

REVISIONS				
REV	ECO	CHANGE DESCRIPTION	DOC	RLSD DATE
D	MN51459	PCB changed to Rev B. Wider pads for Tanulum caps.C401 is masked over.	EG	3-15-17
C	MN49709	Add laser excise for China to cut out circuits from panel. Remove stencil opening from C401.	DSA	08-23-16

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FOLDED ASSEMBLY:
Sheet 1 Top, Bottom, Side Views with Dimensions & Tolerances

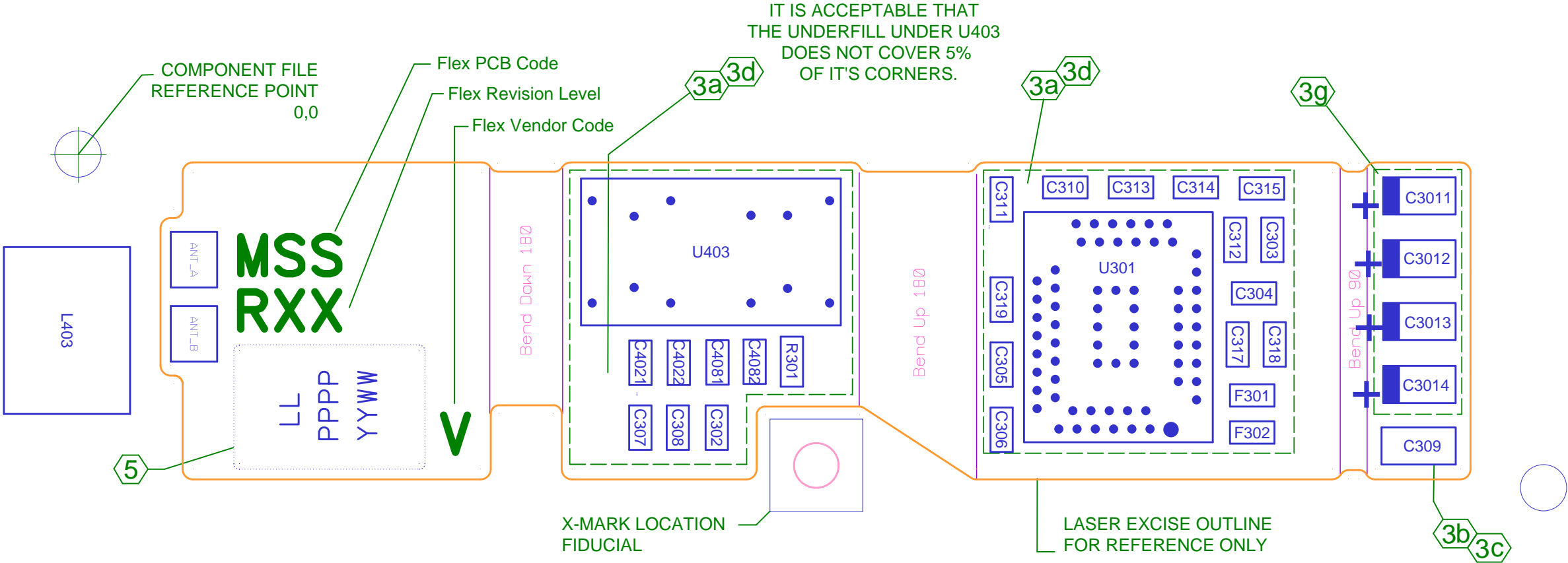
FLAT ASSEMBLY:
Sheet 2 Assembly Top
Sheet 3 Flux Top
Sheet 4 Stencil Top
Sheet 5 Assembly Bottom
Sheet 6 Flux Bottom
Sheet 7 Stencil Bottom

LASER EXCISE SPECIFICATIONS:
Sheet 8 Excise Gerber
Sheet 9 Excise Quality and Packaging

FOLDED ASSEMBLY NOTES:
1. FOLDED ASSEMBLY SHOWN WITH NOMINAL DIMENSIONS.

MATERIAL:	TOLERANCE UNLESS OTHERWISE SPECIFIED INCHES [MM] X.X +/- 0.020 [0.51] X.XX +/- 0.010 [0.25] X.XXX +/- 0.005 [0.13] X.XXXX +/- 0.0010 [0.025]			6600 Washington Ave. South Eden Prairie, MN. 55344 tel. (952) 941-6401 www.Starkey.com	
FINISH:	BY	SIGNATURE	DATE	TITLE: MSS HA ASSY DWG	
	DRFT	Thomas Bartosh	3-07-17	SIZE: B	PCB CODE: MSS
	CHKD	Glenn Burnside	3-07-17	PART NUMBER: 53160D000	REV: D
	ENGR	Kristi Khondkar	3-14-17	SCALE: NTS	
	QLTY	Greg Zhang	3-14-17	SHEET NO.: 1 OF 9	

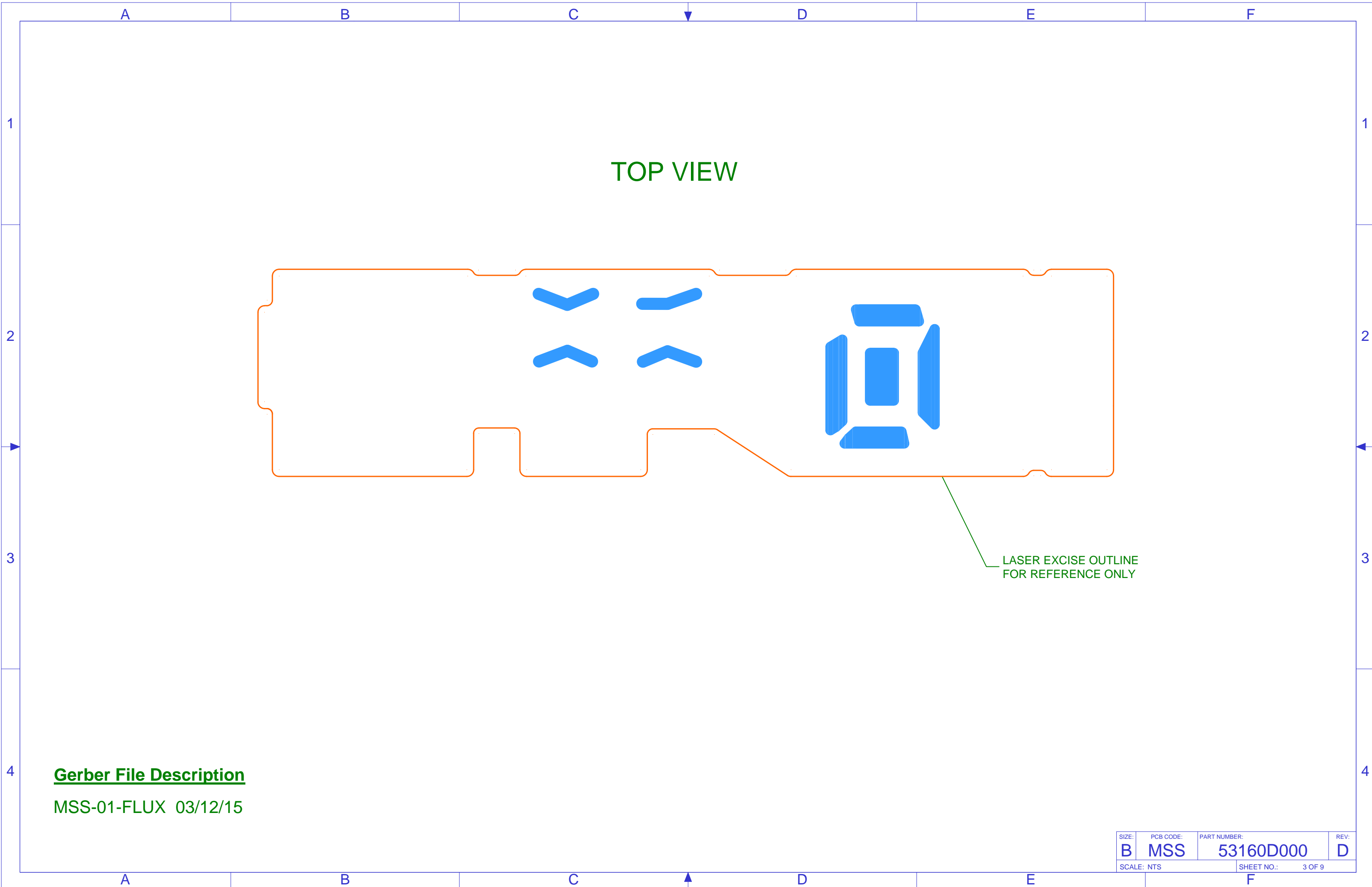
FLAT SMD ASSEMBLY TOP VIEW

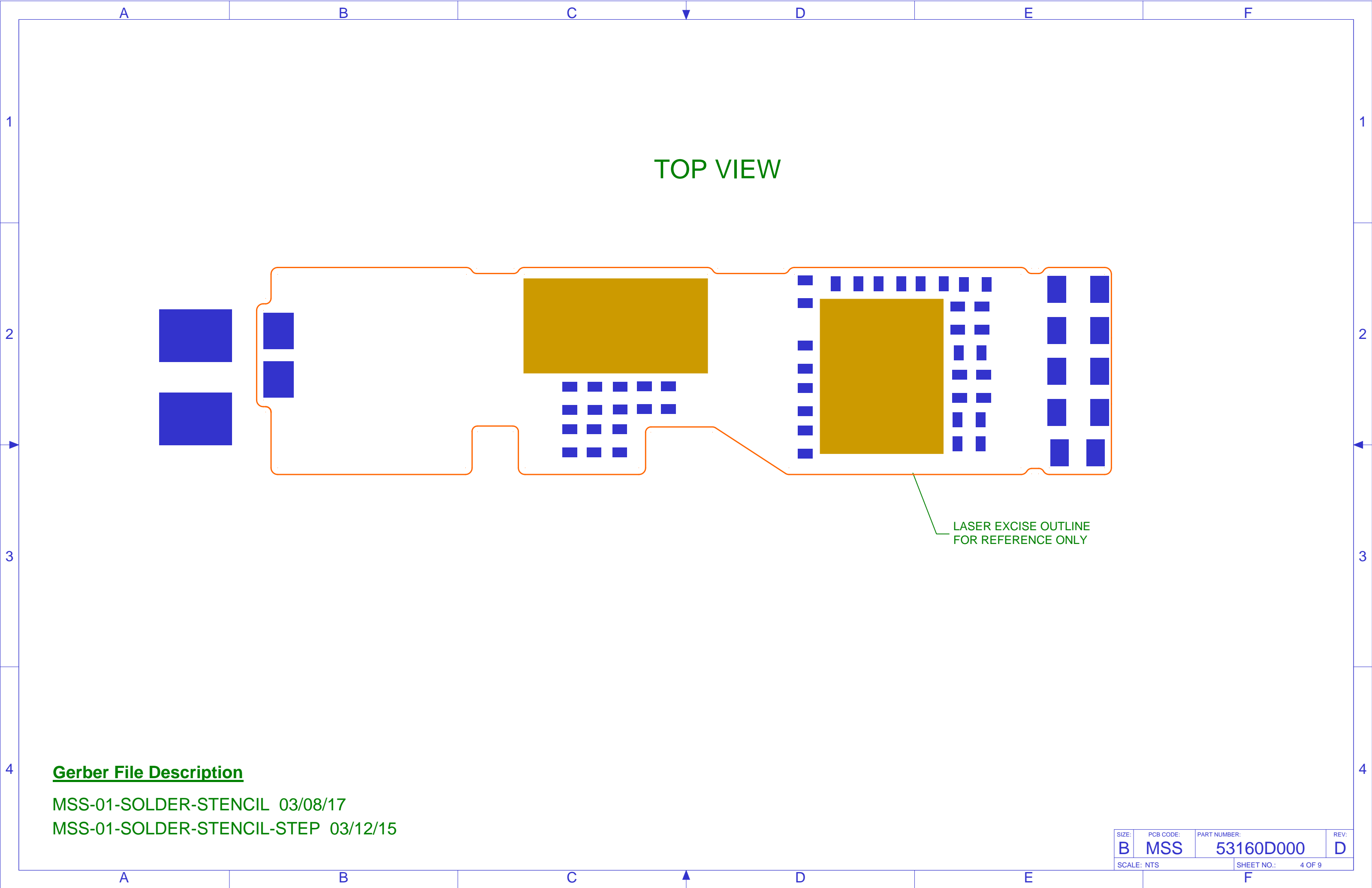


FLAT ASSEMBLY NOTES

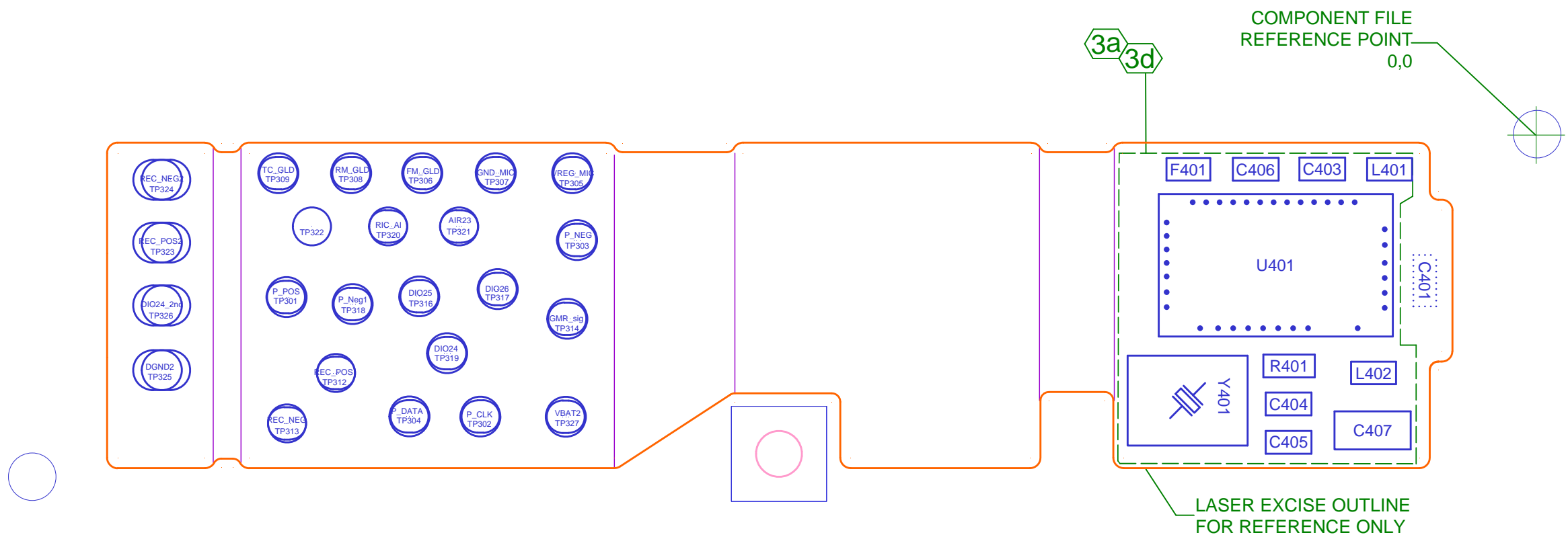
- SEE 53114-940 FOR SCHEMATIC.
- INDIVIDUAL LAYERS AND GERBER FILES ARE DETAILED ON SUBSEQUENT PAGES. ACTUAL GERBER FILES ARE HELD IN DOCUMENTATION SERVICES. GERBER FILES ARE IN A ZIPPED FILE WITH THE SAME PART NUMBER AND REV AS THE DOCUMENT EXCEPT WITH THE "ZIP" EXTENSION.
- UNDERFILL AND RESIDUE SHALL BE KEPT OFF THE TOP SURFACE OF ALL USER PADS AND TPs. NO UNDERFILL IS ALLOWED IN BEND AREAS BUT MAY BE WIPED OFF. OTHER AREAS WITH NO INDICATOR HAVE NO RESTRICTIONS. SEE 99008-169 FOR UNDERFILL INSPECTION CRITERIA. NOT ALL CONDITIONS APPLY TO THIS DRAWING.
 - REINFORCE COMPONENTS WITH UNDERFILL.
 - PARTIAL UNDERFILL IS ALLOWED BUT NOT REQUIRED.
 - UNDERFILL IS ALLOWED ON TOP.
 - WIPE EXCESS UNDERFILL FROM TOP.
 - COVER EXPOSED PADS WITH UNDERFILL.
 - DO NOT COVER EXPOSED PADS WITH UNDERFILL.
 - UNDERFILL IS NOT ALLOWED.

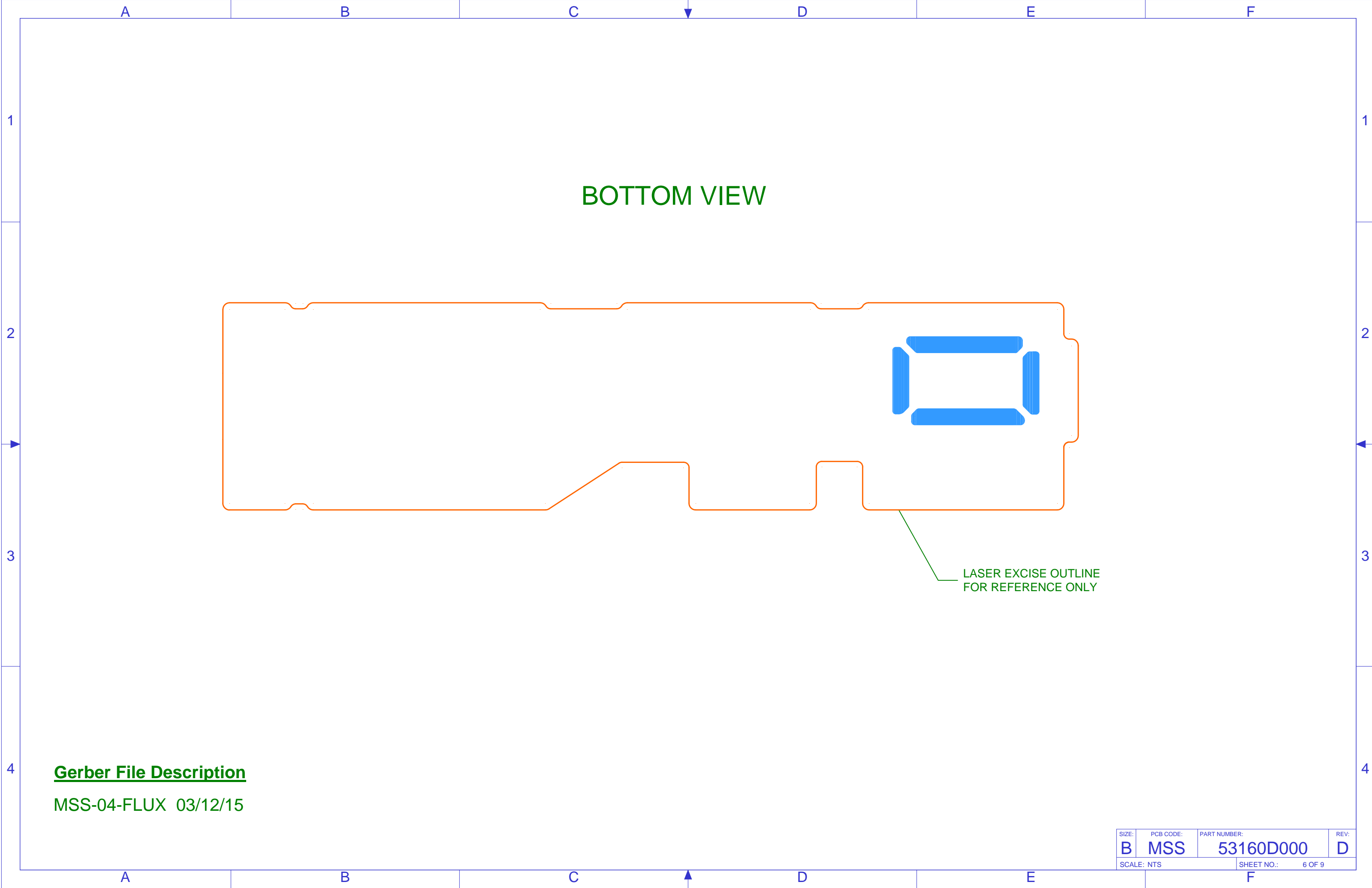
- DNP DETAILS:
 - 01 SIDE COMPONENTS: NONE
 - 04 SIDE COMPONENTS: C401
 - 01 SIDE FOOTPRINTS COVERED BY MASK: NONE
 - 04 SIDE FOOTPRINTS COVERED BY MASK: C401
- LASER DATE CODE IN THIS AREA WITH THE FOLLOWING:
 - LL=LOCATION ON PANEL
 - PPPP = PANEL NUMBER
 - YY = LAST 2 DIGITS OF YEAR
 - WW = WEEK





FLAT SMD ASSEMBLY BOTTOM VIEW





BOTTOM VIEW

LASER EXCISE OUTLINE
FOR REFERENCE ONLY

Gerber File Description
MSS-04-FLUX 03/12/15

SIZE:	PCB CODE:	PART NUMBER:	REV:
B	MSS	53160D000	D
SCALE: NTS		SHEET NO.:	6 OF 9

A

B

C

D

E

F

1

1

BOTTOM VIEW

2

2

3

3

Gerber File Description

MSS-04-SOLDER-STENCIL 03/08/17

MSS-04-SOLDER-STENCIL-STEP 03/12/15

LASER EXCISE OUTLINE
FOR REFERENCE ONLY

SIZE:	PCB CODE:	PART NUMBER:	REV:
B	MSS	53160D000	D
SCALE: NTS			SHEET NO.: 7 OF 9

A

B

C

D

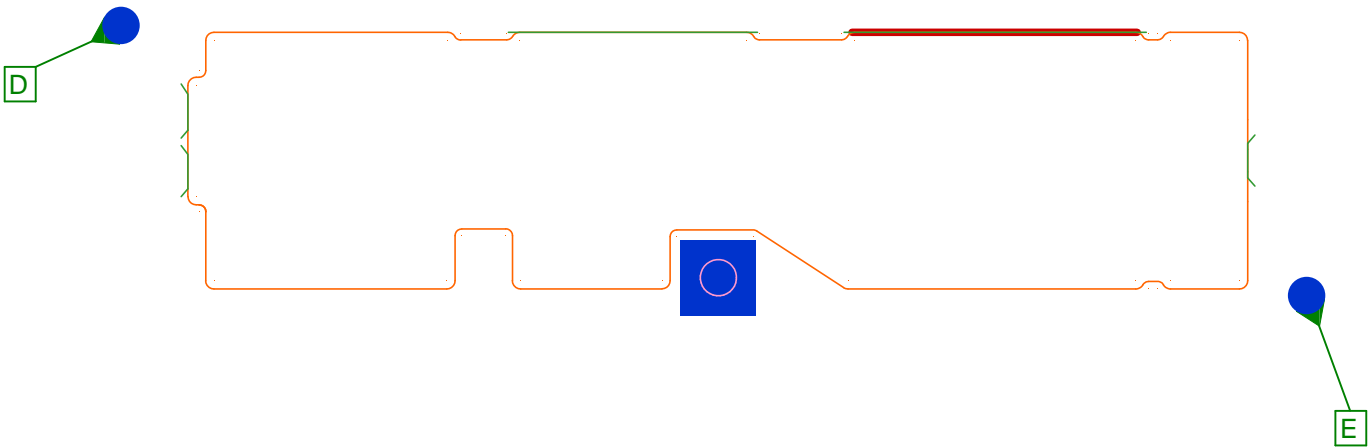
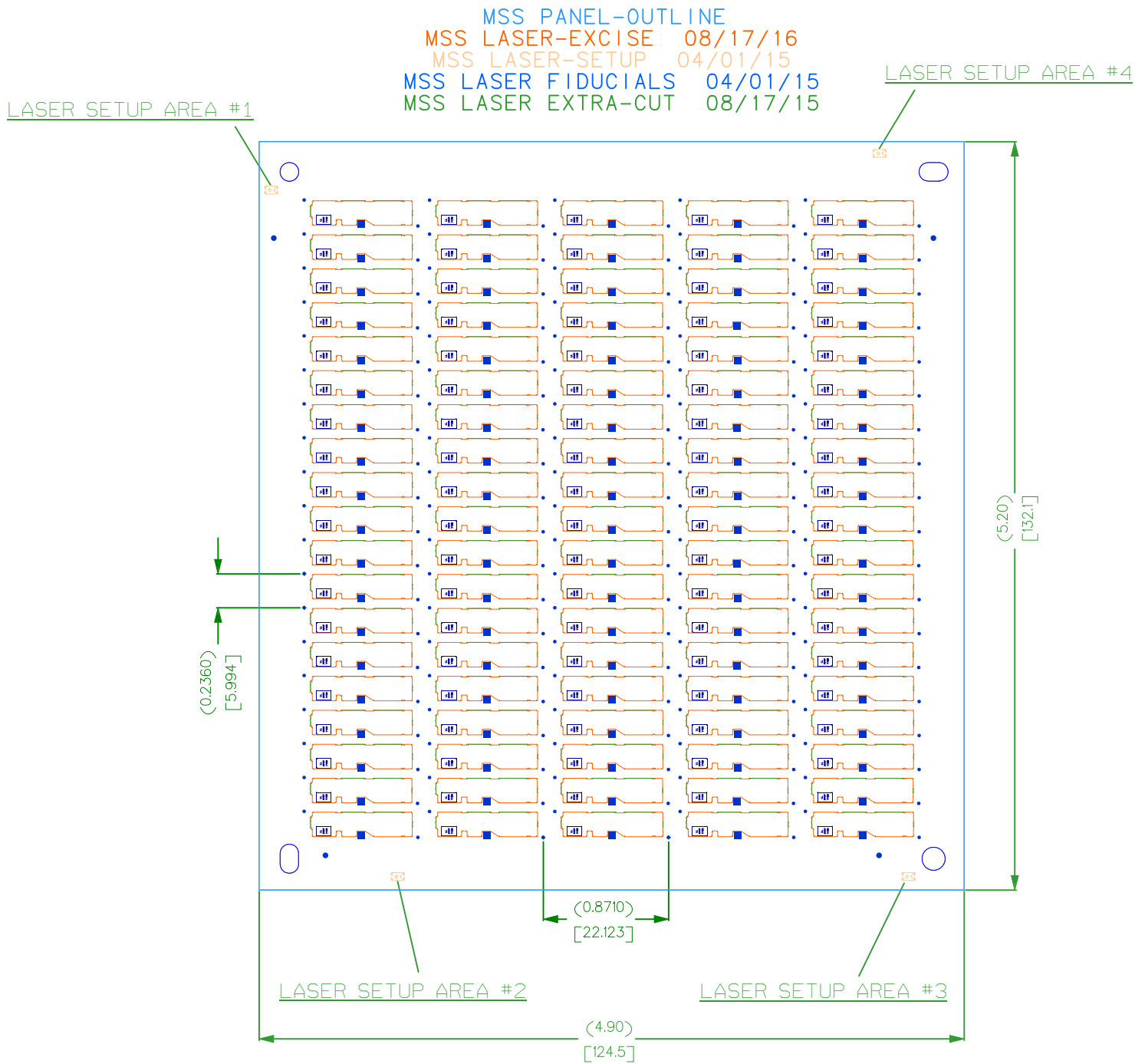
E

F

4

4

TOP VIEWS - Excise Gerber



LASER EXCISE SPECIFICATIONS: Excise Gerber

- INDIVIDUAL LAYERS AND GERBER FILES ARE DETAILED ON SUBSEQUENT PAGES.
ACTUAL GERBER FILES ARE HELD IN DOCUMENTATION SERVICES.
GERBER FILES ARE IN A ZIPPED FILE WITH THE SAME PART NUMBER
AND REV AS THE DOCUMENT EXCEPT WITH THE "ZIP" EXTENSION.
- ALL GERBER VIEWED FROM TOP LOOKING THROUGH BOARD FOR BOTTOM LAYERS
- DATUM A IS THE PLANE DEFINED BY THE BOTTOM OF THE PANEL DATUMS D AND E
ARE LOCAL FIDUCIALS THAT APPLY TO EACH AND EVERY CIRCUIT INDIVIDUALLY.
- LASER ROUTED EDGE:
 - CRITICAL AREAS: $\frac{1}{2}$.006 [.015] A D E
CRITICAL EDGES, IF PRESENT, WILL BE DISPLAYED BY A WIDER RED LINE.
 - NON-CRITICAL AREAS: $\frac{1}{2}$.008 [.020] A D E
 - LASER EXCISE GERBER AND EXTRA CUT GERBER ARE COMPENSATED FOR 1-MIL KERF.

The diagram is a logic puzzle layout. On the left, there is a large empty rectangle. To its right is a vertical stack of two small empty rectangles. Further right is a 3x3 grid of dots. Below this grid is a 2x4 grid of empty rectangles. To the right of the 3x3 grid is a large 10x10 grid of dots. To the right of the 10x10 grid is a vertical stack of four small empty rectangles. On the far right, there are four rows, each starting with a plus sign followed by a small blue square and then an empty rectangle. The entire diagram is enclosed in a blue border.

LASER EXCISE SPECIFICATIONS: Excise Quality and Packaging

- a. LASER KERF EDGE SHALL BE SMOOTH.
- b. LASER MUST COMPLETELY CUT THROUGH PCB MATERIAL.
- c. EXCESSIVE LASER DEBRIS ALONG CUT LINE IS NOT ALLOWED.
LASER DEBRIS SHALL NOT INHIBIT THE SOLDERABILITY OF GOLD PLATED PADS.
- d. PARTS SHALL BE PROTECTED FROM DAMAGE DUE TO HANDLING,
ELECTROSTATIC DISCHARGE, OR EXCESSIVE HUMIDITY.
- e. NO CHEMICAL, AQUEOUS OR PLASMA CLEANING IS ALLOWED WITHOUT STARKEY APPROVAL.
- f. NO REWORK IS ALLOWED WITHOUT STARKEY APPROVAL.

- a. PARTS TO BE DELIVERED IN ARRAY
- b. PACKAGE TO SHIP AS RECEIVED: ON PALLET 53160-986, IN SAME CASSETTE, IN SAME BOX.
- c. THE ADDITION OF A DESICCANT SACHET AND A MOISTURE INDICATOR IS REQUIRED.

SIZE: B	PCB CODE: MSS	PART NUMBER: 53160D000	REV: D
SCALE: NTS		SHEET NO.: 9 OF 9	