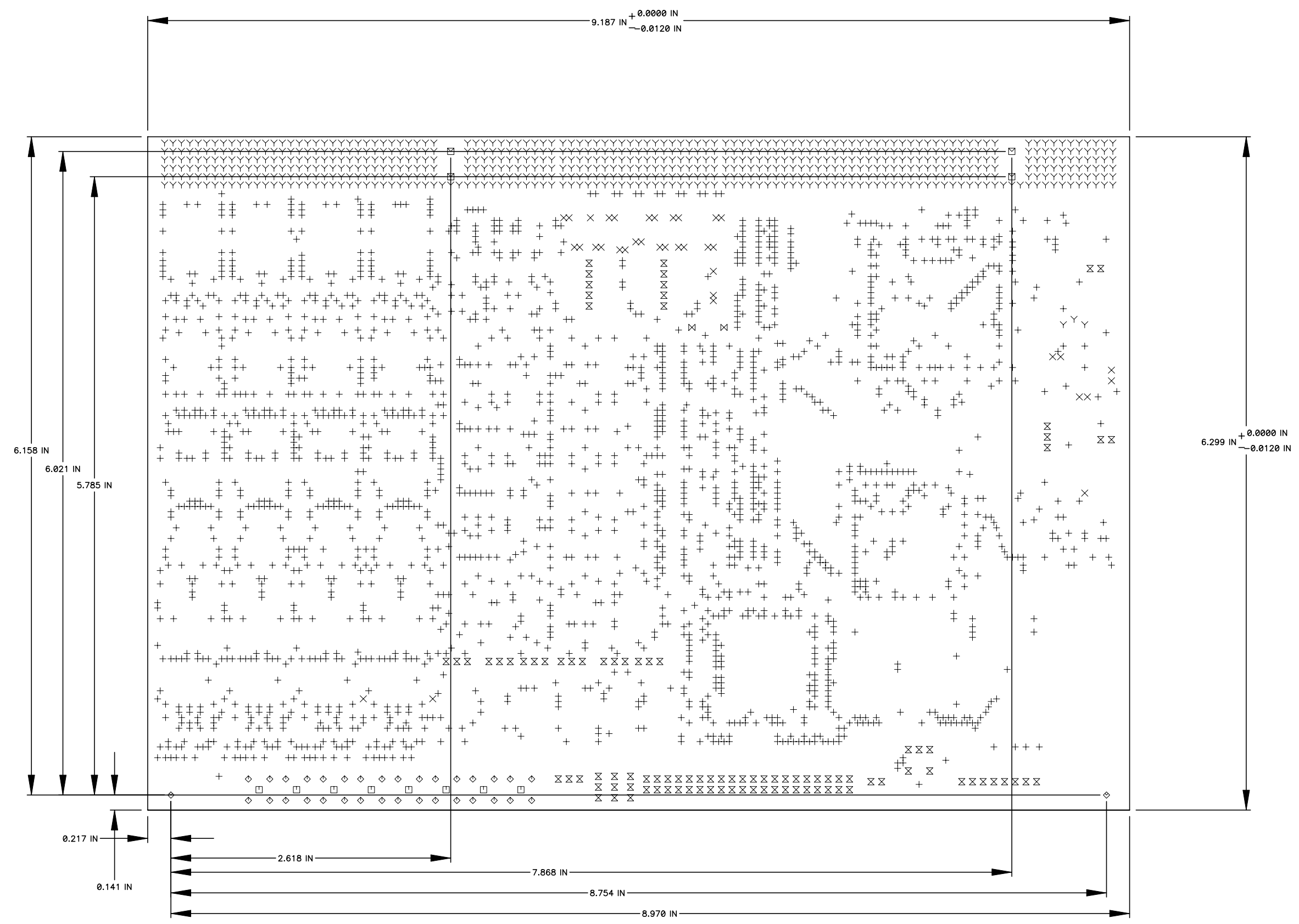


REVISIONS

ZONE	LTR	REVISIONS	ECR	DATE	BY	APRV
	-1	changed copper weight on layers 2 and 9 to 1/2 oz	devel	29mar04	dms	
	A	major revision. see ECO document for details.	MNSN-010B	11may05	dms	p.moore
	B	Change value of R and add R to integrator stage, clear space for PCB stabilizer. Move J6 and assoc. R back as far as possible	MNSN-0109	14sep05	dms	p.moore



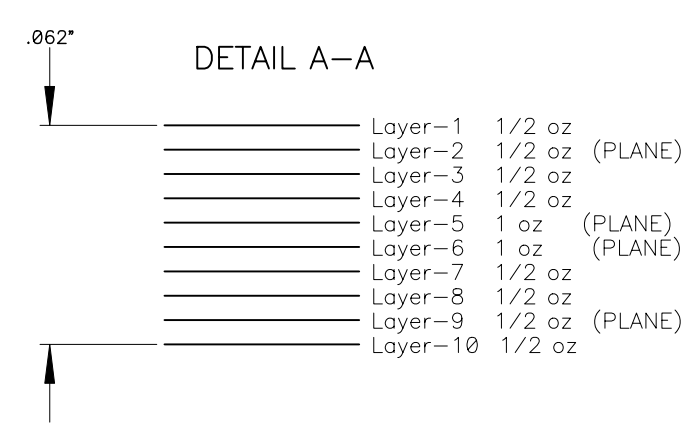
NOTES: unless otherwise specified

- 1.0 Applicable documents
The following items are required:
PATTERN FILM DWG # MNSN-EL-04-3002
DETAIL DRAWING DWG # MNSN-EL-04-1002 THIS DOCUMENT
- 2.0 BASE MATERIAL
2.1 Laminate base material shall be natural color, FR-4 or equivalent.
See Detail A-A for layer to layer specification and overall thickness.
- 2.2 B-Stage shall be selected at vendors discretion to meet over all board thickness and end item requirements.
- 3.0 COPPER PLATING
3.1 Copper plating shall have a minimum purity of 99.5 percent and a minimum thickness of .001 inch. This also applies to the plating in the holes.
- 4.0 SOLDERMASK
4.1 Apply LPI Green soldermask over bare copper according to the soldermask pattern file per IPC-SM-840.
- 5.0 FINISH
5.1 SMOBC, all exposed metal shall be coated in molten solder and hot air leveled, (HASL).
- 6.0 SILK SCREEN
6.1 Silk screen top (-1) and bottom (-10) side of board using white epoxy ink according to the -1S pattern film and the -10S pattern film.
Ink shall not cover any exposed metal.
- 7.0 DIMENSIONS
7.1 All dimensions are in inches.
7.2 Unless otherwise specified all hole sizes apply after plating.
Hole sizes are shown in the drill schedule.
- 8.0 TOLERANCES
8.1 Hole size tolerance +- .003 after plating unless otherwise specified.
8.2 Conductor widths and spacing shall be within 20% of the artwork originals.
8.3 Layer to layer registration shall be .007 inches of true position
8.4 Board dimensions shall meet the requirements of the board drawing.
8.5 Warp and twist shall not exceed that defined in IPC-A-600.
- 9.0 APPEARANCE
9.1 All inside and outside corners shall have a maximum radius of .065
9.2 Remove all burrs and smooth sharp edges to .010 max.

APPROVED FOR CONSTRUCTION 09-14-05 dms

VENDOR NOTE: NOTIFY US OF ANY CONFLICTING REQUIREMENTS OR IF BOARDS CANNOT BE MANUFACTURED TO MEET THE ABOVE REQUIREMENTS, DUE TO VENDORS PROCESS AND/OR TECHNIQUES OR BECAUSE PHOTO TOOLS AND/OR SPECIFICATIONS ARE INADEQUATE.

Hole Dia (inch)	Symbol	Quantity	Plated
0.013	+	2260	Yes
0.018	X	37	Yes
0.025	Y	651	Yes
0.041	Z	102	Yes
0.047	M	2	Yes
0.052	□	8	Yes
0.072	◇	32	Yes
0.080	⊠	4	No
0.110	◇	2	No



Modified Date: Tue Sep 20, 2005
Print Date: Tue Sep 20, 2005

QTY REQ'D	PART OR IDENTIFYING NO	ITEM DESCRIPTION		ITEM NO
TOLERANCES UNLESS OTHERWISE NOTED		NATIONAL OPTICAL ASTRONOMY OBSERVATORIES		
.XX ± .03 ANGULAR		OPERATED BY THE		
.XXX ± .010 ±.5°		ASSOCIATION OF UNIVERSITIES FOR RESEARCH IN ASTRONOMY		
THIRD ANGLE PROJECTION		UNDER COOPERATIVE AGREEMENT WITH		
NATIONAL SCIENCE FOUNDATION		NATIONAL SCIENCE FOUNDATION		
DO NOT SCALE DRAWING		NAME	USED ON	REF
NEXT ASSEMBLY		MONSOON		
REFER TO SCHEMATIC		DWG SIZE		REV
MNSN-EL-04-0002		C		B
MNSN-EL-04-2002		MNSN-EL-04-1002		
SCALE: FULL	DESIGNED BY G. RAHMER	DATE 02SEP03	CHECKED BY	DATE
DWG PRODUCED USING PCAD2004	DRAWN BY Dee Stover	DATE 07MAR04	APPROVED BY	DATE
DWG NO MNSN-EL-04-1002		RELEASED		
SHEET 1 OF 1				