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)**	2B-1905
Quantity Item	Crushed Stone (Container Berth)	**Unit**	m^3

Calculation Procedure Applied

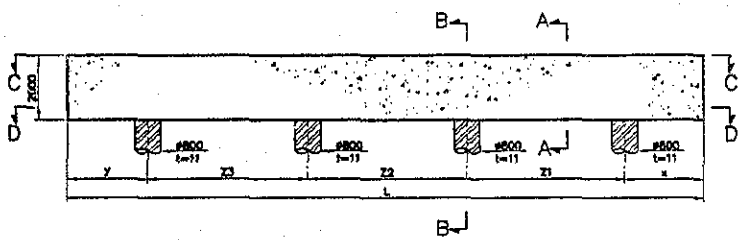
Volume of crushed stone for crane rail foundation was computed based on 10cm thick.

References, Calculation Base and Revisions

References : Tender Drawings :

DW - QV1 - 01 - 056 Crane Foundation (land Side)

Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.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



SECTION E–E
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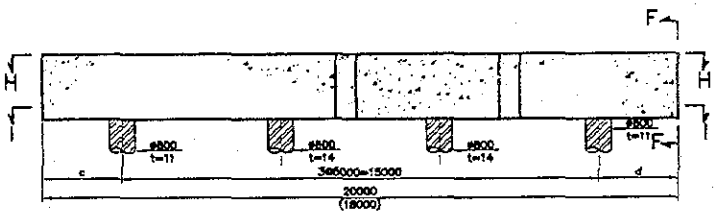

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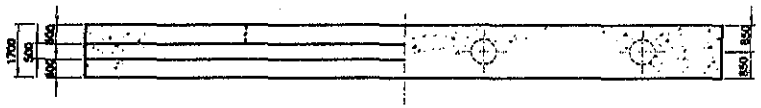

C–C

D–D
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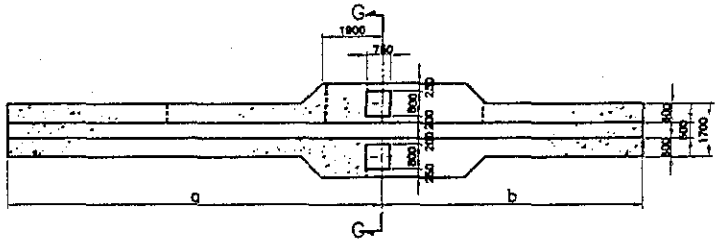
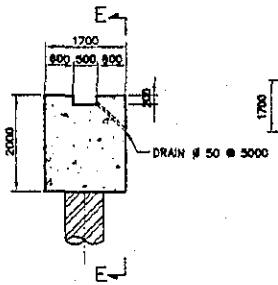


SECTION H–H
SCALE 1:150

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	—	—	—	—	—



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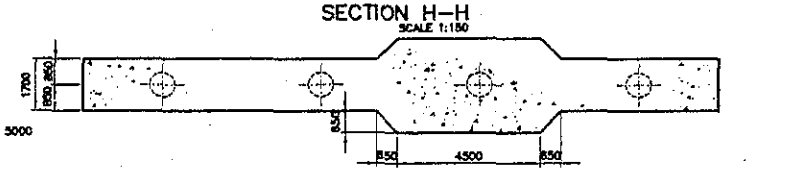

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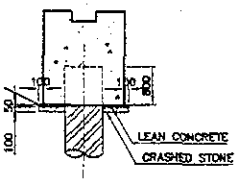

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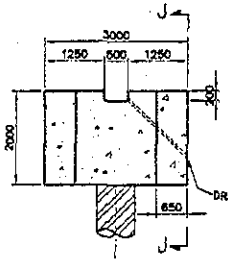

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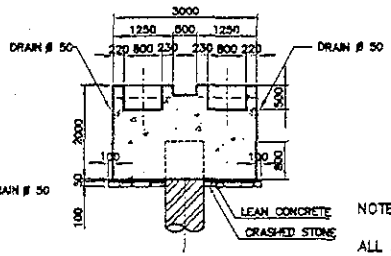
SCALE 1:100



SECTION G–G
SCALE 1:100

NOTE:

ALL DIMENSIONS ARE IN MILLIMETER.

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 :

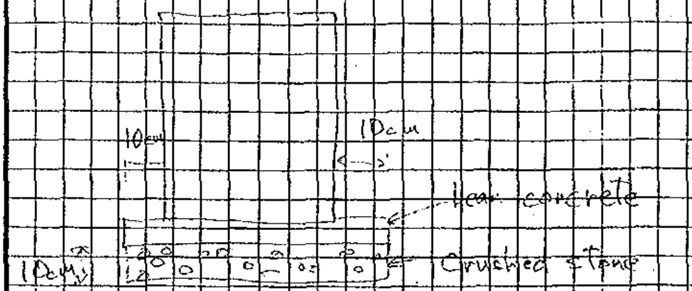
SECTION : QUAYWALL WORK
SUB-SECTION : CONTAINER AND MULTI-PURPOSE BERTH
TITLE :

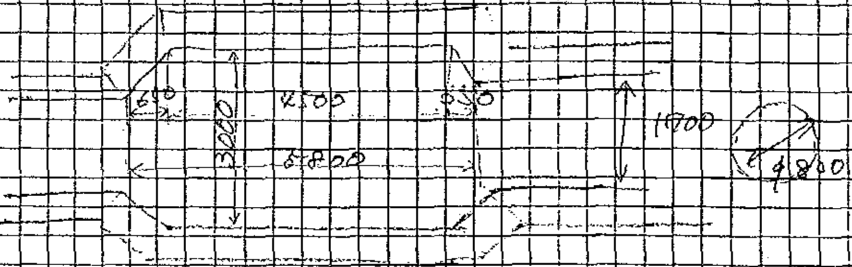
CRANE FOUNDATION (LAND SIDE)

DATE : JULY/2002
SCALE : INDICATED
DRAWING NO. DR-QW-01-058

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 (CONTAINER BERTH)	Page No. /	Rev.

References/ Notes





$L = 340 - 3 = 337\ m.$

Wide part (3m) $5.8 \times 4 = 23.2\ m$

Normal (1.7m) $337 - 23.2 = 313.8\ m.$

$A_1 = 318.8 \times (1.7 + 0.2) = 596.22$

$\doteqdot 596.3\ m^2$

$A_2 = \{4.5 \times (3 + 0.2) + (1.9 + 3.2) \times 0.65\} \times 4$

$= 70.86 \doteqdot 70.9\ m^2$

reduction

steel pipe $N = 68$ $\phi 800$

$\pi \times (0.4)^2 \times 68 = 34.2\ m^2$

		Prepared by		Checked by	
			/ /200		/ /200

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	Crushed stone (CONTAINER BERTH)	Page No. 2	Rev.

References/ Notes

$A = 596.8 + 70.9 - 34.2$

$= 633 \text{ m}^2$

$V = 633 \times 0.1 = 63.3 \text{ m}^3$

	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	CONCRETE FOR CRANE RAIL FOUNDATION	**Pay Item No. (BOQ)**	2B-1406
Quantity Item	Leveling of Crushed Stone	**Unit**	m^2

Calculation Procedure Applied

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

References, Calculation Base and Revisions

References: Tender Drawings;

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

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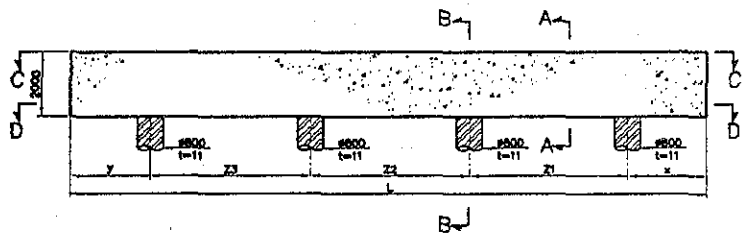

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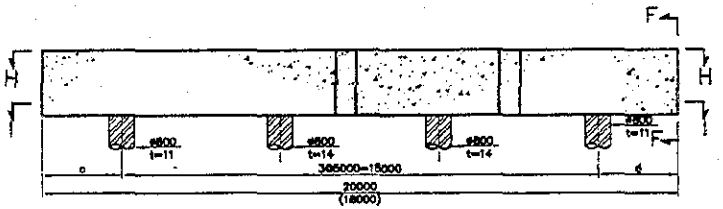

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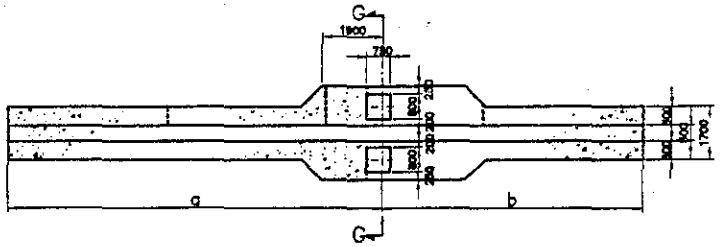
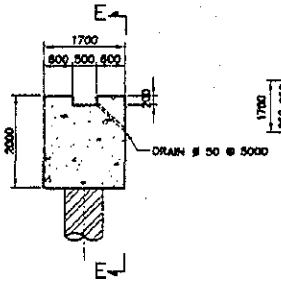
D–D
SCALE 1:150



SECTION H–H
SCALE 1:150

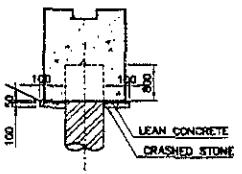
VARIABLE LENGHT OF CRANE FOUNDATION

	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



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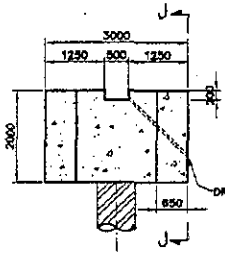

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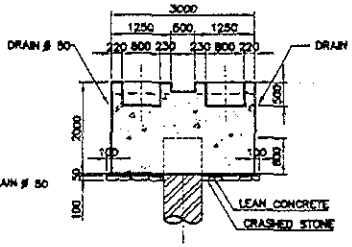

SECTION G–G
SCALE 1:100

NOTE:

ALL DIMENSIONS ARE IN *MILLIMETER*.

REV. NO.	DATE	REMARKS	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	CONCRETE FOR CRANE RAIL FOUNDATION	Calc. Index No.	
Subject	Leveling of Crushed stone (CONT. B.)	Page No.	Rev.

References/ Notes

$A = 688\ m^2$

See crushed stone in detail.

	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	CONCRETE FOR CRANE RAIL FOUNDATION	**Pay Item No. (BOQ)**	2B - 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 5 cm.

References, Calculation Base and Revisions

Reference : Tender Drawings :

CN - QW1 - 01 - 054 Crane foundation (land side)

Rev	Prepared		No. of	Checked		Reviewed		Superseded
	by	Date	Pages	by	Date	by	Date	by Calc No.
0	Karla Gordo			Mr. Inoma		Mr. Ando		
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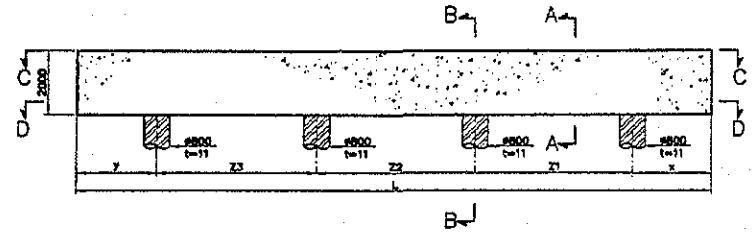

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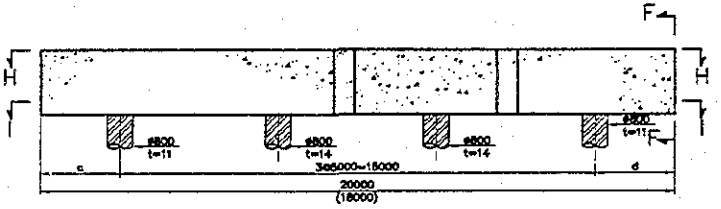

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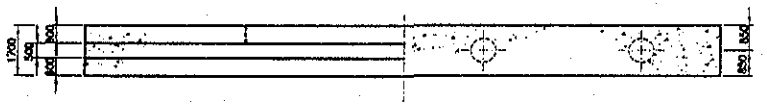

C–C

D–D
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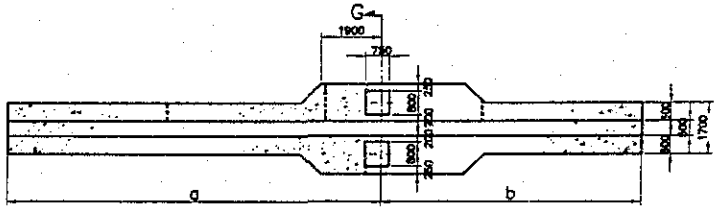
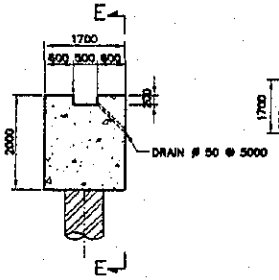


SECTION H–H
SCALE 1:150

VARIABLE LENGHT OF CRANE FOUNDATION

	LENGTH (L)	a	b	c	d	X	Y	Z1	Z2	Z3
No.1	16000	—	—	—	—	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	—	—	—	—	—



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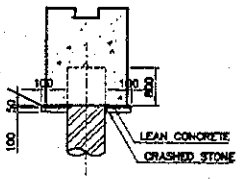

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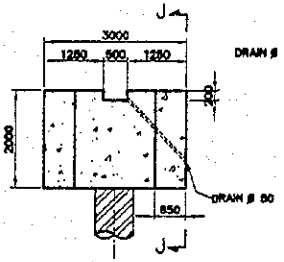
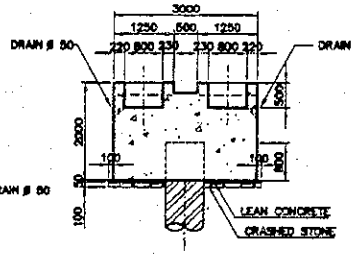


SECTION F–F
SCALE 1:100



SECTION G–G
SCALE 1:100

NOTE:

ALL DIMENSIONS ARE IN MILLIMETER.

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
COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)	NIPPON KOEI CO., LTD.	SUB-SECTION : CONTAINER AND MULTI-PURPOSE BERTH	SCALE : INDICATED
		TITLE : CRANE FOUNDATION (LAND SIDE)	DWG NO. DW-QW-01-056

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	CONCRETE FOR CRANE RAIL FOUNDATION	Calc. Index No.	
Subject	Lean Concrete (CONTAINER BERTH)	Page No.	Rev.

References/ Notes

$A = 633\ m^2$

$t = 0.05\ m$

$V = 633 \times 0.05 = 31.65$

$\fallingdotseq \boxed{31.7\ m^3}$

1.09

		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	CONCRETE FOR CRANE RAIL FOUNDATION	**Pay Item No. (BOQ)**	2B - 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.

References, Calculation Base and Revisions

Reference : Tender Drawing
DW-QW-01-058 Crane Foundation (land Side)

Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
	by	Date		by	Date	by	Date	
0	Karla García	07 June 2002		Mr. Inuma		Mr. Ando		
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2								
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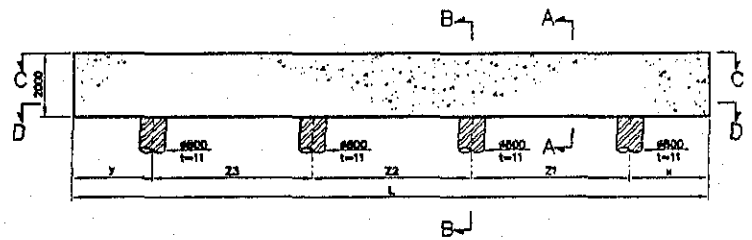

SECTION E–E
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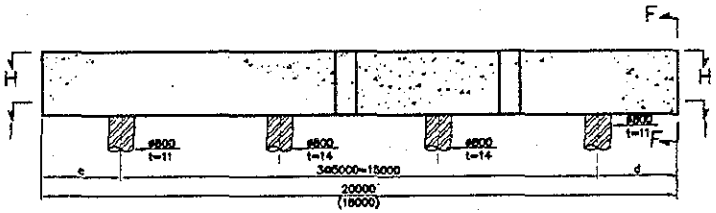

SECTION J–J
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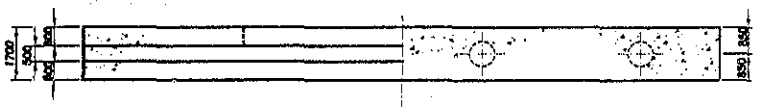
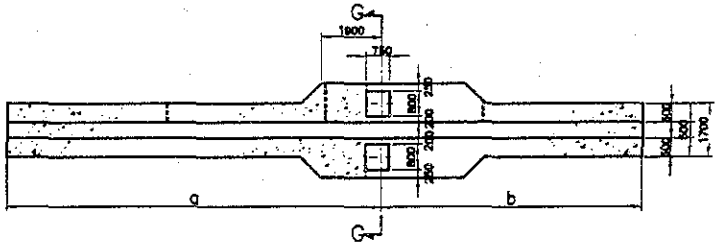


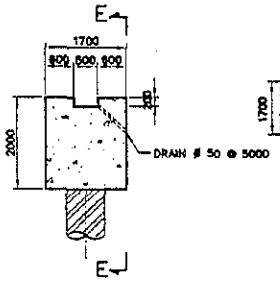
C–C D–D
SCALE 1:150



SECTION H–H
SCALE 1:150

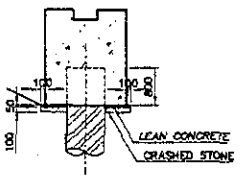
VARIABLE LENGHT OF CRANE FOUNDATION

	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	—	—	—	—	—

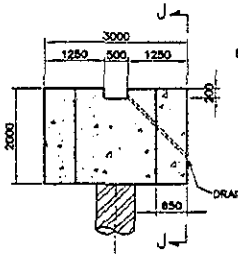


SECTION A–A
SCALE 1:100

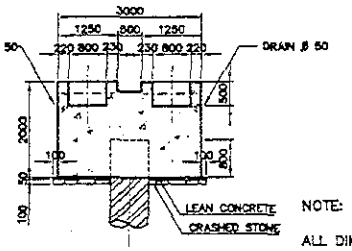
SECTION I–I
SCALE 1:150



SECTION B–B
SCALE 1:100



SECTION F–F
SCALE 1:100



SECTION G–G
SCALE 1:100

NOTE:
ALL DIMENSIONS ARE IN MILLIMETER.

REV. NO.	DATE	CONTENTS	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	CONCRETE FOR CRANE RAIL FOUNDATION	Calc. Index No.	
Subject	DRAIN PIPE (CONTAINER BERTH)	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) = 2.55 m

No 2 – 13

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

No 14 – 17

L_1

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

L = 49.47 m ≃ 50 m

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 = 31.11 m ≃ 32 m

L = 32 m

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

L_T = 82 m

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

Calculation Procedure Applied

Length of crane rail was computed for Container Berth.

References, Calculation Base and Revisions

References : Tender Drawings :

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

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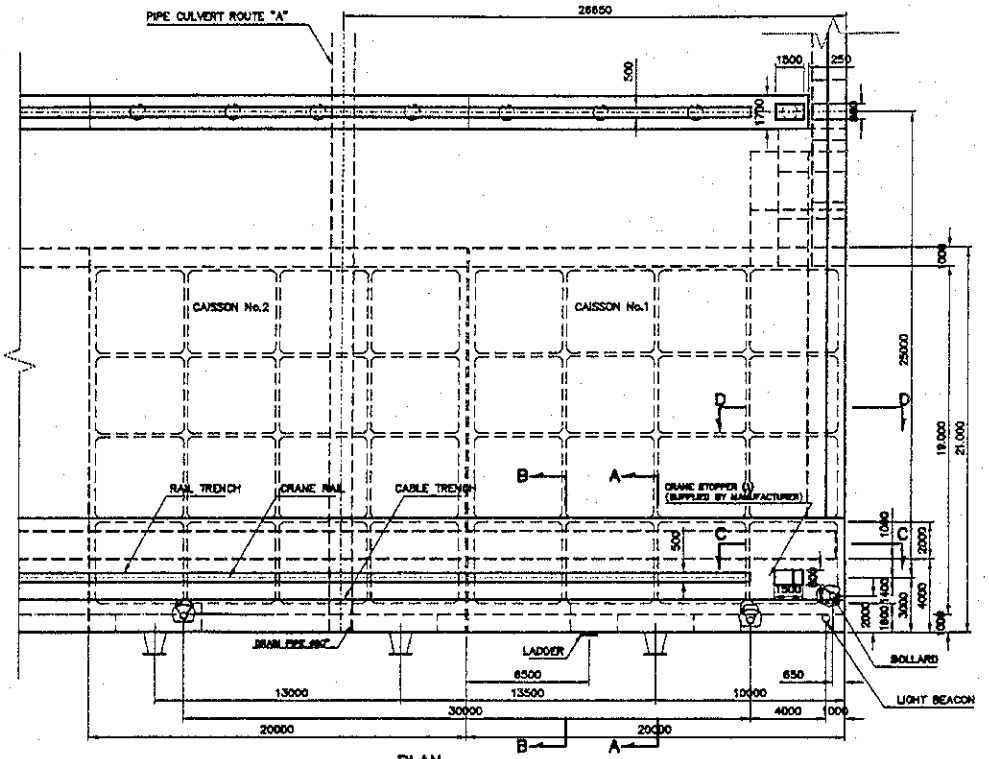
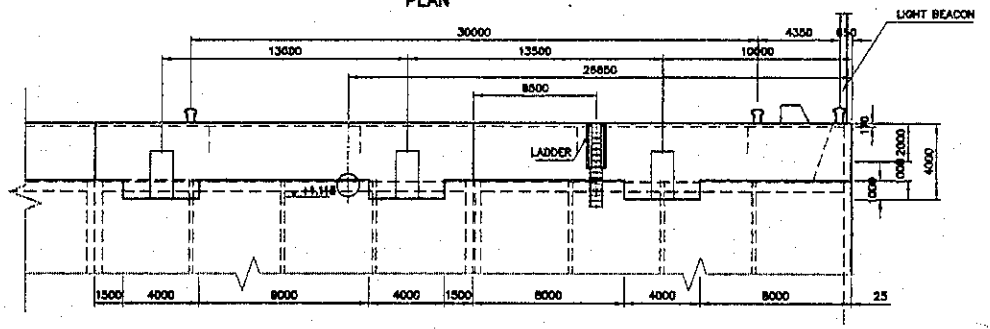
2								
3								

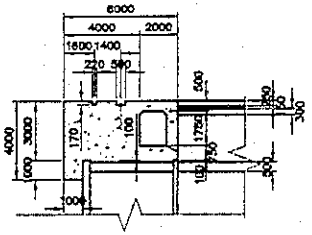
FN : Calculation_Cover_Sheet_020504_seg cover



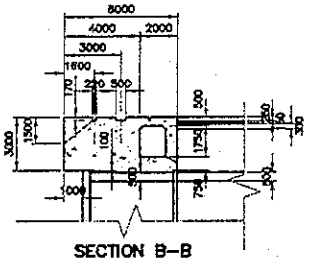
PLAN



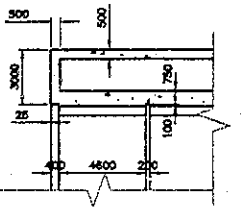
FRONT VIEW



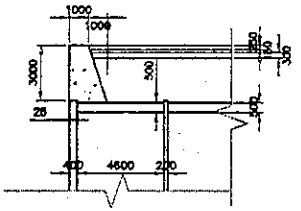
SECTION A–A



SECTION B–B



SECTION C–C



SECTION D–D

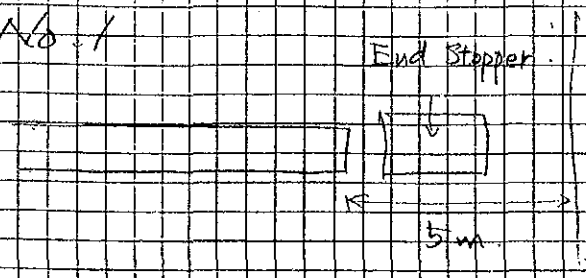
NOTES: ALL DIMENSIONS ARE IN MILLIMETER

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 : DETAIL OF COPING (1)	DATE : JULY/2002 SCALE : 1 : 250 DRAWING NO: DW-QW-01-042

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. 1



L = 340 − 5 = 335

L = 335 × 2 = 670 m

	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	Crane Rail with Accessories	**Pay Item No. (BOQ)**	2B-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

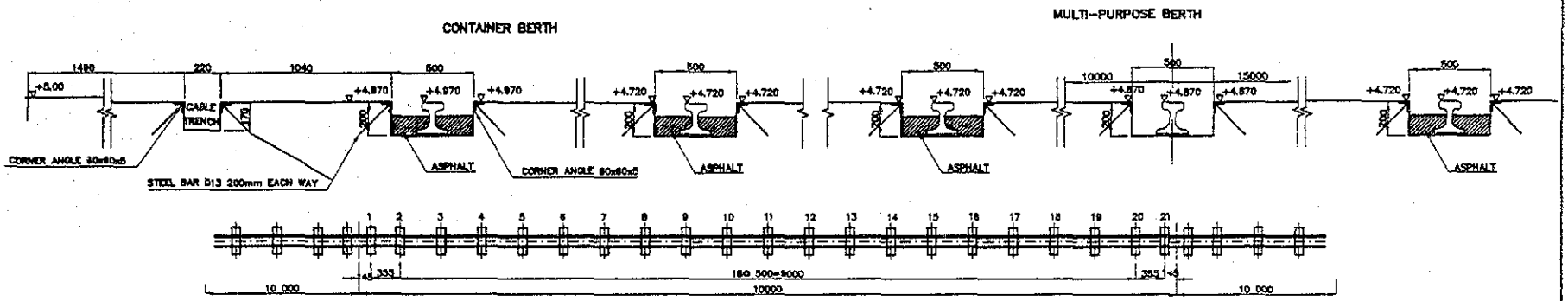
References : Tender Drawings :

DW - QW - 01 - 038 Detail of Crane Rail

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								

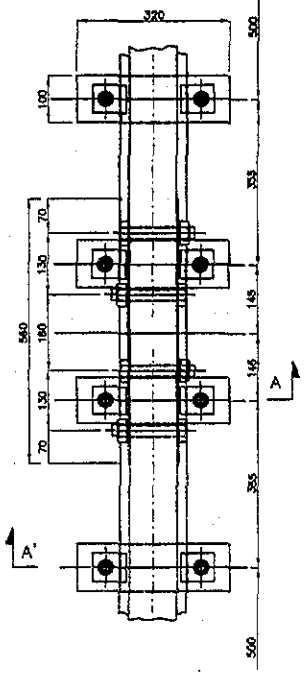
PLAN OF RAIL AND DECK ELEVATION

SCALE 1:25



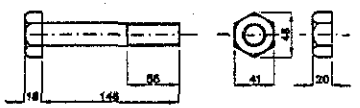
PLAN OF JOINT

SCALE 1:100



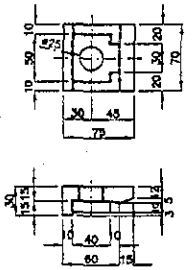
⑤ HEX. BOLT & NUT

SCALE 1:5



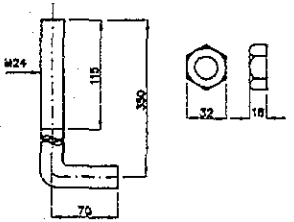
① RAIL CLIP

SCALE 1:5



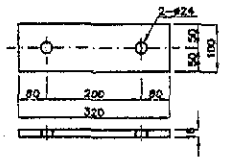
② ANCHOR BOLT & NUT

SCALE 1:5



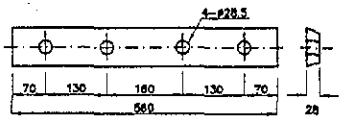
③ BASE PLATE

SCALE 1:10



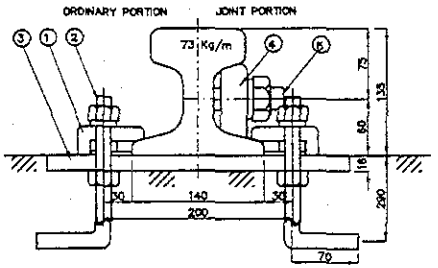
④ JOINT PLATE

SCALE 1:10



SECTION A'–A

SCALE 1:10

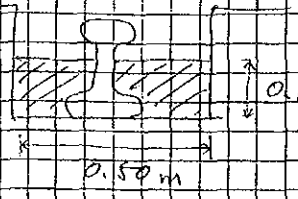


JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) / COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)	DETAILED DESIGN ON PORT REACTIVATION PROJECT IN LA UNION PROVINCE OF THE REPUBLIC OF EL SALVADOR	NIPPON KOEI CO., LTD.	SECTION : QUAYWALL WORK SUB-SECTION : CONTAINER AND MULTI-PURPOSE BERTH TITLE : DETAIL OF 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



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

$L = 670\ m.$

$V = 0.05 \times 670 = \boxed{33.5}\ m^3$

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	Crane Rail with Accessories	**Pay Item No. (BOQ)**	2B-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-01-042 Detail of Coping (1)

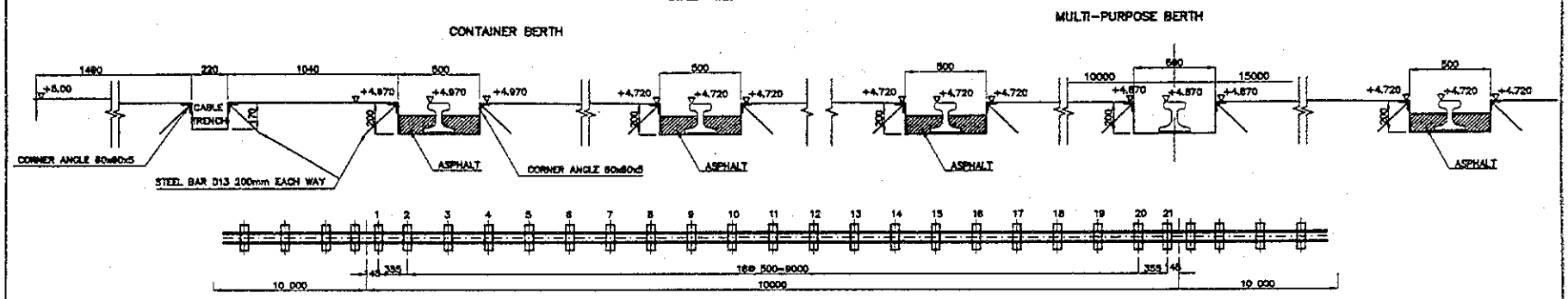
DW-QW-01-058 Detail of Crane Rail

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

FN : Calculation_Cover_Sheet_020504_seg cover

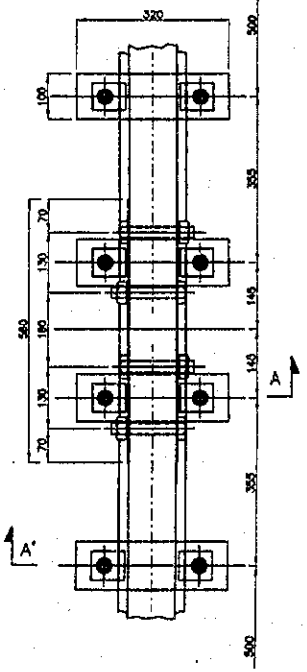
PLAN OF RAIL AND DECK ELEVATION

SCALE 1:25



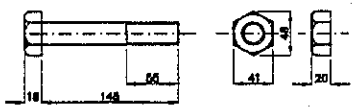
PLAN OF JOINT

SCALE 1:100



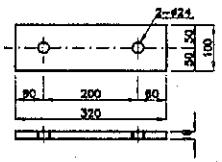
⑤ HEX. BOLT & NUT

SCALE 1:5



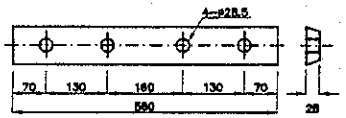
③ BASE PLATE

SCALE 1:10



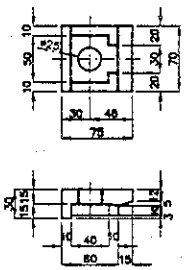
④ JOINT PLATE

SCALE 1:10



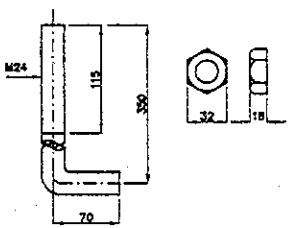
① RAIL CLIP

SCALE 1:5



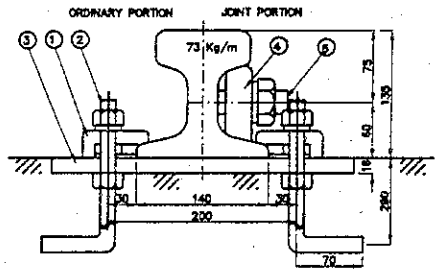
② ANCHOR BOLT & NUT

SCALE 1:5

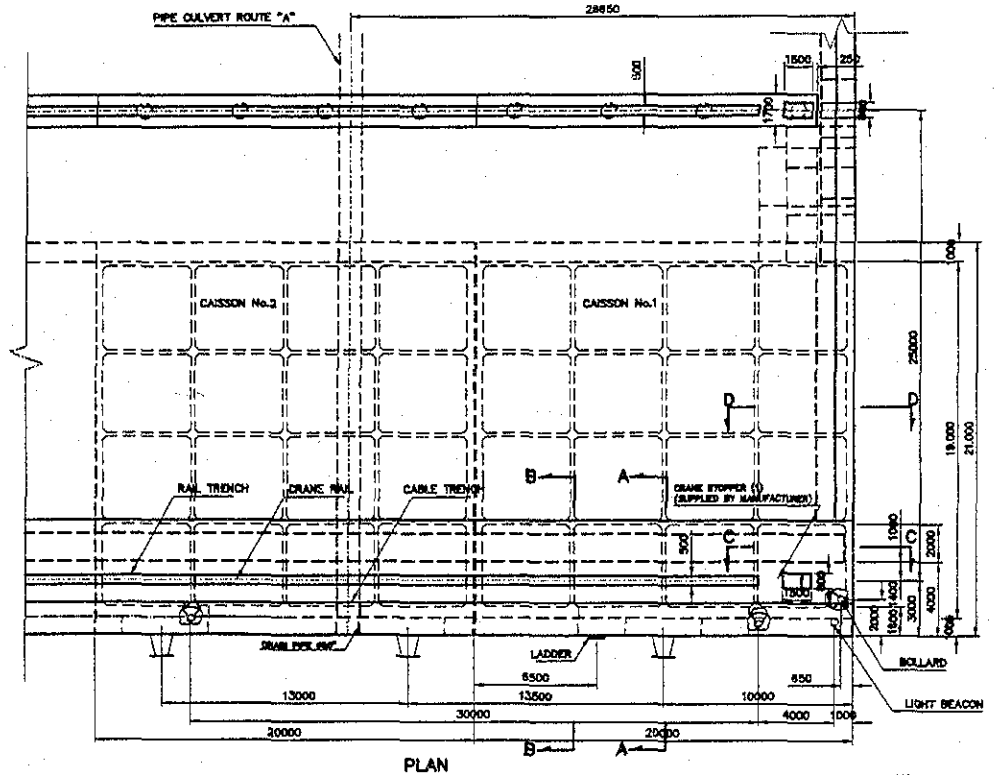


SECTION A'–A

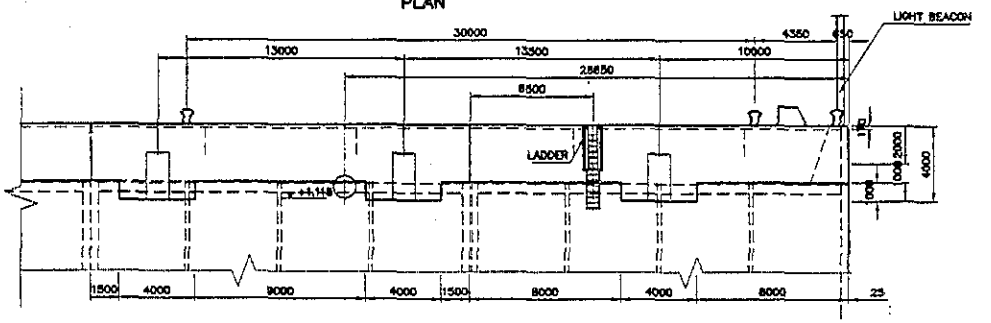
SCALE 1:10



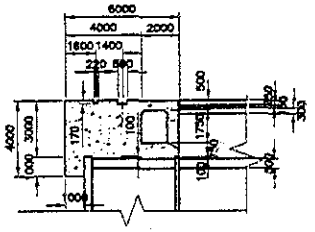
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) / COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)	DETAILED DESIGN ON PORT REACTIVATION PROJECT IN LA UNION PROVINCE OF THE REPUBLIC OF EL SALVADOR	NIPPON KOEI CO., LTD.	SECTION : QUAYWALL WORK SUB-SECTION : CONTAINER AND MULTI-PURPOSE BERTH TITLE : DETAIL OF CRANE RAIL	DATE : JULY/2002 SCALE : INDICATED DRAWING NO. DW-GW-01-056



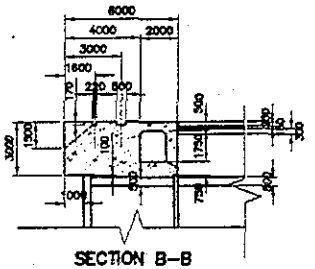
PLAN



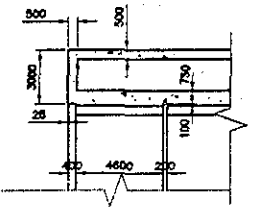
FRONT VIEW



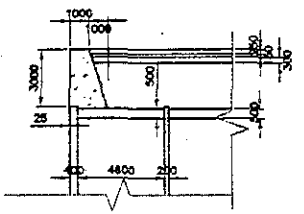
SECTION A–A



SECTION B–B



SECTION C–C



SECTION D–D

NOTES: ALL DIMENSIONS ARE IN MILLIMETER

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 : CONTAINER AND MULTI-PURPOSE BERTH
TITLE :

DETAIL OF COPING (1)

DATE : JULY/2002
SCALE : 1 : 250
DRAWING NO. DW-QW-01-042

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

Check rail pit:

3.35 m

9.5 m

3.35 m

$L = (3.35 \times 2 + 9.5) \times 2$

$= 13.41$ m.

L 60×60×5

unit weight 4.55 kg/m.

$W = 4.55 \times 134.1$

$= 610$ 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	Crane Rail with Accessories	**Pay Item No. (BOQ)**	2B-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

References: Tender Drawings:

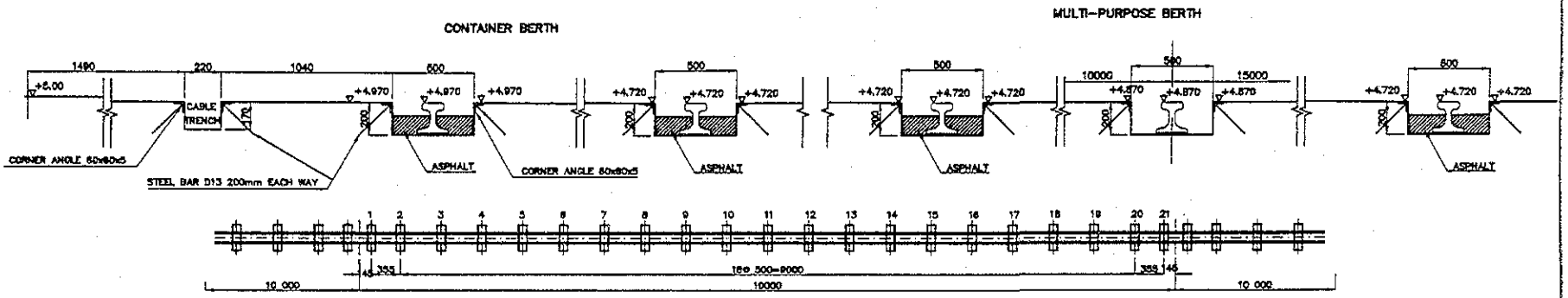
DW-QW-01-058 Detail of Crane Rail

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

FN : Calculation_Cover_Sheet_020504_seg cover

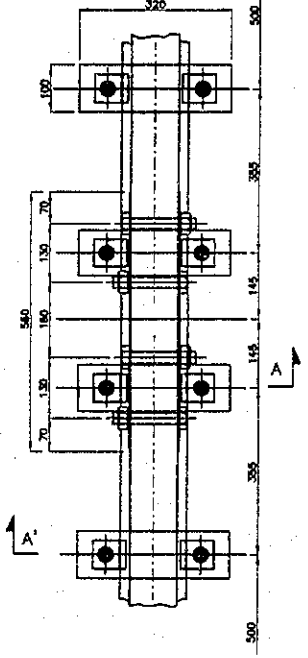
PLAN OF RAIL AND DECK ELEVATION

SCALE 1:25



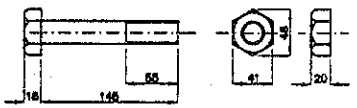
PLAN OF JOINT

SCALE 1:100



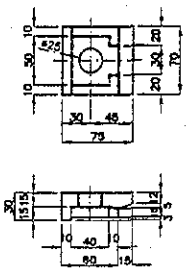
⑤ HEX. BOLT & NUT

SCALE 1:5



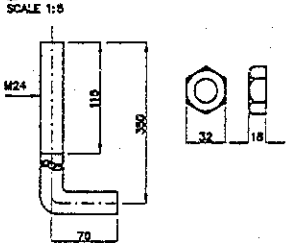
① RAIL CLIP

SCALE 1:5



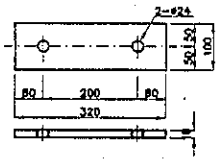
② ANCHOR BOLT & NUT

SCALE 1:5



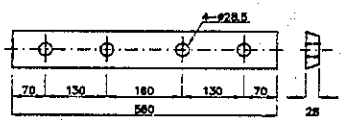
③ BASE PLATE

SCALE 1:10



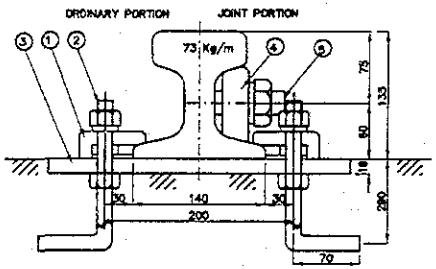
④ JOINT PLATE

SCALE 1:10



SECTION A'—A

SCALE 1:10



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 : 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	Re - Bar	Page No.	Rev.

References/ Notes

Corner angle $L = 1341\,m$

Re-Bar pitch 20cm

$a = 0.25\,cm$

$N = 1341 \div 0.2 = 6705$

$l = 0.25 \times 6705 = 1677\,m$

D13 0.995 kg/m

$W = 0.995 * 1677\,m$

$= 1668.6$

$\simeq$ **1670** 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	Cable Trench	**Pay Item No. (BOQ)**	2B-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.

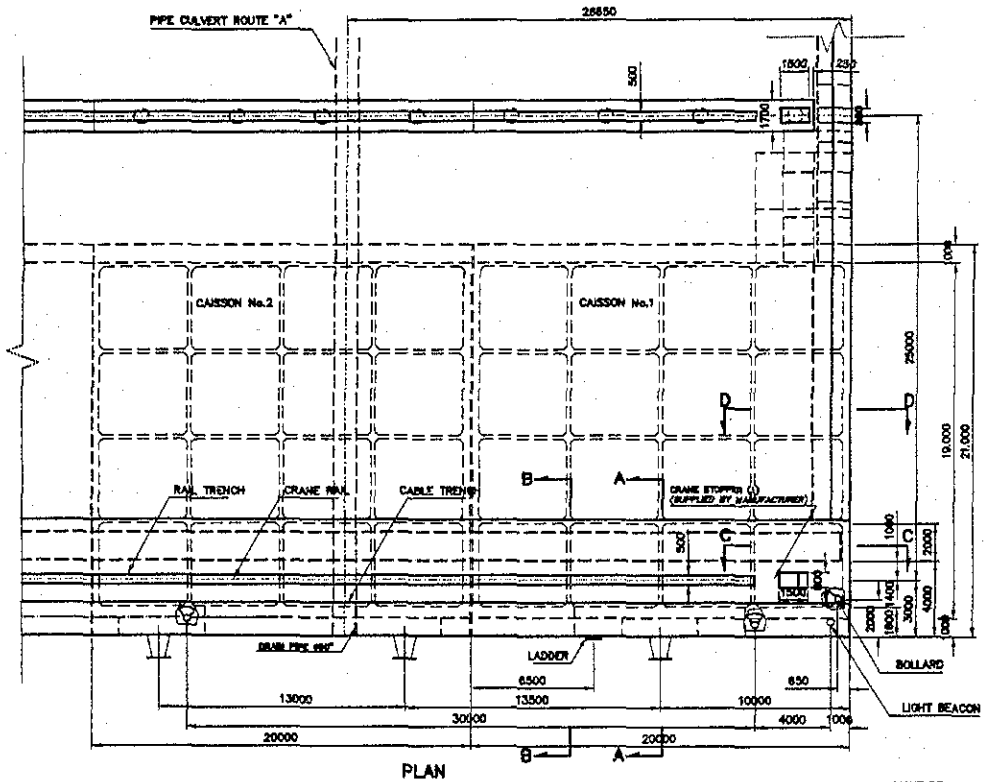
References, Calculation Base and Revisions

Reference : Tender Drawings :

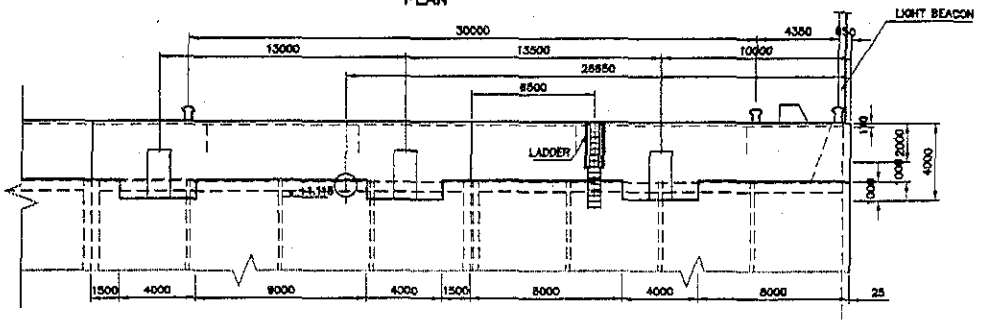
DWG-QW-01-042 Detail of Coping (1)

DWG-QW-01-058 Detail of Crane Rail

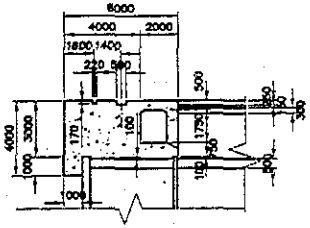
Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
	by	Date		by	Date	by	Date	
0	Karla Garcia			Mr. Inuma		Mr. Ando		
1								
2								
3								



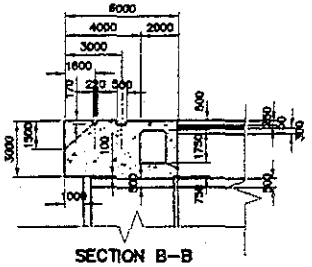
PLAN



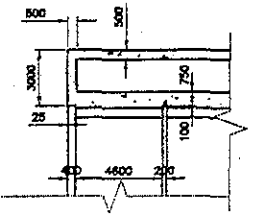
FRONT VIEW



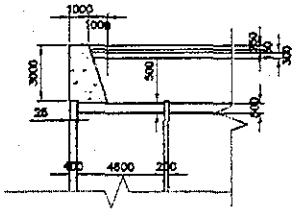
SECTION A–A



SECTION B–B



SECTION C–C



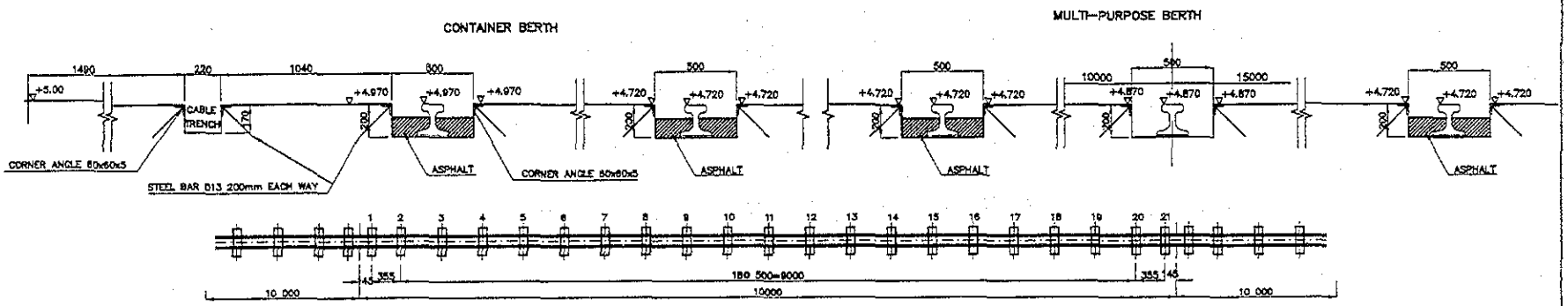
SECTION D–D

NOTES: ALL DIMENSIONS ARE IN MILLIMETER

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 : 1 : 250
		APPROVED BY :	TITLE : DETAIL OF COPING (1)	DRAWING NO. DW-QW-01-042

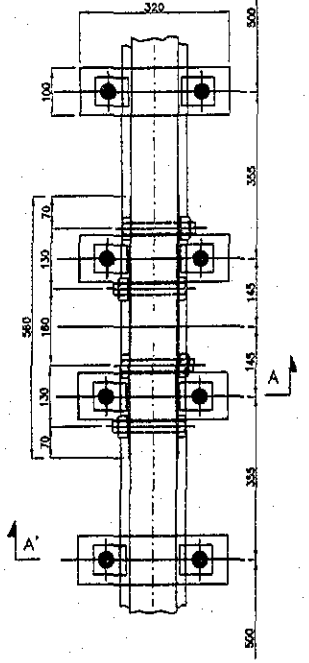
PLAN OF RAIL AND DECK ELEVATION

SCALE 1:25



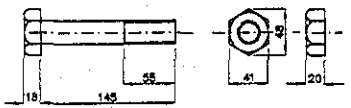
PLAN OF JOINT

SCALE 1:100



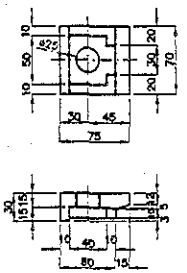
⑤ HEX. BOLT & NUT

SCALE 1:5



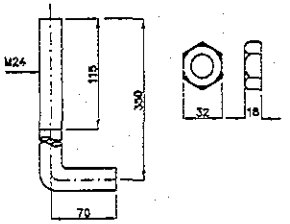
① RAIL CLIP

SCALE 1:5



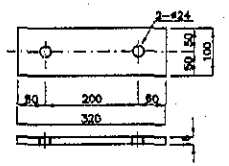
② ANCHOR BOLT & NUT

SCALE 1:5



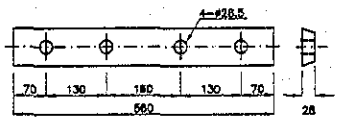
③ BASE PLATE

SCALE 1:10



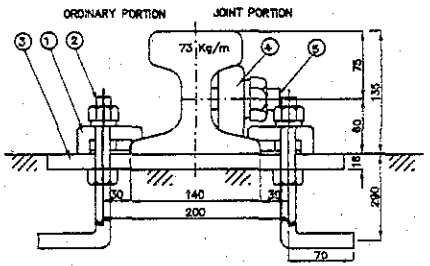
④ JOINT PLATE

SCALE 1:10



SECTION A'-A

SCALE 1:10



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 CRANE RAIL	DRAWING NO: DW-QW-01-058

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

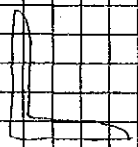
335 m

0.22 m

335 m

$L = (335 \times 2 + 0.22) \times 2$

$= 1340.5$ m



L 60×60×5

Unit weight 4.55 kg

$W = 4.55 \times 1340.5$

$= 6100$ 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	Cable Trench	**Pay Item No. (BOQ)**	213-1602
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

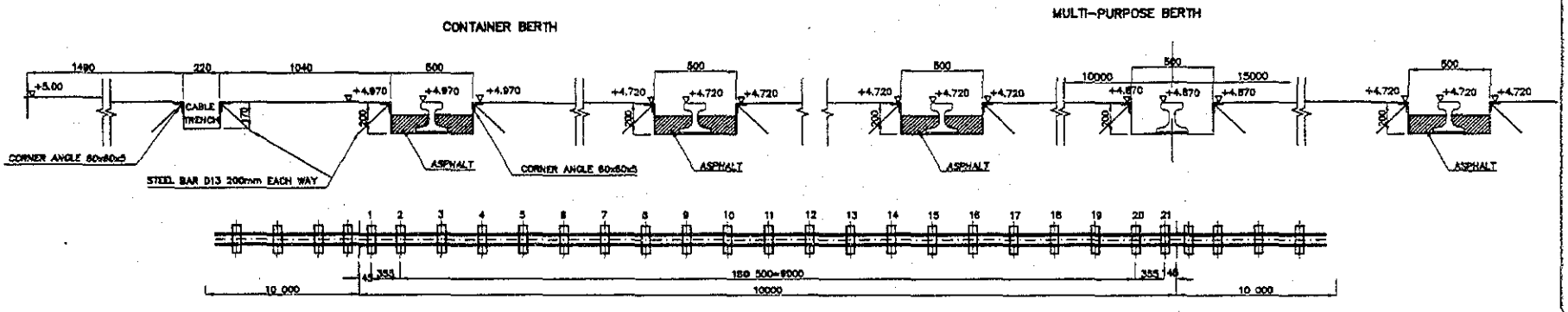
References: Tender Drawings:

DW-QW-01-058 Detail of Crane Rail

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

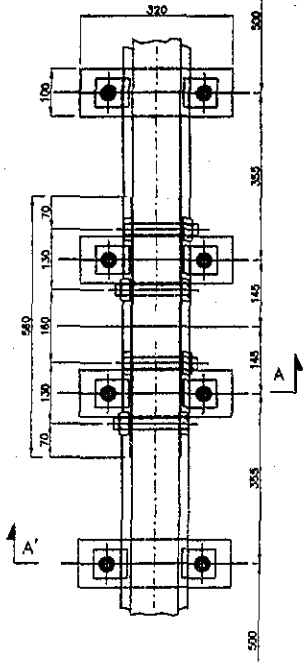
PLAN OF RAIL AND DECK ELEVATION

SCALE 1:25



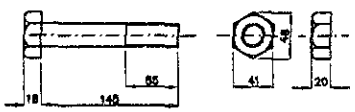
PLAN OF JOINT

SCALE 1:100



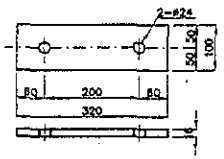
⑤ HEX. BOLT & NUT

SCALE 1:5



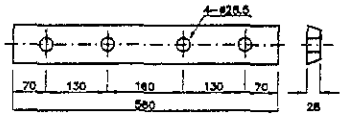
③ BASE PLATE

SCALE 1:10



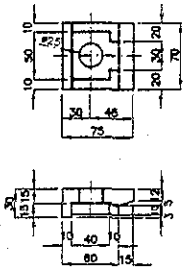
④ JOINT PLATE

SCALE 1:10



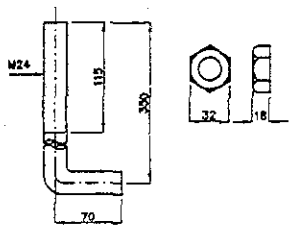
① RAIL CLIP

SCALE 1:5



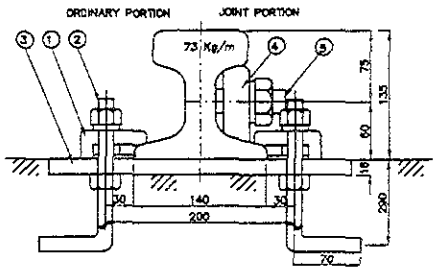
② ANCHOR BOLT & NUT

SCALE 1:5



SECTION A'–A

SCALE 1:10



JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	DETAILED DESIGN ON PORT REACTIVATION PROJECT IN LA UNION PROVINCE OF THE REPUBLIC OF EL SALVADOR	SECTION : QUAYWALL WORK SUB-SECTION : CONTAINER AND MULTI-PURPOSE BERTH TITLE : DETAIL OF CRANE RAIL	DATE : JULY/2002 SCALE : INDICATED DRAWING NO. DW-CW-01-059
COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)	NIPPON KOEI CO., LTD.	DESIGNED BY : CHECKED BY : APPROVED BY :	

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 = 1340.5 m

D13 unit weight 0.995/m

@ 20 cm a = 0.25 m

N = 1340.5 ÷ 0.2 = 6702.5

≈ 6703

W = 0.25 × 6703 × 0.995

= 1667.4

≒ 1670 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	Jack-up base.	**Pay Item No. (BOQ)**	2B-1701
Quantity Item	Steel Plate.	**Unit**	Kgs

Calculation Procedure Applied

Jack-up base was to be set on the coping and crane rail foundation in order to jack crane up while not working.

References, Calculation Base and Revisions

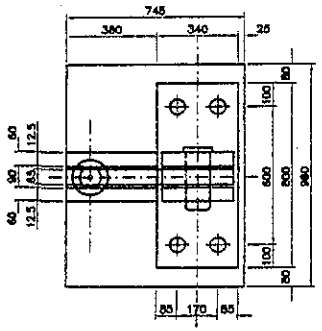
References : Tender Drawings :

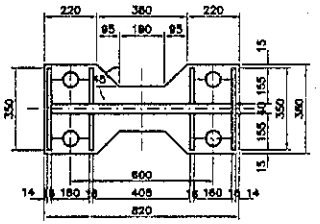
LVJ - QW1 - 01 - 059 Detail of Anchor-jack up plate & Socket Block

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								

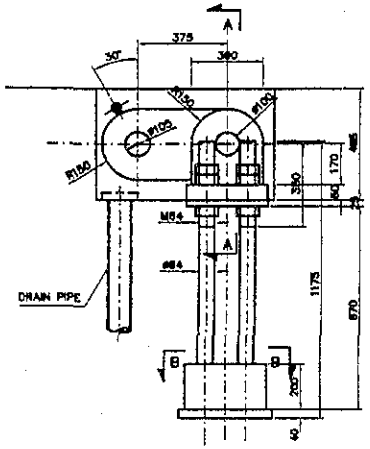
FN : Calculation_Cover_Sheet_020504_seg cover

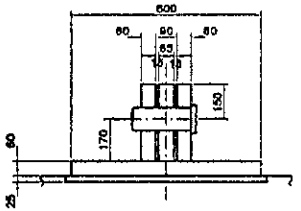
DETAIL OF ANCHORING FRAME
SCALE 1:20





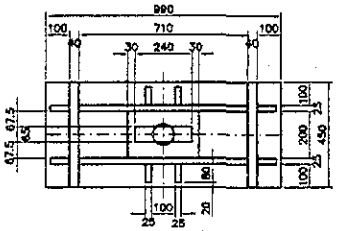
SECTION B–B



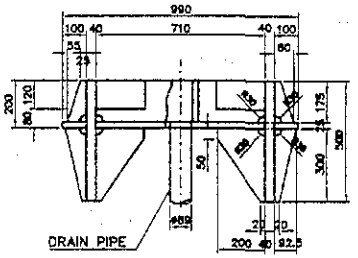


SECTION A–A

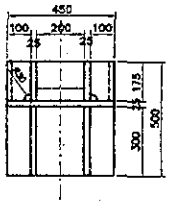
DETAIL OF SOCKET BLOCK
SCALE 1:20



PLAN

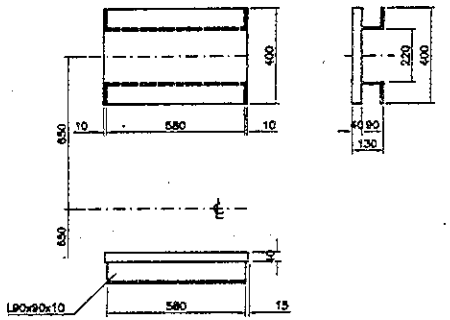


FRONT VIEW

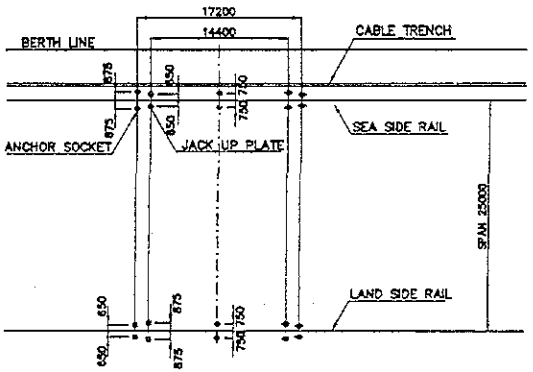


LATERAL VIEW

DETAIL OF JACK UP PLATE
SCALE 1:20



PLAN OF ANCHOR AND JACK UP PLATE
SCALE 1:500



JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) / 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	DW-QW-01-052

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	Jack-up base.	Calc. Index No.	
Subject	Steel Plate.	Page No.	Rev.

References/ Notes

Steel Plate

$N = 8 \times 2 = \boxed{16}$

	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	Jack-up base	**Pay Item No. (BOQ)**	2B-1702
Quantity Item	Base Angle	**Unit**	Nos

Calculation Procedure Applied

Jack-up base was to be set on the coping and crane rail foundation in order to jack crane up while not working.

Base angle was to be used for base of steel plate.

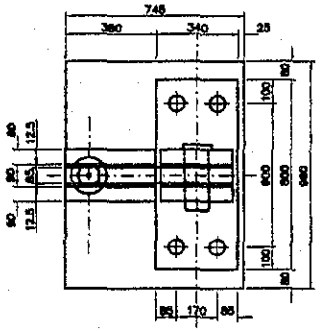
References, Calculation Base and Revisions

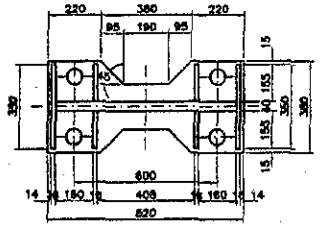
References: Tender Drawings:

DW-QWS-01-059 Detail of Anchor, Jack up Plate & Socket Block

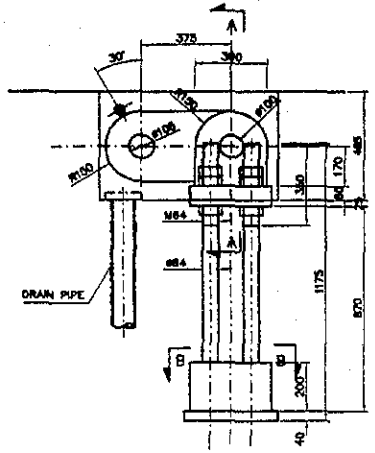
Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
	by	Date		by	Date	by	Date	
0	Khaila Garcia			Mr. Tsuma		Mr. Ando		
1								
2								
3								

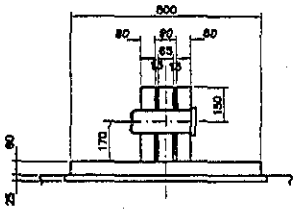
DETAIL OF ANCHORING FRAME
SCALE 1:20





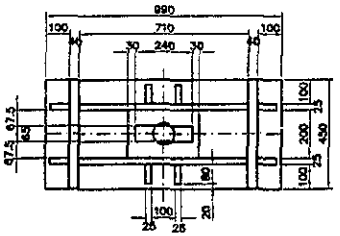
SECTION B–B



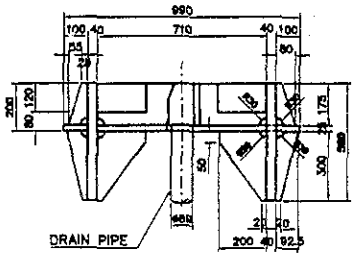


SECTION A–A

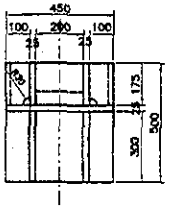
DETAIL OF SOCKET BLOCK
SCALE 1:20



PLAN

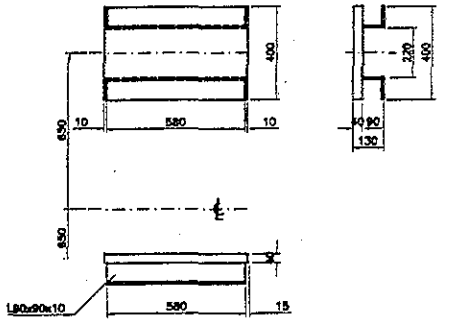


FRONT VIEW

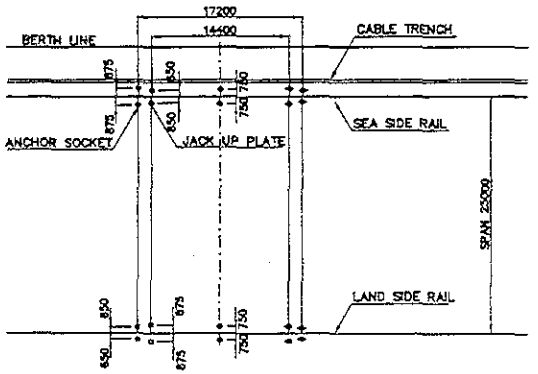


LATERAL VIEW

DETAIL OF JACK UP PLATE
SCALE 1:20



PLAN OF ANCHOR AND JACK UP PLATE
SCALE 1:500

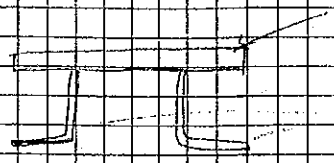


JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	DETAILED DESIGN ON PORT REACTIVATION PROJECT IN LA UNION PROVINCE OF THE REPUBLIC OF EL SALVADOR	SECTION : QUAYWALL WORK	DATE : JULY/2002
COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)	NIPPON KOEI CO., LTD.	SUB-SECTION : CONTAINER AND MULTI-PURPOSE BERTH	SCALE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

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	Jack-up base	Calc. Index No.	
Subject	Base Angle	Page No.	Rev.

References/ Notes

Cross Section.



N = 16 x 2 = 32

	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)**	2B-1801
Quantity Item	Steel Plate & Bolt	**Unit**	X.lot

Calculation Procedure Applied

4 end stoppers were to be set on the edge of crane rail in Container Berth. So, steel plate & bolt were also to be set in 4 points.

References, Calculation Base and Revisions

References: Tender Drawings:

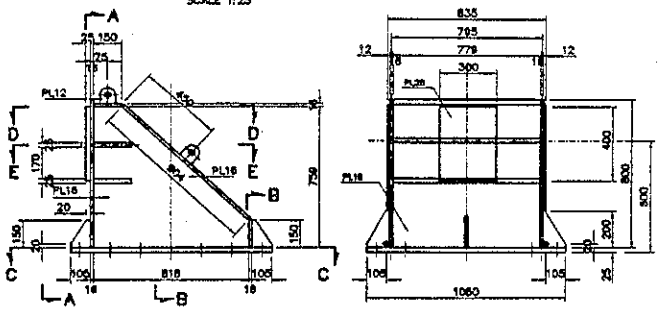
DW-QW-01-060 Detail of Crane End Stopper

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		
1								
2								
3								

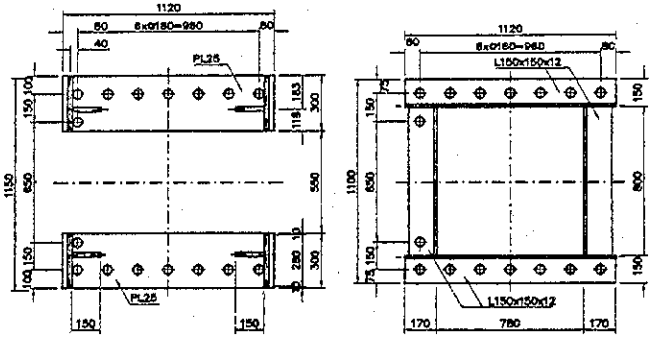
FN : Calculation_Cover_Sheet_020504_seg cover

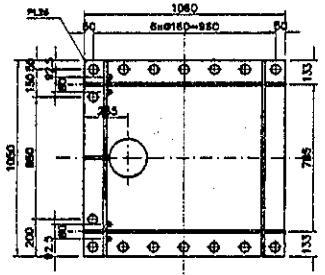
DETAIL OF CRANE END STOPPER EAST SIDE (CONTAINER)

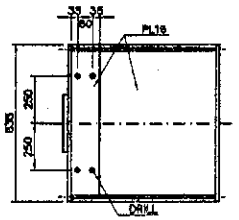
CRANE END STOPPER
SCALE 1:25

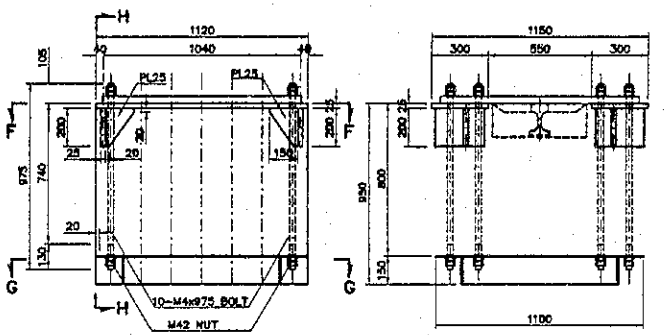


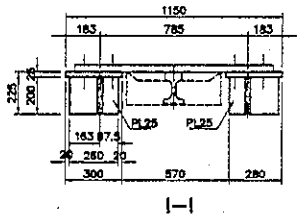
STOPPER BASE
SCALE 1:25

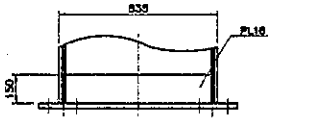


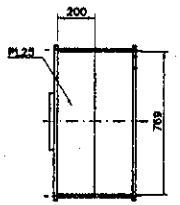


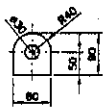






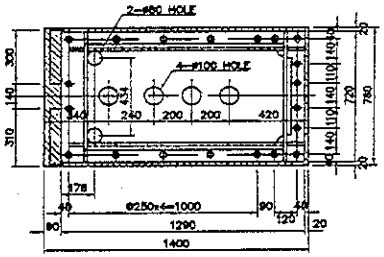


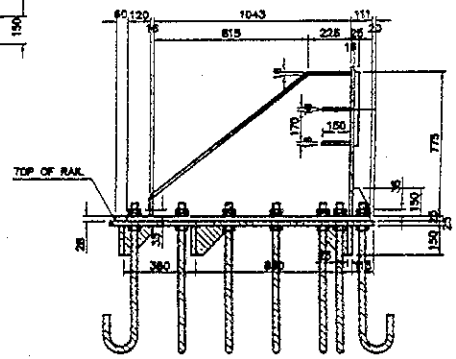


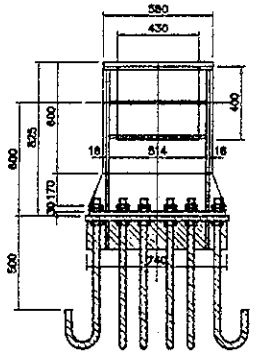


SCALE 1:10

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







REV. NO.	DATE	CONSIGNEE	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 : DETAILS OF CRANE END STOPPER	DATE : JULY/2002 / SCALE : INDICATED / DRAWING NO. : DW-QW-01-060

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

References/
Notes

See attached drawing!

N = 4

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		/ /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)**	2B-1802
Quantity Item	Concrete	**Unit**	m^3

Calculation Procedure Applied

Volume of concrete for end stopper was computed. This concrete was to fill holes for end stoppers after they were to be set in relevant places.

References, Calculation Base and Revisions

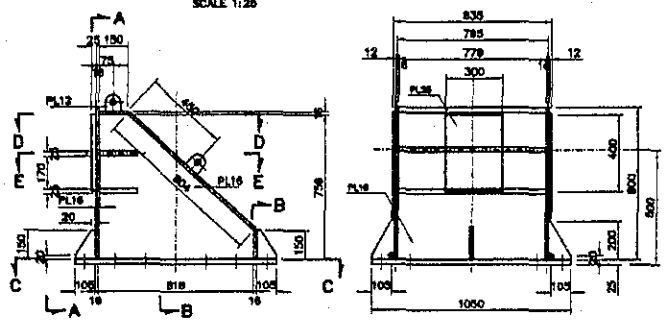
References : Tender Drawings :

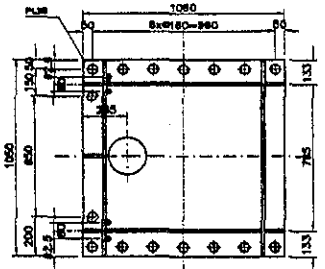
DN - 2N1 - 01 - 060 Detail of Crane End Stopper

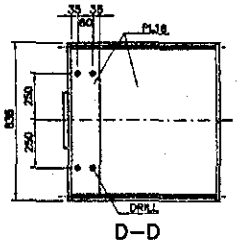
Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
	by	Date		by	Date	by	Date	
0	Karla Gracia			H. Inuma		H. Ando		
1								
2								
3								

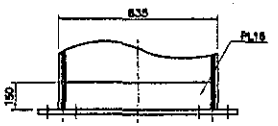
DETAIL OF CRANE END STOPPER EAST SIDE (CONTAINER)

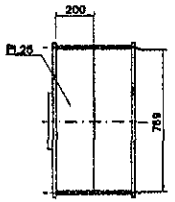
CRANE END STOPPER
SCALE 1:25

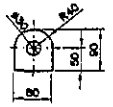






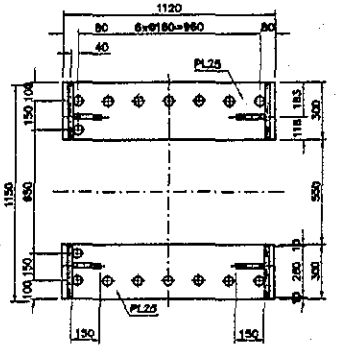


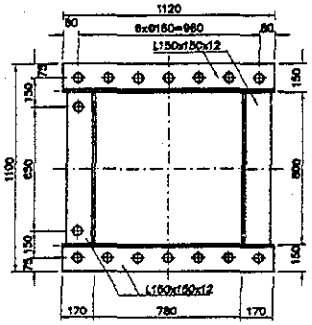


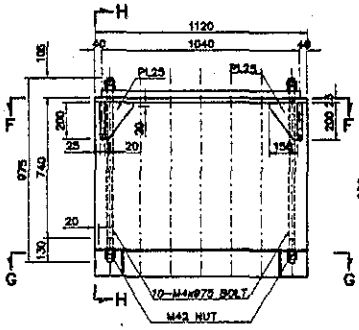


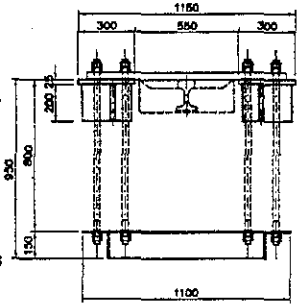
SCALE 1:10

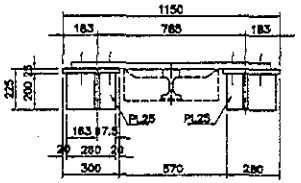
STOPPER BASE
SCALE 1:25



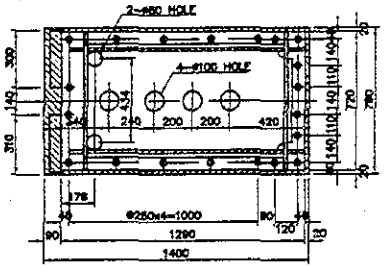


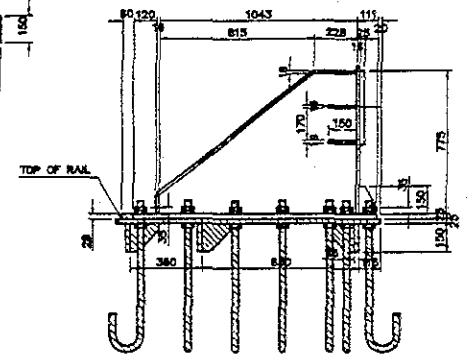


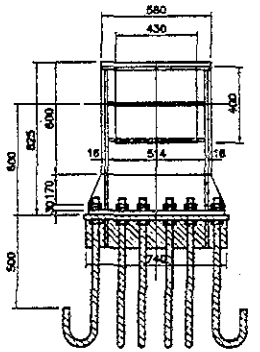




DETAILS OF CRANE END STOPPER WEST SIDE (CONTAINER)
SCALE 1:25







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 : DETAILS OF CRANE END STOPPER	DATE : JULY/2002 SCALE : INDICATED DRAWING NO. : DW-QW-01-060

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

References/ Notes

$V_1 = 0.8 \times 1.4 \times 0.65$

$= 0.73\ m^3$

$V = V_1 \times K = 0.73 \times K$

$= \boxed{2.92}\ m^3$

	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	Socket block	**Pay Item No. (BOQ)**	2B - 1901
Quantity Item	Steel Plate & Bolt	**Unit**	Nos

Calculation Procedure Applied

Socket block is one of safty devices for crane.

4 sets of socket block were to be required for a crane.

References, Calculation Base and Revisions

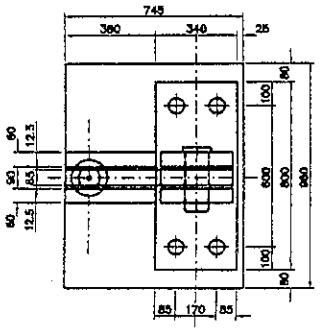
References: Tindr Drawings :

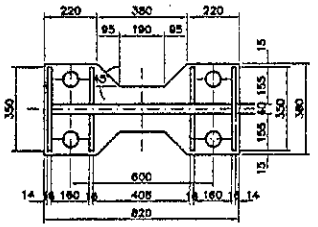
DW - QW - 01 - 059 Detail of Anchor - Jack up Plate & Socket Block

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

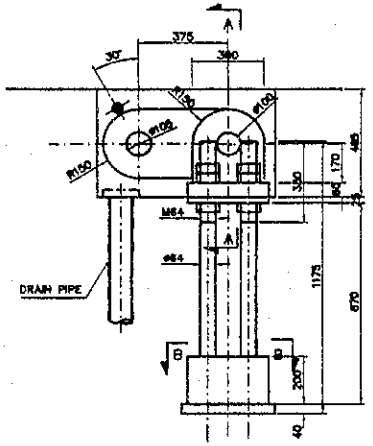
FN : Calculation_Cover_Sheet_020504_seg cover

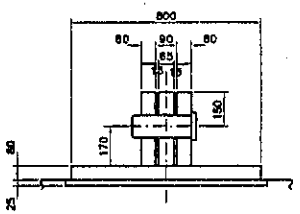
DETAIL OF ANCHORING FRAME
SCALE 1:20





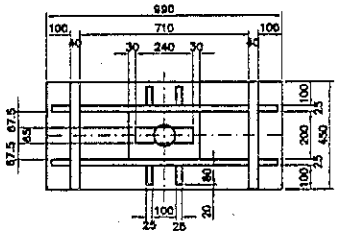
SECTION B–B



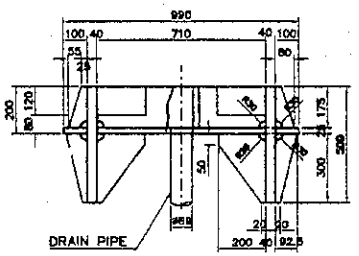


SECTION A–A

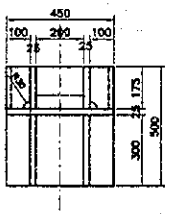
DETAIL OF SOCKET BLOCK
SCALE 1:20



PLAN

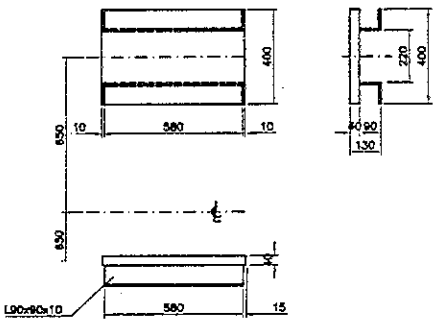


FRONT VIEW

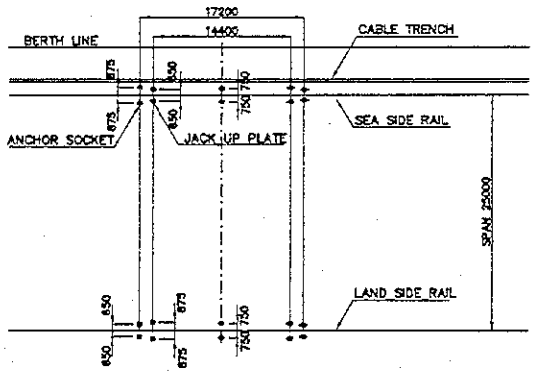


LATERAL VIEW

DETAIL OF JACK UP PLATE
SCALE 1:20



PLAN OF ANCHOR AND JACK UP PLATE
SCALE 1:500



JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) 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 ANCHOR-JACK UP PLATE & SOCKET BLOCK	DATE : JULY/2002 SCALE : INDICATED DRAWING NO. DW-QW-01-059	

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

References/ Notes

2 cranes.

Socket block:

$N = 4 \times 2 = \boxed{8}$

	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	Socket block	**Pay Item No. (BOQ)**	2B-1902
Quantity Item	Concrete	**Unit**	m^3

Calculation Procedure Applied

Volume of concrete for socket block was computed. This concrete was to fill holes for socket blocks after they were to be set in relevant places.

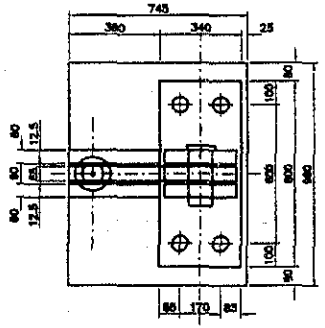
References, Calculation Base and Revisions

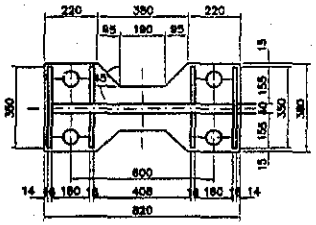
References: Tender Drawings:

PW-QW-01-059 Detail of Anchor - Tockup Plate & Socket Block

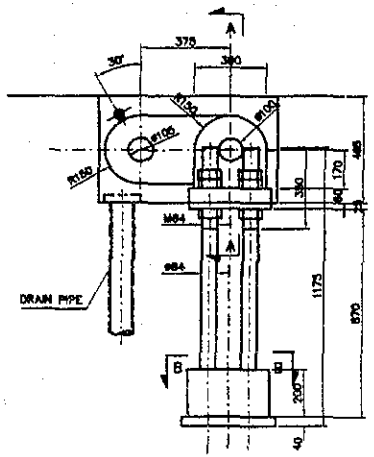
Rev	Prepared by	Prepared Date	No. of Pages	Checked by	Checked Date	Reviewed by	Reviewed Date	Superseded by Calc No.
0	Karla Garcia			Mr. Tsuma		Mr. Ando		
1								
2								
3								

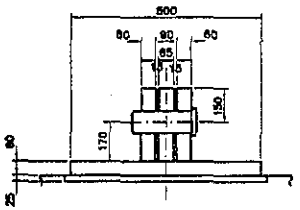
DETAIL OF ANCHORING FRAME
SCALE 1:20





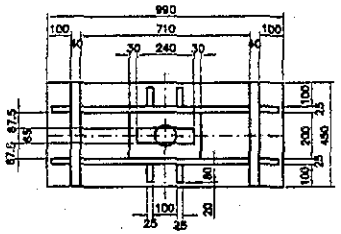
SECTION B–B



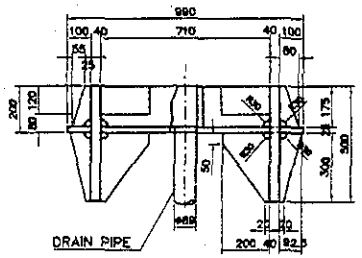


SECTION A–A

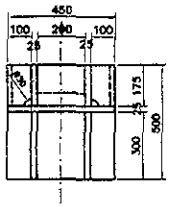
DETAIL OF SOCKET BLOCK
SCALE 1:20



PLAN

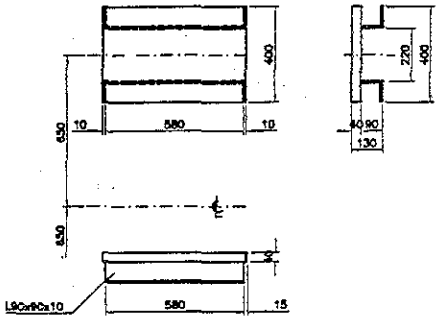


FRONT VIEW

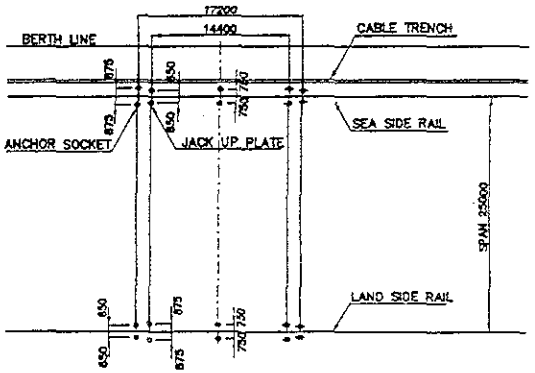


LATERAL VIEW

DETAIL OF JACK UP PLATE
SCALE 1:20



PLAN OF ANCHOR AND JACK UP PLATE
SCALE 1:500



JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) / 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

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

References/ Notes

$V_1 = 0.45 \times 1.0 \times 0.3 = 0.135$

$\fallingdotseq 0.14\ m^3$

$N = 8$

$V = V_1 \times 8 = 0.14 \times 8$

$= \boxed{1.12}\ m^3$

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	Crane anchoring frame	**Pay Item No. (BOQ)**	213 - 2001
Quantity Item	Steel Plate & Bolt	**Unit**	Sets

Calculation Procedure Applied

Crane anchoring frame is one of safty devices for crane.

8 sets of crane anchoring frame were to be set for a crane.

References, Calculation Base and Revisions

References : Tendir Drawings :

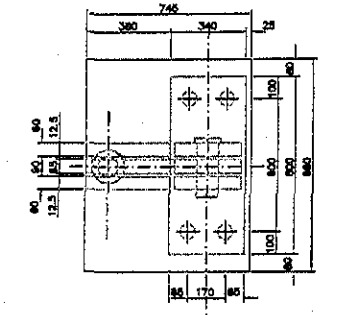
DW - QW - 01 - 059 Detail of Anchor - Tock up Plate & Socket Block

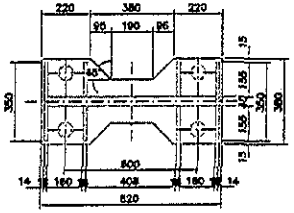
Rev	Prepared		No. of	Checked		Reviewed		Superseded
	by	Date	Pages	by	Date	by	Date	by Calc No.
0	Karla Garcia			Mr. Inuma		Mr. Ando		
1								
2								
3								

FN : Calculation_Cover_Sheet_020504_seg cover

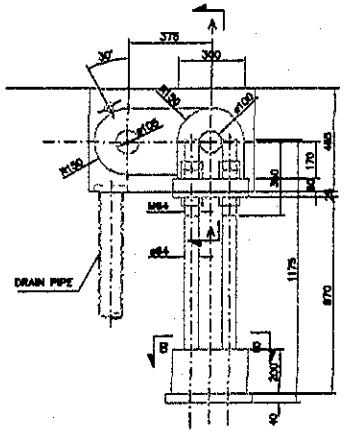
DETAIL OF ANCHORING FRAME

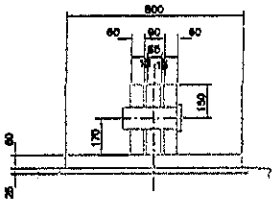
SCALE 1:20





SECTION B-B

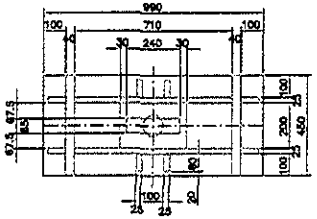




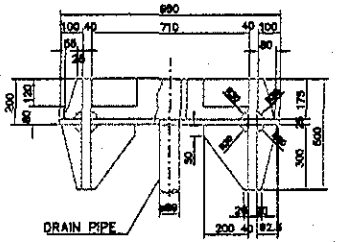
SECTION A-A

DETAIL OF SOCKET BLOCK

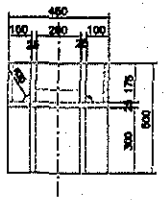
SCALE 1:20



PLAN



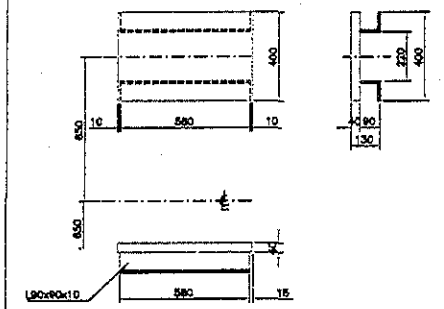
FRONT VIEW



LATERAL VIEW

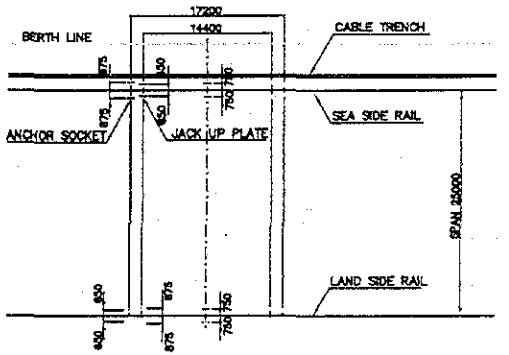
DETAIL OF JACK UP PLATE

SCALE 1:20



PLAN OF ANCHOR AND JACK UP PLATE

SCALE 1:500



059

560

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	Crane anchoring frame	Calc. Index No.	
Subject	steel Plate & Bolt	Page No.	Rev.

References/ Notes

$N = 8 \times 2 = 16$

		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	Crane anchoring frame	**Pay Item No. (BOQ)**	2B - 2002
Quantity Item	Concrete	**Unit**	m^3

Calculation Procedure Applied

Volume of concrete for crane anchoring frame was computed. This concrete was to fill holes for crane anchoring device after it was to be set in relevant place.

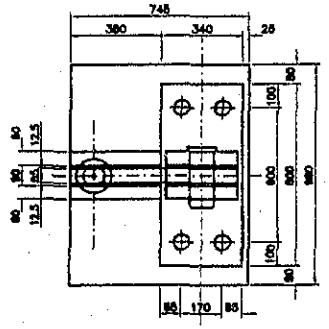
References, Calculation Base and Revisions

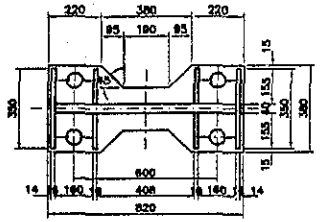
References: Tender Drawings:

LW-2N1-01-053 Detail of Anchor - Jack up Plate & Socket Block

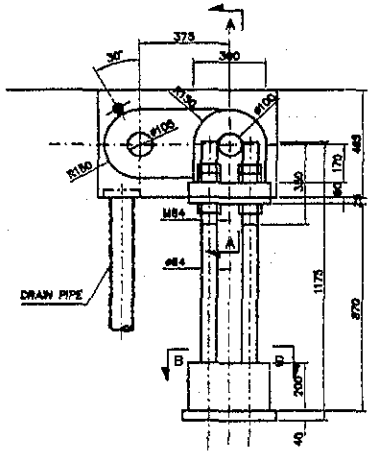
Rev	Prepared by	Prepared Date	No. of Pages	Checked by	Checked Date	Reviewed by	Reviewed Date	Superseded by Calc No.
0	Karla Garcia			Mr. Inuma		Mr. Ando		
1								
2								
3								

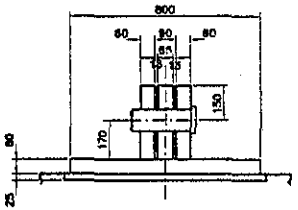
DETAIL OF ANCHORING FRAME
SCALE 1:20





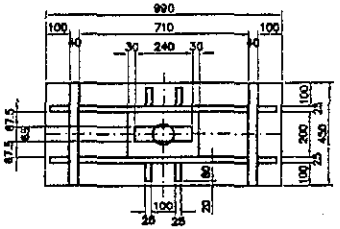
SECTION B–B



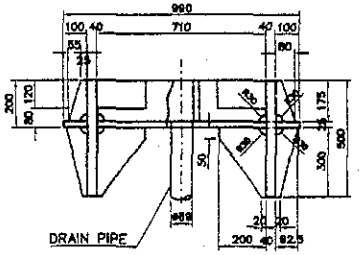


SECTION A–A

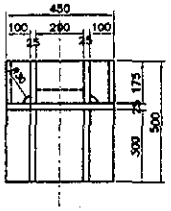
DETAIL OF SOCKET BLOCK
SCALE 1:20



PLAN

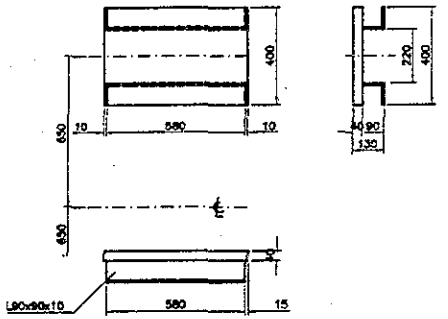


FRONT VIEW

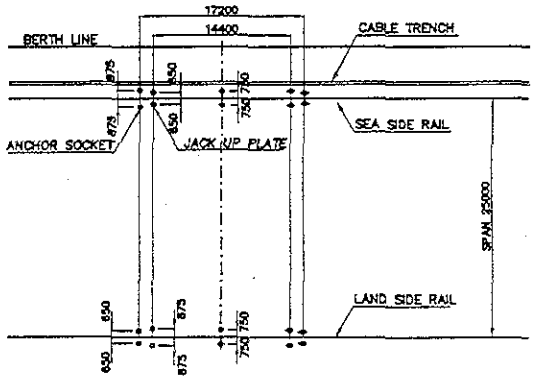


LATERAL VIEW

DETAIL OF JACK UP PLATE
SCALE 1:20



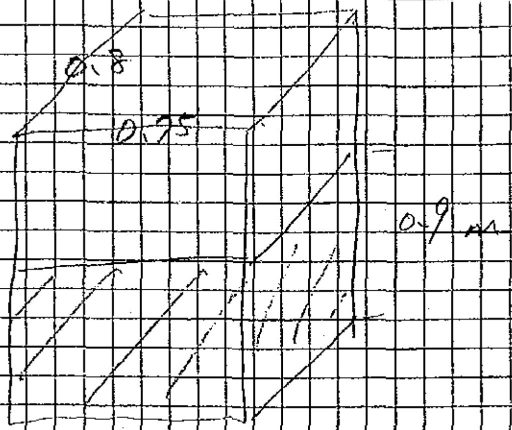
PLAN OF ANCHOR AND JACK UP PLATE
SCALE 1:500



JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) / 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-01-052

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	Crane anchoring frame	Calc. Index No.	
Subject	Concrete	Page No.	Rev.

References/ Notes



$V_1 = 0.75 \times 0.8 \times 0.9$

$= 0.54$

$V = V_1 \times 16 = 0.54 \times 16$

$= 8.64$

$\fallingdotseq \boxed{8.7}\ m^3$

	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	Crane anchoring frame	**Pay Item No. (BOQ)**	28 - 2003
Quantity Item	Angle & Re-Bar	**Unit**	Kg

Calculation Procedure Applied

Crane anchoring frame has a concrete cover. This angle was to be set for frame of concrete cover. And Re-Bar was to be set in order to fix angle.

References, Calculation Base and Revisions

References: Tender Drawings:

[illegible] - 01 - 059 Detail of Anchor - Tie up plate & Solid Block

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. Endo		
1								
2								
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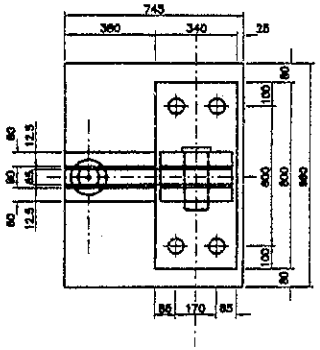
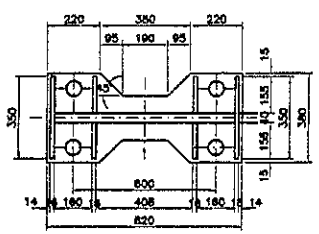
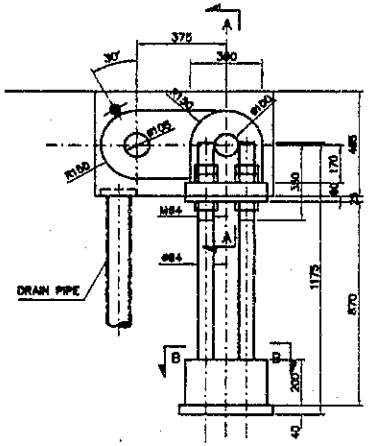
FN : Calculation_Cover_Sheet_020504_seg cover

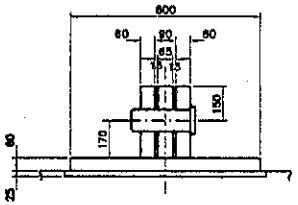
DETAIL OF ANCHORING FRAME
SCALE 1:20





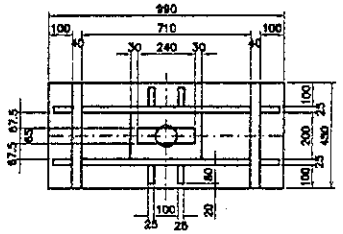
SECTION B–B



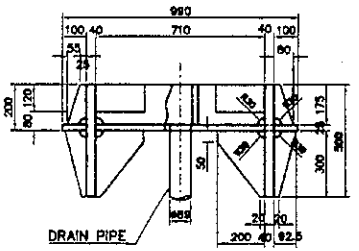


SECTION A–A

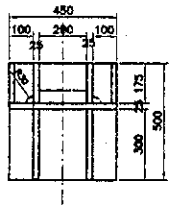
DETAIL OF SOCKET BLOCK
SCALE 1:20



PLAN

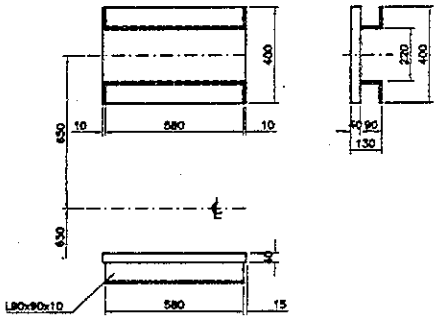


FRONT VIEW

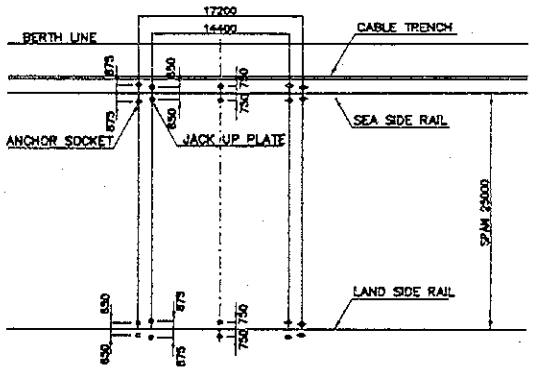


LATERAL VIEW

DETAIL OF JACK UP PLATE
SCALE 1:20



PLAN OF ANCHOR AND JACK UP PLATE
SCALE 1:500



JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

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 :

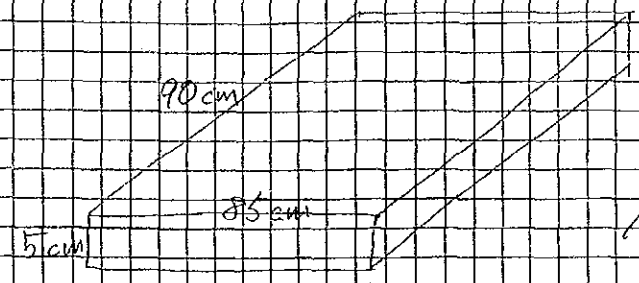
SECTION : QUAYWALL WORK
SUB-SECTION : CONTAINER AND MULTI-PURPOSE BERTH
TITLE :

DETAIL OF ANCHOR-JACK UP PLATE & SOCKET BLOCK

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 anchoring frame	Calc. Index No.	
Subject	Angle & Re-Bar	Page No.	Rev.

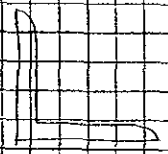
References/ Notes



N = 16

Angle

L = 0.9 × 2 + 0.85 × 2 = 3.5 m



L50 × 50 × 6

Unit weight 4.43 kg/m

W_1 = 4.43 × 3.5 × 16 = 248 kg

Re-Bar

N = 3.5 ÷ 0.2 = 17.5 → 18

ℓ = 0.4 @ 200

D9 unit weight 0.50 kg/m

W_2 = 0.50 × 0.4 × 18 × 16

= 14.4 kg

W = 248 + 14.4 = 262.4

≒ 263 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	Crane anchoring frame	**Pay Item No. (BOQ)**	2B - 2004
Quantity Item	Form for cover	**Unit**	m^2

Calculation Procedure Applied

Area of form for cover of crane anchoring frame was computed.

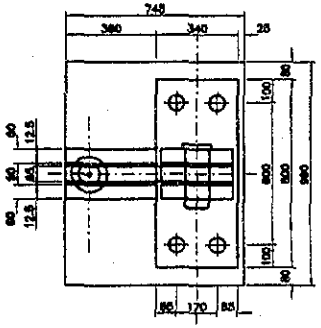
References, Calculation Base and Revisions

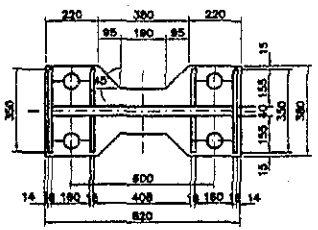
References: Tender Drawings:

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

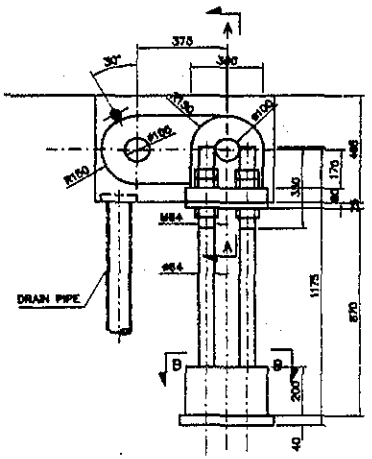
Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded
	by	Date		by	Date	by	Date	by Calc No.
0	Karla Garcia			M. Inuma		M. Ando		
1								
2								
3								

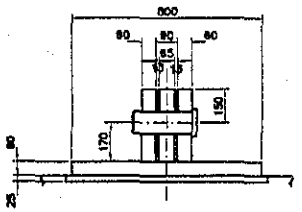
DETAIL OF ANCHORING FRAME
SCALE 1:20





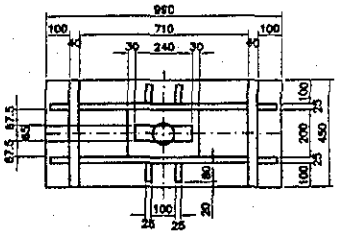
SECTION B–B



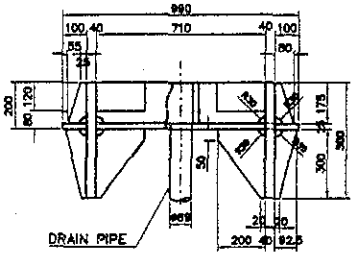


SECTION A–A

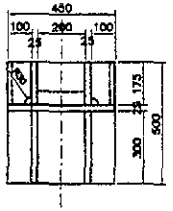
DETAIL OF SOCKET BLOCK
SCALE 1:20



PLAN

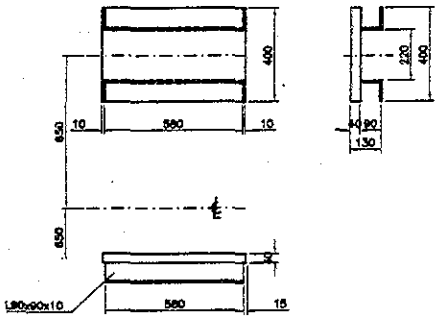


FRONT VIEW

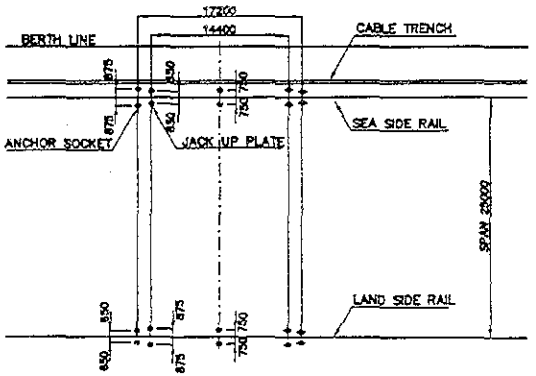


LATERAL VIEW

DETAIL OF JACK UP PLATE
SCALE 1:20



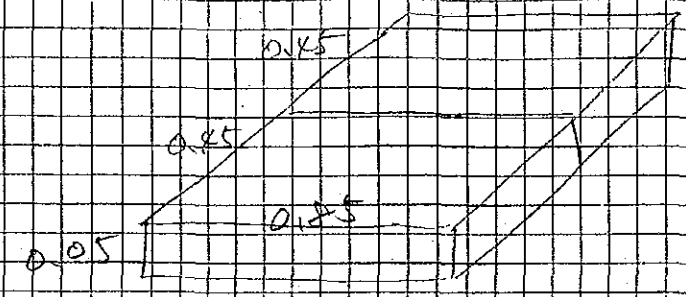
PLAN OF ANCHOR AND JACK UP PLATE
SCALE 1:500



JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) 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 ANCHOR-JACK UP PLATE & SOCKET BLOCK	DATE : JULY/2002 SCALE : INDICATED DRAWING NO. DW-QW-01-050

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

References/ Notes



side $(0.45\times2+0.85\times2)\times0.05\times2$

$= 0.26$

bottom $0.85\times0.9=0.765\rightarrow0.77$

Sub-total $1.03\ m^2$

$N=16$

$A=1.03\times16=16.48$

$\Rightarrow \boxed{16.5}\ m^2$

	Prepared by		Checked by	
		/ /200		/ /200

FN: Calculation_Sheet