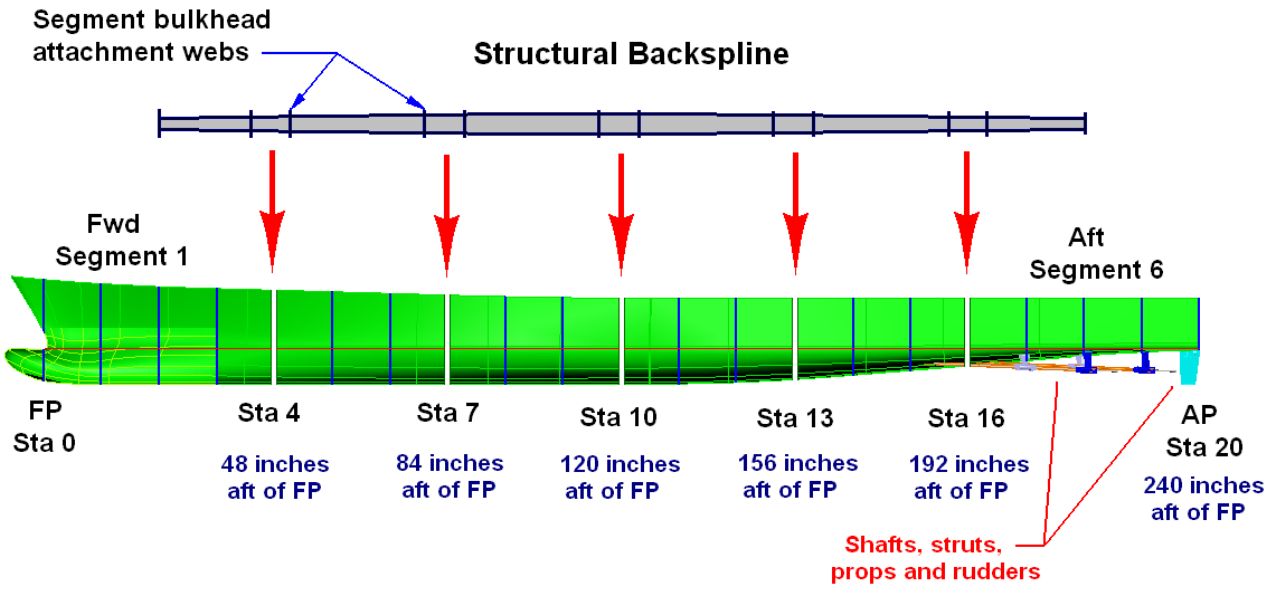

Segment bulkhead attachment webs
Structural Backspline
Fwd
Segment 1
Aft
Segment 6
FP
Sta 0
Sta 4
48 inches aft of FP
Sta 7
84 inches aft of FP
Sta 10
120 inches aft of FP
Sta 13
156 inches aft of FP
Sta 16
192 inches aft of FP
AP
Sta 20
240 inches aft of FP
Shafts, struts, props and rudders

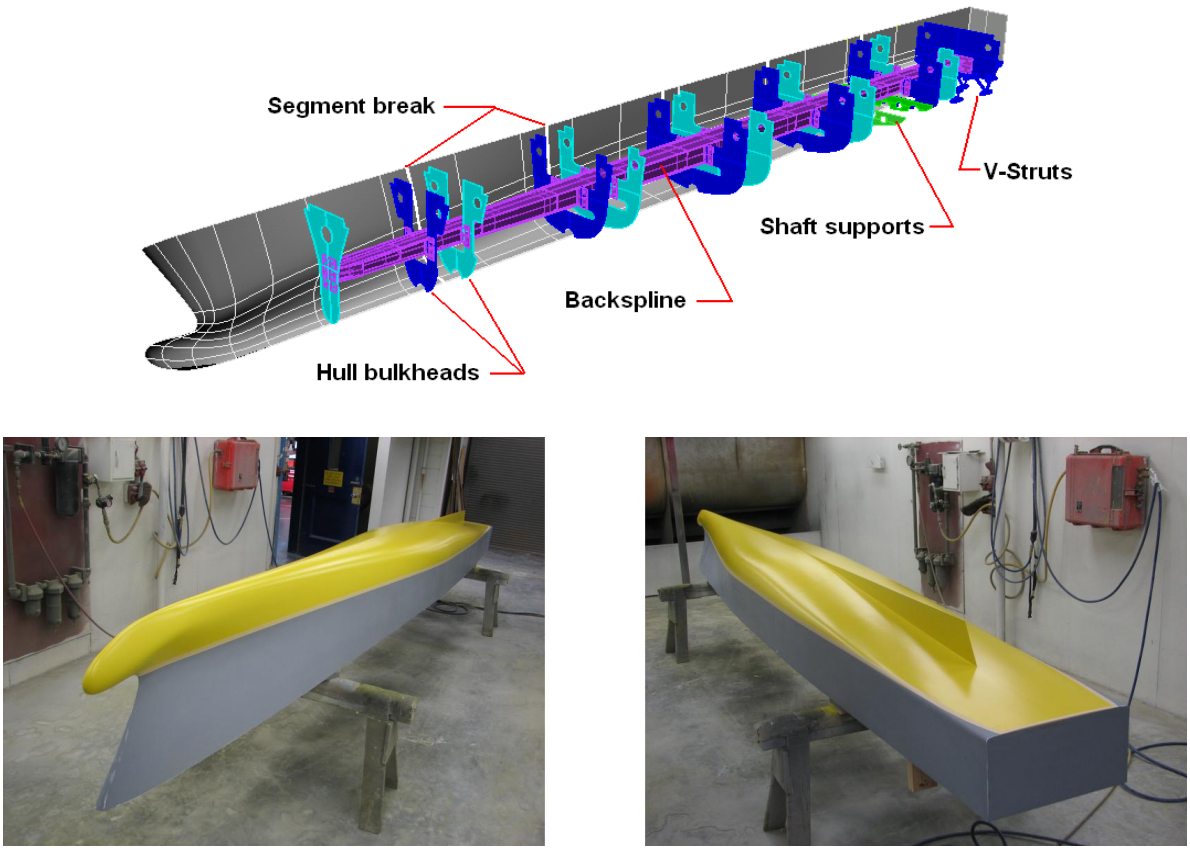


Figure 3. JHSS Model Layout and Segmentation

Table 1. JHSS Structural Characteristics

		Full Scale	1:47.5255 Model Scale
Length	LOA LBP	299.45 meters 289.72 meters	260.04 inches 240.00 inches
Beam	B_{max}	31.987 meters	26.496 inches
Depth	D_{fwd} D_{mid}	25.543 meters 23.418 meters	21.156 inches 19.392 inches
Draft	T_{DWL} $T_{Navigational}$	8.560 meters 8.560 meters	7.091 inches 7.091 inches
Displacement		34,638.5 mtons	711.4 lbs
Notes:			

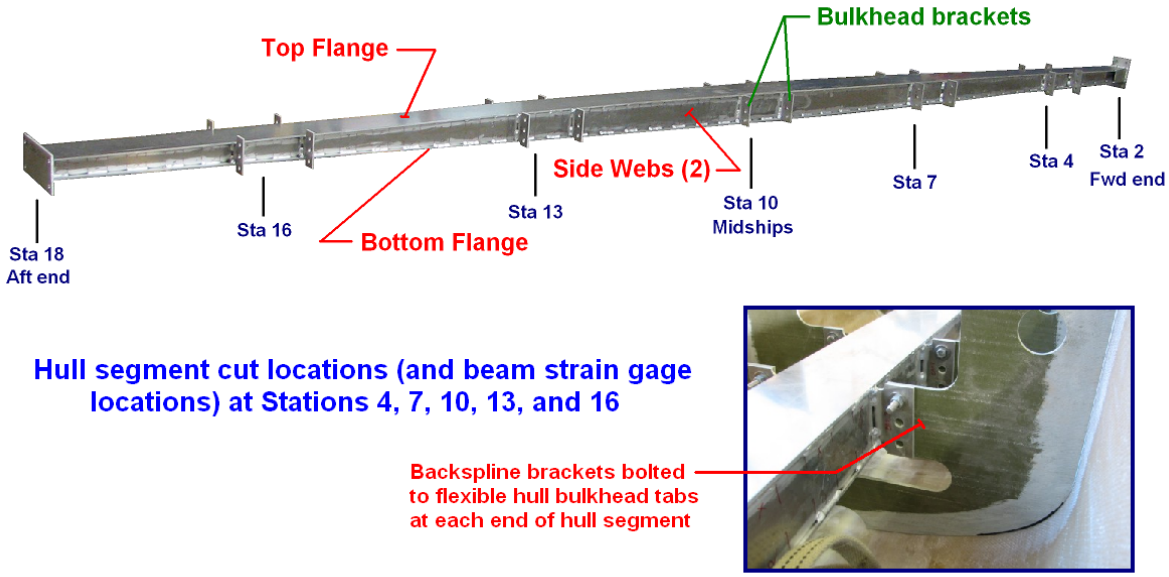


Figure 4. Backspline and Installation Details for JHSS Seakeeping Loads Model 5663

Table 2. JHSS Backspline Dimensions and Inertial Properties

Station	---- Trial Model-scale Backspline Section ----					Full-scale Section		1 : 47.5255 Model-scale Target Backspine		Resultant Backspline Properties			
	Flange width, b_f (in.)	Flange thickness t_f, (in.)	Web depth, d_w (in.)	Web thick., t_w (in.)	Web inside spacing, s_w (in.)	Vertical MOI, I_{xx} ($in^4 \times 10^6$)	Lateral MOI, I_{yy} ($in^4 \times 10^6$)	Vertical MOI, I_{xx} (in^4)	Lateral MOI, I_{yy} (in^4)	I_{xx} (in^4)	percent error	I_{yy} (in^4)	percent error
2a	2.0573	0.1875	1.8097	0.1875	1.6823					0.95680	59.099	0.86725	33.827
2b			2.5141	0.25	2.0573					0.66216	40.900	1.67956	65.512
2	*Spacing between inner/outer webs =*				0.0	132.611	210.000	1.61897	2.56376	1.61897	0.000	2.54681	-0.661
2.5	4.0238	0.1875	1.9275	0.1875	1.8715	156.913	229.692	1.91566	2.80417	1.91566	0.000	2.80417	0.000
3	4.0000	0.1875	2.0928	0.1875	2.1292	183.540	250.259	2.24073	3.05526	2.24072	0.000	3.05525	0.000
4	3.8980	0.1875	2.4583	0.1875	2.6400	247.916	302.747	3.02665	3.69605	3.02666	0.000	3.69607	0.000
5	4.0252	0.1875	2.7725	0.1875	3.1368	325.738	402.476	3.97673	4.91358	3.97674	0.000	4.91360	0.000
6	4.5859	0.1875	3.0135	0.1875	3.6012	431.295	579.297	5.26541	7.07228	5.26540	0.000	7.07229	0.000
7	5.1773	0.1875	3.2245	0.1875	4.0183	549.122	793.504	6.70389	9.68741	6.70391	0.000	9.68738	0.000
8	5.5980	0.1875	3.4040	0.1875	4.3725	655.955	992.866	8.00816	12.12129	8.00817	0.000	12.12133	0.000
9	5.8399	0.1875	3.5333	0.1875	4.6483	734.285	1,144.597	8.96443	13.97368	8.96446	0.000	13.97371	0.000
10	5.9000	0.1875	3.5957	0.1875	4.8286	767.991	1,220.776	9.37593	14.90370	9.37592	0.000	14.90366	0.000
11	5.7700	0.1875	3.5782	0.1875	4.9044	746.102	1,204.460	9.10870	14.70452	9.10871	0.000	14.70449	0.000
12	5.5460	0.1875	3.4696	0.1875	4.8855	677.000	1,122.630	8.26508	13.70550	8.26511	0.000	13.70549	0.000
13	5.3680	0.1875	3.2476	0.1875	4.7866	574.567	1,013.244	7.01454	12.37007	7.01453	0.000	12.37013	0.000
14	5.3542	0.1875	2.9034	0.1875	4.6259	455.933	909.705	5.56621	11.10604	5.56620	0.000	11.10607	0.000
15	5.4561	0.1875	2.5251	0.1875	4.4176	349.999	827.192	4.27292	10.09868	4.27292	0.000	10.09866	0.000
16	5.5862	0.1875	2.2249	0.1875	4.1774	278.341	771.917	3.39809	9.42386	3.39809	0.000	9.42385	0.000
17	5.7001	0.1875	1.9913	0.1875	3.9219	228.516	732.466	2.78981	8.94222	2.78980	0.000	8.94219	0.000
17.5	5.7519	0.1875	1.9101	0.1875	3.7940	212.697	719.791	2.59669	8.78749	2.59670	0.000	8.78746	0.000
18	5.7999	0.1875	1.8447	0.1875	3.6667	200.526	710.000	2.44810	8.66795	2.44810	0.000	8.66793	0.000

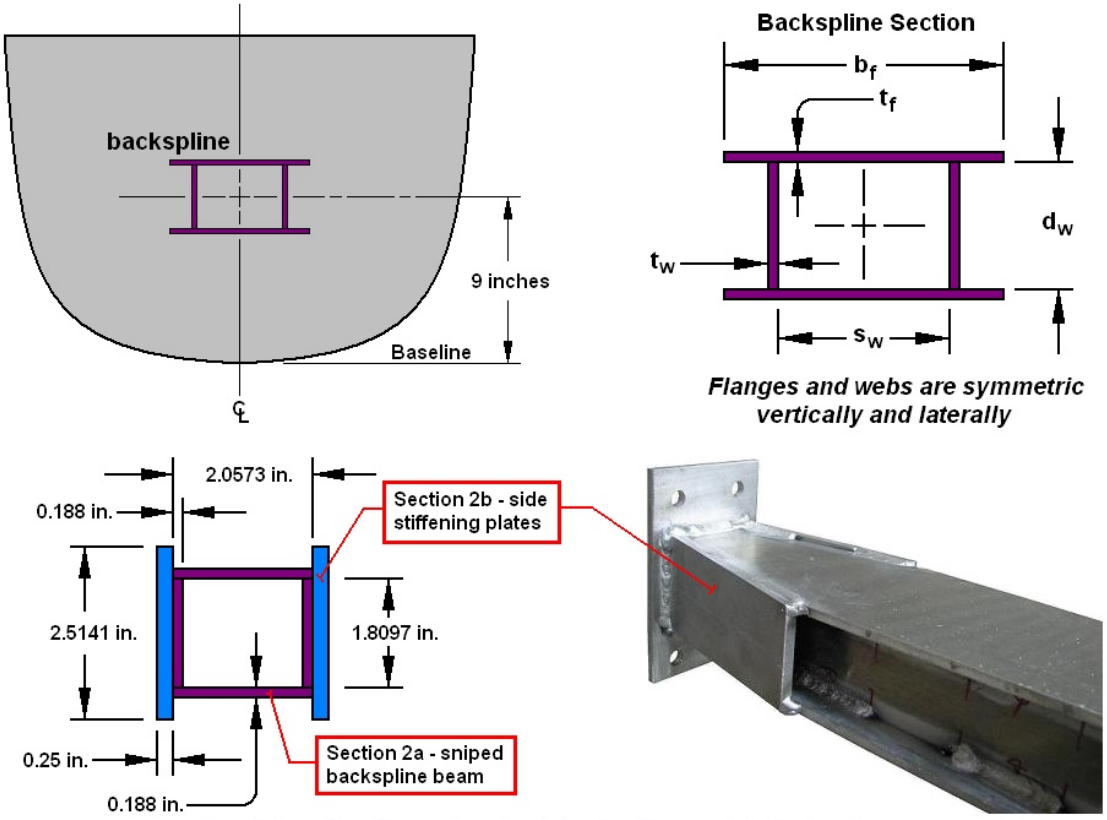


Figure 5. Backspline General Section Dimensioning

Table 3. JHSS Monohull Full-scale and 1:47.5255-scale Segmented Model Backspline Response

	Full-Scale JHSS Hangar Variant Hull Vertical Bending Moments				1:47.5255 Scale Model							
					Vertical Bending Moments				Backspline Bending Stress Response			
	Min-Op Vertical		Full-Load Vertical		Min-Op Vertical		Full-Load Vertical		Min-Op Vertical		Full-Load Vertical	
Station	Shear (Ltons)	Hog Moments (ft-Ltons)	Shear (Ltons)	Sag Moments (ft-Ltons)	Shear (lbs)	Hog Moments (in-lbs)	Shear (lbs)	Sag Moments (in-lbs)	Shear (psi)	Hog Bending (psi)	Shear (psi)	Sag Bending (psi)
2	1085.28	63,717	-416.32	12,130	22.095	327.53	-8.476	62.35	27.0	373.9	-10.3	71.2
2.5	1341.94	92,594	-933.56	-3,856	27.320	475.97	-19.006	-19.82	31.6	286.0	-22.0	-11.9
3	1620.33	128,072	-1542.49	-32,952	32.987	658.35	-31.403	-169.39	35.6	362.5	-33.9	-93.3
4	2293.40	221,165	-2868.91	-136,908	46.690	1136.88	-58.407	-703.76	43.9	532.1	-55.0	-329.4
5	2975.36	347,032	-4285.06	-306,928	60.574	1783.89	-87.237	-1577.74	51.3	706.0	-73.9	-624.4
6	3779.11	509,922	-5053.39	-529,623	76.937	2621.22	-102.879	-2722.49	60.5	843.4	-81.0	-876.0
7	4289.96	705,278	-4737.96	-763,448	87.337	3625.43	-96.457	-3924.45	64.7	973.3	-71.5	-1053.6
8	4153.24	910,021	-3665.16	-964,263	84.553	4677.89	-74.617	-4956.72	59.7	1103.7	-52.7	-1169.5
9	3308.76	1,090,759	-2201.34	-1,104,460	67.361	5606.96	-44.816	-5677.39	46.0	1222.3	-30.6	-1237.6
10	2028.88	1,219,825	-558.46	-1,170,405	41.305	6270.41	-11.369	-6016.37	27.7	1327.8	-7.6	-1274.0
11	63.33	1,269,962	1000.84	-1,159,787	1.289	6528.14	20.376	-5961.79	0.9	1416.6	13.7	-1293.7
12	-2013.26	1,222,343	2092.54	-1,085,808	-40.987	6283.36	42.601	-5581.51	-28.4	1461.4	29.5	-1298.1
13	-3759.54	1,082,452	2910.37	-966,253	-76.538	5564.26	59.250	-4966.94	-56.3	1436.8	43.6	-1282.6
14	-4830.98	874,733	3709.62	-808,104	-98.351	4496.50	75.522	-4153.99	-80.0	1324.2	61.4	-1223.3
15	-4850.04	640,805	4241.70	-618,198	-98.739	3294.01	86.354	-3177.80	-90.8	1117.8	79.4	-1078.4
16	-4363.06	418,475	4169.47	-417,384	-88.825	2151.14	84.884	-2145.53	-91.1	822.9	87.1	-820.8
17	-3160.97	237,672	3570.55	-232,676	-64.352	1221.74	72.691	-1196.05	-72.5	518.1	81.9	-507.2
17.5	-2552.49	169,330	3047.4	-154,845	-51.965	870.43	62.040	-795.97	-60.6	383.0	72.4	-350.2
18	-2058.76	113,516	2366.33	-91,208	-41.913	583.52	48.175	-468.85	-50.4	264.5	57.9	-212.6

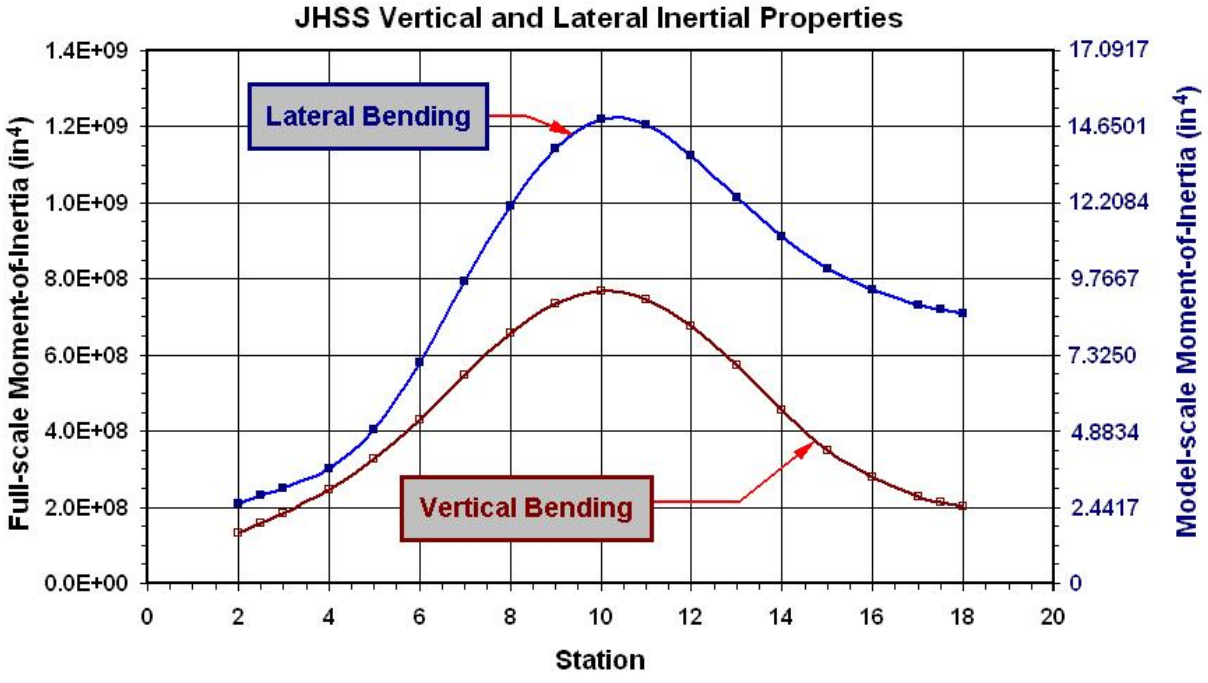


Figure 6. JHSS Full-scale and Model Backspline Vertical and Lateral Inertial Properties

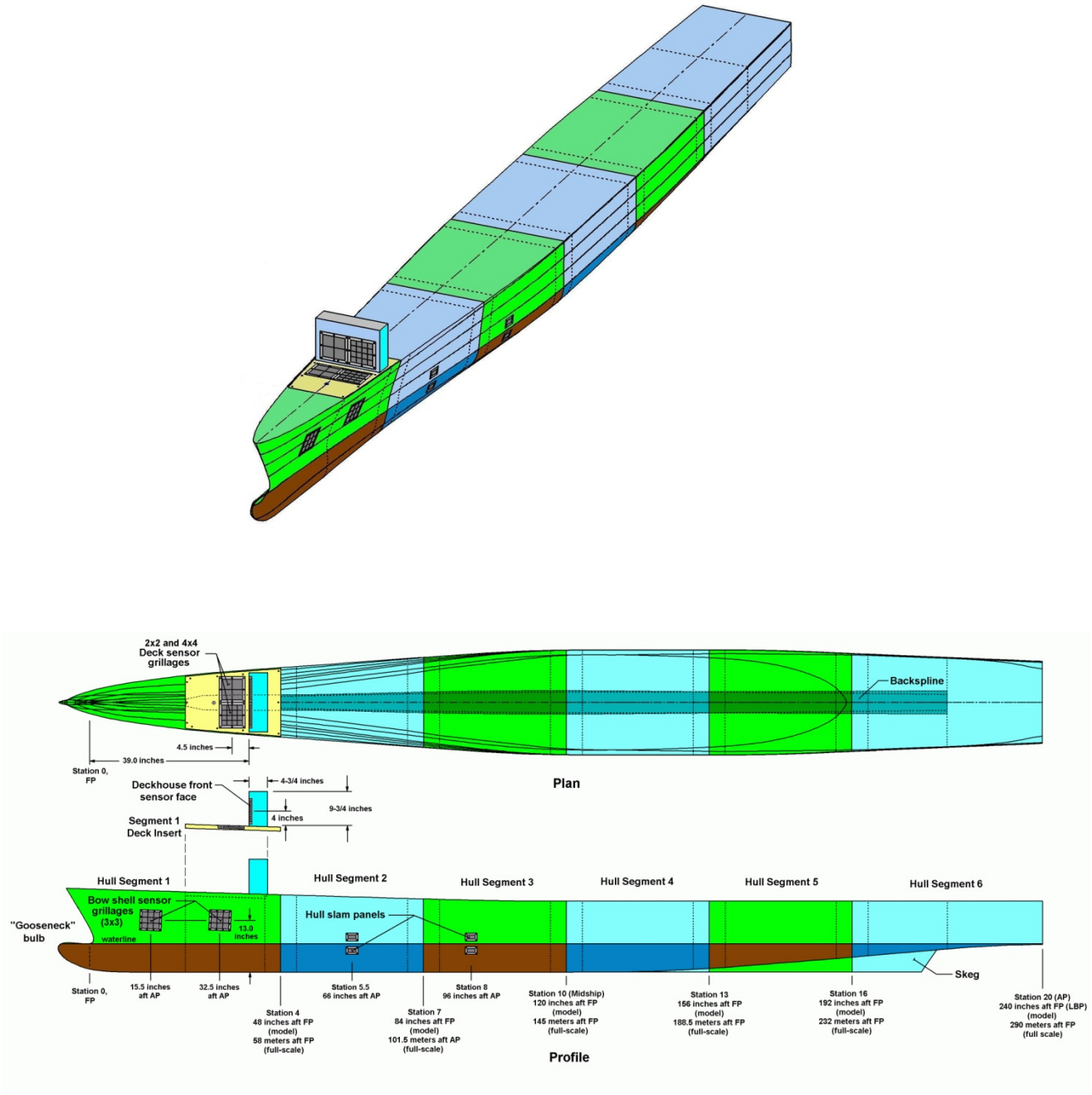


Figure 11. JHSS Hull, Deck and Deckhouse Slam Grillage and Panel Configuration

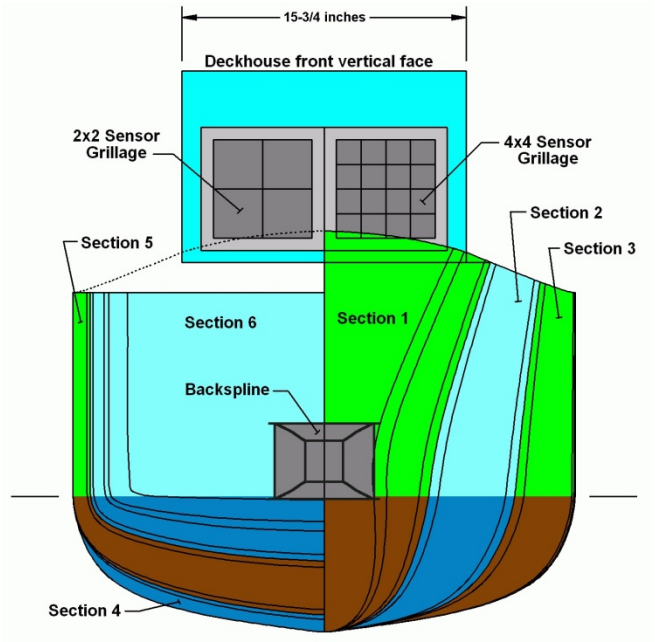


Figure 12. Deckhouse Wave Slap Grillage Detail

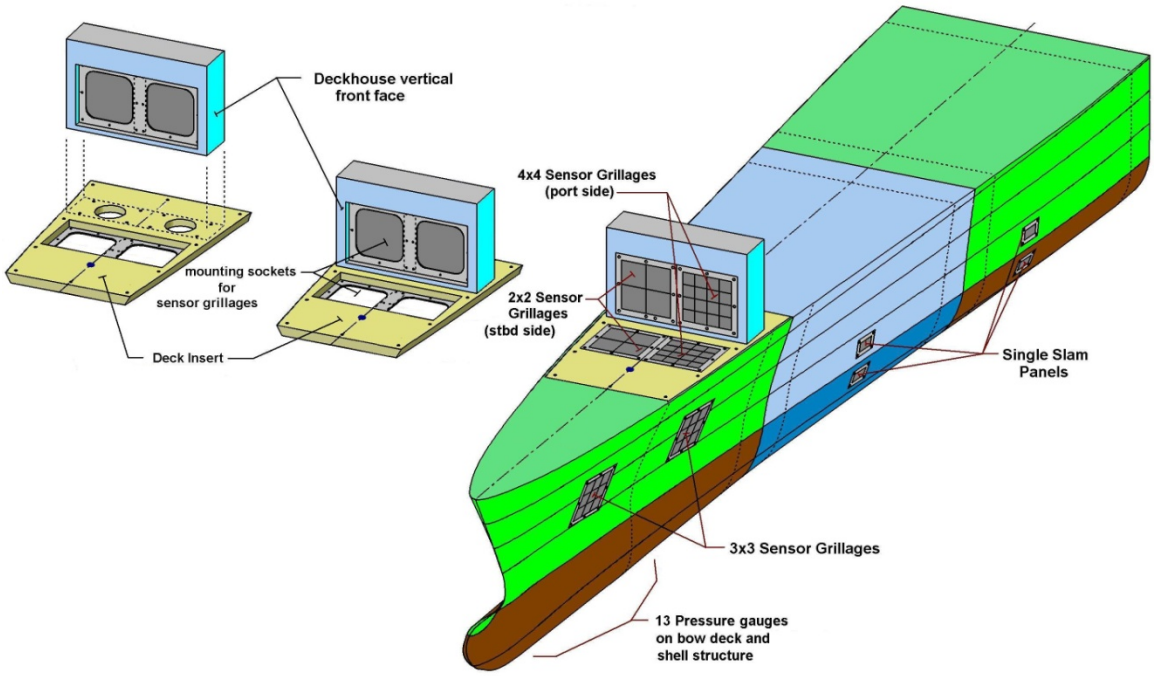
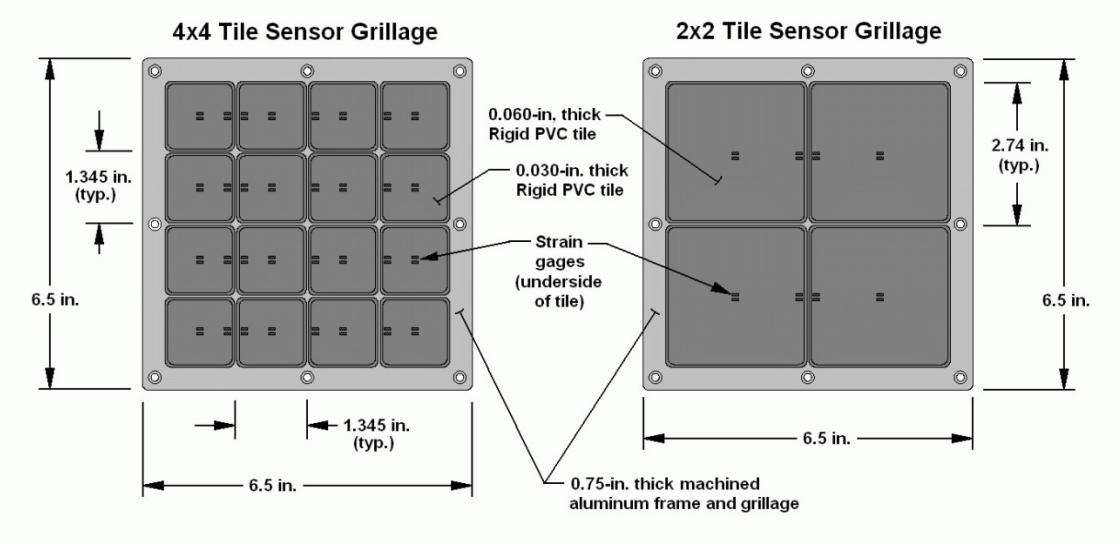


Figure 13. Deckhouse and Slam Grillage Details for JHSS Segment 1 Insert



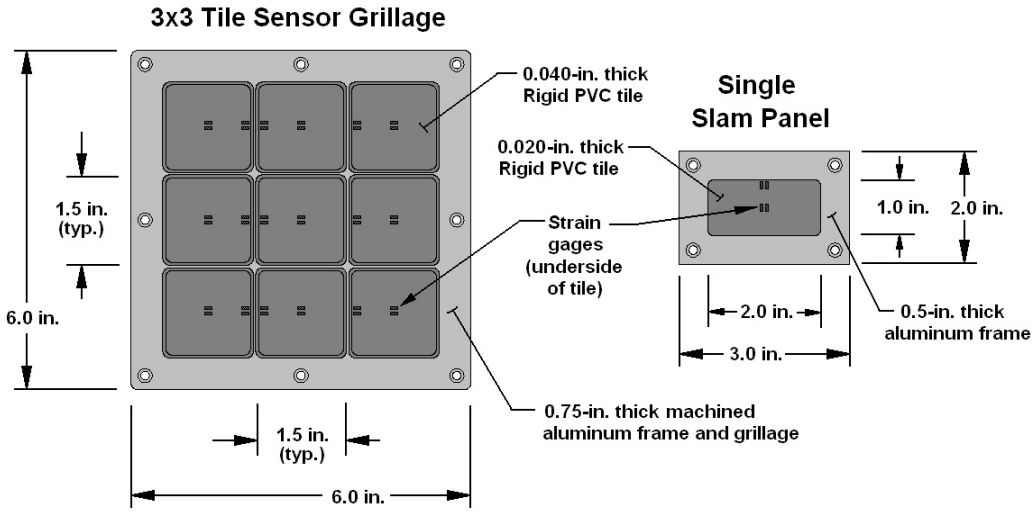


Figure 14. JHSS Slam Grillage and Slam Panel Configuration Details