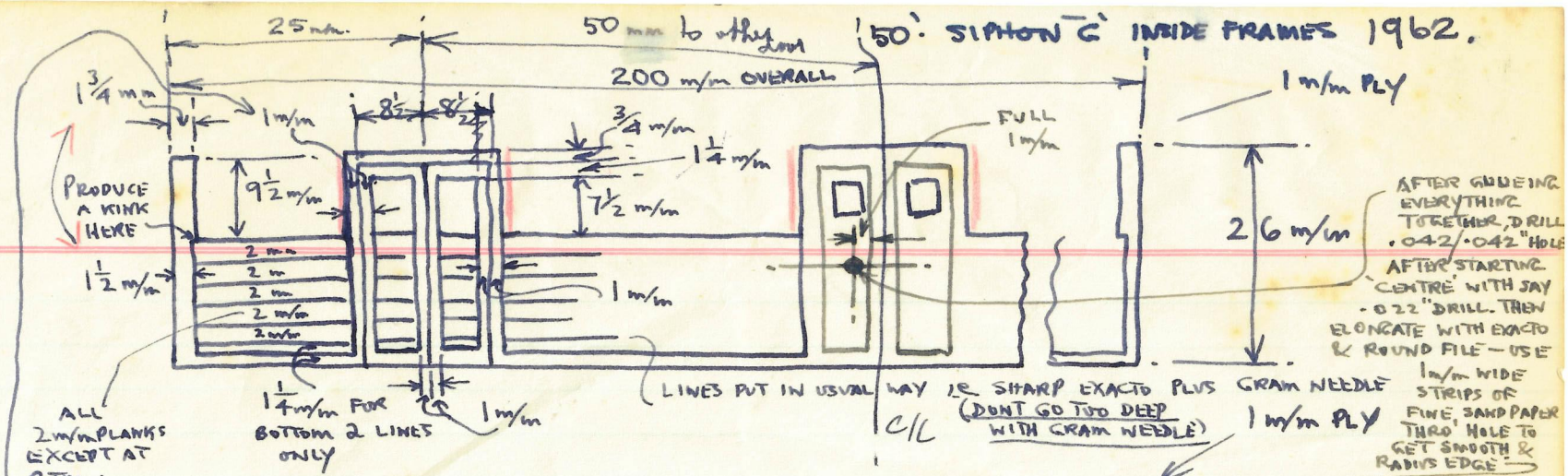
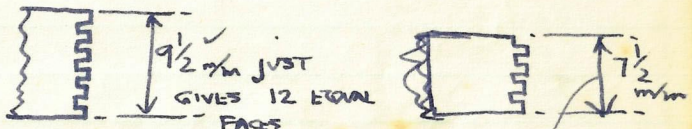
50' SIPHON 'C' INSIDE FRAMES 1962.



ALTO 1 mm QUOTED, IT COULD BE LEFT A SHADE MORE DURING TRIMMING. UP WITH FILE OPERATION TO GIVE A SLIGHT KINK AS PER PROTOTYPE (THIS REMARK ONLY APPLIES TO FACES MARKED | THE KINK AT EACH END IS CATERED FOR IN 1½ V 1¾ m/m

NOTE



LOUVRES

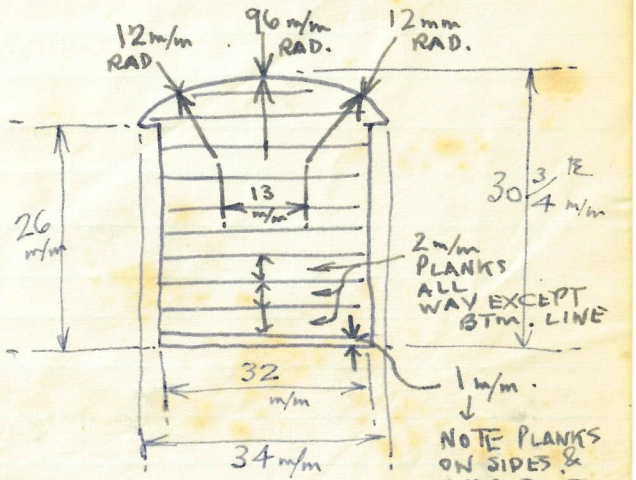
NOTE:- ASSEMBLY

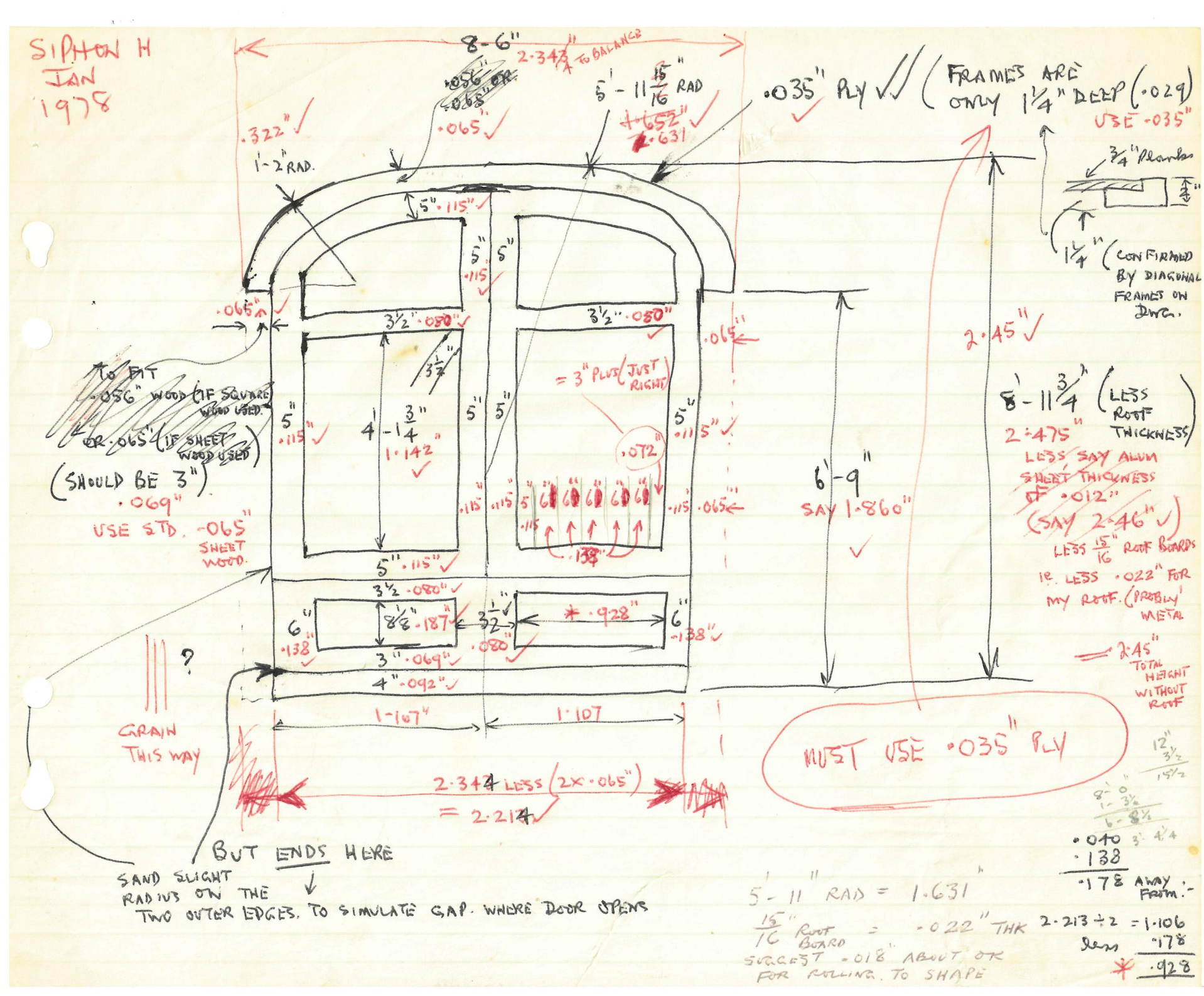
① DOWEL THE 2 SIDES TOGETHER (I.E. 200 & 198 m/m LENGTHS) (5 - POSITIONS EVENLY SPREAD)
USE 78" DRILL 1ST & OPEN OUT 1 SIDE WITH 76" & USE .018" N.S. DOWEL WIRE

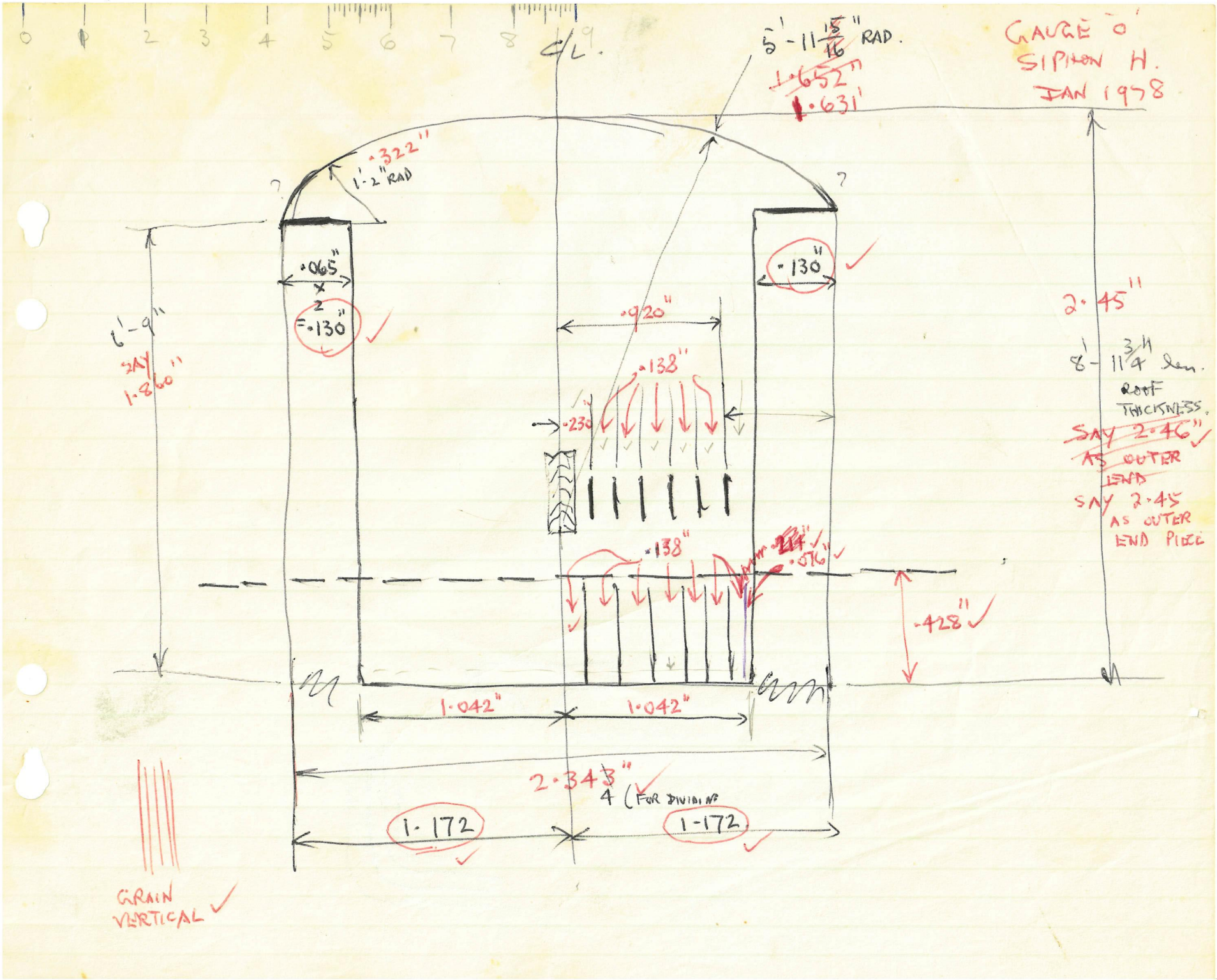
(2) STICK EVERY PIECE TOGETHER IN ONE GO, GLUEING ONLY THE 200 m/m & 198 mm PIECES I.E. SMALL LOUVRES & SPACERS HAVE NO GLUE APPLIED TO THEM BUT JUST PLACED IN POSIT. AS FAST AS POSS. & FINALLY SEVERAL WEIGHTS APPLIED BETWEEN GLASS PLATES

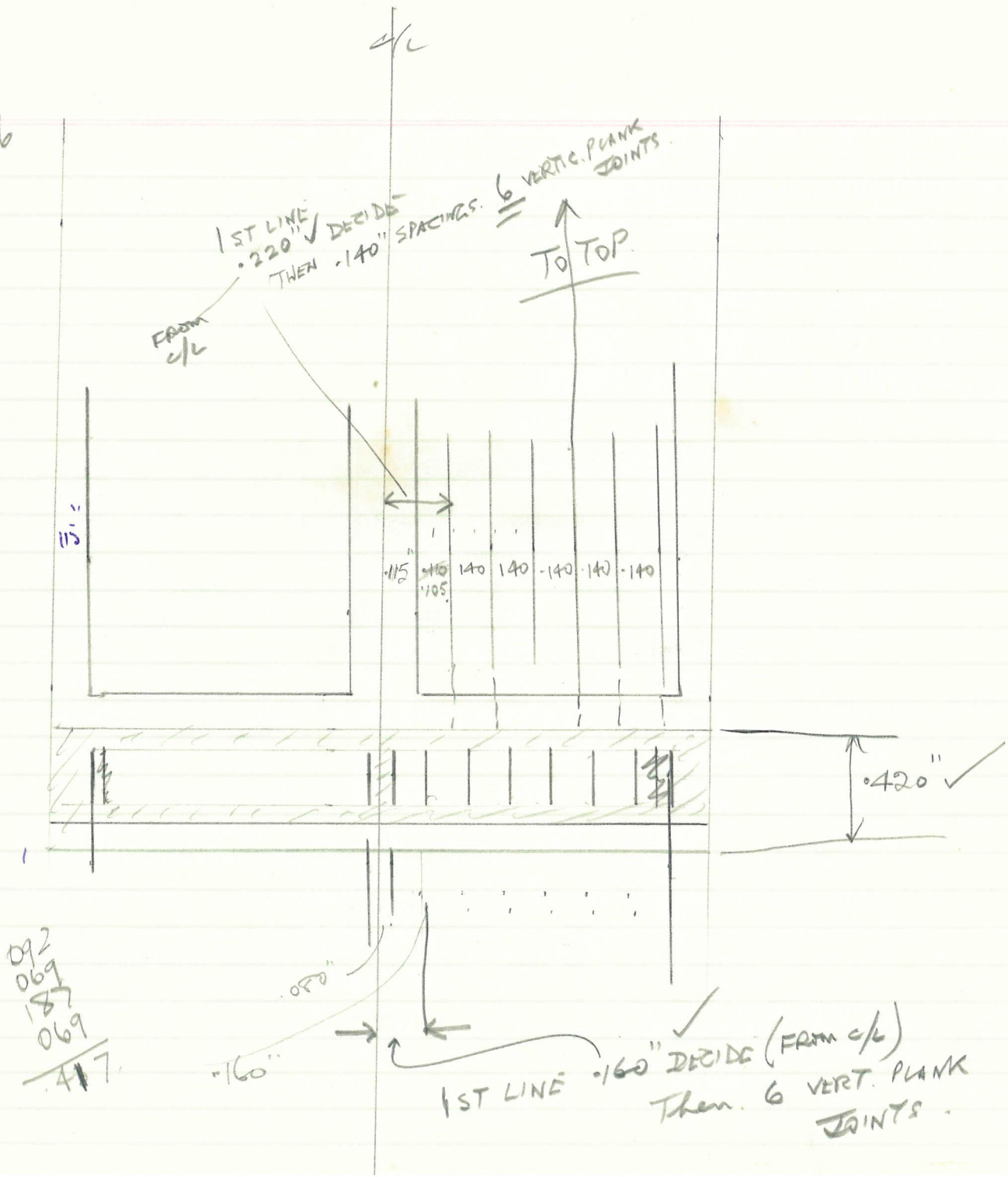
NOTE BEFORE STARTING GLUEING, THE LOUVRES IN THE DOORS ARE POSITIONED (MADE [redacted] PUSH FIT) TO SAVE TIME OF HANDLING & MORE PIECES

③ THE LOUVRES & SPACERS ARE 1ST [redacted] TRIED OUT DRY CUTTING THE SPACERS 1ST (MADE FROM STRIPS OF 1 m/m PLY) CUT IN WIDTHS OF .035" NARROW & .052" WIDE. (WITH THESE PLACED TO GETHER, MEASURE SPACE LEFT FOR LOUVRES & CUT LATTER TO APPROPRIATE WIDTH. MARK EACH PIECE IMMEDIATELY ON BACK WITH INK AND USE NUMBERS OR LETTERS ETC.
↓
BTM

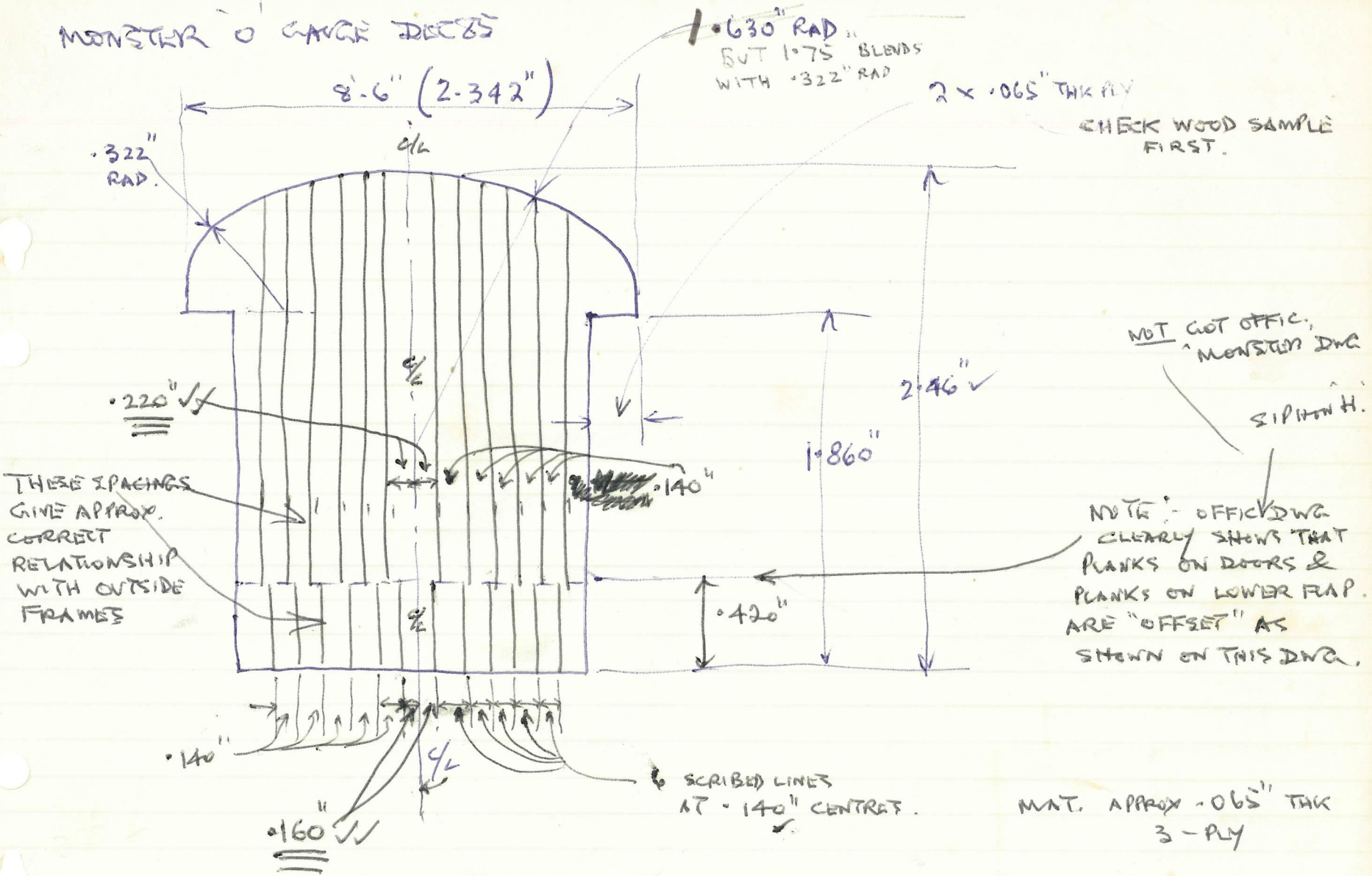



SIPHON H
JAN
1978
8-6"
2·343/4" TO BALANCE
.056" OR .065" OR .065"
5'-11 15/16" RAD
+.652"
.631
.035" PLY
(FRAMES ARE ONLY 1 1/4" DEEP (.029) USE .035"
.322"
1'-2" RAD.
3/4" Planks
1 1/4"
(CONFIRMED BY DIAGONAL FRAMES ON DWG.
5" .115"
5" .115"
5" .115"
.065"
3 1/2" .080"
3 1/2" .080"
.065"
2·45"
TO FIT .056" WOOD (IF SQUARE WOOD USED.
OR .065" (IF SHEET WOOD USED)
(SHOULD BE 3")
.069"
USE STD. .065" SHEET WOOD.
3 1/2"
4'-1 3/4"
1·142
= 3" PLUS (JUST RIGHT)
.072"
5'-11 3/4" (LESS ROOF THICKNESS)
2·475"
LESS SAY ALUM SHEET THICKNESS OF .012"
(SAY 2·46"
LESS 15/16" ROOF BOARDS
ie. LESS .022" FOR MY ROOF. (PROBLY METAL
6'-9"
SAY 1·860"
2·45" TOTAL HEIGHT WITHOUT ROOF
5" .115"
5" .115"
5" .115"
5" .115"
.115"
.115"
.115"
.115"
.065"
6" .138"
6" .138"
3 1/2" .080"
8 1/8" .187"
3 1/2"
* .928"
.080"
3" .069"
4" .092"
1·167"
1·107
GRAIN THIS WAY
?
MUST USE .035" PLY
2·344 LESS (2X .065")
= 2·214
BUT ENDS HERE
SAND SLIGHT RADIUS ON THE TWO OUTER EDGES. TO SIMULATE GAP. WHERE DOOR OPENS
5'-11" RAD = 1·631"
15/16" ROOT BOARD = .022" THK
SUGGEST .018" ABOUT OK FOR ROLLING TO SHAPE
2·213 ÷ 2 = 1·106
less .178
* .928
.010
.138
.178 AWAY FROM :-


GAUGE 0
SIPHON H.
JAN 1958
5'-11 15/16" RAD.
1·652"
1·631'
·322"
1'-2" RAD
·065"
x 2 = ·130"
·130"
·920"
·138"
·230"
·138"
·076"
·428"
6'-9"
SAY 1·860"
2·45"
8'-11 3/4" len.
ROOF THICKNESS.
SAY 2·46"
AS OUTER END
SAY 2·45
AS OUTER END PIECE
1·042"
1·042"
2·343"
4 (FOR DIVIDING
1·172
1·172
GRAIN VERTICAL


1-86
1ST LINE .220" ✓ DECIDE
THEN .140" SPACINGS. 6 VERTIC. PLANK JOINTS
TO TOP
FROM c/L
11'-1"
.115"
.110
.105
140
140
.140
.140
.140
.420" ✓
.050"
.160"
1ST LINE .160" DECIDE (FROM c/L)
Then. 6 VERT. PLANK JOINTS.

MONSTER 'O' GAUGE DEC 85



J Whittaker
DEC 85

1·75
·065
1·685
2·342
·130
2·212
·106

MONSTER 'O' GAUGE
DEC 85

8'-6" (2·342")

·630" RAD

BUT 1·15" BLENDS WITH ·322" RAD

·322" RAD

8'-11 3/4" OV
ie. 3·474
LESS ·610" METAL ROOF
2·46 ✓✓

·065"
·115"
·115"
·115"
·080"
1·142"
·115"
·115"
·115"
·876"
WITH ·065" SIDES
1·860
·115"
·069"
·187"
·417"
·069"
·092"
·080"
·928"
·138"
·138" *

2·46" ✓

SCRIBE DEEP ISH GROOVE HERE

TO GIVE IMPRESSION OF "GAP"

MATERIAL IS,
·035" ✓ APPROX
3 PLY. ✓

·092
·069
·187
·069
·417

WOOD GRAIN

NOTE:- END FRAMES ARE NOT AS DEEP AS SIDE FRAMES
APPROX. ·035"/·065"
END FRAMES
SIDE FRAMES.

PLYWOOD NORMALLY AVAILABLE IS APPROX. ·035 & ·065 THK.
(GET SAMPLES BEFORE FINISHING, SIDES & ENDS.

MEASURE 3 PLY (·065"?)

* ·138" ie IF PLYWOOD SIDES ARE ·065" THK.

LIGHTLY SAND ("RADIUS") THIS EDGE TO SUGGEST "GAP"

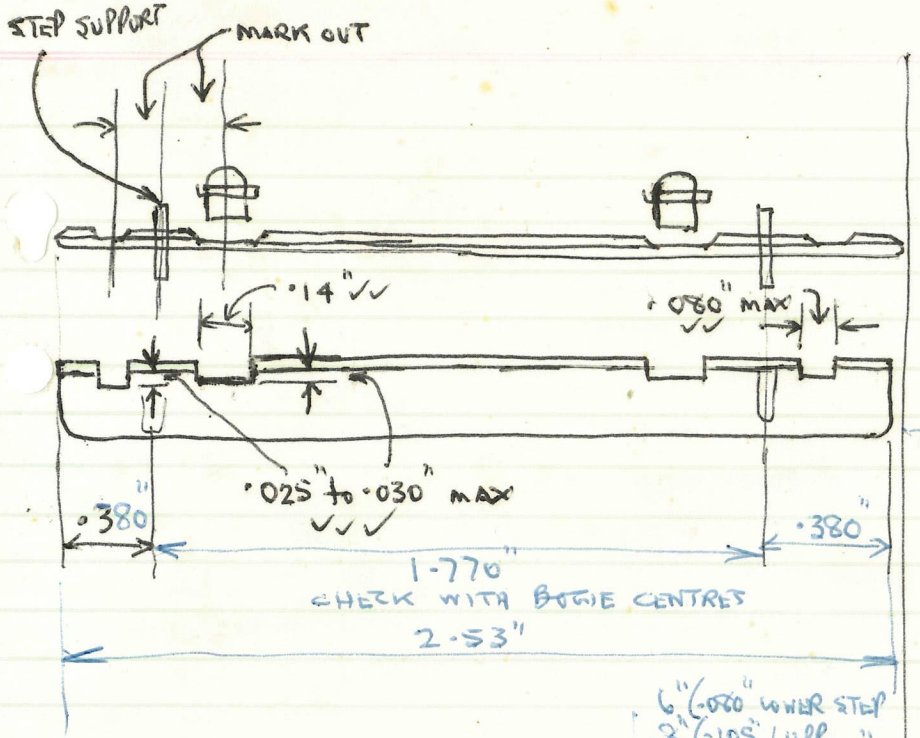
NOTE:- 'END' FRAMES IN "IN VIEW" ARE ONLY 1¼" DEEP (ie. ·030")
(USED ·035" STD 3 PLY — SANDED WILL BE VERY WEAR.

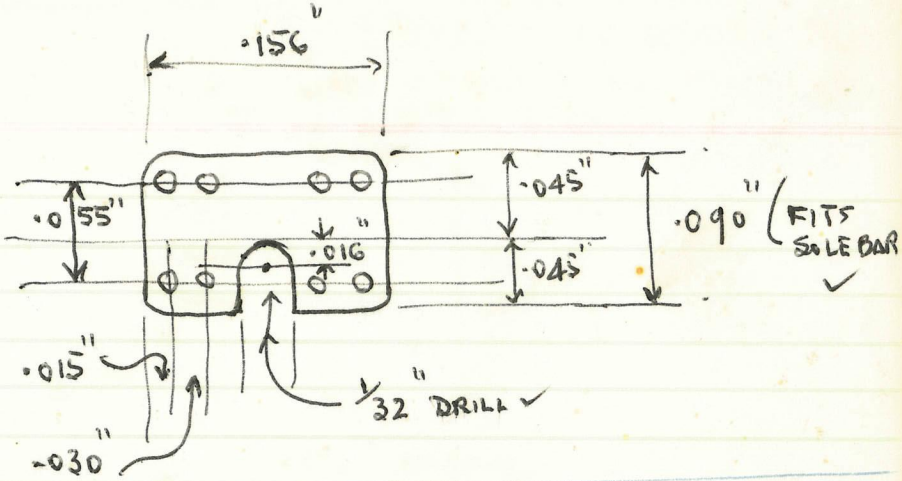
2·46
1·86
·60

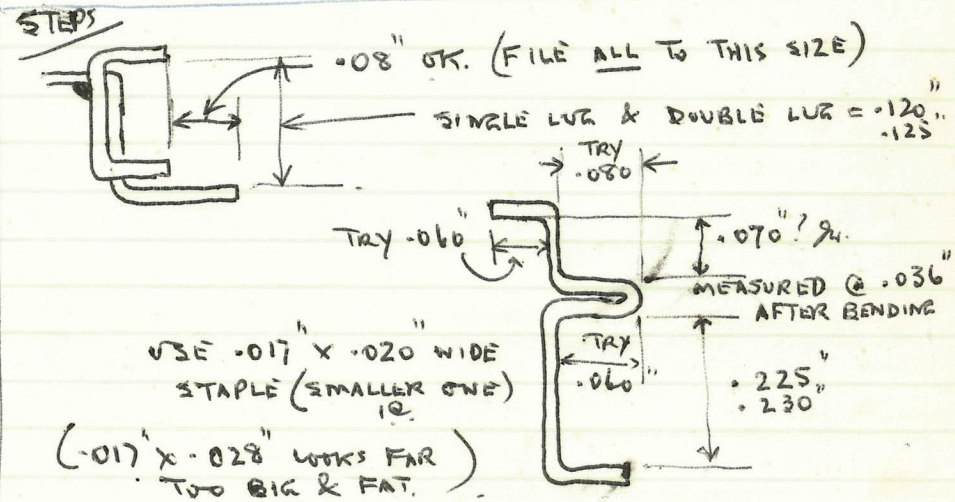
"CORNER" JOINT ARRANGEMENT

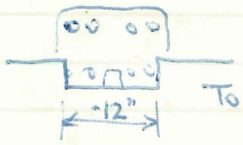
·065"
·114 5/8"
SIDE FRAMES
·115"
PLANKED SIDE
·065"
·065"
·035"
·322
·065
·257
END
END (FRAMED)
END (PLANKED)

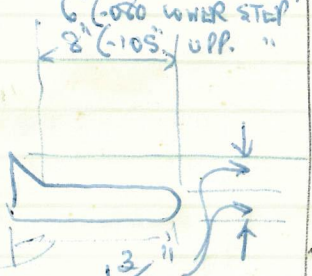
COMPONENTS FOR 4" COACH RAKE XMAS. 1970





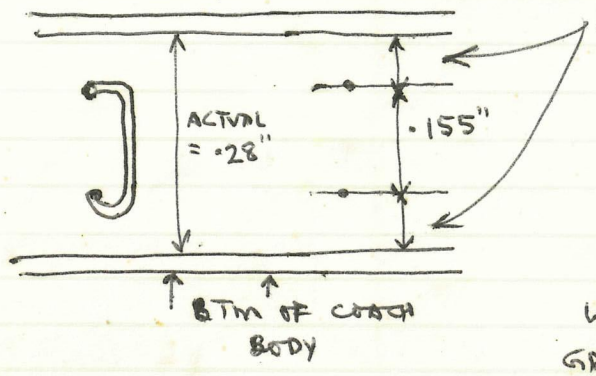






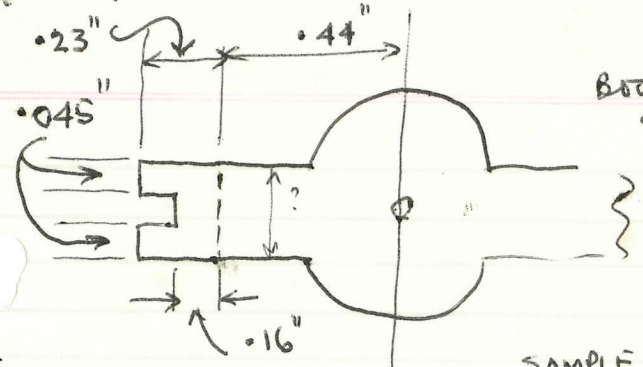
SAY ·1" UPPER LOWER } WHICH IS WHAT I MADE THEM
SAY ·125" LOWER UPPER }
BUT MIGHT LOOK TOO WIDE? MAKE ·1"?

= ·023" (IE. WOOD SIZE OF ACTUAL SECTION. N.E. WOOD PARTS.



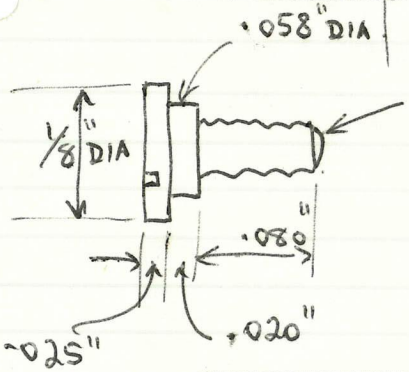
LOWER HANDLE ON GDS. DUTR

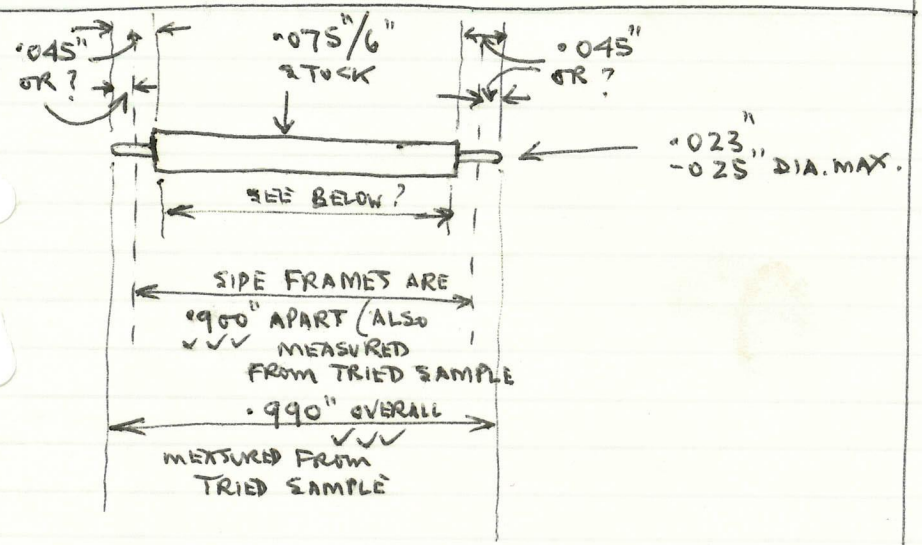
COMPONENTS FOR 4-COACH RAKE XMAS 1970

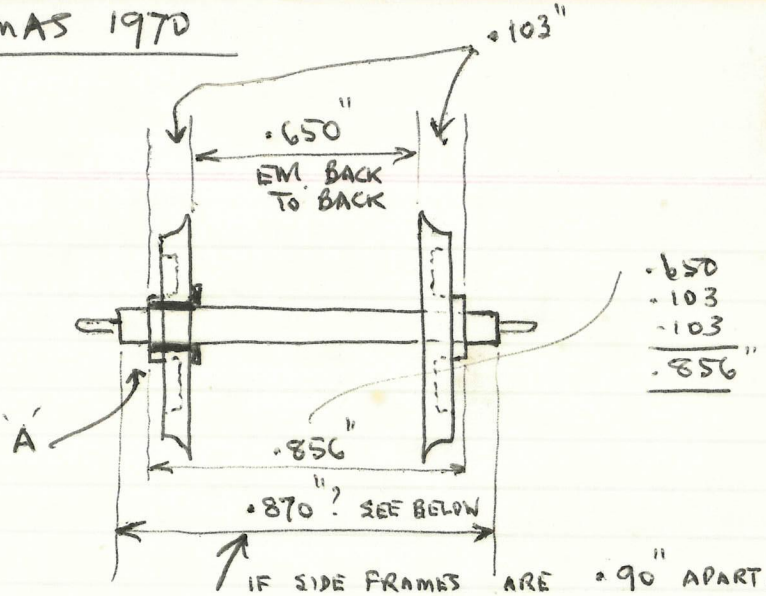


BOGIE PIVOT CROSS PIECE

SAMPLE ✓✓







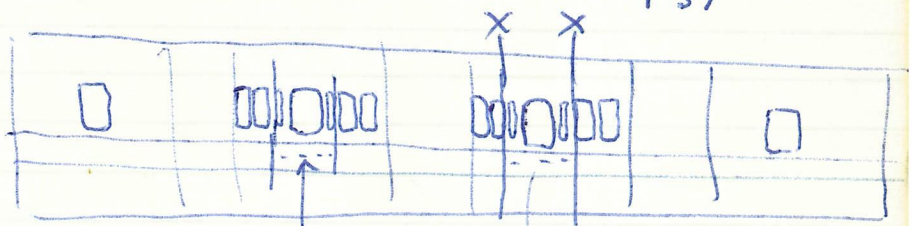
.650
.103
.103
.856"

IF SIDE FRAMES ARE .90" APART:-

SAY .900
.030 SIDE PLAY (TOTAL) TO ALLOW + IN LINE WHEELS TO EVEN OUT
.870

∴ 'A' = $\frac{.870 \text{ less } .856}{2}$ = .007" ?

NEWSPAPER VAN (LOCO MAG. 1901) P 37

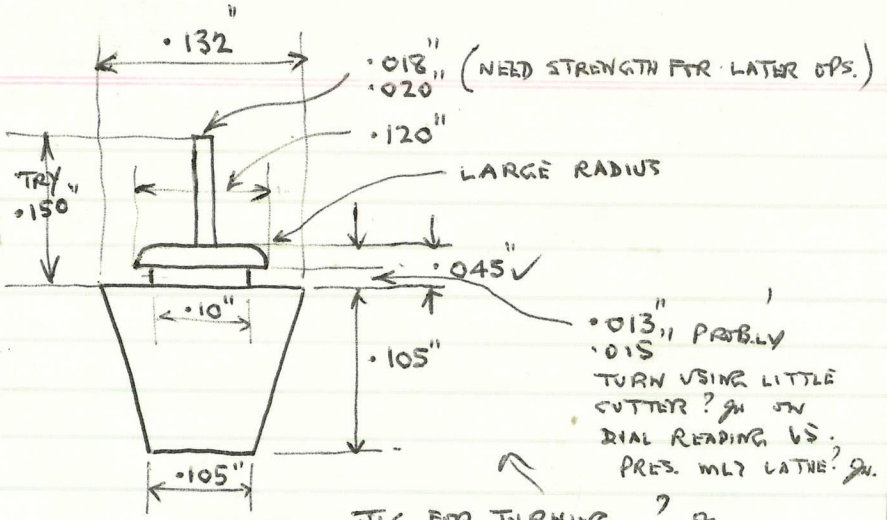


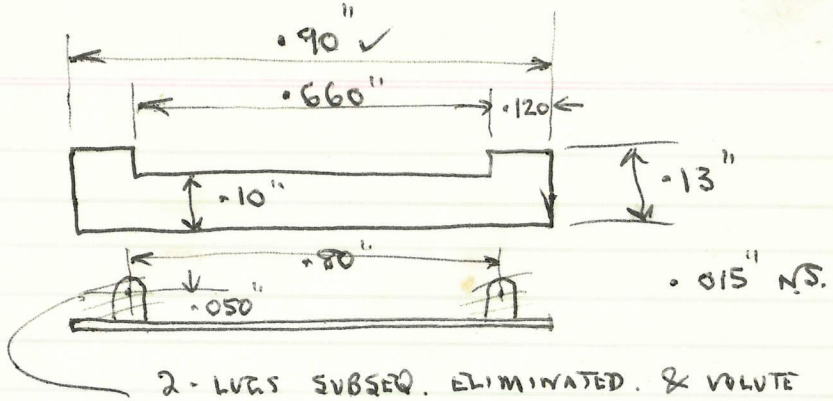
NEWSPAPER (ALL CAPITALS)

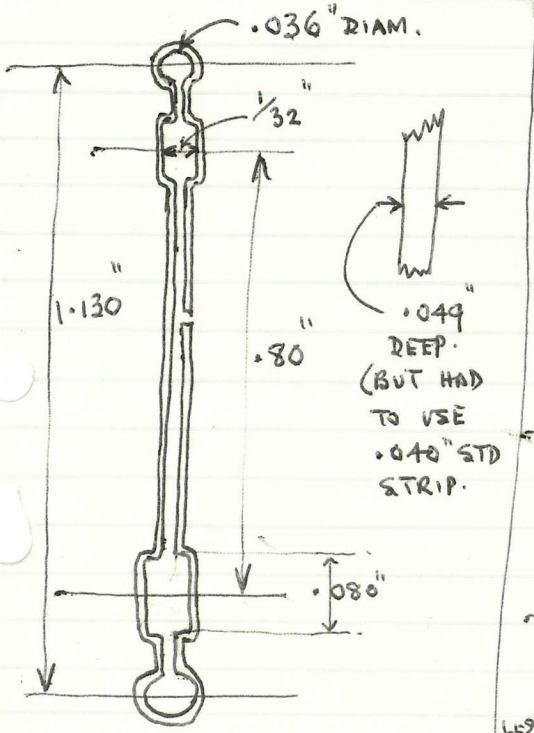
"SORTING VAN" STARTS & FINISHES JUST OUTSIDE MOULDINGS

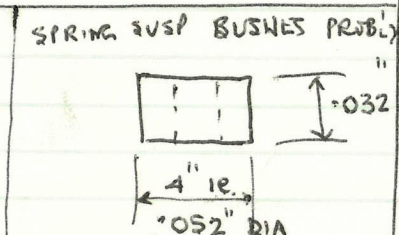
'X'

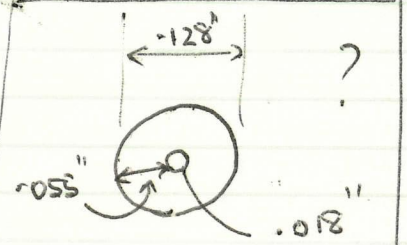
COMPONENTS FOR 4-COACH RAKE XMAS 1970 EXHIB.

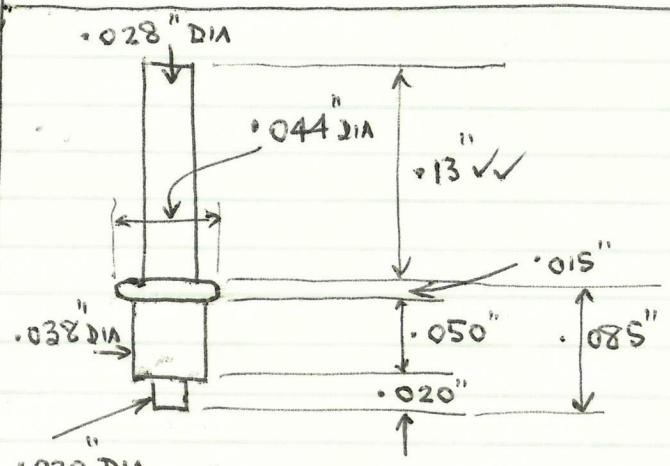








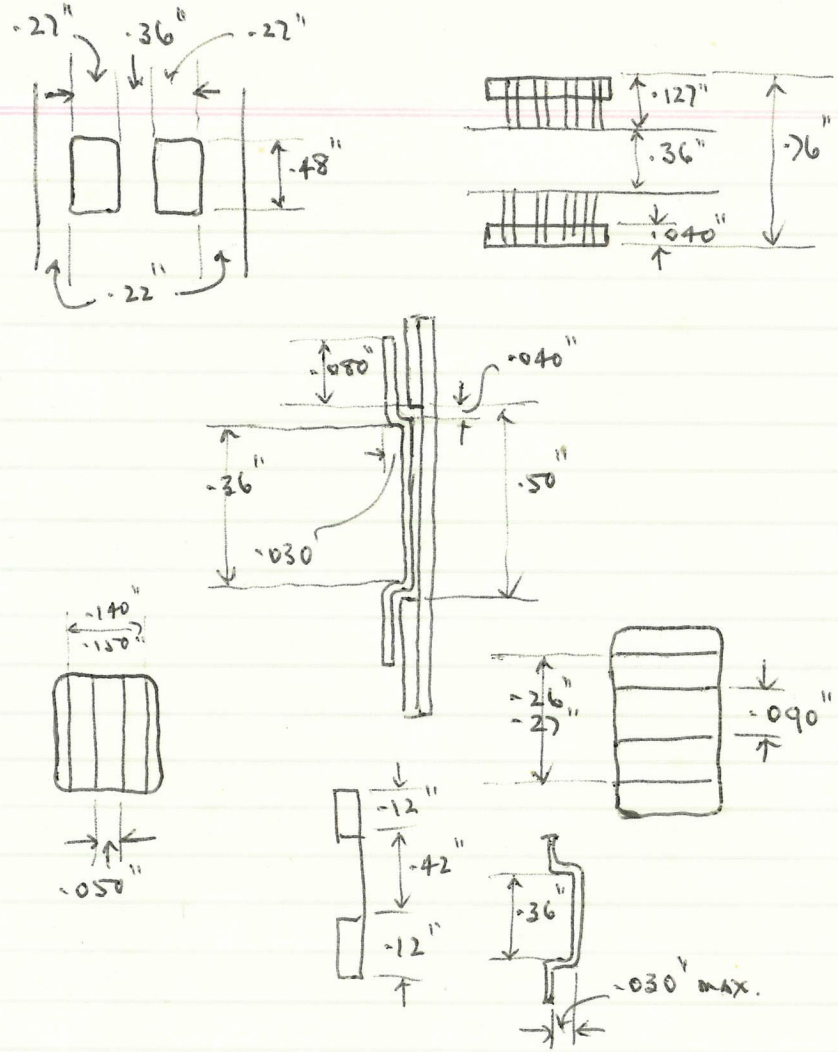




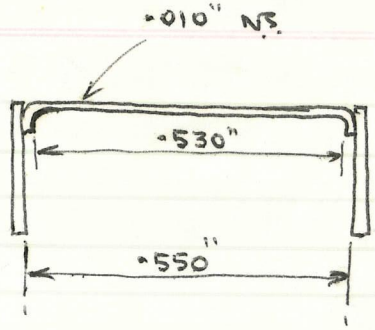
TURN .028" DIA × .13" LONG.
TURN .044" " × APPROX .085" + .015" LONG & SAW OFF (.015") BLADE

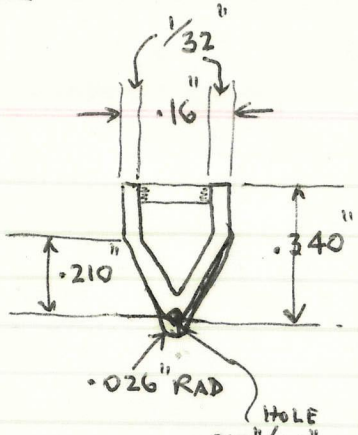
CHUCK IN SPECIAL PIN CHUCK & :-
TURN .038" DIA × .070" LONG
" .020" DIA × .020" LONG (GUESS).

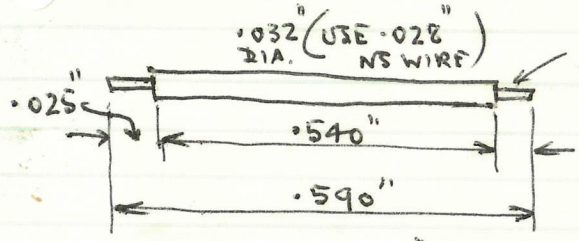
COMPONENTS FOR 4-COACH RAKE XMAS 1970

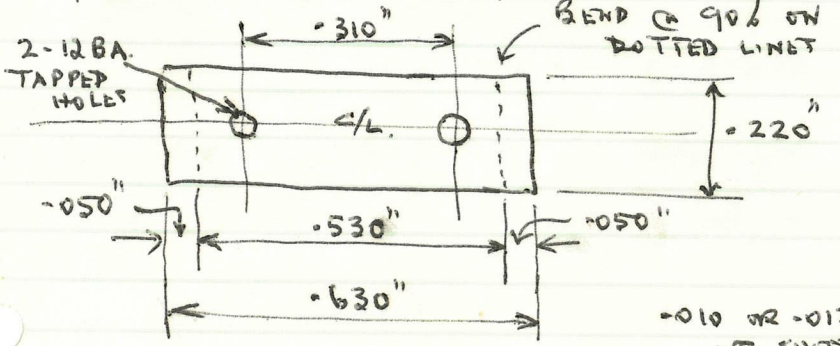


COMPONENTS FOR 4 ~~WHEEL~~ CATCH RAKE XMAS 1970



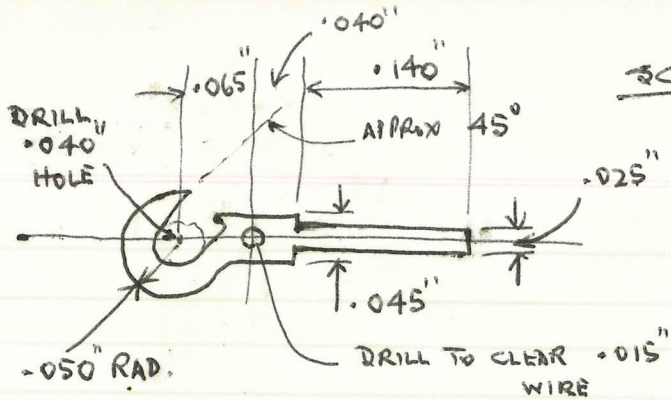


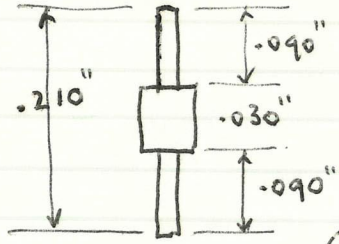




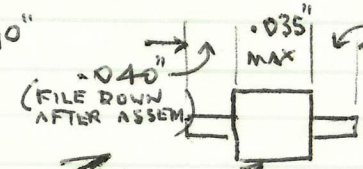
·010 OR ·012" NS. SHEET.

SCREWED COUPLINGS



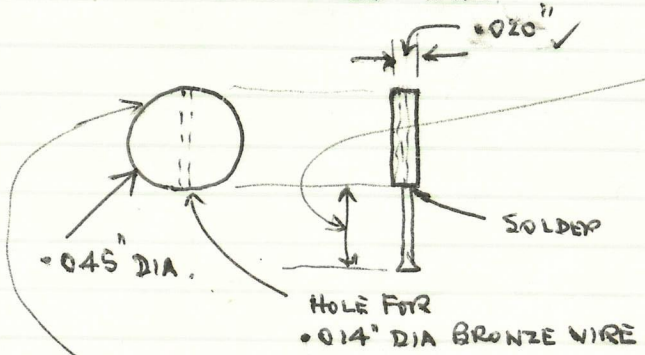


TURN ·028" DIA X ·090" LONG
TURN ·040" DIA X ·030" LONG.
PART OFF ·210" LONG.



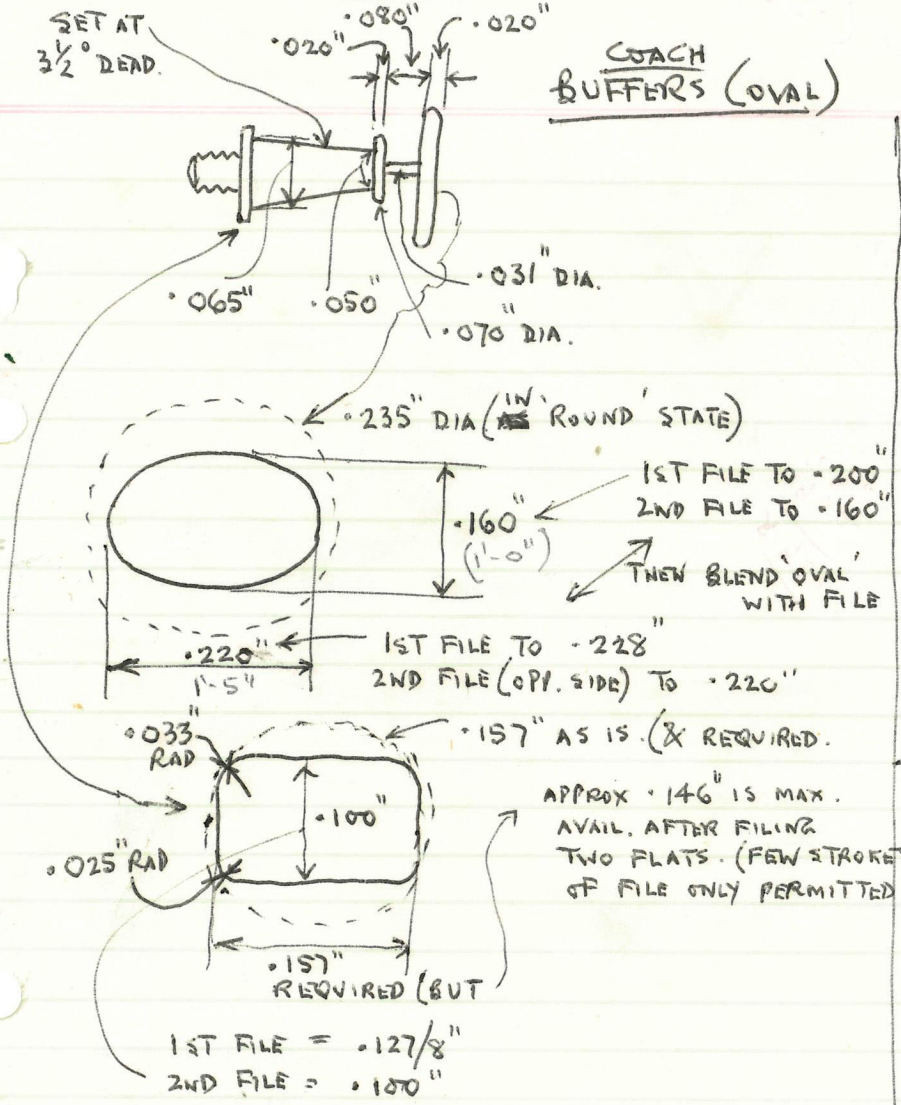
INITIALLY TURN ·050" DIA. (MIN.)
THEN FILE ROUGHLY SQUARE TO ·040" SQUARE

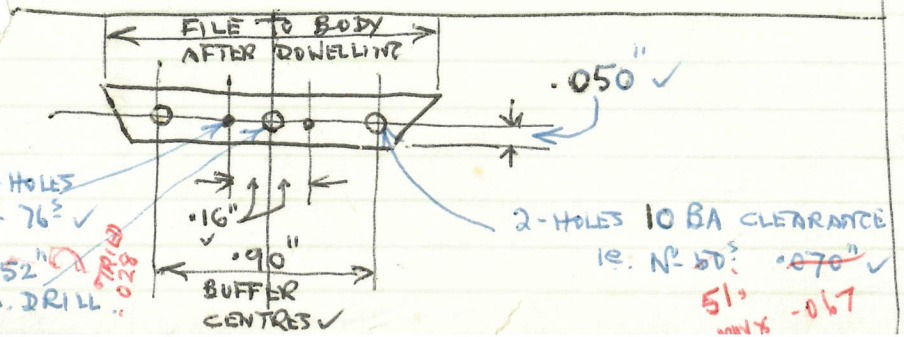
TURN ·020" DIA X ·040" LONG.
TURN ·050" DIA X ·120" TOTAL



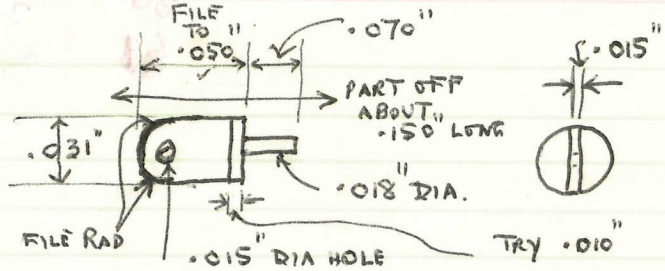
COMPONENTS FOR 4-COACH RAKE XMAS. 1970 ENTRY

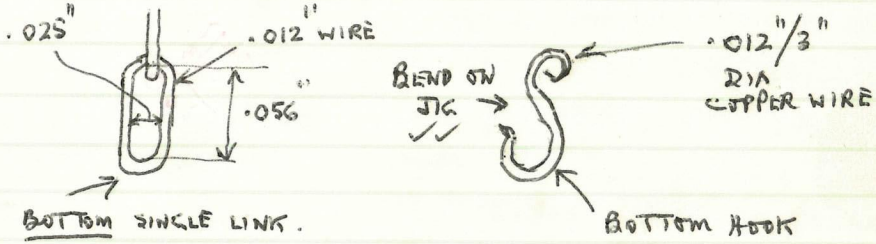
COACH BUFFERS (OVAL)





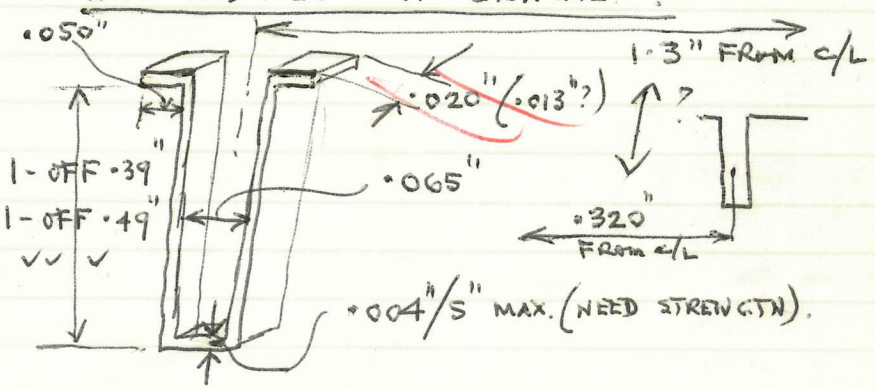
SAFETY CHAINS & LUG





USE STD LINK CHAIN FOR REMAINDER

BKE ROD SUPPORT BRACKETS.

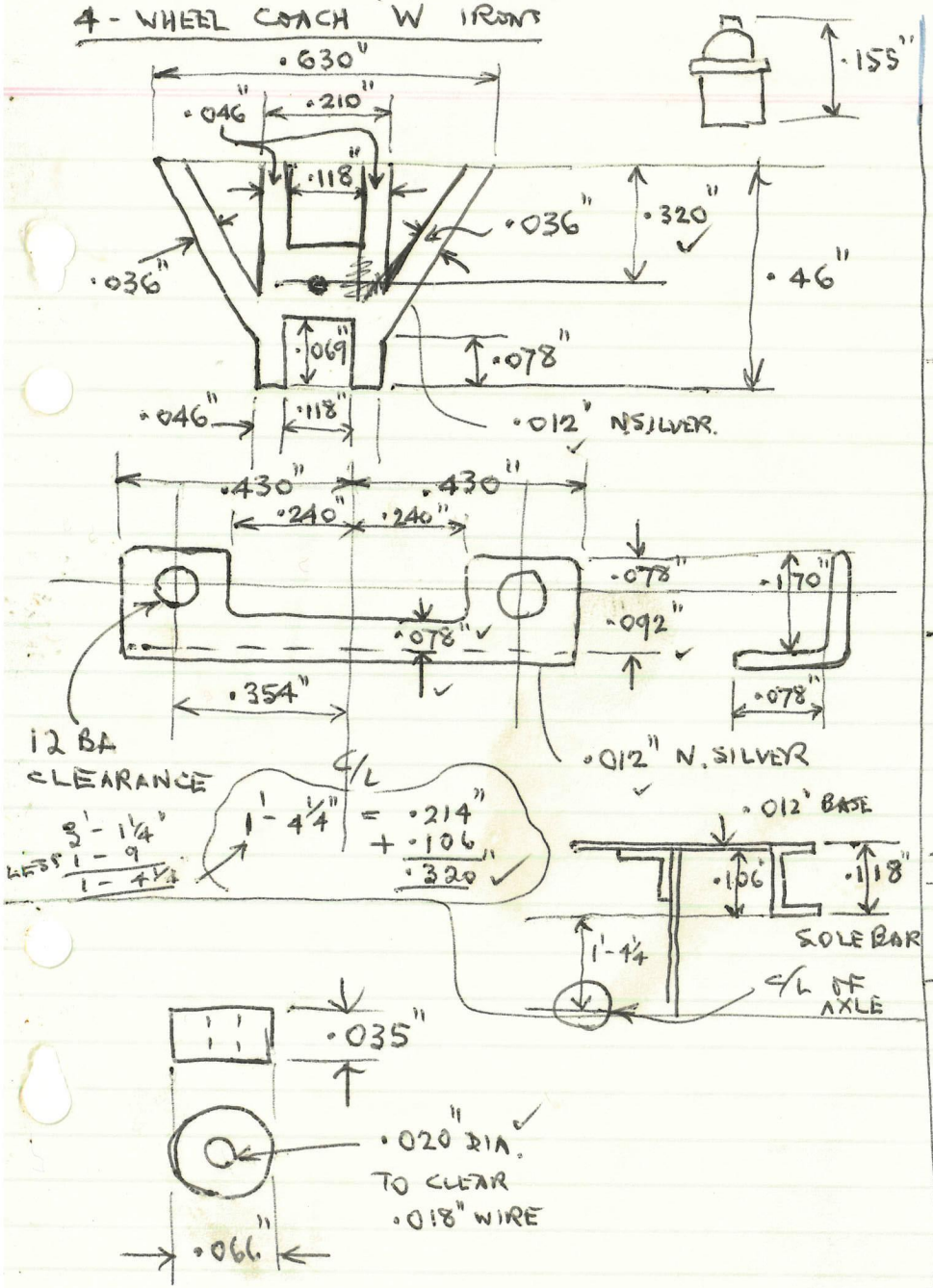


USE ·018" NS WIRE (UN-SOFTENED) & FILE ROUGHLY (SECTIONAL) RECTANGULAR ✓✓

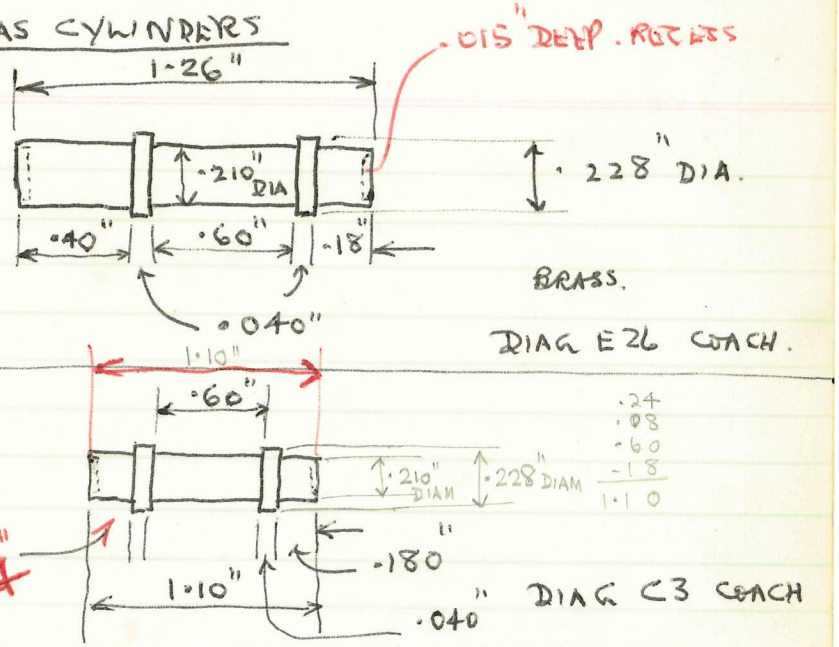
MAY 75

COMPONENTS FOR 4-COACH RAKE, XMAS 1970 ENTRY

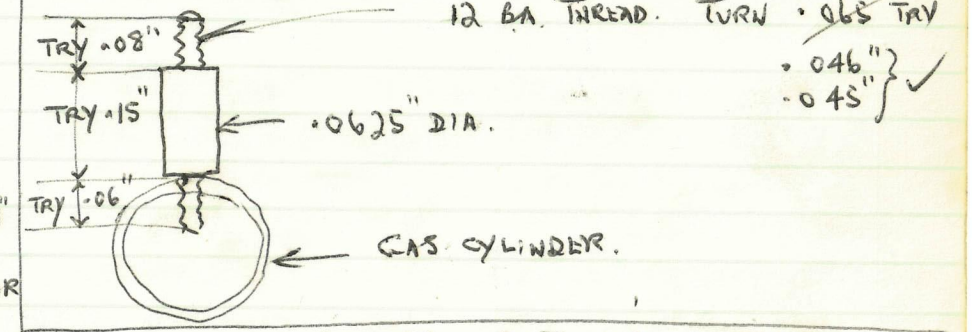
4-WHEEL COACH W IRONS



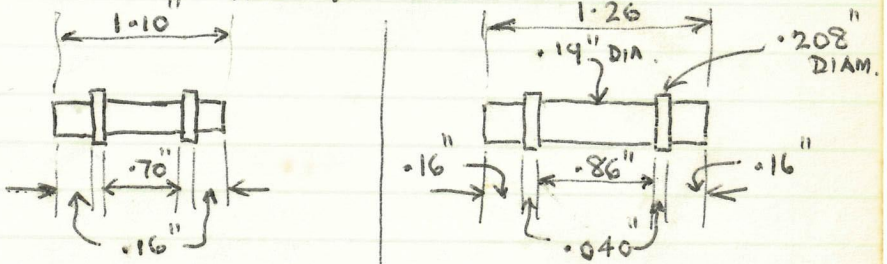
GAS CYLINDERS



GAS. CYL. SECURING STUDS.

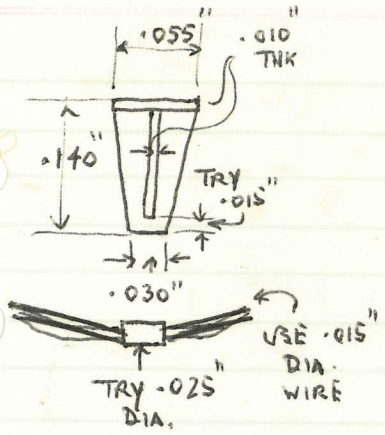


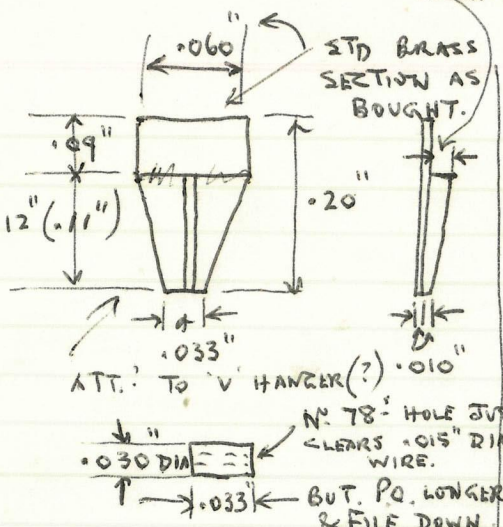
GAS. CYL. CONTINUED



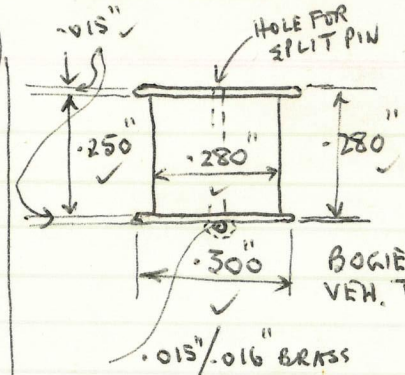
COMPONENTS FOR 4 COACH RAKE – XMAS 1970 ENTRY

TRUSSING DETAILS

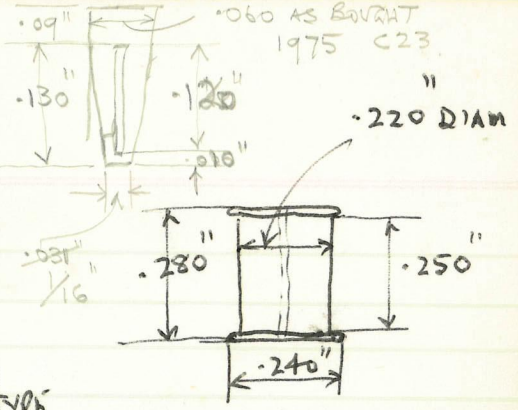




VAC. CYLS

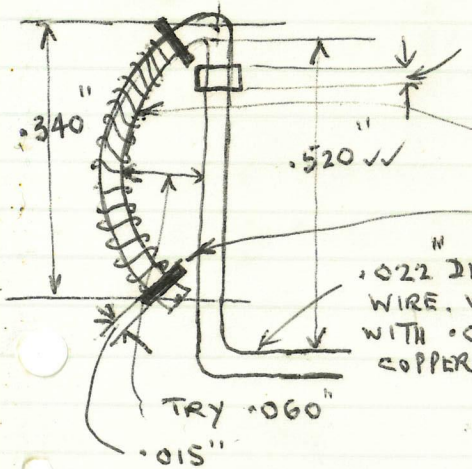


·015"/·016" BRASS CROSS WIRE PUSH WITH BASE



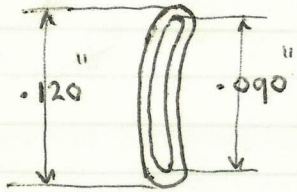
MATL. BRASS ROD

4 - WHEEL COACH TYPE

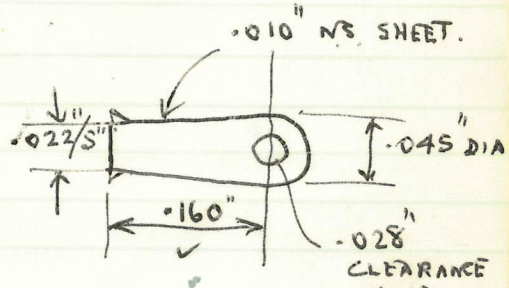


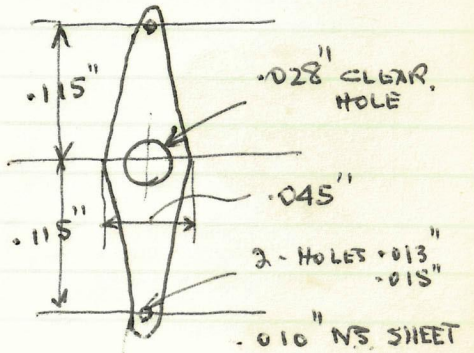
THESE TWO FLANGES = ·009"/·010" THK COPPER WRAPPED ROUND THE N.S. WIRE & SOLDERED IN POSITION, IRRESP-PECTIVE OF WIRE COIL WRAPPING.

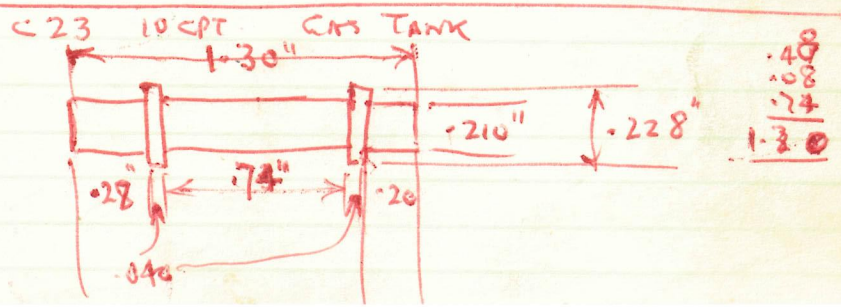
WIRE COIL WRAPPING IS WOUND AWAY FROM JOB (WRAP ROUND 74 DRILL ·0225" & STRETCH SLIGHTLY BEFORE THREADING ON N.S. WIRE.



USE ·015" BRASS WIRE SOFTENED THEN FILE FLAT AFTER SOLDERING TO ARM. (WIND PROFILE ON JIG →





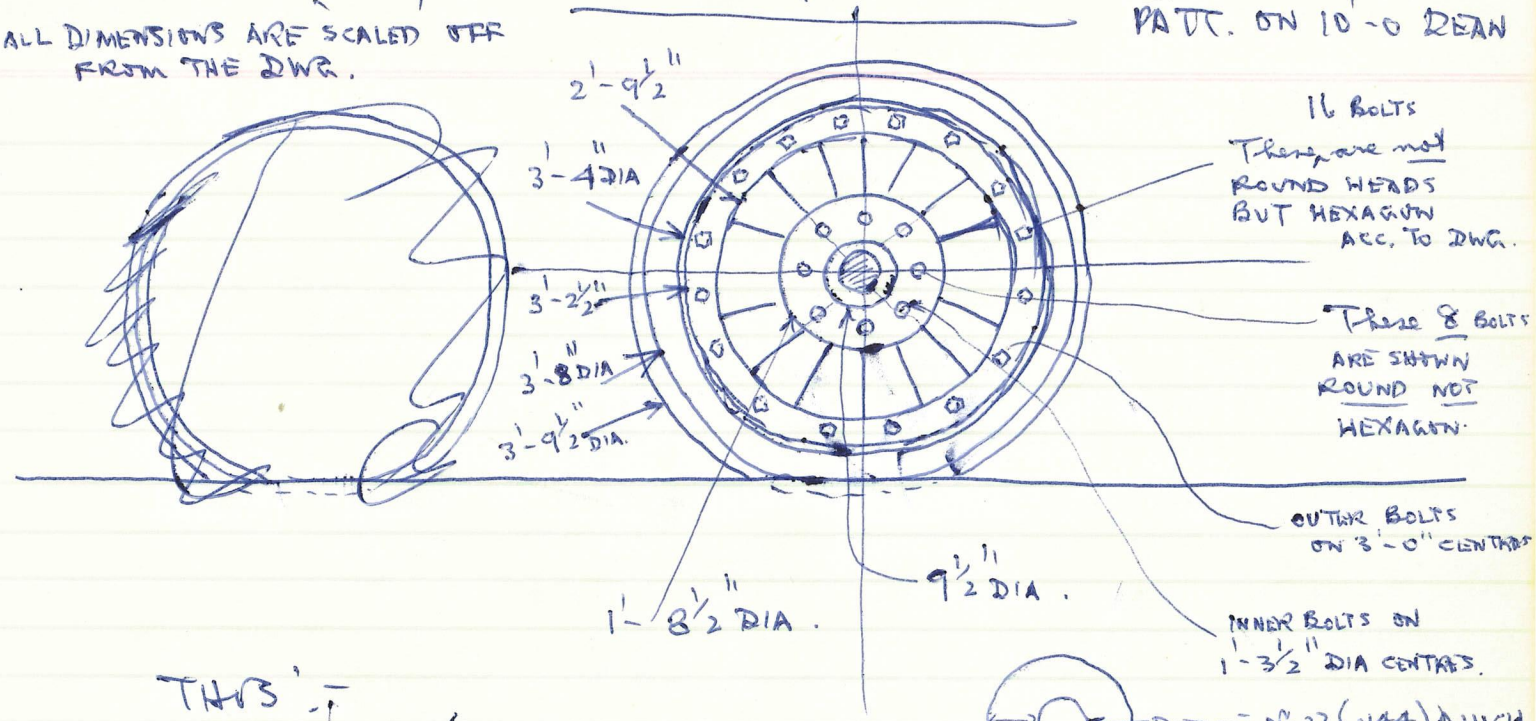


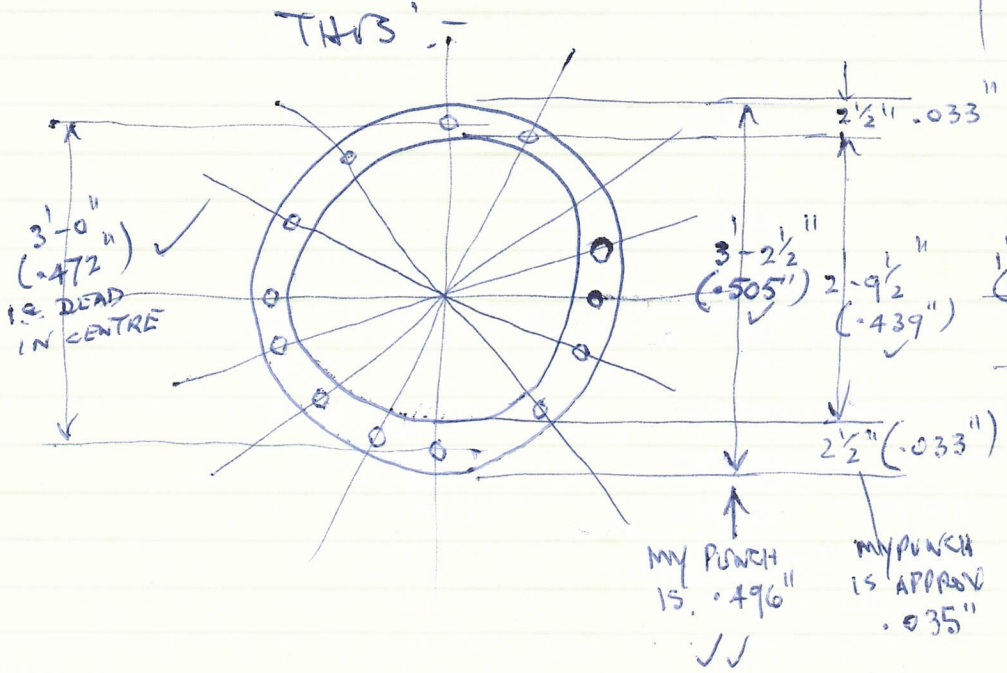
"Copied from RAILWAY CARRIAGE & WAGONS" P129 & P130 Yr? LOANED FROM GUY WILLIAMS OCT 1970

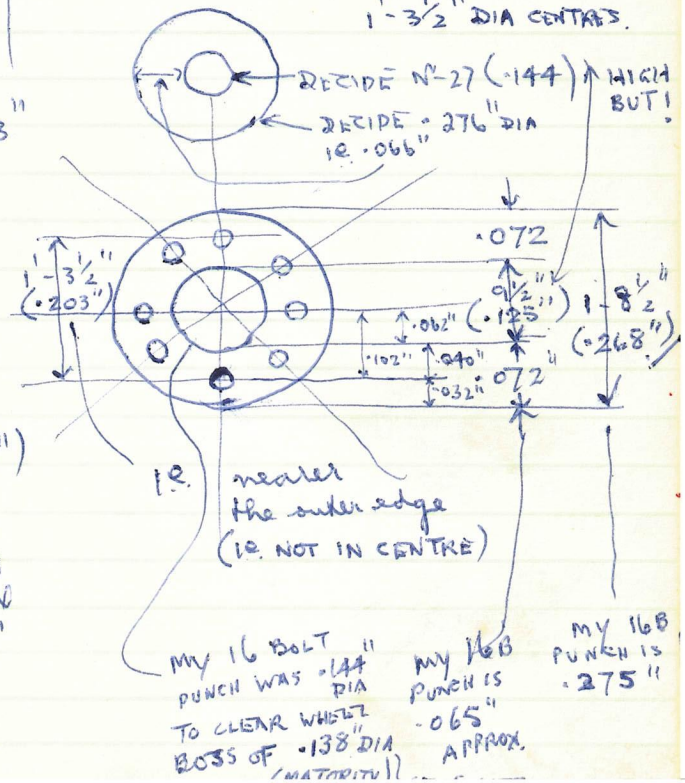
"MANSELL TYPE WHEELS"

GWR PATT. ON 10'-0 DIAM

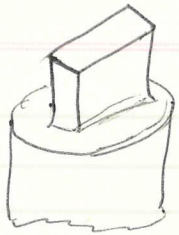
ALL DIMENSIONS ARE SCALED OFF FROM THE DWG.



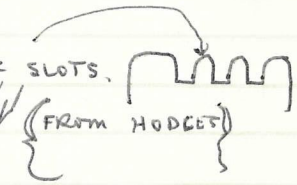




VENTILATOR BONNETS.



① Make punch to dimensions shown elsewhere. (SAW & FILE)
Using .006" SOT coping saw blade sight the position of 3 or 4 slots as required, on one edge, then proceed to sawcut right across, to the depth of the saw blade (App. .020/.025"). If space available, some slots were widened out with .008" blade.

② File radius all round outer edge  and also top edges of slots.  (From Hodgets)
and burnish up with fine emery. (Use special needle file for filing slots & knife file)

Mat. used mainly .004" copper strip, but some used .005"

After punching, flatten out surrounding metal with smooth pliers to try & obtain, a even depth all round and to make a clean flat ~~surface~~ level for filling up with solder.

Cut all round with tinsnips. & file up with smooth file (radius 4 corners). (Incl. file back face flat, if necessary & to get an even depth all round.
Clean up by shaking in Trich-o, before painting.

4 - diff. sizes are required (2 each for 7" eave panel vehicles & 12")

LATER :— After trial with samples on coaches C3 & C4 & D3 & E26 decided, as follows :—

Punches are stamped →

- Punch N° 1 (not normally used) — originally intended for std 7" eave panels, found to be too wide  . But a few stampings from this were used on E26 which inadvertantly had 7" eave panels cut (one side only) rather oversize but just a little less length than the lower 7" punch
- Punch N° 2. (not used) — originally int. for cler. roofs to match the lower 7" eave panels. Again found to be too wide as N°-1  so discarded. It was finally dec. that the slightly diff. lengths of bonnets for 7" eave panels & the appropriate cler. bonnet could be ignored & one std. punch used for upper & lower bonnets, see punch N°-3.
- Punch N°-3. — used for 7" eave panels & approp. upper cler. bonnets  — narrower than N°-1 & 2 & found OK on trial
- Punch N°-4 — used for clerI roofs having a lower 12" eave panel (4-louvres)
- Punch N°-5 — used for 12" eave panels clerI. types (4 louvres)

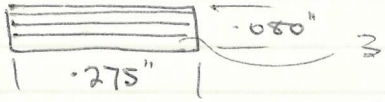
VENTILATOR BONNETS.

STD TYPE FOR 7" EAVE PANEL.

K's sample castings measured .250" x .75"
But look too small when tried on model Coaches C3 & C4

1ST PUNCH WAS .262" LONG x .080" (WHEN TRIED ON COACH, .080" LOOKS OK BUT .262" TOO SHORT

DECIDED ON :-



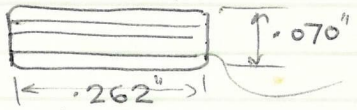
UPPER CLER. VENTS TO MATCH ABOVE. (ie. WITH COACHES WITH 7" EAVE PANEL)

Note :- FROM PHOTOS 19/5 & 77/54, THE DEPTH LOOKS IDENTICAL & WITH SAME No. OF SLOTS (3)
ie. .080"

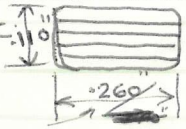
BUT UPPER VENT LENGTH IS SHORTER (& SCALING 77/54, RATIO IS .38" IS TO .34" (CORRECTED TO .35" SAY, AS FURTHER AWAY ON PHOTO

$\therefore$ .275" (ABOVE) $\times \frac{.34}{.38} = .246"$

BUT BY PLACING SAMPLES ON C3 & C4 MODELS, & COMPARING WITH PHOTOS 19/5 & 77/54, , DECIDED TO IGNORE THE .246" x .080" & CHOOSE :-



VENT FOR 12" EAVE PANEL



DECIDED .260" OK AFTER TRIAL ON MODEL.

NOTE :- 'SPACE' FOR VENT MEASURED .28" to .29" x .155" (ON D3 MODEL)
$\therefore$ SELECT .260"/.270" LONG x .110"/.115" DEEP. (PROT. PHOTO 46/43 SCALES SUCH THAT $8\frac{1}{2}$" OF THE 12" EAVE PANEL IS OCCUP. BY VENTILATOR

$\therefore \frac{.155" \times 8\frac{1}{2}}{12} = .11"$ (DECIDED THIS AS LOOKS RIGHT ON D3 MODEL AFTER TRIAL.

UPPER CLER. VENT (TO MATCH 12" EAVE PANEL)

DEPTHS

ADJUST TO .22" SAY AS FURTHER BACK ON PHOTO
DECIDED ABOVE AS OK.

BY SCALING 46/43, THE LOWER & UPPER VENTS (DEPTH) IS .25" x .21" RESPECT. $\therefore$ UPPER VENT = $.110" \times \frac{.22}{.25} = .097"$ DEEP.

ALTERNATIVE CHECK :- 46/44 GIVES :- $.110" \times \frac{.21"}{.255"}$ (ADJUST FROM .20") = .091" APPROX.

BUT NOTE THAT BTM EDGE OF VENT IS APPROX LEVEL (BIT LOWER, ACTUALLY), THAN BTM OF CLEREST. WINDOWS & PANELS, AND THE TOP EDGE OF VENT. IS BELOW TOP EDGE OF WINDOWS, AND SINCE THE WINDOWS ON MODEL D3 ARE BARELY .10" DEEP., DECIDE ON .820" INSTEAD OF .097 & .091" ABOVE

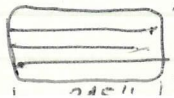
LENGTHS

46/43 GIVES .6" LONG (LOWER) & .55" (UPPER) - ADJ. TO .56" FOR PHOTO $\therefore$ LENGTH = .260" (DECIDED ABOVE) $\times \frac{.56}{.6} = .243"$

ALT. 46/44 GIVES .260" $\times \frac{.52}{.6} = .225"$ UPPER VENTS DO APPEAR LESS LENGTH THAN LOWER (NOT MUCH)

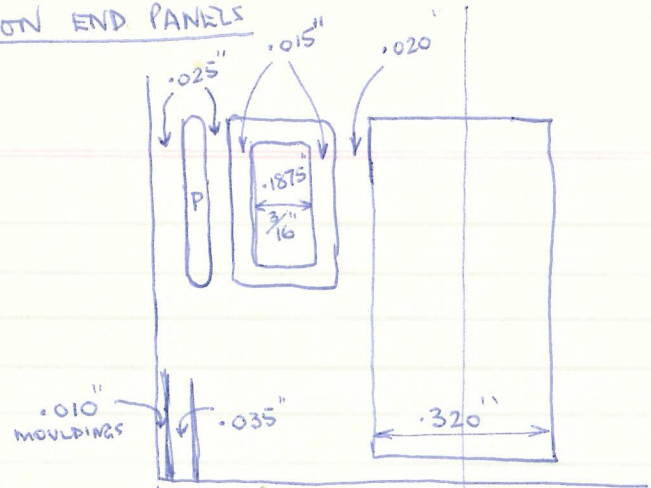
BUT BY CAREFULLY MEASURING D3 MODEL SELECT .245"/.250 AS LOOKING JUST RIGHT (SEE 48/8, 46/43 & 44 TO CONFIRM)

ie.



ie. ALL THESE ARE PUNCH SIZES (IGNORING .004" STRIP METAL WHICH SEEMS TO MAKE LITTLE DIFFERENCE.

CHECK ON END PANELS



CHECK :- .160
.020
.015" x2 .030
.1875
.025 x2 .050
.4475 .491"
LESS .4475
= PANEL OF .0435 = O.K. FOR .040" PUNCH
& LOOKS OK. TO DWG 24955
& COACH PHOTO BW16/9

CHECKED c/ENTRES OF BODY QUARTER LIGHTS WITH centres of CLER. LIGHTS ie. .2875" and .285" RESPECTIVELY (OK. NR. ENOUGH)

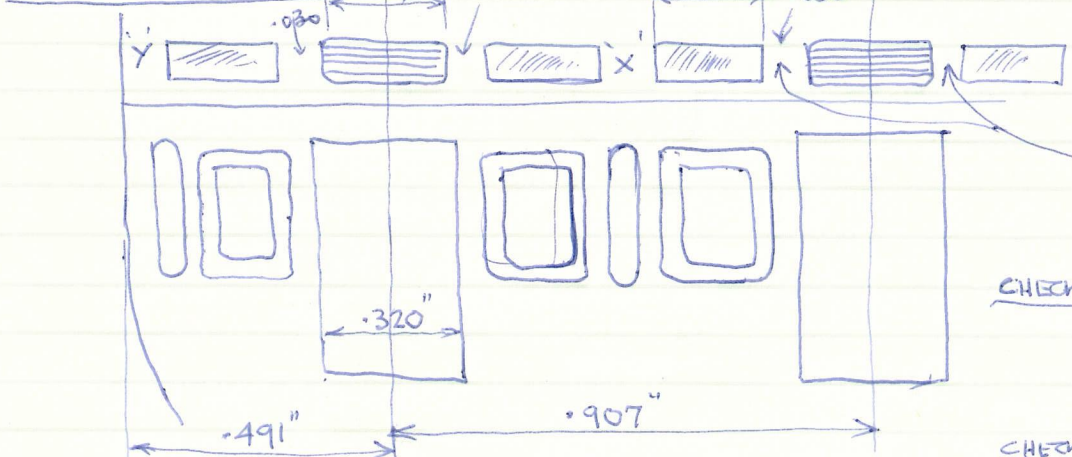
DWG 24955 SCALES .260" APP. ie. NR. ENOUGH TO CONFIRM .250" ✓

THO' USED .240" ON C4 TO GET PANELS OK

MRC. QUOTES 1'7" (.250") FOR CLER VENTS.

MRC. QUOTES 1'-8" (.262") FOR 3RD CLASS CLER. LIGHTS. (DWG 24955 ALSO SCALES .260") (THO' USED .250" ON C4 TO GET PANELS OK

CLER. HORIZONTALS .250" .030" .260" .030"



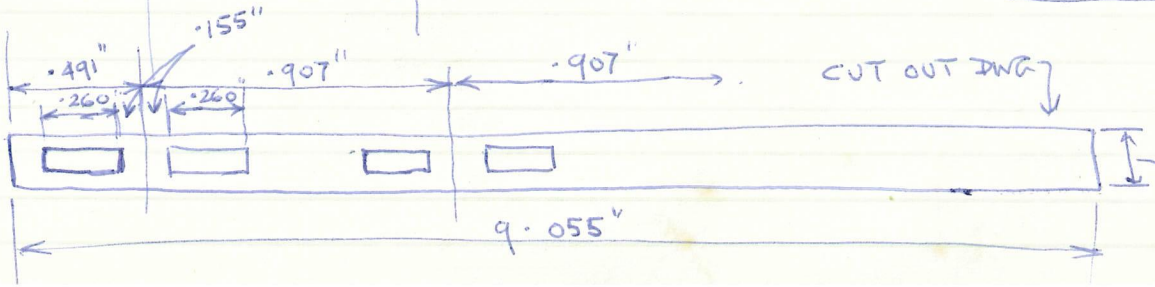
SCALED FROM DWG 24955 & COACH PHOTO 16/9 = .025", BUT .030" GIVES MORE ACCURATE SPACE AT 'X', WHICH SCALES APPROX. .075"

CHECK DIM. 'X' :- .907" LESS .250" VENT
" .520 (.26x2)
LESS .830 " .060 (.03x2)
'X' SPACE = .077 .830

OK. ✓ ie. SCALES APPROX .075"

CHECK DIM 'Y' :- WHICH APPEARS FROM PHOTO THE SAME AS 'X' APPROX

∴ .491" LESS .125 (½ of VENT)
LESS .415 .030
OK. .076 ✓ .260
.415

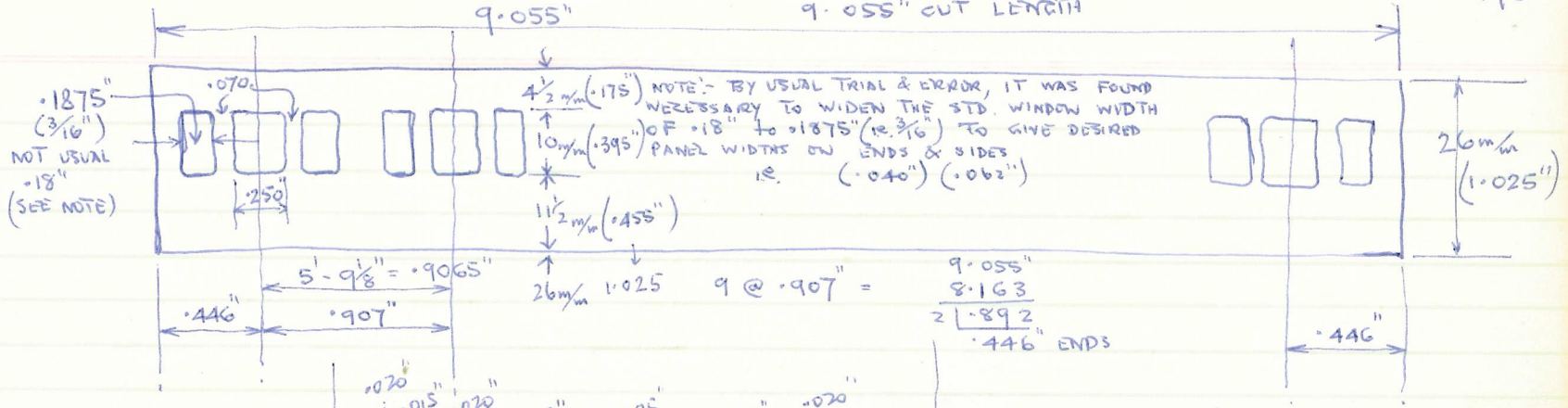


SEE ELSEWHERE FOR VERTICALS (NOW STANDARDISED)

C23
SEPT 1965

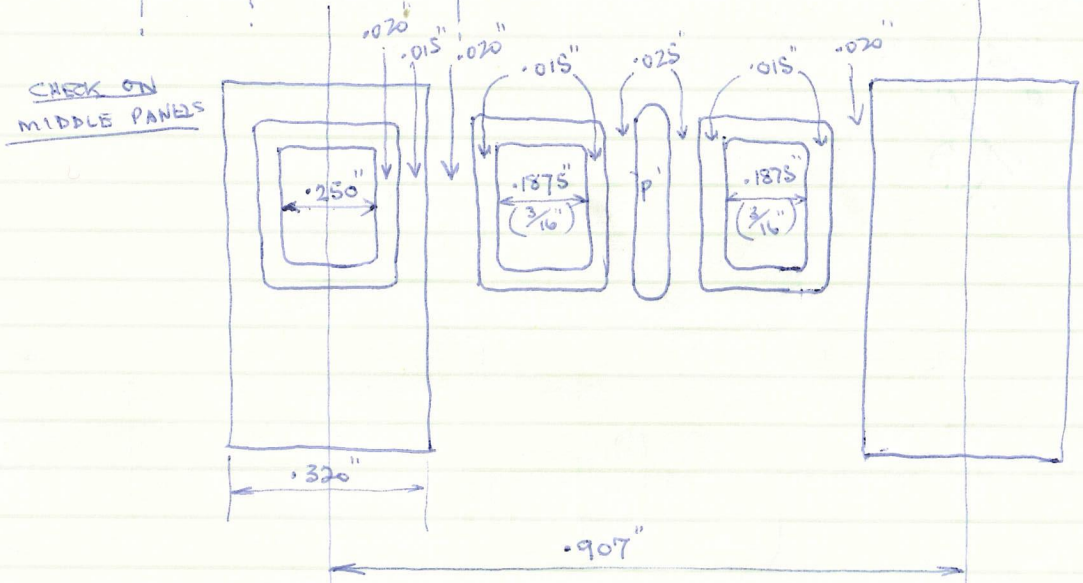
58' - 0 3/4" OVER MOULDINGS =
LESS 2 - ENDS OF .035" PLY
LESS 2 - END MOULDINGS @ .010"
9.055"

9.145"
.070
9.075
.020
9.055" CUT LENGTH



NOTE:- BY USUAL TRIAL & ERROR, IT WAS FOUND NECESSARY TO WIDEN THE STD. WINDOW WIDTH OF .18" to .1875" (ie. 3/16") TO GIVE DESIRED PANEL WIDTHS ON ENDS & SIDES
ie. (.040") (.062")

CHECK ON MIDDLE PANELS



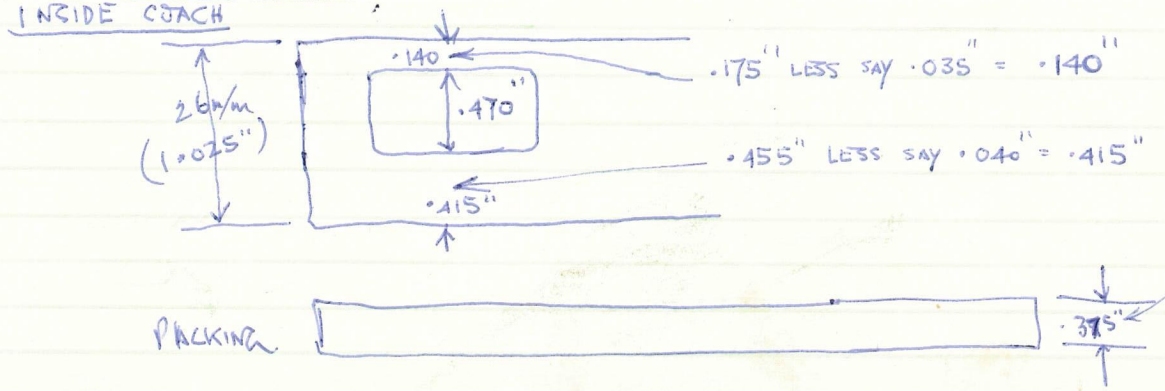
CHECK

.020" x 2	.320"	DOOR.
.015" x 4	.040"	
.1875 x 2	.060"	
.025 x 1	.375	
	.050	
	.845	

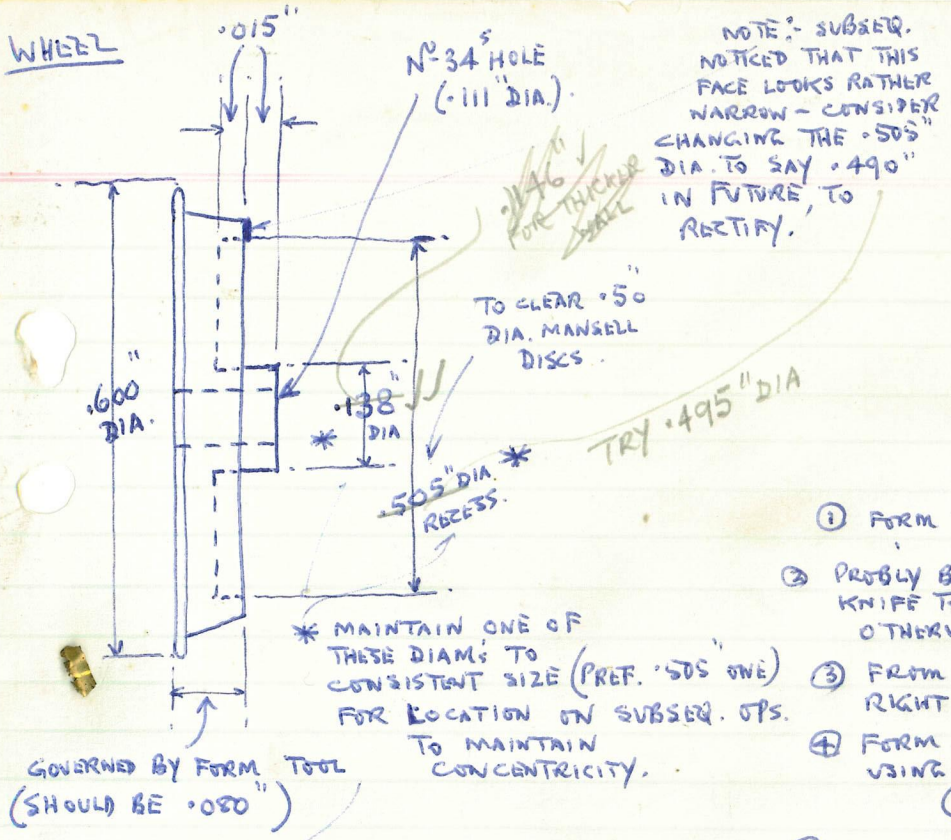
.907
.845
LESS =
.062" PANEL

ie. DEAD ON FOR .062" PUNCH
& LOOKS OK. FROM DWG 24955
& COACH PHOTO BW 16/9.

INSIDE COACH



WHEEL



·346" FOR THICKER WHEEL

NOTE:- SUBSEQ. NOTICED THAT THIS FACE LOOKS RATHER NARROW – CONSIDER CHANGING THE ·505" DIA. TO SAY ·490" IN FUTURE, TO RECTIFY.

TO CLEAR ·50" DIA. MANSELL DISCS.

TRY ·495" DIA

* MAINTAIN ONE OF THESE DIAMS TO CONSISTENT SIZE (PREF. ·505" ONE) FOR LOCATION ON SUBSEQ. OPS. TO MAINTAIN CONCENTRICITY.

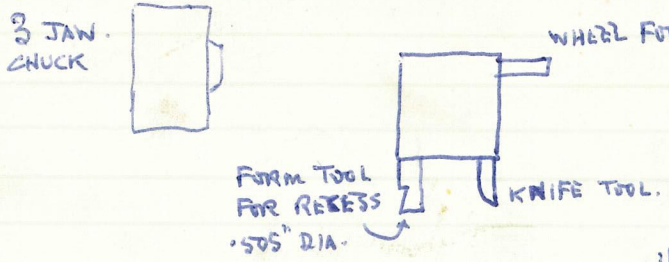
FINAL MODUS FOR 14mm → COACH WHEELS

AUG 1967

SHEET 1 OF 2

USING 5/8" DIAM. BRASS ROD (CUT IN 4" LENGTHS FOR CHUCKING IN 3 JAW CHUCK)

PART OFF TOOL (STRONG ENOUGH NOT TO BOW ON P.O.



① FORM WHEEL PROFILE TO ·60" DIAM. OVER FLANGES.

R. EDGE OF TYRE RATHER ANGULAR (FORM TOOL WORN?)

② PROBLY BETTER IN FUTURE TO FACE CAREFULLY WITH KNIFE TOOL TAKING CARE NOT TO TAKE TOO MUCH OFF OTHERWISE OVERALL WIDTH WOULD BE UNDER ·080" (FATAL)

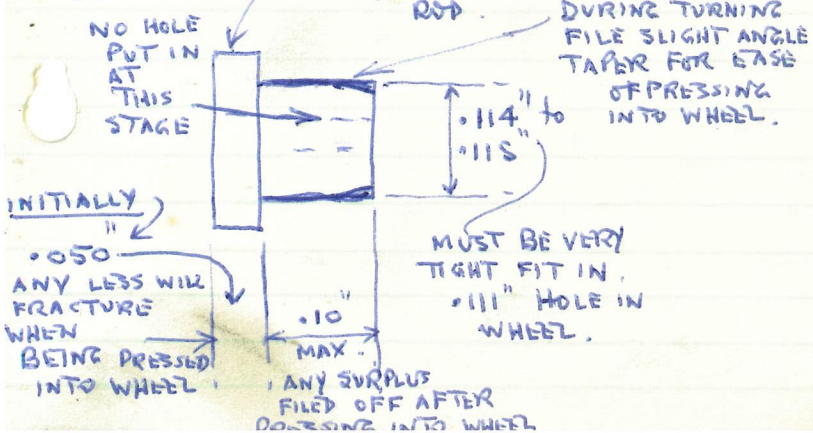
③ FROM THE ABOVE DATUM FACE, WITHDRAW ·015" WITH KNIFE TOOL & FACE RIGHT ACROSS TO GIVE ·015" PROUD BOSS FACE

④ FORM RECESS TO GIVE ·505" DIAM. & THEN MOVE IN FOR ·138" DIA. USING SAME FORM TOOL (WORKING TO MICRO. DIALS IN BOTH PLAINS). (ONE OR OTHER OF THESE DIAMS. SHOULD BE MAINTAINED TO CONSISTENT SIZE FOR LOCATION ON SUBS. OPS. (FOR CONCENTRICITY)

⑤ CENTRE & DRILL N° 34 HOLE

⑥ PART OFF (TRY TO LEAVE NO SPIGOT ON BACK FACE IE. SET P.O. TOOL WITH RESPECT TO WHEEL FORM TOOL FOR A CONSISTENT ·080" WIDTH. (1st samples had a ·015" APPROX SPIGOT which had to be faced off in workshop lathe using stepped collet. (BLACKEN THE FINISHED WHEEL BEFORE PRESSING IN INSUL. BUSH

BUSH



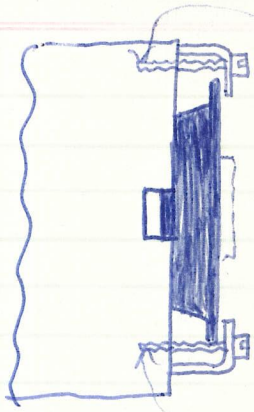
MODUS USING ERINOID ROD (ACTUALLY ·1585" DIAM.)

① Turn ·114" DIA. X ·1" LONG, USING LATHE SET UP AS ABOVE (UNDISTURBED) & PICKING UP DIMENS FROM DIALS & KNIFE TOOL & P.O. (No hole at this stage). (Set P.O. tool with respect to index governing the knife tool, so that everyone is consistent)

② PRESS BUSH INTO WHEEL USING  AND HAMMER HOME MAKING SURE BUSH IS FULLY HOME (MAKE SURE)

(NOTE:- CONSIDER USING SPOT OF EVOSTICK AT THIS STAGE (ON THE NEXT PRODUCTION BATCH) AS AN ODD ONE SUBSEQ. WORKED LOOSE ON LAST BATCH.

FINAL DRILL OF HOLE (CONCENTRIC WITH TYRE).



① USING 1" DIAM. Brass or Aluminium Bar about 2" long, face up one end in 3 Jaw Chuck, & centre & drill N° 28 S (·1405") hole to take the ·138" DIAM boss of wheel (SHOULD THEN BE CONCENTRIC). (BUT initially drill & tap 2 holes 10 BA. to hold wheel in position whilst turning.) using also 2 clips  as shown

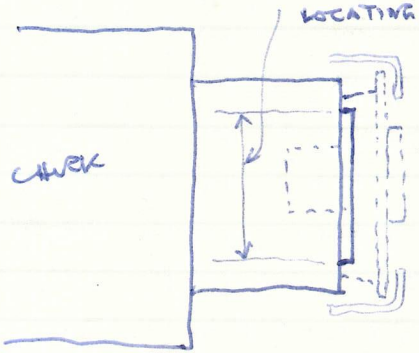
THEN:-

② Centre & Drill N° 49 S (·073" HOLE). right thro' insulation bush. (This is a nice tight fit on ·076" S. STEEL shaft.

③ Face up the insulated boss on back ie. reduce from ·050" to approx ·020" for appearance sake (using same tool used for forming recess in the brass wheel. on the 1st OP.) else slight feed otherwise bush will loosen in wheel, unless EVOSTICK has been used)

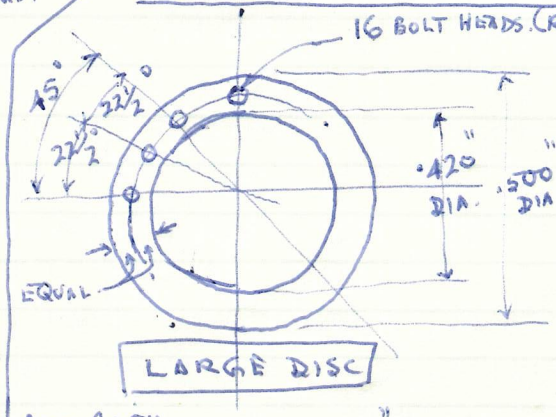
NOTE:- The above still uses same lathe set up used for making the wheels on Page 1. of 2 sheets.

FUTURE POSSIBLE ALTERNATIVE (ie. locate off larger DIAM. (ie. ·505" RECESS IN WHEEL) to improve concentricity still further.

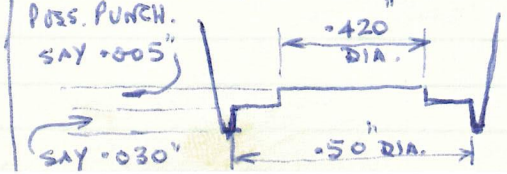


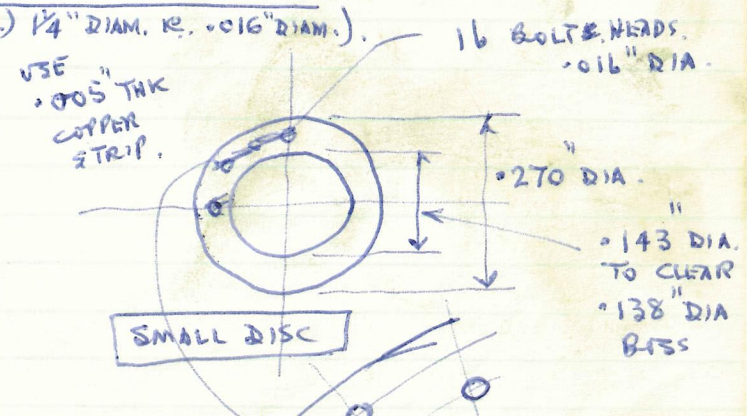
NOTE:-
NOT VERY SUCCESSFUL ON STAMPING OUT.- MIGHT BE BETTER TO MAKE WHOLE DISC (NOT A RING). THUS:-

POSSIBLE MANSELL DISCS FOR ABOVE WHEELS

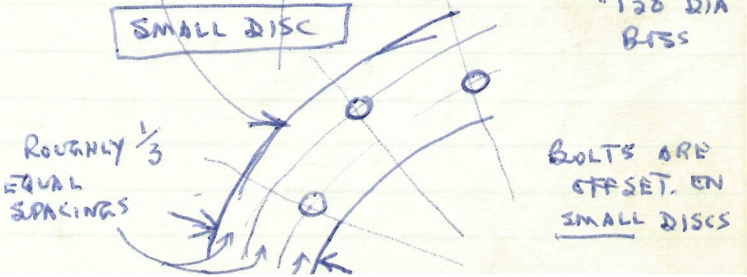


LARGE DISC

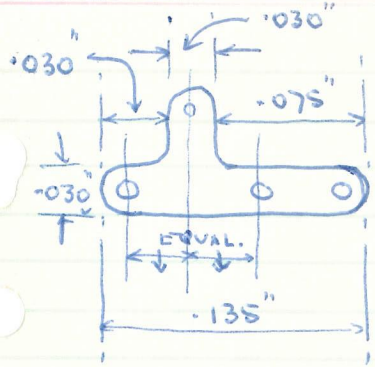




SMALL DISC



END DOOR DETAILS



L.H.

MAT. – ? PRES. ·004/5 COPPER STRIP.

SOLDERED TOGETHER I THINK & HOLE OPENED OUT IF REQD WITH FINE TAPER REAMER

·040" MAX.

·030"

·025" OR LESS.

R.H.

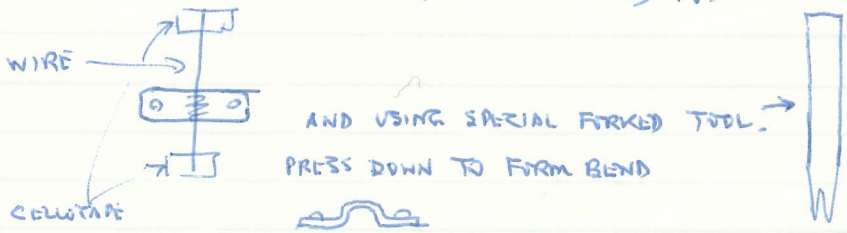
USE SAME PUNCH & REVERSE BLANK

KEEP DOWN TO ·065/·070" IF POSS.

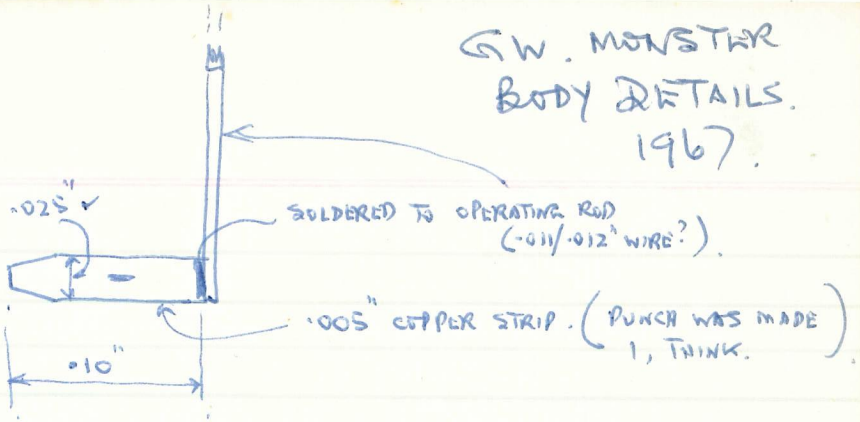
EMBOSSED HEADS.

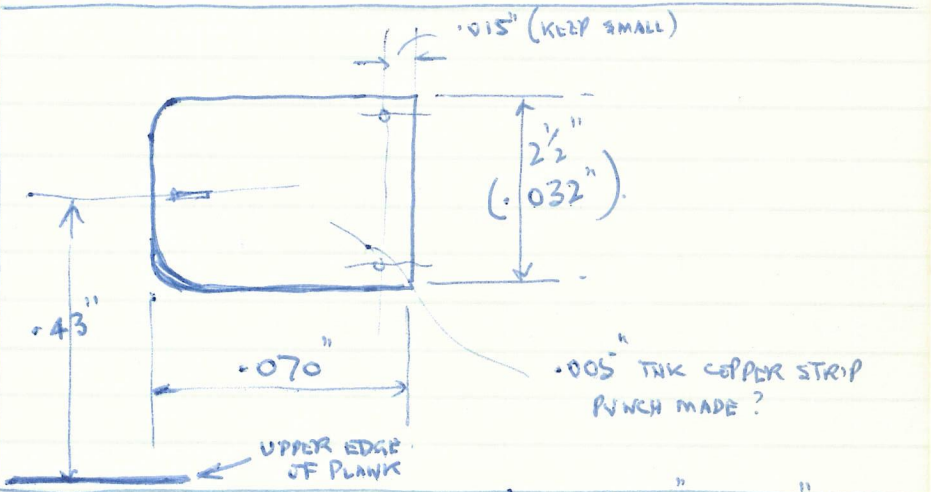
THIS UNIT IS MADE COMPLETE BEFORE BENDING IR.

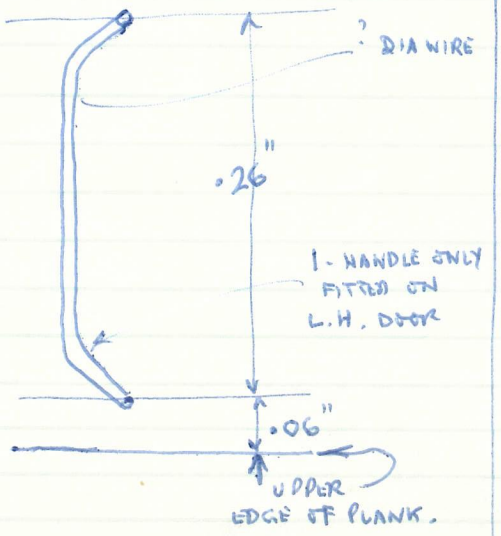
THEN WITH CORRECT WIRE (·012"/·011" DIA ?) STUCK DOWN ON FLAT PIECE OF STEEL WITH CELLOTAPE, PLACE THE UNIT ON TOP OF THE WIRE THUS. (APPROX CENTRAL) eg.

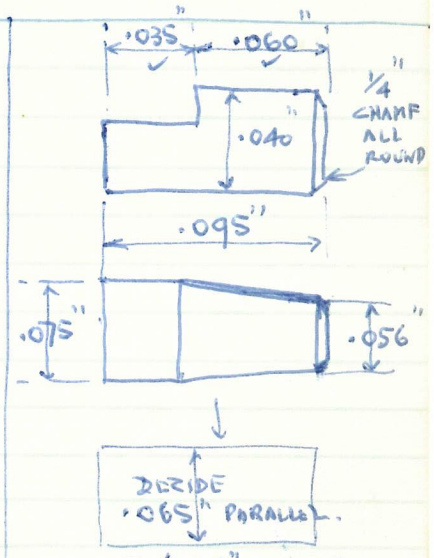


GW. MONSTER BODY DETAILS. 1967.





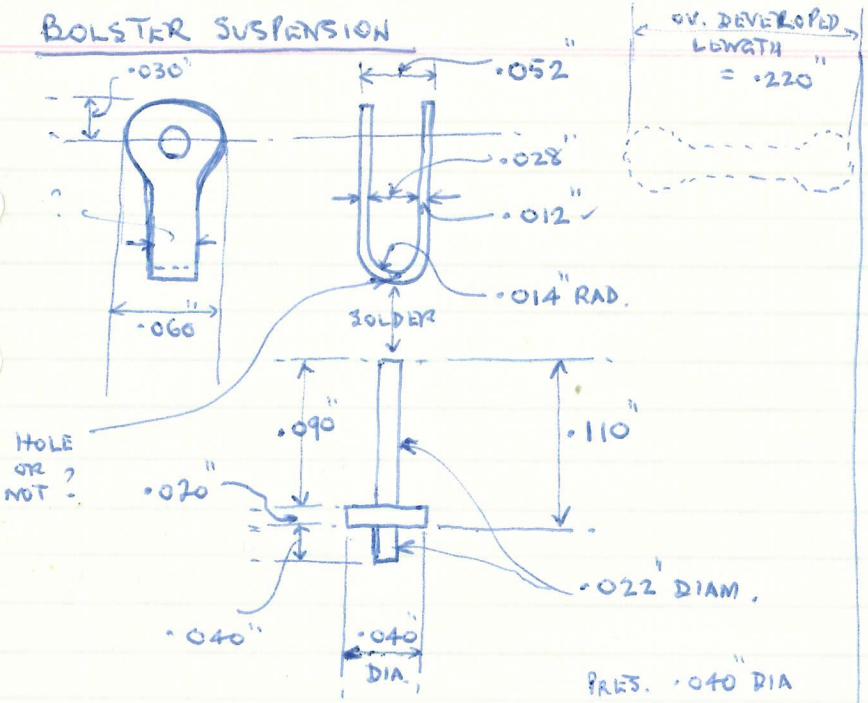


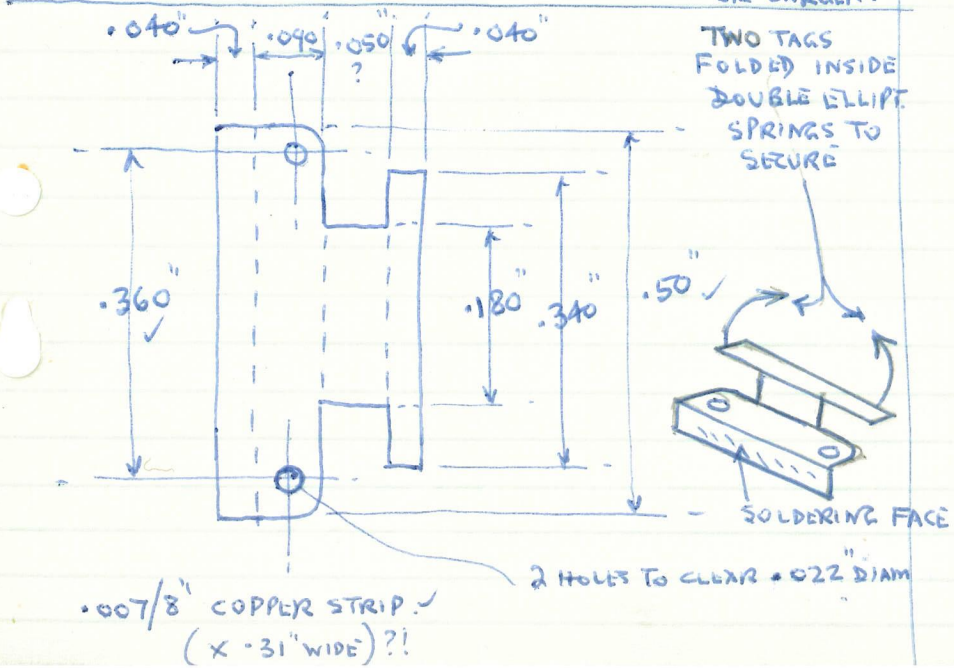


USE ·070/·075" SQUARE SECTION WOOD FROM HOBBIES

G.W. MONSTER
9-0 EQUALIZING
BOGIES.
1967.

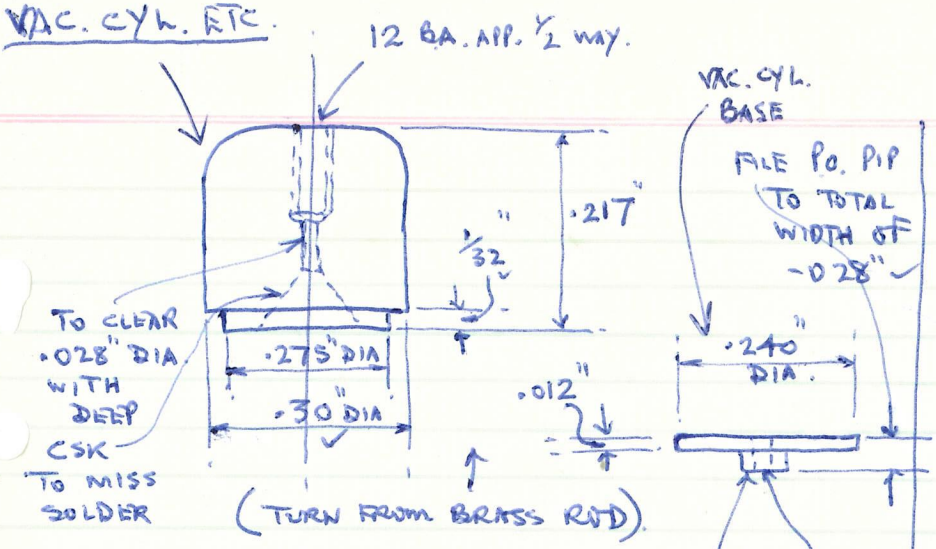
BOLSTER SUSPENSION

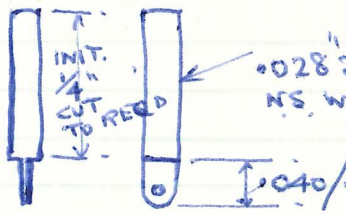


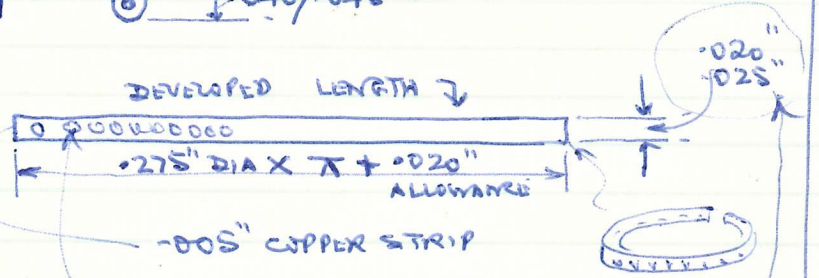


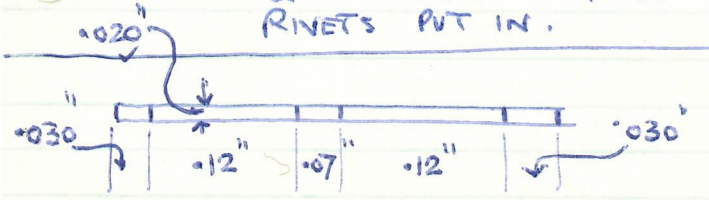
MONSTER CHASSIS. PARTS 1967

VAC. CYL. ETC.

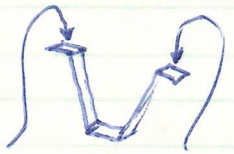


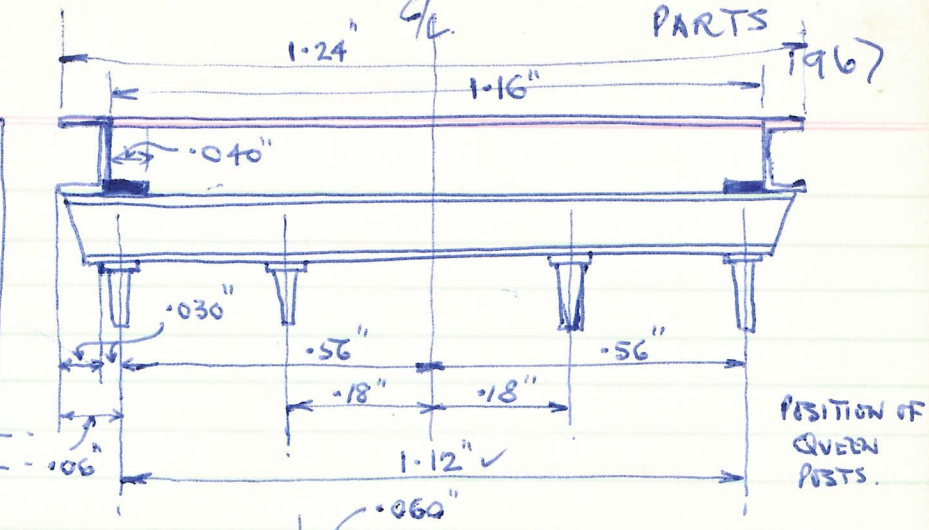


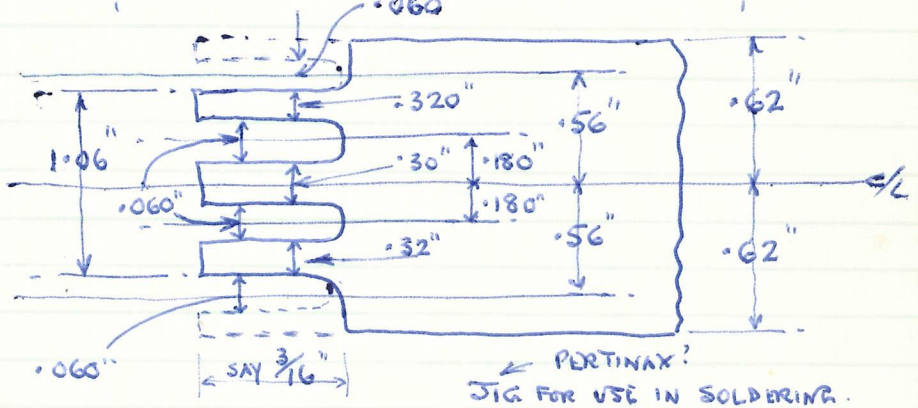




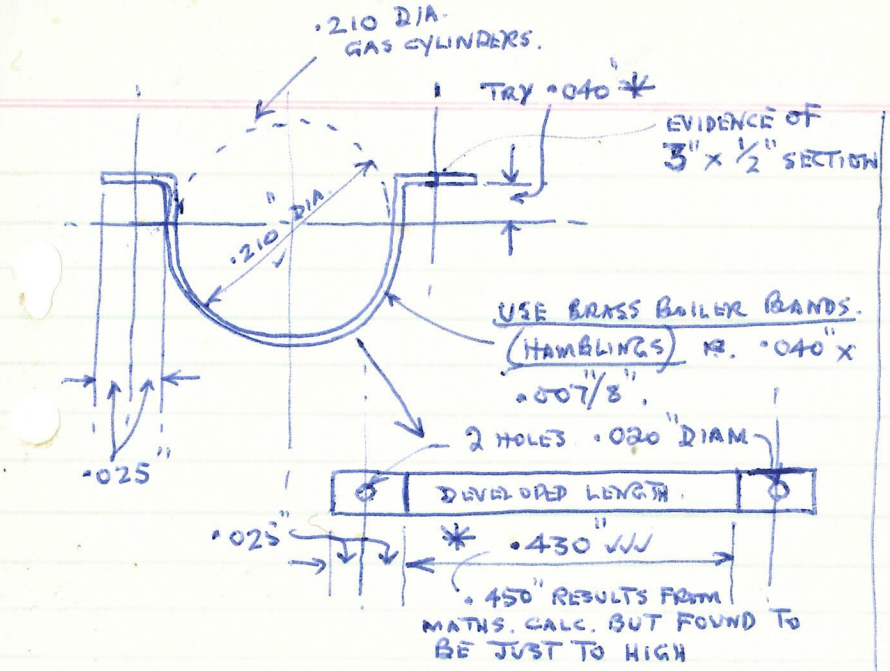
.006" THK BRASS STRIP (HARD)

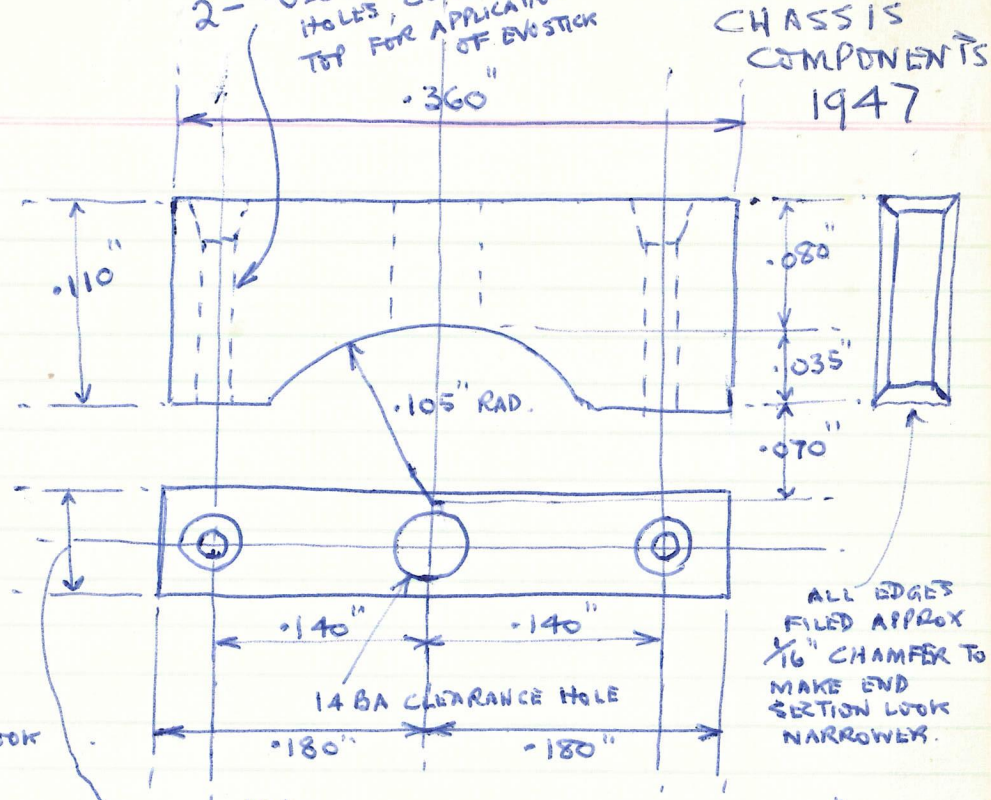


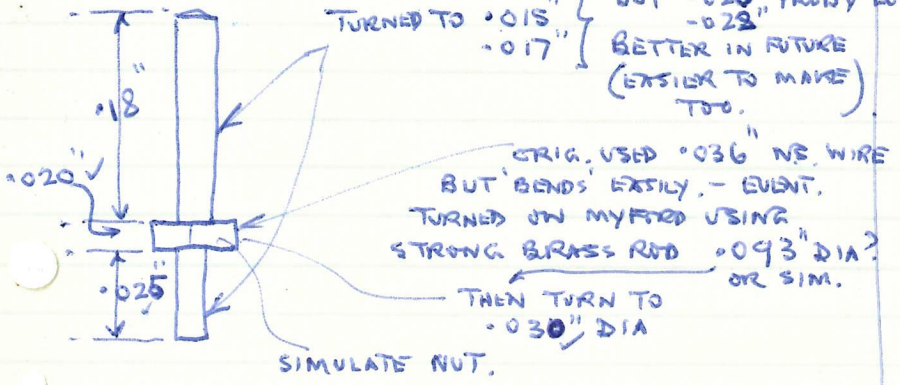


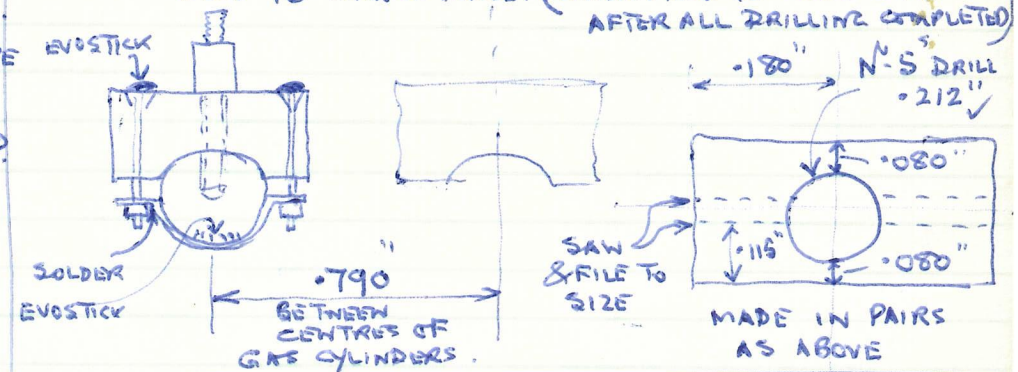


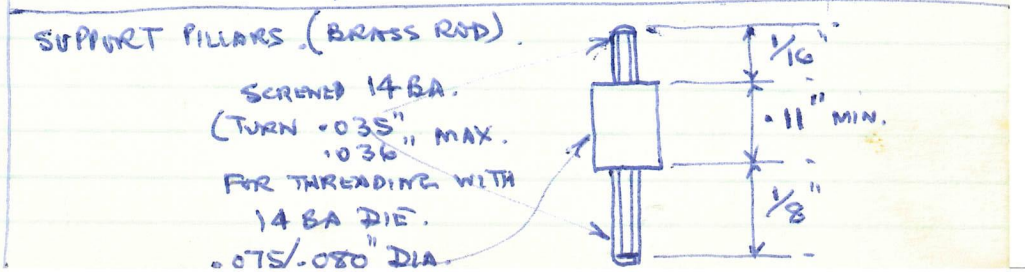
MONSTER CHASSIS COMPONENTS 1947





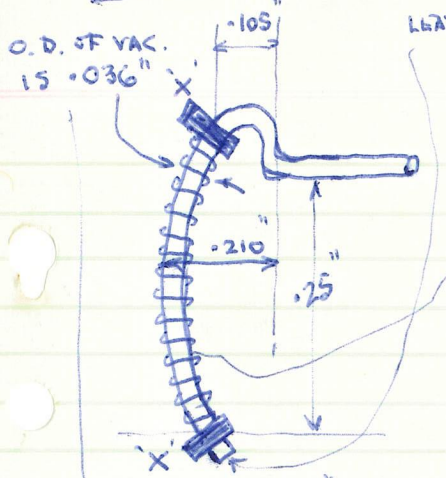






MONSTER CHASSIS COMPONENTS 1967

VAC. PIPE CONNECTORS.

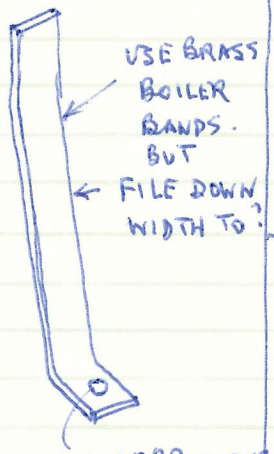


LEAVE APP. .015" PROTRUDING TO SOLDER TO SUPPORT BRACKET.

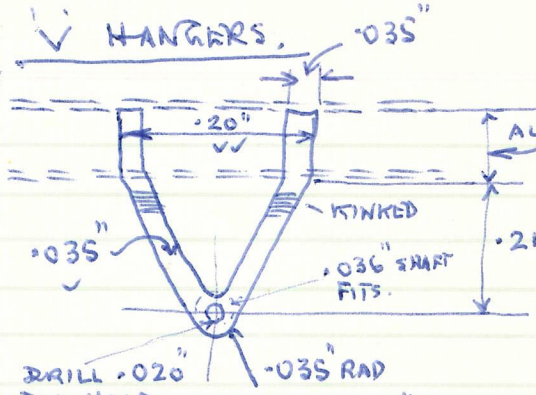
SEPERATE BETWEEN EACH TURN WITH CRAFT KNIFE FOR IMPROVED APPEARANCE

ie. USE .022" DIA. N.S. WIRE ✓ WRAPPED WITH .0075" DIA. COPPER FLEX STRAND. WIRE.

'X' WRAPPED AT 2 PLACES WITH .0075" COPPER WIRE, (FLATTENED). THUS:- & TRIM UP WITH FILE AFTER SOLD IN POSITION



'V' HANGERS.

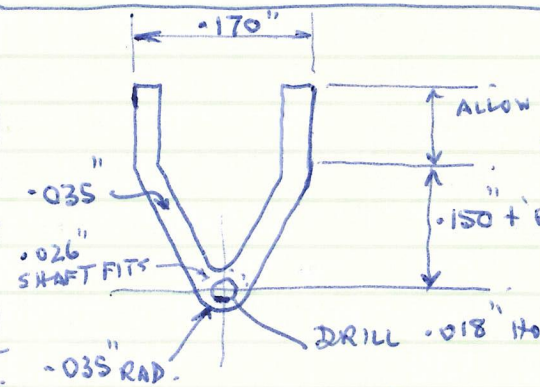


ALLOW .150"/.160" (ie. OVERSIZE & FILE DOWN TO GIVE CORRECT HANGING DEPTH ON ASSEMBLY.

.210" PLUS ALLOWANCE FOR KINK SAY .230" VV

USED .012" N.S. SHEET.

LARGE (MAIN) 'V' HANGER



ALLOW .150"/.160" & FILE DOWN ON ASSEM. TO GIVE CORRECT HANGING DEPTH ON ASSEM ie. .170"

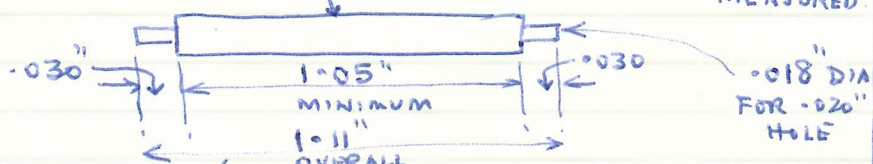
.150" + KINK ALLOWANCE = .170"

USED .010" N.S. SHEET.

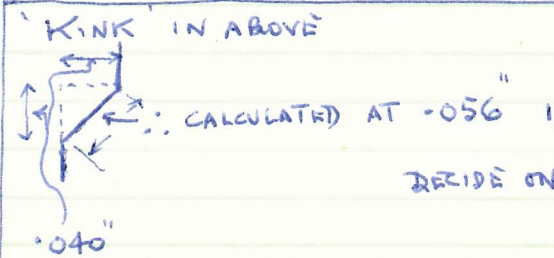
SMALL V HANGER (FOR HAND BRAKE)

MAIN BRAKE SHAFTS (INSIDE FRAME MONSTER ONLY).

SHOULD BE .040" DIA. SHAFT
USED .036" DIA N.S. WIRE

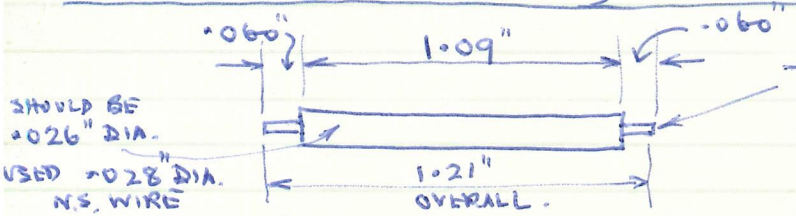


FOR LARGE (MAIN 'V' HANGERS)



∴ CALCULATED AT .056" ie. .056" − .040" = .016" EXTRA LENGTH

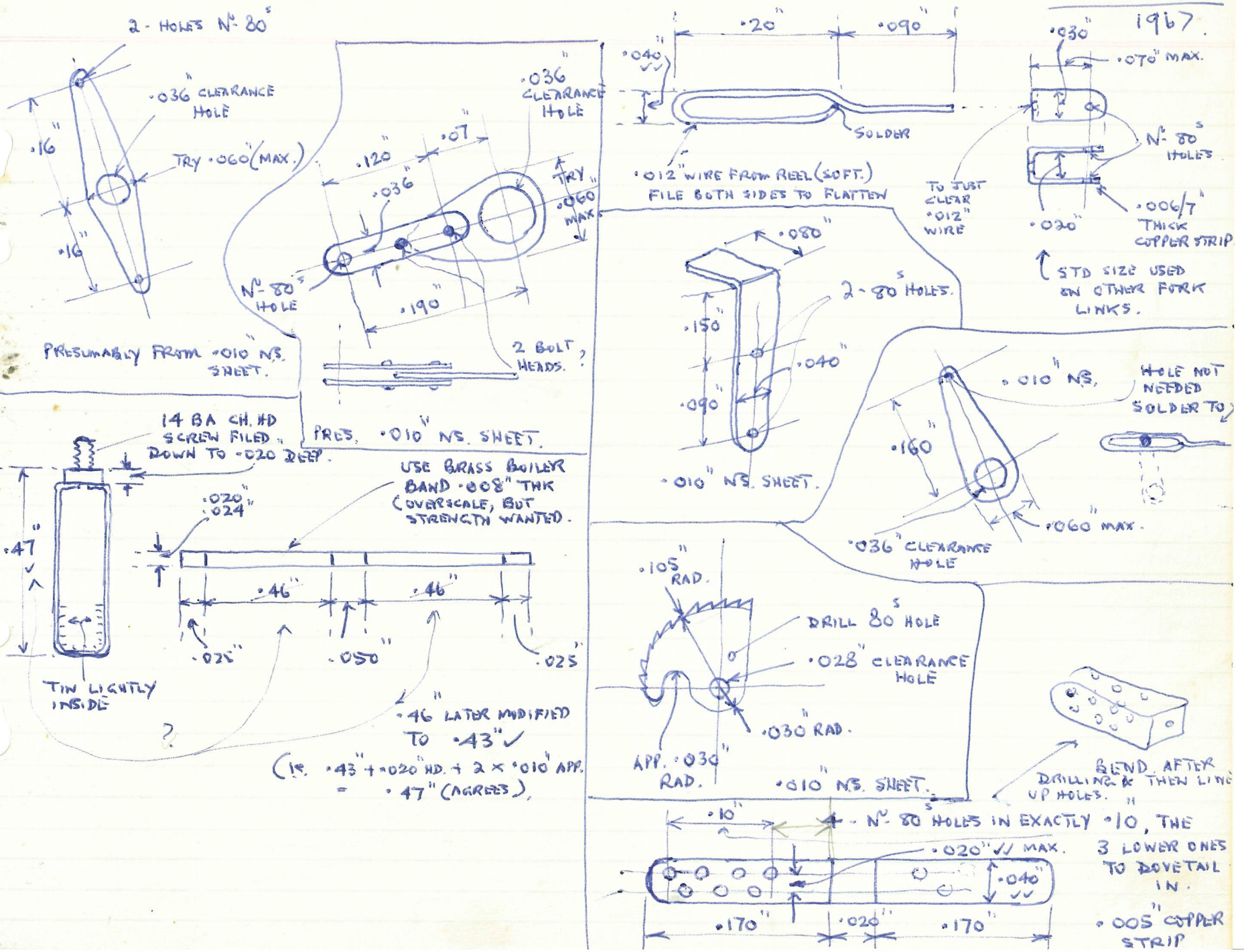
DECIDE ON .020" ✓



FOR SMALL 'V' HANGER (FOR HAND BRAKE)

BRAKE GEAR DETAILS

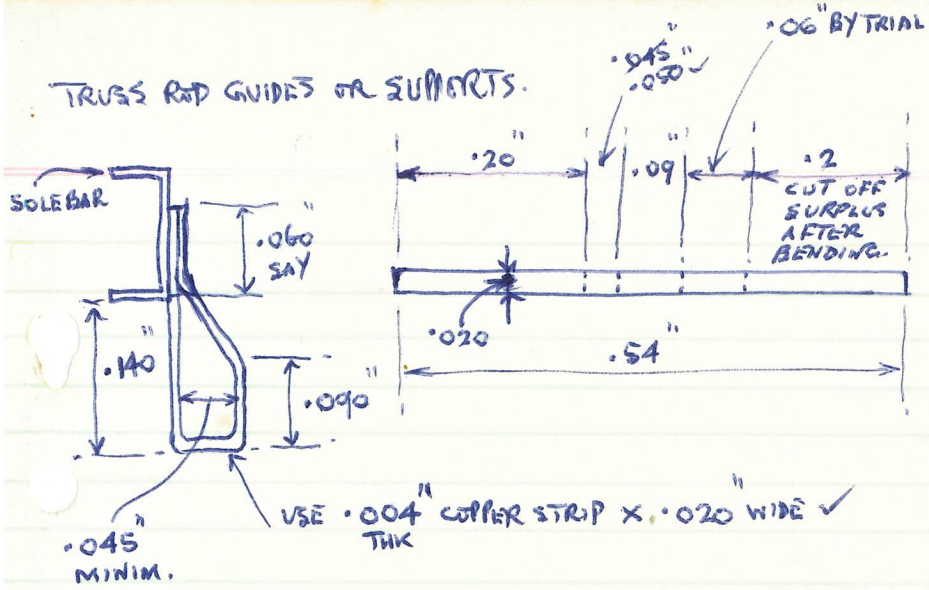
MONSTER CHASSIS COMPONENTS. 1967.



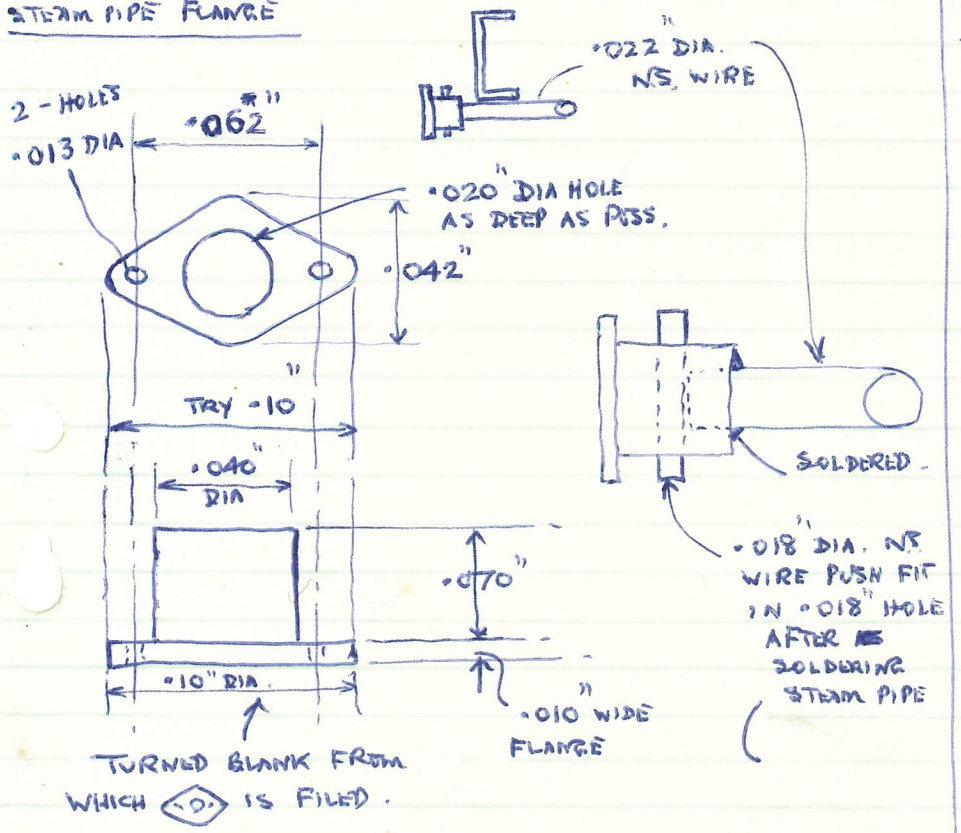
MONSTER CHASSIS PARTS.

1967

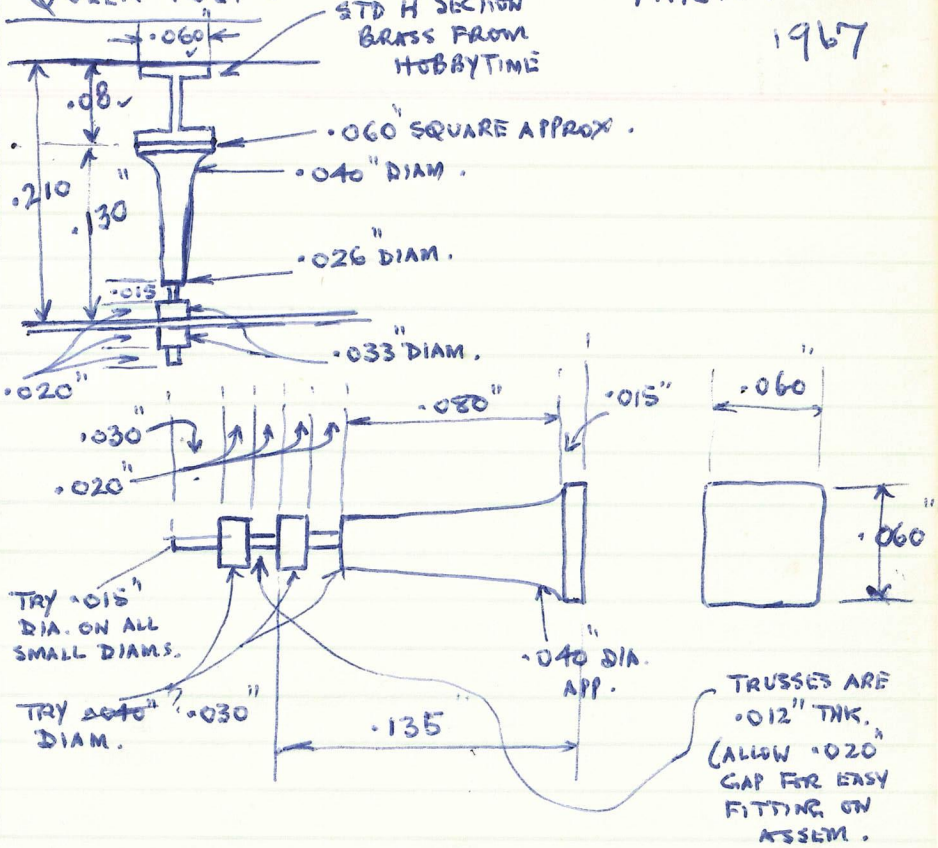
TRUSS ROD GUIDES OR SUPPORTS.



STEAM PIPE FLANGE

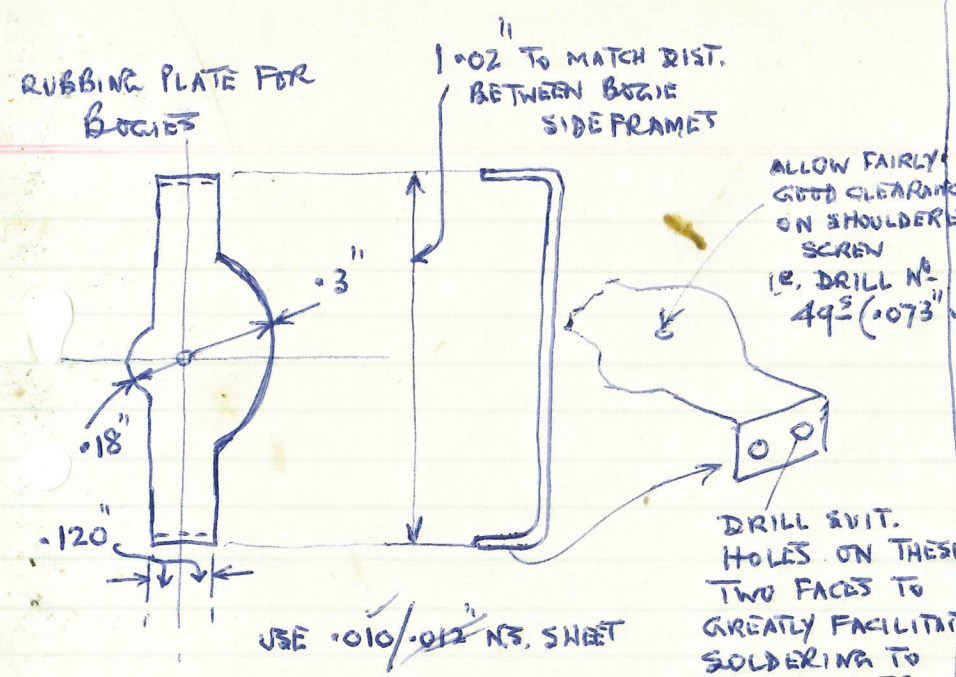


QUEEN POSTS.



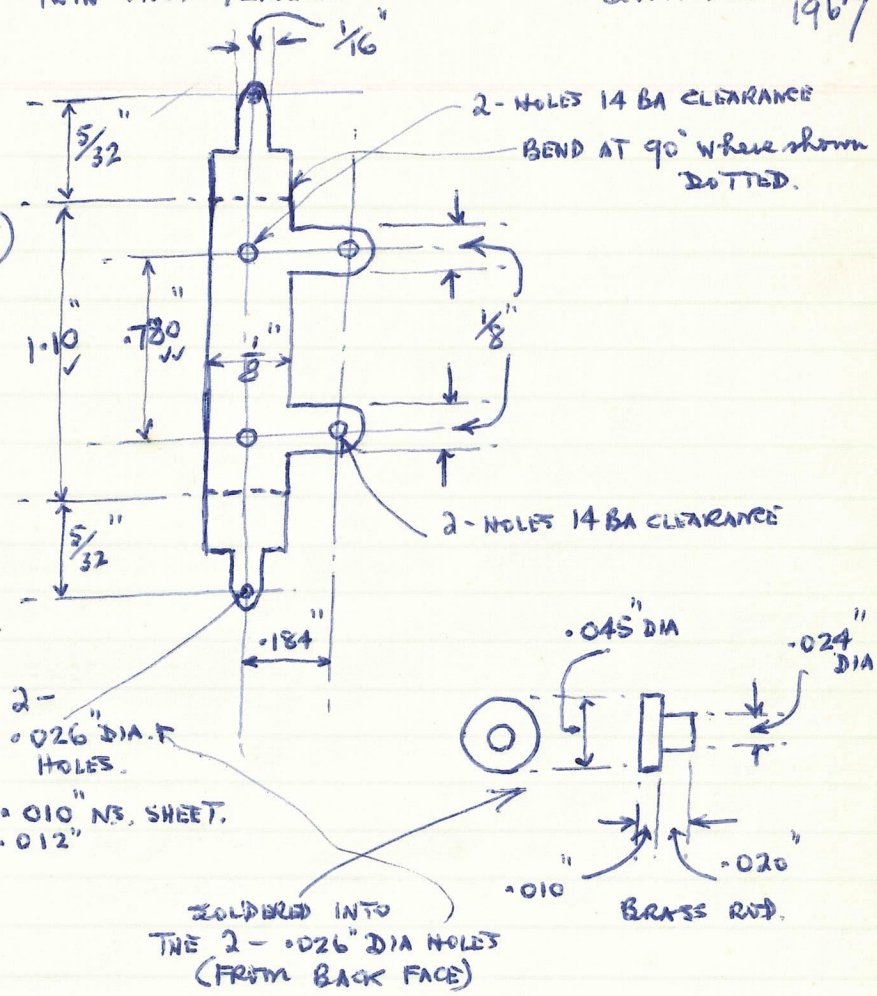
MONSTER CHASSIS DETAILS. 1967.

RUBBING PLATE FOR BOGIES

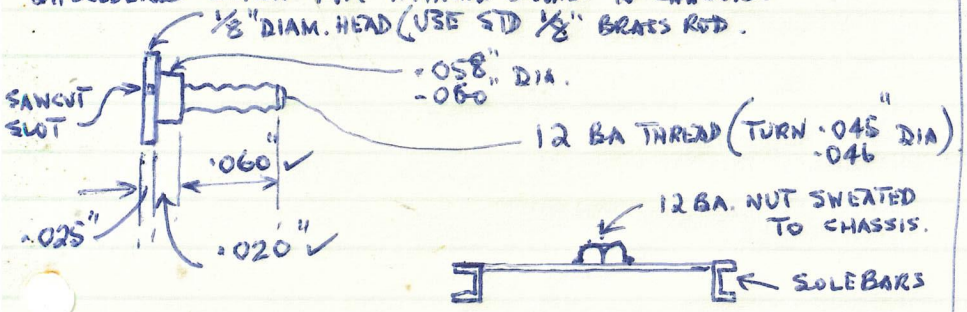


USE ·010/~~·012~~ N3. SHEET

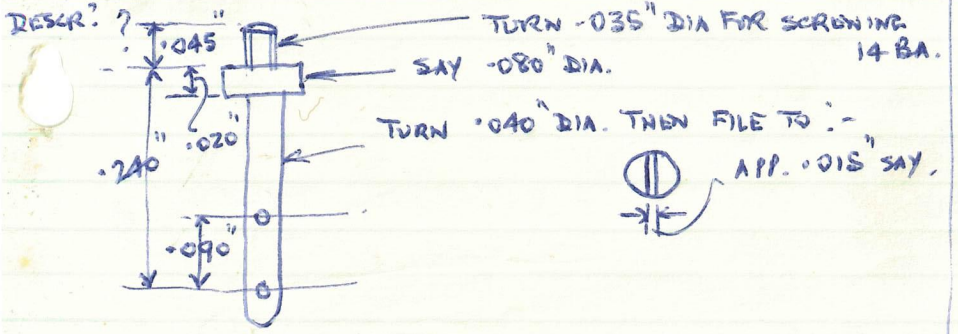
SUPPORT BRACKET FOR TWIN VAC. CYLINDERS.



SHOULDERED SCREW FOR ATTACHG BOGIES TO CHASSIS.

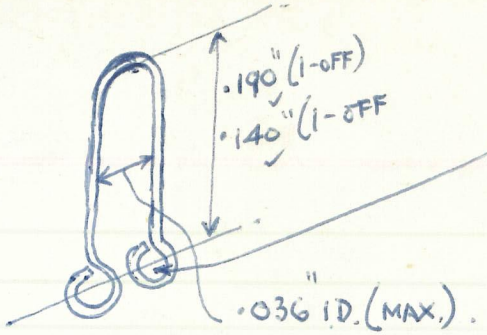


DESGR.?



USED ON ? (WHERE?)

SCREWED COUPLINGS. G.W. MONSTERS. 1967.

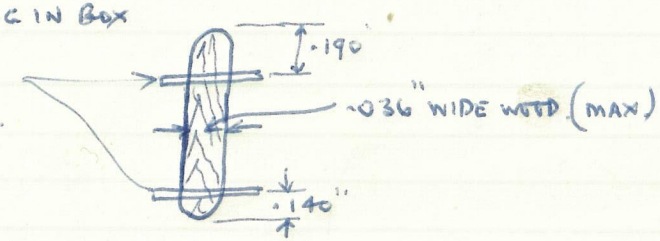


WRAP ROUND .020" DRILL.

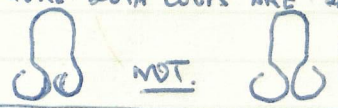
NOTE:- THREAD COUPLING HOOK ON, BEFORE FINALLY FORMING SECOND LOOP. USE VERY FINE ROUND NOSE PLIERS TO HELP FORM THE TWO LOOPS.

USE .015" STD BRASS WIRE (SOFTENED?).

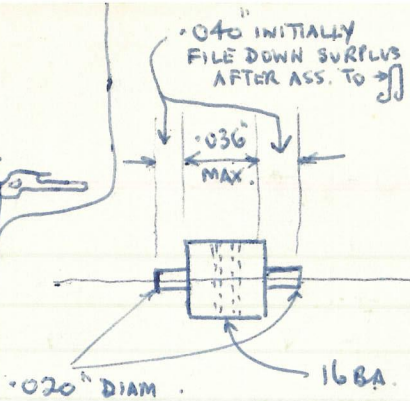
TO OBTAIN CONSIST. .190" & .140" LENGTH USE SIMPLE WOODEN JIG IN BOX



NOTE:- WHEN LOOPS ROUGHLY FORMED, FINALLY, PLACE ON THE ASSOC. COMPONENT & TIDY UP SYMETRICALLY. (MAKE SURE BOTH LOOPS ARE SAME WAY ROUND. ie.



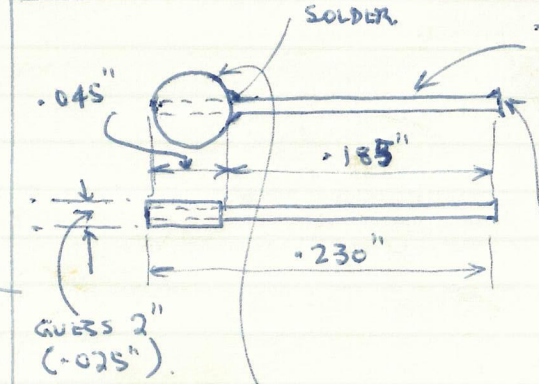
USE STEEL IN FUTURE? IF WIRE AVAIL.



USE DIRTY BRASS WIRE IN GARAGE (6" LENGTHS).

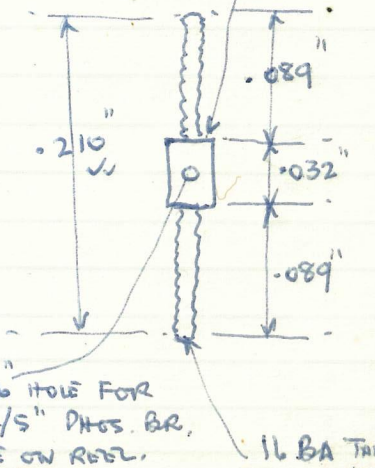
AFTER TURNING AS ABOVE:- HOLD IN PIN CHUCK ON ONE .020" DIA. SHANK & FILE .050" APPROX SQUARE ALL ROUND. CENTRE POP ONE FACE WITH SPRUNG CENTRE POP IN APP. CENTRAL POSIT. & DRILL RIGHT THRO WITH 74 DRILL. TAP. 16 BA.

What about using steel in future? as. MR2 HODGET



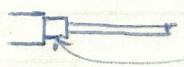
TURN FROM BRASS. & DRILL CLEARANCE HOLE FOR .014/.015" PHOS. BR. WIRE (SAY .016") & FINALLY SOLDER TOGETHER

TRY STEEL IN FUTURE? NOT BRASS



TURN .040" DIA. MIN. AS 16 BA THREAD IS .028"

OP 1. 

OP 2 

OP 3. SCREW 16 BA.

OP 4 PULL FURTHER OUT OF COLLET & PLUNGE CUT TO GIVE .028" DIA ON OTHER END (SEVERAL CUTS). & SAW OFF TO LENGTH.

OP 5 CHUCKING, USING .040 COLLET, SCREW 16 BA OTHER END.

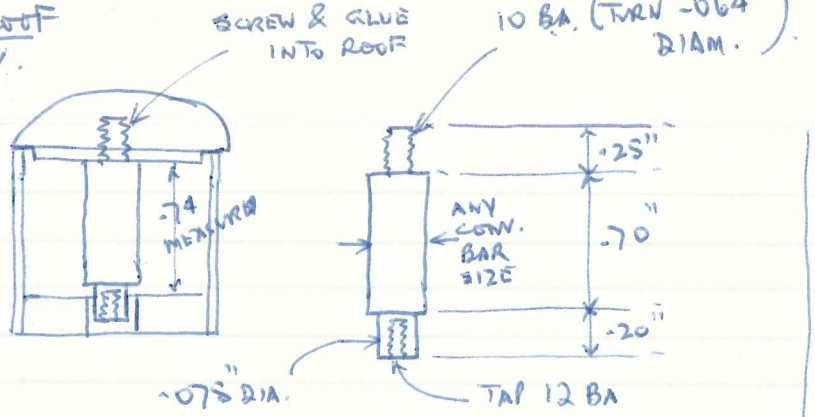
OP. 6 FILE 2 FLATS ON CENTRE BOSS & CENTRE POP IN CENTRE

OP 7. DRILL .016" HOLE.

(USE DIRTY BRASS WIRE

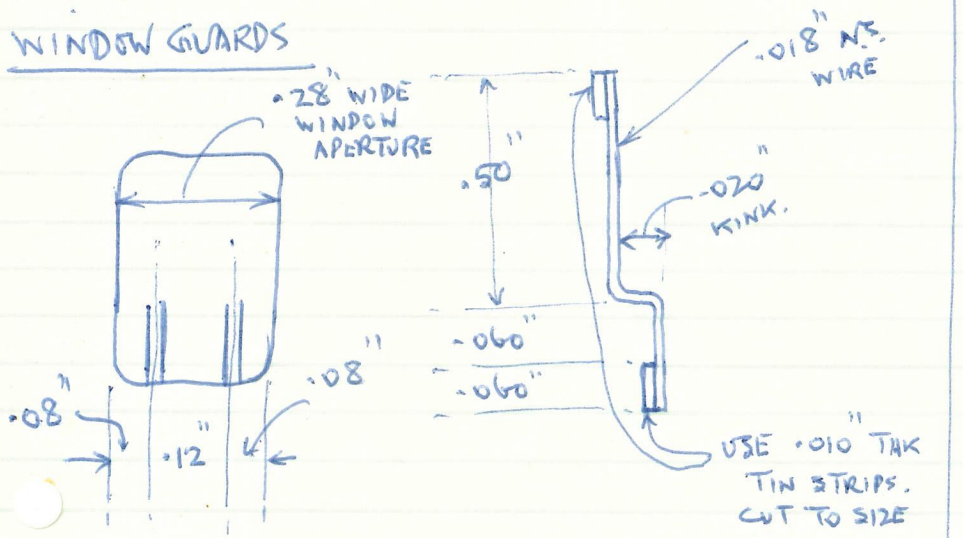
G.W MONSTER
BODY DETAILS.
1967.

STUDS TO SECURE ROOF TO BODY.

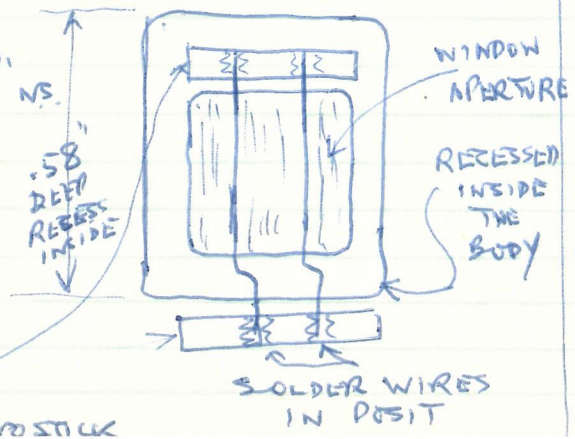


BRASS ROD. (2 PER ROOF).

WINDOW GUARDS



POSITION OF THE TWO BARS. (USED .018" N.S. WIRE)



4 m/m. DISC WHEELS & AXLES. (ARTICLE IN LINK Nº 196 JULY 1953) BY NORMAN WHITNALL

ALSO LINK 198 SEPT 1953.

MATERIALS. 9/16" DIA. BRASS BAR (FOR 3 FT. PROTOTYPE WHEEL).
5/32" DIA INSULATING ROD.
.076" DIA SILVER STEEL. .063" SILVER STEEL ACCEPTABLE (1/16")

TWO RING CHUCKS WILL NEED MAKING, TO HOLD TURNED WHEELS IN THE 3-JAW CHUCK, BACK OUTWARD & FRONT OUTWARD OR A COMBIN. RING CHUCK TO FULFIL BOTH OF THESE FUNCTIONS.

WHEELS CHUCK A LENGTH OF 9/16 BRASS BAR IN 3 JAW CHUCK & REDUCE DIA. TO .550". FRONT OF WHEEL TO BE AWAY FROM CHUCK
TURN FLANGE & TREAD TO .525" ON FLANGE WITH "STUBBS" FORM TOOL (OR TO APPROVED STDS WITH ORDINARY TOOLS).
FOR 3'-0" DIAM. PROT WHEEL. FACE FRONT OF WHEEL & RECESS TO GIVE .040 TYRE & .125" DIA CENTRAL BOSS. & PART OFF WHEEL.
CHUCK WITH BACK OUTWARDS IN RING CHUCK, FACE BACK OF WHEEL, CENTRE & DRILL THRO' Nº 34's.
REPEAT FOR AS MANY WHEELS AS REQ'D

INSULATION

CHUCK LENGTH OF 5/32" INSUL. ROD IN 3-JAW CH. & SHOULDER DOWN TO .115/.116" DIA FOR ABOUT 1/8"
THIS SHOULD BE A GOOD HARD FIT IN THE WHEEL, WHICH SHOULD BE PRESSED ON UP TO THE SHOULDER, THEN THE 5/32" ROD SAWN OFF ABOUT 1/8" FROM BACK OF WHEEL.
PLACE WHEEL ASS. IN RING CHUCK (FRONT OUTWARD) & TURN OFF ANY PROJ. SPIGOT AT FRONT OF WHEEL
REVERSE WHEEL & FACE OFF INSULAT. TO PROJECT 1/16" FROM BACK OF WHEEL.
CENTRE & DRILL THRO' Nº 49 FOR .076" AXLE OR Nº 53 FOR .063" AXLE. REPEAT FOR ALL WHEELS.

AXLES TURN AXLES FROM SILV. STEEL TO .940" OVERALL. WITH A 60° POINT AT EACH END.

ASSEMBLY PLACE WHEEL IN RING CHUCK (BACK OUTWARD), AN AXLE IN TAIL STOCK & FORCE AXLE THRO' WHEEL INSUL. UNTIL POINT PROJ. 1/16" FROM FRONT OF WHEEL. REPEAT UNTIL ALL AXLES & 1/2 OF WHEELS ARE ASSEMBLED. REMAINING WHEELS ARE FORCED ON OTHER ENDS BY SIMILAR PROCESS, BUT AS AXLE CANNOT BE HELD IN TAIL STOCK DRILL CHUCK, PUSH THE AXLE END WITH A PIECE OF BRASS ROD (HELD IN TAIL STOCK) WHICH HAS BEEN FACED, CENTRED & DRILLED Nº 55
WHEEL B to B IS 16·5 mm (.650") MEASURED WITH A SUITABLE GAUGE AS FORCING PROCEEDS.

OBTAINING TRUE RUNNING PLACE EACH ASSEM. IN TURN IN THE LATHE, GRIPPING ONE WHEEL IN RING CHUCK & SEEING THAT OUTBOARD WHEEL RUNS AS TRUE AS POSS. THEN TURN ASSEM. END FOR END & TRY THAT WAY. NEXT PUT ASSEM. IN THE LATHE ONE WHEEL GRIPPED IN RING CHUCK, ITS AXLE END PROJ. & REMAINDER OF ASSEMBLY WITHIN CHUCK BODY SO THAT EACH 60° AXLE END CAN IN TURN BE LIGHTLY SKIMMED TO RUN TRUE WITH WHEEL TREAD.
THE AXLE LENGTH WILL PROBLY BE SHORTENED TO .930/.935". IF YOUR FORCING HAS NOT BEEN TIGHT ENOUGH OR YOU TAKE A TOO HEAVY CUT, EVERY THING WILL COME ADRIFT AT THIS STAGE. FINALLY, WITH THE ASSEMBLY STILL IN THE CHUCK, POLISH THE AXLE END WITH FINE EMERY (ABRASIVE CLOTH) MOUNTED ON A FLAT STICK. (NOT HELD IN FINGERS). IF ALL →

4 m/m WHEELS & AXLES. NORMAN WHITNALL (COPY FROM LINK Nº 198 SEPT 53.

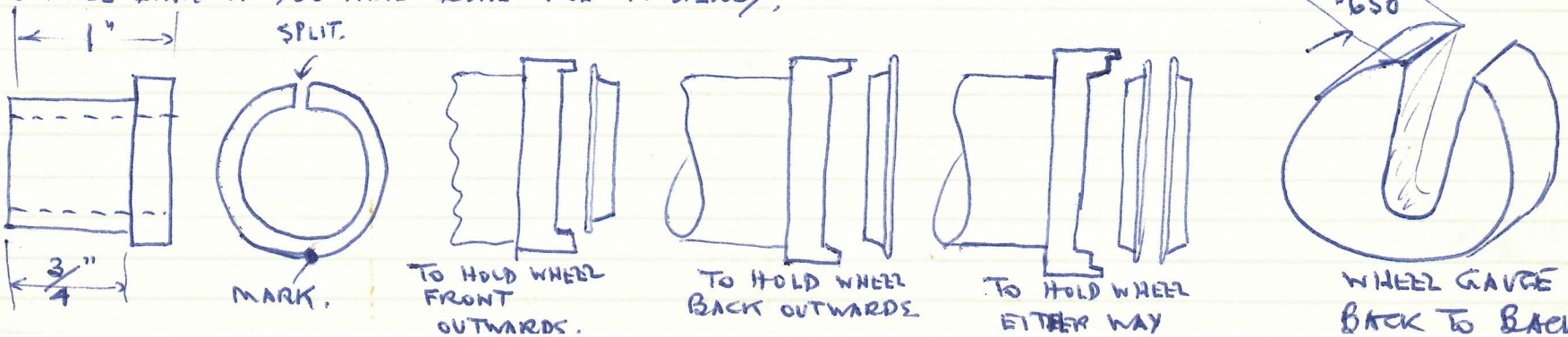
RING CHUCKS (REQUIRED FOR PROD'n) & REFERRED TO IN PREVIOUS ARTICLE IN LINK Nº 196

THE PURPOSE OF THESE CHUCKS, IN COMBINATION WITH A 3-JAW SELF CENT.G CHUCK IS TO HOLD A WHEEL RUNNING TRUE ON ITS' OUTSIDE DIAM. WHILST PERFORMING SOME OTHER OP. ON THE REST OF THE WHEEL. IT IS ALSO A CONVEN'T WAY OF HOLDING A WHEEL WITHOUT MARKING THE TURNED FLANGE & TREAD. CHOOSE A PIECE OF TUBE 1" LONG, ABOUT 3/4" O.DIA. & 1/2" BORE (IF TUBE NOT AVAIL. USE BAR & BORE IT OUT). MILD STEEL PROBY BEST. REDUCE THE OUTSIDE DIAM BY ABOUT .025" FOR 3/4" LENGTH, THEN REVERSE IN 3 JAW SO THAT THE JAWS GRIP THE PART JUST TURNED, & REGISTER AGAINST THE SHOULDER. (DO NOT DISTURB THE PIECE DURING SUBSEQUENT OPERATIONS.

THE END OF THE TUBE SHOULD BE BORED OUT TO SUCH A DIAM. & DEPTH AS WILL JUST ADMIT THE FLANGE OF A WHEEL, FOR GRIPPING THE WHEEL FRONT-OUTWARD, OR THE TREAD OF THE WHEEL FOR GRIPPING FOR GRIPPING BACK-OUTWARD. IF YOU WANT TO MAKE THE COMBINATION CHUCK, YOU WILL NEED TO BORE OUT A DOUBLE STEP — SEE SKETCHES — BUT BE SURE THAT THE BACK FACE OF WHEEL IS NOT SUNK WITHIN THE TUBE (WHEN BACK OUTWARD), OR YOU WILL EVENTUALLY NOT BE ABLE TO OFFER A GAUGE AGAINST IT WHEN FORCING A 2ND WHEEL ON THE AXLE.

WHEN YOU ARE QUITE SATISFIED WITH THIS BORING, THE PIECE CAN BE REMOVED FROM THE 3-JAW, BUT FIRST A MARK SHOULD BE MADE ON IT SO THAT IT CAN ALWAYS BE REPLACED EXACTLY AS BEFORE. THE ACCEPTED METHOD IS TO PUT A MARK AGAINST Nº 1 JAW OF 3 JAW CHUCK, THEN WHEN THE RING CHUCK IS SPLIT DOWN ITS' LENGTH, HALF WAY ROUND THE CHUCK FROM THE MARK, THIS SPLIT WILL BE BETWEEN Nºs 2 & 3 JAWS.

THIS SPLIT IS THE NEXT STAGE BEING FORMED BY A SAWCUT AT THE PLACE JUST STATED, ANY BURRS IN BORE BEING REMOVED IF YOU NOW REPLACE THE RING CHUCK IN THE 3-JAW, FIT A WHEEL IN THE TURNED BORE & TIGHTEN THE 3-JAW, THE RING CHUCK WILL SPRING IN SLIGHTLY & GRIP THE WHEEL FIRMLY. THE WHEEL WILL REVOLVE TRUE ON ITS' OUTSIDE DIAM. IF YOU HAVE DONE JOB PROPERLY.



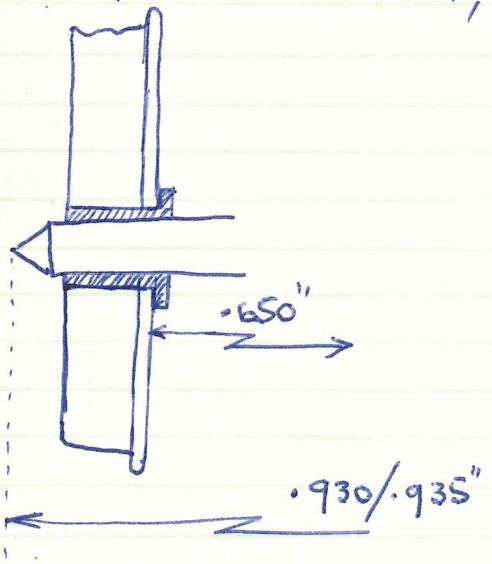
TWEAK THE WHEELS WITH SMOOTH PLIERS IF "OUT" IN VERTICAL PLAIN. ETC.

GOES WELL, IT SHOULD BE POSS. TO SPIN THE COMP. ASS. ON CENTRES, AND HAVE THE WHEELS CONCENTRIC WITH EACH OTHER & THE AXLE IF YOU HAVE FORMED THE AXLE ENDS WITH A TOOLPOST GRINDER, SKIM & POLISH THE AXLE ENDS JUST THE SAME. ENDS

AXLE BEARINGS

THESE VARY ACC. TO VEHICLE CONST., BUT THE FOLLOWING GEN. PRINC. SHOULD BE USEFUL.

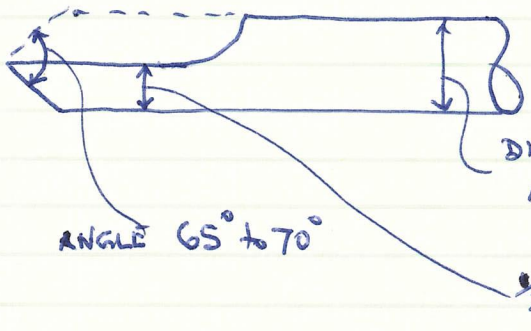
THE VERTICAL SURFACES (OF BRASS OR BRONZE), SHOULD BE .9" APART, MARKED AT CORRECT POSITIONS, LIGHTLY CENTRE POPPED & CSK WITH THE TOOL SHOWN IN SKETCH, TO A DEPTH. OF .015", TRY AN ASSEM. BETWEEN BEARINGS. & IF NOT FREE, CSK SLIGHTLY DEEPER, UNTIL FREE RUNNING, WITHOUT ENDPLAY, IS OBTAINED. (ASSEM. MUST BE AS CENTRAL AS POSS. BETWEEN BEARINGS). IF WHITE METAL AXLEGUARDS ARE USED, THE HOLES CAN BE TAPPED & FILLED WITH PIECES OF 7 BA. THREADED STICK, CUT OFF. & FILED SMOOTH UNTIL .9" APART.



GEN. ASSEMBLY.

CSK TOOL

MADE FROM SILVER STEEL (HARDEN & TEMPER)

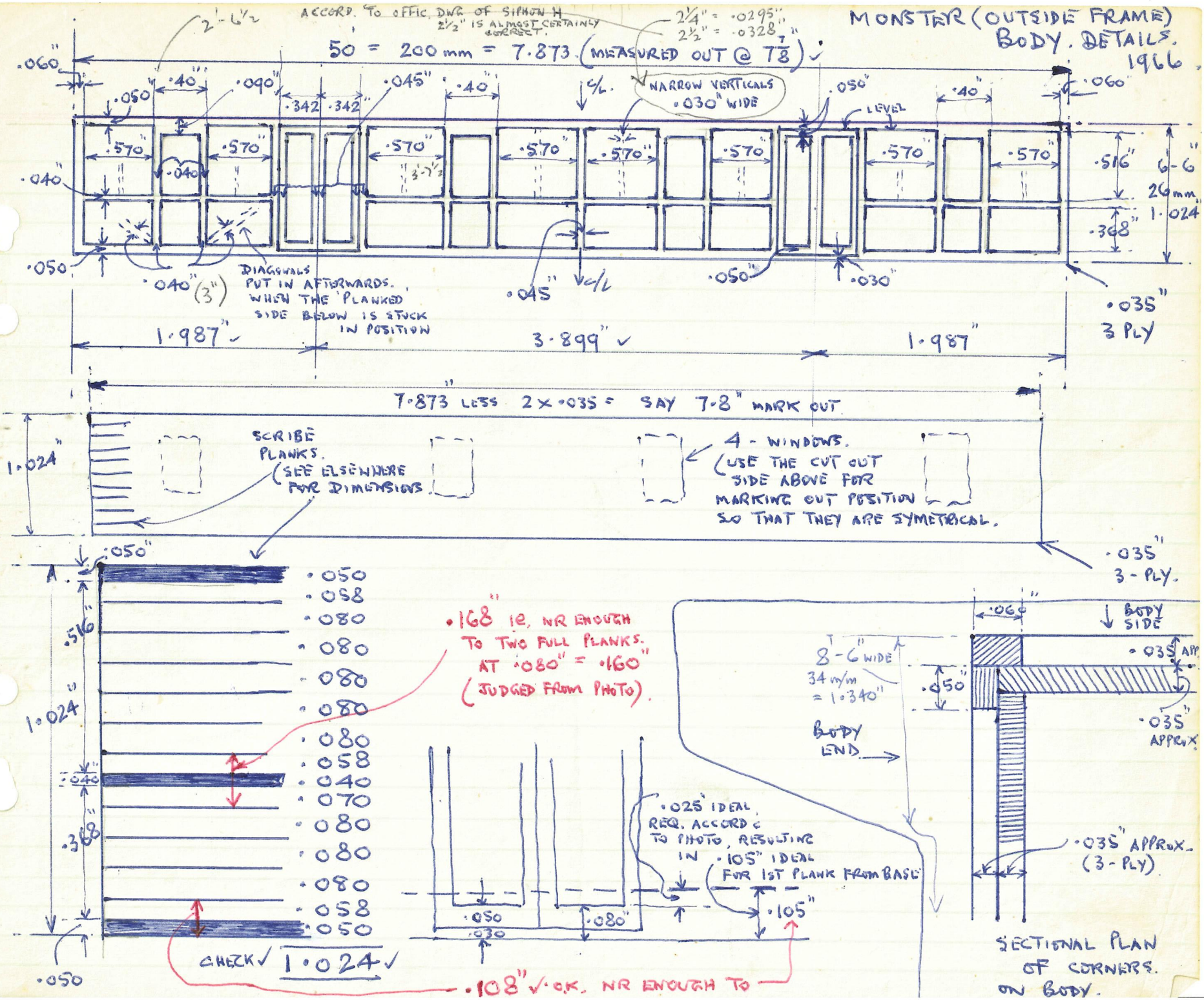


NOTE SPOKED WHEELS AS ABOVE, BUT SEVERAL HOLES DRILLED & FILED UP. (SEE ART. BY ALEX JACKSON IN MRN. JUNE 1950 ON. HIS LNWR COAL TANK)

NOTE:- BEARINGS

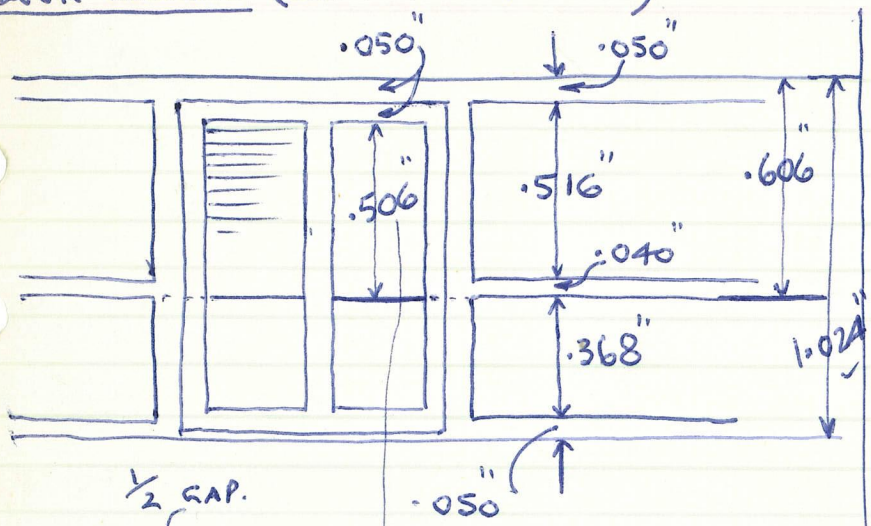
IT IS POSS. TO RUN THESE ASSEMBLIES. WHICH ARE .728" OVER OUTSIDE FACES OF WHEELS, BETWEEN BEARING SURFACES LESS THAN .9" APART. ALL IT NEEDS IS TO SINK YOUR HOLES DEEPER THAN ORIGINALLY SPECIFIED.

MONSTER (OUTSIDE FRAME) BODY. DETAILS. 1966.

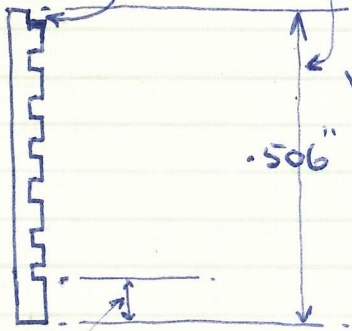


"MONSTER"
OUTSIDE FRAMED
1966/67.

DOOR LOUVRES (CALCULATION OF DEPTH)



½ GAP.

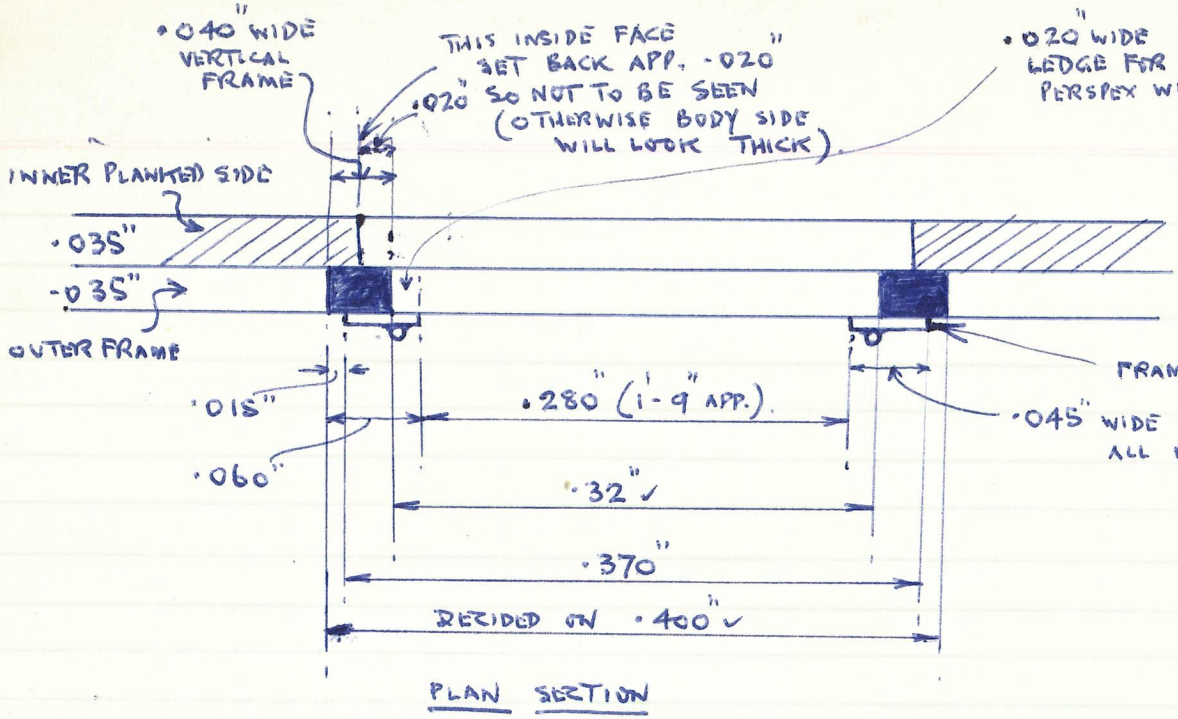


WITH ·506" DIMENSION THIS GIVES ·025" FACE AT BOTTOM (AS REQUIRED). PLUS ½ GAP AT TOP. AS REQ'D. — BUT, OF COURSE, ONLY 15 FACES INSTEAD OF 18 ON PROTOTYPE.

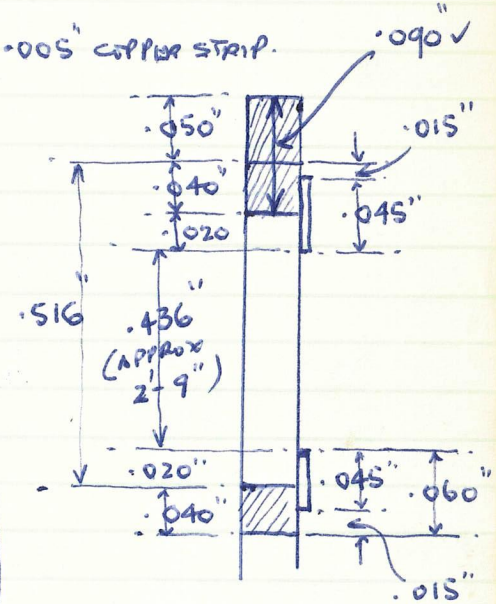
JUDGED FROM PHOTO APPROX. ·025" FACE REQ'D HERE.

BUT NO SUITABLE PITCHED FRET SAW BLADE TO GIVE 18 FACES.

MONSTER OUTSIDE FRAMES 1966/67.

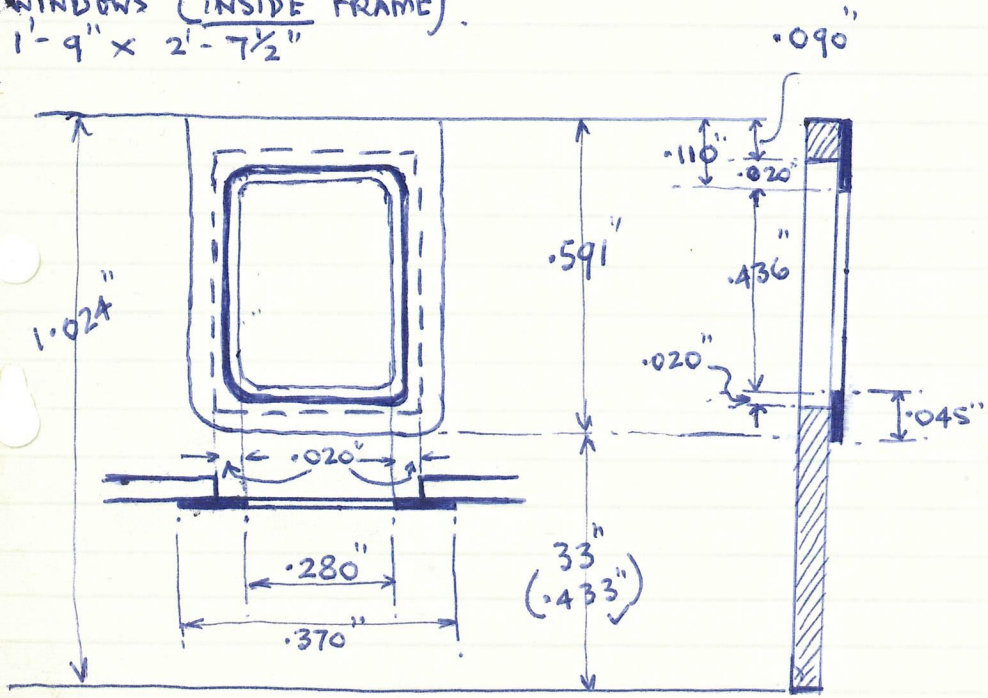


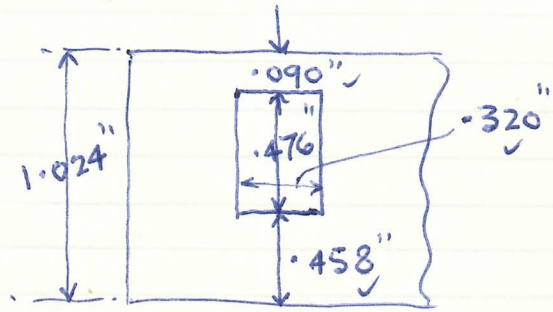
PLAN SECTION



VERTICAL SECTION

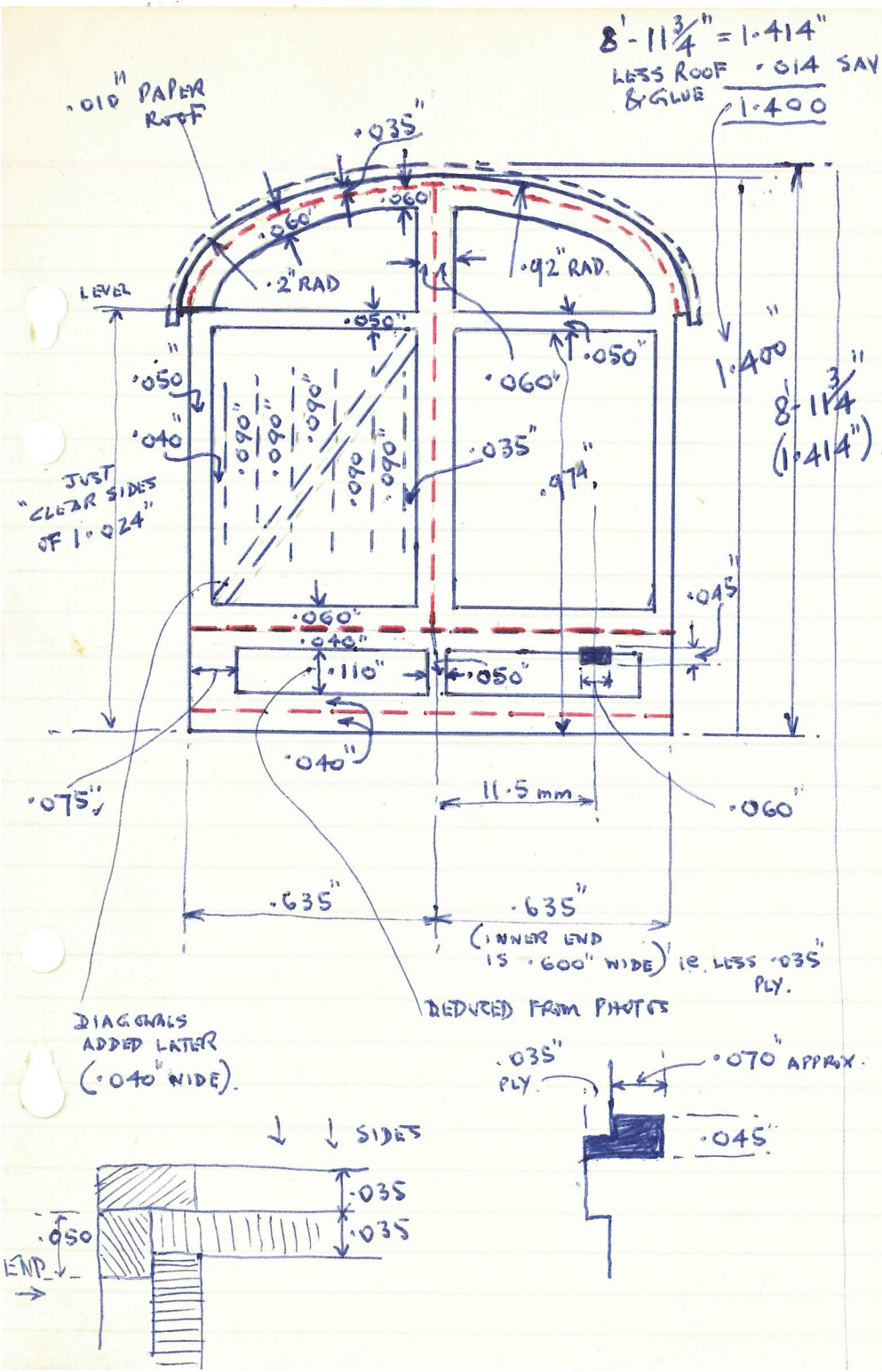
WINDOWS (INSIDE FRAME) 1'-9" × 2'-7½"





POSIT. OF CUT OUTS ON SIDES.

"MONSTER"
OUTSIDE FRAME
BODY DETAILS



"MONSTER" COMPONENTS 1967.

INSIDE FRAMED BODY. DETAILS.

33" = .88"
x" = 2"
33 x 2 / .88 = 300/4 = 75" = 6'-3"

3" DECIDED (IE. .040")

6'-3" DOOR

6'-6" 26 m/m. 1.024"

.3411"

.050"

.040"

1.024" (6'-6") SHOULD BE 1.038" (6'-7¾")

.040"

LEAVES .501" FOR → CHECKED OK

.433" (2'-9" DEAD)

.090 + .433 = .523

1.024 − .523 = .501"

10'-6½"
3-10¾
6-7¾"

FOR LOUVRES.

THIS CAN ALWAYS BE VARIED A BIT ON CUTTING, TO ACCOM. CORRECT FIT OF LOUVRES IN .501" DIM.

"OUTER" END

.635"
.095
6 | .540
= .090"

.92" RAD.

.2" RAD.

6 PLANKS @ .090"

.050"

1.4"

.045"

.040"

.040"

.075"

.075"

.110"

.110"

1.024" CLEARANCE

.635"

.635"

.035"

.035"

.040" (3"✓)

.035" IE. 3 PLY SIDE IE. APPROX 2¾" PROT.

(.035" 3. PLY WOOD.)

IN ADDITION TO PLANKS, SCRIBE WHERE SHOWN — FOR DOOR OPENINGS, AND BOTTOM FLAP.

THE "INSIDE" END IS SAME EXTERNAL DIMS. AS ABOVE BUT SCRIBED:-

CHECK .635":- .110" + .450 + .075" = .635" OK. ✓

5 PLANKS AT .090"

.075"

.110"

APPROX 3/8"

.635"

℄L.

THE PLANKS ARE OFFSET (IE. NOT IN LINE) WITH PLANKS ON

DOOR PLANKING DETAILS. INSIDE FRAMED MONSTER

.3411"

.0852"

.030" .05535" .030"

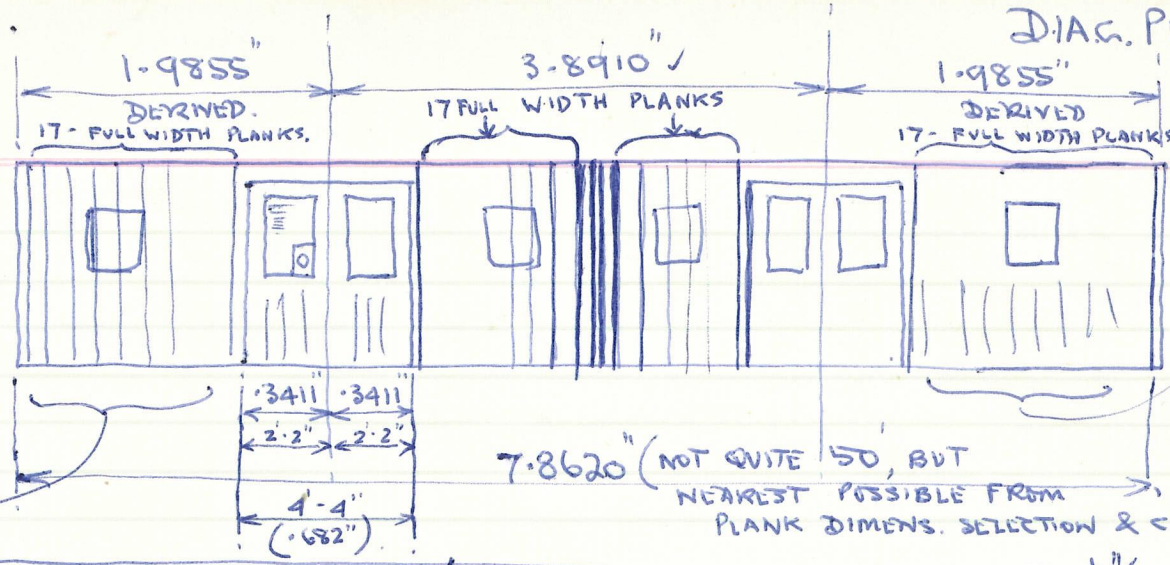
.0852
.0852
.0600
.2304

.3411 − .2304 = .1107

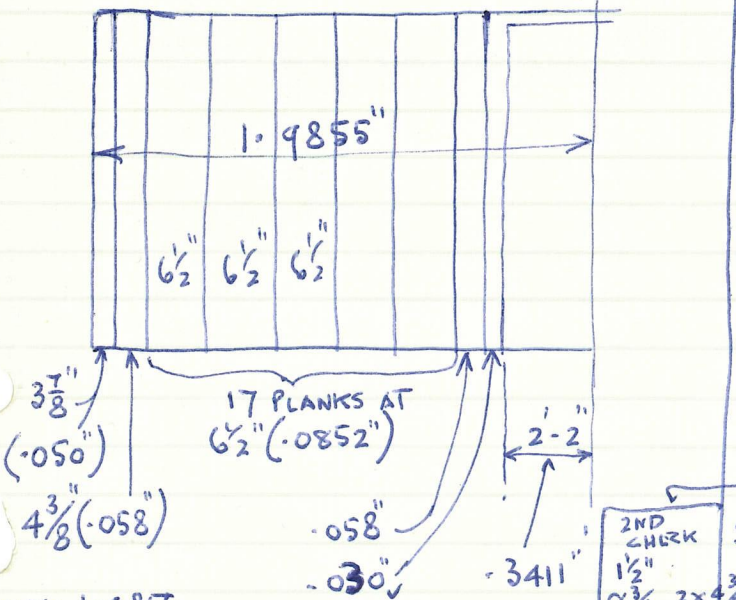
2 | .1107
= .05535"
= 4" NEARLY DEAD ON ✓

DIAG. P18 MONSTER INSIDE FRAMES JUNE 66

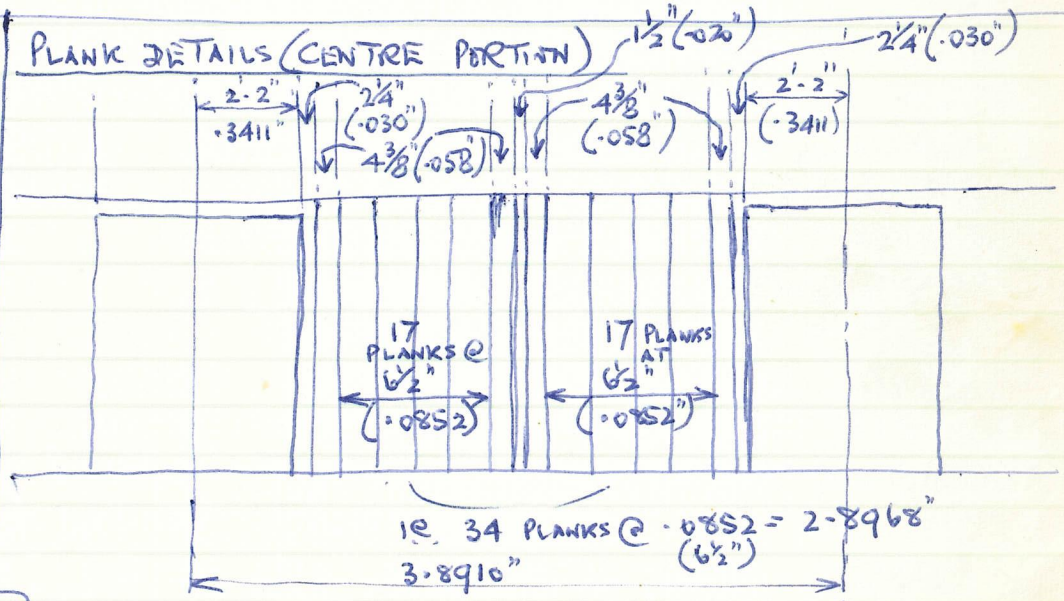
12' - 7 3/4" = 1·992"
24 - 8 1/2" = 3·889"



PLANK DETAILS (ENDS)



PLANK DETAILS (CENTRE PORTION)



CHECK 1·9855

·030 × 1	=	·0300
·050 × 1	=	·0500
·058 × 2	=	·1160
·0852 × 17	=	1·4484
·3411 × 1	=	·3411
OK ✓	=	1·9855

2ND CHECK

1 1/2"			
8 3/4	2 ×	4 3/8	
221"	34 ×	6 1/2	
8 3/4	2 ×	4 3/8	
4 1/2	2 ×	2 1/4	
244 1/2"			
+ DOOR 52"			4'-4"
296 1/2"			

= 24' - 8 1/2"

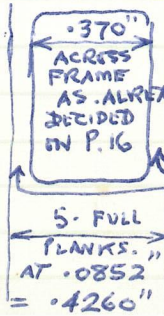
CHECK 3·8910" CENTRES

2·8968"	34 PLANKS.	
·3411	½ DOOR	
·3411	" "	
·0600	2 × ·030"	
·1160	2 × ·058"	
·1160	2 × ·058"	
·0200	CENTRE BIT	
3·8910"		

NR. ENOUGH

CENTRES = 3·889

CHECK PLANKS ROUND WINDOWS.



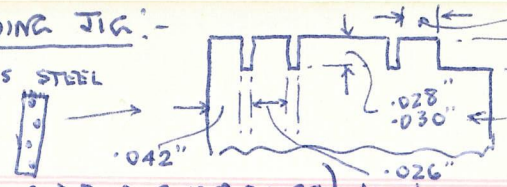
·426
LESS ·370"
·056"
÷ 2 = ·028
IE. = 2" PROTOTYPE APPROX.
✓ OK. LOOKS QUITE NEAR THIS FROM PHOTOS.

"MONSTER" COMPONENTS.

1966/67.

BENDING JIG :-

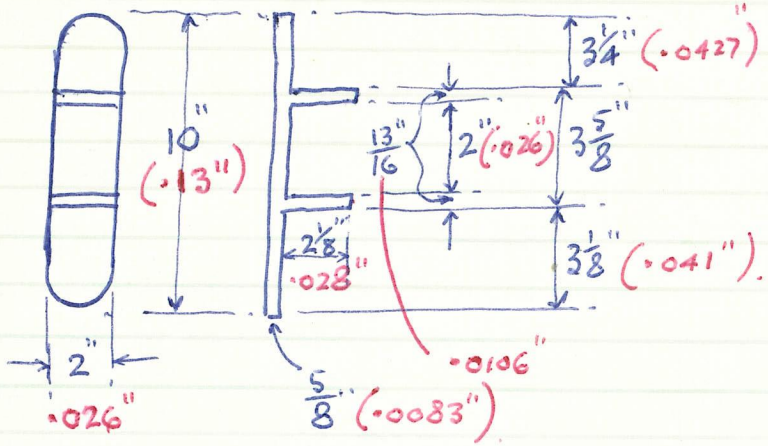
USED A WOOLWORTHS STEEL STRAP



ALL 3 SAWCUTS ARE ·010"/·012" WIDE WITH 8OT. COPING SAW.

HINGE BRACKET

DIMS. FROM MONSTER W 600 (DOUBLE FOLDING END DOORS).



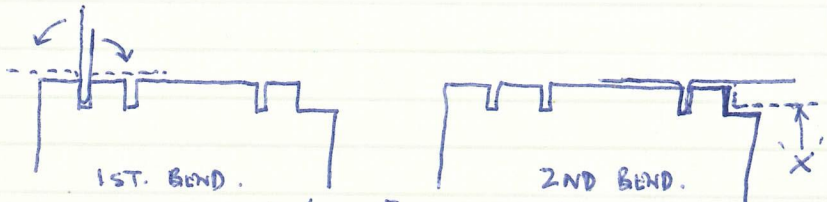
MAT. USED. ·004" ✓✓ COPPER STRIP.

MODUS

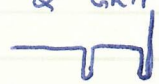
① MARK OUT & CUT (TINSNIPS) THE DEVELOPED SIZE ie. APPROX 5/8" LONG. X ·040" WIDE FILED DOWN LATER OP. TO ·026" ABOVE

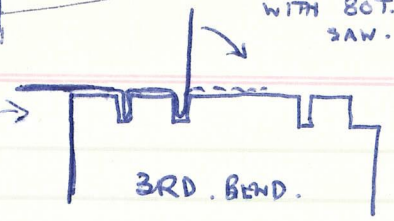
② TIN (VERY THIN - WIPE) ONE FACE OF ABOVE & BEND ON C/L APPROX THEN FLATTEN WITH D.B. PLIERS

③ USING BENDING JIG. PROCEED AS FOLLOWS.

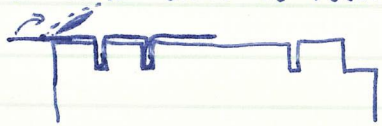


THEN FOLD BACK 'X' 90° & GRIP (FLATTEN) WITH D.B. PLIERS TO GET:-





④ WHILST STILL IN ABOVE POSITION, PLACE ANY KNIFE EDGE TOOL. (eg. SLOTTING FILE), IN POSITION SHOWN BELOW. "SIGHTING" ITS POSITION AGAINST EDGE OF TOOL, & BEND BACK TO POSITION SHOWN :-



THEN TRIM OFF TO LENGTH & PRESS DOWN FLAT SO THAT LUG IS APPROX ½ WAY. THUS :-

⑤ REVERSE THE BKT IN JIG & REPEAT FOR OPPOSITE LUG.

⑥ APPLY SOLDERING IRON ON BACK & BOTH SIDE EDGES TO FUZE EVERYTHING TOGETHER.

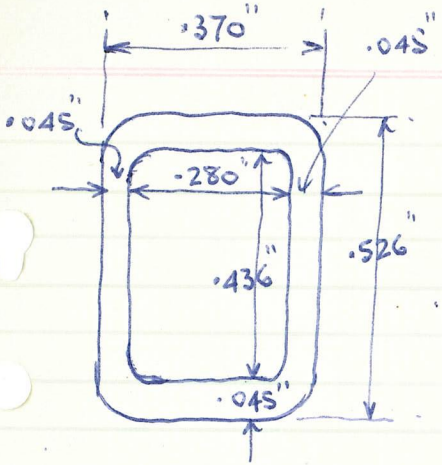
⑦ FILE BOTH EDGES TO BRING DOWN TO ·026" WIDTH. (USE MICR. AS REQ'D) —

⑧ WHILST SOLDER IS STILL ON BACK OF BKT. (STRENGTHENING SAME). GRIP. BKT WITH TWEEZERS AND/OR SMALL NOSED PLIERS IN BEST POSITION TO FACILITATE FILING RADIUS IN 4 POSITIONS. (USING SMOOTH WEDGE FILE ▯).

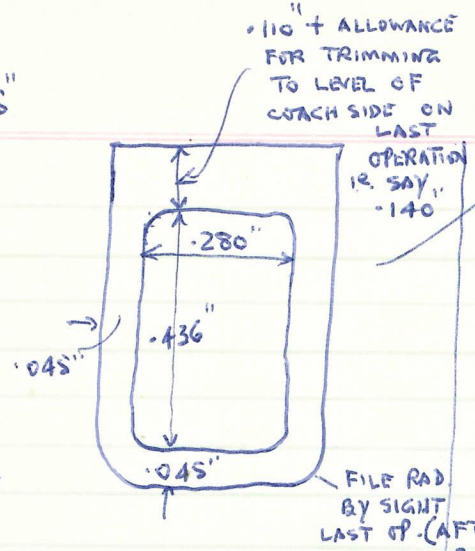
⑨ RUB BACK FACE OF BKT ON SMOOTH WEDGE FILE WITH FINGERS TO REMOVE SURPLUS SOLDER & FLATTEN BACK FACE.

⑩ WITH EMERY CELLOTAPED TO VERY THIN RULE, POLISH ALL EDGES & FACES TO CLEAN UP.

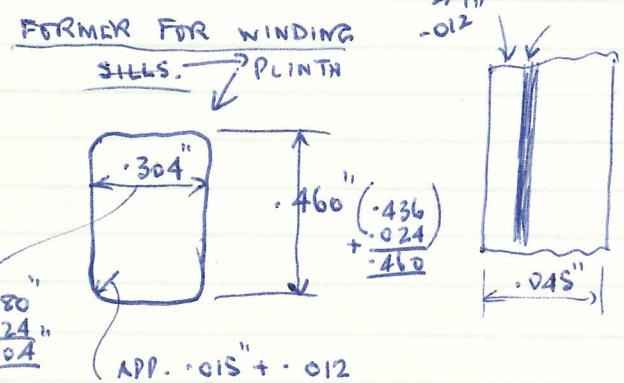
WINDOW FRAMES.



FOR OUTSIDE FRAME MONSTER



FOR INSIDE FRAMED MONSTER.



NOTE:- USED ·010" HEILKRAFT STEEL WIRE SOFTENED.— BUT STILL SPRINGY. — REQUIRED PLENTY OF REBENDS & FIDDLING EVEN AFTER BEING WOUND ROUND FORMER.

IN FUTURE, TRY ·010" SOFT COPPER WIRE WOUND ROUND FORMER

WINDOWS (PERSPEX) WERE ALL CUT TO INDIVIDUAL BODY APERTURE (V. GOOD FIT, IN VIEW OF NARROW LEDGE), THEN

THE FRAMES WERE THEN CODED FOR EACH INDIVIDUAL APERTURE IN BODY SIDE & STORED UNTIL REQUIRED.

NOV. 66.

"MONSTER" COMPONENTS

→ USED ·004" COPPER STRIP. (·005" MIGHT BE BETTER IF AVAIL.) 3/16" ON PROTOTYPE

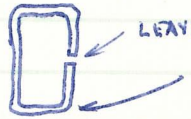
MODUS. ① BLUE COPP. STRIP. & M.O ABOUT 8 FRAMES.

② PUNCH 4 CORNERS. (USING MEDIUM SIZED PUNCH) ·040" DIAM?

③ WITH EXACTO BLADE, CUT OUT WINDOWS (8 FRAMES).

④ TRIM ALL ROUND (IE. CUT OUT WINDOW FRAMES FROM STRIP LEAVING ALLOWANCE ON ·045" DIMS. FOR FILING.

⑤ CLEAN UP [redacted] FACE FOR SOLDERING PLINTH. (PLINTH MADE FROM ·010" DIA. WIRE & MADE TO SUIT INDIVIDUAL FRAME



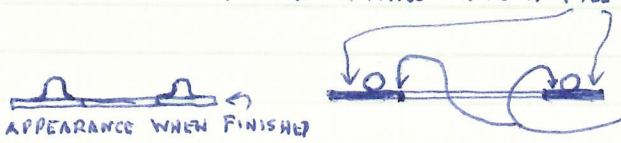
LEAVE LITTLE OR NO GAP.

MAKE SURE ALL 4 CORNERS ARE TO CONSISTENT RADIUS.

⑥ SOLDER PLINTH TO FRAME, ONE SIDE AT A TIME USING CELLOTAPE TO POSITION EACH TIME. THEN HOLDING WIRE DOWN FIRM WITH STEEL RULE UNTIL SOLDER TAKES HOLD. (USE MINIMUM SOLDER ON IRON)

⑦ FILE ALL ROUND WINDOW FRAME (IE. REMOVE SURPLUS. METAL) TO BRING DOWN TO ·045" WIDTH. APPROX ALL ROUND & FILE RADIUS, BY SIGHT ON THE CORNERS.

⑧ REMOVE EXCESS SOLDER ALL ROUND THE WINDOW FRAME USING SMOOTH FILE & IF SOLDER APPEARS IN ODD LUMPS ON INNER FACE, SCRAPE DOWN FLAT WITH SHARP TOOL (SCRAPER)



APPEARANCE WHEN FINISHED

⑨ FINALLY CLEAN UP ALL ROUND (POLISH) USING FINE EMERY (EMERY STUCK TO VERY THIN 12" RULE OR ANYTHING SIMILAR, USING CELLOTAPE

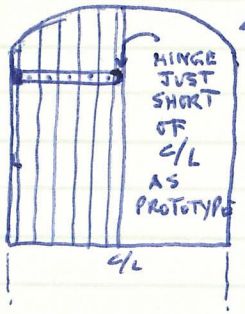
NOTE:- ALL WINDOW FRAMES WERE TEMP. CELLOTAPED TO BODY SIDES. TO ENSURE THAT THERE WAS AN EVEN LEDGE (PROJECTION) ALL ROUND FOR THE WINDOW. WHEN THIS POSIT. WAS ESTABLISHED LIGHT PENCIL MARKS WERE APPLIED TO BODY, [redacted] SIDES. TO INDICATE POSIT. OF FRAMES ON LATER ASSEM.

HINGES FOR END DOORS

'MONSTER' COMPONENTS. 1966/67.

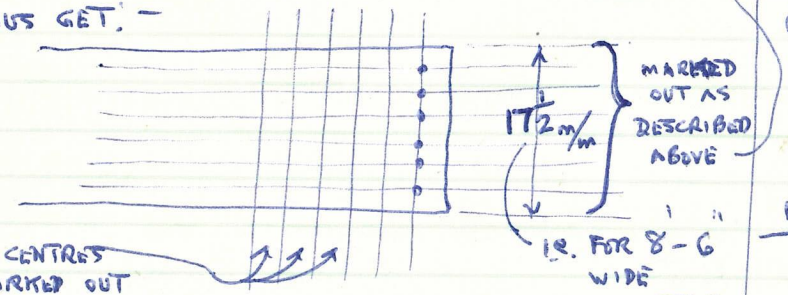
USE .007" COPPER STRIP

① FROM ACTUAL VEHICLE (MODEL) MARK OFF CARD TEMPLATE IN PENCIL THUS:-



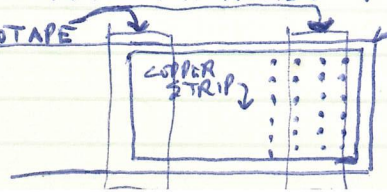
② DECIDING THAT BOLT HEADS ARE IN CENTRE OF PLANKS (AS PROTOTYPE PHOTOS INDICATE), THE POSITION OF THE BOLT HEADS CAN BE ASCERTAINED, AND THESE ARE THEN MARKED OUT ON .007" COPPER STRIP, CUT TO 17½ mm WIDTH. (17½ mm WAS ASCERTAINED BY TRIAL AS THE TOTAL LENGTH OF THE HINGE, ALLOWING SOMETHING FOR CURLING THE END 

③ WE THUS GET:-



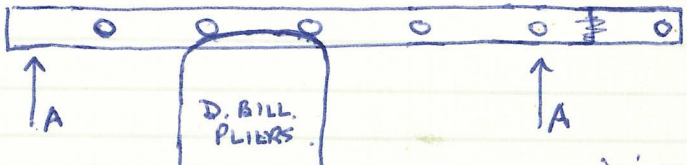
④ USING BEESON RIVET & JIG & SAME DOLLY AS THAT USED ON GUSSETS.  , WHICH PRODUCES A NICE ROUND HEAD.  , EMBOSS THE RIVET HEADS ONE ROW AT A TIME (USING ADJUSTABLE GUIDE ALL THE TIME TO ENSURE ALL RIVETS ARE IN A STRAIGHT LINE) & OLD BEESON BLUNT PUNCH.

⑤ AFTER ABOUT 1 DOZ. ROWS ARE EMBOSSED, STICK THE COPPER STRIP DOWN ONTO A PIECE OF .035" 3 PLY WOOD. USING CELLOTAPE

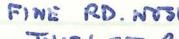


⑥ USING BOT COPING SAW, SAW RIGHT THRO WOOD & COPPER, KEEPING AS NEAR TO BOLT HEADS AS POSS. TO REDUCE SUBSEQUENT FILING OF EDGES. (KEEP REMOVING NARROW STRIPS OF CELLOTAPE WITH EXACTO BLADE AS EACH ROW IS SAWN THRO, SO THAT BOLT HEADS CAN BE CLEARLY SEEN FOR SAWING NEAR TO.

⑦ REMOVE ROUGH BURRS FROM UNDERNEATH, THEN GRIP EACH SIDE IN TURN WITH DUCK BILL PLIERS THUS:-



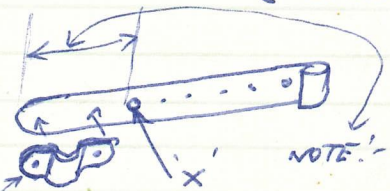
AND WITH FINGER PRESSURE, APPLIED AT 'A' TO KEEP HINGE APPROX LEVEL, FILE EACH EDGE IN TURN WITH SMOOTH WEDGE FILE TO .026" WIDTH ALL DOWN

⑧ REMOVE EDGE BURRS ALL ROUND (SHARP EXACTO) & FILE RADIUS AT ONE END THUS 
AT OPPOSITE END, BEND WITH VERY FINE RD. NOSED PLIERS TO APPROX ½ WAY THUS:-  , THEN COMPLETE THE BEND WITH TWEEZERS. - MUST BE VERY COMPACT BEND OTHERWISE IT WILL PROTECT OUTSIDE THE HINGE BKT. LUGS.

L.H. & R.H. HINGES (DIFFERENT.)

BOTH L.H. & R.H HINGES ARE IDENTICAL EXCEPT FOR THE SINGLE END RIVET AT THE ROUNDED END OF THE HINGE I.E:

THIS RIVET IS PUT IN FOR ALL L.H. HINGES, BUT OMITTED FOR ALL R.H. HINGES. BECAUSE ALL R.H HINGES CARRY A GUIDE BKT FOR THE DOOR SECURING RODS. (SEE SEP. DETAILS FOR MANUFACTURING METHODS.

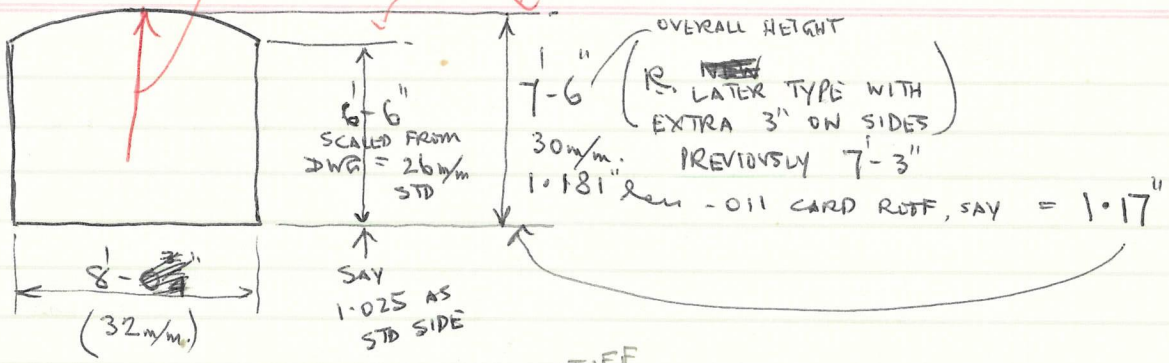


NOTE:- MAKE SURE THERE IS ENOUGH ROOM TO POSITION THE GUIDE BKT ON THE HINGE WITHOUT FOULING THE ADJACENT RIVET 'X' - THE LATTER COULD BE MOVED OVER SLIGHTLY TO ENSURE THIS.

M1
APRIL 65

RADIUS TO GIVE THESE DIMS
DERIVED AS 8'-9" R. 35 m/m RAD.
FROM LARGE SCALE HAND MADE DWG.

ENDS



M1 BASE 3-PLY of .030" THIN STUFF APPARENTLY STUCK TOGETHER = .090"

8'-0" WIDE (WITHOUT MOULDINGS) = 32 m/m = 1.260"

LESS .090 x 2 = .180

1.080 (R. STD 1 1/16" IS NOT WIDE ENOUGH

NEWSPAPER VAN DWG 35033.

M1

APRIL 1965

46'- 6 3/4" OVER MOULDINGS
= 7·334" LONG.
− ·090
7·244 CUT LENGTH → 7·244"

LESS 2X ·035" PLY
" 2X ·010" MOULDG.
= ·090"

3-DOORS - MARK OUT, BUT CUT OUT AFTER GLUEING TO Nº 2 SIDE BELOW.

STD. VERT. DIMS. (AS D3.) TO GIVE 12" LEAVE PANEL ON A 6'-6" HEIGHT OF SIDE. (ie. 26m/m)

·040" ·21" ·240" ·330" ·455" ·040"

1·025" (26m/m) (STD).

·045" ·035" ·010"

·58" ·622" ·590 (15m/m) 1·535" (39m/m). ·590 1·535" (39m/m). ·590" ·622" ·58" = 7·244" (CHECK!) ✓

·58 ·917" 1·0625" 1·0625" 1·0625" 1·0625" ·917" ·58 = 7·244" (CHECK ✓)

7 7/8" = 7-10⅛ PROT.
= 1·245"
÷ 2 (AS WINDOW SCALES ON C/L
= ·622" ✓
THE ·58" DERIVED:-
·622"
LESS ·045
·577 SAY ·58
TO = 7·244" CUT LENGTH

3 - DOORS NOT MARKED OUT AS THEYRE CUT AFTER GLUEING TO Nº 1 ABOVE

·5" ·50" ·5" ·50" ·370"

1·025" (26m/m) STD.

·58" ·30" ·510" (MAX).

3 - WINDOWS ARE MARKED OUT BUT CUT AFTER GLUEING TO Nº 1 & 2 TO ENSURE SYMETTRY.

·20" ·410" ·415" ·240" ·330" ·570" ·3" ·3" ·3"

1·025" 26m/m.

THESE DERIVED FROM DETAILED DWG DIMS. ON VG DOOR (SEE ELSEWHERE)

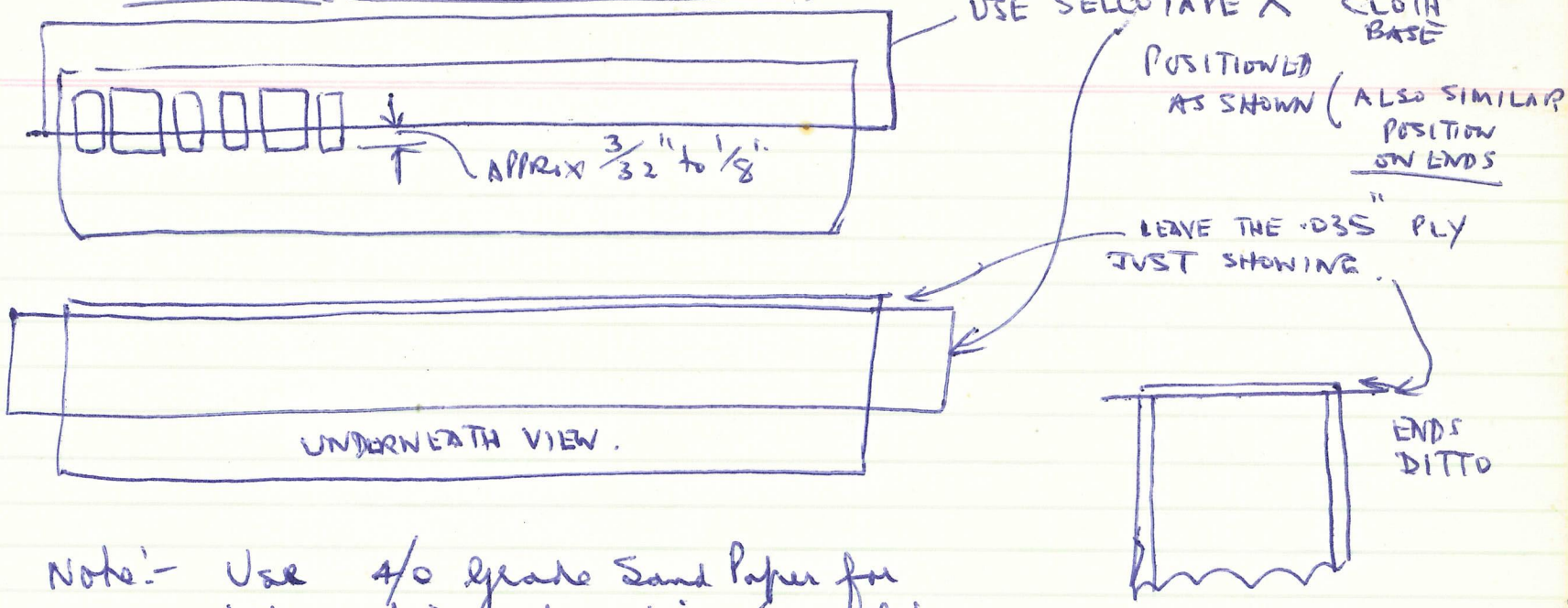
✱ FROM J. SLINN'S LARGE M1 PHOTO (LOANED), THIS WINDOW WIDTH SCALED 1'-4" (F. ACCURATELY DONE) = ·210" (ie. WIDER THAN D3 at ·18"

THE DWG 35033 ALSO SCALED 1'-4" (MINIMUM)

ALSO LARGE PHOTO CLEARLY SUGGESTS WIDER WINDOW THAN STD QUARTER LIGHT @ ·18"
SO ACCEPT 1'-4" ie. ·21"

FURTHERMORE, CHECKING WITH ADJACENT PANELS (WHICH ARE SLIGHTLY WIDER THAN THE WINDOW (SEE LARGE PHOTO)
& ASSUMING THE NARROW PANEL IS ·44" BUILDING PANEL (

BODIES (SANDING TUMBLEHOME)



Note:- Use 4/0 grade Sand Paper for 1st sanding operation (gently)

Then finish off with 7/0 whilst SELLOTAPE still in position

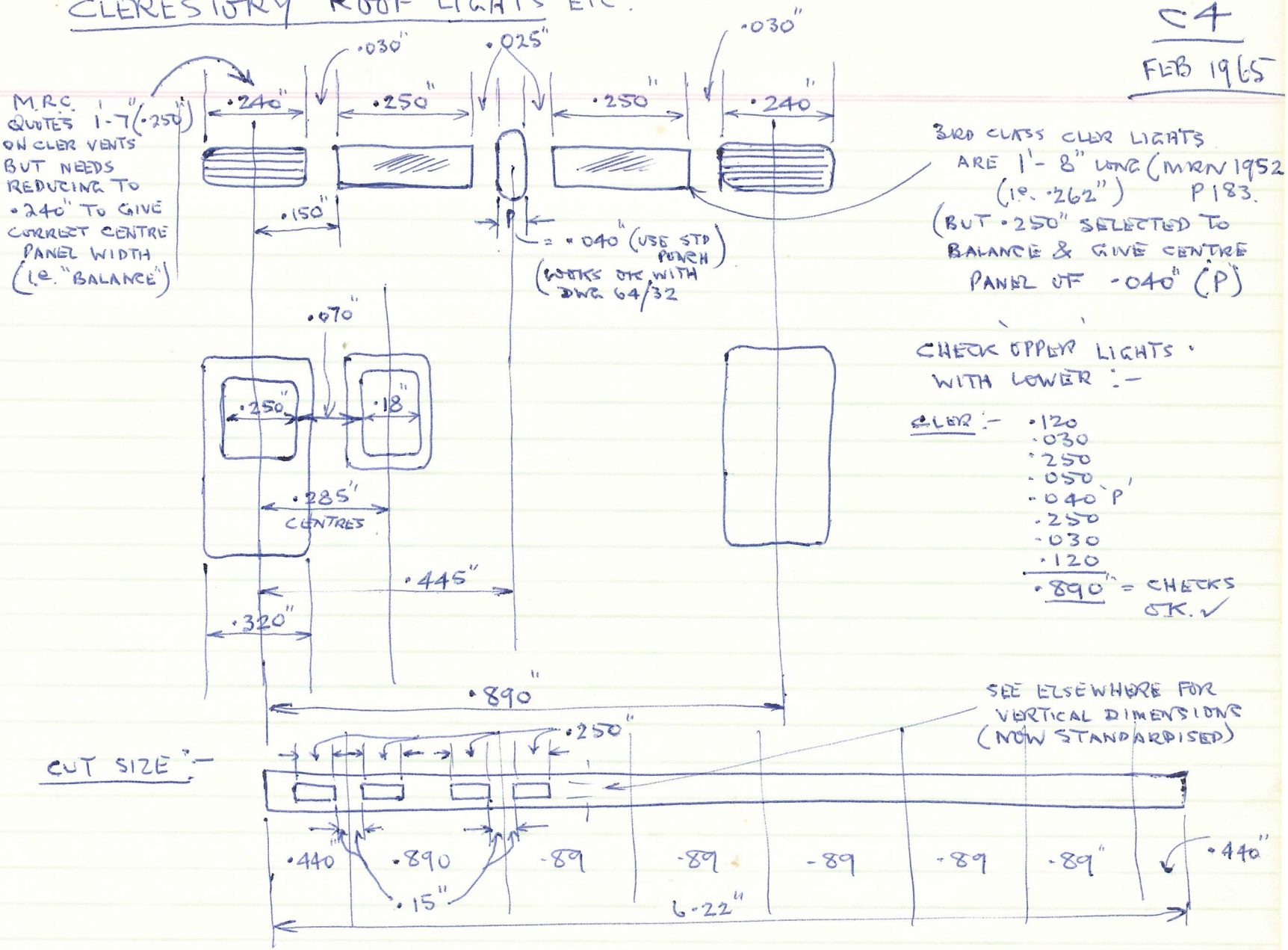
after removing Sellotape & blend radius on each corner (if necessary), to look similar ie. nice gentle curve using 7/0 grade sandpaper.

Then fill in with sanding sealer.

CLERESTORY ROOF LIGHTS ETC.

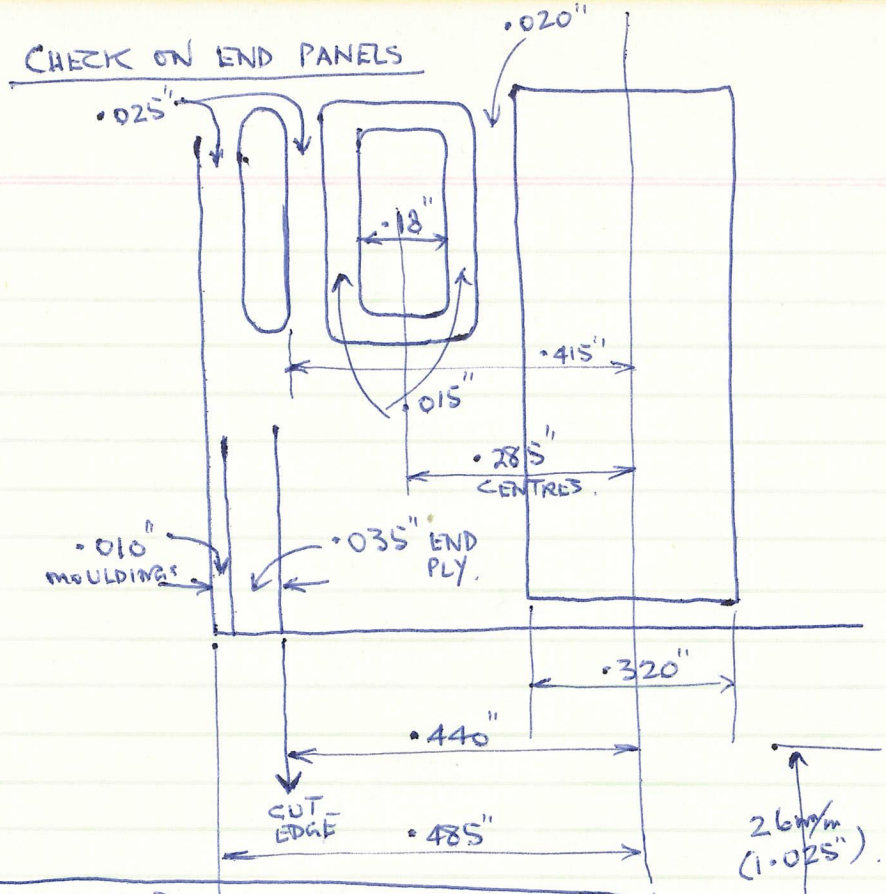
C4

FEB 1965



C4

CHECK ON END PANELS



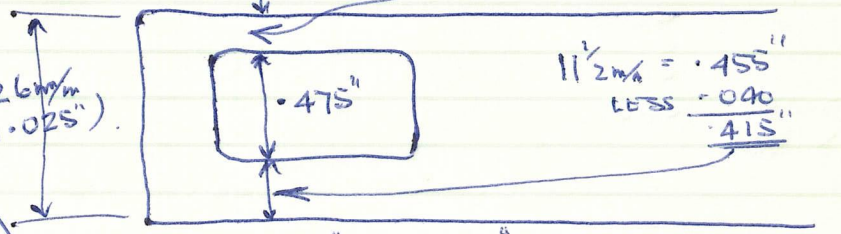
END PANEL IS ·485" LESS ·415" + ·025" = ·440 = ·045"

i.e. 3½" (LOOKS OK WITH DWG. 64/42.

(WILL HAVE TO USE ·040" PUNCH. & WIDEN OR MAKE THE ·025" END MOULDING INTO ·030"

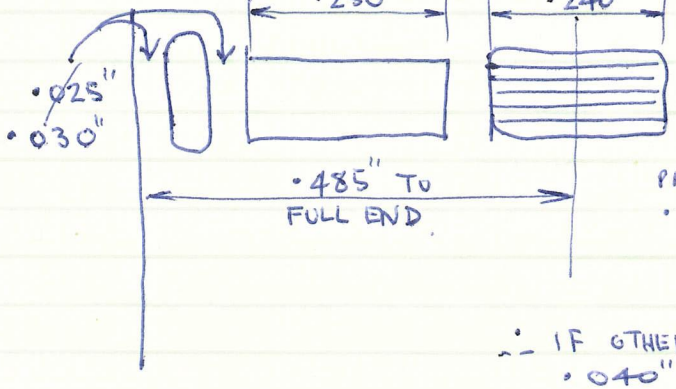
OK ✓

4½ m/m = ·175" LESS ·040" SAY ·135"



"INTERNAL" SIDE OF COACH.

CHECK END CLERESTORY PANEL. C4



·415" less ·040 = ·375

THESE GIVE A PANEL OF:-

·485" LESS ·120 + ·030 + ·250 + ·050 = ·450 = ·035" (TOO WIDE)

∴ IF OTHER PANELS ARE OK. @ ·040", AS ESTABLISHED, THIS SHOULD BE PROBABLY ·025"

∴ ALTER THE TWO ·025" MOULDINGS TO ·030", TO GIVE PANEL OF ·025"

OK. ✓

C4

STARTED FEB 1965

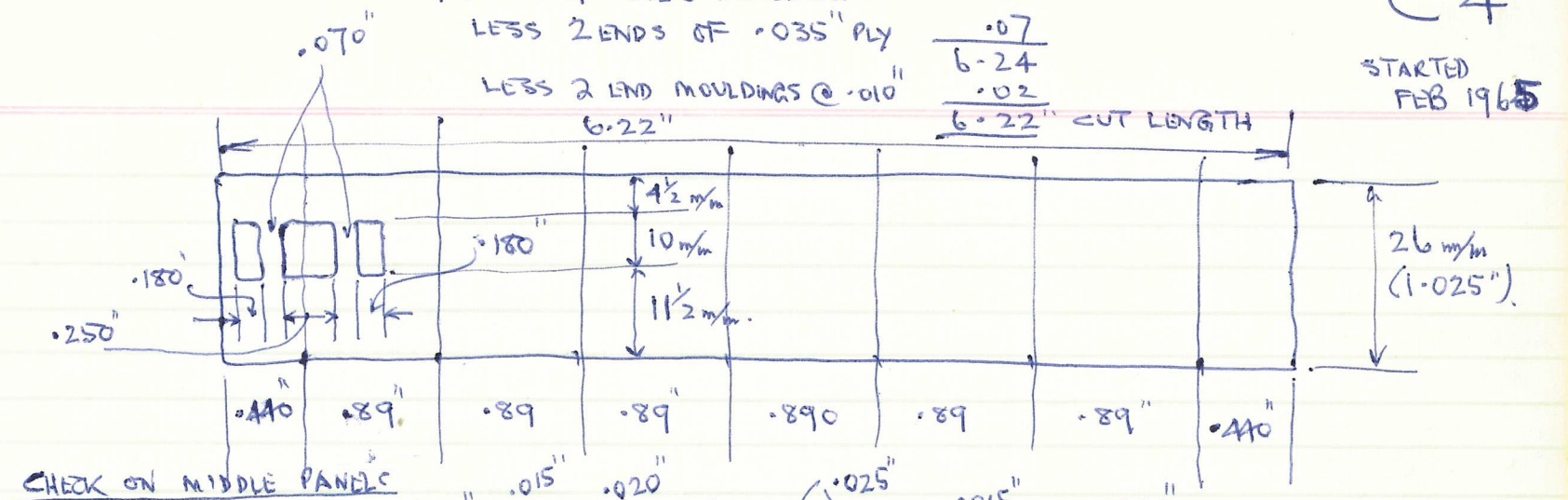
40' - 0 3/4" OVER MOULDINGS = 6.31"

LESS 2 ENDS OF .035" PLY .07

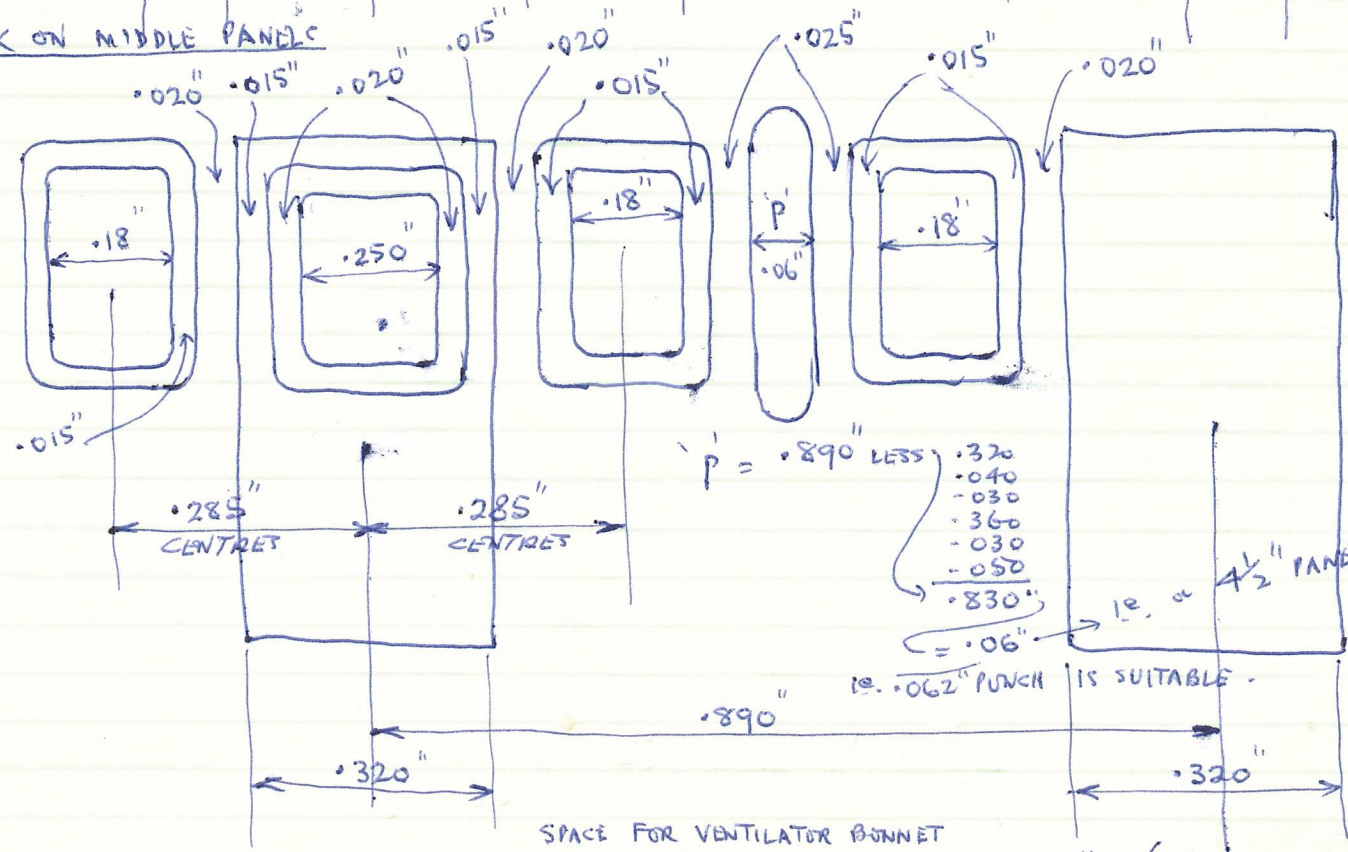
6.24

LESS 2 END MOULDINGS @ .010" .02

6.22" CUT LENGTH



CHECK ON MIDDLE PANEL



'P' = .890" LESS

.320
.040
.030
.360
.030
.050

.830"

= .06"

i.e. a 4½" PANEL - LOOKS BANG ON WHEN SCALED WITH DWG 64/42.

i.e. .062" PUNCH IS SUITABLE.

SPACE FOR VENTILATOR BONNET

= .250" + .040" + .010" OF THE .015" X 2 (PROV. I CUT THE EAVE MOULDINGS TO .025" & NOT .035" MOULDING BETWEEN DOOR & WINDOW

= .310" (SUFFICIENT TO ACCOMODATE THE .270" VENTILATOR BONNET.

V6

MAIN SIDES