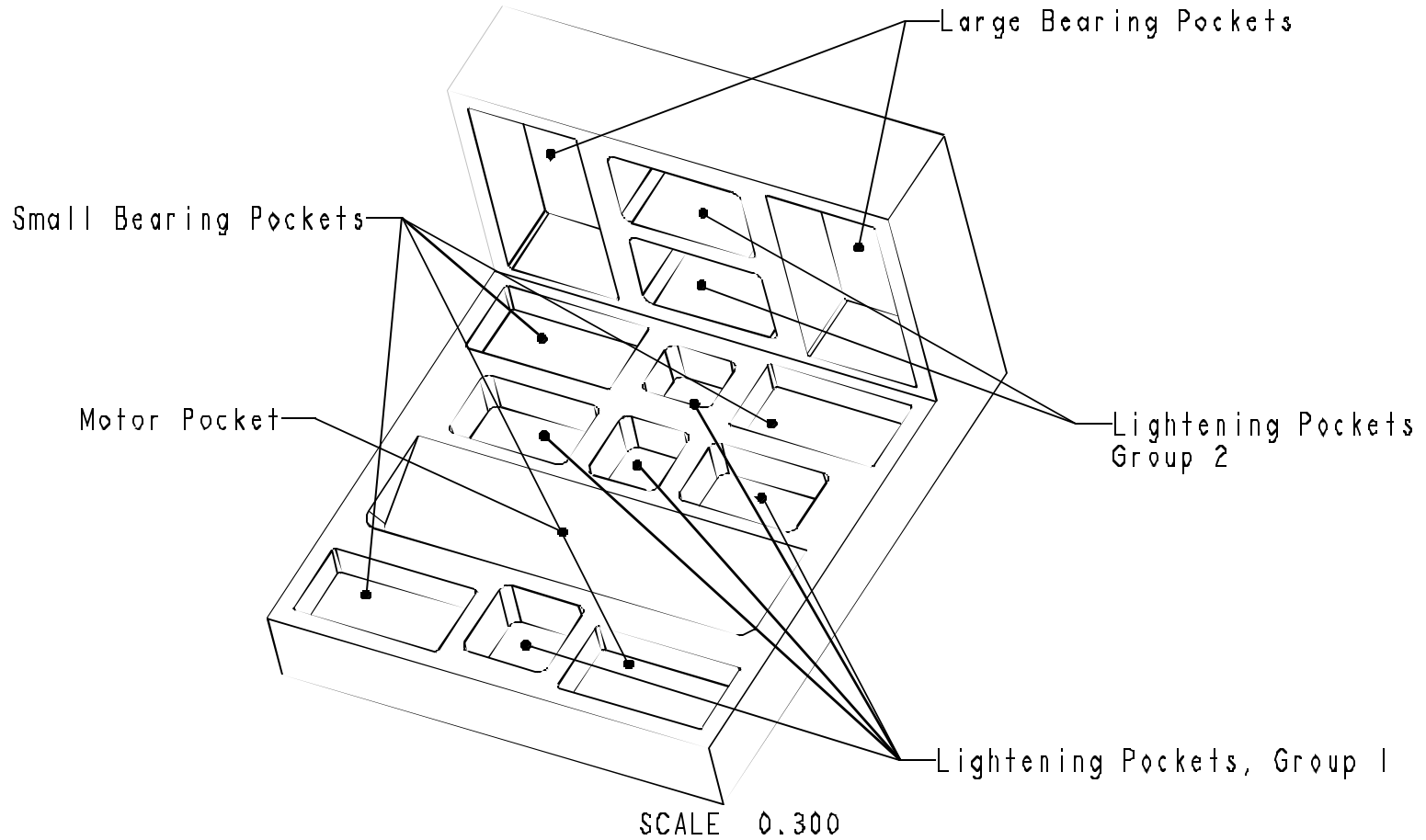


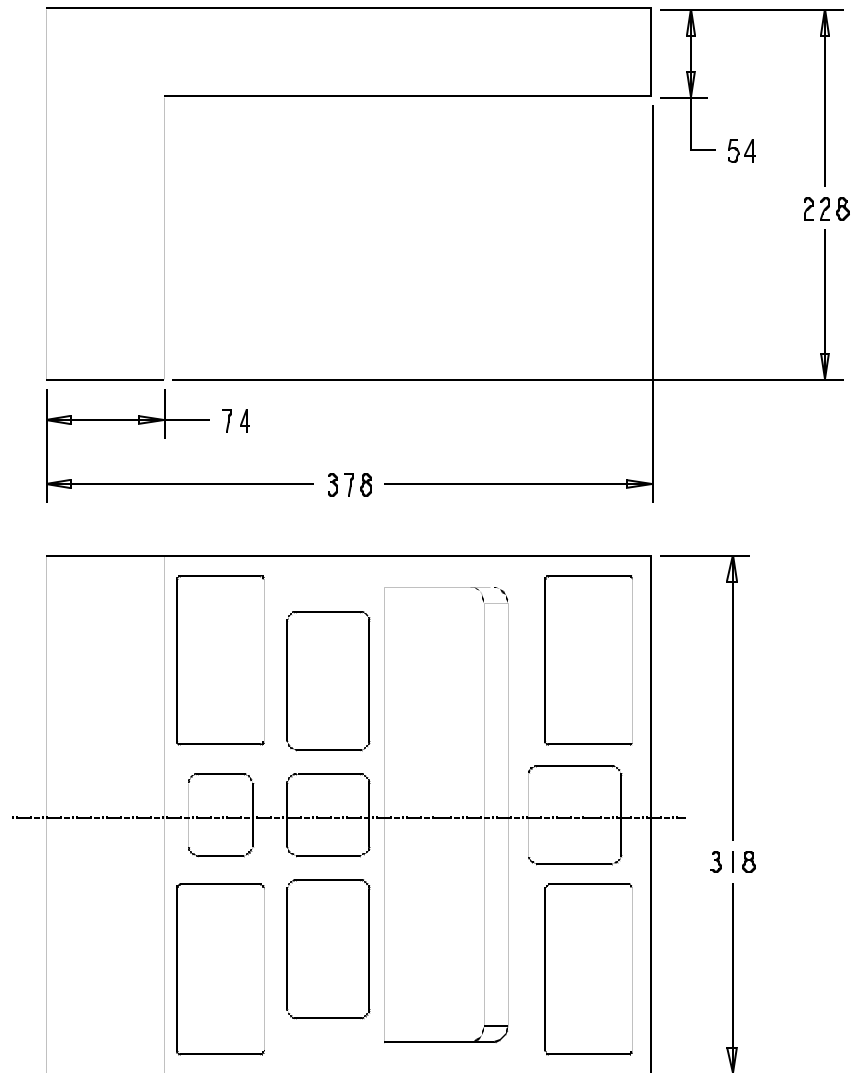
Chapter 3

AXTRUSION PART DRAWINGS

This chapter consists of the manufacturing drawings for the prototype Axtrusion and its fixturing. These are the drawings for the machine that was actually built. The next generation carriage should include a lot of improvements. A list of these suggested improvements and the reasons for them are included in SectionA.3 on page113 of the Appendix.

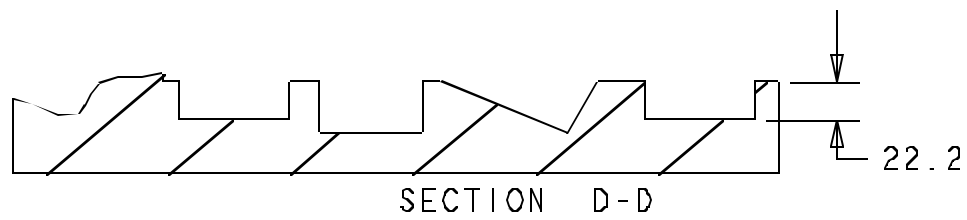
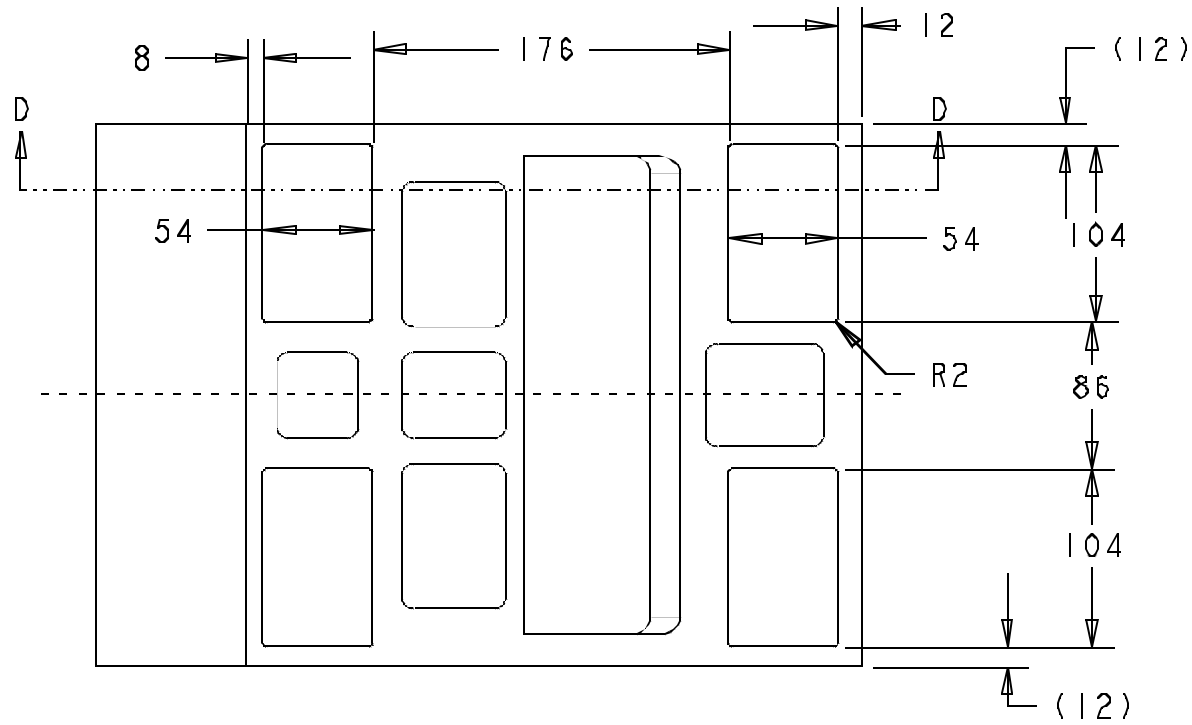
Part Overview





Overall Dimensions (mm)

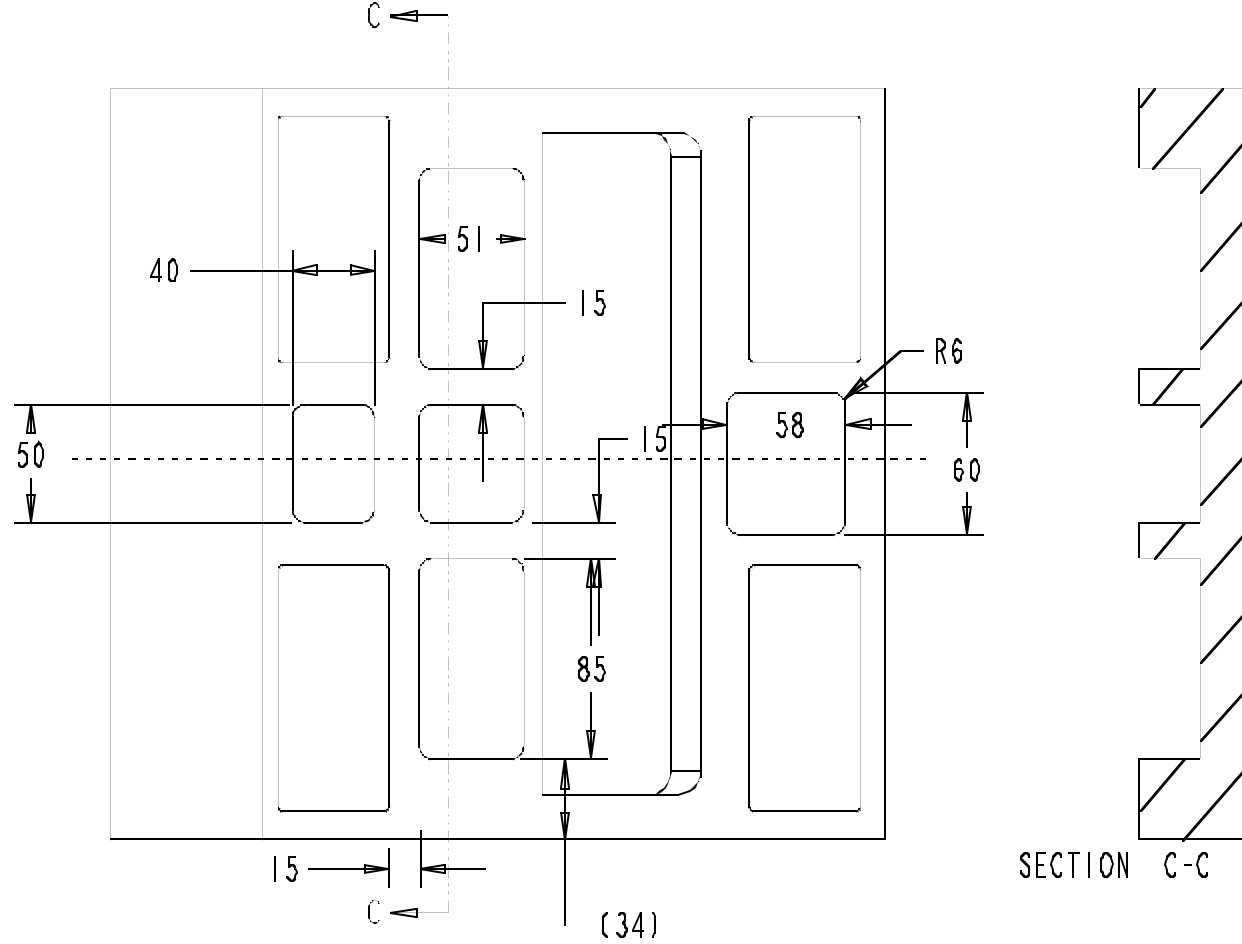
Small Bearing Pocket Dimensions



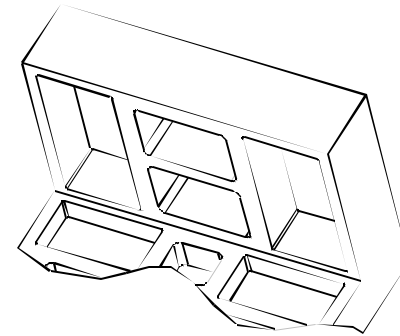
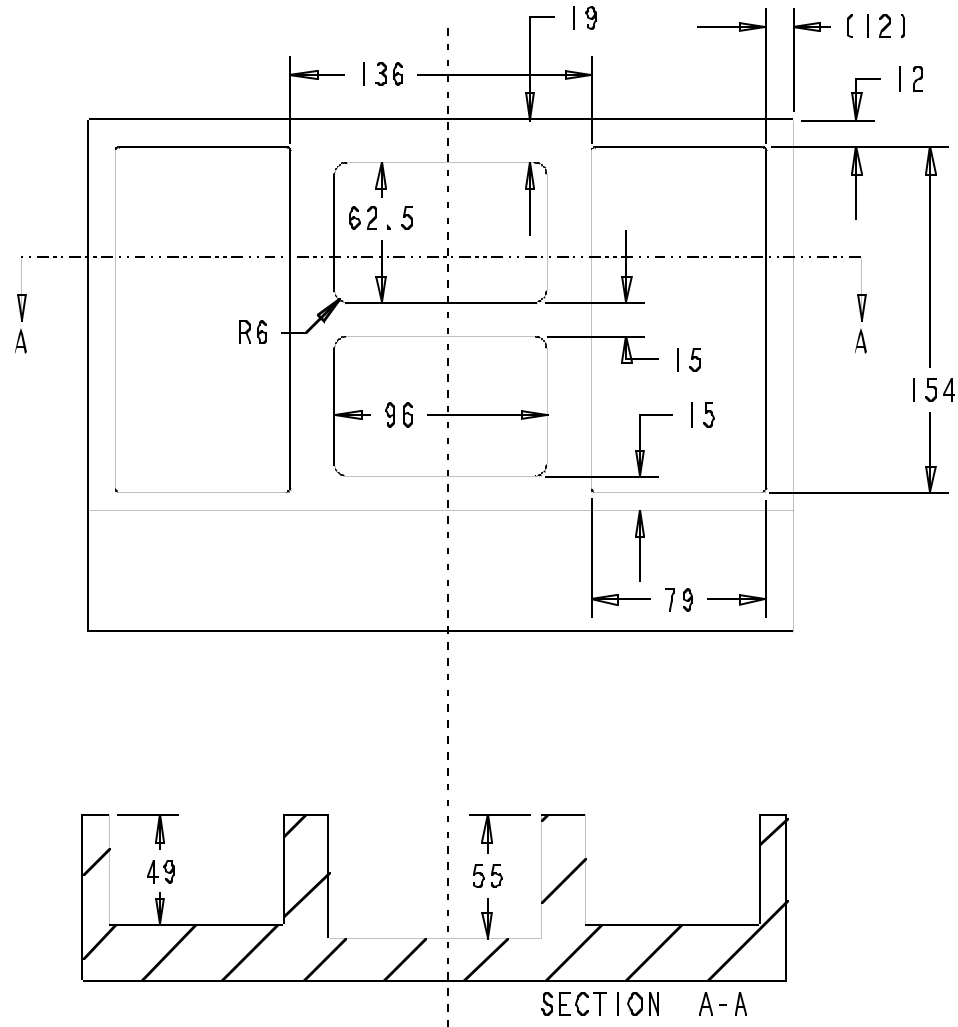
All Dimensions In mm

Lightening Pockets, Group 1 Dimensions (mm)

All 5 lightening Pockets are 30 mm deep from the main surface

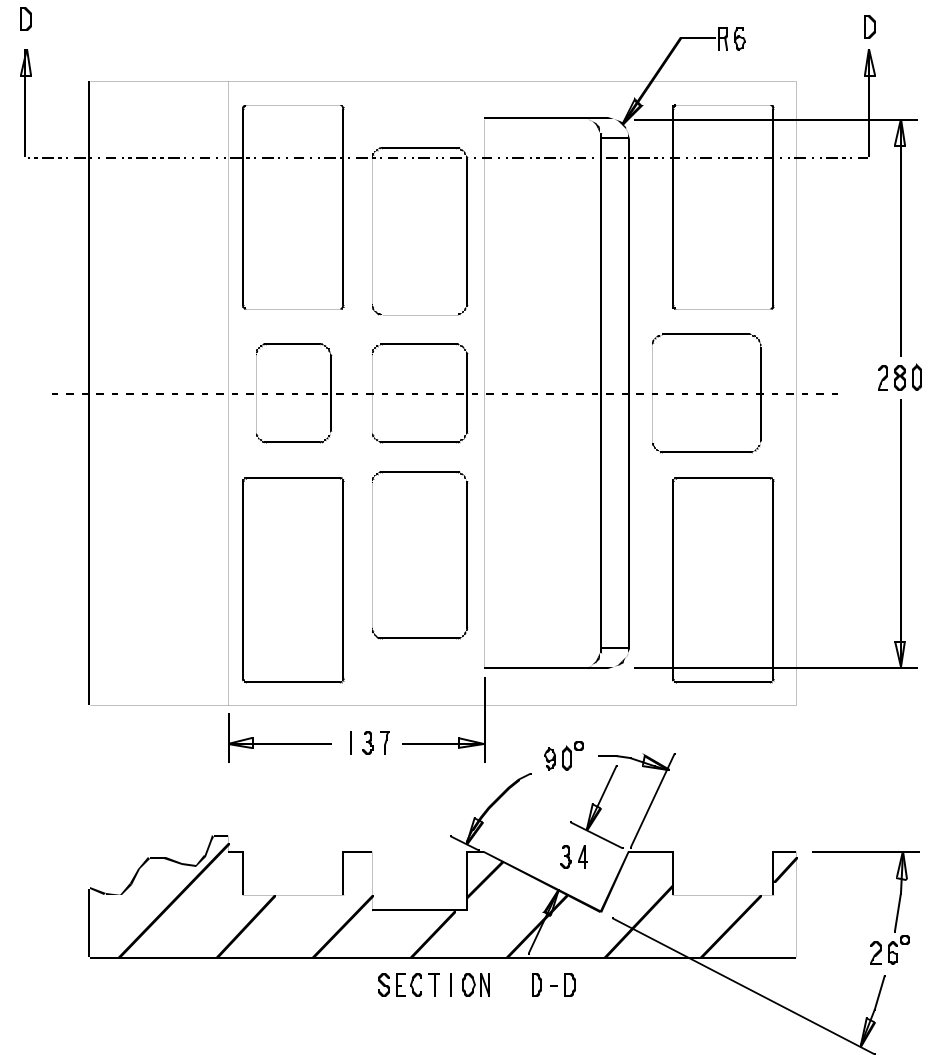


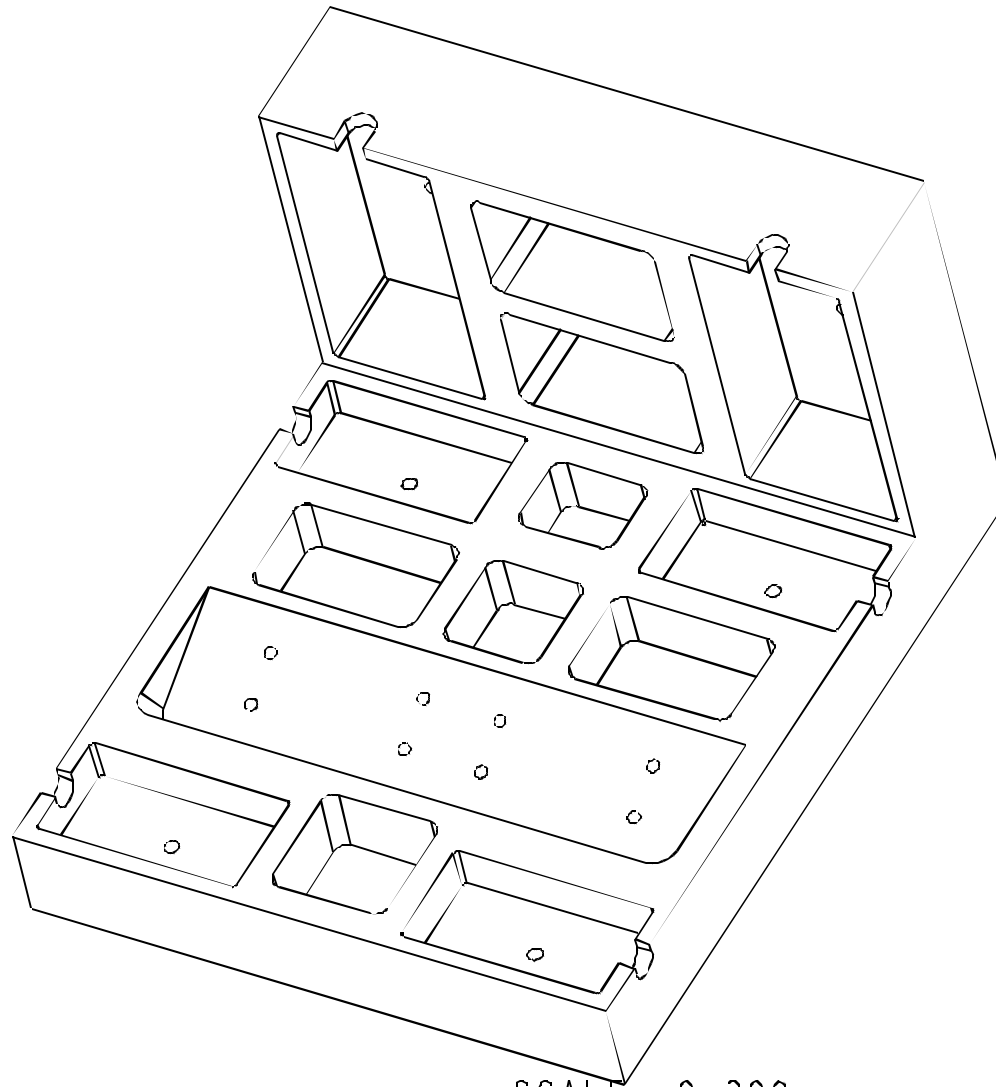
Big Bearing Pocket and Lightening Pockets (Group 2)



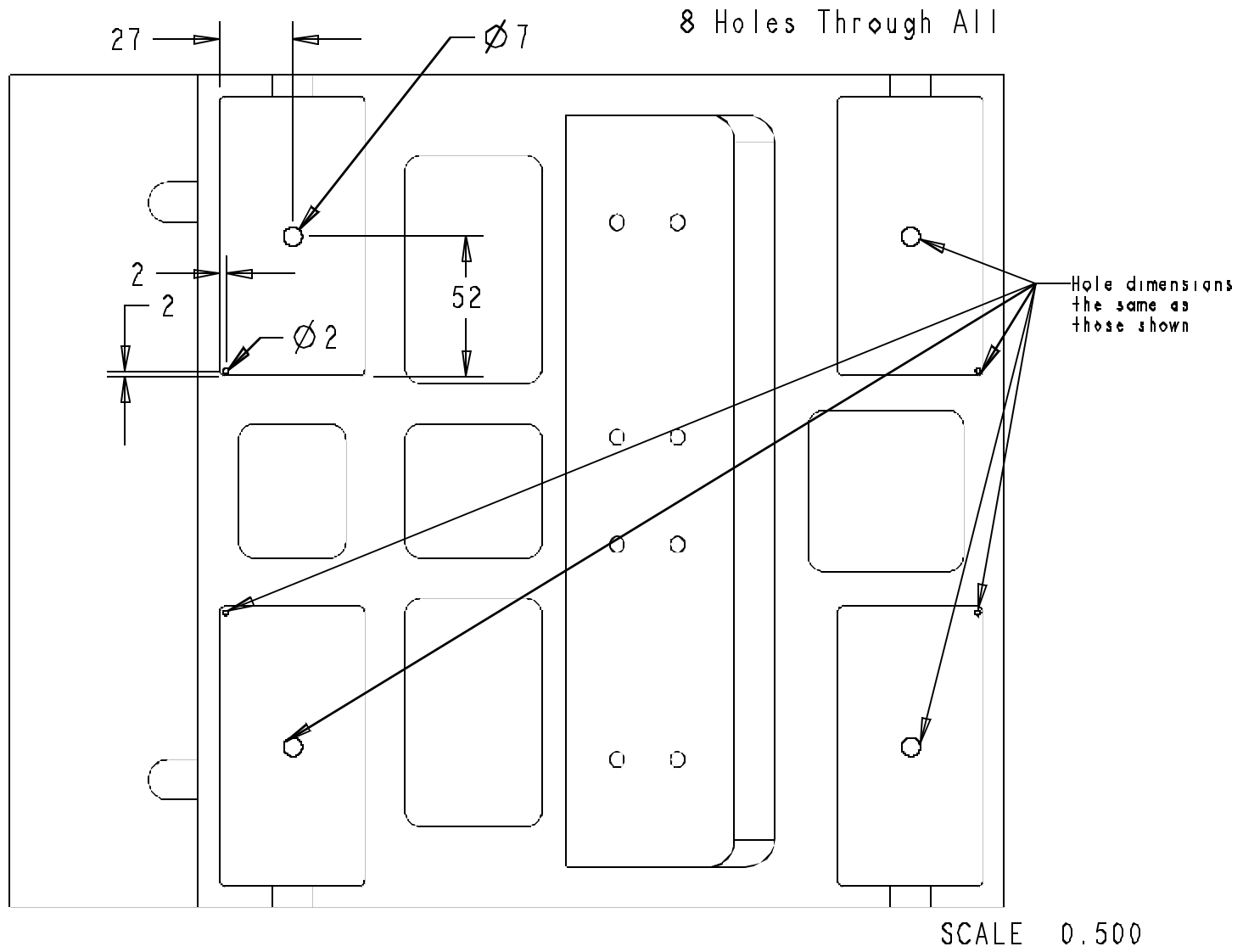
SCALE 0.200

Motor Pocket Dimensions (mm)



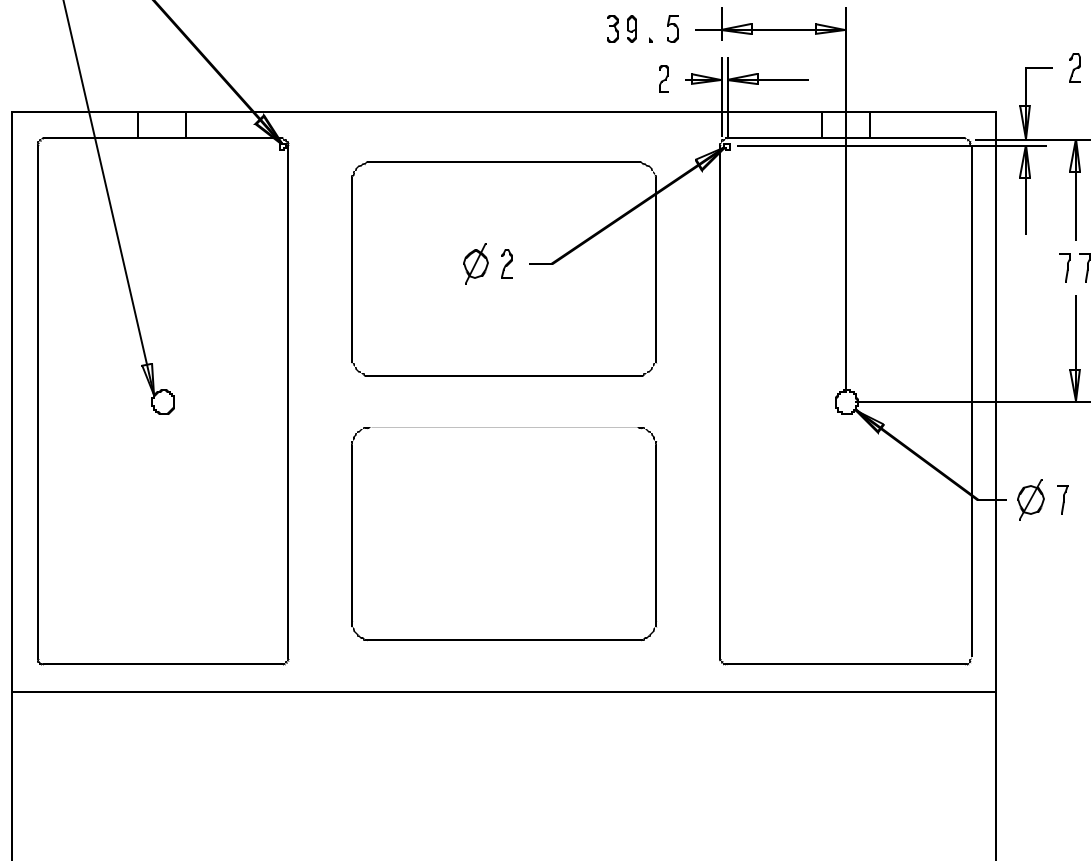


SCALE 0.300

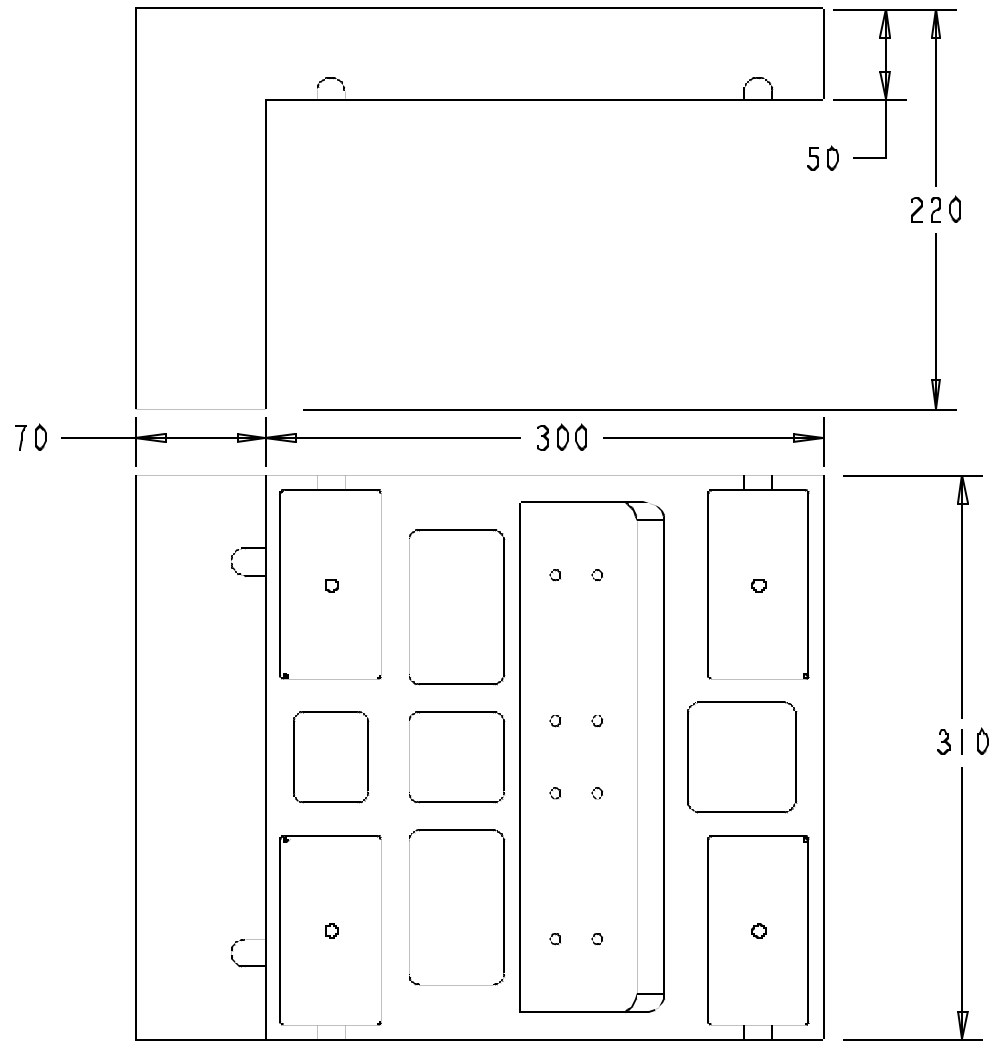


Hole dimensions
same as those shown

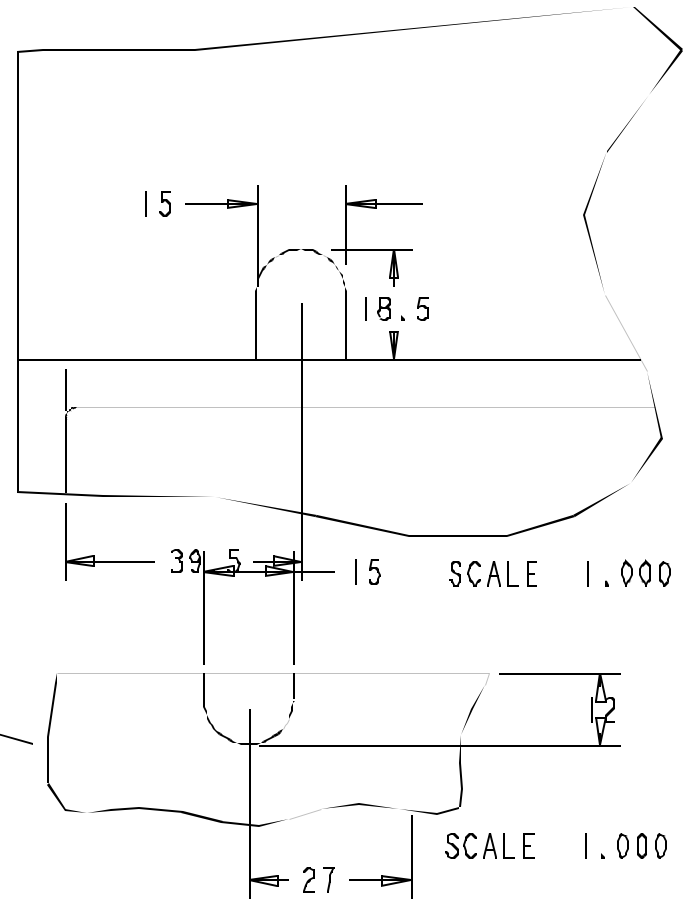
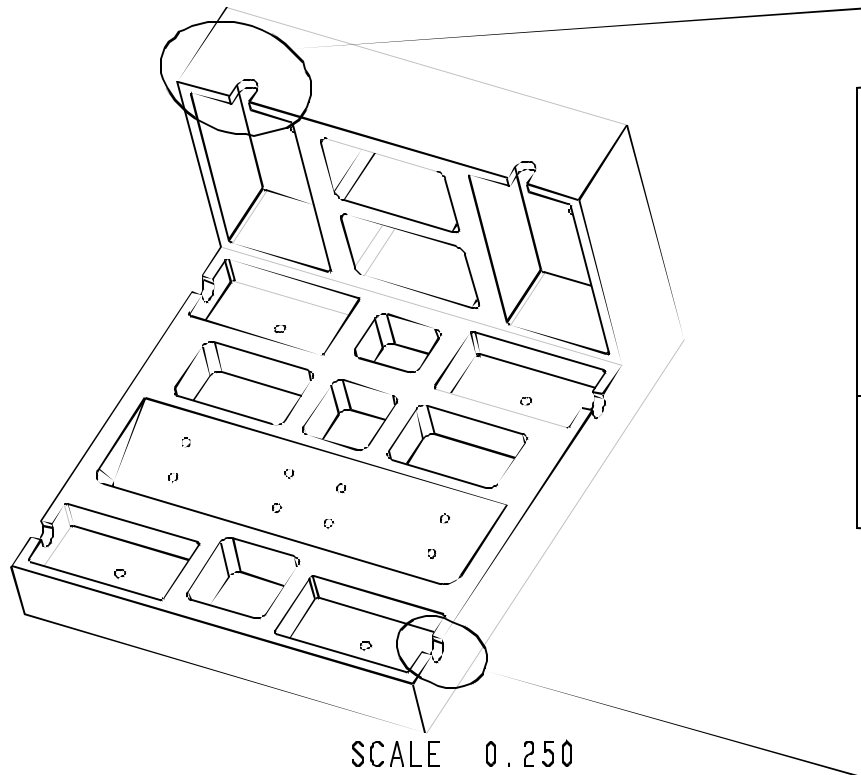
4 Holes Though All

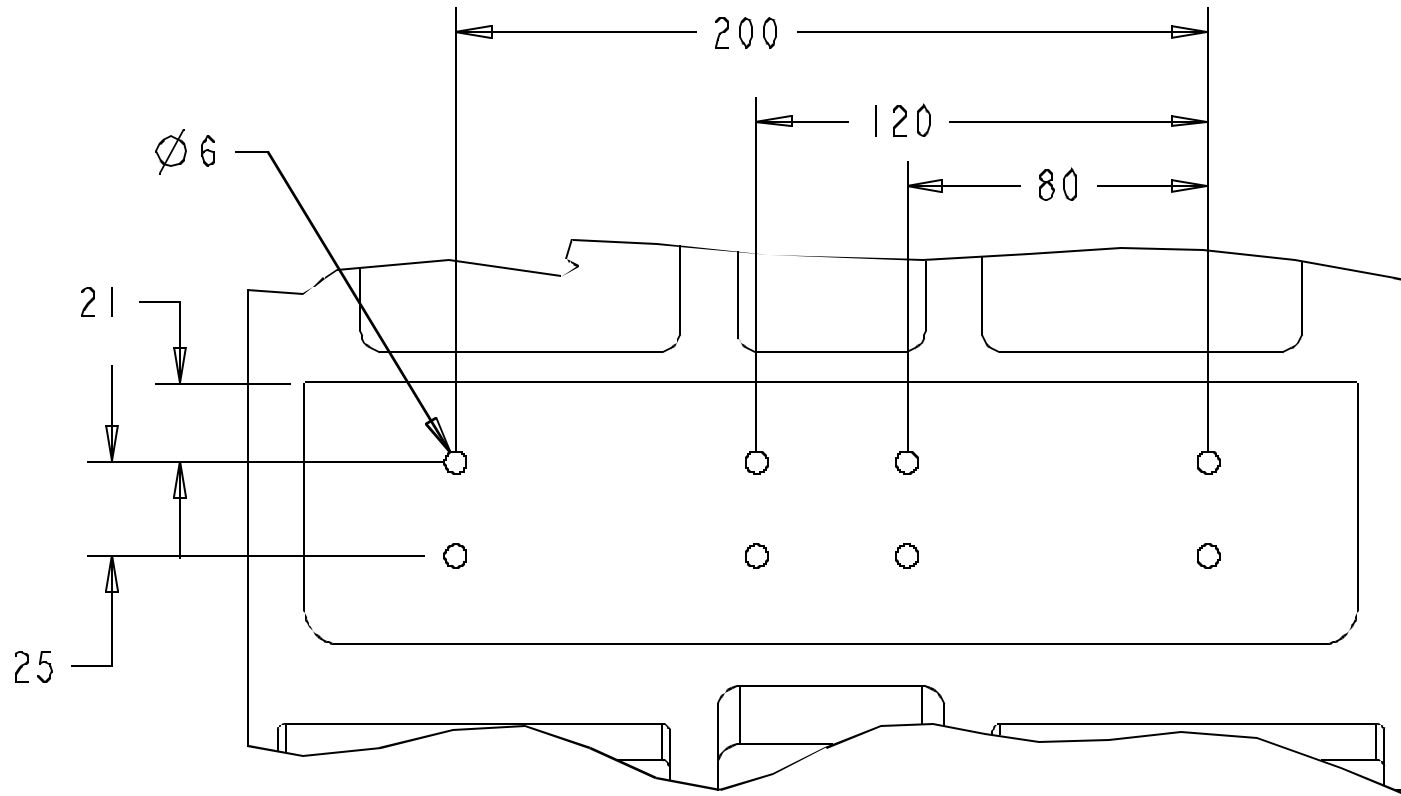


SCALE 0.500



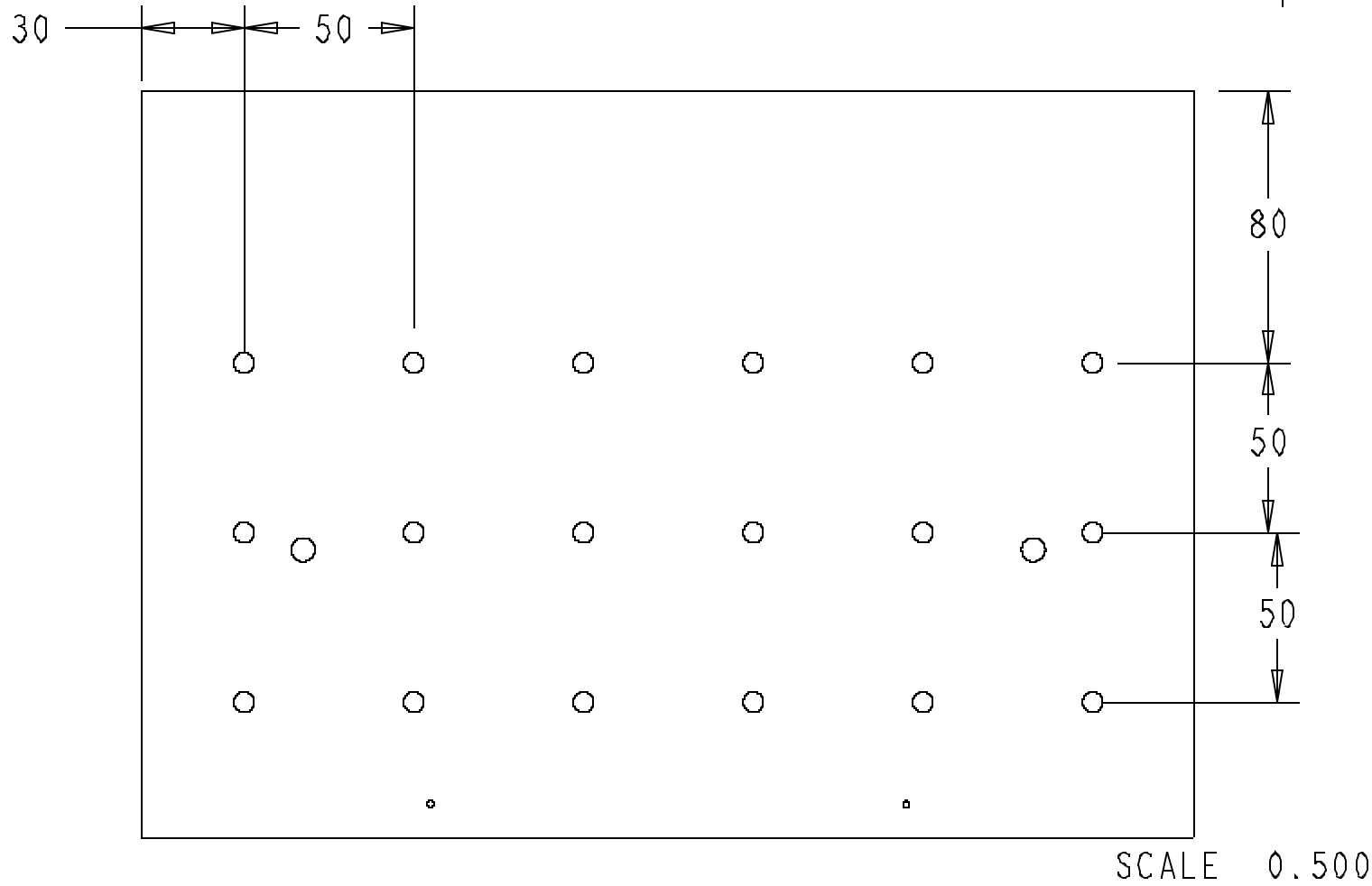
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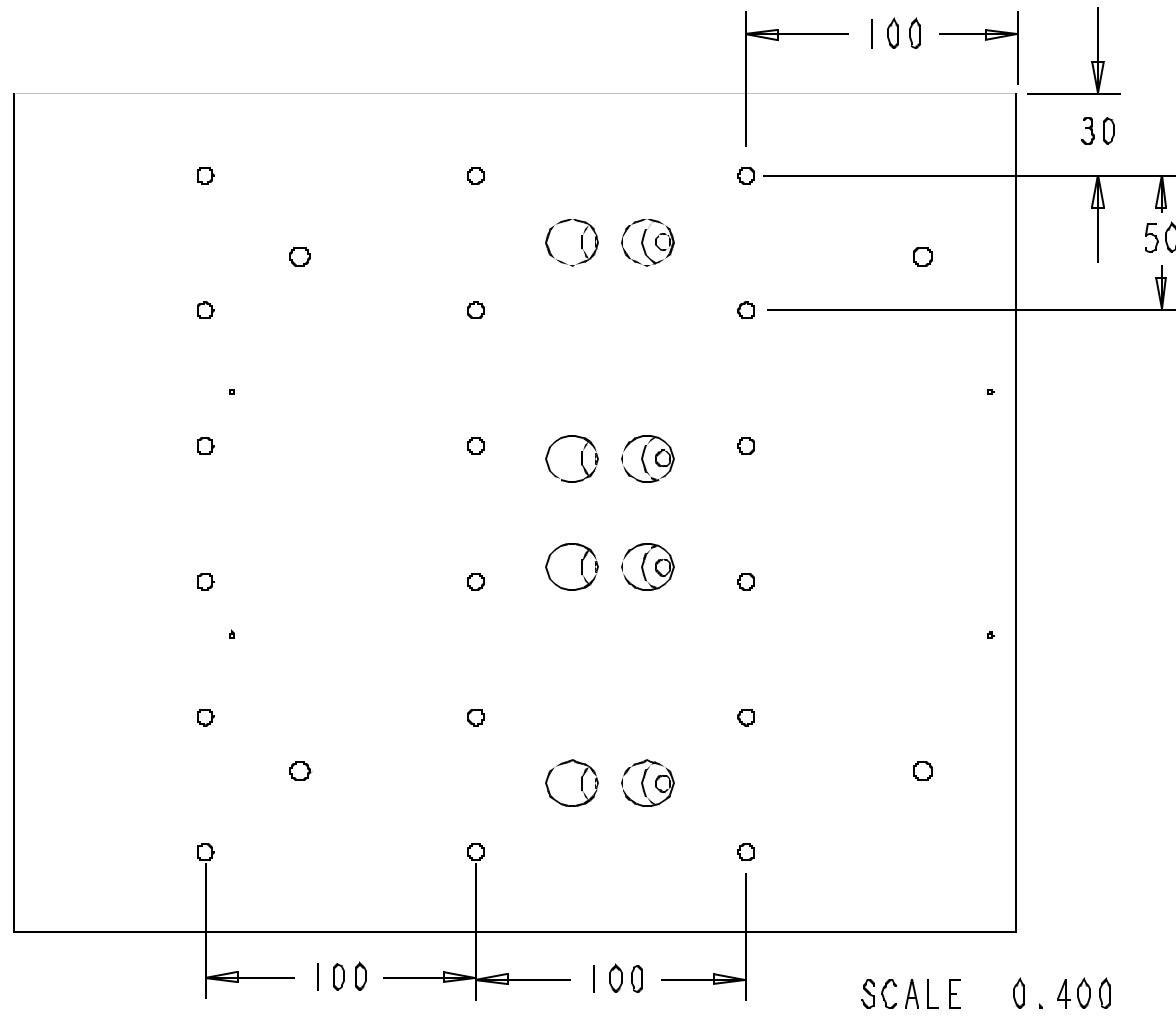


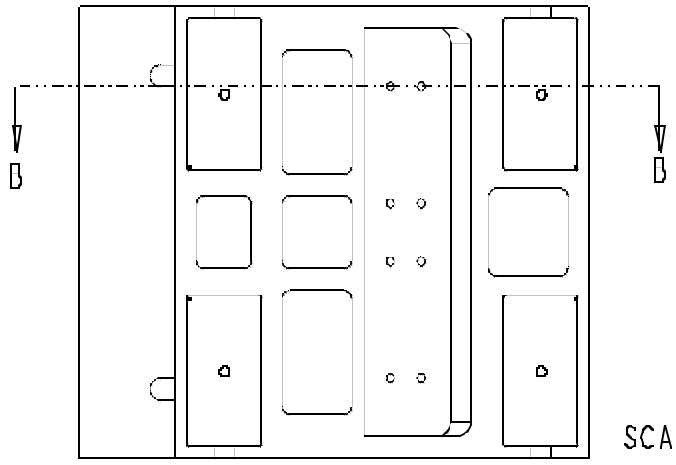
SCALE 0.500

18 Holes with M6 threads 12 mm deep



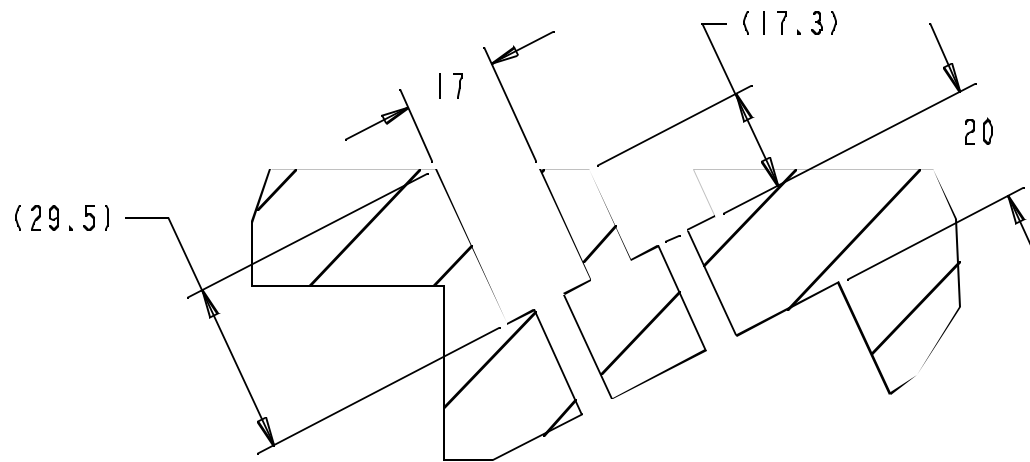
18 Holes with M6 threads 12 mm deep



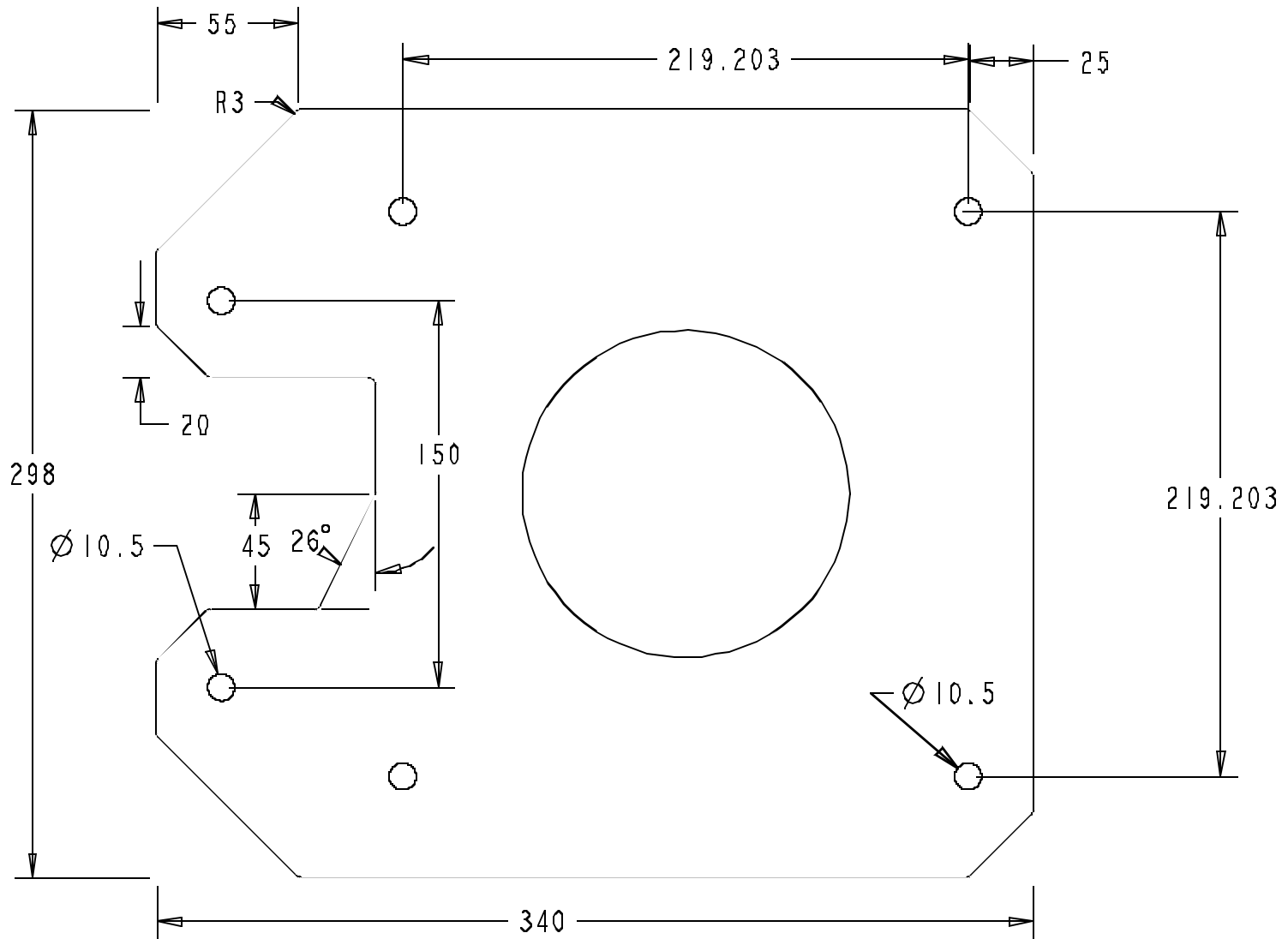


Dimensions for Angled
Counter Bored Holes

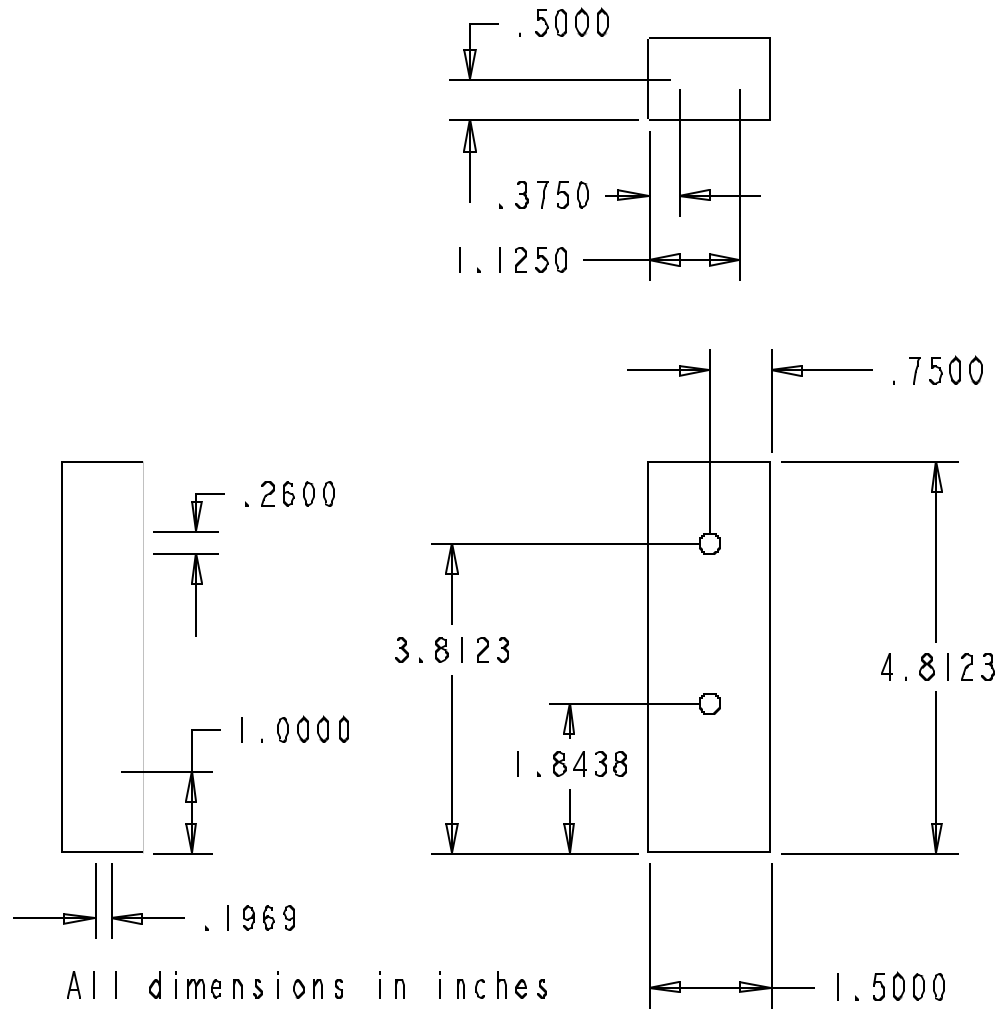
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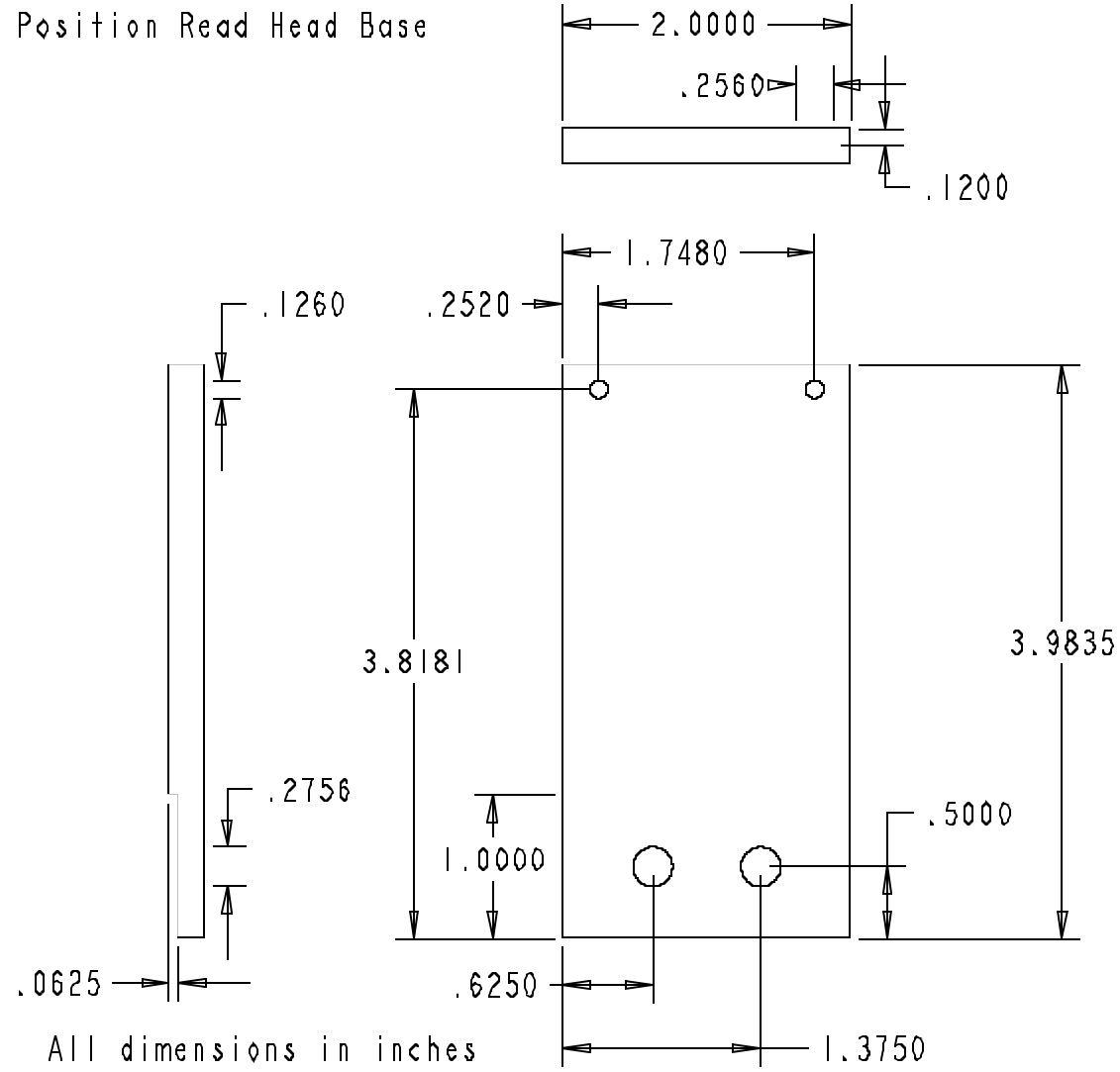


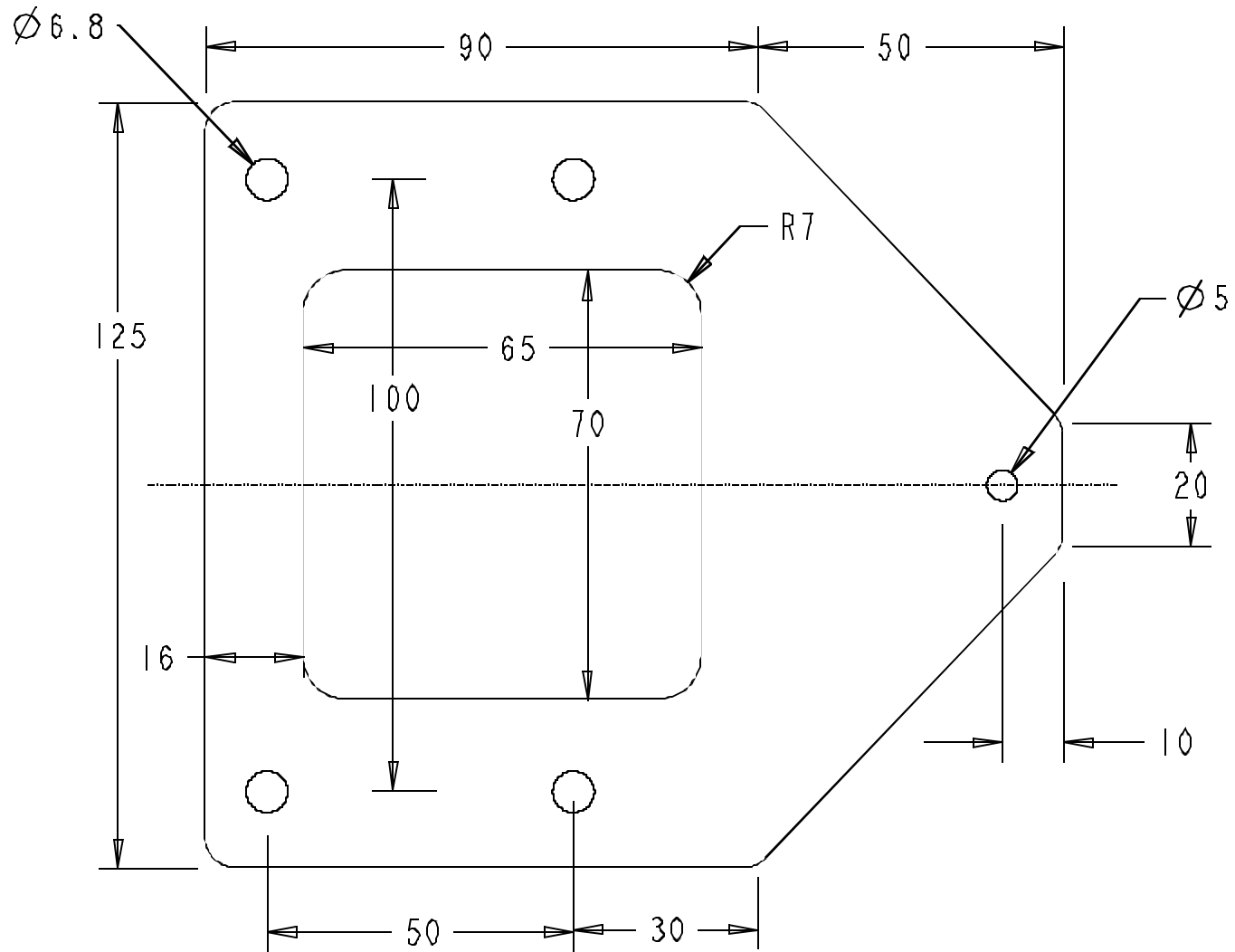
SECTION B-B
SCALE 1.000

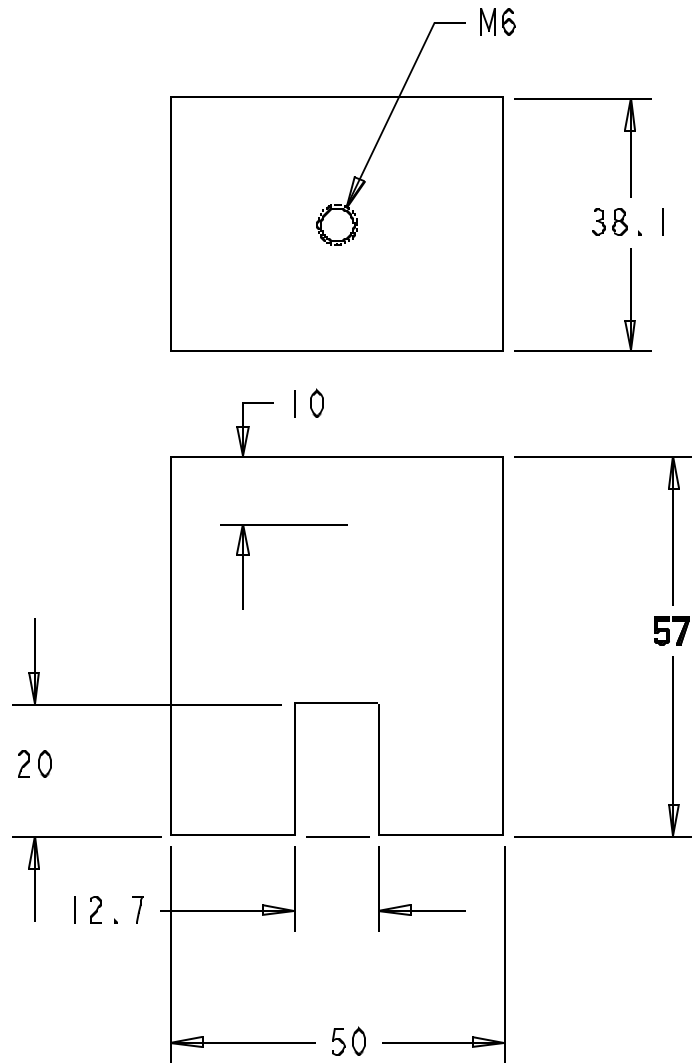


Position Read Head Mount



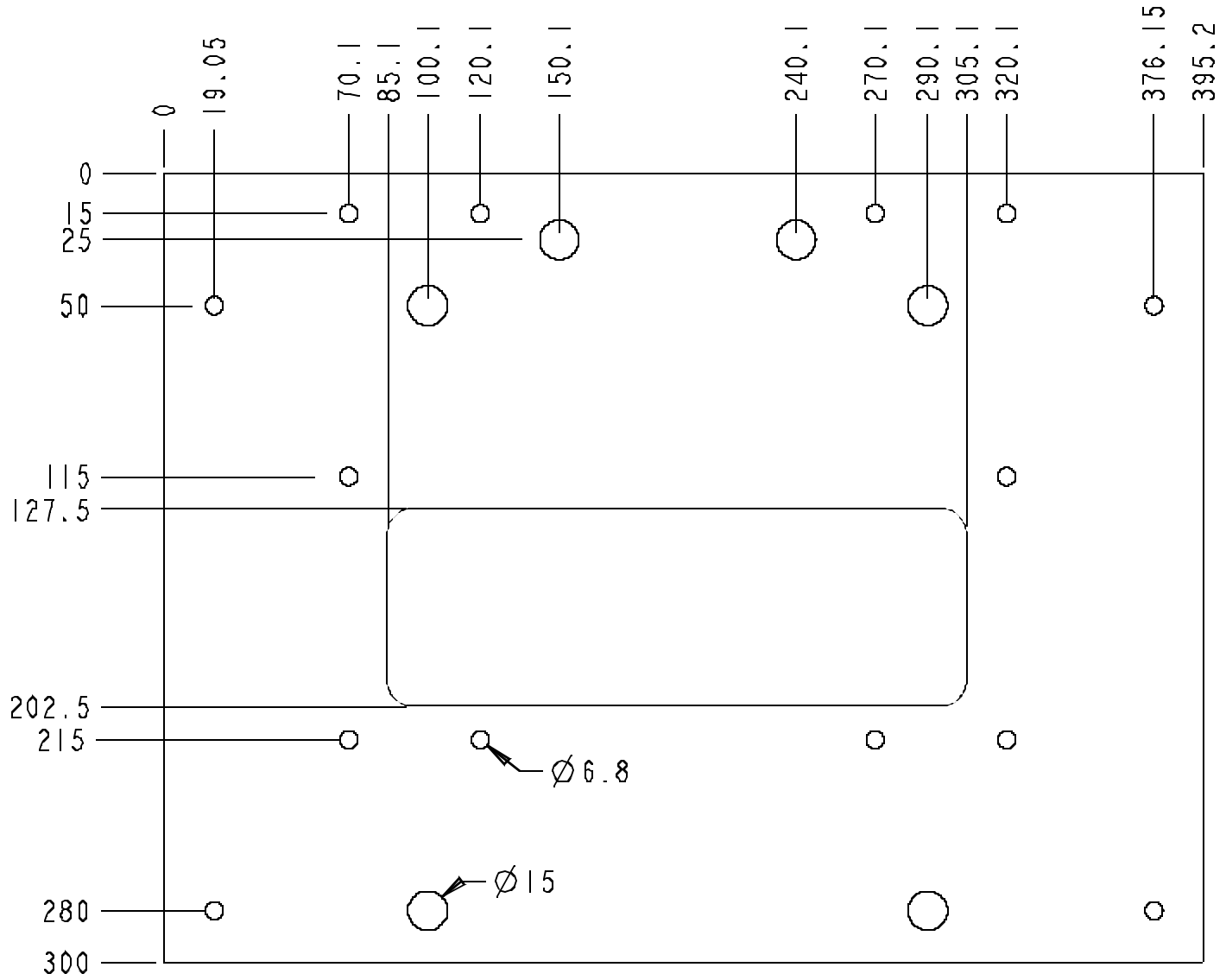




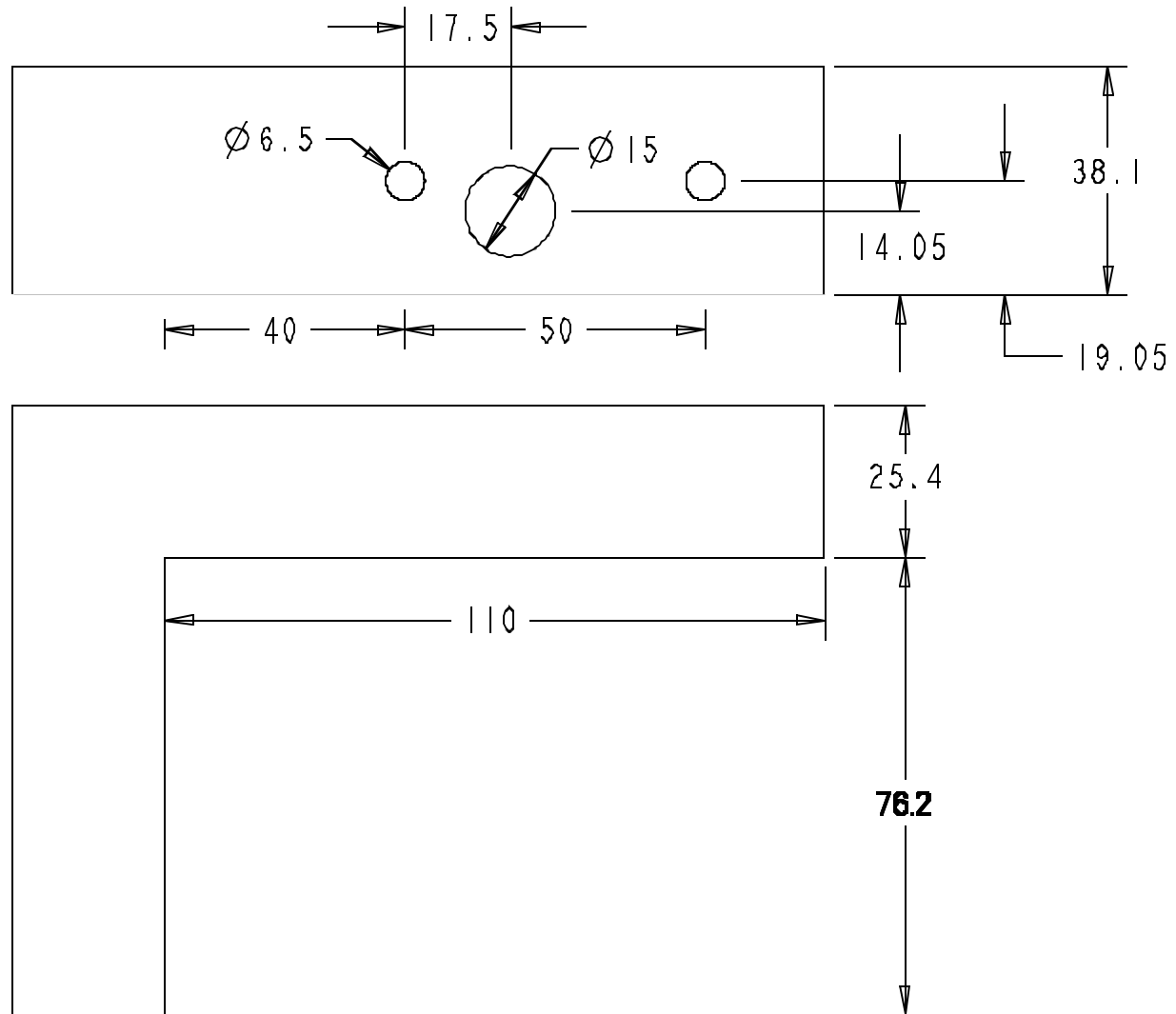


Fixture Block for Top
1.5" Aluminum Plate
all dimensions in mm

Axtrusion Top Fixturing Plate 3/4" Aluminum
 all dimensions in mm

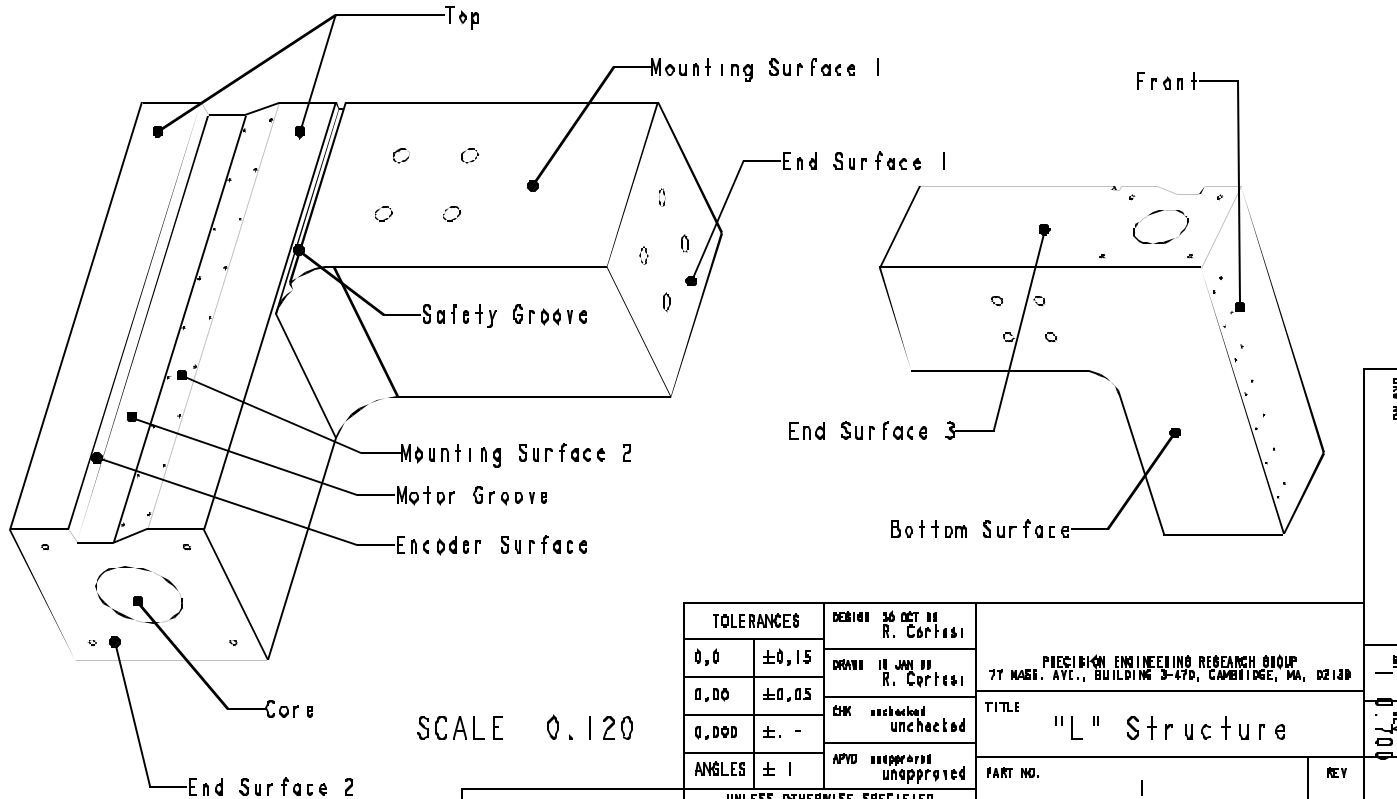


Fixture Block for the Front Face
 1.5" Aluminum Plate
 all dimensions in mm
 make a lefthand and righthand version



Surface and Groove Names

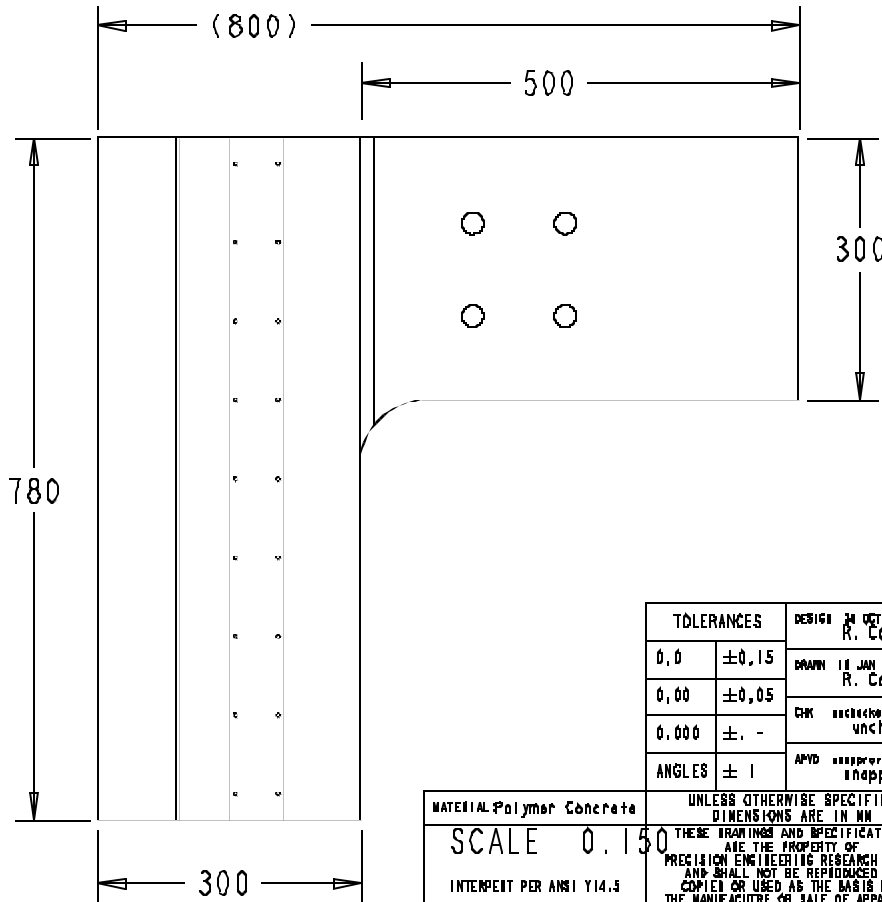
DIN NO.		1		REV	0.700	
ZONE	REV	SCR NO.	DESCRIPTION	BY	DATE	APPROVED
			NEW RELEASE			



SCALE 0.120

TOLERANCES		DESIGN 30 OCT 88 R. Cortesi	PRECISION ENGINEERING RESEARCH GROUP 77 MASS. AVE., BUILDING 3-470, CAMBRIDGE, MA, 02139	TITLE "L" Structure
0,0	±0,15	DRAWN 18 JAN 89 R. Cortesi		
0,00	±0,05	CHK unchecked unchecked		
0,000	±. -	APVD unapproved unapproved		
ANGLES	± 1		PART NO. 1	REV
MATERIAL: Polymer Concrete	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM		DRAWING NO. 1	REV 0.700
INTERPERT PER ANSI 114.5	THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF PRECISION ENGINEERING RESEARCH GROUP AND SHALL NOT BE REPRODUCED OR COPIED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS WITHOUT THE WRITTEN PERMISSION OF PRECISION ENGINEERING RESEARCH GROUP		PROJ/E DRAW FILE STRUCTURE_L	REV ***
CODE IDENT 31413	SIZE A	SCALE 0.075	SHEET 1 OF 1	

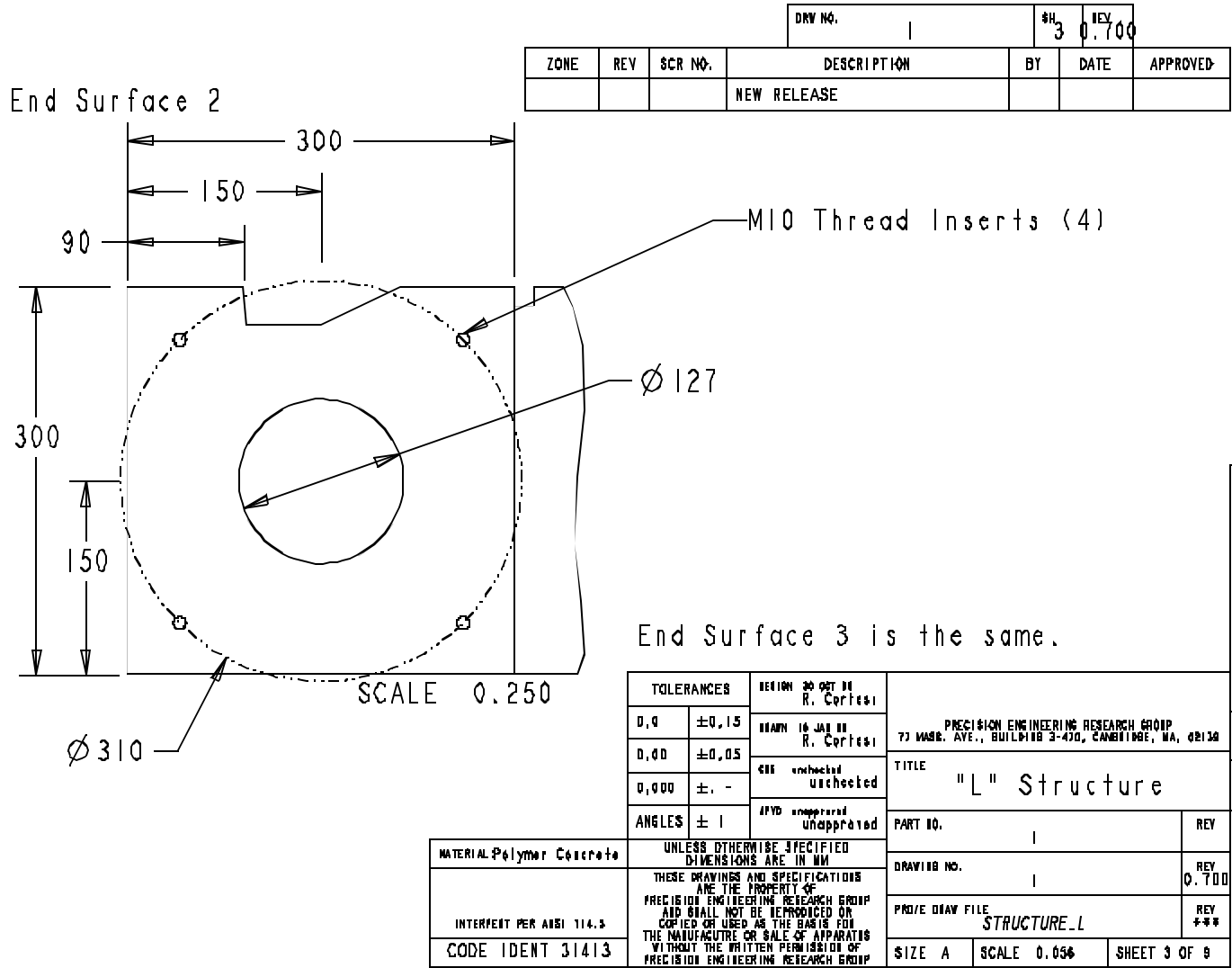
Overall Dimensions



DRAW NO. 1			REV 2	REV 0.700		
ZONE	REV	SCR NO.	DESCRIPTION	BY	DATE	APPROVED
			NEW RELEASE			

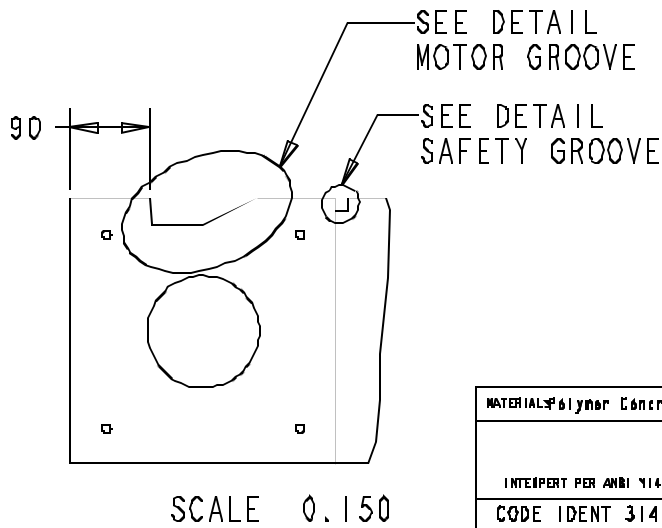
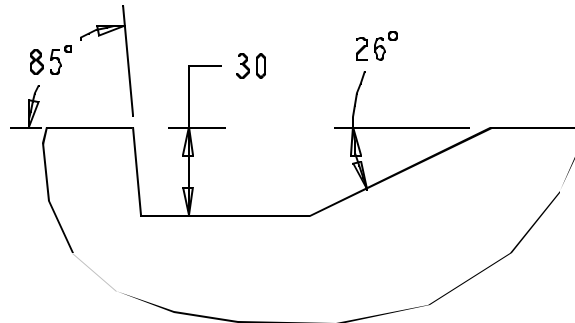
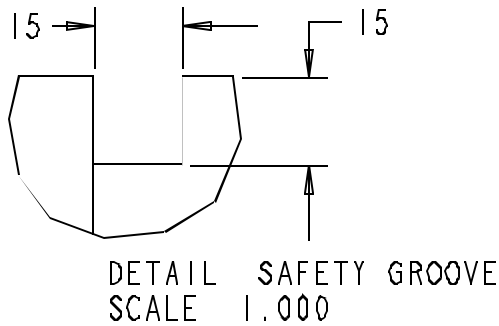
TOLERANCES		DESIGN 24 OCT 61 R. Cortesi	PRECISION ENGINEERING RESEARCH GROUP 77 MASS. AVE., BUILDING 3-470, CAMBRIDGE, MA, 02139	DRAWN 18 JAN 61 R. Cortesi	CHK unchecked unchecked	APVD unapproved unapproved	TITLE "L" Structure	
0,0	±0,15	PART NO. 1					REV	
0,00	±0,05	DRAWING NO. 1					REV 0.700	
0,000	±, -	PRO/E DRAW FILE STRUCTURE_L					REV ***	
ANGLES ± 1		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM		SIZE A		SCALE 0.05%	SHEET 2 OF 9	
MATERIAL Polymer Concrete		SCALE 0.150		INTERRUPT PER ANSI Y14.3		CODE IDENT 31413		DRAWING NO. 1 REV 0.700
PRECISION ENGINEERING RESEARCH GROUP AND SHALL NOT BE REPRODUCED OR COPIED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS WITHOUT THE WRITTEN PERMISSION OF PRECISION ENGINEERING RESEARCH GROUP								

DRAWING NO. 1
REV 0.700



Groove Dimensions

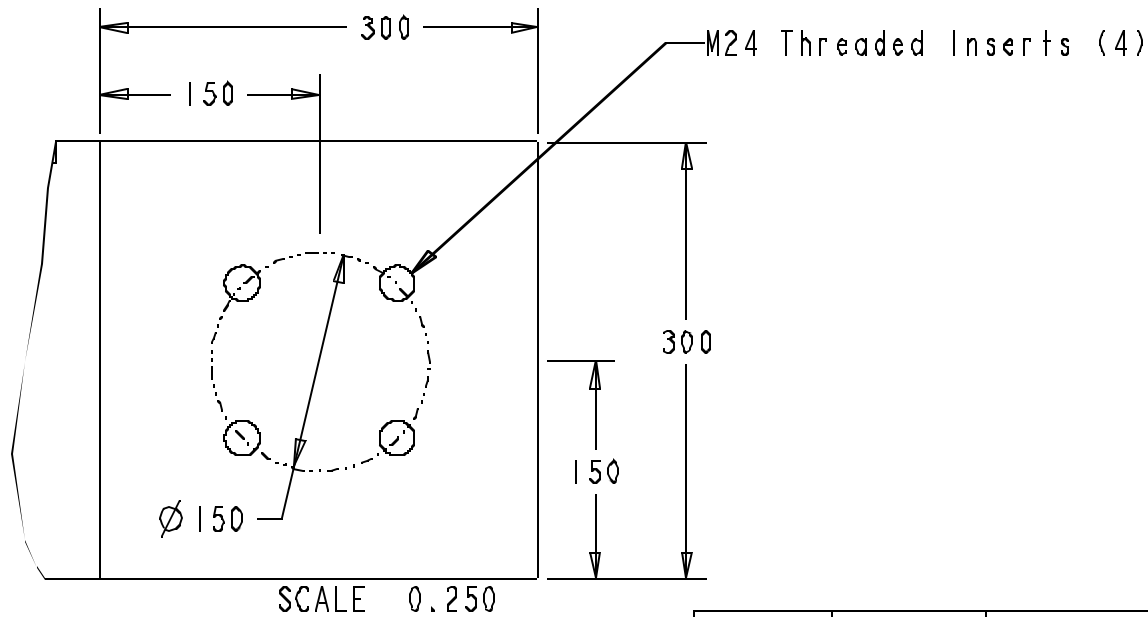
DRW NO. 1			REV 4	REV 0.700		
ZONE	REV	SCR NO.	DESCRIPTION	BY	DATE	APPROVED
			NEW RELEASE			



TOLERANCES 0.0 ±0.15 0.00 ±0.05 0.000 ±. - ANGLES ± 1	DESIGN 30 OCT 68	PRECISION ENGINEERING RESEARCH GROUP 77 MASS. AVE., BUILDING 3-470, CAMBRIDGE, MA, 02138 TITLE "L" Structure PART NO. 1 DRAWING NO. 1 PROJ/ENGINEERING FILE STRUCTURE_L SIZE A SCALE 0.05# SHEET 4 OF 9
	DRAWN 18 JAN 69	
	CHK uncheck'd	
	APV'd unapproved	
MATERIAL: Polymer Concrete INTERPRET PER ANSI Y14.5 CODE IDENT 31413	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF PRECISION ENGINEERING RESEARCH GROUP AND SHALL NOT BE REPRODUCED OR COPIED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS WITHOUT THE WRITTEN PERMISSION OF PRECISION ENGINEERING RESEARCH GROUP	REV 4 0.700 REV ***

01 AND
 7
 0.700

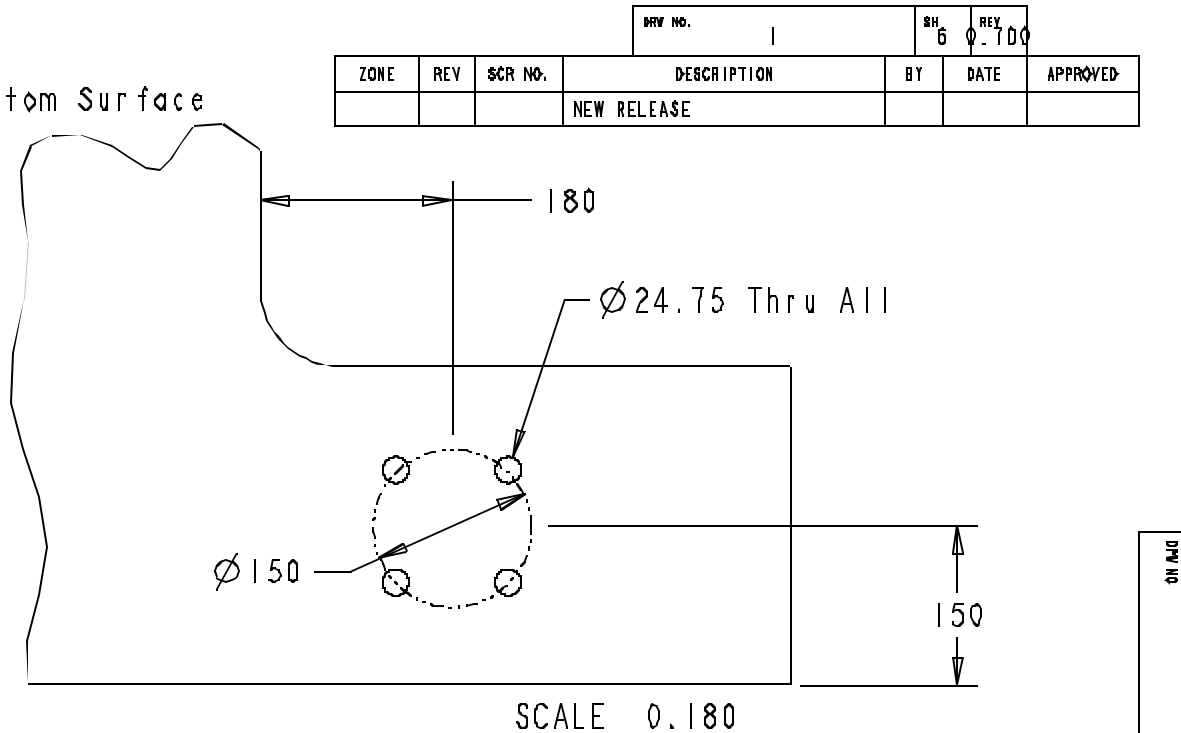
End Surface I Dimensions



DWG NO.		1		SH	REV	0.700
ZONE	REV	SCR NO.	DESCRIPTION	BY	DATE	APPROVED
			NEW RELEASE			

TOLERANCES		DESIGN BY R. Corfasi	PRECISION ENGINEERING RESEARCH GROUP 77 MASS. AVE., BUILDING 3-470, CAMBRIDGE, MA. 02139	SH REV 0.700	
0.0	±0.15	DRAWN BY R. Corfasi			TITLE "L" Structure
0.00	±0.05	CHK uncheckd uncheckd			FACT NO. 1
0.000	±. -	APPD unapproved unapproved			REV 0.700
ANGLES	± 1	DRAWING NO. 1			
MATERIAL: Polymer Concrete	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM		PRO/E DRAW FILE STRUCTURE.L	REV 0.700	
INTERPRET PER ANSI Y14.5	THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF PRECISION ENGINEERING RESEARCH GROUP AND SHALL NOT BE REPRODUCED OR COPIED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS WITHOUT THE WRITTEN PERMISSION OF PRECISION ENGINEERING RESEARCH GROUP		SIZE A	SCALE 0.056	
CODE IDENT 31413			SHEET 5 OF 9		

Holes in Bottom Surface

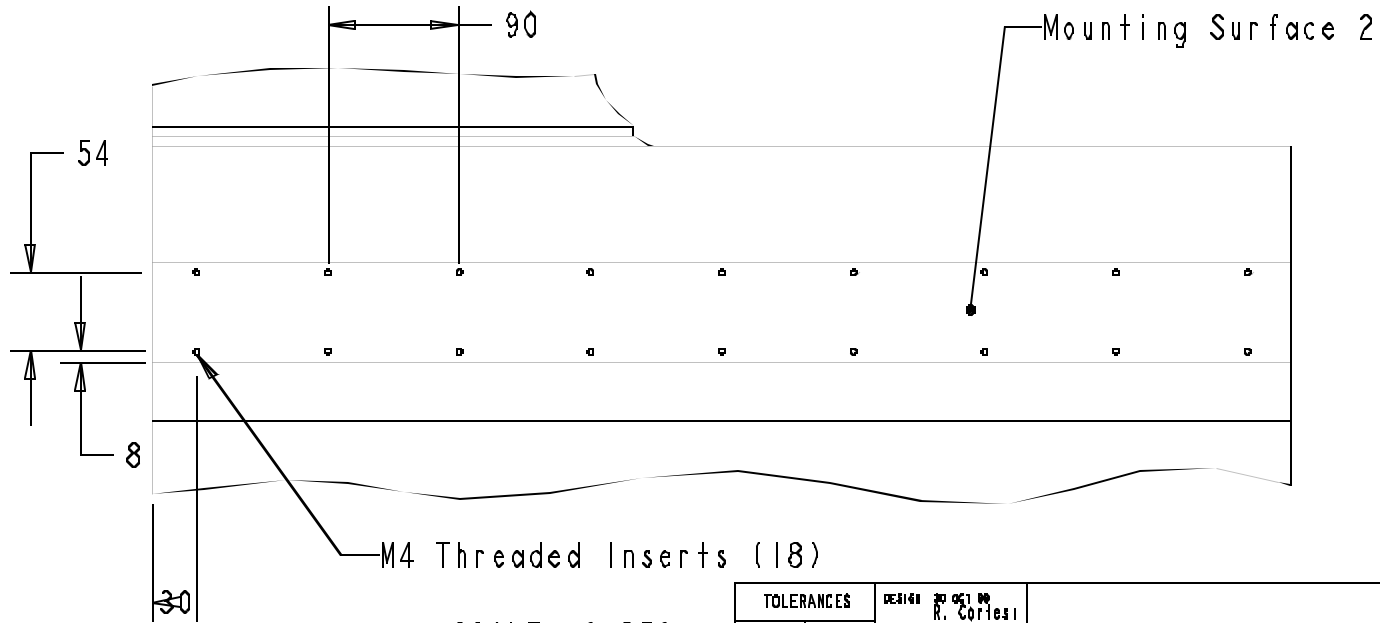


DRW NO. 1			SH 6	REV 0.100		
ZONE	REV	SCR NO.	DESCRIPTION	BY	DATE	APPROVED
			NEW RELEASE			

TOLERANCES D, D ±0,15 D, DD ±0,05 D, DDD ±. - ANGLES ± 1		DESIGN 30 OCT 88 R. Cortesi DRAWN 18 JAN 88 R. Cortesi CHK unchecked unchecked APVD unapproved unapproved	PRECISION ENGINEERING RESEARCH GROUP 77 MASS. AVE., BUILDING 3-414, CAMBRIDGE, MA, 02138 TITLE "L" Structure PART NO. 1 DRAWING NO. 1 PROJ/ DRAW FILE STRUCTURE.L SIZE A SCALE 0.036 SHEET 6 OF 9	DRW NO. 108 SH 6 REV 0.100
MATERIAL: Polymer Concrete INTERPRET PER ANSI Y14.3 CODE IDENT 31413	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF PRECISION ENGINEERING RESEARCH GROUP AND SHALL NOT BE REPRODUCED OR COPIED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS WITHOUT THE WRITTEN PERMISSION OF PRECISION ENGINEERING RESEARCH GROUP			REY 0.100 REY Admrcy

Insert Location
on Mounting Surface 2

DRW NO. 1			SH 7	REV 0.700		
ZONE	REV	SCR NO.	DESCRIPTION	BY	DATE	APPROVED
			NEW RELEASE			

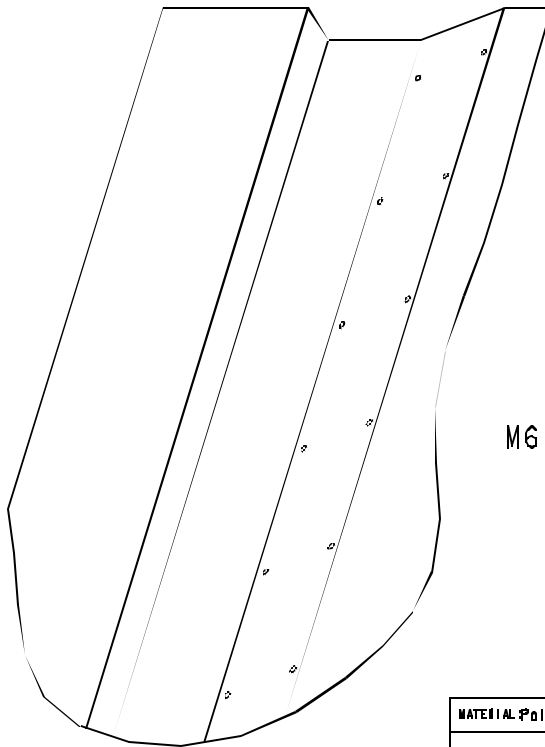


SCALE 0.250

TOLERANCES 0.0 ±0.15 0.00 ±0.05 0.000 ±. - ANGLES ± 1	DESIGN BY R. Corleai	PRECISION ENGINEERING RESEARCH GROUP 17 MASS. AVE., BUILDING 3-470, CAMBRIDGE, MA. 02138 TITLE "L" Structure PART NO. 1 DRAWING NO. 1 PROJ/ DRAW FILE STRUCTURE_L SIZE A SCALE 0.050 SHEET 7 OF 9	SH 7
	DRAWN BY R. Corleai		REV 0.700
	CHK checked		
	APVA unapproved		
MATERIAL: Polymer Concrete UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF PRECISION ENGINEERING RESEARCH GROUP AND SHALL NOT BE REPRODUCED OR COPIED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS WITHOUT THE WRITTEN PERMISSION OF PRECISION ENGINEERING RESEARCH GROUP INTERPRET PER ANSI 114.5 CODE IDENT 31413			

Insert Location
on Encoder Surface

DIN NO.		1		SH	REV	0.700
ZONE	REV	SCR NO.	DESCRIPTION	BY	DATE	APPROVED
			NEW RELEASE			



M6 Threaded Inserts (2)

SCALE 0.300

TOLERANCES		DESIGN BY OCT 81 R. Corliss	PRECISION ENGINEERING RESEARCH GROUP 27 WASH. AVE., BUILDING 3-470, CAMBRIDGE, MA. 02138
0,0	±0,15	DRAWN 18 JAN 82 R. Corliss	
0,00	±0,05	CHK un-checked un-checked	
0,000	±, -	APPD un-approved un-approved	
ANGLES	± 1		TITLE "L" Structure
MATERIAL Polymer Concrete	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM		PART NO. 1
	THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF PRECISION ENGINEERING RESEARCH GROUP AND SHALL NOT BE REPRODUCED OR COPIED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS WITHOUT THE WRITTEN PERMISSION OF PRECISION ENGINEERING RESEARCH GROUP		DRAWING NO. 1
INTERPRET PER ANSI Y14.3			PRO/E DRAW FILE STRUCTURE_L
CODE IDENT 31413			SIZE A SCALE 0.056 SHEET 8 OF 9

ON MIC

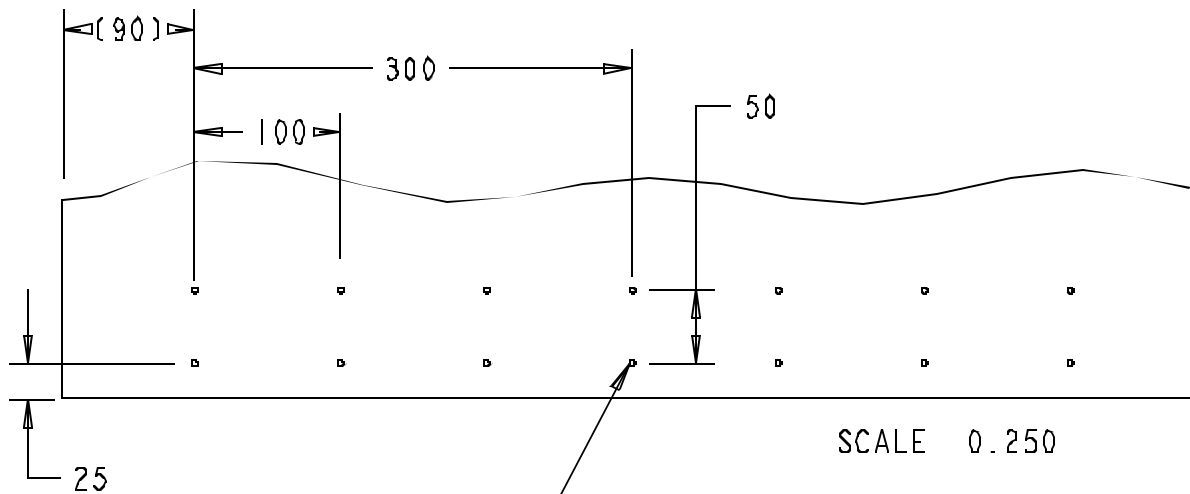
SH

REV

0.700

			DWG NO.	1	REV	9	0.700
ZONE	REV	SCR NO.	DESCRIPTION		BY	DATE	APPROVED
			NEW RELEASE				

Insert Location for Hardware Mounting



SCALE 0.250

M4 Threaded Insert (14)

TOLERANCES 0,0 ±0,15 0,00 ±0,05 0,000 ±. - ANGLES ± 1		DESIGN BY R. Cortesi DRAWN BY R. Cortesi CHK un-checked un-checked APVD un-approved un-approved	PRECISION ENGINEERING RESEARCH GROUP 77 MARI AVE., BUILDING 3-470, CAMBRIDGE, MA, 02139 TITLE "L" Structure PART NO. 1 REV DRAWING NO. 1 REV 0.700 PROJ/E DRAW FILE STRUCTURE_L REV & p d m r e v
MATERIAL Polymer Concrete INTERPRET PER ANSI Y14.3 CODE IDENT 31413	UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF PRECISION ENGINEERING RESEARCH GROUP AND SHALL NOT BE REPRODUCED OR COPIED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS WITHOUT THE WRITTEN PERMISSION OF PRECISION ENGINEERING RESEARCH GROUP		SIZE A SCALE 0.056 SHEET 9 OF 9

DWG NO.	1
REV	9
0.700	

