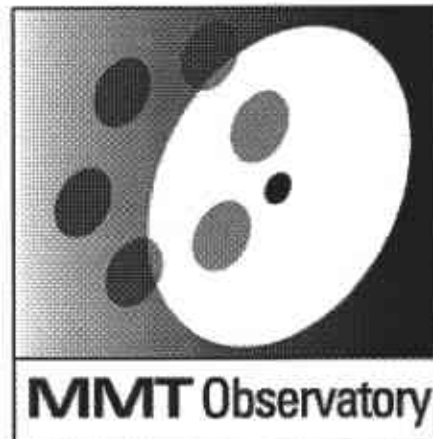


**MMTO Conversion Internal Technical Memorandum #99-2**



**Smithsonian Institution &  
The University of Arizona\***

**Magellan Project 6.5 Meter Telescope  
Hardpoint Counterweight Design Layouts**

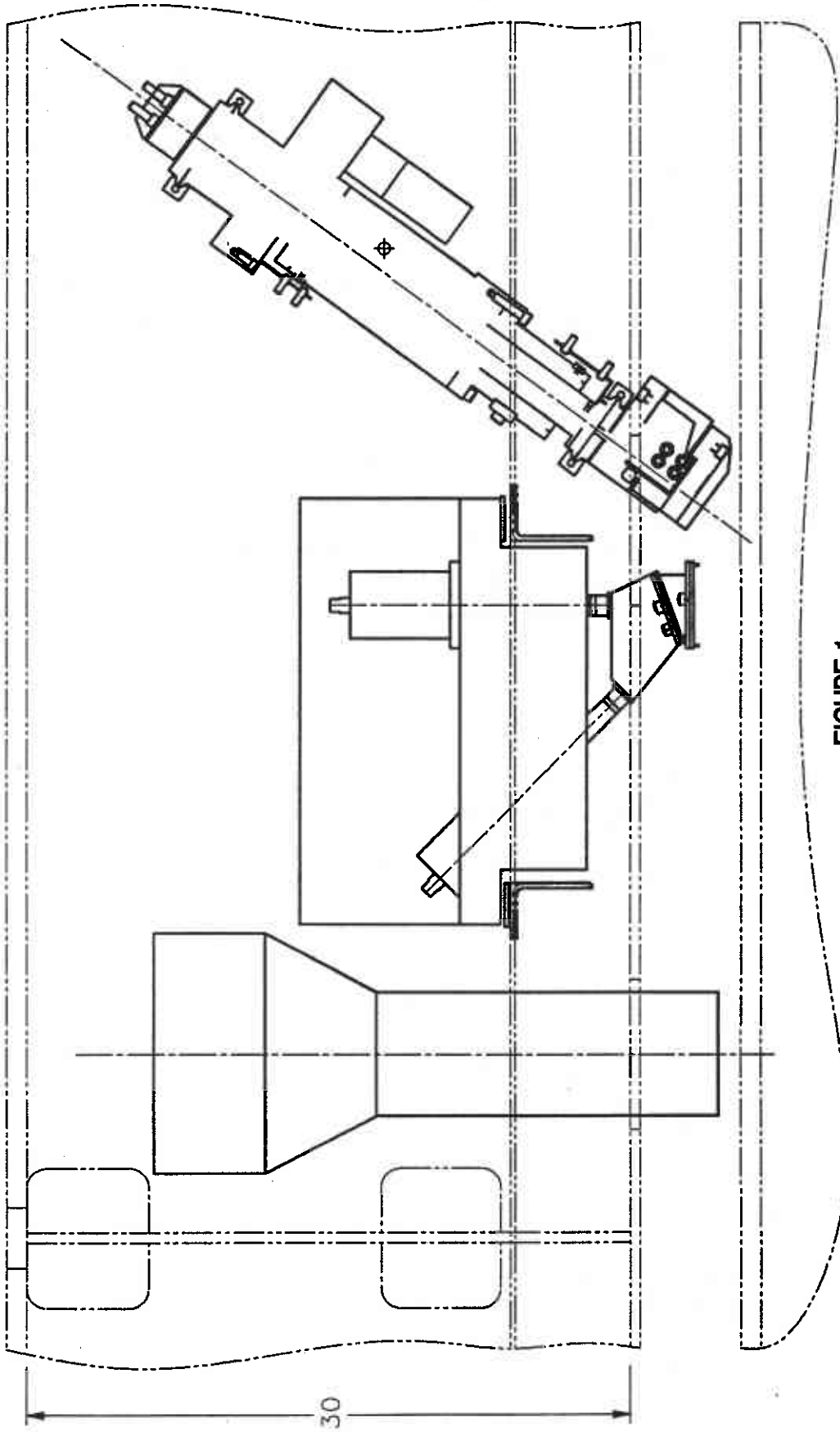
**May 18, 1999**

**MAGELLAN PROJECT 6.5 METER TELESCOPE  
HARDPOINT COUNTERWEIGHT DESIGN LAYOUTS**

**Steve Gunnels - March 12, 1996**

CIW No. 97TM9715

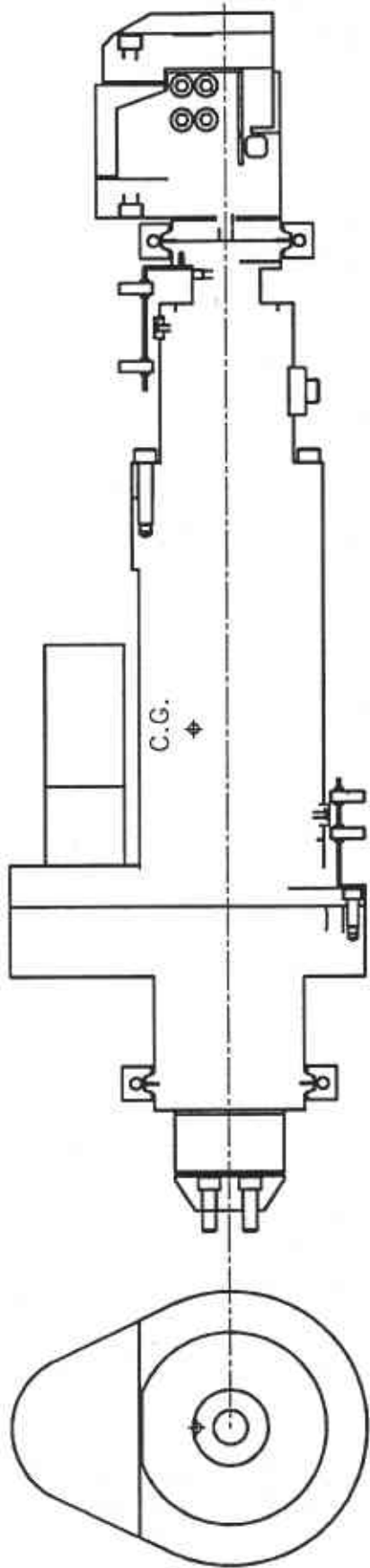
*Comments  
SCW.*



**FIGURE 1**

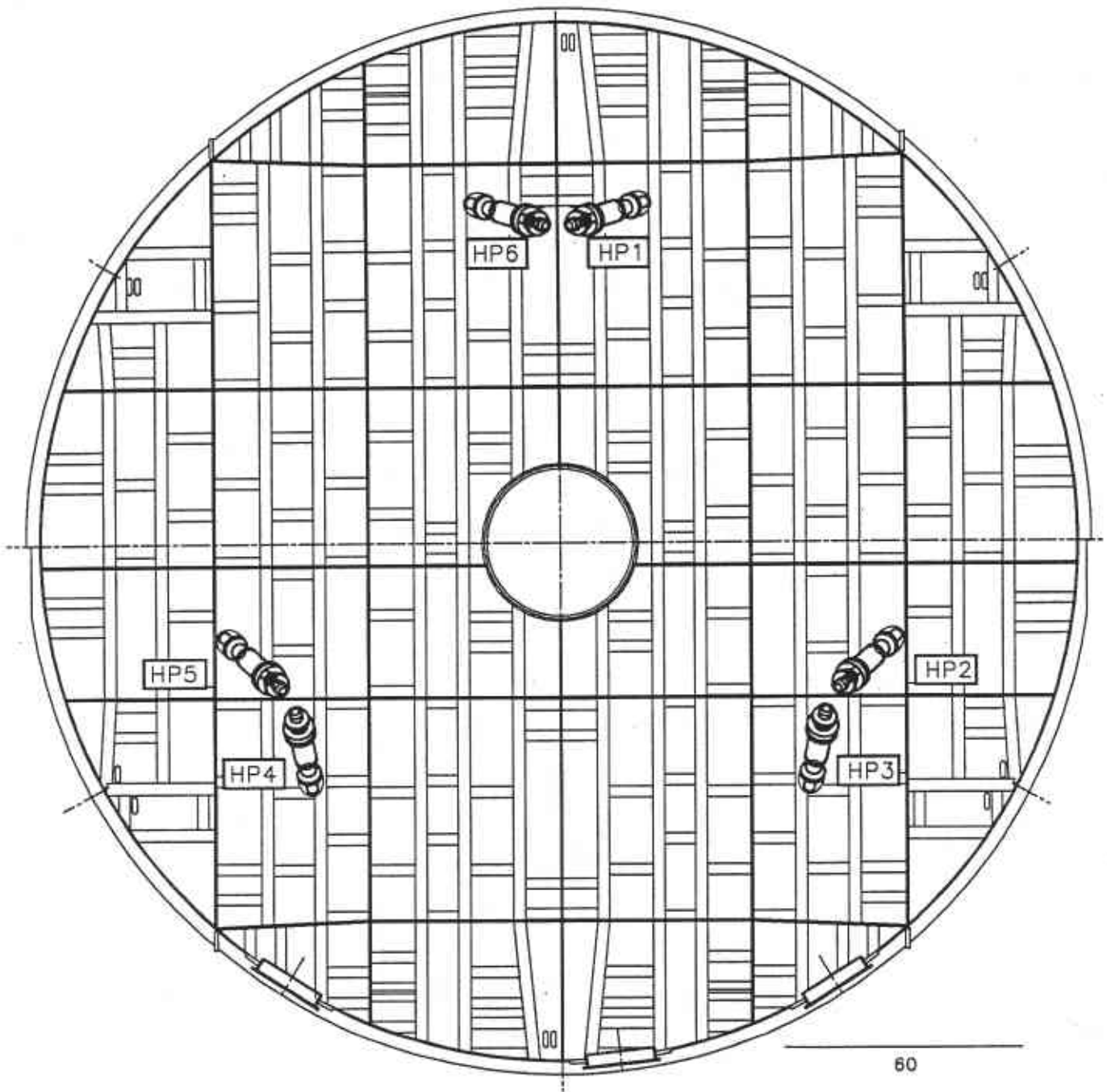
PRIMARY MIRROR CELL  
SUPPORT & VENTILATION SUBASSEMBLIES

20; CIW180.DW2; SMG 3-12-96  
CIW NO. 96TM9715



**FIGURE 2**

HARDPOINT ASSEMBLY OUTLINE



**FIGURE 3**  
**HARDPOINTS 1 THRU 6**

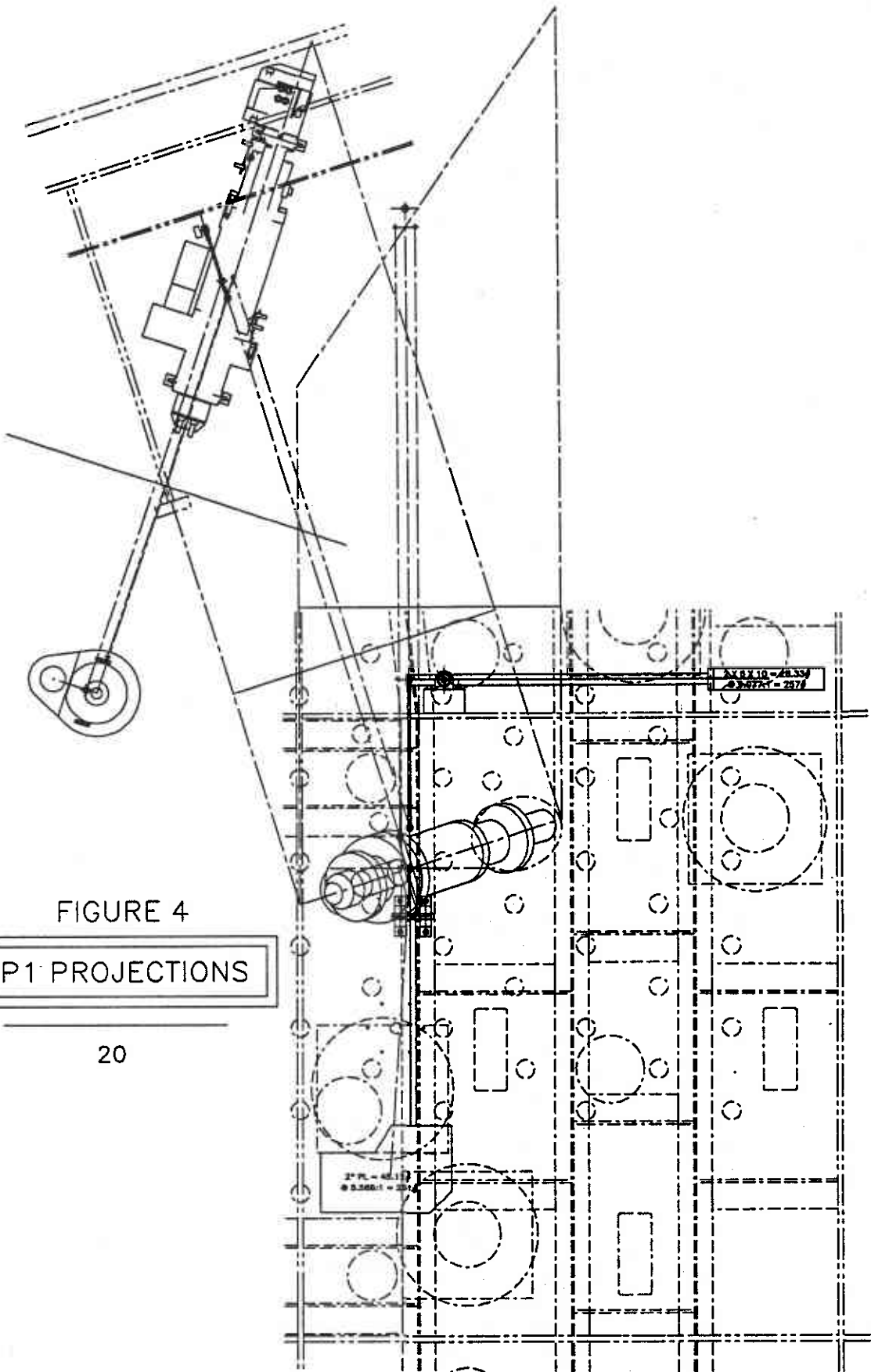


FIGURE 4

HP1 PROJECTIONS

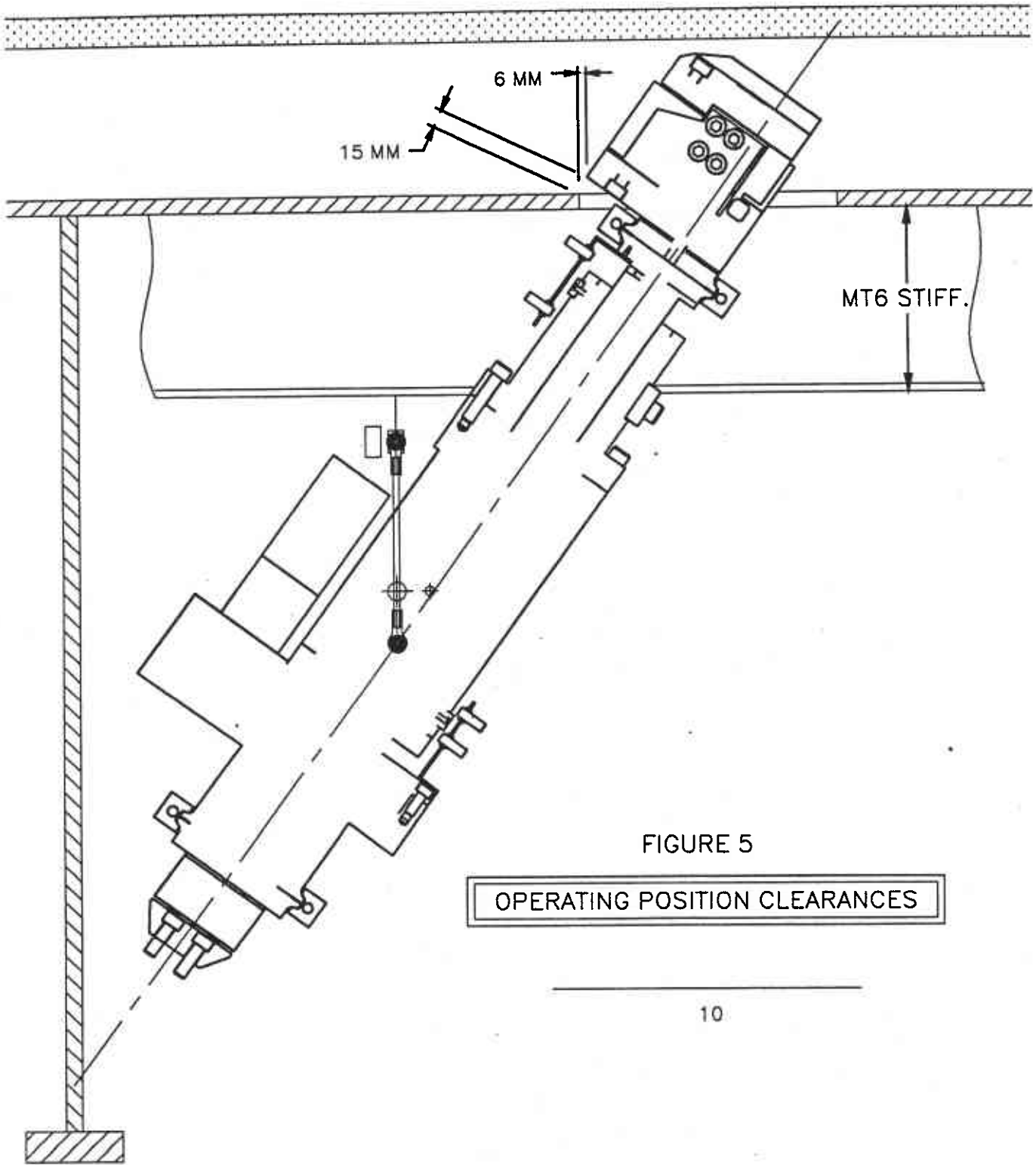


FIGURE 5

OPERATING POSITION CLEARANCES

Top of hardpoint can move  
in a 10mm sphere volume.

$\arctan\left(\frac{10}{5640}\right) \approx 0.65^\circ \rightarrow -1.3^\circ$  total possible deflection.

280  
to atod

Pillow  
Block.

teflon-lined  
rod end.

2 X 5 X 10 = 28.33#  
● 9.077:1 = 257#

Horizon  
counter  
weight.

Single  
attachment.

Pillow  
Block.  
mtle stiffener.

Air  
Nozzles.

ventilator  
hole

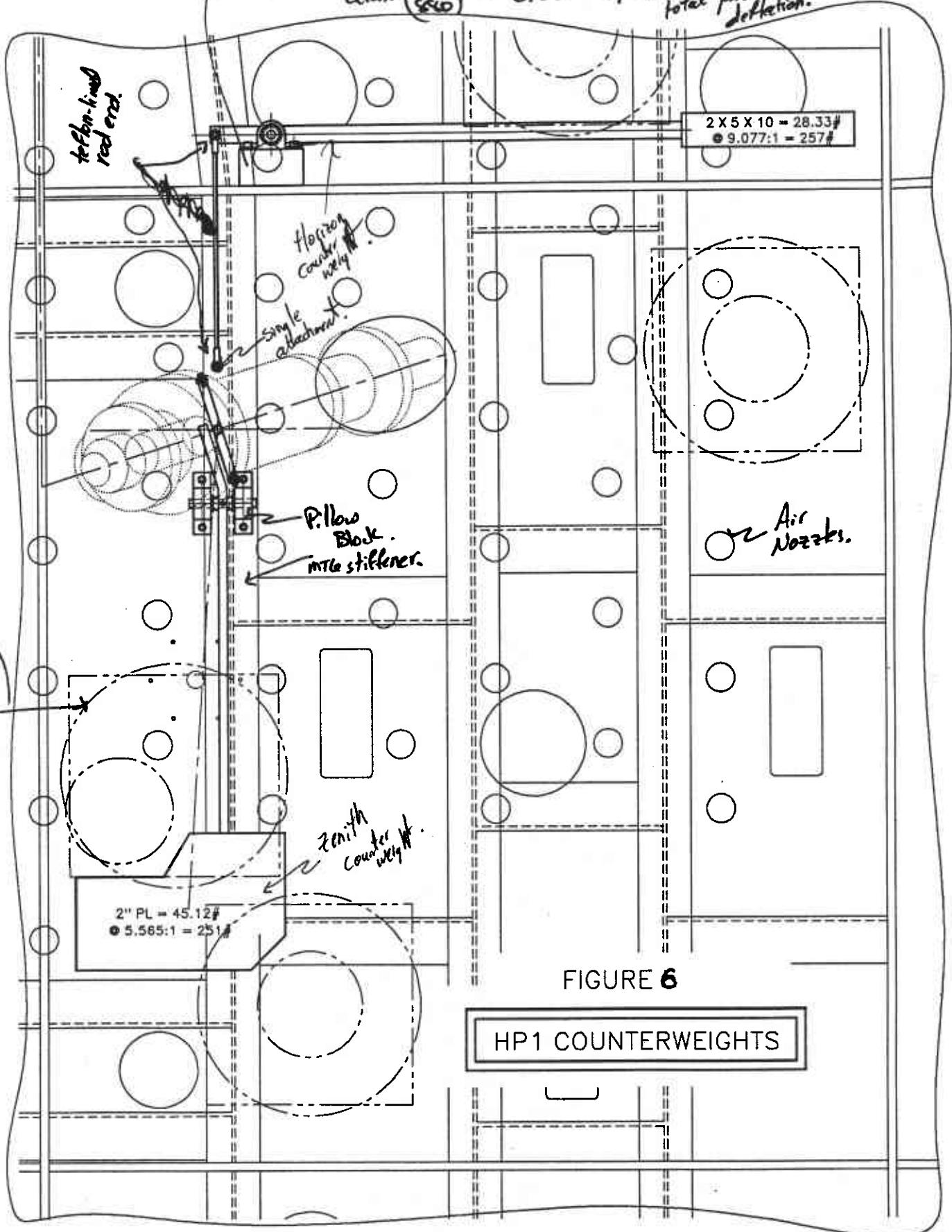
Zenith  
counter  
weight.

2" PL = 45.12#  
● 5.585:1 = 251#

FIGURE 6

HP1 COUNTERWEIGHTS

Counterweights will require trim for exact balance in setup.





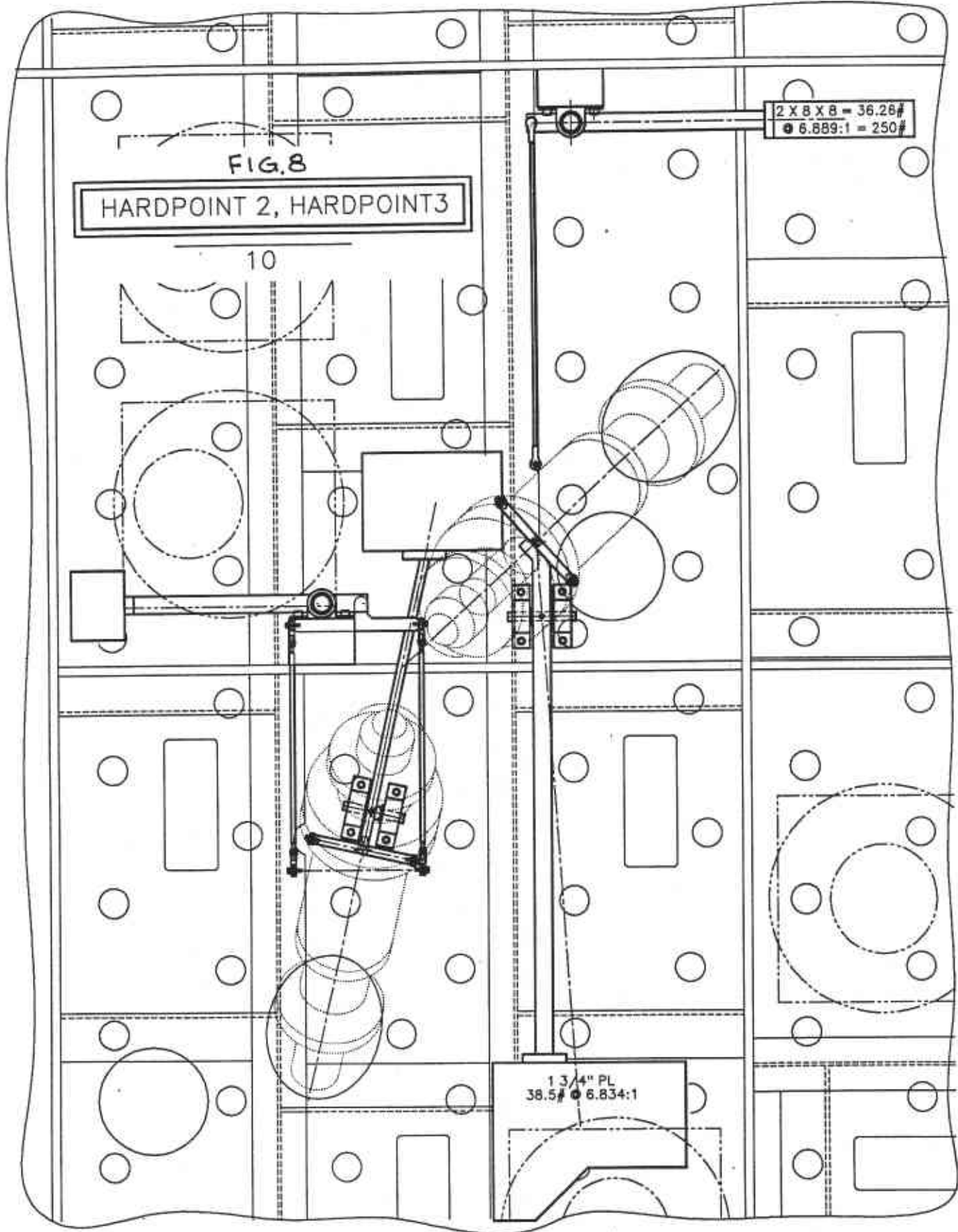


FIG. 8

HARDPOINT 2, HARDPOINT 3

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