120 Inch Telescope
Coude' Support Frame Adjustment

— SHEET I — 12-12-78/FM

INSTALLATION OF SOUTH SUPPORT - COUDÈ ROOM

IN NOVEMBER 78 A NEW SUPPORT FOR THE SOUTH CORNER OF THE COUDÈ FRAME WAS INSTALLED.
THE SUPPORT WAS DESIGNED BY "CEIDEBURG ENG'G." (408) 688-3841 DWG. NO. 14-C-14, AND WAS BUILT IN OUR SHOP.
THE IDEA BEHIND THE DESIGN IS TO ALLOW THE COUDÈ FRAME TO PIVOT ON A SPHERICAL BEARING (SOUTH) WHILE THE WEST SUPPORT GOT NEW HARDENED PLATES SO IT CAN SLIDE IN AN E-W DIRECTION.

DR. G. HERBIG, R. LAUB, N. JERN & F. MUELLER WERE PRESENT AT THE INSTALLATION.
WE FIRST MADE A TARGET ON THE TOP OF THE I-BEAM SOUTH CORNER, AND CENTERED A PLUMB BOB ON IT.
WE REMOVED THE BOTTOM COLLIMATOR AND ITS HOUSING AND THE LIFT MOTOR ON THE ECHELLE-CROSSDISPERSER.

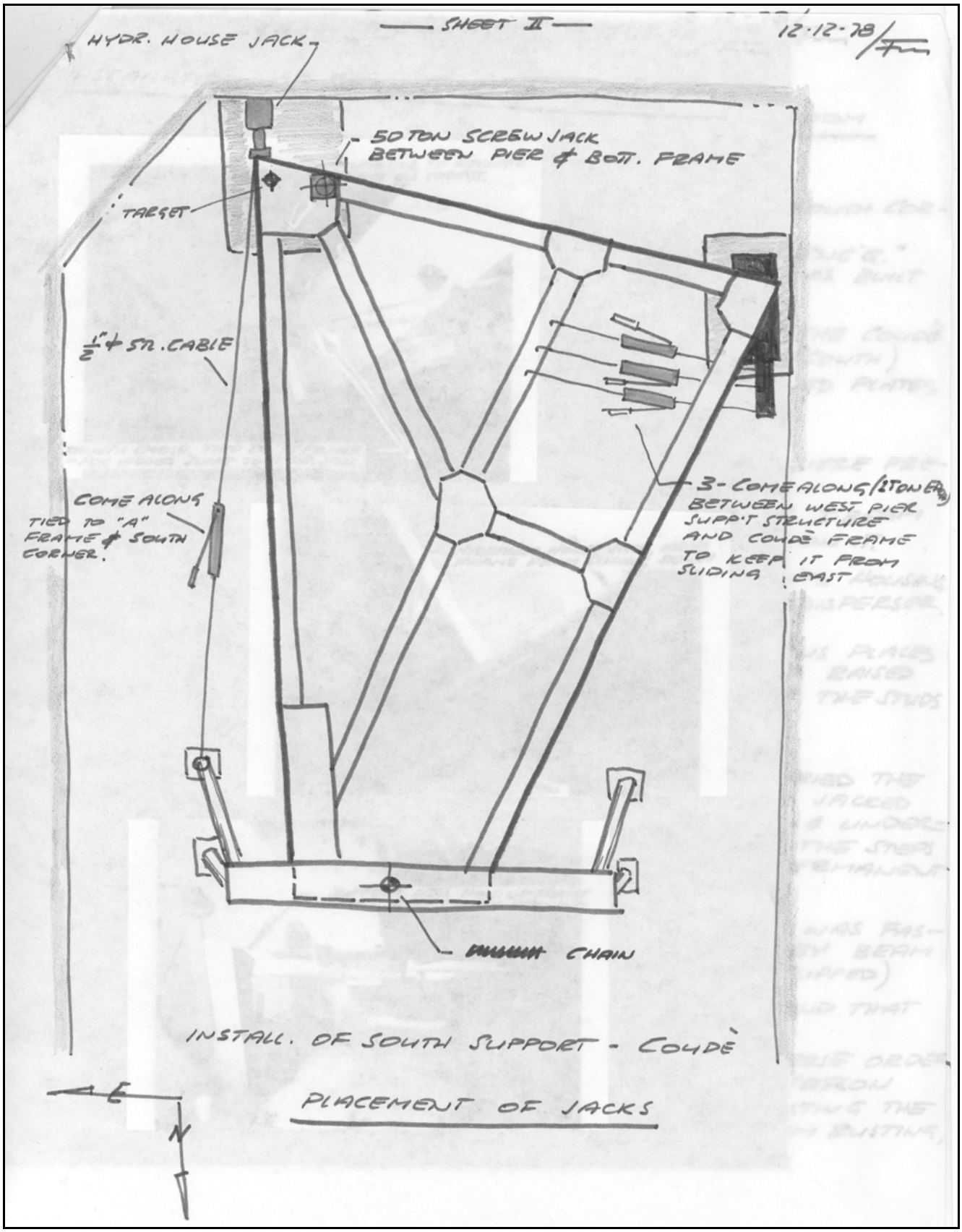
WE PLACED JACKS AND COMEALONGS AT VARIOUS PLACES (SEE SHEET II & III) UNDER THE FRAME AND RAISED THE SOUTH CORNER APPROX. 3½" TO CLEAR THE STUDS THAT ARE IMBEDDED IN THE PIER.

WE DISMANTLED THE WELDMENT THAT CARRIED THE SUPPORT WHEEL, CLAMPED EARS TO IT AND JACKED IT UP HIGH ENOUGH TO GET 2 BROOT 2x4 UNDERNEATH. THEN WE SLID THE WELDMENT ONTO THE STEPS OF THE COUDÈ RM WHERE IT FOUND A PERMANENT RESTING PLACE.

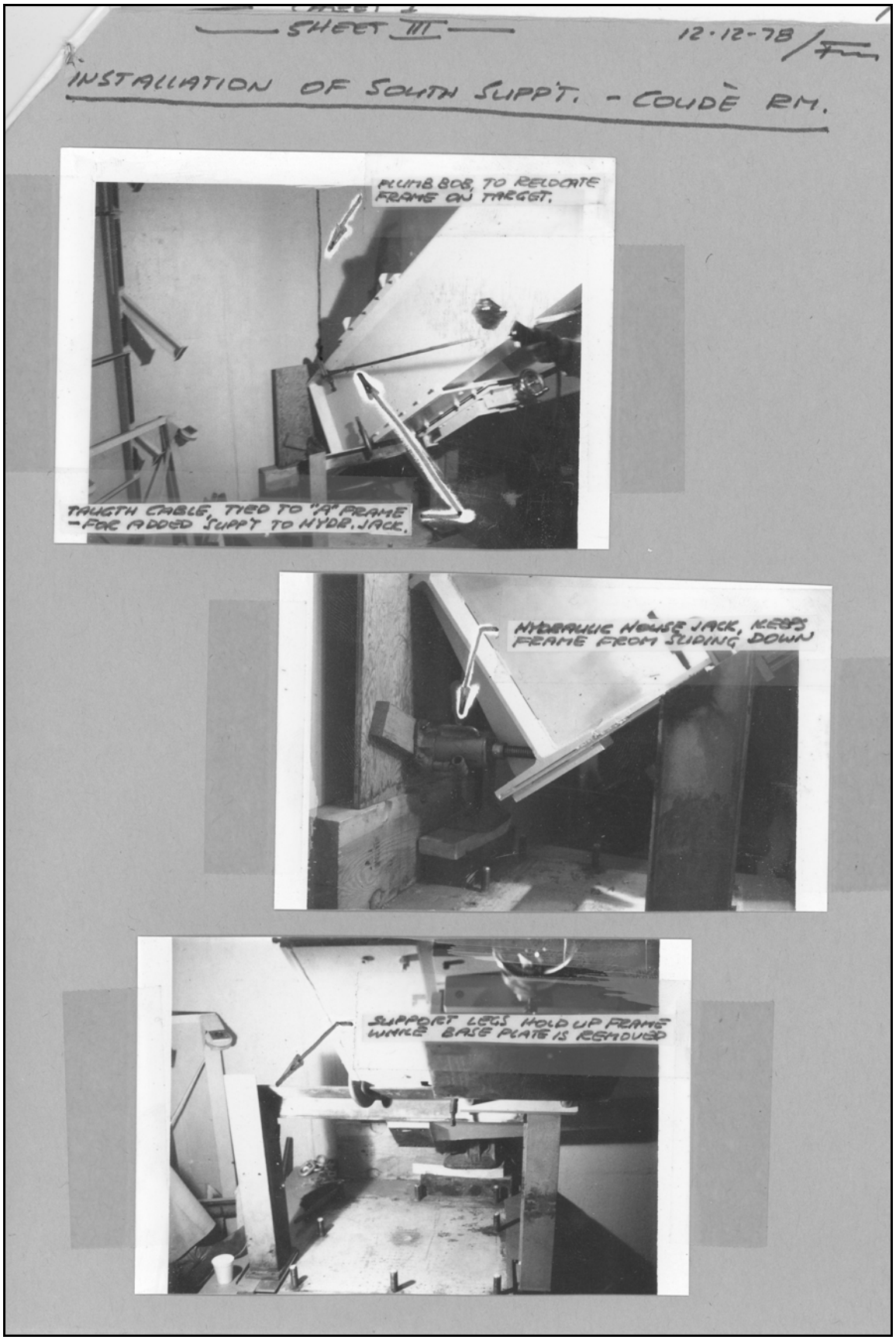
NEAL WELDED UP A SUPPORT FRAME WHICH WAS FASTENED TO THE I BEAM OF THE COUDÈ FRAME BY BEAM CLAMPS (TO TAKE THE LOAD IN CASE A JACK SLIPPED)

THEN THE NUTS CAME OFF THE BASE PLATE AND THAT TOO WAS REMOVED.
THE NEW SUPPORT WAS INSTALLED IN REVERSE ORDER THE BASE PLATE WAS SPRAYED WITH A THIN TEFLON FILM TO FACILITATE MOVING (FOR FINE ADJUSTING THE FRAME) AND TO PREVENT THE STEEL FROM RUSTING,

120 Inch Telescope
Coude' Support Frame Adjustment



120 Inch Telescope
Coude' Support Frame Adjustment



120 Inch Telescope
Coude' Support Frame Adjustment

7-20-79 /Fm

COUDÉ FRAME ALIGNMENT

AFTER THE INSTALLATION OF THE NEW SOUTH SUPPORT IN NOV. 78. DR. GEORGE HERBIG & GENE HARLAN TRIED TO REALIGN THE OPTICS AND FOUND THE FRAME TO BE OFF.

THEY MEASURED THE OPTICAL AXIS AT THE 6½" COLLIMAT (THE COLLIMATOR) AND FOUND IT TO BE APPROX 1½" OFF TO THE RIGHT.

GEORGE HERBIG, THE MOUNTAIN CREW AND I TRIED TO MOVE THE FRAME WEST (BY MEANS OF THE ADJUSTM'T SCREWS AT THE SOUTH SUPPORT) BUT THAT MOVED THE WHO FRAME OVER AN EQUAL AMOUNT TOP (SLIT PLATE) AND BOTTOM (SOUTH SUPPORT)

THE CHAIN, FROM WHICH THE FRAME IS SUSPENTED DID NOT ACT AS A PIVOT POINT, IT MERELY MOVED FROM SIDE TO SIDE.

WE THEN BROUGHT THE FRAME BACK TO ITS ORIGINAL POSIT AND STARTED LOWERING THE CAM FOLLOWER AT THE SOUT WEST CORNER OF THE FRAME. APPROX. 0.25" THAT CORREC THE MISALIGNMENT AT THE 6½" COLLIMETER BY ABOUT 5/8"

WE COULD NOT LOWER THE CAM FOLLOWER ANYMORE, BEC

a.) IT WAS AT THE END OF ITS TRAVEL.

b.) THE LIFT MOTOR OF THE 40" CAMERA CAME TO WITH 1/8" CLEARANCE OF THE CEILING.

WE LEFT THE FRAME IN THIS POSITION FOR THE TIME BE I WENT BACK TO THE MOUNTAIN TO SEE IF WE COULD MOVE THE FRAME NORTH, USING THE CAM FOLLOWER AT THE SOUTH-WEST CORNER AS A PIVOT POINT.

THERE IS 2" MOVEMENT LEFT IN THE PUSH SCREWS AT TH SOUTH SUPPORT (THAT IS 1 5/8" ALONG THE POLAR AXIS)

HOWEVER THERE IS ONLY ABOUT 1¼" CLEARANCE BETWE THE NO VII GRATING AND THE WALL OF THE COUDÉ RO

½" CLEARANCE BETWEEN THE STRUCTURE OF THE SLITP AND THE PERISCOPE, ABOUT 7/8" CLEAR. BETWEEN TH RIGHT SIDE OF THE SLIT PLATE AND THE SLIT ROOM WA (THE DIRECT. IN WHICH THE PLATE WOULD MOVE)

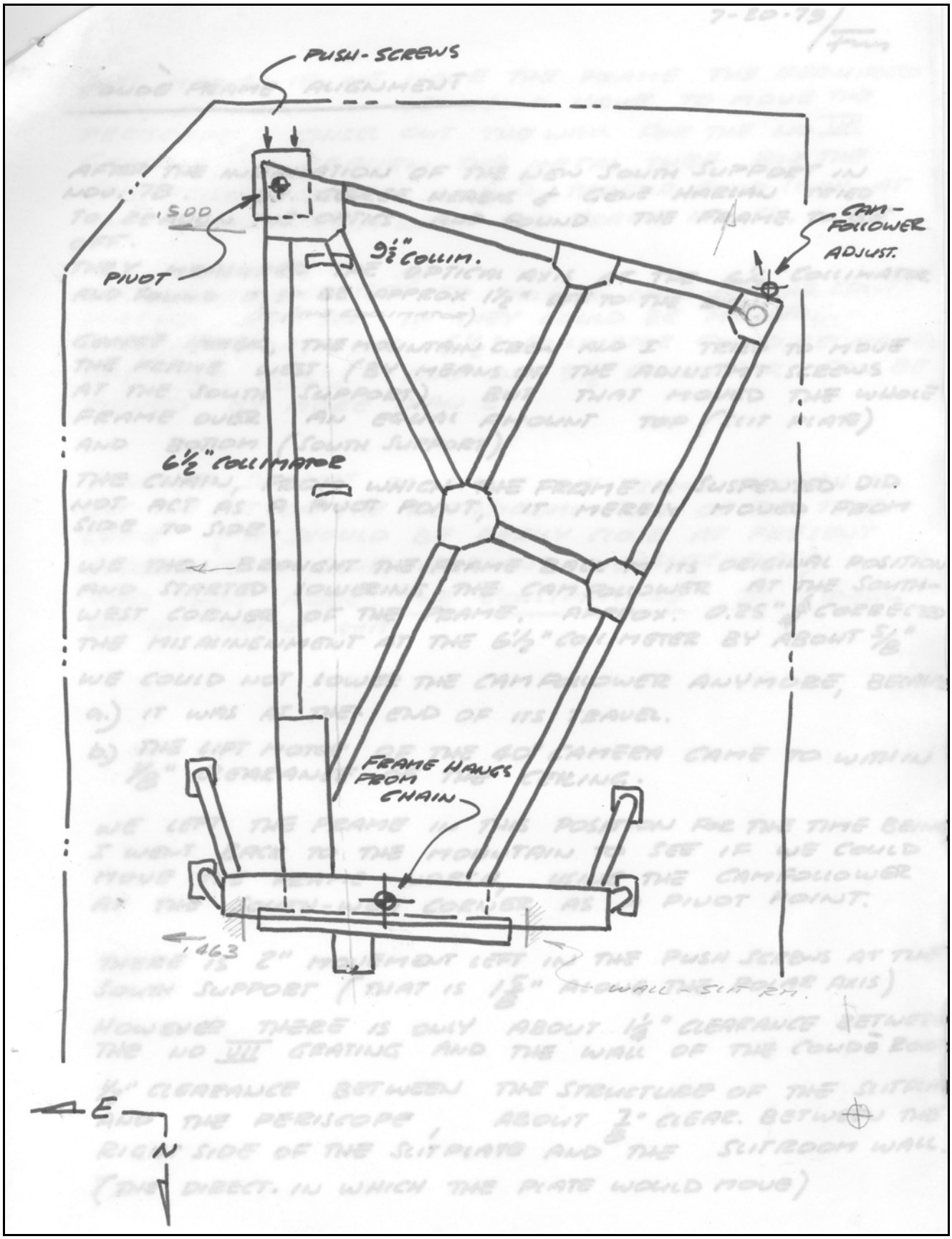
120 Inch Telescope
Coude' Support Frame Adjustment

THAT MEANS IF WE MOVE THE FRAME THE REQUIRED AMOUNT NORTH - WE WOULD HAVE TO MOVE THE PERISCOPE, CHISEL OUT THE WALL FOR THE NO VII GRATING. REALIGN THE METAL TUBE FOR THE COMPARISON LIGHTS AND TAKE A GOOD LOOK AT THE CHAIN FROM WHICH THE FRAME HANGS.

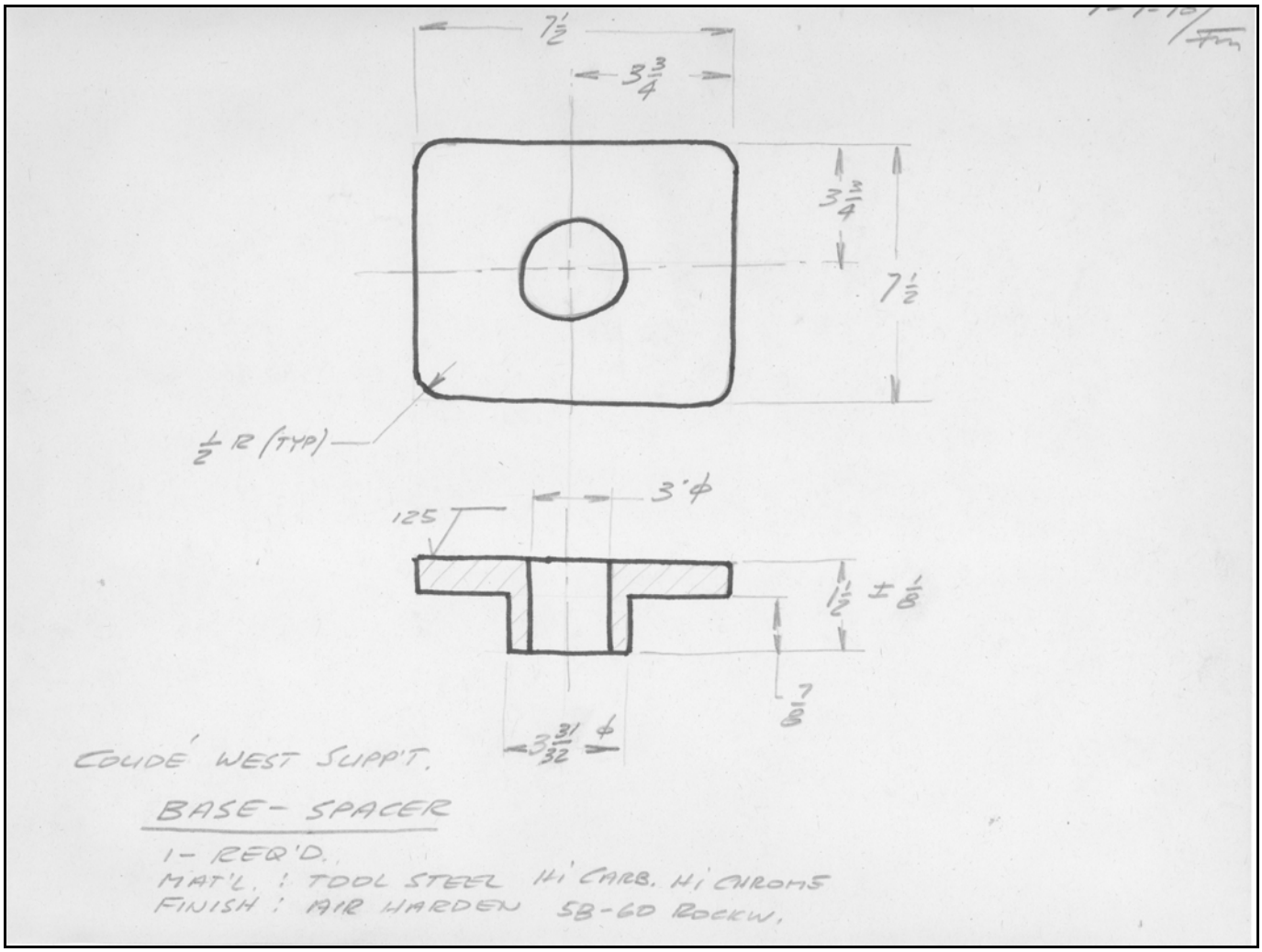
DR. HERBIG SUGGESTED TO TAKE A LOOK AT THE COLLIMATORS AND SEE IF THEY COULD BE MOVED. I FOUND THAT THE 6½" COLLIMATOR COULD BE MOVED EAST BY 0.75" AND THE 9½" COLLIMATOR CAN BE MOVED BY MORE THAN 2".

I WOULD SUGGEST TO MOVE THE FRAME ENOUGH TO GET THE SLIT ON THE ROTATIONAL AXIS OF THE TELESCOPE (IT SHOULD BE REALLY CLOSE AT PRESENT ACCORDING TO GENE HARLANS MEASUREMENTS) AND THEN MOVE THE COLLIMATORS TO CENTER OF THE POLAR AXIS.

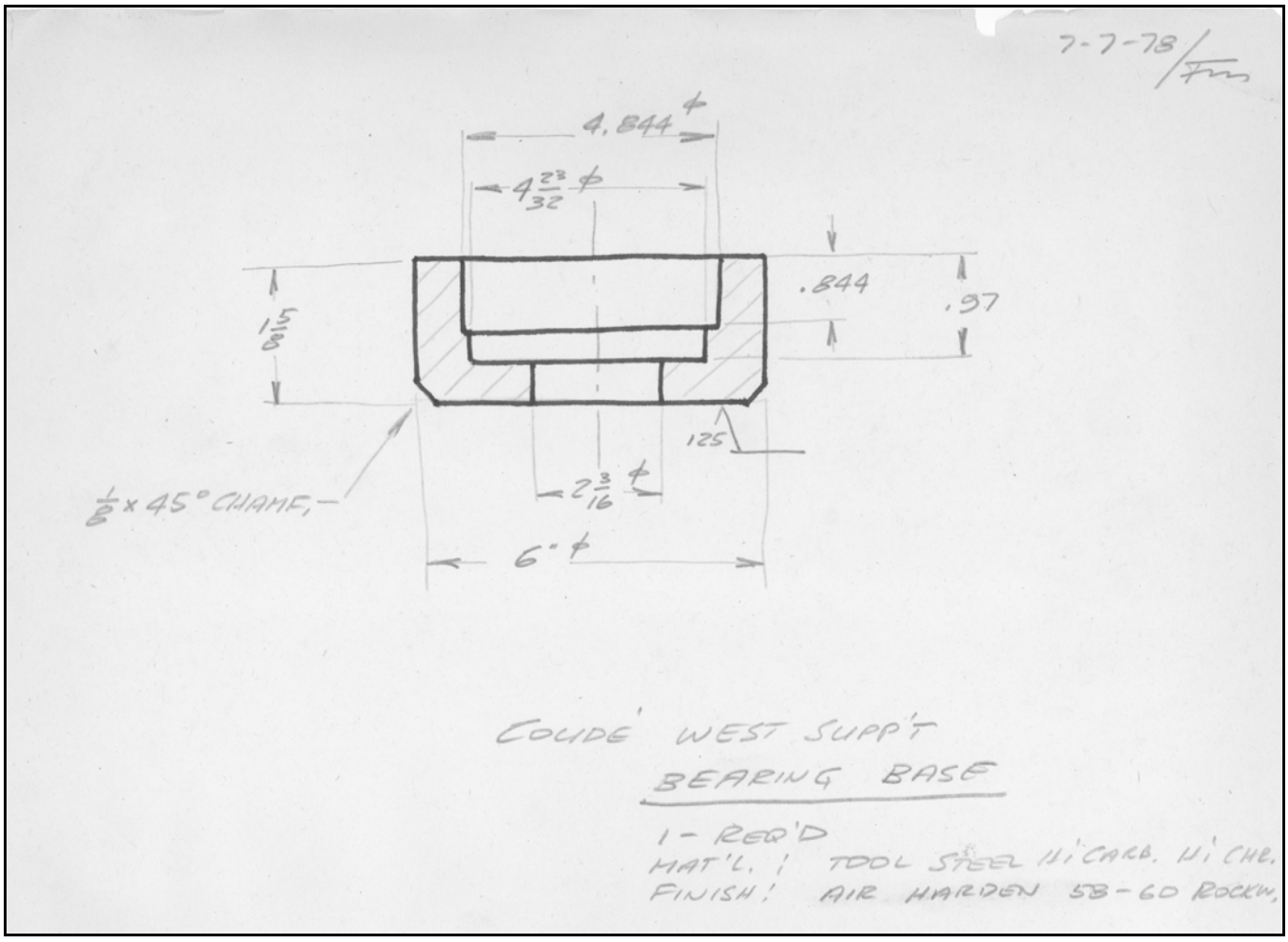
120 Inch Telescope
Coude' Support Frame Adjustment



120 Inch Telescope
Coude' Support Frame Adjustment



120 Inch Telescope
Coude' Support Frame Adjustment



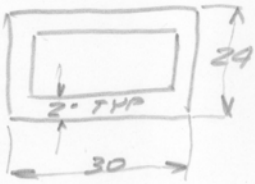
120 Inch Telescope
Coude' Support Frame Adjustment

5-3-78

GUDÉ - NEW FRAME SUPPORT

MATERIAL COSTS

WESTERN STR. & CUTTING "LARRY" 286-4532

1 PIECE STR. 

1½" TH CUT & CLEAN UP GRD. B.S.
$ 135.56

1 PIECE STR. 30 x 30 x 1¼ CUT & CLEANUP GRD. B.S.
$ 133.84

1 PIECE STR. 15 x 6 x 3 CUT $ 37.62

1 PIECE STR. 16 x 16 x ½ CUT $ 42.29

1 PIECE STR. 12 x 6 x 4 CUT $ 37.95

2 GUSSETS STR. 4 x 4 @ 45° x 1" CUT 4.10 EACH

$ 395.41 TOTAL
45.72
Pg.
Steel for screw 40.00
fasteners 125.00
606.13
120 hrs Shoptime @ 25.00 3000.00
7½ days INSTALLATION @ 14.00 875.00
4481.13