

British Gliding Association
Minor Modification Application – Glider/SSS.
[For CAA Reg.(G-) aircraft use CAA form AD261]



BGA Mod No.
BGA 2005/03
BGA USE ONLY

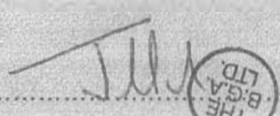
Aircraft Type SUNGOBY T21B	Name & Address of applicant P.S. LINDERWOOD 68, THE RYE EATON BRAY DUNSTABLE BEDS LU10 2BQ Tel 01525 231495	Applicants Mod Number 09 Issue No 1 Date 14.01.05
Reg. No. BGA ANY T21B		
Serial No		

Details of Modification (use continuation sheets if necessary)
Installation of C.G. Hook. The following drawings show details.
01, Issue 3, Jan 05. Mounting Beam.
02, Issue 3, Jan 05. Component Details
03, Issue 2, Jan 05, Floor Reinforcement Instruction Drg.
04, Issue 2, Jan 05, Preparation of Frames 2 & 3 Instruction Drg.
05, Issue 3, Jan 05. Mounting Beam, Initial Installation Instruction Drg.
06, Issue 3, Jan 05 Mounting Beam, Final Installation Instruction Drg.
07, Issue 1, Jan 05 Operating Cable Run Detail Parts
08, Issue 1, Jan 05 Operating Cable Installation Instruction Drg.
Load and stress calculations also attached.
P.S. Underwood 14.01.05

Suitable for installation on this aircraft only.* Suitable for installation on any other T21B		Limitations, Conditions, Exemptions _____	
Weight & C of G Schedule #	Flight Manual Amendment #		Electrical Load Analysis
Modification Instructions #	Modification Drawings #	Permitted	Published in TNS.

Can this modification be passed on to interested members within the BGA? Yes / ~~No~~
Or. All enquires to be directed to originator. (The former will apply if no preference is shown)

The above modification has been approved for incorporation on BGA registered Aircraft only.

Signed  For BGA Date 28/1/05

* Delete as reqd, # Tick or N/A in box as reqd, ☐ BGA Use only.



VINTAGE GLIDER CLUB

IMPORTANT INFORMATION

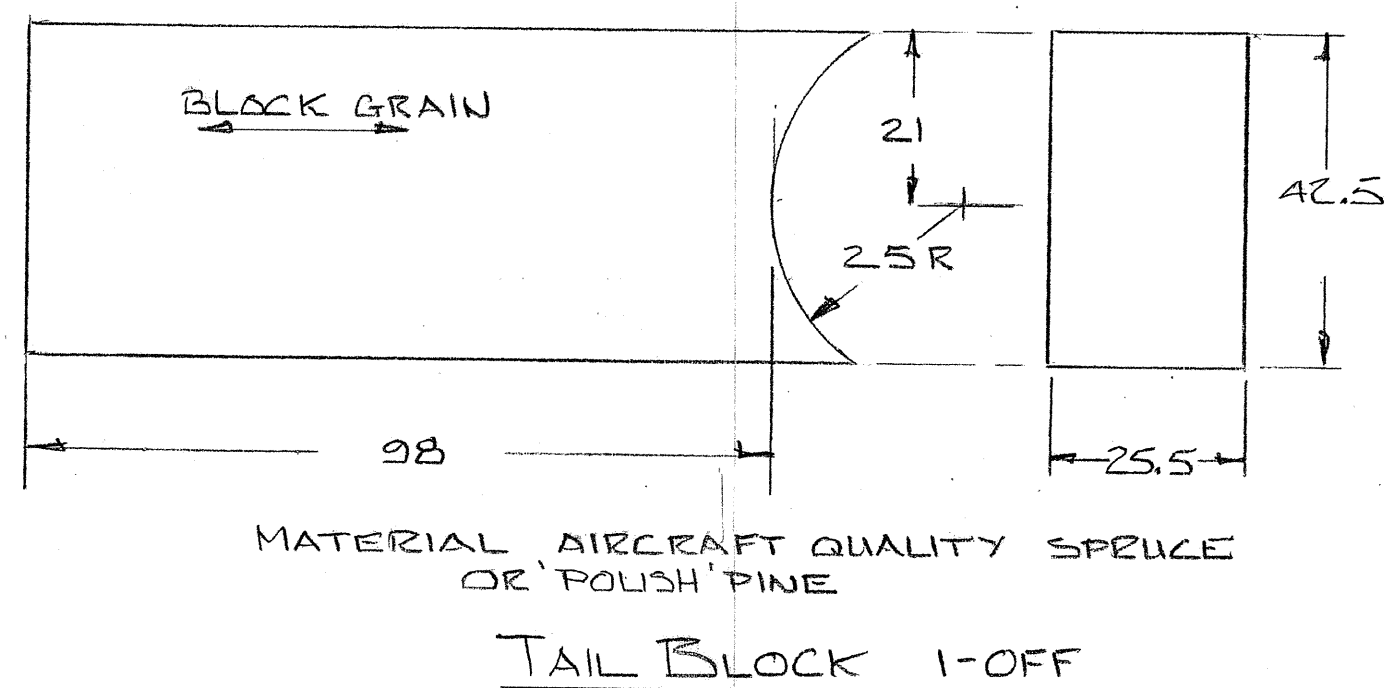
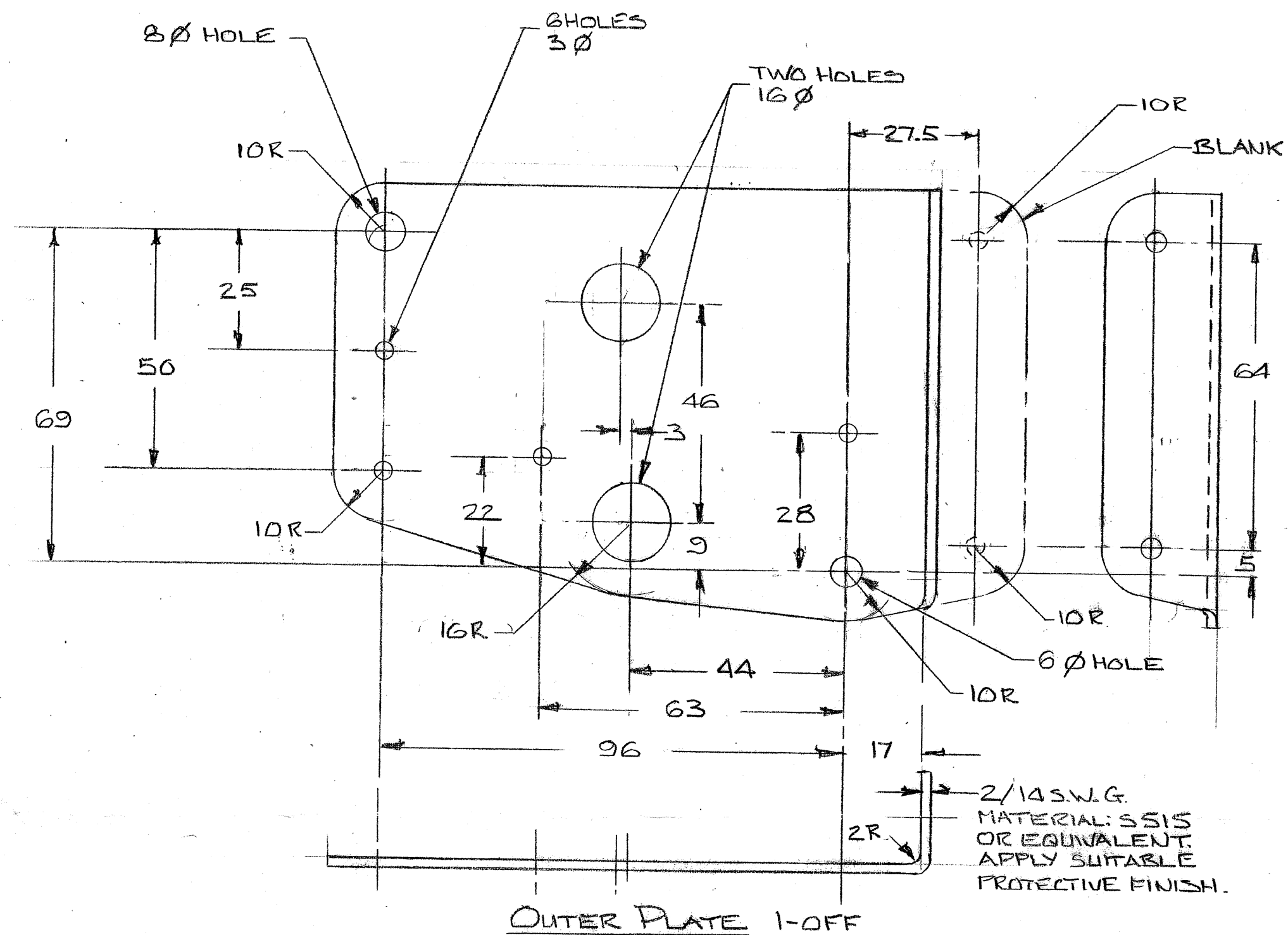
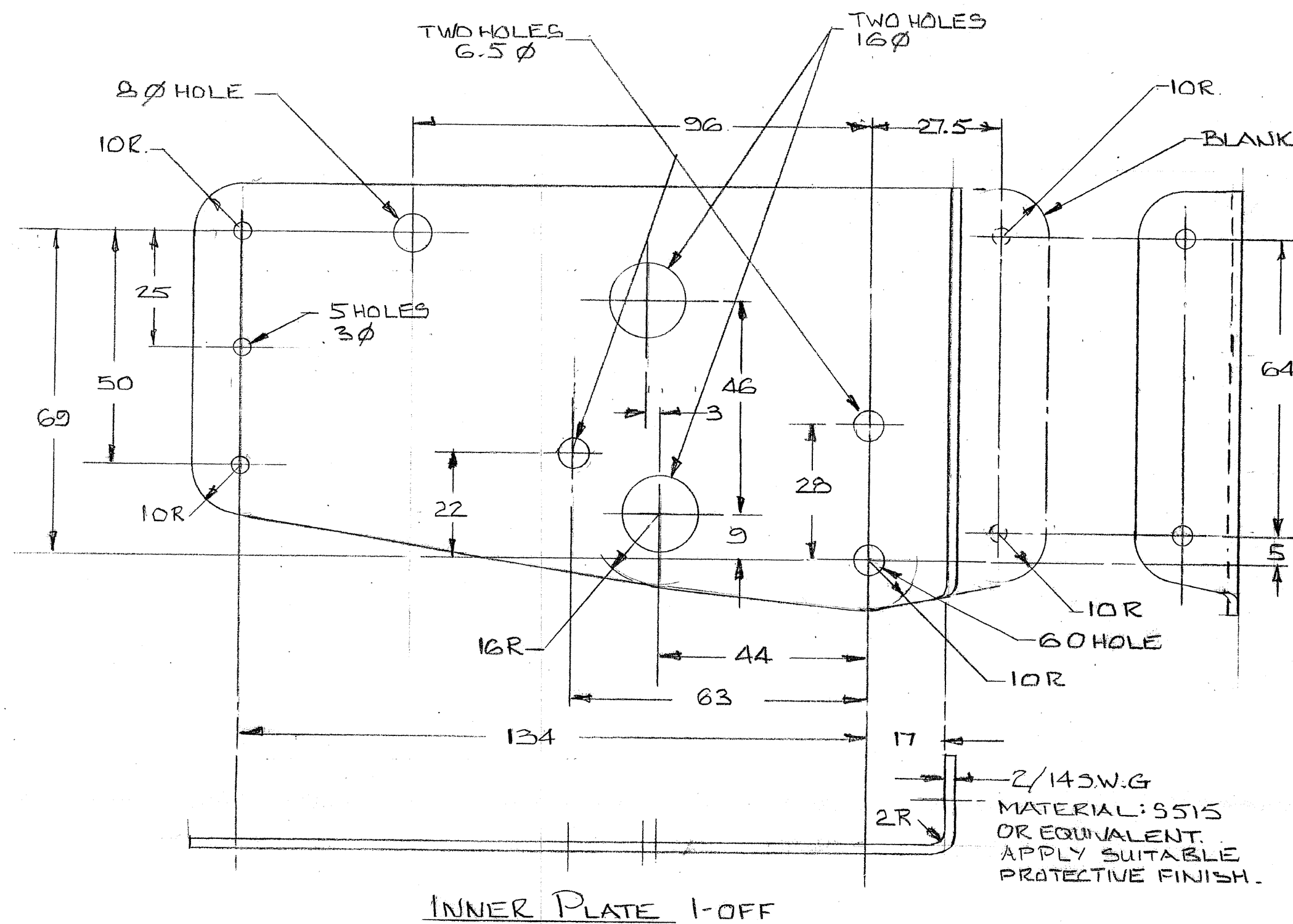
BGA MODIFICATION 2005/03 INSTALLATION OF C of G HOOK ON (SLINGSBY T-21b GLIDER)

The drawings on this CD may not be the latest revision. Anyone considering carrying out this BGA approved modification must first contact Mr. Peter Underwood of the Vintage Glider Club.

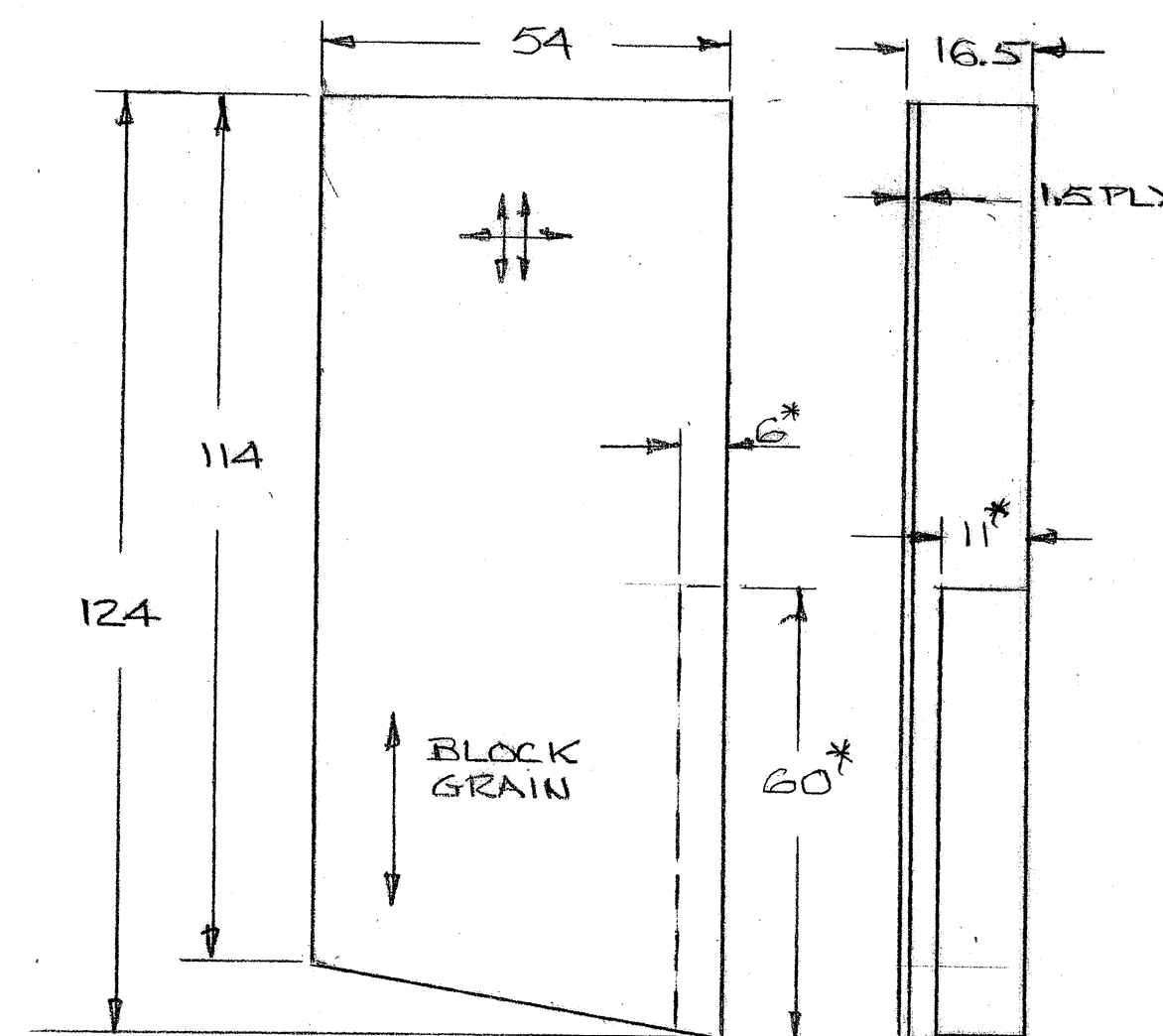
This is a BGA approved modification. The disclaimer below still applies.

Vintage Glider Club Disclaimer

“This material is provided for historical research purposes only. It is not to be used for the manufacture of components, repair, or construction of complete aircraft. The Vintage Glider Club does not warrant its accuracy and disclaims any liability to any third party anywhere in the world for any injury, damage, direct or indirect loss, consequential or economic loss or any other loss suffered as a result of the use or reliance upon the material supplied.”



THIRD ANGLE PROJECTIO.
DIMENSIONS IN MM.

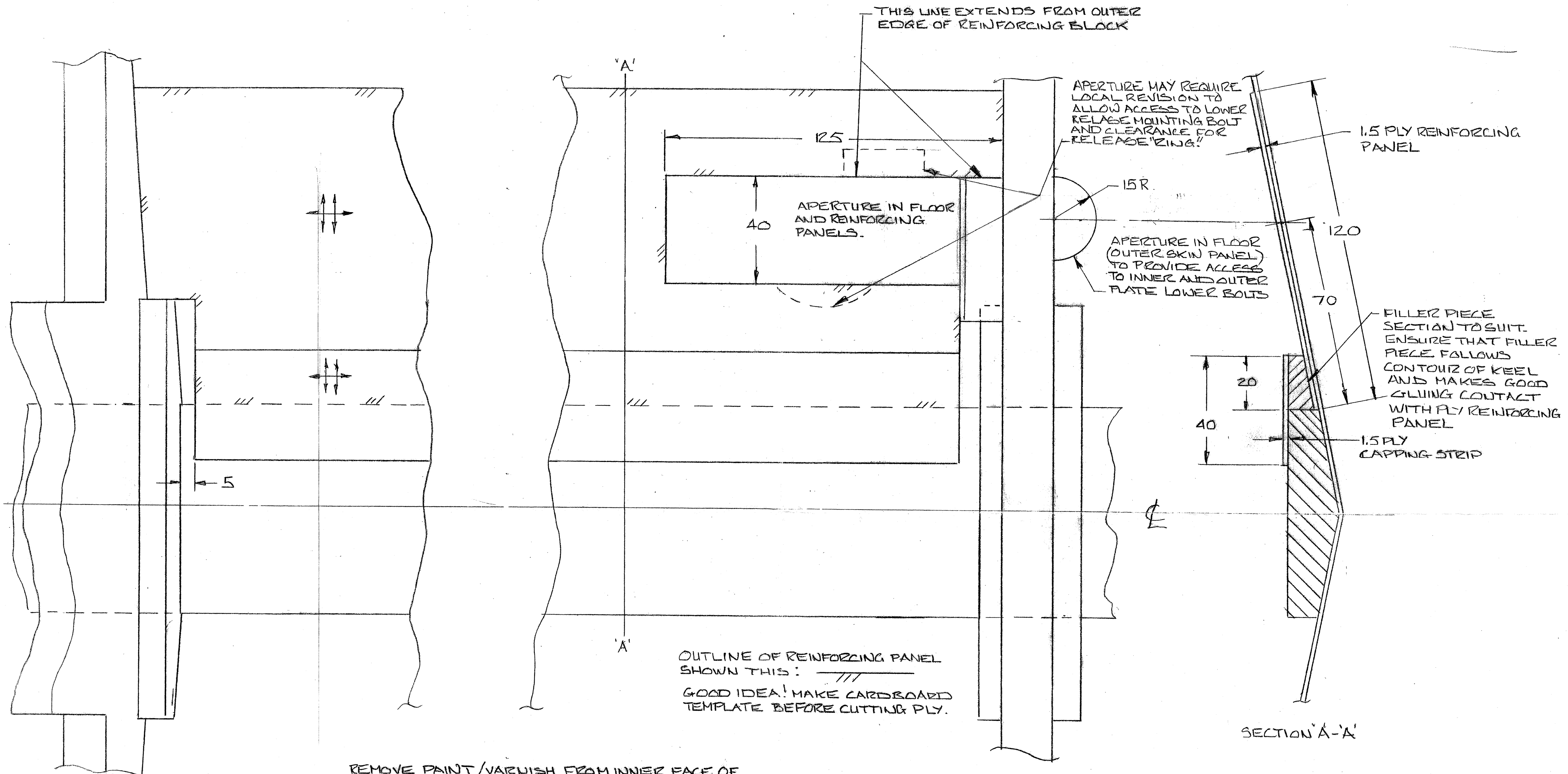


MATERIAL: AIRCRAFT QUALITY SPRUCE
OR POLISH PINE. 1/4 PLY.

* REBATE DIMENSIONS ARE NOMINAL.
SEE DRG NO. 04 FRAME 2 STAGES
FOR FINAL DIMENSIONS

REINFORCING BLOCK 1-OFF

DR: PS.U.	DATE: JAN. 05
COMPONENT DETAILS	
ISSUE: 3. JAN. 05	02



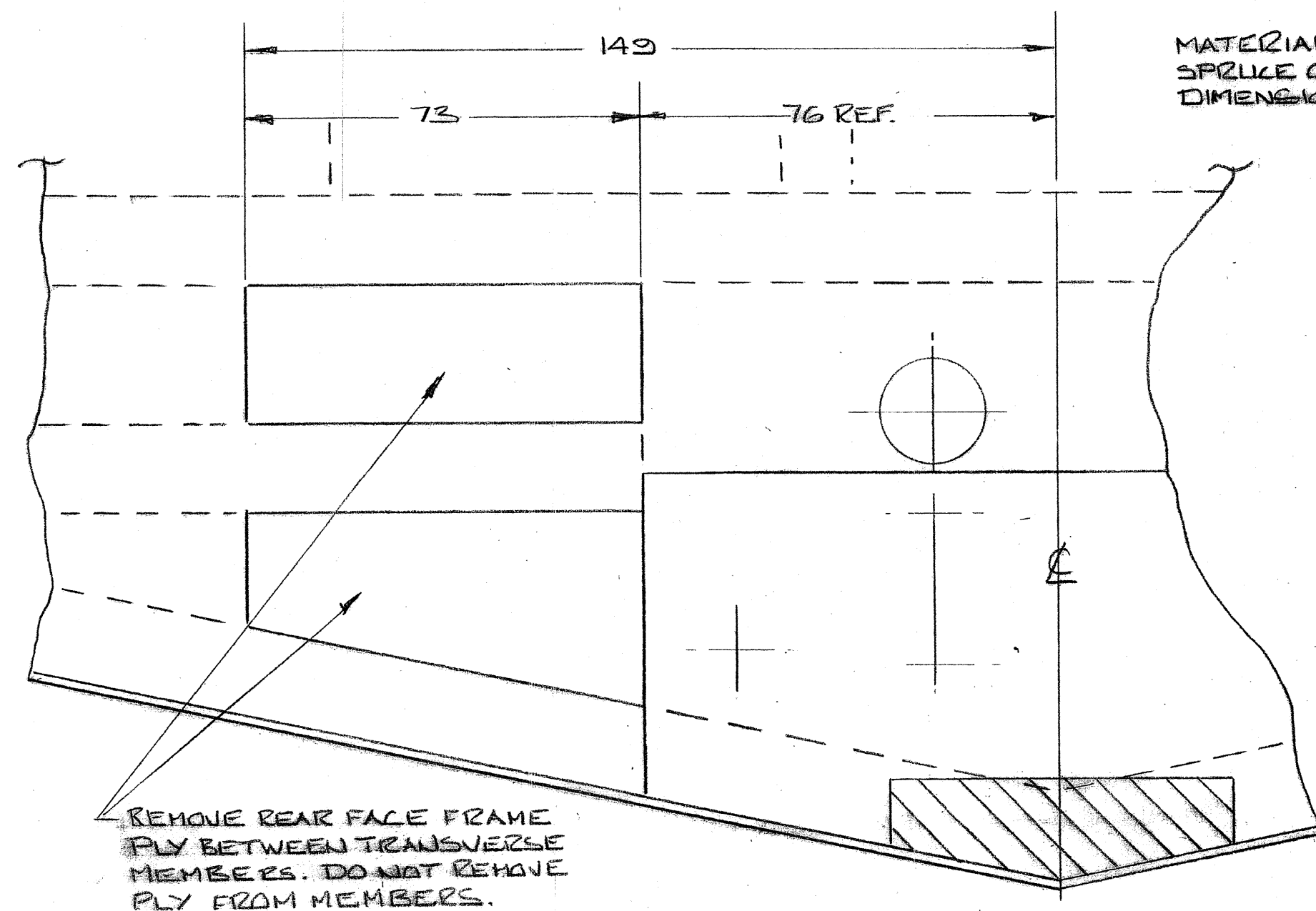
REMOVE PAINT / VARNISH FROM INNER FACE OF FLOOR PANEL AND KEEL WHERE REINFORCING PANEL, FILLER PIECE AND CAPPING STRIP WILL MAKE CONTACT.

ENSURE GOOD GLUING CONTACT IS MADE BETWEEN FLOOR AND REINFORCING PANEL. STAPLE THROUGH TO TEMPORARY EXTERNAL BACKERS AS NECESSARY.

MATERIALS: AIRCRAFT QUALITY SITKA SPRUCE OR 'POLISH' PINE. GLI PLY.

DIMENSIONS IN MM.

DEN: PS.U.	DATE: JAN 05
FLOOR REINFORCMENT INSTRUCTION DRG.	
ISSUE: 2. JAN '05	03
ISSUE: 3. NOV '05	

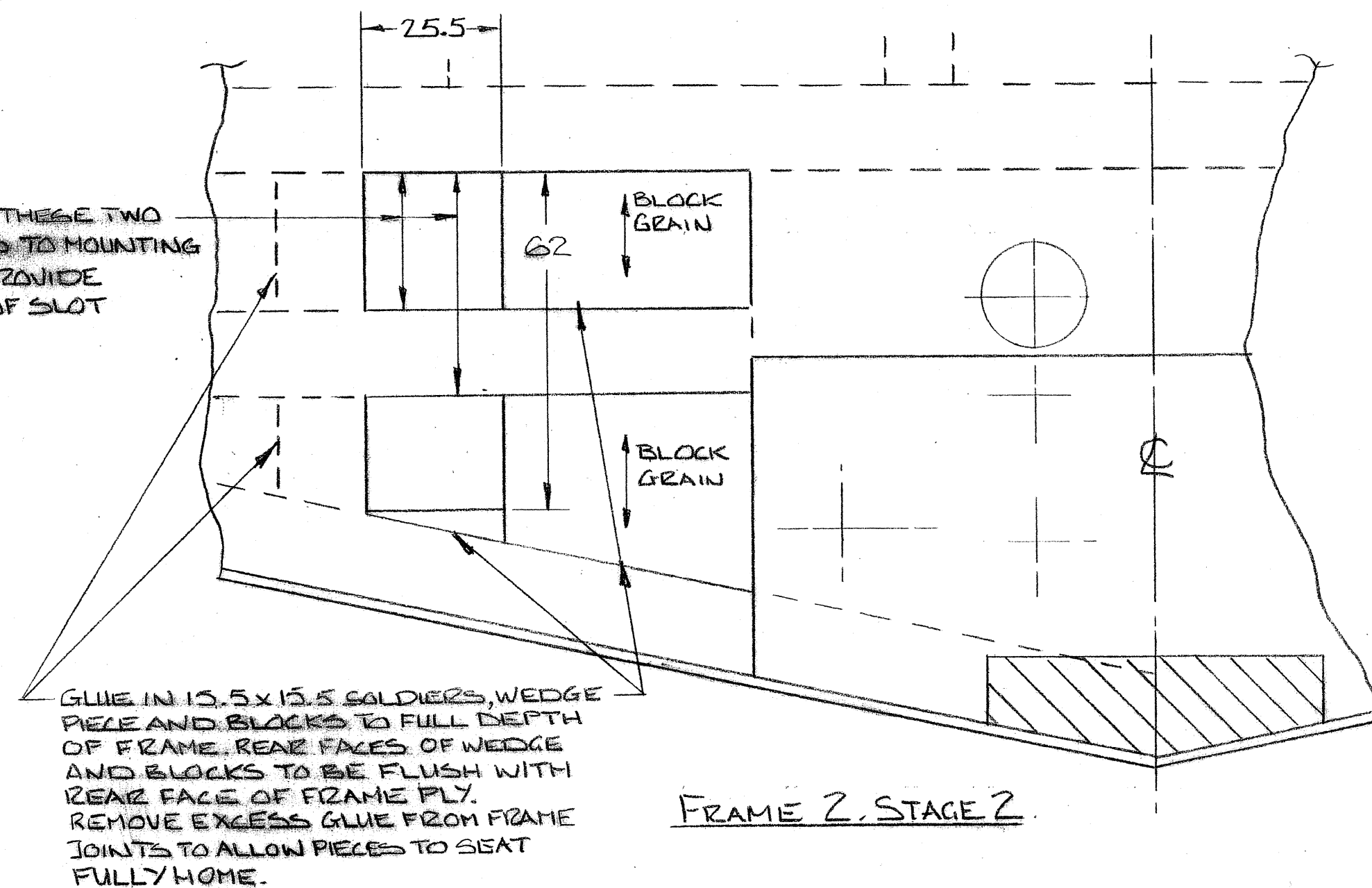


FRAME 2 STAGE 1

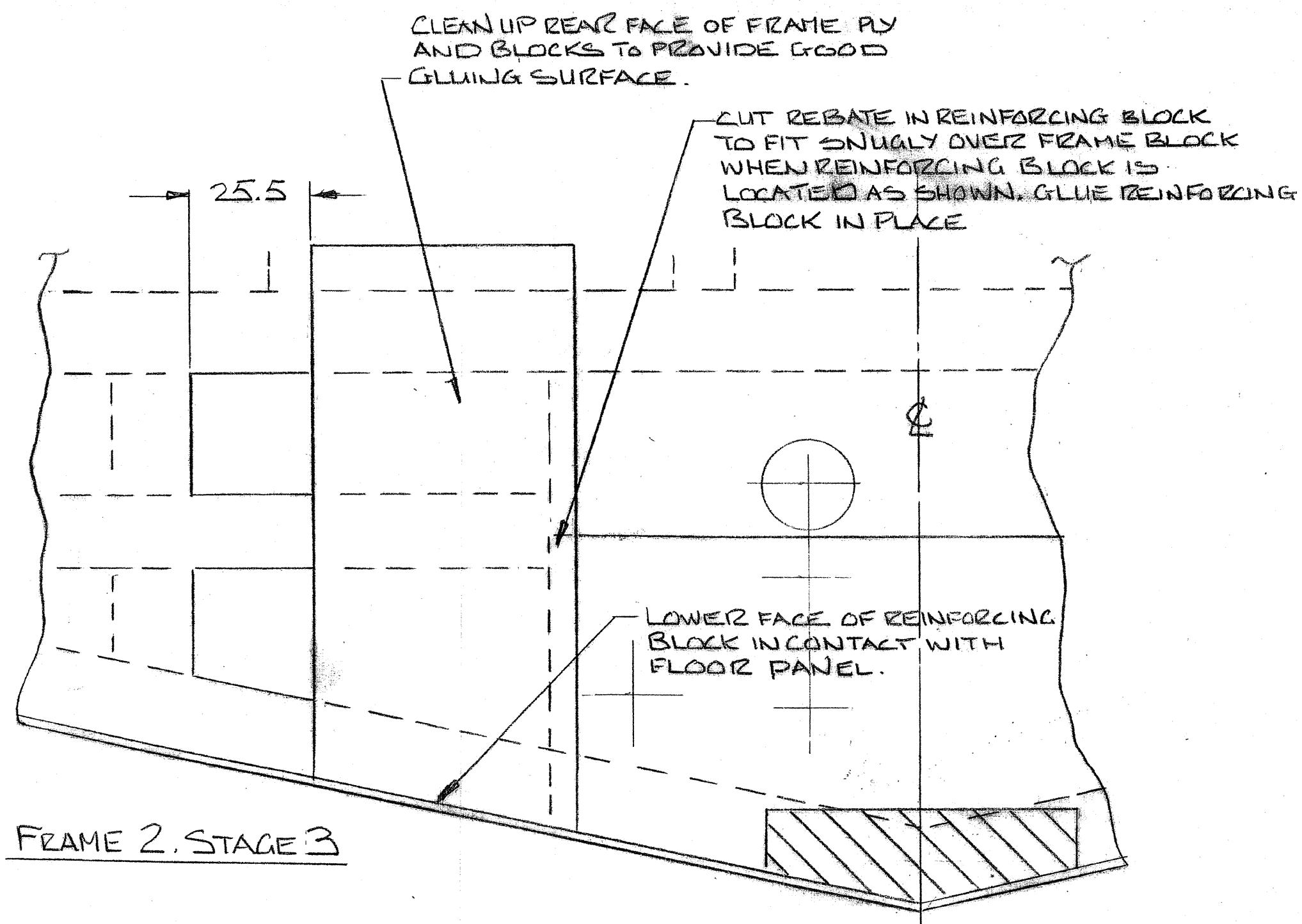
VIEW ON REAR FACE OF FRAME

MATERIAL: AIRCRAFT QUALITY SITKA SPRUCE OR POLISH PINE. DIMENSIONS IN MM.

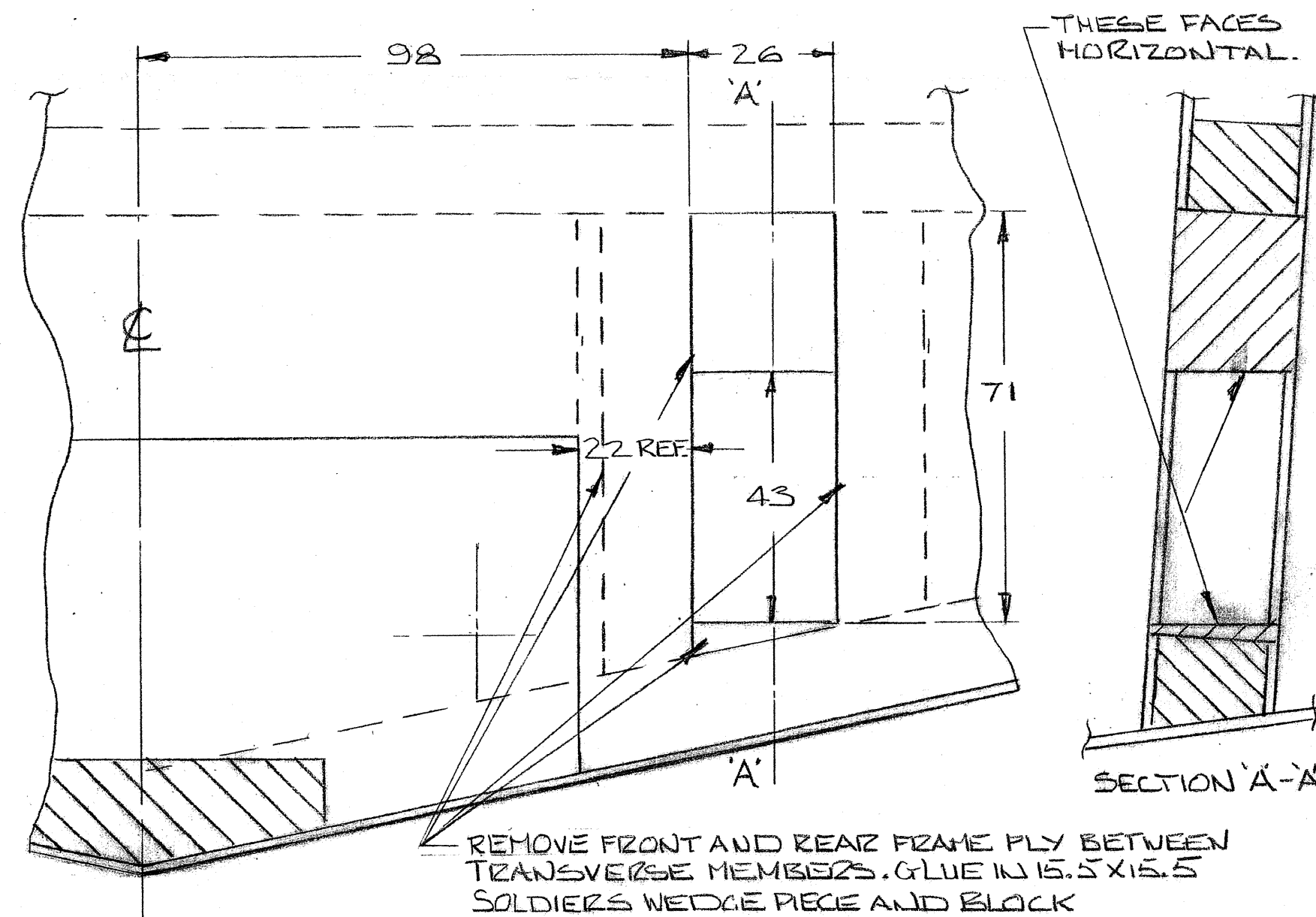
TRANSFER THESE TWO DIMENSIONS TO MOUNTING BEAM TO PROVIDE LOCATION OF SLOT



FRAME 2, STAGE 2



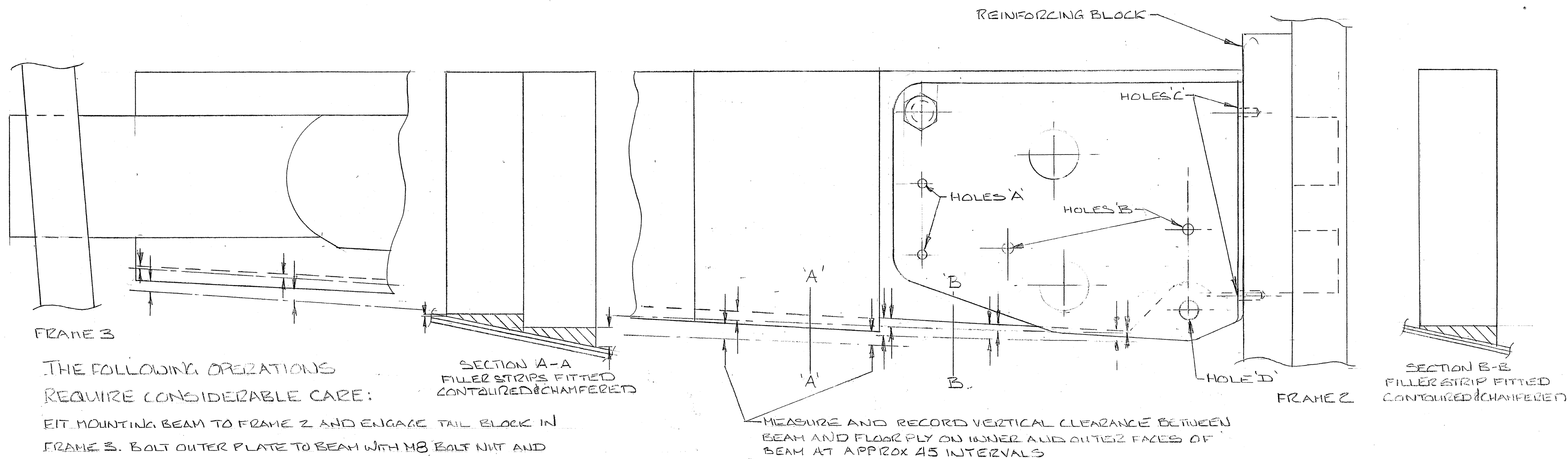
FRAME 2, STAGE 3



FRAME 3

VIEW ON FRONT FACE OF FRAME

DRN: P.11.11. DATE: JAN '05
PREPARATION OF FRAMES 2 AND 3.
INSTRUCTION DRG.
ISSUED: JAN '05
04

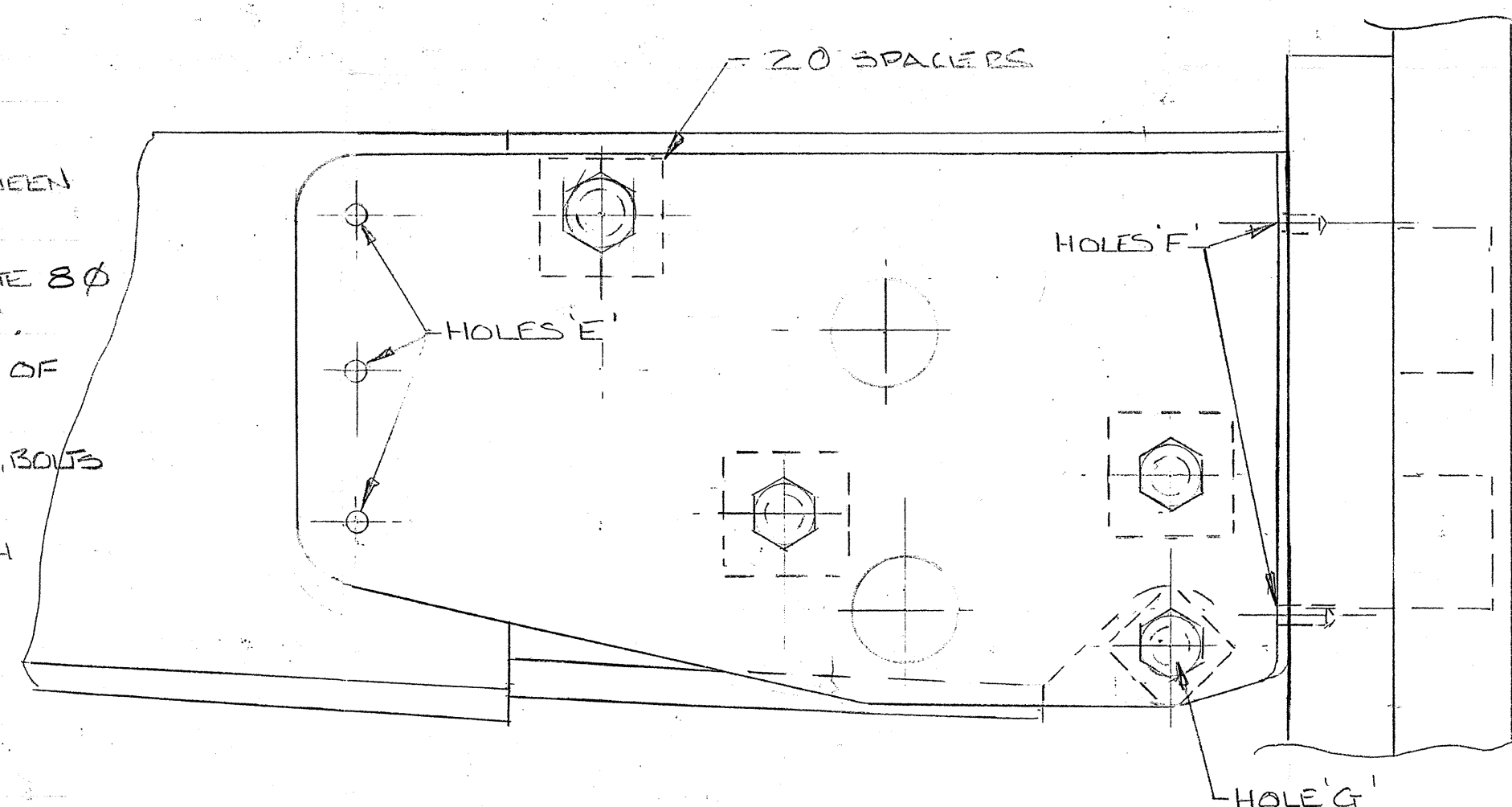


THE FOLLOWING OPERATIONS
REQUIRE CONSIDERABLE CARE:

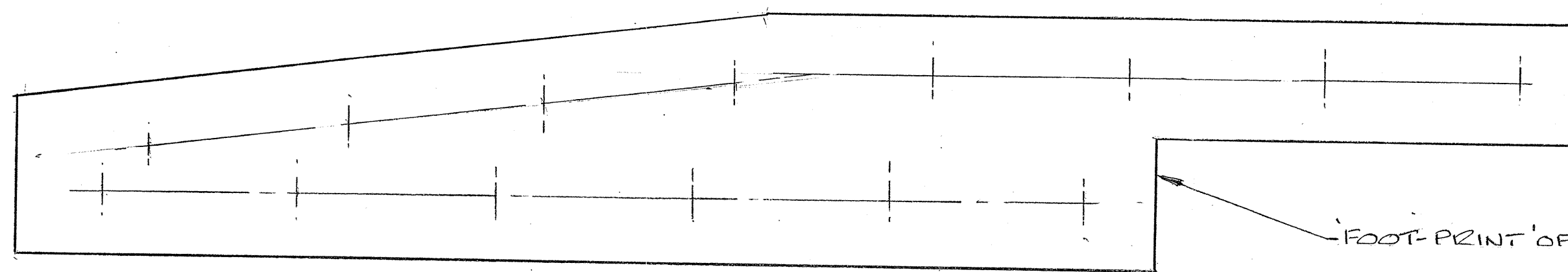
REFIT MOUNTING BEAM TO FRAME 2 AND ENGAGE TAIL BLOCK IN FRAME 3. BOLT OUTER PLATE TO BEAM WITH M8 BOLT NUT AND WASHER: NUT ON OUTSIDE OF BEAM. LIGHTLY LEVER BETWEEN FRAME 3 AND BEAM TO BRING FLANGE OF PLATE INTO CLOSE CONTACT WITH REINFORCING BLOCK. CLAMP TAIL BLOCK AND PLATE TO BEAM. MARK POSITION OF 3 Ø PILOT HOLES ON BEAM AND BLOCK. IF POSSIBLE DRILL SHALLOW 3 Ø HOLES THROUGH INTO BEAM AND BLOCK. AT APPROX 45 INTERVALS MEASURE AND RECORD VERTICAL CLEARANCE BETWEEN BEAM AND FLOOR PLY ON INNER AND OUTER FACES OF BEAM. REMOVE BEAM WITHOUT DISTURBING POSITION OF OUTER PLATE. DRILL BEAM & PLATE 8 Ø THROUGH TWO 3 Ø PILOT HOLES 'A' AND DRILL 6.5 Ø THROUGH 2 PILOT HOLES 'B'. TO LOWER FACE OF BEAM GLUE TWO STRIPS OF SPRUCE OR PINE TO WIDTH OF BEAM: CONTOUR AND CHAMFER TO DIMENSIONS TAKEN ABOVE. LOOSELY BOLT IN PLACE INNER AND OUTER PLATES USING M6 AND M8 NUTS, BOLTS AND WASHERS WITH 25 SPACERS AS SHOWN. REFIT BEAM AND TAIL BLOCK WEDGING AS BEFORE. ENSURE FLANGES ARE IN CLOSE CONTACT WITH BLOCK: TIGHTEN NUTS. CLAMP TAIL BLOCK. AS ABOVE, MARK OR DRILL THROUGH 3 Ø PILOT HOLES. REMOVE BEAM WITHOUT DISTURBING PLATES. DRILL BEAM & PLATE 6 Ø THROUGH PILOT HOLES 'E'. DRILL THROUGH REINFORCING BLOCK & FRAME 2 FOUR HOLES 6 Ø ON EXACT LOCATIONS MARKED OR PILOTED. THESE HOLES MUST BE HELD SQUARE TO FACE OF BLOCK. DRILL 6 Ø THROUGH 3 Ø PILOT HOLES 'C' & 'F' IN FLANGES OF INNER AND OUTER PLATES.

FINALLY: OPEN OUT 6 Ø HOLES 'D' & 'G' TO 6.5 Ø IN INNER AND OUTER PLATES.

DURING THE ABOVE OPERATIONS DRAW ON FLOOR PANEL CONTACT FOOT-PRINT OF BEAM TO FLOOR.



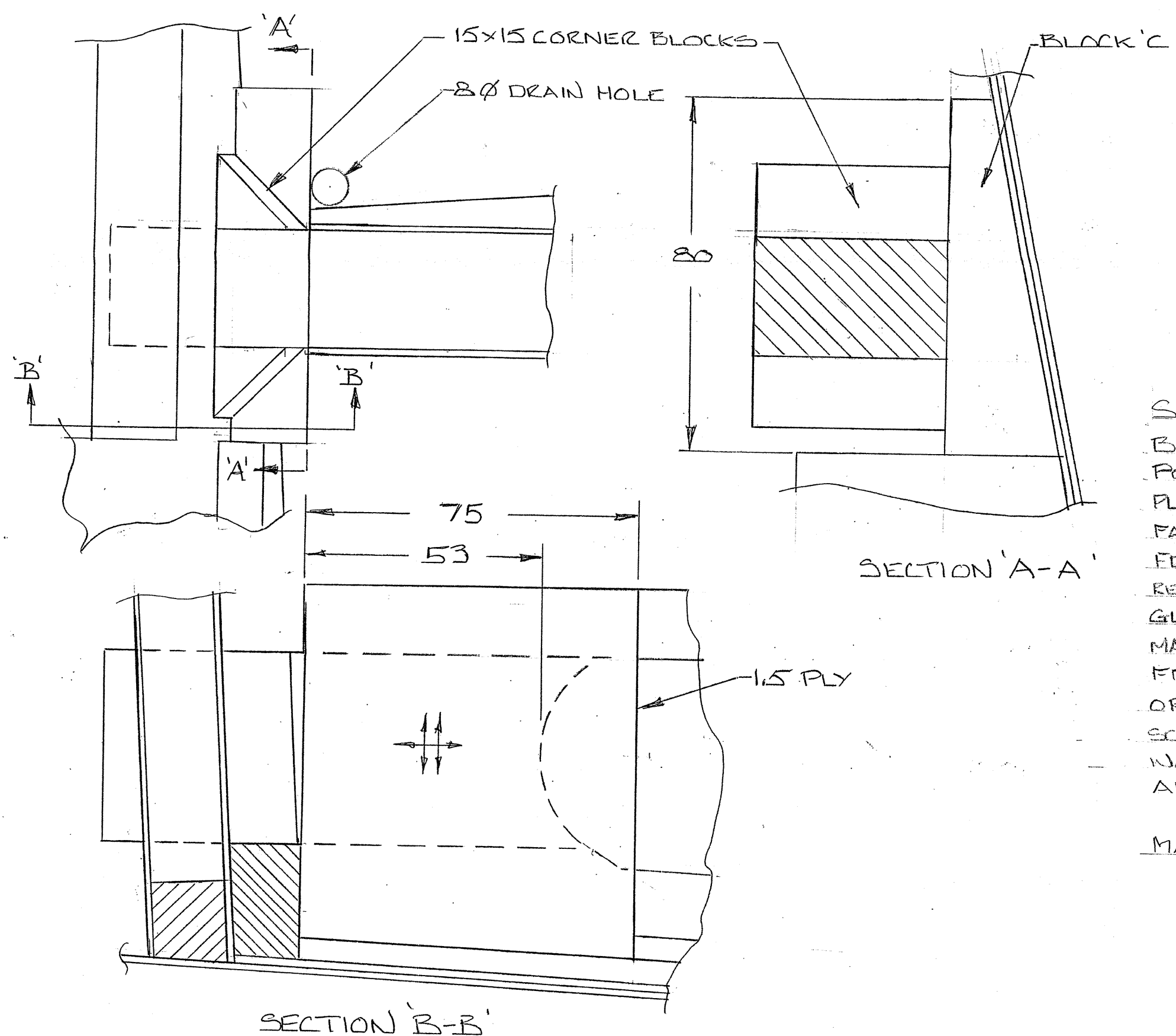
DR: P.S. 11	DATE: OCT '03
MOUNTING BEAM, INITIAL INSTALLATION, INSTRUCTION DRAWING.	
OSIE: 3, JAN '05	05



FOOT-PRINT OF BEAM CONTACT WITH FLOOR

AT APPROX 40 CENTRES, IF EXTERIOR FINISH IS IN PLACE, PIERCE FLOOR WITH THIN NAIL. FROM OUTSIDE CAREFULLY DRILL OUT HOLES TO 3/5 Ø. OTHERWISE DRILL 3/5 Ø.

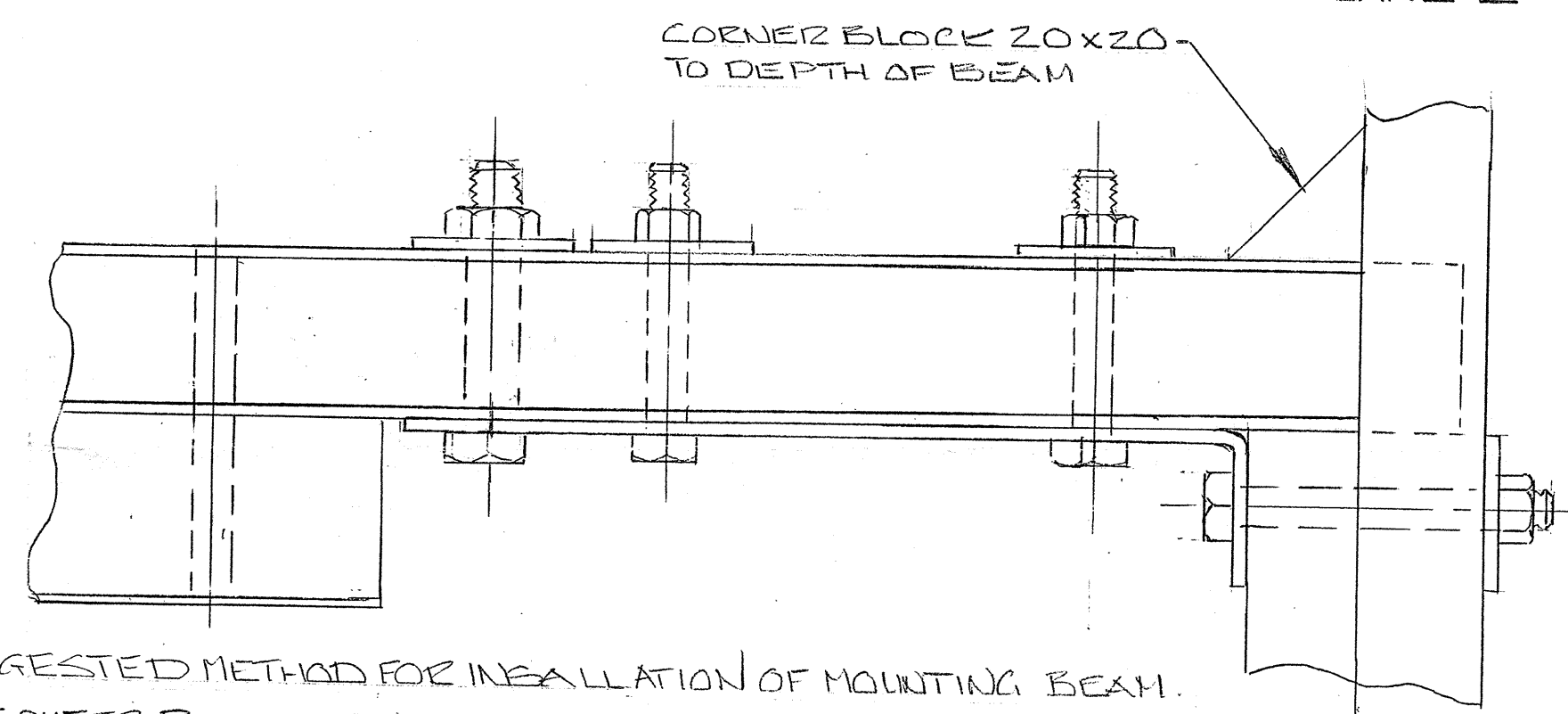
FRAME 3



SECTION 'A-A'

SECTION 'B-B'

FRAME 2

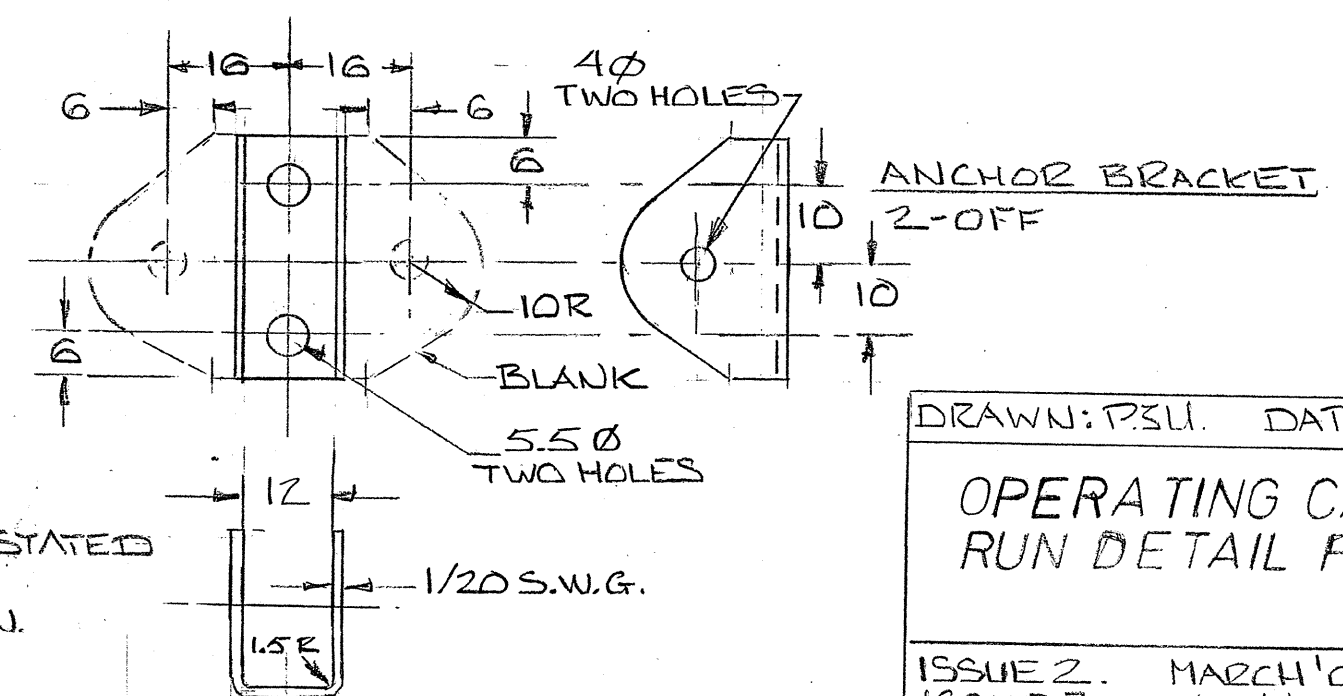
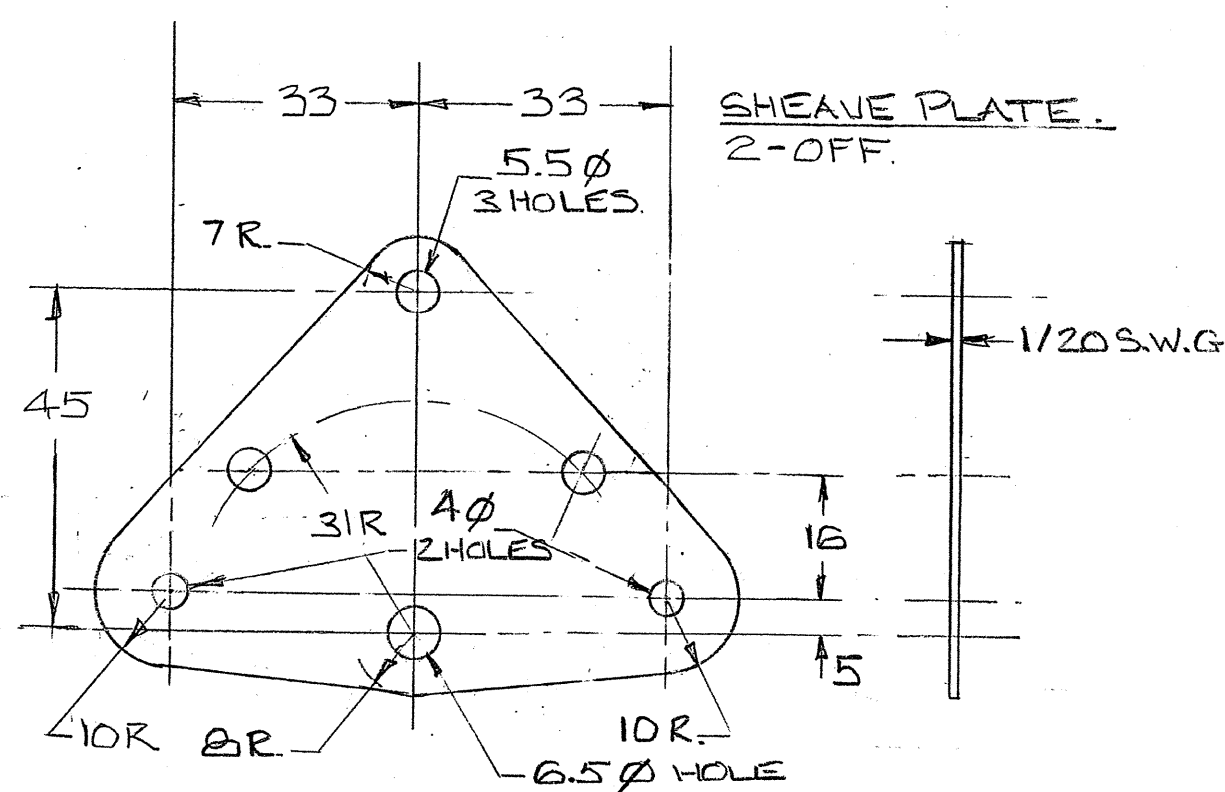
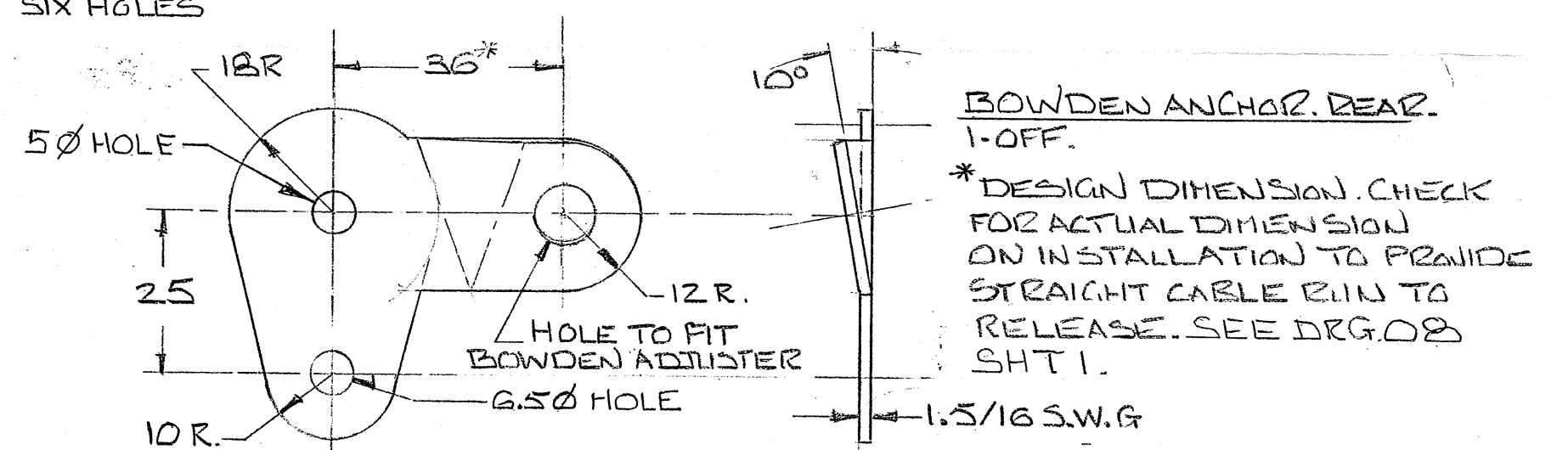
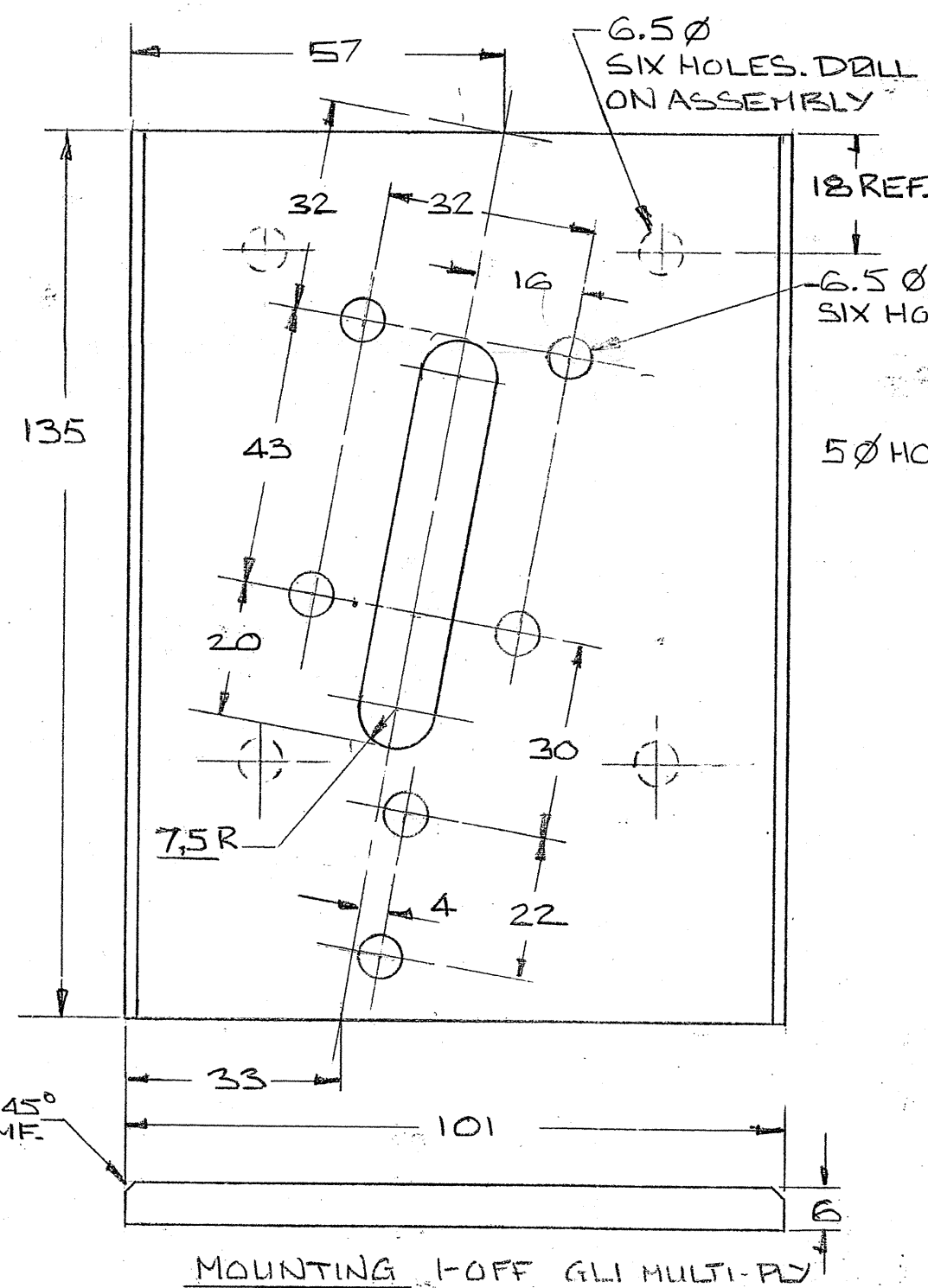
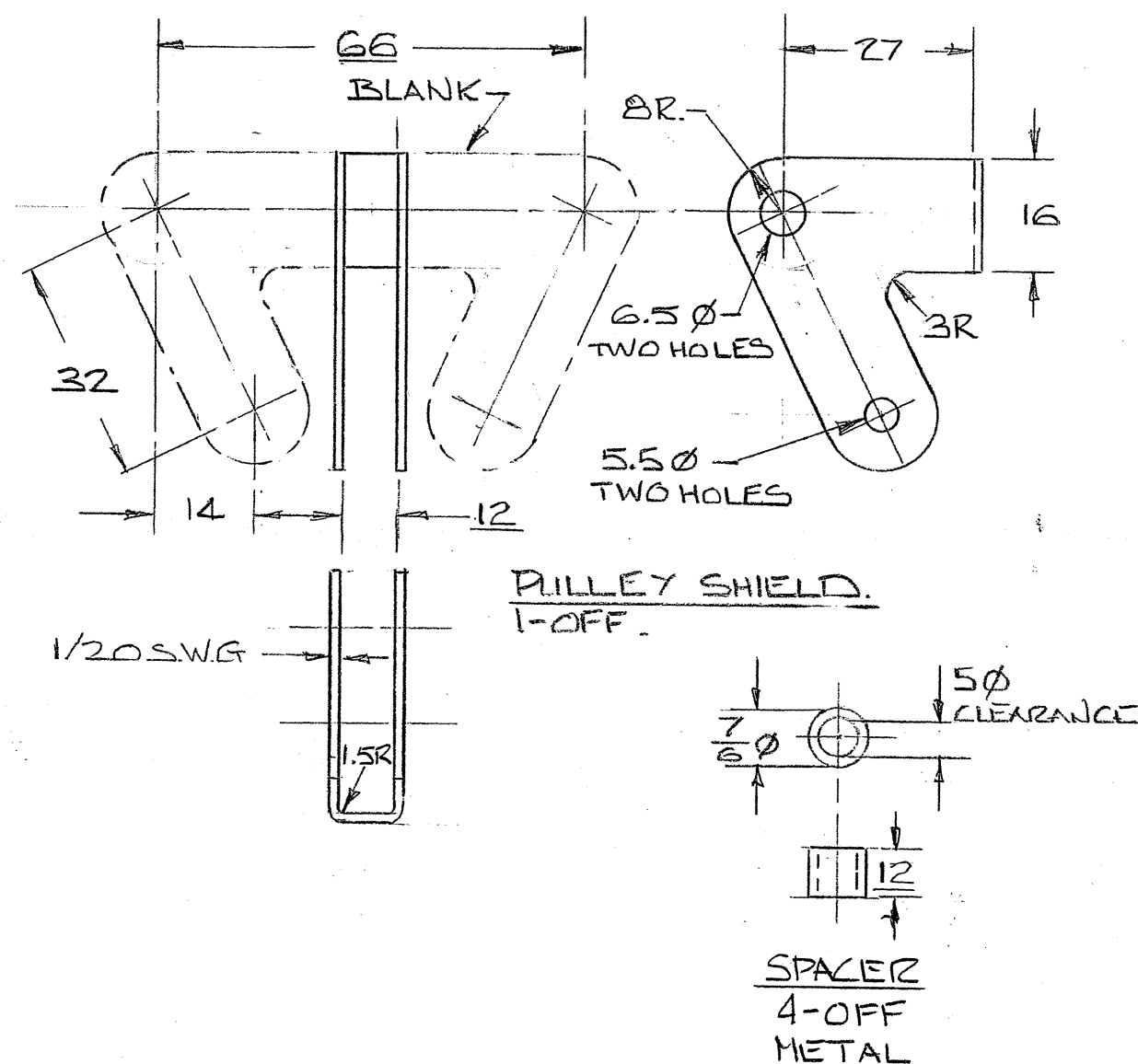
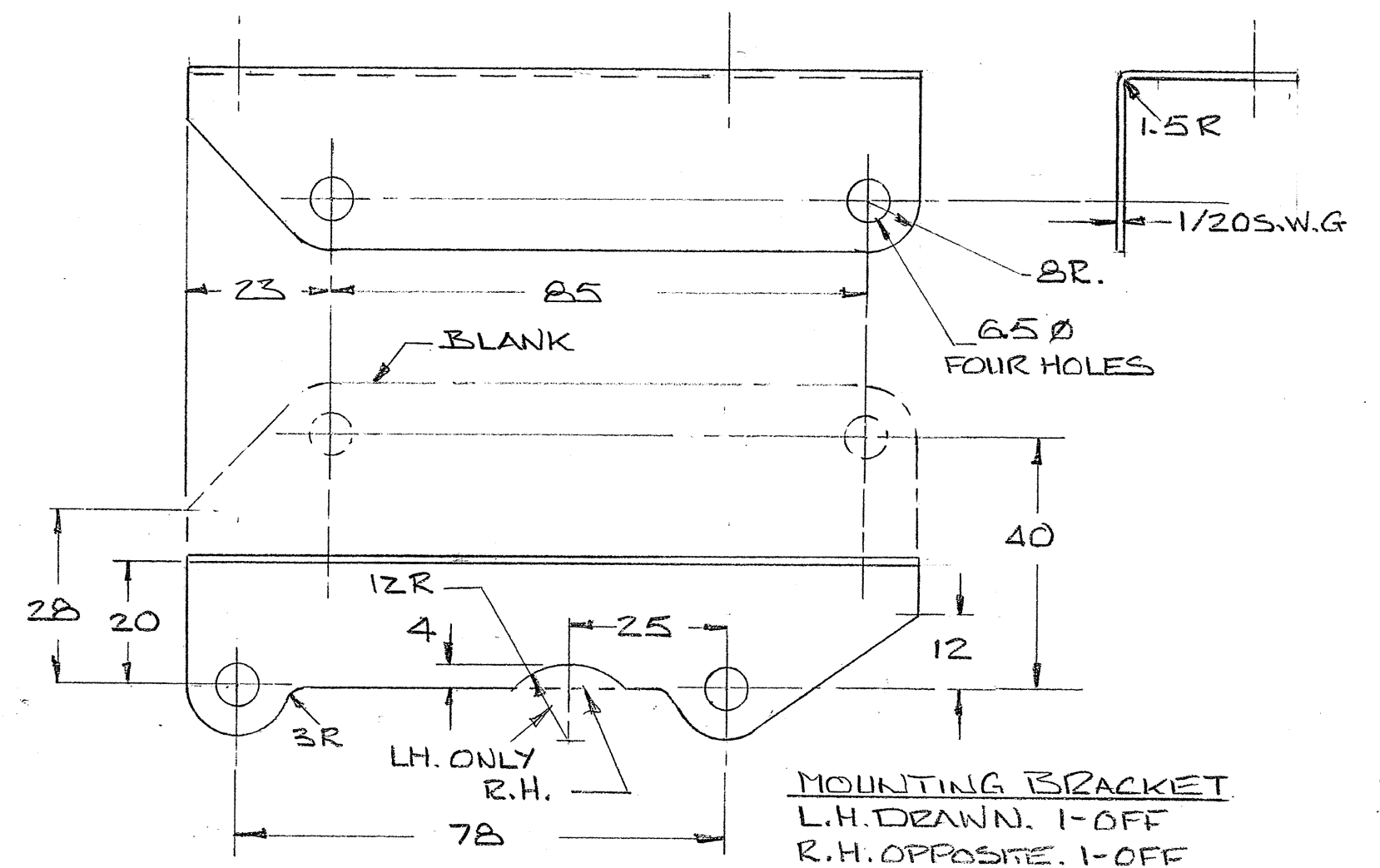
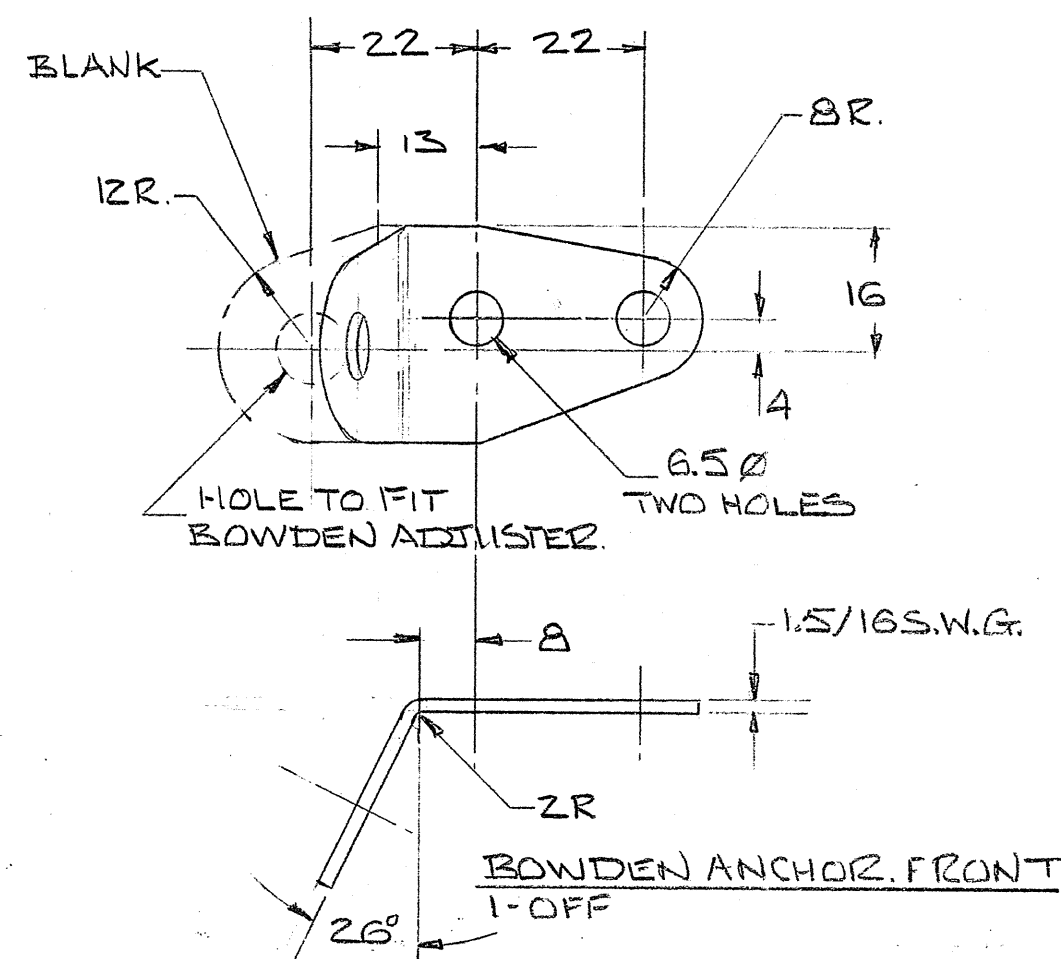
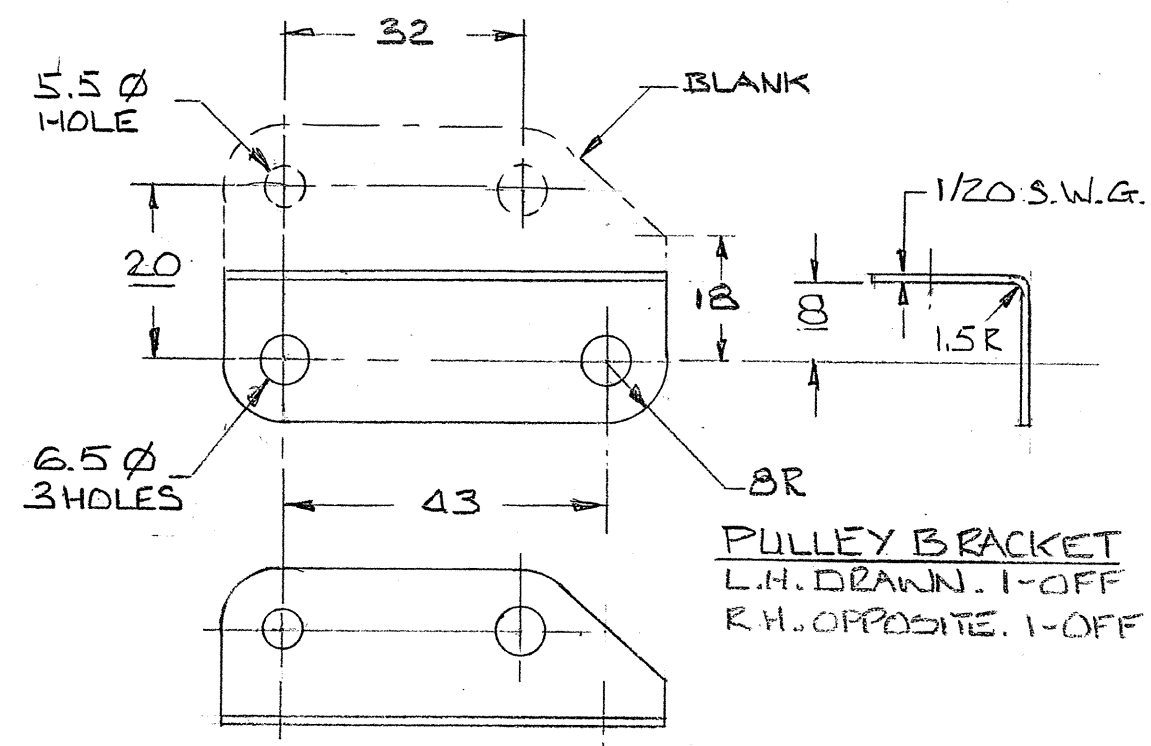


CORNER BLOCK 20x20 TO DEPTH OF BEAM

SUGGESTED METHOD FOR INSTALLATION OF MOUNTING BEAM.
BOLT OUTER PLATE IN POSITION ON FRAME 2.
POSITION MOUNTING BEAM AND TAIL-BLOCK WITH M6 AND M8 BOLTS PASSING THROUGH PLATE AND BEAM, ENSURE BEAM MAKES GOOD CONTACT WITH FLOOR.
FABRICATE BLOCK 'C' WHICH SHOULD BE A SNUG FIT IN APERTURE BETWEEN FRAME 3, TAIL BLOCK, FLOOR AND REAR END OF MOUNTING BEAM.
REMOVE PAINT FROM FRAME SURFACES WHERE GLUED JOINTS WILL BE MADE.
GLUE IN PLACE ALL COMPONENTS, AGAIN WITH M6 NUTS, BOLTS & WASHERS.
MAINTAINING OUTER PLATE IN CLOSE CONTACT WITH BEAM.
FROM OUTSIDE FLOOR APPLY GLUING PRESSURE WITH NO. 6 x 3/4" R. HEAD BRASS OR STAINLESS STEEL SCREWS. PLACE PRESSURE STRIP OR WASHERS UNDER SCREW HEADS TO SPREAD LOAD. WHEN GLUE HAS CURED REMOVE STRIP/WASHERS AND DRIVE SCREWS FULLY HOME.
APPLY PROTECTIVE FINISH AS REQUIRED.

MATERIAL: AIRCRAFT QUALITY SITKA SPRUCE
OR 'POLISH' PINE. GLI PLY

DR: P.S. 11	DATE: OCT '03
MOUNTING BEAM, FINAL INSTALLATION, INSTRUCTION DRAWING.	
ISSUE: 3, JAN '05	06



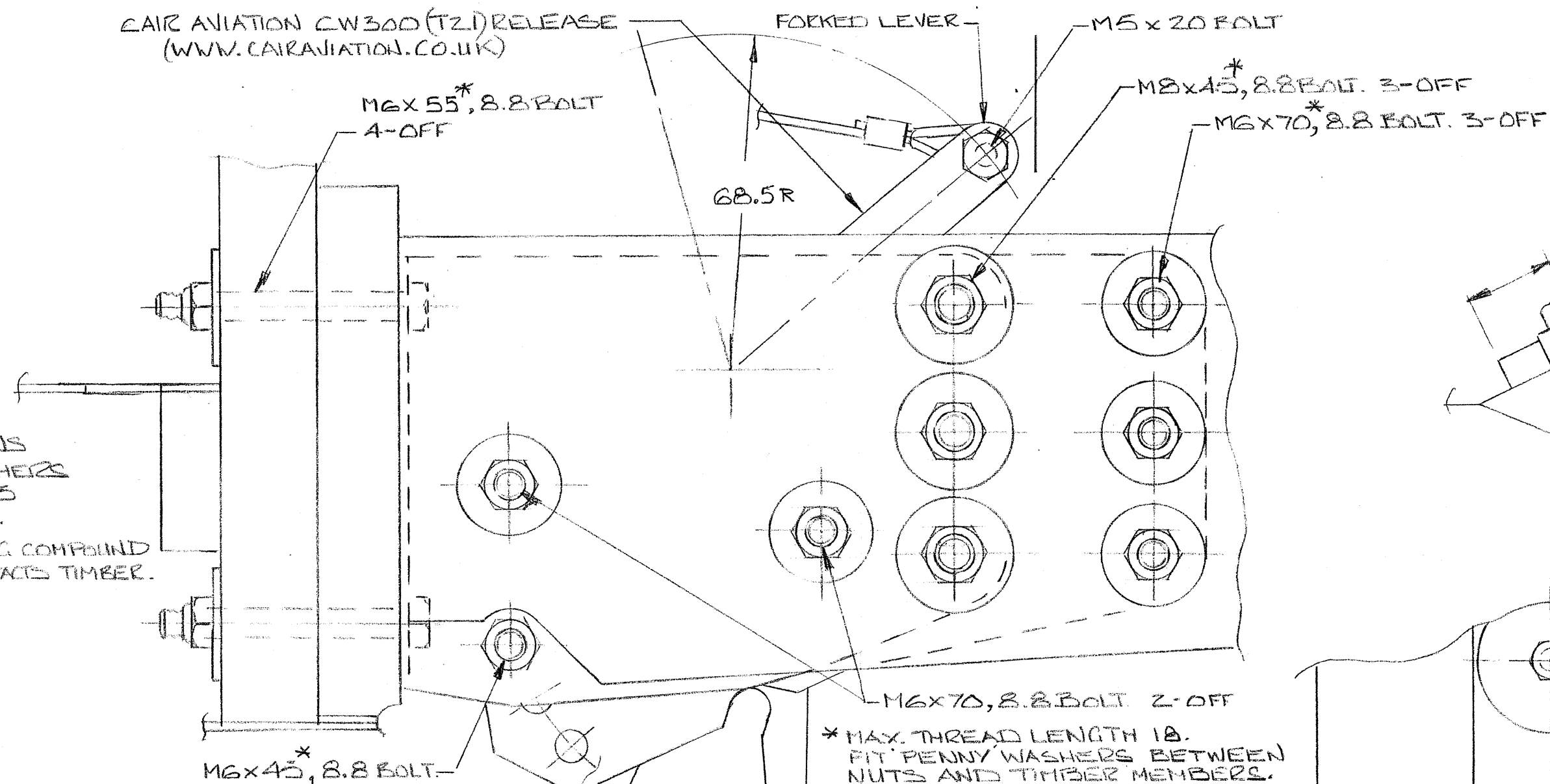
MATERIAL: S515 OR EQUIVALENT. EXCEPT WHERE STATED
APPLY SUITABLE PROTECTIVE FINISH.
DIMENSIONS IN MM. THIRD ANGLE PROJECTION.
SEE ALSO GENERAL NOTE DRG. 08 SHT. 2.

DRAWN: PSU. DATE: MARCH '05	
OPERATING CABLE RUN DETAIL PARTS	
ISSUE 2. MARCH '05	07
ISSUE 3. NOV. '05	

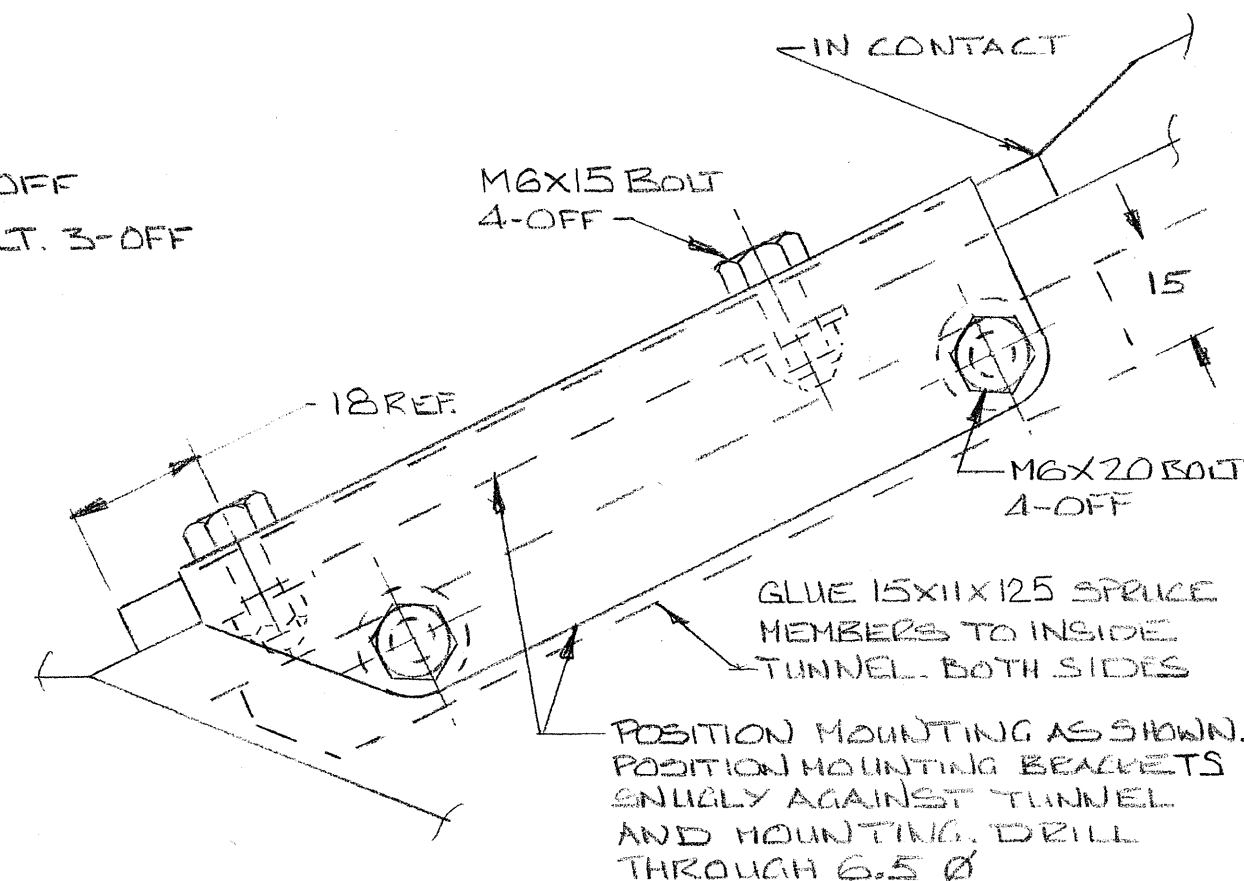
CAIR AVIATION CW300 (TZ) RELEASE
(WWW.CAIRAVIATION.CO.UK)

USE LOCKNUTS IN ALL LOCATIONS
USE LARGE 'PENNY' PLAIN WASHERS
UNDER NUTS AND BOLT HEADS
BEARING ON TIMBER MEMBERS.
APPLY ZINC CHROMATE JOINTING COMPOUND
TO ALL SURFACES WHERE MEAL CONTACTS TIMBER.

DIMENSIONS IN MM EXCEPT,
WHERE STATED.

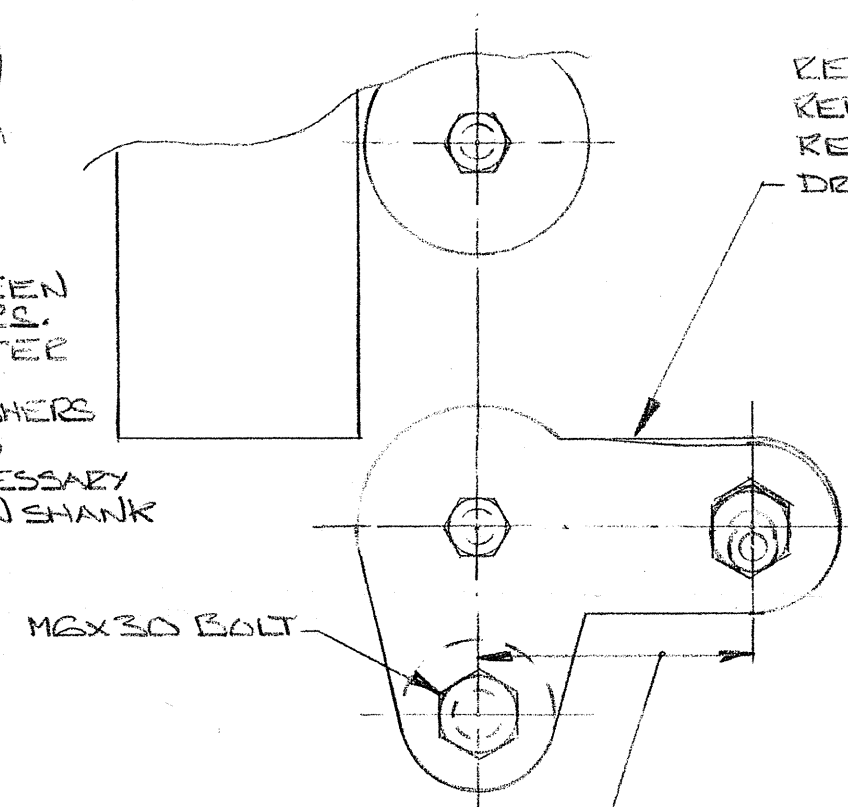


* MAX. THREAD LENGTH 18.
FIT 'PENNY' WASHERS BETWEEN
NUTS AND TIMBER MEMBERS.
DO NOT USE BOLTS SHORTER
THAN SPECIFIED.
USE ADDITIONAL PLAIN WASHERS
UNDER NUTS IF THREADS
'BOTTOM OUT'. THIS IS NECESSARY
TO ENSURE MAX. BOLT PLAIN SHANK
BEARING IN TIMBER.



REMOVE LOWER 'PENNY' WASHER.
REPLACE WITH BOWDEN ANCHOR
REAR. ALIGN ANCHOR AS SHOWN,
DRILL THROUGH FRAME 6.5 Ø

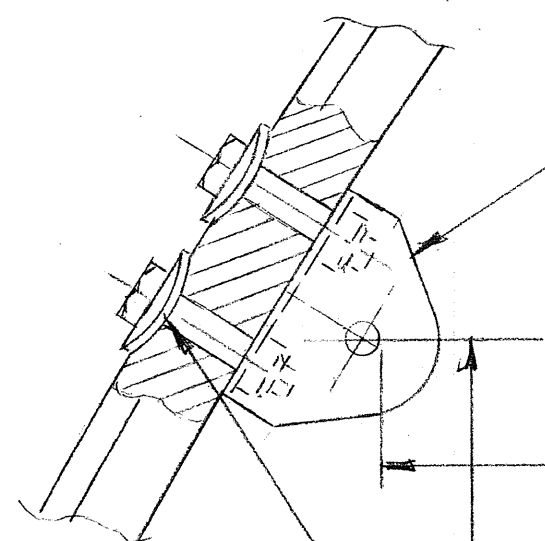
CUT MIN. DIA. HOLES IN FRONT
AND REAR PLY TO ALLOW
PASSAGE OF BOWDEN OUTER



BEFORE MAKING REAR ANCHOR,
CHECK THIS DIMENSION TO
GIVE STRAIGHT CABLE RUN
TO RELEASE.

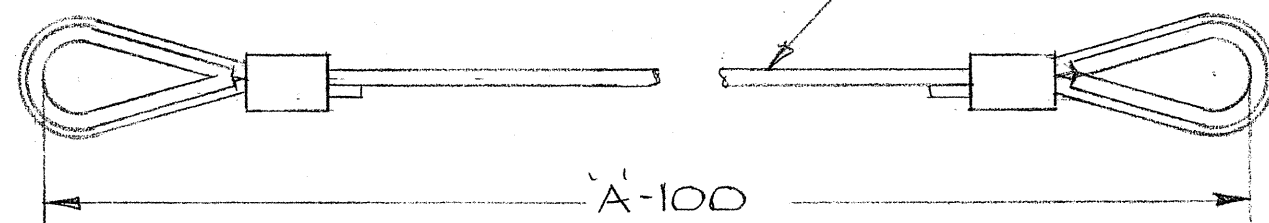
REDUCE ADJUSTER
TO MIN. AFTER SETTING
FRONT & REAR ANCHORS.

POSITION ANCHOR BRACKET
ON CENTRE LINE OF NOSE
BOW AS SHOWN. DRILL
THROUGH 5.5 Ø TWO HOLES



PLACE STRAIGHT EDGE ACROSS REAR
FACE OF FRAME 1 VERTICAL MEMBERS.
ON AIRCRAFT CENTRE LINE MEASURE
HORIZONTAL DISTANCE FROM REAR
OF 4 Ø HOLE IN ANCHOR BRACKET TO
FRONT OF STRAIGHT EDGE. RECORD
THIS FIGURE AS DIMENSION 'A'.

MAKE UP STROP AS SHOWN.
3/32" Ø 7x19 GALVANISED CABLE



COMMERCIAL BOWDEN CABLE OUTER
TO ACCOMMODATE 3/32" Ø INNER CABLE.
RETAIN AS NECESSARY WITH NYLON
TIES. ENSURE CABLE RUN IS SMOOTH.

UPPER FACE OF CENTRAL TUNNEL EXTENDING
FORWARD FROM FRAME 1 TO NOSE. BALLAST
WEIGHT HOUSING OMITTED FOR CLARITY.

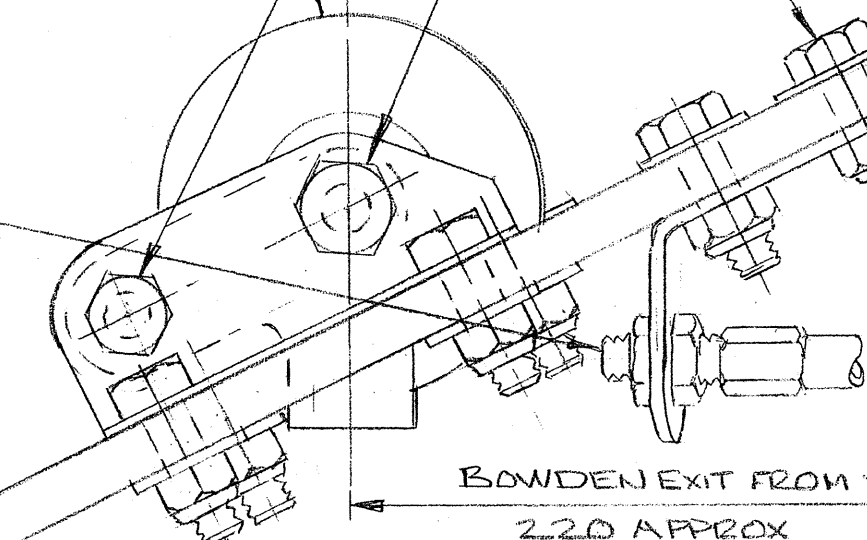
FRAME 1

2" O. DIA. MS24566-3B POSITION ANCHOR BRACKET ON
PULLEY CENTRE LINE OF SPILLER LEVER
ADJUSTMENT. DRILL THROUGH
5.5 Ø TWO HOLES. ENSURE
ADJUSTMENT RETAINING SCREWS
ARE FULLY EFFECTIVE.

M5x20 BOLT
WITH SPACER

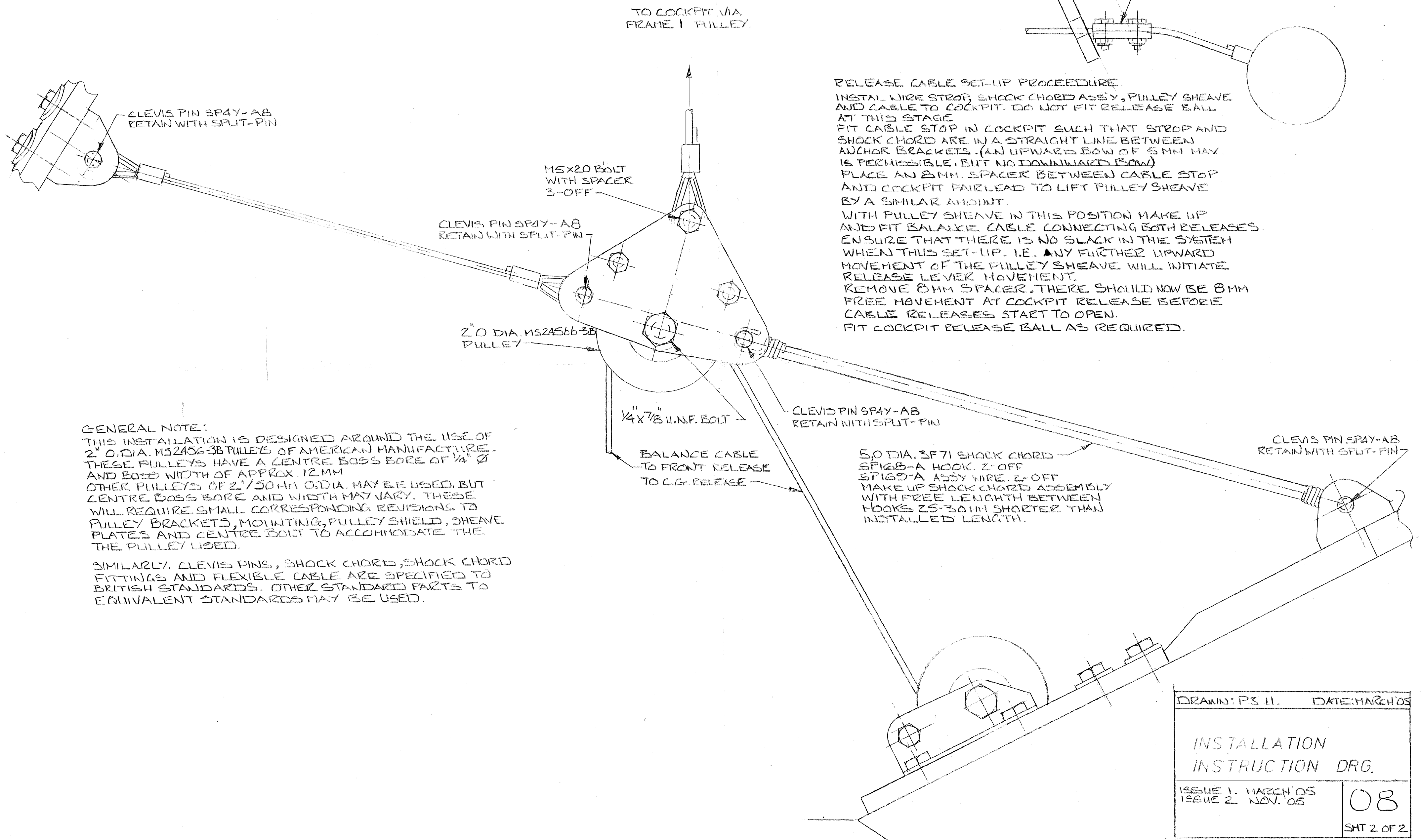
M6x20 BOLTS
6-OFF

GLUE PROTECTIVE TIMBER
PIECE TO SIDE OF TUNNEL



DRAWN: PS.11. DATE: MARCH '05	
INSTALLATION INSTRUCTION DRG	
ISSUE 2. MARCH '05 ISSUE 3. NOV '05	08 SHT 1 OF 2

USE LOCK-NUTS IN ALL LOCATIONS.
ALL CABLES $\frac{3}{16}$ " $\varnothing$ 7x19 GALVANISED.
DIMENSIONS IN MM. EXCEPT WHERE STATED



RELEASE CABLE SET-UP PROCEDURE.
INSTALL WIRE STROP, SHOCK CHORD ASSY, PULLEY SHEAVE AND CABLE TO COCKPIT. DO NOT FIT RELEASE BALL AT THIS STAGE.
FIT CABLE STOP IN COCKPIT SUCH THAT STROP AND SHOCK CHORD ARE IN A STRAIGHT LINE BETWEEN ANCHOR BRACKETS. (AN UPWARD BOW OF 5MM MAY BE PERMISSIBLE, BUT NO DOWNWARD BOW).
PLACE AN 8MM SPACER BETWEEN CABLE STOP AND COCKPIT FAIRLEAD TO LIFT PULLEY SHEAVE BY A SIMILAR AMOUNT.
WITH PULLEY SHEAVE IN THIS POSITION MAKE UP AND FIT BALANCE CABLE CONNECTING BOTH RELEASES. ENSURE THAT THERE IS NO SLACK IN THE SYSTEM WHEN THIS SET-UP. I.E. ANY FURTHER UPWARD MOVEMENT OF THE PULLEY SHEAVE WILL INITIATE RELEASE LEVER MOVEMENT.
REMOVE 8MM SPACER. THERE SHOULD NOW BE 8MM FREE MOVEMENT AT COCKPIT RELEASE BEFORE CABLE RELEASES START TO OPEN.
FIT COCKPIT RELEASE BALL AS REQUIRED.

GENERAL NOTE:
THIS INSTALLATION IS DESIGNED AROUND THE USE OF 2" O.D.IA. MS2456-3B PULLEYS OF AMERICAN MANUFACTURE. THESE PULLEYS HAVE A CENTRE BOSS BORE OF $\frac{1}{4}$ " $\varnothing$ AND BOSS WIDTH OF APPROX. 12MM.
OTHER PULLEYS OF 2" / 50MM O.D.IA. MAY BE USED, BUT CENTRE BOSS BORE AND WIDTH MAY VARY. THESE WILL REQUIRE SMALL CORRESPONDING REVISIONS TO PULLEY BRACKETS, MOUNTING, PULLEY SHIELD, SHEAVE PLATES AND CENTRE BOLT TO ACCOMMODATE THE PULLEY USED.

SIMILARLY, CLEVIS PINS, SHOCK CHORD, SHOCK CHORD FITTINGS AND FLEXIBLE CABLE ARE SPECIFIED TO BRITISH STANDARDS. OTHER STANDARD PARTS TO EQUIVALENT STANDARDS MAY BE USED.

DRAWN: P3 11.		DATE: MARCH '05	
INSTALLATION INSTRUCTION DRG.			
ISSUE 1. MARCH '05		ISSUE 2. NOV. '05	
		08	
		SHT 2 OF 2	