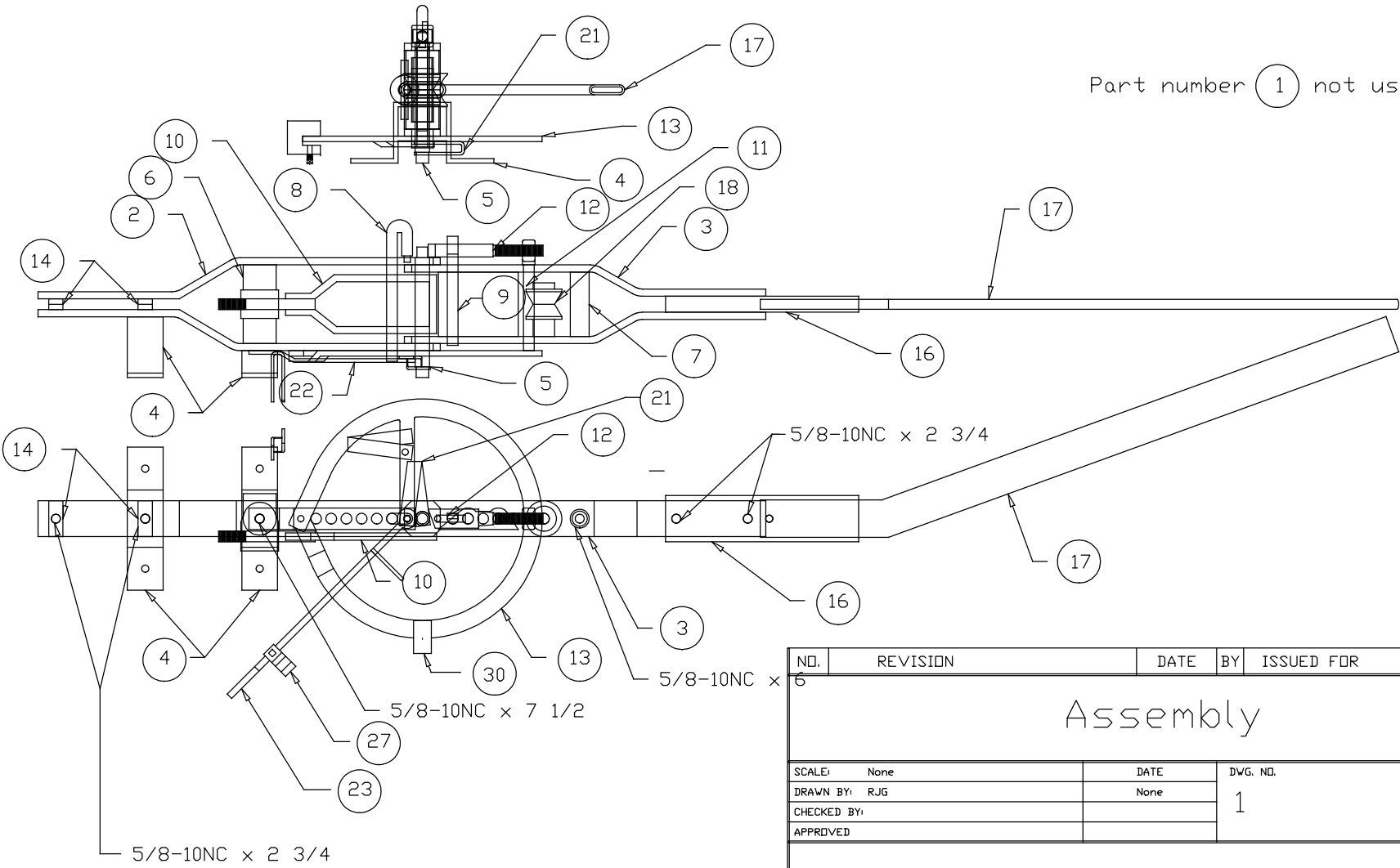


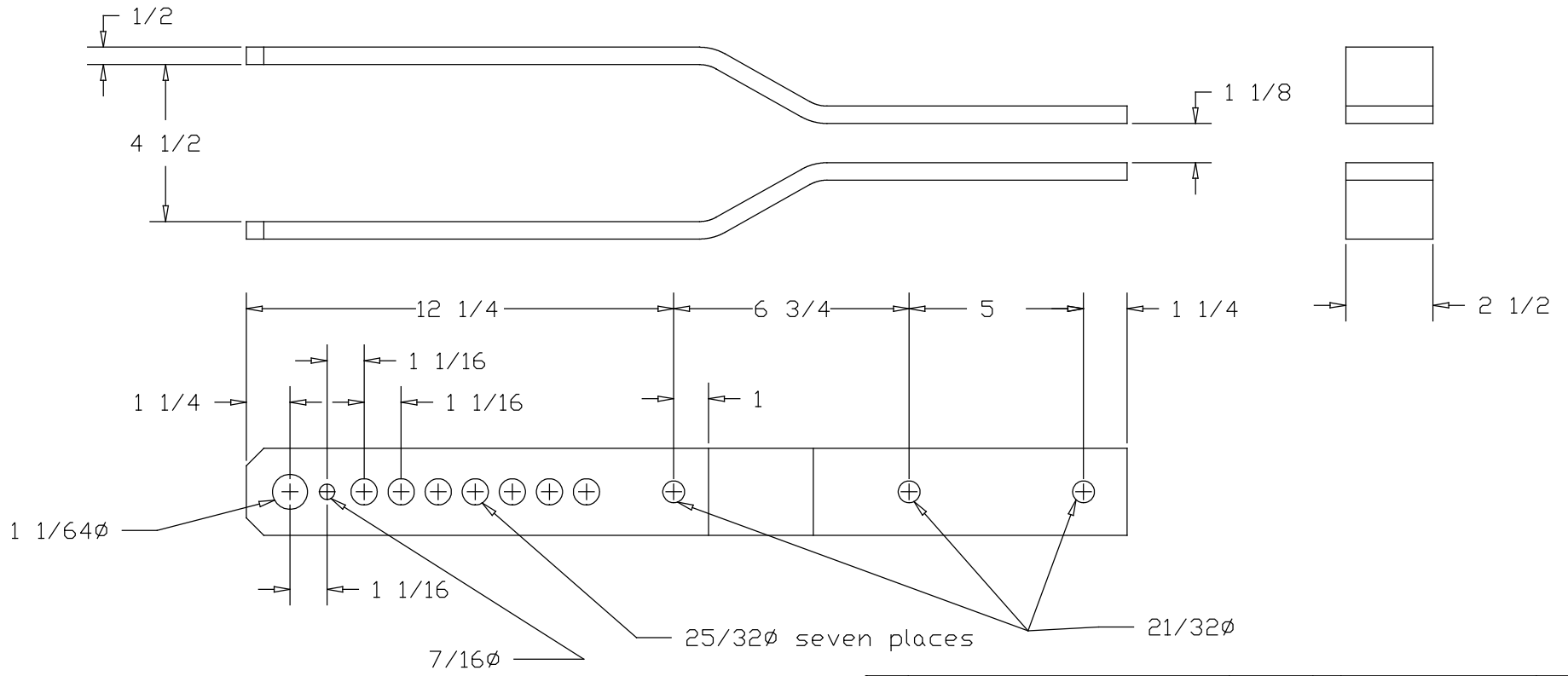
Part number 1 not used



REVISION DATE: 19 Nov 1999
 LAST PLOT DATE: 5 Nov 1993
 CAD FILENAME: Bend01.DWG

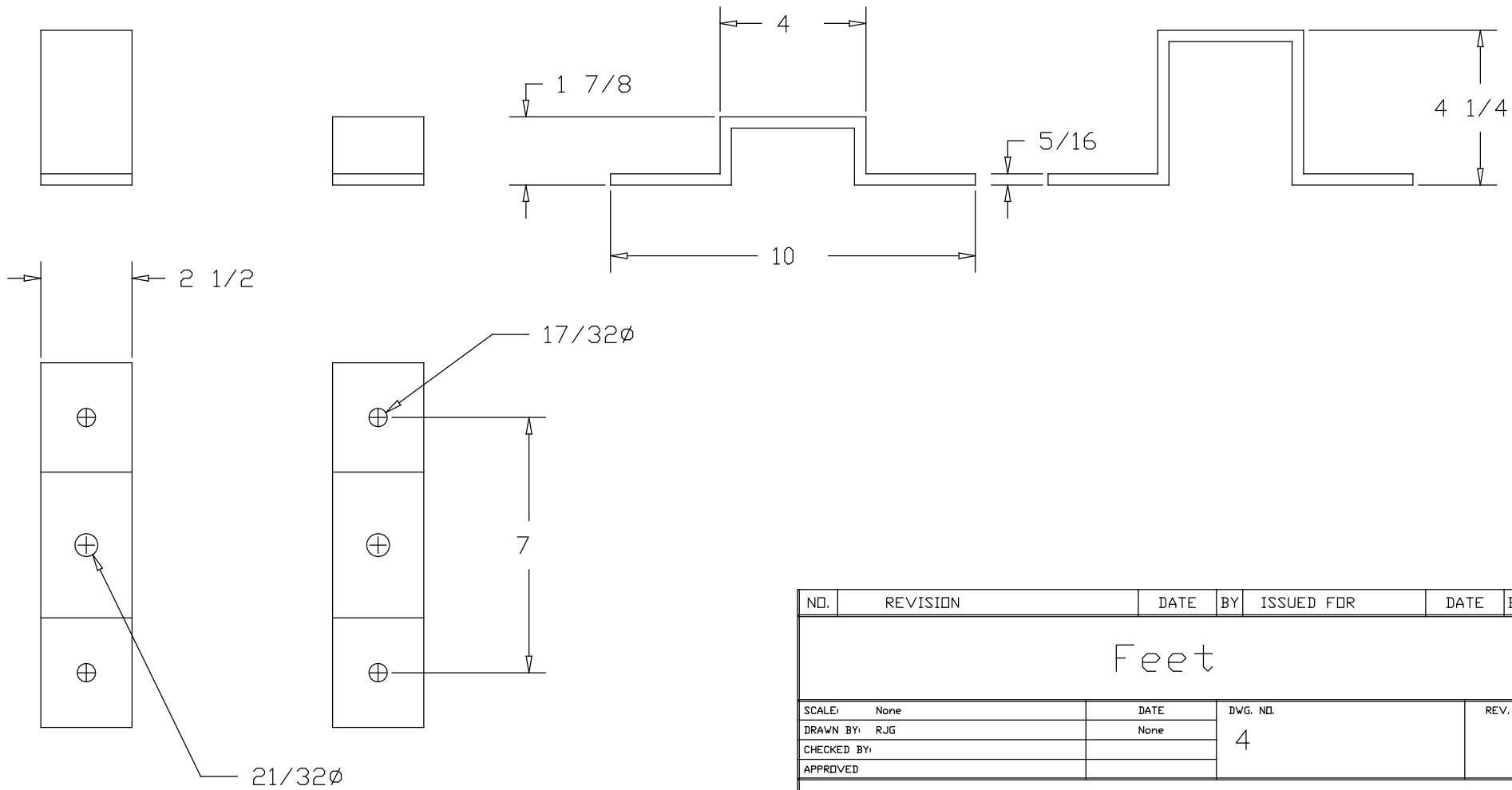
NO.	REVISION	DATE	BY	ISSUED FOR	DATE	BY
5						
Assembly						
SCALE: None		DATE		DWG. NO.		REV.
DRAWN BY: RJG		None		1		
CHECKED BY:						
APPROVED						

Metal Bender



NO.	REVISION	DATE	BY	ISSUED FOR	DATE	BY
Swinging Frame Assembly						
SCALE:	None	DATE	DWG. NO.		REV.	
DRAWN BY:	RJG	None	3			
CHECKED BY:						
APPROVED						
Metal Bender						

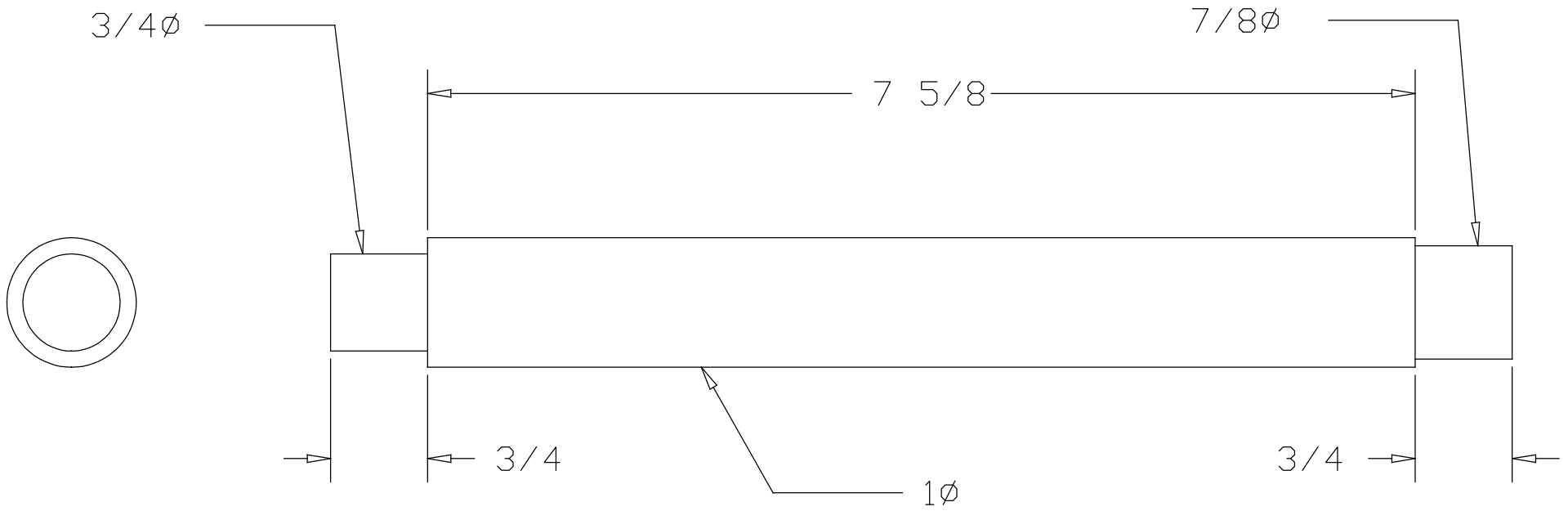
REVISION DATE: 19 Nov 1999
 LAST PLOT DATE: 5 Nov 1993
 CAD FILENAME: Bend03.DWG



REVISION DATE: 19 Nov 1999
 LAST PLOT DATE: 5 Nov 1993
 CAD FILENAME: Bend04.DWG

NO.	REVISION	DATE	BY	ISSUED FOR	DATE	BY
Feet						
SCALE: None		DATE		DWG. NO.		REV.
DRAWN BY: RJG		None		4		
CHECKED BY:						
APPROVED						

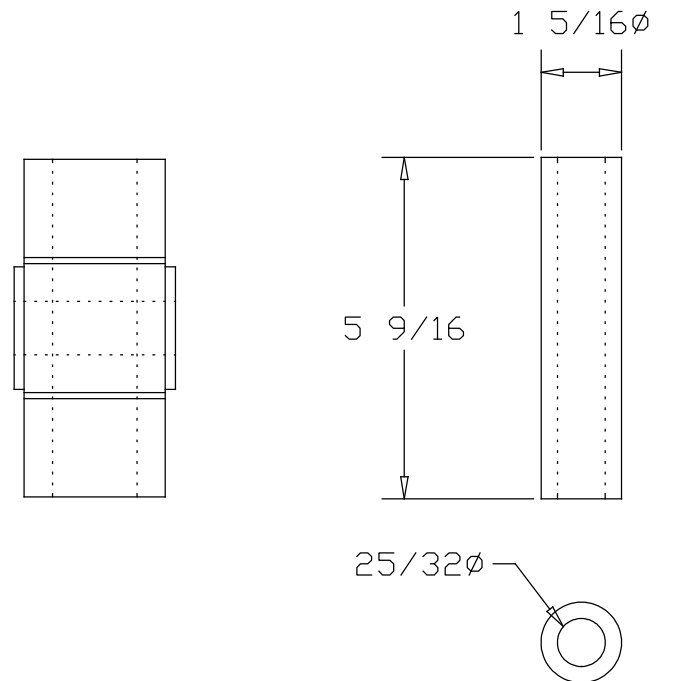
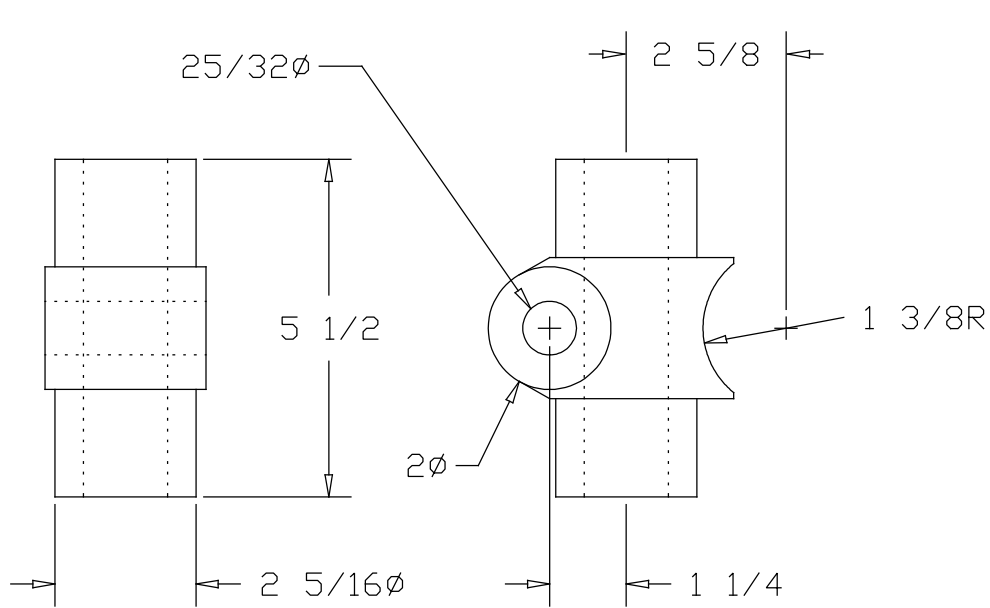
Metal Bender



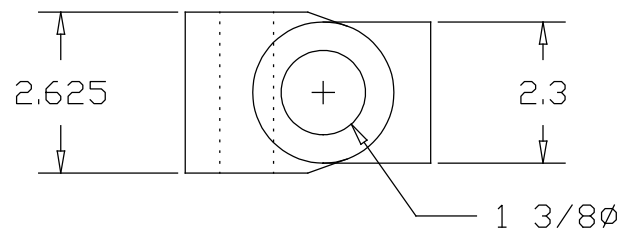
NO.	REVISION	DATE	BY	ISSUED FOR	DATE	BY
Center Pin for 3/4" & 7/8"						
SCALE: None		DATE		DWG. NO.		REV.
DRAWN BY: RJG		None		5		
CHECKED BY:						
APPROVED						

REVISION DATE: 19 Nov 1999
 LAST PLOT DATE: 5 Nov 1993
 CAD FILENAME: Bend05.DWG

Metal Bender



Sleeve



Material

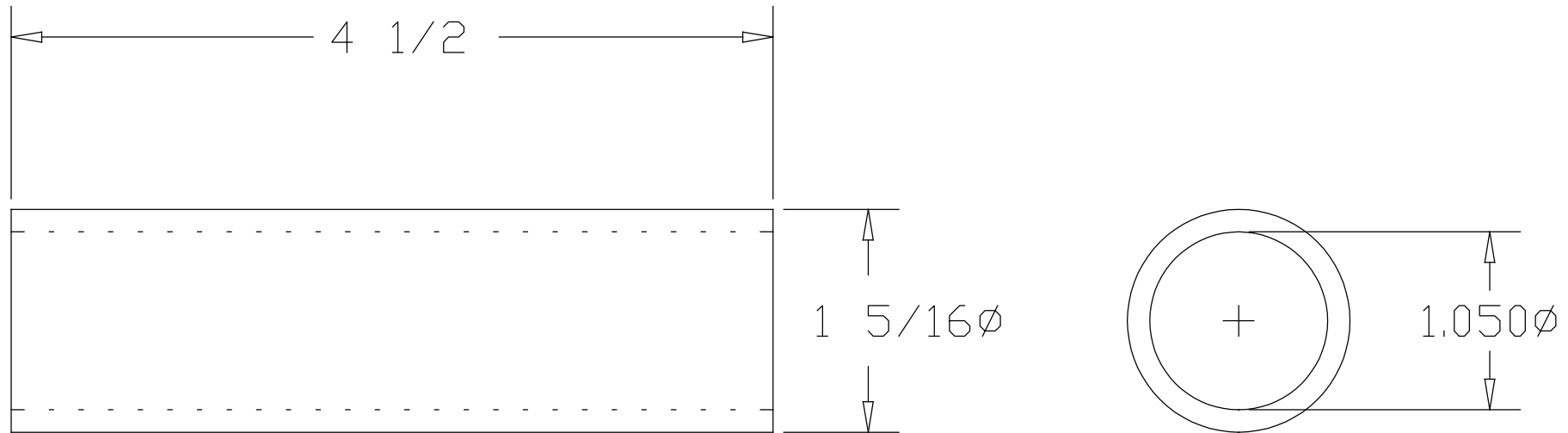
Oscillating Block - Cast Iron

Sleeve - Mild Steel

REVISION DATE: 19 Nov 1999
 LAST PLOT DATE: 5 Nov 1993
 CAD FILENAME: Bend06.DWG

NO.	REVISION	DATE	BY	ISSUED FOR	DATE	BY
Oscillating Block and Sleeve						
SCALE:	None	DATE	None	DWG. NO.	6	
DRAWN BY:	RJG					
CHECKED BY:						
APPROVED						

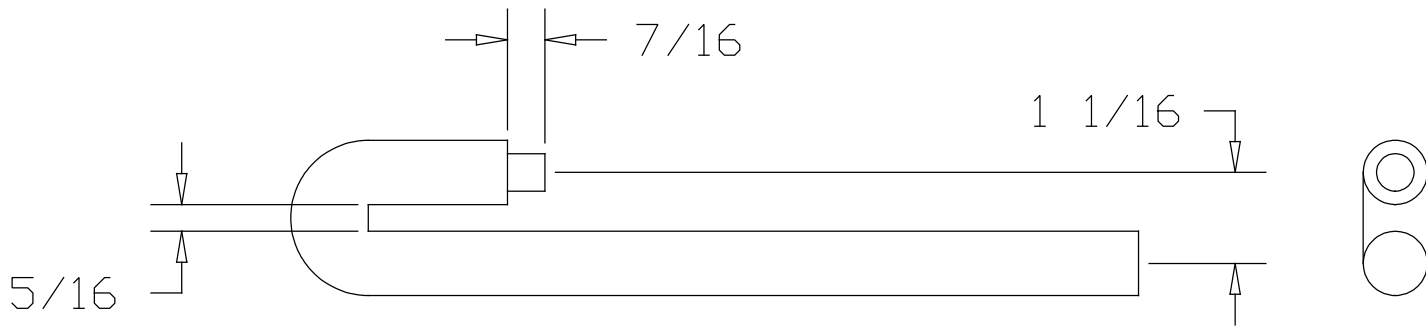
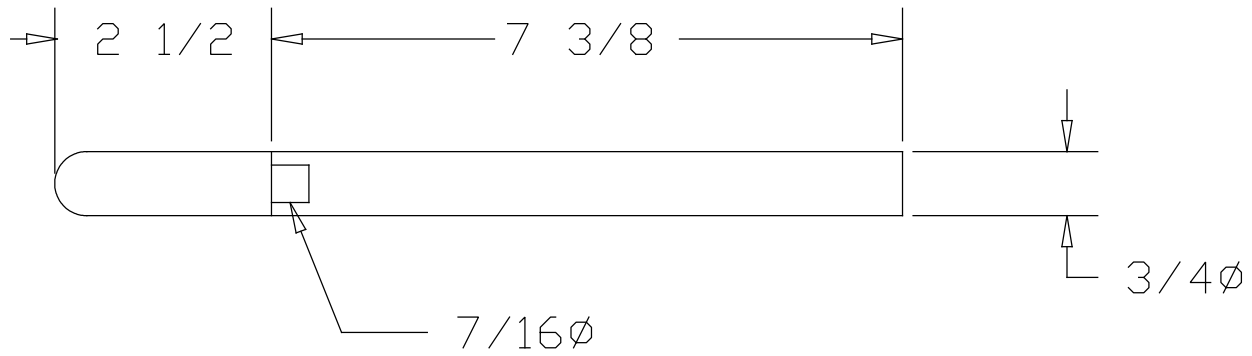
Metal Bender



I think this is a 4 1/2" long piece of 1" iron pipe.

NO.	REVISION	DATE	BY	ISSUED FOR	DATE	BY
Spacer						
SCALE: None		DATE		DWG. NO.		REV.
DRAWN BY: RJG		None		7		
CHECKED BY:						
APPROVED						
Metal Bender Part Number 28B3						

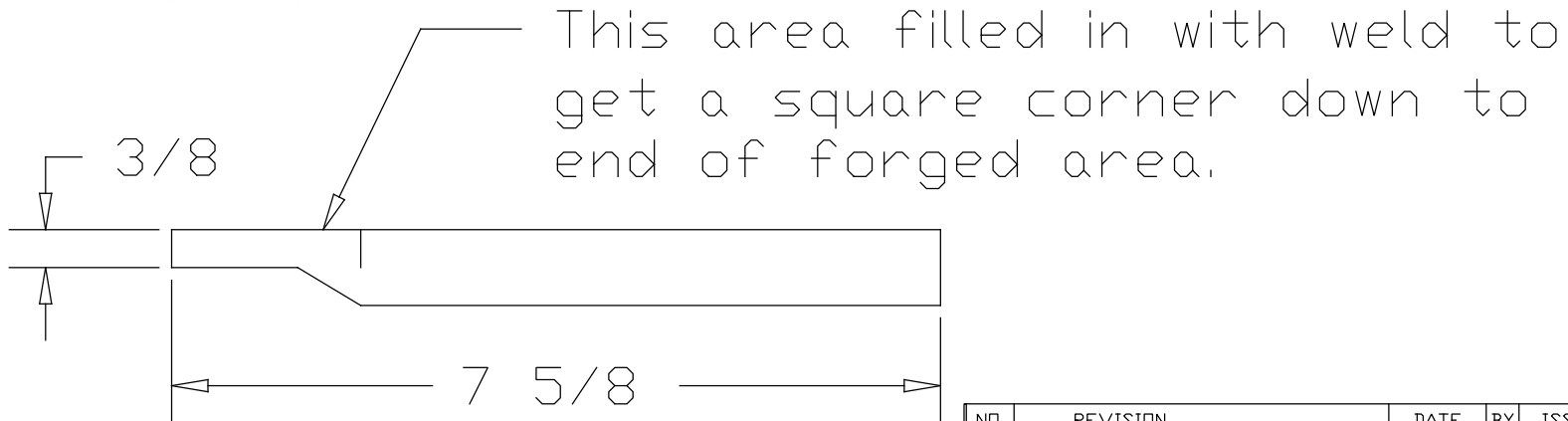
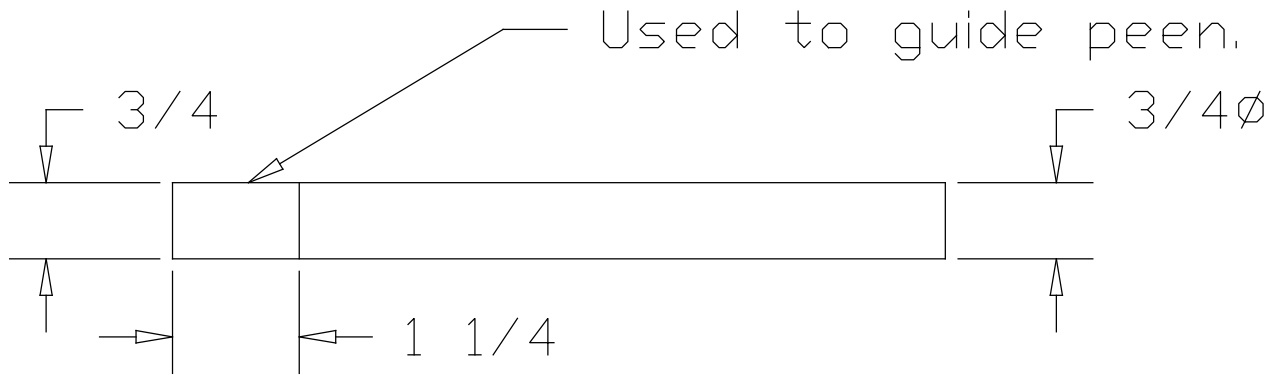
REVISION DATE: 19 Nov 1999
 LAST PLOT DATE: 5 Nov 1993
 CAD FILENAME: Bend07.DWG



NO.	REVISION	DATE	BY	ISSUED FOR	DATE	BY
U Pin w/lug						
SCALE: None		DATE		DWG. NO.		REV.
DRAWN BY: RJG		None		8		
CHECKED BY:						
APPROVED						

REVISION DATE: 19 Nov 1999
 LAST PLOT DATE: 5 Nov 1993
 CAD FILENAME: Bend08.DWG

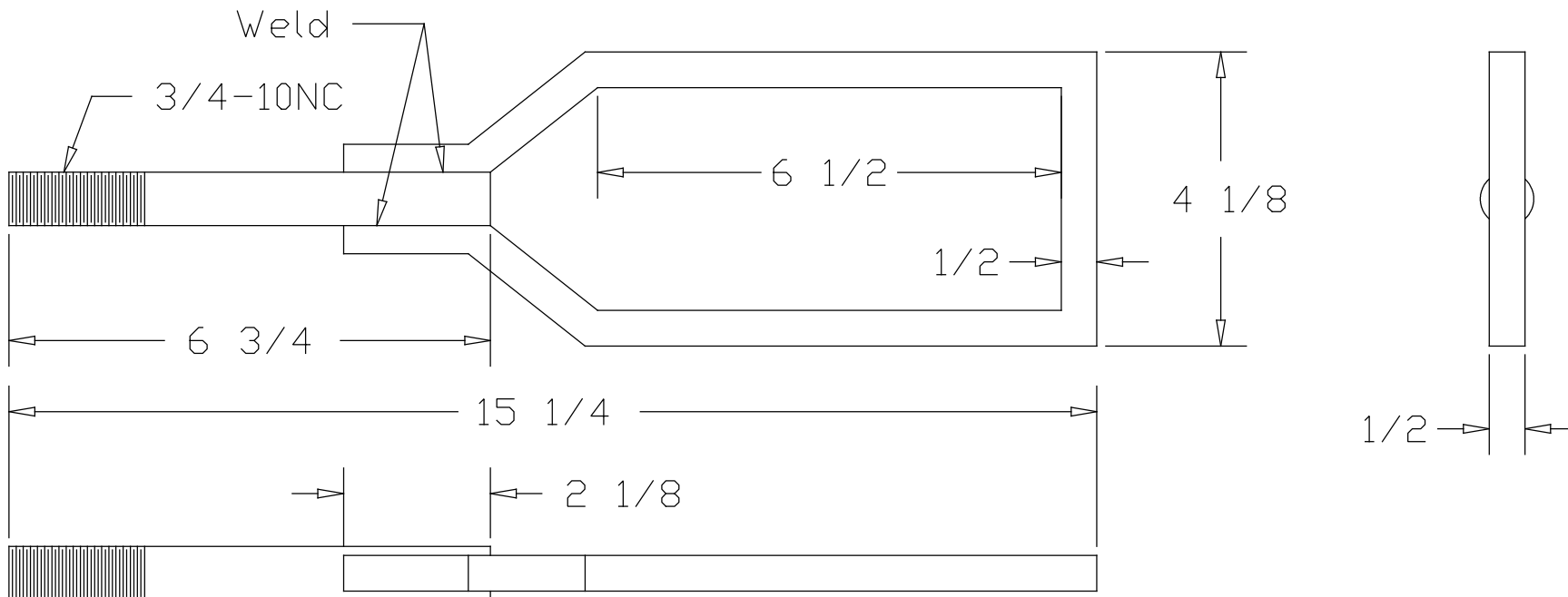
Metal Bender
 Part Number 19B4



NO.	REVISION	DATE	BY	ISSUED FOR	DATE	BY
Flat Head Pin						
SCALE:	None	DATE	DWG. NO.		REV.	
DRAWN BY:	RJG	None	9			
CHECKED BY:						
APPROVED						

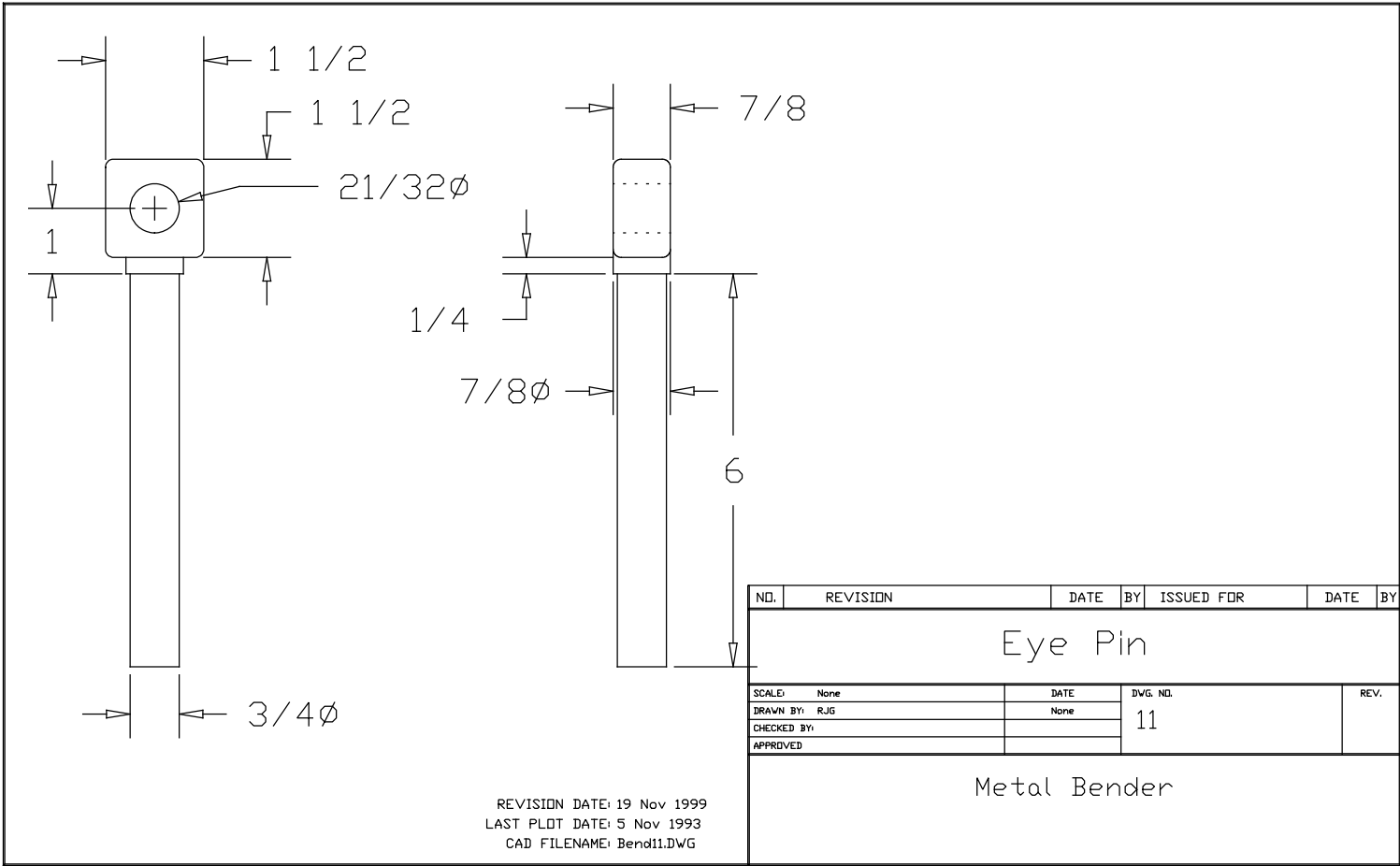
Metal Bender

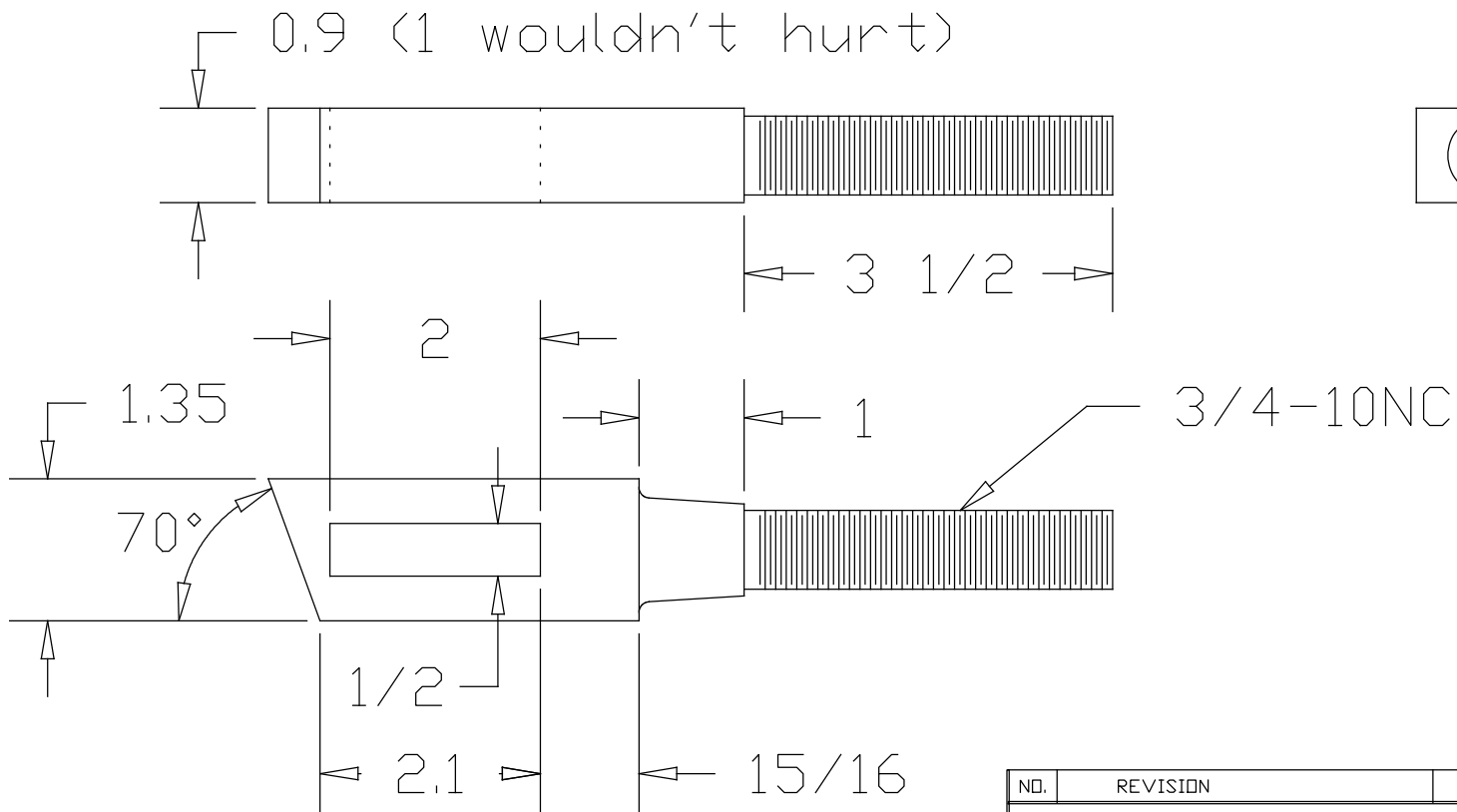
REVISION DATE: 19 Nov 1999
 LAST PLOT DATE: 5 Nov 1993
 CAD FILENAME: Bend09.DWG



NO.	REVISION	DATE	BY	ISSUED FOR	DATE	BY
Yoke						
SCALE:	None	DATE	None	DWG. NO.	10	REV.
DRAWN BY:	RJG					
CHECKED BY:						
APPROVED						
Metal Bender						

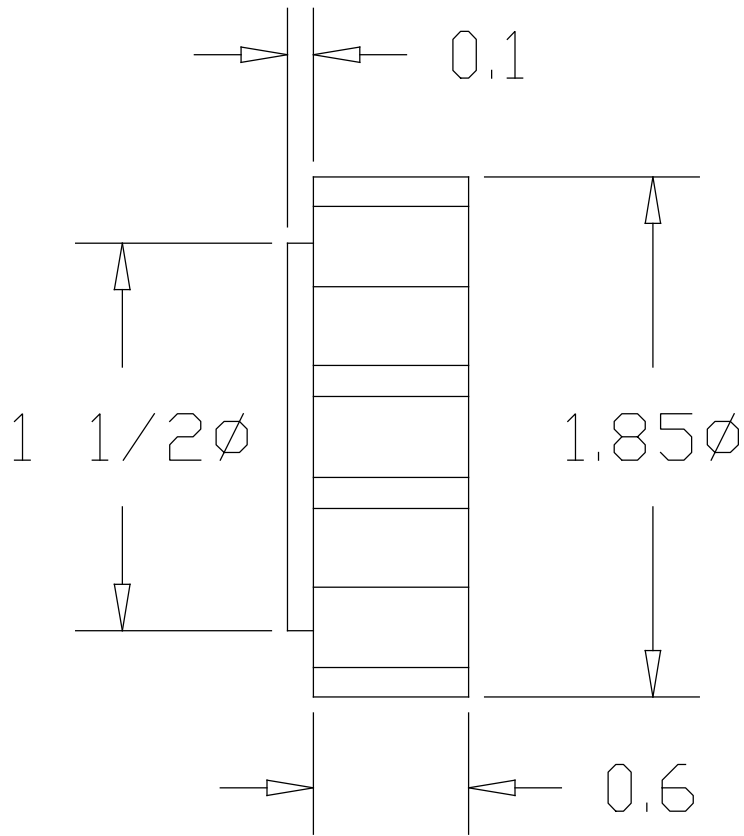
REVISION DATE: 19 Nov 1999
 LAST PLOT DATE: 5 Nov 1993
 CAD FILENAME: Bend10.DWG





NO.	REVISION	DATE	BY	ISSUED FOR	DATE	BY
Eye Bolt Bending Dog						
SCALE:	None	DATE	None	DWG. NO.	12	
DRAWN BY:	RJG					
CHECKED BY:						
APPROVED						
Metal Bender						

REVISION DATE: 19 Nov 1999
 LAST PLOT DATE: 6 Nov 1993
 CAD FILENAME: Bend12.DWG



3/4-10NC

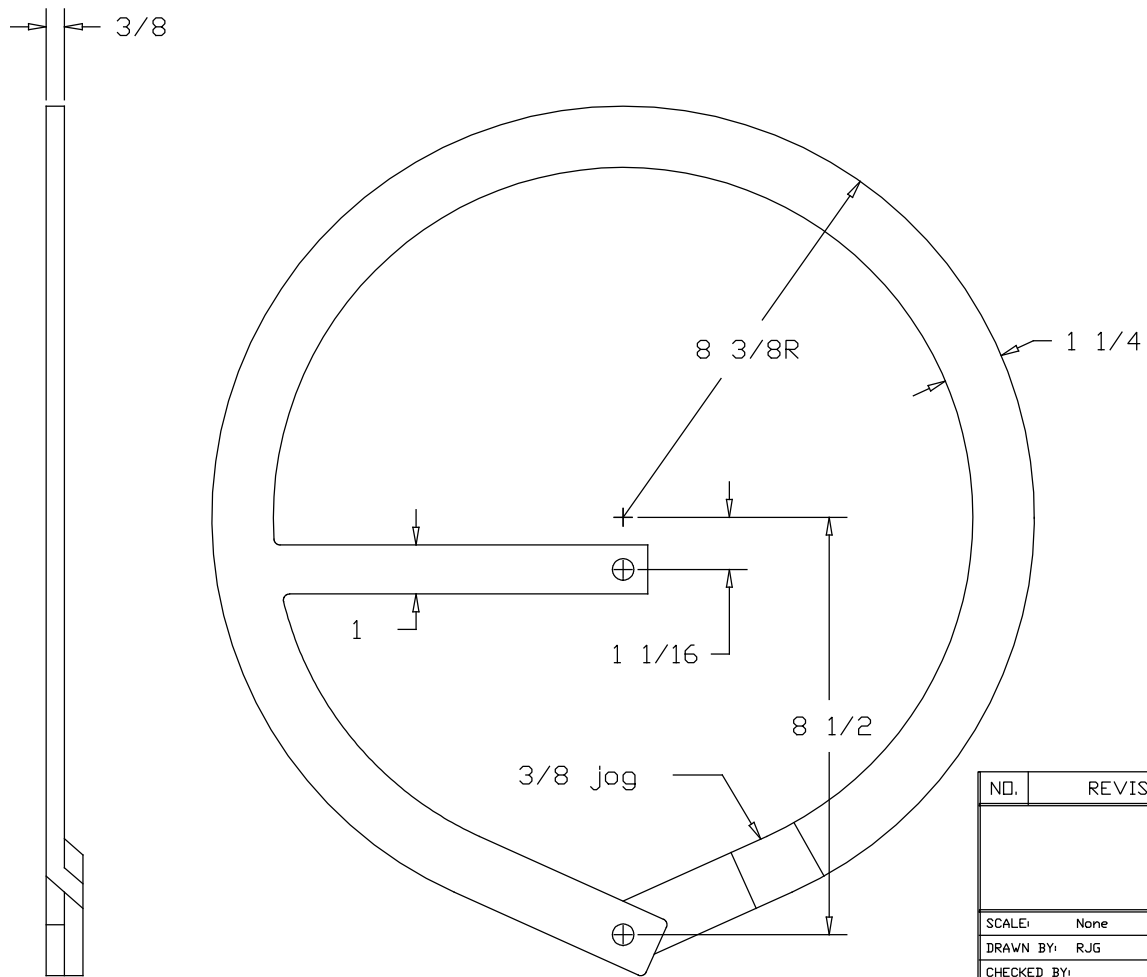
While it is an elegant looking nut, a simpler one would serve.

Could use two of these

REVISION DATE: 19 Nov 1999
 LAST PLOT DATE: 6 Nov 1993
 CAD FILENAME: Bend12A.DWG

NO.	REVISION	DATE	BY	ISSUED FOR	DATE	BY
Thumb Nut						
SCALE: None		DATE		DWG. NO.		REV.
DRAWN BY: RJG		None		12A		
CHECKED BY:						
APPROVED						

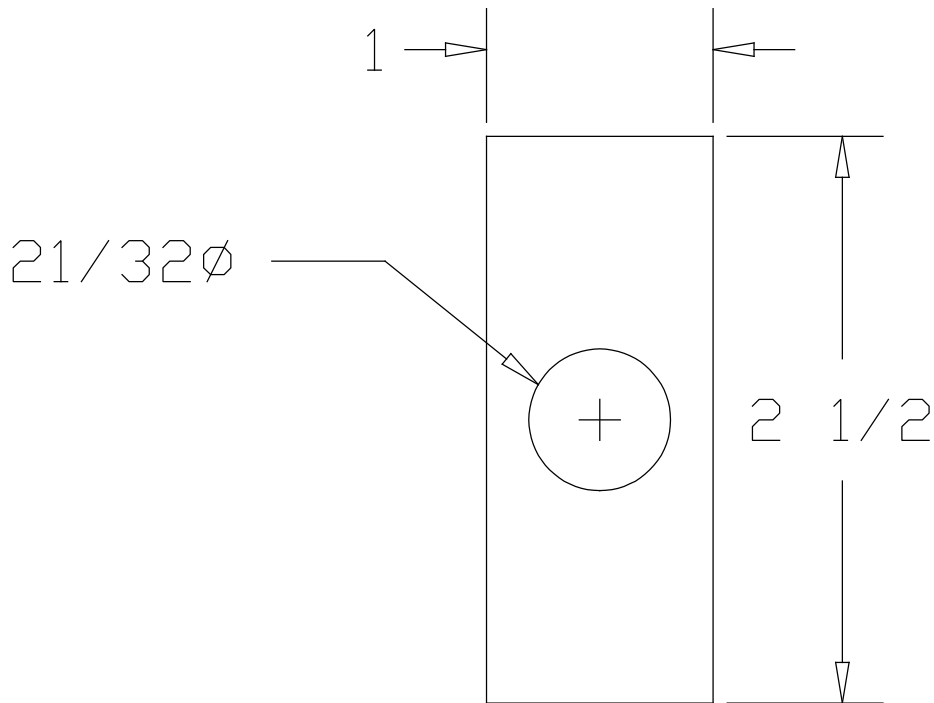
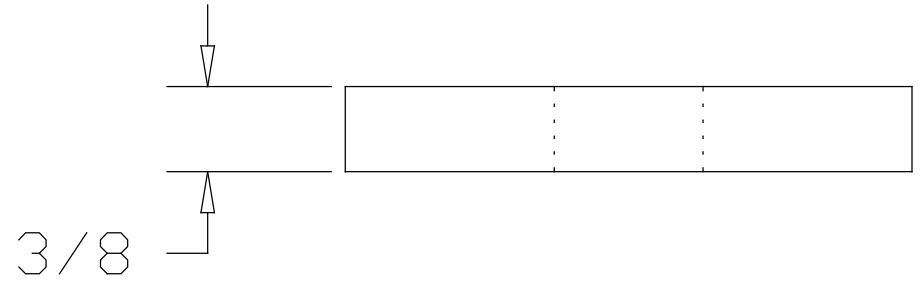
Metal Bender



REVISION DATE: 19 Nov 1999
 LAST PLOT DATE: 6 Nov 1993
 CAD FILENAME: Bend13.DWG

NO.	REVISION	DATE	BY	ISSUED FOR	DATE	BY
Circle Assembly						
SCALE: None		DATE		DWG. NO.		REV.
DRAWN BY: R.JG		None		13		
CHECKED BY:						
APPROVED						

Metal Bender

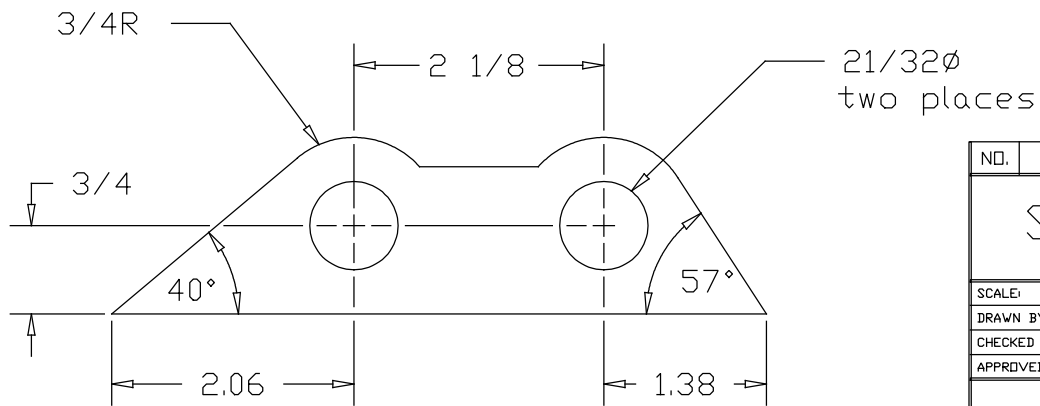
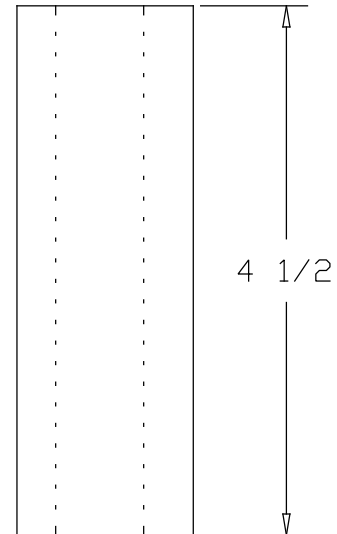
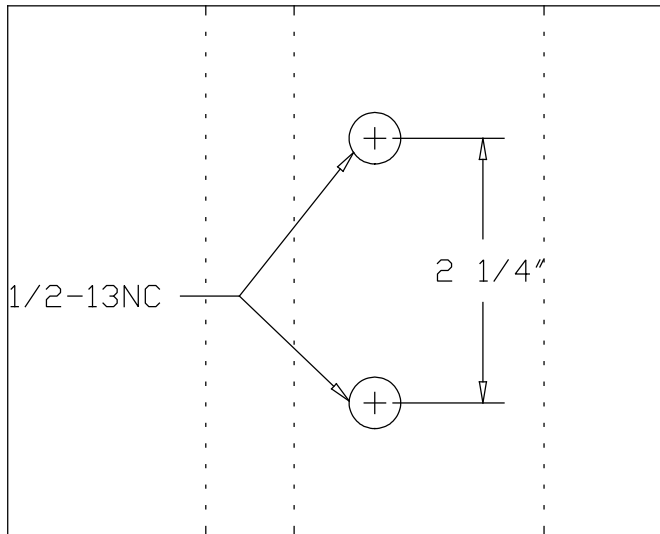


4 required

REVISION DATE: 19 Nov 1999
 LAST PLOT DATE: 6 Nov 1993
 CAD FILENAME: Bend14.DWG

NO.	REVISION	DATE	BY	ISSUED FOR	DATE	BY
Main Frame Assembly Spacer						
SCALE: None		DATE		DWG. NO.		REV.
DRAWN BY: RJG		None		14		
CHECKED BY:						
APPROVED						

Metal Bender

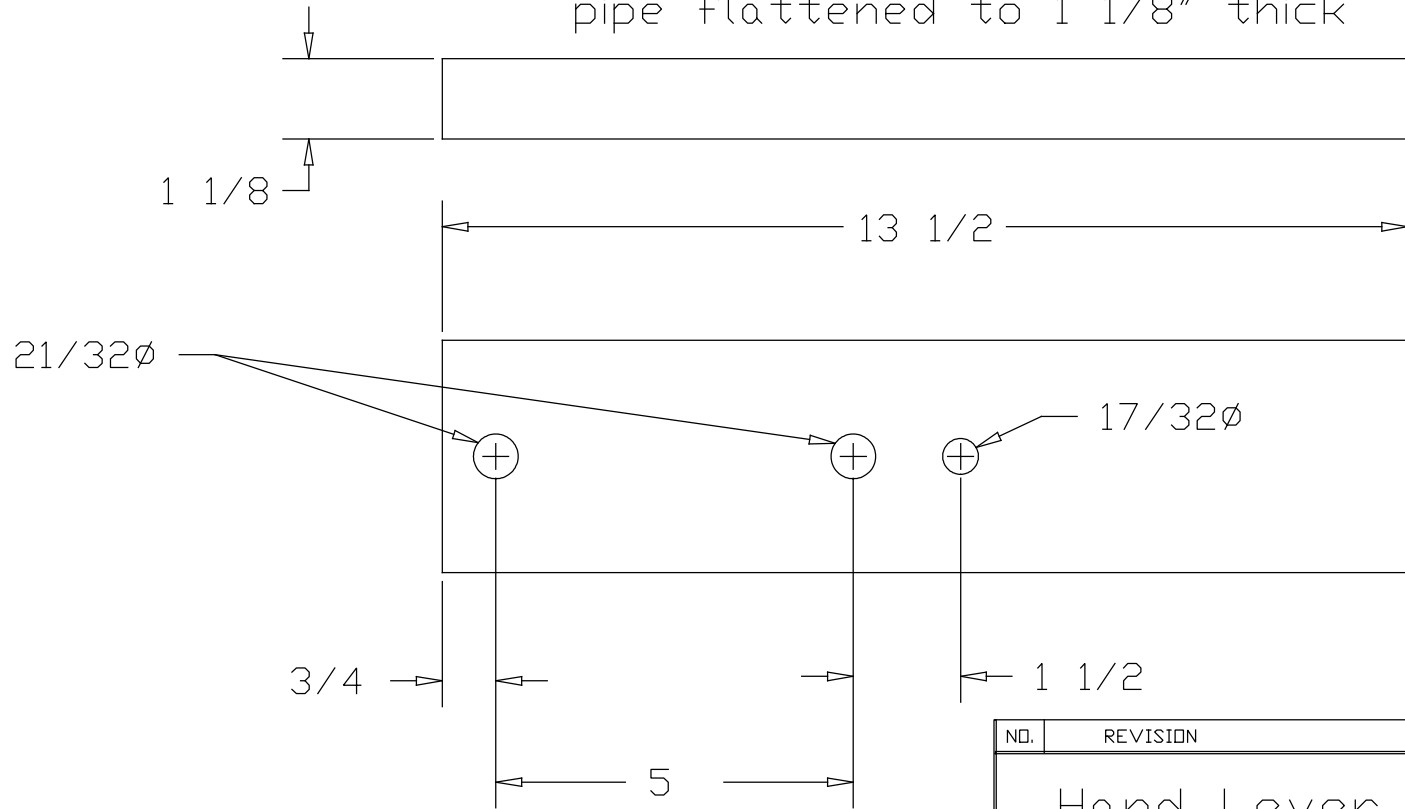


REVISION DATE: 19 Nov 1999
 LAST PLOT DATE: 12 Jan 1998
 CAD FILENAME: Bend15.DWG

NO.	REVISION	DATE	BY	ISSUED FOR	DATE	BY
Sharp Square Bending Block						
SCALE: None		DATE		DWG. NO.		REV.
DRAWN BY: RJG		None		15		
CHECKED BY:						
APPROVED						

Metal Bender

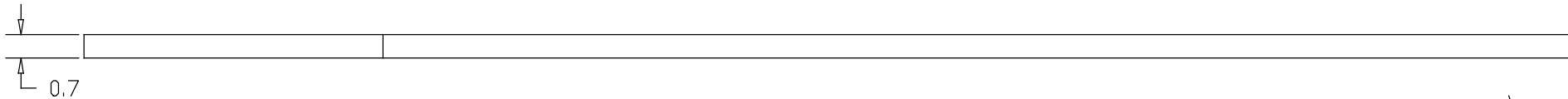
This looks and measures like 2" iron pipe flattened to 1 1/8" thick



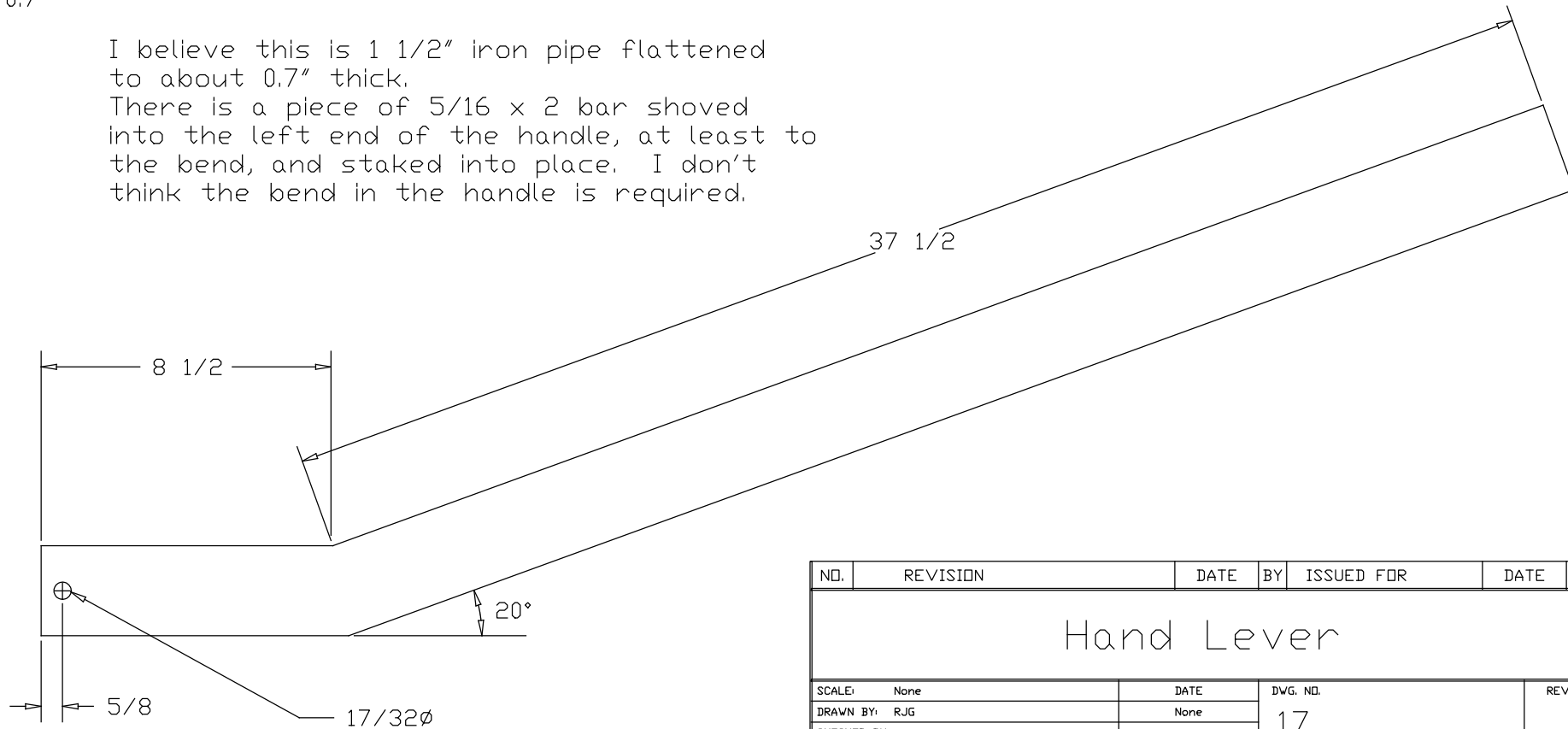
NO.	REVISION	DATE	BY	ISSUED FOR	DATE	BY
Hand Lever Socket w/filler						
SCALE: None		DATE		DWG. NO.		REV.
DRAWN BY: RJG		None		16		
CHECKED BY:						
APPROVED						

REVISION DATE: 19 Nov 1999
 LAST PLOT DATE: 6 Nov 1993
 CAD FILENAME: Bend16.DWG

Metal Bender



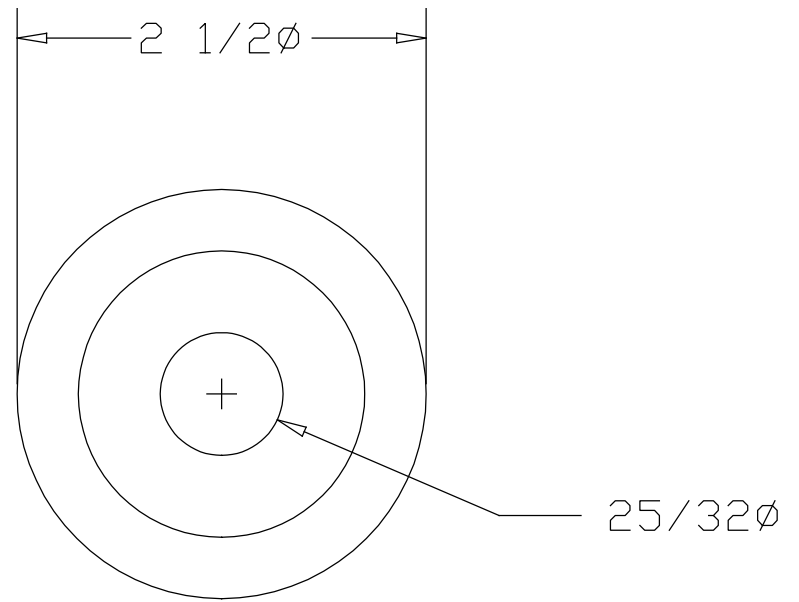
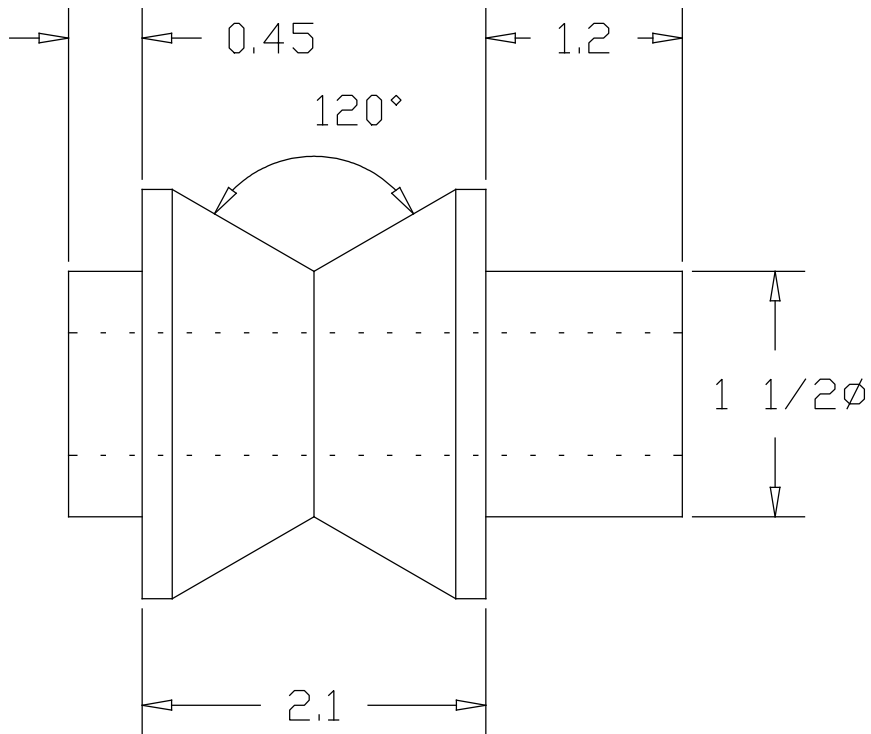
I believe this is 1 1/2" iron pipe flattened to about 0.7" thick. There is a piece of 5/16 x 2 bar shoved into the left end of the handle, at least to the bend, and staked into place. I don't think the bend in the handle is required.



REVISION DATE: 19 Nov 1999
 LAST PLOT DATE: 6 Nov 1993
 CAD FILENAME: Bend17.DWG

NO.	REVISION	DATE	BY	ISSUED FOR	DATE	BY
Hand Lever						
SCALE: None		DATE		DWG. NO.		REV.
DRAWN BY: RJG		None		17		
CHECKED BY:						
APPROVED						

Metal Bender

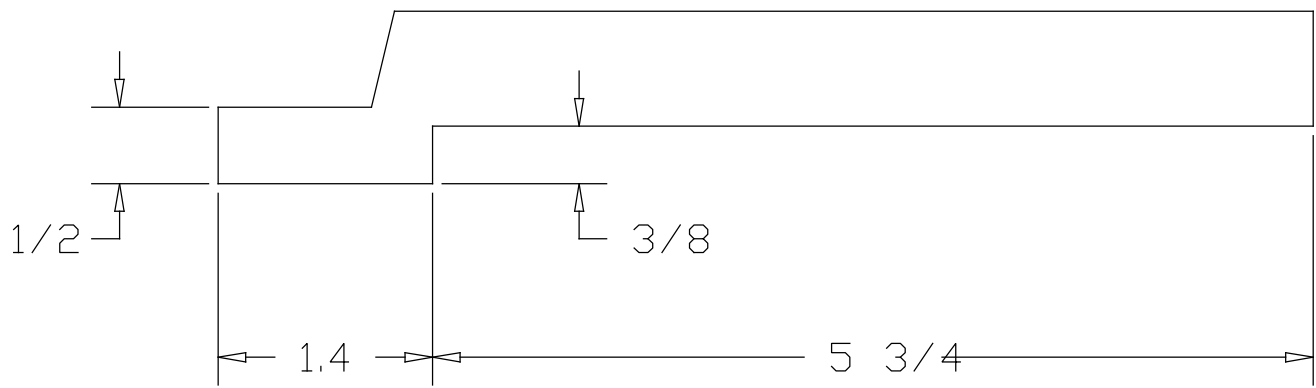
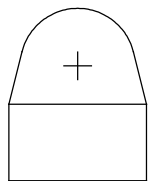
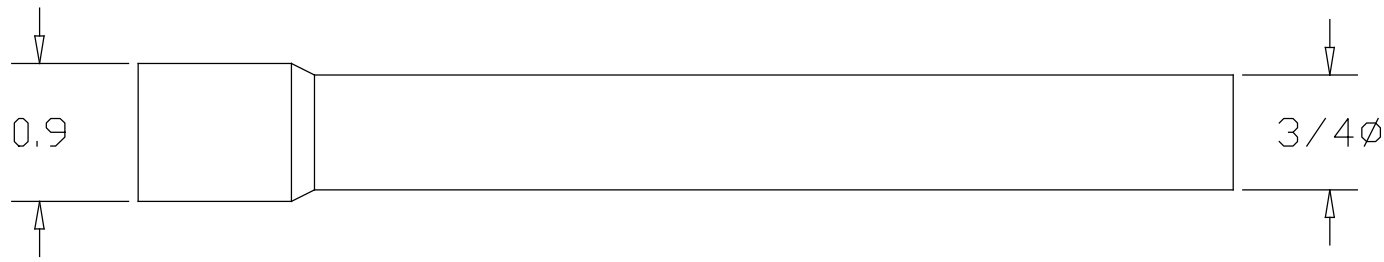


See drawing 31 for alternate

Mat'l - cast iron
You need two of these.

REVISION DATE: 19 Nov 1999
LAST PLOT DATE: 6 Nov 1993
CAD FILENAME: Bend18.DWG

NO.	REVISION	DATE	BY	ISSUED FOR	DATE	BY
V Grooved Roller						
SCALE:	None	DATE	None	DWG. NO.	18	REV.
DRAWN BY:	RJG					
CHECKED BY:						
APPROVED						
Metal Bender						



NO.	REVISION	DATE	BY	ISSUED FOR	DATE	BY
Offset Flat Head Pin						
SCALE:	None	DATE	DWG. NO.		REV.	
DRAWN BY:	RJG	None	19			
CHECKED BY:						
APPROVED						
Metal Bender						

REVISION DATE: 19 Nov 1999
 LAST PLOT DATE: 6 Nov 1993
 CAD FILENAME: Bend19.DWG

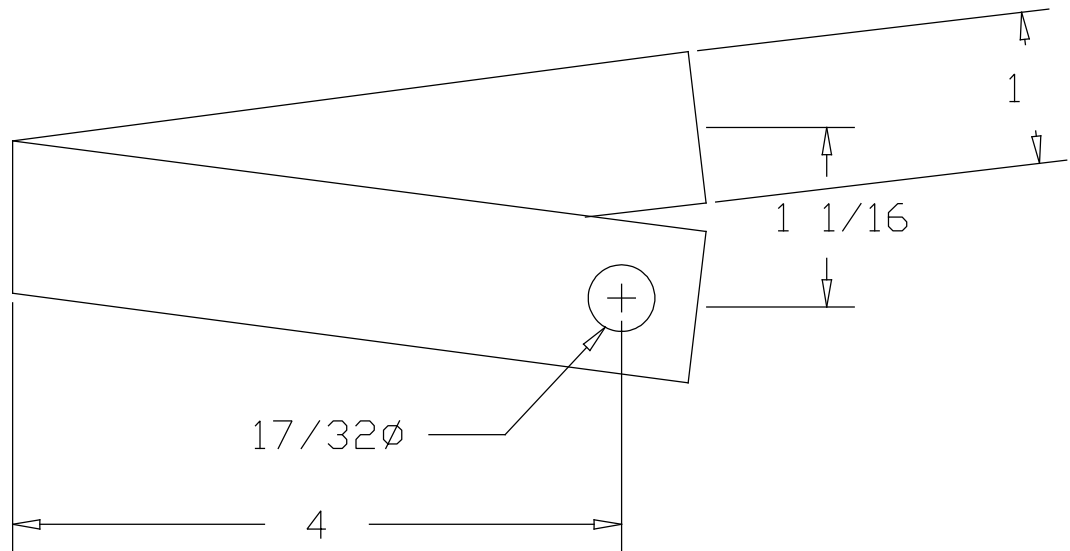
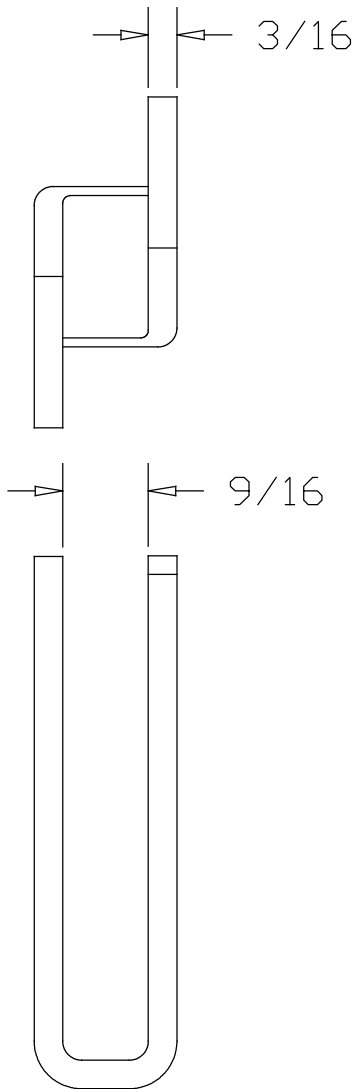


Center pins with ends from $\frac{1}{4}$ to $\frac{15}{16}$ can be used

NO.	REVISION	DATE	BY	ISSUED FOR	DATE	BY
Center Pin for $\frac{1}{2}$ & $\frac{5}{8}$ Eye						
SCALE: None		DATE		DWG. NO.		REV.
DRAWN BY: RJG		None		20		
CHECKED BY:						
APPROVED						

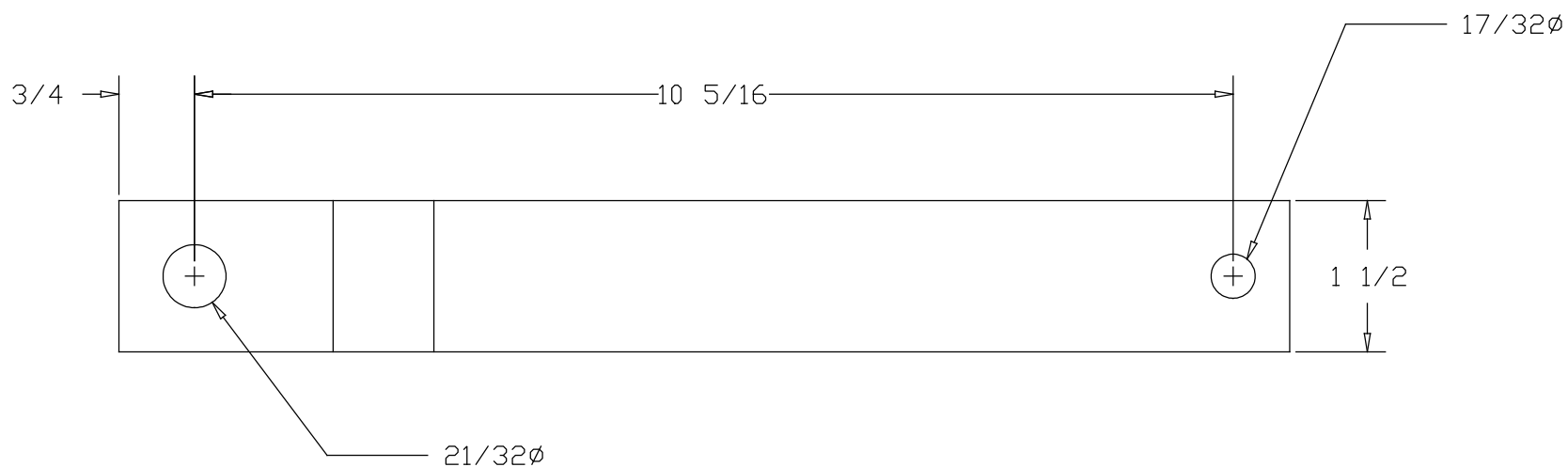
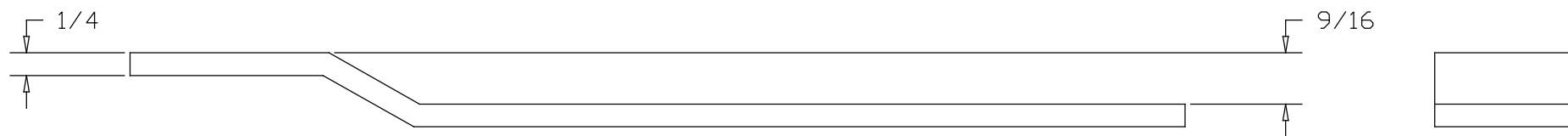
REVISION DATE: 19 Nov 1999
 LAST PLOT DATE: 6 Nov 1993
 CAD FILENAME: Bend20.DWG

Metal Bender



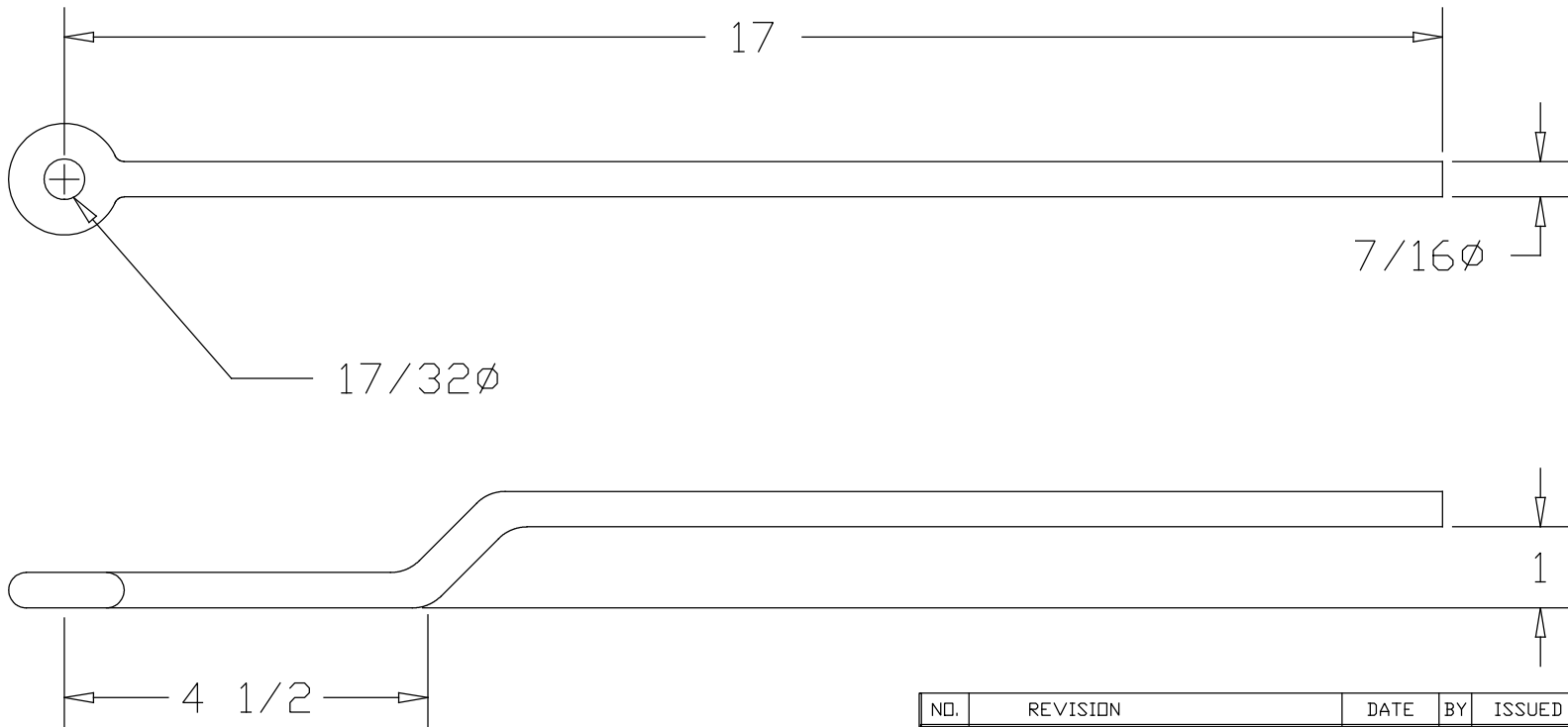
REVISION DATE: 19 Nov 1999
 LAST PLOT DATE: 6 Nov 1993
 CAD FILENAME: Bend21.DWG

NO.	REVISION	DATE	BY	ISSUED FOR	DATE	BY
Center Pin Support						
SCALE: None		DATE		DWG. NO.		REV.
DRAWN BY: RJG		None		21		
CHECKED BY:						
APPROVED						
Metal Bender						



NO.	REVISION	DATE	BY	ISSUED FOR	DATE	BY
U Pin Support						
SCALE: None		DATE		DWG. NO.		REV.
DRAWN BY: RJG		None		22		
CHECKED BY:						
APPROVED						
Metal Bender						

REVISION DATE: 19 Nov 1999
 LAST PLOT DATE: 6 Nov 1993
 CAD FILENAME: Bend22.DWG



REVISION DATE: 19 Nov 1999
 LAST PLOT DATE: 6 Nov 1993
 CAD FILENAME: Bend23.DWG

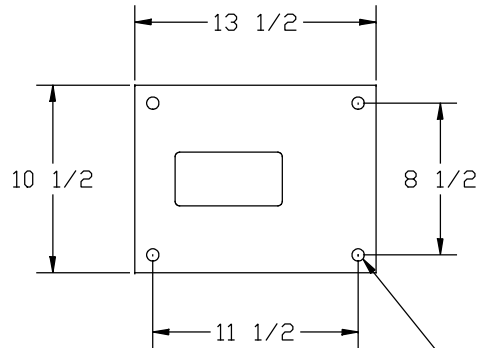
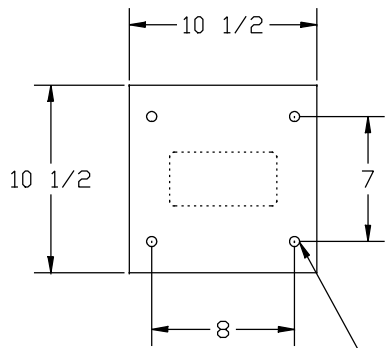
NO.	REVISION	DATE	BY	ISSUED FOR	DATE	BY
Circle Rod						
SCALE:	None	DATE	None	DWG. NO.	23	
DRAWN BY:	RJG				REV.	
CHECKED BY:						
APPROVED						

Metal Bender

Top Plate

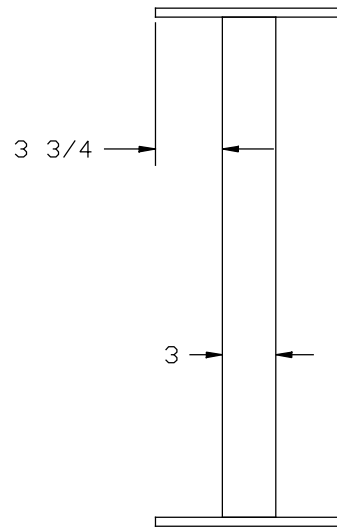
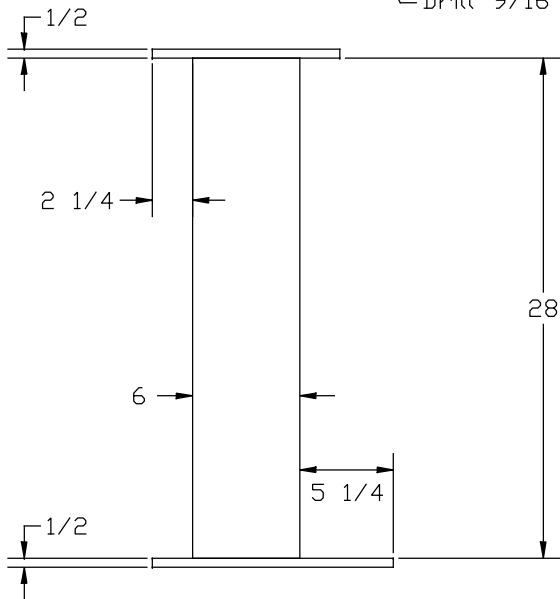
Bottom Plate

Mat'l - 1/2 plate
- 3 X 6 tube



Drill 9/16" 4 places

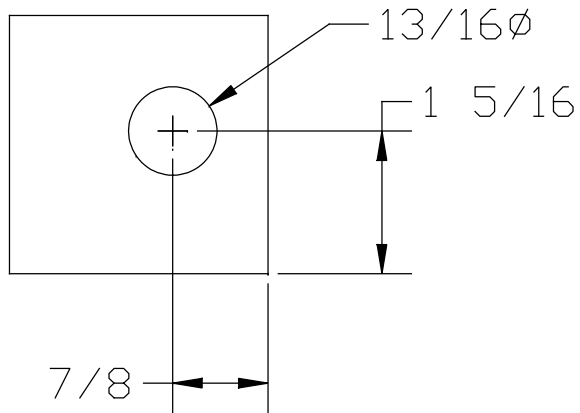
Drill 11/16" 4 places



REVISION DATE: 17 Nov 1999
LAST PLOT DATE: 17 Nov 1999
CAD FILENAME: Bend24.dwg

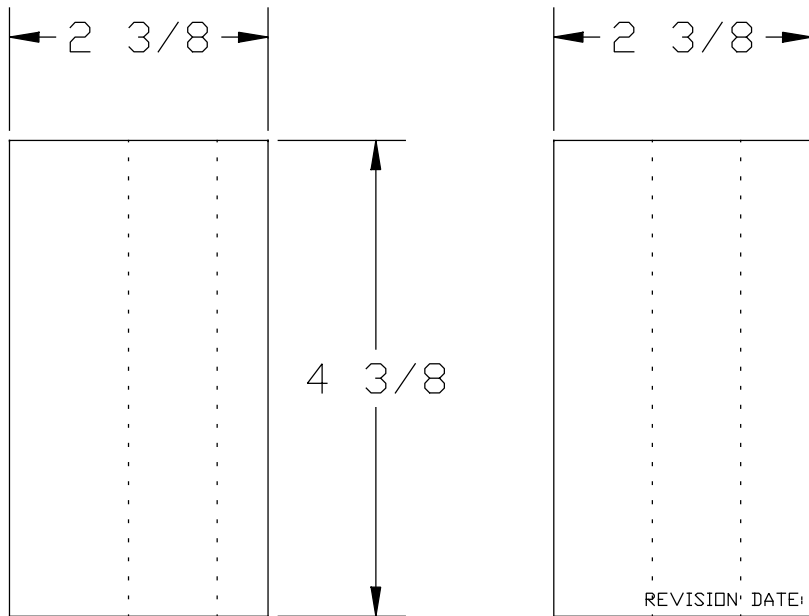
NO.	REVISION	DATE	BY	ISSUED FOR	DATE	BY
Stand						
SCALE: None		DATE		DWG. NO.		REV.
DRAWN BY: RJG		17 Nov 1999		24		
CHECKED BY:						
APPROVED						

Metal Bender



Mat'l - Cast Iron

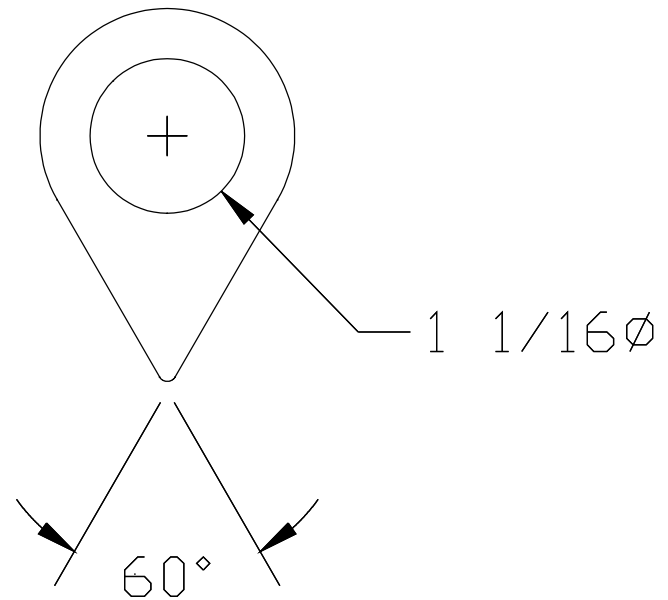
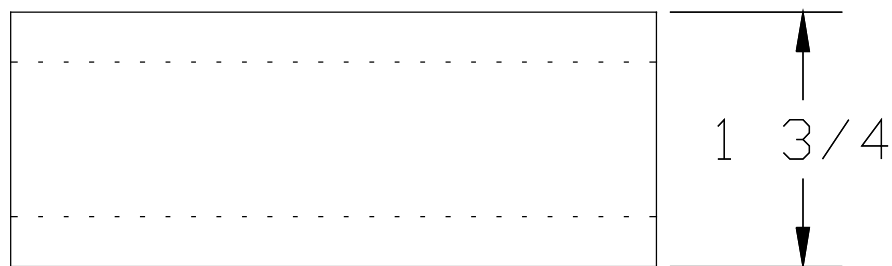
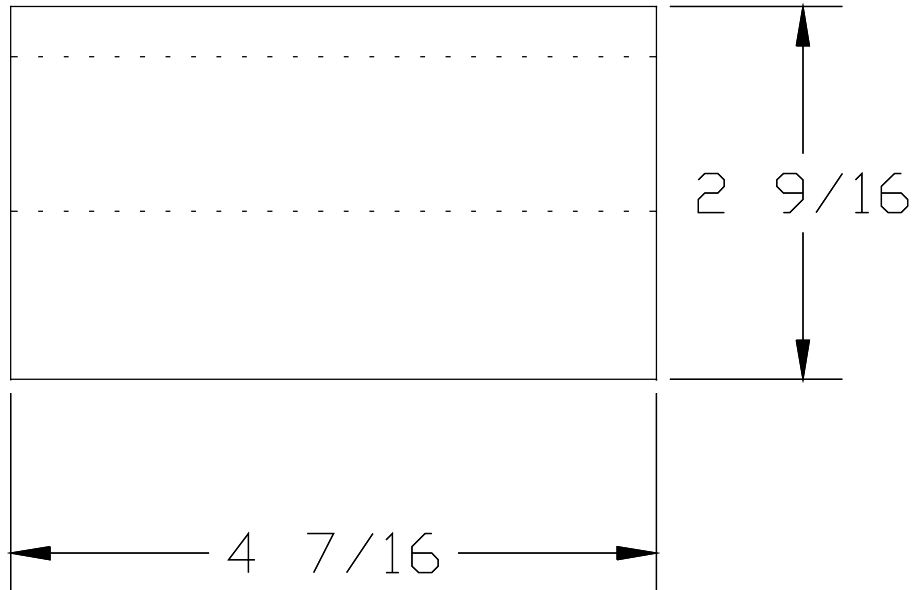
Two of these blocks
are required



REVISION: DATE: 18 Nov 1999
 LAST PLOT DATE: 18 Nov 1999
 CAD FILENAME: Bend25.dwg

NO.	REVISION	DATE	BY	ISSUED FOR	DATE	BY
Block						
SCALE: None		DATE		DWG. NO.		REV.
DRAWN BY: RJG		18 Nov 1999		25		
CHECKED BY:						
APPROVED						

Metal Bender

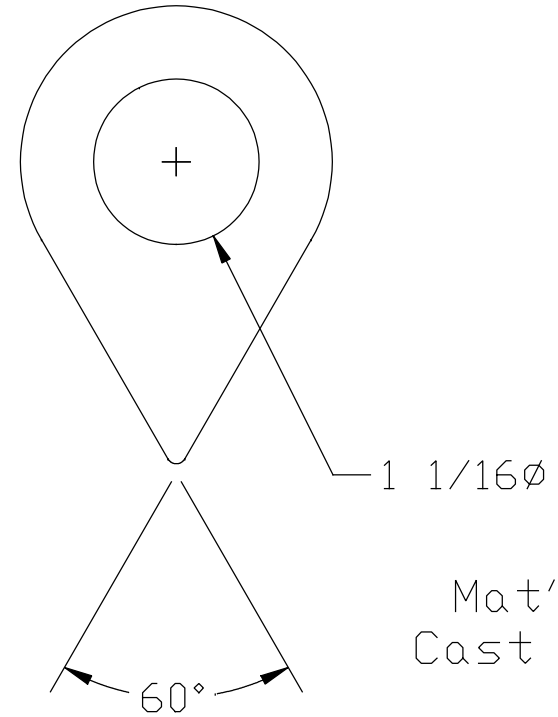
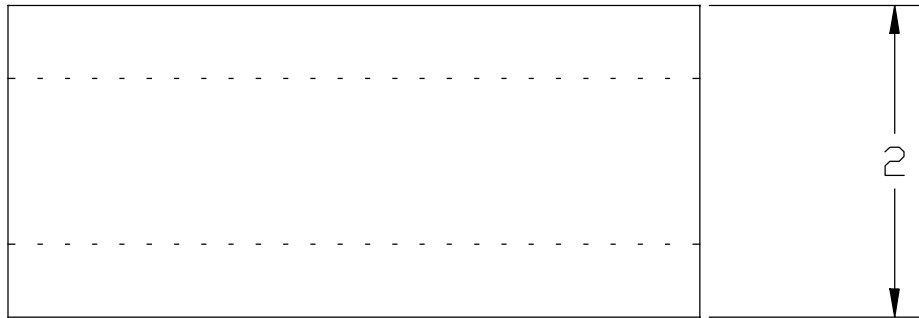
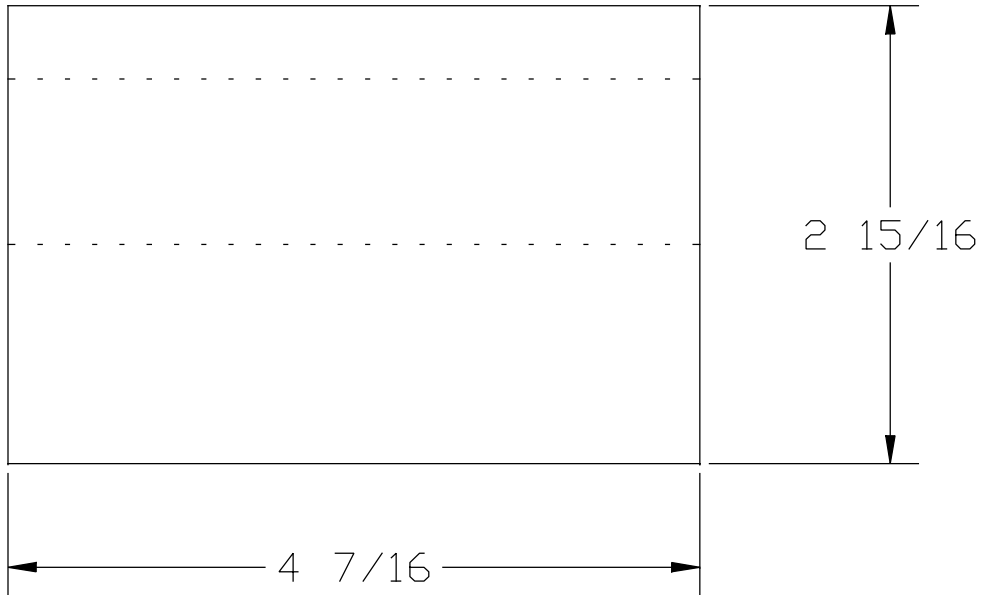


Mat'l - Cast Iron

REVISION DATE: 19 Nov 1999
 LAST PLOT DATE: 19 Nov 1999
 CAD FILENAME: Bend26A.DWG

NO.	REVISION	DATE	BY	ISSUED FOR	DATE	BY
Cam Die 1 3/4"						
SCALE: None		DATE		DWG. NO.		REV.
DRAWN BY: RJG		19 Nov 1999		26A		
CHECKED BY:						
APPROVED						

Metal Bender

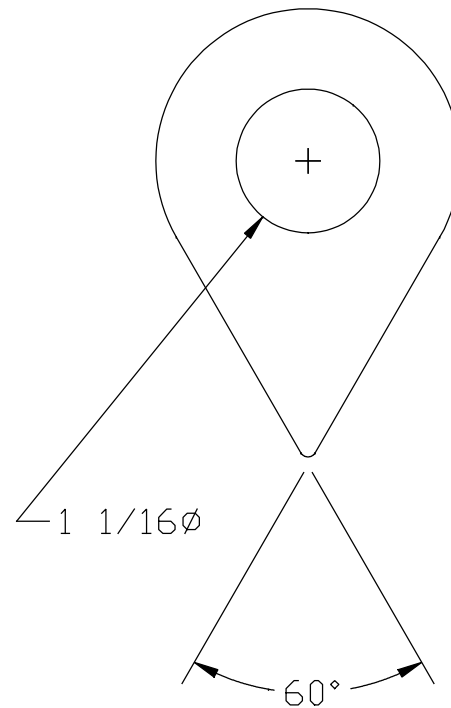
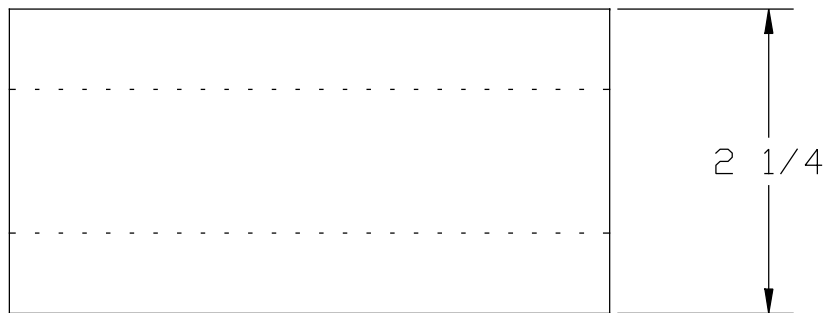
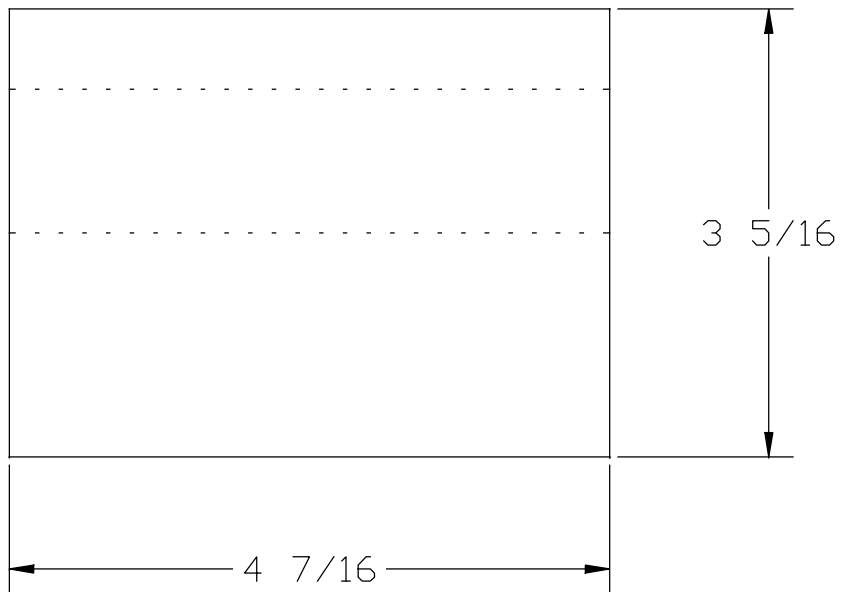


Mat'l -
Cast Iron

REVISION DATE: 19 Nov 1999
 LAST PLOT DATE: 19 Nov 1999
 CAD FILENAME: Bend26B.DWG

NO.	REVISION	DATE	BY	ISSUED FOR	DATE	BY
Cam Die, 2"						
SCALE: None		DATE		DWG. NO.		REV.
DRAWN BY: RJG		19 Nov 1999		26B		
CHECKED BY:						
APPROVED						

Metal Bender

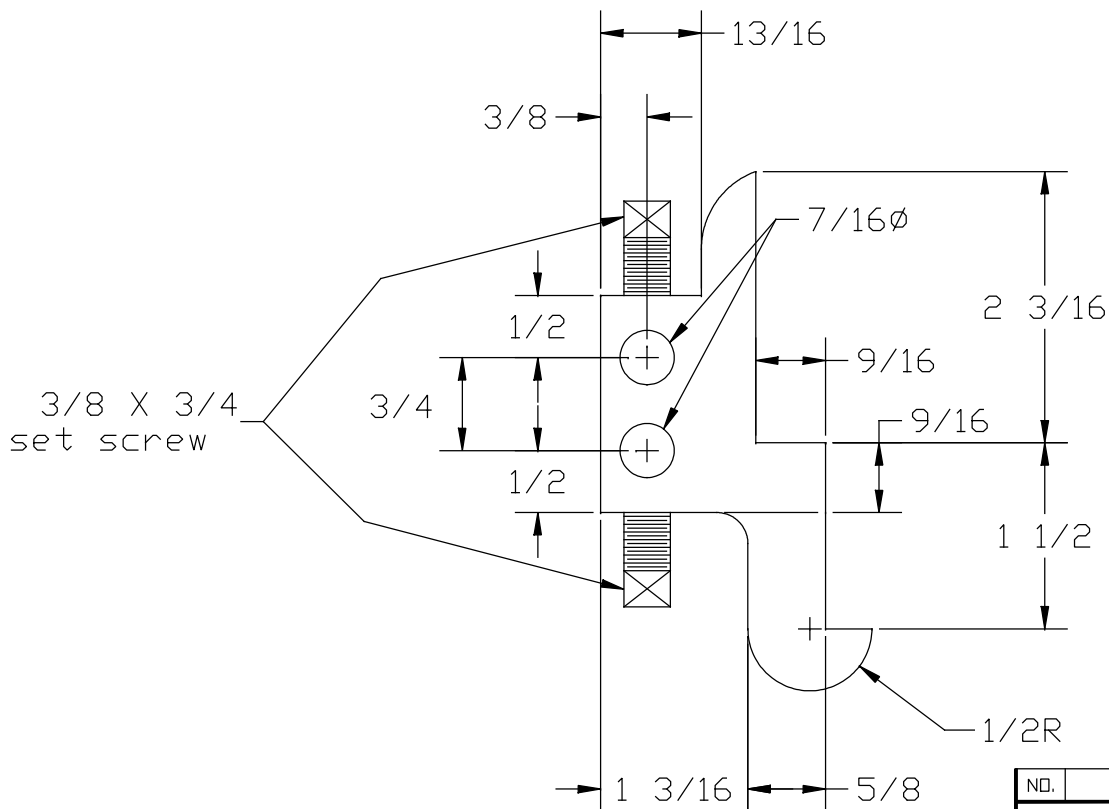


Mat'l -
Cast Iron

REVISION DATE: 19 Nov 1999
 LAST PLOT DATE: 19 Nov 1999
 CAD FILENAME: Bend26C.DWG

NO.	REVISION	DATE	BY	ISSUED FOR	DATE	BY
Cam Die, 2 1/4"						
SCALE: None		DATE		DWG. NO.		REV.
DRAWN BY: RJG		19 Nov 1999		26C		
CHECKED BY:						
APPROVED						

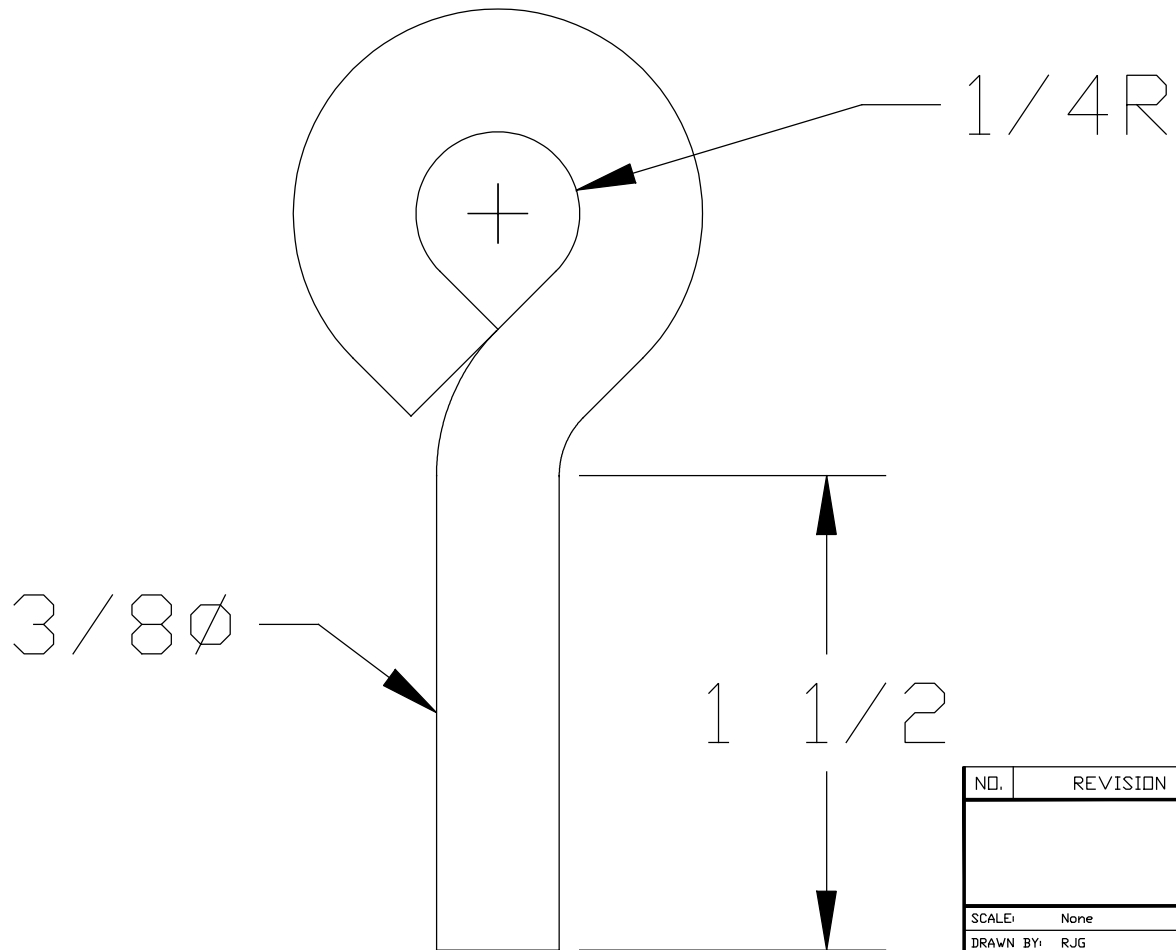
Metal Bender



REVISION DATE: 19 Nov 1999
 LAST PLOT DATE: 19 Nov 1999
 CAD FILENAME: Bend27.DWG

NO.	REVISION	DATE	BY	ISSUED FOR	DATE	BY
Sliding Gauge						
SCALE: None		DATE		DWG. NO.		REV.
DRAWN BY: RJG		19 Nov 1999		27		
CHECKED BY:						
APPROVED						

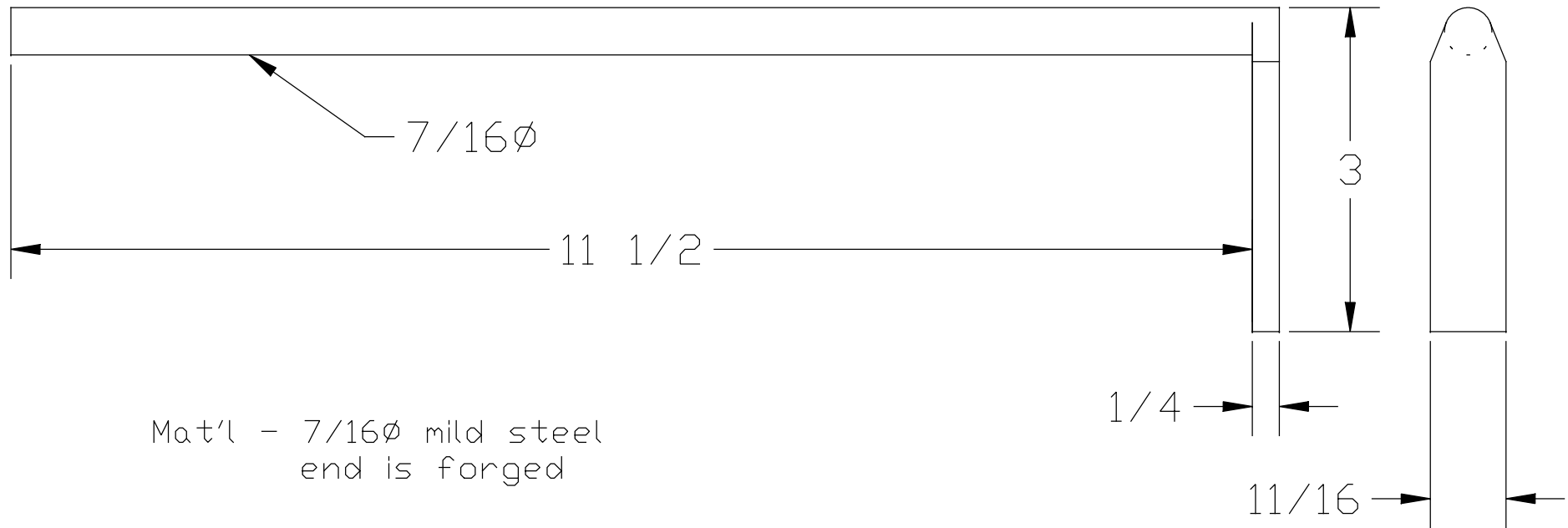
Metal Bender



REVISION DATE: 19 Nov 1999
 LAST PLOT DATE: 19 Nov 1999
 CAD FILENAME: Bend28.DWG

NO.	REVISION	DATE	BY	ISSUED FOR	DATE	BY
Hand Lever Pin						
SCALE: None		DATE		DWG. NO.		REV.
DRAWN BY: RJG		19 Nov 1999		28		
CHECKED BY:						
APPROVED						

Metal Bender

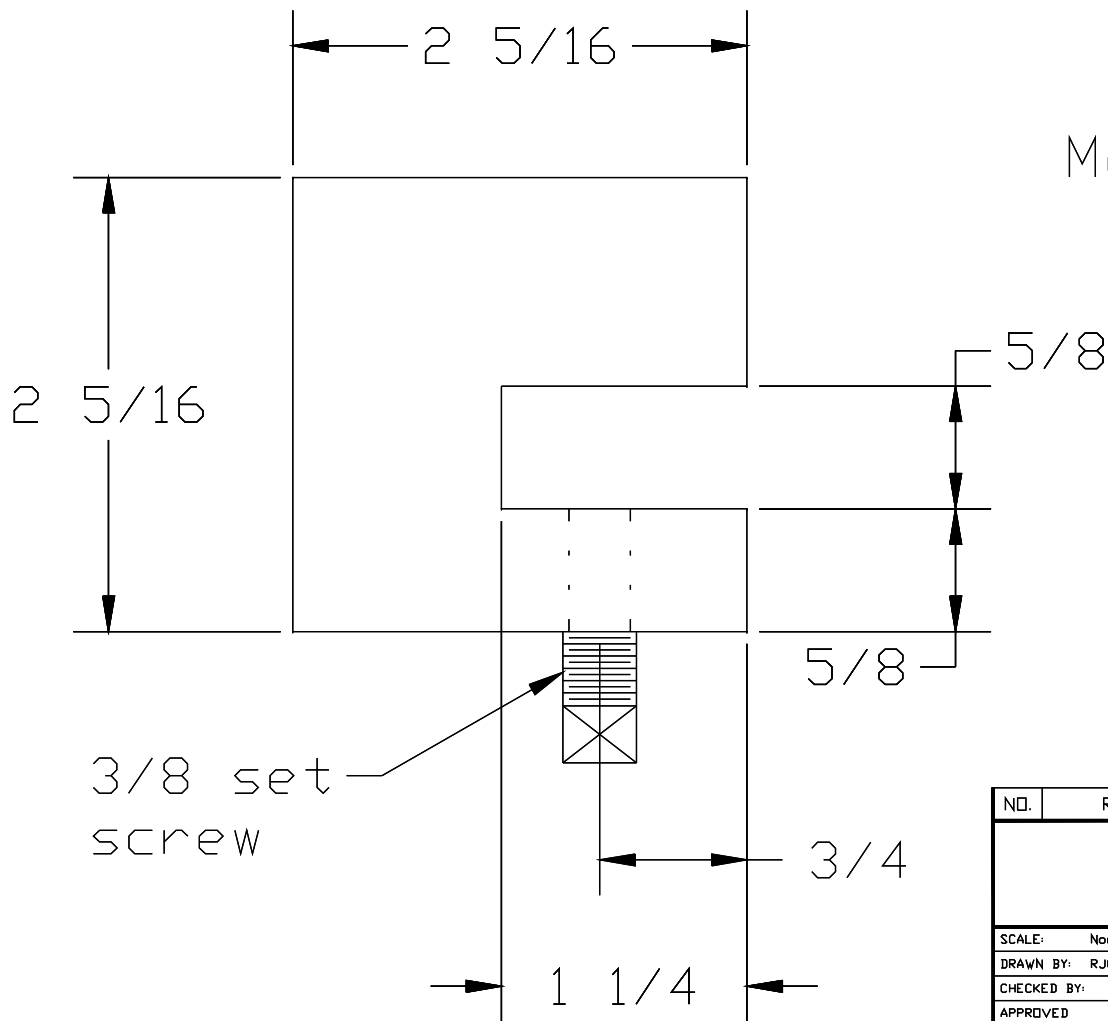


Mat'l - 7/16 ϕ mild steel
end is forged

NO.	REVISION	DATE	BY	ISSUED FOR	DATE	BY
Gauge Extension						
SCALE: None		DATE		DWG. NO.		REV.
DRAWN BY: RJG		19 Nov 1999		29		
CHECKED BY:						
APPROVED						

Metal Bender

REVISION DATE: 19 Nov 1999
 LAST PLOT DATE: 19 Nov 1999
 CAD FILENAME: Bend29.DWG



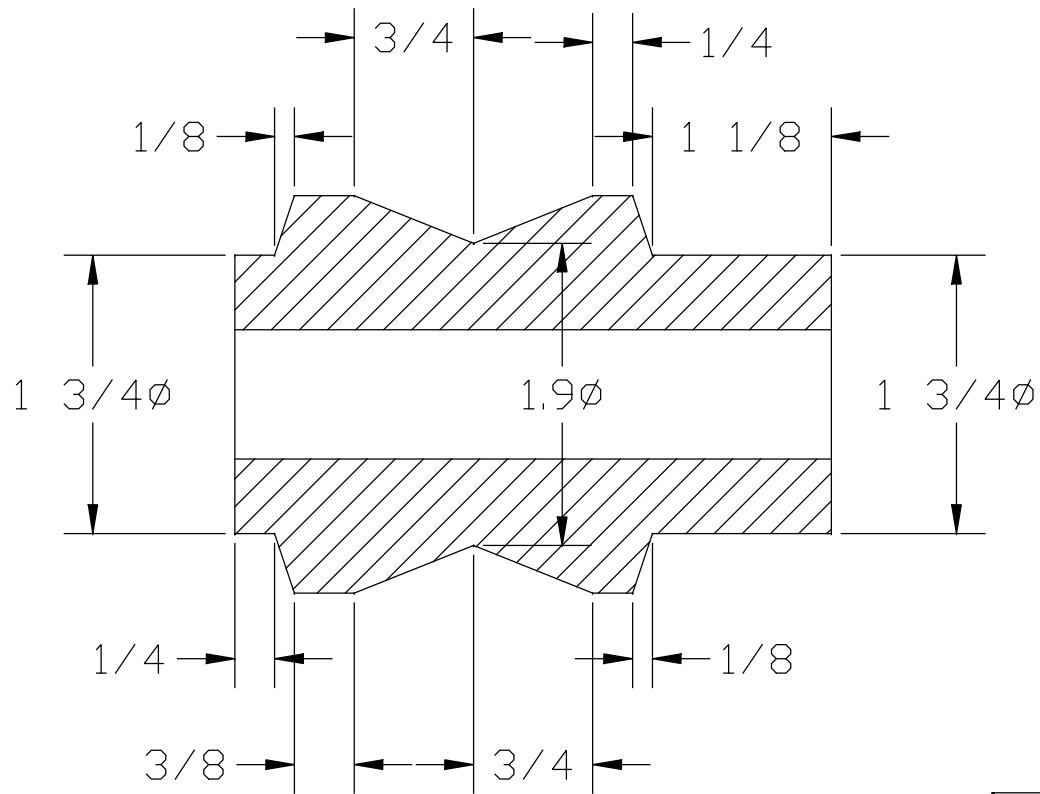
Mat'l - Cast Iron
 1 1/4 thick

3/8 set screw

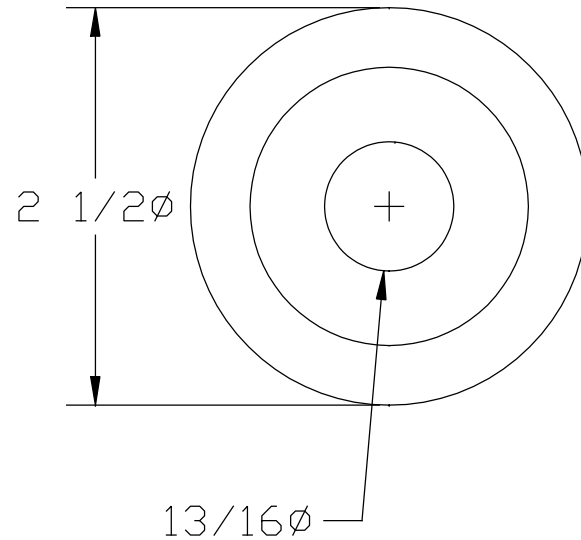
REVISION DATE: 19 Nov 1999
 LAST PLOT DATE: 19 Nov 1999
 CAD FILENAME: Bend30.DWG

NO.	REVISION	DATE	BY	ISSUED FOR	DATE	BY
Circle Gauge						
SCALE: None		DATE		DWG. NO.		REV.
DRAWN BY: RJG		19 Nov 1999		30		
CHECKED BY:						
APPROVED						

Metal Bender



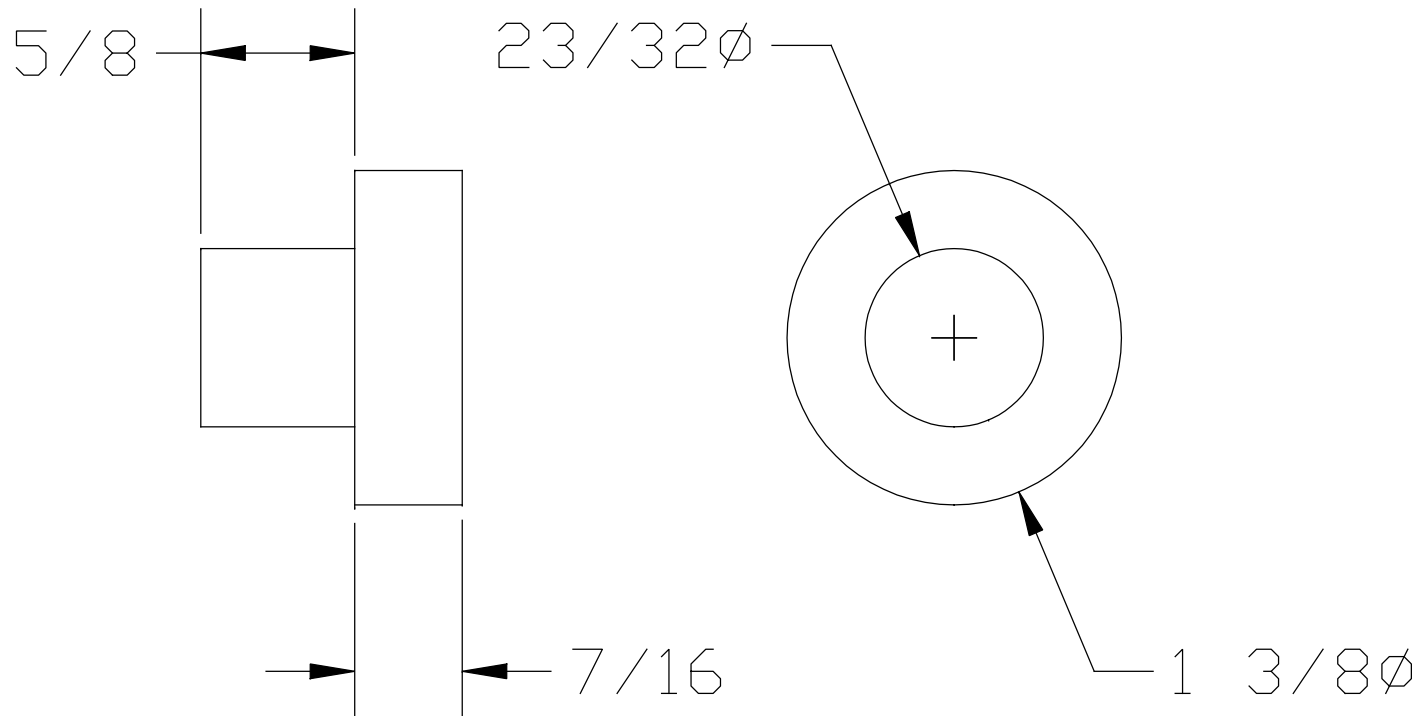
Mat'l - Cast Iron



NOTE: This is an alternative to the roller shown on drawing 18

REVISION DATE: 19 Nov 1999
 LAST PLOT DATE: 19 Nov 1999
 CAD FILENAME: Bend31.DWG

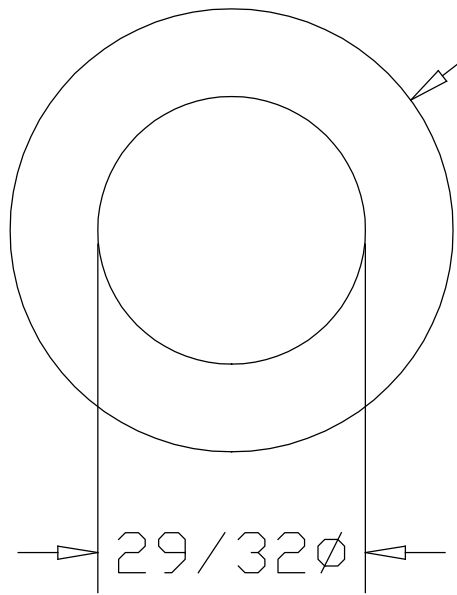
NO.	REVISION	DATE	BY	ISSUED FOR	DATE	BY
V Grooved Roller						
SCALE: None		DATE		DWG. NO.		REV.
DRAWN BY: RJG		19 Nov 1999		31		
CHECKED BY:						
APPROVED						
Metal Bender						



Mat'l - Cast Iron

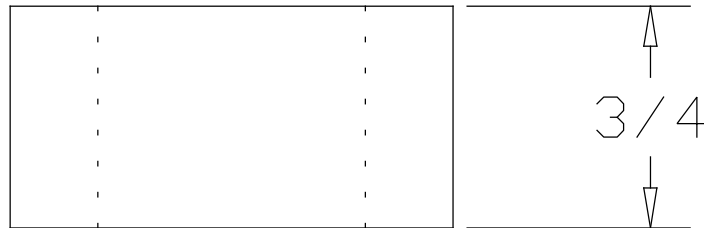
REVISION DATE: 19 Nov 1999
 LAST PLOT DATE: 19 Nov 1999
 CAD FILENAME: Bend32.DWG

NO.	REVISION	DATE	BY	ISSUED FOR	DATE	BY
Support Plug						
SCALE: None		DATE		DWG. NO.		REV.
DRAWN BY: RJG		19 Nov 1999		32		
CHECKED BY:						
APPROVED						
Metal Bender						



1 1/2 ϕ to 11-1/2 ϕ as required

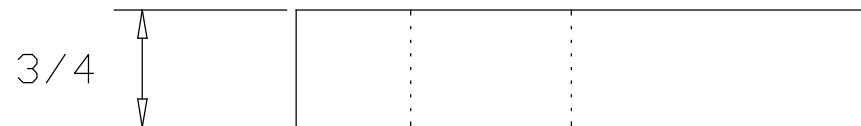
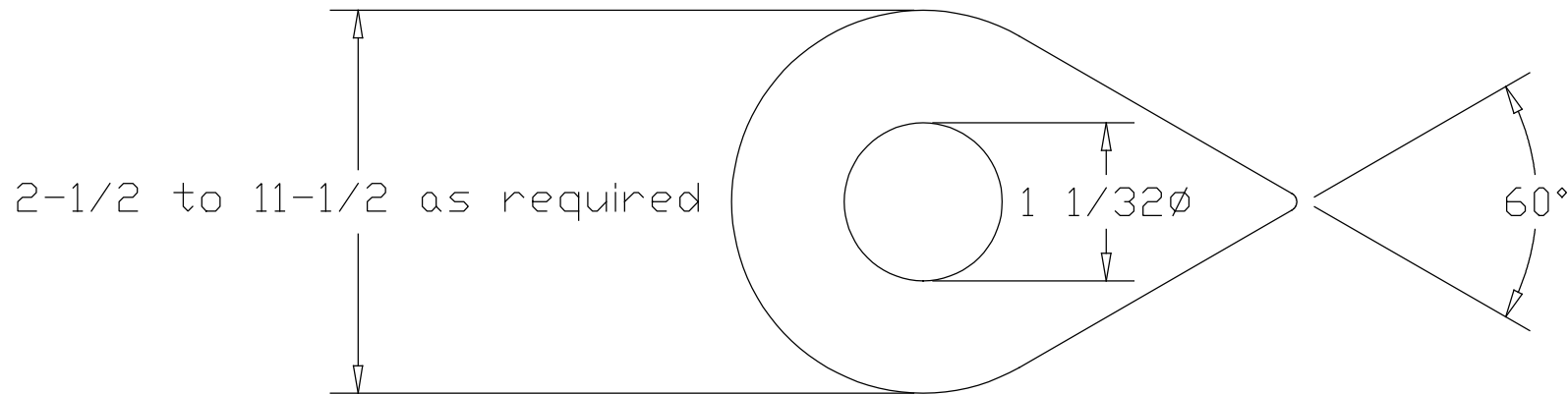
Mat'l - Cast Iron
(CRS would serve)



NO.	REVISION	DATE	BY	ISSUED FOR	DATE	BY
Rollers						
SCALE: None		DATE		DWG. NO.		REV.
DRAWN BY: RJG		19 Nov 1999		33		
CHECKED BY:						
APPROVED						

Metal Bender

REVISION DATE: 19 Nov 1999
 LAST PLOT DATE: 19 Nov 1999
 CAD FILENAME: Bend33.DWG

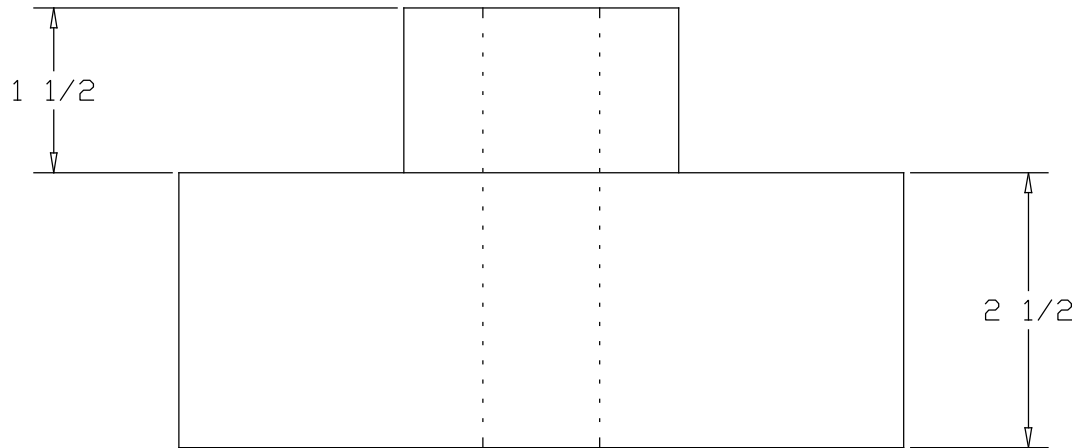


Mat'l - Cast Iron
Mild Steel would suffice

Used for forming uniform
leg "U" bends

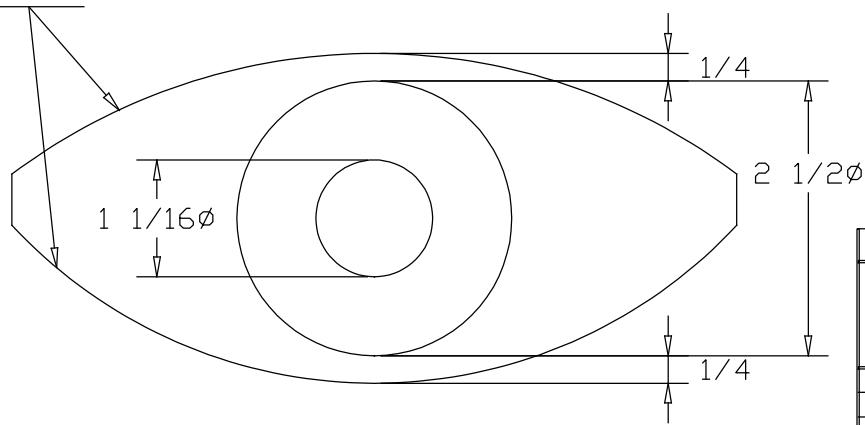
REVISION DATE: 19 Nov 1999
LAST PLOT DATE: 19 Nov 1999
CAD FILENAME: Bend34.DWG

NO.	REVISION	DATE	BY	ISSUED FOR	DATE	BY
Cam Dies						
SCALE: None		DATE		DWG. NO.		REV.
DRAWN BY: RJG		19 Nov 1999		34		
CHECKED BY:						
APPROVED						
Metal Bender						



Suggested Radii	
Face 1	Face 2
4 1/2	5 1/2
5	6
6 1/2	7 1/2
7	8
9	12
10	11
13	14
15	18
20	22
24	36
28	30
34	35
39	40
42	48
54	60
66	72
78	84
108	120

Radius 4 1/2 to 120, as required



NO.	REVISION	DATE	BY	ISSUED FOR	DATE	BY
Flat Face Radius Block						
SCALE: None		DATE		DWG. NO.		REV.
DRAWN BY: RJG		19 Nov 1999		35		
CHECKED BY:						
APPROVED						

Mat'l - Cast Iron

REVISION DATE: 19 Nov 1999
 LAST PLOT DATE: 20 Nov 1999
 CAD FILENAME: Bend35.DWG

Metal Bender