B. Sidewall (parallel to centerline: landside) slab fixed on three sides and free on one side $P1 = -79.41 (kN/m^2)$ $P2 = -94.04 (kN/m^2)$ $P3 = -94.04 (kN/m^2)$ P4 = 4.900 (m) P4 = 4.900 (m) P5 = 4.900 (m)654321 3 The ratio of a length of sides 16.200 шпіпш 4.900 P2= -94.04 -79.41 -14.63

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

(i) Section force by equivalent uniform load $P=-79.41\,(kN/m^2)$ MX = $P\cdot LY^2\cdot X=-79.41\times 4.900^2\times MY=P\cdot LY^2\cdot Y=-79.41\times 4.900^2\times MY=0.000$

$$MX = P \cdot LY^2 \cdot X = -79.41 \times 4.900^2 \times X = -1906.63 \times X$$

 $MY = P \cdot LY^2 \cdot Y = -79.41 \times 4.900^2 \times Y = -1906.63 \times Y$

		Х	MX	Υ	MY
I	7	0.0000	0. 000	0. 0432	-82. 367
	6	0.0067	-12. 774	0. 0414	-78. 935
	5	0.0068	-12. 965	0. 0416	-79. 316
	4	0.0070	-13. 346	0. 0418	-79. 697
	3	0.0083	-15. 825	0. 0415	-79. 125
	2	0.0136	-25. 930	0. 0326	-62. 156
	1	-0.0565	107. 725	-0. 0094	17. 922
П	7	0.0000	0.000	0. 0105	-20. 020
	6	0.0015	-2.860	0. 0104	-19. 829
	5	0.0015	-2.860	0. 0104	-19. 829
	4	0.0017	-3.241	0. 0105	-20. 020
	3	0.0025	-4.767	0. 0107	-20. 401
	2	0.0062	-11.821	0. 0103	-19. 638
	1	-0.0338	64.444	-0. 0056	10. 677
Ш	7	0,0000	0.000	-0. 0872	166. 258
	6	-0,0141	26.884	-0. 0847	161. 492
	5	-0,0141	26.884	-0. 0845	161. 111
	4	-0,0141	26.884	-0. 0846	161. 301
	3	-0,0142	27.074	-0. 0851	162. 255
	2	-0,0120	22.880	-0. 0720	137. 278
	1	0,0000	0.000	0. 0000	0. 000

CALC	ULATIO	٧
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in La Un	ion Provin	CE
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ALC INDEX NO	.: P	AGE 9
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PREPARED BY	Y. Ando	26/07/
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(ii) Section force by triangular distribution load $P = -14.63 \, (kN/m^2)$ $MX = P \cdot LY^2 \cdot X = -14.63 \times 4.900^2 \times X = -351.27 \times X$ $MY = P \cdot LY^2 \cdot Y = -14.63 \times 4.900^2 \times Y = -351.27 \times Y$

		Х	MX	Y	MY
I	7654321	0.0000 0.0008 0.0022 0.0035 0.0059 0.0123 -0.0496	0.000 -0.281 -0.773 -1.229 -2.072 -4.321 17.423	0. 0029 0. 0071 0. 0139 0. 0209 0. 0277 0. 0263 -0. 0083	-1, 019 -2, 494 -4, 883 -7, 341 -9, 730 -9, 238 2, 916
II	7 6 5 4 3 2 1	0.0000 0.0002 0.0005 0.0008 0.0018 0.0058 -0.0302	0,000 -0,070 -0,176 -0,281 -0,632 -2,037 10,608	0. 0003 0. 0017 0. 0034 0. 0052 0. 0072 0. 0086 -0. 0050	-0. 105 -0. 597 -1. 194 -1. 827 -2. 529 -3. 021 1. 756
Ш	7654321	0.0000 -0.0019 -0.0045 -0.0071 -0.0097 -0.0099 0.0000	0.000 0.667 1.581 2.494 3.407 3.478 0.000	-0. 0008 -0. 0116 -0. 0271 -0. 0428 -0. 0583 -0. 0594 0. 0000	0. 281 4. 075 9. 519 15. 034 20. 479 20. 865 0. 000

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The sum total of (i) and (ii)

		·	
		MX	MY
I	7 6 5 4 3 2 1	0. 000 -13. 055 -13. 738 -14. 575 -17. 897 -30. 251 125. 148	-83. 386 -81. 429 -84. 199 -87. 038 -88. 855 -71. 394 20. 838
П	7 6 5 4 3 2	0, 000 -2, 930 -3, 036 -3, 522 -5, 399 -13, 858 75, 052	-20. 125 -20. 426 -21. 023 -21. 847 -22. 930 -22. 659 12. 433
Ш	7 6 5 4 3 2 1	0. 000 27. 551 28. 465 29. 378 30. 481 26. 358 0. 000	166. 539 165. 567 170. 630 176. 335 182. 734 158. 143 0. 000

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Correction of the non-balance bending moment in a side wall corner Non-balance arises in bending moment of a transverse direction on the intersection of side wall (perpendicular to levee normal) and side wall (parallel to centerline) Since it is calculated as slab fixed on three sides and free on one side, moment is distributed and corrected by the rigid ratio of slab. Correction is made about corner (IIIAxis) and the central part of span(IAxis)

Rigid ratio
$$K1 = \frac{E1 \cdot 11}{L1} \qquad K2 = \frac{E2 \cdot 12}{L2}$$

$$E1 = E2 \qquad I1 = I2$$
The relative share of moment
$$e1 = \frac{K1}{K1 + K2} = \frac{L2}{L1 + L2} = \frac{4.900}{4.900 + 4.700} = 0.510$$

$$e2 = \frac{K2}{K1 + K2} = \frac{L1}{L1 + L2} = \frac{4.700}{4.700} = 0.490$$

Correction of moment in corner (MAxis) When referred to as (M1 > M2)

 $\Delta M = M1 - M2$ Correction moment

$$M1' = M1 - \Delta M \cdot e1 = M1 - 0.510 \cdot \Delta M$$

 $M2' = M2 + \Delta M \cdot e2 = M2 + 0.490 \cdot \Delta M$

Correction of the moment in the central part (I Axis) of span
Let 50% of the quantity of corrections in III Axis be the quantity of corrections However, when a correction value is smaller than the original moment, a safe value is taken, and the value before correction is used. $\begin{array}{lll} \text{M}_{1\,B} &=& \text{M}_{1\,B} &=& 1/2 & \cdot \Delta \, \text{M} & \cdot \, \text{el} &=& \text{M}_{1\,B} &=& 0.255 & \cdot \, \Delta \, \text{M} \\ \text{M}_{2\,B} &=& \text{M}_{2\,B} &+& 1/2 & \cdot \, \Delta \, \text{M} & \cdot \, \text{e2} &=& \text{M}_{2\,B} &+& 0.245 & \cdot \, \Delta \, \text{M} \\ \end{array}$

$$M_{1B} = M_{1B} - 1/2 \cdot \Delta M \cdot e1 = M_{1B} - 0.255 \cdot \Delta M$$
 $M_{2B} = M_{2B} + 1/2 \cdot \Delta M \cdot e2 = M_{2B} + 0.245 \cdot \Delta M$

The table of a correction moment

Sidewal	l(perpendicular e1	to	levee normal)		Sidewall(parallel to centerline) e2			rline)
I		Ш				Ш		I
M _{IB}	1/2·∆M·e1	M1	> ΔM·e1 (ΔΜ) Δ M ⋅e2	M2 < M2'	1/2·∆M·e2	< M _{2 B} ,

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on Port Rea	led Designation of the Province of the Provinc	P	roject
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CALC INDEX No).;	P/	IGE 97
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PREPARED BY			26/07/02
CHECKED BY			07/06/202

(a) Sidewall (perpendicular to levee normal:seaside) and Front wall (parallel to centerline:seaside) (1) While afloat

Sidew	all (perpe	ndicular e1 =	The second secon	rmal:seaside)	Fro		rallel to c e2 = 0.		e:seaside)
	I		Ш				Ш		1
7 7'	2. 292 > 2. 147	0. 145	-0. 170 > -0. 460	0.290 (0.	568)	0. 278	< ^{-0.738} -0.460	0. 139	< 2. 676 2. 815
6 6	6. 027 > 5. 722	0. 305	-9. 508 > -10. 117	0.609 (1.	195)	0. 586	-10. 703 < -10. 117	0. 293	< 6. 551 6. 844
5 5'	11. 800 > 11. 247	0. 553	-22. 836 > -23. 942	1.106 (2	. 169)	1. 063	-25. 005 < -23. 942	0. 531	< 12. 826 13. 357
4 4'	17. 742 > 16. 958	0. 784	-36. 419 > -37. 986	1.567 (3	. 073)	1. 506	-39. 492 < -37. 986	0. 753	< 19, 285 < 20, 038
3 3'	23. 685 > 22. 696	0. 989	-49. 916 > -51. 894	1.978 (3	. 878)	1. 900	-53. 794 < -51. 894	0. 950	<25. 559 26. 509
2 2'	23. 600 > 23. 088	0. 512	-52. 803 > -53. 826	1.023 (2	. 006)	0. 983	-54. 809 < -53. 826	0. 491	<24. 267 24. 758
1 1'	-7. 046 > -7. 046	0. 000	0.000 > 0.000	0.000 (0	. 000)	0. 000	< 0.000 0.000	0.000	< ^{-7. 658} <rr><rr><rr><rr>-7. 658</rr></rr></rr></rr>

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The moment after correction

Sidewall (perpendicu	ular to levee norm	al:seaside)	Front wall (parallel to center) e2 = 0.490	ine:seaside)
I	Ш		Ш	I
7' 2. 292	-0. 460		-0. 460	2. 815
6' 6. 027	-10. 117		-10. 117	6. 844
5' 11.800	-23. 942		-23. 942	13. 357
4' 17, 742	-37. 986		-37. 986	20. 038
3' 23, 685	-51. 894		-51. 894	26. 509
2' 23 600	-53. 826		-53. 826	24. 758
1' -7. 046	0.000		0.000	-7. 658

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CALC INDEX No		PA	GE 99	
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PREPARED BY	1. And	lo	26/07/	0
CHECKED BY	2. NISHIM			

(2) After Construction

Sidewall(perpendicular to levee normal:seaside) e1 = 0.510				Front wall (parallel to centerline:seaside) e2 = 0.490					
	I		Ш		_ 		Ш		I
7	-77. 136 > -74. 143	2. 993	154. 800 > 160. 787	5. 987 (11	. 739)	5. 752	166, 539 < 160, 787	2. 876	-83. 386 < -86. 262
6 6	-75. 631 -72. 668	2. 963	153. 947	5. 926 (11	. 620)	5. 694	165. 567	2. 847	-81. 429 <
5'	-78. 115 >	3. 075	159. 873 158. 572 >	6. 150 (12	. 058)	5. 908	159. 873 170. 630	2. 954	-84. 276 -84. 199
4	-75. 040 -80. 668 >	3. 189	164. 722 163. 828 >	6. 379 (12	. 507)	6. 128	164. 722 176. 335		-87. 153 -87. 038
3	-77. 479 -83. 045 >	3. 040	170. 207 170. 814 >	6. 079 (11	. 920)	5. 841	170. 207 182. 734 <	2. 920	-90. 102 -88. 855 <
3' 2	-80. 005 -69. 955 >	1. 199	176. 893 153. 443 >	2. 397 (4	. 700)	2. 303	176. 893 158. 143	1. 152	-91. 775 -71. 394
2'	-68. 756 19. 403	0. 000	0. 000 >	0.000 (0			0.000		-72. 546 20. 838
1'	19. 403	0. 000	0.000		. 000/	0.000	0.000	0.000	20. 838

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tivation	Pr	oject
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The moment after correction

Side	ewall (perpendic	cular to levee normal:seaside) e1 = 0.510	Front wall(parallel to centerline:seaside) e2 = 0.490				
	I	Ш	Ш	I			
7'	-77. 136	160. 787	160. 787	-86. 262			
6'	-75. 631	159. 873	159. 873	-84. 276			
5'	-78. 115	164. 722	164. 722	-87. 153			
4'	-80. 668	170. 207	170, 207	-90. 102			
3'	-83. 045	176. 893	176. 893	-91. 775			
2'	-69. 955	155. 840	155. 840	-72. 546			
1'	19. 403	0. 000	0.000	20. 838			

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CHECKED BY	P. DISHER	M	09/08/200

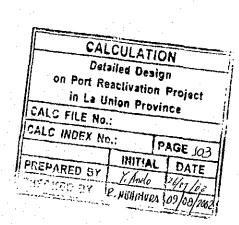
(b) Sidewall (perpendicular to levee normal: landside) and Rear wall (parallel to centerline : landside) (1) While afloat

Side	wall(perper	ndicular 1 e1 =	to levee no 0,510	rmal:landside)	Rear	wall(paral		nterline D. 490	: landside)
	1		Ш				Ш		I
7	2. 292 >	0. 145		0.290 (0.	568)	0. 278	< -0. 738	0.139	
6	2. 147 6. 027 >	0. 305	-0. 460 -9. 508 >	0.609 (1.	195)	0. 586		0. 293	2. 815 < 6. 551
6' 5	5. 722 11. 800	0 552	-10. 117 -22. 836	1 106 / 2	160)	1 062	-10. 117 -25. 005		12. 826
5' 4	11. 247 17. 742	0. 553	-23. 942 -36. 419	1.106 (2.	(09)	1,003	<	0.531	13. 357
4'	16. 958	0. 784	-37. 986	1.567 (3.	073)	1. 506	< -37. 986		< 20. 038
3,	23. 685 > 22. 696	0. 989	-49. 916 > -51. 894	1.978 (3.	878)	1. 900	-53. 794 < -51. 894	0.950	
2'	23. 600 > 23. 088	0. 512	-52. 803 > -53. 826	1.023 (2.	006)	0. 983	-54, 809 < -53, 826	0. 491	< 24. 267 < 24. 758
1'	-7.046 > -7.046	0. 000	0.000 > 0.000	0.000 (0.	000)	0. 000	< 0.000 0.000	0. 000	< ^{-7. 658} <rr><rr><rr><rr></rr></rr></rr></rr>

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On Port Re	iled Design activation Project nion Province
CALC FILE No.	·
CALC INDEX NO	PAGE 102
D.D.B.	INITIAL DATE
PREFARED BY	Y. Ando 26/07/02
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The moment after correction

Side	wall(perpen	dicular to levee norm	nal:landside)	Rear wall(parallel to cen	terline : landside) .490
	I	Ш		Ш	I
7'	2. 292	-0.460		-0. 460	2. 815
6'	6. 027	-10. 117		-10. 117	6. 844
5'	11. 800	-23. 942		-23. 942	13. 357
4'	17. 742	-37. 986		-37. 986	20. 038
3′	23, 685	-51. 894	71 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1	-51.894	26. 509
2'	23. 600	-53. 826		-53. 826	24. 758
1'	-7. 046	0.000		0.000	-7. 658



(2) After Construction

Side	wall(perpen	dicular 1 e1 =	to levee no 0.510	rmal:landside)	Rear	wall(para	llel to cen e2 = 0	terline : . 490	landside)
	I		Ш				Ш		I
7 7'	-77. 136 > -74. 143	2. 993	154. 800 > 160. 787	5.987 (11.	739)	5. 752	166, 539 < 160, 787	2. 876	-83. 386 < -86. 262
6	-75. 631 > -72. 668	2. 963	153. 947 > 159. 873	5.926 (11	620)	5. 694	165, 567 < 159, 873	2. 847	-81. 429 < -84. 276
5 5'	-78. 115 > -75. 040	3. 075	158. 572 > 164. 722	6. 150 (12	058)	5. 908	170. 630 < 164. 722	2. 954	-84. 199 < -87. 153
4′	-80. 668 > -77. 479	3. 189	163. 828 > 170. 207	6. 379 (12	507)	6. 128	176. 335 < 170. 207	3. 064	-87. 038 < -90. 102
3,	-83. 045 > -80. 005	3. 040	170. 814 > 176. 893	6.079 (11	920)	5. 841	182. 734 < 176. 893	2. 920	-88. 855 < -91. 775
2'	-69. 955 > -68. 756	1. 199	153. 443 > 155. 840	2.397 (4			158. 143 < 155. 840	1. 152	
1'	19. 403 > 19. 403	0. 000	0.000 > 0.000	0.000 (0	. 000)	0. 000	< 0.000 0.000	0. 000	<20.838 20.838

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The moment after correction

Sidev	ali (perpe	endicular to levee no e1 = 0.510	ormal:landside)	Rear wall(parallel to centerline : land e2 = 0.490				
	I	Ш		Ш	I			
7'	-77. 136	160. 787		160. 787	-86. 262			
6'	-75. 631	159. 873		159. 873	-84. 276			
5'	-78. 115	164. 722		164. 722	-87. 153			
4'	-80. 668	170. 207		170. 207	-90. 102			
3'	-83. 045	176. 893		176. 893	-91. 775			
2'	-69. 955	155. 840		155. 840	-72. 546			
1'	19. 403	0.000		0.000	20. 838			

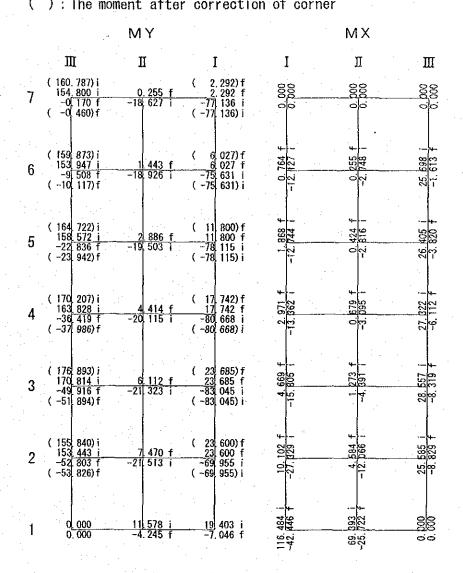
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Sidewall (perpendicular to levee normal, seaside) Golligation of bending moment Top (left) side: +moment Bottom (right) side: -moment (): The moment after correction of corner

		MY			мх	
	Ш	п	I	ľ	п	Ш
7	(160, 787) i 154, 800 i -0, 170 f (-0, 460) f	0, 255 f -18, 627 i	(2, 292) f 2, 292 f -77, 136 i (-77, 136) i	0 0 0 0 0 0 0 0 0 0 0	0.00	0 000
6	(159 873) i 153 947 i -9 508 f (-10 117) f	1 443 f -18 926 i	(6 027) f 6 027 f -75 631 i (-75 631) i	0, 764 f	0.255 + -2.748	25. 698 -1. 613 F
5	(164, 722) i 158, <u>572 i</u> -22, 836 f (-23, 942) f	2 886 f -19 503 i	(11 800) f 11 800 f -78 115 i (-78 115) i	1.868 f	0.424 f -2.816 i	26.405 i -3.820 f
4	(170, 207) i 163 <u>828 i</u> -36, 419 f (-37 986) f	4 414 f -20 115 i	(17, 742) f 17, 742 f -80, 668 i (-80, 668) i	2. 971 f -13. 362 1	0 679 f -3.095 t	27. 322 -6. 112 #
3	(176, 893) i 170, 814 i -49, 916 f (-51, 894) f	6 112 f -21 323 i	(23 685) f 23 685 f -83 045 i (-83 045) i	4, 669 f -15, 805 f	1. 273 f -4. 391	28. 557 i -8. 319 f
2	(155, 840) i 153 <u>443 i</u> -52 803 f (-53 826) f	7, 470 f -21, 513 i	(23 600) f 23 600 f -69 955 i (-69 955) i	10, 102 f	4. 584 f -12. 066 i	25, 585 i -8, 829 f
1	0 <u>000</u> 0.000	11 578 i -4. 245 f	19 403 i -7.046 f	-42. 446 †	69, 393 i -25, 722 †	0.000

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CALC	ULATION
Detail	ed Design
on Port Real	ctivation Project
in La Uni	ion Praviace
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	INITIAL DATE
PREPARED BY	Y. Ando 21/07/62
CHECKED BY	P. NISHIHURA 01/08/2002

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



CALC	ULATION
Detail	led Design
on Port Rea	ctivation Project
in La Un	ion Province
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PREPARED BY	Y. Ando 126/07/0
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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

		MY			MX	
	Ш	П	I	· I	II	Ш
7	(160, 787) i 166, 539 i -0, 738 f (-0, 460) f	0.277 f -20.125 i	(2. 815) f 2. 676 f -83 386 i (-86 262) i	00 00	000 000 000	00000
6	(159, 873) i 165, 567 i -10, 703 f (~10, 117) f	1 569 f -20 426 i	(6 844) f 6 551 f -81 429 i (-84 276) i	0. 738 f -13. 055 l	0.1185 F -2.930	27 551 i -1.753 f
5	(164 722) i 170 630 i -25 005 f (-23 942) f	3 137 f -21 023 i	(13, 357) f 12, 826 f -84, 199 i (-87, 153) i	2. 030 f -13. 738 i	0.461 -3.036 i	28.465 i
4	(170, 207) i 176, 335 i -39, 492 f (-37, 986) f	4. 798 f -21. 847 i	(20 038) f 19 285 f -87 038 i (-90 102) i	3. 229 f -14. 575 i	0 738 f	29.378 i -6.551 f
3	(176, 893) 182, 734 -53, 794 f (-51, 894) f	6 643 f -22 930 i	(26 509) f 25 559 f -88 855 i (-91 775) i	5. 444 f -17. B97 i	-5, 561 f -5, 399 i	30. 481 j -8. 950 f
2	(155 840) i 158 143 i -54 809 f (-53 826) f	7, 935 f -22 659 i	(24 758) f 24 267 f -71 394 i (-72 546) i	11, 349 f -30, 251 i	5,352 f	26 358 i -9 135 f
1	0 <u>000</u> 0.000	12 433 i -4. 614 f	20 838 i -7 658 f	125, 148 i -45, 766 f	75, 052 i -27, 866 f	000 000 000

CALC	ULATION				
Detailed Design on Port Reactivation Project in La Union Province					
CALC FILE No .:					
CALC INDEX No	PAGE 108				
	INITIAL DATE				
PREPARED BY	7. Ando -26/07/6				
CHECKED BY	E. NISHINURA 03/08/200				

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

		MY	. *		MX	
	Щ	П	I	1	П	Ш
7	(160, 787) i 166, 539 i -0, 738 f (-0, 460) f	0. 277 f -20. 125 i	2. 815) f 2. 676 f -83, 386 i (-86, 262) i	0.000 0.000	0.000	0.00
6	(159 873) i 165 567 i -10 703 f (-10 117) f	1 569 f -20 426 i	(6 844) f 6 551 f -81 429 i (-84 276) i	0, 738 f -13, 055 i	0, 185 f	27, 551 i -1,753 f
5	(164, 722) j 170, 630 j -25, 005 f (-23, 942) f	3 137 f -21 023 i	(13 357) f 12 826 f -84 199 i (-87 153) i	2. 030 f	0.461 -3.036	28.465 i -4.152 f
4	(170, 207) i 176, 335 i -39, 492 f (-37, 986) f	4 798 f -21 847 i	(20 038) f 19 285 f -87 038 i (-90 102) i	3, 229 f	0. 738 f -3. 522 i	29, 378 i -6, 551 f
3	(176 893) i 182 734 i -53 794 f (-51 894) f	6 643 f -22 930 j	(26 509) f 25 559 f -88 855 i (-91 775) i	5, 444 f	-5. 399 i	30, 481 i
2	(155, 840) i 158, 143 i -54, 809 f (-53, 826) f	7, 935 f -22, 659 i	(24, 758) f 24, 267 f -71, 394 i (-72, 546) i	11.349 f	-13.852 f	26.358 i -9.135 f
1	0 <u>000</u> 0.000	12 433 i -4 614 f	20 838 i -7 658 f	125. 148 i -45. 766 f	75. 052 i -27. 866 f	000 000 0

CALC	ULATIO	N				
Detailed Design on Port Reactivation Project in La Union Province						
CALC FILE No .:						
CALC INDEX No	.:	P	IGE 109			
INITIAL DATE						
PREPARED BY Y, Ando 2407/62						
CHECKED BY	e. มนมเหง	Oh.	19/08/2002			

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

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	A	CALCI Detaile	LATIC d Desig	N	
	in L	. uesci			$\cdot \parallel$
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			P.	GE 110	$-\parallel$
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		P. N.L	HINERA	9/08/202	

A Room
While afloat
slab fixed on four sides
P1 = 32.75(kN/m²)
P2 = 32.75(kN/m²)
LX = 4.700(m)
LY = 4.900(m)
The ratio of a length of sides
4.700

--- = 0.964.900

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

LY= 4.900 5 4 3 2 1 шпіпш

Section force by equivalent uniform load P = $32.75 \, (kN/m^2)$ MX = P · LX² · X = $32.75 \times 4.700^2 \times X$ MY = P · LX² · Y = $32.75 \times 4.700^2 \times Y$

723, $45 \times X$ 723, $45 \times Y$

		Х	МХ	Υ	MY
I	5	-0.0513	-37. 113	-0.0086	-6, 222
	4	0.0096	6. 945	0.0116	8.392
	3 2	0, 0206 0, 0096	14. 903 6. 945	0.0206 0.0116	14, 903 8, 392
	1	-0.0513	-37. 113	-0.0086	-6. 222
${f II}$	5	-0.0324	-23. 440	-0.0054	-3. 907
	4	0.0059	4. 268	0.0059	4. 268
1.	3	0.0116	8. 392	0.0096	6. 945
	2	0.0059	4. 268	0.0059	4. 268
<u> </u>		-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
	1				I

CALCULA	TION
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CALC FILE No.:	
CALC INDEX No.:	PAGE III
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***************************************	THURA 03/08/20

A Room

After Construction Upward load (above)

The ratio of a length of sides
$$\frac{P2}{73.09}$$

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

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

(i) Section force by equivalent uniform load
$$P = 73.09 \, (kN/m^2)$$
 $MX = P \cdot LX^2 \cdot X = 73.09 \times 4.700^2 \times X = 1614.56 \times X$ $MY = P \cdot LX^2 \cdot Y = 73.09 \times 4.700^2 \times Y = 1614.56 \times Y$

		Х	MX	Υ	MY
I	5	-0. 0513	-82. 827	-0. 0086	-13, 885
	4	0. 0096	15. 500	0. 0116	18, 729
	3	0. 0206	33. 260	0. 0206	33, 260
	2	0. 0096	15. 500	0. 0116	18, 729
	1	-0. 0513	-82. 827	-0. 0086	-13, 885
II	5	-0. 0324	-52. 312	-0. 0054	-8. 719
	4	0. 0059	9. 526	0. 0059	9. 526
	3	0. 0116	18. 729	0. 0096	15. 500
	2	0. 0059	9. 526	0. 0059	9. 526
	1	-0. 0324	-52. 312	-0. 0054	-8. 719
Ш	5	0.0000	0. 000	0.0000	0.000
	4	-0.0054	-8. 719	-0.0324	-52.312
	3	-0.0086	-13. 885	-0.0513	-82.827
	2	-0.0054	-8. 719	-0.0324	-52.312
	1	0.0000	0. 000	0.0000	0.000

CALCULATION	N
Datailed Design on Port Reactivation	Project
in La Union Provi	AC9
GALC FILE No.1	
CALC INDEX No.:	PAGE 112
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PREPARED BY I KANA	0 26/07/62
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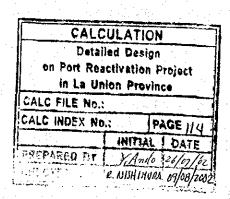
(ii) Section force by triangular distribution load $P = -27.11 \, (kN/m^2)$ $MX = P \cdot LX^2 \cdot X = -27.11 \times 4.700^2 \times X = -598.86 \times X$ $MY = P \cdot LX^2 \cdot Y = -27.11 \times 4.700^2 \times Y = -598.86 \times Y$

	·	Х	MX	Y	MY
I	5	-0. 0334	20. 002	-0. 0056	3, 354
	4	0. 0080	-4. 791	0. 0069	-4, 132
	3	0. 0103	-6. 168	0. 0103	-6, 168
	2	0. 0015	-0. 898	0. 0047	-2, 815
	1	-0. 0179	10. 720	-0. 0030	1, 797
I	5	-0. 0223	13. 355	-0. 0037	2. 216
	4	0. 0052	-3. 114	0. 0040	-2. 395
	3	0. 0058	-3. 473	0. 0048	-2. 875
	2	0. 0006	-0. 359	0. 0018	-1. 078
	1	-0. 0101	6. 048	-0. 0017	1. 018
Ш	54321	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

CAL	CULATI	ON		=	
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CALC FILE No.:					
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The sum total of (i) and (ii)

:		MX	MY
1	5	-62. 825	-10.531
	4	10. 709	14.597
	3	27. 092	27.092
	2	14. 602	15.914
	1	-72. 107	-12.088
П	5	-38. 957	-6. 503
	4	6. 412	7. 131
	3	15. 256	12. 625
	2	9. 167	8. 448
	1	-46. 264	-7. 701
Ш	5	0. 000	0, 000
	4	-6. 563	-39, 856
	3	-11. 310	-67, 436
	2	-7. 581	-45, 365
	1	0. 000	0, 000



B Room

While afloat

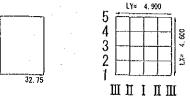
slab fixed on four sides P1 = 32.75 (kN/m²) P2 = 32.75 (kN/m²) LX = 4.600 (m)

P1 = P2 = LX = LY = 4. 900 (m)

The ratio of a length of sides

4.600

-=0.944,900



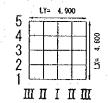
The coefficient table of $\lambda = 1.00$ is used.

Section force by equivalent uniform load $P = 32.75 (kN/m^2)$ $MX = P \cdot LX^2 \cdot X = 32.75 \times 4.600^2$ $MY = P \cdot LX^2 \cdot Y = 32.75 \times 4.600^2$ 692.99 × X 692.99 × Y 4.600^2 × X × Y 4. 600²

		Χ	MX	Υ	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 Deteiled Design on Port Reactivation Fragect in La Union Province CALC FILE No .: CALC INDEX No .: INITIAL PREPARED BY Y. Ando 126/6 CHECKER e. WISH I HEED 09/08

B Room



$$\lambda = \frac{4.000}{4.900} = 0.94$$

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

(i) Section force by equivalent uniform load
$$P = 45.98 \, (kN/m^2)$$
 $MX = P \cdot LX^2 \cdot X = 45.98 \times 4.600^2 \times X = 972.94 \times X$ $MY = P \cdot LX^2 \cdot Y = 45.98 \times 4.600^2 \times Y = 972.94 \times Y$

		Х	MX	Υ	MY
I	5	-0. 0513	-49, 912	-0. 0086	-8, 367
	4	0. 0096	9, 340	0. 0116	11, 286
	3	0. 0206	20, 043	0. 0206	20, 043
	2	0. 0096	9, 340	0. 0116	11, 286
	1	-0. 0513	-49, 912	-0. 0086	-8, 367
П	5	-0. 0324	-31. 523	-0. 0054	-5. 254
	4	0. 0059	5. 740	0. 0059	5. 740
	3	0. 0116	11. 286	0. 0096	9. 340
	2	0. 0059	5. 740	0. 0059	5. 740
	1	-0. 0324	-31. 523	-0. 0054	-5. 254
Ш	5	0.0000	0. 000	0.0000	0.000
	4	-0.0054	-5. 254	-0.0324	-31,523
	3	-0.0086	-8. 367	-0.0513	-49,912
	2	-0.0054	-5. 254	-0.0324	-31,523
	1	0.0000	0. 000	0.0000	0.000

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on Port Re in La U	activation nion Provi	Project
CALC FILE No.		1166
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PREPARED BY	Y.Ando	3 BATE
7. 4 4 m	P. WISHINOO	109/05/20
7.44.00	P. WISHIMURI	109/05/20

(ii) Section force by triangular distribution load P = $-26.52 \, (kN/m^2)$ MX = P · LX² · X = $-26.52 \times 4.600^2 \times X$ = $-561.16 \times X$ MY = P · LX² · Y = $-26.52 \times 4.600^2 \times Y$ = $-561.16 \times Y$

		Х	MX	Y	MY
I	5	-0. 0334	18. 743	-0.0056	3. 143
	4	0. 0080	-4. 489	0.0069	-3. 872
	3	0. 0103	-5. 780	0.0103	-5. 780
	1	0. 0015 -0. 0179	-0. 842 10. 045	0. 0047 -0. 0030	-2. 637 1. 683
П	5	-0. 0223	12. 514	-0. 0037	2. 076
	4	0. 0052	-2. 918	0. 0040	-2. 245
	3	0. 0058	-3. 255	0. 0048	-2. 694
	2	0. 0006	-0. 337	0. 0018	-1. 010
	1	-0. 0101	5. 668	-0. 0017	0. 954
Ш	5	0.0000	0.000	0.0000	0.000
	4	-0.0036	2.020	-0.0208	11.672
	3	-0.0043	2.413	-0.0257	14.422
	2	-0.0019	1.066	-0.0116	6.509
	1	0.0000	0.000	0.0000	0.000

CALC	ULATION
on Port Rea	led Design ctivation Project ion Province
CALC FILE No.:	
CALC INDEX NO.	PAGE 117

The sum total of (i) and (ii)

			•
		MX	MY
Ι	5 4 3 2 1	-31. 169 4. 851 14. 263 8. 498 -39. 867	-5. 224 7. 414 14. 263 8. 649 -6. 684
П	54321	-19. 009 2. 822 8. 031 5. 403 -25. 855	-3. 178 3. 495 6, 646 4. 730 -4. 300
m	5 4 3 2 1	0. 000 -3. 234 -5. 954 -4. 188 0. 000	0, 000 -19, 851 -35, 490 -25, 014 0, 000

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on Port Read	tivation Froject
in La Uni	on Province
CALC FILE No.:	
CALC INSEX HO	PAGE 18
	INITIAL DATE
FALPARTO BY	1. Ando 24/07/02
LABORED BY	E NEHIMURA 09/08/2002;

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

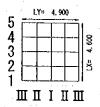
Section force by equivalent uniform load $P=32.75\,(kN/m^2)$ MX = $P\cdot LX^2\cdot X=32.75\times 4.600^2$ MY = $P\cdot LX^2\cdot Y=32.75\times 4.600^2$ $32.75 \times 4.600^2 \times X$ $32.75 \times 4.600^2 \times Y$ $692.99 \times X$ $692.99 \times Y$

		Х	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	54321	-0. 0324 0. 0059 0. 0116 0. 0059 -0. 0324	-22. 453 4. 089 8. 039 4. 089 -22. 453	-0. 0054 0. 0059 0. 0096 0. 0059 -0. 0054	-3. 742 4. 089 6. 653 4. 089 -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

CALC	ULATIO	N			
Detailed Design					
on Port Reactivation Project					
in La Un	ion Prov	inci	.		
CALC FILE No.:					
CALC INDEX NO).:	PA	GE 119		
	INITIA	L	DATE		
PREPARED BY	Y. And	, ,	26/07/02		
CHECKED BY	P NISHIHUP		09/08/200		

C Room

Room
After Construction
Upward load (above)
slab fixed on four sides
P1 = 0.00 (kN/m²)
P2 = 19.46 (kN/m²)
LX = 4.600 (m)
LY = 4.900 (m)
The ratio of a length of sides
$$\frac{4.600}{\lambda = ----} = 0.94$$



 $\dot{-} = 0.94$

4. 900

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

(i) Section force by equivalent uniform load
$$P = 19.46 \, (kN/m^2)$$
 $MX = P \cdot LX^2 \cdot X = 19.46 \times 4.600^2 \times X = 411.77 \times MY = P \cdot LX^2 \cdot Y = 19.46 \times 4.600^2 \times Y = 411.77 \times Y$

1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		X	MX	Υ	MY
Ι	54321	-0. 0513 0. 0096 0. 0206 0. 0096 -0. 0513	-21. 124 3. 953 8. 483 3. 953 -21. 124	-0. 0086 0. 0116 0. 0206 0. 0116 -0. 0086	-3. 541 4. 777 8. 483 4. 777 -3. 541
П	54321	-0. 0324 0. 0059 0. 0116 0. 0059 -0. 0324	-13. 341 2. 429 4. 777 2. 429 -13. 341	-0, 0054 0, 0059 0, 0096 0, 0059 -0, 0054	-2. 224 2. 429 3. 953 2. 429 -2. 224
Ш	5 4 3 2 1	0.0000 -0.0054 -0.0086 -0.0054 0.0000	0. 000 -2. 224 -3. 541 -2. 224 0. 000	0.0000 -0.0324 -0.0513 -0.0324 0.0000	0. 000 -13. 341 -21. 124 -13. 341 0. 000

CAL	CULATI		
On Port Re	iled Das	ign n Pro	ject
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CALC INDEX NO).:	PAG	E 120
PREPARED BY	INITIA	LE	ATE
CHEOKE	Y And P. NISHIMU		00//01 0e/2002
		1//	92002

(ii) Section force by triangular distribution load P = $-19.46 \, (kN/m^2)$ MX = P · LX² · X = $-19.46 \times 4.600^2 \times X$ = $-411.77 \times X$ MY = P · LX² · Y = $-19.46 \times 4.600^2 \times Y$ = $-411.77 \times Y$

		Х	MX	Y	MY
I	54321	-0. 0334 0. 0080 0. 0103 0. 0015 -0. 0179	13. 753 -3. 294 -4. 241 -0. 618 7. 371	-0.0056 0.0069 0.0103 0.0047 -0.0030	2. 306 -2. 841 -4. 241 -1. 935 1. 235
П	5	-0. 0223	9. 183	-0. 0037	1. 524
	4	0. 0052	-2. 141	0. 0040	-1. 647
	3	0. 0058	-2. 388	0. 0048	-1. 977
	2	0. 0006	-0. 247	0. 0018	-0. 741
	1	-0. 0101	4. 159	-0. 0017	0. 700
Ш	5	0.0000	0. 000	0.0000	0. 000
	4	-0.0036	1. 482	-0.0208	8. 565
	3	-0.0043	1. 771	-0.0257	10. 583
	2	-0.0019	0. 782	-0.0116	4. 777
	1	0.0000	0. 000	0.0000	0. 000

CALC	ULATIC	N	
Detailed Design on Port Reactivation Project in La Union Province			
CALC FILE No.:	•		
CALC INDEX No		P/	GE 121
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PREPARED BY	Y.An.	To	26/07/0
	e.visilino	24	09/22/200

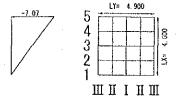
The sum total of (i) and (ii)

·		MX	MY
I	5	-7. 371	-1. 235
	4	0. 659	1. 936
	3	4. 242	4. 242
	2	3. 335	2. 842
	1	-13. 753	-2. 306
II	5	-4. 158	-0. 700
	4	0. 288	0. 782
	3	2. 389	1. 976
	2	2. 182	1. 688
	1	-9. 182	-1. 524
ш	5	0. 000	0. 000
	4	-0. 742	-4. 776
	3	-1. 770	-10. 541
	2	-1. 442	-8. 564
	1	0. 000	0. 000

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in La Un	ion Prov	inc	:•
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PREPARED BY			26/07/02
CHE THE DA			09/00/2002
· .x			1.1.

C Room

Downward load (below) slab fixed on four sides P1 = -7.07(kN/m²) P2 = 0.00(kN/m²) LX = 4.600(m) LY = 4.900(m) The ratio of a length of sides



 $\lambda = \frac{4.600}{}$ $\frac{00}{-} = 0.94$ 4. 900

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

Section force by triangular distribution load P = $-7.07 \, (kN/m^2)$ MX = P · LX² · X = $-7.07 \times 4.600^2 \times X$ MY = P · LX² · Y = $-7.07 \times 4.600^2 \times Y$ = -149, 60 \times X = -149, 60 \times Y

		Х	MX	Υ ,	MY
I	5	-0. 0334	4. 997	-0. 0056	0, 838
	4	0. 0080	-1. 197	0. 0069	-1, 032
	3	0. 0103	-1. 541	0. 0103	-1, 541
	2	0. 0015	-0. 224	0. 0047	-0, 703
	1	-0. 0179	2. 678	-0. 0030	0, 449
П	5	-0. 0223	3. 336	-0. 0037	0, 554
	4	0. 0052	-0. 778	0. 0040	-0, 598
	3	0. 0058	-0. 868	0. 0048	-0, 718
	2	0. 0006	-0. 090	0. 0018	-0, 269
	1	-0. 0101	1. 511	-0. 0017	0, 254
III	5	0.0000	0. 000	0.0000	0, 000
	4	-0.0036	0. 539	-0.0208	3, 112
	3	-0.0043	0. 643	-0.0257	3, 845
	2	-0.0019	0. 284	-0.0116	1, 735
	1	0.0000	0. 000	0.0000	0, 000

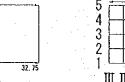
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Detaile on Port Read in La Uni	tivation	Pre	oject e
GALC FILE No.:			
CALC INDEX No.	.:		GE 123
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$$LX = 4.700 (m)$$

 $LY = 4.900 (m)$

The ratio of a length of sides
$$\lambda = \frac{4.700}{4.900} = 0.96$$

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





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

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

			V		
		X	MX	Υ	MY
I	5 4 321	-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
п	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
III	5 4 3 2 1	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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11 77	le. Nishmue	-1/-/

D Room

slab fixed on four sides

$$P1 = -34.18(kN/m^2)$$

$$LX = 4.700 (m)$$

Downward load (below)

slab fixed on four sides

P1 = -34.18(kN/m²)

P2 = -7.07(kN/m²)

LX = 4.700 (m)

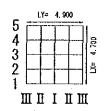
LY = 4.900 (m)

The ratio of a length of sides

4.700

$$\lambda = -7.07$$

$$= \begin{bmatrix} 1 & -34.18 \\ 2 & -7.01 \end{bmatrix} + \begin{bmatrix} -27.11 \\ -7.67 \end{bmatrix}$$



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

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

$$P = -7.07 (kN/m^2)$$

(i) Section force by equivalent uniform load
$$P = -7.07 (kN/m^2)$$
 $MX = P \cdot LX^2 \cdot X = -7.07 \times 4.700^2 \times X = -156.18 \times X$ $MY = P \cdot LX^2 \cdot Y = -7.07 \times 4.700^2 \times Y = -156.18 \times Y$

		Х	MX	Y	MY
Ι	5	-0. 0513	8. 012	-0. 0086	1. 343
	4	0. 0096	-1, 499	0. 0116	-1. 812
	3	0. 0206	-3, 217	0. 0206	-3. 217
	2	0. 0096	-1, 499	0. 0116	-1. 812
	1	-0. 0513	8, 012	-0. 0086	1. 343
I	5	-0. 0324	5, 060	-0. 0054	0. 843
	4	0. 0059	-0, 921	0. 0059	-0. 921
	3	0. 0116	-1, 812	0. 0096	-1. 499
	2	0. 0059	-0, 921	0. 0059	-0. 921
	1	-0. 0324	5, 060	-0. 0054	0. 843
Ш	54321	0. 0000 -0. 0054 -0. 0086 -0. 0054 0. 0000	0, 000 0, 843 1, 343 0, 843 0, 000	0. 0000 -0. 0324 -0. 0513 -0. 0324 0. 0000	0. 000 5. 060 8. 012 5. 060 0. 000

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CHECKED BY	e. Nisijihura	· · · · · · · · · · · · · · · · · · ·

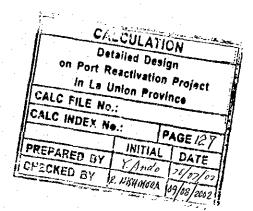
(ii) Section force by triangular distribution load P = $-27.11 (kN/m^2)$ MX = P · LX² · X = $-27.11 \times 4.700^2 \times X = -598.86 \times X$ MY = P · LX² · Y = $-27.11 \times 4.700^2 \times Y = -598.86 \times Y$

	100				
		Х	MX	Υ	MY
I	5 4 3 2 1	-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
II	54321	-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

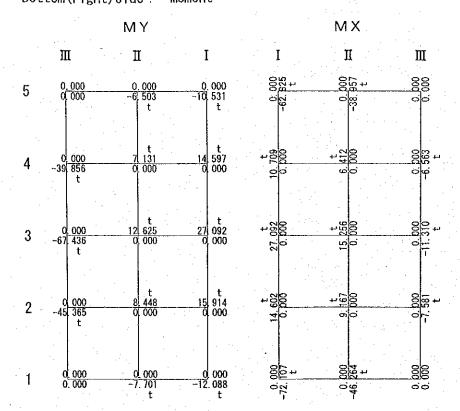
CALCULATION Detailed Design on Port Reactivation Project in La Union Province CALC FILE No.: CALC INDEX No.: PAGE 12 G	Detailed Design on Port Reactivation Project in La Union Province CALC FILE No.: CALC INDEX No.: PAGE 124 INITIAL DATE PREPARED BY YAndo 26/67/	CALC	111 4	TION	
CALC INDEX No.: PAGE 126	CALC FILE No.: PAGE 124 CALC INDEX No.: PAGE 124 INITIAL DATE PREPARED BY YAndo 26/07/1	Detai on Port Rea	led Di	sign ion F	Toises
1.00	PREPARED SY YAndo 20/07/	CALC FILE No.:		DAJIN	**
	PREPARED 54 Y. Ando 126/02/	CALC INDEX NO		P	IGE 124

The sum total of (i) and (ii)

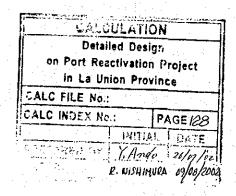
		MX -	MY
I	5	28. 014	4. 697
	4	-6. 290	-5. 944
	3	-9. 385	-9. 385
	2	-2. 397	-4. 627
	1	18. 732	3. 140
П	5	18. 415	3. 059
	4	-4. 035	-3. 316
	3	-5. 285	-4. 374
	2	-1. 280	-1. 999
	1	11. 108	1. 861
Ш	5	0.000	0.000
	4	2.999	17.516
	3	3.918	23.403
	2	1.981	12.007
	1	0.000	0.000



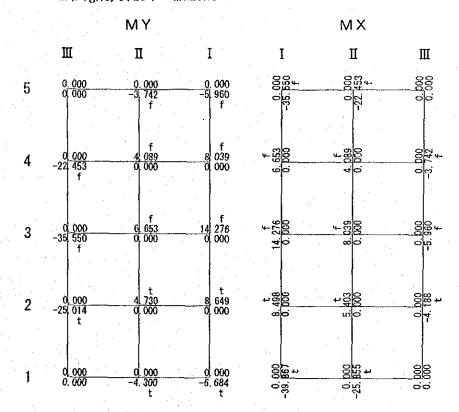
Bottom slab A Room Colligation of bending moment Top(left)side: +moment Bottom(right)side: -moment



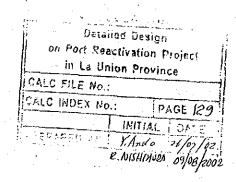
f: While afloat t: Load from a top b: Load from the bottom



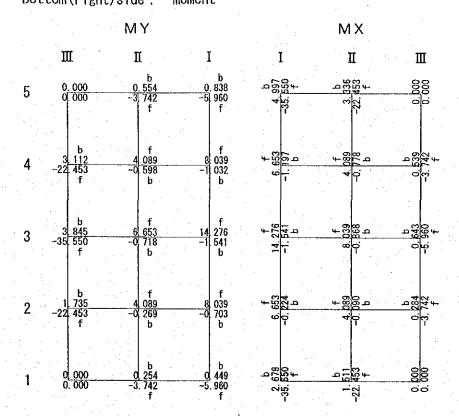
Bottom slab B Room Colligation of bending moment Top(left)side: +moment Bottom(right)side: -moment



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



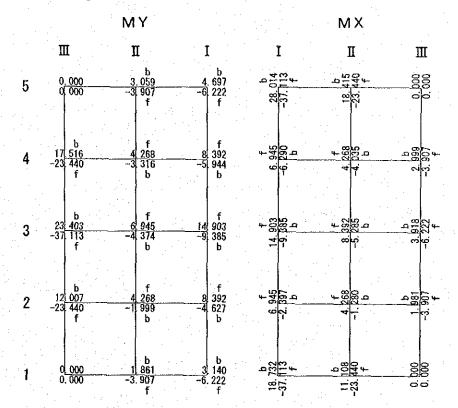
Bottom slab C Room Colligation of bending moment Top(left)side: +moment Bottom(right)side: -moment



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

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on Port Rea	ictivation ion Prev	Pr	oject	ı
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PREPARED BY	Y. Ando	1,	26/07/02	
TOKED BY	e Nuh mu	RA	09/05/20	d

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

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on Port Re	ectivation Pari
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PREPARED BY	INITIAL DATE Y. Annho 21/07/02
U UHECKE -	2 DISTINUES 09/06/2002

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 $M = 1/6 \times$ 0.00) $0.000 \, (kN \cdot m/m)$ $V = 1/2 \times$ 0.000 (kN/m)Below $1.\ 00^2\ \times\ (2\ \times\ 313,\ 81\ +\ 305,\ 26\)$ $0.\ 65\ \times\ (\ 313,\ 81\ +\ 308,\ 25\)$ $M = 1/6 \times$ 155.480 (kN·m/m) $\ddot{V} = 1/2 \times$ 202.170 (kN/m) Land side Above $M = 1/6 \times V = 1/2 \times V$ 33.99) 18.658 (kN-m/m) 24. 284 (kN/m)Below 0.00 + 0.00) $M = 1/6 \times$ 0.000 (kN·m/m) $0.000 \, (kN/m)$

<u>****</u>			
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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)

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 = 4.700 (m)
The ratio of a length of sides

$$\lambda = \frac{16.200}{4.700} = 3.45$$

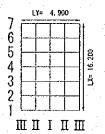
The coefficient table of $\lambda = 3.50$ is used.

- 1		Х	MX	Y	MY
I	7	0. 0000	0.000	0. 0432	4. 819
	6	0. 0067	0.747	0. 0415	4. 630
	5	0. 0068	0.759	0. 0416	4. 641
	4	0. 0069	0.770	0. 0417	4. 652
	3	0. 0079	0.881	0. 0417	4. 652
	2	0. 0132	1.473	0. 0343	3. 826
	1	-0. 0564	-6.292	-0. 0094	-1. 049
П	7654321	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	0.0000	0.000	-0. 0877	-9. 783
	6	-0.0142	-1.584	-0. 0851	-9. 493
	5	-0.0141	-1.573	-0. 0847	-9. 449
	4	-0.0141	-1.573	-0. 0846	-9. 438
	3	-0.0143	-1.595	-0. 0855	-9. 538
	2	-0.0125	-1.394	-0. 0750	-8. 367
	1	0.0000	0.000	0. 0000	0. 000

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CHECKED BY	e. N. SII IHUR	03/08/2012		

(b) Partition wall (parallel to centerline)

slab fixed on three sides and free on one side P1 = $5.05 (kN/m^2)$ P2 = $5.05 (kN/m^2)$ LX = 16.200 (m) LY = 4.900 (m)The ratio of a length of sides 16.200 $\lambda = ----= 3.31$ 4.900



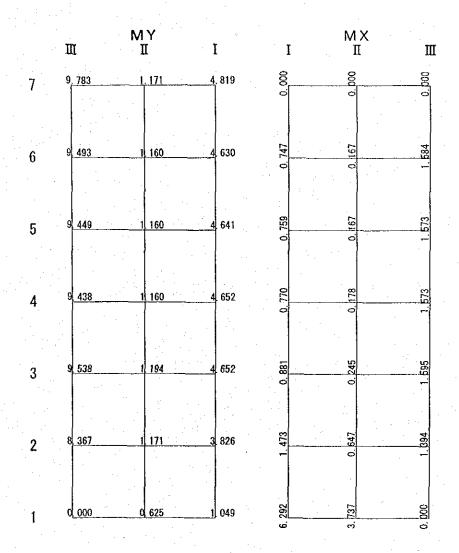
The coefficient table of $\lambda = 3.25$ is used.

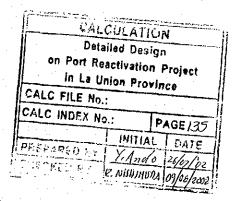
Section force by equivalent uniform load $P=5.05\,(kN/m^2)$ $MX=P\cdot LY^2\cdot X=5.05\times 4.900^2$ $MY=P\cdot LY^2\cdot Y=5.05\times 4.900^2$ $121.25 \times X$ $121.25 \times Y$

٠.						
			X	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
	П	7654321	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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Partition wall (perpendicular to levee normal) Colligation of bending moment





Partition wall(parallel to centerline) Colligation of bending moment

	m	MΥ II	1	I	MX	Ш
7	10. 573	1, 273	5. 238	0 000	0	0 000
.1						
6	10_270	1 261	5 020	0.812	0 182	1.710
5	10 246	1 261	5 044	0.825	0. 182	1.710
4	10 258	1 273	5 068	0,849	0.206	1 710
				9	77	2
3	10 318	1l 297	5 032	1 006	0 303	1. 72
· · ·	8 <u>730</u>	1 249	<u>3</u> 953	649	752	455
2	0, 730	11 243	3 953	Ğ —	0 2	-
	0,000	0 679	1 140	851	860	000
. !	4 000	0.019		છ	4	0

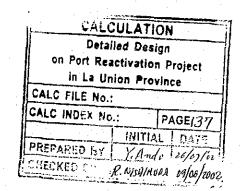
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on Port Read	tivation	Pr	oject
in La Uni	on Prov	inc	e ·
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	AITIM	L	DATE
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CHECKED BY	e. Duvih	;RA	09/06/200

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4. Design of Members
  Effective height of each part material
     (1) Side wall
           It arranges horizontally outside.
            h = 40.0 (cm)
            An inner side cover = 6.0 (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)
                                             d = 49.0(55.6) (cm)
          Parailel to center line
              Upper steel reinforcement
                                             d = 53.0 (cm)
          Perpendicular to levee normal
      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)

※ ( ): Effective quantity in consideration of haunch
```



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

NO		ld d ·m) (cm)	Asn (cm²)	Diameter (mm)	Pitch (cm)	As (cm²)	Mud (kN·m)	γi·Md/Mud
(6 13. 5 25. 4 39. 3 52. 2 51.	043 33.0 261 33.0 961 33.0 035 33.0 109 33.0 922 33.0 343 33.0	0. 56 1. 48 2. 91 4. 40 5. 91 5. 88 2. 39	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 19. 36	179. 322 179. 322 179. 322 179. 322 179. 322 179. 322 179. 322	0. 03 0. 08 0. 16 0. 24 0. 32 0. 32 0. 13
	6 3. 5 6. 4 9. 3 13. 2 16.	560 33.0 175 33.0 350 33.0 712 33.0 448 33.0 436 33.0 736 33.0	0. 06 0. 35 0. 71 1. 08 1. 50 1. 84 1. 42	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 19. 36	179, 322 179, 322 179, 322 179, 322 179, 322 179, 322 179, 322	0. 00 0. 02 0. 04 0. 06 0. 08 0. 10 0. 08
	6 169. 5 174. 4 180. 3 187. 2 168.	345 33. 0 430 33. 0 209 33. 0 892 33. 0	20. 29 20. 17 20. 82 21. 57 22. 57 20. 10 0. 00	D22, D25 D22, D25 D22, D25 D22, D25 D22, D25 D22, D25 D22, D25 D22, D25	10. 0 10. 0 10. 0 10. 0 10. 0 10. 0 10. 0	44. 69 44. 69 44. 69 44. 69 44. 69 44. 69	376. 716 376. 716 376. 716 376. 716 376. 716 376. 716 376. 716	0. 50
	6 13. 5 25. 4 39. 3 52. 2 51.	043 33. 0 261 33. 0 961 33. 0 035 33. 0 109 33. 0 922 33. 0 343 33. 0	0. 56 1. 48 2. 91 4. 40 5. 91 5. 88 2. 39	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 19. 36	179. 322 179. 322 179. 322 179. 322 179. 322 179. 322 179. 322	0. 03 0. 08 0. 16 0. 24 0. 32 0. 32 0. 13
	6 175. 5 181. 4 187. 3 194. 2 171.	860 33.0 192 33.0 224 33.0 578 33.0	21. 14 21. 01 21. 70 22. 48 23. 45 20. 43 0. 00	D22, D25 D22, D25 D22, D25 D22, D25 D22, D25 D22, D25 D22, D25 D22, D25	10. 0 10. 0 10. 0 10. 0 10. 0 10. 0	44. 69 44. 69 44. 69 44. 69 44. 69 44. 69	376. 716 376. 716 376. 716 376. 716 376. 716 376. 716 376. 716	0. 52

% 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

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on Port React	lvation	Project	
in La Unio	n Prov	ince	`
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سترقيب تسمه ميسان سنده د. وم		185 19/08	

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

NO	: '	Ms (kN·m)	d Diameter (cm) (mm)	Pitch (cm)	As (cm²)	σse ((N/mm²)	Crack width W(cm)	Permission crack width Wiim (cm)
I	7 6 5 4 3 2	2, 292 6, 027 11, 800 17, 742 23, 685 23, 600 19, 403	33. 0 D22 33. 0 D22 33. 0 D22 33. 0 D22 33. 0 D22 33. 0 D22 33. 0 D22	20. 0 20. 0 20. 0	19. 36 19. 36 19. 36 19. 36 19. 36 19. 36 19. 36	3, 932 10, 340 20, 245 30, 440 40, 636 40, 490 33, 289	0.0007 0.0019 0.0037 0.0055 0.0074 0.0074 0.0061	0. 0040 × 6. 0 =0. 0240
II	7 6 5 4 3 2	0. 255 1. 443 2. 886 4. 414 6. 112 7. 470 11. 578	33. 0 D22 33. 0 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. 438 2. 476 4. 951 7. 573 10. 486 12. 816 19. 864	0.0001 0.0005 0.0009 0.0014 0.0019 0.0023 0.0036	0. 0040 × 6. 0 = 0. 0240
Ш	6 5 4 3	154. 800 153. 947 158. 572 163. 828 170. 814 153. 443 0. 000	33. 0 D22, D25 33. 0 D22, D25	10. 0 10. 0 10. 0 10. 0	44. 69 44. 69 44. 69 44. 69 44. 69 44. 69 44. 69	119. 713 119. 053 122. 630 126. 695 132. 097 118. 664 0. 000	0. 0176 0. 0175 0. 0181 0. 0187 0. 0194 0. 0175 0. 0000	0. 0040 × 6. 0 =0. 0240
Ī	7 6 5 4 3 2	2. 292 6. 027 11. 800 17. 742 23. 685 23. 600 19. 403	33. 0 D22 33. 0 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	3. 932 10. 340 20. 245 30. 440 40. 636 40. 490 33. 289	0. 0007 0. 0019 0. 0037 0. 0055 0. 0074 0. 0074 0. 0061	0. 0040×6. 0 =0. 0240
Ш	6 5 4 3	160. 787 159. 873 164. 722 170. 207 176. 893 155. 840 0. 000	33. 0 D22, D25	10. 0 10. 0 10. 0 10. 0 10. 0		124. 343 123. 636 127. 386 131. 628 136. 798 120. 517 0. 000	0. 0183 0. 0182 0. 0188 0. 0194 0. 0201 0. 0177 0. 0000	0. 0040×6. 0 =0. 0240

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

Detail on Port Rea	ed Design	
· ·	ion Provin	
CALC FILE No .:		
CALC INDEX No	1	PAGE/39
	INITIAL	DATE
PREPARED BY	Y. Ando	26/07/
الما عدد المواطنة فالمواطنية المراكب المراكب	e. PUNIH	

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

	<u> </u>						D - TOUGH
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 1	84, 852 83, 195 85, 927 88, 734 91, 348 76, 948 15, 502	31.0 31.0 31.0 31.0 31.0 31.0 37.6	10. 42 10. 21 10. 56 10. 92 11. 25 9. 42 1. 52	D22, D13 D22, D13 D22, D13 D22, D13 D22, D13 D22, D13 D22, D13	10. 0 25. 69 10. 0 25. 69	217. 190 217. 190 217. 190 217. 190 217. 190 217. 190 268. 072	0. 43
II 7 6 5 4 3 2 1	20, 491 20, 820 21, 454 22, 126 23, 455 23, 664 9, 339	31.0 31.0 31.0 31.0 31.0 31.0 37.6	2. 44 2. 48 2. 56 2. 64 2. 80 2. 83 0. 91	D22 D22 D22 D22 D22 D22 D22	20. 0	167. 704 167. 704 167. 704 167. 704 167. 704 167. 704 206. 044	0. 13 0. 14 0. 14 0. 15 0. 15 0. 16 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 37. 6 37. 6 37. 6 37. 6 37. 6 37. 6	0. 04 2. 05 4. 97 8. 00 11. 07 11. 73 0. 00	D22 D22 D22 D22 D22 D22 D22	20. 0 19. 36 20. 0 19. 36	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 1	84. 852 83. 195 85. 927 88. 734 91. 348 76. 948 15. 502	31.0 31.0 31.0 31.0 31.0 31.0 37.6	10. 42 10. 21 10. 56 10. 92 11. 25 9. 42 1. 52	D22, D13 D22, D13 D22, D13 D22, D13 D22, D13 D22, D13 D22, D13	10. 0 25. 69 10. 0 25. 69	217. 190 217. 190 217. 190 217. 190 217. 190 217. 190 217. 190 268. 072	0. 43
111' 7 6 5 4 3 2 1	1. 012 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	20. 0 19. 36 20. 0 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

	ULATION ed Design
on Port Read	ctivation Project
in La Uni	ion Province
CALC FILE No.:	
CALC INDEX NO	.: PAGE 140
	INITIAL DATE
:R70 E1	Y. Ando 26/07/

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

NO	M: (kN		Diameter (mm)	Pitch (cm)	(cm²)	σse ((N/mm²)	Crack width W(cm)	Permission crack width Wiim (cm)
I	7 77. 6 75. 5 78. 4 80. 3 83. 2 69. 1 7.	631 31.0 115 31.0 668 31.0 045 31.0 955 31.0	D22, D13 D22, D13 D22, D13 D22, D13 D22, D13 D22, D13 D22, D13	10. 0 10. 0 10. 0 10. 0 10. 0	25. 69 25. 69 25. 69 25. 69 25. 69 25. 69 25. 69 25. 69	107. 773 105. 671 109. 141 112. 708 116. 029 97. 740 8. 047	0. 0201 0. 0208 0. 0215 0. 0221 0. 0186	0.0035 × 8.0 =0.0280
I	6 18. 5 19. 4 20. 3 21. 2 21.	926 31.0 503 31.0 115 31.0 323 31.0	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	34, 108 34, 656 35, 712 36, 833 39, 045 39, 393 6, 359	0. 0077 0. 0079 0. 0082 0. 0087	0. 0035 × 8. 0 =0. 0280
Ш	6 9. 5 22. 4 36. 3 49. 2 52.	419 37.6 916 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	0.0076 0.0121	0. 0035 × 8. 0 = 0. 0280
ī	77 77. 6 75. 5 78. 4 80. 3 83. 2 69. 1 7.	631 31.0 115 31.0 668 31.0 045 31.0 955 31.0	D22, D13 D22, D13 D22, D13 D22, D13 D22, D13 D22, D13 D22, D13	10. 0 10. 0 10. 0 10. 0 10. 0	25. 69 25. 69 25. 69 25. 69 25. 69 25. 69 25. 69	107. 773 105. 671 109. 141 112. 708 116. 029 97. 740 8. 047	0. 0205 0. 0201 0. 0208 0. 0215 0. 0221 0. 0186 0. 0015	0. 0035 × 8. 0 = 0. 0280
<u> </u>	6 10. 5 23. 4 37. 3 51. 2 53.	986 37.6 894 37.6	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 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

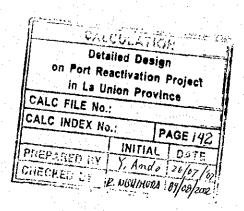
Notes) I $\sim III$: Before correction Slab of a middle part Notes) I $\sim III$: After correction Slab of side wall corner

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on Port Rea in La Un	ctivation ion Prov	i P	roject :e
CALC FILE No.:			
CALC INDEX No	.:	P/	GE 141
			DATE
PREPARED BY			26/07/00
			04/08/2002

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

NO		Md (kN·m)	(cm)	Asn (cm²)	Diameter (mm)	Pitch (cm)	As (cm²)	Mud γi·Md/Mud (kN·m)	
Ĭ	7 6 5 4 3 2	0.000 1.681 4.109 6.537 10.272 22.226 128.129	31.0 31.0 31.0 31.0 31.0 31.0	0. 00 0. 20 0. 49 0. 78 1. 22 2. 65 16. 07	D16 D16 D16 D16 D16 D16 D16	40. 0 40. 0 40. 0 40. 0 40. 0 40. 0 10. 0	4. 97 4. 97 4. 97 4. 97 4. 97 4. 97 35. 27	45. 410 0. 00 45. 410 0. 04 45. 410 0. 10 45. 410 0. 16 45. 410 0. 25 45. 410 0. 54 287. 063 0. 49	*
II	7 6 5 4 3 2 1	0. 000 0. 560 0. 934 1. 494 2. 802 10. 086 76. 330	31.0 31.0 31.0 31.0 31.0 31.0	0. 00 0. 07 0. 11 0. 18 0. 33 1. 20 9. 34	D16 D16 D16 D16 D16 D16 D16 D16, D16	40. 0 40. 0 40. 0 40. 0 40. 0 40. 0 10. 0	4. 97 4. 97 4. 97 4. 97 4. 97 4. 97 19. 86	45. 410 0. 00 45. 410 0. 01 45. 410 0. 02 45. 410 0. 04 45. 410 0. 07 45. 410 0. 24 171. 711 0. 49	*
111	7 6 5 4 3 2	0.000 28.269 29.046 30.054 31.413 28.143 0.000	31.0 31.0 31.0 31.0 31.0 31.0	0, 00 3, 38 3, 48 3, 60 3, 77 3, 37 0, 00	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	89. 107 0. 00 89. 107 0. 35 89. 107 0. 36 89. 107 0. 37 89. 107 0. 39 89. 107 0. 35 89. 107 0. 00	

^{*} It determines from serviceability limit state.



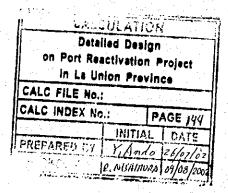
Serviceability limit state
Sidewall (perpendicular to levee normal:seaside) —Perpendicular inner side steel reinforcement
B = 100cm

NO		Ms (kN·m)	d Diameter (cm) (mm)	Pitch (cm)	As (cm²)	σse C (N/mm²)	rack width W(cm)	Permission of width William	- crack (cm)
Ī	7 6 5 4 3 2	0. 000 0. 764 1. 868 2. 971 4. 669 10. 102 116. 484	31. 0 D16 31. 0 D16 31. 0 D16 31. 0 D16 31. 0 D16 31. 0 D16 31. 0 D16, D25	40. 0 40. 0 40. 0 40. 0 40. 0 40. 0 10. 0	4. 97 4. 97 4. 97 4. 97 4. 97 4. 97 4. 97 35. 27	0.000 5.216 12.752 20.282 31.874 68.963 120.393	0. 0000 0. 0015 0. 0038 0. 0060 0. 0094 0. 0203 0. 0228	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 69. 393	31. 0 D16 31. 0 D16 31. 0 D16 31. 0 D16 31. 0 D16 31. 0 D16 31. 0 D16, D16	40. 0 40. 0 40. 0 40. 0 40. 0 40. 0 10. 0	4. 97 4. 97 4. 97 4. 97 4. 97 4. 97 19. 86	0.000 1.741 2.895 4.635 8.690 31.294 124.000	0. 0000 0. 0005 0. 0009 0. 0014 0. 0026 0. 0092 0. 0235	0. 0040 × 8. 0 = 0. 0320	
П	7 6 5 4 3 2 1	0. 000 25. 698 26. 405 27. 322 28. 557 25. 585 0. 000	31. 0 D16 31. 0 D16 31. 0 D16 31. 0 D16 31. 0 D16 31. 0 D16 31. 0 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	0.000 89.512 91.974 95.168 99.470 89.118 0.000	0. 0000 0. 0201 0. 0206 0. 0214 0. 0223 0. 0200 0. 0000	0. 0040 × 8. 0 =0. 0320	-

CALC	ULATIC	M	
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in La Uni	ion Prov	inc	:6
CALC FILE No.:			
CALC INDEX No		P/	IGE 143
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PREPARED BY	YAnd	0	26/07/0
CHECKED BY	e. Wishin	001	08/08/20

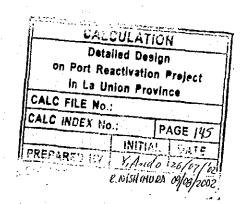
Ultimate limit state (Under ordinary conditions)
Sidewall(perpendicular to levee normal:seaside)—Perpendicular outside steel reinforcement
B = 100cm

NO _		Md (kN·m)	d (cm)	Asn Diameter (cm²) (mm)	Pitch (cm)	As (cm²)	Mud (kN·m)	γi·Md/Mud.
I 7 6 5 4 3 2 1		0. 000 13. 340 14. 019 14. 699 17. 386 30. 062 93. 386	29. 0 29. 0 29. 0 29. 0 29. 0 29. 0 35. 6	0.00 D13 1.70 D13 1.78 D13 1.87 D13 2.22 D13 3.86 D13, D13 9.92 D13, D13	20. 0 20. 0 20. 0 20. 0 20. 0 10. 0	6. 34 6. 34 6. 34 6. 34 6. 34 12. 67 12. 67	53, 833 53, 833 53, 833 53, 833 53, 833 104, 945 130, 031	0. 00 0. 27 0. 29 0. 30 0. 36 0. 32 0. 79
II 7 6 5 4 3 2 1	•	0.000 3.023 3.098 3.404 4.830 13.273 56.592	29. 0 29. 0 29. 0 29. 0 29. 0 29. 0 35. 6	0. 00 D13 0. 38 D13 0. 39 D13 0. 43 D13 0. 61 D13 1. 69 D13 5. 94 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 12. 67	27. 249 27. 249 27. 249 27. 249 27. 249 53. 833 130. 031	0. 00 0. 12 0. 13 0. 14 0. 19 0. 27 0. 48
III 7 6 5 4 3 2 1		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	0.00 D13 0.37 D13 0.87 D13 1.39 D13 1.90 D13 2.01 D13 0.00 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



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

** .						*		
NO	Ms (kN·m)	d (cm)	Diameter (mm)	Pitch (cm)	As (cm²)	σse (N/mm²)	Crack width W(cm)	Permission crac width W _{lim} (cm)
1 7 6 5 4 3 2	0.000 12.127 12.744 13.362 15.805 27.329 42.446	29. 0 29. 0 29. 0 29. 0 29. 0 29. 0 35. 6	D13 D13 D13 D13		6. 34 6. 34 6. 34 6. 34 6. 34 12. 67 12. 67	0.000 69.932 73.490 77.054 91.142 80.606	2 0. 0186 0 0. 0195 4 0. 0205 2 0. 0242 6 0. 0186	0, 0035 × 10. 0 =0, 0350
II 7 6 5 4 3 2 1	0. 000 2. 748 2. 816 3. 095 4. 391 12. 066 25. 722	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 20. 0 10. 0	3. 17 3. 17 3. 17 3. 17 3. 17 6. 34 12. 67	0. 000 31. 177 31. 949 35. 114 49. 818 69. 580 61. 361	7 0.0105 9 0.0107 1 0.0118 3 0.0167 9 0.0185	0. 0035×10. 0 =0. 0350
TII 7 6 5 4 3 2 1	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	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



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

NO	Md (kN·m)	d (cm)	Asn (cm²)	Diameter (mm)	Pitch (cm)	As (cm²)	Mud γi·Md/Mud (kN·m)
I	7 5. 043 6 13. 261 5 25. 961 4 39. 035 3 52. 109 2 51. 922 1 21. 343	33. 0 33. 0 33. 0 33. 0 33. 0	0. 56 1. 48 2. 91 4. 40 5. 91 5. 88 2. 39	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 19. 36	179. 322 0. 03 179. 322 0. 08 179. 322 0. 16 179. 322 0. 24 179. 322 0. 32 179. 322 0. 32 179. 322 0. 13
I	7 0.560 6 3.175 5 6.350 4 9.712 3 13.448 2 16.436 1 12.736	33. 0 33. 0 33. 0 33. 0 33. 0	0. 06 0. 35 0. 71 1. 08 1. 50 1. 84 1. 42	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 19. 36	179. 322 0. 00 179. 322 0. 02 179. 322 0. 04 179. 322 0. 06 179. 322 0. 08 179. 322 0. 10 179. 322 0. 08
111	7 170. 286 6 169. 345 5 174. 430 4 180. 209 3 187. 892 2 168. 783 1 0. 000	33. 0 33. 0 33. 0 33. 0 33. 0	20. 29 20. 17 20. 82 21. 57 22. 57 20. 10 0. 00	D22, D25 D22, D25 D22, D25 D22, D25 D22, D25 D22, D25 D22, D25 D22, D25	10. 0 10. 0 10. 0 10. 0 10. 0 10. 0	44. 69 44. 69 44. 69 44. 69 44. 69 44. 69	376. 716 0. 50 % 376. 716 0. 49 % 376. 716 0. 51 % 376. 716 0. 53 % 376. 716 0. 55 % 376. 716 0. 49 % 376. 716 0. 00
	7 5. 043 6 13. 263 5 25. 963 4 39. 033 3 52. 103 2 51. 922 1 21. 343	33. 0 33. 0 33. 0 33. 0 33. 0	0. 56 1. 48 2. 91 4. 40 5. 91 5. 88 2. 39	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 19. 36	179. 322 0. 03 179. 322 0. 08 179. 322 0. 16 179. 322 0. 24 179. 322 0. 32 179. 322 0. 32 179. 322 0. 13
III	1' 7 176. 868 6 175. 860 5 181. 192 4 187. 224 3 194. 578 2 171. 419 1 0. 000	33.0 2 33.0 4 33.0 3 33.0 3 33.0	21. 14 21. 01 21. 70 22. 48 23. 45 20. 43 0. 00	D22, D25 D22, D25 D22, D25 D22, D25 D22, D25 D22, D25 D22, D25	10. 0 10. 0 10. 0 10. 0 10. 0 10. 0 10. 0	44. 69 44. 69 44. 69 44. 69 44. 69 44. 69	376. 716 0. 52 % 376. 716 0. 51 % 376. 716 0. 53 % 376. 716 0. 55 % 376. 716 0. 57 % 376. 716 0. 50 % 376. 716 0. 00

% 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

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PREPARED BY	YAM	do	26/07/02
1000	A 25 - 1 c		09/08/2002

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

NO		Ms (kN·m)	d Diameter (cm) (mm)	Pitch (cm)	As (cm²)	σse Crack width (N/mm²) W(cm)	Permission crack width W _{lim} (cm)
	7 6 5 4 3 2	2. 292 6. 027 11. 800 17. 742 23. 685 23. 600 19. 403	33. 0 D22 33. 0 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 19. 36	3. 932 0. 0007 10. 340 0. 0019 20. 245 0. 0037 30. 440 0. 0055 40. 636 0. 0074 40. 490 0. 0074 33. 289 0. 0061	0. 0040 × 6. 0 = 0. 0240
П	7 6 5 4 3 2	0. 255 1. 443 2. 886 4. 414 6. 112 7. 470 11. 578	33. 0 D22 33. 0 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 19. 36	0. 438 0. 0001 2. 476 0. 0005 4. 951 0. 0009 7. 573 0. 0014 10. 486 0. 0019 12. 816 0. 0023 19. 864 0. 0036	0. 0040 × 6. 0 =0. 0240
	7 6 5 4 3 2	154. 800 153. 947 158. 572 163. 828 170. 814 153. 443 0. 000	33. 0 D22, D25 33. 0 D22, D25	10. 0 10. 0 10. 0 10. 0	44. 69 44. 69 44. 69 44. 69 44. 69 44. 69	119. 713	0. 0040 × 6. 0 =0. 0240
I,	7 6 5 4 3 2	2. 292 6. 027 11. 800 17. 742 23. 685 23. 600 19. 403	33. 0 D22 33. 0 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 19. 36	3. 932 0. 0007 10. 340 0. 0019 20. 245 0. 0037 30. 440 0. 0055 40. 636 0. 0074 40. 490 0. 0074 33. 289 0. 0061	0. 0040 × 6. 0 =0. 0240
Ш,	7 6 5 4 3 2	160. 787 159. 873 164. 722 170. 207 176. 893 155. 840 0. 000	33. 0 D22, D25 33. 0 D22, D25	10. 0 10. 0 10. 0 10. 0 10. 0	44. 69 44. 69 44. 69 44. 69 44. 69 44. 69 44. 69	124. 343	0. 0040 × 6. 0 =0. 0240

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

on Port Reactivation Prejet in La Union Province CALC FILE No.: CALC INDEX No.: PAGE		ULATIO!	
CALC FILE No.: PAGE	on Port Rea	ctivation	Preject
ALL JAITINI	CALC FILE No.:		
ari Jaitini	CALC INDEX No.	: P	AGE 14
		INITINI	DATE
REFARED BY Y.Ando 26/0 P. MINIMUNA 29/0	REPARED BY	Y. Ando	26/07/

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

				and the second			professional fire		
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	84. 852 83. 195 85. 927 88. 734 91. 348 76. 948 15. 502	31. 0 31. 0 31. 0 31. 0 31. 0	10. 42 10. 21 10. 56 10. 92 11. 25 9. 42 1. 52	D22, D13 D22, D13 D22, D13 D22, D13 D22, D13 D22, D13 D22, D13	10. 0 10. 0 10. 0 10. 0 10. 0 10. 0	25. 69 25. 69 25. 69 25. 69 25. 69 25. 69 25. 69	217. 190 217. 190 217. 190 217. 190 217. 190 217. 190 268. 072	0. 43
I	7 6 5 4 3 2	20. 491 20. 820 21. 454 22. 126 23. 455 23. 664 9. 339	31.0 31.0 31.0 31.0	2. 44 2. 48 2. 56 2. 64 2. 80 2. 83 0. 91	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. 13 0. 14 0. 14 0. 15 0. 15 0. 16 0. 05
Π	I 7 6 5 4 3 2 1	0. 374 20. 918 50. 241 80. 128 109. 821 116. 172 0. 000	37.6 37.6 37.6 37.6 37.6	0. 04 2. 05 4. 97 8. 00 11. 07 11. 73 0. 00	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 19. 36	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
Ī	7 6 5 4 3 2	84. 852 83. 195 85. 927 88. 734 91. 348 76. 948 15. 502	31.0 31.0 31.0 31.0 31.0	10. 42 10. 21 10. 56 10. 92 11. 25 9. 42 1. 52	D22, D13 D22, D13 D22, D13 D22, D13 D22, D13 D22, D13 D22, D13	10. 0 10. 0 10. 0 10. 0 10. 0 10. 0 10. 0	25. 69 25. 69 25. 69 25. 69 25. 69 25. 69 25. 69	217, 190 217, 190 217, 190 217, 190 217, 190 217, 190 268, 072	0. 43
I	1'7 6 5 4 3 2	1. 012 22. 260 52. 675 83. 573 114. 172 118. 423 0. 000	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 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	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 $\sim III$: Before correction Slab of a middle part Notes) I' $\sim III'$: After correction Slab of side wall corner

CALC	ULATION	
Detail	ed Design	
on Port Rea	crivation Project	
in La Us	ion Province	
CALC FILE No.:		
CALC INDEX No	PAGE /	48
	INITIAL DAT	
PREPARED BY	Y. Ando 26/07	
Caticado	P. NISH I HURA 09/08	b

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

				1				
NO	Ms (kN·m)	d (cm)	Diameter (mm)	Pitch (cm)	As (cm²)	σse 0 (N/mm²)	rack width W(cm)	Permission crack width Wiim (cm)
I 7 6 5 4 3 2 1	77. 136 75. 631 78. 115 80. 668 83. 045 69. 955 7. 046	31.0 31.0 31.0 31.0	D22, D13 D22, D13 D22, D13 D22, D13 D22, D13 D22, D13 D22, D13	10. 0 10. 0 10. 0 10. 0 10. 0	25, 69 25, 69 25, 69 25, 69 25, 69 25, 69 25, 69	107. 773 105. 671 109. 141 112. 708 116. 029 97. 740 8. 047	0. 0205 0. 0201 0. 0208 0. 0215 0. 0221 0. 0186 0. 0015	0. 0035 × 8. 0 =0. 0280
II 7 6 5 4 3 2 1	18. 627 18. 926 19. 503 20. 115 21. 323 21. 513 4. 245	31.0 31.0 31.0 31.0 31.0 31.0	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	34. 108 34. 656 35. 712 36. 833 39. 045 39. 393 6. 359	0.0076 0.0077 0.0079 0.0082 0.0087 0.0088 0.0014	0.0035 × 8.0 =0.0280
III 7 6 5 4 3 2 1	0. 170 9. 508 22. 836 36. 419 49. 916 52. 803 0. 000	37. 6 37. 6 37. 6 37. 6 37. 6 37. 6	D22 D22 D22 D22 D22		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	0.0035×8.0 =0.0280
I '7 6 5 4 3 2	77. 136 75. 631 78. 115 80. 668 83. 045 69. 955 7. 046	31.0 31.0 31.0 31.0 31.0	D22, D13 D22, D13 D22, D13 D22, D13 D22, D13 D22, D13 D22, D13	10. 0 10. 0 10. 0 10. 0 10. 0	25. 69 25. 69 25. 69 25. 69 25. 69 25. 69 25. 69	107. 773 105. 671 109. 141 112. 708 116. 029 97. 740 8. 047	0. 0205 0. 0201 0. 0208 0. 0215 0. 0221 0. 0186 0. 0015	0. 0035 × 8. 0 =0. 0280
III ' 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	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

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

CAL	CULAT	101	V
Deta on Port Re- in La Ur	iled De	n F	tolest
CALC FILE No.			
CALC INDEX NO	.:	P,	AGE 149
PREPARED BY	INITI	AL	DATE
CHEART	Y. Ana		0/08/2002

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)	γi·Md/Mud
1	7 6 5 4 3 2	0, 000 1, 681 4, 109 6, 537 10, 272 22, 226 128, 129	31. 0 31. 0 31. 0 31. 0 31. 0 31. 0	0. 00 0. 20 0. 49 0. 78 1. 22 2. 65 16. 07	D16 D16 D16 D16 D16 D16 D16	40. 0 40. 0 40. 0 40. 0 40. 0 10. 0	4. 97 4. 97 4. 97 4. 97 4. 97 4. 97 4. 97 35. 27	45. 410 45. 410 45. 410 45. 410 45. 410 45. 410 287. 063	0, 00 0, 04 0, 10 0, 16 0, 25 0, 54 0, 49 **
Π	7 6 5 4 3 2	0.000 0.560 0.934 1.494 2.802 10.086 76.330	31.0 31.0 31.0 31.0 31.0 31.0	0. 00 0. 07 0. 11 0. 18 0. 33 1. 20 9. 34	D16 D16 D16 D16 D16 D16 D16	40. 0 40. 0 40. 0 40. 0 40. 0 40. 0 10. 0	4. 97 4. 97 4. 97 4. 97 4. 97 4. 97 19. 86	45. 410 45. 410 45. 410 45. 410 45. 410 45. 410 171. 711	0. 00 0. 01 0. 02 0. 04 0. 07 0. 24 0. 49 ※
Ш	7 6 5 4 3 2	0.000 28.269 29.046 30.054 31.413 28.143 0.000	31.0 31.0 31.0 31.0 31.0 31.0	0. 00 3. 38 3. 48 3. 60 3. 77 3. 37 0. 00	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	89. 107 89. 107 89. 107 89. 107 89. 107 89. 107 89. 107	0. 00 0. 35 0. 36 0. 37 0. 39 0. 35 0. 00

^{*} It determines from serviceability limit state.

CALC	ULATIO	NC	
Detai on Port Rea in La Un	led Desi ctivation ion Prov	P	Oject
CALC FILE No.:			
CALC INDEX No	.:	P/	GE/50
			DATE
PREPARED BY	YAnda	,	20/07/00
CHECKED BY	e. Nisii ptu	RA	09/08/2002

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

						D 1000m
NO .		Ms (kN·m)	d Diameter (cm) (mm)	Pitch As (cm) (cm²)	σse Crack width (N/mm²) W(cm)	Permission crack width W _{lim} (cm)
	7 6 5 4 3 2	0. 000 0. 764 1. 868 2. 971 4. 669 10. 102 116. 484	31.0 D16 31.0 D16 31.0 D16 31.0 D16 31.0 D16 31.0 D16 31.0 D16, D25	40.0 4.97 40.0 4.97 40.0 4.97 40.0 4.97 40.0 4.97 40.0 4.97 10.0 35.27	0, 000 0, 0000 5, 216 0, 0015 12, 752 0, 0038 20, 282 0, 0060 31, 874 0, 0094 68, 963 0, 0203 120, 393 0, 0228	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 69. 393	31.0 D16 31.0 D16 31.0 D16 31.0 D16 31.0 D16 31.0 D16 31.0 D16, D16	40. 0 4. 97 40. 0 4. 97 10. 0 19. 86	0. 000 0. 0000 1. 741 0. 0005 2. 895 0. 0009 4. 635 0. 0014 8. 690 0. 0026 31. 294 0. 0092 124. 000 0. 0235	0. 0040 × 8. 0 =0. 0320
	7 6 5 4 3 2	0. 000 25. 698 26. 405 27. 322 28. 557 25. 585 0. 000	31.0 D16 31.0 D16 31.0 D16 31.0 D16 31.0 D16 31.0 D16 31.0 D16	20. 0 9. 93 20. 0 9. 93	0. 000 0. 0000 89. 512 0. 0201 91. 974 0. 0206 95. 168 0. 0214 99. 470 0. 0223 89. 118 0. 0200 0. 000 0. 0000	0. 0040 × 8. 0 =0. 0320

CALC	ULATIC	N	
Detail	ed Desig	חנ	
on Port Rea	ctivation	Pr	oject
In La Un	ion Prov	inc	•
CALC FILE No.:			
CALC INDEX NO		P	GE /5
	MITIA	ιl.	DATE
PREPARED BY			26/07/
र भग जिल्लाम् १५	P. NISHIN	UDA	19/08/2

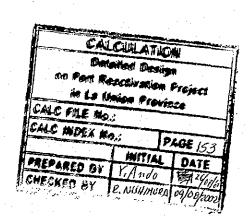
Ultimate limit state (Under ordinary conditions)
Sidewall (perpendicular to levee normal: landside) — Perpendicular outside steel reinforcement
B = 100cm

						and the second second		
NO		Md (kN·m)	d (cm)	Asn (cm²)	Diameter (mm)	Pitch As (cm) (cr	Mud (kN·m)	γi·Md/Mud
I	7 6 5 4 3 2	0. 000 13. 340 14. 019 14. 699 17. 38 30. 069 93. 380	29. 0 9 29. 0 9 29. 0 6 29. 0 2 29. 0	0. 00 1. 70 1. 78 1. 87 2. 22 3. 86 9. 92	D13 D13 D13 D13 D13 D13, D13 D13, D13	20. 0 6. 20. 0 6. 20. 0 6. 20. 0 6. 20. 0 6. 20. 0 6. 20. 0 12. 0 12. 0	34 53, 833 34 53, 833 34 53, 833 34 53, 833 67 104, 945	0. 00 0. 27 0. 29 0. 30 0. 36 0. 32 0. 79
Π	7 6 5 4 3 2	0, 00 3, 02 3, 09 3, 40 4, 83 13, 27 56, 59	3 29.0 8 29.0 4 29.0 0 29.0 3 29.0	0.00 0.38 0.39 0.43 0.61 1.69 5.94	D13 D13 D13 D13 D13 D13 D13	40. 0 3. 40. 0 3. 40. 0 3. 40. 0 3. 40. 0 3. 20. 0 6.3 10. 0 12.	17 27. 249 17 27. 249 17 27. 249 17 27. 249 34 53. 833	0. 00 0. 12 0. 13 0. 14 0. 19 0. 27 0. 48
Ш	7 6 5 4 3 2	0. 000 3. 54 8. 400 13. 444 18. 30 19. 42 0. 000	9 35.6 5 35.6 8 35.6 4 35.6 4 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 3. 40. 0 3. 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	0. 00 0. 12 0. 28 0. 44 0. 60 0. 64 0. 00

		_	
CALC	ULAT!	Ņ	
Detai	ed Desi	gn	
on Port Rea	ctivation	P	roiect
in La Un			
CALC FILE No.:		•	
CALC INDEX NO	: 5.5	P/	GE 152
			DATE
PREPARED SY			26/01/02
CHECKED BY			09/08/200
			1,00,00

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

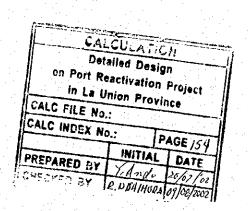
NO		Ms (kN·m)	d Di (cm)	ameter (mm)	Pitch (cm)	As (cm²)	σse C (N/mm²)	rack width W(cm)	Permission of width Wilm	- crack (cm)
	7 6 5 4 3 2	0,000 12,127 12,744 13,362 15,805 27,329 42,446		D13 D13 D13 D13 D13 D13,D13		6. 34 6. 34 6. 34 6. 34 6. 34 12. 67 12. 67	0, 000 69, 932 73, 490 77, 054 91, 142 80, 606 101, 256	0. 0000 0. 0186 0. 0195 0. 0205 0. 0242 0. 0186 0. 0233	0. 0035 × 10. 0 =0. 0350	
1	7 6 5 4 3 2	0. 000 2. 748 2. 816 3. 095 4. 391 12. 066 25. 722	29. 0 29. 0 29. 0 29. 0 29. 0 29. 0 35. 6	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 12. 67	0.000 31.177 31.949 35.114 49.818 69.580 61.361	0. 0000 0. 0105 0. 0107 0. 0118 0. 0167 0. 0185 0. 0141	0. 0035 × 10. 0 =0. 0350	· .
III	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	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	0. 000 14. 849 35. 167 56. 268 76. 586 81. 281 0. 000	0. 0000 0. 0050 0. 0118 0. 0189 0. 0257 0. 0273 0. 0000	0. 0035 × 10. 0 = 0. 0350	



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

					1	A Line State of the State of	B = IOOCW
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	5. 887 14. 413 28. 218 42. 428 56. 232 53. 390 22. 920	33. 0 0. 66 33. 0 1. 61 33. 0 3. 17 33. 0 4. 79 33. 0 6. 38 33. 0 6. 05 33. 0 2. 57	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	179. 322 179. 322 179. 322 179. 322 179. 322 179. 322 179. 322	0. 04 0. 09 0. 17 0. 26 0. 34 0. 33 0. 14
II 7 6 5 4 3 2 1	0. 609 3. 451 6. 902 10. 556 14. 616 17. 458 13. 677	33. 0 0. 07 33. 0 0. 38 33. 0 0. 77 33. 0 1. 18 33. 0 1. 63 33. 0 1. 95 33. 0 1. 53	D22 D22 D22 D22 D22 D22 D22 D22	20. 0 20. 0 20. 0 20. 0	19. 36 19. 36 19. 36 19. 36 19. 36 19. 36	179. 322 179. 322 179. 322 179. 322 179. 322 179. 322 179. 322	0.00 0.02 0.04 0.06 0.09 0.11 0.08
III 7 6 5 4 3 2 1	183, 191 182, 120 187, 689 193, 964 201, 001 173, 951 0, 000	33. 0 21. 96 33. 0 21. 82 33. 0 22. 54 33. 0 23. 37 33. 0 24. 30 33. 0 20. 76 33. 0 0. 00	D22, D25 D22, D25 D22, D25 D22, D25 D22, D25 D22, D25 D22, D25 D22, D25	10.0 4 10.0 4 10.0 4 10.0 4	14. 69	376. 716 376. 716 376. 716 376. 716 376. 716 376. 716 376. 716	0. 53
1 ' 7 6 5 4 3 2 1	6. 193 15. 058 29. 387 44. 084 58. 322 54. 471 22. 920	33. 0 0. 69 33. 0 1. 68 33. 0 3. 30 33. 0 4. 98 33. 0 6. 63 33. 0 6. 18 33. 0 2. 57	D22 D22 D22 D22 D22 D22 D22 D22	20. 0 1 20. 0 1 20. 0 1 20. 0 1 20. 0 1	9. 36 9. 36 9. 36 9. 36 9. 36 9. 36 9. 36	179. 322 179. 322 179. 322 179. 322 179. 322 179. 322 179. 322	0. 04 0. 09 0. 18 0. 27 0. 36 0. 33 0. 14
III'7 6 5 4 3 2 1	176. 868 175. 860 181. 192 187. 224 194. 578 171. 419 0. 000	33. 0 21. 14 33. 0 21. 01 33. 0 21. 70 33. 0 22. 48 33. 0 23. 45 33. 0 20. 43 33. 0 0. 00	D22, D25 D22, D25 D22, D25 D22, D25 D22, D25 D22, D25 D22, D25 D22, D25	10. 0 4 10. 0 4 10. 0 4 10. 0 4	14. 69 14. 69 14. 69 14. 69 14. 69 14. 69	376. 716 376. 716 376. 716 376. 716 376. 716 376. 716 376. 716	0. 52

% 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



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

Ms (kN·m) 2. 676 6. 551 12. 826 19. 285 25. 559 24. 267 20. 838 0. 277 1. 569 3. 137 4. 798 6. 643 7. 935 12. 433	d Diameter (cm) (mm) 33.0 D22	20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0 20. 0	(cm²) 19. 36 19. 36 19. 36 19. 36 19. 36 19. 36 19. 36 19. 36 19. 36 19. 36	(N/mm²) 4. 591 11. 239 22. 005 33. 087 43. 851 41. 635 35. 752 0. 475 2. 692 5. 382 8. 232 11. 397	0.0008 0.0020 0.0040 0.0060 0.0080 0.0076 0.0065 0.0001 0.0005 0.0010 0.0015 0.0021	Permission crawidth W _{1.1.m} (cm) 0.0040 × 6.0 = 0.0240 0.0040 × 6.0 = 0.0240
6. 551 12. 826 19. 285 25. 559 24. 267 20. 838 0. 277 1. 569 3. 137 4. 798 6. 643 7. 935 12. 433	33. 0 D22 33. 0 D22	20. 0 20. 0	19. 36 19. 36 19. 36 19. 36 19. 36 19. 36 19. 36 19. 36 19. 36 19. 36	11. 239 22. 005 33. 087 43. 851 41. 635 35. 752 0. 475 2. 692 5. 382 8. 232 11. 397	0. 0020 0. 0040 0. 0060 0. 0080 0. 0076 0. 0065 0. 0001 0. 0005 0. 0010 0. 0015	=0. 0240 0. 0040 × 6. 0
1. 569 3. 137 4. 798 6. 643 7. 935 12. 433	33. 0 D22 33. 0 D22 33. 0 D22 33. 0 D22 33. 0 D22 33. 0 D22	20. 0 20. 0 20. 0 20. 0 20. 0	19. 36 19. 36 19. 36 19. 36 19. 36	2. 692 5. 382 8. 232 11. 397	0. 0005 0. 0010 0. 0015	
	00 0 D00 D0=	20.0	19.36	13. 614 21. 331	0. 0025 0. 0039	
170. 630 176. 335 182. 734 158. 143 0. 000	33. 0 D22, D25	10. 0 10. 0 10. 0 10. 0	44. 69 44. 69 44. 69 44. 69 44. 69 44. 69 44. 69	128. 791 128. 040 131. 955 136. 367 141. 315 122. 298 0. 000	0. 0190 0. 0189 0. 0194 0. 0201 0. 0208 0. 0180 0. 0000	0. 0040 × 6. 0 =0. 0240
2. 815 6. 844 13. 357 20. 038 26. 509 24. 758 20. 838	33. 0 D22 33. 0 D22 33. 0 D22 33. 0 D22 33. 0 D22 33. 0 D22 33. 0 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 19. 36	4. 830 11. 742 22. 916 34. 379 45. 481 42. 477 35. 752	0.0009 0.0021 0.0042 0.0063 0.0083 0.0077 0.0065	0. 0040 × 6. 0 =0. 0240
160. 787 159. 873 164. 722 170. 207 176. 893 155. 840 0. 000	33. 0 D22, D25 33. 0 D22, D25 33. 0 D22, D25 33. 0 D22, D25 33. 0 D22, D25	10. 0 10. 0 10. 0 10. 0 10. 0	44. 69 44. 69 44. 69 44. 69 44. 69 44. 69 44. 69	124. 343 123. 636 127. 386 131. 628 136. 798 120. 517 0. 000	0. 0183 0. 0182 0. 0188 0. 0194 0. 0201 0. 0177 0. 0000	0. 0040 × 6. 0 =0. 0240
	6. 844 13. 357 20. 038 26. 509 24. 758 20. 838 160. 787 159. 873 164. 722 170. 207 176. 893 155. 840 0. 000	6.844 33.0 D22 13.357 33.0 D22 20.038 33.0 D22 26.509 33.0 D22 24.758 33.0 D22 20.838 33.0 D22 160.787 33.0 D22, D25 159.873 33.0 D22, D25 164.722 33.0 D22, D25 170.207 33.0 D22, D25 176.893 33.0 D22, D25 176.893 33.0 D22, D25 175.840 33.0 D22, D25 0.000 33.0 D22, D25	6. 844 33. 0 D22 20. 0 13. 357 33. 0 D22 20. 0 20. 038 33. 0 D22 20. 0 26. 509 33. 0 D22 20. 0 24. 758 33. 0 D22 20. 0 20. 838 33. 0 D22 20. 0 160. 787 33. 0 D22, D25 10. 0 159. 873 33. 0 D22, D25 10. 0 159. 873 33. 0 D22, D25 10. 0 170. 207 33. 0 D22, D25 10. 0 176. 893 33. 0 D22, D25 10. 0 176. 893 33. 0 D22, D25 10. 0 155. 840 33. 0 D22, D25 10. 0 155. 840 33. 0 D22, D25 10. 0 0. 000 33. 0 D22, D25 10. 0	6.844 33.0 D22 20.0 19.36 13.357 33.0 D22 20.0 19.36 20.038 33.0 D22 20.0 19.36 26.509 33.0 D22 20.0 19.36 24.758 33.0 D22 20.0 19.36 20.838 33.0 D22 20.0 19.36 20.838 33.0 D22 20.0 19.36 160.787 33.0 D22 D25 10.0 44.69 159.873 33.0 D22, D25 10.0 44.69 164.722 33.0 D22, D25 10.0 44.69 170.207 33.0 D22, D25 10.0 44.69 176.893 33.0 D22, D25 10.0 44.69 176.893 33.0 D22, D25 10.0 44.69 155.840 33.0 D22, D25 10.0 44.69 155.840 33.0 D22, D25 10.0 44.69 0.000 33.0 D22, D25 10.0 44.69	6.844 33.0 D22 20.0 19.36 11.742 13.357 33.0 D22 20.0 19.36 22.916 20.038 33.0 D22 20.0 19.36 34.379 26.509 33.0 D22 20.0 19.36 45.481 24.758 33.0 D22 20.0 19.36 42.477 20.838 33.0 D22 20.0 19.36 35.752 160.787 33.0 D22, D25 10.0 44.69 124.343 159.873 33.0 D22, D25 10.0 44.69 123.636 164.722 33.0 D22, D25 10.0 44.69 127.386 170.207 33.0 D22, D25 10.0 44.69 131.628 176.893 33.0 D22, D25 10.0 44.69 131.628 176.893 33.0 D22, D25 10.0 44.69 136.798 155.840 33.0 D22, D25 10.0 44.69 120.517 0.000 33.0 D22, D25 10.0 44.69 0.000	6.844 33.0 D22 20.0 19.36 11.742 0.0021 13.357 33.0 D22 20.0 19.36 22.916 0.0042 20.038 33.0 D22 20.0 19.36 34.379 0.0063 26.509 33.0 D22 20.0 19.36 45.481 0.0083 24.758 33.0 D22 20.0 19.36 42.477 0.0077 20.838 33.0 D22 20.0 19.36 35.752 0.0065 160.787 33.0 D22, D25 10.0 44.69 124.343 0.0183 159.873 33.0 D22, D25 10.0 44.69 123.636 0.0182 164.722 33.0 D22, D25 10.0 44.69 127.386 0.0188 170.207 33.0 D22, D25 10.0 44.69 131.628 0.0194 176.893 33.0 D22, D25 10.0 44.69 136.798 0.0201 155.840 33.0 D22, D25 10.0 44.69 136.798 0.0201 155.840 33.0 D22, D25 10.0 44.69 120.517 0.0177 0.000 33.0 D22, D25 10.0 44.69 120.517 0.0177 0.000 33.0 D22, D25 10.0 44.69 0.000 0.0000

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CALC FILE No.	:	VIIICE	
CALC INDEX NO		PAG	E 155
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Ultimate limit state (Under ordinary conditions)
Sidewall(parallel to centerline:seaside)—Horizontal outside steel reinforcement

В	 100cm

NO	Md (kN·m)	d As (cm) (cn		Pitch (cm)	As (cm²)	Mud (kN·m)	γi∙Md/Mud
	7 91. 722 6 89. 570 5 92. 617 4 95. 740 3 97. 738 2 78. 531 1 16. 849	31. 0 11. 3 31. 0 11. 0 31. 0 11. 0 31. 0 12. 0 31. 0 9. 0 37. 6 1. 0	02 D22, D16 12 D22, D16 13 D22, D16 13 D22, D16 14 D22, D16 15 D22, D16	10. 0 10. 0 10. 0 10. 0 10. 0 10. 0	29. 29 29. 29 29. 29 29. 29 29. 29 29. 29 29. 29	244, 159 244, 159 244, 159 244, 159 244, 159 244, 159 302, 158	0. 41
	7 22. 137 6 22. 469 5 23. 125 4 24. 030 3 25. 223 2 24. 924 1 10. 150	31. 0 2. 0 31. 0 2. 0 31. 0 2. 3 31. 0 2. 3 31. 0 3. 0 31. 0 2. 3 37. 6 0. 9	58 D22 76 D22 37 D22 02 D22 98 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 19. 36	167. 704 167. 704 167. 704 167. 704 167. 704 167. 704 206. 044	0. 15 0. 15 0. 15 0. 16 0. 17 0. 16 0. 05
Ш	7 1. 624 6 23. 549 5 55. 014 4 86. 886 3 118. 352 2 120. 585 1 0. 000	37. 6 0. 37. 6 2. 37. 6 5. 37. 6 8. 37. 6 11. 37. 6 12. 37. 6 0.	31 D22 45 D22 69 D22 96 D22 19 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 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 94. 884 6 92. 700 5 95. 865 4 99. 110 3 100. 950 2 79. 797 1 16. 849	31. 0 11. 31. 0 11. 31. 0 11. 31. 0 12. 31. 0 12. 31. 0 9. 37. 6 1.	43 D22, D16 83 D22, D16 25 D22, D16 49 D22, D16 78 D22, D16	10. 0 10. 0 10. 0 10. 0 10. 0 10. 0 10. 0	29. 29 29. 29 29. 29 29. 29 29. 29 29. 29 29. 29	244. 159 244. 159 244. 159 244. 159 244. 159 244. 159 302. 158	0. 43
щ	7 1. 011 6 22. 260 5 52. 675 4 83. 573 3 114. 172 2 118. 423 1 0. 000	37. 6 0. 37. 6 2. 37. 6 5. 37. 6 8. 37. 6 11. 37. 6 0.	18 D22 22 D22 35 D22 52 D22 97 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	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 ~ 111 : Before correction Slab of a middle part Notes) I' ~ 111 : After correction Slab of side wall corner

GAL Deta on Port Rei in La Un CALC FILE No.	IION Dea.	ign	
CALC INDEX NO	,	PAGE /	56
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Serviceability limit state
Sidewall(parallel to centerline:seaside) - Horizontal outside steel reinforcement
B = 100cm

				1.5	10.00				<u> </u>			
NO			Ms (kN·m)	d D (cm)	iameter (mm)	Pitch (cm)	As (cm²)	σse ((N/mm²)	Crack width W(cm)	, F	Permission width W _{lim}	crack (cm)
I	7 6 5 4 3 2 1	\ \ !	83. 386 81. 429 84. 199 87. 038 88. 855 71. 394 7. 658	31.0 31.0 31.0 31.0 31.0	D22, D16 D22, D16 D22, D16 D22, D16 D22, D16 D22, D16 D22, D16	10. 0 10. 0 10. 0 10. 0 10. 0	29. 29 29. 29 29. 29 29. 29 29. 29 29. 29 29. 29	102. 821 100. 408 103. 824 107. 324 109. 565 88. 034 7. 715	0. 0195 0. 0190 0. 0197 0. 0203 0. 0208 0. 0167 0. 0015		0035 × 8, 0 = 0, 0280	
II	7 6 5 4 3 2		20. 125 20. 426 21. 023 21. 847 22. 930 22. 659 4. 614	31.0 31.0 31.0 31.0 31.0 31.0 37.6	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 19. 36	36. 851 37. 402 38. 496 40. 004 41. 987 41. 491 6. 912	0. 0082 0. 0083 0. 0086 0. 0089 0. 0093 0. 0092 0. 0015		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 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 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		0035 × 8. 0 = 0. 0280	
I '	7 6 5 4 3 2		86. 262 84. 276 87. 153 90. 102 91. 775 72. 546 7. 658	31.0 31.0 31.0 31.0 31.0	D22, D16 D22, D16 D22, D16 D22, D16 D22, D16 D22, D16 D22, D16	10. 0 10. 0 10. 0 10. 0 10. 0	29. 29 29. 29 29. 29 29. 29 29. 29 29. 29 29. 29	106. 368 103. 919 107. 466 111. 103 113. 166 89. 455 7. 715	0. 0201 0. 0197 0. 0204 0. 0210 0. 0214 0. 0169 0. 0015		035 × 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 37. 6 37. 6 37. 6 37. 6 37. 6 37. 6	D22 D22 D22 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		035×8.0 =0.0280	

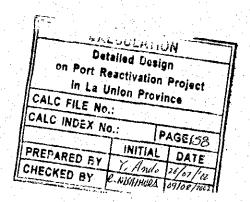
 $\sim {\rm I\!I\!I}$: Before correction Slab of a middle part $\sim {\rm I\!I\!I}'$: After correction Slab of side wall corner Notes) Notes)

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

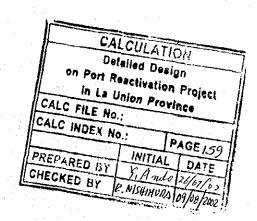
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NO		Md (kN·m)	d As (cm) (cm		Pitch (cm)	As (cm²)	Mud (kN·m)	γi·Md/Mud
I	7 6 5 4 3 2	0. 000 1. 624 4. 466 7. 105 11. 977 24. 970 137. 658	31. 0 0. 0 31. 0 0. 1 31. 0 0. 5 31. 0 1. 4 31. 0 2. 9 31. 0 17. 3	9 D16 3 D16 4 D16 2 D16 8 D16	40. 0 40. 0 40. 0 40. 0 40. 0 40. 0 10. 0	4. 97 4. 97 4. 97 4. 97 4. 97 4. 97 35. 27	45. 410 45. 410 45. 410 45. 410 45. 410 45. 410 287. 063	0. 00 0. 04 0. 11 0. 17 0. 29 0. 60 0. 53 **
Π	7 6 5 4 3 2	0.000 0.406 1.015 1.624 3.654 11.774 82.555	31. 0 0. 0 31. 0 0. 0 31. 0 0. 1 31. 0 0. 1 31. 0 0. 2 31. 0 1. 4 31. 0 10. 1	D16 2 D16 9 D16 3 D16 0 D16	40. 0 40. 0 40. 0 40. 0 40. 0 40. 0 10. 0	4. 97 4. 97 4. 97 4. 97 4. 97 4. 97 19. 86	45. 410 45. 410 45. 410 45. 410 45. 410 45. 410 171. 711	0. 00 0. 01 0. 02 0. 04 0. 09 0. 29 0. 53 **
III	7 6 5 4 3 2	0.000 30.306 31.310 32.315 33.528 28.992 0.000	31. 0 0. 0 31. 0 3. 0 31. 0 3. 3 31. 0 3. 3 31. 0 4. 0 31. 0 0. 0	03 D16 75 D16 08 D16 02 D16 17 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	89. 107 89. 107 89. 107 89. 107 89. 107 89. 107	0. 00 0. 37 0. 39 0. 40 0. 41 0. 36 0. 00

^{*} It determines from serviceability limit state.



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

			the state of the s						
NO		Ms (kN·m)	d Diamete (cm) (mm)		As (cm²)	σse ((N/mm²)	Crack width W(cm)	Permission width W _{lim}	crack (cm)
I	7 6 5 4 3 2 1	0.000 0.738 2.030 3.229 5.444 11.349 125.148	31. 0 D16 31. 0 D16 31. 0 D16 31. 0 D16 31. 0 D16 31. 0 D16, D2	40. 0 40. 0 40. 0 40. 0 40. 0 40. 0 25 10. 0	4. 97 4. 97 4. 97 4. 97 4. 97 4. 97 35. 27	0. 000 5. 038 13. 858 22. 043 37. 165 77. 476 129. 347	0. 0000 0. 0015 0. 0041 0. 0065 0. 0109 0. 0228 0. 0245	0. 0040 × 8. 0 = 0. 0320	
Π	7 6 5 4 3 2 1	0.000 0.185 0.461 0.738 1.661 5.352 75.052	31.0 D16 31.0 D16 31.0 D16 31.0 D16 31.0 D16 31.0 D16 31.0 D16, D1	40. 0 40. 0 40. 0 40. 0 40. 0 40. 0 6 10. 0	4. 97 4. 97 4. 97 4. 97 4. 97 4. 97 19. 86	0.000 1.263 3.147 5.038 11.339 36.537 134.112	0.0000 0.0004 0.0009 0.0015 0.0033 0.0108 0.0254	0. 0040 × 8. 0 =0. 0320	
Ш	7 6 5 4 3 2 1	0.000 27.551 28.465 29.378 30.481 26.358 0.000	31.0 D16 31.0 D16 31.0 D16 31.0 D16 31.0 D16 31.0 D16 31.0 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	0.000 95.966 99.150 102.330 106.172 91.810 0.000	0. 0000 0. 0215 0. 0223 0. 0230 0. 0238 0. 0206 0. 0000	0.0040×8.0 =0.0320	



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

NO		Md (kN·m)	d (cm)	Asn (cm²)	Diameter (mm)	Pitch (cm)	Ås (cm²)	Mud (kN·m)	γi·Md/Mud
I	7 6 5 4 3 2	0.000 14.361 15.111 16.033 19.686 33.275 00.690	29. 0 29. 0 29. 0 29. 0 29. 0 29. 0 35. 6	0. 00 1. 83 1. 92 2. 04 2. 51 4. 28 10. 73	D13 D13 D13 D13 D13 D13, D13 D13, D13	20. 0 20. 0 20. 0 20. 0 20. 0 10. 0	6. 34 6. 34 6. 34 6. 34 6. 34 12. 67 12. 67	53. 833 53. 833 53. 833 53. 833 53. 833 104. 945 130. 031	0. 00 0. 29 0. 31 0. 33 0. 40 0. 35 0. 85
II	7 6 5 4 3 2	0. 000 3. 223 3. 339 3. 874 5. 938 15. 244 61. 307	29. 0 29. 0 29. 0 29. 0 29. 0 29. 0 35. 6	0, 00 0, 41 0, 42 0, 49 0, 75 1, 94 6, 44	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 12. 67	27. 249 27. 249 27. 249 27. 249 27. 249 53. 833 130. 031	0. 00 0. 13 0. 13 0. 16 0. 24 0. 31 0. 52
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 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 0.13 0.30 0.47 0.65 0.66 0.00

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

					-		D 1000III
NO		Ms (kN·m)	d Diameter (cm) (mm)	Pitch (cm)	As (cm²)	σse Crack wid (N/mm²) W(cm)	th Permission crac width Wiim (cm)
I	7 6 5 4 3 2	0. 000 13. 055 13. 738 14. 575 17. 897 30. 251 45. 766	29. 0 D13 29. 0 D13 29. 0 D13 29. 0 D13 29. 0 D13 29. 0 D13, D13 35. 6 D13, D13		6. 34 6. 34 6. 34 6. 34 6. 34 12. 67 12. 67	0,000 0.0000 75,283 0.0200 79,222 0.0210 84,049 0.0223 103,206 0.0274 89,224 0.0206 109,176 0.0252	0. 0035 × 10. 0 =0. 0350
II	7 6 5 4 3 2	0. 000 2. 930 3. 036 3. 522 5. 399 13. 858 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 20. 0 10. 0	3. 17 3. 17 3. 17 3. 17 3. 17 6. 34 12. 67	0.000 0.0000 33.242 0.0112 34.445 0.0116 39.958 0.0134 61.254 0.0206 79.914 0.0212 66.475 0.0153	0. 0035 × 10. 0 =0. 0350
III	7 6 5 4 3 2	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	0.000 0.0000 16.138 0.0054 38.224 0.0128 60.309 0.0202 82.395 0.0276 84.098 0.0282 0.000 0.0000	0. 0035 × 10. 0 =0. 0350

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on Port Re	lled Design
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PREPARED BY CHECKED BY	E. NISHMUM 07/08/2002

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

NO	Md (kN⋅m)	d Asn (cm) (cm²)	Diameter (mm)	Pitch As (cm) (cm²)	Mud (kN·m)	γi·Md/Mud
I	7 5. 887 6 14. 413 5 28. 218 4 42. 428 3 56. 232 2 53. 390 1 22. 920	33. 0 0. 66 33. 0 1. 61 33. 0 3. 17 33. 0 4. 79 33. 0 6. 38 33. 0 6. 05 33. 0 2. 57	D22 D22 D22 D22 D22 D22 D22 D22	20. 0 19. 36 20. 0 19. 36	179. 322 179. 322 179. 322 179. 322 179. 322 179. 322 179. 322	0. 04 0. 09 0. 17 0. 26 0. 34 0. 33 0. 14
T	7 0. 609 6 3. 451 5 6. 902 4 10. 556 3 14. 616 2 17. 458 1 13. 677	33. 0 0. 07 33. 0 0. 38 33. 0 0. 77 33. 0 1. 18 33. 0 1. 63 33. 0 1. 95 33. 0 1. 53	D22 D22 D22 D22 D22 D22 D22 D22	20. 0 19. 36 20. 0 19. 36	179. 322 179. 322 179. 322 179. 322 179. 322 179. 322 179. 322	0. 00 0. 02 0. 04 0. 06 0. 09 0. 11 0. 08
Ш	7 183. 191 6 182. 120 5 187. 689 4 193. 964 3 201. 001 2 173. 951 1 0. 000	33. 0 21. 96 33. 0 21. 82 33. 0 22. 54 33. 0 23. 37 33. 0 24. 30 33. 0 20. 76 33. 0 0. 00	D22, D25 D22, D25 D22, D25 D22, D25 D22, D25 D22, D25 D22, D25 D22, D25	10. 0 44. 69 10. 0 44. 69	376. 716 376. 716 376. 716 376. 716 376. 716 376. 716 376. 716	0. 53
Ī	7 6. 193 6 15. 058 5 29. 387 4 44. 084 3 58. 322 2 54. 471 1 22. 920	33. 0 0. 69 33. 0 1. 68 33. 0 3. 30 33. 0 4. 98 33. 0 6. 63 33. 0 6. 18 33. 0 2. 57	D22 D22 D22 D22 D22 D22 D22 D22	20. 0 19. 36 20. 0 19. 36	179. 322 179. 322 179. 322 179. 322 179. 322 179. 322 179. 322	0. 04 0. 09 0. 18 0. 27 0. 36 0. 33 0. 14
Ш	7 176. 868 6 175. 860 5 181. 192 4 187. 224 3 194. 578 2 171. 419 1 0. 000	33. 0 21. 14 33. 0 21. 01 33. 0 21. 70 33. 0 22. 48 33. 0 23. 45 33. 0 20. 43 33. 0 0. 00	D22, D25 D22, D25 D22, D25 D22, D25 D22, D25 D22, D25 D22, D25	10. 0 44. 69 10. 0 44. 69	376. 716 376. 716 376. 716 376. 716 376. 716 376. 716 376. 716	0. 52

% 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

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

						<u></u>	D 1000III
NO	Ms (kN∙m)	d Diameter (cm) (mm)	Pitch (cm)	As (cm²)	σse C (N/mm²)	rack width W(cm)	Permission crac width W _{iim} (cm)
1 7 6 5 4 3 2 1	2. 676 6. 551 12. 826 19. 285 25. 559 24. 267 20. 838	33. 0 D22 33. 0 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	4. 591 11. 239 22. 005 33. 087 43. 851 41. 635 35. 752	0. 0008 0. 0020 0. 0040 0. 0060 0. 0080 0. 0076 0. 0065	0.0040×6.0 =0.0240
II 7 6 5 4 3 2 1	0. 277 1. 569 3. 137 4. 798 6. 643 7. 935 12. 433	33. 0 D22 33. 0 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 19. 36	0, 475 2, 692 5, 382 8, 232 11, 397 13, 614 21, 331	0.0001 0.0005 0.0010 0.0015 0.0021 0.0025 0.0039	0. 0040 × 6. 0 =0. 0240
M 7 6 5 4 3 2 1	166. 539 165. 567 170. 630 176. 335 182. 734 158. 143 0, 000	33. 0 D22, D25 33. 0 D22, D25	10. 0 10. 0 10. 0 10. 0	44. 69 44. 69 44. 69 44. 69 44. 69 44. 69 44. 69	128. 791 128. 040 131. 955 136. 367 141. 315 122. 298 0. 000	0. 0190 0. 0189 0. 0194 0. 0201 0. 0208 0. 0180 0. 0000	0. 0040 × 6. 0 =0. 0240
I'7 6 5 4 3 2	2. 815 6. 844 13. 357 20. 038 26. 509 24. 758 20. 838	33. 0 D22 33. 0 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 19. 36	4. 830 11. 742 22. 916 34. 379 45. 481 42. 477 35. 752	0.0009 0.0021 0.0042 0.0063 0.0083 0.0077 0.0065	0. 0040 × 6. 0 =0. 0240
III'7 6 5 4 3 2 1	160. 787 159. 873 164. 722 170. 207 176. 893 155. 840 0. 000	33. 0 D22, D25 33. 0 D22, D25	10. 0 10. 0 10. 0 10. 0 10. 0	44. 69	124. 343 123. 636 127. 386 131. 628 136. 798 120. 517 0. 000	0. 0183 0. 0182 0. 0188 0. 0194 0. 0201 0. 0177 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

Datailed Design on Pore Reactivation Project in La Union Province CALC FILE No.: CALC (NOEX Wo): PAGE N INITIAL EAS PROPARED BY Y. Ando 26/6/
IN La Union Province CALC FILE No.: CALC INDEX NO.: PAGE (
CALC FILE No.: CALC INDEX No.: PAGE A
CALC INDEX NO. PAGE A
INITIAL EAS
ما النهاب الرحورة والإستان والمراجعة الإستان المراجعة المراجعة المراجعة المراجعة المراجعة المراجعة المراجعة الم
2838ARED 34 Y. Ando 26/0
e. WUHIHUDA 09/08/

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

B = 100cm

NO	Md (kN·m)	d Asn (cm) (cm²)	Diameter (mm)	Pitch As (cm) (cm²)	Mud (kN·m)	γ i·Md/Mud
I 7 6 5 4 3 2 1	91. 722 89. 570 92. 617 95. 740 97. 738 78. 531 16. 849	31. 0 11. 30 31. 0 11. 02 31. 0 11. 42 31. 0 11. 82 31. 0 12. 08 31. 0 9. 62 37. 6 1. 65	D22, D16 D22, D16 D22, D16 D22, D16 D22, D16 D22, D16 D22, D16 D22, D16	10.0 29.29 10.0 29.29 10.0 29.29 10.0 29.29 10.0 29.29 10.0 29.29 10.0 29.29	244. 159 244. 159 244. 159 244. 159 244. 159 244. 159 302. 158	0. 41
II 7 6 5 4 3 2 1	22. 137 22. 469 23. 125 24. 030 25. 223 24. 924 10. 150	31. 0 2. 64 31. 0 2. 68 31. 0 2. 76 31. 0 2. 87 31. 0 3. 02 31. 0 2. 98 37. 6 0. 99	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. 15 0. 15 0. 15 0. 16 0. 17 0. 16 0. 05
III 7 6 5 4 3 2 1	1. 624 23. 549 55. 014 86. 886 118. 352 120. 585 0. 000	37. 6 0. 16 37. 6 2. 31 37. 6 5. 45 37. 6 8. 69 37. 6 11. 96 37. 6 12. 19 37. 6 0. 00	D22 D22 D22 D22 D22 D22 D22	20. 0 19. 36 20. 0 19. 36	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	94. 884 92. 700 95. 865 99. 110 100. 950 79. 797 16. 849	31. 0 11. 71 31. 0 11. 43 31. 0 11. 83 31. 0 12. 25 31. 0 12. 49 31. 0 9. 78 37. 6 1. 65	D22, D16 D22, D16 D22, D16 D22, D16 D22, D16 D22, D16 D22, D16	10.0 29.29 10.0 29.29 10.0 29.29 10.0 29.29 10.0 29.29 10.0 29.29 10.0 29.29	244. 159 244. 159 244. 159 244. 159 244. 159 244. 159 302. 158	0. 43
Ш'7 6 5 4 3 2 1	1. 011 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	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

Notes)

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

> Distaltas passign Cagniver on Project E. NISHIHURA 09/00/2002

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

B = 100cm

NO	Ms (kN·m)	d Diameter (cm) (mm)	Pitch (cm)	As (cm²)	σse Ci (N/mm²)	ack width W(cm)	Permission crack width Witm(cm)
I 7 6 5 4 3 2 1	83. 386 81. 429 84. 199 87. 038 88. 855 71. 394 7. 658	31. 0 D22, D16 31. 0 D22, D16 37. 6 D22, D16	10. 0 10. 0 10. 0 10. 0	29. 29 29. 29 29. 29 29. 29 29. 29 29. 29 29. 29	102. 821 100. 408 103. 824 107. 324 109. 565 88. 034 7. 715	0. 0195 0. 0190 0. 0197 0. 0203 0. 0208 0. 0167 0. 0015	0. 0035 × 8. 0 =0. 0280
II 7 6 5 4 3 2 1	20. 125 20. 426 21. 023 21. 847 22. 930 22. 659 4. 614	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	19. 36 19. 36 19. 36 19. 36 19. 36 19. 36 19. 36	36. 851 37. 402 38. 496 40. 004 41. 987 41. 491 6. 912	0. 0082 0. 0083 0. 0086 0. 0089 0. 0093 0. 0092 0. 0015	0. 0035 × 8. 0 =0. 0280
III 7 6 5 4 3 2 1	0. 738 10. 703 25. 005 39. 492 53. 794 54. 809 0. 000	37. 6 D22 37. 6 D22 37. 6 D22 37. 6 D22 37. 6 D22 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	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
1'7 6 5 4 3 2	86, 262 84, 276 87, 153 90, 102 91, 775 72, 546 7, 658	31. 0 D22, D16 31. 0 D22, D16 37. 6 D22, D16	10. 0 10. 0 10. 0 10. 0	29. 29 29. 29 29. 29 29. 29 29. 29 29. 29 29. 29	106. 368 103. 919 107. 466 111. 103 113. 166 89. 455 7. 715	0. 0201 0. 0197 0. 0204 0. 0210 0. 0214 0. 0169 0. 0015	0. 0035 × 8. 0 =0. 0280
III'7 6 5 4 3 2 1	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	77. 736 80. 630	0. 0002 0. 0034 0. 0080 0. 0126 0. 0173 0. 0179 0. 0000	0. 0035 × 8. 0 = 0. 0280

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

CAL	CULAT	ION
	iled De activati	sign on Project
CALC FILE No.	:	OTTICE
CALC INDEX NO).:	PAGE 165
PREPARED BY	Y.A.	AL DATE ndo 26/67/62 4UMA 09/08/2002

Ultimate limit state (Under ordinary conditions)
Sidewall(parallel to centerline:landside) —Perpendicular inner side 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	31.0 0.00	D16	40. 0	4. 97	45. 410	0.00
	1. 624	31.0 0.19	D16	40. 0	4. 97	45. 410	0.04
	4. 466	31.0 0.53	D16	40. 0	4. 97	45. 410	0.11
	7. 105	31.0 0.84	D16	40. 0	4. 97	45. 410	0.17
	11. 977	31.0 1.42	D16	40. 0	4. 97	45. 410	0.29
	24. 970	31.0 2.98	D16	40. 0	4. 97	45. 410	0.60
	137. 658	31.0 17.35	D16	10. 0	35. 27	287. 063	0.53 **
II 7 6 5 4 3 2 1	0. 000	31. 0 0. 00	D16	40. 0	4. 97	45. 410	0.00
	0. 406	31. 0 0. 05	D16	40. 0	4. 97	45. 410	0.01
	1. 015	31. 0 0. 12	D16	40. 0	4. 97	45. 410	0.02
	1. 624	31. 0 0. 19	D16	40. 0	4. 97	45. 410	0.04
	3. 654	31. 0 0. 43	D16	40. 0	4. 97	45. 410	0.09
	11. 774	31. 0 1. 40	D16	40. 0	4. 97	45. 410	0.29
	82. 555	31. 0 10. 13	D16	10. 0	19. 86	171. 711	0.53 **
III 7 6 5 4 3 2 1	0. 000	31.0 0.00	D16	20. 0	9. 93	89. 107	0. 00
	30. 306	31.0 3.63	D16	20. 0	9. 93	89. 107	0. 37
	31. 310	31.0 3.75	D16	20. 0	9. 93	89. 107	0. 39
	32. 315	31.0 3.88	D16	20. 0	9. 93	89. 107	0. 40
	33. 528	31.0 4.02	D16	20. 0	9. 93	89. 107	0. 41
	28. 992	31.0 3.47	D16	20. 0	9. 93	89. 107	0. 36
	0. 000	31.0 0.00	D16	20. 0	9. 93	89. 107	0. 00

[※] It determines from serviceability limit state.

CALC	ULATIC	NC	
	led Desi	an	
in La Ur	lion Prov	nc	oject B
CALC FILE No.			
CALC INDEX NO).:	PA	GE 166
	INITIA	ιŢ	DATE
PREPARED BY	YiAna	61	26/07/0
CHECKED BY	e. Nishini	COALA	7/2-1

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

				•					
NO		Ms (kN·m)	d Diam (cm) (eter Pitch mm) (cm)	n As (cm²)	σse C (N/mm²)	rack width W(cm)	Permission width Wiim	cracl (cm)
I 7 6 5 4 3 2 1		0.000 0.738 2.030 3.229 5.444 11.349 125.148	31.0 D 31.0 D 31.0 D 31.0 D 31.0 D	16 40. 0 16 40. 0 16 40. 0 16 40. 0 16 40. 0 16 40. 0 , D25 10. 0	4. 97 4. 97 4. 97 4. 97 4. 97 4. 97 35. 27	0, 000 5, 038 13, 858 22, 043 37, 165 77, 476 129, 347	0.0000 0.0015 0.0041 0.0065 0.0109 0.0228 0.0245	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 75. 052	31. 0 D 31. 0 D 31. 0 D 31. 0 D 31. 0 D 31. 0 D	16 40.0 16 40.0 16 40.0 16 40.0 16 40.0 16 40.0 , D16 10.0	4. 97 4. 97 4. 97 4. 97 4. 97 4. 97 19. 86	0.000 1.263 3.147 5.038 11.339 36.537 134.112	0. 0000 0. 0004 0. 0009 0. 0015 0. 0033 0. 0108 0. 0254	0.0040 × 8.0 =0.0320	<u> </u>
III 7 6 5 4 3 2 1	:	0. 000 27. 551 28. 465 29. 378 30. 481 26. 358 0. 000	31.0 D 31.0 D 31.0 D 31.0 D 31.0 D	16 20.0 16 20.0 16 20.0 16 20.0 16 20.0 16 20.0 16 20.0	9. 93 9. 93 9. 93 9. 93 9. 93 9. 93	0.000 95.966 99.150 102.330 106.172 91.810 0.000	0. 0000 0. 0215 0. 0223 0. 0230 0. 0238 0. 0206 0. 0000	0.0040×8.0 =0.0320	

