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	PLATFORM 1	**Pay Item No. (BOQ)**	2D-PJ0206
Quantity Item	FORM FOR CURB	**Unit**	m2

Calculation Procedure Applied

Form for curb was computed for Platform 1. Form area was computed for each type of curb. The form was applied in all sides of curbs.

References, Calculation Base and Revisions

References: Tender Drawings:

SW-GW-02-028 Detail of curb

Rev	Prepared by	Prepared Date	No. of Pages	Checked by	Checked Date	Reviewed by	Reviewed Date	Superseded by Calc No.
0	Karla Garza			Ms. Inuma		Mr. Ando		
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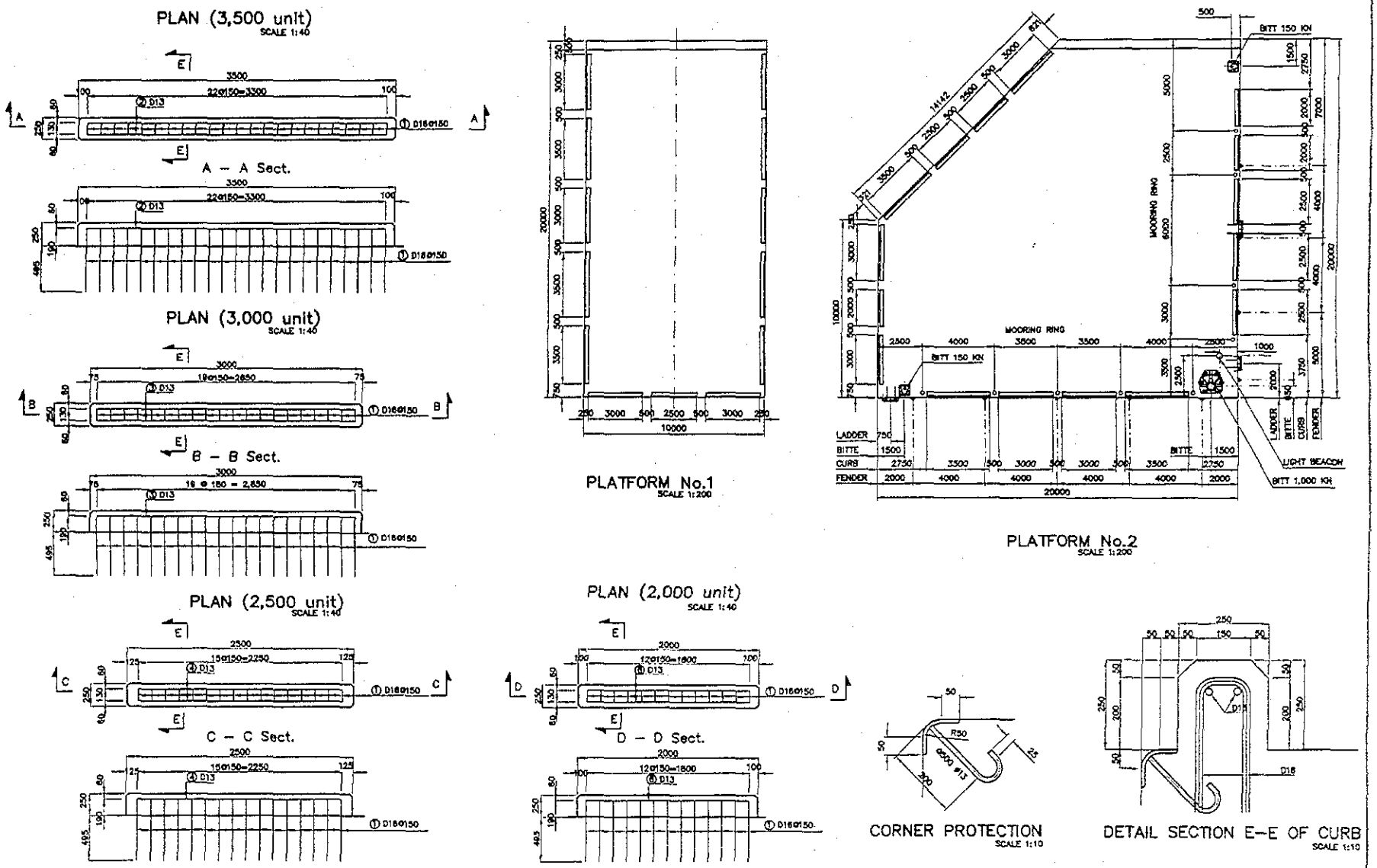
cover



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 : PASSENGER BERTH	SCALE : INDICATED
			TITLE : DETAIL OF CURB	DRAWING NO. DW-QW-02-025

NIPPON KOEI CO.,LTD.

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	PLATFORM 1	Calc. Index No.	
Subject	FORM FOR CURB	Page No.	Rev.

References/ Notes

$L = 3.50\ m \qquad No = 6$

$A = \left[(0.20m)(2) + (0.07(m)(2)\right](3.50m) + (0.06m)(2)$

$= 2.017\ m^2 \simeq 2.02\ m^2$

$A_T = (2.02\ m^2)(6) = 12.12\ m^2$

$L = 3.00\ m \qquad No = 6$

$A = \left[(0.20m)(2) + (0.07(m)(2)\right](3.0m) + (0.06m)(2) = 1.746\ m^2$

$\simeq 1.75\ m^2$

$A_T = (1.75\ m^2)(6) = 10.50\ m^2$

$L = 2.50\ m \qquad No = 1$

$A = \left[(0.20m)(2) + (0.07(m)(2)\right](2.50m) + (0.06m)(2)$

$= 1.475 \simeq 1.48\ m^2$

$A_T = (1.48\ m^2)(1) = 1.48\ m^2$

$A_T = 24.10\ m^2$

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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	PLATFORM 1	**Pay Item No. (BOQ)**	2D - P10207
Quantity Item	REINFORCEMENT FOR CURB	**Unit**	Kg

Calculation Procedure Applied

Reinforcement was computed for platform 1. Reinforcement was computed for each type of curb. It was computed summarizing all bar lenghts for each type of diameter. Then, they were multiplied by the weight.

References, Calculation Base and Revisions

References : Tender Drawings :

DW-QW-02-028 Detail for Curb

Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.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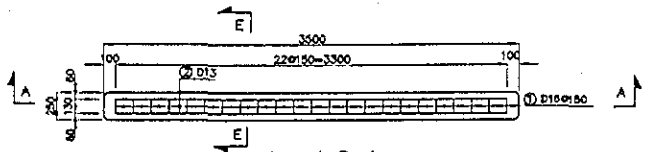
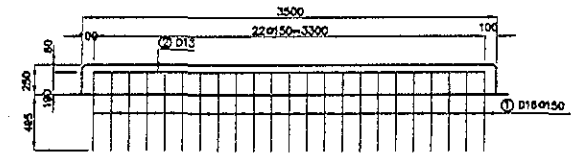
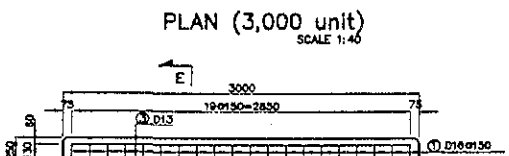
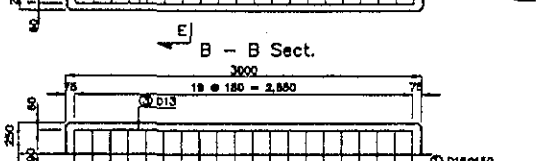
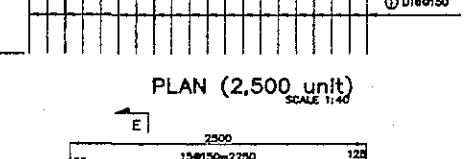
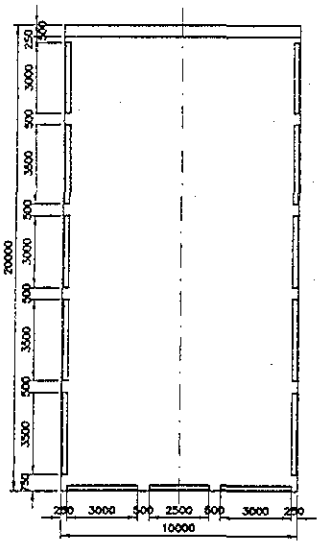




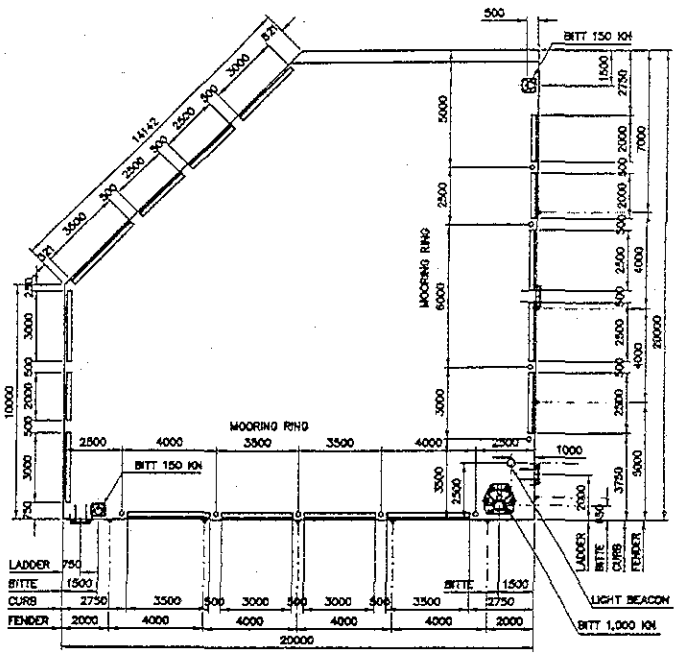




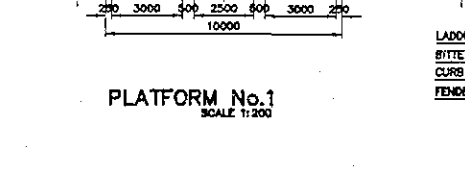


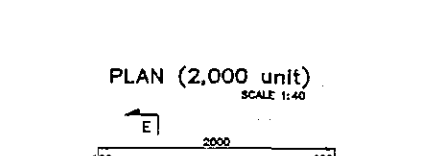


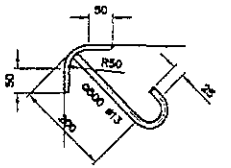
PLATFORM No.1
SCALE 1:200



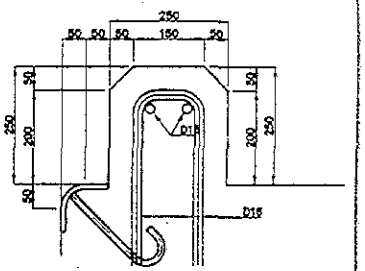
PLATFORM No.2
SCALE 1:200







CORNER PROTECTION
SCALE 1:10



DETAIL SECTION E–E OF CURB
SCALE 1:10

REV. NO. / DATE / DESCRIPTION / BY / APPROVED / DATE	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)	DETAILED DESIGN ON PORT REACTIVATION PROJECT IN LA UNION PROVINCE OF THE REPUBLIC OF EL SALVADOR NIPPON KOEI CO., LTD.	DESIGNED BY : CHECKED BY : APPROVED BY :	SECTION : QUAYWALL WORK SUB-SECTION : PASSENGER BERTH TITLE : DETAIL OF CURB	DATE : JULY/2002 SCALE : INDICATED DRAWING NO. : DW-QW-02-028

NIPPON KOEI CO.,LTD.

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	PLATFORM 1	Calc. Index No.	
Subject	REINFORCEMENT FOR CURB	Page No.	Rev.

References/ Notes

L = 3.50 m No = 6

D16 x 23 = (1.56 kg/m)(1.50 m)(23) = 53.82 kg ≈ 53.90 kg

D13 x 2 = (0.995 kg/m)(3.30 m)(2) = 6.57 kg ≈ 6.60 kg

W = 60.50 kg

L = 3.0 m No = 6

D16 x 20 = (1.56 kg/m)(1.50 m)(20) = 46.80 kg

D13 x 2 = (0.995 kg/m)(2.85 m)(2) = 5.67 kg ≈ 5.70 kg

W = 52.50 kg

L = 2.50 m No = 1

D16 x 16 = (1.56 kg/m)(1.50 m)(16) = 37.44 kg ≈ 37.50 kg

D13 x 2 = (0.995 kg/m)(2.25 m)(2) = 4.48 kg ≈ 4.50 kg

W = 42.00 kg

W_T = (60.50 kg)(6) + (52.50 kg)(6) + 42.00 kg

= **720 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	PLATFORM 2	**Pay Item No. (BOQ)**	2D - P20101
Quantity Item	STEEL PIPE PILE	**Unit**	Nos

Calculation Procedure Applied

Steel pipe piles were computed for each type of pile, including diameter and thickness.
Lenght was multiplied by the total number of pile in platform 2. Also, the unit and total weight of pile were computed using Weight Tables.

References, Calculation Base and Revisions

DW - QW - 02 - 003 Passenger Berth Pier 2
Plan & Typical Cross Section.

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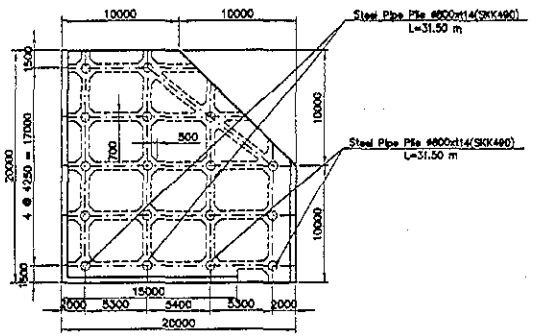
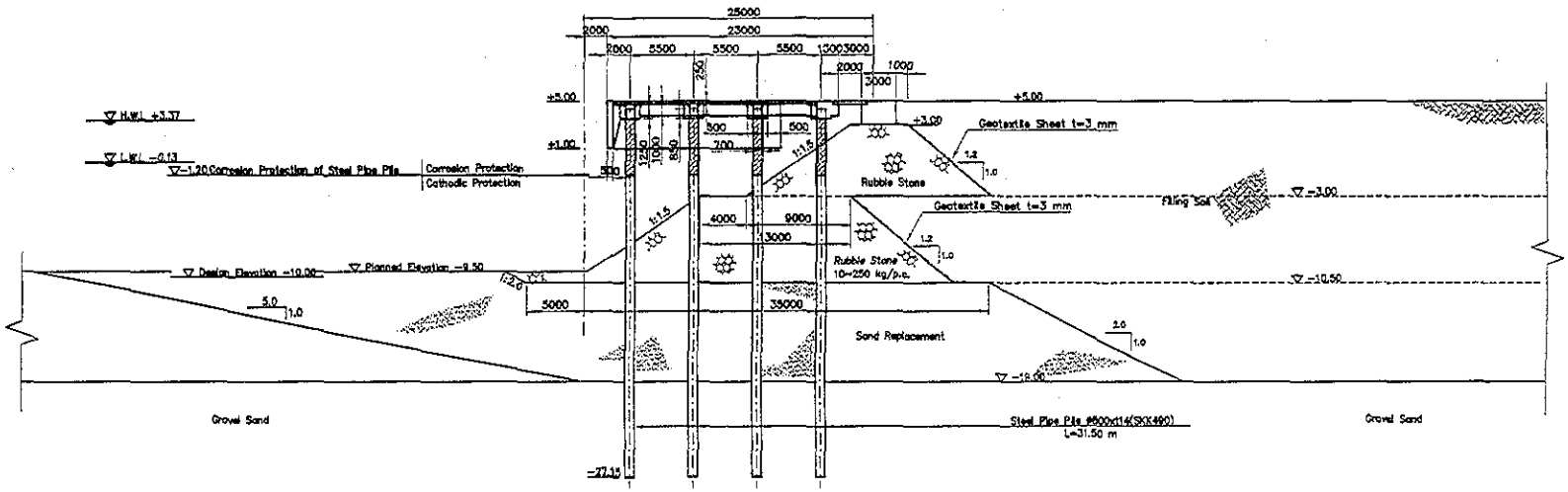


PLAN PIER 2



TYPICAL CROSS SECTION

SCALE 1:400 0 5.0 10.0 15.0 20.0 25.0 30.0

REV. NO.	DATE	COORDINATE	BY	APPROVED	DATE		

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)

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

NIPPON KOEI CO., LTD

DESIGNED BY :
CHECKED BY :
APPROVED BY :

SECTION : QUAYWALL WORK
SUB-SECTION : PASSENGER BERTH
TITLE : PASSENGER BERTH PIER 2 PLAN & TYPICAL CROSS SECTION

DATE : JULY/2001
SCALE : 1 : 400
DRAWING NO. DW-QW-02-003

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	PLATFORM 2	Calc. Index No.	
Subject	STEEL PIPE PILE	Page No.	Rev.

References/ Notes

No. piles = 17

ϕ = 800 mm

L = 31.50 m

t = 14 mm

$\Rightarrow$ W = 271 kg/m

$\Rightarrow$ Unit weight = (271 kg/m)(31.50 m) = 8,536.50 kg

$\approx$ 8,537 kg

$\Rightarrow$ W_T = (8,537 kg)(17)

= 145,129 kg $\approx$ **145 ton**

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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	PLATFORM 2	**Pay Item No. (BOQ)**	2b-P20102
Quantity Item	PLATE	**Unit**	

Calculation Procedure Applied

Plate was computed for Platform 1. The unit weight was multiplied by the total number of pieces.

References, Calculation Base and Revisions

References: Tender Drawings:

DW-QW-02-019 Bar Arrangement for Platform Pile Head

Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
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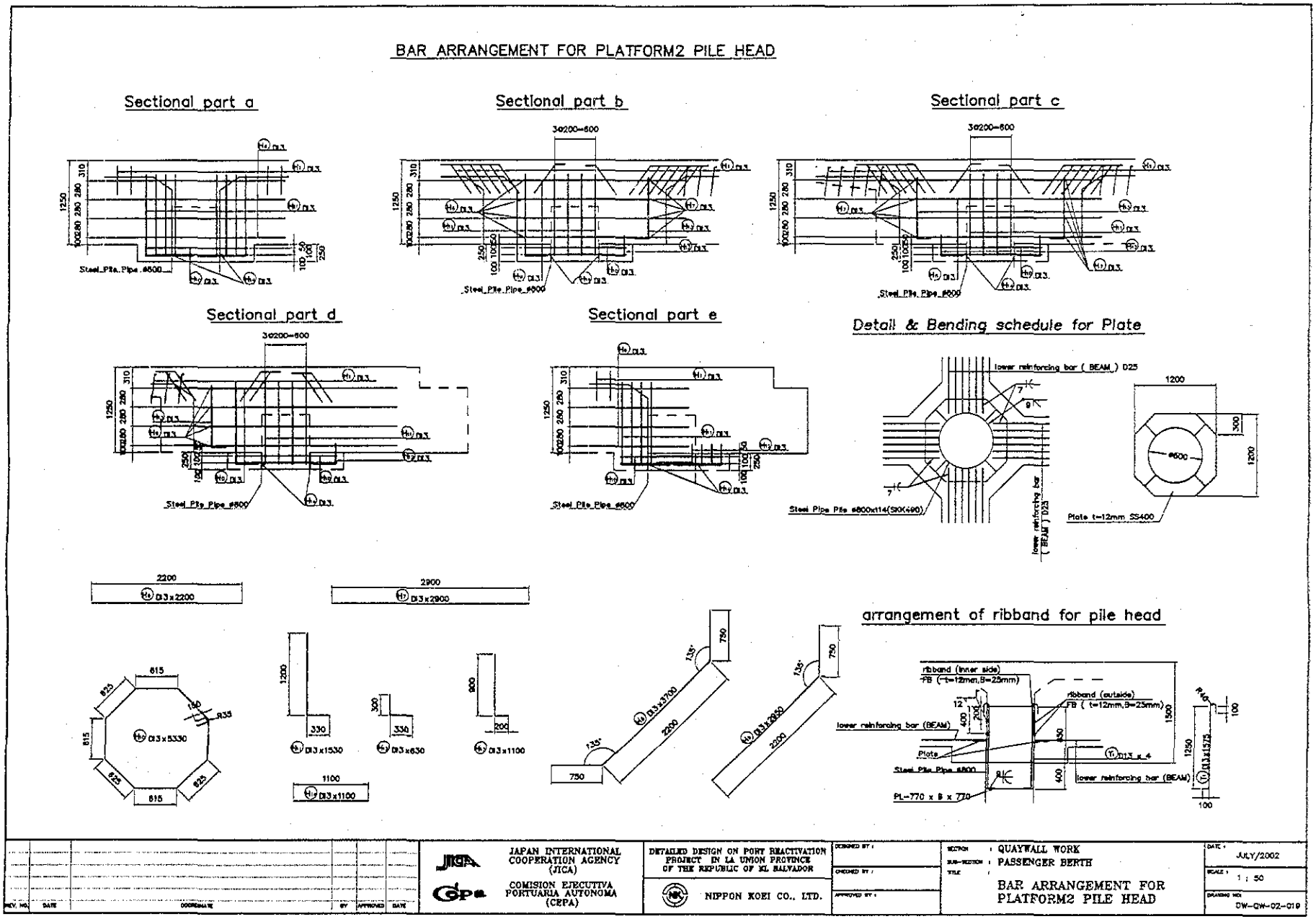
BAR ARRANGEMENT FOR PLATFORM2 PILE HEAD
Sectional part a
Sectional part b
Sectional part c
Sectional part d
Sectional part e
Detail & Bending schedule for Plate
arrangement of ribband for pile head
Steel Pile Pipe ø800
Steel Pipe Pile ø800x114(SKK490)
Plate t=12mm SS400
lower reinforcing bar (BEAM) D25
ribband (inner side)
ribband (outside)
lower reinforcing bar (BEAM)
Plate
PL-770 x 8 x 770
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)
DETAILED DESIGN ON PORT REACTIVATION PROJECT IN LA UNION PROVINCE OF THE REPUBLIC OF EL SALVADOR
NIPPON KOEI CO., LTD.
QUAYWALL WORK
PASSENGER BERTH
BAR ARRANGEMENT FOR PLATFORM2 PILE HEAD
JULY/2002
1 : 50
DW-QW-02-019

platform 2.

TOTAL

D25	15,270 kg
D19	26,771 kg
D16	3,385 kg
D13	3,903 kg
TOTAL	49,329 kg

PLATE(SS400)
71.3kgx17pieces=1,212.1 kg

RIBBAND(SS400)outside	2.36kg/mx2.53mx34pieces=203.0 kg
RIBBAND(SS400)inner side	2.36kg/mx2.36mx34pieces=189.4 kg
TOTAL	392.4 kg

CONCRETE VOLUME	304.954 m3
FORM	846.130 m2

(T1)	D 13	1,575	0.995	68	1.567	107	⟶

D13	107 kg
TOTAL	107 kg

PLATE(SS400)
32.9kgx17pieces=559 kg

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	PLATFORM 2	Calc. Index No.	
Subject	PLATE	Page No.	Rev.

References/ Notes

$W = 1,212.10\ kg + 559\ kg$

$= 1,771.10\ kg$

$\simeq \boxed{1,780\ kg}$

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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	PLATFORM 2	**Pay Item No. (BOQ)**	2D - P20103
Quantity Item	RIBBAND	**Unit**	Kg

Calculation Procedure Applied

Ribbond was computed for Platform 2.
The out side and inner side ribbond were computed.

References, Calculation Base and Revisions

References : Tender Drawings :
DW - QW - 02 - 019 Bar Arrangement for Platform 2 Pile Head.

Rev	Prepared by	Prepared Date	No. of Pages	Checked by	Checked Date	Reviewed by	Reviewed Date	Superseded by Calc No.
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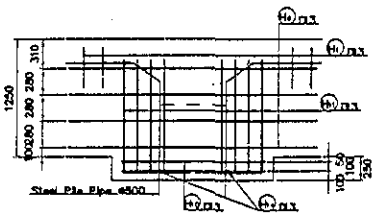
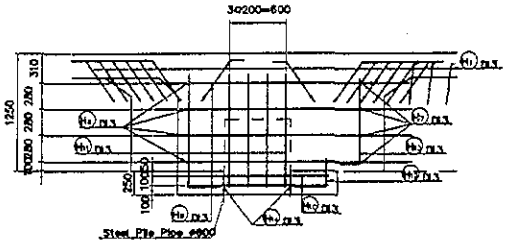
BAR ARRANGEMENT FOR PLATFORM2 PILE HEAD

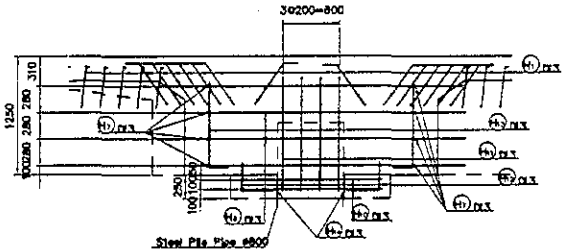
Sectional part a



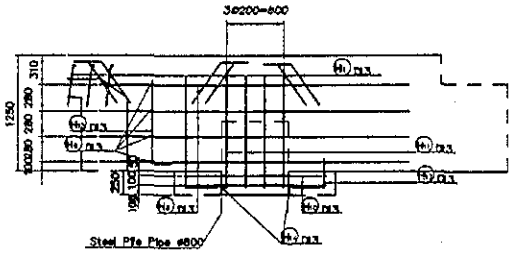
Sectional part b



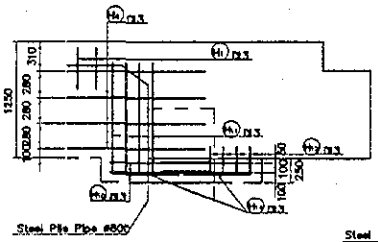
Sectional part c



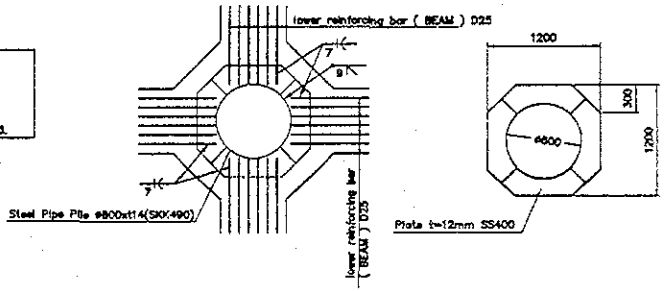
Sectional part d

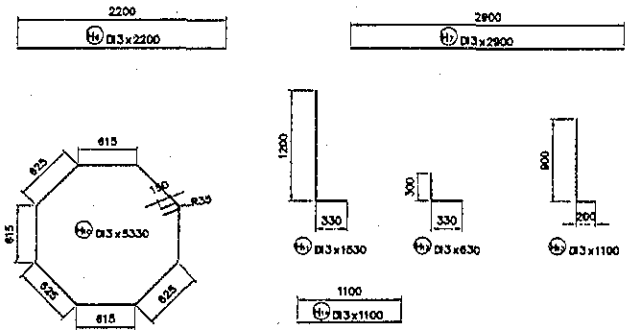


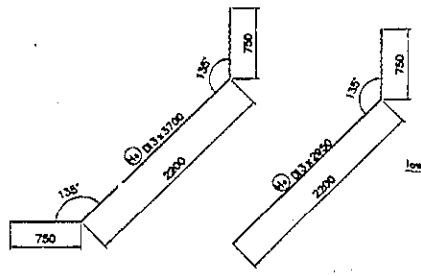
Sectional part e



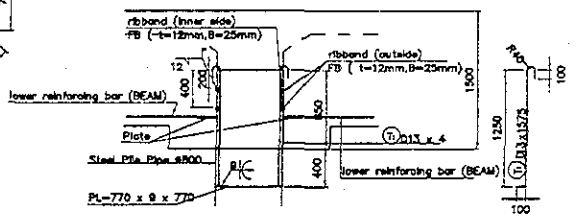
Detail & Bending schedule for Plate







arrangement of ribband for pile head



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 : PASSENGER BERTH TITLE : BAR ARRANGEMENT FOR PLATFORM2 PILE HEAD	DATE : JULY/2002 SCALE : 1 : 50 DRAWING NO. DW-QW-02-019

platform 2.

TOTAL

D25	15,270 kg
D19	26,771 kg
D16	3,385 kg
D13	3,903 kg
TOTAL	49,329 kg

PLATE(SS400)
71.3kgx17pieces=1,212.1 kg

RIBBAND(SS400)outside	2.36kg/mx2.53mx34pieces=203.0	kg
RIBBAND(SS400)inner side	2.36kg/mx2.36mx34pieces=189.4	kg
TOTAL	392.4	kg

CONCRETE VOLUME	304.954	m3
FORM	846.130	m2

T1	D 13	1,575	0.995	68	1.567	107	⟶

D13	107 kg
TOTAL	107 kg

PLATE(SS400)
32.9kgx17pieces=559 kg

NIPPON KOEI CO.,LTD.

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	PLATFORM 2	Calc. Index No.	
Subject	RIBBAND	Page No.	Rev.

References/ Notes

$W = 203.00\ kg + 189.40\ kg$

$= 392.40\ kg$

$\simeq \boxed{395\ kg}$

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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	PLATFORM 2	**Pay Item No. (BOQ)**	2D - P20201
Quantity Item	CONCRETE FOR COPING	**Unit**	m^3

Calculation Procedure Applied

Concrete was computed for coping.
Volume was computed using geometric formulas, multiplying the area by the thickness of the coping.

References, Calculation Base and Revisions

Reference : Tender Drawings :

DW - QW - 02 - 003 Passenger Berth Pier 2 Plan & Typical Cross Section

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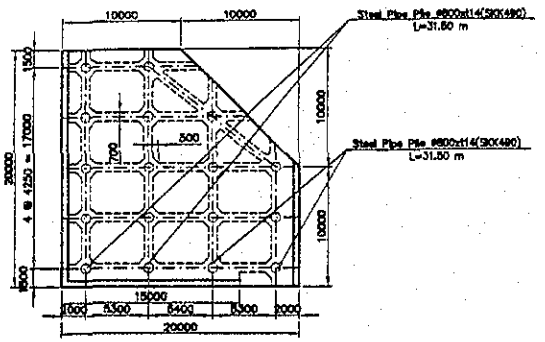
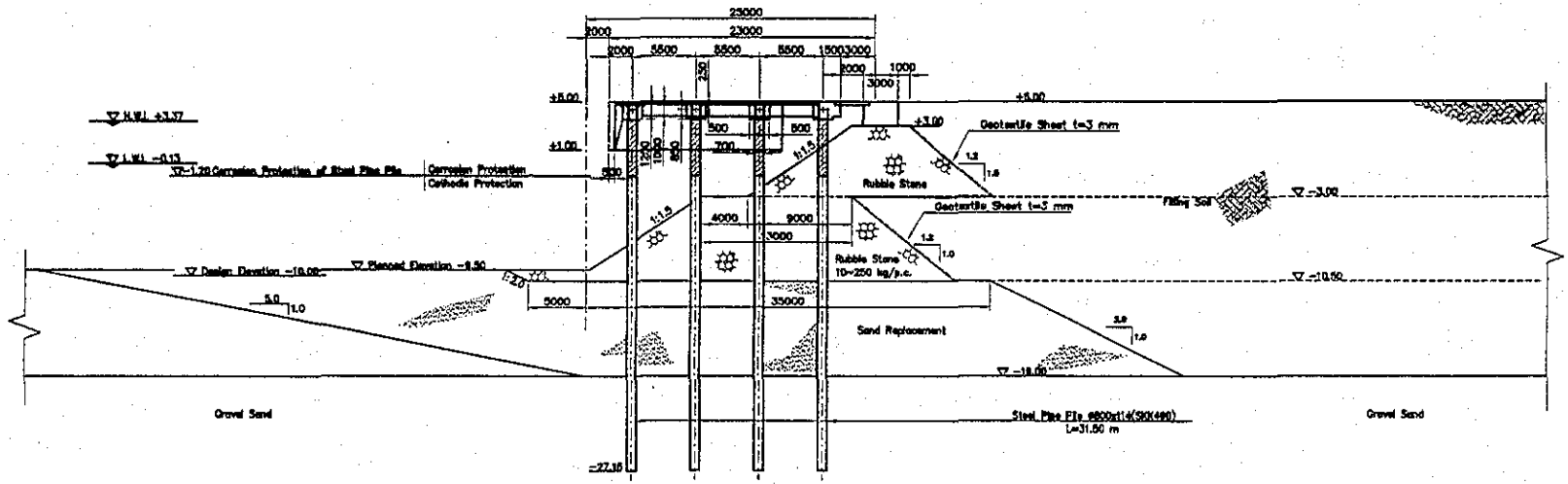


PLAN PIER 2



TYPICAL CROSS SECTION

SCALE 1:400 0 5.0 10.0 15.0 20.0 25.0 30.0

REV. NO.	DATE	COORDINATE	BY	APPROVED	DATE

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)

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

NIPPON KOEI CO., LTD

DESIGNED BY :
CHECKED BY :
APPROVED BY :

SECTION : QUAYWALL WORK
SUB-SECTION : PASSENGER BERTH
TITLE : PASSENGER BERTH PIER 2 PLAN & TYPICAL CROSS SECTION

DATE : JULY/2001
SCALE : 1 : 400
DRAWING NO. DW-QW-02-003

platform 2.

TOTAL								
	D25	15,270 kg						
	D19	26,771 kg						
	D16	3,385 kg						
	D13	3,903 kg						
	TOTAL	49,329 kg						
	PLATE(SS400)							
	71.3kgx17pieces=1,212.1 kg							
	RIBBAND(SS400)outside	2.36kg/mx2.53mx34pieces=203.0 kg						
	RIBBAND(SS400)inner side	2.36kg/mx2.36mx34pieces=189.4 kg						
	TOTAL	392.4 kg						
	CONCRETE VOLUME	304.954 m3						
	FORM	846.130 m2						
	①	D 13	1,575	0.995	68	1.567	107	⟶
	D13	107 kg						
	TOTAL	107 kg						
	PLATE(SS400)							
	32.9kgx17pieces=559 kg							

NIPPON KOEI CO.,LTD.

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	PLATFORM 2	Calc. Index No.	
Subject	CONCRETE FOR COPING	Page No.	Rev.

References/ Notes

$V = 304.95\ m^3$

$\simeq$ **$305\ m^3$**

		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	PLATFORM 2	**Pay Item No. (BOQ)**	2D - P20202
Quantity Item	FORM FOR COPING	**Unit**	m^2

Calculation Procedure Applied

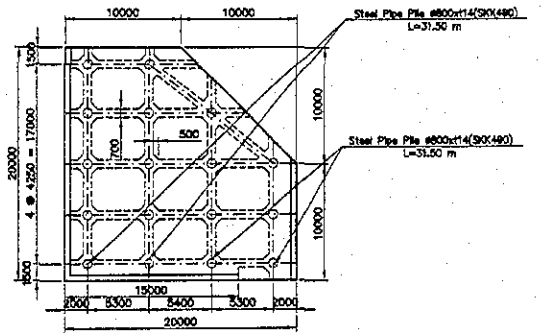
Form area was computed for Platform 2.
Form was computed in all sides of platform.

References, Calculation Base and Revisions

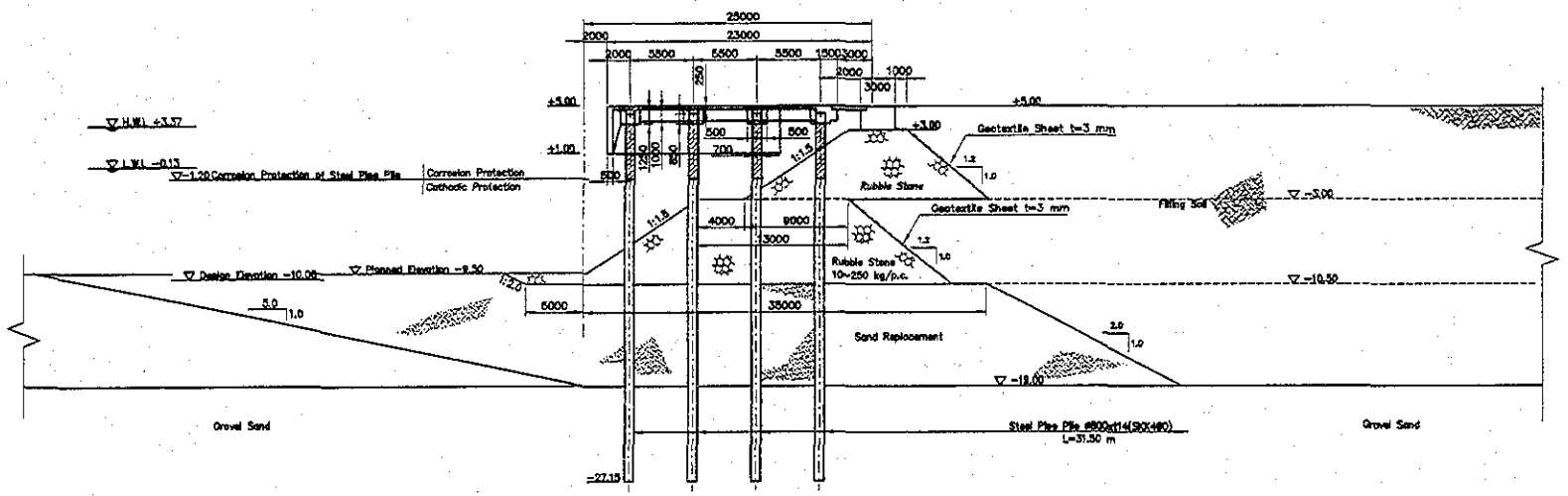
References: Tender Drawings:
DW-QW-02-003 Passenger Berth Pier 2 Plan & Typical Cross Section

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

FN : Calculation_Cover_Sheet_020504_seg
cover



PLAN PIER 2



TYPICAL CROSS SECTION

SCALE 1:400 0 5.0 10.0 15.0 20.0 25.0 30.0

REV. NO. / DATE / COORDINATE / BY / APPROVED / DATE	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 SUB-SECTION : PASSENGER BERTH	DATE : JULY/2001
	COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)	NIPPON KOEI CO., LTD	CHECKED BY :	TITLE : PASSENGER BERTH PIER 2 PLAN & TYPICAL CROSS SECTION	SCALE : 1 : 400
			APPROVED BY :		DRAWING NO. : DW-QW-02-003

NIPPON KOEI CO.,LTD.

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	PLATFORM 2	Calc. Index No.	
Subject	FORM FOR COPING	Page No.	Rev.

References/ Notes

$A = 846.13 \ m^2$

$\approx$ 850 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	PLATFORM 2	**Pay Item No. (BOQ)**	20 - P20203
Quantity Item	REINFORCEMENT FOR COPING	**Unit**	ton

Calculation Procedure Applied

Reinforcement was computed for coping. It was computed summarizing all bar lenghts for each type of diameter. These lenghts were multiplied by the weight to obtain unit weight, then it was multiplied by the total quantity.

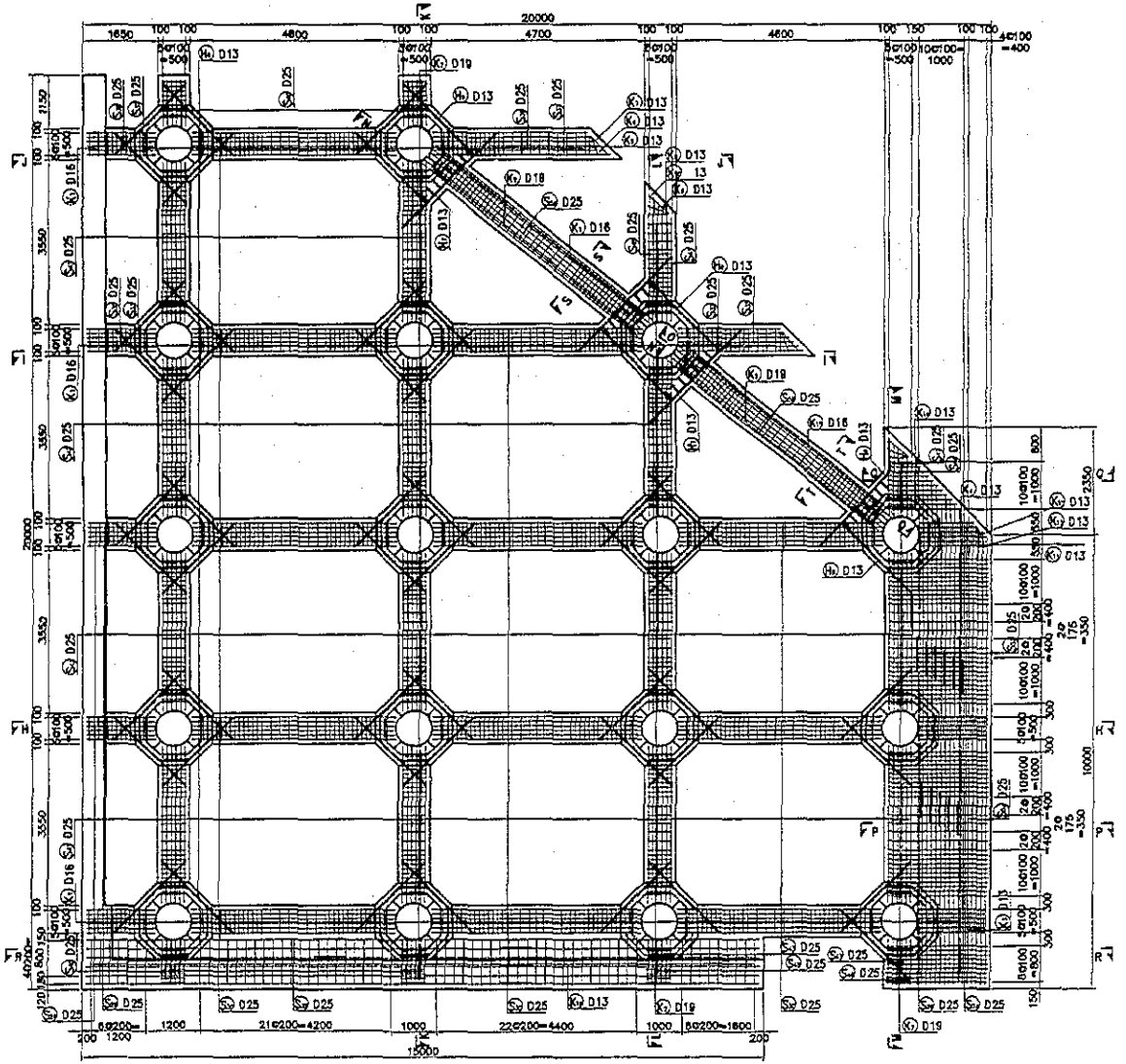
References, Calculation Base and Revisions

References: Tender Drawings:

- From DW-QW-02-011 Bar Arrangement for Platform 2 Beam (Lower Side)
  To DW-QW-02-019 Bar Arrangement for Platform 2 Pile Head.
- And From DW-QW-02-021 Bar Bending Schedule for Platform No1 (Deck Hall)
  To DW-QW-02-024

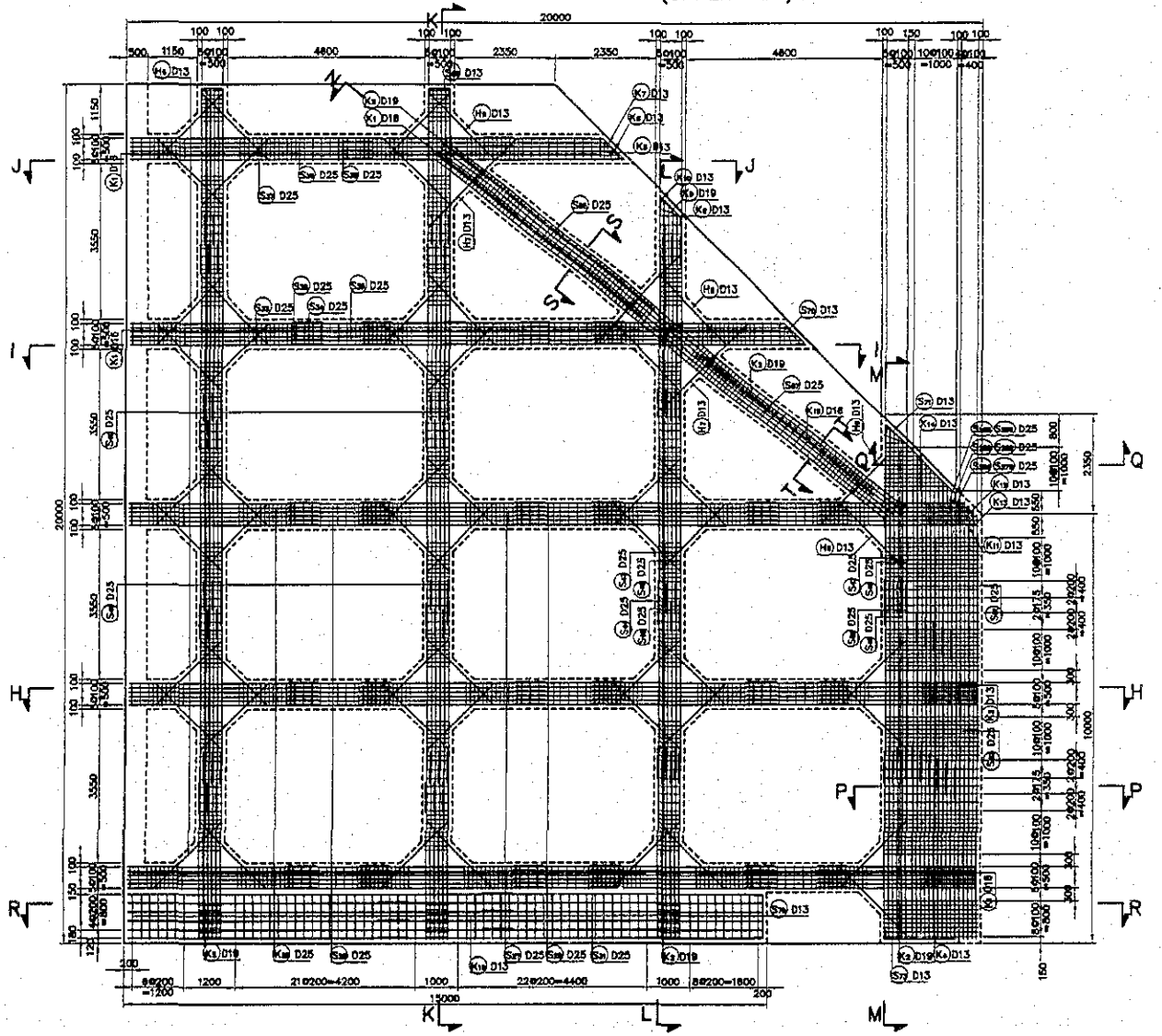
Rev	Prepared by	Prepared Date	No. of Pages	Checked by	Checked Date	Reviewed by	Reviewed Date	Superseded by Calc No.
0	Karla Garcia			Mr. Inoma		Mr. Ando		
1								
2								
3								

BAR ARRANGEMENT FOR PLATFORM2 BEAM (LOWER SIDE)



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 : PASSENGER BERTH TITLE : BAR ARRANGEMENT FOR PLATFORM2 BEAM (LOWER SIDE)	DATE : JULY/2002 SCALE : 1 : 100 DRAWING NO: DW-QW-02-011
COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)	NIPPON KOEI CO., LTD.	DESIGNED BY : CHECKED BY : APPROVED BY :	

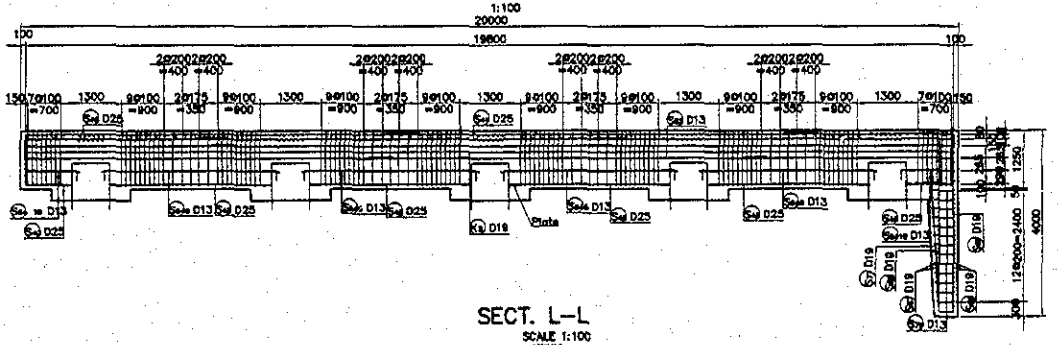
BAR ARRANGEMENT FOR PLATFORM2 BEAM (UPPER SIDE)



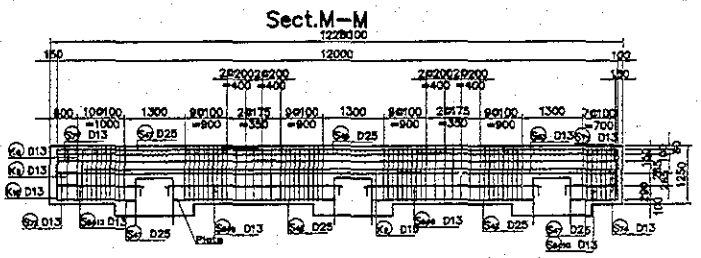
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	DETAILED DESIGN ON PORT REACTIVATION PROJECT IN LA UNION PROVINCE OF THE REPUBLIC OF EL SALVADOR	SECTION : QUAYWALL WORK	DATE : JULY/2002
COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)	NIPPON KOEI CO., LTD.	SUB-SECTION : PASSENGER BERTH	SCALE : 1 : 100
		TITLE : BAR ARRANGEMENT FOR PLATFORM 2 BEAM (UPPER SIDE)	DRAWING NO. DW-QW-02-012

BAR SECTIONAL ARRANGEMENT FOR PLATFORM2 BEAM (PARALLEL & OBLIQUE TO NORMAL LINE)

SECT. K-K

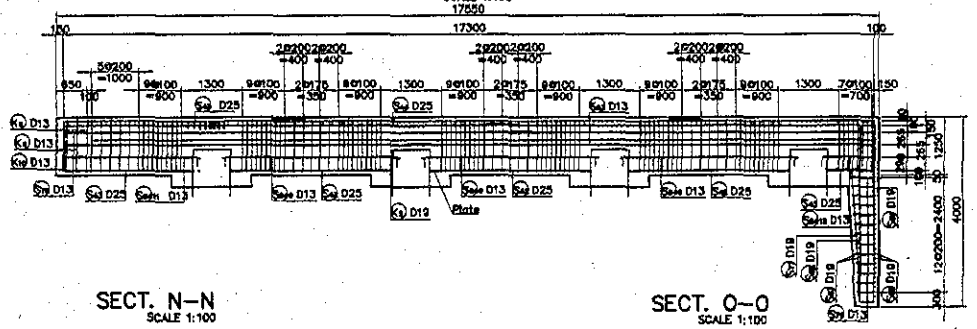


Sect.M-M



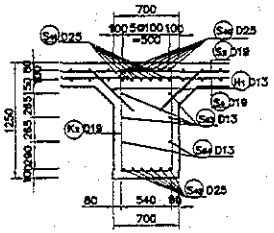
SECT. L-L

SCALE 1:100



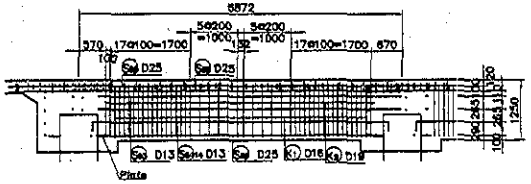
TYPICAL CROSS SECTION (BEAM OF PARALLEL TO NORMAL LINE)

SCALE 1:50



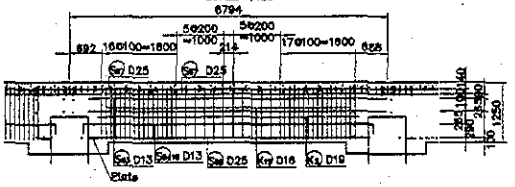
SECT. N-N

SCALE 1:100



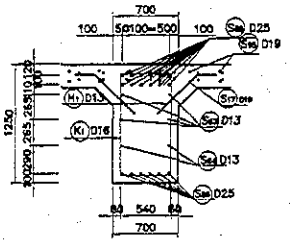
SECT. O-O

SCALE 1:100



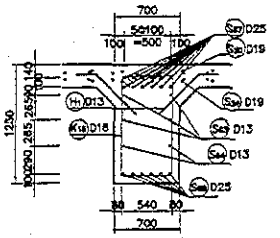
SECT. S-S

SCALE 1:50



SECT. T-T

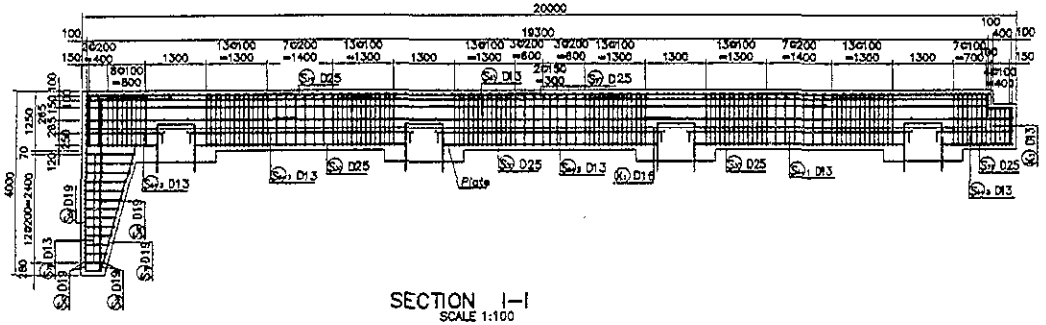
SCALE 1:50



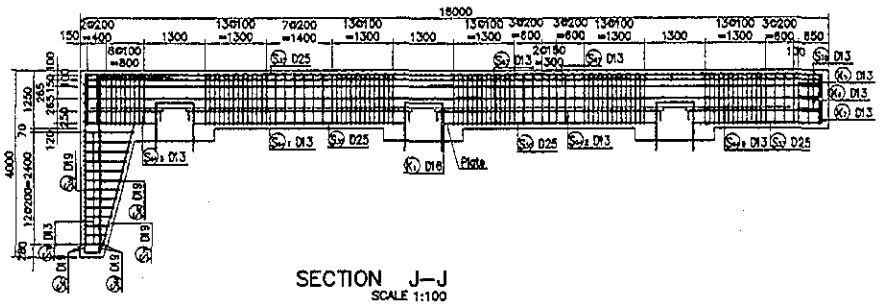
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)	DETAILED DESIGN ON PORT REACTIVATION PROJECT IN LA UNION PROVINCE OF THE REPUBLIC OF EL SALVADOR	NIPPON KOEI CO., LTD.	DESIGNED BY : CHECKED BY : APPROVED BY :	SECTION : QUAYWALL WORK SUB-SECTION : PASSENGER BERTH TITLE : BAR SECTIONAL ARRANGEMENT FOR PLATFORM 2 BEAM (PARALLEL & OBLIQUE TO NORMAL LINE)	DATE : JULY/2002 SCALE : INDICATE DRAWING NO. DW-QW-02-013

BAR SECTIONAL ARRANGEMENT FOR PLATFORM2 BEAM (VERTICAL TO NORMAL LINE)

SECTION H–H
SCALE 1:100



SECTION I–I
SCALE 1:100



SECTION J–J
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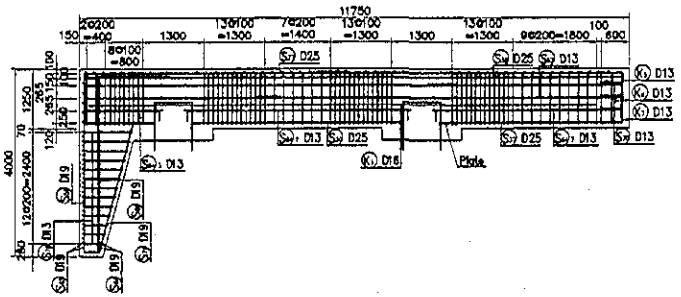
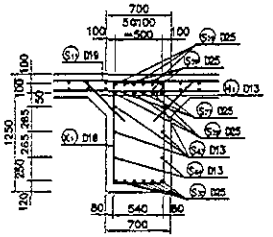


TYPICAL CROSS SECTION (BEAM OF VERTICAL TO NORMAL LINE)
SCALE 1:50



SECTION P–P
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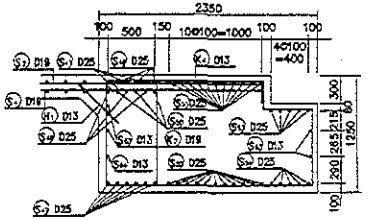

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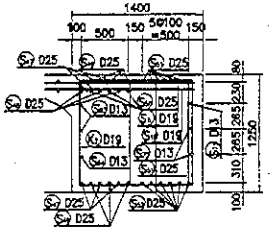
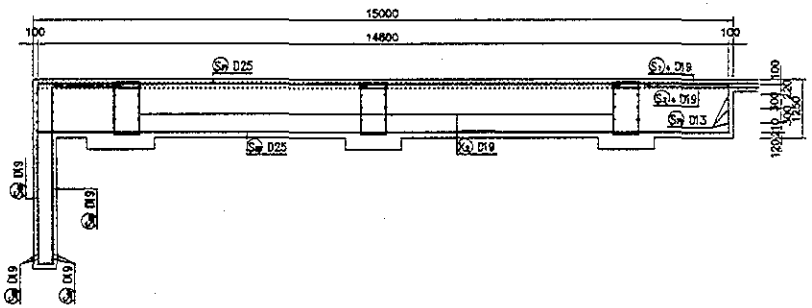


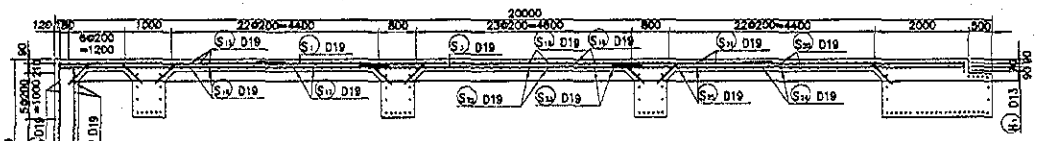
SECTION R–R
SCALE 1:100



JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)	DETAILED DESIGN ON PORT REACTIVATION PROJECT IN LA UNION PROVINCE OF THE REPUBLIC OF EL SALVADOR NIPPON KOEI CO., LTD.	DESIGNED BY : CHECKED BY : APPROVED BY :	SECTION : QUAYWALL WORK SUB-SECTION : PASSENGER BERTH TITLE : BAR SECTIONAL ARRANGEMENT FOR PLATFORM2 BEAM (VERTICAL TO NORMAL LINE)	DATE : JULY/2002 SCALE : INDICATED DRAWING NO: DW-QW-02-014

BAR SECTIONAL ARRANGEMENT FOR PLATFORM2 DECK SLAB

SECTION A–A



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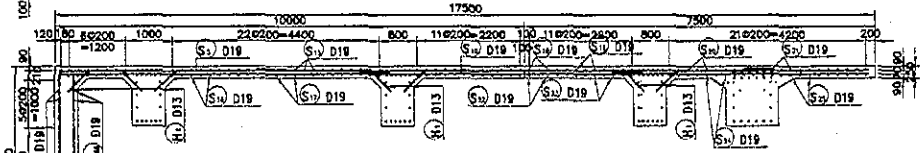
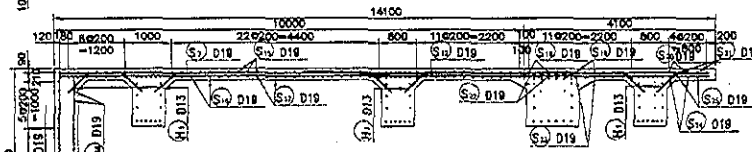
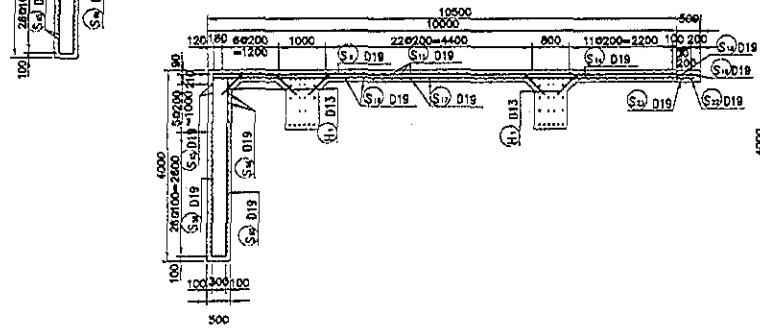


SECTION C–C



SECTION D–D



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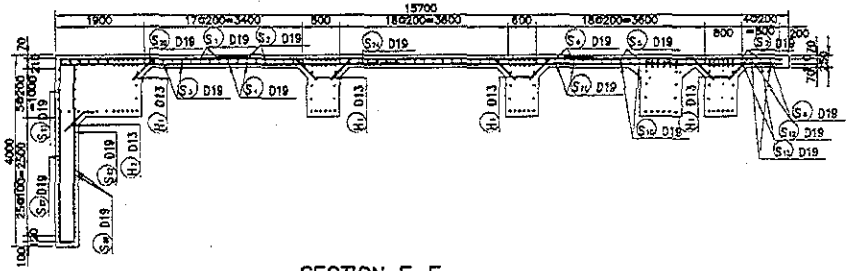

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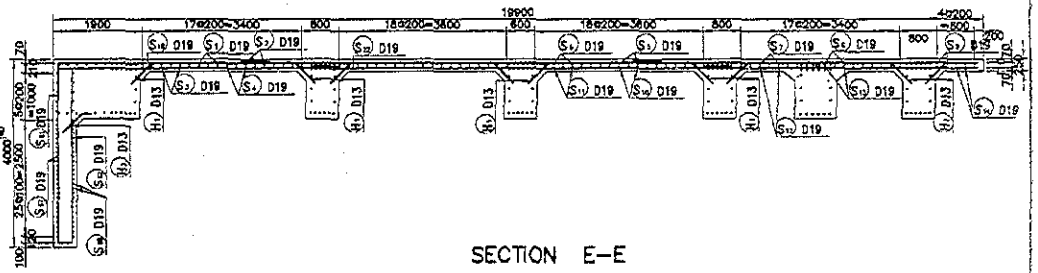
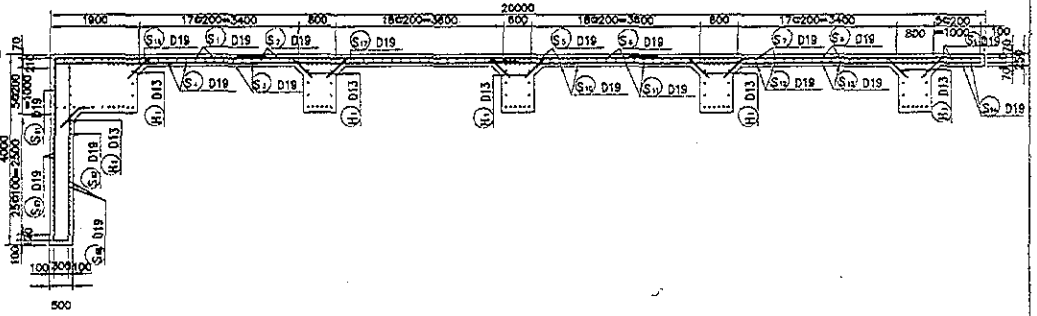
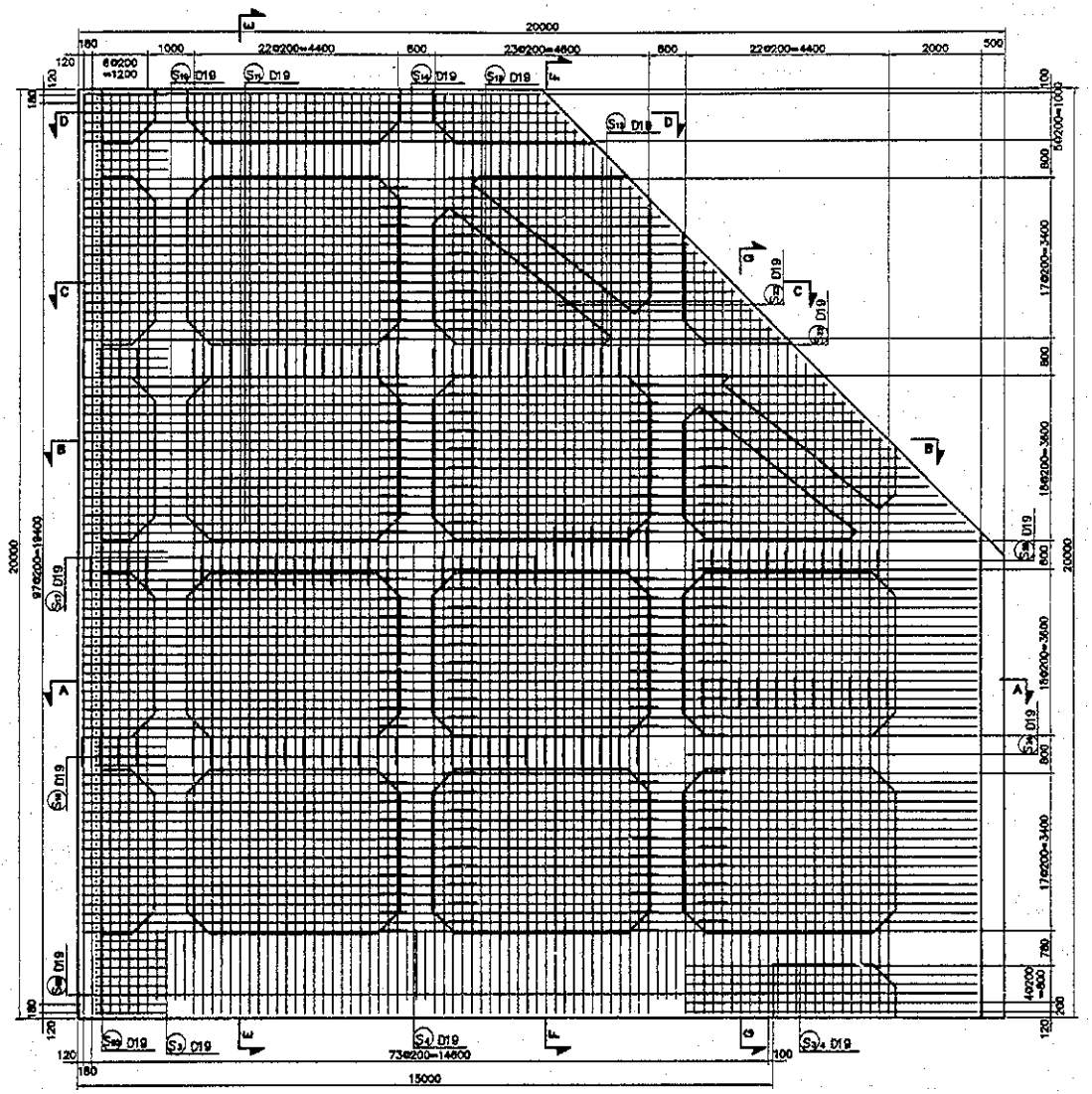


SECTION E–E



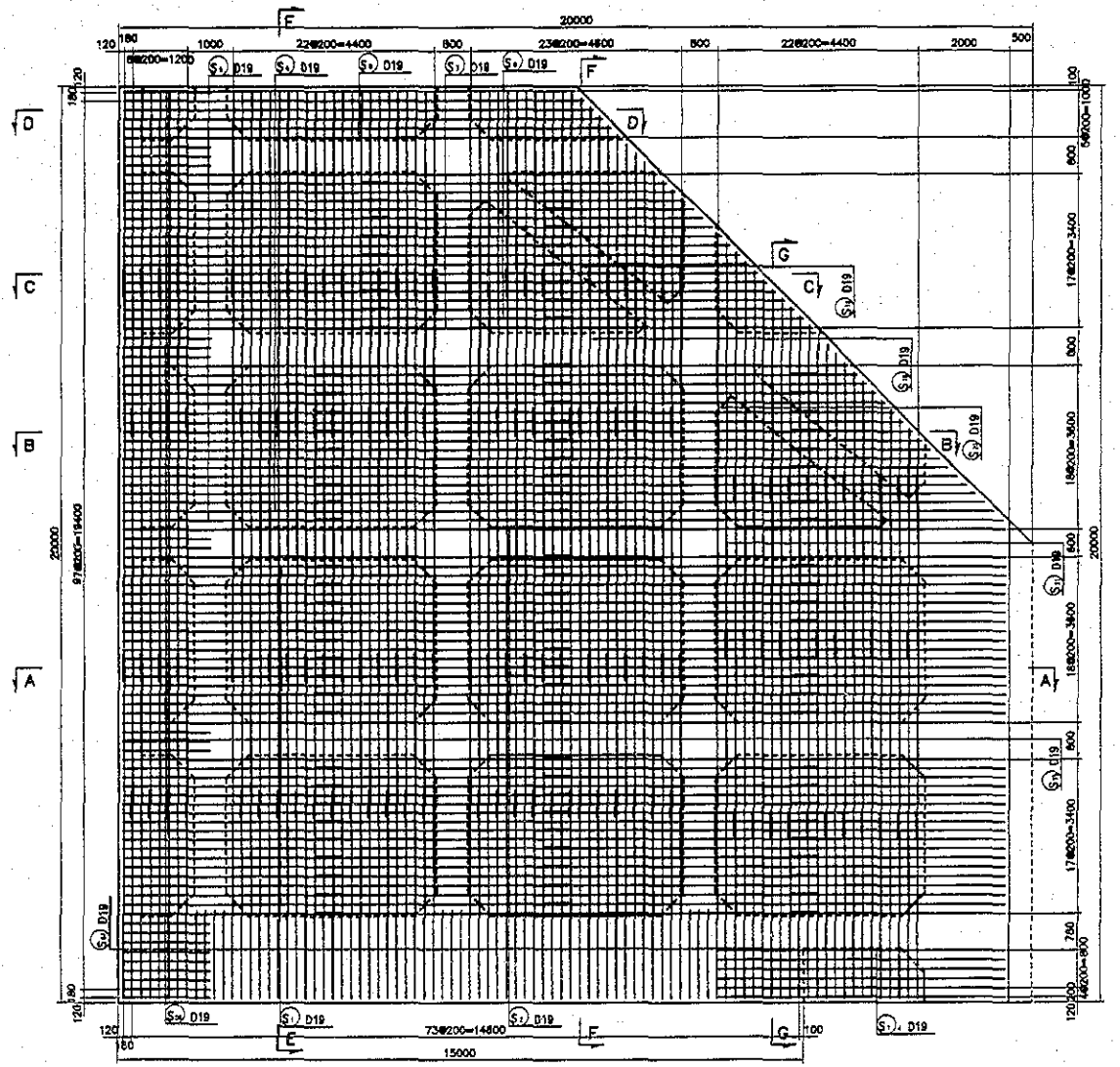
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)	DETAILED DESIGN ON PORT REACTIVATION PROJECT IN LA UNION PROVINCE OF THE REPUBLIC OF EL SALVADOR NIPPON KOEI CO., LTD.	DESIGNED BY : CHECKED BY : APPROVED BY :	SECTION : QUAYWALL WORK SUB-SECTION : PASSENGER BERTH TITLE : BAR SECTIONAL ARRANGEMENT FOR PLATFORM2 DECK SLAB	DATE : JULY/2002 SCALE : 1 : 100 DRAWING NO. DW-QW-02-015

BAR ARRANGEMENT FOR PLATFORM2 DECK SLAB (LOWER SIDE)



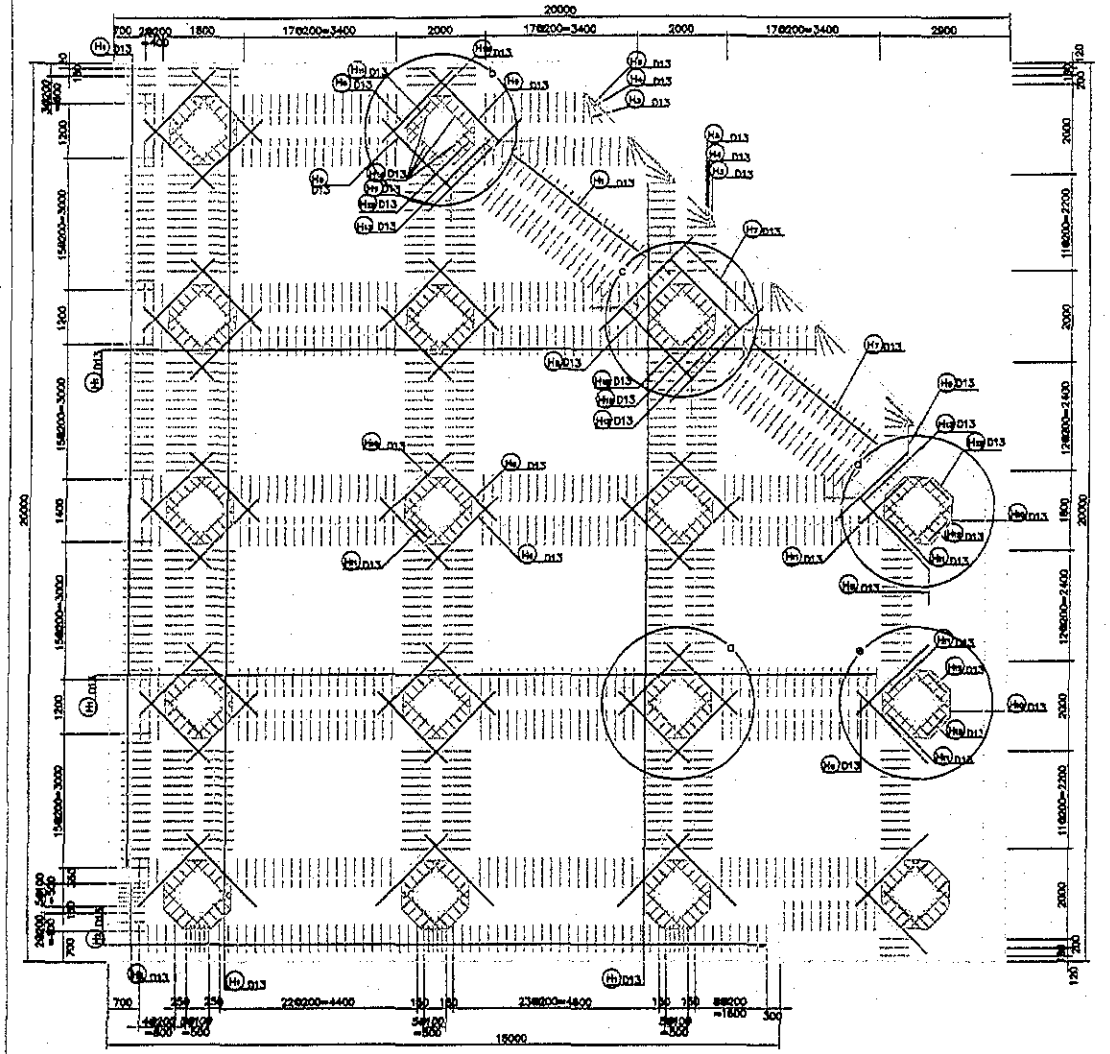
JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)	DETAILED DESIGN ON PORT REACTIVATION PROJECT IN LA UNION PROVINCE OF THE REPUBLIC OF EL SALVADOR NIPPON KOEI CO., LTD.	DESIGNED BY : CHECKED BY : APPROVED BY :	SECTION : QUAYWALL WORK SUB-SECTION : PASSENGER BERTH TITLE : BAR ARRANGEMENT FOR PLATFORM2 DECK SLAB (LOWER SIDE)	DATE : JULY/2002 SCALE : 1 : 100 DRAWING NO. : DW-QW-02-016

BAR ARRANGEMENT FOR PLATFORM2 DECK SLAB (UPPER SIDE)

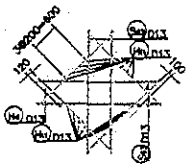


JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)	DETAILED DESIGN ON PORT REACTIVATION PROJECT IN LA UNION PROVINCE OF THE REPUBLIC OF EL SALVADOR NIPPON KOEI CO., LTD.	DESIGNED BY : CHECKED BY : APPROVED BY :	SECTION : QUAYWALL WORK SUB-SECTION : PASSENGER BERTH TITLE : BAR ARRANGEMENT FOR PLATFORM2 BEAM (UPPER SIDE)	DATE : JULY/2002 SCALE : 1 : 100 DRAWING NO. DW-QW-02-017

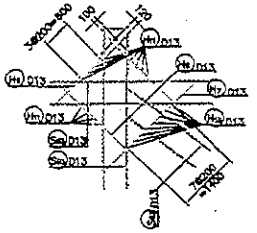
BAR ARRANGEMENT FOR PLATFORM2 HAUNCH



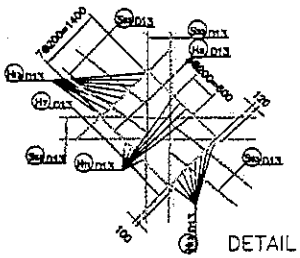
DETAIL OF PART A



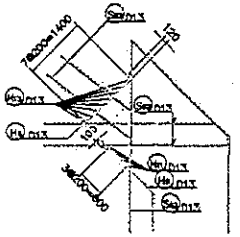
DETAIL OF PART B



DETAIL OF PART C



DETAIL OF PART D



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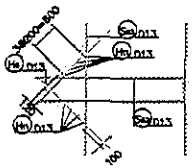
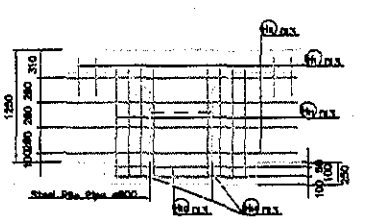


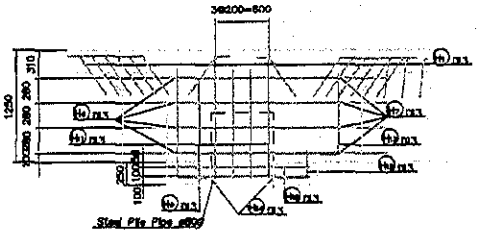
BAR BENDING SCHEDULE FOR PLATFORM2 HAUNCH

BAR ARRANGEMENT FOR PLATFORM2 PILE HEAD

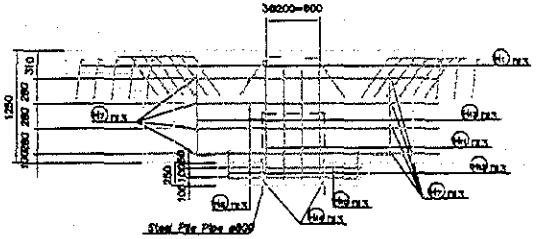
Sectional part a



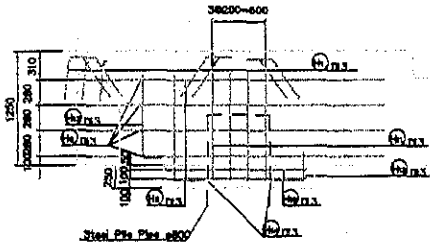
Sectional part b



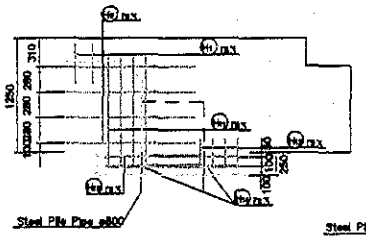
Sectional part c



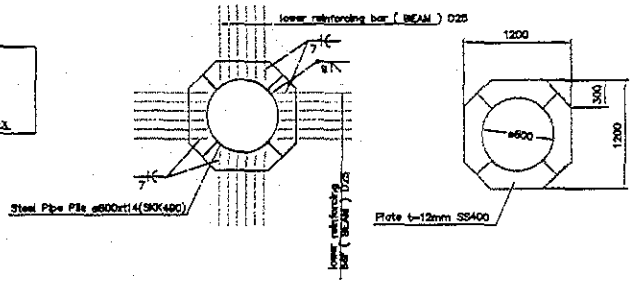
Sectional part d

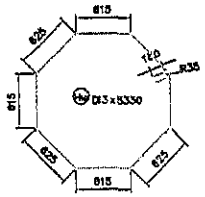


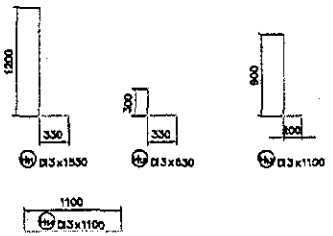
Sectional part e

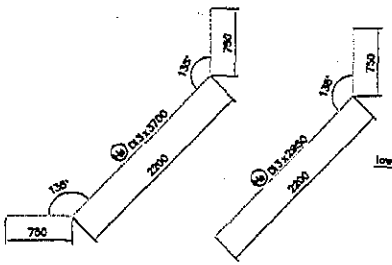


Detail & Bending schedule for Plate

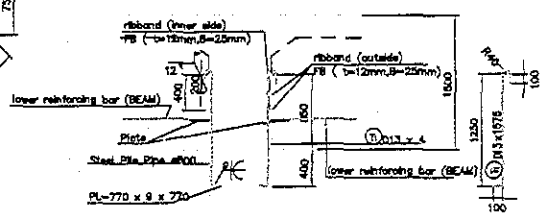








arrangement of ribband for pile head



platform 2.

TOTAL

D25	15,270 kg
D19	26,771 kg
D16	3,385 kg
D13	3,903 kg
TOTAL	49,329 kg

PLATE(SS400)
71.3kgx17pieces=1,212.1 kg

RIBBAND(SS400)outside	2.36kg/mx2.53mx34pieces=203.0	kg
RIBBAND(SS400)inner side	2.36kg/mx2.36mx34pieces=189.4	kg
TOTAL	392.4	kg

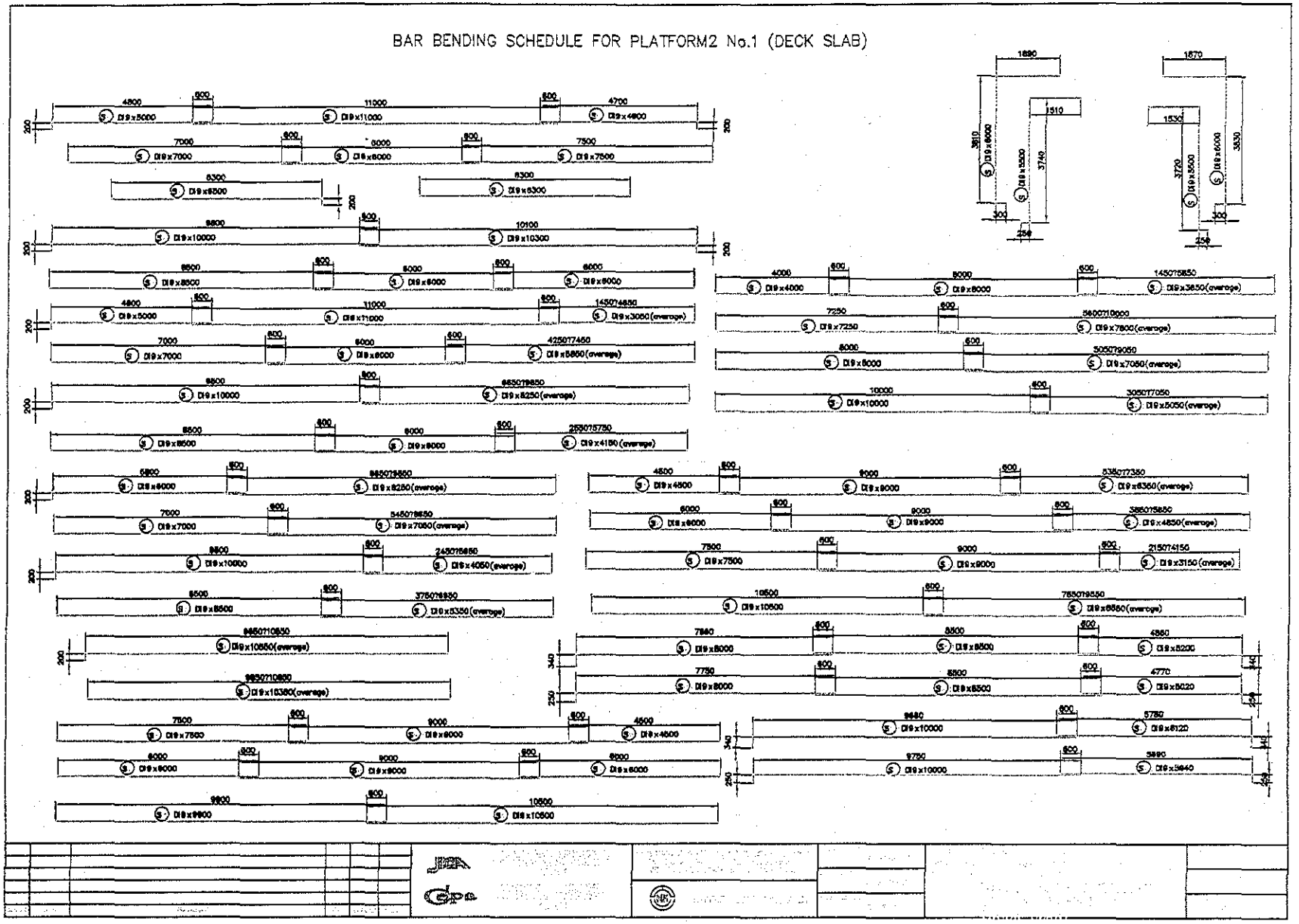
CONCRETE VOLUME	304.954	m3
FORM	846.130	m2

T1	D 13	1,575	0.995	68	1.567	107	⟶

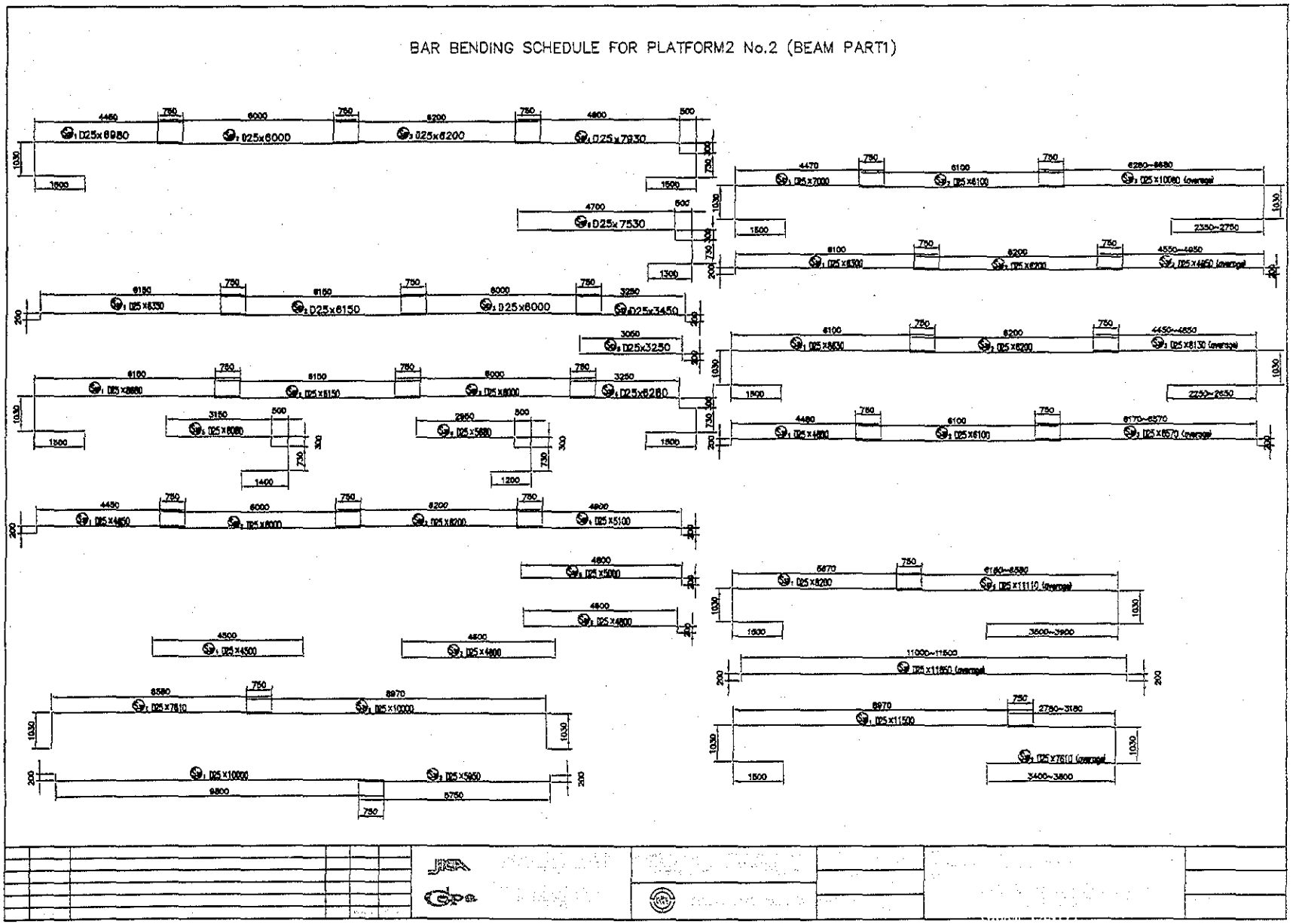
D13	107 kg
TOTAL	107 kg

PLATE(SS400)
32.9kgx17pieces=559 kg

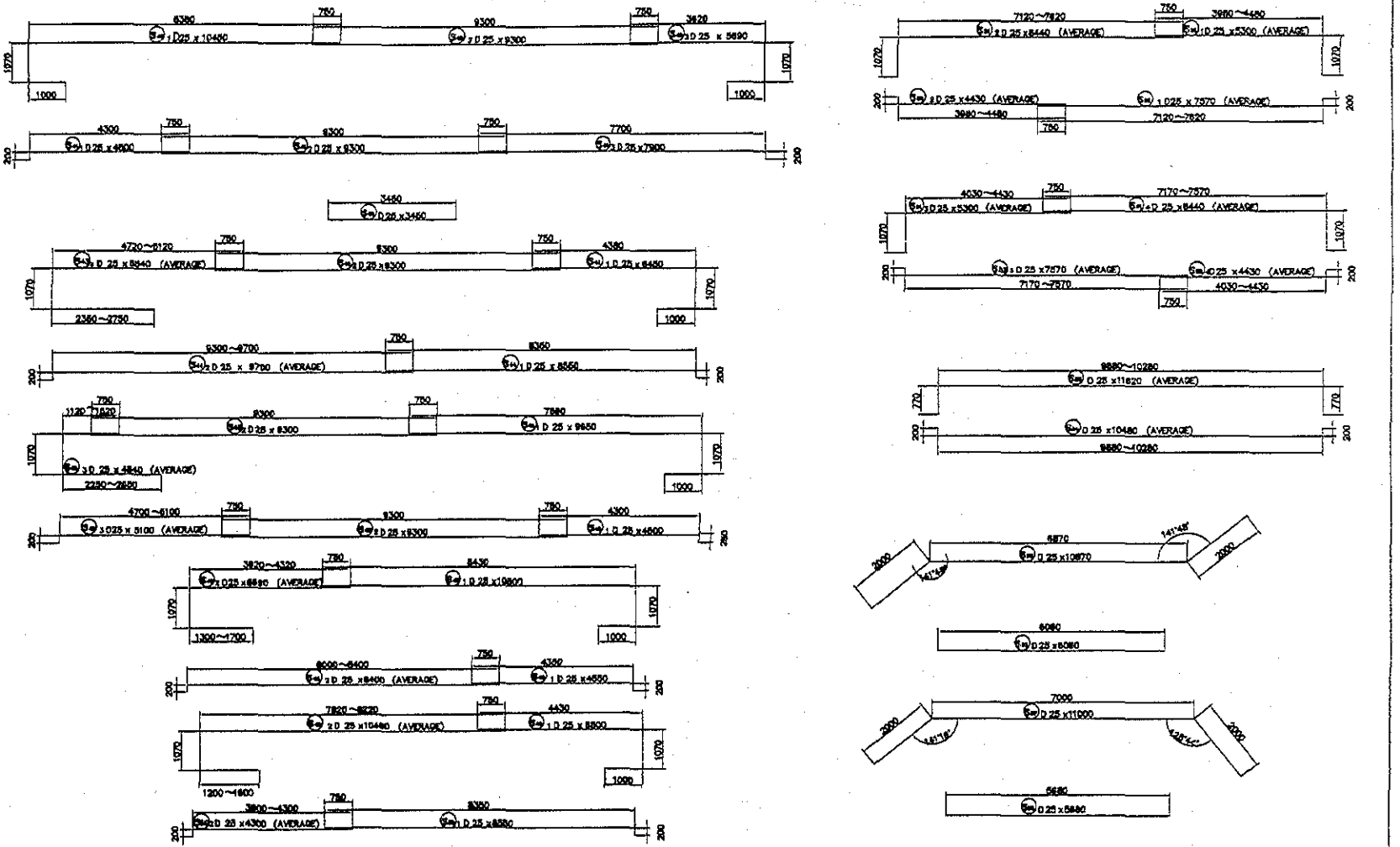
BAR BENDING SCHEDULE FOR PLATFORM2 No.1 (DECK SLAB)

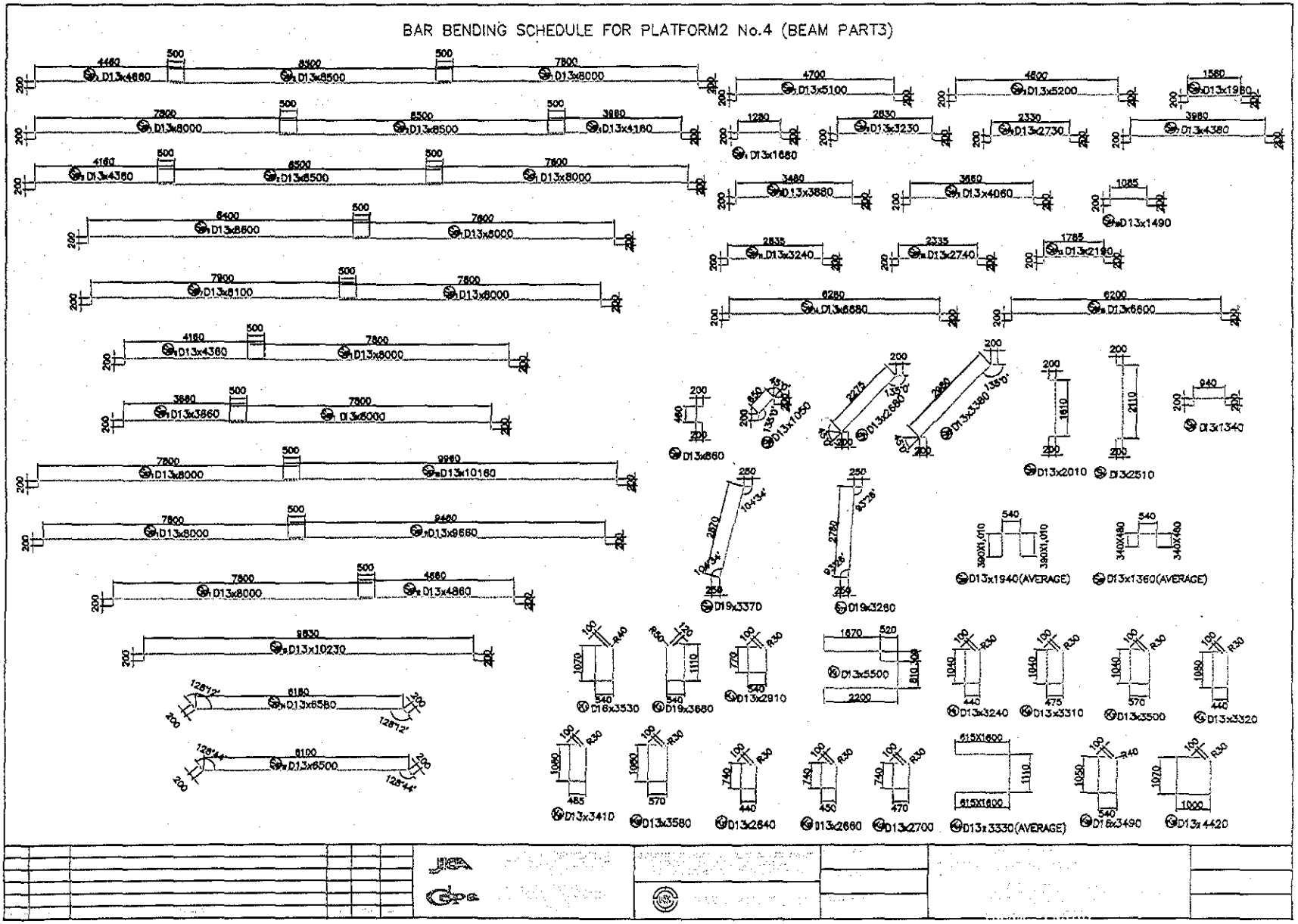


BAR BENDING SCHEDULE FOR PLATFORM2 No.2 (BEAM PART1)



BAR BENDING SCHEDULE FOR PLATFORM2 No.3 (BEAM PART2)




BAR BENDING SCHEDULE FOR PLATFORM2 No.4 (BEAM PART3)
4460
500
8500
7800
D13x4460
D13x8500
D13x8000
4700
D13x5100
4600
D13x5200
1580
D13x1980
7800
8500
3980
D13x8000
D13x8500
D13x4160
1280
2830
2330
3980
D13x1680
D13x3230
D13x2730
D13x4380
4160
D13x4360
D13x8500
D13x8000
3480
D13x3880
3980
D13x4060
1085
D13x1490
8400
D13x8800
D13x8000
2835
D13x3240
2335
D13x2740
1785
D13x2190
7900
D13x8100
D13x8000
6280
D13x6680
6200
D13x6600
4160
D13x4360
D13x8000
3880
D13x3860
D13x8000
D13x8000
9960
D13x10160
7800
D13x8000
9460
D13x9660
7800
D13x8000
4660
D13x4860
9830
D13x10230
6180
D13x6580
6100
D13x6500
D13x860
D13x1050
D13x2680
D13x3380
D13x1340
D13x2010
D13x2510
D19x3370
D19x3280
D13x1940(AVERAGE)
D13x1360(AVERAGE)
D16x3530
D19x3680
D13x2910
D13x5500
D13x3240
D13x3310
D13x3500
D13x3320
D13x3410
D13x3580
D13x2640
D13x2660
D13x2700
D13x3330(AVERAGE)
D16x3490
D13x4420

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	PLATFORM 2	Calc. Index No.	
Subject	REINFORCEMENT FOR COPING	Page No.	Rev.

References/ Notes

D25 = 15,270 kg ≃ 15.30 ton

D19 = 26,771 kg ≃ 26.80 ton

D16 = 3,385 kg ≃ 3.40 ton

D13 = 3,903 kg ≃ 4.00 ton

Wt = 49,329 kg ≃ **49.40 ton**

Prepared by			Checked by		
		/ /200			/ /200

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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	PLATFORM 2	**Pay Item No. (BOQ)**	2D-P20204
Quantity Item	CORNER PROTECTION	**Unit**	m

Calculation Procedure Applied

Corner protection lenght was computed for platform 1.
Lenght was computed around 2 sides of platform 2.

References, Calculation Base and Revisions

References Drawings; Tender Drawings:
DW – Q-N – 02-0CJ Plan and Profile Passenger Berth

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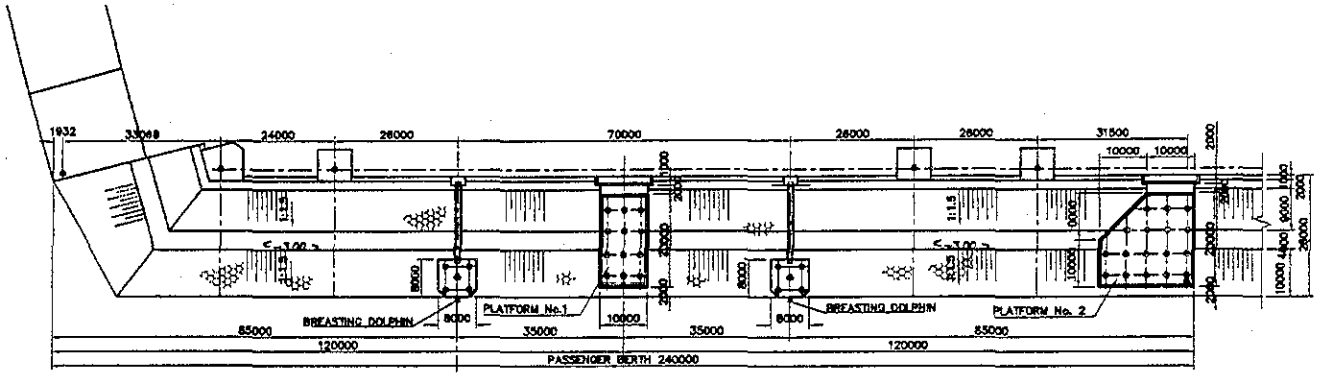
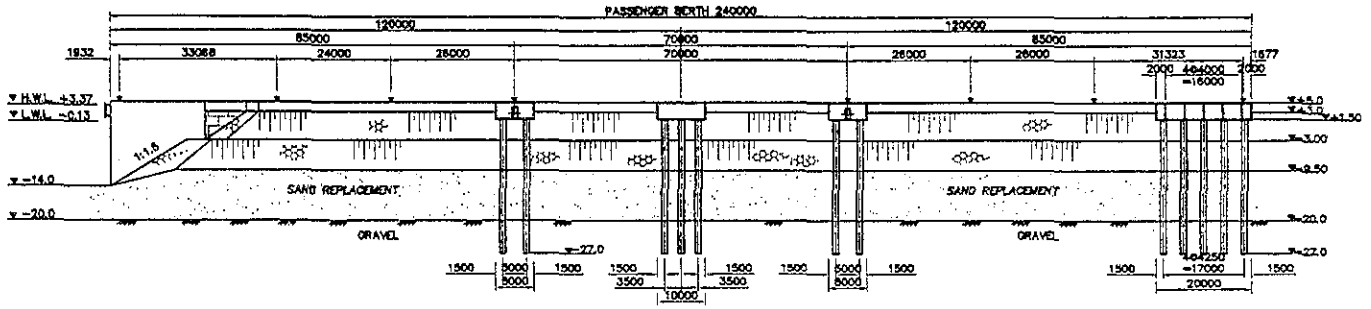


PLAN



PROFILE

PASSENGER BERTH

SCALE 1:1,000 0 10.0 20.0 30.0 40.0 50.0 60.0

REV. NO.	DATE	DESCRIPTION	BY	APPROVED	DATE		
JICA	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		
CEPA	COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)	NIPPON KOEI CO., LTD.	CHECKED BY :	SUB-SECTION : PASSENGER BERTH	SCALE : 1 : 1,000		
			APPROVED BY :	TITLE : PLAN AND PROFILE OF PASSENGER BERTH	DRAWING NO. OW-QW-02-001		

NIPPON KOEI CO.,LTD.

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	PLATFORM 2	Calc. Index No.	
Subject	CORNER PROTECTION	Page No.	Rev.

References/ Notes

$L = 20.00\ m + 19.50\ m = 39.50\ m$

$\approx$ **40 m**

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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	PLATFORM 2	**Pay Item No. (BOQ)**	2D - P20205
Quantity Item	CONCRETE FOR CURB.	**Unit**	

Calculation Procedure Applied

Concrete for curb was computed for platform 2. Concrete volume was computed for each type of curb. The cross section area was multiplied by the different types of lenghts.

References, Calculation Base and Revisions

References : Tender Drawings :

DW - QW - 02 - 028 Detail of curb

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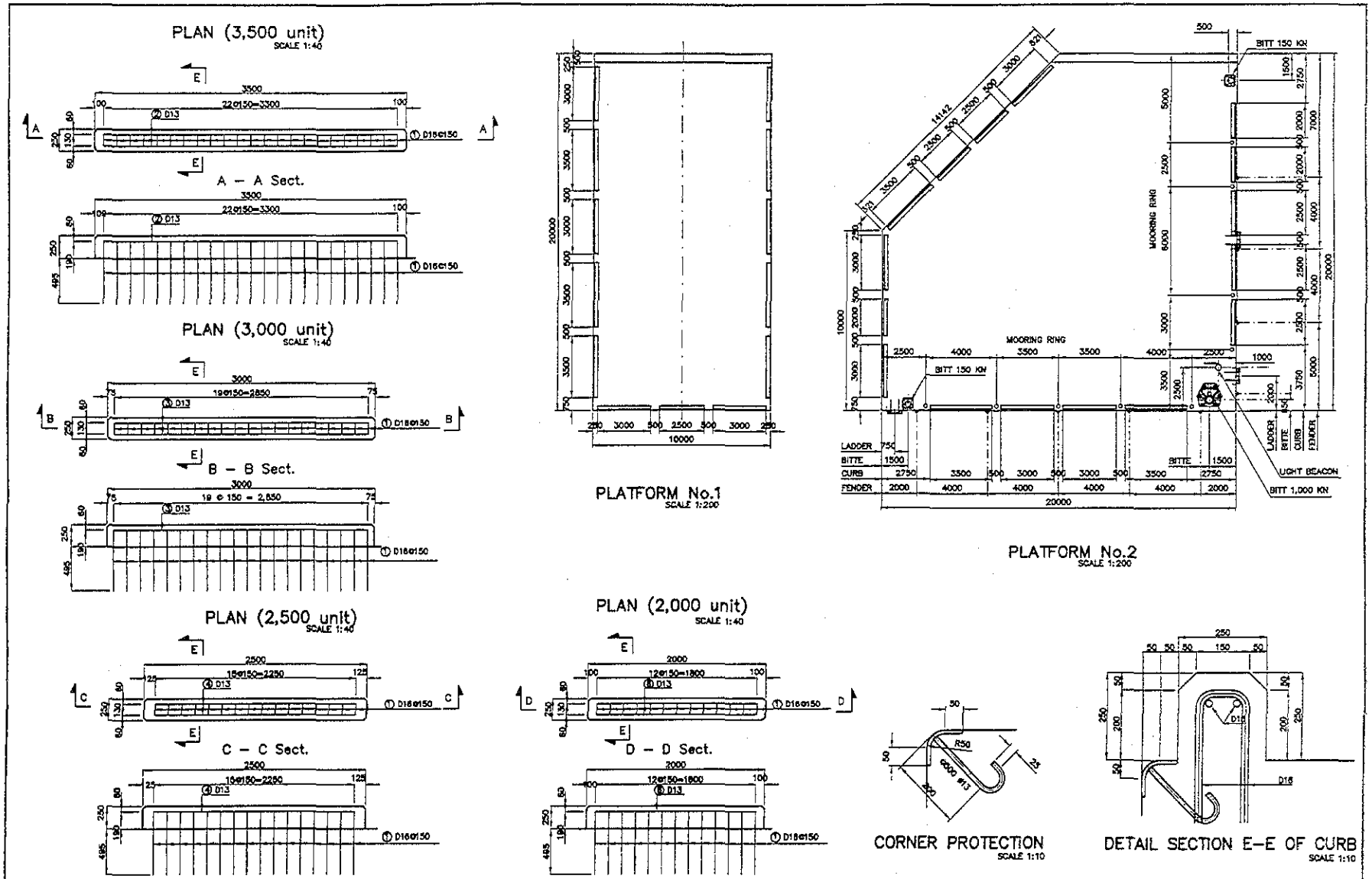

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) / COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)	DETAILED DESIGN ON PORT REACTIVATION PROJECT IN LA UNION PROVINCE OF THE REPUBLIC OF EL SALVADOR	NIPPON KOEI CO., LTD.	SECTION : QUAYWALL WORK SUB-SECTION : PASSENGER BERTH TITLE : DETAIL OF CURB	DATE : JULY/2002 SCALE : INDICATED DRAWING NO. : DW-QW-02-028

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	PLATFORM 2	Calc. Index No.	
Subject	CONCRETE FOR WALL	Page No.	Rev.

References/ Notes

$L = 3.50\ m \qquad No = 3$

$A = (0.25m)(0.25m) - \frac{(0.05m)(0.05m)}{2}(2)$

$= 0.06\ m^2$

$V = (0.06\ m^2)(3.50\ m) = 0.21\ m^3$

$V_T = (0.21\ m^3)(3) = 0.63\ m^3$

$L = 3.0\ m \qquad No = 5$

$V = (0.06\ m^2)(3.0\ m) = 0.18\ m^3$

$V_T = (0.18\ m^3)(5) = 0.90\ m^3$

$L = 2.50\ m \qquad No = 5$

$V = (0.06\ m^2)(2.50\ m) = 0.15\ m^3$

$V_T = (0.15\ m^3)(5) = 0.75\ m^3$

$L = 2.0\ m \qquad No = 3$

$V = (0.06\ m^2)(2.0\ m) = 0.12\ m^3$

$V_T = (0.12\ m^3)(3) = 0.36\ m^3$

$V_T = 2.64\ m^3 \simeq \boxed{2.70\ m^3}$

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QUANTITY CALCULATION COVER SHEET

Project	Detailed Design on Port Reactivation Project in La Union Province	**Project Code**	JC1N004/2N001
Work Section Title	PLATFORM 2	**Pay Item No. (BOQ)**	2D - P20206
Quantity Item	FORM FOR CURB	**Unit**	

Calculation Procedure Applied

Form for curb was computed for Platform 2. Form area was computed for each type of curb. The form was applied in all sides of curbs.

References, Calculation Base and Revisions

References: Tender Drawings:

DW-QW-01-028 Detail of curb

Rev	Prepared		No. of	Checked		Reviewed		Superseded
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0	Karla Garlo			M. Inuma		M. Ando		
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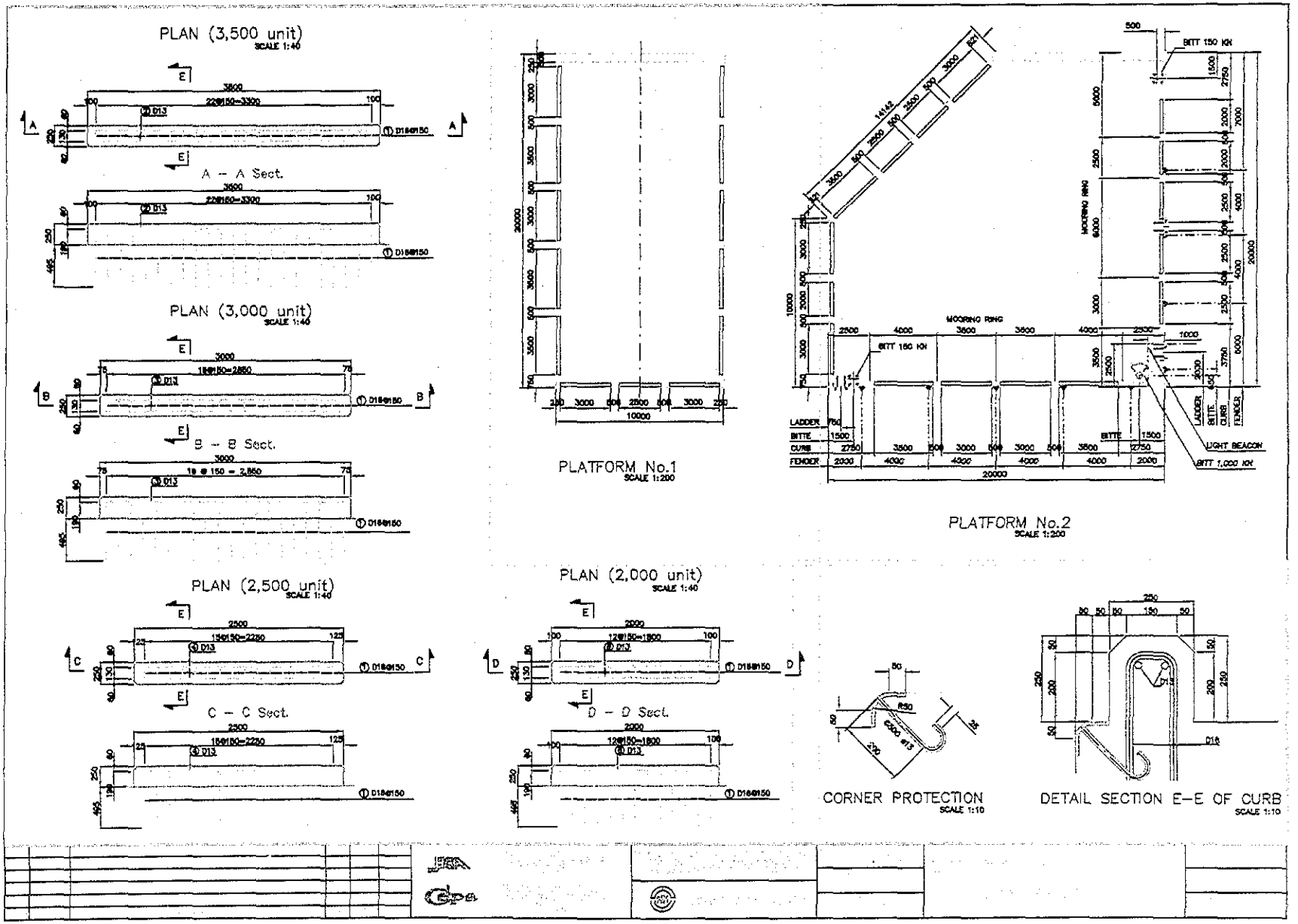
PLAN (3,500 unit)
SCALE 1:40
A – A Sect.
PLAN (3,000 unit)
SCALE 1:40
B – B Sect.
PLAN (2,500 unit)
SCALE 1:40
C – C Sect.
PLAN (2,000 unit)
SCALE 1:40
D – D Sect.
PLATFORM No.1
SCALE 1:200
PLATFORM No.2
SCALE 1:200
MOORING RING
BITT 150 KN
BITT 1,000 KN
LIGHT BEACON
LADDER
BITTE
CURB
FENDER
CORNER PROTECTION
SCALE 1:10
DETAIL SECTION E–E OF CURB
SCALE 1:10

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	PLATFORM 2	Calc. Index No.	
Subject	FORM FOR CURB	Page No.	Rev.

References/ Notes

$L = 3.50\ m \quad No = 3$

$A = \left[(0.20m)(2) + (0.071\ m)(2)\right](3.50\ m) + (0.06)(2)$

$= 2.017\ m^2 \simeq 2.02\ m^2$

$A_T = (2.02\ m^2)(3) = 6.06\ m^2$

$L = 3.00\ m \quad No = 5$

$A = \left[(0.20m)(2) + (0.071m)(2)\right](3.0\ m) + (0.06m)(2)$

$= 1.75\ m^2$

$A_T = (1.75\ m^2)(5) = 8.75\ m^2$

$L = 2.50\ m \quad No = 5$

$A = \left[(0.20m)(2) + (0.071m)(2)\right](2.50m) + (0.06m)(2)$

$= 1.47\ m^2 \simeq 1.48\ m^2$

$A_T = (1.48\ m^2)(5) = 7.40\ m^2$

$L = 2.0\ m \quad No\ 3$

$A = \left[(0.20m)(2) + (0.071m)(2)\right](2.0) + (0.06)(2)$

$= 1.204\ m^2 \simeq 1.21\ m^2$

$A_T = (1.21\ m^2)(3) = 3.63\ m^2$

$A_T = 25.84\ m^2$

$\simeq \boxed{25.90\ m^2}$

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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	PLATFORM 2	**Pay Item No. (BOQ)**	2D-P20207
Quantity Item	REINFORCEMENT FOR CURB	**Unit**	Kg

Calculation Procedure Applied

Reinforcement was computed for Platform 2. Reinforcement was computed for each type of curb. It was computed summarizing all bar lenghts for each type of diameter. Then, they were multiplied by the weight.

References, Calculation Base and Revisions

Reference: Tender Drawings:

DW-QW-02-028 Detail of Curb

Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
	by	Date		by	Date	by	Date	
0	Karla Garcia			Mr. Inuma		Mr. Ando		
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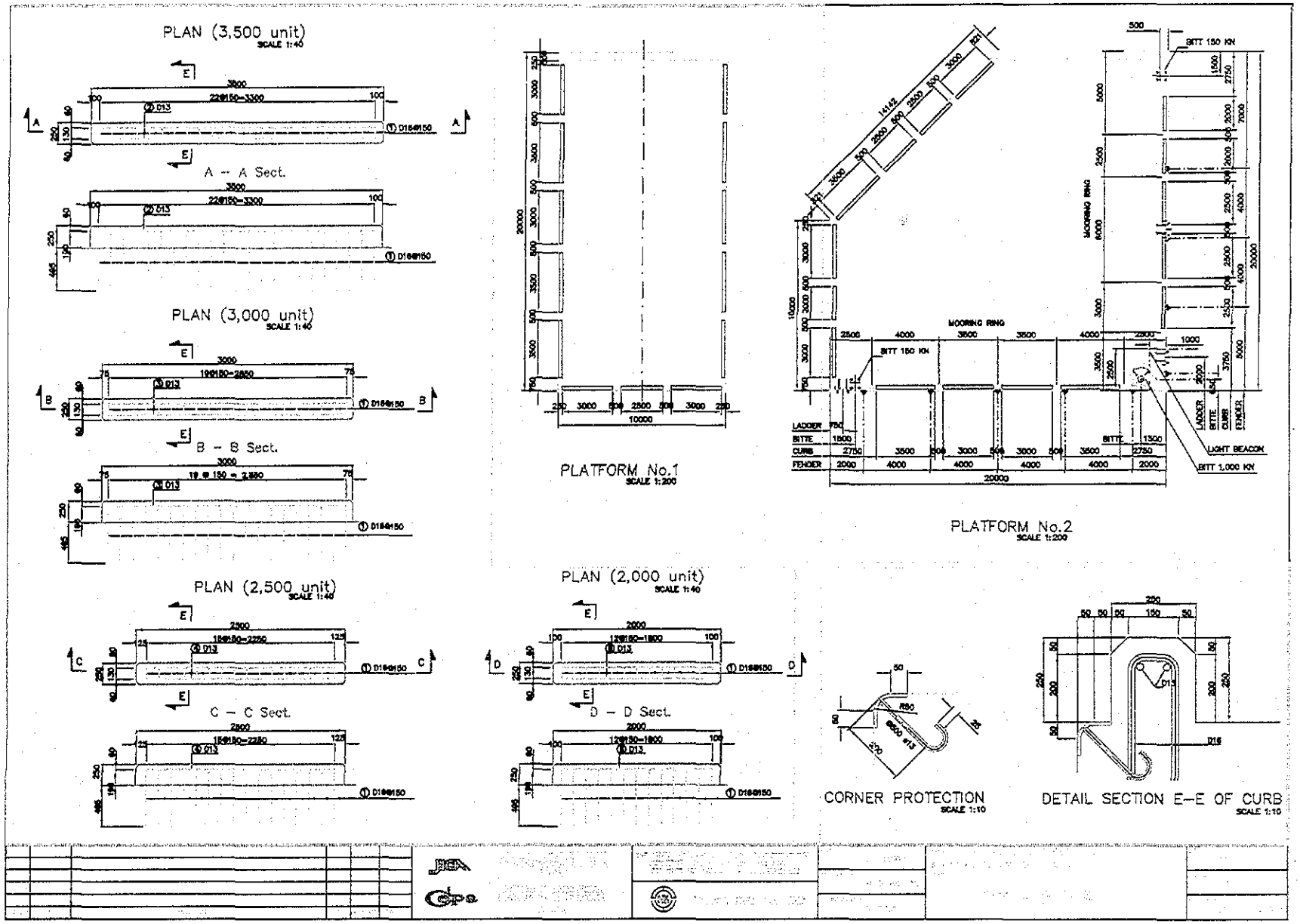
PLAN (3,500 unit)
SCALE 1:40
A – A Sect.
PLAN (3,000 unit)
SCALE 1:40
B – B Sect.
PLAN (2,500 unit)
SCALE 1:40
C – C Sect.
PLAN (2,000 unit)
SCALE 1:40
D – D Sect.
PLATFORM No.1
SCALE 1:200
PLATFORM No.2
SCALE 1:200
MOORING RING
BITT 150 KN
BITT 1,000 KN
LIGHT BEACON
LADDER
BITE
CURB
FENDER
CORNER PROTECTION
SCALE 1:10
DETAIL SECTION E–E OF CURB
SCALE 1:10

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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	BREASTING DOLPHIN	**Pay Item No. (BOQ)**	2D - BD0101
Quantity Item	STEEL PIPE PILE	**Unit**	Nos

Calculation Procedure Applied

Steel pipe piles were computed for each type of pile, including diameter and thickness.
Lenght was multiplied by the total number of pile in both Breasting Dolphin. Also, the unit and total weight of pile were computed using Weight Tables.

References, Calculation Base and Revisions

DW - QW - 02 - 004 Passenger Berth Breasting Dolphin Plan & Typical Cross Section

Rev	Prepared by	Prepared Date	No. of Pages	Checked by	Checked Date	Reviewed by	Reviewed Date	Superseded by Calc No.
0	Karla Garcia			Mr. Inuma		Mr. Ando		
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Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	PLATFORM 2	Calc. Index No.	
Subject	REINFORCEMENT FOR WEB	Page No.	Rev.

References/ Notes

L = 3.50 m No = 3

D16 x 23 = (1.56 kg/m)(1.50m)(23) = 53.82 kg ≈ 53.90 kg

D13 x 2 = (0.995 kg/m)(3.30m)(2) = 6.57 kg ≈ 6.60 kg

W = (60.50 kg)(3) = 181.50 kg

L = 3.00 m No = 5

D16 x 20 = (1.56 kg/m)(1.50m)(20) = 46.80 kg

D13 x 2 = (0.995 kg/m)(2.85 m)(2) = 5.67 kg ≈ 5.70 kg

W = (52.50 kg)(5) = 262.50 kg

L = 2.50 m No = 5

D16 x 16 = (1.56 kg/m)(1.50m)(16) = 37.44 kg ≈ 37.50 kg

D13 x 2 = (0.995 kg/m)(2.25m)(2) = 4.48 kg ≈ 4.50 kg

W = (42.00 kg)(5) = 210 kg

L = 2.00 m No = 3

D16 x 13 = (1.56 kg/m)(1.50m)(13) = 30.42 kg ≈ 30.50 kg

D13 x 2 = (0.995 kg/m)(1.80m)(2) = 3.58 kg ≈ 3.60 kg

W = (34.10 kg)(3) = 102.30 kg

W_T = 756.30 kg ≈ 760 kg

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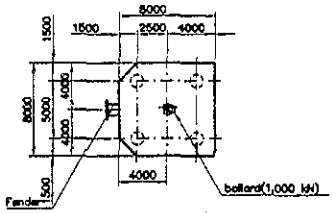
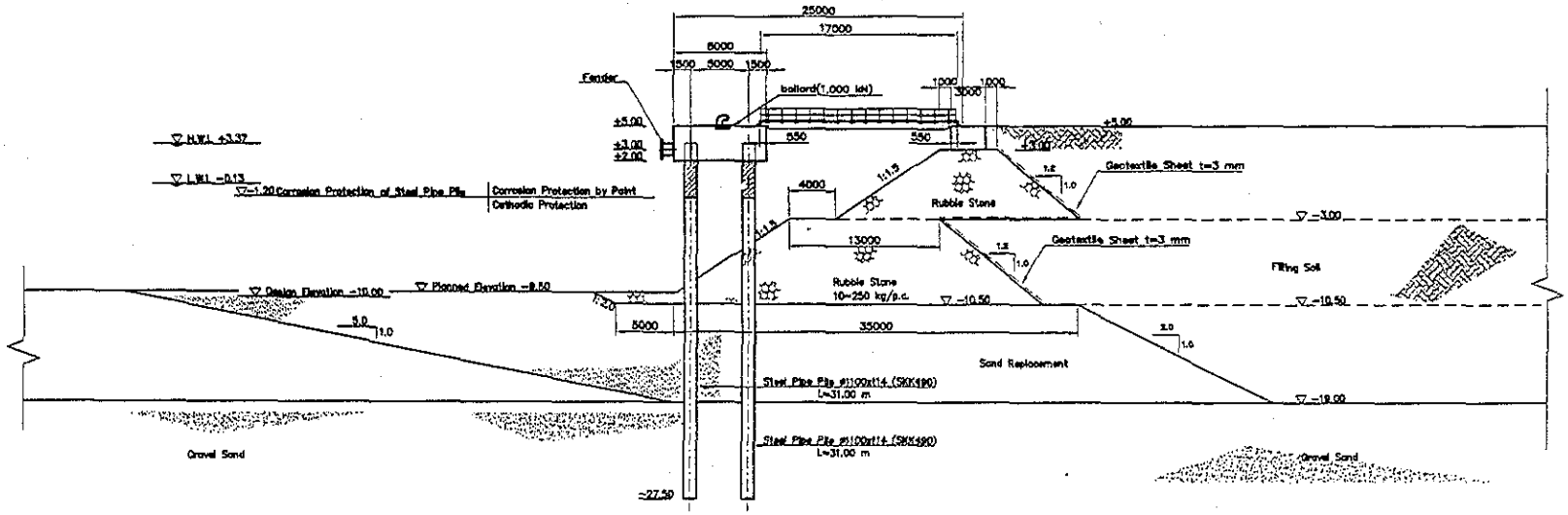


PLAN BREASTING DOLPHIN



TYPICAL CROSS SECTION

SCALE 1:400 0 5.0 10.0 15.0 20.0 25.0 30.0

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	BREASTING DOLPHIN	Calc. Index No.	
Subject	STEEL PIPE PILE	Page No.	Rev.

References/ Notes

No. Breasting Dolphin = 2

No. piles = 8

ϕ = 1,500 mm

L = 31 m

t = 14 mm

$\Rightarrow$ W = 375 kg/m

$\Rightarrow$ Unit weight = (375 kg/m)(31 m) = 11,625 kg

$\Rightarrow$ W_T = (11,625 kg)(8) = 93,000 kg

$\simeq$ **93.0 ton**

L_T = (31 m)(4)(2) = 248 m

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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	BREASTING DOLPHIN	**Pay Item No. (BOQ)**	2D - BD0102
Quantity Item	PLATE	**Unit**	ton

Calculation Procedure Applied

Plate was computed for both Breasting Dolphin. The unit weight was multiplied by the total number of pieces.

References, Calculation Base and Revisions

Reference Drawings : Tender Drawings

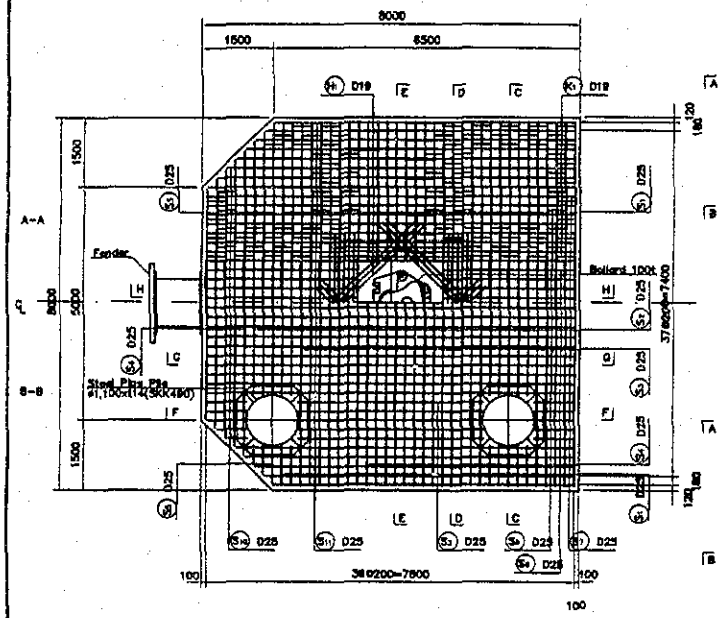
1701 - 2701 - 02 - 006 Bar Arrangement for Breasting Dolphin

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								

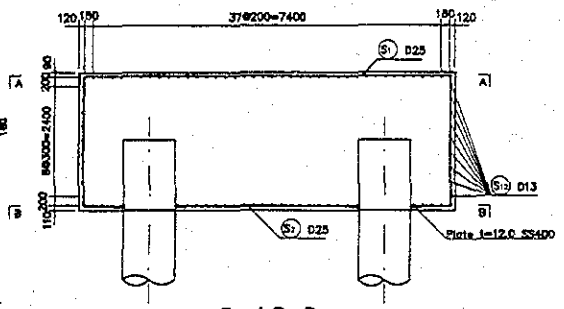
FN : Calculation_Cover_Sheet_020504_seg cover

BAR ARRANGEMENT FOR BREASTING DOLPHIN

Plan



Sect.C-C



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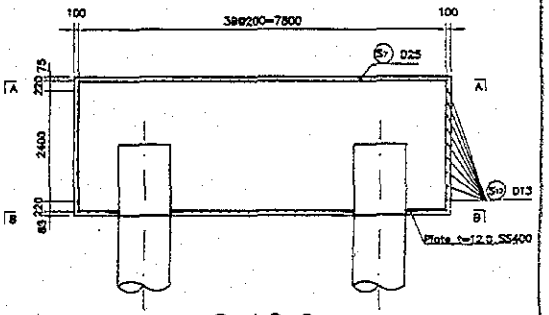

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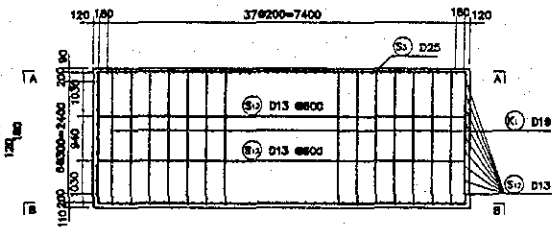

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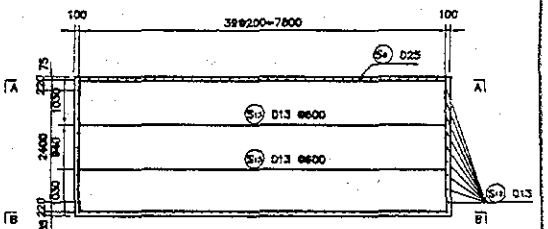
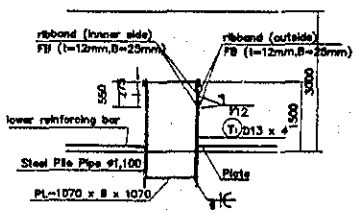
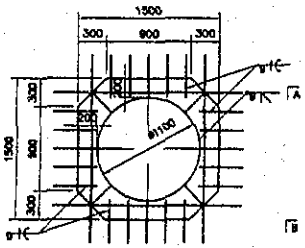


areangement of ribband for pile head



Detail of Plate



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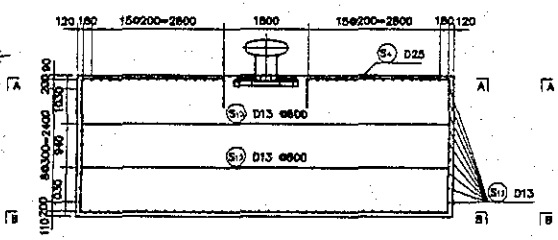

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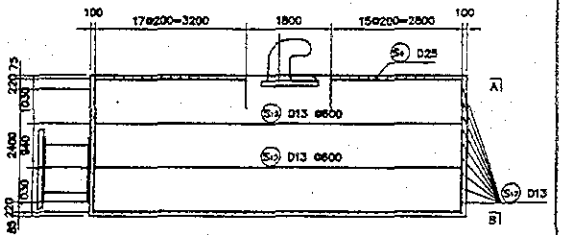

REV. NO.	DATE	CONSIGNEE	BY	APPROVED	DATE

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 : PASSENGER BERTH
TITLE :

BAR ARRANGEMENT FOR BREASTING DOLPHIN

DATE : JULY/2002
SCALE : 1 : 100
DRAWING NO. : DW-QW-02-006

BAR SCHEDULE FOR BREASTING DOLPHIN

BAR No.		DIA	LENGTH (mm)	UNIT WT. (kg/m)	Q.T.Y	WEIGHT (kg)	TOTAL WT. (kg)	SHAPE	REMARKS
S1	1	D25	8,640	3.98	7	34.387	241		
	2	"	7,290	"	7	29.014	203		
S2		"	3,900	"	20	15.522	310		
S3	1	"	7,790	"	17	31.004	527		
	2	"	6,440	"	17	25.631	436		
	3	"	9,000	"	17	35.820	609		
S4	1	"	6,460	"	16	25.711	411		
	2	"	9,000	"	8	35.820	287		
S5	1	"	8,160	"	3	32.477	97		average
	2	"	6,810	"	3	27.104	81		"
S6	1	"	6,750	"	5	26.865	134		"
	2	"	5,400	"	5	21.492	107		"
	3	"	6,920	"	5	27.542	138		"
S7	1	"	8,600	"	4	34.228	137		
	2	"	7,250	"	4	28.855	115		
S8	1	"	7,750	"	12	30.845	370		
	2	"	6,400	"	12	25.472	306		
	3	"	9,000	"	12	35.820	430		
S9	1	"	6,600	"	8	26.268	210		
	2	"	6,200	"	8	24.676	197		
	3	"	9,000	"	8	35.820	287		
S10	1	"	8,120	"	6	32.318	194		average
	2	"	7,250	"	6	28.855	173		"
S11	1	"	6,710	"	10	26.706	267		"
	2	"	6,400	"	10	25.472	255		"
	3	"	7,960	"	10	31.681	317		"
S12	1	D13	5,740	0.995	9	5.711	51		
	2	"	8,440	"	18	8.398	151		
	3	"	8,640	"	9	8.597	77		
S13		D13	8,200	0.995	14	8.159	114		

D25	6,840
D19	394
TOTAL	7,234 kg

BAR No.	DIA	LENGTH (mm)	UNIT WT. (kg/m)	Q.T.Y	WEIGHT (kg)	TOTAL WT. (kg)	SHAPE	REMARKS
K1	D19	6,530	2.25	198	14.693	2,909		
				D19		2,909		
				TOTAL		2,909	kg	
H1	D25	3,000	3.98	24	11.940	287		
				D25		287		
				TOTAL		287	kg	
TOTAL				D25		7,126		
				D19		2,909		
				D13		394		
				TOTAL		10,430	kg	
				PLATE(SS400)				
				105.5 kg x 4 pieces =		422	kg	
				ribband(SS400)outside	2.36 kg/m x 3.46m x 8 pieces =	65.3	kg	
				ribband(SS400)inner side	2.36 kg/m x 3.30m x 8 pieces =	62.3	kg	
				TOTAL		127.6	kg	
				CONCRETE VOLUME		185.3	m3	
				FORM		148.7	m2	
T1	D13	2,375	0.995	16	2.363	38		
				D13		38		
				TOTAL		38	kg	
				PLATE(SS400)				
				63.5 kg x 4 piec		254	kg	

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

References/ Notes

$W = 422\ kg + 254\ kg$

$= 676\ kg$

$W_T = (676\ kg)(2) = 1,352\ kg$

$\approx$ 1,360 ton

Prepared by		Checked by	
	/ /200		/ /200

FN: Calculation_Sheet