

11/3/82
A.M.P.

Oct. 22, 1982

Reery

To: H. Hugotum, J. Findlay, L. King

From: W. Horne

Subject: Panel and Antenna Dimensions ~ 12M

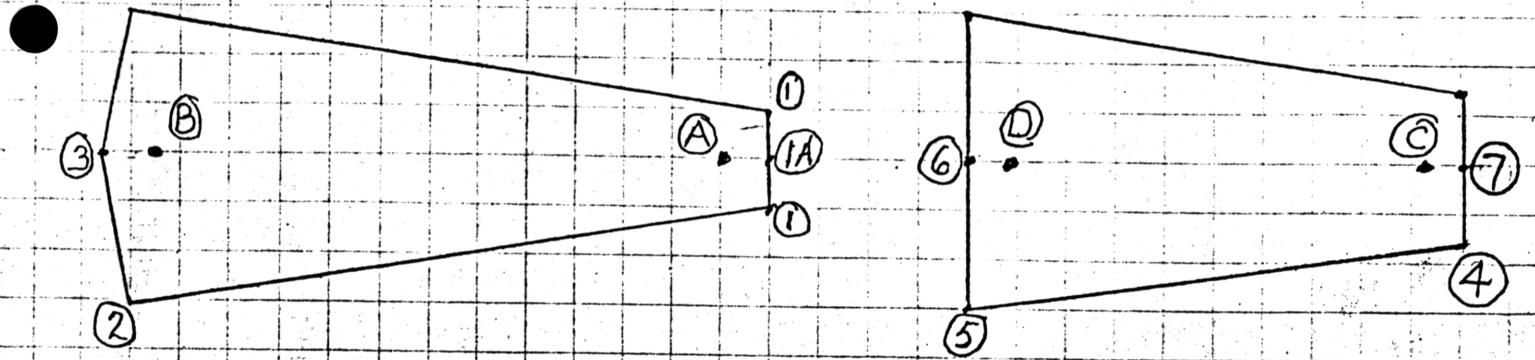
Attached are 3 sheets of antenna and panel dimensions for the 12 meter:

- (1) The first sheet repeats the Antenna coordinates for the indicated points as given me by Brenner of ESSCO on 4/19/82 and published in Memo 154. I have added calculations of the radius and surface arc lengths.
- (2) The next two sheets give a comparison of the various dimensions of the panels as supplied to NRAO by ESSCO. Document D81-15 are the original dimensions in which discrepancies were discovered by Findlay, King, Horne and others (Memo 42) and corrections were requested from ESSCO. Dwg. 793-373 and Dwg. 793-317 were supplied by ESSCO to NRAO in March 1982 at the delivery of panels. Limited measurements of the panels revealed some discrepancies and since coordinates furnished to that date did not place all surface points on a 200 inch focal length parabola ESSCO was requested on March 30, 1982 to review their coordinates. ESSCO's response with revised coordinates resulted in Memo 154.

Coordinates as given in Memo 154 were used to calculate angles used in rough setting the panels and the surface arc lengths.

12 M Antenna 2 Surface Panels DESIGN DIMENSIONS

Oct. 19, 1982



INNER PANEL

OUTER PANEL

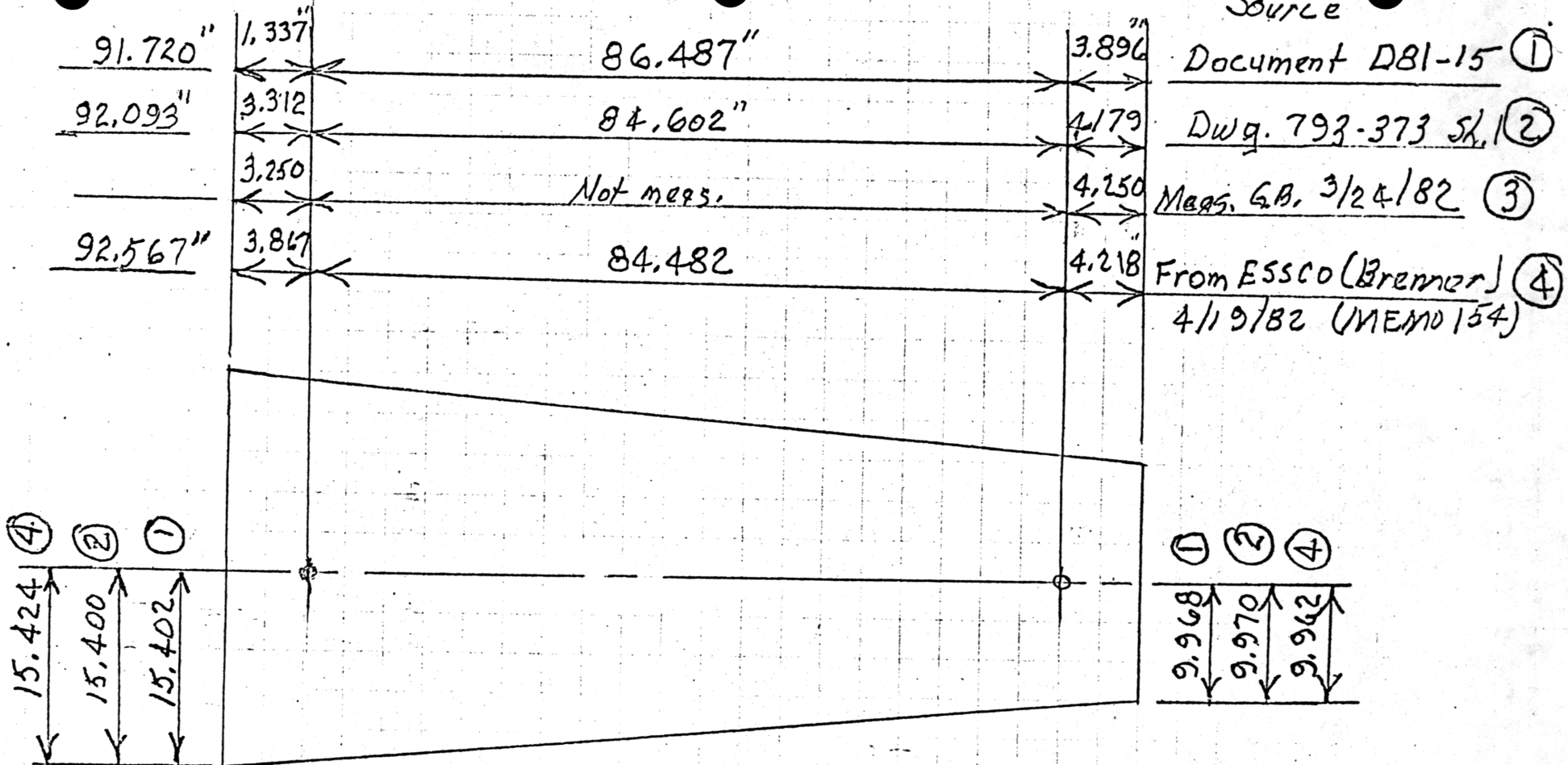
| Pt. No | Ant. Coord. * | | | Radius | Arc Length from Vertex |
|-------------|---------------|--------|--------|----------|------------------------|
| | X | Y | Z | | |
| A | 28.552 | 0 | 1.019 | 28.552 | 28.576 in. |
| B | 145.817 | 0 | 26.578 | 145.817 | 148.985 in. |
| C | 156.885 | 0 | 30.766 | 156.885 | 160.819 in. |
| D | 232.867 | 0 | 67.784 | 232.867 | 245.4218 in. |
| Inner Panel | | | | | |
| ① | 23.782 | 3.082 | 0.719 | 23.981 | 23.992 |
| ② | 151.806 | 19.935 | 29.303 | 153.109 | 156.7699 in. |
| ③ | 153.109 | 0 | 29.303 | 153.109 | 156.7699 in. |
| Outer Panel | | | | | |
| ④ | 152.872 | 9.962 | 29.336 | 153.196 | 156.863 |
| ⑤ | 236.088 | 15.424 | 69.969 | 236.5913 | 249.740 |
| * ⑥ | 236.088 | 0 | 69.672 | 236.088 | 249.155 in. |
| * ⑦ | 152.872 | 0 | 29.212 | 152.872 | 156.5158 in. |
| * IA | 23.782 | 0 | 0.707 | 23.782 | 23.796 |

Antenna Coordinates are those given by Brenner of ESSCO by phone on 4/19/82 and published in Memo 154

Points 6 and 7 were not furnished by Brenner; Surface arc lengths calculated by Horne from

$$S = \frac{1}{4F} \left\{ x \sqrt{x^2 + 4F^2} + 4F^2 \left[\ln(x + \sqrt{x^2 + 4F^2}) - \ln 2F \right] \right\}$$

LENGTH



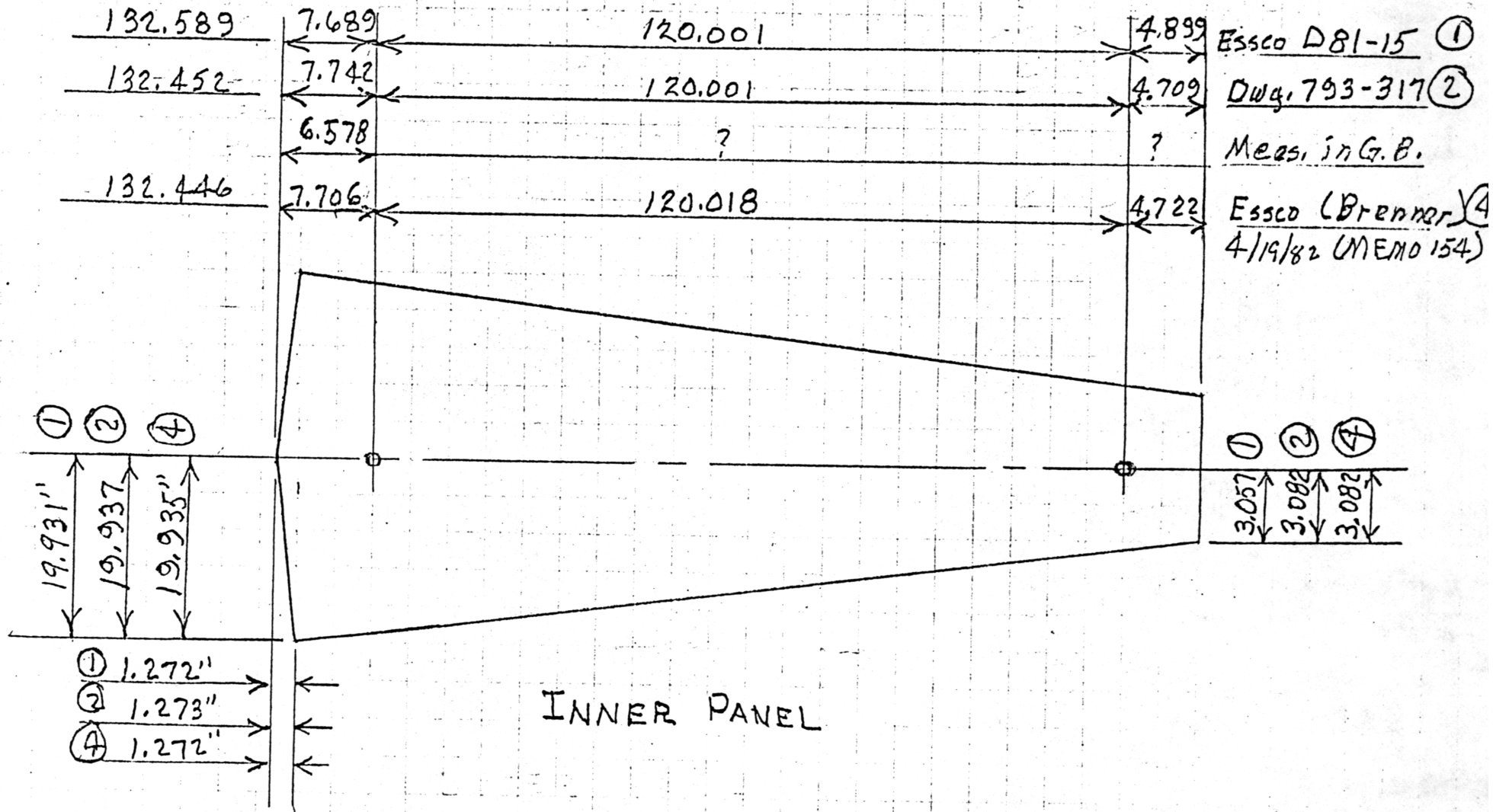
OUTER PANEL

Note: All dimensions are CMM dimensions and must be corrected by Coordinate Conversion parameters for plane in which dimensions are desired except for G.B. measurements

W.G.H.

Length

Source



Note: All dimensions are CMM dimensions and must be corrected by Coordinate Conversion parameters for the plane in which dimensions are desired except for G.B. measurements

W. Giff,