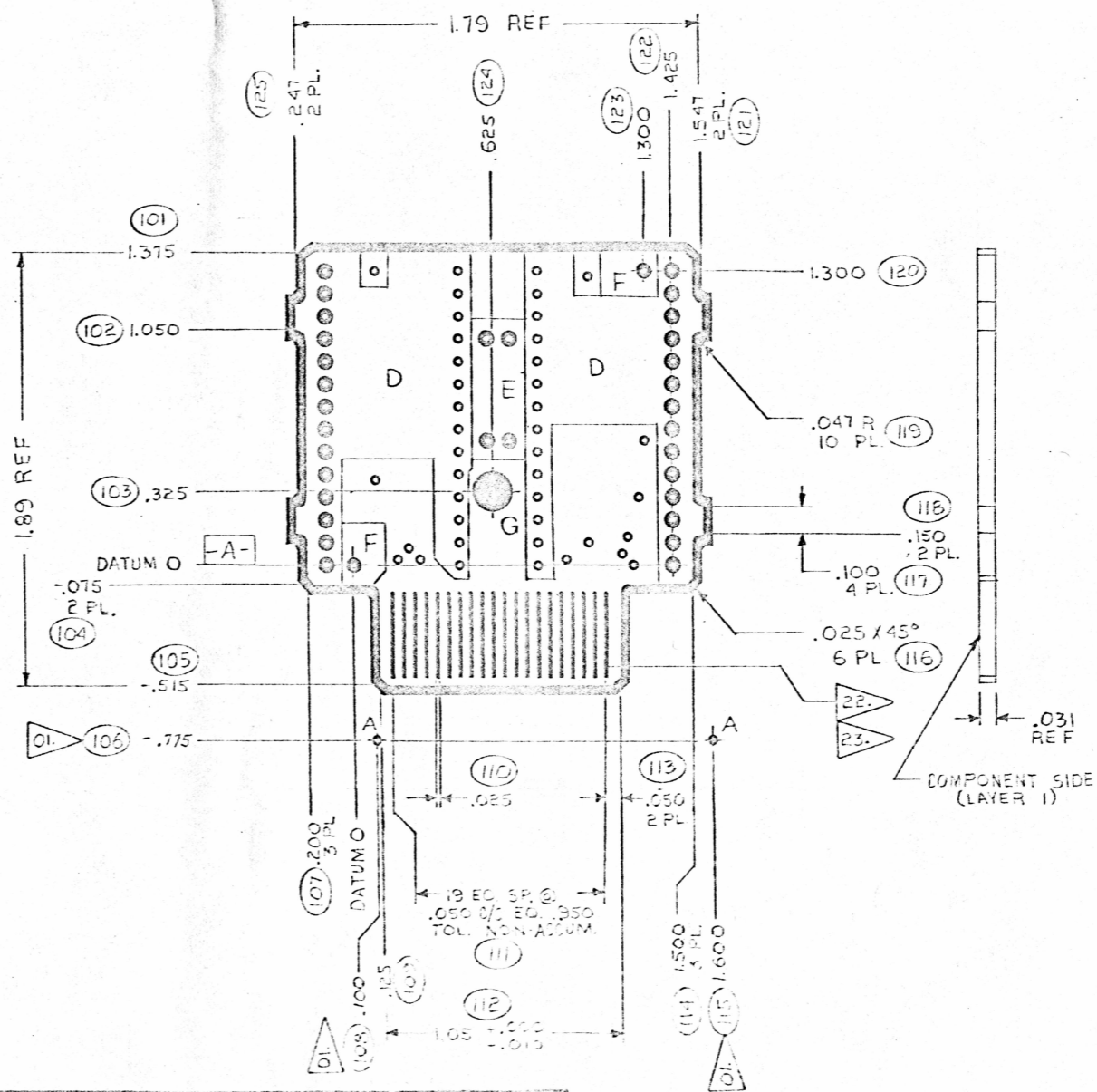


NOTES: UNLESS OTHERWISE SPECIFIED

01. EXTERNAL TOOLING HOLE DIMENSIONS.
02. MINIMUM ANNULAR RING .001 EXCEPT BREAK OUT PERMITTED ON TRIMMED PADS.
03. MAX. INTERNAL RADIUS .062 MAX. EXTERNAL RADIUS .063
04. NO DEBURR REQUIRED.
05. CRAZING AND DELAMINATION WITHIN A MAX. OF .030 BOARD PERIMETER SHALL BE ACCEPTABLE.
06. HOLE LOCATION ~~(C) A, B, D, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25~~ OR ~~(C) A, B, D, 10, 11, 12, 13~~ IN INCH.
07. ALL HOLES NOT DIMENSIONED ARE ON .025 INCH GRID INCREMENTS IN RELATION TO DATUM O.
08. DECIMAL HOLE DIAMETERS AND HOLE TOLERANCES GOVERN HOLE SIZE. ~~NUMBERS IN PARENTHESES ARE FOR REFERENCE ONLY.~~
09. FINISHED ARTWORK CONDUCTOR WIDTH AND SPACING TO BE $.012 \pm .004$
10. BOARD WARP OR TWIST SHALL NOT EXCEED .020 INCH PER INCH LENGTHWISE AND SHALL NOT EXCEED .018 INCH PER INCH CROSSWISE.
11. NO CLEARANCE REQUIRED FROM CONDUCTOR TO EDGE OF BOARD AND SLOTS.
12. MATERIAL SHALL BE $.031$ THK NEMA GRADE FR-4 OR G-10 WITH ONE .02 COPPER BOTH SIDES.
13. PROCESSES: TIN LEAD 60/40 PLATE, .0003 THK MIN, PER QQ-5-571 "REFLOWED" BEFORE SOLDER MASK IS APPLIED.
14. SOLDER MASK SHALL BE SCREENED ON BOTH SIDES USING PC 401 OR APPROVED EQUIVALENT. COLOR TO BE GREEN.
15. SOLDER MASK IS PERMITTED TO BLEED ON PADS OF CONDUCTOR SIDE WHERE PADS ARE TRIMMED AND ON COMPONENT SIDE OF BOARD.
16. MARK PER ANS-I Y32-18-1958 METHOD SILK SCREEN HEIGHT PER ARTWORK PROVIDED. COLOR CONTRASTING (F100, METHOD 1, CLASS 1).
17. REGISTRATION MARKS TO BE USED FOR POSITIONING MARKING AT HOLES SHOWN.
18. THIS PWB IS AN UL RECOGNIZED COMPONENT AND SUCH AS MUST DISPLAY THE VENDORS MARK RECOGNIZED BY UL IN THE AREA OF THE PWB INDICATED.
19. SOLDER MASK ALLOWED TO BLEED A MAX. OF .005 ONTO THE PAD.
20. NO ANNULAR RING REQUIREMENTS ON OVAL PADS.
21. SOLDER MASK PERMITTED TO COVER TIN-LEAD-PLATED COPPER AREAS GREATER THAN .250 INCH.
22. ELECTROLESS NICKEL PLATE PER Q1, CLASS B (F-38, METHOD 2) THICKNESS TO BE .0008 MIN. OR ELECTROPLATE A LOW STRESS NICKEL .0002 MIN. THK FREE FROM VISIBLE BLISTERS, PITS, NODULES, CRACKS OR OTHER DEFECTS. IPC TAPE TEST SHOWS NO SEPARATION OF NICKEL FROM COPPER. NO COHESIVE FAILURE OR NO SEPARATION OF SUBSEQUENT TOP COAT.
23. ELECTROPLATE GOLD PER MIL-G-45204, CL II OR F-34, CL 2. .000015 MIN THK. MIN. GOLD PLATING THICKNESS ON FINISHED PCB .000005. GOLD SHALL BE ADHERENT (IPC TAPE TEST), HAVE UNIFORM COVERAGE AND GOLD COLOR WITH NO EVIDENCE OF POROSITY.
24. ALL HOLES TO BE WITHIN .014 INCH TRUE POSITION TO DATUM "O" WHEN PINNED TO PLANE A.
25. ASSY. NO. NOT REQUIRED.

| REVISIONS | | | |
|-----------|-----|-------------|------|
| ZONE | LTR | DESCRIPTION | DATE |
| | | | |
| | | | |



| LTR | FINISHED HOLE DIA | REMARKS |
|-----|-------------------------|--------------|
| G | .200 ± .001 | |
| F | .062 ± .001 | INTL TOOLING |
| E | .046 ± .001 | |
| D | .039 ± .001 | |
| C | .025 ± .001 | UNLETTERED |
| B | .125 ± .001 | INTL TOOLING |
| A | SHOP OPTION | EXTL TOOLING |
| | UNSUPPORTED PLATED TFRU | |
| | | |

| INVENTORY CONTROL NUMBER | THIS DRAWING | HOLE CONFIGURATION | DRILL DECK | LAYER 1 (COMP. SIDE) | LAYER 2 (COND. SIDE) | MARKING | CONDUCTOR SIDE SOLDER MASK | COMPONENT SIDE SOLDER MASK |
|--------------------------|--------------|--------------------|------------|----------------------|----------------------|---------|----------------------------|----------------------------|
| | | | | | | | | |

| DIMENSION IDENTIFIERS | |
|-----------------------|----------|
| LAST USED | NOT USED |
| 220 | 120-201 |

UNLESS OTHERWISE SPECIFIED
 • DIMENSIONS ARE IN INCHES
 • TOLERANCES:
 ANGLES ± 5°
 3 PLACE DECIMALS ± .010
 2 PLACE DECIMALS ± .02
 • DIMENSIONING IN ACCORDANCE WITH ANSI Y14.5

DATE: 4-27-83
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]
 APPROVED BY: [Signature]

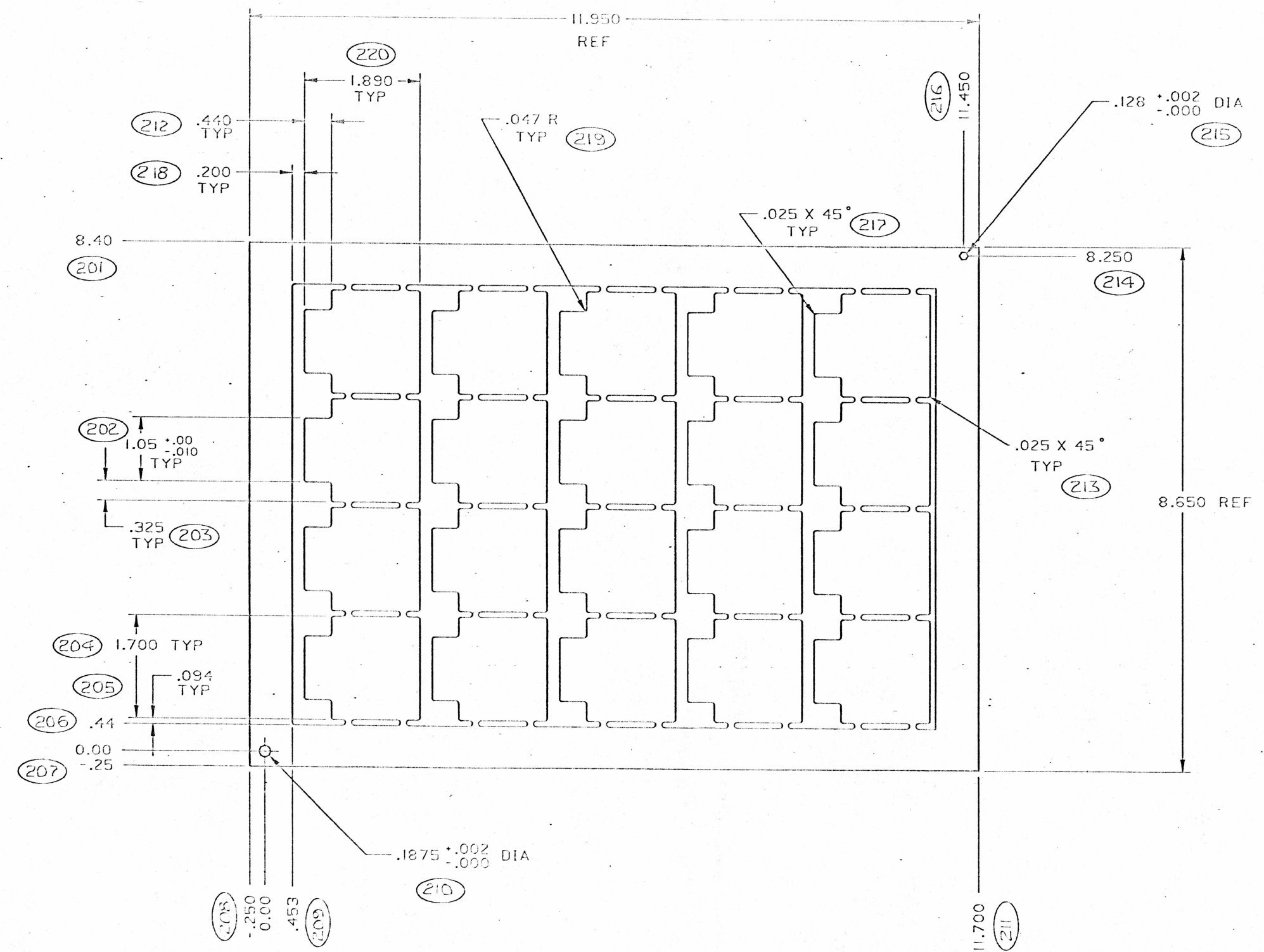
TEXAS INSTRUMENTS
 INCORPORATED
 CALCULATOR PRODUCTS DIVISION

PRINTED WIRING BOARD,
 PRODUCT 477

SIZE: DRAWING D 1056630

REVISION LEVEL CONTROL

12



| DIMENSION IDENTIFICATION NUMBERS | |
|----------------------------------|----------|
| USED | NOT USED |
| 201 - 220 | |