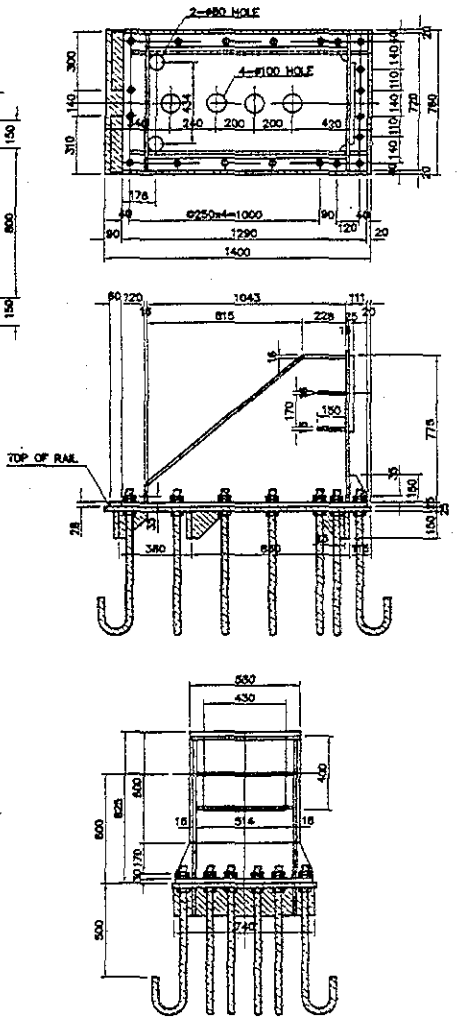
CRANE STOPPER
SCALE 1:25



STOPPER BASE
SCALE 1:25



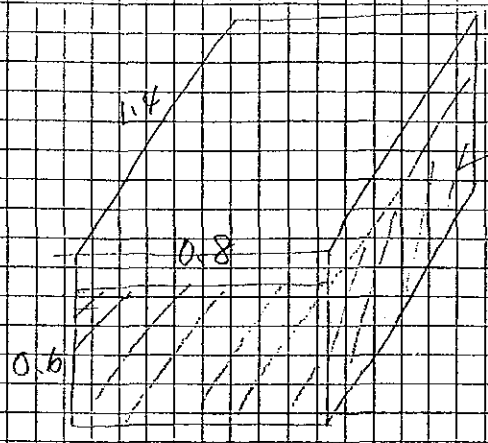
DETAILS OF CRANE STOPPER WEST SIDE (CONTAINER)
SCALE 1:25



JICA — JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	DETAILED DESIGN ON PORT REACTIVATION PROJECT IN LA UNION PROVINCE OF THE REPUBLIC OF EL SALVADOR	SECTION : QUAYWALL WORK	DATE : JULY/2002
CEPA — COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)	NIPPON KOEI CO., LTD.	SUB-SECTION : CONTAINER AND MULTI-PURPOSE BERTH	SCALE : INDICATED
		TITLE : DETAILS OF CRANE STOPPER	DRAWING NO. : DW-QW-01-080

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

References/ Notes



$V_1 = 0.8 \times 1.4 \times 0.6$

$= 0.672$

$\fallingdotseq 0.68\ m^3$

$N = 2$

$V = 0.68 \times 2 = 1.36\ m^3$

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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	End Stopper	**Pay Item No. (BOQ)**	2e-1702
Quantity Item	Form for Cover	**Unit**	m^2

Calculation Procedure Applied

Area of form for cover was computed. This cover was to be separated into 2 parts.

References, Calculation Base and Revisions

Refrances : Tender Drawings :
DW-QW-01-060 Details of Crane End stopper
(Same as Sand (End stopper))

Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
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0	Karla Garcia			Mr. Inoma		Mr. Ando		
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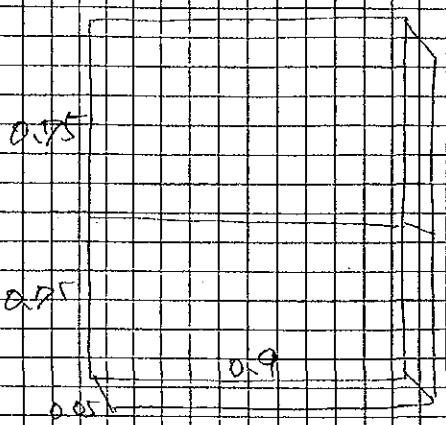
Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	End Stopper	Calc. Index No.	
Subject	Form for Cover	Page No.	Rev.

References/ Notes



$A_1 = (0.95 \times 2 + 0.9 \times 2) \times 0.05 \times 2$
$+ 0.9 \times 1.5$
$= 1.68 \text{ m}^2$

$N = 2 \times 2 = 4$

$A = 1.68 \times 4 = \boxed{6.72} \text{ m}^2$

	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	End Stopper	**Pay Item No. (BOQ)**	2C-1703
Quantity Item	Concrete for Cover	**Unit**	m^3

Calculation Procedure Applied

Volume of concrete for cover was computed.

References, Calculation Base and Revisions

References: Tindir Drawings:

DW-QW-01-060 Details of Crane End Stopper

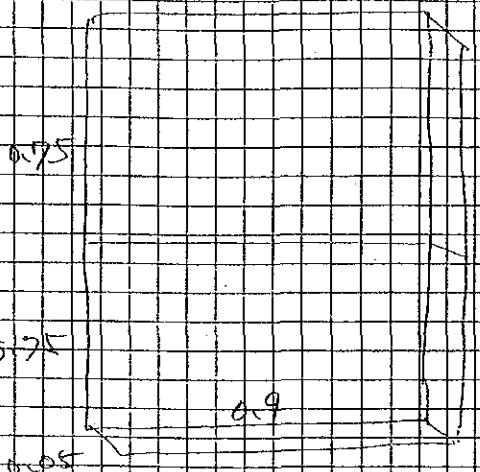
(Same as Sand (End Stopper))

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	End Stopper	Calc. Index No.	
Subject	Concrete for Cover	Page No.	Rev.

References/ Notes



$V_1 = 0.75 \times 0.9 \times 0.05$

$= 0.034\ m^3$

$N = 2 \times 2 = 4$

$V = 0.034 \times 4 + 0.136$

$\simeq \boxed{0.14}\ m^3$

	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	End Stopper	**Pay Item No. (BOQ)**	2C-1704
Quantity Item	Angle	**Unit**	kg

Calculation Procedure Applied

Weight of angle was computed for cover of End Stopper hole by multiplying unit weight by length.

References, Calculation Base and Revisions

References: Tender Drawings:

DW-QW-01-060 Details of Crane End Stopper

(Same Sand (End Stopper))

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	by	Date		by	Date	by	Date	
0	Karla García			Mr. Inoma		Mr. Ando		
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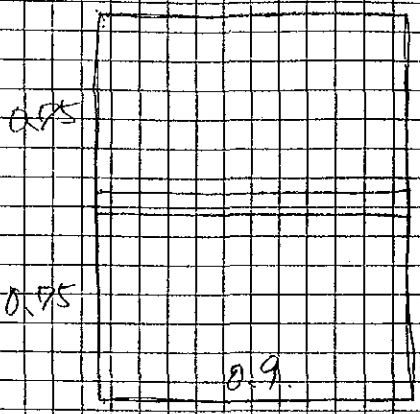
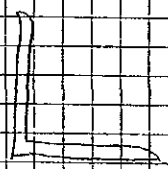
FN : Calculation_Cover_Sheet_020504_seg cover

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

References/ Notes



$L = 1.5 \times 2 + 0.9 \times 4 = 6.6\,m$



L 50×50×6 4.43kg/m.

$W_1 = 4.43 \times 6.6 = 29.3\,kg$

$N = 2$

$W = 29.3 \times 2 = \boxed{58.6}\,kg$

	Prepared by		Checked by	
		/ /200		/ /200

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	End Stopper	**Pay Item No. (BOQ)**	20 -1705
Quantity Item	Re - Bar	**Unit**	kg

Calculation Procedure Applied

Weight of re-bar was computed by multiplying unit weight by length.

References, Calculation Base and Revisions

References: Tender Drawings :

DWI - QW - 01 - 060 Details of Crane End stopper

(Same as Sand (End Stopper))

Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
	by	Date		by	Date	by	Date	
0	Karla Gonio			Mr. Inuma		Mr. Ando		
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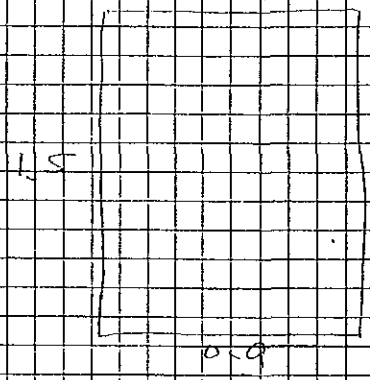
FN : Calculation_Cover_Sheet_020504_seg cover

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	End Stopper	Calc. Index No.	
Subject	Re-Bar	Page No.	Rev.

References/ Notes

L = 0.1 m @ 200

D9 0.50 kg/m



L = 0.9 x 2 + 1.5 x 2 = 4.8 m

n = 4.8 ÷ 0.2 = 24

W1 = 0.50 x 0.1 x 24

= 1.2 kg

N = 2

W = 1.2 x 2 = **2.4** 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	Socket block	**Pay Item No. (BOQ)**	EC-1801
Quantity Item	Sand	**Unit**	m^3

Calculation Procedure Applied

4 holes were to be prepared for Socket block and to be filled with sand until saftydevice will be set.

References, Calculation Base and Revisions

References: Tender Drowings :

SW-QW-01-059 Detail of Anchor - Jack up Plate & Socket Block.

Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
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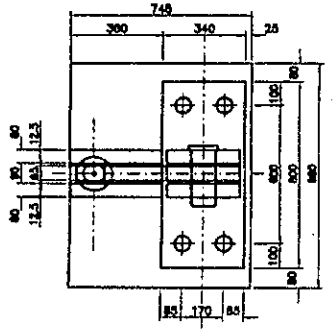
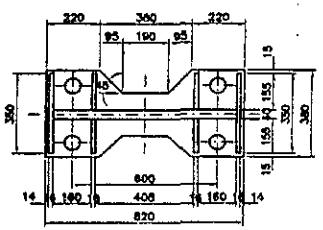
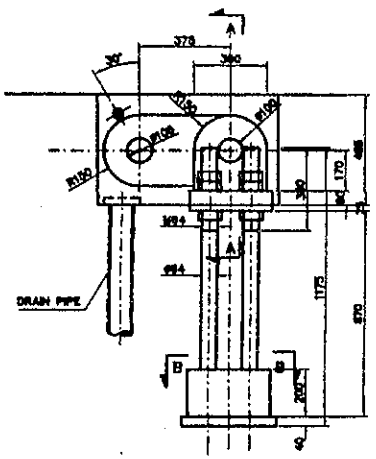
FN : Calculation_Cover_Sheet_020504_seg cover

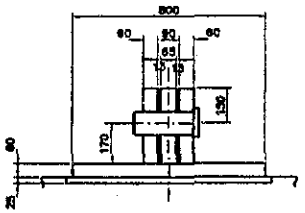
DETAIL OF ANCHORING FRAME
SCALE 1:20





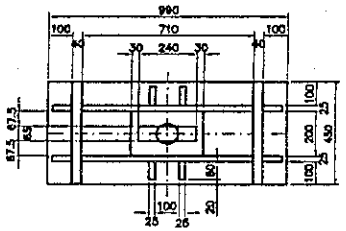
SECTION B–B



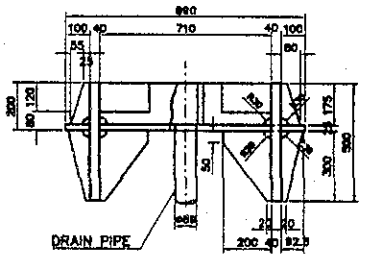


SECTION A–A

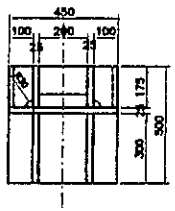
DETAIL OF SOCKET BLOCK
SCALE 1:20



PLAN

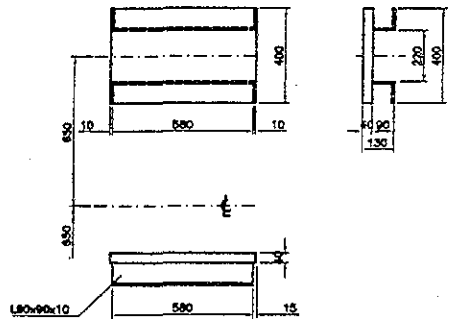


FRONT VIEW

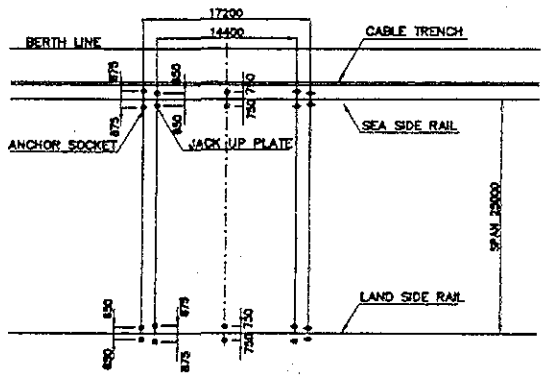


LATERAL VIEW

DETAIL OF JACK UP PLATE
SCALE 1:20



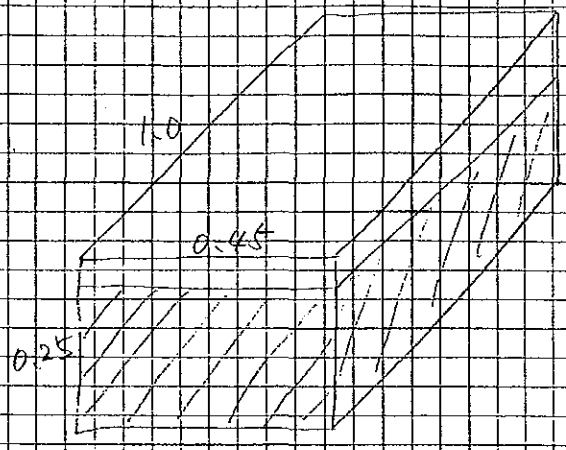
PLAN OF ANCHOR AND JACK UP PLATE
SCALE 1:500



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 : CONTAINER AND MULTI-PURPOSE BERTH	SCALE : INDICATED
		APPROVED BY :	TITLE : DETAIL OF ANCHOR-JACK UP PLATE & SOCKET BLOCK	DRAWING NO. QW-QW-01-059

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

References/ Notes



$V_1 = 0.45 \times 1.0 \times 0.25$

$= 0.1125$

$\simeq 0.12\ m^3$

$N = 4$

$V = 0.12 \times 4 = \boxed{0.48}\ m^3$

	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	Socket Block	**Pay Item No. (BOQ)**	2C-1802
Quantity Item	Form for cover	**Unit**	m^2

Calculation Procedure Applied

Area of form for cover was computed. This cover was to be separated into 2 parts.

References, Calculation Base and Revisions

Refrances : Tender Drowings :

DW-QW-01-059 Detail of Anchor - Tock up Plate & Socket Block.

(Same as Sand (Socket Block))

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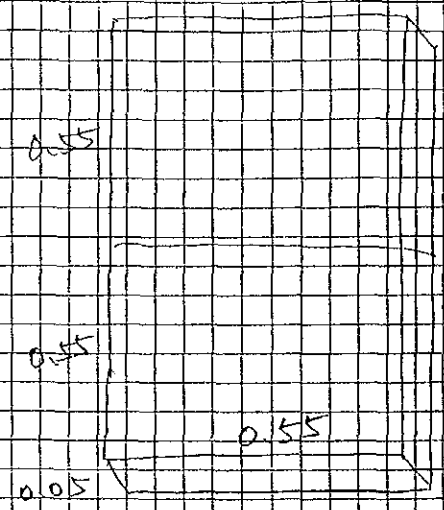
FN : Calculation_Cover_Sheet_020504_seg cover

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	Socket block	Calc. Index No.	
Subject	Form for cover	Page No.	Rev.

References/ Notes



$$A_1 = (0.55 \times 2 + 0.55 \times 2) \times 0.05 \times 2 + 1.1 \times 0.55$$

$$= 0.83\ m^2$$

$$N = 4$$

$$A = 0.83 \times 4 = \boxed{3.32}\ m^2$$

Prepared by		Checked by	
	/ /200		/ /200

FN: Calculation_Sheet