# SPREADER BAR (MAGNET COIL ASSEMBLY FIXTURE)

I. D. Nº 23 COLOR OF BAR : WHITE

LOAD CAPACITY PAINTED ON BAR 4 TONS.

DATE CAP. & I. D. Nº PAINTED ON BAR _____

DATE OF LAST LOAD TEST. OCTOBER 31. 88 N. J. Bosch

TEST LOAD WEIGHT 6 TONS

TEST LOAD % 150

STRESS CALCULATIONS :

DONE BY ANDREW SZYMULANSKI

DATE OCT. 31. 88

REMARKS :

E-771 "ROSIE" | ANALYSIS | A.SZ.

# MAGNET ASSEMBLY FIXTURE – LOAD TEST ARRANGEMENT

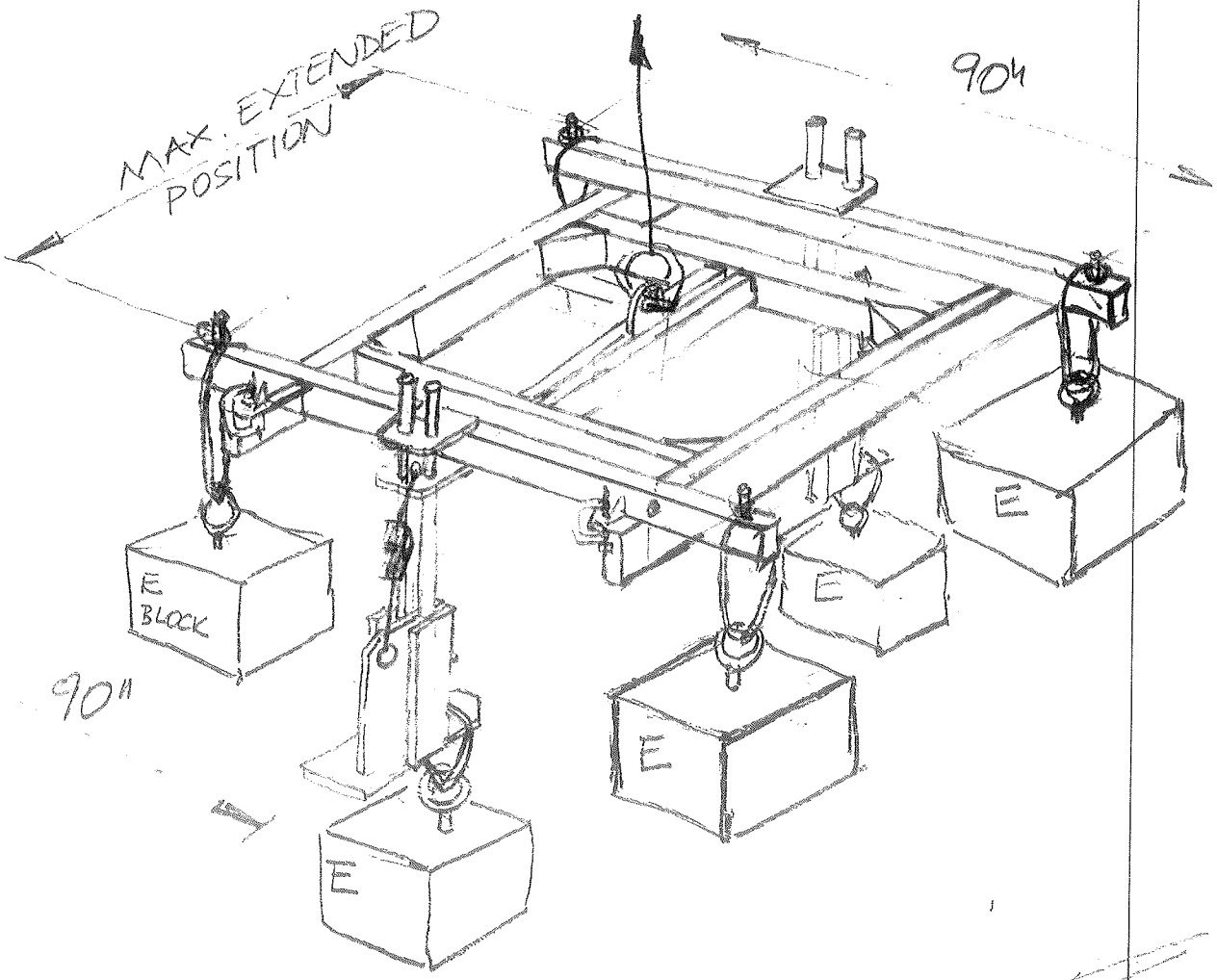



FIG. 1

LOAD: (6) "E" SIZE BLOCKS

MAGNET ASSEMBLY FIXTURE -

# 4 POINT PICKUP - MODIFICATION

×487C

SPREADER BAR. ID NO 23

(SUPPLEMENTAL TEST)

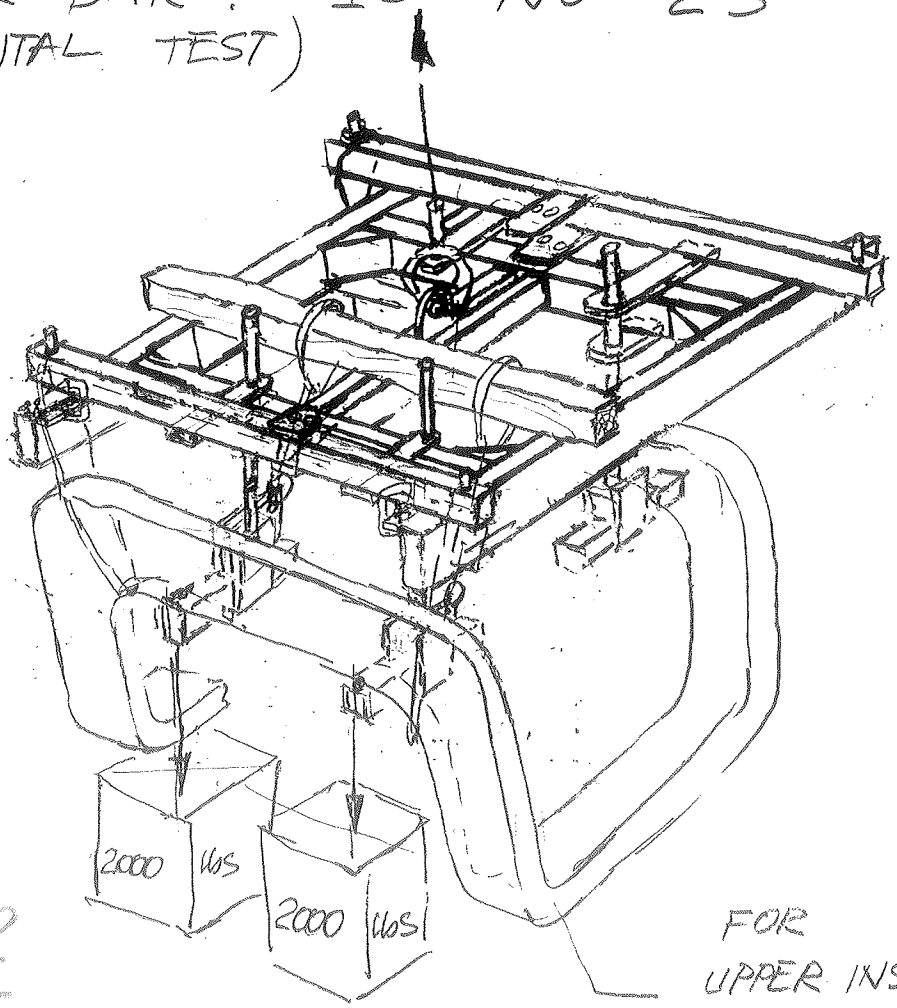



FIGURE 2

FOR UPPER INSIDE 2 COILS ONLY

LOAD TEST:

2000 lbs AT 4 POINTS

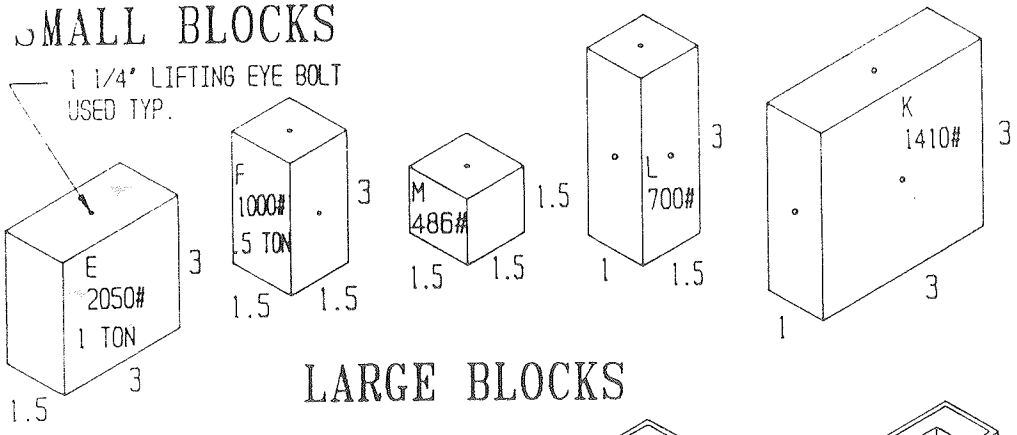
$9\frac{1}{2}$" EXTENSION, AS SHOWN ON ATTACHED DWG.: "ASSEMBLY FIXTURE - 4 POINT LIFTING FOR UPPER TWO INNER COILS"

# CONCRETE SHIELDING

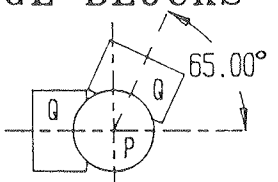
## DIMENSIONS & WEIGHTS

REV. 1988

### SMALL BLOCKS

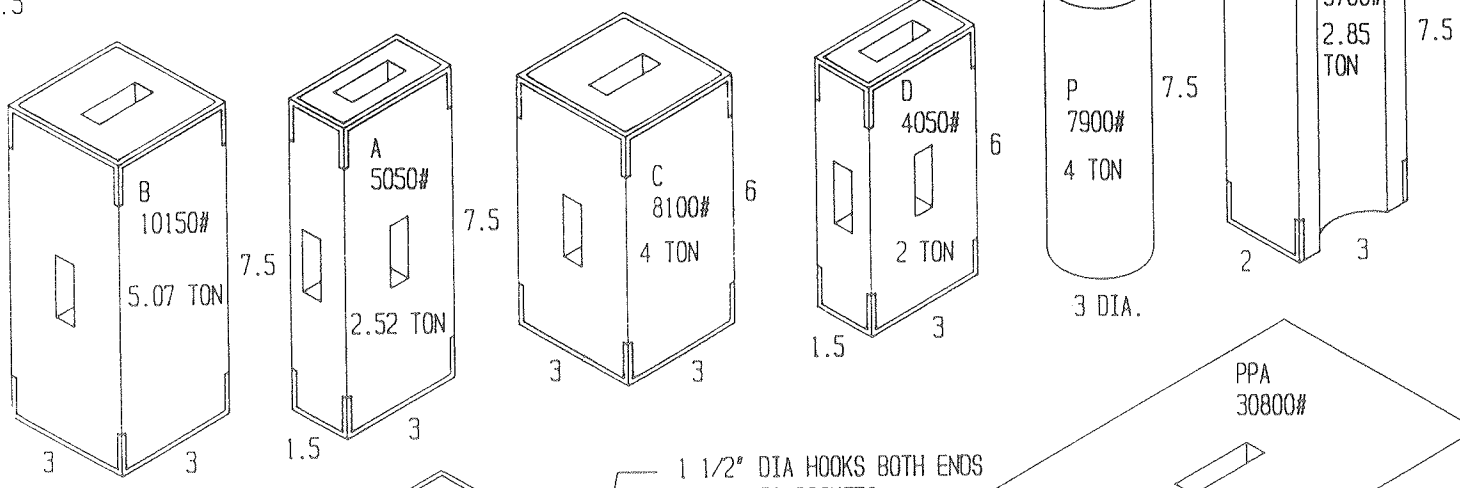


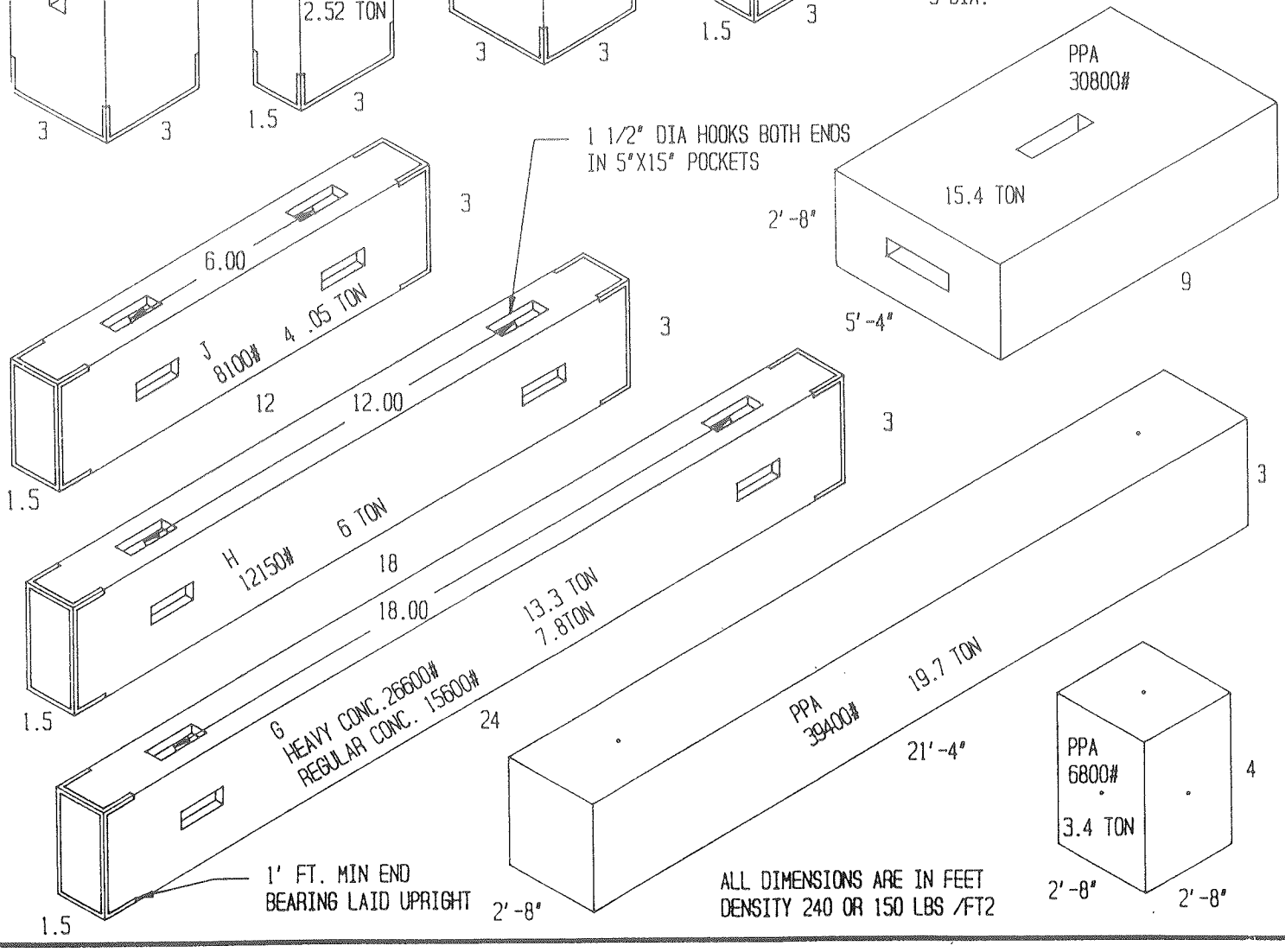

### HINGE BLOCKS




PLAN VIEW SHOWING USAGE OF HINGE BLOCKS P & Q

### LARGE BLOCKS




ALL DIMENSIONS ARE IN FEET
DENSITY 240 OR 150 LBS /FT2

THE FIXTURE IS SHOWN ON THE FOLLOWING DRAWINGS:

1. 9210-350-ME-272068
2. 9210-350-ME-272106
3. 9210-350-ME-272107

DWG. ME-272068

DETERMINING THE CRUCIAL STRESSES IN STRUCTURE ELEMENTS.

ITEMS 7, 8.

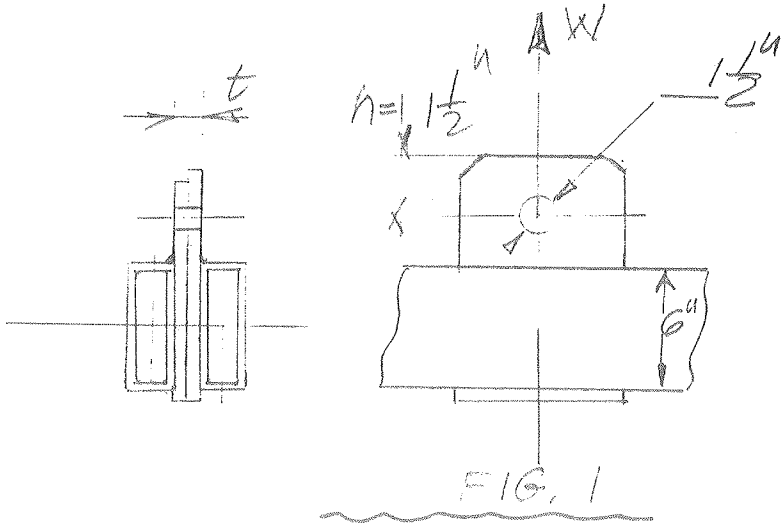



FIG. 1

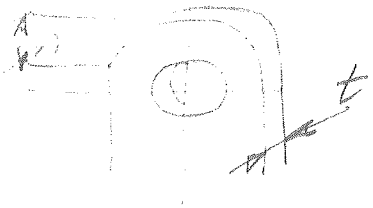
W = 1.5 × LOAD = 12000 [lbs]

STRESS:

$$S = \frac{W}{h(t)}$$

$$S = \frac{12000}{1.5(1)}$$

$$S = 8000 \text{ psi}$$




$$S \leq 0.6\,\sigma_y$$

$$8000 \leq 0.6(36000)$$

$$8000 \leq 21600$$

O.K.

ATTACHMENT OF ITEMS 7, 8 TO ITEM 3.

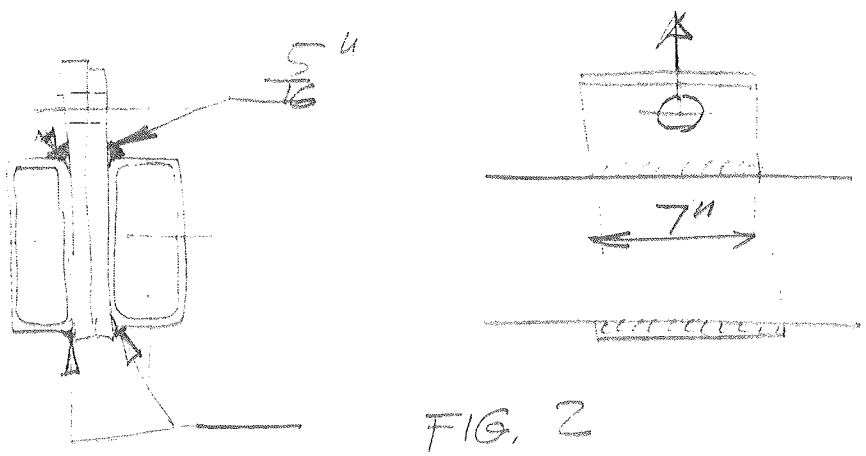



FIG. 2

ALLOWABLE STATIC LOAD PER LINEAR INCH ACCORDING TO TABLE 23 'DESIGN OF MACHINE MEMBERS')

$\frac{5}{16} \times \frac{5}{16}$ FOR NORMAL WELDS:

$F = 3125 \times 2 \times 7 = 43750$ lbs.

$12000 < 43750$ O.K.

E-771 "ROSIE" ANALYSIS MAGNET ASSEMBLY FIXTURE | A. SZ. | 3.



For weld proportions used in practice, this variation may be neglected. In a parallel weld, the maximum shear stress is across the throat of the weld where the area is $0.707t$. Hence the shear stress on the side of the weld is 0.707 times $s_{s,\max}$, and the permissible load per linear inch is $0.707t$ times 11,500, or $8{,}130t$ lb. This is the same capacity as that found for a normal weld. However, when the external forces are not collinear, there will be bending in the weld and the permissible load should be reduced 20 per cent to $6{,}400t$. This value has been used in computing the values in Table 28.

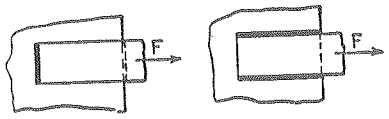


FIG. 88.

TABLE 28.—ALLOWABLE LOADS ON MILD-STEEL FILLET WELDS

| Size of weld, in. | Allowable static load per linear inch of weld, lb | | | |
|---|---|---|---|---|
| | Bare welding rod | | Shielded arc | |
| | Normal weld | Parallel weld | Normal weld | Parallel weld |
| $\frac{1}{8}$ by $\frac{1}{8}$ | 1,000 | 800 | 1,250 | 1,000 |
| $\frac{3}{16}$ by $\frac{3}{16}$ | 1,500 | 1,200 | 1,875 | 1,500 |
| $\frac{1}{4}$ by $\frac{1}{4}$ | 2,000 | 1,600 | 2,500 | 2,000 |
| $\frac{5}{16}$ by $\frac{5}{16}$ | 2,500 | 2,000 | 3,125 | 2,500 |
| $\frac{3}{8}$ by $\frac{3}{8}$ | 3,000 | 2,400 | 3,750 | 3,000 |
| $\frac{1}{2}$ by $\frac{1}{2}$ | 4,000 | 3,200 | 5,000 | 4,000 |
| $\frac{5}{8}$ by $\frac{5}{8}$ | 5,000 | 4,000 | 6,250 | 5,000 |
| $\frac{3}{4}$ by $\frac{3}{4}$ | 6,000 | 4,800 | 7,500 | 6,000 |

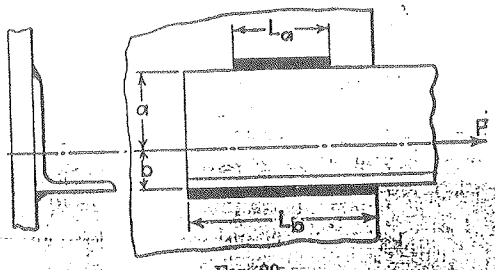


FIG. 89.

**138. Eccentric Loads.** With axial loads on unsymmetrical sections such as angles, or channels welded on the flange edges, the weld lengths should be proprotioned so that the sum of the resisting moments of the welds about the gravity axis is zero. In Fig. 89, let $L$ be the total weld

ALLOY AND TEMPER
1100 – H12, H14
3003 – H12, H14, H16, H18
ALCLAD 3003 – H12, H14, H16, H18
3004 – H14, H16, H18, H32, H34, H36
ALCLAD 3004 – H14, H16, H18, H291, H32
3105 – H14, H16
5005 – H12, H14, H32, H34
5050 – H32, H34
5052 – H291, H32, H34
5083 – H111
5083 – H321
5083 – H321
5083 – H323, H343
5086 – H111
5086 – H112
5086 – H112
5086 – H112
5086 – H32, H34
5454 – H111
5454 – H112
5454 – H32, H34
5456 – H111
5456 – H112
5456 – H321
5456 – H32
5456 – H
6061 –
6061 –
6063
6070 T6,
ANO H1

ITEMS 3;

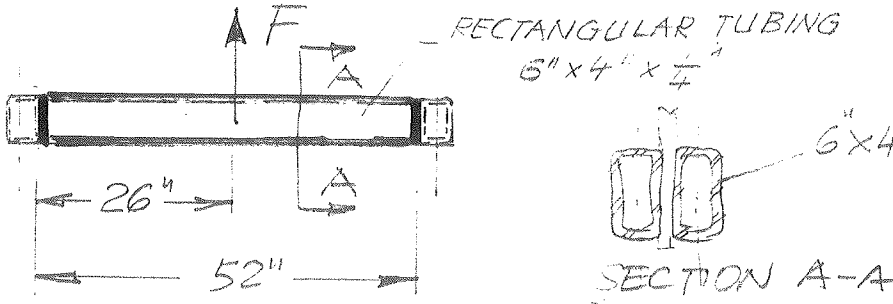
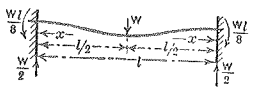



FIG. 3



**Stresses and Deflections in Beams**

| Type of Beam | Stresses | |
|---|---|---|
| | General Formula for Stress at any Point | Stresses at Critical Points |
| Case 19. — Fixed at Both Ends, Load at Center  | Between each end and load, $s = \frac{W}{2Z}(\frac{1}{8}l - x)$ | Stress at ends $\frac{Wl}{8Z}$; at load $-\frac{Wl}{8Z}$. These are the maximum stresses and are equal and opposite. Stress is zero at $x = \frac{1}{8}l$ |

MAX. STRESS:

$$S = \frac{W L}{8 Z}$$

$$S = \frac{12500(52)}{8(7.36)(2)} = 5298 \text{ psi}$$

ITEMS 3 AND 2 WELDMENTS:

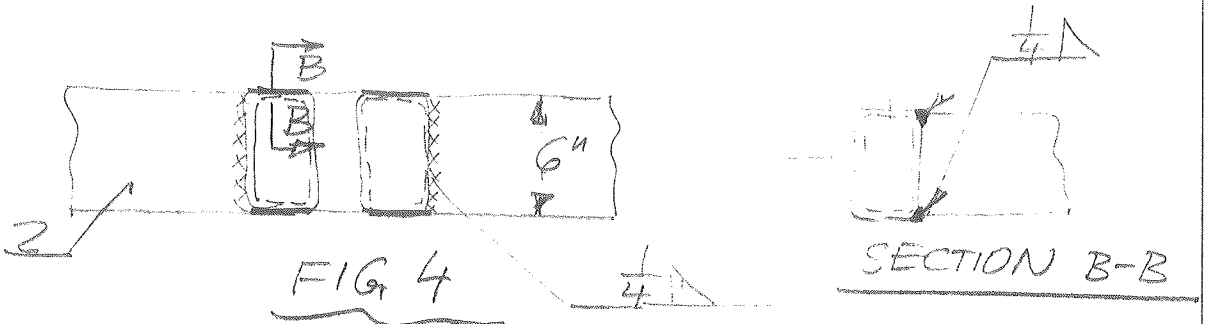



FIG 4

ALLOWABLE STATIC LOAD ACCORDING TO TABLE 28 DATA

NORMAL WELDS: $F_1 = 2500 \times 8 = 20000$

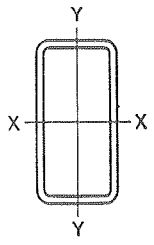
E-771 "ROSIE" ANALYSIS MAGNET ASSEMBLY FIXTURE

A.S.Z.

5.



# STRUCTURAL TUBING
## Rectangular
## Dimensions and properties




| DIMENSIONS | | | | PROPERTIES** | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Nominal* Size | Wall Thickness | | Weight per Foot | Area | X-X AXIS | | | Y-Y AXIS | | |
| | | | | | $I_x$ | $S_x$ | $r_x$ | $I_y$ | $S_y$ | $r_y$ |
| In. | In. | | Lb. | In.$^2$ | In.$^4$ | In.$^3$ | In. | In.$^4$ | In.$^3$ | In. |
| 8 x 3 | .3750 | 3/8 | 24.93 | 7.33 | 51.0 | 12.7 | 2.64 | 10.4 | 6.92 | 1.19 |
| | .3125 | 5/16 | 21.21 | 6.23 | 44.7 | 11.2 | 2.68 | 9.25 | 6.16 | 1.22 |
| | .2500 | 1/4 | 17.32 | 5.09 | 37.6 | 9.40 | 2.72 | 7.90 | 5.26 | 1.25 |
| | .1875 | 3/16 | 13.25 | 3.89 | 29.6 | 7.40 | 2.76 | 6.31 | 4.21 | 1.27 |
| 8 x 2 | .3750 | 3/8 | 22.37 | 6.58 | 40.1 | 10.0 | 2.47 | 3.85 | 3.85 | .765 |
| | .3125 | 5/16 | 19.08 | 5.61 | 35.5 | 8.87 | 2.51 | 3.52 | 3.52 | .792 |
| | .2500 | 1/4 | 15.62 | 4.59 | 30.1 | 7.52 | 2.56 | 3.08 | 3.08 | .819 |
| | .1875 | 3/16 | 11.97 | 3.52 | 23.9 | 5.97 | 2.60 | 2.52 | 2.52 | .847 |
| 7 x 5 | .5000 | 1/2 | 35.24 | 10.4 | 63.5 | 18.1 | 2.48 | 37.2 | 14.9 | 1.90 |
| | .3750 | 3/8 | 27.48 | 8.08 | 52.2 | 14.9 | 2.54 | 30.8 | 12.3 | 1.95 |
| | .3125 | 5/16 | 23.34 | 6.86 | 45.5 | 13.0 | 2.58 | 26.9 | 10.8 | 1.98 |
| | .2500 | 1/4 | 19.02 | 5.59 | 38.0 | 10.9 | 2.61 | 22.6 | 9.04 | 2.01 |
| | .1875 | 3/16 | 14.53 | 4.27 | 29.8 | 8.50 | 2.64 | 17.7 | 7.10 | 2.04 |
| 7 x 4 | .3750 | 3/8 | 24.93 | 7.33 | 44.0 | 12.6 | 2.45 | 18.1 | 9.06 | 1.57 |
| | .3125 | 5/16 | 21.21 | 6.23 | 38.5 | 11.0 | 2.49 | 16.0 | 7.98 | 1.60 |
| | .2500 | 1/4 | 17.32 | 5.09 | 32.3 | 9.23 | 2.52 | 13.5 | 6.75 | 1.63 |
| | .1875 | 3/16 | 13.25 | 3.89 | 25.4 | 7.26 | 2.55 | 10.7 | 5.34 | 1.66 |
| 7 x 3 | .3750 | 3/8 | 22.37 | 6.58 | 35.7 | 10.2 | 2.33 | 9.08 | 6.05 | 1.18 |
| | .3125 | 5/16 | 19.08 | 5.61 | 31.5 | 9.00 | 2.37 | 8.11 | 5.41 | 1.20 |
| | .2500 | 1/4 | 15.62 | 4.59 | 26.6 | 7.61 | 2.41 | 6.95 | 4.63 | 1.23 |
| | .1875 | 3/16 | 11.97 | 3.52 | 21.1 | 6.02 | 2.45 | 5.57 | 3.71 | 1.26 |
| 6 x 4 | .5000 | 1/2 | 28.43 | 8.36 | 35.3 | 11.8 | 2.06 | 18.4 | 9.21 | 1.48 |
| | .3750 | 3/8 | 22.37 | 6.58 | 29.7 | 9.90 | 2.13 | 15.6 | 7.82 | 1.54 |
| | .3125 | 5/16 | 19.08 | 5.61 | 26.2 | 8.72 | 2.16 | 13.8 | 6.92 | 1.57 |
| | .2500 | 1/4 | 15.62 | 4.59 | 22.1 | 7.36 | 2.19 | 11.7 | 5.87 | 1.60 |
| | .1875 | 3/16 | 11.97 | 3.52 | 17.4 | 5.81 | 2.23 | 9.32 | 4.66 | 1.63 |

* Outside dimensions across flat sides.

** Properties are based upon a nominal outside corner radius equal to two times the wall thickness.

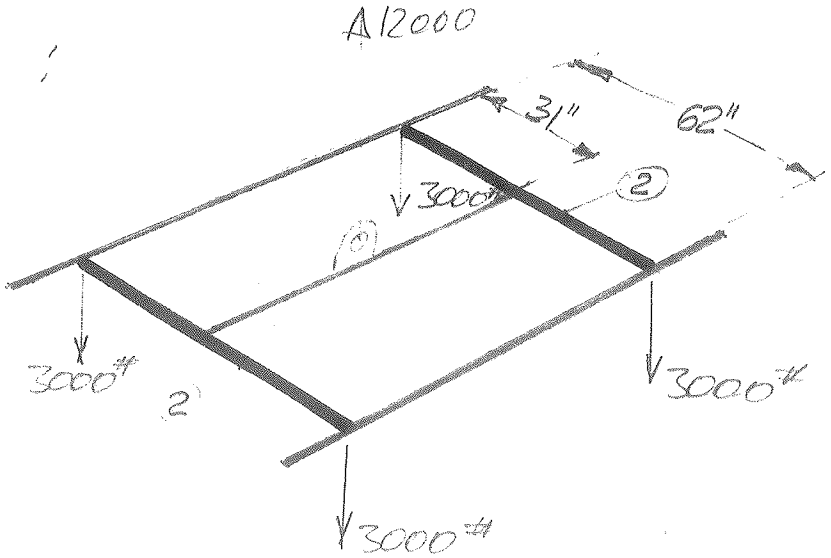
PARALLEL WELDS :

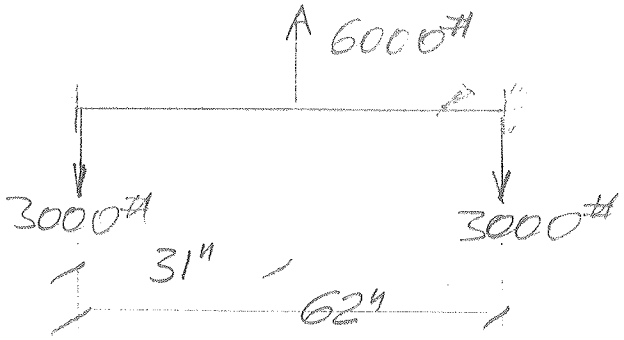
$F_2 = 2000 \times 4 = 8000$

TOTAL : $F_T = F_1 + F_2 = 28000$ lbs

$12000 < 28000$ O.K.

ITEMS 2 :



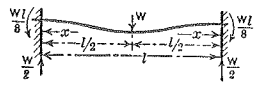

$6" \times 4" \times \frac{5}{16}"$ TUBING

FIG. 5

E-771 "ROSIE" ANALYSIS MAGNET ASSEMBLY FIXTURE | A, SZ. | 7



**Stresses and Deflections in Beams**

| Type of Beam | Stresses | | Deflections (*See footnote at beginning of Table*) | |
|---|---|---|---|---|
| | General Formula for Stress at any Point | Stresses at Critical Points | General Formula for Deflections at any Point | Deflections at Critical Points |
| **Case 19. — Fixed at Both Ends, Load at Center**  | Between each end and load, $s = \frac{W}{2Z}(\frac{1}{8}l - x)$ | Stress at ends $\frac{Wl}{8Z}$; at load $-\frac{Wl}{8Z}$ These are the maximum stresses and are equal and opposite. Stress is zero at $x = \frac{1}{4}l$ | $y = \frac{Wx^2}{48EI}(3l - 4x)$ | Maximum deflection, at load, $\frac{Wl^3}{192EI}$ |



**Stresses and Deflections in Beams**

MAX. STRESS:

$$S = \frac{6000\,(62)}{3\,(8.72)}$$

Z = SECTION MODULUS

$$S = 5332 \text{ psi}$$

$5332 < 21600$ O.K.

WELDMENTS OF ITEMS (2) AND (1)

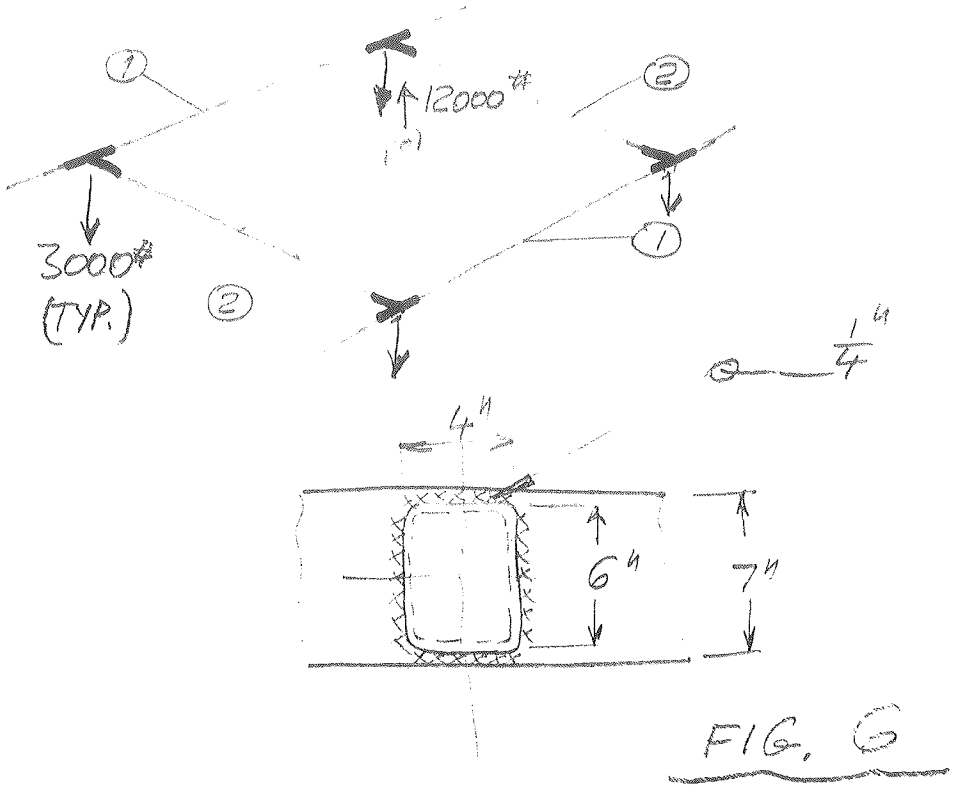



FIG. 6

ALLOWABLE STATIC LOAD PER WELDMENT AS SHOWN IN FIG. 6

NORMAL WELDS:

$F_1 = 2500 \times 4 \times 2 = 20000$ lbs

PARALLEL WELDS:

$F_2 = 2000 \times 6 \times 2 = 24000$ lbs

$F_T = 20000 + 24000 = 44000$ lbs

O.K.

ITEMS (1):

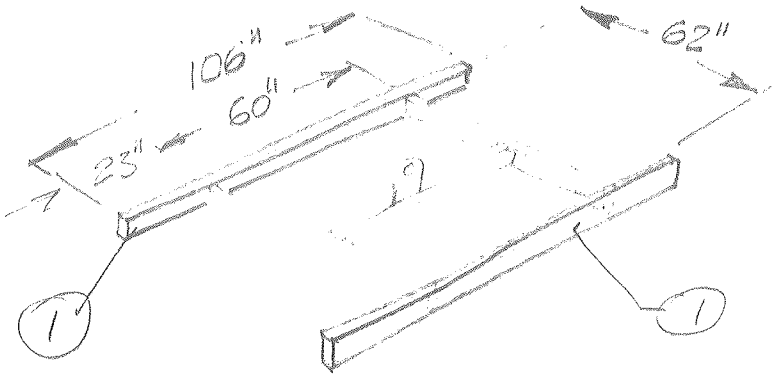
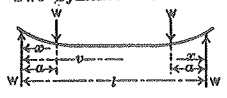



FIG. 7

| | | | | |
|---|---|---|---|---|
| Case 4.—Supported at Both Ends, Two Symmetrical Loads  | Between each support and adjacent load, $s = -\frac{Wx}{Z}$ Between loads, $s = -\frac{Wa}{Z}$ | Stress at each load, and at all points between, $-\frac{Wa}{Z}$ | Between each support and adjacent load, $y = \frac{Wx}{6EI}[3a(l-a) - x^2]$ Between loads, $y = \frac{Wa}{6EI}[3v(l-v) - a^2]$ | Maximum deflection at center, $\frac{Wa}{24EI}(3l^2 - 4a^2)$ Deflection at loads $\frac{Wa^2}{6EI}(3l - 4a)$ |

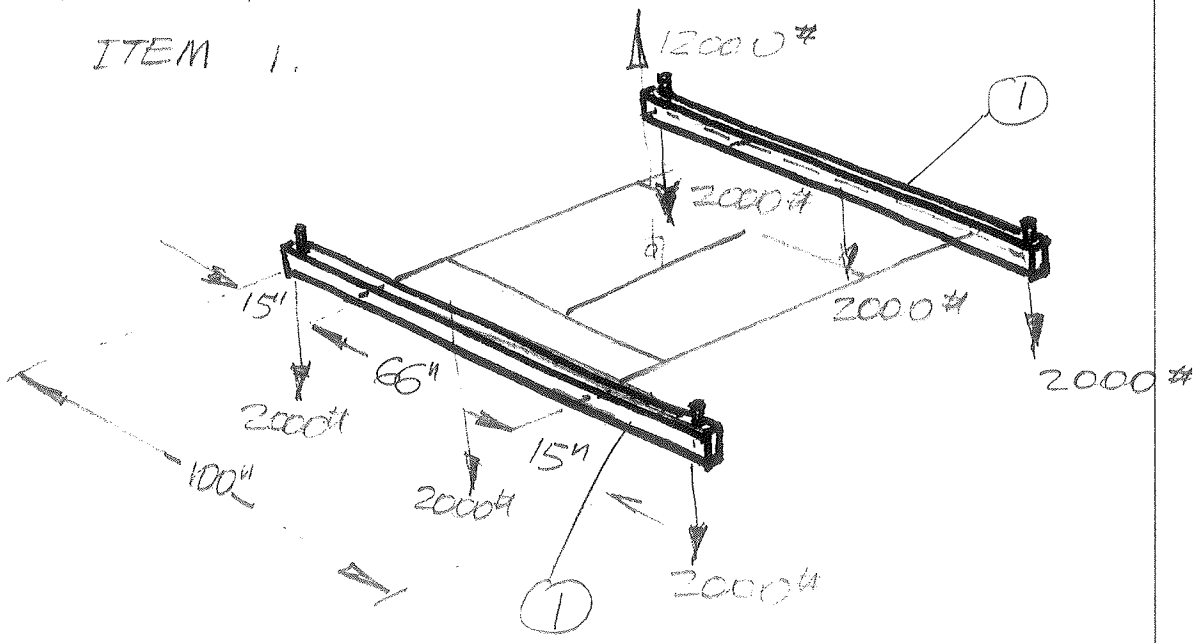
ASSUMING $W = 6000$ (TOTAL LOAD ON ONE SIDE OF THE FRAME

$$S = \frac{6000(23)}{9.23} = 14951 \text{ [psi]}$$

$14951 < 21600$ O.K.

DWG. NO 9210.350-ME-272106

ITEM 1.



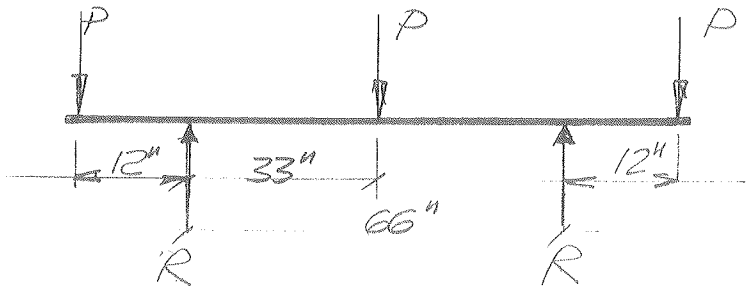
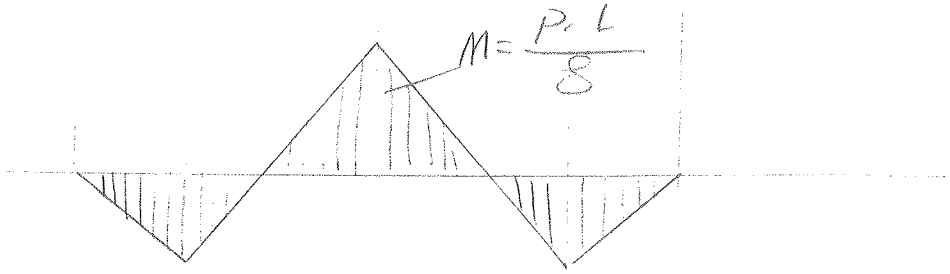




FIG. 8

P = 2000 lbs

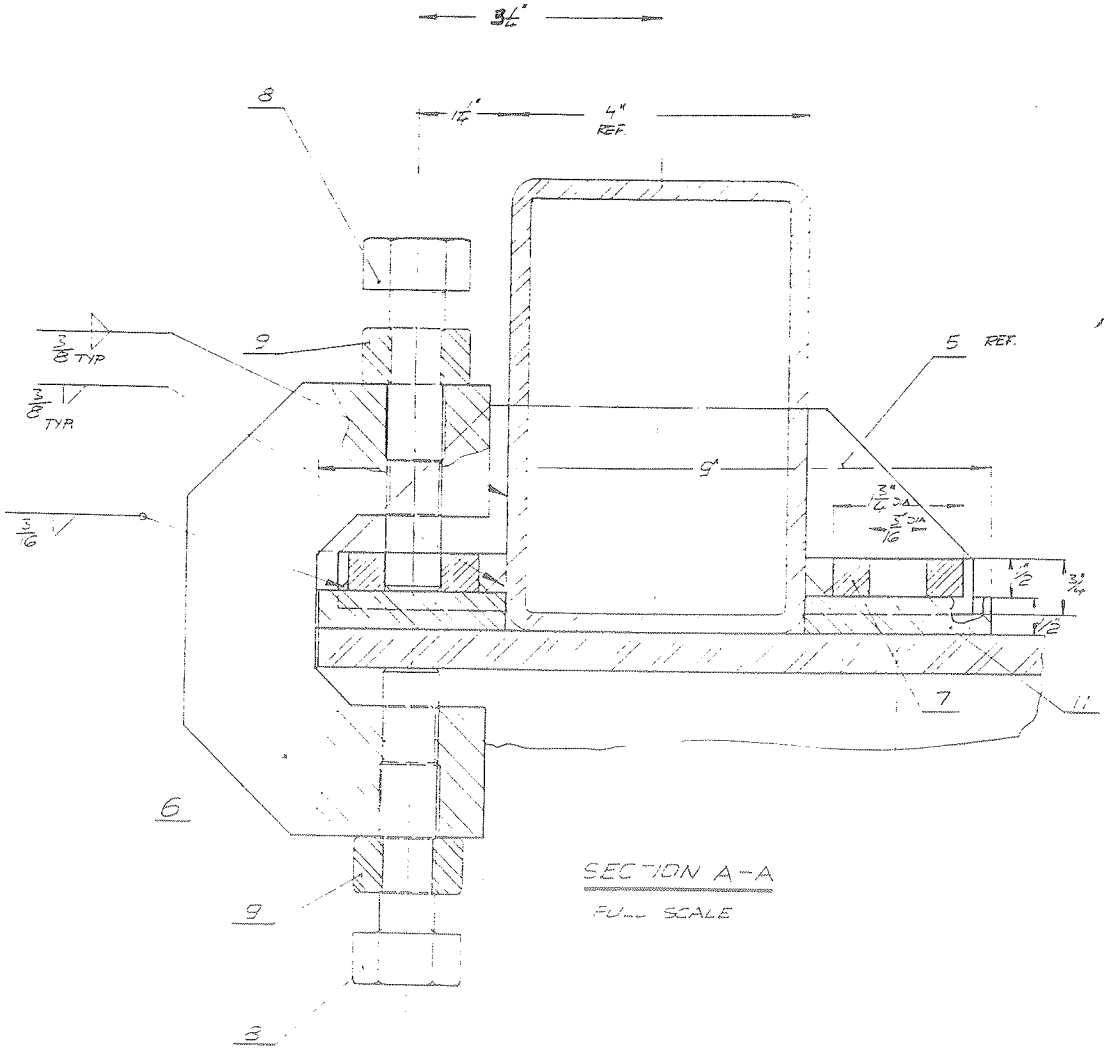
R = 3000 lbs




$$M_{max} = \frac{P(L)}{8} = \frac{2000\,(66)}{8} = 16500 \text{ lbin}$$

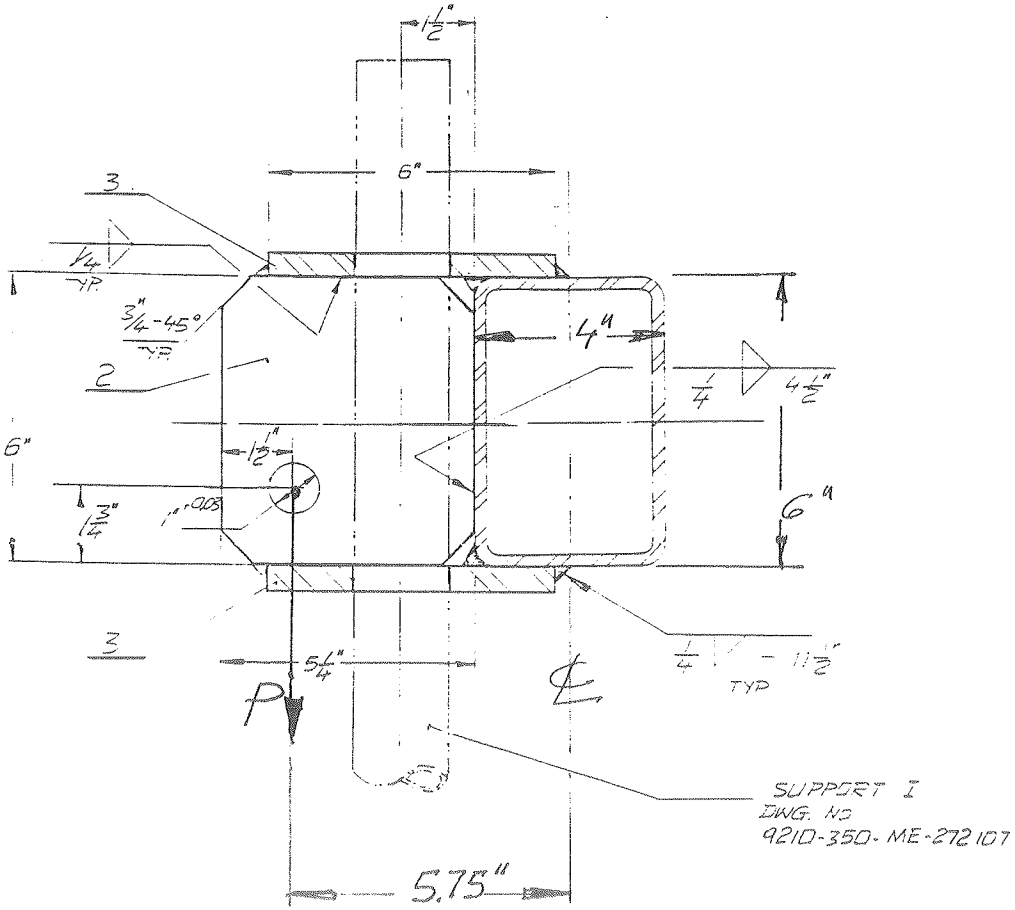
$$\sigma = \frac{M}{Z} = \frac{16500}{7.36} = 2241 \text{ [psi]}$$

CHECKING THE STRESSES IN CLAMPING DEVICE AREAS;




SECTION A-A
FULL SCALE

FIG. 9




SECTION B-B

SCALE ½" = 1"

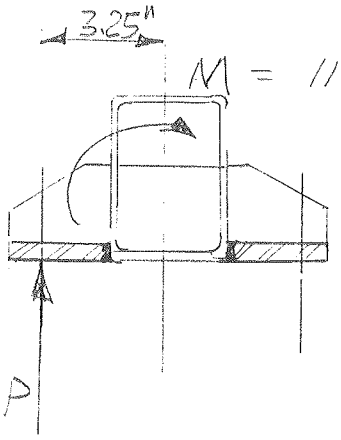
FIG. 10

DUE TO THE OFF SET OF THE FORCE "P" RESULTANT MOMENT WILL BE :

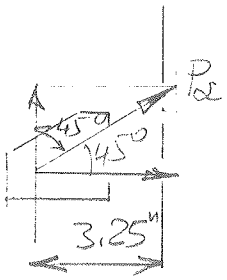
$$M = P(5.75) = 2000(5.75)$$

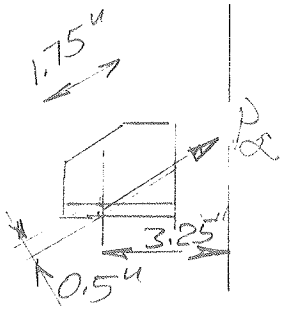
$$M = 11500 \text{ [lbin]}$$

THIS MOMENT WILL AFFECT THE CLAMPING STRUCTURE AND SUPPORT BRACKETS — AS SHOWN IN FIG. 9.




$M = P(3.25)$ $\quad P = \underline{3539}$ lbs




$\frac{P}{P_x} = \sin 45^\circ$

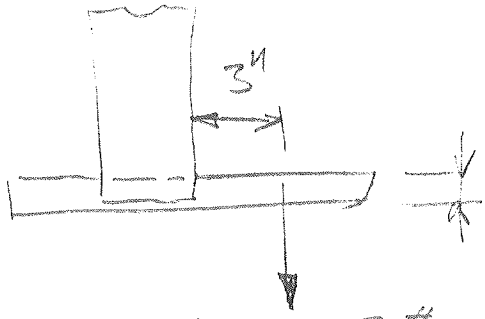
$P_x = \frac{P}{\sin 45^\circ}$ $\quad P_x = 5004$ lbs

$\bar{\sigma} = \frac{P_x}{A} = \frac{5004}{(1.75)\times(0.5)\times(3)}$

$\bar{\sigma} = \underline{714}$ psi $\quad$ O.K.

DWG. No 9210-350-ME-272107

ITEM No 3.




$$Z = \frac{bh^2}{6} = \frac{4.875\,(0.75)^2}{6}$$

$$Z = 0.45\ in^3$$

$$\sigma = \frac{M}{Z} = \frac{2000\,(3)}{0.45} = 13333\ psi$$

$13333 < 21500$ O.K.

E-771 "ROSIE" ANALYSIS MAGNET ASSEMBLY FIXTURE

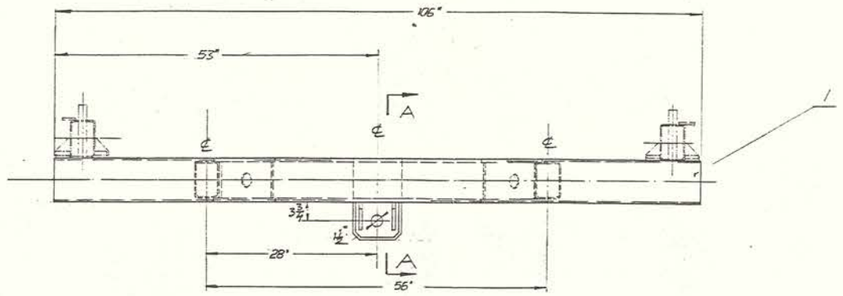
A. SZ.

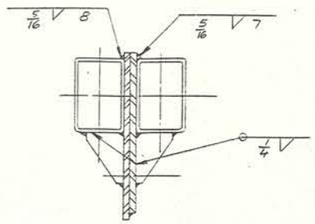
TEST LOADING ARRANGEMENT FOR FIGURE 1

I.D. Nº 23

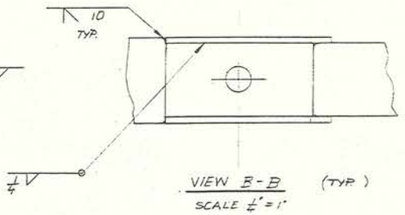
TEST DATE:
OCT. 31. 88

| REV. | DESCRIPTION | DRAWN | DATE |
|---|---|---|---|
| | | APPD. | DATE |

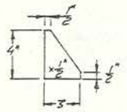


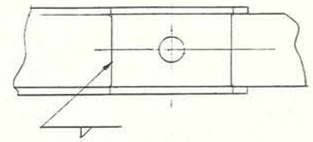

SECTION A-A
SCALE 1/2" = 1"



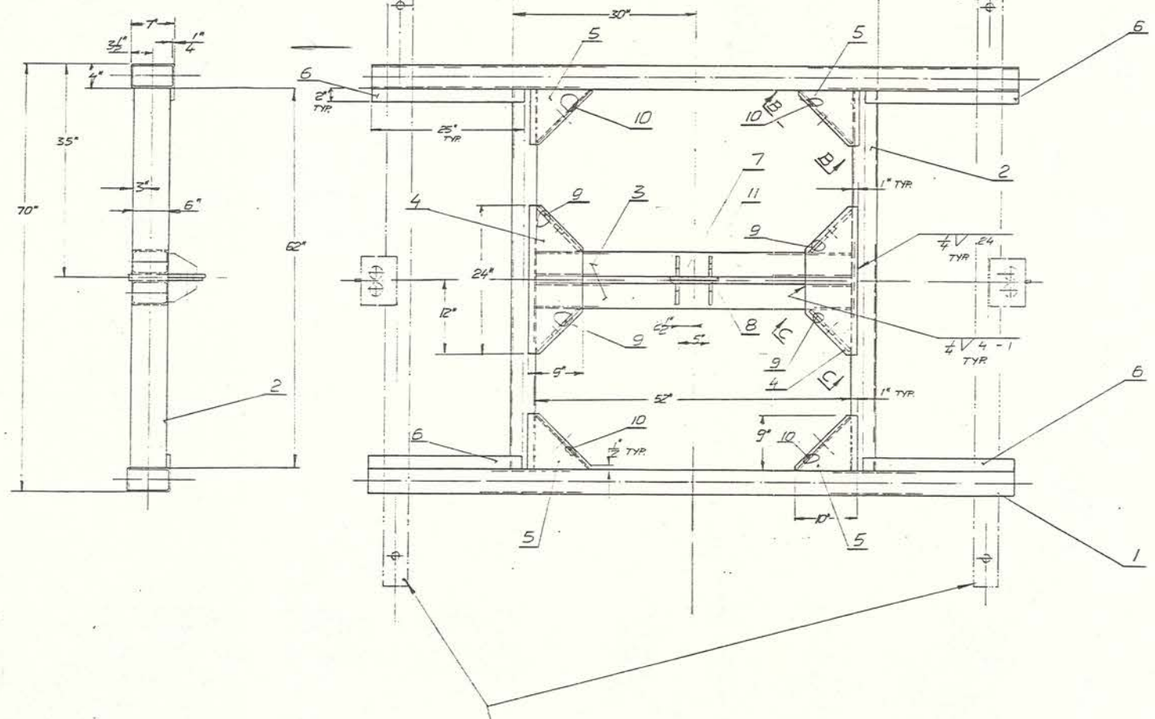

VIEW B-B (TYP)
SCALE 1" = 1"

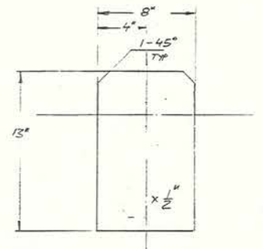



ITEM 11
SCALE 1/4" = 1"

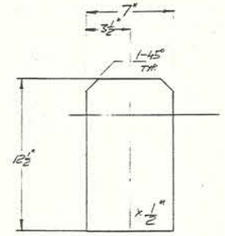


VIEW C-C
SCALE 1/4" = 1"



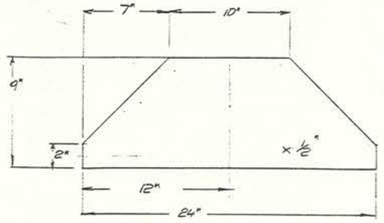

ITEM # 7
SCALE 1/4" = 1"



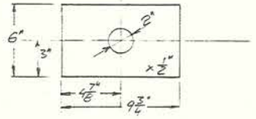

ITEM # 8
SCALE 1/4" = 1"

WELDING SEQUENCE:

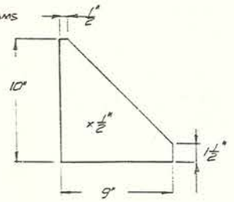
1. WELD ITEM # 7 WITH BEAM # 3
2. WELD ITEM # 8 WITH BEAM # 3 (SECOND BEAM).
3. WELD FIRST BEAM (# 3) WITH BEAMS # 2
4. WELD SECOND BEAM (# 3) WITH BEAMS # 2.
5. WELD ITEMS 7 AND 8 TOGETHER.



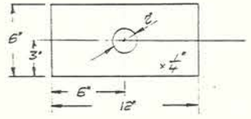

ITEM # 4
SCALE 1/2" = 1"




ITEM # 9
SCALE 1/4" = 1"




ITEM # 5
SCALE 1/4" = 1"




ITEM # 10
SCALE 1/4" = 1"

| ITEM NO. | PART NO. | DESCRIPTION OR SIZE | QTY. REQ. |
|---|---|---|---|
| 11 | | RE 1/2" x 3" x 4" | 4 |
| 10 | | RE 1/2" x 6" x 12" | 4 |
| 9 | | RE 1/2" x 6" x 9 3/4" | 4 |
| 8 | | RE 1/2" x 7" x 12 1/2" | 1 |
| 7 | | RE 1/2" x 8" x 13" | 1 |
| 6 | | RE 1/2" x 2" x 85" LG. | 4 |
| 5 | | RE 1/2" x 9" x 10" | 8 |
| 4 | | RE 1/2" x 9" x 24" | 4 |
| 3 | | RECTANGULAR TUBING 6" x 4" x 1/4" x 82" LG | 2 |
| 2 | | RECTANGULAR TUBING 6" x 4" x 1/4" x 68" LG | 2 |
| 1 | | RECTANGULAR TUBING 7" x 4" x 1/2" x 108" LG. | 2 |

PARTS LIST

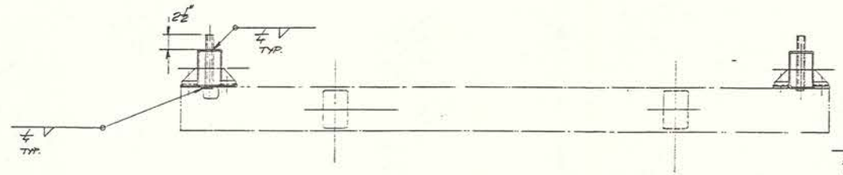
| UNLESS OTHERWISE SPECIFIED | ORIGINATOR | [illegible] | x 9570 |
|---|---|---|---|
| FRACTIONS DECIMALS ANGLES | DRAWN | J. SZ. | 2/22.88 |
| | CHECKED | | |
| 1. BREAK ALL SHARP EDGES 1/64 MAX. | APPROVED | | |
| 2. DO NOT SCALE DWG. | USED ON | | |
| 3. DIMENSIONING IN ACCORD WITH ANSI Y14.5 STD's. | MATERIAL- | | |
| √ MAX. ALL MACHINED SURFACES | | | |

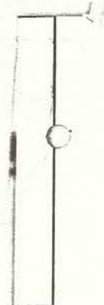
FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

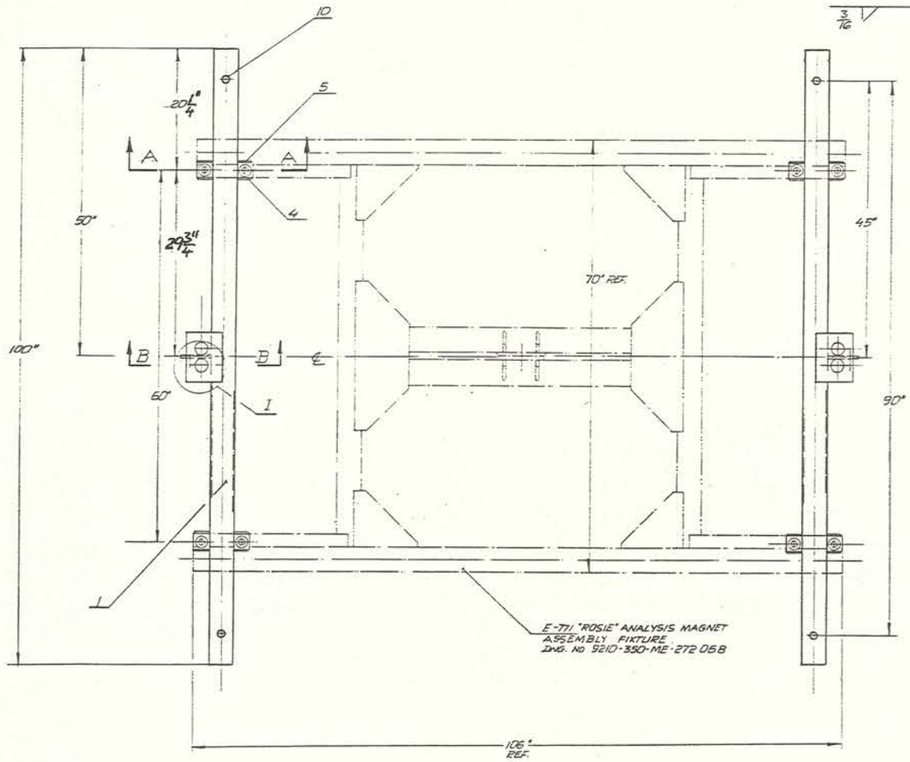
E-771, "ROSIE" ANALYSIS MAGNET
ASSEMBLY FIXTURE
R/D MECHANICAL

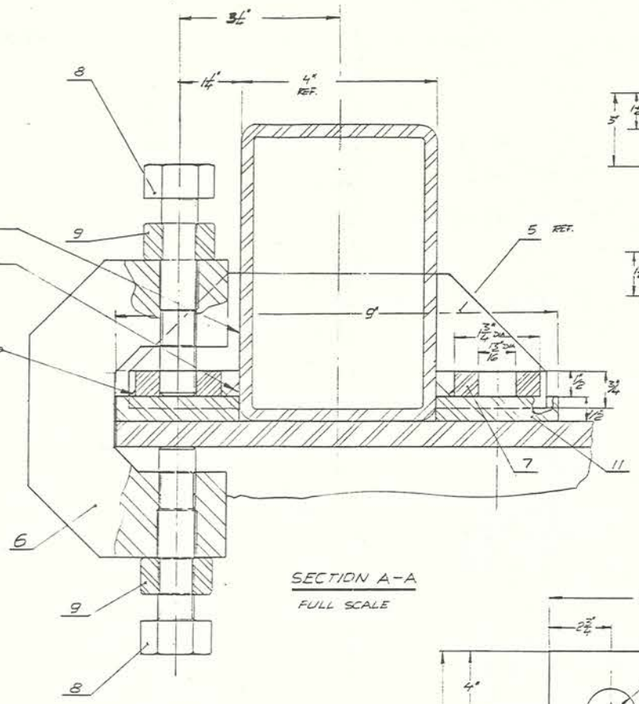
| SCALE | PLANED | DRAWING NUMBER | REV. |
|---|---|---|---|
| 1/4" = 1" (UNLESS NOTED) | | 9210-350-ME-272068 | |

| REV. | DESCRIPTION | DRAWN | DATE |
|---|---|---|---|
| | | APPD. | DATE |

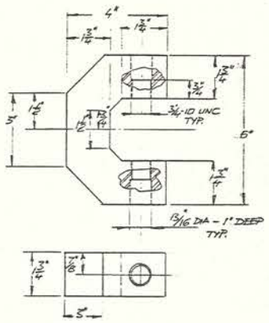


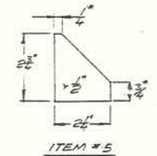


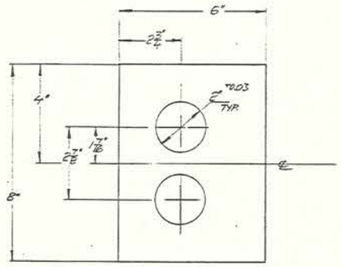

SECTION A-A
FULL SCALE



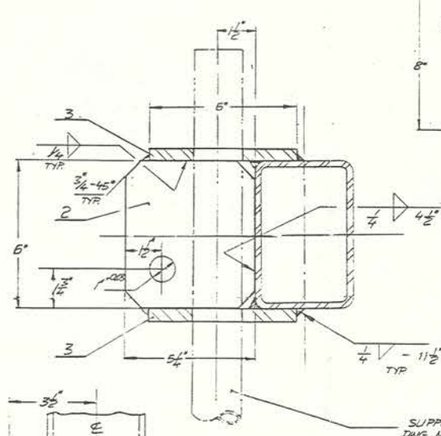

ITEM # 6
SCALE 1/2" = 1"



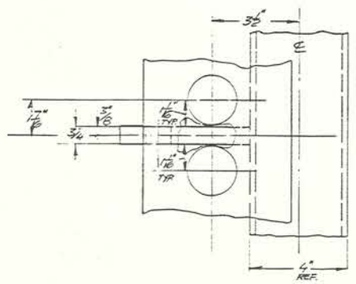

ITEM # 5
SCALE 1/2" = 1"




ITEM # 3
SCALE 1/2" = 1"




SECTION B-B
SCALE 1/2" = 1"




DETAIL "I"
SCALE 1/2" = 1"

| ITEM NO. | PART NO. | DESCRIPTION OR SIZE | QTY. REQ. |
|---|---|---|---|
| 11 | | PLATE ½" × 6½" × 2½" | 8 |
| 10 | | 6" O.D. × .250" × 8 3/4" LG. ROUND MECHANICAL TUBING | 4 |
| 9 | | ¾"-10 UNC-HEX NUT | 16 |
| 8 | SAE GRADE 5 | ¾"-10 UNC-FULL THD. × 3½" LG. SOCKET HEAD CAP SCREW | 16 |
| 7 | | ½" × 1½" O RING | 8 |
| 6 | | CLAMP | 8 |
| 5 | | PLATE #2 | 8 |
| 4 | | PLATE 6½" × ¾" × 2½" | 8 |
| 3 | | PLATE ½" × 6" × 8" | 4 |
| 2 | | PLATE ¾" × 5¾" × 6" | 2 |
| 1 | | RECTANGULAR TUBING 6" × 4" × .25" TH. × 100" LG | 2 |

PARTS LIST

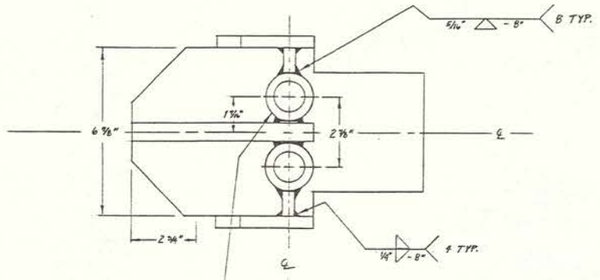
| | | | |
|---|---|---|---|
| UNLESS OTHERWISE SPECIFIED | ORIGINATOR | [illegible] STRUCTURALS | V 9870 |
| FRACTIONS DECIMALS ANGLES | DRAWN | [illegible] | JULY 1, 82 |
| | CHECKED | | |
| 1. BREAK ALL SHARP EDGES 1/64 MAX. | APPROVED | | |
| 2. DO NOT SCALE DWG. | USED ON | | |
| 3. DIMENSIONING IN ACCORD WITH ANSI Y14.5 STD's. | MATERIAL | STRUCTURAL STEEL | |
| √ MAX. ALL MACHINED SURFACES | | | |

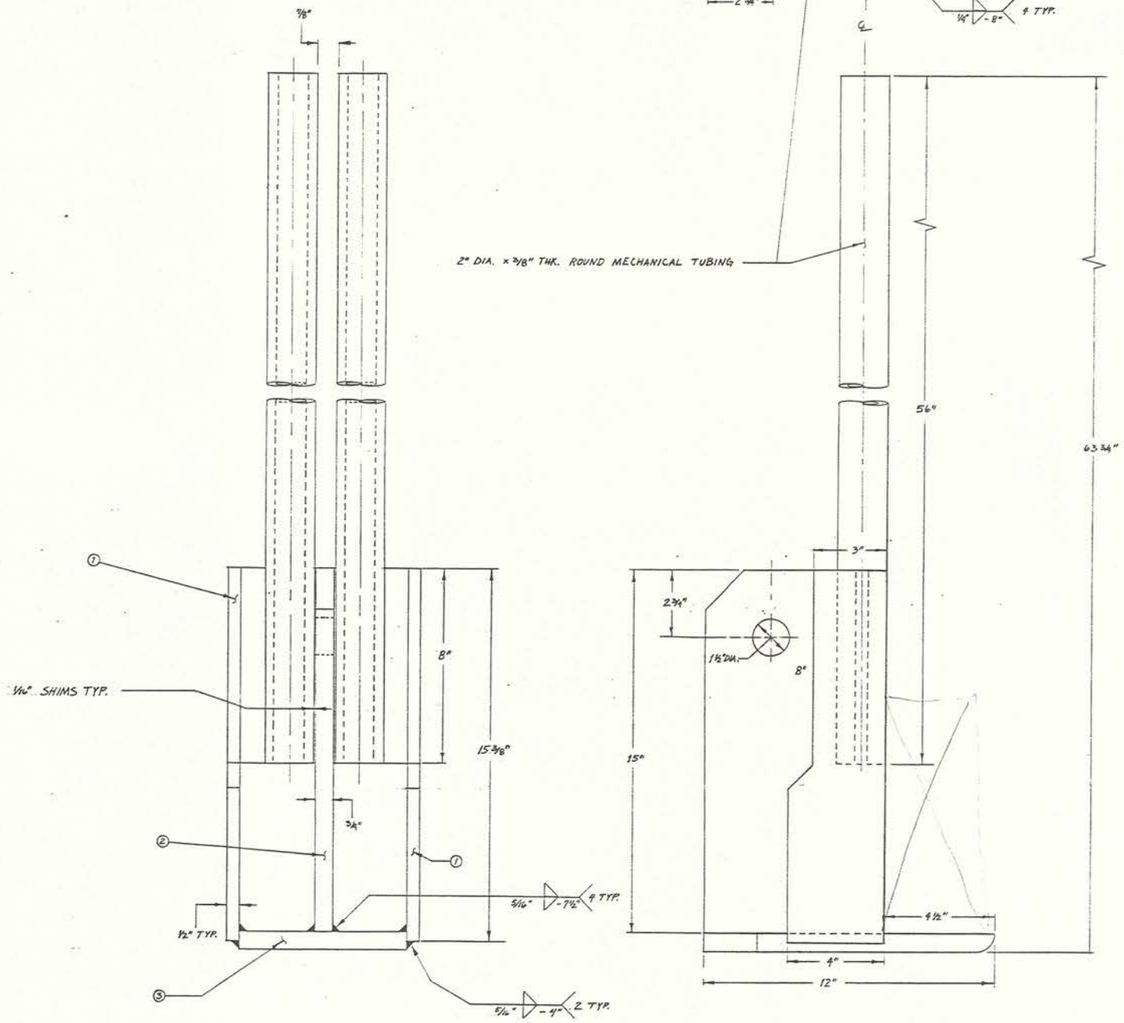
FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

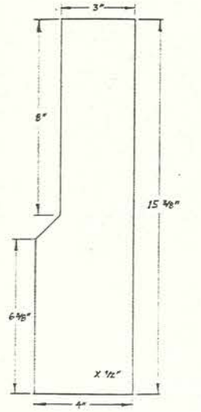
E-771 ROSIE ANALYSIS MAGNET
ASSEMBLY FIXTURE - CTR. LIFTING BEAMS
R/D MECHANICAL

| SCALE | FILMED | DRAWING NUMBER | REV. |
|---|---|---|---|
| 1/2" = 1" UNLESS NOTED | | 9210 350-ME-272 106 | |

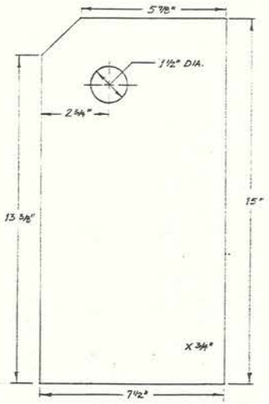
| REV. | DESCRIPTION | DRAWN | DATE |
|---|---|---|---|
| | | APPD. | DATE |



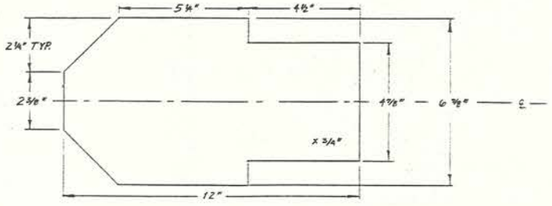




ITEM 1 (2 REQUIRED)




ITEM 2 (1 REQUIRED)




ITEM 3 (1 REQUIRED)

| ITEM NO. | PART NO. | DESCRIPTION OR SIZE | QTY. REQ. |
|---|---|---|---|
| | | PARTS LIST | |

| | | | |
|---|---|---|---|
| UNLESS OTHERWISE SPECIFIED: | DESIGNED | I.A. SOLYNJANSKI | |
| FRACTIONS DECIMALS ANGLES | DRAWN | J. SALAS | 7/16/98 |
| ± ± ± | CHECKED | | |
| 1. BREAK ALL SHARP EDGES 1/64 MAX. | APPROVED | | |
| 2. DO NOT SCALE DWG. | USED ON | | |
| 3. DIMENSIONING IN ACCORD WITH ANSI Y14.5 STD'S. | MATERIAL | STRUCTURAL STEEL | |
| MARK ALL MACHINED SURFACES | | | |

FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

E-771 ROSIE ANALYSIS MAGNET
SUPPORT 1
R/D MECHANICAL

| SCALE | PLANED | DRAWING NUMBER | REV. |
|---|---|---|---|
| ½" = 1" | | 9210-350-ME-272107 | |

2" O.D.

3/16"

13"

7.75"

2.75"

℄ EXISTING

PL 1/2" x 6" x 13" (4 REQ'D)

2.5" 2.25"

5/16" (TOTAL PIPE LG. 62")

6.25"

℄

4.25"

1.5" 2.75"

EXISTING MAIN FIXTURE

3.5"

PL 1/2" x 6" x 6" (4 REQ'D)

6"

9.5"

3.75"

0.25" 5.5"

* 9 1/2"

4.75" 5.5"

6"

3"

PL 1/2" x 6" x 6" (4 REQ'D)

0.5"

1/2" PL.

4"

7.25"

1.75"

1.5"

X 3/4"

5"

0.5"

3"

10"

12"

0.5"

3.5"

0.5"

4" ⌀

7.5"

4.5"

3.5"

30°

0.5"

1.5"

0.5"

2000 #

PL 1/2" x 6" x 7 1/2" (4 REQ'D)

* LOAD TEST CONDITION

| | | | | | |
|---|---|---|---|---|---|
| ITEM NO. | PART NO. | DESCRIPTION OR SIZE | | | QTY. REQ. |
| | | PARTS LIST | | | |
| UNLESS OTHERWISE SPECIFIED | | ORIGINATOR | | | |
| FRACTIONS | DECIMALS | ANGLES | DRAWN | | |
| ± | ± | ± | CHECKED | | |
| 1. BREAK ALL SHARP EDGES 1/64 MAX. | | | APPROVED | | |
| 2. DO NOT SCALE DWG. | | | USED ON | | |
| 3. DIMENSIONING IN ACCORD WITH ANSI Y14.5 STD'S. | | | | | |
| MAC MACHINED SURFACES | | | MATERIAL | | |

FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

E-778 BOSE ANALYSIS MAGNET
ASSEMBLY FIXTURE 4 POINT LIFTING
FOR UPPER END COILS
R.D. MECHANICAL

| SCALE | BOARD | DRAWING NUMBER | REV. |
|---|---|---|---|
| FULL | | | |

| REV. | DESCRIPTION | DRAWN | DATE |
|---|---|---|---|
| | | APPD. | DATE |