WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
BRIDGE & STRUCTURES BRANCH

Project..... Sheet No. 117 of..... sheets

S. R. ..... Made by ..... Check by ..... Date ..... Supv. .....

Int. Bot Slab Member (15) @ .1L16.

$M_D = -2.91$

$M_{L+I} = -1.46$, .74

$M_H = +12.51$

$M_{NW} = 30\%(-6.52) = 1.96^{k'}$

$M_T = 1.06$

$M_{DM} = -14.23$

4.40 k' 4.73 Tension I.F.

$M_s = -4.40 + (-4.73 + 4.40).1 = -4.43^{k'}$ tension I.F.

2.68 k' 4.90 k'

$M_s = -2.68 + (-4.90 + 2.68).1 = -2.90$ "

$t = 13.01''$ $M_{pe} = -1.58^{k'}$ tension I.F.

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Sheet No.

MEMBER (15)

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WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
BRIDGE & STRUCTURES BRANCH

Project 3rd Lake Wash. Floating Bridge - Stage II Sheet No. 116 of ____ sheets
S. R. 90 Made by YMT. Check by ____ Date ____ Supv. YAC/RTS

Transverse Design — pontoon D near Wall 5
Section at 1L15

$t = 13.014''$ $e = -.257''$ $M_{pe} = -1.58^{K'}$ tension I.F.
$A = 13.01(12) = 156^{in^2}$ $S = \frac{12}{6}(13)^2 = 339^{in^3}$

Group S①: D + H + (L + I) + $M_{P/S}$ 100%

	Case A	Case B	Case C
M_D	-2.91		
M_H	12.51		
M_L	-1.46 .74		
M_{pe}	-1.58		
M_{2nd}	-4.43 (3.59)	-2.90 (5.12)	
	2.13 4.33	3.66 5.86	

Group S③: S① + .3 Wave 125%

	Case A	Case B	Case C
S①	2.13	5.86	
.3W	1.96	1.96	
	4.09	7.82	

Group S④: S① + T 125%

	Case A	Case B	Case C
S①			
T			

Group S⑥: S③ + T 140%

	Case A	Case B	Case C
S③		7.82	
T		1.06	
		8.88	

$$f = \frac{-13.66}{156} \pm \frac{8.88(12)}{339} = -.472 \pm -.314 = -.787^{ksi} \text{ Max} < 2.0^{ksi}$$
$$= -.158^{ksi} \text{ Min. } 0^{ksi}$$
O.K.

Flood Damage

Group S⑦: S① + DM

	Case A	Case B	Case C
S①			
DM			

Group S⑨: S③ + DM

	Case A	Case B	Case C
S③	4.09		
DM	-14.23		
	-10.14		

$$f = -.472 \pm \frac{-10.14(12)}{339} = -.472 \pm -.359 = -.831^{ksi} \text{ Max} < 2.0^{ksi}$$
$$= -.113^{ksi} \text{ Min. } +.213^{ksi}$$
O.K.

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Form 232-007

WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
BRIDGE & STRUCTURES BRANCH

Project..... Sheet No. 120 of..... sheets

S. R. ..... Made by ..... Check by ..... Date ..... Supv. .....

Int. Bot. Slab .2L15

$M_D = -1.72$

$M_{L+I} = -1.25, +.65$

$M_H = 4.27$

$M_{NW} = 30\%(-5.63) = -1.69^{k'}$

$M_T = 1.06$

$M_{DM} = -6.14$

M_S Case A $= -4.40 + (-4.73 + 4.40) \cdot 2 = -4.47^{k'}$ Tension I.F.

B $= -2.68 + (-4.90 + 2.68) \cdot 2 = -3.12^{k'}$ " "

$t = 10.54''$ $M_{pe} = 6.01^{k'}$ Tension O.F.

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REVISED 9/81

Sheet No.

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WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
BRIDGE & STRUCTURES BRANCH

Project 3rd Lake Wash. Floating Bridge - Stage II Sheet No. 119 of ____ sheets
S. R. 90 Made by YMT. Check by ____ Date ____ Supv. YFC/RTS

Transverse Design — pontoon D near Wall 5
Section at .2L15

$t = 10.54''$ $e = .98$ $M_{pe} = 6.01^{k'}$ tension o.f.

$A = 10.54(12) = 126$ $S = \frac{12}{6}(10.54)^2 = 222$

Group S①: D + H + (L + I) + $M_{P/S}$ 100%

	Case A	Case B	Case C
M_D	-1.72	"	
M_H	4.27	"	
M_L	-1.25 .65	"	
M_{pe}	6.01	"	
M_{2nd}	-4.47	-3.12	
	(4.09)	(5.44)	
	2.84 4.74	4.19 6.09	

Group S③: S① + .3 Wave 125%

	Case A	Case B	Case C
S①	2.84	6.09	
.3W	-1.69	-1.69	
	1.15	4.40	

Group S④: S① + T 125%

	Case A	Case B	Case C
S①		6.09	
T		1.06	
		7.15	

Group S⑥: S③ + T 140%

	Case A	Case B	Case C
S③		4.40	
T		1.06	
		5.46	

$f = \frac{-73.66}{126} \pm \frac{-(7.15)12}{222} = -.585 \pm -.387 = -.971^{ksi}$ Max < 2.0 ksi
$= -.198^{ksi}$ Min. 0 ksi
o.k.

Flood Damage

Group S⑦: S① + DM

	Case A	Case B	Case C
S①			
DM			

Group S⑨: S③ + DM

	Case A	Case B	Case C
S③	1.15		
DM	-6.14		
	-4.99 small.		

$f = \_\_\_ \pm \_\_\_ = \_\_\_ \pm \_\_\_ = \_\_\_^{ksi}$ Max < 2.0 ksi
$= \_\_\_^{ksi}$ Min. +.212 ksi

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WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
BRIDGE & STRUCTURES BRANCH

Project..... Sheet No. 121 of..... sheets

S. R. ..... Made by ..... Check by ..... Date ..... Supv. .....

Int. Bot Slab Member (15) .5L15

$M_{DL} = .05^{k'}$

$M_{LL} = -.61, +.39$

$M_H = -6.11$

$M_{NW} = 30\% (-2.56) = -.77$

$M_T = .47^{k'}$

$M_{DM} = 4.42$

M_{15} case A $= -4.40 + (4.73 + 4.40) .5 = -4.57^{k'}$ tension I.F.

B $= -2.68 + (-4.90 + 2.68) .5 = -3.79$ "

$t = 10''$ $M_{pe} = 7.67^{k'}$

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WASHINGTON STATE DEPARTMENT OF TRANSPORTATION
BRIDGE & STRUCTURES BRANCH

Project 3rd Lake Wash. Floating Bridge - Stage II Sheet No. 122 of ____ sheets
S. R. 90 Made by YMT. Check by ____ Date ____ Supv. YRC/RTS

Transverse Design — pontoon D near Wall 5
Section at 15+15

$t = 10$ $e = 1.125''$ $M_{pe} = 7.67^{k'}$ tension o.k.
$A = 10(12) = 120$ $S = \frac{12}{6}(10)^2 = 200$

Group S①: D + H + (L + I) + $M_{P/S}$ 100%

	Case A	Case B	Case C
M_D	.05		
M_H	-6.11		
M_L	-.61	+.39	
M_{pe}	7.67		
M_{grnd}	-4.57	-3.79	
	(-2.96)	(-2.18)	
	-3.57 -2.57	-2.79 -1.79	

Group S③: S① + .3 Wave 125%

	Case A	Case B	Case C
S①	-3.57	-1.79	
.3W	-.77	-.77	
	-4.34	-2.56	

Group S④: S① + T 125%

	Case A	Case B	Case C
S①	-3.57		
T	-.47		
	-4.04		

Group S⑥: S③ + T 140%

	Case A	Case B	Case C
S③	-4.34		
T	-.47		
	-4.80		

$f = \frac{-73.66}{120} \pm \frac{4.80(12)}{200} = -.614 \pm .288 = -.902^{ksi}$ Max < 2.0 ksi
$= -.326^{ksi}$ Min. 0 ksi
o.k.

Flood Damage

Group S⑦: S① + DM

	Case A	Case B	Case C
S①			
DM	$M_{DM} = 4.42$ small		

Group S⑨: S③ + DM

	Case A	Case B	Case C
S③			
DM			

$f = \frac{\quad}{\quad} \pm \quad = \quad \pm \quad =$ ____ ksi Max < 2.0 ksi
= ____ ksi Min. +.212 ksi

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