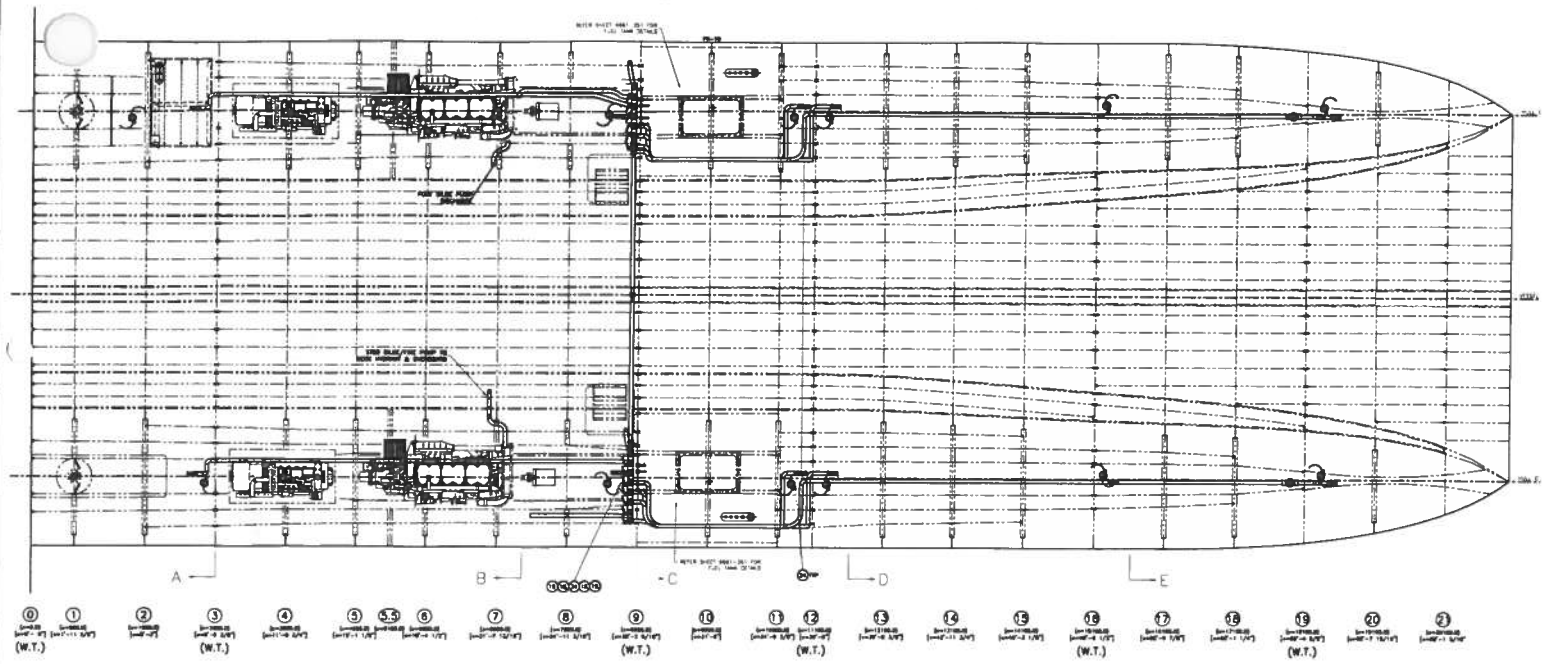
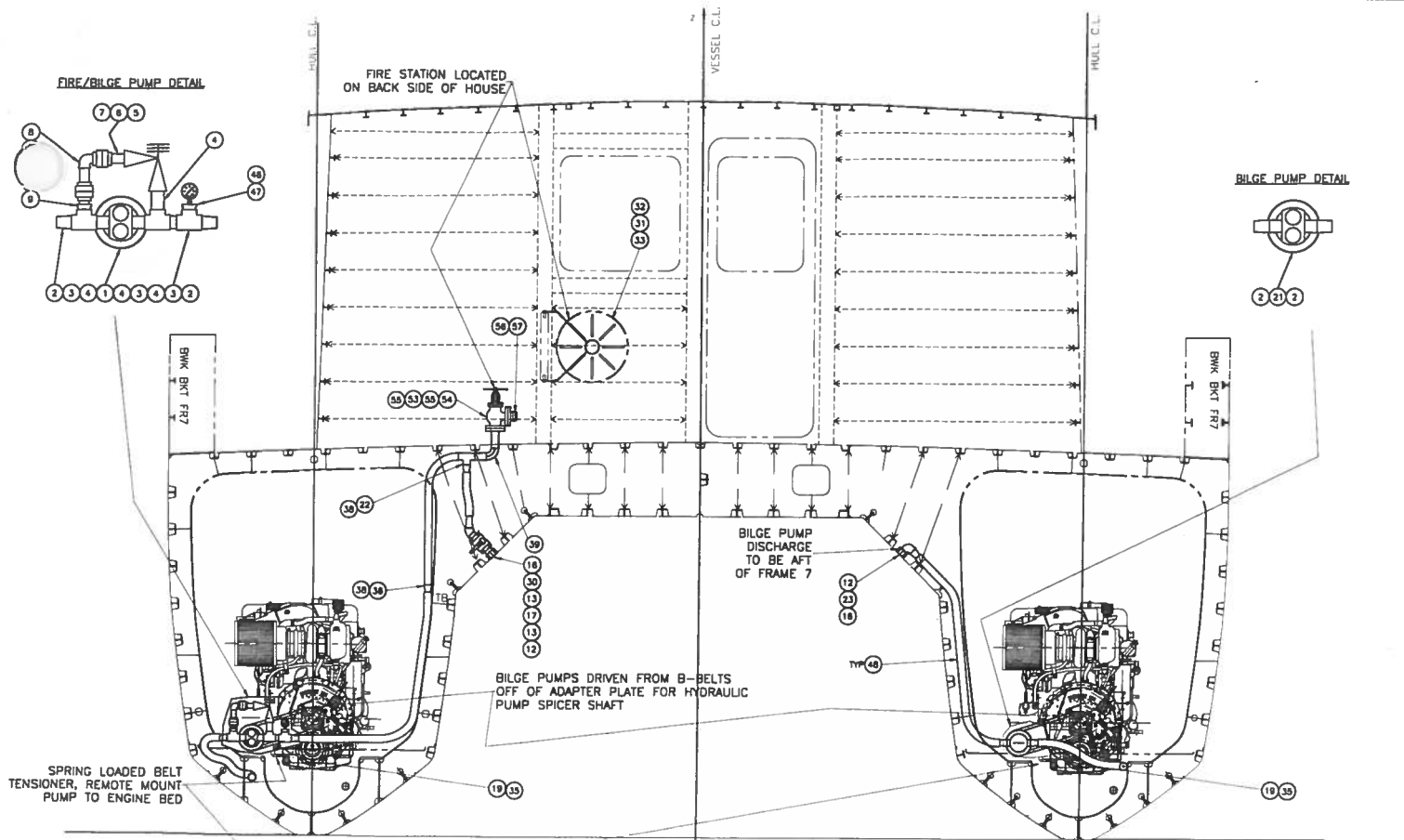


PLAN VIEW BILGE SYSTEM

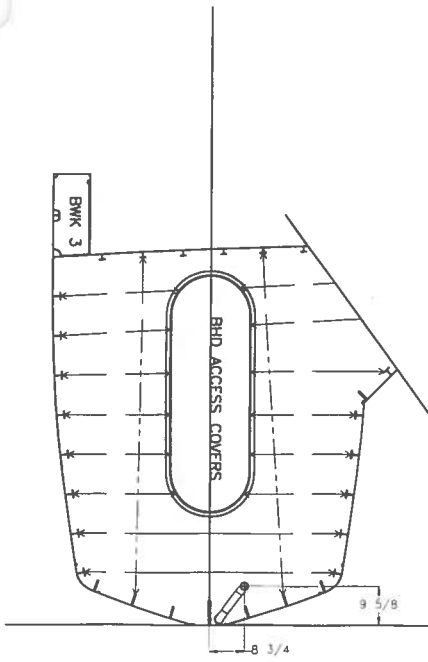




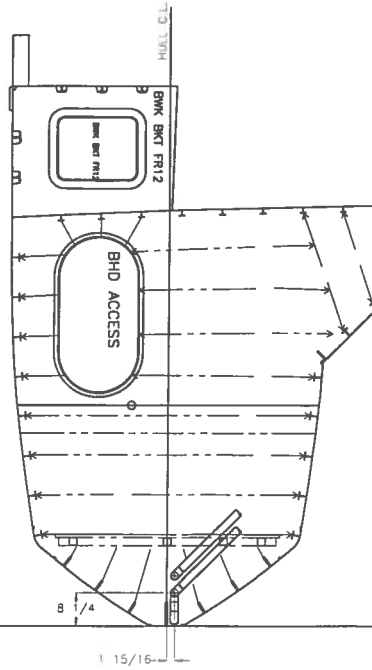
SECTION B-B - PUMP CONNECTIONS
LKG AFT - FRAME 7/ FRONT PULLEY

Kvichak Marine Industries, Inc. 8961-470-001-0	69' VESSEL	
	FIRE/BILGE SYSTE	
	4 OF 7	1/2"=1'

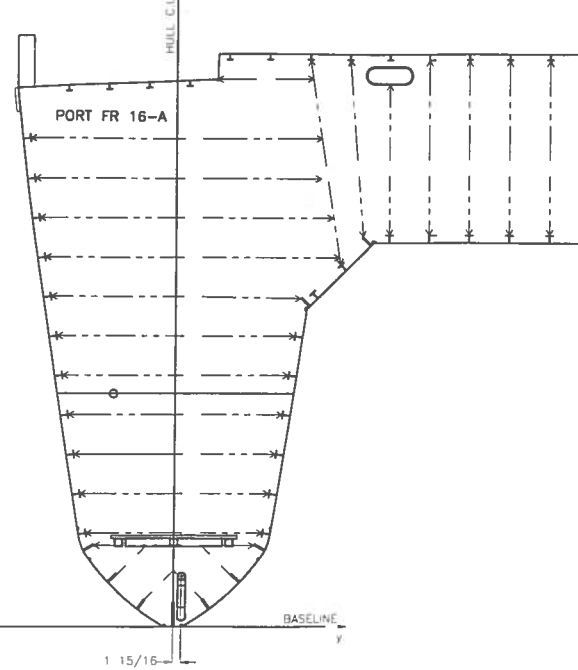
SECTION A-A -- BLKHD PEN.
LKG AFT -- BLKHD 3

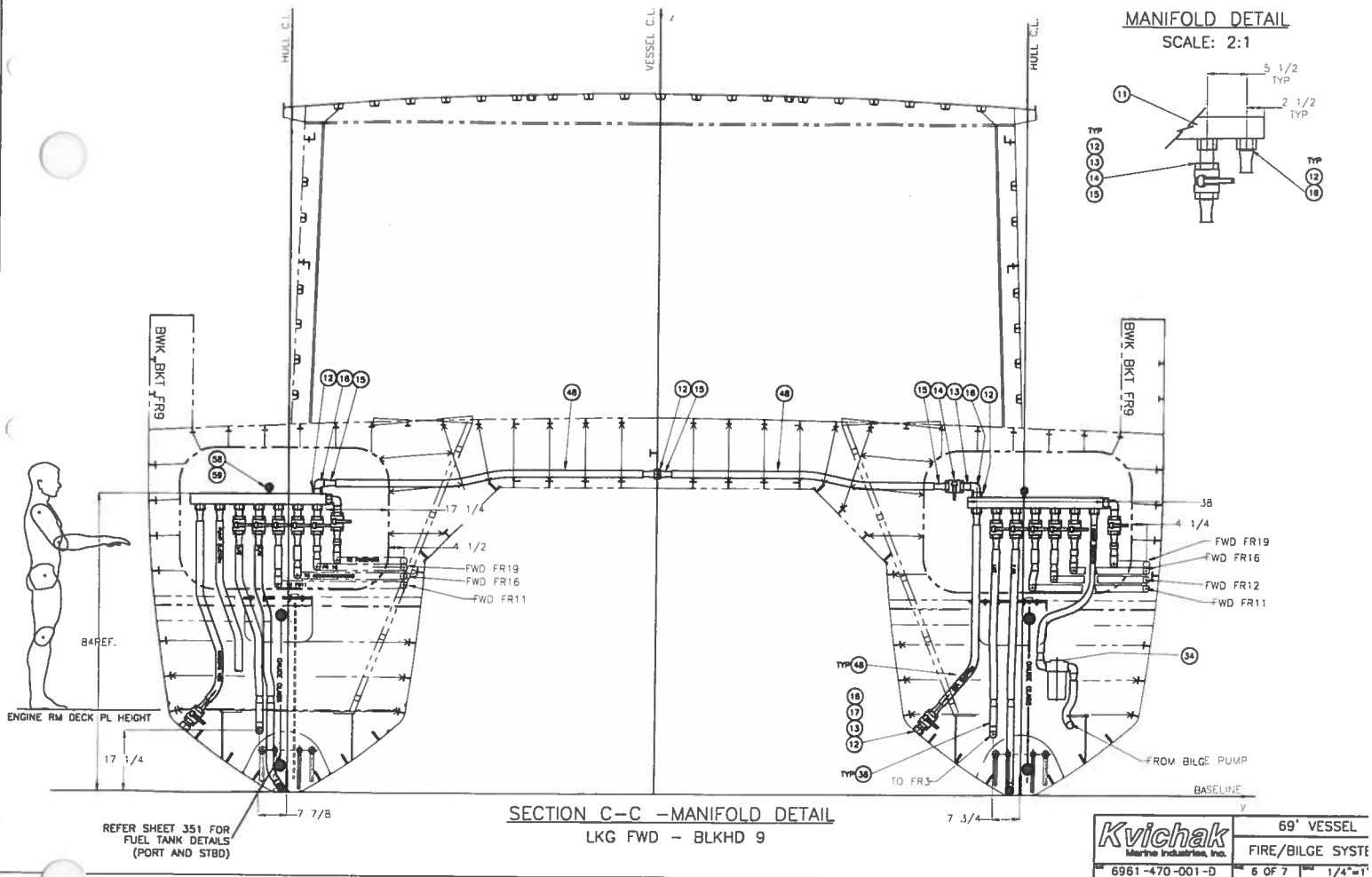


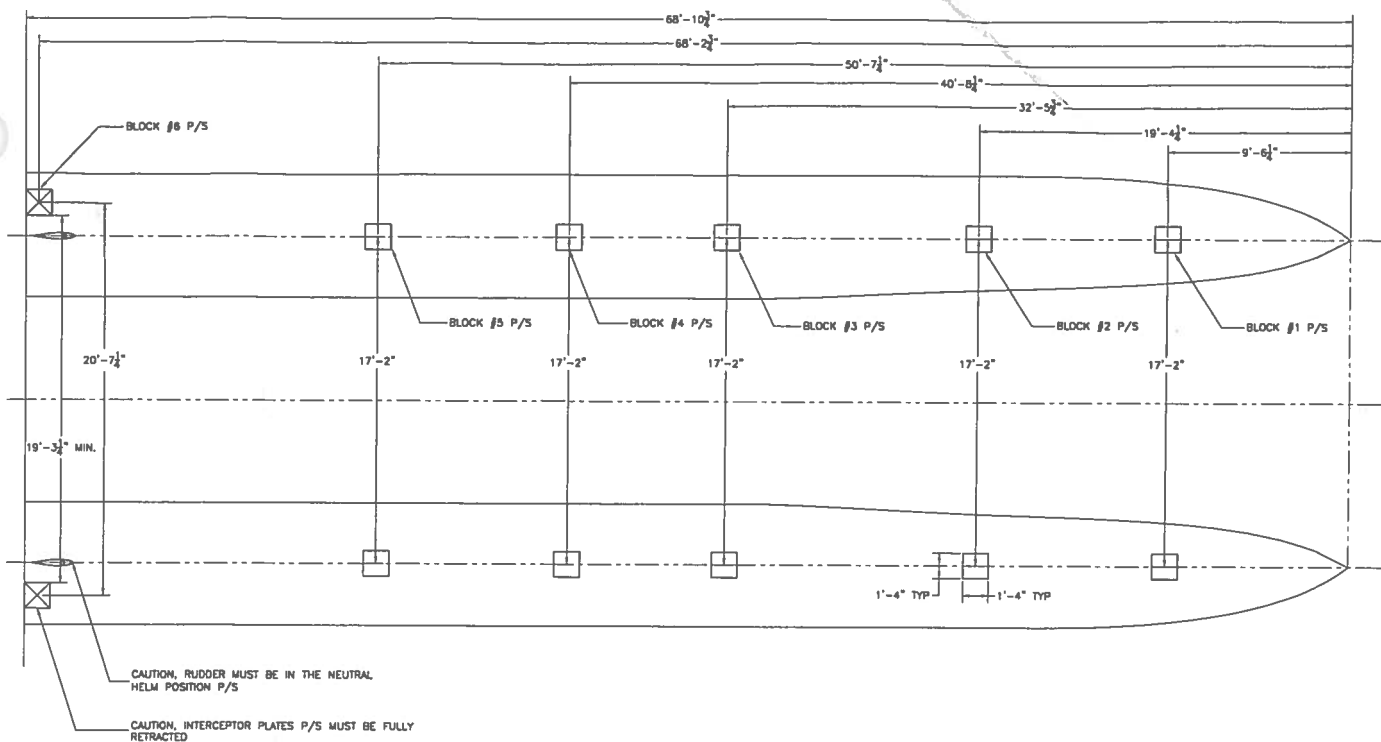
SECTION D-D -- BLKHD PEN.
LKG FWD -- BLKHD 12

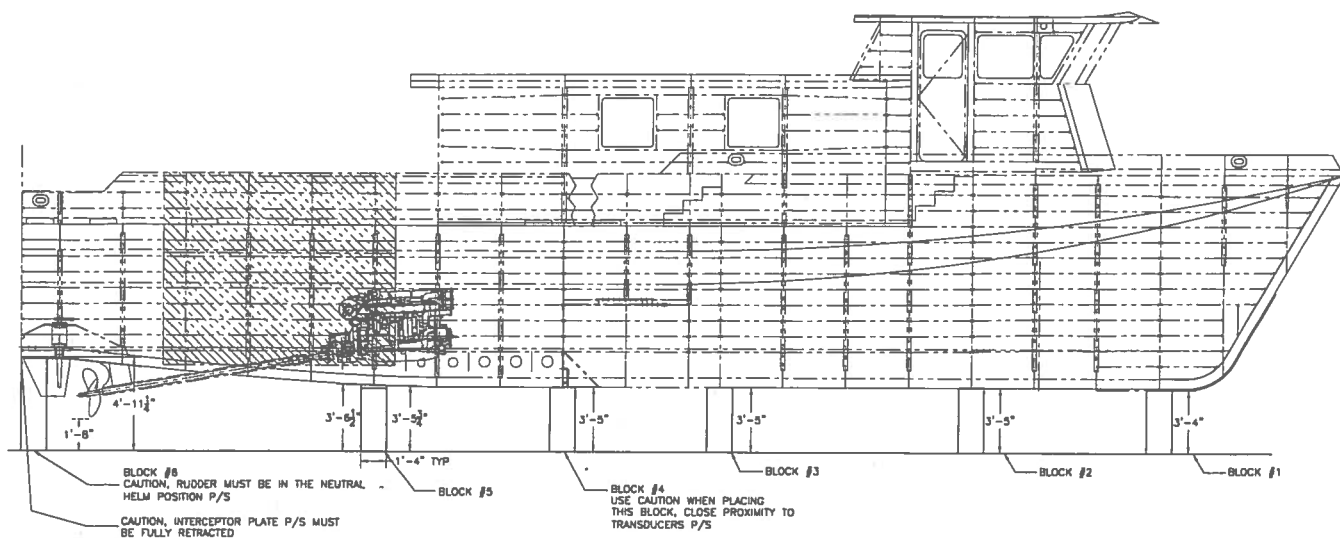


SECTION E-E -- BLKHD PEN.
LKG FWD -- BLKHD 16



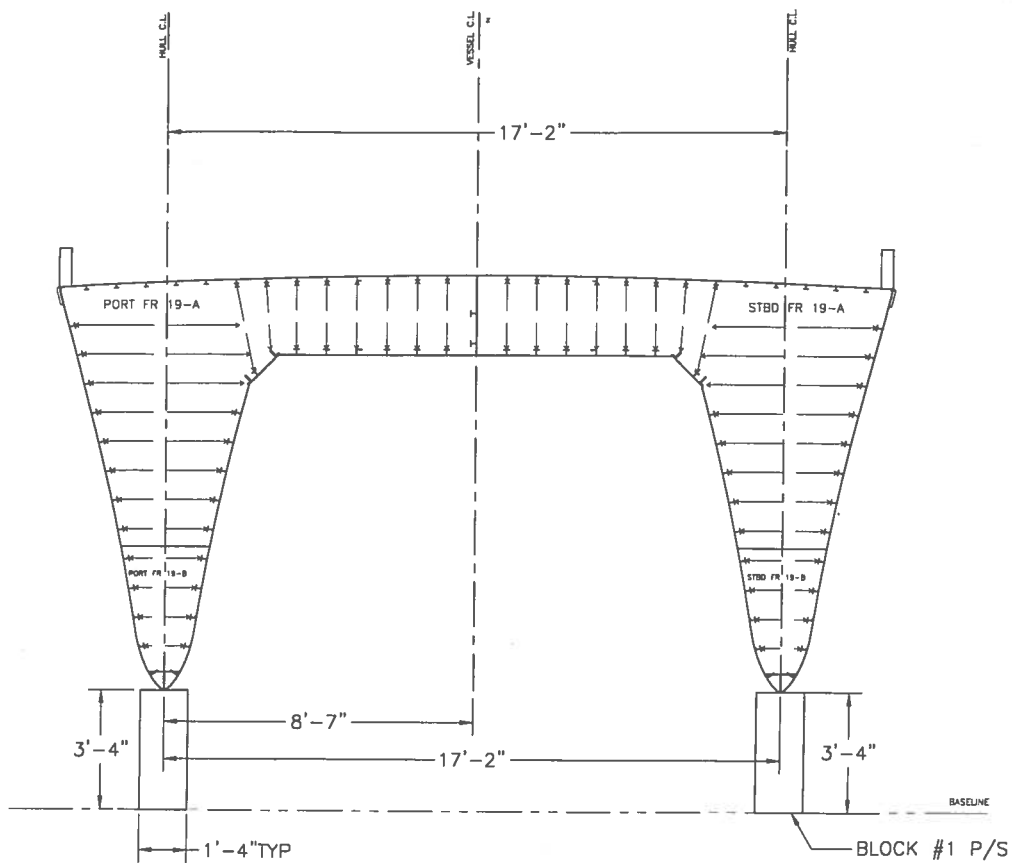






⑥ [Symbol] [Symbol] (W.T.)	① [Symbol] [Symbol] (W.T.)	② [Symbol] [Symbol] (W.T.)	③ [Symbol] [Symbol] (W.T.)	④ [Symbol] [Symbol] (W.T.)	⑤ [Symbol] [Symbol] (W.T.)	⑤.5 [Symbol] [Symbol] (W.T.)	⑥ [Symbol] [Symbol] (W.T.)	⑦ [Symbol] [Symbol] (W.T.)	⑧ [Symbol] [Symbol] (W.T.)	⑨ [Symbol] [Symbol] (W.T.)	⑩ [Symbol] [Symbol] (W.T.)	⑪ [Symbol] [Symbol] (W.T.)	⑫ [Symbol] [Symbol] (W.T.)	⑬ [Symbol] [Symbol] (W.T.)	⑭ [Symbol] [Symbol] (W.T.)	⑮ [Symbol] [Symbol] (W.T.)	⑯ [Symbol] [Symbol] (W.T.)	⑰ [Symbol] [Symbol] (W.T.)	⑱ [Symbol] [Symbol] (W.T.)	⑳ [Symbol] [Symbol] (W.T.)	㉑ [Symbol] [Symbol] (W.T.)	㉒ [Symbol] [Symbol] (W.T.)
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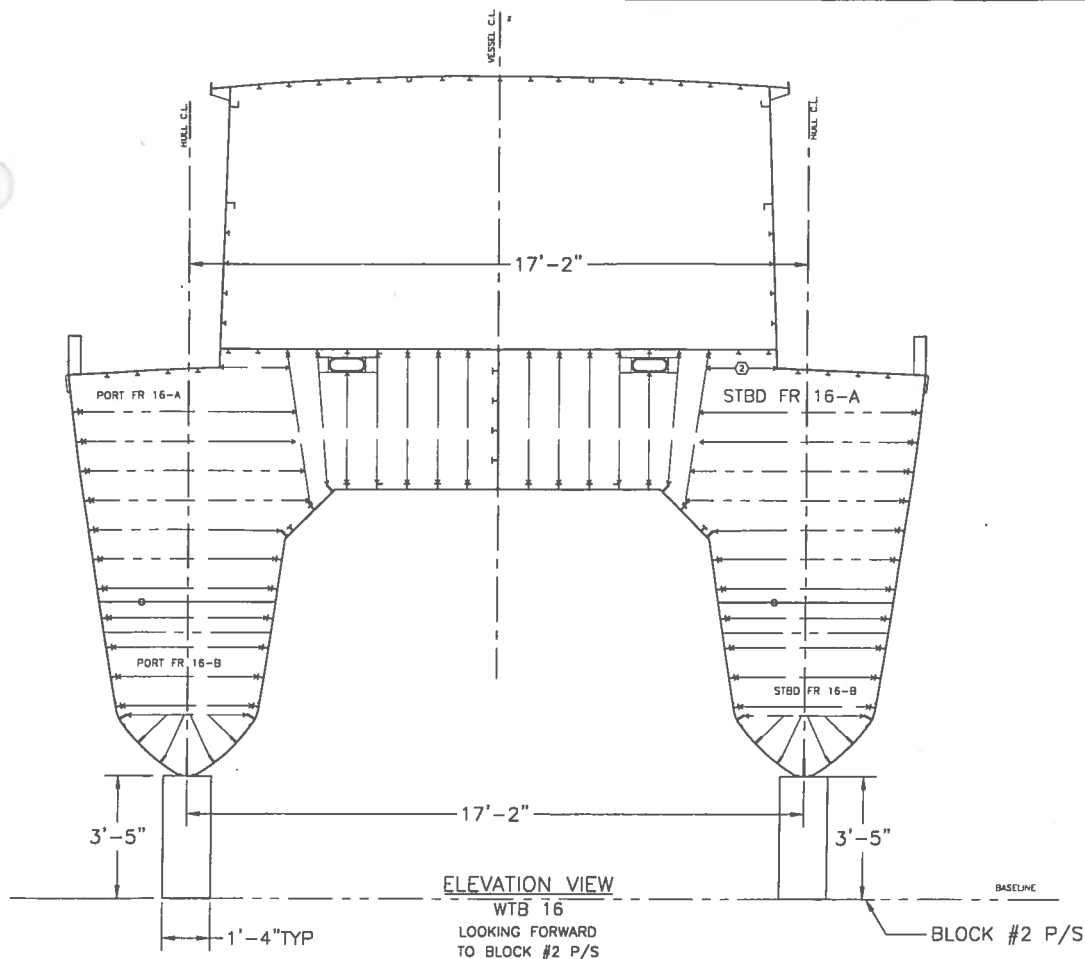
Kvichak Marine Industries, Inc.	69' VESSEL	
	GRAVING ARRANGEMENT	
6461-232-	-B	3 OF 9
		1/4"=1'-0"



ELEVATION VIEW

WTB 19
LOOKING FORWARD
TO BLOCK #1 P/S

Kvichak Marine Industries, Inc.		69' VESSEL	
6461-232- -B		4 OF 9	1/4"=1'
		GRAVING ARRANGEMENT	



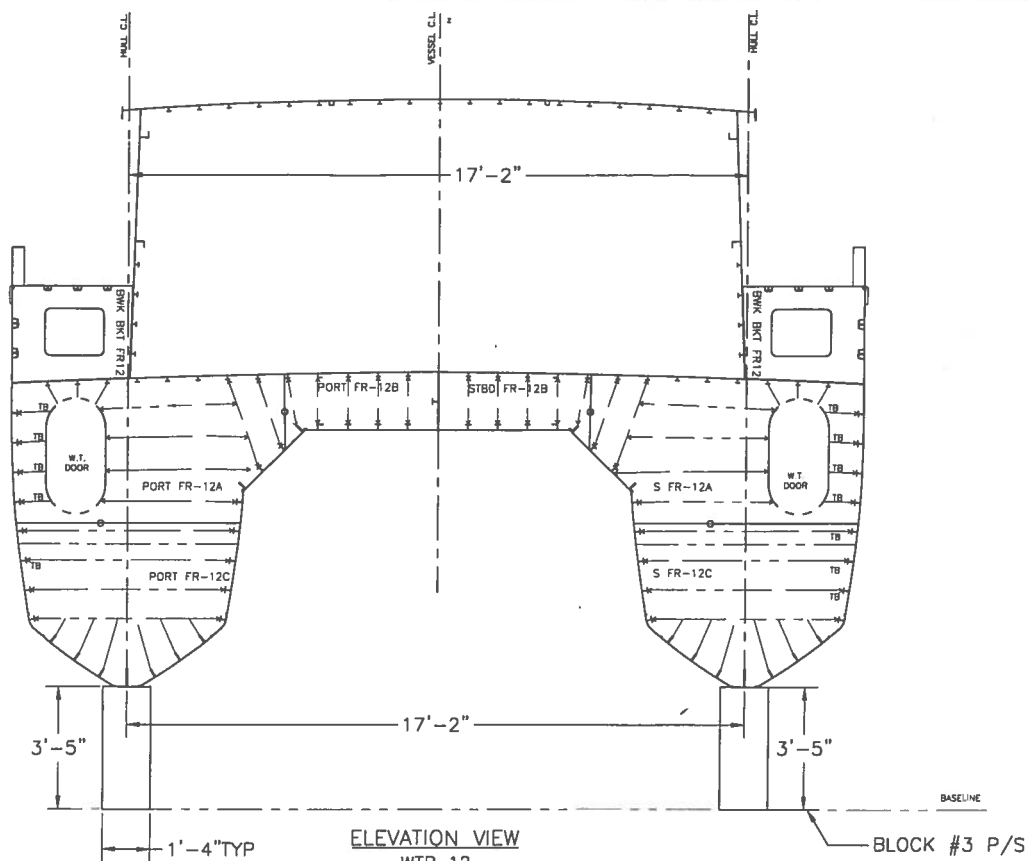
ELEVATION VIEW

WTB 16
LOOKING FORWARD
TO BLOCK #2 P/S

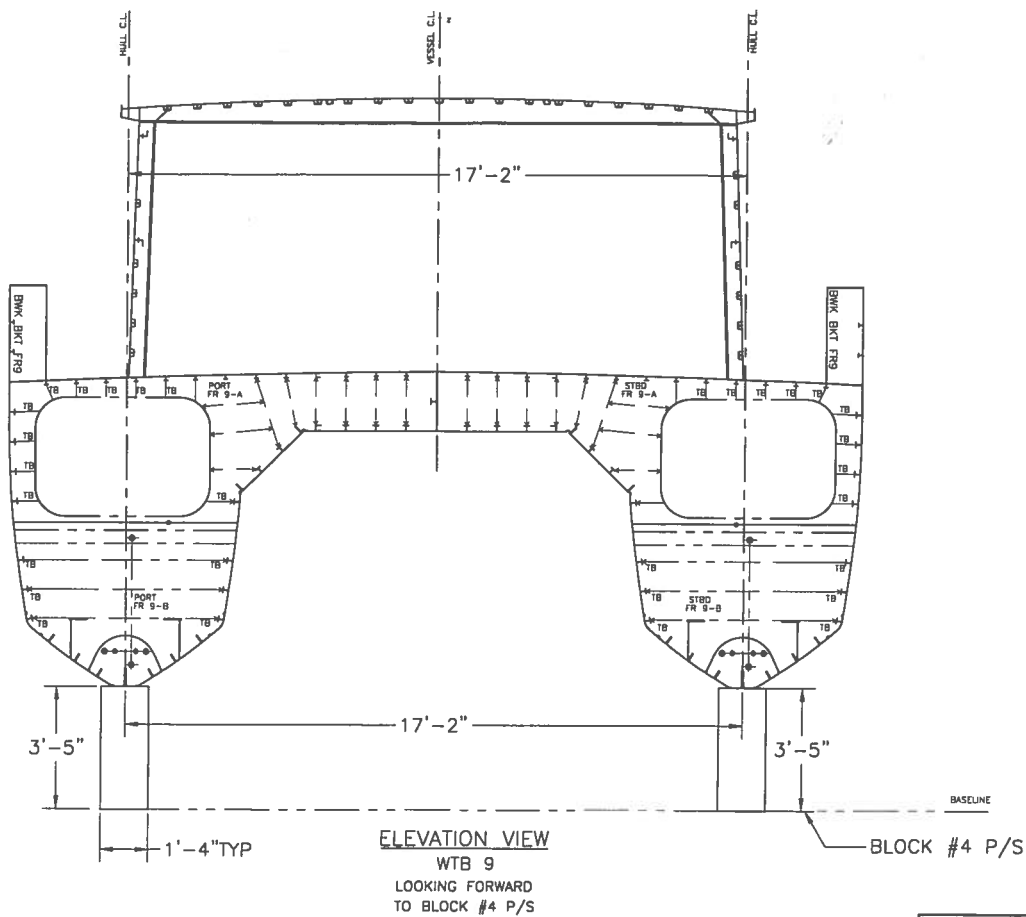
BASELINE

BLOCK #2 P/S

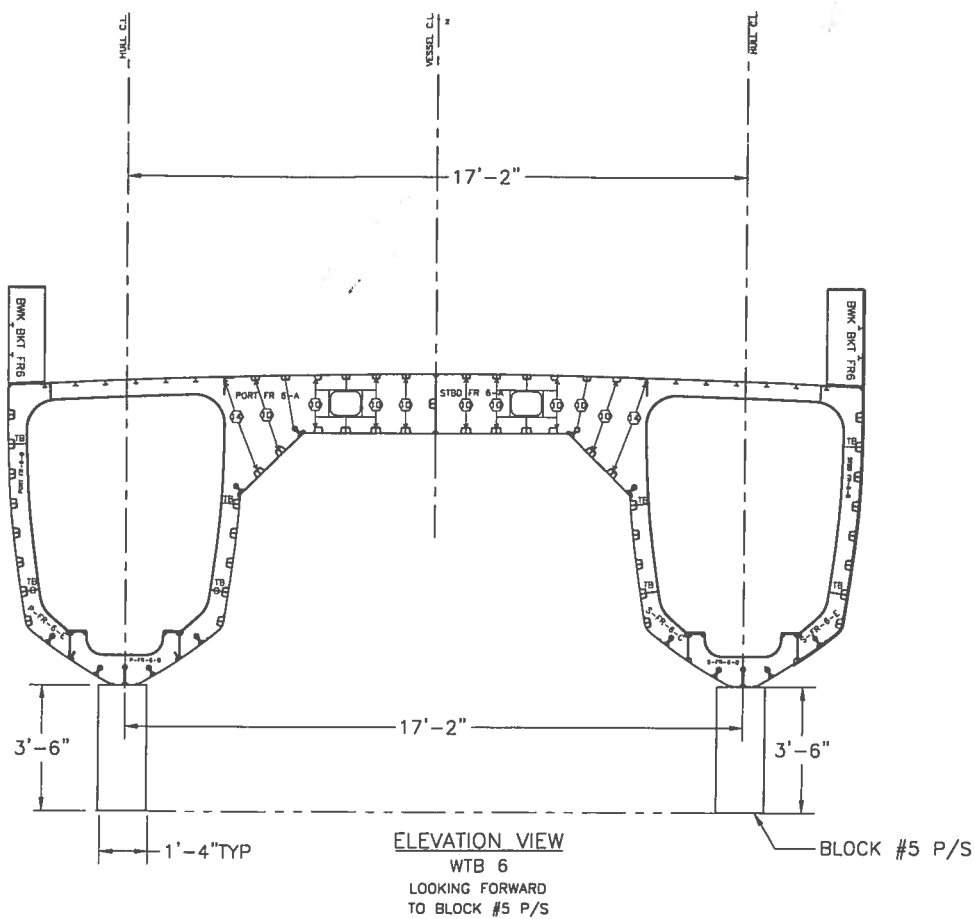
Kvichak Marine Industries, Inc. 6461-232- -B	69" VESSEL
	GRAVING ARRANGEMI
	5 OF 9 1/4"=1"



ELEVATION VIEW
 WTB 12
 LOOKING FORWARD
 TO BLOCK #3 P/S



Kvichak Marine Industries, Inc.		69' VESSEL	
6461-232- -B		GRAVING ARRANGEMENT	
7 OF 9		1/4"=1'	



Kvichak Marine Industries, Inc.		69' VESSEL	
6461-232- -B		GRAVING ARRANGEMENT	
		8 OF 9	1/4"=1'



Kvichak
Marine Industries, Inc.
6461-232- -8

BILL OF MATERIALS - # 117181

NO.	PART NO.	QTY.	DESCRIPTION	MAT
16	105775	8	KING NIPPLE 1-1/2"	SST
17	111257	3	VALVE BALL, 1-1/2" FP	SST
18	102614	8	ELBOW 1.500 90 STREET BRASS	BRASS
19	114187	2	TENSIONER 2-A BELTS ASSY.	STL
20	112548	12	VALVE FOOT, BILGE SUCTION 1 1/2"	NYLON
21	113573	1	PUMP 58GPM OBERDORF#501-E-24VDC, CLUTCH	VARIES
22	112490	1	TEE 1-1/2" SCH 40 BUTT-WELD	6061
23	103076	1	ELBOW, 1-1/2" 90° STREET	SST
24	111557	12	PUMP, RULE 2000 STANDARD ASSEMBLY, 24VDC	-
25	-	-	-	-
26	-	-	-	-
27	-	-	-	-
28	-	-	-	-
29	-	-	-	-
30	112547	1	ELBOW 1-1/2 45° FP-FP	SST
31	112551	1	HOSE FIRE SJ 1.5", 50' LENGTH, GOW#P300	VARIES
32	111135	1	NOZZLE, 1-1/2" FIRE HOSE, MCM#6489T131	BRASS
33	112870	1	HOSE REEL, 19" HD, GOW#HDR19	STL
34	101610	2	STRAINER, 1-1/2" RAW WATER GRO#ARG1500	BRONZE
35	103837	10'	V-BELT A SIZE, 1/2" POWERWHT	VARIES
36	100060	220'	PIPE 1-1/2" SCH 40	6063
37	-	-	-	-
38	112457	12	KING NIPPLE, 1-1/2" SCH 40 BUTT-WELD	6061
39	111143	37	ELBOW 1-1/2" 90° BUTT-WELD SCH 40	6061
40	107873	8	NIPPLE 1-1/2"x8" THREADED	6061
41	-	-	-	-
42	-	-	-	-
43	-	-	-	-
44	-	-	-	-
45	-	-	-	-
46	103376	1	PRESSURE GAUGE, 0-100PSI, 1/4" NPT	VARIES
47	113275	1	BUSHING, 1-1/4"x1/4" NPT	BRASS
48	101501	50'	HOSE, 1-1/2" BELLWOLFLEX	NEOP.
49	118284	2	CATE VALVE 2 NPT #B140 STOCKHAM	BRZ
50	113621	50	OMEGA CLAMP 1.5" PIPE	-
51	-	-	-	-
52	-	-	-	-
53	112048	1	1.5" Valve, angle globe flanged #150	SST
54	111835	1	1.5" Flange #150, SLIP ON, flat faced	6061
55	111848	2	1.5" #150 flange gasket, 1/16" red rubber	BUNA
56	111838	1	1.5" Flange #150, THREADED, FLAT FACED	SST
57	111138	1	NIPPLE, 1.5"WNHx1.5"NPT, MCM#6523T11	BRASS
58	113278	2	GAUGE VACUUM HOSKOW#25.500-30"Hg-1/4"NPT	SST
59	110210	1	COUPLING 1/4" SCH 80, FULL	6061-T5
60	-	-	-	-
61	-	-	-	-
62	-	-	-	-
63	-	-	-	-
64	-	-	-	-
65	-	-	-	-
66	-	-	-	-

REVISIONS

REV	NO.	DESCRIPTION	BY	DATE
B		ADDDPC49&50 PC14 WAS QTY11 CHG TD13	BB	8/22/01
C		PC 49 WAS 105479 CHG TO 118284	BB	9/2/03
D		PC 34 WAS QTY 1	BB	10/27/0

GENERAL NOTES

1. All piping should utilize bent pipe over weld elbows when possible to lower system losses. Weld elbows are to be used where geometry warrants a tighter bend radius.
2. All bilge suction should be as low as possible while removal of foot valve is still possible.
3. All hose connection to be double clamped.
4. All hose runs to be free from mechanical damage and visible upon final installation. Hoses to be supported every 18".
5. Reference 24VDC system schematic for bilge pump wiring.

BILL OF MATERIALS - # 11

NO.	PART NO.	QTY.	DESCRIPTION
1	111133	1	FIRE PUMP, OBERDORFER#11HD05
2	103080	4	FITTING HOSE, 1-1/2"HBN1-1/4"WP
3	105673	3	TEE 1-1/4" FP
4	105295	4	NIPPLE, 1-1/4"xCLOSE
5	111244	1	RELIEF VLV 1.25"x1", @80PSI, W&O#505100-250
6	111245	2	NIPPLE 1"xTBD
7	111247	2	UNION 1"
8	103805	1	ELBOW 1" 90° STREET
9	107942	1	BUSHING REDUCER, 1-1/4"x1"
10	107935	1	NIPPLE 1"xCLOSE
11	112549	8'	SO TUBE, 3"x.219 THK, ALCOPI
12	100137	18	COUPLING 1-1/2" SCH 80, FULL
13	101108	21	NIPPLE 1-1/2"xCLOSE
14	101814	13	VALVE BALL, 1-1/2"
15	101815	18	KING NIPPLE 1-1/2"

REFERENCES

NO.	DRAWING TITLE	DRAWING NO.
1.	HYDRAULIC SYSTEM	69814
2.	24VDC SYSTEM	69615

Kvichak Marine Industries, Inc.		69' PATROL VESSEL	
		BILGE/FIRE SYSTEM	
400 100 000000 FL. MATH. INC. 10140 TEL. (208) 645-2100 FAX (208) 645-2101	8981-470 -001 -D	8981-470 -001 -D	8981-470 -001 -D

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PROFILE VIEW BILGE SYSTEM

