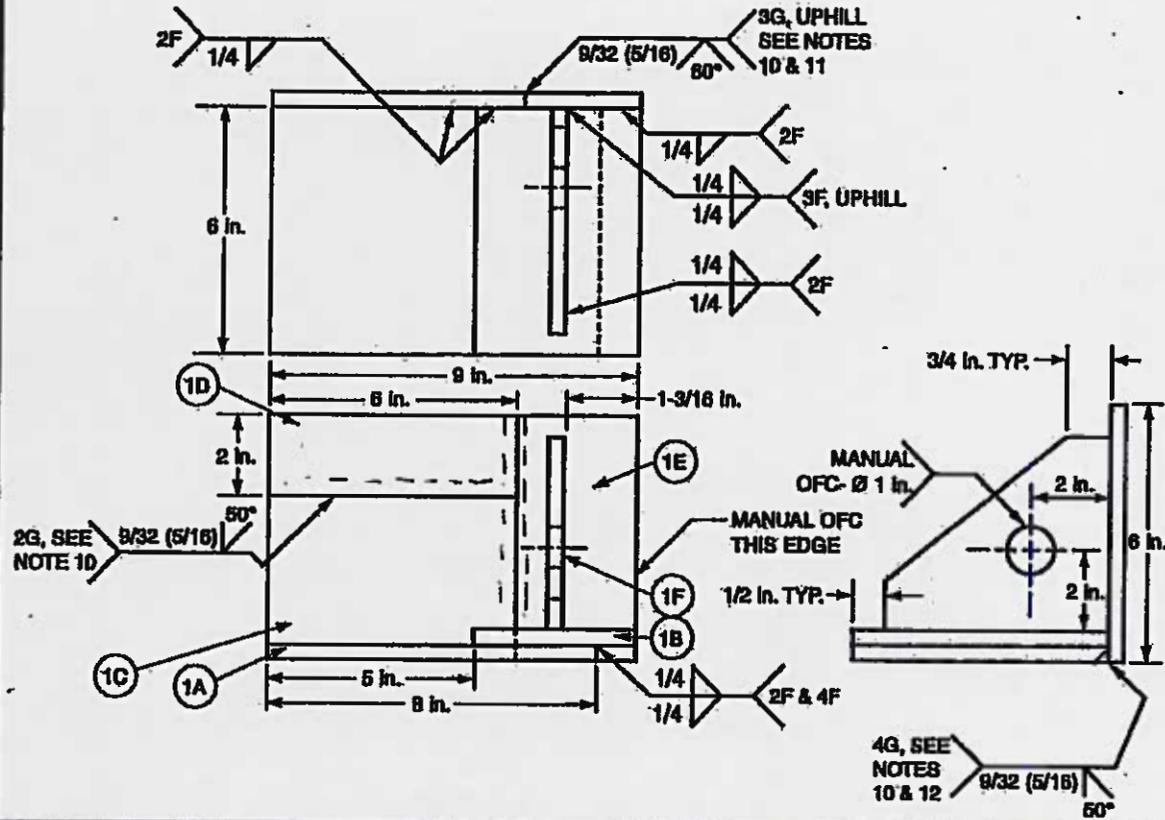


111



- NOTES:**
1. All dimensions U.S. Customary Units unless otherwise specified.
 2. 3/8 in. thickness carbon steel.
 3. The welder shall prepare a bill of materials in U.S. Customary Units prior to cutting.
 4. The welder shall convert the above bill of materials to S.I. Metric Units of measure.
 5. All parts may be mechanically cut or machine OFC unless specified manual OFC.
 6. All welds FCAW-G/GM or FCAW-S as applicable.
 7. Fit and tack entire assembly on bench before attaching to positioning arm.
 8. All welding to be done in position according to welding symbol.
 9. Employ boxing technique where applicable.
 10. Melt through not required.
 11. Weld joints parts 1C and 1D to 1E.
 12. Weld joints parts 1C and 1E to 1A.
 13. For FCAW-G, use WPS AWS EDU FCAW-01. (See AWS QC10, Table 2.)
For FCAW-GM use WPS AWS EDU FCAW-01. (See AWS QC10, Table 2.)
For FCAW-S use WPS AWS EDU FCAW-03. (See AWS QC10, Table 2.)
 14. Visual examination in accordance with requirements of AWS QC10, Table 3.

ID	QTY	SIZE	METRIC CONVERSION


American Welding Society

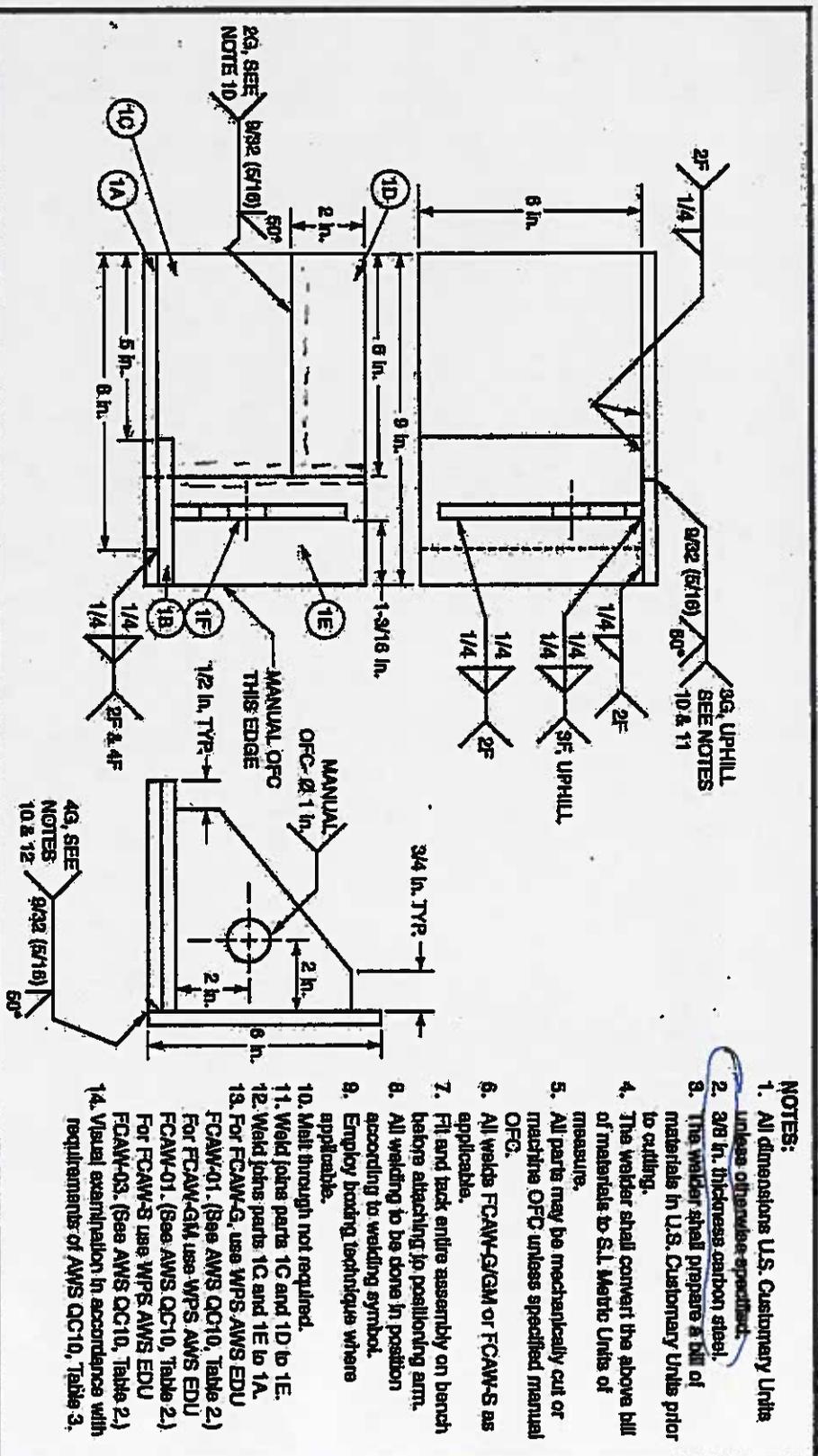
Entry Welder Performance Qualification
FCAW-G/GM, FCAW-S Carbon Steel

DATE:	SCALE:	DWG #: AWS EDU-1
DR BY:	Tolerances: (Unless otherwise specified)	
APP BY:	DRAWING NOT TO SCALE	
Fractions: ± 1/16" Angles: +10°, -5°		

AWS EG2.0:2008

ANSWERS

111



ID	QTY	SIZE	METRIC CONVERSION
1A	1	3/8" x 8" x 6"	9.5 x 203 x 152
1B	1	3/8" x 4" x 6"	9.5 x 101.6 x 152
1C	1	3/8" x 4" x 6"	9.5 x 101.6 x 152
1D	1	3/8" x 2" x 6"	9.5 x 50.8 x 152
1E	1	3/8" x 3" x 6"	9.5 x 76 x 152
1F	1	3/8" x 4 3/4" x 5 1/2"	9.5 x 120.6 x 140

Hint
 $H = G - (1/2 + 3/8 + 3/8) = G - 1 1/4 = 4 3/4$
 $D = G - 1/2 = 5 1/2$

American Welding Society

Entry Welder Performance Qualification
 FCAG-G/GM, FCAG-S Carbon Steel

DATE: _____
 DR BY: _____
 APP BY: _____
 SCALE: _____ DWG #: AWS EDU-1
 Tolerances: (Unless otherwise specified)
 DRAWING NOT TO SCALE
 Fractions: ± 1/16" Angles: +10°, -5°

- NOTES:
- All dimensions U.S. Customary Units unless otherwise specified.
 - 3/8 in. thickness carbon steel.
 - The welder shall prepare a bill of materials in U.S. Customary Units prior to cutting.
 - The welder shall convert the above bill of materials to S.I. Metric Units of measure.
 - All parts may be mechanically cut or machine OFC unless specified manual OFC.
 - All welds FCAG-G/GM or FCAG-S as applicable.
 - Fit and tack entire assembly on bench before attaching to positioning arm.
 - All welding to be done in position according to welding symbol.
 - Employ bonding technique where applicable.
 - Melt through not required.
 - Weld joints parts 1C and 1D to 1E.
 - Weld joints parts 1C and 1E to 1A.
 - For FCAG-G, use WPS AWS EDU FCAG-01. (See AWS QC10, Table 2.)
 - For FCAG-S use WPS AWS EDU FCAG-03. (See AWS QC10, Table 2.)
 - Visual examination in accordance with requirements of AWS QC10, Table 3.

Bearing Support Bracket

Material List (QTY 2)

	Size	QTY	material
A			
B			
C			

Spacer Bar

Material list (QTY 4)

	Size	QTY	Material
A			
B			
C			

ANSWER

Bearing Support Bracket

Material List (QTY 2)

	Size	QTY	material
A	1/4 x 12 x 4	4	CRS
B	3/4 x 5 1/2 x 4 ⁴ / _{Holes}	2	CRS
C	3/4 x 5 1/2 x 4 ⁶ / _{Holes}	2	CRS

Spacer Bar

Material list (QTY 4)

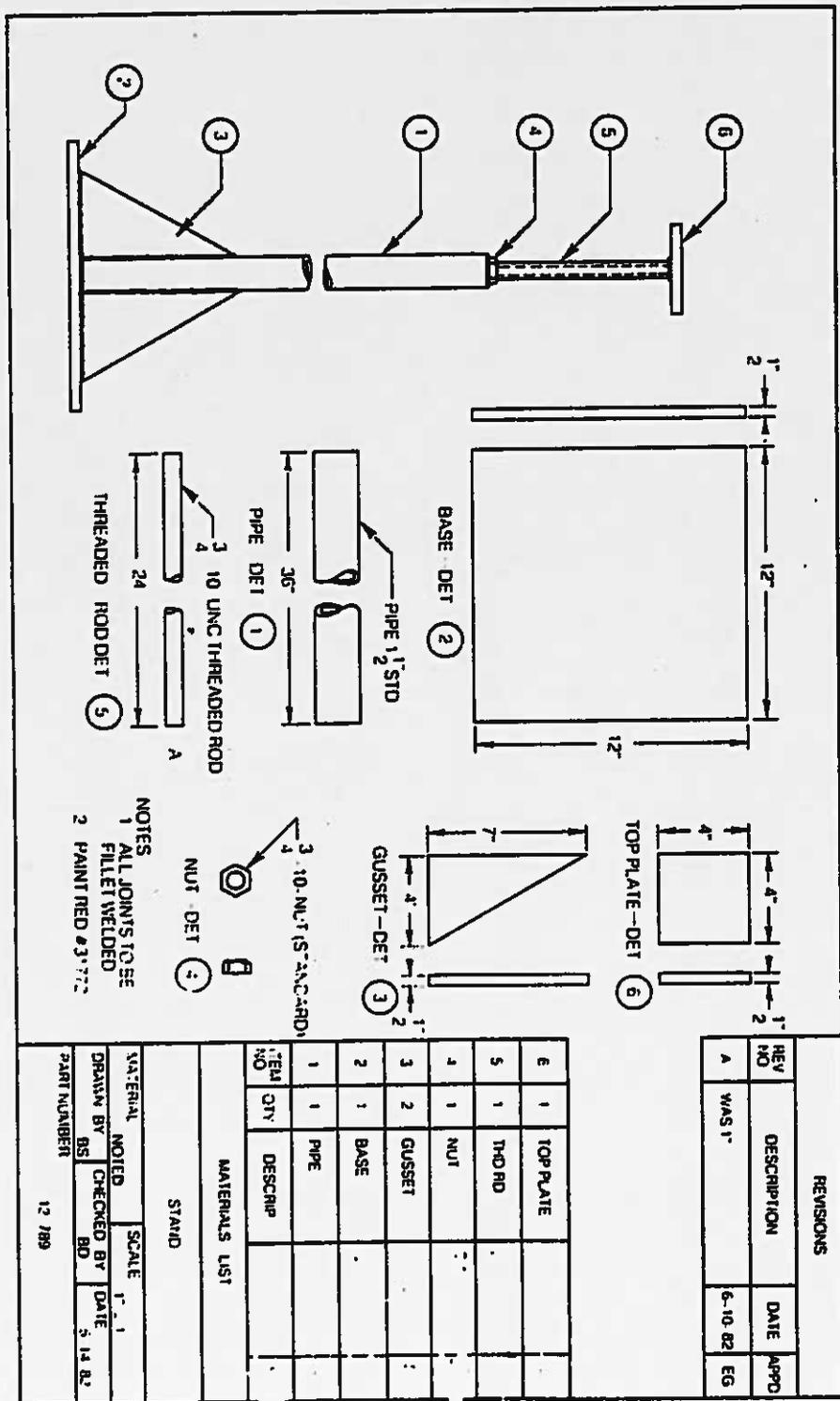
	Size	QTY	Material
A	1/2 x 12 x 4 ^{KNUTS}	4	HRS LOW CARBON
B	1/2 x 12 x 4 ^{SO}	4	" "
C	1 1/2 φ x 9 ⁵	4	BI PIPE

TEXT
Pg 36 & 48

PRACTICE

TOLERANCE		SCALE		COURSE		DRAWN BY		SHEET NO.	
DATE		DATE		DATE		DATE		DATE	
NAME OF PLATE					PART OR PROBLEM NO.				

matic



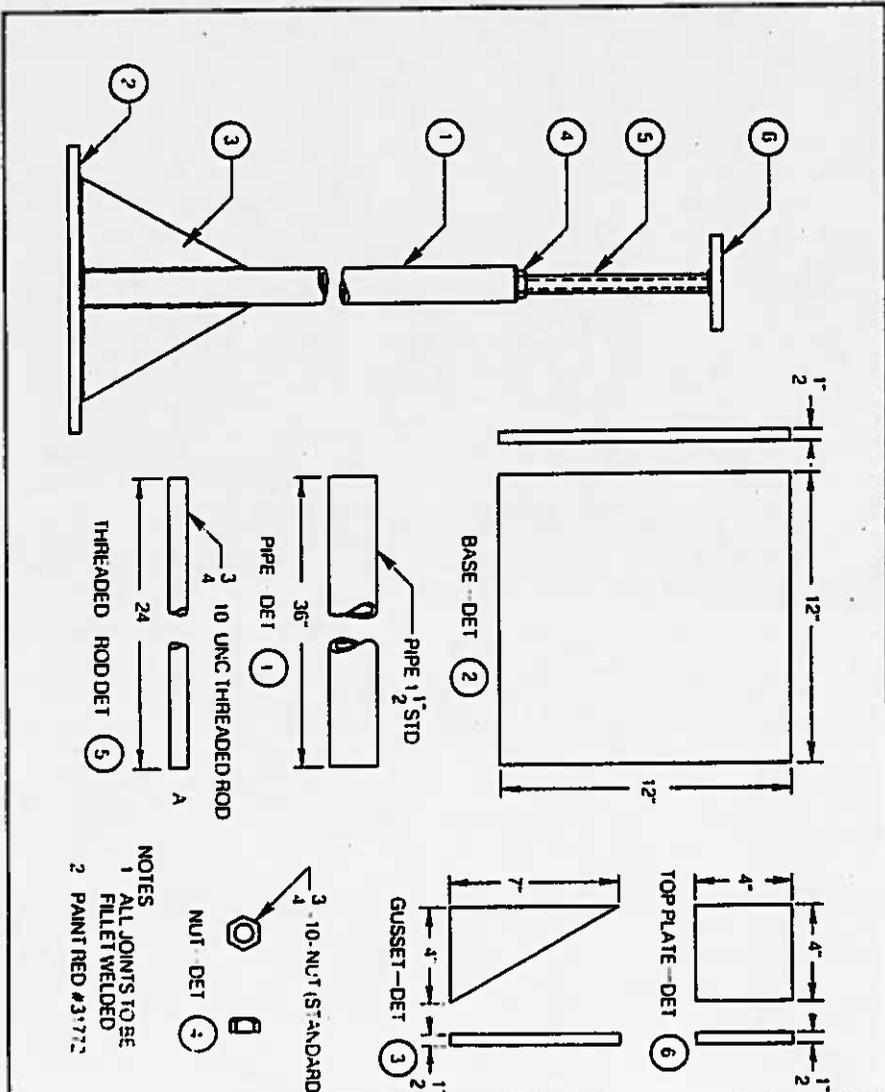
REVISIONS			
REV NO	DESCRIPTION	DATE	APPD
A	WAS 1"	6-10-82	EG

ITEM NO	QTY	DESCRIP
1	1	PIPE
2	1	BASE
3	2	GUSSET
4	1	NUT
5	1	THD RD
6	1	TOP PLATE

MATERIALS LIST			
STAND			
VARIABLE	NOTED	SCALE	1" = 1"
DRAWN BY	BS	CHECKED BY	BD
PART NUMBER		12 789	

ANSWERS

TOLERANCE		SCALE		PART OR PROBLEM NO.	
DRAWN BY		COURSE		NAME OF PLATE	
SHEET NO.		DATE		DATE	
APPRO		DATE		DATE	

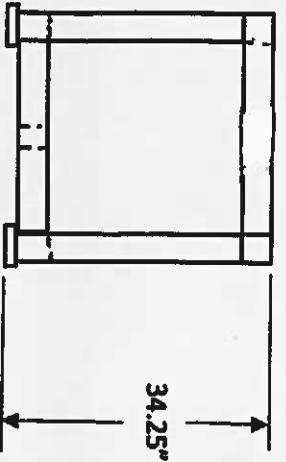
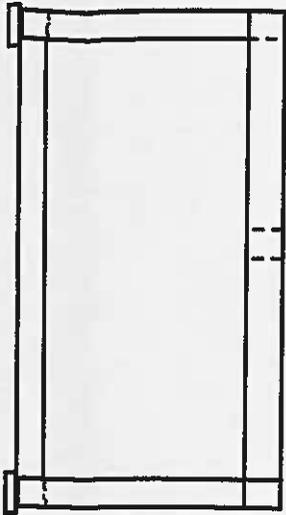
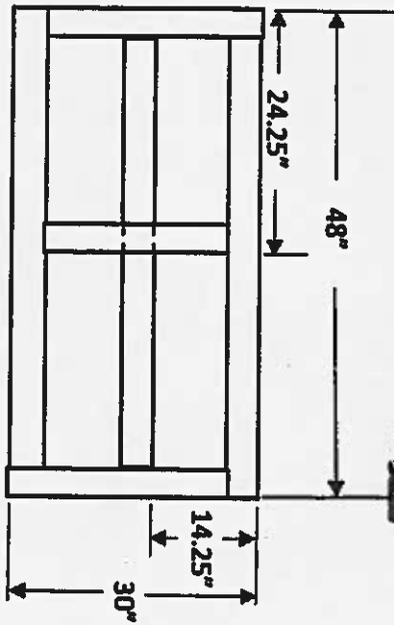
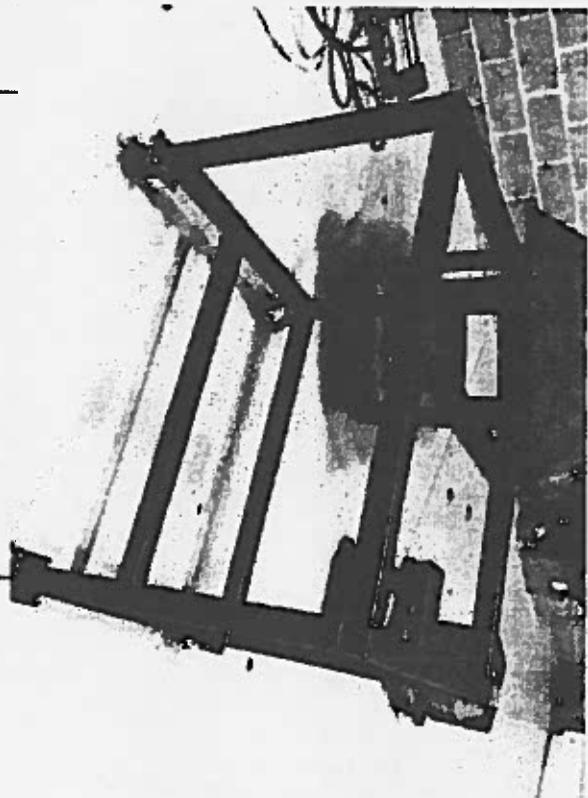


- NOTES
- 1 ALL JOINTS TO BE FILET WELDED
 - 2 PAINT RED #31772

REVISIONS		
REV NO	DESCRIPTION	DATE
A	WAS 1"	6-10-82
		EG

ITEM NO	QTY	DESCRIP	SIZE
1	1	PIPE	1 1/2" x 12 x 36
2	1	BASE	1/2 x 12 x 12
3	2	GUSSET	1/2 x 7 x 4
4	1	NUT	3/4 - 10 (STD)
5	1	THD RD	3/4 - 10 x 24"
6	1	TOP PLATE	1/2 x 4 x 4

MATERIALS LIST	
STAND	
MATERIAL NOTED	SCALE 1" = 1"
DRAWN BY BS	CHECKED BY BD
PART NUMBER 12 789	DATE 5 14 82



Create a material list for this project

The frame is constructed from 1.5" x 1.5" x .125" wall square tubing. The length is 48", the width or depth is 30", and the height is 34" without the casters or bottom pad. The tubing in the middle of the top is on center. The tubing across the bottom is centered in the 30" width or depth. The bottom pads for the casters are 2 1/2" x 2 1/2" x 1/4".

Material list for table

Name:

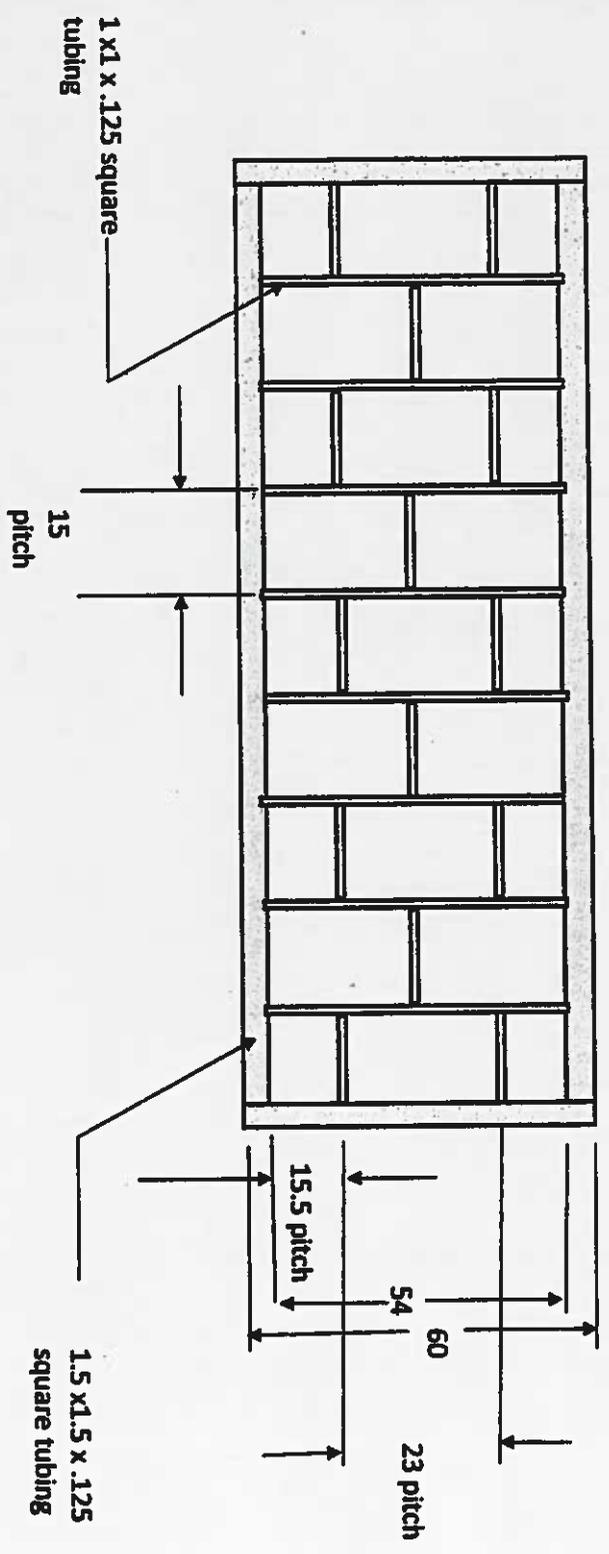
Part	Size	Quantity	material
A			
B			
C			
D			
E			
F			
G			
H			

Material list for table

Name:

ANSWERS

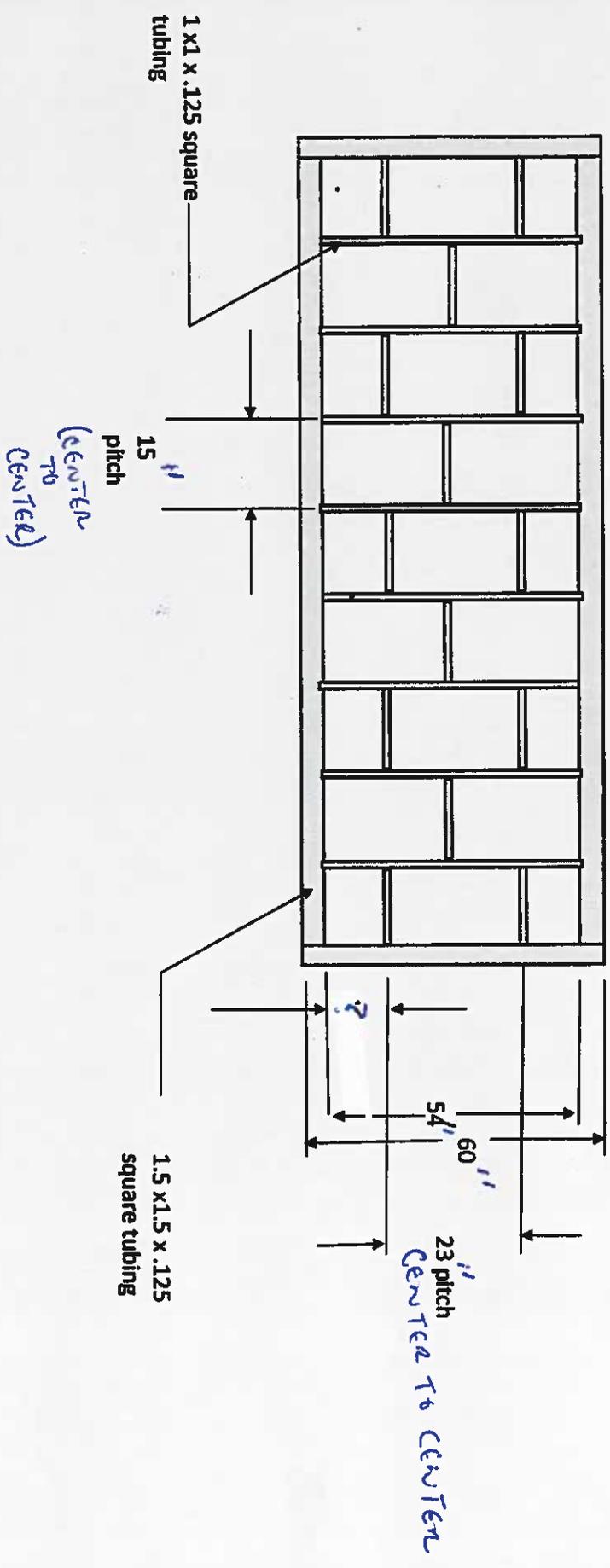
Part	Size	Quantity	material
A	46.5"	2	1.5x1.5x.125 SQT
B	28.5"	2	"
C	38.5"	1	"
D	45"	2	"
E	27"	3	"
F	2 1/2 x 2 1/2 x 1/4	4	Y4 STEEL
G			
H			



How many 20 foot lengths of 2x2 and 1x1 tubing are required? (Hint 20' = 240" & you must allow 1/16 (.0625) kerf per cut from saw. Always figure longest pieces to shortest) Draw out how you would cut the parts – extra length are drawn.

A series of 15 horizontal rectangular boxes, arranged vertically, intended for drawing out the cut parts of the tubing. Each box is empty and has a thin black border.

Answers

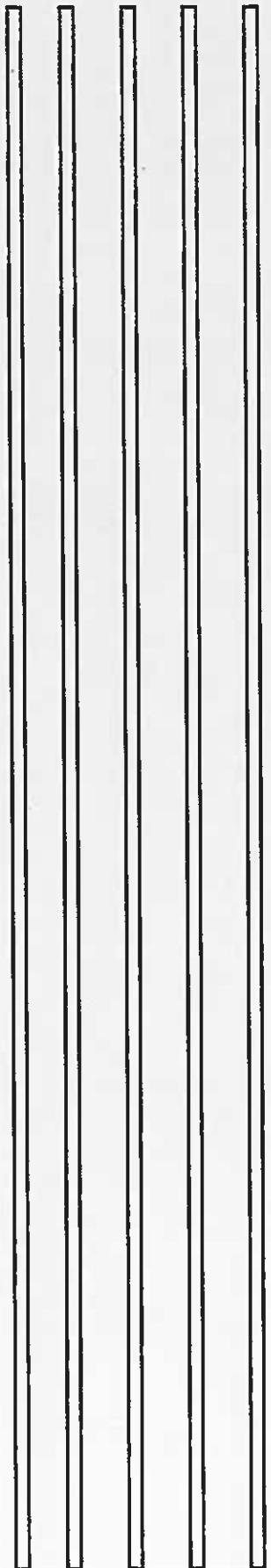
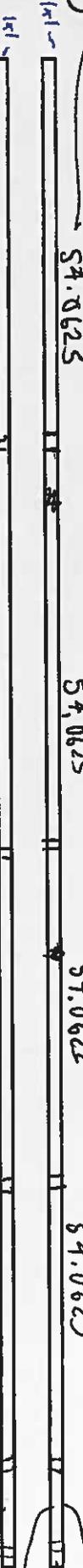
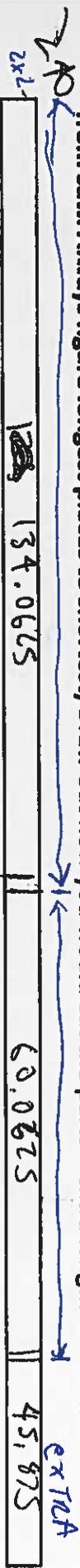


HINT: How many 14" spaces in the length?
How many 1" pcs of tubing in the length?

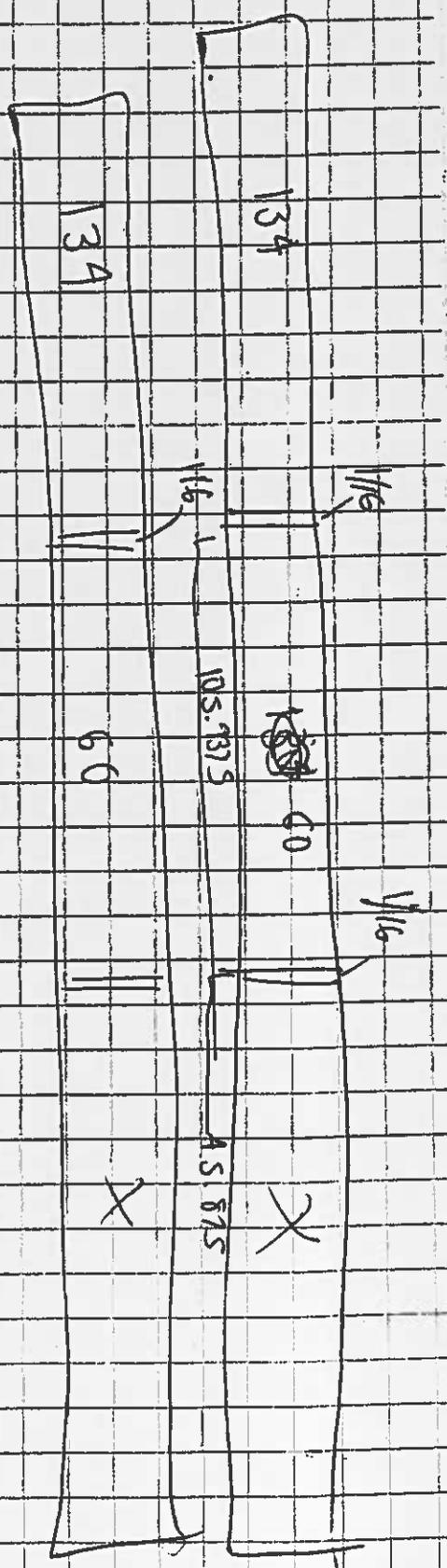
How wide are the 2 end spaces if the middle space is 22" for the width?

ANSWERS

How many 20 foot lengths of 2x2 and 1x1 tubing are required? (Hint 20' = 240" & you must allow 1/16 (.0625) kerf per cut from saw. Always figure longest pieces to shortest) Draw out how you would cut the parts - extra length are drawn.



2x2



2116.25

23.95



71.25

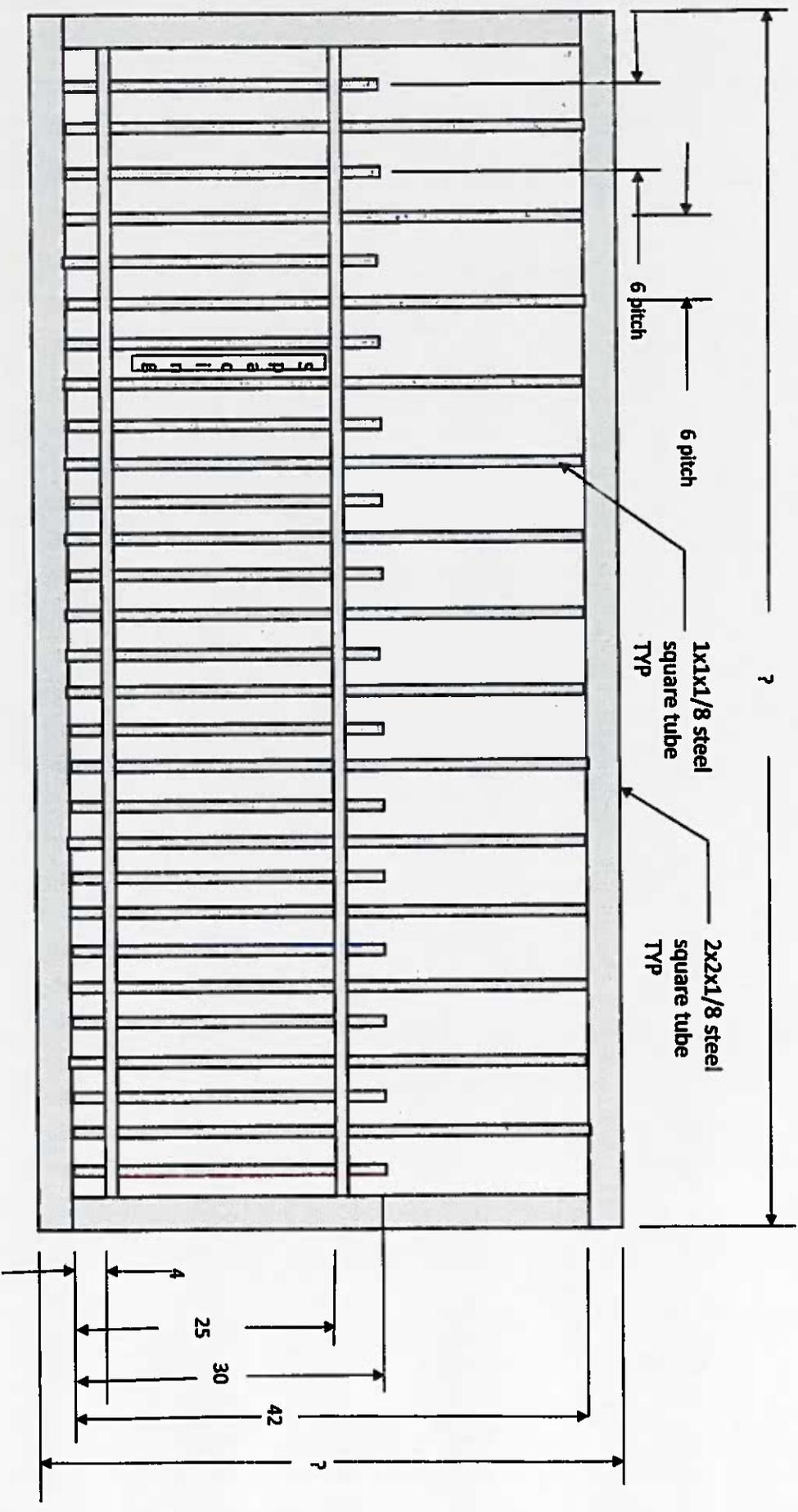


$$8 \times 1 = 8$$

$$8 + 126 = 134$$

$$\begin{array}{r} 126 \\ \times 1 \\ \hline 126 \end{array}$$

POST TEST ADVANCE



ANSWER

What is the actual spacing between the 1" tubing for layout purposes? 2"
How many spacing are there? 30

Create a material list for the gate.

Part	Material	length	QTY
Horizontal Frame	2x2x 1/8	93	2
Vertical Frame	2x2x 1/8	42	2
Long vertical posts	1x1x 1/8	42	14
Short vertical posts	1x1x 1/8	30	15
Horizontal braces	1x1x 1/8	89	2

What is the overall height and length of the steel gate? $15 + 14 + 60 + 4 = 93 \times 46$ "
(2x30") (2x2")

