Sidewall(perpendicular to levee normal, seaside) Colligation of bending moment Top(left)side: +moment Bottom(right)side: -moment (): The moment after correction of corner

		MY			ΜX	
	m	II	I	Ι.	п	Ш
7	(76. 724) i 74. 080 i -0 170 f (-0 460) f	0, 255 f -8 947 i	(2. 292) f 2. 292 f -37, 216 i (-37, 216) i	000	000	0,000
6	(77, 569) i 74, 954 i -9, 508 f (-10, 117) f	1 443 f -9 252 i	(6.027) f 6.027 f -37.009 i (-37.009) i	0.764 f -5.906 f	0.255 f -1.350 i	12, 516 i -1, 613 f
5	(81 714) 78 997 i -22 836 f (-23 942) f	2 886 f -9 727 i	(11,800)f 11,800 f -38,991 i (-38,991) i	-6. 358 -6. 354 -	0 #24 f -1,405 i	13 156 j -3,820 f
4	(86 193) i 83 376 i -36 419 f (-37 986) f	4 414 f -10 229 i	(17, 742) f 17, 742 f -41, 028 i (-41, 028) i	2, 971 6, 800	0.679 f -1.573 i	13.910 ; -6. 112 f
3	(91 226)i 88 572 i -49 916 f (-51 894)f	6 112 f -11 040 i	(23,685) f 23,685 f -42,981 i (-42,981) i	4 669 f -8 202 j	1.273 f -2.275 i	14,804 j -8,319 f
2	(81 453); 80 658; -52 803 f (-53 826) f	7 470 f -11 318 i	(23,600) f 23,600 f -36,707 i (-36,707) i	10 102 f	4, 584 f -6, 403	13. 153 j -8. 829 f
1	0 <u>000</u> 0.000	6 122 i -4 245 f	10 250 i -7.046 f	61. <u>555</u> -42. 446 †	36, 730 i -25, 722 f	0.000

f: While afloat i: from inside After Construction o : from outside After Construction

CALC	ULATIC	N	
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CALC INDEX No		P	AGE 33
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PREPARED BY	YiHad	0	26/07/02
CHECKED BY	e vis41m	IN	01/08/200

Sidewall(perpendicular to levee normal, landside) Colligation of bending moment Top(left)side: +moment Bottom(right)side: -moment (): The moment after correction of corner

		MY			ΜX	
	ш	П	1	. I	11	Ш
7	(76. 724) i 74. 080 i -0 170 f (-0 460) f	0, 255 f -8 947 i	(2, 292) f 2, 292 f -37, 216 i (-37, 216) i	0.000	000 000	0 000
6	(77,569); 74,954; -9,508 f (-10,117)f	1 443 f -9 252 i	(6 027) f 6 027 f -37 009 i (-37 009) i	0, 764 f -5, 906 j	0,255 f -1,350 i	12 516 i -1.613 f
5	(81 714) i 78 997 i -22 836 f (-23 942) f	2 886 f -9 727 i	(11 800) f 11 800 f -38 991 i (-38 991) i	1 868 -6. 154	0, 424 f	13, 156 j -3, 820 f
4	(86 193) i 83 376 i -36 419 f (-37 986) f	4 414 f -10 229 i	(17,742) f 17,742 f -41,028 i (-41,028) i	2 971 f -6. 800 j	0.679 f -1.573 i	13. 910 j -6. 112 f
3	(91 226) i 88 572 i -49 916 f (-51 894) f	6, 112 f -11, 040 i	(23 685) f 23 685 f -42 981 i (-42 981) i	4 669 f	1 273 f -2 275 f	14,804 j -8,319 f
2	(81, 453) i 80,658 i -52,803 f (-53,826) f	7 470 f -11 318 i	(23 600) f 23 600 f -36 707 i (-36 707) i	10 102 -14,462	4, 584 f -6, 403	13, #53 i -8, 829 f
1	0, 000 0, 000	6. 122 i -4. 245 f	10 250 i -7.046 f	61. 555. i -42. 446. f	36, 730 i -25, 722 t	000

f: While afloat i: from inside After Construction o: from outside After Construction

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PREPARED BY	YAnd		26/07/02
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Front wall (parallel to centerline seaside) Colligation of bending moment Top (left) side: +moment Bottom(right) side: -moment (): The moment after correction of corner

		MΥ			ΜX	
	ш	n	I	I	П	Ш
7	(76. 724) i 79. 264 i -0. 738 f (-0. 460) f	0 277 f -9 603 i	(2.815) f 2.676 f -39.984 i (-41.254) i	0000	000	0.00
6	(77 569) i 80 082 i -10 703 f (-10 117) f	1 569 f -9 911 i	(6, 844) f 6, 551 f -39, 551 i (-40, 807) i	0 738 -6. 301 f	-1. 417 i	13, 322 ; -1, 753 f
5	(81 714) i 84 325 i -25 005 f (-23 942) f	3 137 f -10 397	(13 357) f 12 826 f -41 673 i (-42 978) i	2 030 f -6, 791	-1, 503 -1, 503	14. D65 j -4. 152 f
4	(86 193); 88 899 j -39 492 f (-37 986) f	4 798 f -11 001 f	(20 038) f 19 285 f -43 854 f (-45 207) i	3.229 f	0 738	14, 807 i -6, 551 f
3	(91 226) i 93 776 i -53 794 f (-51 894) f	6 643 f -11 753 i	(26,509) f 25,559 f -45,523 i (-46,798) i	- 9.20 - 9.20	1. <u>661</u> f -2. 780 i	15,640 i
2	(81 453)i 82 216 i -54 809 f (-53 826)f	7 935 f -11 791 i	(24 758) f 24 267 f -37 056 i (-37 438) i	11 349 1	5. 352 f	13, 703 i -9, 135 f
. 1	0 <u>000</u> 0.000	6 503 i -4 614 f	10, 889 i -7, 658 f	65, 370 i -45, 766 f	39.257 i -27.866 f	0.000

f: While afloat i: from inside After Construction o: from outside After Construction

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CHECKED BY			09/08/2002

Rear wall (parallel to centerline, and side) Colligation of bending moment Top (left) side: +moment

Bottom(right)side: — moment
(): The moment after correction of corner

		МҮ			MX	٠.
	Ш	П	1	Ι .	П	Ш
7	(76.724)i 79.264 i -0.738 f (-0.460)f	0, 277 f -9 603	(2.815) f 2.676 f -39 984 i (-41 254) i	000	0000	000
6	(77, 569) i 80, 082 i -10, 703 f (-10, 117) f	1 569 f -9 911 i	(6, 844) f 6, 551 f -39, 551 i (-40, 807) i	0 738 f -6 301 i	0 185 f	13 822 i -1 753 f
5	(81 714) i 84 325 i -25 005 f (-23 942) f	3 137 f -10 397 i	(13 357) f 12 826 f -41 673 i (-42 978) i	2. 030 f 6. 791	0.461 -1.503	14. 065 j -4. 152 f
4	(86 193) i 88 899 j -39 492 f (-37 986) f	4 798 f -11 001 i	(20 038) f 19 285 f -43 854 i (-45 207) i	3 229 f -7. 344	-1. 769 i	14 807 i -6. 551 f
3	(91, 226) i 93, 776 i -53, 794 f (-51, 894) f	6l 643 f -11l 753 i	(26,509) f 25,559 f -45,523 i (~46,798) i	5 444 f -9.207	1.661 f -2.780 j	15 640 i -8.950 f
2	(81, 453) i 82, 216 i -54, 809 f (-53, 826) f	7 935 f -11 791 i	(24 758) f 24 267 f -37 056 i (-37 438) i	11 349 f	5. 352 ·f	13 703 i -9 135 f
1	0 <u>000</u> 0.000	6 503 i -4 614 f	10, 889 i -7, 658 f	65. 370 i 45. 766 f	39, <u>257</u> i -27, 866 f	0.000

f: While afloat i: from inside After Construction o: from outside After Construction

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	ed Desig		
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PREPARED BY	Y, Ando	26/17/0	2
CHECKED BY	E. NUHIH	UDA 09/08/2	/0

Bottom slab

Bottom slab is calculated as a slab fixed on four sides Note) The mark of bending moment (+): upper tensile (-): downside tensile

CALCULATION Detailed Design on Port Reactivation Project in La Union Province CALC FILE No .: CALC INDEX No.: PAGE 335 INITIAL SPARED BY Y, Ando 2. KISHIHUPA 07/08/2002 A Room

While afloat

$$P1 = 32.75 (kN/m^2)$$

 $P2 = 32.75 (kN/m^2)$
 $LX = 4.700 (m)$
 $LY = 4.900 (m)$

The ratio of a length of sides

$$\lambda = \frac{4.700}{4.900} = 0.96$$

The coefficient table of $\lambda = 1.00$ is used.

Section force by equivalent uniform load
$$P = 32.75 (kN/m^2)$$
 $MX = P \cdot LX^2 \cdot X = 32.75 \times 4.700^2 \times X = 723.45 \times MY = P \cdot LX^2 \cdot Y = 32.75 \times 4.700^2 \times Y = 723.45 \times Y$

4 3 2

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		Х	MX	Υ	MY
Ι	5 4 3 2	-0. 0513 0. 0096 0. 0206 0. 0096 -0. 0513	-37. 113 6. 945 14. 903 6. 945 -37. 113	-0. 0086 0. 0116 0. 0206 0. 0116 -0. 0086	-6. 222 8. 392 14. 903 8. 392 -6. 222
II	5 4 3 2 1	-0. 0324 0. 0059 0. 0116 0. 0059 -0. 0324	-23, 440 4, 268 8, 392 4, 268 -23, 440	-0. 0054 0. 0059 0. 0096 0. 0059 -0. 0054	-3. 907 4. 268 6. 945 4. 268 -3. 907
Ш	5 4 3 2	0.0000 -0.0054 -0.0086 -0.0054 0.0000	0. 000 -3. 907 -6. 222 -3. 907 0. 000	0.0000 -0.0324 -0.0513 -0.0324 0.0000	0. 000 -23. 440 -37. 113 -23. 440 0. 000

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	INITIA	L	DATE
PREPARED BY	Y. And	0	26/07/02
CHECKED BY	e. Nishihu	Q4	01/08/202

A Room

After Construction

$$LX = 4.700 (m)$$

 $LY = 4.900 (m)$

The ratio of a length of sides P2= 137.09

$$1 = \frac{4.700}{4.900} = 0.96$$

The coefficient table of $\lambda = 1.00$ is used.

(i) Section force by equivalent uniform load

1111					
		Х	MX	Y	MY
I	5	-0. 0513	-155. 353	-0. 0086	-26, 044
	4	0. 0096	29. 072	0. 0116	35, 128
	3	0. 0206	62. 383	0. 0206	62, 383
	2	0. 0096	29. 072	0. 0116	35, 128
	1	-0. 0513	-155. 353	-0. 0086	-26, 044
П	5	-0. 0324	-98. 118	-0. 0054	-16. 353
	4	0. 0059	17. 867	0. 0059	17. 867
	3	0. 0116	35. 128	0. 0096	29. 072
	2	0. 0059	17. 867	0. 0059	17. 867
	1	-0. 0324	-98. 118	-0. 0054	-16. 353
Ш	5	0. 0000	0. 000	0. 0000	0.000
	4	-0. 0054	-16. 353	-0. 0324	-98.118
	3	-0. 0086	-26. 044	-0. 0513	-155.353
	2	-0. 0054	-16. 353	-0. 0324	-98.118
	1	0. 0000	0. 000	0. 0000	0.000

CALCULATION Detailed Design on Port Reactivation Project in La Union Province CALC FILE No.: CALC INDEX No.. PAGE 33 INITIAL | DATE PREFARED Y Y. Ande 26/07/02 ENUNIHWA 09/08/2002

(ii) Section force by triangular distribution load P = $-27.11 (kN/m^2)$ MX = P· LX²·X = $-27.11 \times 4.700^2 \times X = -598.86 \times X$ MY = P· LX²·Y = $-27.11 \times 4.700^2 \times Y = -598.86 \times Y$

		Χ	MX	Υ	MY
I	54321	-0. 0334 0. 0080 0. 0103 0. 0015 -0. 0179	20, 002 -4, 791 -6, 168 -0, 898 10, 720	-0. 0056 0. 0069 0. 0103 0. 0047 -0. 0030	3. 354 -4. 132 -6. 168 -2. 815 1. 797
П	5 4 3 2 1	-0. 0223 0. 0052 0. 0058 0. 0006 -0. 0101	13, 355 -3, 114 -3, 473 -0, 359 6, 048	-0. 0037 0. 0040 0. 0048 0. 0018 -0. 0017	2. 216 -2. 395 -2. 875 -1. 078 1. 018
Ш	5 4 3 2 1	0.0000 -0.0036 -0.0043 -0.0019 0.0000	0. 000 2. 156 2. 575 1. 138 0. 000	0.0000 -0.0208 -0.0257 -0.0116 0.0000	0, 000 12, 456 15, 391 6, 947 0, 000

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CHECKED BY CHUNIMUMS 09/08/2002

The sum total of (i) and (ii)

		MX	: MY
Ι	5 4 3 2	-135, 351 24, 281 56, 215 28, 174 -144, 633	-22. 690 30. 996 56. 215 32. 313 -24. 247
П	5	-84, 763	-14. 137
	4	14, 753	15. 472
	3	31, 655	26. 197
	2	17, 508	16. 789
	1	-92, 070	-15. 335
ш	5	0. 000	0.000
	4	-14. 197	-85.662
	3	-23. 469	-139.962
	2	-15. 215	-91.171
	1	0. 000	0.000

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	INITIA	Ľ	DATE
PREPARED BY			26/07/02
CHECKED BY	e, Nemal	24	09/08/2002

B Room

While afloat

slab fixed on four sides P1 = 32.75(kN/m²) P2 = 32.75(kN/m²) LX = 4.600(m) LY = 4.900(m)

The ratio of a length of sides 4.600

--=0.944.900

The coefficient table of $\lambda = 1.00$ is used.

5 4 3 2 ппппш

Section force by equivalent uniform load $P = 32.75 (kN/m^2)$ $MX = P \cdot LX^2 \cdot X = 32.75 \times 4.600^2$ $MY = P \cdot LX^2 \cdot Y = 32.75 \times 4.600^2$ $32.75 \times 4.600^2 \times X$ $32.75 \times 4.600^2 \times Y$ 692.99 ×

692.99 ×

			<u> </u>		
		X	MX	Y	MY
I	5	-0. 0513	-35, 550	-0. 0086	-5, 960
	4	0. 0096	6, 653	0. 0116	8, 039
	3	0. 0206	14, 276	0. 0206	14, 276
	2	0. 0096	6, 653	0. 0116	8, 039
	1	-0. 0513	-35, 550	-0. 0086	-5, 960
II	5	-0. 0324	-22. 453	-0. 0054	-3. 742
	4	0. 0059	4. 089	0. 0059	4. 089
	3	0. 0116	8. 039	0. 0096	6. 653
	2	0. 0059	4. 089	0. 0059	4. 089
	1	-0. 0324	-22. 453	-0. 0054	-3. 742
Ш	5	0.0000	0. 000	0. 0000	0, 000
	4	-0.0054	-3. 742	-0. 0324	-22, 453
	3	-0.0086	-5. 960	-0. 0513	-35, 550
	2	-0.0054	-3. 742	-0. 0324	-22, 453
	1	0.0000	0. 000	0. 0000	0, 000

CALCULATION **Detailed Design** on Port Reactivation Project in La Union Province CALC FILE No.: CALC INDEX No INITIAL P. NISUMURA 01/08/2002 B Room

Upward load (above)

slab fixed on four sides
P1 =
$$83.46(kN/m^2)$$

$$\begin{array}{lll} P1 &=& 83.46 \, (kN/m^2) \\ P2 &=& 109.98 \, (kN/m^2) \\ LX &=& 4.600 \, (m) \end{array}$$

$$LX = 4.600 (m)$$

 $LY = 4.900 (m)$

The ratio of a length of sides.

$$\lambda = \frac{4,600}{4,900} = 0.94$$

The coefficient table of $\lambda = 1.00$ is used.

$$P = 109.98(kN/m^2)$$

P2= 109.98

				and the second second	
		X	MX	Y	MY
I	5 4	-0.0513 0.0096	-119. 384 22. 341	-0. 0086 0. 0116	-20. 014 26. 995
	3	0. 0206 0. 0096	47. 940 22. 341	0. 0206 0. 0116	47. 940 26. 995
	1	-0. 0513	-119. 384	-0, 0086	-20. 014
II	5	-0. 0324 0. 0059	-75. 401	-0.0054	-12. 567 13. 730
	3	0.0059	13. 730 26. 995	0, 0059 0, 0096	22. 341
	2 1	0. 0059 -0. 0324	13. 730 -75. 401	0. 0059 -0. 0054	13. 730 -12. 567
Ш	5 4	0.0000 -0.0054	0. 000 -12. 567	0.0000 -0.0324	0. 000 -75. 401
	3	-0.0086	-20. 014	-0. 0513	-119, 384
	2	-0. 0054 0. 0000	-12, 567 0, 000	-0. 0324 0. 0000	-75. 401 0. 000

CALCULATION **Detailed Design** on Port Reactivation Project in La Union Province CALC FILE No.: CALC INDEX No.: PAGE 34) INITIAL DATE PREPARED BY Y. Ando 26/07/02 E. NKHIMURA 09/08/2002

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(ii) Section force by triangular distribution load $P=-26.52(kN/m^2)$ MX = $P\cdot LX^2\cdot X=-26.52\times 4.600^2\times X=MY=P\cdot LX^2\cdot Y=-26.52\times 4.600^2\times Y=$

-561. 16 × X -561. 16 × Y

		Х	MX	Υ	MY
I	5 4 3 2 1	-0. 0334 0. 0080 0. 0103 0. 0015 -0. 0179	18. 743 -4. 489 -5. 780 -0. 842 10. 045	-0. 0056 0. 0069 0. 0103 0. 0047 -0. 0030	3. 143 -3. 872 -5. 780 -2. 637 1. 683
П	54321	-0, 0223 0, 0052 0, 0058 0, 0006 -0, 0101	12. 514 -2. 918 -3. 255 -0. 337 5. 668	-0. 0037 0. 0040 0. 0048 0. 0018 -0. 0017	2. 076 -2. 245 -2. 694 -1. 010 0. 954
ш	5 4 3 2 1	0. 0000 -0. 0036 -0. 0043 -0. 0019 0. 0000	0. 000 2. 020 2. 413 1. 066 0. 000	0. 0000 -0. 0208 -0. 0257 -0. 0116 0. 0000	0. 000 11. 672 14. 422 6. 509 0. 000

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PREPARED BY	Y, And	0	26/07/62			
CHECKED BY	e. Nedimun	10	4/08/2002			

The sum total of (i) and (ii)

		MX	MY
I	5	-100. 641	-16. 871
	4	17. 852	23. 123
	3	42. 160	42. 160
	2	21. 499	24. 358
	1	-109. 339	-18. 331
I	5	-62. 887	-10. 491
	4	10. 812	11. 485
	3	23, 740	19. 647
	2	13. 393	12. 720
	1	-69. 733	-11. 613
Ш	5 4 3 2	0. 000 -10. 547 -17. 601 -11. 501 0. 000	0.000 -63.729 -104.962 -68.892 0.000

CALCULATION

Detailed Design
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PREPARED BY Y.Ando 26/67/62

2. NISHINUOA 09/06/2002

The ratio of a length of sides

$$\lambda = \frac{4.600}{4.900} = 0.94$$

The coefficient table of $\lambda = 1.00$ is used.

5 4 3 2 1 шпппш

$$P = 32.75 (kN/m^2)$$

	•				
		X	MX	Y	MY
I	5	-0, 0513	-35, 550	-0, 0086	-5. 960
	- 4	0.0096	6, 653	0. 0116	8. 039
	. 3	0. 0206	14. 276	0. 0206	14, 276
	2	0.0096	6. 653	0.0116	8, 039
	1	-0. 0513	∽35. 550	-0. 0086	-5.960
11	5	-0. 0324	-22, 453	-0.0054	-3, 742
	4	0.0059	4, 089	0.0059	4, 089
1.5	3	0.0116	8. 039	0.0096	6.653
	. 2	0.0059	4. 089	0.0059	4, 089
	1	-0. 0324	-22. 453	-0.0054	-3.742
Ш	5	0.0000	0. 000	0,0000	0,000
	4	-0.0054	-3, 742	-0.0324	-22, 453
	3	-0.0086	-5. 960	-0.0513	-35, 550
	2	-0.0054	-3. 742	-0. 0324	-22, 453
	1	0. 0000	0.000	0.0000	0.000
					1

CALCULATION Detailed Design on Port Reactivation Project	
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CALC FILE No.:	1
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PREPARED BY Y. Ando 26/01	1/02
CHECKED BY E. NISHIMON ON JO	

C Room

After Construction

Upward load (above)
slab fixed on four sides
P1 = 56.93(kN/m²)
P2 = 83.46(kN/m²)

P2 = LX = 4.600(m)

LY = 4.900 (m)The ratio of a length of sides P2 4.600

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---- = 0.94

The coefficient table of $\lambda = 1.00$ is used.

(i) Section force by equivalent uniform load

 $1766.01 \times X$ 1766.01 ×

		X	MX	Υ	MY
I	5 4 3 2	-0. 0513 0. 0096 0. 0206 0. 0096 -0. 0513	-90. 597 16. 954 36. 380 16. 954 -90. 597	-0, 0086 0, 0116 0, 0206 0, 0116 -0, 0086	-15. 188 20. 486 36. 380 20. 486 -15. 188
I	5 4 3 2 1	-0. 0324 0. 0059 0. 0116 0. 0059 -0 0324	-57. 219 10. 419 20. 486 10. 419 -57. 219	-0.0054 0.0059 0.0096 0.0059 -0.0054	-9. 536 10. 419 16. 954 10. 419 -9. 536
Ш	5 4 3 2	0.0000 -0.0054 -0.0086 -0.0054 0.0000	0.000 -9.536 -15.188 -9.536 0.000	0. 0000 -0. 0324 -0. 0513 -0. 0324 0. 0000	0. 000 -57, 219 -90. 597 -57, 219 0. 000

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PREPARED BY			26/07/02			
CHECKED BY	R. NISHIA	I PLA	19/08/2007			

(ii) Section force by triangular distribution load $P=-26.53(kN/m^2)$ MX = $P\cdot LX^2\cdot X=-26.53\times 4.600^2\times X=MY=P\cdot LX^2\cdot Y=-26.53\times 4.600^2\times Y=$ $-561.38 \times X$ -561.38 × Y

			•••		
		X	MX	Υ	MY
I	5 4 3 2 1	-0. 0334 0. 0080 0. 0103 0. 0015 -0. 0179	18. 750 -4. 491 -5. 782 -0. 842 10. 049	-0.0056 0.0069 0.0103 0.0047 -0.0030	3, 144 -3, 873 -5, 782 -2, 638 1, 684
п	5 4 3 2	-0. 0223 0. 0052 0. 0058 0. 0006 -0. 0101	12. 519 -2. 919 -3. 256 -0. 337 5. 670	-0. 0037 0. 0040 0. 0048 0. 0018 -0. 0017	2. 077 -2. 246 -2. 695 -1. 010 0. 954
111	5 4 3 2 1	0. 0000 -0. 0036 -0. 0043 -0. 0019 0. 0000	0. 000 2. 021 2. 414 1. 067 0. 000	0.0000 -0.0208 -0.0257 -0.0116 0.0000	0, 000 11, 677 14, 427 6, 512 0, 000

CALC	JLATIO	N	
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in La Un	on Prev	nc	•
CALC FILE No .:			
CALC INDEX NO		PA	GE 39φ
	AITINI	L	DATE
PREPARED BY	Y. And	v	26/07/02
CHECKED BY	e. Nisilin	U/21	09/08/2002

The sum total of (i) and (ii)

		MX	MY
I	5 4 3 2 1	-71. 847 12. 463 30. 598 16. 112 -80. 548	-12. 044 16. 613 30. 598 17. 848 -13. 504
П	5 4 3 2 1	-44. 700 7. 500 17. 230 10. 082 -51. 549	-7. 459 8. 173 14. 259 9. 409 -8. 582
Ш	5 4 3 2	0. 000 -7. 515 -12. 774 -8. 469 0. 000	0. 000 -45. 542 -76. 170 -50. 707 0. 000

CALC	ULATIC	N			
Detail	led Desig	gn			
on Pert Rea	ctivation	P	roject		
in La Un	ion Prov	ind	:0		
CALC FILE No.:					
CALC INDEX NO		P	GE 347		
	INITIA	L	DATE		
PREPARED BY Y. Ando 26/07/02					
CHECKED BY			09/08/2002		

D Room





The ratio of a length of sides

$$\lambda = \frac{4.700}{4.900} = 0.96$$

The coefficient table of $\lambda = 1.00$ is used.

Section force by equivalent uniform load $P = 32.75 (kN/m^2)$ $MX = P \cdot LX^2 \cdot X = 32.75 \times 4.700^2$ $MY = P \cdot LX^2 \cdot Y = 32.75 \times 4.700^2$

$$MX = P \cdot LX^2 \cdot X =$$

		Х	MX	Y	MY
I	5	-0. 0513	-37. 113	-0, 0086	-6. 222
	4	0. 0096	6. 945	0, 0116	8. 392
	3	0. 0206	14. 903	0, 0206	14. 903
	2	0. 0096	6. 945	0, 0116	8. 392
	1	-0. 0513	-37. 113	-0, 0086	-6. 222
п	5	-0. 0324	-23, 440	-0. 0054	-3. 907
	4	0. 0059	4, 268	0. 0059	4. 268
	3	0. 0116	8, 392	0. 0096	6. 945
	2	0. 0059	4, 268	0. 0059	4. 268
	1	-0. 0324	-23, 440	-0. 0054	-3. 907
Ш	5	0. 0000	0. 000	0. 0000	0. 000
	4	-0. 0054	-3. 907	-0. 0324	-23. 440
	3	-0. 0086	-6. 222	-0. 0513	-37. 113
	2	-0. 0054	-3. 907	-0. 0324	-23. 440
	1	0. 0000	0. 000	0. 0000	0. 000

<u> </u>		
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ed Desig	jn .	
ctivation	P	oject
ion Prov	inc	•
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:	PA	GE 348
INITIA	L	DATE
E. NISHIH	I/ZA	09/08/2002
	ed Desig ctivation ion Prov	ULATION ed Design ctivation Pr ion Provinc Pr initial P. NISHIHURA

D Room

The ratio of a length of sides
$$\frac{7}{P^2} = \frac{56.93}{56.93}$$

$$\lambda = \frac{4.700}{4.900} = 0.96$$

The coefficient table of $\lambda = 1.00$ is used.

(i) Section force by equivalent uniform load

				i	
	:	Х	MX	Y	MY
Ι	5 4 3 2	-0. 0513 0. 0096 0. 0206 0. 0096 -0. 0513	-64. 514 12. 073 25. 906 12. 073 -64. 514	-0. 0086 0. 0116 0. 0206 0. 0116 -0. 0086	-10, 815 14, 588 25, 906 14, 588 -10, 815
П	5 4 3 2	-0. 0324 0. 0059 0. 0116 0. 0059 -0. 0324	-40. 746 7. 420 14. 588 7. 420 -40. 746	-0. 0054 0. 0059 0. 0096 0. 0059 -0. 0054	-6. 791 7. 420 12. 073 7. 420 -6. 791
Ш	5 4 3 2 1	0. 0000 -0. 0054 -0. 0086 -0. 0054 0. 0000	0. 000 -6. 791 -10. 815 -6. 791 0. 000	0. 0000 -0. 0324 -0. 0513 -0. 0324 0. 0000	0. 000 -40. 746 -64. 514 -40. 746 0. 000

CALC	ULATIO	NC	4			
Detailed Design on Port Reactivation Project in La Union Province						
CALC FILE No.:						
CALC INDEX NO		P	AGE 349			
	INITIAL DATE					
PREPARED BY Y. Ando 26/07/02						
CHECKED BY						

(ii) Section force by triangular distribution load $P=-27.11(kN/m^2)$ MX = $P\cdot LX^2\cdot X=-27.11\times 4.700^2\times X=MY=P\cdot LX^2\cdot Y=-27.11\times 4.700^2\times Y=$ $-598.86 \times X$ -598.86 × Y

				*	
		Х	MX	Y	MY
1	5 4 3 2	-0. 0334 0. 0080 0. 0103 0. 0015	20. 002 -4. 791 -6. 168	-0. 0056 0. 0069 0. 0103	3, 354 -4, 132 -6, 168
	1	-0.0179	-0. 898 10. 720	0. 0047 -0. 0030	-2. 815 1. 797
П	5 4 3 2 1	-0. 0223 0. 0052 0. 0058 0. 0006 -0. 0101	13. 355 -3. 114 -3. 473 -0. 359 6. 048	-0. 0037 0. 0040 0. 0048 0. 0018 -0. 0017	2. 216 -2. 395 -2. 875 -1. 078 1. 018
Ш	5 4 3 2 1	0. 0000 -0. 0036 -0. 0043 -0. 0019 0. 0000	0. 000 2. 156 2. 575 1. 138 0. 000	0. 0000 -0. 0208 -0. 0257 -0. 0116 0. 0000	0, 000 12, 456 15, 391 6, 947 0, 000

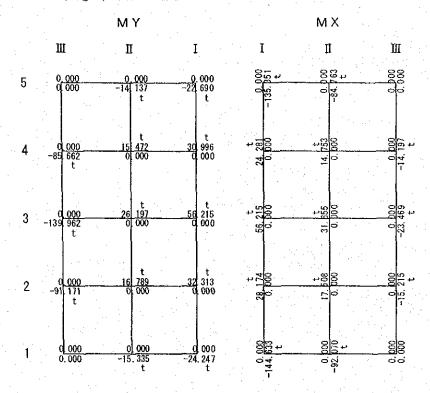
tra <u>la la l</u>	<u> 4. 1914</u> , 1914					
CALC	ULATION					
Detailed Design on Port Reactivation Preject in La Union Prevince						
CALC FILE No.						
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	INITIAL	DATE				
PREPARED SY	Y. Ando					
CHECKED BY		01/08/2002				

The sum total of (i) and (ii)

		MX	MY
I	5	-44. 512	-7. 461
	4	7. 282	10. 456
	3	19. 738	19. 738
	2	11. 175	11. 773
	1	-53. 794	-9. 018
П	5 4 3 2	-27. 391 4. 306 11. 115 7. 061 -34. 698	-4. 575 5. 025 9. 198 6. 342 -5. 773
Ш	5	0. 000	0. 000
	4	-4. 635	-28. 290
	3	-8. 240	-49. 123
	2	-5. 653	-33. 799
	1	0. 000	0. 000

CALULATION					
Detailed Design on Port Reactivation Project in La Union Province					
CALC FILE No.:					
CALC INDEX No.		P/	GE 351		
	INITIA	L	DATE		
PREPARED BY	Y. Ana	o_	21/07/02		
CHECKED BY	P. NisHim	ĮQΔ	09/08/200		

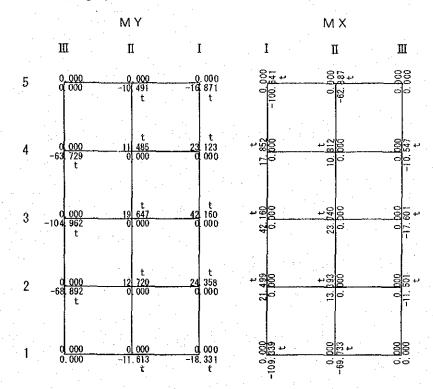
Bottom slab A Room Colligation of bending moment Top(left)side: +moment Bottom(right)side: -moment



f: While afloat t: Load from a top b: Load from the bottom

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PREPARED BY	Y. An.	16	26/07/02
CHECKED BY	e. Nishinu	IDA	09/08/2002

Bottom slab B Room Colligation of bending moment Top(left)side: +moment Bottom(right)side: -moment



f: While afloat t: Load from a top b: Load from the bottom

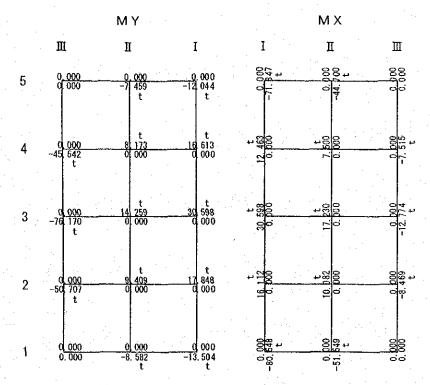
CALCULATION

Detailed Design
on Port Reactivation Project
In La Union Province

CALC FILE No.:

CALC INDEX PO PAGE 353

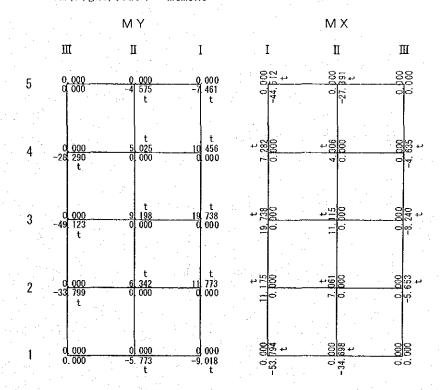
Bottom slab C Room Colligation of bending moment Top(left)side: +moment Bottom(right)side: -moment



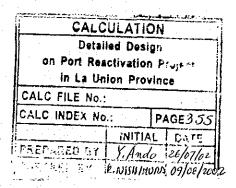
f: While afloat t:Load from a top b:Load from the bottom

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en Port Reactivation Project in La Union Prevince						
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CALC INDEX NO		P/	GE 354			
	INITIA	L	DATE			
PREPARED BY	YAno	6	26/07/02			
HEP BY	e. Wishin					

Bottom slab D Room Colligation of bending moment Top(left)side: +moment Bottom(right)side: -moment



f: While afloat t: Load from a top b: Load from the bottom



Footing

Footing is examined as cantilever beam supported with the wall of before or back.

Bending moment and Shearing force are calculated by the lower formula. Bending moment $M = 1/6 \cdot L^2 \cdot (2 \cdot P_1 + P_2)$ Shearing force $V = 1/2 \cdot L \cdot (P_1 + P_2)$

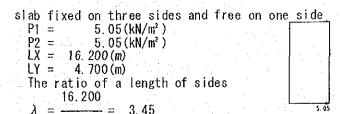
Let the examination position of shearing force be the position which separated h/2 from the footing end.

Moment, Shearing force Sea side Above $M = 1/6 \times$ 0.000 (kN·m/m) 0.00) $V = 1/2 \times$ 0.000 (kN/m)Below $M = 1/6 \times V = 1/2 \times V$ $1.00^2 \times (2 \times 313.81 + 305.26 \\ 0.65 \times (313.81 + 308.25)$ 155.480 (kN·m/m) 202. 170 (kN/m) Land side Above $1.00^{2} \times (2 \times 38.98 +$ $M = 1/6 \times$ 33, 99 18.658 (kN m/m) $\ddot{V} = 1/2 \times$ $0.65 \times (38.98 + 35.74)$ 24. 284 (kN/m) Below $M = 1/6 \times$ $1.00^{\circ} \times (2 \times$ 0.00 + 0.00) 0.000 (kN·m/m) $V = 1/2 \times$ $0.65 \times (0.00 + 0.00)$ $0.000 \, (kN/m)$

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Partition Wall

(1) Equivalent uniform load by the difference of the water level in during installation (a) Partition wall (perpendicular to levee normal)



4.700 The coefficient table of $\lambda = 3.50$ is used.

Section force by equivalent uniform load

۲.	=	1	5.05(KN/m	۳) ۳			April 1985						
ΜX	=	Р.	$LY^2 \cdot X =$	5.	05	×	4. 700 ²	X	X	=	111. 56	×	Χ
MY	=	Ρ.	LY ² • Y =	5.	05	×	4. 700 ²	×	Y	=	111. 56	×	Υ

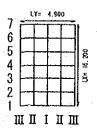
		X	MX	Υ	MY
I	7654321	0. 0000 0. 0067 0. 0068 0. 0069 0. 0079 0. 0132 -0. 0564	0. 000 0. 747 0. 759 0. 770 0. 881 1. 473 -6. 292	0. 0432 0. 0415 0. 0416 0. 0417 0. 0417 0. 0343 -0. 0094	4. 819 4. 630 4. 641 4. 652 4. 652 3. 826 -1. 049
П	7 6 5 4 3 2	0. 0000 0. 0015 0. 0015 0. 0016 0. 0022 0. 0058 -0. 0335	0. 000 0. 167 0. 167 0. 178 0. 245 0. 647 -3. 737	0. 0105 0. 0104 0. 0104 0. 0104 0. 0107 0. 0105 -0. 0056	1. 171 1. 160 1. 160 1. 160 1. 194 1. 171 -0. 625
Ш	7 6 5 4 3 2	0. 0000 -0. 0142 -0. 0141 -0. 0141 -0. 0143 -0. 0125 0. 0000	0. 000 -1. 584 -1. 573 -1. 573 -1. 595 -1. 394 0. 000	-0. 0877 -0. 0851 -0. 0847 -0. 0846 -0. 0855 -0. 0750 0. 0000	-9. 783 -9. 493 -9. 449 -9. 438 -9. 538 -8. 367 0. 000

CALCULATION						
Detailed Design on Port Reactivation Project in La Union Province						
CALC FILE No.						
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(b) Partition wall (parallel to centerline)

slab fixed on three sides and free on one side
P1 = 5.05(kN/m²)
P2 = 5.05(kN/m²)
LX = 16.200(m)
LY = 4.900(m)
The ratio of a length of sides
16.200

$$\lambda$$
 = ---- = 3.31



4.900 The coefficient table of $\lambda = 3.25$ is used.

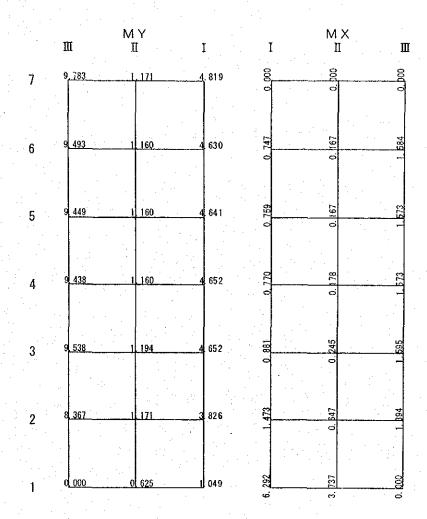
Section force by equivalent uniform load

۲	=	5. U5 (KN/	m)		100					
		P - LY2 - X =								
M	Y = F	$P \cdot LY^2 \cdot Y =$	5. 05	×	4. 900²	×	Y	=	121. 25 ×	Υ

		Х	MX	Υ	MY
I	7 6 5 4 3 2 1	0. 0000 0. 0067 0. 0068 0. 0070 0. 0083 0. 0136 -0. 0565	0. 000 0. 812 0. 825 0. 849 1. 006 1. 649 -6. 851	0. 0432 0. 0414 0. 0416 0. 0418 0. 0415 0. 0326 -0. 0094	5. 238 5. 020 5. 044 5. 068 5. 032 3. 953 -1. 140
п	7 6 5 4 3 2 1	0. 0000 0. 0015 0. 0015 0. 0017 0. 0025 0. 0062 -0. 0338	0. 000 0. 182 0. 182 0. 206 0. 303 0. 752 -4. 098	0. 0105 0. 0104 0. 0104 0. 0105 0. 0107 0. 0103 -0. 0056	1. 273 1. 261 1. 261 1. 273 1. 297 1. 249 -0. 679
Ш	7 6 5 4 3 2	0. 0000 -0. 0141 -0. 0141 -0. 0141 -0. 0142 -0. 0120 0. 0000	0. 000 -1, 710 -1, 710 -1, 710 -1, 722 -1, 455 0. 000	-0. 0872 -0. 0847 -0. 0845 -0. 0846 -0. 0851 -0. 0720 0. 0000	-10. 573 -10. 270 -10. 246 -10. 258 -10. 318 -8. 730 0. 000

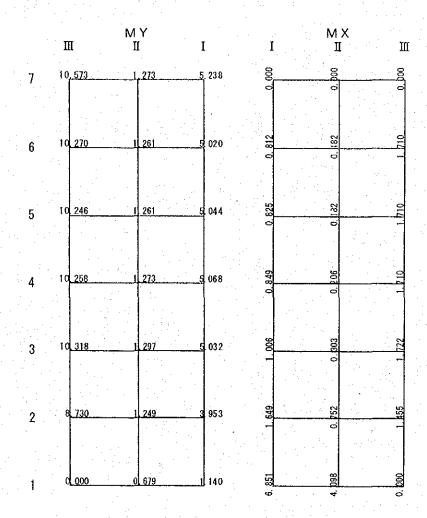
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Detail on Port Rea in La Un	led Desig ctivation ion Prov	F	oject
CALC FILE No.:			
CALC INDEX No	.:	PA	GE 358
			DATE
PREPARED BY	Y. And	0	26/07/02
SHECKED DY	P. Nishimod	24	09/08/2001

Partition wall (perpendicular to levee normal) Colligation of bending moment



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PREPARED BY	Y. An	do	26/07/	02		
CHECKED BY	P. NISHI	HUZA	01/08/2	201		

Partition wall (parallel to centerline) Colligation of bending moment



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in La Un	ion Prov	inc	•					
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CALC INDEX NO	.: 77	P/	GE 360					
	HITIA		DATE					
PREPARED BY	YAn	lo	26/07/02					
SHECKED BY			03/08/2002					
a and the section with the second of the second								

```
4. Design of Members
 Effective height of each part material
      (1) Side wall
            It arranges horizontally outside.
             h = 40.0 \text{ (cm)}
             An inner side cover = 6.0 \text{ (cm)}
             An outside cover = 8.0 (cm)
             Effective height
              Outside steel reinforcement
                                        d = 31.0(37.6) (cm)
d = 29.0(35.6) (cm)
               Horizontal
               Perpendicular
              Inner side steel reinforcement
                                        d = 33.0 (cm)

d = 31.0 (cm)
               Horizontal
               Perpendicular
           ※ ( ) : Effective quantity in consideration of haunch
      (2) Bottom slab
           The steel reinforcement of the perpendicular to levee normal is arranged outside.
             h = 60.0 \text{ (cm)}
             An upper cover = 6.0 (cm)
             A lower cover = 8.0 \text{ (cm)}
             Effective height
             Lower steel reinforcement
           Perpendicular to levee normal d = 51.0 (57.6) (cm)
           Parallel to center line
                                                d = 49.0 (55.6) (cm)
              Upper steel reinforcement
          Perpendicular to levee normal d = 53.0 \text{ (cm)}
Parallel to center line d = 51.0 \text{ (cm)}
          Parallel to center line d = 51.0(cm) 

** ( ): Effective quantity in consideration of haunch
      (3) Partition wall
          One half of partition wall thickness is considered to be effective thickness d = 10.0(16.6) (cm)
          oldsymbol{lpha} ( ): Effective quantity in consideration of haunch
```

CALCULATION						
Detailed Design on Port Reactivation Project						
in La Un	ion Prov	Inc	•			
CALC FILE No.:						
CALC INDEX No	.:	PA	GE 36/			
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PREPARED BY Yolando 26/07/02						
CHECKED BY	P. NSHIHI	101	09/08/1002			

Ultimate limit state (Under ordinary conditions)
Sidewall (perpendicular to levee normal seaside) — Horizontal inner side steel reinforcement B = 100 cm

		 •					and the second		
NO		Md (kN·m)	cl (cm)	Asn (cm²)	Diameter (mm)	Pitch (cm)	As (cm²)	Mud (kN·m)	γ i·Md/Mud
I	7 6 5 4 3 2 1	5, 043 13, 261 25, 961 39, 035 52, 109 51, 922 11, 274	33, 0 33, 0 33, 0 33, 0 33, 0 33, 0 33, 0	0.56 1.48 2.91 4.40 5.91 5.88 1.26	D16 D16 D16 D16 D16 D16 D16	20.0 20.0 20.0 20.0 20.0 20.0 20.0	9.93 9.93 9.93 9.93 9.93 9.93	95, 061 95, 061 95, 061 95, 061 95, 061 95, 061	0, 06 0, 15 0, 30 0, 45 0, 60 0, 60 0, 13
Π	7 6 5 4 3 2 1	0. 560 3. 175 6. 350 9. 712 13. 448 16. 436 6. 733	33. 0 33. 0 33. 0 33. 0 33. 0 33. 0 33. 0	0.06 0.35 0.71 1.08 1.50 1.84 0.75	D16 D16 D16 D16 D16 D16 D16	20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0	9. 93 9. 93 9. 93 9. 93 9. 93 9. 93 9. 93	95. 061 95. 061 95. 061 95. 061 95. 061 95. 061	0, 01 0, 04 0, 07 0, 11 0, 16 0, 19 0, 08
Ш	7 6 5 4 3 2	81. 485 82. 447 86. 893 91. 709 97. 424 88. 718 0. 000	33. 0 33. 0 33. 0 33. 0 33. 0 33. 0 33. 0	9.34 9.46 9.99 10.56 11.25 10.20 0.00	D16, D19 D16, D19 D16, D19 D16, D19 D16, D19 D16, D19 D16, D19	10.0 10.0 10.0 10.0 10.0 10.0	24. 26 24. 26 24. 26 24. 26 24. 26 24. 26 24. 26	220. 809 220. 809 220. 809 220. 809 220. 809 220. 809 220. 809	0. 41
I	7 6 5 4 3 2 1	5. 043 13. 261 25. 961 39. 035 52. 109 51. 922 11. 274	33. 0 33. 0 33. 0 33. 0 33. 0 33. 0 33. 0	0.56 1.48 2.91 4.40 5.91 5.88 1.26	D16 D16 D16 D16 D16 D16 D16	20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0	9.93 9.93 9.93 9.93 9.93 9.93 9.93	95. 061 95. 061 95. 061 95. 061 95. 061 95. 061	0. 06 0. 15 0. 30 0. 45 0. 60 0. 60 0. 13
Ш	7 6 5 4 3 2 1	84. 400 85. 329 89. 886 94. 810 100. 345 89. 593 0. 000	33. 0 33. 0 33. 0 33. 0 33. 0 33. 0 33. 0	9.69 9.80 10.34 10.93 11.60 10.31 0.00	D16, D19 D16, D19 D16, D19 D16, D19 D16, D19 D16, D19 D16, D19	10.0 10.0 10.0 10.0 10.0 10.0	24. 26 24. 26 24. 26 24. 26 24. 26 24. 26 24. 26	220. 809 220. 809 220. 809 220. 809 220. 809 220. 809 220. 809	0. 42

CALC	ULATIC	N	
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in La Uni	ien Prov	inc	•
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	INITIA	١L	DATE
PREPARED BY	YAno	0	26/07/0
ungukèp BA	Z NGHILL	101	molocia

Serviceability limit state

Sidewall (perpendicular to levee normal:seaside) —Horizontal inner side steel reinforcement B = 100cm

NO		Ms (kN m	d) (cm)	Diameter (mm)	Pitch (cm)	As (cm²)	σse (N/mm²)	Crack width W(cm)	Permission crack width W _{iim} (cm)
I	7 6 5 4 3 2 1	2. 29 6. 02 11. 80 17. 74 23. 68 23. 60 10. 25	7 33.0 0 33.0 2 33.0 5 33.0 0 33.0	D16 D16 D16 D16 D16	20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0	9.93 9.93 9.93 9.93 9.93 9.93 9.93	7.485 19.683 38.536 57.941 77.350 77.072 33.474	0.0036 0.0071 0.0107 0.0143 0.0142	$0. 0040 \times 6. 0 \\ = 0. 0240$
П	7 6 5 4 3 2	0. 25 1. 44 2. 88 4. 41 6. 11 7. 47 6. 12	3 33. 0 6 33. 0 4 33. 0 2 33. 0 0 33. 0	D16 D16 D16 D16 D16	20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0	9. 93 9. 93 9. 93 9. 93 9. 93 9. 93 9. 93	0.833 4.713 9.425 14.415 19.960 24.395 19.993	0.0009 0.0017 0.0027 0.0037 0.0045	0. 0040 × 6. 0 = 0. 0240
П	7 6 5 4 3 2	74. 08 74. 95 78. 99 83. 37 88. 57 80. 65 0. 00	4 33. 0 7 33. 0 6 33. 0 2 33. 0 8 33. 0	D16, D19 D16, D19 D16, D19 D16, D19 D16, D19 D16, D19 D16, D19	10. 0 10. 0 10. 0 10. 0 10. 0	24. 26 24. 26 24. 26 24. 26 24. 26 24. 26 24. 26 24. 26	102.402 103.611 109.199 115.253 122.435 111.495 0.000	0.0155 0.0163 0.0172 0.0183 0.0167	0. 0040 × 6. 0 = 0. 0240
Ī	7 6 5 4 3 2	2. 29 6. 02 11. 80 17. 74 23. 68 23. 60 10. 25	7 33 0 0 33 0 2 33 0 5 33 0 0 33 0	D16 D16 D16 D16 D16	20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0	9, 93 9, 93 9, 93 9, 93 9, 93 9, 93	7. 485 19. 683 38. 536 57. 941 77. 350 77. 072 33. 474	0.0014 0.0036 0.0071 0.0107 0.0143 0.0142 0.0062	0. 0040 × 6. 0 = 0. 0240
Ī	7 6 5 4 3 2	76. 72 77. 56 81. 71 86. 19 91. 22 81. 45 0. 00	9 33.0 4 33.0 3 33.0 6 33.0 3 33.0	D16, D19 D16, D19 D16, D19 D16, D19 D16, D19 D16, D19 D16, D19	10. 0 10. 0 10. 0 10. 0 10. 0	24. 26 24. 26 24. 26 24. 26 24. 26 24. 26 24. 26	106.057 107.225 112.955 119.147 126.104 112.594 0.000	0.0158 0.0160 0.0169 0.0178 0.0188 0.0168 0.0000	0. 0040 × 6. 0 = 0. 0240

Notes) I $\sim \mathbb{H}$: Before correction Slab of a middle part Notes) I' $\sim \mathbb{H}$ ': After correction Slab of side wall corner

CALCULATION								
	Detailed Design							
on Port Reactivation Project								
	in La Union Province							
CALC FILE No.:								
CALC INDEX No		P/	GE363					
INITIAL DATE								
PREPARED BY Y-Ando 26/01/02								
CHECKED BY 2. NUHIYURA 05/06/2003								

Ultimate limit state (Under ordinary conditions)
Sidewall (perpendicular to levee normal seaside) —Horizontal outside steel reinforcement B = 100 cm

-					the first of the same	D - 1000iii
NO	Md (kN⋅m)	d Asn (cm) (cm²)	Diameter (mm)	Pitch As (cm) (cm²)	Mud (kN·m)	γi·Md/Mud
I 7 6 5 4 3 2 1	40. 937 40. 708 42. 888 45. 129 47. 277 40. 376 15. 502	31. 0 4. 93 31. 0 4. 90 31. 0 5. 17 31. 0 5. 44 31. 0 5. 71 31. 0 4. 86 37. 6 1. 52	D22 D22 D22 D22 D22 D22 D22 D22	20. 0 19. 36 20. 0 19. 36	167. 704 167. 704 167. 704 167. 704 167. 704 167. 704 206. 044	0. 27
II 7 6 5 4 3 2 1	9, 841 10, 178 10, 699 11, 252 12, 143 12, 449 9, 339	31. 0 1. 17 31. 0 1. 21 31. 0 1. 27 31. 0 1. 34 31. 0 1. 44 31. 0 1. 48 37. 6 0. 91	D22 D22 D22 D22 D22 D22 D22 D22	20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36	167, 704 167, 704 167, 704 167, 704 167, 704 167, 704 206, 044	0. 06 0. 07 0. 07 0. 07 0. 08 0. 08 0. 05
III 7 6 5 4 3 2 1	0. 374 20. 918 50. 241 80. 125 109. 821 116. 172 0. 000	37. 6 0. 04 37. 6 2. 05 37. 6 4. 97 37. 6 8. 00 37. 6 11. 07 37. 6 11. 73 37. 6 0. 00	D22 D22 D22 D22 D22 D22 D22 D22	20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36	206. 044 206. 044 206. 044 206. 044 206. 044 206. 044 206. 044	0. 00 0. 11 0. 27 0. 43 0. 59 0. 62 0. 00
1 ' 7 6 5 4 3 2	40. 937 40. 708 42. 888 45. 129 47. 277 40. 376 15. 502	31. 0 4. 93 31. 0 4. 90 31. 0 5. 17 31. 0 5. 44 31. 0 5. 71 31. 0 4. 86 37. 6 1. 52	D22 D22 D22 D22 D22 D22 D22 D22	20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36	167. 704 167. 704 167. 704 167. 704 167. 704 167. 704 206. 044	0. 27
III 7 6 5 4 3 2 1	52. 675 83. 573	37. 6 0. 10 37. 6 2. 18 37. 6 5. 22 37. 6 8. 35 37. 6 11. 52 37. 6 11. 97 37. 6 0. 00	D22 D22 D22 D22 D22 D22 D22 D22	20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36	206. 044 206. 044 206. 044 206. 044 206. 044 206. 044 206. 044	0. 01 0. 12 0. 28 0. 45 0. 61 0. 63 0. 00

※ It determines from serviceability limit state.
 Notes) I ~ Ⅲ : Before correction Slab of a middle part Notes) I' ~ Ⅲ' : After correction Slab of side wall corner

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Detail	ed Desig	n .	
on Port Rea in La Un			ect
CALC FILE No.:	3 17		
CALC INDEX No		PAG	E 364
1.00	INITIA		
PREPARED BY	Y. And	0 2	1/07/02
	e. Nish Inc		

Serviceability limit state

Sidewall (perpendicular to levee normal:seaside) —Horizontal outside steel reinforcement

B = 100cm

NO		Ms (kN·m)	d Diameter (cm) (mm)	Pitch (cm)	As (cm²)	σse Crack widt (N/mm²) W(cm)	
I	7 6 5 4 3 2	37. 216 37. 009 38. 991 41. 028 42. 981 36. 707 7. 046	31. 0 D22 31. 0 D22 31. 0 D22 31. 0 D22 31. 0 D22 31. 0 D22 31. 0 D22 37. 6 D22	20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0	19.36 19.36 19.36 19.36 19.36 19.36	68. 147 0. 0151 67. 768 0. 0151 71. 397 0. 0159 75. 127 0. 0167 78. 703 0. 0175 67. 215 0. 0149 10. 555 0. 0023	0. 0035 × 8. 0 = 0. 0280
П	7 6 5 4 3 2	8. 947 9. 252 9. 727 10. 229 11. 040 11. 318 4. 245	31. 0 D22 31. 0 D22 31. 0 D22 31. 0 D22 31. 0 D22 31. 0 D22 31. 0 D22 37. 6 D22	20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0	19.36 19.36 19.36 19.36 19.36 19.36	16. 383	0. 0035 × 8. 0 = 0. 0280
Ш	7 6 5 4 3 2	0. 170 9. 508 22. 836 36. 419 49. 916 52. 803 0. 000	37. 6 D22 37. 6 D22	20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0	19.36 19.36 19.36 19.36 19.36 19.36 19.36	0.255 0.0001 14.243 0.0032 34.208 0.0076 54.555 0.0121 74.773 0.0166 79.098 0.0176 0.000 0.0000	0. 0035 × 8. 0 = 0. 0280
ī	7 6 5 4 3 2	37. 216 37. 009 38. 991 41. 028 42. 981 36. 707 7. 046	31. 0 D22 31. 0 D22 31. 0 D22 31. 0 D22 31. 0 D22 31. 0 D22 31. 0 D22 37. 6 D22	20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0	19.36 19.36 19.36 19.36 19.36 19.36 19.36	68. 147 0. 0151 67. 768 0. 0151 71. 397 0. 0159 75. 127 0. 0167 78. 703 0. 0175 67. 215 0. 0149 10. 555 0. 0023	$0. 0035 \times 8. 0 \\ = 0. 0280$
Ш	7 6 5 4 3 2	0. 460 10. 117 23. 942 37. 986 51. 894 53. 826 0. 000	37. 6 D22 37. 6 D22	20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0	19.36 19.36 19.36 19.36 19.36 19.36 19.36	0.689 0.0002 15.155 0.0034 35.864 0.0080 56.902 0.0126 77.736 0.0173 80.630 0.0179 0.000 0.0000	0. 0035 × 8. 0 = 0. 0280

Notes) I $\sim III$: Before correction Slab of a middle part Notes) I' $\sim III$: After correction Slab of side wall corner

CALCULATION

Detailed Design
on Port Reactivation Project
in La Union Province

CALC FILE No.:

CALC INDEX No.:

PAGE 365

INITIAL DATE

PREPARED BY Y. Ando 26/67/62

CHECKED BY P. NISHHAM 09/08/2002

Ultimate limit state (Under ordinary conditions) Sidewall (perpendicular to levee normal seaside) — Perpendicular inner side steel reinforcement $B=100\,\mathrm{cm}$

NO	Md (kN⋅m	d) (cm)	Asn (cm²)	Diameter (mm)	Pitch (cm)	As (cm²)	Mud (kN·m)	γ i · Md/Mud
I 7 6 5 4 3 2 1	4. 10 6. 53 10. 27	1 31.0 9 31.0 7 31.0 2 31.0 6 31.0	0.00 0.20 0.49 0.78 1.22 2.65 8.25	D13 D13 D13 D13 D13 D13 D13, D16	40.0 40.0 40.0 40.0 40.0 20.0	3.17 3.17 3.17 3.17 3.17 6.34 16.27	29. 151 29. 151 29. 151 29. 151 29. 151 57. 636 142. 597	0. 00 0. 06 0. 16 0. 25 0. 39 0. 42 0. 52 **
II 7 6 5 4 3 2 1	0. 93 1. 49 2. 80	0 31.0 4 31.0 4 31.0 2 31.0 6 31.0	0.00 0.07 0.11 0.18 0.33 1.20 4.86	D13 D13 D13 D13 D13 D13 D13,D13	40.0 40.0 40.0 40.0 40.0 40.0	3. 17 3. 17 3. 17 3. 17 3. 17 3. 17 12. 67	29. 151 29. 151 29. 151 29. 151 29. 151 29. 151 112. 544	0.00 0.02 0.04 0.06 0.11 0.38 0.39 **
III 7 6 5 4 3 2 1	13. 76 14. 47 15. 30 16. 28	7 31.0 2 31.0 0 31.0 4 31.0 7 31.0	0.00 1.64 1.72 1.82 1.94 1.76 0.00	D13 D13 D13 D13 D13 D13 D13	20.0 20.0 20.0 20.0 20.0 20.0 20.0	6.34 6.34 6.34 6.34 6.34 6.34	57. 636 57. 636 57. 636 57. 636 57. 636 57. 636 57. 636	0.00 0.26 0.28 0.29 0.31 0.28 0.00

^{*} It determines from serviceability limit state.

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CALCULATION								
Detai	ed Desi	gn						
on Port Rea	on Port Reactivation Project							
in La lin	in La Union Province							
CALC FILE No.:	CALO FILE No.:							
CALC INDEX NO		p	AGE 366					
	INIT!		DATE					
PREPARED BY Y. Ando 26/07/62								
CHECKED BY PUISHMUND 09/08/2002								
The state of the s		-						

Serviceability limit state
Sidewall (perpendicular to levee normal:seaside) — Perpendicular inner side steel reinforcement
B = 100cm

NO		Ms (kN·m)	d D)iameter (mm)	Pitch (cm)	As (cm²)	σse (N/mm²)	Crack width W(cm)	Permission crack width W _{iis} (cm)
Ī	7 6 5 4 3 2	0, 000 0, 764 1, 868 2, 971 4, 669 10, 102 61, 555	31.0 31.0 31.0	D13 D13 D13	40. 0 40. 0 40. 0 40. 0 40. 0 20. 0 10. 0	3. 17 3. 17 3. 17 3. 17 3. 17 6. 34 16. 27	0.000 8.098 19.800 31.491 49.489 54.399 133.180	0.0024 0.0059 0.0093 0.0146 0.0123	0. 0040 × 8. 0 = 0. 0320
1	7 6 5 4 3 2	0, 000 0, 255 0, 424 0, 679 1, 273 4, 584 36, 730	31. 0 31. 0 31. 0 31. 0 31. 0	D13 D13 D13 D13 D13 D13 D13, D13	40. 0 40. 0 40. 0 40. 0 40. 0 40. 0 10. 0	3. 17 3. 17 3. 17 3. 17 3. 17 3. 17 12. 67	0.000 2.703 4.494 7.197 13.493 48.588 101.104	0.0008 0.0013 0.0021 0.0040 0.0144	0. 0040 × 8. 0 = 0. 0320
III	7 6 5 4 3 2	0. 000 12. 516 13. 156 13. 910 14. 804 13. 453 0. 000	31. 0 31. 0 31. 0 31. 0 31. 0	D13 D13 D13 D13 D13 D13 D13	20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0	6.34 6.34 6.34 6.34 6.34 6.34	0.000 67.399 70.845 74.905 79.720 72.444 0.000	0.0152 0.0160 0.0169 0.0180 0.0163	0. 0040 × 8. 0 = 0. 0320

CALCULATION								
Detailed Design on Port Reactivation Project in La Union Province								
CALC FILE No.:	1011 1 304	-						
CALC INDEN HO		PΑ	GE 36	2				
	ATTIA	ı,	CATE					
PREPARED LY	Y. And	6	26/07/0	2				
CHECKED BY	e. NisHin	υημ	09/06/2	202				

Ultimate limit state (Under ordinary conditions)
Sidewall (perpendicular to levee normal seaside) —Perpendicular outside steel reinforcement B = 100 cm

		 							D TOOOHI
NO		Md (kN⋅m)	d (cm)	Asn (cm²)	Diameter (mm)	Pitch (cm)	As (cm²)	Mud (kN·m)	γi·Md/Mud
I	7 6 5 4 3 2	0. 000 6. 497 6. 988 7. 480 9. 023 15. 906 93. 386	29. 0 29. 0 29. 0 29. 0 29. 0 29. 0 35. 6	0.00 0.82 0.89 0.95 1.15 2.03 9.92	D13 D13 D13 D13 D13 D13 D13	40.0 40.0 40.0 40.0 20.0 20.0 10.0	3, 17 3, 17 3, 17 3, 17 6, 34 6, 34 12, 67	27. 249 27. 249 27. 249 27. 249 53. 833 53. 833 130. 031	0. 00 0. 26 0. 28 0. 30 0. 18 0. 33 0. 79
I	7 6 5 4 3 2 1	0. 000 1. 485 1. 546 1. 731 2. 503 7. 042 56. 592	29. 0 29. 0 29. 0 29. 0 29. 0 29. 0 35. 6	0.00 0.19 0.20 0.22 0.32 0.89 5.94	D13 D13 D13 D13 D13 D13 D13, D13	40.0 40.0 40.0 40.0 40.0 40.0	3. 17 3. 17 3. 17 3. 17 3. 17 3. 17 12. 67	27. 249 27. 249 27. 249 27. 249 27. 249 27. 249 130. 031	0. 00 0. 06 0. 06 0. 07 0. 10 0. 28 0. 48
III	7 6 5 4 3 2	0. 000 3. 549 8. 405 13. 448 18. 304 19. 424 0. 000	35. 6 35. 6 35. 6 35. 6 35. 6 35. 6 35. 6	0.00 0.37 0.87 1.39 1.90 2.01 0.00	D13 D13 D13 D13 D13 D13 D13	40.0 40.0 40.0 40.0 40.0 40.0 40.0	3. 17 3. 17 3. 17 3. 17 3. 17 3. 17 3. 17	33. 525 33. 525 33. 525 33. 525 33. 525 33. 525 33. 525	0.00 0.12 0.28 0.44 0.60 0.64 0.00

CALCULATION							
Detailed Design on Port Reactivation Project							
							in La Union Province
STALC FILE No.:							
CALC INDEX OF		Pé	SE 3	68			
	INITE	1	DAT	Ĕ			
PREPARED 55	Y. An	do	26/07	//01			
CHECKED SY	P. Nishin	UDA	09/08	1200			

Serviceability limit state Sidewall (perpendicular to levee normal:seaside) — Perpendicular outside steel reinforcement $B=100\,\mathrm{cm}$

							1000			
-	NO	:		Ms (kN·m)	d Diameter (cm) (mm)	Pitch (cm)	As · (cm²)	ose (N/mm²)	Crack width W(cm)	Permission crack width W _{iim} (cm)
	Ī	7 6 5 4 3 2 1		0. 000 5. 906 6. 354 6. 800 8. 202 14. 462 42. 446	29. 0 D13 29. 0 D13 29. 0 D13 29. 0 D13 29. 0 D13 29. 0 D13 35. 6 D13, D13	40. 0 40. 0 40. 0 20. 0 20. 0 10. 0	3. 17 3. 17 3. 17 3. 17 6. 34 6. 34 12. 67	0.000 67.006 72.089 77.149 47.298 83.397 101.256	0.0225 0.0242 0.0259 0.0126 0.0221	0. 0035 × 10. 0 = 0. 0350
	n	7 6 5 4 3 2 1		0. 000 1. 350 1. 405 1. 573 2. 275 6. 403 25. 722	29. 0 D13 29. 0 D13 29. 0 D13 29. 0 D13 29. 0 D13 29. 0 D13 35. 6 D13, D13	40. 0 40. 0 40. 0 40. 0 40. 0 40. 0 10. 0	3. 17 3. 17 3. 17 3. 17 3. 17 3. 17 12. 67	0.000 15.316 15.940 17.846 25.811 72.645 61.361	0.0051 0.0053 0.0060 0.0087 0.0244	$0.0035 \times 10.0 \\ = 0.0350$
	Ш	7 6 5 4 3 2		0. 000 1. 613 3. 820 6. 112 8. 319 8. 829 0. 000	35. 6 D13 35. 6 D13 35. 6 D13 35. 6 D13 35. 6 D13 35. 6 D13 35. 6 D13	40. 0 40. 0 40. 0 40. 0 40. 0 40. 0 40. 0	3. 17 3. 17 3. 17 3. 17 3. 17 3. 17 3. 17	0.000 14.849 35.167 56.268 76.586 81.281 0.000	0.0050 0.0118 0.0189 0.0257 0.0273	0. 0035 × 10. 0 = 0. 0350

CALCULATION							
Detailed Design							
on Port Reactivation Project							
in Lz Union Province							
CALC FILE No.		• :					
CALC INDEX NO).:	9/	GE 369				
	INITIA	1.	DATE				
PREPARED BY	Y, And	0	26/07/02				
CHECKED BY			09/00/200				

Ultimate limit state (Under ordinary conditions)
Sidewall (perpendicular to levee normal: landside) —Horizontal inner side steel reinforcement B = 100cm

			er and the second				
NO		Md (kN·m)	d (cm)	Asn Diameter (cm²) (mm)	Pitch As (cm) (cm²)	Mud (kN·m)	γi·Md/Mud
I	7 6 5 4 3 2	5. 043 13. 261 25. 961 39. 035 52. 109 51. 922 11. 274	33. 0 33. 0 33. 0 33. 0 33. 0 33. 0 33. 0	0.56 D16 1.48 D16 2.91 D16 4.40 D16 5.91 D16 5.88 D16 1.26 D16	20.0 9.93 20.0 9.93 20.0 9.93 20.0 9.93 20.0 9.93 20.0 9.93 20.0 9.93	95. 061 95. 061 95. 061 95. 061 95. 061 95. 061	0. 06 0. 15 0. 30 0. 45 0. 60 0. 60 0. 13
I	7 6 5 4 3 2	0. 560 3. 175 6. 350 9. 712 13. 448 16. 436 6. 733	33. 0 33. 0 33. 0 33. 0 33. 0 33. 0 33. 0	0.06 D16 0.35 D16 0.71 D16 1.08 D16 1.50 D16 1.84 D16 0.75 D16	20.0 9.93 20.0 9.93 20.0 9.93 20.0 9.93 20.0 9.93 20.0 9.93 20.0 9.93	95. 061 95. 061 95. 061 95. 061 95. 061 95. 061 95. 061	0. 01 0. 04 0. 07 0. 11 0. 16 0. 19 0. 08
Ш	7 6 5 4 3 2	81, 485 82, 447 86, 893 91, 709 97, 424 88, 718 0, 000	33.0	9. 34 D16, D19 9. 46 D16, D19 9. 99 D16, D19 10. 56 D16, D19 11. 25 D16, D19 10. 20 D16, D19 0. 00 D16, D19	10.0 24.26 10.0 24.26 10.0 24.26 10.0 24.26 10.0 24.26 10.0 24.26 10.0 24.26	220, 809 220, 809 220, 809 220, 809 220, 809 220, 809 220, 809	0. 41
I	7 6 5 4 3 2	5. 043 13. 261 25. 961 39. 035 52. 109 51. 922 11. 274	33. 0 33. 0 33. 0 33. 0 33. 0 33. 0 33. 0	0.56 D16 1.48 D16 2.91 D16 4.40 D16 5.91 D16 5.88 D16 1.26 D16	20.0 9.93 20.0 9.93 20.0 9.93 20.0 9.93 20.0 9.93 20.0 9.93 20.0 9.93	95. 061 95. 061 95. 061 95. 061 95. 061 95. 061	0. 06 0. 15 0. 30 0. 45 0. 60 0. 60 0. 13
Ш	7 6 5 4 3 2	84, 400 85, 329 89, 886 94, 810 100, 345 89, 593 0, 000	33. 0 33. 0 33. 0 33. 0 33. 0 33. 0 33. 0	9. 69 D16, D19 9. 80 D16, D19 10. 34 D16, D19 10. 93 D16, D19 11. 60 D16, D19 10. 31 D16, D19 0. 00 D16, D19	10.0 24.26 10.0 24.26 10.0 24.26 10.0 24.26 10.0 24.26 10.0 24.26 10.0 24.26	220. 809 220. 809 220. 809 220. 809 220. 809 220. 809 220. 809	0. 42

※ It determines from serviceability limit state.
 Notes) I ~ Ⅲ : Before correction Slab of a middle part Notes) I' ~ Ⅲ' : After correction Slab of side wall corner

CALCULATION								
Detai	led Desi	gn						
on Port Reactivation Project								
in La Union Frovince								
CALC FILE No.:								
CALC INDEX NO		PAGE 370						
	(NITE	L DATE						
PREPARED 5Y	Y. An	do 26/07/0						
CHECKED BY	elicum	UDA 09/06/200						

Serviceability limit state
Sidewall(perpendicular to levee normal:landside)—Horizontal inner side steel reinforcement
B = 100cm

		1	2.3					. D = 1000III
NO		Ms c N·m) (ci		r Pitch (cm)	As (cm²)	σse ((N/mm²)	Crack widt W(cm)	h Permission cra width W (cm)
I 7 6 5 4 3	6 11 17 23	2. 292 33 3. 027 33 3. 800 33 4. 742 33 4. 685 33	. 0 D16 . 0 D16 . 0 D16 . 0 D16	20. 0 20. 0 20. 0 20. 0 20. 0	9.93 9.93 9.93 9.93 9.93	7. 485 19. 683 38. 536 57. 941 77. 350	0.0014 0.0036 0.0071 0.0107 0.0143	0. 0040 × 6. 0 = 0. 0240
2		600 33 250 33		20. 0 20. 0	9.93 9.93	77.072 33.474	0.0142 0.0062	
II 7 6 5 4	1 2), 255 33 , 443 33), 886 33), 414 33	. 0 D16 . 0 D16	20. 0 20. 0 20. 0 20. 0	9.93 9.93 9.93 9.93	0, 833 4, 713 9, 425 14, 415	0.0002 0.0009 0.0017 0.0027	0. 0040 × 6. 0 = 0. 0240
3 2 1	. 7	3. 112 33 7. 470 33 3. 122 33	. 0 D16	20. 0 20. 0 20. 0	9.93 9.93 9.93	19.960 24.395 19.993	0.0037 0.0045 0.0037	
III 7 6 5 4	74 78 83	l 954 33 3 997 33 3 376 33	. 0 D16, D19 . 0 D16, D19 . 0 D16, D19 . 0 D16, D19	10. 0 10. 0 10. 0	24. 26 24. 26 24. 26	102.402 103.611 109.199 115.253	0.0153 0.0155 0.0163 0.0172	0. 0040 × 6. 0 = 0. 0240
3 2 1	80	658 33	. 0 D16, D19 . 0 D16, D19 . 0 D16, D19	10.0	24. 26 24. 26 24. 26	122. 435 111. 495 0. 000	0.0183 0.0167 0.0000	
I ' 7 6 5 4 3 2	6 11 17 23	2. 292 33 5. 027 33 . 800 33 7. 742 33 6. 685 33 6. 600 33	. 0 D16 . 0 D16 . 0 D16 . 0 D16	20. 0 20. 0 20. 0 20. 0 20. 0 20. 0	9.93 9.93 9.93 9.93 9.93 9.93	7. 485 19. 683 38. 536 57. 941 77. 350 77. 072	0.0014 0.0036 0.0071 0.0107 0.0143 0.0142	0. 0040 × 6. 0 = 0. 0240
<u>1</u> <u>m'7</u>	76). 250 33 j. 724 33	O D16, D19	20. 0	9.93	33. 474 106. 057	0.0062	
6 5 4 3 2	81 86 91	. 714 33 5. 193 33 . 226 33 . 453 33	. O D16, D19 . O D16, D19	10. 0 10. 0 10. 0 10. 0	24. 26 24. 26 24. 26 24. 26 24. 26 24. 26	107. 225 112. 955 119. 147 126. 104 112. 594 0. 000	0.0160 0.0169 0.0178 0.0188 0.0168 0.0000	0. 0040 × 6. 0 = 0. 0240

Notes) I $\sim III$: Before correction Slab of a middle part Notes) I' $\sim III$: After correction Slab of side wall corner

CALCULATION							
Datziled Design							
on Port Reactivation Project							
in La Uni	in La Union Province						
GALO FILE No.:							
CALC INDEX NO	F.	AGE 37]					
	METAL.	1977 5					
PREPARED	YAndo	26/07/02					
CHECKED BY	e. Mishimura	09/08/2002					

Ultimate limit state (Under ordinary conditions) Sidewall (perpendicular to levee normal:landside) —Horizontal outside steel reinforcement $B=100\,\mathrm{cm}$

		and the second			and the second	D ~ TVUGII
NO	Md (kN·m)	d Asn (cm) (cm²)	Diameter (mm)	Pitch As (cm) (cm²)	Mud (kN·m)	γi·Md/Mud
I 7 6 5 4 3 2 1	40, 937 40, 708 42, 888 45, 129 47, 277 40, 376 15, 502	31. 0 4. 93 31. 0 4. 90 31. 0 5. 17 31. 0 5. 44 31. 0 5. 71 31. 0 4. 86 37. 6 1. 52	D22 D22 D22 D22 D22 D22 D22 D22	20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36	167. 704 167. 704 167. 704 167. 704 167. 704 167. 704 206. 044	0, 27
II 7 6 5 4 3 2 1	9. 841 10. 178 10. 699 11. 252 12. 143 12. 449 9. 339	31.0 1.17 31.0 1.21 31.0 1.27 31.0 1.34 31.0 1.44 31.0 1.48 37.6 0.91	D22 D22 D22 D22 D22 D22 D22 D22	20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36	167. 704 167. 704 167. 704 167. 704 167. 704 167. 704 206. 044	0. 06 0. 07 0. 07 0. 07 0. 08 0. 08 0. 08
TII 7 6 5 4 3 2 1	0. 374 20. 918 50. 241 80. 125 109. 821 116. 172 0. 000	37. 6 0. 04 37. 6 2. 05 37. 6 4. 97 37. 6 8. 00 37. 6 11. 07 37. 6 11. 73 37. 6 0. 00	D22 D22 D22 D22 D22 D22 D22 D22	20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36	206. 044 206. 044 206. 044 206. 044 206. 044 206. 044 206. 044	0. 00 0. 11 0. 27 0. 43 0. 59 0. 62 0. 00
I ' 7 6 5 4 3 2	40, 937 40, 708 42, 888 45, 129 47, 277 40, 376 15, 502	31.0 4.93 31.0 4.90 31.0 5.17 31.0 5.44 31.0 5.71 31.0 4.86 37.6 1.52	D22 D22 D22 D22 D22 D22 D22 D22	20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36	167. 704 167. 704 167. 704 167. 704 167. 704 167. 704 206. 044	0. 27 × 0. 27 × 0. 28 × 0. 30 × 0. 31 × 0. 26 × 0. 08
M'76544321	1. 012 22, 260 52, 675 83, 573 114, 172 118, 423 0. 000	37. 6 0. 10 37. 6 2. 18 37. 6 5. 22 37. 6 8. 35 37. 6 11. 52 37. 6 11. 97 37. 6 0. 00	D22 D22 D22 D22 D22 D22 D22 D22	20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36 20.0 19.36	206. 044 206. 044 206. 044 206. 044 206. 044 206. 044 206. 044	0. 01 0. 12 0. 28 0. 45 0. 61 0. 63 0. 00

% It determines from serviceability limit state. Notes) I $\sim \text{III}$: Before correction Slab of a middle part Notes) I' $\sim \text{III}$: After correction Slab of side wall corner

CALC	ULATIC	N		÷				
Detailed Design								
on Port Reactivation Project								
In La Union Province								
CALC FILE No:								
CALC INDEA AC	4.	FA	3E3	12				
	INITIA	L	DAT	Ε				
PREPARED BY	YAnd	6	26/07	/or				
CHECKED BY	e. NISHin	UQA	09/08/	rcoz				

Serviceability limit state
Sidewall (perpendicular to levee normal: landside) — Horizontal outside steel reinforcement B = 100 cm

	a		<u> </u>	· · · · · · · · · · · · · · · · · · ·	·.	· · · · · · · · · · · · · · · · · · ·				1000111
NO		Ms (kN·		Diameter (mm)	Pitch (cm)	As (cm²)	σse C (N/mm²)	rack width W(cm)		sion crack W _{lie} (cm)
I	7 6 5 4 3 2	37. 2 37. 0 38. 9 41. 0 42. 9 36. 7	009 31,0 091 31,0 028 31,0 081 31,0	D22 D22 D22 D22 D22 D22	20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0	19.36 19.36 19.36 19.36 19.36 19.36	68. 147 67. 768 71. 397 75. 127 78. 703 67. 215 10. 555	0.0151 0.0151 0.0159 0.0167 0.0175 0.0149 0.0023	0. 0035 × = 0. 0	
Ī	7 6 5 4 3 2	8. 9 9. 2 9. 7 10. 2 11. 0 11. 3	252 31.0 727 31.0 229 31.0 340 31.0	D22 D22 D22 D22 D22 D22	20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0	19.36 19.36 19.36 19.36 19.36 19.36 19.36	16. 383 16. 941 17. 811 18. 730 20. 216 20. 725 6. 359	0.0036 0.0038 0.0040 0.0042 0.0045 0.0046 0.0014	0. 0035 × = 0. 00	
п	7 6 5 4 3 2	0. 1 9. 8 22. 8 36. 4 49. 9 52. 8	336 37.6 119 37.6 116 37.6 303 37.6	D22 D22 D22 D22 D22	20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0	19. 36 19. 36 19. 36 19. 36 19. 36 19. 36 19. 36	0. 255 14. 243 34. 208 54. 555 74. 773 79. 098 0. 000	0.0001 0.0032 0.0076 0.0121 0.0166 0.0176 0.0000	0. 0035 × = 0. 00	
	7 6 5 4 3 2	37. 2 37. 0 38. 9 41. 0 42. 9 36. 7	009 31.0 991 31.0 028 31.0 981 31.0	D22 D22 D22 D22 D22 D22	20.0	19.36 19.36 19.36 19.36 19.36 19.36 19.36	68. 147 67. 768 71. 397 75. 127 78. 703 67. 215 10. 555	0.0151 0.0151 0.0159 0.0167 0.0175 0.0149 0.0023	0. 0035 × = 0. 02	
Ш	7 6 5 4 3 2	0. 4 10. 1 23. 9 37. 9 51. 8 53. 8	117 37.6 942 37.6 986 37.6 394 37.6 326 37.6	D22 D22 D22 D22 D22		19.36 19.36 19.36 19.36 19.36 19.36 19.36	0. 689 15. 155 35. 864 56. 902 77. 736 80. 630 0. 000	0.0002 0.0034 0.0080 0.0126 0.0173 0.0179 0.0000	0. 0035 × = 0. 02	

: Before correction Slab of a middle part : After correction Slab of side wall corner Notes) Notes) ~ III

CALCULATION								
	d Desig							
on Port Read	tivation	P_i	oject					
in La Uni	on Prev	inc	e					
CALC FILE No.:		-						
CALC INDEX NO		<u>. </u>	GE <i>373</i>					
	MITIA		DATE					
PREPARED SY YANGO 26/07/02								
CHECKED BY	e. Nishiri	ura	09/08/2002					

Ultimate limit state (Under ordinary conditions)
Sidewall(perpendicular to levee normal:landside) - Perpendicular inner side steel reinforcement
B = 100cm

NO		Md (kN·m)	d (cm)	Asn (cm²)	Diameter (mm)	Pitch (cm)	As (cm²)	Mud (kN·m)	γ i·Md/Mud
I	7 6 5 4 3 2	0. 000 1. 681 4. 109 6. 537 10. 272 22. 226 67. 706	31. 0 31. 0 31. 0 31. 0 31. 0 31. 0	0.00 0.20 0.49 0.78 1.22 2.65 8.25	D13 D13 D13 D13 D13 D13 D13, D16	40.0 40.0 40.0 40.0 40.0 20.0	3. 17 3. 17 3. 17 3. 17 3. 17 6. 34 16. 27	29. 151 29. 151 29. 151 29. 151 29. 151 57. 636 142. 597	0. 00 0. 06 0. 16 0. 25 0. 39 0. 42 0. 52 ※
Ī	7 6 5 4 3 2	0. 000 0. 560 0. 934 1. 494 2. 802 10. 086 40. 400	31. 0 31. 0 31. 0 31. 0 31. 0 31. 0	0.00 0.07 0.11 0.18 0.33 1.20 4.86	D13 D13 D13 D13 D13 D13 D13, D13	40.0 40.0 40.0 40.0 40.0 40.0	3. 17 3. 17 3. 17 3. 17 3. 17 3. 17 12. 67	29. 151 29. 151 29. 151 29. 151 29. 151 29. 151 112. 544	0. 00 0. 02 0. 04 0. 06 0. 11 0. 38 0. 39 💥
Ш	7 6 5 4 3 2	0. 000 13. 767 14. 472 15. 300 16. 284 14. 797 0. 000	31. 0 31. 0 31. 0 31. 0 31. 0 31. 0 31. 0	0.00 1.64 1.72 1.82 1.94 1.76 0.00	D13 D13 D13 D13 D13 D13 D13	20.0 20.0 20.0 20.0 20.0 20.0 20.0	6. 34 6. 34 6. 34 6. 34 6. 34 6. 34	57. 636 57. 636 57. 636 57. 636 57. 636 57. 636 57. 636	0. 00 0. 26 0. 28 0. 29 0. 31 0. 28 0. 00

^{*} It determines from serviceability limit state.

CALCULATION									
Detail	ed Desig	n							
on Port Rea	ctivation	Project							
in La Un	ion Prov	ince							
CALC FILE No .:									
CALC INDEX No	1,41,4	PAGE 374							
	INITIA	L DATE							
PREPARED BY YAndo 26/07/02									
CHECKED BY	z Alsilin	UNA 09/08/2012							

Serviceability limit state
Sidewall(perpendicular to levee normal:landside)—Perpendicular inner side steel reinforcement
B = 100cm

NO		Ms (kN·m)	d Diamet (cm) (mm)	er Pitch As (cm) (cm²)	σse Cr (N/mm²)	ack width W(cm)	Permission crack width W _{iim} (cm)
I	7 6 5 4 3 2	0. 000 0. 764 1. 868 2. 971 4. 669 10. 102 61. 555	31. 0 D13 31. 0 D13 31. 0 D13 31. 0 D13 31. 0 D13 31. 0 D13 31. 0 D13, D	40. 0 3. 17 40. 0 3. 17 40. 0 3. 17 40. 0 3. 17 40. 0 3. 17 20. 0 6. 34 16 10. 0 16. 27	8, 098 19, 800 31, 491 49, 489 54, 399	0.0000 0.0024 (0.0059 0.0093 0.0146 0.0123 0.0254	0. 0040 × 8. 0 = 0. 0320
I	7 6 5 4 3 2	0. 000 0. 255 0. 424 0. 679 1. 273 4. 584 36. 730	31. 0 D13 31. 0 D13 31. 0 D13 31. 0 D13 31. 0 D13 31. 0 D13 31. 0 D13, D	40. 0 3. 17 40. 0 3. 17	0,000 2,703 4,494 7,197 13,493 48,588	0,0000	0. 0040 × 8. 0 = 0. 0320
111	7 6 5 4 3 2	0. 000 12. 516 13. 156 13. 910 14. 804 13. 453 0. 000	31. 0 D13 31. 0 D13 31. 0 D13 31. 0 D13 31. 0 D13 31. 0 D13 31. 0 D13	20. 0 6. 34 20. 0 6. 34	67.399 (70.845 (74.905 (79.720 (72.444 (0.0000 0.0152 0 0.0160 0.0169 0.0180 0.0163 0.0000	0. 0040 × 8. 0 = 0. 0320

	1 1 1 1								
CALC	CALCULATION								
Detai	led Desig	jn							
on Port Rea	ctivation	P:	oject						
in La Un	ion Prov	inc	e (
CALC FILE No.:									
CALC INDEX NO	.:	PA	GE 375						
	INITIA	L	DATE						
PREPARED BY JAndo 26/07/02									
CHECKED BY	P. Nishim								

Ultimate limit state (Under ordinary conditions)
Sidewall(perpendicular to levee normal landside)—Perpendicular outside steel reinforcement
B = 100cm

NO		Md (kN·m)	d (cm)	Asn Diameter (cm²) (mm)	Pitch As (cm) (cm²)	Mud (kN·m)	γi·Md/Mud
I	7 6 5 4 3 2	0. 000 6. 497 6. 988 7. 480 9. 023 15. 906 93. 386	29. 0 29. 0 29. 0 29. 0 29. 0 29. 0 35. 6	0.00 D13 0.82 D13 0.89 D13 0.95 D13 1.15 D13 2.03 D13 9.92 D13, D13	40.0 3.17 40.0 3.17 40.0 3.17 40.0 3.17 20.0 6.34 20.0 6.34 10.0 12.67	27. 249 27. 249 27. 249 27. 249 53. 833 53. 833 130. 031	0. 00 0. 26 0. 28 0. 30 0. 18 0. 33 0. 79
I	7 6 5 4 3 2	0. 000 1. 485 1. 546 1. 731 2. 503 7. 042 56. 592	29. 0 29. 0 29. 0 29. 0 29. 0 29. 0 35. 6	0.00 D13 0.19 D13 0.20 D13 0.22 D13 0.32 D13 0.89 D13 5.94 D13, D13	40.0 3.17 40.0 3.17 40.0 3.17 40.0 3.17 40.0 3.17 40.0 3.17 10.0 12.67	27. 249 27. 249 27. 249 27. 249 27. 249 27. 249 130. 031	0. 00 0. 06 0. 06 0. 07 0. 10 0. 28 0. 48
Ш	7 6 5 4 3 2	0, 000 3, 549 8, 405 13, 448 18, 304 19, 424 0, 000	35. 6 35. 6 35. 6 35. 6 35. 6 35. 6 35. 6	0.00 D13 0.37 D13 0.87 D13 1.39 D13 1.90 D13 2.01 D13 0.00 D13	40.0 3.17 40.0 3.17 40.0 3.17 40.0 3.17 40.0 3.17 40.0 3.17 40.0 3.17	33. 525 33. 525 33. 525 33. 525 33. 525 33. 525 33. 525	0. 00 0. 12 0. 28 0. 44 0. 60 0. 64 0. 00

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CALC	ULATION							
Detail	ed Design							
on Port Rea	ctivation Project							
in La Un	ion Province							
CALC FILE No.:								
CALC INDEX NO	PAGE 376							
	INITIAL DATE							
PREFARED BY	Y. Ando 26/07/02							
CHECKED BY ENGHINUEN 03/08/2002								

Service ability limit state Sidewall (perpendicular to levee normal: landside) — Perpendicular outside steel reinforcement $B = 100\,\mathrm{cm}$

<i>i</i> _			N									
N	0		Ms (kN·m)	d (cm)	Diameter (mm)	Pitol (cm)	n As (cm²)	σse (N/mm²)	Crack width W(cm)		Permission width W	 crack (cm)
]	!	7 5 4 3 2	0. 000 5. 906 6. 354 6. 800 8. 202 14. 462 42. 446	29. 0 29. 0 29. 0 29. 0 29. 0 29. 0 35. 6	D13 D13 D13 D13 D13	40. 0 40. 0 40. 0 40. 0 20. 0 20. 0 10. 0	3.17 3.17 3.17 3.17 6.34 6.34 12.67	0.000 67.006 72.089 77.149 47.298 83.397	0.0225 0.0242 0.0259 0.0126 7.0.0221	0.	0035 × 10.0 = 0.0350	
		7 6 5 4 3 2	0. 000 1. 350 1. 405 1. 573 2. 275 6. 403 25. 722	29. 0 29. 0 29. 0 29. 0 29. 0 29. 0 35. 6	D13 D13 D13 D13 D13	40. 0 40. 0 40. 0 40. 0 40. 0 40. 0 10. 0	3.17 3.17 3.17 3.17 3.17 3.17 12.67	0.000 15.316 15.940 17.846 25.811 72.645 61.361	0.0051 0.0053 6.0.0060 1.0087 5.0.0244	0.	0035 × 10.0 = 0.0350	
Ī		7 6 5 4 3 2	0. 000 1. 613 3. 820 6. 112 8. 319 8. 829 0. 000	35, 6 35, 6 35, 6 35, 6 35, 6 35, 6 35, 6	D13 D13 D13 D13 D13	40. 0 40. 0 40. 0 40. 0 40. 0 40. 0 40. 0	3. 17 3. 17 3. 17 3. 17 3. 17 3. 17 3. 17	0.000 14.849 35.167 56.268 76.586 81.281 0.000	0.0050 0.0118 0.0189 0.0257 0.0273	0.	0035 × 10.0 = 0.0350	

CALCULATION Detailed Design on Port Reactivation Project in La Union Province CALC FILE No.: PAGE 377 GALC INDEX NO Y. Ando 126/07/02 PREPARED 91 e. Nishindaa 09/00/2002 CHECKED BY

Ultimate limit state (Under ordinary conditions)
Sidewall (parallel to centerline:seaside) — Horizontal inner side steel reinforcement
B = 100 cm

						- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	D - 1000
NO		Md (kN·m)	d (cm)	Asn Diameter (cm²) (mm)	Pitch As (cm) (cm²)	Mud (kN·m)	γi·Md/Mud
I 7 6 5 4 3 2 1		5. 887 14. 413 28. 218 42. 428 56. 232 53. 390 11. 978	33. 0 33. 0 33. 0 33. 0 33. 0 33. 0 33. 0	0.66 D16 1.61 D16 3.17 D16 4.79 D16 6.38 D16 6.05 D16 1.34 D16	20.0 9.93 20.0 9.93 20.0 9.93 20.0 9.93 20.0 9.93 20.0 9.93 20.0 9.93	95. 061 95. 061 95. 061 95. 061 95. 061 95. 061	0. 07 0. 17 0. 33 0. 49 0. 65 0. 62 0. 14
II 7 6 5 4 3 2 1		0. 609 3. 451 6. 902 10. 556 14. 616 17. 458 7. 153	33. 0 33. 0 33. 0 33. 0 33. 0 33. 0 33. 0	0. 07 D16 0. 38 D16 0. 77 D16 1. 18 D16 1. 63 D16 1. 95 D16 0. 80 D16	20.0 9.93 20.0 9.93 20.0 9.93 20.0 9.93 20.0 9.93 20.0 9.93 20.0 9.93	95. 061 95. 061 95. 061 95. 061 95. 061 95. 061	0, 01 0, 04 0, 08 0, 12 0, 17 0, 20 0, 08
III 7 6 5 4 4 3 2 1		87. 201 88. 097 92. 762 97. 789 103. 151 90. 434 0. 000	33. 0 33. 0 33. 0 33. 0 33. 0 33. 0 33. 0	10. 02 D16, D19 10. 13 D16, D19 10. 69 D16, D19 11. 29 D16, D19 11. 93 D16, D19 10. 41 D16, D19 0. 00 D16, D19	10.0 24.26 10.0 24.26 10.0 24.26 10.0 24.26 10.0 24.26	220, 809 220, 809 220, 809 220, 809 220, 809 220, 809 220, 809	0. 43
I'7 6 2 2 3) 	6. 193 15. 058 29. 387 44. 084 58. 322 54. 471 11. 978	33. 0 33. 0 33. 0 33. 0 33. 0 33. 0	0. 69 D16 1. 68 D16 3. 30 D16 4. 98 D16 6. 63 D16 6. 18 D16 1. 34 D16	20.0 9.93 20.0 9.93 20.0 9.93 20.0 9.93 20.0 9.93 20.0 9.93 20.0 9.93	95. 061 95. 061 95. 061 95. 061 95. 061 95. 061	0. 07 0. 17 0. 34 0. 51 0. 67 0. 63 0. 14
Ш' 7	5 5 1 3	84. 400 85. 328 89. 886 94. 810 100. 345 89. 593 0. 000	33. 0 33. 0 33. 0 33. 0 33. 0 33. 0 33. 0	9.69 D16,D19 9.80 D16,D19 10.34 D16,D19 10.93 D16,D19 11.60 D16,D19 10.31 D16,D19 0.00 D16,D19	10.0 24.26 10.0 24.26 10.0 24.26 10.0 24.26 10.0 24.26	220. 809 220. 809 220. 809 220. 809 220. 809 220. 809 220. 809	0. 42

% it determines from serviceability limit state. Notes) I ~ 11 : Before correction Slab of a middle part Notes) I' ~ 11 : After correction Slab of side wall corner

CALC	ULATIC	N							
Detail	ed Desig	n							
on Port Rea	on Port Reactivation Project								
in La Un	ion Prov	inc	ŧ						
CALC FILE No.:		Ϊ,							
CALC INDEX NO		P#	GE 378						
	INITIA	ļ,	DATE						
PREFARED BY Y. Ando 26/07/0									
CHECKED BY P. NISHITIVA 09/06/									

Serviceability limit state
Sidewall(parallel to centerline:seaside) —Horizontal inner side steel reinforcement

 $B = 100 \, \text{cm}$

		 			* 4			D - FOOGIII
NO		 Ms (kN·m)	d Diameter (cm) (mm)	Pitch (cm)	As (cm²)	σse (N/mm²)	Crack width W(cm)	Permission crac width W (cm)
I	7 6 5 4 3 2 1	2. 676 6. 551 12. 826 19. 285 25. 559 24. 267 10. 889	33. 0 D16 33. 0 D16 33. 0 D16 33. 0 D16 33. 0 D16 33. 0 D16 33. 0 D16	20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0	9.93 9.93 9.93 9.93 9.93 9.93	8, 739 21, 394 41, 887 62, 980 83, 470 79, 250 35, 561	0.0016 0.0039 0 0.0077 0.0116 0.0154 0.0146 0.0066	. 0040 × 6. 0 = 0. 0240
II	7 6 5 4 3 2	0. 277 1. 569 3. 137 4. 798 6. 643 7. 935 6. 503	33. 0 D16 33. 0 D16	20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0	9.93 9.93 9.93 9.93 9.93 9.93 9.93	0.905 5.124 10.245 15.669 21.695 25.914 21.237	0.0002 0.0009 0 0.0019 0.0029 0.0040 0.0048 0.0039	. 0040 × 6. 0 = 0. 0240
Ш	7 6 5 4 3 2	79. 264 80. 082 84. 325 88. 899 93. 776 82. 216 0. 000	33. 0 D16, D19 33. 0 D16, D19	10. 0 10. 0 10. 0 10. 0 10. 0	24. 26 24. 26	109.568 110.699 116.564 122.887 129.629 113.649 0.000	0.0164 0.0165 0 0.0174 0.0184 0.0194 0.0170 0.0000	. 0040 × 6. 0 = 0. 0240
Ī	7 6 5 4 3 2	2. 815 6. 844 13. 357 20. 038 26. 509 24. 758 10. 889	33. 0 D16 33. 0 D16	20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0	9.93 9.93 9.93 9.93 9.93 9.93 9.93	9. 193 22. 351 43. 621 65. 439 86. 572 80. 854 35. 561	0.0017 0.0041 0 0.0080 0.0121 0.0160 0.0149 0.0066	. 0040 × 6. 0 = 0. 0240
П'	7 6 5 4 3 2	76. 724 77. 569 81. 714 86. 193 91. 226 81. 453 0. 000	33. 0 D16, D19 33. 0 D16, D19	10. 0 10. 0 10. 0 10. 0 10. 0	24. 26 24. 26 24. 26 24. 26 24. 26 24. 26 24. 26	106.057 107.225 112.955 119.147 126.104 112.594 0.000	0.0158 0.0160 0.0169 0.0178 0.0188 0.0168 0.0000	0040 × 6. 0 = 0. 0240

 $\sim m$: Before correction Slab of a middle part $\sim m$: After correction Slab of side wall corner

CALCULATION							
ed Desig	'n						
ctivation	Pr	ojest					
in La Union Province							
CALC FILE No.:							
	P/	GE 379					
INITIA	L	DATE					
S. And	0	26/07/02					
CHECKED BY LINISHIMUNA 07/08/2002							
	ed Designation Prov	ed Design ctivation Pr ion Provinc : PA INITIAL X. Ando					

Ultimate limit state (Under ordinary conditions)
Sidewall (parallel to centerline:seaside) —Horizontal outside steel reinfor

NO		Md (kN⋅m)	d (cm)	Asn (cm²)	Diameter (mm)	Pitch (cm)	As (cm²)	Mud (kN·m)	γi·Md/Mud
I	7 6 5 4 3 2	43. 986 43. 509 45. 843 48. 239 50. 074 40. 760 16. 849	31. 0 31. 0 31. 0 31. 0 31. 0 31. 0 37. 6	5.30 5.24 5.53 5.83 6.05 4.91 1.65	D22 D22 D22 D22 D22 D22 D22 D22	20.0 20.0 20.0 20.0 20.0 20.0 20.0	19.36 19.36 19.36 19.36 19.36 19.36	167. 704 167. 704 167. 704 167. 704 167. 704 167. 704 206. 044	0. 29
1	7 6 5 4 3 2	10. 564 10. 903 11. 437 12. 102 12. 928 12. 969 10. 150	31. 0 31. 0 31. 0 31. 0 31. 0 31. 0 37. 6	1.26 1.30 1.36 1.44 1.54 0.99	D22 D22 D22 D22 D22 D22 D22 D22	20.0 20.0 20.0 20.0 20.0 20.0 20.0	19.36 19.36 19.36 19.36 19.36 19.36	167. 704 167. 704 167. 704 167. 704 167. 704 167. 704 206. 044	0. 07 0. 07 0. 08 0. 08 0. 08 0. 09 0. 05
111	7 6 5 4 3 2	1. 624 23. 549 55. 014 86. 886 118. 352 120. 585 0. 000	37. 6 37. 6 37. 6 37. 6 37. 6 37. 6 37. 6	0. 16 2. 31 5. 45 8. 69 11. 96 12. 19 0. 00	D22 D22 D22 D22 D22 D22 D22 D22	20.0 20.0 20.0	19.36 19.36 19.36 19.36 19.36 19.36	206, 044 206, 044 206, 044 206, 044 206, 044 206, 044 206, 044	0. 01 0. 13 0. 29 0. 46 0. 63 0. 64 0. 00
I	7 6 5 4 3 2	45. 386 44. 893 47. 281 49. 729 51. 477 41. 180 16. 849	31. 0 31. 0 31. 0 31. 0 31. 0 31. 0 37. 6	5. 47 5. 41 5. 71 6. 01 6. 23 4. 96 1. 65	D22 D22 D22 D22 D22 D22 D22	20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0	19.36 19.36 19.36 19.36 19.36 19.36	167. 704 167. 704 167. 704 167. 704 167. 704 167. 704 206. 044	0. 30
III	7 6 5 4 3 2	1. 011 22. 260 52. 675 83. 573 114. 172 118. 423 0. 000	37. 6 37. 6 37. 6 37. 6 37. 6 37. 6 37. 6	0. 10 2. 18 5. 22 8. 35 11. 52 11. 97 0. 00	D22 D22 D22 D22 D22 D22 D22 D22	20.0	19.36 19.36 19.36 19.36 19.36 19.36 19.36	206. 044 206. 044 206. 044 206. 044 206. 044 206. 044 206. 044	0. 01 0. 12 0. 28 0. 45 0. 61 0. 63 0. 00

※ It determines from serviceability limit state.
 Notes) I ~ Ш : Before correction Slab of a middle part Notes) I' ~ Ш': After correction Slab of side wall corner

CALCULATION						
Detail	ed Desig	<u>, 11</u>	<i>v</i> 1			
on Port Rea	ctivation	P	roject			
in La Un	ion Prov	Inc	:e			
CALC FILE No .:	44.5	1 .	444			
CALC INDEX 1/2		P/	AGE 380			
	INITIA	L	DATE			
PREPARED BY YAndo 26/07/02						
CHECKED BY L. NISHIMURA 09/08/2002						

Serviceability limit state
Sidewall(parallel to centerline:seaside) — Horizontal outside steel reinforcement

 $B = 100 \, \text{cm}$

NO	:	 Ms (kN·m)		eter Pito mm) (cm)	h As (cm²)	orse (N/mm²)	Crack width W(cm)	Permission width Wiim	
I	7 6 5 4 3 2	39. 984 39. 551 41. 673 43. 854 45. 523 37. 056 7. 658	31. 0 D 31. 0 D 31. 0 D 31. 0 D 31. 0 D	22 20.0 22 20.0 22 20.0 22 20.0 22 20.0 22 20.0 22 20.0 22 20.0	19.36 19.36 19.36 19.36 19.36 19.36	73.215 72.422 76.308 80.302 83.358 67.854 11.471	0.0161 0.0170 0.0178 0.0185	0035 × 8, 0 = 0, 0280	
I	7 6 5 4 3 2 1	9. 603 9. 911 10. 397 11. 001 11. 753 11. 791 4. 614	31. 0 D 31. 0 D 31. 0 D 31. 0 D 31. 0 D	22 20. 0 22 20. 0	19.36 19.36 19.36	17. 584 18. 148 19. 038 20. 144 21. 521 21. 591 6. 912	0.0040 0.0042 0.0045 0.0048 0.0048	0035 × 8. 0 = 0. 0280	
Ш	7 6 5 4 3 2	0, 738 10, 703 25, 005 39, 492 53, 794 54, 809 0, 000	37. 6 D 37. 6 D 37. 6 D 37. 6 D 37. 6 D	22 20. 0 22 20. 0		1. 106 16. 033 37. 457 59. 158 80. 582 82. 102 0. 000	0.0036 0.0083 0.0131 0.0179 0.0182	0035 × 8. 0 = 0. 0280	
I '	7 6 5 4 3 2	41, 254 40, 807 42, 978 45, 207 46, 798 37, 438 7, 658	31. 0 D 31. 0 D 31. 0 D 31. 0 D 31. 0 D	22 20. 0 22 20. 0	19. 36 19. 36 19. 36 19. 36 19. 36 19. 36	75. 541 74. 722 78. 698 82. 779 85. 692 68. 553 11. 471	0.0175 0.0184	035 × 8. 0 = 0. 0280	
ш'	7 6 5 4 3 2 1	0, 460 10, 117 23, 942 37, 986 51, 894 53, 826 0, 000	37. 6 D 37. 6 D 37. 6 D 37. 6 D 37. 6 D	22 20. 0 22 20. 0	19. 36 19. 36 19. 36 19. 36 19. 36 19. 36	0. 689 15. 155 35. 864 56. 902 77. 736 80. 630 0. 000	0.0002 0.0034 0.0080 0.0126 0.0173 0.0179 0.0000	035 × 8. 0 = 0. 0280	

: Before correction Slab of a middle part : After correction Slab of side wall corner Notes) ~ Ⅲ Notes) ~Ⅲ

> CALCULATION Detailed Design on Port Reactivation Project in La Union Province CALC FILE No.: CALC INDEX RE PAGE 30 INITIAL PREPARED BY

> > R NISHIHUDA 05/08/2002

CHECKED BY

Ultimate limit state (Under ordinary conditions)
Sidewall (parallel to centerline:seaside) - Perpendicular inner side steel reinforcement
B = 100cm

NO		Md (kN·m)	d (cm)	Asn (cm²)	Diameter (mm)	Pitch (cm)	As (cm²)	Mud (kN·m)	γi·Md/Mud
;	7 6 5 4 3 2	0. 000 1. 624 4. 466 7. 105 11. 977 24. 970 71. 903	31. 0 31. 0 31. 0 31. 0 31. 0 31. 0	0.00 0.19 0.53 0.84 1.42 2.98 8.78	D13 D13 D13 D13 D13 D13 D13	40.0 40.0 40.0 40.0 40.0 20.0 10.0	3.17 3.17 3.17 3.17 3.17 6.34 20.66	29. 151 29. 151 29. 151 29. 151 29. 151 57. 636 178. 101	0. 00 0. 06 0. 17 0. 27 0. 45 0. 48 0. 44 **
	7 6 5 4 3 2	0.000 0.406 1.015 1.624 3.654 11.774 43.180	31. 0 31. 0 31. 0 31. 0 31. 0 31. 0 31. 0	0.00 0.05 0.12 0.19 0.43 1.40 5.20	D13 D13 D13 D13 D13 D13 D13, D13	40.0 40.0 40.0 40.0 40.0 40.0 40.0	3.17 3.17 3.17 3.17 3.17 3.17 12.67	29. 151 29. 151 29. 151 29. 151 29. 151 29. 151 112. 544	0. 00 0. 02 0. 04 0. 06 0. 14 0. 44 0. 42 **
•	7 6 5 4 3 2	0. 000 14. 656 15. 472 16. 288 17. 203 15. 073 0. 000	31. 0 31. 0 31. 0 31. 0 31. 0 31. 0	0.00 1.74 1.84 1.94 2.05 1.79 0.00	D13 D13 D13 D13 D13 D13 D13	20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0	6.34 6.34 6.34 6.34 6.34 6.34	57, 636 57, 636 57, 636 57, 636 57, 636 57, 636	0. 00 0. 28 0. 30 0. 31 0. 33 0. 29 0. 00

X It determines from serviceability limit state.

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CALC	ULATIC	N	•				
Detail	ed Desig	'n					
on Port Rea	on Port Reactivation Project						
in La Union Province							
LALC FILE No :	11.5						
CALC INDEX No		PA	GE 382				
	INITIA	L	DATE				
PREPARED BY Y. Ando 26/07/02							
CHECKED BY	R. NISH IM	J24	0; 08 rcci				

Serviceability limit state
Sidewall(parallel to centerline:seaside) — Perpendicular inner side steel reinforcement
B = 100cm

	 	1.1			·		n - Lógolii	
NO	Ms (kN⋅m)		meter Pitch mm) (cm)	As (cm²)	σse (N/mm²)	Crack width W(cm)	Permission width Wiin	crack (cm)
I 7 6 5 4 3 2 1	0. 000 0. 738 2. 030 3. 229 5. 444 11. 349 65. 370	31. 0 D 31. 0 D 31. 0 D 31. 0 D 31. 0 D	13 40.0 13 40.0 13 40.0 13 40.0 13 40.0 13 20.0 , D19 10.0	3. 17 3. 17 3. 17 3. 17 3. 17 6. 34 20. 66	0.000 7.822 21.517 34.226 57.704 61.114 112.470	0.0023 0.0064 0.0101 0.0171 0.0138	0. 0040 × 8. 0 = 0. 0320	
II 7 6 5 4 3 2 1	0. 000 0. 185 0. 461 0. 738 1. 661 5. 352 39. 257	31. 0 D 31. 0 D 31. 0 D 31. 0 D 31. 0 D	13 40.0 13 40.0 13 40.0 13 40.0 13 40.0 13 40.0 13 40.0 ,D13 10.0	3. 17 3. 17 3. 17 3. 17 3. 17 3. 17 12. 67	0.000 1.961 4.886 7.822 17.606 56.729 108.060	0.0000 0.0006 0.0014 0.0023 0.0052 0.0168 0.0206	0.0040 × 8.0 = 0.0320	
III 7 6 5 4 3 2 1	0. 000 13. 322 14. 065 14. 807 15. 640 13. 703 0. 000	31. 0 D 31. 0 D 31. 0 D 31. 0 D 31. 0 D	13 20, 0 13 20, 0 13 20, 0 13 20, 0 13 20, 0 13 20, 0 13 20, 0	6.34 6.34 6.34 6.34 6.34 6.34	0.000 71.739 75.740 79.736 84.221 73.791 0.000	0.0000 0.0162 0.0171 0.0180 0.0190 0.0166 0.0000	0. 0040 × 8. 0 = 0. 0320	

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CALCULATION								
Detailed Design								
on Port Reactivation Project								
in La Union Province								
CALC FILE No.:								
CALC INDEX No		24	.GE 383					
	INITIA	L	DATE					
PREPARED BY	Y. And	10	26/07/02					
CHECKED BY								

Ultimate limit state (Under ordinary conditions)
Sidewall (parallel to centerline:seaside) — Perpendicular outside steel reinforcement
B = 100 cm

								D ~ 1000iii
NO		Md (kN·m)	d (cm)	Asn (cm²)	Diameter (mm)		As Mud cm²) (kN·m)	γi·Md/Mud
I	7 6 5 4 3 2	0. 000 6. 932 7. 471 8. 078 10. 127 17. 421 100. 690	29. 0 29. 0 29. 0 29. 0 29. 0 29. 0 35. 6	0.00 0.88 0.95 1.03 1.29 2.22 10.73	D13 D13 D13 D13 D13 D13 D13, D13	40.0 3. 40.0 3. 40.0 3. 20.0 6. 20.0 6.	17 27. 249 17 27. 249 17 27. 249 17 27. 249 34 53. 833 34 53. 833 67 130. 03	0. 28 0. 30 0. 33 0. 21 3 0. 36
П	7 6 5 4 3 2	0. 000 1. 559 1. 653 1. 946 3. 058 8. 002 61. 307	29. 0 29. 0 29. 0 29. 0 29. 0 29. 0 35. 6	0.00 0.20 0.21 0.25 0.39 1.02 6.44	D13 D13 D13 D13 D13 D13 D13, D13	40.0 3. 40.0 3. 40.0 3. 40.0 3. 40.0 3.	17 27, 245 17 27, 245 17 27, 245 17 27, 245 17 27, 245 17 27, 245 67 130, 031	0.06 0.07 0.08 0.12 0.32
Ш	7 6 5 4 3 2	0. 000 3. 857 9. 135 14. 413 19. 691 20. 097 0. 000	35. 6 35. 6 35. 6 35. 6 35. 6 35. 6 35. 6	0.00 0.40 0.94 1.49 2.04 2.08 0.00	D13 D13 D13 D13 D13 D13 D13	40.0 3. 40.0 3. 40.0 3. 40.0 3. 40.0 3.	17 33, 525 17 33, 525 17 33, 525 17 33, 525 17 33, 525 17 33, 525 17 33, 525	0. 13 0. 30 0. 47 0. 65 0. 66

<u> </u>	· · · · · · · · · · · · · · · · · · ·
CALC	ULATION
Detail	ed Design
on Port Rea	ctivation Project
in La Un	ion Province
CALC FILE No.:	
CALC INDEX 140	.: PAGE 384
	INITIAL DATE
PREPARED BY	Y. Ando 26/07/02
CHECKED BY	e. Nishimura ogbe <i>kc</i> oz

Serviceability limit state
Sidewall(parallel to centerline:seaside) — Perpendicular outside steel reinforcement
B = 100cm

					- 114					
NO			Ms (kN·m)	d Diameter (cm) (mm)	Pitch (cm)	As (cm²)	σse ((N/mm²)	Crack width W(cm)	Permission c	
Ī	7 6 5 4 3 2	. •	0. 000 6. 301 6. 791 7. 344 9. 207 15. 838 45. 766	29. 0 D13 29. 0 D13 29. 0 D13 29. 0 D13 29. 0 D13 29. 0 D13 35. 6 D13, D13	40. 0 40. 0 40. 0 40. 0 20. 0 20. 0 10. 0	3.17 3.17 3.17 3.17 6.34 6.34 12.67	0.000 71.487 77.047 83.321 53.093 91.332 109.176	0.0000 0.0240 0.0259 0.0280 0.0141 0.0243 0.0252	0. 0035 × 10. 0 = 0. 0350	,
1	7 6 5 4 3 2 1		0. 000 1. 417 1. 503 1. 769 2. 780 7. 276 27. 866	29. 0 D13 29. 0 D13 29. 0 D13 29. 0 D13 29. 0 D13 29. 0 D13 35. 6 D13, D13	40. 0 40. 0 40. 0 40. 0 40. 0 40. 0 10. 0	3. 17 3. 17 3. 17 3. 17 3. 17 3. 17 12. 67	0.000 16.076 17.052 20.070 31.540 82.549 66.475	0.0000 0.0054 0.0057 0.0067 0.0106 0.0277 0.0153	0. 0035 × 10. 0 = 0. 0350	
II	7 6 5 4 3 2 1		0. 000 1. 753 4. 152 6. 551 8. 950 9. 135 0. 000	35. 6 D13 35. 6 D13 35. 6 D13 35. 6 D13 35. 6 D13 35. 6 D13 35. 6 D13	40. 0 40. 0 40. 0 40. 0 40. 0 40. 0 40. 0	3. 17 3. 17 3. 17 3. 17 3. 17 3. 17 3. 17 3. 17	0.000 16.138 38.224 60.309 82.395 84.098 0.000	0.0000 0.0054 0.0128 0.0202 0.0276 0.0282 0.0000	0. 0035 × 10. 0 = 0. 0350	

CALCULATION								
ed Desig	jn							
ctivation	Fr	cject						
in La Union Province								
i in								
.:	PA	GE 385						
IriiTiA	L.	DATE						
Y. And	6	26/1//02						
e.Nishih	UQΔ	09/08/2002						
	ed Designation Prov	ed Design ctivation Fr ion Provinc						

Ultimate limit state (Under ordinary conditions)
Sidewall (parallel to centerline: landside) — Horizontal inner side steel reinforcement
B = 100cm

	· .								$B = 100 \mathrm{cm}$
NO		Md (kN⋅m)	d (cm)	Asn (cm²)	Diameter (mm)	Pitch (cm)	As (cm²)	Mud (kN⋅m)	γi·Md/Mud
I 7 6 5 4 3 2 1		5. 887 14. 413 28. 218 42. 428 56. 232 53. 390 11. 978	33. 0 33. 0 33. 0 33. 0 33. 0 33. 0 33. 0	0.66 1.61 3.17 4.79 6.38 6.05 1.34	D16 D16 D16 D16 D16 D16	20.0 20.0 20.0 20.0 20.0 20.0 20.0	9.93 9.93 9.93 9.93 9.93 9.93	95. 061 95. 061 95. 061 95. 061 95. 061 95. 061	0. 07 0. 17 0. 33 0. 49 0. 65 0. 62 0. 14
II 7 6 5 4 3 2 1		0. 609 3. 451 6. 902 10. 556 14. 616 17. 458 7. 153	33. 0 33. 0 33. 0 33. 0 33. 0 33. 0 33. 0	0.07 0.38 0.77 1.18 1.63 1.95 0.80	D16 D16 D16 D16 D16 D16 D16	20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0	9. 93 9. 93 9. 93 9. 93 9. 93 9. 93 9. 93	95, 061 95, 061 95, 061 95, 061 95, 061 95, 061	0. 01 0. 04 0. 08 0. 12 0. 17 0. 20 0. 08
III 7 6 5 4 3 2 1		87. 201 88. 097 92. 762 97. 789 103. 151 90. 434 0. 000	33. 0 33. 0 33. 0 33. 0 33. 0 33. 0 33. 0	10.02 10.13 10.69 11.29 11.93 10.41 0.00	D16, D19 D16, D19 D16, D19 D16, D19 D16, D19 D16, D19 D16, D19	10.0 10.0 10.0 10.0 10.0 10.0	24. 26 24. 26 24. 26 24. 26 24. 26 24. 26 24. 26	220. 809 220. 809 220. 809 220. 809 220. 809 220. 809 220. 809 220. 809	0. 43 % 0. 44 % 0. 46 % 0. 49 % 0. 51 % 0. 45 % 0. 00
I 7 6 5 4 3 2		6. 193 15. 058 29. 387 44. 084 58. 322 54. 471 11. 978	33. 0 33. 0 33. 0 33. 0 33. 0 33. 0 33. 0	0.69 1.68 3.30 4.98 6.63 6.18 1.34	D16 D16 D16 D16 D16 D16 D16	20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0	9.93 9.93 9.93 9.93 9.93 9.93	95. 061 95. 061 95. 061 95. 061 95. 061 95. 061 95. 061	0. 07 0. 17 0. 34 0. 51 0. 67 0. 63 0. 14
Ш'7 6 5 4 3 2		84, 400 85, 328 89, 886 94, 810 100, 345 89, 593 0, 000	33. 0 33. 0 33. 0 33. 0 33. 0 33. 0 33. 0	9.69 9.80 10.34 10.93 11.60 10.31 0.00	D16, D19 D16, D19 D16, D19 D16, D19 D16, D19 D16, D19 D16, D19 D16, D19	10. 0 10. 0 10. 0 10. 0 10. 0 10. 0	24.26 24.26 24.26 24.26 24.26 24.26 24.26	220. 809 220. 809 220. 809 220. 809 220. 809 220. 809 220. 809	0. 42

CALC	JLATION
Detaile	ed Design
on Port Rest	ctivation Project
in La Uni	on Province
CALC FILE No.:	
CALC INDEX NO.	.: PAGE 386
	INITIAL DATE

Y. Ando

2. NISHIMURA 07/08/2002

PREPARED BY

CHECKED BY

Serviceability limit state Sidewall (parallel to centerline:landside) — Horizontal inner side steel reinforcement $B=100\,\mathrm{cm}$

	· .			·			D - 1000M	
NO		Ms (kN·m)	d Diameter (cm) (mm)	Pitch As (cm) (cm²)	σse Crack wie (N/mm²) W(cm		Permission width W	
ī	7 6 5 4 3 2	2, 676 6, 551 12, 826 19, 285 25, 559 24, 267 10, 889	33. 0 D16 33. 0 D16	20. 0 9. 93 20. 0 9. 93	8,739 0.0016 21,394 0.0039 41,887 0.0077 62,980 0.0116 83,470 0.0154 79,250 0.0146 35,561 0.0066	0.	0040 × 6.0 = 0.0240	
I	7 6 5 4 3 2	0. 277 1. 569 3. 137 4. 798 6. 643 7. 935 6. 503	33. 0 D16 33. 0 D16 33. 0 D16 33. 0 D16 33. 0 D16 33. 0 D16 33. 0 D16	20. 0 9. 93 20. 0 9. 93	0.905 0.0002 5.124 0.0009 10.245 0.0019 15.669 0.0029 21.695 0.0040 25.914 0.0048 21.237 0.0039	0.	0040 × 6, 0 = 0, 0240	-
Ш	7 6 5 4 3 2	79. 264 80. 082 84. 325 88. 899 93. 776 82. 216 0. 000	33. 0 D16, D19 33. 0 D16, D19	10. 0 24. 26 10. 0 24. 26 10. 0 24. 26 10. 0 24. 26 10. 0 24. 26	109.568 0.0164 110.699 0.0165 116.564 0.0174 122.887 0.0184 129.629 0.0194 113.649 0.0170 0.000 0.0000		0040 × 6. 0 = 0. 0240	
I	7 6 5 4 3 2	2. 815 6. 844 13. 357 20. 038 26. 509 24. 758 10. 889	33. 0 D16 33. 0 D16	20. 0 9. 93 20. 0 9. 93	9. 193 0. 0017 22. 351 0. 0041 43. 621 0. 0080 65. 439 0. 0121 86. 572 0. 0160 80. 854 0. 0149 35. 561 0. 0066		0040 × 6. 0 = 0. 0240	
III '	7 6 5 4 3 2	76. 724 77. 569 81. 714 86. 193 91. 226 81. 453 0. 000	33. 0 D16, D19 33. 0 D16, D19	10. 0 24. 26 10. 0 24. 26 10. 0 24. 26 10. 0 24. 26 10. 0 24. 26	106.057 0.0158 107.225 0.0160 112.955 0.0169 119.147 0.0178 126.104 0.0188 112.594 0.0168 0.000 0.0000		0040 × 6. 0 = 0. 0240	_
	Notes) Notes)	I ~ I			b of a middle pa of side wall co	rt	-	

CALCULATION									
Detailed Design									
on Port Rea	on Port Reactivation Project								
in La Un	ion Provi	nce							
CALC FILE No.:									
CALC INDEX 6:		PAGE <i>3</i> 87							
	INITIAL	DATE							
PREPARED BY	Yeland	0 26/07/02							
CHECKED BY	e. Nishimu	14 01/08/2002							

Ultimate limit state (Under ordinary conditions)
Sidewall (paralle) to centerline: landside) — Horizontal outside steel reinforcement

B = 100cm

******				-						· D - 100	
NO		M (kN	ld ·m)	d (cm)	Asn (cm²)	Diamete (mm)	r Pitch (cm)	As (cm²)	Mud (kN·m)	γi-Md/Mu	ud
I	7 6 5 4 3 2	43. 45. 48. 50. 40.	986 509 843 239 074 760 849	31. 0 31. 0 31. 0 31. 0 31. 0 31. 0 37. 6	5. 30 5. 24 5. 53 5. 83 6. 05 4. 91 1. 65	D22 D22 D22 D22 D22 D22 D22	20.0 20.0 20.0 20.0 20.0 20.0 20.0	19.36 19.36 19.36 19.36 19.36 19.36	167. 704 167. 704 167. 704 167. 704 167. 704 167. 704 206. 044	0. 29 0. 29 0. 30 0. 32 0. 33 0. 27 0. 09	** ** ** **
I	7 6 5 4 3 2	10. 11. 12. 12. 12.	564 903 437 102 928 969 150	31. 0 31. 0 31. 0 31. 0 31. 0 31. 0 37. 6	1.26 1.30 1.36 1.44 1.54 1.54 0.99	D22 D22 D22 D22 D22 D22 D22	20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0	19.36 19.36 19.36 19.36 19.36 19.36	167. 704 167. 704 167. 704 167. 704 167. 704 167. 704 206. 044	0, 07 0, 07 0, 08 0, 08 0, 08 0, 09 0, 05	
Ш	7 6 5 4 3 2	23. 55. 86. 118. 120.	624 549 014 886 352 585 000	37. 6 37. 6 37. 6 37. 6 37. 6 37. 6 37. 6	0.16 2.31 5.45 8.69 11.96 12.19 0.00	D22 D22 D22 D22 D22 D22 D22	20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0	19.36 19.36 19.36 19.36 19.36 19.36	206. 044 206. 044 206. 044 206. 044 206. 044 206. 044 206. 044	0, 01 0, 13 0, 29 0, 46 0, 63 0, 64 0, 00	
Ι,	7 6 5 4 3 2	44. 47. 49. 51. 41.	386 893 281 729 477 180 849	31. 0 31. 0 31. 0 31. 0 31. 0 31. 0 37. 6	5. 47 5. 41 5. 71 6. 01 6. 23 4. 96 1. 65	D22 D22 D22 D22 D22 D22 D22	20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0	19.36 19.36 19.36 19.36 19.36 19.36	167. 704 167. 704 167. 704 167. 704 167. 704 167. 704 206. 044	0. 30 0. 29 0. 31 0. 33 0. 34 0. 27 0. 09	** ** ** **
ш'	7 6 5 4 3 2	22. 52. 83. 114. 118.	011 260 675 573 172 423 000	37. 6 37. 6 37. 6 37. 6 37. 6 37. 6 37. 6	0.10 2.18 5.22 8.35 11.52 11.97 0.00	D22 D22 D22 D22 D22 D22 D22	20.0 20.0 20.0 20.0 20.0 20.0 20.0 20.0	19.36 19.36 19.36 19.36 19.36 19.36	206. 044 206. 044 206. 044 206. 044 206. 044 206. 044	0. 01 0. 12 0. 28 0. 45 0. 61 0. 63 0. 00	

% It determines from serviceability limit state. Notes) I $\sim III$: Before correction Slab of a middle part Notes) I' $\sim III$: After correction Slab of side wall corner

<u> </u>		-						
CALC	ULATIC	N						
Detailed Design								
on Port Reactivation Project								
in La Un	In La Union Province							
CALC FILE No .:			A 1 4 5 4 5					
CALC INDEX No		P/	GE 388					
	INITIA	L	DATE					
PREPARED BY	Y.An	do	26/07/02					
CHECKED BY		_	01/07/2002					

Serviceability limit state
Sidewall (parallel to centerline: landside) — Horizontal outside steel reinforcement

 $B = 100 \, \text{cm}$

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NO			Ms (kN·m)	d (cm)	Diameter (mm)	Pitch (cm)	As (cm²)	σse ((N/mm²)	Crack width W(cm)	Permission crac width W (cm)
I	7 6 5 4 3 2	- Ar 	39, 984 39, 551 41, 673 43, 854 45, 523 37, 056 7, 658	31.0	D22 D22 D22 D22 D22 D22 D22	20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0	19. 36 19. 36 19. 36 19. 36 19. 36 19. 36 19. 36	73. 215 72. 422 76. 308 80. 302 83. 358 67. 854 11. 471	0.0163 0.0161 0.0170 0.0178 0.0185 0.0151 0.0025	0. 0035 × 8. 0 = 0. 0280
П	7 6 5 4 3 2		9. 603 9. 911 10. 397 11. 001 11. 753 11. 791 4. 614	31. 0 31. 0 31. 0 31. 0 31. 0	D22 D22 D22 D22 D22 D22 D22	20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0	19. 36 19. 36 19. 36 19. 36 19. 36 19. 36 19. 36	17. 584 18. 148 19. 038 20. 144 21. 521 21. 591 6. 912	0.0039 0.0040 0.0042 0.0045 0.0048 0.0048	0. 0035 × 8. 0 = 0. 0280
III	7 6 5 4 3 2	٠.	0. 738 10. 703 25. 005 39. 492 53. 794 54. 809 0. 000	37. 6 37. 6 37. 6 37. 6 37. 6	D22 D22 D22 D22 D22 D22 D22 D22	20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0	19. 36 19. 36 19. 36 19. 36 19. 36 19. 36 19. 36	1.106 16.033 37.457 59.158 80.582 82.102 0.000	0.0002 0.0036 0.0083 0.0131 0.0179 0.0182 0.0000	0. 0035 × 8. 0 = 0. 0280
I	7 6 5 4 3 2		41. 254 40. 807 42. 978 45. 207 46. 798 37. 438 7. 658	31. 0 31. 0 31. 0 31. 0 31. 0	D22 D22 D22 D22 D22 D22 D22 D22	20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0	19.36 19.36 19.36 19.36 19.36 19.36 19.36	75. 541 74. 722 78. 698 82. 779 85. 692 68. 553 11. 471	0.0168 0.0166 0.0175 0.0184 0.0190 0.0152 0.0025	0. 0035 × 8. 0 = 0. 0280
111	7 6 5 4 3 2 1		0. 460 10. 117 23. 942 37. 986 51. 894 53. 826 0. 000	37. 6 37. 6 37. 6 37. 6 37. 6 37. 6 37. 6	D22 D22 D22 D22 D22 D22 D22 D22	20. 0 20. 0 20. 0 20. 0 20. 0	19. 36 19. 36 19. 36 19. 36 19. 36 19. 36 19. 36	0.689 15.155 35.864 56.902 77.736 80.630 0.000	0.0002 0.0034 0.0080 0.0126 0.0173 0.0179 0.0000	0. 0035 × 8. 0 = 0. 0280

 \sim III $\,$: Before correction $\,$ Slab of a middle part $\,\sim$ III $\,$: After correction $\,$ Slab of side wall corner Notes) Notes)

CALCULATION

Detailed Design on Port Reactivation Project in La Union Province

CALC FILE No.:

CALC INDEX No.: PAGE 389 INITIAL Y. Ando 26/07 PREPARED BY CHECKED BY e. Nishinued 03/08/2002

Ultimate limit state (Under ordinary conditions)
Sidewall(parallel to centerline:landside)—Perpendicular inner side steel reinforcement
B = 100cm

		1 4							7 7 7 7 7
NO		Md (kN⋅m)	d (cm)	Asn (cm²)	Diameter (mm)	Pitch (cm)	As (cm²)	Mud (kN·m)	γi·Md/Mud
I	7 6 5 4 3 2	0. 000 1. 624 4. 466 7. 105 11. 977 24. 970 71. 903	31. 0 31. 0 31. 0 31. 0 31. 0 31. 0	0.00 0.19 0.53 0.84 1.42 2.98 8.78	D13 D13 D13 D13 D13 D13 D13 D13,D19	40.0 40.0 40.0 40.0 40.0 20.0 10.0	3. 17 3. 17 3. 17 3. 17 3. 17 6. 34 20. 66	29. 151 29. 151 29. 151 29. 151 29. 151 57. 636 178. 101	0. 00 0. 06 0. 17 0. 27 0. 45 0. 48 0. 44 ※
II	7 6 5 4 3 2 1	0. 000 0. 406 1. 015 1. 624 3. 654 11. 774 43. 180	31. 0 31. 0 31. 0 31. 0 31. 0 31. 0	0.00 0.05 0.12 0.19 0.43 1.40 5.20	D13 D13 D13 D13 D13 D13 D13	40.0 40.0 40.0 40.0 40.0 40.0 10.0	3.17 3.17 3.17 3.17 3.17 3.17 12.67	29. 151 29. 151 29. 151 29. 151 29. 151 29. 151 112. 544	0. 00 0. 02 0. 04 0. 06 0. 14 0. 44 0. 42 **
Ш	7 6 5 4 3 2	0. 000 14. 656 15. 472 16. 288 17. 203 15. 073 0. 000	31. 0 31. 0 31. 0 31. 0 31. 0 31. 0	0.00 1.74 1.84 1.94 2.05 1.79 0.00	D13 D13 D13 D13 D13 D13 D13	20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0	6.34 6.34 6.34 6.34 6.34 6.34	57. 636 57. 636 57. 636 57. 636 57. 636 57. 636 57. 636	0. 00 0. 28 0. 30 0. 31 0. 33 0. 29 0. 00

^{*} It determines from serviceability limit state.

CALC	JLAT	ION						
Detailed Design								
on Port Reactivation Project								
in La Uni	on Pr	ovino	e					
CALC FILE No.:								
CALC INDEX Ho		P/	GE 390					
	INIT	IAL.	DATE					
PREPARED BY	Y.A.	ndo	26/07/0					
CHECKED BY	2 NisH	IHURA	03/08/200					

Serviceability limit state
Sidewall (parallel to centerline: landside) — Perpendicular inner side steel reinforcement
B = 100cm

NO	Ms (kN·m)	d (cm)	Diameter (mm)	Pitch (cm)		ose (N/mm²)	Crack width W(cm)	Permission crac width W (cm)
I 7 6 5 4 3 2 1	0. 000 0. 738 2. 030 3. 229 5. 444 11. 349 65. 370	31. 0 31. 0 31. 0 31. 0 31. 0 31. 0	D13 D13 D13 D13 D13	40. 0 40. 0 40. 0 40. 0 40. 0 20. 0 10. 0	3.17 3.17 3.17 3.17 3.17 6.34 20.66	0.000 7.822 21.517 34.226 57.704 61.114 112.470	0.0023 0.0064 0.0101 0.0171 0.0138	0. 0040 × 8. 0 = 0. 0320
II 7 6 5 4 3 2 1	0. 000 0. 185 0. 461 0. 738 1. 661 5. 352 39. 257	31. 0 31. 0 31. 0 31. 0 31. 0 31. 0	D13 D13 D13 D13 D13	40. 0 40. 0 40. 0 40. 0 40. 0 40. 0 10. 0	3. 17 3. 17 3. 17 3. 17 3. 17 3. 17 12. 67	0.000 1.961 4.886 7.822 17.606 56.729 108.060	0.0006 0.0014 0.0023 0.0052 0.0168	0. 0040 × 8. 0 = 0. 0320
III 7 6 5 4 3 2 1	0. 000 13. 322 14. 065 14. 807 15. 640 13. 703 0. 000	31. 0 31. 0 31. 0 31. 0 31. 0 31. 0	D13 D13 D13 D13 D13	20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0	6.34 6.34 6.34 6.34 6.34 6.34	0.000 71.739 75.740 79.736 84.221 73.791 0.000	0.0162 0.0171 0.0180 0.0190 0.0166	0. 0040 × 8. 0 = 0. 0320

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CALCULATION									
Detailed Design									
ctivation	Ρ	roject							
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	P	AGE 391							
INITIA	Ĺ,	DATE							
YAndo	;	26/07/02							
e. Njshimul	24	09/08/2002							
	ed Designation Prov	ed Design ctivation P ion Provinc : P							

Ultimate limit state (Under ordinary conditions)
Sidewall (parallel to centerline: landside) — Perpendicular outside steel reinforcement $B = 100 \, \text{cm}$

NO	Md (kN⋅m)		sn Diameter m²) (mm)	Pitch As (cm) (cm²)	Mud (kN·m)	γi·Md/Mud
I 7 6 5 4 3 2 1	0.000 6.932 7.471 8.078 10.127 17.421 100.690	29. 0 0. 29. 0 1. 29. 0 1.	88 D13 95 D13 03 D13 29 D13 22 D13	40.0 3.17 40.0 3.17 40.0 3.17 40.0 3.17 20.0 6.34 20.0 6.34 10.0 12.67	27. 249 27. 249 27. 249 27. 249 27. 249 53. 833 53. 833 130. 031	0. 00 0. 28 0. 30 0. 33 0. 21 0. 36 0. 85
II 7 6 5 4 3 2 1	1. 946	29. 0 0. 29. 0 0. 29. 0 0. 29. 0 0. 29. 0 1.	25 D13 39 D13	40.0 3.17 40.0 3.17 40.0 3.17 40.0 3.17 40.0 3.17 40.0 3.17 10.0 12.67	27. 249 27. 249 27. 249 27. 249 27. 249 27. 249 130. 031	0.00 0.06 0.07 0.08 0.12 0.32 0.52
III 7 6 5 4 3 2 1	9. 135 14. 413 19. 691	35. 6 0. 35. 6 0. 35. 6 1. 35. 6 2. 35. 6 2.	00 D13 40 D13 94 D13 49 D13 04 D13 08 D13 00 D13	40.0 3.17 40.0 3.17 40.0 3.17 40.0 3.17 40.0 3.17 40.0 3.17 40.0 3.17	33, 525 33, 525 33, 525 33, 525 33, 525 33, 525 33, 525	0, 00 0, 13 0, 30 0, 47 0, 65 0, 66 0, 00

CALCULATION								
Detailed Design								
on Port Reactivation Project								
in La Union Province								
GALC FILE No.:								
CALC INDEX No.: PAGE 3	92							
INITIAL DATE								
PREPARED BY LAndo 26/07/								
CHECKED BY L. NISHITUDA 09/02/								

Serviceability limit state
Sidewall(parallel to centerline:landside)—Perpendicular outside steel reinforcement
B = 100cm

		•		. *				
NO		Ms (kN·m)	d Diamet (cm) (mm)	er Pitch (cm)	As (cm²)	σse (N/mm²)	Crack width W(cm)	Permission crack width W (cm)
I	7 6 5 4 3 2 1	0. 000 6. 301 6. 791 7. 344 9. 207 15. 838 45. 766	29. 0 D13 29. 0 D13 29. 0 D13 29. 0 D13 29. 0 D13	40. 0 40. 0 40. 0 40. 0 20. 0 20. 0 13 10. 0	3.17 3.17 3.17 3.17 6.34 6.34 12.67	0.000 71.487 77.047 83.321 53.093 91.332 109.176	7 0.0240 7 0.0259 0.0280 3 0.0141 2 0.0243	0. 0035 × 10. 0 = 0. 0350
I	7 6 5 4 3 2 1	0. 000 1. 417 1. 503 1. 769 2. 780 7. 276 27. 866	29. 0 D13 29. 0 D13 29. 0 D13 29. 0 D13 29. 0 D13	40. 0 40. 0 40. 0 40. 0 40. 0 40. 0 13 10. 0	3. 17 3. 17 3. 17 3. 17 3. 17 3. 17 12. 67	0.000 16.076 17.052 20.070 31.540 82.549 66.475	0.0054 0.0057 0.0067 0.0106 0.0277	0. 0035 × 10. 0 = 0. 0350
Ш	7 6 5 4 3 2 1	0. 000 1. 753 4. 152 6. 551 8. 950 9. 135 0. 000	35. 6 D13 35. 6 D13 35. 6 D13 35. 6 D13 35. 6 D13	40. 0 40. 0 40. 0 40. 0 40. 0 40. 0 40. 0	3. 17 3. 17 3. 17 3. 17 3. 17 3. 17 3. 17	0.000 16.138 38.224 60.309 82.395 84.098 0.000	0.0054 0.0128 0.0202 0.0276 0.0282	0. 0035 × 10. 0 = 0. 0350

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CALCULATION								
Detailed Design								
on Port Reactivation Project								
In La Union Province								
CALC FILE No :								
CALC INDEX NO	<u>.</u>	P/	GE 393					
	INITIA	L	DATE					
PREPARED BY	Y. And	6	26/67/06					
CHECKED BY								

Examination of as opposed to slip out and load of a partition wall (Ultimate limit state is examined)

Horizontal 266.88 1.15 1.10 9.79 DIS, DIS 10.0 12.07 000.100	
	0. 77
erpendicular 553,82 1.00 1.00 16.05 D13,D19 10.0 20.66 712.770 (0. 78

Section	Td (kN/m)	rb ri	Asn Di (cm²)	ameter Pi (mm) (tch As (cm) (cm ²)	Nud γi· (kN/m)	Td/Nud
 Horizontal	260. 03	1. 15 1. 1	0 9.53	D13, D13	10.0 12.67	380. 100	0.75
					10.0 20.66		

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CALCULATION								
Detailed Design								
on Port Reactivation Project								
in La Union Province								
CALC FILE No.:								
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INITIA	L.	DATE						
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		n/08/2002						
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Ultimate limit state (Under ordinary conditions)
Partition wall (perpendicular to levee normal) — Horizontal steel reinforcement
B = 100cm

NO		Md (kN·m)	d (cm)	Asn (cm²)	Diameter (mm)	Pitch (cm)	As (cm²)	Mud (kN·m)	γi·Md/Mud
I	7 6 5 4 3 2	10, 602 10, 185 10, 209 10, 234 10, 234 8, 418 2, 307	10. 0 10. 0 10. 0 10. 0 10. 0 10. 0	4.07 3.90 3.91 3.92 3.92 3.20 0.85	D13, D13 D13, D13 D13, D13 D13, D13 D13, D13 D13, D13 D13, D13	10.0 10.0 10.0 10.0 10.0 10.0 10.0	12.67 12.67 12.67 12.67 12.67 12.67 12.67	32. 727 32. 727 32. 727 32. 727 32. 727 32. 727 32. 727	0. 36 0. 34 0. 34 0. 34 0. 34 0. 28 0. 08
II	7 6 5 4 3 2	2. 577 2. 552 2. 552 2. 552 2. 626 2. 577 1. 374	10. 0 10. 0 10. 0 10. 0 10. 0 10. 0	0.95 0.95 0.95 0.95 0.97 0.95 0.51	D13, D13 D13, D13 D13, D13 D13, D13 D13, D13 D13, D13 D13, D13	10.0 10.0 10.0 10.0 10.0 10.0 10.0	12.67 12.67 12.67 12.67 12.67 12.67 12.67	32. 727 32. 727 32. 727 32. 727 32. 727 32. 727 32. 727	0, 09 0, 09 0, 09 0, 09 0, 09 0, 09 0, 05
Ш	7 6 5 4 3 2	21. 523 20. 885 20. 787 20. 763 20. 983 18. 407 0. 000	10. 0 10. 0 10. 0 10. 0 10. 0 10. 0	8. 73 8. 44 8. 40 8. 38 8. 48 7. 34 0. 00	D13, D13 D13, D13 D13, D13 D13, D13 D13, D13 D13, D13 D13, D13	10.0 10.0 10.0 10.0 10.0 10.0 10.0	12.67 12.67 12.67 12.67 12.67 12.67 12.67	32. 727 32. 727 32. 727 32. 727 32. 727 32. 727 32. 727	0. 72 0. 70 0. 70 0. 70 0. 71 0. 62 0. 00

CALCULATION								
Detailed Design								
on Port Reactivation Project								
in La Union Province								
CALC FILE No.:								
CALC INDEX NO).	p,	IGE 395					
	INIT:A	L	DATE					
PREPARED IN YANDO 26/07/02								
CHECKED BY	CHECKED BY & NUMITURA 03/08/2002							
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Serviceability limit state
Partition wall (perpendicular to levee normal) — Horizontal steel reinforcement

R = 100cm B = 100 cm

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NO		Ms (kN·m)	d (cm)	Diameter (mm)		As (cm²)	σse ((N/mm²)	Crack width W(cm)	Permission crack width W (cm)
Ī	7 6 5 4 3 2	4. 819 4. 630 4. 641 4. 652 4. 652 3. 826 1. 049	10. 0 10. 0 10. 0 10. 0	D13, D13 D13, D13 D13, D13 D13, D13 D13, D13 D13, D13 D13, D13	10. 0 10. 0 10. 0 10. 0 10. 0	12.67 12.67 12.67 12.67 12.67 12.67 12.67	43. 224 41. 529 41. 627 41. 726 41. 726 34. 317 9. 409	0.0096 0.0096 0.0096 0.0096 0.0079	0. 0040 × 10. 0 = 0. 0400
П	7 6 5 4 3 2	1. 171 1. 160 1. 160 1. 160 1. 194 1. 171 0. 625	10. 0 10. 0 10. 0 10. 0	D13, D13 D13, D13 D13, D13 D13, D13 D13, D13 D13, D13 D13, D13	10. 0 10. 0 10. 0 10. 0 10. 0	12.67 12.67 12.67 12.67 12.67 12.67 12.67	10. 503 10. 405 10. 405 10. 405 10. 710 10. 503 5. 606	0.0024 0.0024 0.0024 0.0025 0.0024	0. 0040 × 10. 0 = 0. 0400
Ш	7 6 5 4 3 2	9, 783 9, 493 9, 449 9, 438 9, 538 8, 367 0, 000	10. 0 10. 0 10. 0 10. 0	D13, D13 D13, D13 D13, D13 D13, D13 D13, D13 D13, D13 D13, D13	10. 0 10. 0 10. 0 10. 0 10. 0	12.67 12.67 12.67 12.67	87. 748 85. 147 84. 752 84. 654 85. 551 75. 047 0. 000	0.0196 0.0195 0.0195 0.0197 0.0173	0. 0040 × 10. 0 = 0. 0400

CALC	ULATIO	N						
Detailed Design on Port Reactivation Project in La Union Province								
CALC FILE No.:								
CALC INDEX No		P/	GE 396					
ku ya Maraka	INITIA		DATE					
PREPARED BY	Y, And	- concord	26/67/01					
CHECKED BY			04/08/2002					

Ultimate limit state (Under ordinary conditions)
Partition wall (perpendicular to levee normal) — Perpendicular steel reinforcement
B = 100cm

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NO		Md (kN·m)	d (cm)	Asn (cm²)	Diameter (mm)	Pitch As (cm) (cm²)	Mud (kN·m)	γi·Md/Mud
I	7 6 5 4 3 2	0. 000 1. 644 1. 669 1. 693 1. 939 3. 240 13. 842	10. 0 10. 0 10. 0 10. 0 10. 0 10. 0	0.00 0.61 0.62 0.63 0.72 1.20 5.39	D13 D13 D13 D13 D13 D13 D13	40.0 3.17 40.0 3.17 40.0 3.17 40.0 3.17 40.0 3.17 40.0 3.17 10.0 20.66	9. 179 9. 179 9. 179 9. 179 9. 179 9. 179 47. 933	0. 00 0. 20 0. 20 0. 20 0. 23 0. 39 0. 32
11	7 6 5 4 3 2	0. 000 0. 368 0. 368 0. 393 0. 540 1. 423 8. 222	10. 0 10. 0 10. 0 10. 0 10. 0 10. 0 10. 0	0.00 0.14 0.14 0.14 0.20 0.52 3.12		40.0 3.17 40.0 3.17 40.0 3.17 40.0 3.17 40.0 3.17 40.0 3.17 10.0 20.66	9. 179 9. 179 9. 179 9. 179 9. 179 9. 179 47. 933	0. 00 0. 04 0. 04 0. 05 0. 06 0. 17 0. 19
Ш	7 6 5 4 3 2	0. 000 3. 485 3. 460 3. 510 3. 068 0. 000	10. 0 10. 0 10. 0 10. 0 10. 0 10. 0 10. 0	0.00 1.30 1.29 1.29 1.31 1.14 0.00	D13 D13 D13 D13 D13 D13 D13	40.0 3.17 40.0 3.17 40.0 3.17 40.0 3.17 40.0 3.17 40.0 3.17 10.0 20.66	9. 179 9. 179 9. 179 9. 179 9. 179 9. 179 47. 933	0. 00 0. 42 0. 41 0. 41 0. 42 0. 37 0. 00

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CALCULATION								
Detailed Design								
on Port Reactivation Project								
in La Union Province								
CALC FILE No.:								
CALC INDEX No	CALC INDEX No.: PAGE 395							
	HITH	۱L	DATE					
PREPARED BY	Y. An	10	26/07/12					
CHECKED BY	ENISH!	HUQS	es/08/202					

Serviceability limit state
Partition wall (perpendicular to levee normal) - Perpendicular steel reinforcement
B = 100cm

NO		Ms (kN·m)	d (cm)	Diameter (mm)	Pitch (cm)	As (cm²)		Crack wid W(cm)	
I	7 6 5 4 3 2	0. 000 0. 747 0. 759 0. 770 0. 881 1. 473 6. 292	10. 0 10. 0 10. 0 10. 0 10. 0	D13 D13 D13 D13 D13	40. 0 40. 0 40. 0 40. 0 40. 0 40. 0 10. 0	3. 17 3. 17 3. 17 3. 17 3. 17 3. 17 20. 66	0.000 25.259 25.665 26.037 29.790 49.809 35.592	0.0085 0.0086 0.0087 0.0100 0.0167	0. 0040 × 10. 0 = 0. 0400
I	7 6 5 4 3 2	0. 000 0. 167 0. 167 0. 178 0. 245 0. 647 3. 737	10. 0 10. 0 10. 0 10. 0 10. 0	D13 D13 D13 D13 D13	40. 0 40. 0 40. 0 40. 0 40. 0 40. 0 10. 0	3. 17 3. 17 3. 17 3. 17 3. 17 3. 17 20. 66	0.000 5.647 5.647 6.019 8.285 21.878 21.139	0.0019 0.0019 0.0020 0.0028 0.0073	0. 0040 × 10. 0 = 0. 0400
Ш	7 6 5 4 3 2	0. 000 1. 584 1. 573 1. 573 1. 595 1. 394 0. 000	10. 0 10. 0 10. 0 10. 0 10. 0	D13 D13 D13 D13 D13	40. 0 40. 0 40. 0 40. 0 40. 0 40. 0 10. 0	3. 17 3. 17 3. 17 3. 17 3. 17 3. 17 20. 66	0.000 53.562 53.190 53.190 53.934 47.137 0.000	0.0180 0.0178 0.0178 0.0178 0.0181	0. 0040 × 10. 0 = 0. 0400

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CALC	ULATIC	N	
Detail	ed Desig	'n	
on Port Rea	ctivation	Pı	ojact
in La Un	ion Prov	inc	6
CALC FILE No.:		7	
CALC INDEX NO		PA	GE 398
	INITIA	Ĺ,	DATE
PREPARED BY	Y. And	9	26/07/12
CHECKED BY	e Mishid	DΑ	09/08/2002

Ultimate limit state (Under ordinary conditions)
Partition wall (parallele to centerline) — Horizontal steel reinforcement
B = 100cm

NO	Md (kN·m)	d (cm)	Asn Diameter (cm²) (mm)	Pitch As (cm) (cm²)	Mud (kN⋅m)	γi•Md/Mud
I	7 11. 524 6 11. 043 5 11. 097 4 11. 150 3 11. 070 2 8. 696 1 2. 507	3 10.0 4 7 10.0 4 9 10.0 4 9 10.0 4 5 10.0 3	1. 44 D13, D13 1. 25 D13, D13 1. 27 D13, D13 1. 29 D13, D13 1. 26 D13, D13 1. 31 D13, D13 0. 93 D13, D13	10.0 12.67 10.0 12.67 10.0 12.67 10.0 12.67 10.0 12.67 10.0 12.67 10.0 12.67	32. 727 32. 727 32. 727 32. 727 32. 727 32. 727 32. 727	0, 39 0, 37 0, 37 0, 37 0, 37 0, 29 0, 08
II	7 2. 801 6 2. 774 5 2. 774 4 2. 801 3 2. 854 2 2. 748 1 1. 494	10.0 1 10.0 1 10.0 1 10.0 1 10.0 1	.04 D13, D13 .03 D13, D13 .03 D13, D13 .04 D13, D13 .06 D13, D13 .02 D13, D13 .55 D13, D13	10.0 12.67 10.0 12.67 10.0 12.67 10.0 12.67 10.0 12.67 10.0 12.67 10.0 12.67	32. 727 32. 727 32. 727 32. 727 32. 727 32. 727 32. 727	0. 09 0. 09 0. 09 0. 09 0. 10 0. 09 0. 05
Ш	7 23. 261 6 22. 594 5 22. 540 4 22. 567 3 22. 701 2 19. 206 1 0. 000	1 10.0 9 1 10.0 9 1 10.0 9 10.0 9 10.0 7	0.52 D13, D13 0.22 D13, D13 0.19 D13, D13 0.20 D13, D13 0.27 D13, D13 0.00 D13, D13	10.0 12.67 10.0 12.67 10.0 12.67 10.0 12.67 10.0 12.67 10.0 12.67 10.0 12.67	32. 727 32. 727 32. 727 32. 727 32. 727 32. 727 32. 727 32. 727	0. 78 0. 76 0. 76 0. 76 0. 76 0. 65 0. 00

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on Port Rea	ctivation	F	ojest				
in La Un	ion Prov	inc	e				
CALC FILE No.:			-				
CALC INDEX NO	:	P/	GE 399				
	INITIA	_	DATE				
PREPARED BY YANG 26/07/02							
CHECKED BY			09/08/2002				

Serviceability limit state
Partition wall (parallele to centerline) — Horizontal steel reinforcement
B = 100cm

NO		Ms (kN⋅m)	d Diameter (cm) (mm)	Pitch As (cm) (cm ²)	σse Crack width (N/mm²) W(cm)	Permission crack width Wiim (cm)
Ī	7 6 5 4 3 2	5. 238 5. 020 5. 044 5. 068 5. 032 3. 953 1. 140	10. 0 D13, D13 10. 0 D13, D13	10. 0 12. 67 10. 0 12. 67 10. 0 12. 67 10. 0 12. 67 10. 0 12. 67	46.982 0.0108 45.027 0.0104 45.242 0.0104 45.457 0.0105 45.134 0.0104 35.456 0.0082 10.225 0.0024	0. 0040 × 10. 0 = 0. 0400
I	7 6 5 4 3 2 1	1. 273 1. 261 1. 261 1. 273 1. 297 1. 249 0. 679	10. 0 D13, D13 10. 0 D13, D13	10.0 12.67 10.0 12.67 10.0 12.67 10.0 12.67 10.0 12.67	11. 418	0. 0040 × 10. 0 = 0. 0400
111	7 6 5 4 3 2	10. 573 10. 270 10. 246 10. 258 10. 318 8. 730 0. 000	10. 0 D13, D13 10. 0 D13, D13	10.0 12.67 10.0 12.67 10.0 12.67 10.0 12.67 10.0 12.67	94.834 0.0219 92.116 0.0212 91.901 0.0212 92.009 0.0212 92.547 0.0213 78.303 0.0181 0.000 0.0000	0. 0040 × 10. 0 = 0. 0400

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CALC	CALCULATION								
Detai	led Desi	gn							
on Port Rea	ctivation	Project							
	ion Prov	/ince							
CALC FILE No.:									
CALC INDEX No	.;	PAGE 400							
	INITIA	L DATE							
PREPARED BY	YeAnde	26/07/05							
CHECKED BY	R. NISH)HU	VOA 07/08/2002							

Ultimate limit state (Under ordinary conditions)
Partition wall (parallele to centerline)—Perpendicular steel reinforcement
B = 100cm

NO	Md (kN·m)	d Asn (cm) (cm²)	Diameter (mm)	Pitch (cm)	As (cm²)	Mud (kN·m)	γi·Md/Mud
I 7 6 5 4 3 2 1	0. 000 1. 787 1. 814 1. 867 2. 214 3. 628 15. 071	10.0 0.00 10.0 0.66 10.0 0.67 10.0 0.69 10.0 0.82 10.0 1.35 10.0 5.91	D13 D13 D13 D13 D13 D13 D13,D19	40. 0 40. 0 40. 0 40. 0 40. 0 10. 0	3. 17 3. 17 3. 17 3. 17 3. 17 3. 17 20. 66	9. 179 9. 179 9. 179 9. 179 9. 179 9. 179 47. 933	0. 00 0. 21 0. 22 0. 22 0. 27 0. 43 0. 35
II 7 6 5 4 3 2 1	0. 000 0. 400 0. 400 0. 453 0. 667 1. 654 9. 016	10. 0 0. 15 10. 0 0. 15 10. 0 0. 17 10. 0 0. 25 10. 0 0. 61	D13 D13 D13 D13 D13 D13 D13, D19	40.0 40.0 40.0 40.0 40.0 40.0 10.0	3. 17 3. 17 3. 17 3. 17 3. 17 3. 17 20. 66	9. 179 9. 179 9. 179 9. 179 9. 179 9. 179 47. 933	0. 00 0. 05 0. 05 0. 05 0. 08 0. 20 0. 21
III 7 6 5 4 3 2 1	0. 000 3. 761 3. 761 3. 761 3. 788 3. 201 0. 000	10. 0 0. 00 10. 0 1. 40 10. 0 1. 40 10. 0 1. 40 10. 0 1. 41 10. 0 1. 19 10. 0 0. 00	D13 D13 D13 D13 D13 D13 D13, D19	40. 0 40. 0 40. 0 40. 0 40. 0 40. 0 10. 0	3. 17 3. 17 3. 17 3. 17 3. 17 3. 17 20. 66	9. 179 9. 179 9. 179 9. 179 9. 179 9. 179 47. 933	0. 00 0. 45 0. 45 0. 45 0. 45 0. 38 0. 00

2 4 4 4								
CALC	CALCULATION							
Detail	ed Desig	J1)						
on Port Read	ctivation	Pi	ojact					
in La Uni	on Prov	inc	0					
CALC FILE No.:								
CALC INDEX No	.:	PA	GE 401					
	INITIA	Ļ	DATE					
PREPARED DY	Y. Aradi	3	26/07/01					
CHECKED BY	R. NISHIMU	124	01/08/2002					

Serviceability limit state
Partition wall (parallele to centerline) - Perpendicular steel reinforcement
B = 100cm

			·	-				er ve		D = 1000m
NO	·	•	Ms (kN·m)	d (cm)	Diameter (mm)	Pitch (cm)	As (cm²)	øse (N/mm²)	Crack width W(cm)	Permission crack width W 1 in (cm)
I	7 6 5 4 3 2		0. 000 0. 812 0. 825 0. 849 1. 006 1. 649 6. 851	10. 0 10. 0 10. 0 10. 0 10. 0 10. 0	D13 D13 D13 D13	40. 0 40. 0 40. 0 40. 0 40. 0 40. 0 10. 0	3. 17 3. 17 3. 17 3. 17 3. 17 3. 17 20. 66	0.000 27.457 27.897 28.708 34.017 55.760 38.764	7 0.0092 7 0.0094 8 0.0096 7 0.0114 0 0.0187	0.0040 × 10.0 = 0.0400
II	7 6 5 4 3 2 1		0. 000 0. 182 0. 182 0. 206 0. 303 0. 752 4. 098	10. 0 10. 0 10. 0 10. 0 10. 0 10. 0	D13 D13 D13 D13 D13	40. 0 40. 0 40. 0 40. 0 40. 0 40. 0 10. 0	3. 17 3. 17 3. 17 3. 17 3. 17 3. 17 20. 66	0.000 6.154 6.154 6.966 10.246 25.428 23.181	4 0.0021 4 0.0021 5 0.0023 6 0.0034 8 0.0085	0. 0040 × 10. 0 = 0. 0400
III	7 6 5 4 3 2		0. 000 1. 710 1. 710 1. 710 1. 722 1. 455 0. 000	10. 0 10. 0 10. 0 10. 0 10. 0	D13 D13 D13 D13	40. 0 40. 0 40. 0 40. 0 40. 0 40. 0 10. 0	3. 17 3. 17 3. 17 3. 17 3. 17 3. 17 20. 66	0.000 57.823 57.823 57.823 58.228 49.200 0.000	3 0.0194 3 0.0194 3 0.0194 3 0.0195 0 0.0165	0. 0040 × 10. 0 = 0. 0400

CALC	ULATI	ON	
Detai	led Des	gn	
on Port Rea	ctivatio	n Fr	ojact
in La Un	ion Pro	vince	•
CALC FILE No.:			
CALC INDEX NO		PA	GE 402
	INIT!		0415
PREPARED 1.1	Y. Ana	16	26/07/62
CHECKED BY	E. MISHIR		09/08/200

Ultimate limit state (Under ordinary conditions)
Bottom slab(A Room) — Perpendicular to levee normal An upper steel reinforcement
B = 100cm

		 		·					b = 100 cm
NO		Md (kN·m)	d (cm)	Asn (cm²)	Diameter (mm)	Pitch (cm)	As (cm²)	Mud (kN·m)	γi·Md/Mud
I	5 4 3 2 1	 0. 000 40. 862 92. 207 45. 144 0. 000	53. 0 53. 0 53. 0 53. 0 53. 0	0.00 2.84 6.47 3.14 0.00	D13 D13 D13, D13 D13 D13	20. 0 20. 0 10. 0 20. 0 20. 0	6.34 6.34 12.67 6.34 6.34	99. 479 99. 479 196. 171 99. 479 99. 479	0. 00 0. 45 0. 52 0. 50 0. 00
I	5 4 3 2 1	0. 000 24. 927 51. 922 27. 957 0. 000	53. 0 53. 0 53. 0 53. 0 53. 0	0.00 1.73 3.62 1.94 0.00	D13 D13 D13 D13 D13	20.0 20.0 20.0 20.0 20.0 20.0	6.34 6.34 6.34 6.34 6.34	99. 479 99. 479 99. 479 99. 479 99. 479	0. 00 0. 28 0. 57 0. 31 0. 00
III	5 4 3 2 1	0. 000 0. 000 0. 000 0. 000 0. 000	53. 0 53. 0	0.00 0.00 0.00 0.00 0.00	D13 D13 D13 D13 D13	20. 0 20. 0 20. 0 20. 0 20. 0 20. 0	6.34 6.34 6.34 6.34 6.34	99. 479 99. 479 99. 479 99. 479 99. 479	0.00 0.00 0.00 0.00 0.00

CALCULATION								
Detail	ed Desig	jn						
on Port Rea	ctivation	Pr	oject					
in La Uni	ion Prov	inc	е					
CALC FILE No.:		-						
CALC INDEX HO		19/	GE 403					
	INITIA	ı,	DATE					
PREPARED BY Y. Ando 26/07/01								
CHECKED BY ENISHIMUND 07/08/2002								