

**QUANTITY CALCULATION COVER SHEET**

<b>Project</b>	Detailed Design on Port Reactivation Project in La Union Province	<b>Project Code</b>	JC1N004/2N001
<b>Work Section Title</b>	MACADAM PAVEMENT (1) (TYPE 4)	<b>Pay Item No. (BOQ)</b>	26-0402
<b>Quantity Item</b>	SUBBASE COURSE	<b>Unit</b>	m <sup>3</sup>

Calculation Procedure Applied

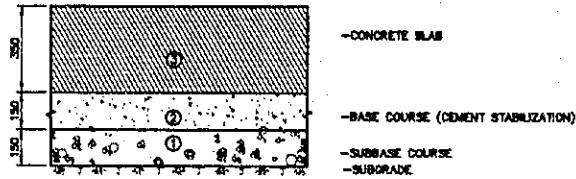
Pavement area was computed using geometric formulas.  
 Pavement volume was obtained multiplying the area to  
 the thickness of each type of course.  
 The volume was computed with zero decimal for total

References, Calculation Base and Revisions

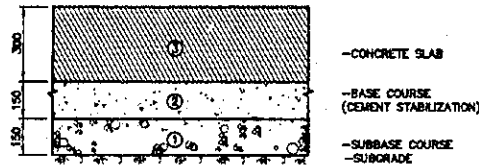
References: Tender Drawings:  
 CW-PV-00-001 General Plan of Pavement Area  
 DW-PV-00-004 Typical Section of Pavement and Road

Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
	by	Date		by	Date	by	Date	
0	Karla Garcia	26 June 2002		Mr. Inoma		Mr. Ando		
1	KA							
2								
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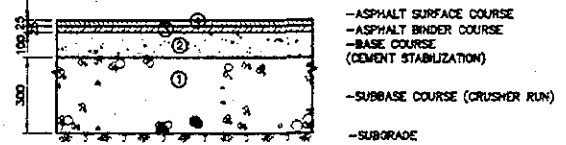
TYPICAL SECTION OF PAVEMENT  
SCALE: 1:20



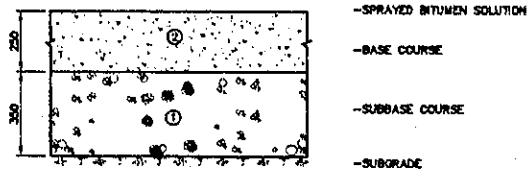
TYPE 1 CONCRETE PAVEMENT  
(FOR R.T.G. TRAFFIC LANE)



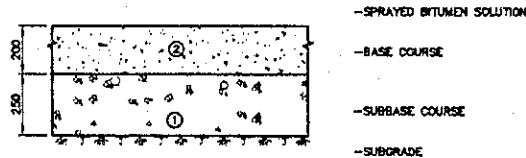
TYPE 2 CONCRETE PAVEMENT



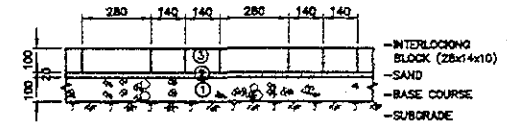
TYPE 3 ASPHALT CONCRETE PAVEMENT



TYPE 4 MACADAM PAVEMENT (1)

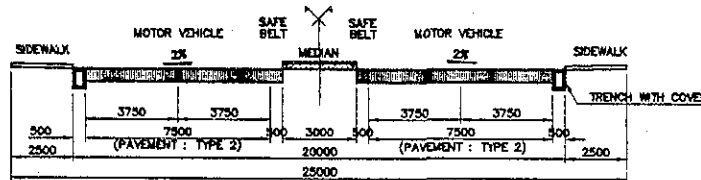


TYPE 5 MACADAM PAVEMENT (2)

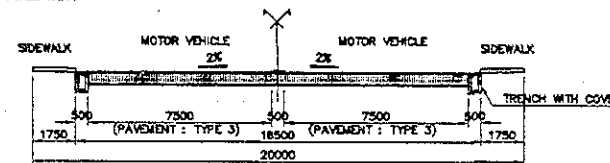


TYPE 6 INTERLOCKING CONCRETE BLOCK PAVEMENT  
(FOR SIDEWALK)

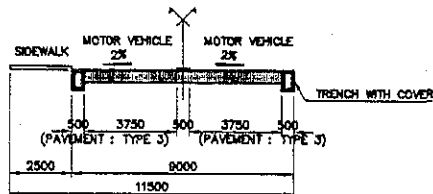
TYPICAL SECTION ROADS  
SCALE 1:200



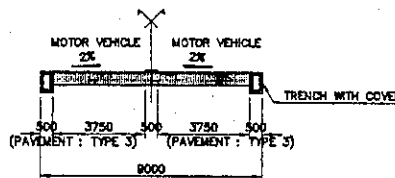
TYPICAL SECTION OF MAIN ROAD (TYPE A)



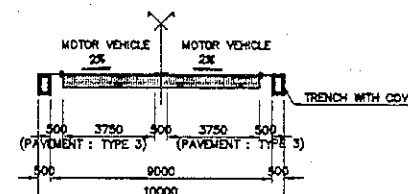
TYPICAL SECTION OF SUB-TRUNK ROAD (TYPE B)



TYPICAL SECTION OF  
BRANCH ROAD (TYPE C)



TYPICAL SECTION OF  
BRANCH ROAD (TYPE D)



TYPICAL SECTION OF  
BRANCH ROAD (TYPE E)

REV. NO.	DATE	COORDINATE	BY	APPROVED	DATE	<p>JAPAN INTERNATIONAL COOPERATION AGENCY (JICA) COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)</p>	<p>NIIPPON KOKI CO., LTD.</p>	DESIGNED BY :	SECTION :	DATE :
								CHECKED BY :	SUB-SECTION :	JULY/2002
								APPROVED BY :	TITLE :	SCALE :
								ROAD AND PAVEMENT GENERAL		INDICATE
								TYPICAL SECTION OF PAVEMENT AND ROAD		DRAWING NO. DW-PV-00-004



QUANTITY CALCULATION COVER SHEET			
<b>Project</b>	Detailed Design on Port Reactivation Project In La Union Province	<b>Project Code</b>	JC1N004/2N001
<b>Work Section Title</b>	MACADAM PAVEMENT (1) (TYPE 4)	<b>Pay Item No. (BOQ)</b>	2G-0403
<b>Quantity Item</b>	BASE COURSE	<b>Unit</b>	m <sup>3</sup>

**Calculation Procedure Applied**

Pavement area was computed using geometric formulas -  
 Pavement volume was obtained multiplying the area  
 to the thickness of each type of course.  
 The volume was computed with zero decimal for  
 total.

**References, Calculation Base and Revisions**

References : Tender Drawings :  
 DW - PV - 00 - 001 General Plan of Pavement Area  
 DW - PV - 00 - 004 Typical Section of Pavement and Road  
 (Some as "Subgrade Preparation and Subbase Course")

Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
	by	Date		by	Date	by	Date	
0	Karla Goria	26 June 2002		Mr. Inuma		Mr. Ando		
1								
2								
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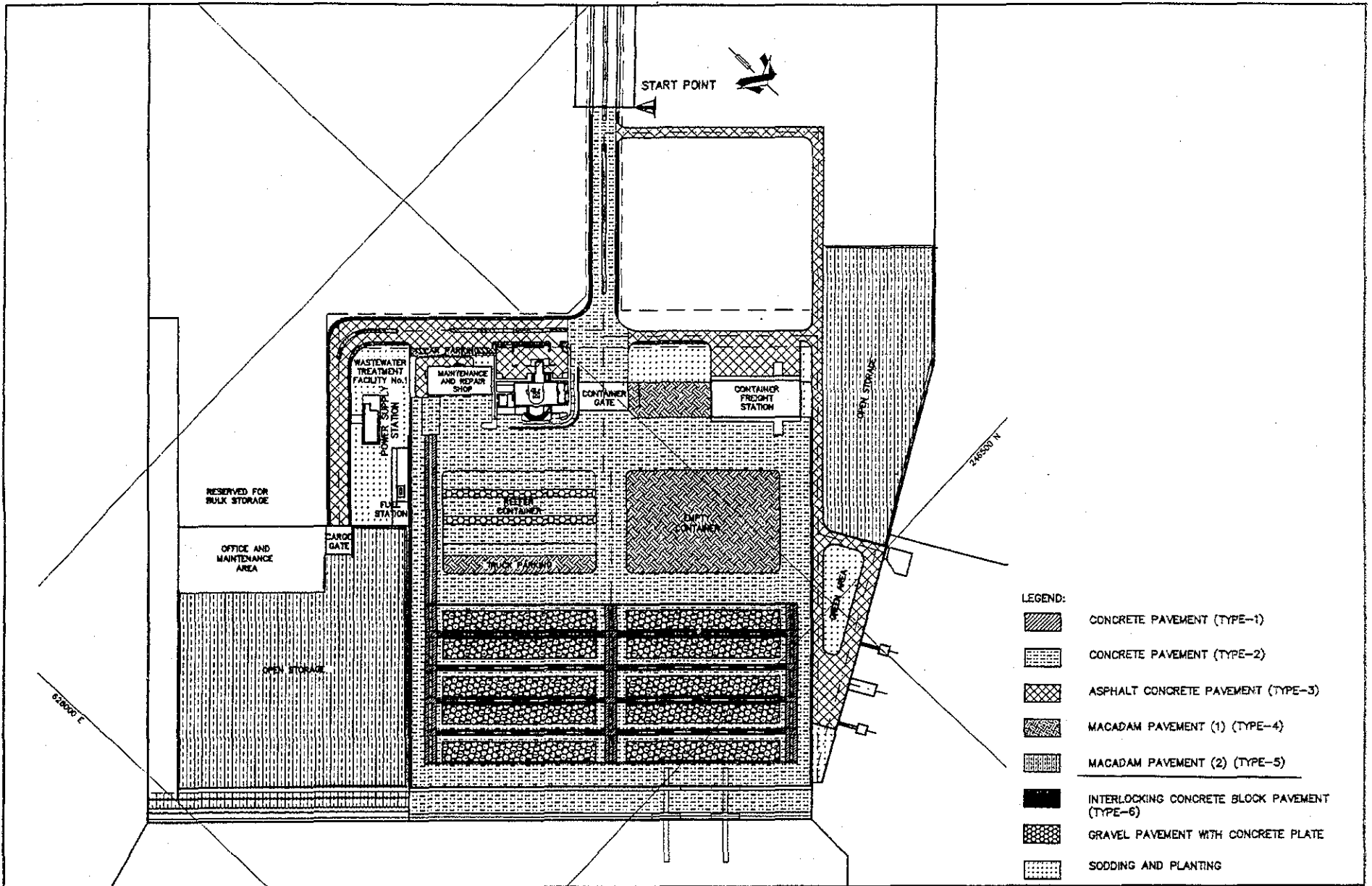
<b>Project</b>	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
<b>Section</b>	MACADAM PAVEMENT (1) (TYPE 4)	Calc. Index No.	
<b>Subject</b>	BASE COURSE	Page No.	Rev.
$A = 16,000 \text{ m}^2$ $t = 25 \text{ cm}$ $V = (16,000 \text{ m}^2)(0.25 \text{ m})$ $V = 4,000 \text{ m}^3$		References/Notes	
		$V = 4,000 \text{ m}^3$	
Prepared by		Checked by	
Kaio G.		26 / June / 2002	
		1 / 1200	

QUANTITY CALCULATION COVER SHEET								
<b>Project</b>	Detailed Design on Port Reactivation Project in La Union Province			<b>Project Code</b>	JC1N004/2N001			
<b>Work Section Title</b>	MACADAM PAVEMENT (1) (TYPE 4)			<b>Pay Item No. (BOQ)</b>	2G-0404			
<b>Quantity Item</b>	PRIME COATING			<b>Unit</b>	m <sup>2</sup>			
<b>Calculation Procedure Applied</b>								
<p>Pavement area was computed sectioning the preparation area into small section areas and using geometric formulas.</p> <p>The area was computed with zero decimal for total.</p>								
<b>References, Calculation Base and Revisions</b>								
<p>References: Tender Drawings:</p> <p style="padding-left: 40px;">DW-PV-00-001 General Plan of Pavement Area</p> <p style="padding-left: 40px;">(Same as "Subgrade Preparation")</p>								
Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
	by	Date		by	Date	by	Date	
0	Karla Garcia	26 June 2002		Mr. Inuma		Mr. Ando		
1	<del>KA</del>							
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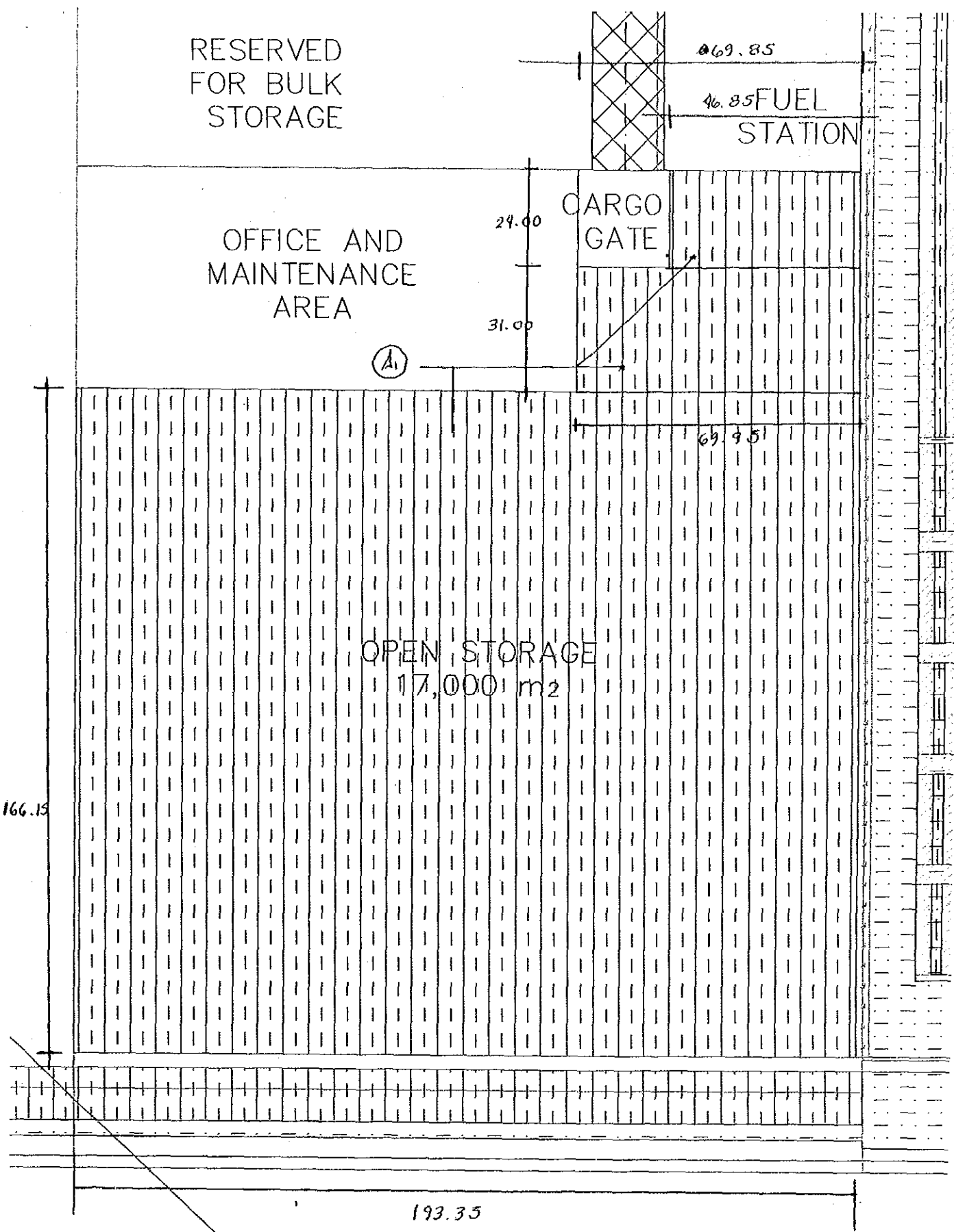
<b>Project</b>	Detailed Design on Port Reactivation Project in La Union		Calc. File No.	
<b>Section</b>	MACADAM PAYEMENT (1) (TYPE 4)		Calc. Index No.	
<b>Subject</b>	PRIME COATING		Page No.	Rev.
$A = 16,000 \text{ m}^2$			References/Notes	
			$A = 16,000 \text{ m}^2$	
Prepared by		Checked by		
Koito G.		24 June/2002	1 /200	

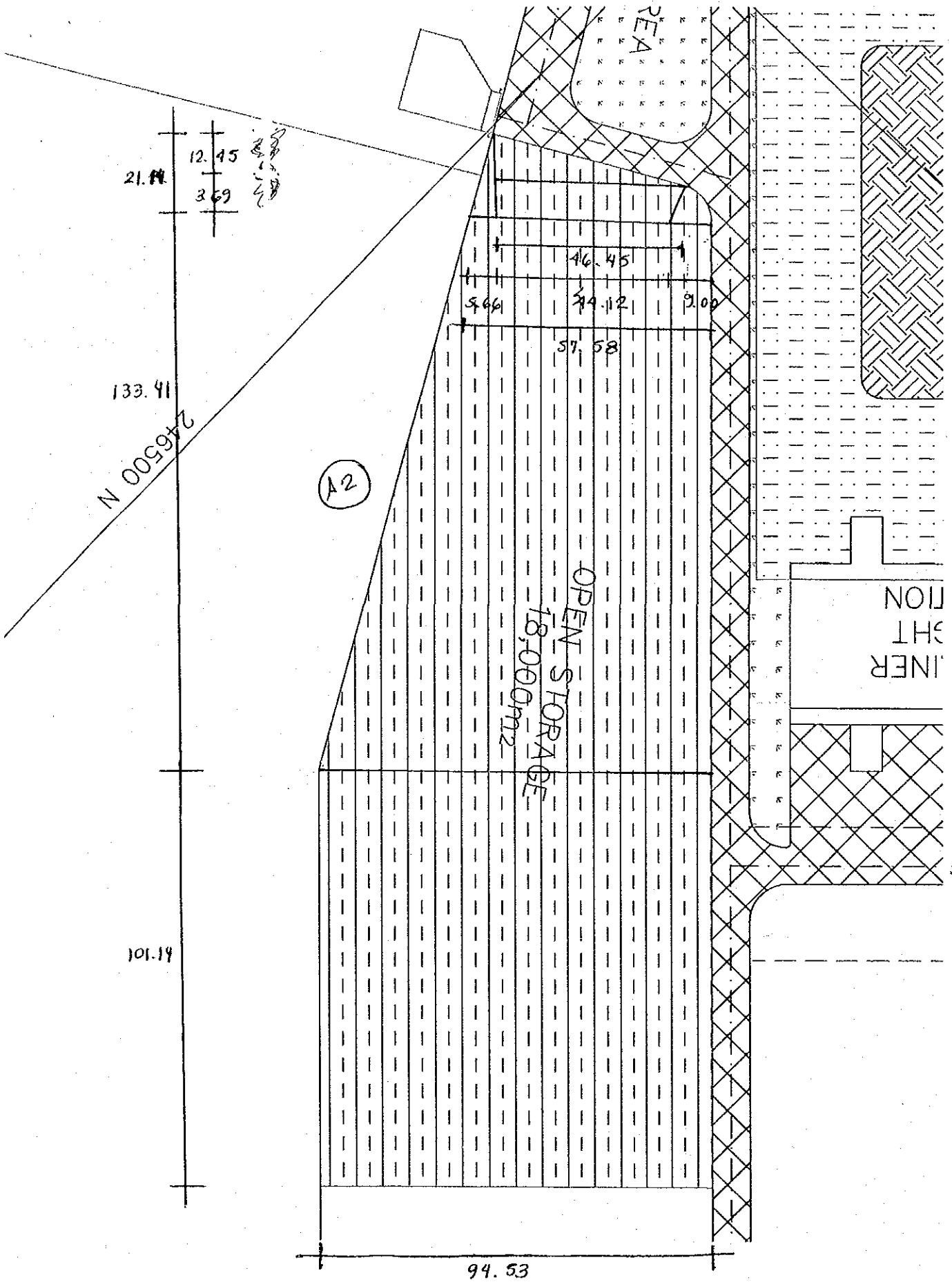
QUANTITY CALCULATION COVER SHEET								
Project	Detailed Design on Port Reactivation Project in La Union Province			Project Code	JC1N004/2N001			
Work Section Title	MACADAM PAVEMENT (2) (TYPE 5)			Pay Item No. (BOQ)	24-0501			
Quantity Item	SUBGRADE PREPARATION			Unit	m <sup>2</sup>			
<b>Calculation Procedure Applied</b>								
<p>Pavement area was computed sectioning the preparation area into small section areas and using geometric formulas.</p> <p>The area was computed with two decimal for section area and zero decimal for total.</p>								
<b>References, Calculation Base and Revisions</b>								
<p>References: Tender Drawings: DW - PV - 00 - 001 General Plan of Pavement Area</p>								
Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
	by	Date		by	Date	by	Date	
0	Karla Garcia	26 June 2002		Mr. Inuma		Ms. Ando		
1								
2								
3								





		<b>JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)</b>		<b>DETAILED DESIGN OF PORT REACTIVATION PROJECT IN LA UNION PROVINCE OF THE REPUBLIC OF EL SALVADOR</b>		DESIGNED BY : CHECKED BY : APPROVED BY :		SECTION : <b>ROAD AND PAVEMENT</b> SUB-SECTION : <b>GENERAL</b> TITLE : <b>GENERAL PLAN OF PAVEMENT AREA</b>		DATE : <b>JULY/2002</b> SCALE : <b>1 : 3000</b> DRAWING NO. : <b>DW-PV-00-001</b>	
		<b>COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)</b>				<b>NIPPON KORI CO., LTD.</b>					

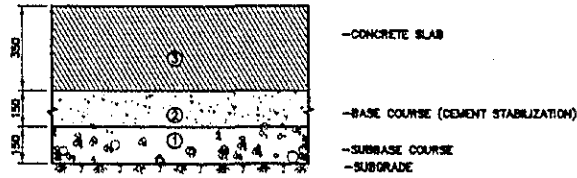




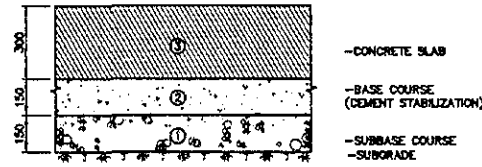
Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	HACADAM PAVEMENT (2) (TYPE 5)	Calc. Index No.	
Subject	SUB GRADE PREPARATION	Page No.	Rev.
$A_1 = (193.35 \text{ m})(166.5 \text{ m}) + \frac{(68.95 \text{ m} + 69.85 \text{ m})}{2} (31 \text{ m}) +$ $(46.85 \text{ m})(24 \text{ m})$ $= 9,560.76 \text{ m}^2 + 10,226.54 \text{ m}^2 + 59.83 \text{ m}^2$ $= 35,416.40 \text{ m}^2$		References/ Notes	
$A_2 = (94.53 \text{ m})(101.14 \text{ m}) + \frac{(94.53 \text{ m} + 58.78 \text{ m})}{2} (133.41 \text{ m}) +$ $\frac{(21.14 \text{ m})}{2} (5.46 \text{ m}) + \frac{(46.45 \text{ m} + 44.12 \text{ m})}{2} (8.69 \text{ m}) +$ $\frac{(22.45 \text{ m})(16.45 \text{ m})}{2} + \pi \frac{(3 \text{ m})^2}{360^\circ} (75^\circ)$ $= 9,560.76 \text{ m}^2 + 10,226.54 \text{ m}^2 + 59.83 \text{ m}^2 +$ $398.53 \text{ m}^2 + 289.15 \text{ m}^2 + 53.01 \text{ m}^2$ $= 20,582.82 \text{ m}^2$			
$A_T = A_1 + A_2 = 55,999.22 \text{ m}^2 \approx 56,000 \text{ m}^2$		$A = 56,000 \text{ m}^2$	
Prepared by		Checked by	
Karlo G.		26 June 2002	
		1 / 200	

QUANTITY CALCULATION COVER SHEET								
Project	Detailed Design on Port Reactivation Project in La Union Province			Project Code	JC1N004/2N001			
Work Section Title	MACADAM PAVEMENT (2) (TYPES)			Pay Item No. (BOQ)	EG-0502			
Quantity Item	SUBBASE COURSE			Unit	m <sup>3</sup>			
<b>Calculation Procedure Applied</b>								
<p>Pavement area was computed using geometric formulas.                      Pavement volume was obtained multiplying the area                      to the thickness of each type of course.                      The volume was computed with zero decimal for                      total.</p>								
<b>References, Calculation Base and Revisions</b>								
<p>References : Tender Drawings:                      DW-PV-00-001 General Plan of Pavement Area                      DW-PV-00-004 Typical Section of Pavement and Road.</p>								
Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
	by	Date		by	Date	by	Date	
0	Yaito G.	26 June /2002		Mr. Inuma		Mr. Ando		
1	<del>Yaito G.</del>							
2								
3								

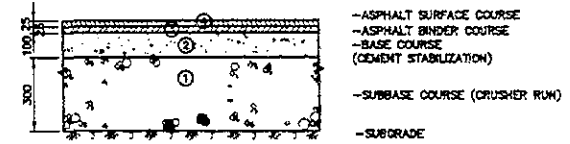
TYPICAL SECTION OF PAVEMENT  
SCALE 1:20



TYPE 1 CONCRETE PAVEMENT  
(FOR R.T.G. TRAFFIC LANE)



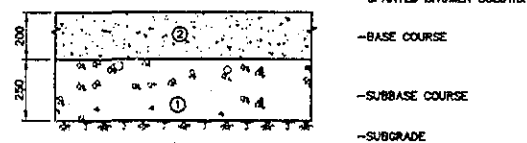
TYPE 2 CONCRETE PAVEMENT



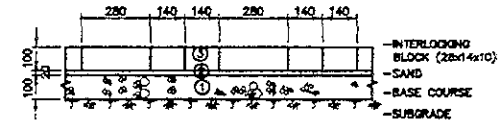
TYPE 3 ASPHALT CONCRETE PAVEMENT



TYPE 4 MACADAM PAVEMENT (1)

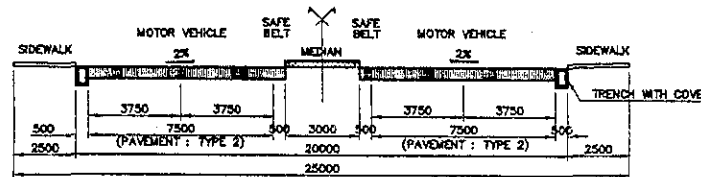


TYPE 5 MACADAM PAVEMENT (2)

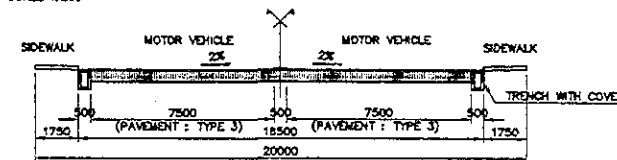


TYPE 6 INTERLOCKING CONCRETE BLOCK PAVEMENT  
(FOR SIDEWALK)

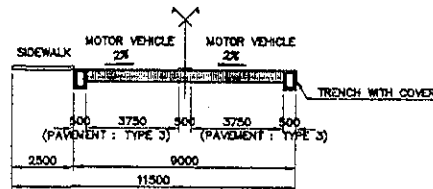
TYPICAL SECTION ROADS  
SCALE 1:200



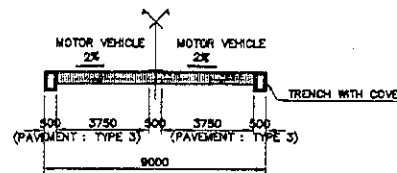
TYPICAL SECTION OF MAIN ROAD (TYPE A)



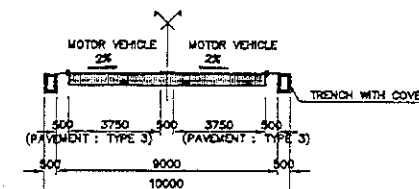
TYPICAL SECTION OF SUB-TRUNK ROAD (TYPE B)



TYPICAL SECTION OF  
BRANCH ROAD (TYPE C)



TYPICAL SECTION OF  
BRANCH ROAD (TYPE D)



TYPICAL SECTION OF  
BRANCH ROAD (TYPE E)

REV. NO.	DATE	COORDINATE	BY	APPROVED	DATE	JICA JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)	COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)	NIPPON KOEI CO., LTD.	DESIGNED BY :	SECTION :	DATE :
									CHECKED BY :	SUB-SECTION :	JULY/2002
									APPROVED BY :	TITLE :	SCALE :
										TYPICAL SECTION OF PAVEMENT AND ROAD	INDICATE
											DRAWING NO. : DW-PY-00-004

<b>Project</b>	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
<b>Section</b>	MACADAM PAVEMENT (2) (TYPE 5)	Calc. Index No.	
<b>Subject</b>	SUBBASE COURSE	Page No.	Rev.
$A = 56,000 \text{ m}^2$ $t = 25 \text{ cm}$ $V = (56,000 \text{ m}^2) (0.25 \text{ m})$ $V = 14,000 \text{ m}^3$		References/ Notes	
		V = 14,000 m <sup>3</sup>	
Prepared by		Checked by	
Karlo G.		26 June 2002	
		1 / 200	





**QUANTITY CALCULATION COVER SHEET**

<b>Project</b>	Detailed Design on Port Reactivation Project in La Union Province	<b>Project Code</b>	JC1N004/2N001
<b>Work Section Title</b>	MACADAM PAVEMENT (?) (TYPES)	<b>Pay Item No. (BOQ)</b>	2G-0503
<b>Quantity Item</b>	BASE COURSE	<b>Unit</b>	m <sup>3</sup>

**Calculation Procedure Applied**

Pavement area was computed using geometric formulas.  
 Pavement volume was computed multiplying the area  
 to the thickness of each type of course.  
 The volume was computed with zero decimal for  
 total.

**References, Calculation Base and Revisions**

References: Tender Drawings.  
 DW - PV - 00 - 001 General Plan of Pavement Area  
 DW - PV - 00 - 004 Typical Section of Pavement and Road.  
 (Same as "Subgrade Preparation and Subbase Course")

Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
	by	Date		by	Date	by	Date	
0	Karlo Garcia	26 June 2002		Mr. Inuma		Mr. Ando		
1								
2								
3								

<b>Project</b>	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
<b>Section</b>	MACADAM PAVEMENT (2) (TYPE 5)	Calc. Index No.	
<b>Subject</b>	BASE COURSE	Page No.	Rev.
$A = 56,000 \text{ m}^2$ $t = 20 \text{ cm}$ $V = (56,000 \text{ m}^2)(20 \text{ cm})$ $V = 11,200 \text{ m}^3$			References/ Notes
			$V = 11,200 \text{ m}^3$
Prepared by		Checked by	
Karlo G.		26 June 2002	
		1 / 200	

**QUANTITY CALCULATION COVER SHEET**

<b>Project</b>	Detailed Design on Port Reactivation Project in La Union Province	<b>Project Code</b>	JC1N004/2N001
<b>Work Section Title</b>	MACADAM PAVEMENT (2) (TYPE 5)	<b>Pay Item No. (BOQ)</b>	2G-0504
<b>Quantity Item</b>	PRIME COATING	<b>Unit</b>	m <sup>2</sup>

**Calculation Procedure Applied**

Pavement area was computed sectioning prime coating area into small section areas and using geometric formulas.

The area was computed with zero decimal for total.

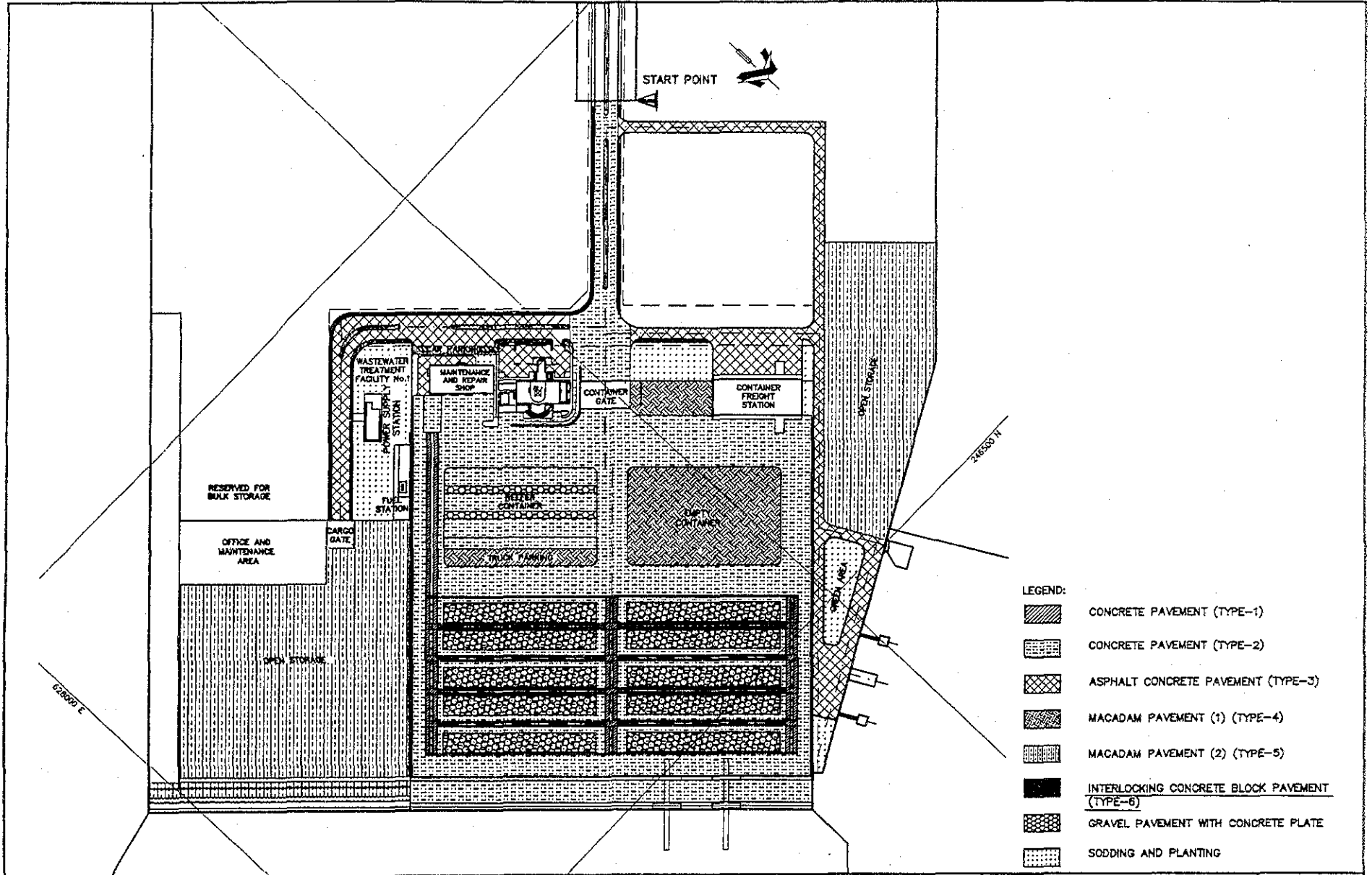
**References, Calculation Base and Revisions**

References : Tender Drawings =  
DW - PV - 00 - 001 General Plan of Pavement Area  
(Same as "Subgrade Preparation")

Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
	by	Date		by	Date	by	Date	
0	Karla Garcia	26 June 2002		Mr. Inuma		Mr. Ando		
1	EA							
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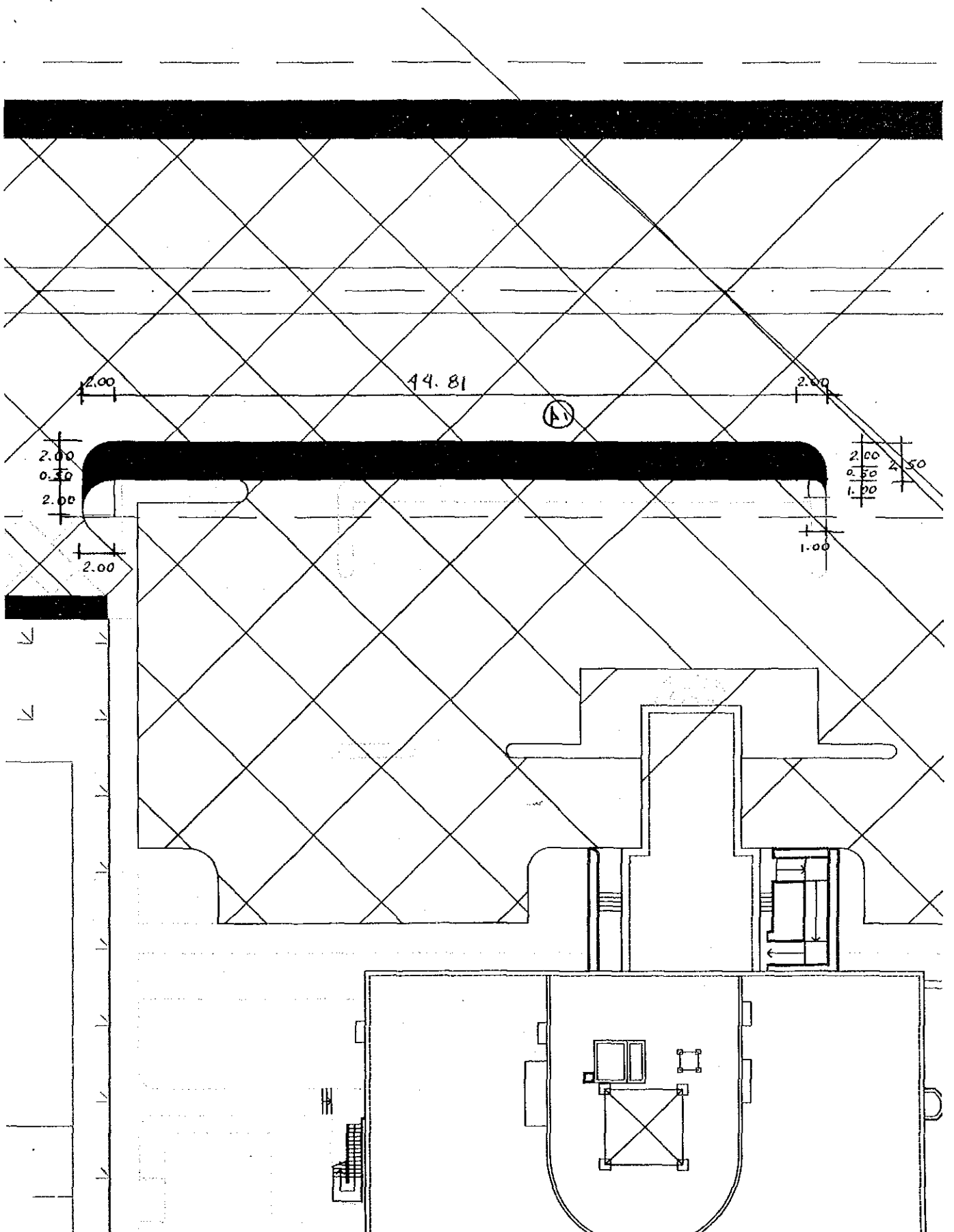
<b>Project</b>	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
<b>Section</b>	MACADAM PAVEMENT (2) (TYPE 5)	Calc. Index No.	
<b>Subject</b>	PRIME COATING	Page No.	Rev.
$A = 56,000 \text{ m}^2$ (See "Subgrade Preparation")		References/Notes	
		$A = 56,000 \text{ m}^2$	
Prepared by		Checked by	
Kaila G.		16 / June / 2002	
		/ / 200	

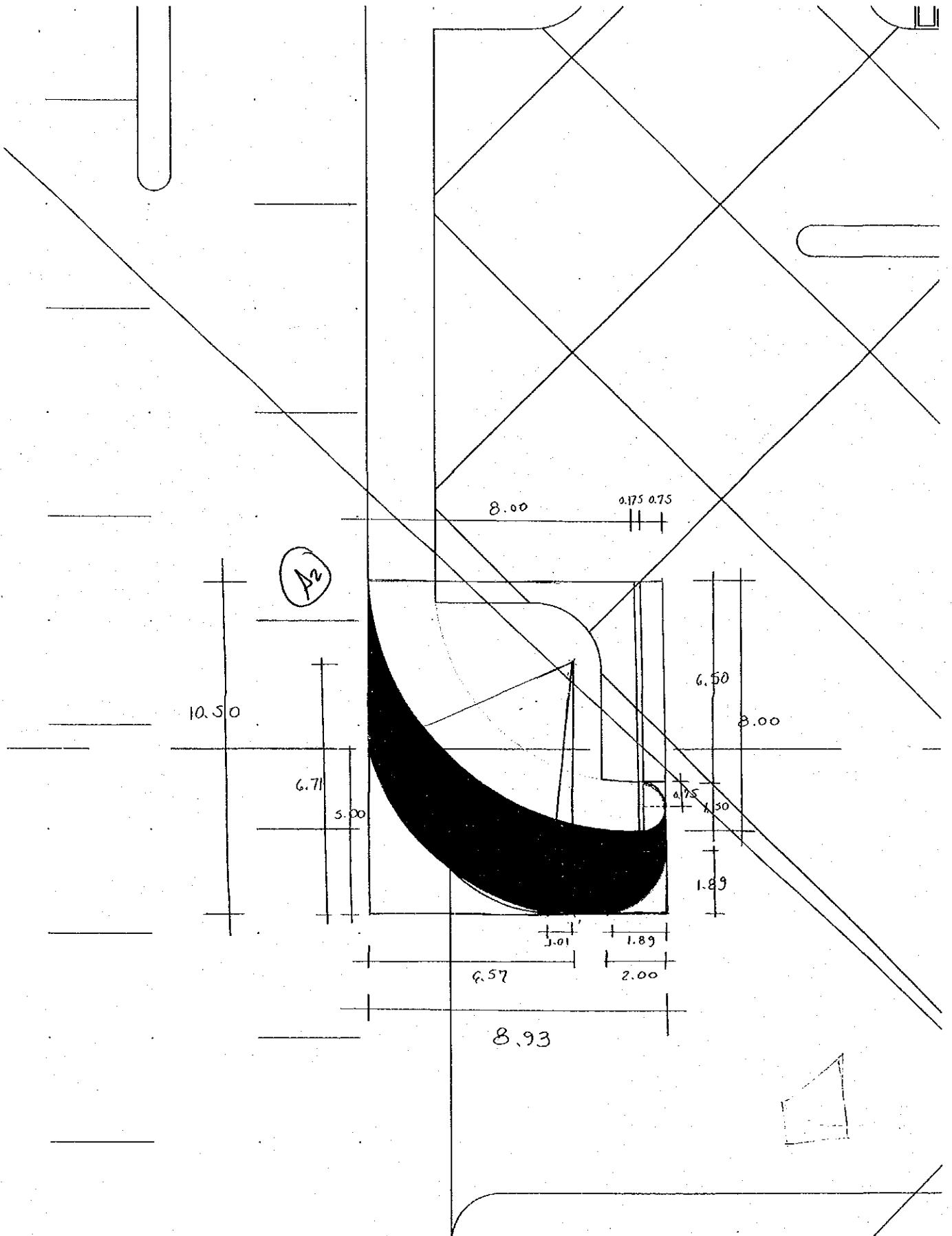
QUANTITY CALCULATION COVER SHEET								
<b>Project</b>	Detailed Design on Port Reactivation Project in La Union Province			<b>Project Code</b>	JC1N004/2N001			
<b>Work Section Title</b>	INTERLOCKING CONCRETE BLOCK PAV. FOR SIDEWALK (TG)			<b>Pay Item No. (BOQ)</b>	2G-0601			
<b>Quantity Item</b>	SUBGRADE PREPARATION			<b>Unit</b>	m <sup>2</sup>			
<b>Calculation Procedure Applied</b>								
<p>Pavement area was computed sectioning the interlocking concrete block area in small section areas and using geometric formulas. The area was computed with two decimal for section area and zero decimal for total.</p>								
<b>References, Calculation Base and Revisions</b>								
<p>References: Tender Drawings: DW-PV-00-001 General Plan of Pavement Area</p>								
Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
	by	Date		by	Date	by	Date	
0	Karla G.	26 June 2002		Mr. Inuma		Mr. Ando		
1	<del>KA</del>							
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- LEGEND:**
- CONCRETE PAVEMENT (TYPE-1)
  - CONCRETE PAVEMENT (TYPE-2)
  - ASPHALT CONCRETE PAVEMENT (TYPE-3)
  - MACADAM PAVEMENT (1) (TYPE-4)
  - MACADAM PAVEMENT (2) (TYPE-5)
  - INTERLOCKING CONCRETE BLOCK PAVEMENT (TYPE-6)
  - GRAVEL PAVEMENT WITH CONCRETE PLATE
  - SODDING AND PLANTING

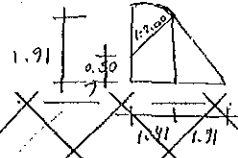
		JICA JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)		DETAILED DESIGN ON PORT REACTIVATION PROJECT IN LA UNION PROVINCE OF THE REPUBLIC OF EL SALVADOR		DESIGNED BY : CHECKED BY : APPROVED BY :	SECTION : ROAD AND PAVEMENT SUB-SECTION : GENERAL FILE : <b>GENERAL PLAN OF PAVEMENT AREA</b>	DATE : JULY/2002 SCALE : 1 : 3000 DRAWING NO. : DW-PV-00-001
		GPA COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)		NIPPON KOKI CO., LTD.				
NO. 101	DATE	COORDINATE	BY	APPROVED	DATE			







Type 6



28.42

28.22

7.75

1.50

A3

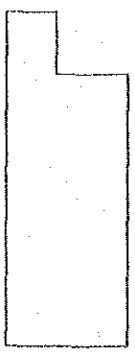
CAR PARKING

7.75

71.50

GREEN AREA  
RESERVE FOR  
FUTURE)

MAINTENANCE  
AND REPAIR  
SHOP

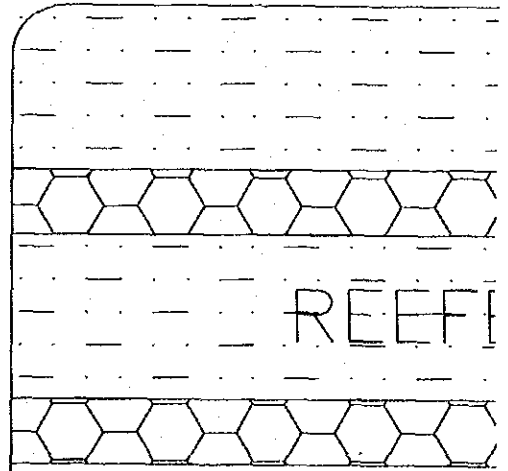


POWER  
SUPPLY  
STATION

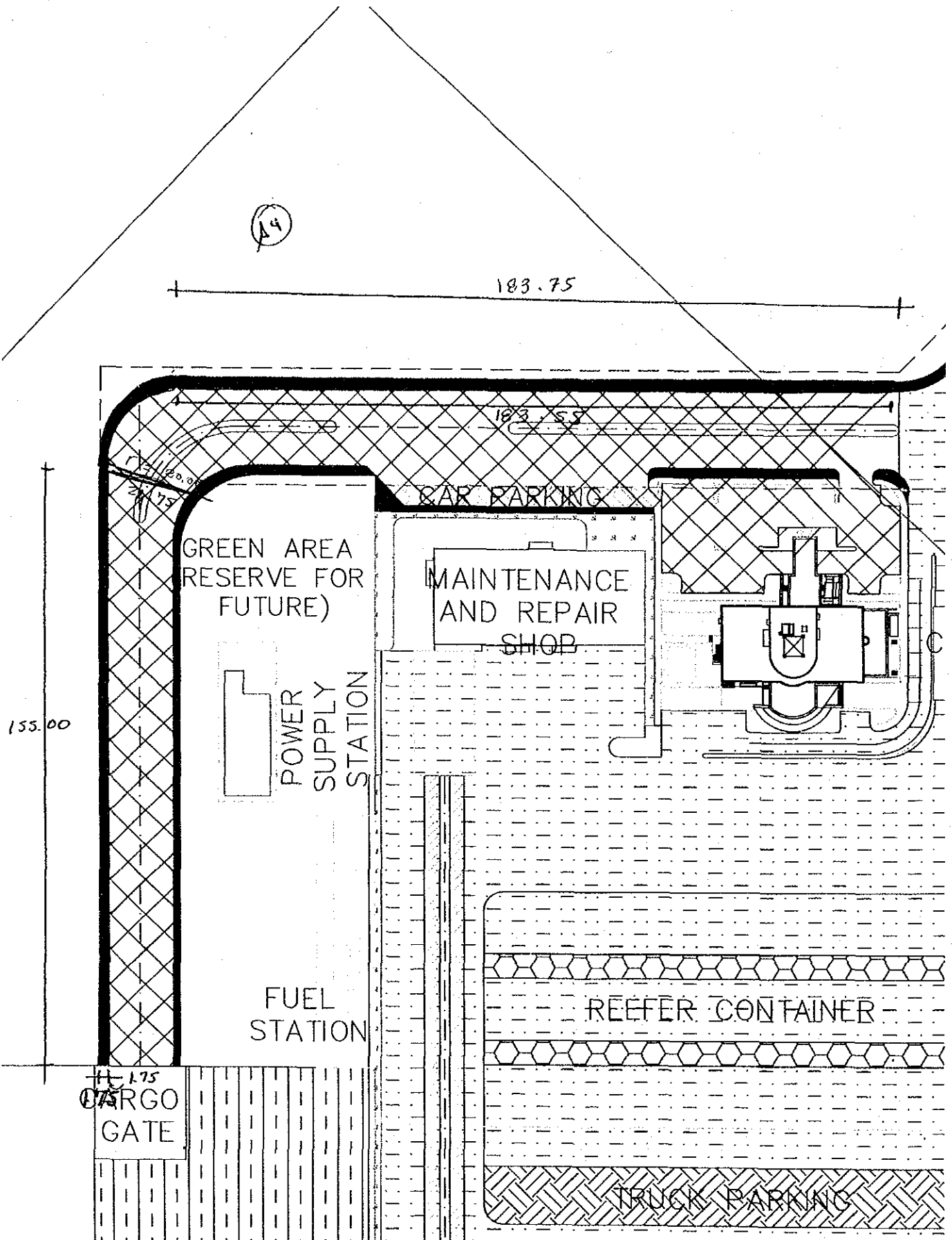
135.00

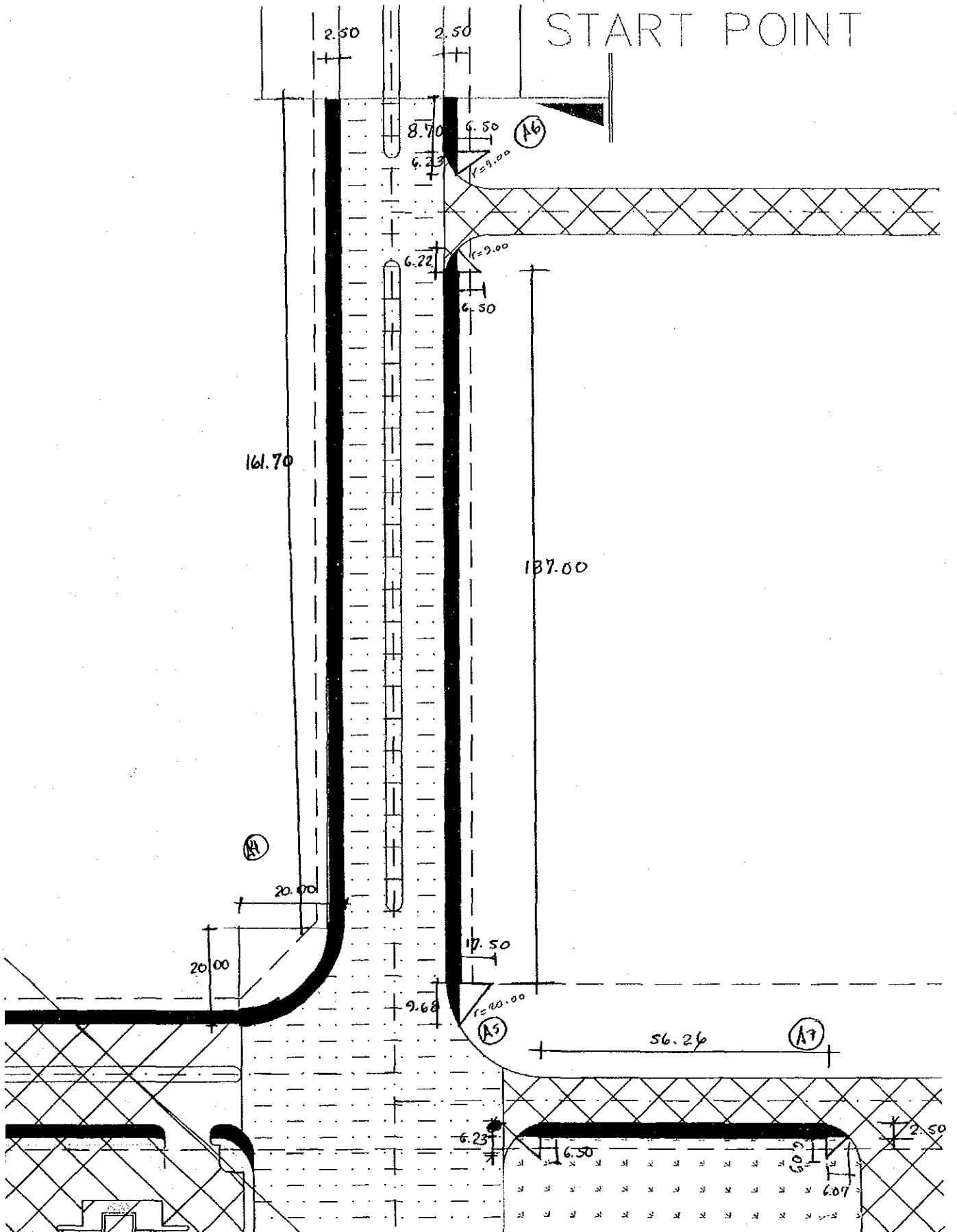
FUEL  
STATION

REFE



H  
675





Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	INTERLOCKING CONCRETE BLOCK PAV. FOR SIDEWALK (TYPE 6)	Calc. Index No.	
Subject	SUBGRADE PREPARATION	Page No.	Rev.
$A_1 = \left[ (1m)(1m) - \frac{\pi(1m)^2}{4} \right] + (0.5m)(2m) + \frac{\pi(2m)^2}{4} + \frac{(2.59m)(49.81m)}{112.03} + \frac{\pi(2m)^2}{4} + (0.5m)(2m) + \left[ (2m)(2m) - \frac{\pi(2m)^2}{4} \right]$ $= 121.38 \text{ m}^2$		References/Notes	
$A_2 = (8.93m)(10.50m) - \left\{ \frac{\pi(8m)^2}{4} + (0.175m)(8m) + (0.50m)(0.75m) \right\} + \left[ (0.75m)(0.75m) - \frac{\pi(0.75)^2}{4} \right] + \left[ \frac{(1.89)^2}{2} (1.89) - \frac{\pi(1.89)^2 (93.3^\circ)}{360^\circ} \right] + \frac{\pi(0.75m)^2}{2} + \left[ \frac{(5m+6.71m)(6.57m)}{2} - \frac{\pi(6.79m)^2 (66.79^\circ)}{360^\circ} - \frac{(1.91m)(6.71m)}{2} \right]$ $= 27.24 \text{ m}^2$			
$A_3 = (1.50m)(7.50m) + \frac{(7.75m)(7.75m)}{2} + \frac{(1.91m)(1.91m)}{2} + \frac{(1.91m+0.5m)(1.41m)}{2} + \frac{\pi(2m)^2 (42.85^\circ)}{360^\circ} + \frac{(28.22m+28.42m)(2.50m)}{2} + \left[ \frac{\pi(22.57m)^2 (79^\circ)}{360^\circ} - \frac{\pi(20m)^2 (73^\circ)}{360^\circ} \right] + (1.75m)(1.35m)$ $= 529.07 \text{ m}^2$			
$A_4 = (1.75m)(1.35m) + \left[ \frac{(2.75m)(2.50m)}{2} - \frac{\pi(20)^2 (6.56^\circ)}{360^\circ} \right] + \left[ \frac{\pi(22.57)^2 (79^\circ)}{360^\circ} - \frac{\pi(20m)^2 (73^\circ)}{360^\circ} \right] + \frac{(183.55m+183.75m)(2.50m)}{2} + \left[ \frac{\pi(20m)^2}{4} - \frac{\pi(17.50)^2}{4} \right] + (2.50m)(161.70m)$ $= 1,287.98 \text{ m}^2$			
$A_5 = \left[ \frac{\pi(20m)^2 (23.96^\circ)}{360^\circ} - \frac{(9.68m)(17.30m)}{2} \right] + \left[ \frac{\pi(9m)^2 (43.76^\circ)}{360^\circ} - \frac{(6.50m)(6.72m)}{2} \right] + (137.00m)(2.50m)$ $= 369.00 \text{ m}^2$			
$A_6 = \left[ \frac{\pi(6m)^2 (47.76^\circ)}{360^\circ} - \frac{(2.50m)(6.83m)}{2} \right] + (2.50m)(8.70m) = 32.43 \text{ m}^2$			
Prepared by		Checked by	
Koito G.		26 / June / 2002	
		1 / 1200	

<b>Project</b>	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
<b>Section</b>	INTERLOCKING CONCRETE BLOCK PAV. FOR SIDEWALK (TYPE 6)	Calc. Index No.	
<b>Subject</b>	SUBGRADE PREPARATION	Page No.	Rev.
$A_7 = \left[ \frac{\pi (8.52m)^2 (44.91^\circ)}{360^\circ} - \frac{(6.07m)(6.09m)}{2} \right] + \frac{(52.26m)(2.50m)}{2}$ $- \left[ \frac{\pi (9m)^2 (43.76^\circ)}{360^\circ} - \frac{(6.13m)(6.50m)}{2} \right] = 20.25$ $A_7 = 151.30 \text{ m}^2$		References/Notes	
$A_T = 2,519.00 \text{ m}^2 \approx 2,600 \text{ m}^2$		$A = 2,600 \text{ m}^2$	
Prepared by		Checked by	
Kato G.		/ 1200	
26 June 2002			

**QUANTITY CALCULATION COVER SHEET**

<b>Project</b>	Detailed Design on Port Reactivation Project in La Union Province	<b>Project Code</b>	JC1N004/2N001
<b>Work Section Title</b>	INTERLOCKING CONCRETE BLOCK PAV. FOR SIDEWALK (16)	<b>Pay Item No. (BOQ)</b>	29-0602
<b>Quantity Item</b>	BASE COURSE	<b>Unit</b>	m <sup>3</sup>

Calculation Procedure Applied

Pavement area was computed using geometric formulas.  
 Pavement volume was computed multiplying the area  
 to the thickness of the course.  
 Volume was computed with zero decimal for total.

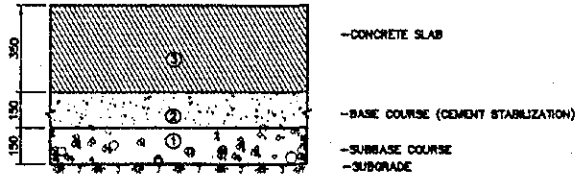
References, Calculation Base and Revisions

References : Tender Drawings :

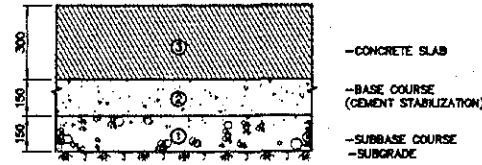
- DW - PV - 00 - 001 General Plan of Pavement Area
- DW - PV - 00 - 004 Typical Section of Pavement and Road

Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
	by	Date		by	Date	by	Date	
0	Koila, Garcia	26 June 2002		Mr. Inuma		Mr. Ando		
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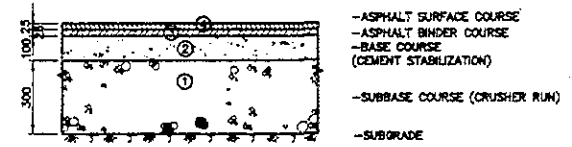
TYPICAL SECTION OF PAVEMENT  
SCALE : 1:20



TYPE 1 CONCRETE PAVEMENT  
(FOR R.T.G. TRAFFIC LANE)



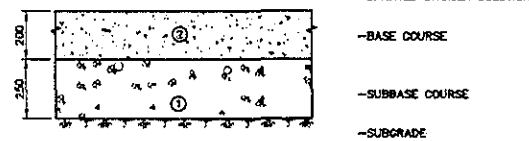
TYPE 2 CONCRETE PAVEMENT



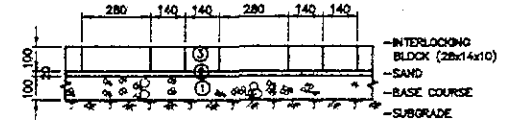
TYPE 3 ASPHALT CONCRETE PAVEMENT



TYPE 4 MACADAM PAVEMENT (1)

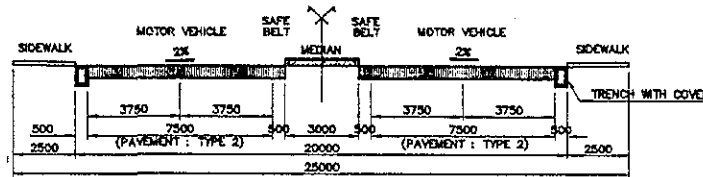


TYPE 5 MACADAM PAVEMENT (2)

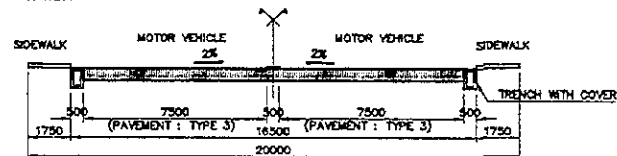


TYPE 6 INTERLOCKING CONCRETE BLOCK PAVEMENT  
(FOR SIDEWALK)

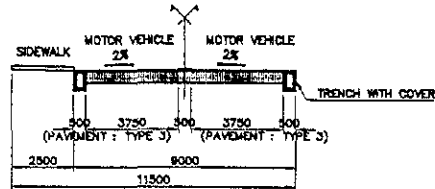
TYPICAL SECTION ROADS  
SCALE 1:200



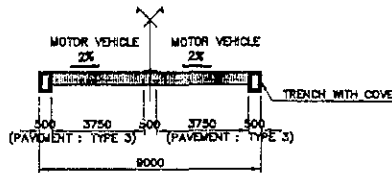
TYPICAL SECTION OF MAIN ROAD (TYPE A)



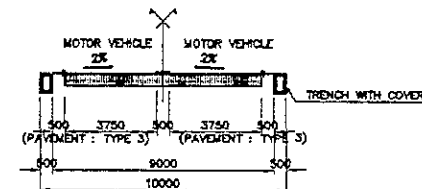
TYPICAL SECTION OF SUB-TRUNK ROAD (TYPE B)



TYPICAL SECTION OF  
BRANCH ROAD (TYPE C)



TYPICAL SECTION OF  
BRANCH ROAD (TYPE D)



TYPICAL SECTION OF  
BRANCH ROAD (TYPE E)

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	DESIGNED BY :	SECTION :	DATE :
									ROAD AND PAVEMENT GENERAL	JULY/2002	CHECKED BY : TITLE : TYPICAL SECTION OF PAVEMENT AND ROAD

<b>Project</b>	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
<b>Section</b>	INTERLOCKING CONCRETE BLOCK PAV. FOR SIDEWALK (TYPE 6)	Calc. Index No.	
<b>Subject</b>	BASE COURSE	Page No.	Rev.
$A = 2,600 \text{ m}^2$ $t = 10 \text{ cm}$ $V = (2,600 \text{ m}^2) (0.10 \text{ m})$ $= 260 \text{ m}^3$		References/Notes	
		$V = 260 \text{ m}^3$	
Prepared by		Checked by	
Karla G. 26 June 2002		/ /200	



**QUANTITY CALCULATION COVER SHEET**

<b>Project</b>	Detailed Design on Port Reactivation Project in La Union Province	<b>Project Code</b>	JC1N004/2N001
<b>Work Section Title</b>	INTERLOCKING CONCRETE BLOCK PAV. FOR SIDEWALK (T)	<b>Pay Item No. (BOQ)</b>	24-0603
<b>Quantity Item</b>	SAND CUSHION	<b>Unit</b>	m <sup>3</sup>

**Calculation Procedure Applied**

Pavement area was computed using geometric formulas.  
 Pavement volume was computed multiplying the area to the thickness of the course.  
 The volume was computed with zero decimal for total.

**References, Calculation Base and Revisions**

References : Tender Drawings :

01 - PV - 00 - 001 General Plan of Pavement Area  
 02 - PV - 00 - 004 Typical Section of Pavement and Road  
 (Same as "Subgrade Preparation and Base Course")

Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
	by	Date		by	Date	by	Date	
0	Karla Gada	26 June 2002		Mr. Inuma		Mr. Ando		
1	<del>KA</del>							
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<b>Project</b>	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
<b>Section</b>	INTERLOCKING CONCRETE BLOCK PAV. FOR SIDEWALK (TYPE G)	Calc. Index No.	
<b>Subject</b>	SAND CUSHION	Page No.	Rev.
		References/ Notes	
$A = 2,600 \text{ m}^2$ $t = 2 \text{ cm}$ $V = (2,600 \text{ m}^2) (0.02 \text{ m})$ $= 52 \text{ m}^3$		$V = 52 \text{ m}^3$	
Prepared by		Checked by	
Karla G.		26 June 2002	
		1 / 200	

QUANTITY CALCULATION COVER SHEET								
<b>Project</b>	Detailed Design on Port Reactivation Project in La Union Province			<b>Project Code</b>	JC1N004/2N001			
<b>Work Section Title</b>	INTERLOCKING CONCRETE BLOCK PAV. FOR SIDEWALK (TG)			<b>Pay Item No. (BOQ)</b>	EG-0604			
<b>Quantity Item</b>	INTERLOCKING CONCRETE BLOCK			<b>Unit</b>	m <sup>3</sup>			
<b>Calculation Procedure Applied</b>								
<p>Pavement area was computed using geometric formulas.                      Pavement volume was computed multiplying the area                      to the thickness of the course.                      The volume was computed with zero decimal for                      total.</p>								
<b>References, Calculation Base and Revisions</b>								
<p>References: Tender Drawings:</p> <p>DW - PV - 00 - 001 General Plan of Pavement Area                      DW - PV - 00 - 004 Typical Section of Pavement and Road                      (Same as "Subgrade Preparation and Base Course")</p>								
Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
	by	Date		by	Date	by	Date	
0	Karla Garcia	26 June 2002		Mr. Truma		Mr. Ando		
1	<del>_____</del>							
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<b>Project</b>	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
<b>Section</b>	INTERLOCKING CONCRETE BLOCK PAV. FOR SIDEWALK (TYPE 6)	Calc. Index No.	
<b>Subject</b>	INTERLOCKING CONCRETE BLOCK	Page No.	Rev.
$A = 2,600 \text{ m}^2$ $t = 10 \text{ cm}$ $V = (2,600 \text{ m}^2)(0.10 \text{ m})$ $= 260 \text{ m}^3$		References/Notes	
		$V = 260 \text{ m}^3$	
Prepared by		Checked by	
Karlo G.		20 June 2002	
		1 / 200	

QUANTITY CALCULATION COVER SHEET			
<b>Project</b>	Detailed Design on Port Reactivation Project in La Union Province	<b>Project Code</b>	JC1N004/2N001
<b>Work Section Title</b>	GRAVEL PAVEMENT WITH CONCRETE PLATE (CONTAINER STACKING PLATE)	<b>Pay Item No. (BOQ)</b>	EG-070101
<b>Quantity Item</b>	SUBGRADE PREPARATION	<b>Unit</b>	m <sup>2</sup>

**Calculation Procedure Applied**

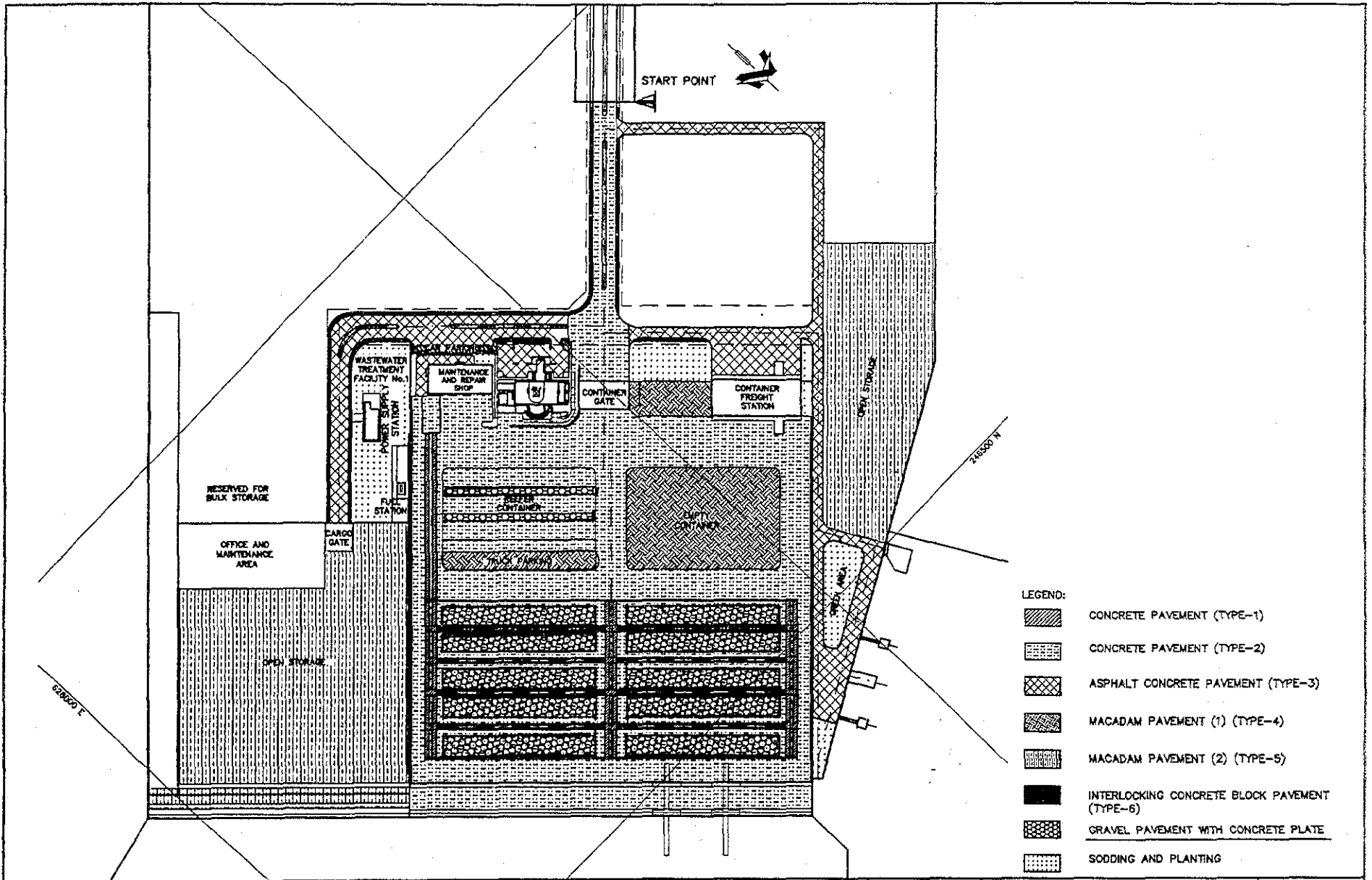
Pavement area was computed using geometric formulas.  
The area was computed with two decimal for section area and zero decimal for total.

**References, Calculation Base and Revisions**

References: Tender Drawings:

- DW - PV - 00 - 001 General Plan of Pavement Area
- DW - PV - 01 - 001 layout of Container stacking yard
- DW - PV - 01 - 002 location of Container stacking plate for Dry Container
- DW - PV - 01 - 003 location of Container " " for Reefer Container

Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
	by	Date		by	Date	by	Date	
0	Karla Garcia	26 June 2002		Mr. Inuma		Mr. Ando		
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- LEGEND:
- CONCRETE PAVEMENT (TYPE-1)
  - CONCRETE PAVEMENT (TYPE-2)
  - ASPHALT CONCRETE PAVEMENT (TYPE-3)
  - MACADAM PAVEMENT (1) (TYPE-4)
  - MACADAM PAVEMENT (2) (TYPE-5)
  - INTERLOCKING CONCRETE BLOCK PAVEMENT (TYPE-6)
  - GRAVEL PAVEMENT WITH CONCRETE PLATE
  - SODDING AND PLANTING

		JICA JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)		DETAILED DESIGN ON PORT REACTIVATION PROJECT IN LA UNION PROVINCE OF THE REPUBLIC OF EL SALVADOR		DRAWN BY : CHECKED BY : APPROVED BY :	SECTION : ROAD AND PAVEMENT SUB-SECTION : GENERAL TITLE : GENERAL PLAN OF PAVEMENT AREA	DATE : JULY/2002 SCALE : 1 : 3000 DRAWING NO. : DW-PV-00-001
		COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)		NIPPON KOKI CO., LTD.				
REV. NO.	DATE	DESCRIPTION	BY	APPROVED	DATE			

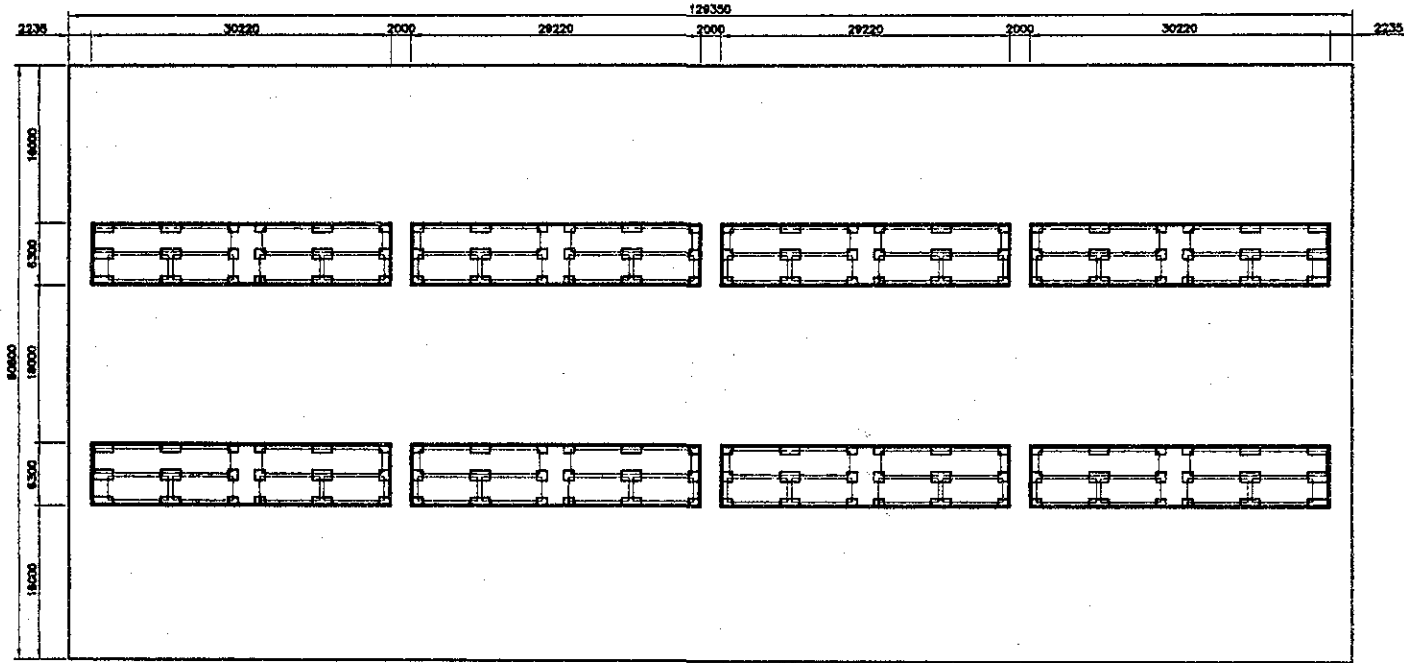






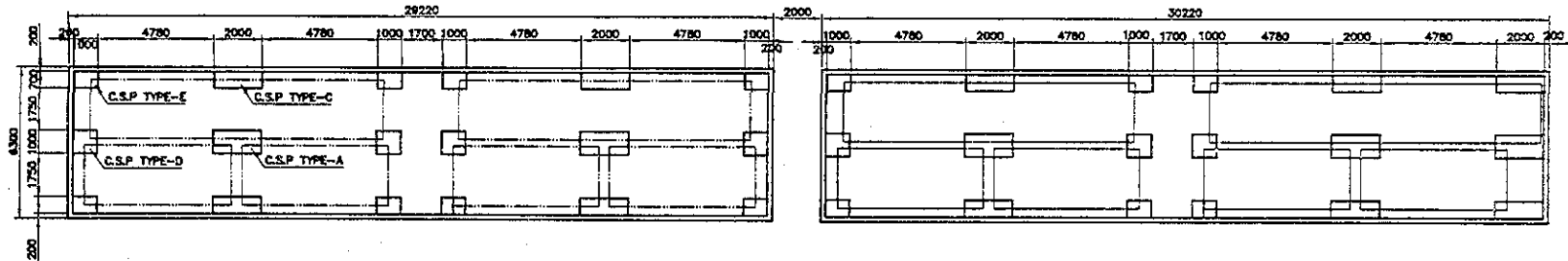
### LAYOUT OF CONTAINER STACKING PLATE FOR REEFER CONTAINER

SCALE:1:500



### DETAILS OF CONTAINER STACKING YARD

SCALE:1:200



<p>JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)</p>		<p>COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)</p>		<p>NIPPON KOKI CO., LTD.</p>		<p>DESIGNED BY: _____</p> <p>CHECKED BY: _____</p> <p>APPROVED BY: _____</p>		<p>SECTION: ROAD AND PAVEMENT</p> <p>SUB-SECTION: PORT SERVICE ROAD AND CONTAINER YARD PAVEMENT</p> <p>TITLE: LOCATION OF CONTAINER STACKING PLATE FOR REEFER CONTAINER</p>		<p>DATE: JULY/2002</p> <p>SCALE: INDICATED</p> <p>DRAWING NO. SW-PV-01-003</p>	
REV. NO.	DATE	DESCRIPTION	BY	APPROVED	DATE						

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	GRAVEL PAV. WITH CONCRETE PLATE (CONT. STACKING PLATE)	Calc. Index No.	
Subject	SUBGRADE PREPARATION	Page No.	Rev.
Stacking Yard Area :			References/ Notes
$A = (110.60 \text{ m})(129.35 \text{ m}) = 2,147.21 \text{ m}^2 (10) = 21,472.10 \text{ m}^2$			
Concrete Area :			
Type A : No Stacking Plate = (105)(10) = 1050			
$A_A = (2 \text{ m})(1 \text{ m}) = 2 \text{ m}^2 (105)(10) = 2,100 \text{ m}^2$			
Type B : No Stacking Plate = (42)(10) = 420			
$A_B = (2 \text{ m})(0.55 \text{ m}) = 1.10 \text{ m}^2 (42)(10) = 462 \text{ m}^2$			
$A = 2,100 \text{ m}^2 + 462 \text{ m}^2 = 2,562.00 \text{ m}^2$			
Gravel Area :			
$A = 21,472.10 \text{ m}^2 - 2,562.00 \text{ m}^2 = 18,910.10 \text{ m}^2$ $\approx 18,920 \text{ m}^2$			
Reefer Container Area :			$A = 18,920 \text{ m}^2$
$A_1 = (30.22 \text{ m})(6.30 \text{ m}) = 190.39 \text{ m}^2 (4) = 761.56 \text{ m}^2$			
$A_2 = (29.22 \text{ m})(6.30 \text{ m}) = 184.09 \text{ m}^2 (4) = 736.36 \text{ m}^2$			
$A = A_1 + A_2 = 1,497.92 \text{ m}^2$			
Concrete Area :			
Type A : No Stacking Plate = 20			
$A = (2 \text{ m})(1 \text{ m}) = 2 \text{ m}^2 (20) = 40 \text{ m}^2$			
Type C : No Stacking Plate = 40			
$A = (2 \text{ m})(0.70 \text{ m}) = 1.40 \text{ m}^2 (40) = 56 \text{ m}^2$			
Prepared by		Checked by	
/ /200		/ /200	

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	GRAVEL PAVEMENT WITH CONCRETE PLATE (CONTAINER STACKING PLATE)	Calc. Index No.	
Subject	SUBGRADE PREPARATION	Page No.	Rev.
<p>Type D: No stacking plate = 28</p> $A = (1m)(1m) = 1m^2(28) = 28 m^2$ <p>Type E: No stacking plate = 56</p> $A = (1m)(0.70m) = 0.70m^2(56) = 39.20 m^2$ $A = (40.00 + 56.00 + 28.00 + 39.20) m^2 = 163.20 m^2$ <p>Gravel Area:</p> $A = 1,497.92 m^2 - 163.20 m^2 = 1,334.72 m^2$ <p>Gravel Pavement Area = 18,910.10 + 1,334.72 = 20,244.82 m<sup>2</sup> = 20,250 m<sup>2</sup></p> $A_T = 2,190 + 462 + 56 + 28 + 39.20 + (18,910.10 + 1,334.72)$ $A_T = 22,990.02 \approx 23,000 m^2$		References/ Notes	
			$A_T = 23,000 m^2$
Prepared by		Checked by	
Kotla Garcia 26 June 2002		/ /200	

<b>QUANTITY CALCULATION COVER SHEET</b>								
<b>Project</b>	Detailed Design on Port Reactivation Project in La Union Province			<b>Project Code</b>	JC1N004/2N001			
<b>Work Section Title</b>	GRAVEL PAVEMENT WITH CONCRETE PLATE (CONTAINER STACKING PLATE)			<b>Pay Item No. (BOQ)</b>	2G-070102			
<b>Quantity Item</b>	GRAVEL PAVEMENT			<b>Unit</b>	m <sup>3</sup>			
<b>Calculation Procedure Applied</b>								
<p>Pavement area was computed using geometric formulas.                      Pavement volume was computed multiplying the area to                      the thickness of the course.                      Volume was computed with zero decimal for total.</p>								
<b>References, Calculation Base and Revisions</b>								
<p>References: Tender Drawings:</p> <p>DW - PV - 01 - 001 layout of Container Stacking Yard                      DW - PV - 01 - 002 location of Container Stacking Plate for dry Container                      DW - PV - 01 - 003 " " " " " Reeler Container</p> <p style="text-align: center;">(Same as "Subgrade Preparation")</p>								
Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
	by	Date		by	Date	by	Date	
0	Karla Garcia	26 June 2002		Mr. Inuma		Mr. Ando		
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<b>Project</b>	Detailed Design on Port Reactivation Project in La Union		Calc. File No.	
<b>Section</b>	GRAVEL PAV. WITH CONCRETE PLATE (CONT. STACKING PLATE)		Calc. Index No.	
<b>Subject</b>	GRAVEL PAVEMENT		Page No.	Rev.
$A = 20,250 \text{ m}^2$ $t = 30 \text{ cm}$ $V = (20,250 \text{ m}^2)(0.30 \text{ m})$ $V = 6,075 \text{ m}^3$			References/ Notes	
		Prepared by	Checked by	
		Karla G.	26 June 2002	1 / 200

**QUANTITY CALCULATION COVER SHEET**

<b>Project</b>	Detailed Design on Port Reactivation Project in La Union Province	<b>Project Code</b>	JC1N004/2N001
<b>Work Section Title</b>	CONCRETE STACKING PLATE (TYPE A)	<b>Pay Item No. (BOQ)</b>	EG-070201
<b>Quantity Item</b>	BASE COURSE	<b>Unit</b>	m <sup>3</sup>

Calculation Procedure Applied

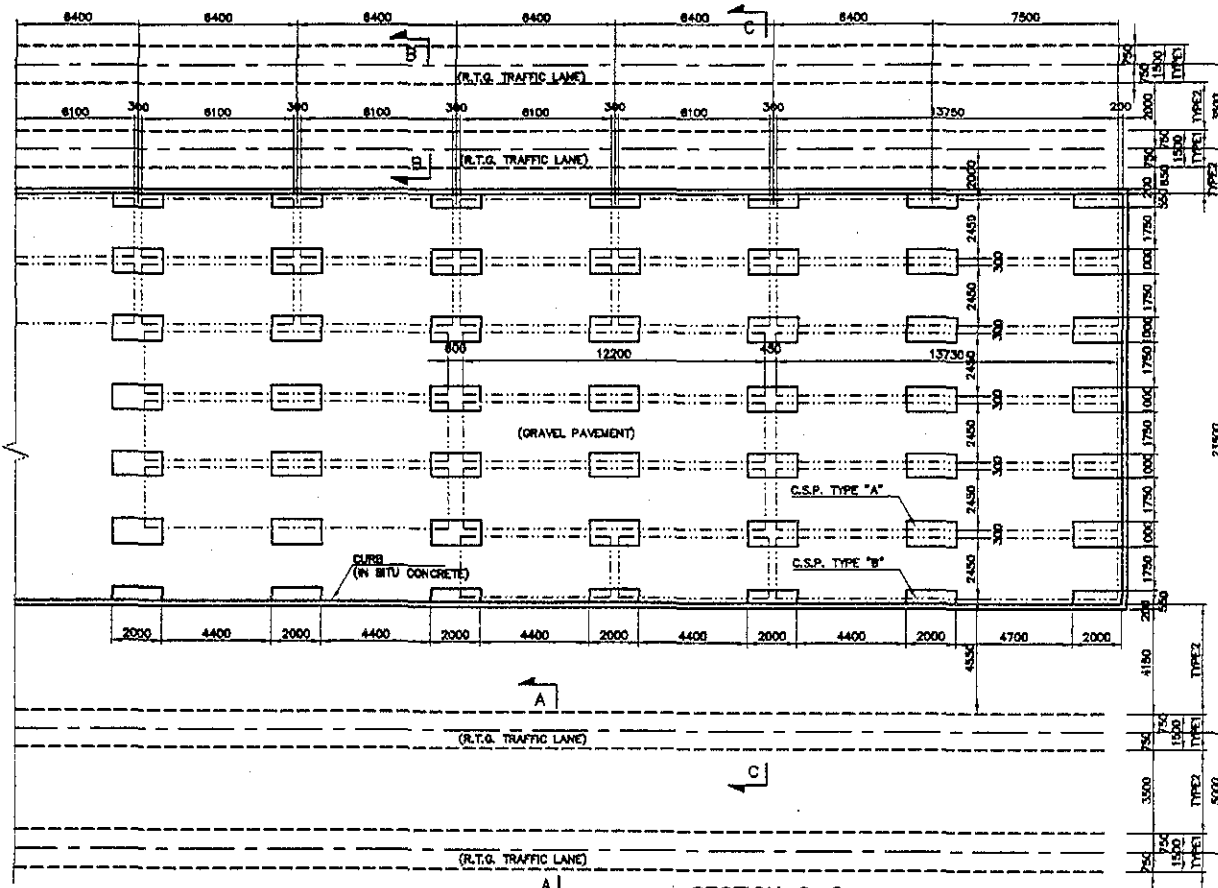
Pavement area was computed using geometric formulas.  
 Pavement volume was computed multiplying the area to  
 the thickness of the course.  
 Volume was computed with two decimal for section  
 area and zero decimal for total.

References, Calculation Base and Revisions

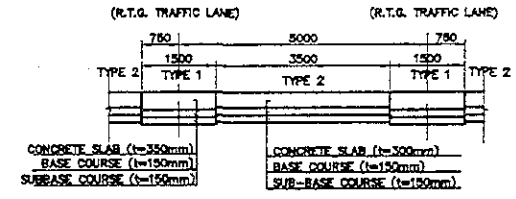
References: Tender Drawings:  
 PW - PV - 01 - 002 location of Container Stacking Plate for Dry Container  
 PW - PV - 01 - 003 location of Containers " " Reefer Container  
 PW - PV - 01 - 004 Details of Container Stacking Plate.

Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
	by	Date		by	Date	by	Date	
0	Koito Garcia	26 June 2002		Mr. Inema		Mr. Ando		
1	<del>Koito Garcia</del>							
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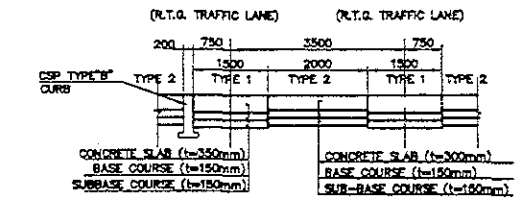
LOCATION OF CONTAINER STACKING PLATE FOR DRY CONTAINER  
SCALE 1:200



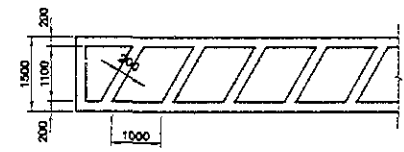
SECTION A-A  
SCALE 1:100



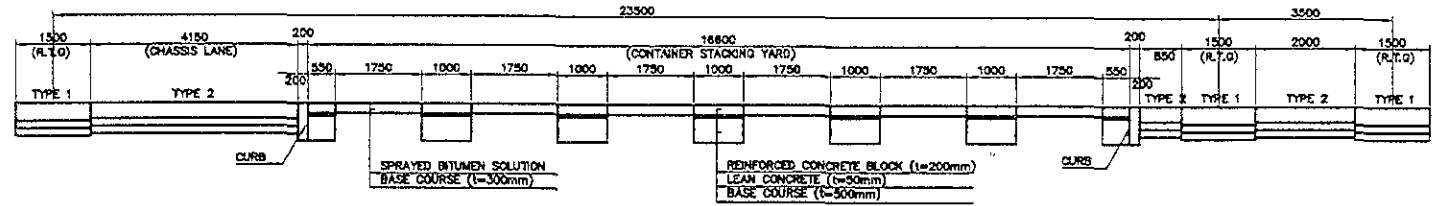
SECTION B-B  
SCALE 1:100



MARKING FOR R.T.G. TRAFFIC LANE  
SCALE 1:100



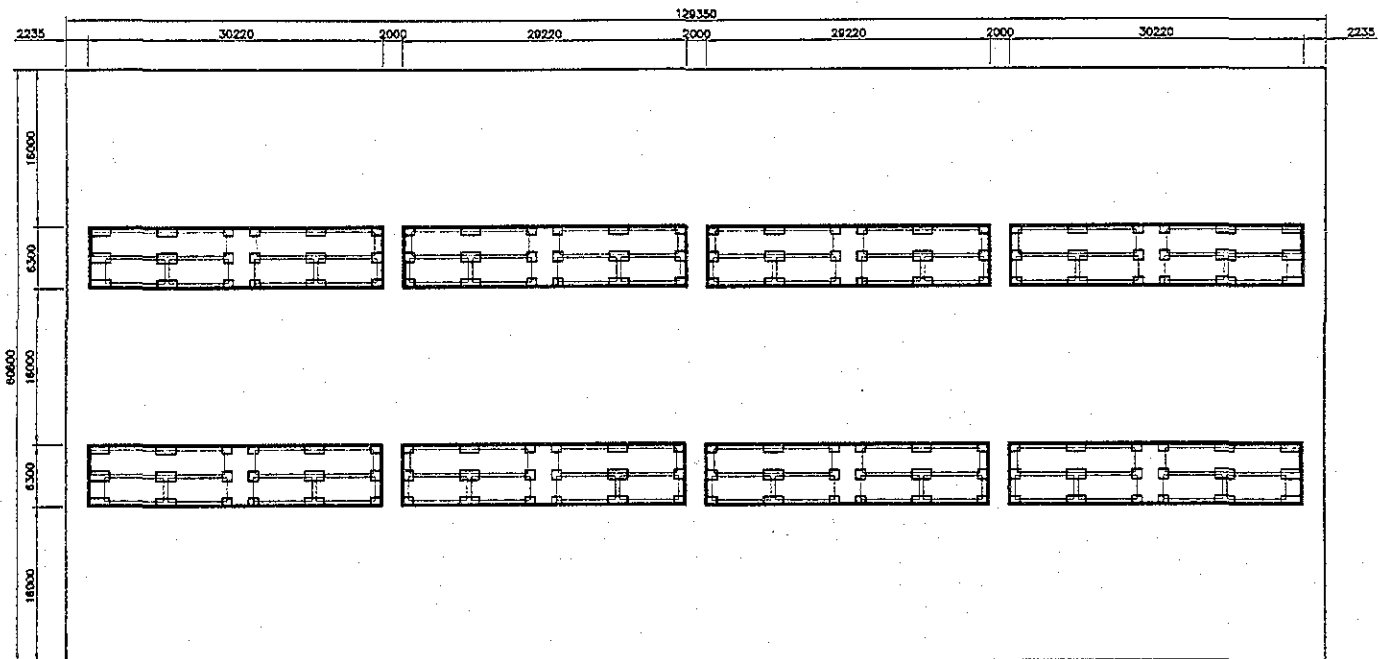
SECTION C-C  
SCALE 1:100



JICA 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 : ROAD AND PAVEMENT SUB-SECTION : PORT SERVICE ROAD AND CONTAINER YARD PAVEMENT TITLE : LOCATION OF CONTAINER STACKING PLATE FOR DRY CONTAINER	DATE : JUNE/2002 SCALE : INDICATED DRAWING NO : DW-PV-01-002
NO.	REV.	DATE	DESCRIPTION	BY	APPROVED	DATE		

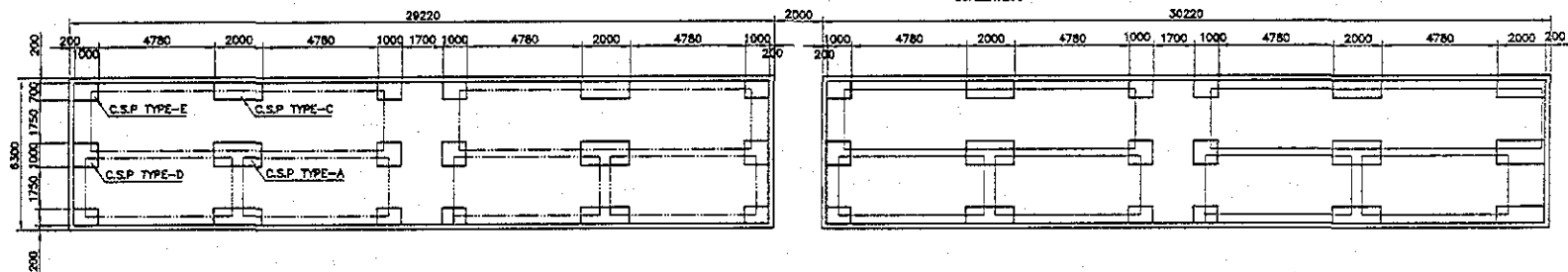
### LAYOUT OF CONTAINER STACKING PLATE FOR REEFER CONTAINER




SCALE:1:500



### DETAILS OF CONTAINER STACKING YARD

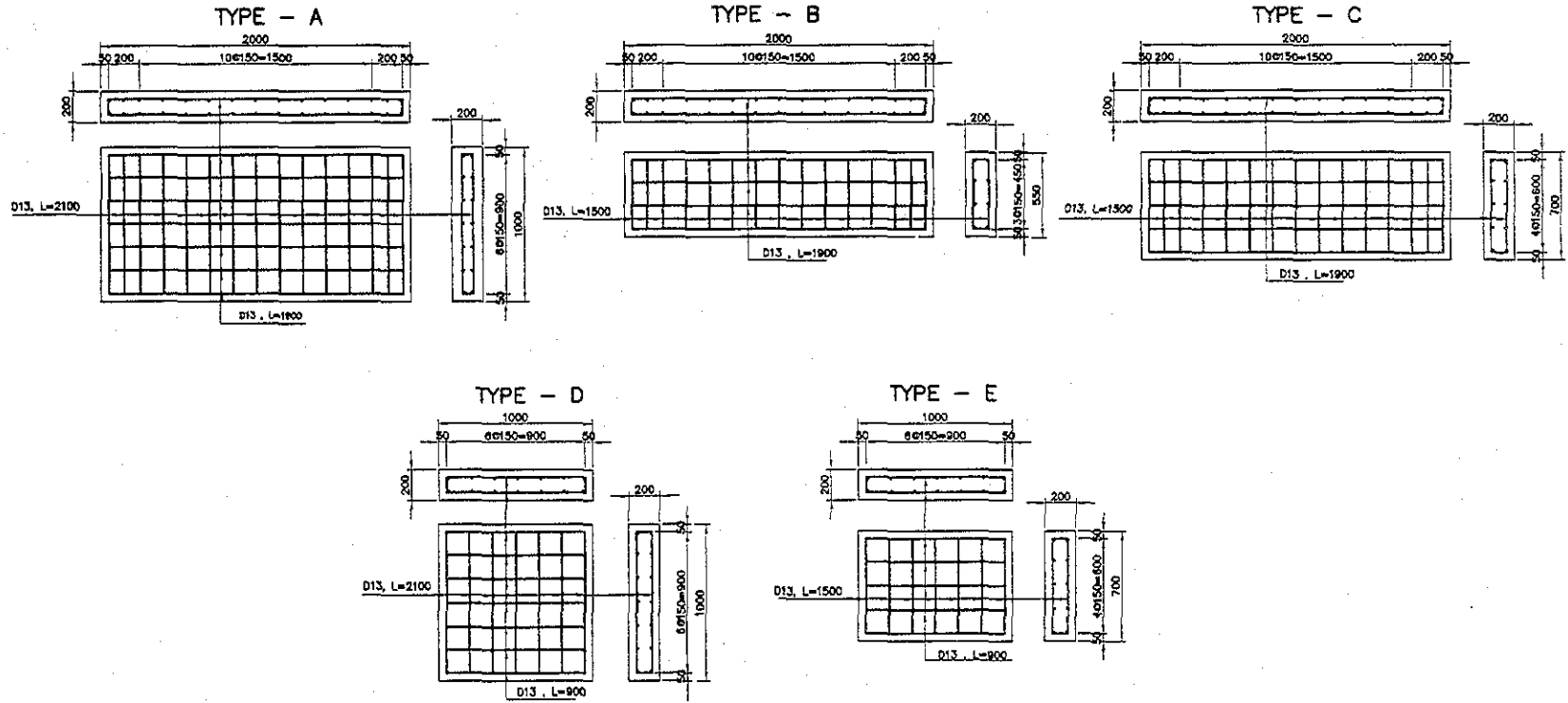
SCALE:1:200





REV. NO.	DATE	COORDINATE	BY	APPROVED	DATE	 	JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)  COMISION EJECUTIVA PORTUARIA AUTONOMA (CEPA)	 NIPPON KOEI CO., LTD.	DESIGNED BY : CHECKED BY : APPROVED BY :	SECTION : ROAD AND PAVEMENT SUB-SECTION : PORT SERVICE ROAD AND CONTAINER YARD PAVEMENT  TITLE : LOCATION OF CONTAINER STACKING PLATE FOR REEFER CONTAINER	DATE : JULY/2002  SCALE : INDICATED  DRAWING NO. : DW-PV-01-003	




DETAILS OF CONCRETE STACKING PLATE



REV. NO.	DATE	COOPERATE	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 : ROAD AND PAVEMENT  
 SUB-SECTION : PORT SERVICE ROAD AND CONTAINER YARD PAVEMENT  
 TITLE : DETAILS OF CONTAINER STACKING PLATE

DATE : JULY/2002  
 SCALE : 1:30  
 DRAWING NO. : DW-PV-01-004

Project	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
Section	CONCRETE STACKING PLATE (TYPE A)	Calc. Index No.	
Subject	BASE CROSS	Page No.	Rev.
Stacking Yard area:		References/ Notes	
No. Stacking Plate = $(105)(10) = 1050$			
$A = (2m)(1m) = 2m^2 (1050) = 2,100 m^2$			
$t = 50 cm$			
Recker Container Area:			
No. stacking Plate = 20			
$A = (2m)(1m) = 2m^2 (20) = 40 m^2$			
$t = 50 cm$			
No. stacking Plate = $1050 + 20 = 1,070$		$N_o = 1,070$	
$A_T = 2,100 m^2 + 40 m^2 = 2,140 m^2$		$A = 2,140 m^2$	
$V = (2,140 m^2)(0.50 m) = 1,070 m^3$		$V = 1,070 m^3$	
Prepared by		Checked by	
Kaila G.		1 / 2002	

**QUANTITY CALCULATION COVER SHEET**

<b>Project</b>	Detailed Design on Port Reactivation Project in La Union Province	<b>Project Code</b>	JC1N004/2N001
<b>Work Section Title</b>	CONCRETE STACKING PLATE (TYPE A)	<b>Pay Item No. (BOQ)</b>	2G-070202
<b>Quantity Item</b>	LEAN CONCRETE	<b>Unit</b>	m <sup>3</sup>

Calculation Procedure Applied

Pavement area was computed using geometric formulas.  
 Pavement volume was computed multiplying the area to  
 the thickness of the course.  
 Volume was computed with zero decimal for total.

References, Calculation Base and Revisions

References : Tender Drawings :

DW - PV - 01 - 002 location of Container Stacking Plate for Dry Container

(Same as "Base Course")

Rev	Prepared		No. of Pages	Checked		Reviewed		Superseded by Calc No.
	by	Date		by	Date	by	Date	
0	Karlo Garcia	26 June 2002		Mr. Inuma		Mr. Ando		
1	<del>EL</del>							
2								
3								

<b>Project</b>	Detailed Design on Port Reactivation Project in La Union	Calc. File No.	
<b>Section</b>	CONCRETE STAKING PLATE (TYPE A)	Calc. Index No.	
<b>Subject</b>	LC11) CONCRETE	Page No.	Rev.
$A = 2,140 \text{ m}^2$ $t = 5 \text{ cm}$ $V = (2,140 \text{ m}^2) (0.05 \text{ m})$ $= 107 \text{ m}^3$			References/ Notes
			$V = 107 \text{ m}^3$
Prepared by		Checked by	
Kaia G.		26 June 2002	
		1 / 200	