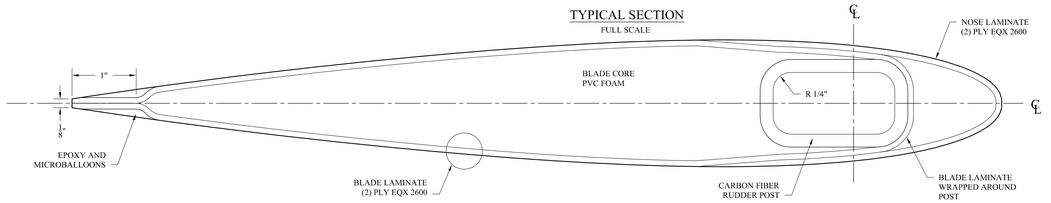
RUDDER PARTICULARS

POST MATERIAL	Carbon Fiber
ULTIMATE TENSILE STRENGTH	115,000 psi
YEILD STRENGTH	100,000 psi
RUDDER AREA	4.37 ft^2
% BALLANCE	15%
TOTAL SIDE FORCE	1,024 lbs
MAX. TORQUE	300 ft.lbs
MAX. BENDING MOMENT	1,915 ft.lbs
SIDE FORCE AT UPPER BEARING	910 lbs
SIDE FORCE AT LOWER BEARING	1,920 lbs
ALLOWABLE MATERIAL STRESS (U/2.33)	49,356 psi
REQUIRED INERTIA AT LWR. BRNG.	0.44 in^4
ACTUAL INERTIA AT LWR.BRNG.	0.51 in^4
ESTIMATED WEIGHT OF POST	8.5 lbs

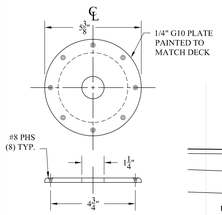
REVISIONS

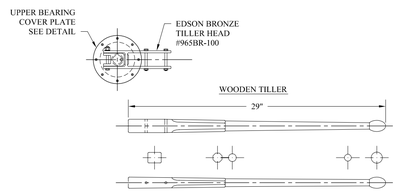
#	DESCRIPTION	DATE
1	- Updated drawing to show bearings "as built" installations. - Added boss to top of rudder blade to accept lower thrust washer. - Top of post raised 1/4" to accomodate higher upper bearing installed position.	7/29/01
2	- Autopilot details added. Linear drive unit base details added. Autopilot arm increased to 9". - Rudder port height changed to 10" as built.	10/02/01

TYPICAL SECTION
FULL SCALE

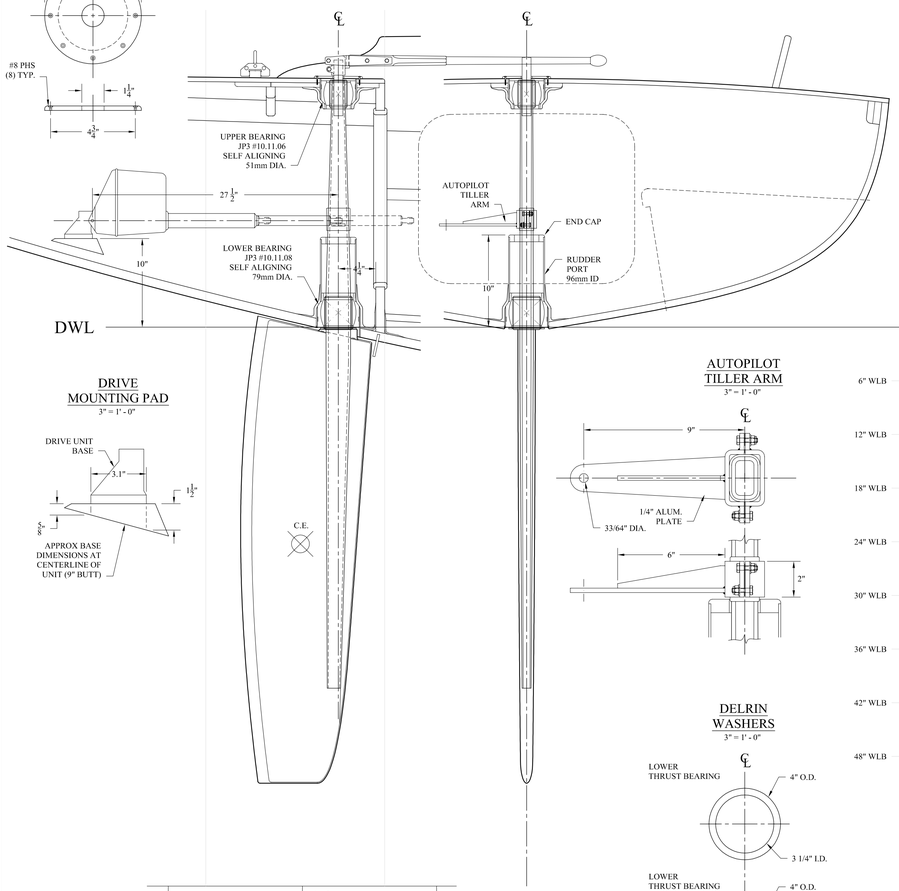


COVER PLATE
3" = 1' - 0"

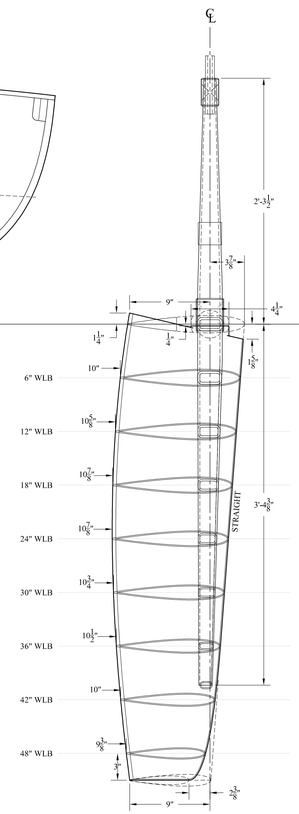




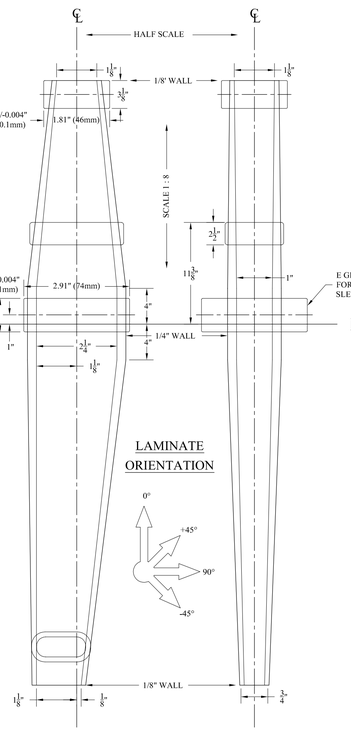
RUDDER POST CL



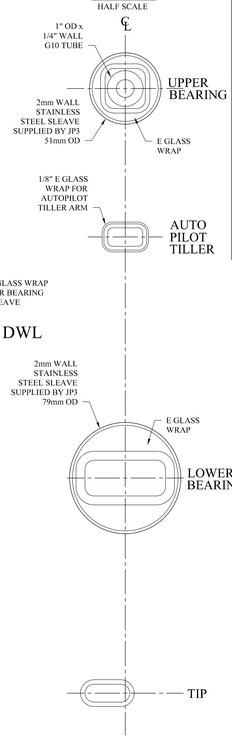
RUDDER GEOMETRY



SIDE VIEW / END VIEW



END VIEW
HALF SCALE



DRIVE MOUNTING PAD
3" = 1' - 0"

AUTOPILOT TILLER ARM
3" = 1' - 0"

LAMINATE ORIENTATION

LAMINATE NOTES:

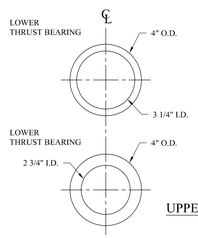
POST LAMINATE = CARBON UNI
- 70% OF FIBER AT 0°
- 15% OF FIBER AT +45°
- 15% OF FIBER AT -45°
- TOTAL THICKNESS VARIES AS SHOWN

BLADE LAMINATE = E GLASS QUADRAX (EQX 2600)
- 2 PLY OVER ENTIRE BLADE FOR TOTAL THICKNESS OF 2mm

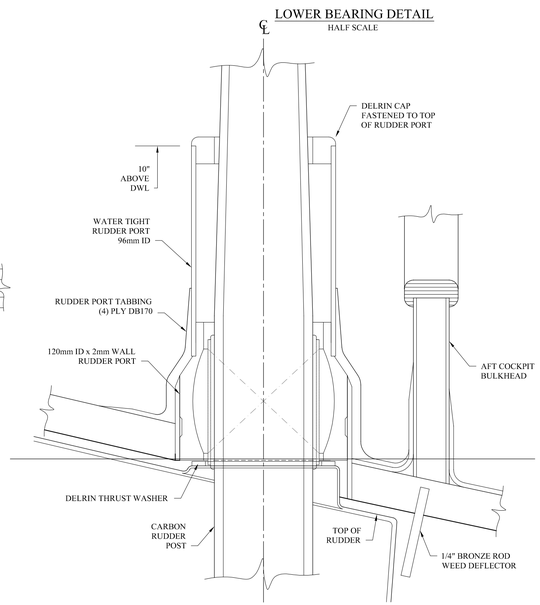
ALL RESIN TO BE EPOXY
- GOUGEON PRO SET OR EQUAL
- POST CURE PER MANUFACTURERS RECOMENDATIONS

BLADE FINISH
- FILL AND FAIR WITH US PAINT "AWLFAIR"
- BLADE TO BE PRIMED WITH AWLGRIP #545 GREY PRIMER

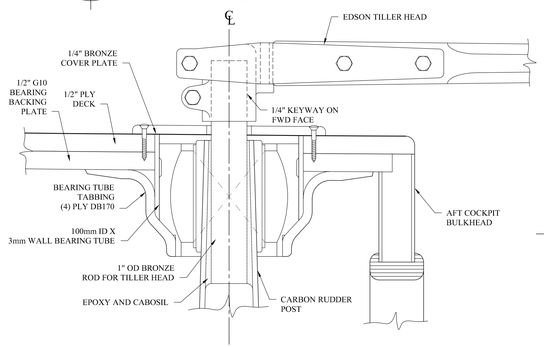
DELRIN WASHERS
3" = 1' - 0"

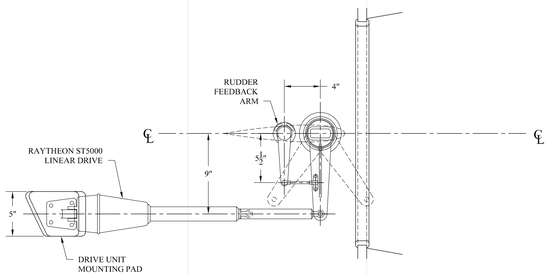


LOWER BEARING DETAIL
HALF SCALE



UPPER BEARING DETAIL
HALF SCALE





MATTHEW SMITH
NAVAL ARCHITECT
479 New Meadow Road Barrington, RI 02806
Tel: (401) 245-0008

TITLE: RUDDER DETAILS			
FOR: Mr. John Mills			
DRAWN BY: MS	DATE: February 21st, 2001	CHECKED BY:	DATE:
SCALE: 1 1/2" = 1'-0" (1:8)	DWG. NO.: 122-601		REV: 2

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