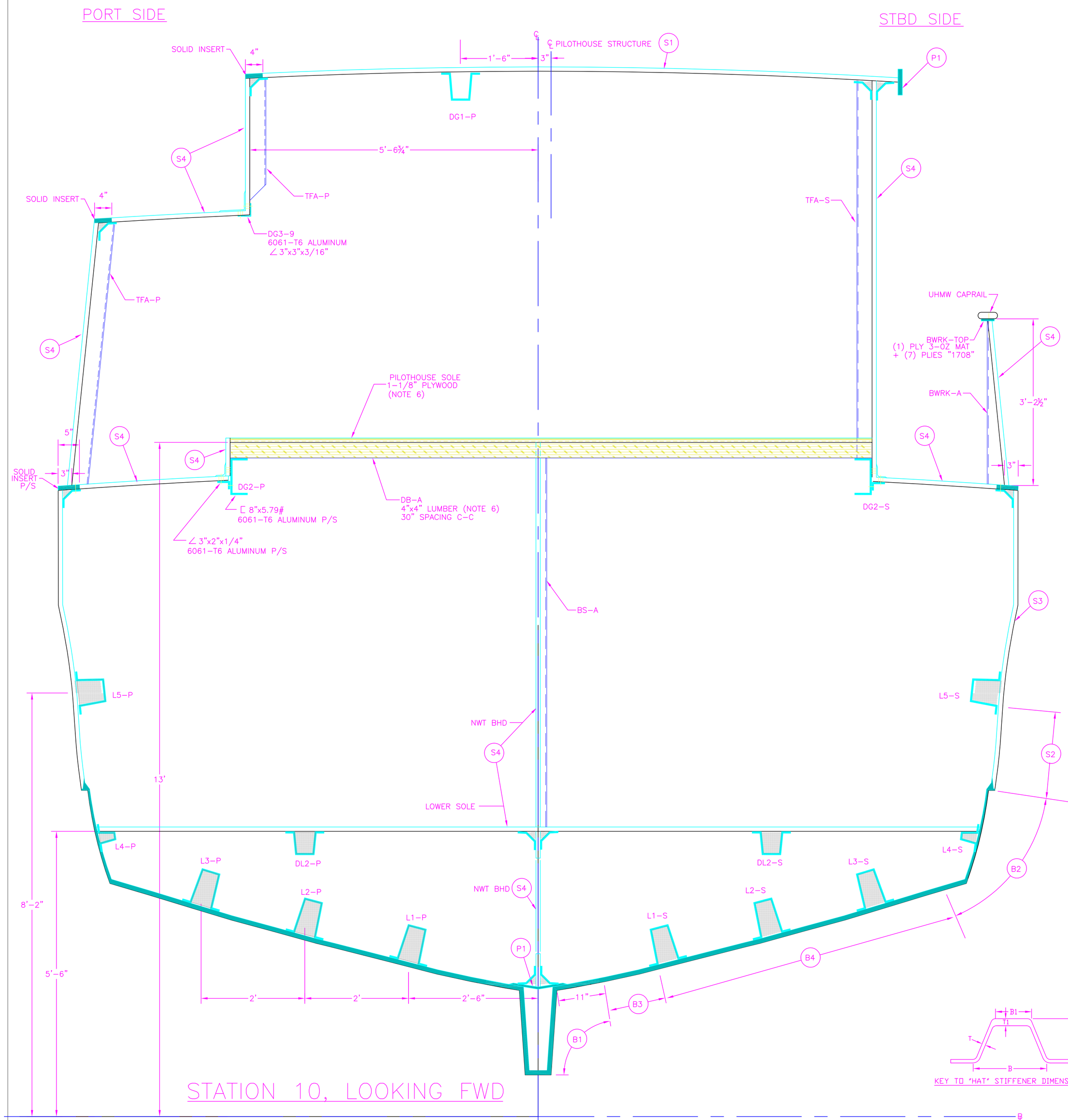

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NOTES:

1. THIS DRAWING SHOWS A REPRESENTATIVE STRUCTURAL SECTION THROUGH THE HULL AND DECKHOUSE, AT STATION 10 (MIDSHIPS). THE STRUCTURE DOES NOT HAVE PORT/STBD SYMMETRY. THIS DRAWING DOES NOT CONSTITUTE A COMPREHENSIVE STRUCTURAL DESIGN, BUT RATHER IT SHOWS THE BASIC CONSTRUCTION OF SHELL, DECKS, AND DECKHOUSE, USING BOTH SINGLE SKIN AND SANDWICH PANELS. THE FRAMING SHOWN IS SPECIFIC TO THE MIDBODY REGION AND IS NOT NECESSARILY REPRESENTATIVE OF FRAMING TOWARD THE ENDS OF THE VESSEL. THE COMPREHENSIVE STRUCTURAL DESIGN WILL INCLUDE DECK AND BOTTOM FRAMING PLANS AND SIDE FRAMING ELEVATIONS, AS WELL AS SECTIONAL VIEWS SHOWING THE CONSTRUCTION OF TRANSVERSE BULKHEADS.

2. FIBERGLASS REINFORCEMENT USED IN LAMINATES SHOWN HEREIN IS "E-GLASS". THE MATERIAL CALLED OUT AS "1708" IS A STITCH-BONDED COMBINATION FABRIC MADE UP OF:

   A) WOVEN ROVING (17 OZ/SQ YD) ORIENTED AT +/- 45 DEG TO WARP DIRECTION, AND
   B) ¾ OZ/SQ FT MAT.

   UNIT WEIGHT OF "1708" FABRIC IS 23.75 OZ/SQ YD.

3. RESIN USED IN LAMINATES THROUGHOUT THE BOAT TO BE FIRE-RETARDANT POLYESTER OR FIRE-RETARDANT VINYL-ESTER, IN COMPLIANCE WITH MIL-R-21607 AND/OR 46CFR 177.410(c). SEE REFERENCE 5 FOR A LIST OF ACCEPTED FIRE-RETARDANT POLYESTER RESINS.

4. THE ESTIMATED LAMINATE THICKNESSES INDICATED IN THE TABLES ARE BASED UPON THE ASSUMPTION THAT THE MAT IS 30% GLASS BY WEIGHT, AS LAMINATED, AND "1708" FABRIC IS 35% GLASS BY WEIGHT. TABULAR THICKNESS DOES NOT ACCOUNT FOR GEL COATS AND SKIN COATS, IF ANY.

5. ATTENTION IS CALLED TO SECTION 4 "MATERIALS" IN REFERENCE 4, WHEREIN MINIMUM PHYSICAL PROPERTIES ARE SPECIFIED FOR LAMINATES AND ALSO FOR WOOD.

6. THE PILOT HOUSE SOLE IS CONSTRUCTED OF MARINE EXTERIOR PLYWOOD WITH LUMBER FRAMING. SCANTLINGS ARE BASED ON THE USE OF DOUGLAS FIR FOR THIS STRUCTURE. IF OTHER SPECIES ARE USED, A SCANTLING ADJUSTMENT IS INDICATED IN REFERENCE 4 (PARAGRAPHS 4.5.1 AND 4.6.1).

7. STRUCTURAL DETAILS, INCLUDING BOUNDARY ANGLES, TABBING, AND FASTENING, TO BE IN COMPLIANCE WITH REFERENCE 4.

8. LAMINATE PROPERTIES TO BE CONFIRMED BY LABORATORY TESTING OF SAMPLES IN ACCORDANCE WITH SECTION 3A OF REFERENCE 6.

PRINCIPAL CHARACTERISTICS

LENGTH OVERALL:	63'-1½"
LBP:	58'-9"
BEAM:	19'-0" MOLDED
DEPTH:	11'-3¼" (INCL KEEL)
ESTIMATED FULL LOAD DRAFT:	6'-0"
ESTIMATED MAX. SPEED:	17 KNOTS (AT MOST, FOR SCANTLINGS)
ROUTE:	UNRESTRICTED

The information contained in this drawing has been prepared and reviewed by me and is certified as complying with U.S. Coast Guard regulations [46 CFR 177.300(c)(2)], Ref. 4, and Ref. 6.

"HAT" STIFFENER DIMENSIONS

SYM-BOL	LOCATION	H	B	B1	T	T1	LAMINATE	NOTE
	SHELL STRINGERS:							
L-1 P/S	bottom shell	8"	5"	4"	.331"	.415" CROWN	(1) 3-OZ MAT + (4) "1708" + (1) 3-OZ MAT CROWN	
L-2 P/S	bottom shell	"	"	"	"	"	"	
L-3 P/S	bottom shell	"	"	"	"	"	"	
L-4 P/S	lower sole support shelf	3.75"	2.5"	1.5"	.308"		"PRISMA" LR-2x4 + (4) "1708"	BALTEK "PRISMA" PRE-FORM
L-5 P/S	side shell	6"	6"	5"	.331"		(1) 3-OZ MAT + (4) "1708"	
	DECK LONGITUDINALS:							
DG-1 P	pilothouse top	6"	5"	4"	.331"	.415" CROWN	(1) 3-OZ MAT + (4) "1708" + (1) 3-OZ MAT CROWN	
DL-2 P/S	lower sole	5"	5"	4"	.331"		(1) 3-OZ MAT + (4) "1708"	
	TRANSVERSE FRAMES:							
TF-A P/S	pilot house sides	3.75"	2.5"	1.5"	.308"		"PRISMA" LR-2x4 + (4) "1708"	BALTEK "PRISMA" PRE-FORM; MAX SPACING 64"
	BULKHEAD STIFFENERS:							
BS-A	center NWT divider bulkhead	1.5"	2.5"	2"	.308"		"PRISMA" TR2515 + (4) "1708"	BALTEK "PRISMA" PRE-FORM; APPROX 30" SPACING
	BULWARK STIFFENERS:							
BWRK-A	typical, foredeck bulwarks	4"	2"	1.5"	.269"		(1) 3-OZ MAT + (3) "1708"	APPROX 72" SPACING

PLATING LAMINATE SCHEDULE

GRP (SINGLE SKIN) LAMINATES:

SYMBOL	ABS REQ'D THICKNESS (MINIMUM)	ESTIMATED THICKNESS FOR SPECIFIED LAMINATE	(PLIES) LAMINATE SPECIFICATION
B1	1.001"	1.008"	(1) 3-OZ MAT (15) 17-OZ "1708" STITCH-BONDED
B2	0.900"	0.947"	(1) 3-OZ MAT (14) 17-OZ "1708" STITCH-BONDED
B3	0.720"	0.762"	(1) 3-OZ MAT (11) 17-OZ "1708" STITCH-BONDED
B4	0.570"	0.577"	(1) 3-OZ MAT (8) 17-OZ "1708" STITCH-BONDED
P1	-	0.392"	(1) 3-OZ MAT (5) 17-OZ "1708" STITCH-BONDED

GRP SANDWICH LAMINATES:

SYMBOL		ESTIMATED THICKNESS FOR SPECIFIED LAMINATE AT RIGHT	(PLIES) LAMINATE RECOMMENDATION
S1	OUTER SKIN:	0.269"	(1) 3-OZ MAT + (3) 17-OZ "1708"
	PVC CORE:	1.00"	AIRLITE B-5.00 OR AIREX R63.80
	INNER SKIN:	0.269"	(1) 3-OZ MAT + (3) 17-OZ "1708"
	SANDWICH THICKNESS:	1.538"	
S2	OUTER SKIN:	0.269"	(1) 3-OZ MAT + (3) 17-OZ "1708"
	PVC CORE:	0.75"	AIRLITE B-5.00 OR AIREX R63.80
	INNER SKIN:	.207"	(1) 3-OZ MAT + (2) 17-OZ "1708"
	SANDWICH THICKNESS:	1.226"	
S3	OUTER SKIN:	.207"	(1) 3-OZ MAT + (2) 17-OZ "1708"
	PVC CORE:	0.75"	AIRLITE B-5.00 OR AIREX R63.80
	INNER SKIN:	0.145"	(1) 3-OZ MAT + (1) 17-OZ "1708"
	SANDWICH THICKNESS:	1.102"	
S4	OUTER SKIN:	0.145"	(1) 3-OZ MAT + (1) 17-OZ "1708"
	PVC CORE:	0.75"	AIRLITE B-5.00 OR AIREX R63.80
	INNER SKIN:	0.145"	(1) 3-OZ MAT + (1) 17-OZ "1708"
	SANDWICH THICKNESS:	1.040"	

REFERENCES

1. DWG No. 3505-1 LINES
2. DWG No. 3505-2 GENERAL ARRANGEMENT
3. DWG No. 3505-3 INBOARD PROFILE
4. RULES FOR REINFORCED PLASTIC VESSELS, ABS, 1978
5. GUIDELINES FOR REVIEW OF STRUCTURAL PLANS FOR FRP VESSELS, USCG MSC #H1-12
6. U.S. COAST GUARD NVIC No. 8-87, NOTES ON DESIGN, CONSTRUCTION, INSPECTION, AND REPAIR OF FRP VESSELS

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M/V NORTHWEST NATIVE

MIDSHIP SECTION

FOR	CAPT MIKE LAWSON
SCALE	1" = 1'-0"
DATE	7/3/05
DRAWN BY	ALAN WINKLEY, P.E.

DWG No. **3505-5** REV