

NOTICE - WHEN GOVERNMENT DRAWINGS, SPECIFICATIONS, OR OTHER DATA ARE USED FOR ANY PURPOSE OTHER THAN IN CONNECTION WITH A DEFINITELY RELATED GOVERNMENT PROCUREMENT OPERATION, THE UNITED STATES GOVERNMENT THEREBY INCURS NO RESPONSIBILITY FOR ANY OBLIGATION WHATSOEVER, AND THE FACT THAT THE GOVERNMENT MAY HAVE FORMULATED, FURNISHED, OR IN ANY WAY SUPPLIED THE SAID DRAWINGS, SPECIFICATIONS OR OTHER DATA IS NOT TO BE REGARDED BY IMPLICATION OR OTHERWISE AS IN ANY MANNER LICENSING THE HOLDER OR ANY OTHER PERSON OR CORPORATION, OR CONVEYING ANY RIGHTS OR PERMISSION TO MANUFACTURE, USE, OR SELL ANY PATENTED INVENTION THAT MAY IN ANY WAY BE RELATED THERETO.

**REQUIREMENTS:**

**1. GENERAL:**

- A. INTERPRET DRAWING IN ACCORDANCE WITH THE STANDARDS PRESCRIBED BY MIL-D-70327.
- B. SUPPLIER SHALL CONFORM TO THE QUALITY ASSURANCE PROVISIONS CONTAINED IN ND 1015404, CLASS 2.
- C. UNITS SHALL BE CAPABLE OF MEETING ALL QUALIFICATION REQUIREMENTS OF ND 1002056 INCLUDING THOSE SPECIFIED FOR NON-HERMETICALLY SEALED UNITS.
- D. PART MARKING: PARTS SHALL BE PERMANENTLY AND LEGIBLY MARKED, IN ACCORDANCE WITH ND 1002019, WITH THE MANUFACTURER'S NAME AND/OR SYMBOL, LOT CODE OR NUMBER, TERMINAL IDENTIFICATION AND NASA PART NUMBER (DRAWING NUMBER AND REVISION LETTER). NO MARKING SHALL APPEAR ON THE 32/ SURFACE.
- E. PREPARATION FOR DELIVERY SHALL BE IN ACCORDANCE WITH ND 1002215, CLASS I, CODE 1.
  - (1) MARKING OF SHIPPING CONTAINERS SHALL CONFORM TO THE MARKING OF UNIT AND INTERMEDIATE PACKAGES AND THE METHODS OF MARKING AS SPECIFIED IN ND 1002215.

**2. ACCEPTANCE AND INSPECTION (100%)**

**A. MECHANICAL PROPERTIES:**

- (1) DIMENSION: SHALL BE AS SHOWN.
- (2) SURFACE ROUGHNESS: 125/ UNLESS OTHERWISE SPECIFIED.
- (3) LEGENDS: TO BE .125 HIGH BLACK CHARACTERS (FUTURA DEMIBOLD) PER ND 1002019 & ND 1002122.
- (4) WHEN MOUNTED ON A SUITABLE FIXTURE, UNIT SHALL WITHSTAND PRESSURE OF 15 PSIG APPLIED AGAINST 32/ AREA.

**B. ELECTRICAL CHARACTERISTICS:**

- (1) LIGHT INTENSITY: PER TABLE  
WHEN EXCITED WITH 250 ± 2.5 VRMS, 800 ± 5 CPS.
- (2) POWER FACTOR: 0.25 MAXIMUM WHEN EXCITED PER 2.B.(1).
- (3) TOTAL CURRENT (ALL AREA ENERGIZED PER 2.B.(1)): 15.0 MA MAX.
- (4) CASE GND (PIN NO. 158) TO ALL OTHER PINS RESISTANCE: NLT 10.0 MEGOHMS. CASE GND IS DEFINED AS ALUMINUM FRAME AND METAL LAMP CASE.

**3. DESIGN REQUIREMENTS:**

- A. OPERATING LIFE: 2000 HOURS MINIMUM WITH A LOSS OF NOT MORE THAN 60% OF ORIGINAL LIGHT INTENSITY WHEN EXCITED PER 2.B.(1) AT 25°C.
- B. STORAGE LIFE: 1 YR MINIMUM WITHOUT LOSS OF ELECTRICAL PERFORMANCE AT 0°C TO +94°C.
- C. OPERATING TEMPERATURE RANGE: -55°C TO +94°C.
- D. ELECTROLUMINESCENT DISPLAYS SHALL BE HERMETICALLY SEALED.
- E. MATERIAL: ALUMINUM ALLOY.
- F. RATINGS:
  - (1) LIGHT OUTPUT WAVELENGTH: 5300 ANGSTROMS (NOMINAL).
  - (2) PEAK CONTINUOUS VOLTAGE: 420V MAX. (840V PEAK-PEAK 800CPS)
  - (3) PEAK TRANSIENT VOLTAGE: 500V MAX. PULSE NOT TO EXCEED ONE-HALF CYCLE AT THE OPERATING FREQUENCY.

**G. FINISH:**

- (1) CHROMATE TREAT PER MIL-C-5541 (AL CASE).
- (2) PAINT SURFACES MARKED "A" AND ALUM AREAS ON SURFACE "B" DARK GRAY PER ND 1002279 USING PAINT 1008809-1.
- (3) FINAL CAT SURFACE MARKED "A" AND ALUMINUM AREAS ON SURFACE "B" PER ND 1002277 USING 1012543-003

**H. TERMINALS AND INSULATORS: SHALL MEET THE REQUIREMENTS OF ND1002136.**

**I. BURN-IN (BY VENDOR): UNITS WHICH MEET INITIAL ELECT. REQUIREMENTS SHALL BE OPERATED FOR 100 HRS. AT ROOM TEMP. WHILE EXCITED PER 2.B.(1). BEFORE AND AFTER BURN-IN READING OF BRIGHTNESS, CURRENT, AND POWER FACTOR SHALL BE TAKEN & SHIPPED WITH EACH PART.**

**J. A GRAY REINFORCEMENT BAR ACROSS THE FRONT FACE OF THE DISPLAY IS PERMISSIBLE.**

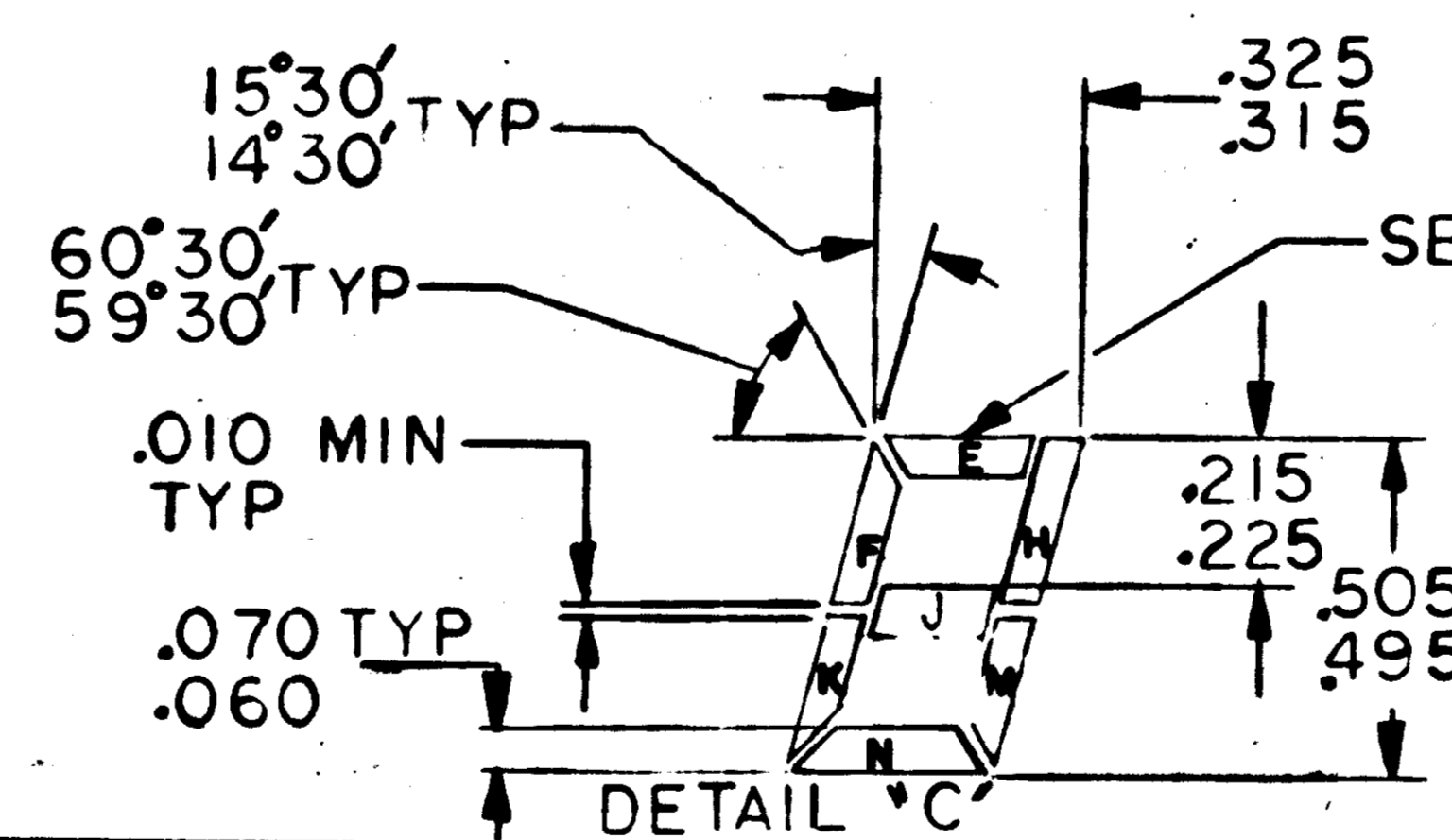
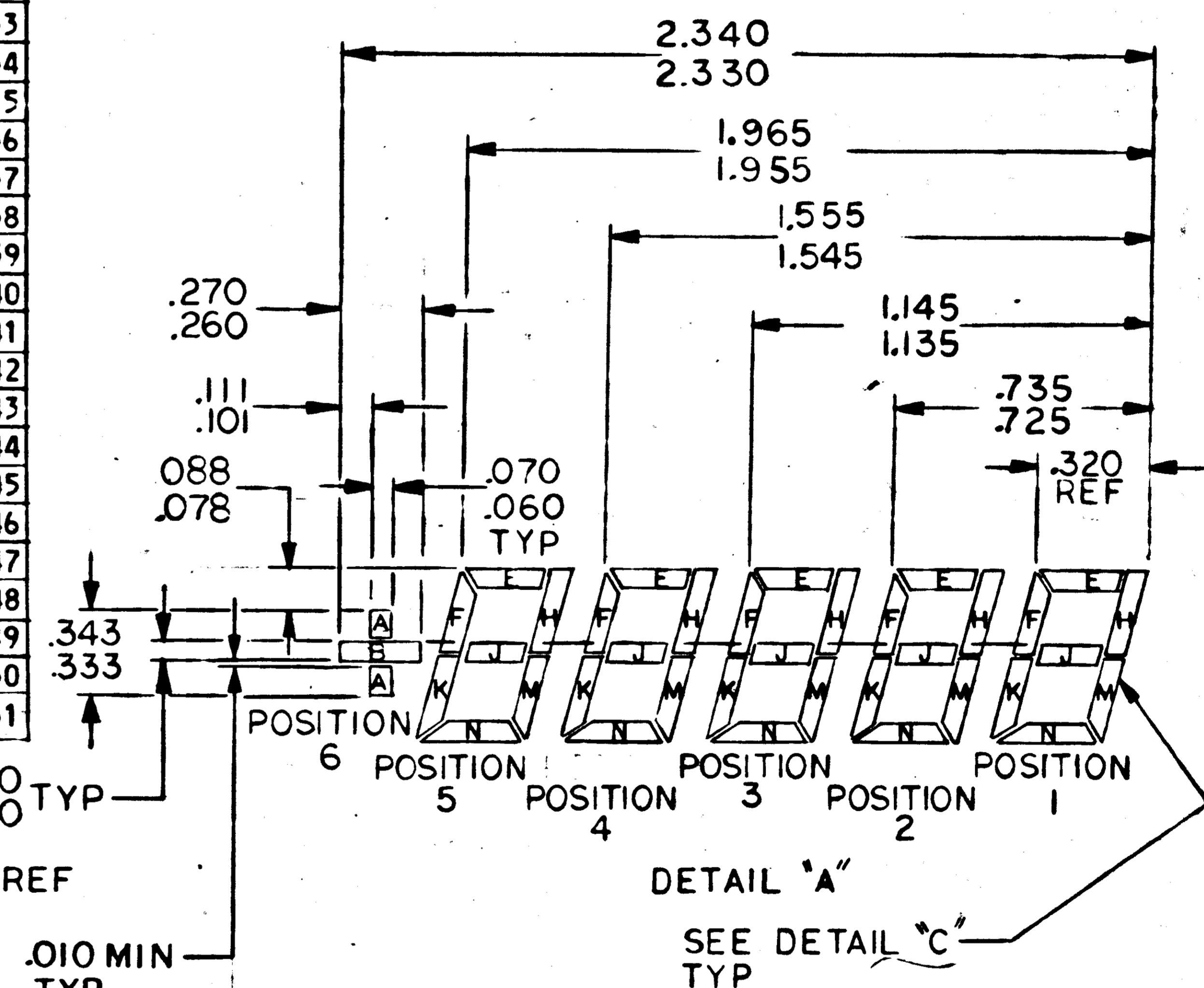
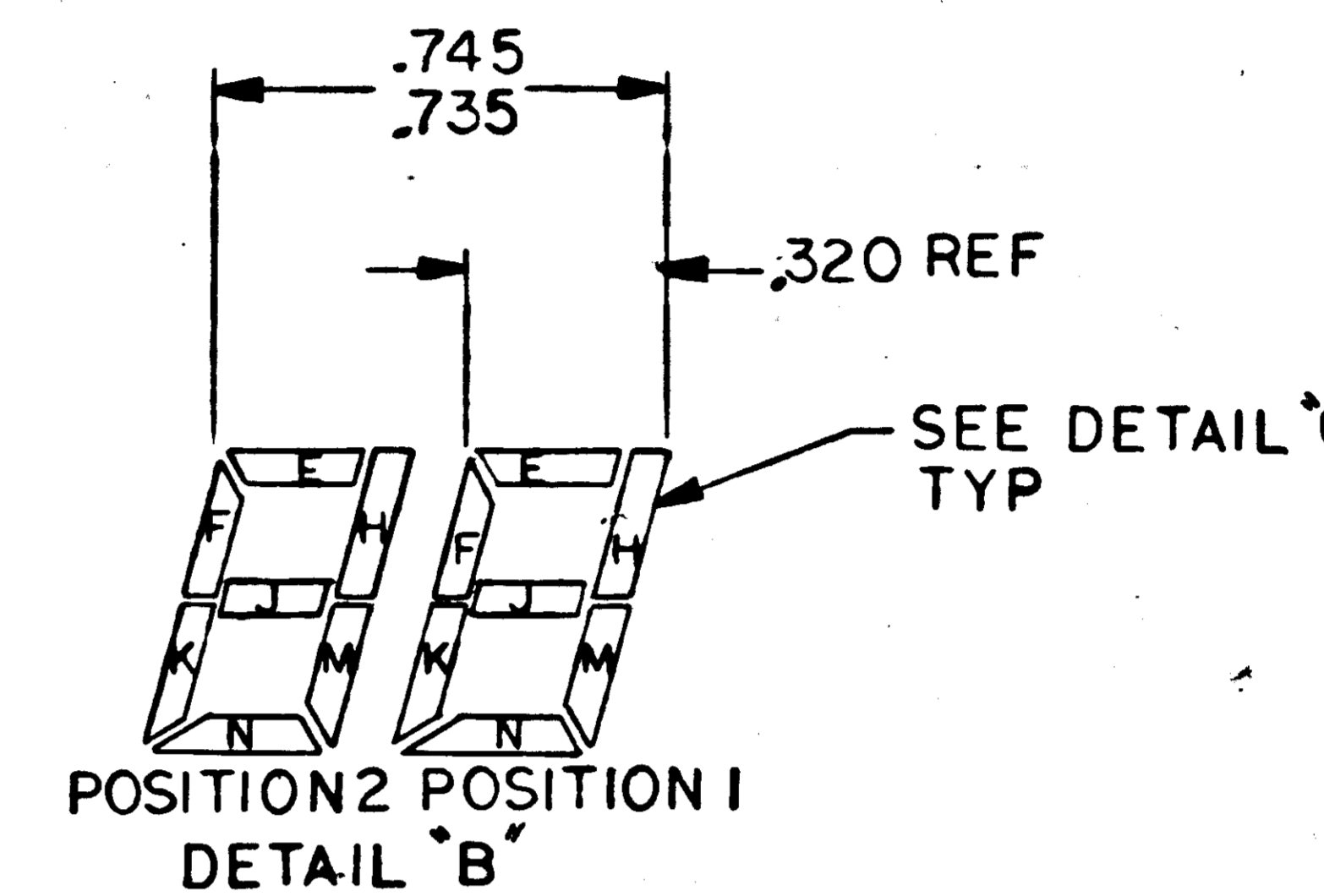
PROCURE ONLY FROM APPROVED SOURCES LISTED IN ND 1002034 FOR THIS DRAWING.

**SEGMENT TO CONNECTOR PIN CHART**

REF DESIG 3 2 J SEGMENT POSITION

SEGMENT	PIN NO.	SEGMENT	PIN NO.	SEGMENT	PIN NO.	SEGMENT	PIN NO.
31E	1	21E	38	11E	75	41E	112
31H	2	21H	39	11H	76	41H	113
31M	3	21M	40	11M	77	41M	114
31N	4	21N	41	11N	78	41N	115
31J	5	21J	42	11J	79	41J	116
31K	6	21K	43	11K	80	41K	117
31F	7	21F	44	11F	81	41F	118
32E	8	22E	45	12E	82	42E	119
32H	9	22H	46	12H	83	42H	120
32M	10	22M	47	12M	84	42M	121
32N	11	22N	48	12N	85	42N	122
32J	12	22J	49	12J	86	42J	123
32K	13	22K	50	12K	87	42K	124
32F	14	22F	51	12F	88	42F	125
33E	15	23E	52	13E	89	51E	126
33H	16	23H	53	13H	90	51H	127
33M	17	23M	54	13M	91	51M	128
33N	18	23N	55	13N	92	51N	129
33J	19	23J	56	13J	93	51J	130
33K	20	23K	57	13K	94	51K	131
33F	21	23F	58	13F	95	51F	132
34E	22	24E	59	14E	96	52E	133
34H	23	24H	60	14H	97	52H	134
34M	24	24M	61	14M	98	52M	135
34N	25	24N	62	14N	99	52N	136
34J	26	24J	63	14J	100	52J	137
34K	27	24K	64	14K	101	52K	138
34F	28	24F	65	14F	102	52F	139
35E	29	25E	66	15E	103	71E	140
35H	30	25H	67	15H	104	71H	141
35M	31	25M	68	15M	105	71M	142
35N	32	25N	69	15N	106	71N	143
35J	33	25J	70	15J	107	71J	144
35K	34	25K	71	15K	108	71K	145
35F	35	25F	72	15F	109	71F	146
36A	36	26A	73	16A	110	72E	147
36B	37	26B	74	16B	111	72H	148
61A	154	250V 800-	157	72K	152	72M	149
GRD	155	CASE GRD	158	72F	153	72N	150
GRD	156	SPARE	159	SPARE	160	72J	151

REVISIONS /						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
-		INITIAL RELEASE CLASS A PER TDRR 19724	24			
A		REVISED PER TDRR 24793	EX		11/28/65	WJK
B		REVISED PER TDRR 28153	J.P.		4/24/66	WJK
C		REVISED PER TDRR 28445			5/10/66	MAN
D		REVISED PER TDRR 31697	WJK	MW	1 NOV 66	
E		REVISED PER TDRR 32952	WJK	EX	17 FEB 67	



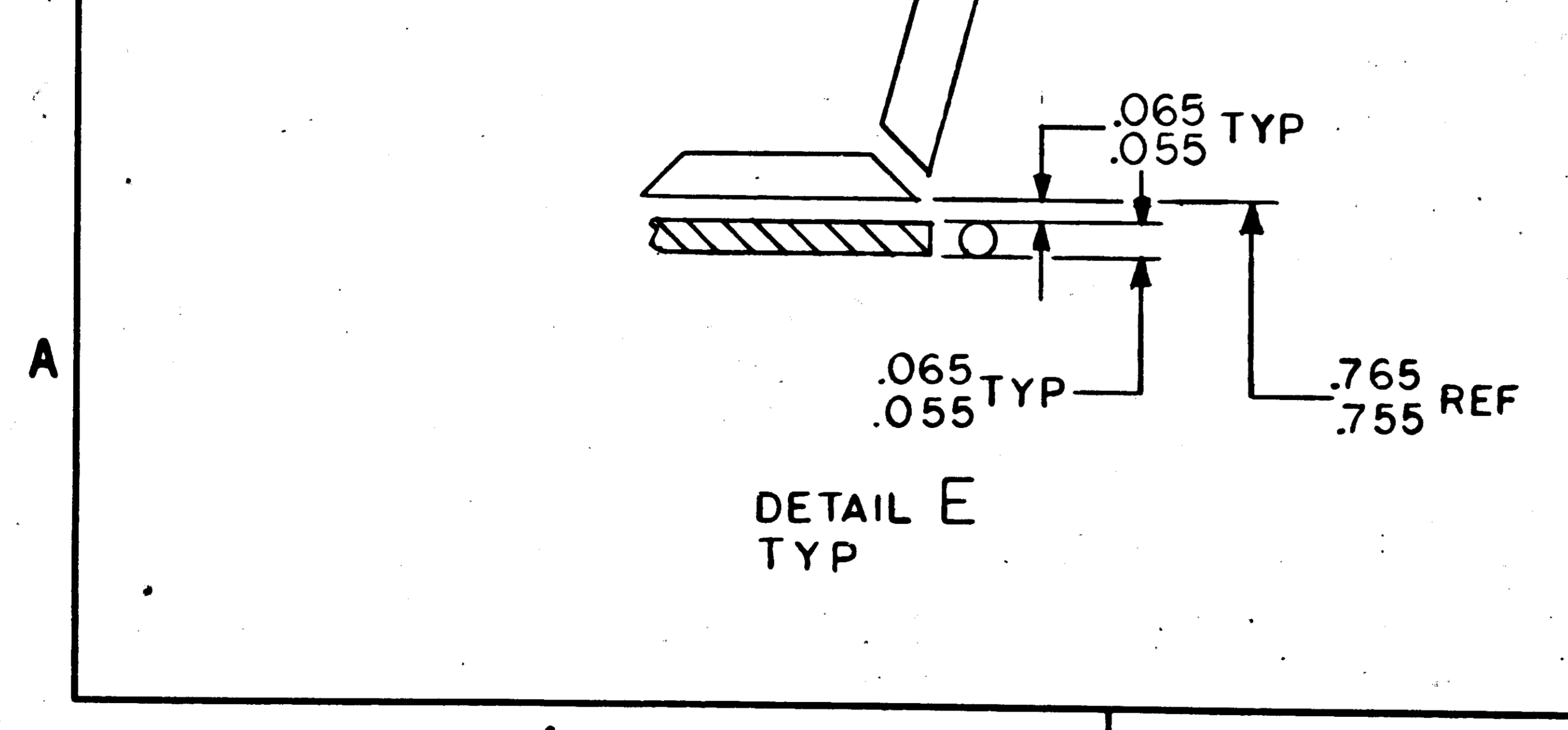
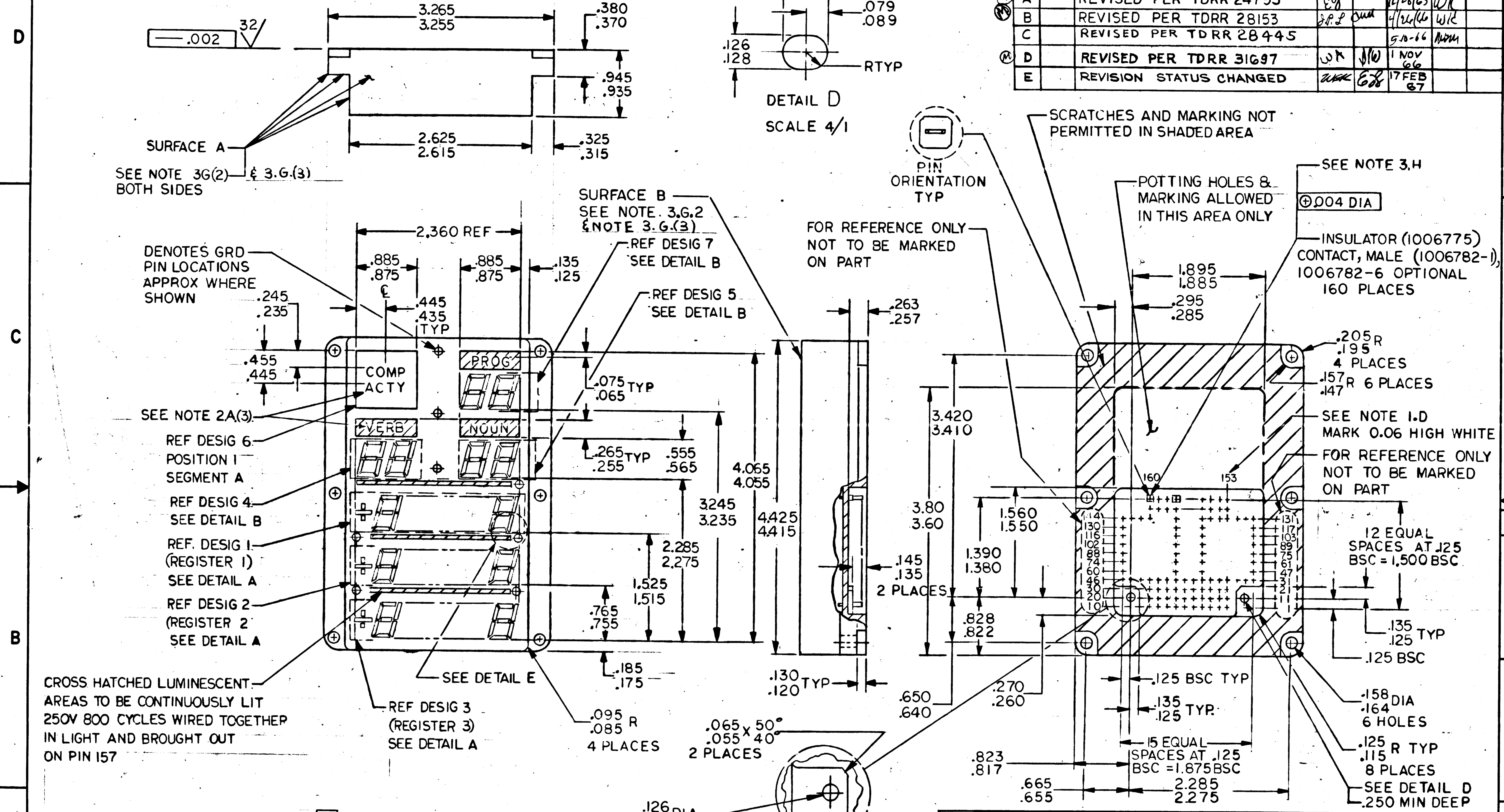
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES CAPACITOR VALUES ARE IN μf RESISTOR VALUES ARE IN OHMS TOLERANCES ON FRACTIONS DECIMALS ANGLES ± ± ± DO NOT SCALE THIS DRAWING
MATERIAL <b>SEE NOTE</b>
NEXT ASSY USED ON APPLICATION

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
MIT. INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS		
DRAWN <i>D. Murray</i> 2/29/65		<b>INDICATOR, DIGITAL, ELECTROLUMINESCENT</b>		
CHECKED <i>J. Wolpert</i> 2/11/65				
APPROVED <i>Elder</i> 2/21/65		<b>SPECIFICATION CONTROL DRAWING</b>		
APPROVED MIT <i>W. K. Meyer</i> 2/24/65		CODE IDENT NO.	SIZE	DRAWING NO.
APPROVED MSC <i>J. Marshall</i> 4/2/65		80230	C	1006315
DATE		SCALE NONE	SHEET 1 OF 3	

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1006315

REVISIONS						
SYM	ZONE	DESCRIPTION	DR	CHK	DATE	APPROVED
-		INITIAL RELEASE CLASS A PER TDRR 19724				
A		REVISED PER TDRR 24793	WPK		11/18/65	WPK
B		REVISED PER TDRR 28153	J.P. & C.		1/12/66	WPK
C		REVISED PER TDRR 28445			5-10-66	WPK
D		REVISED PER TDRR 31697	WPK	J.W.	1 NOV 66	
E		REVISION STATUS CHANGED	WPK	E.S.	17 FEB 67	



QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
	MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
	INDICATOR, DIGITAL, ELECTROLUMINESCENT			
	SPECIFICATION CONTROL DRAWING			
	APPROVED MIT	APPROVED MSC	CODE IDENT NO. SIZE 80230 C	DRAWING NO. 1006315
	NEXT ASSY	USED ON	DATE	SHEET 2 OF 3
	APPLICATION		SCALE NONE	

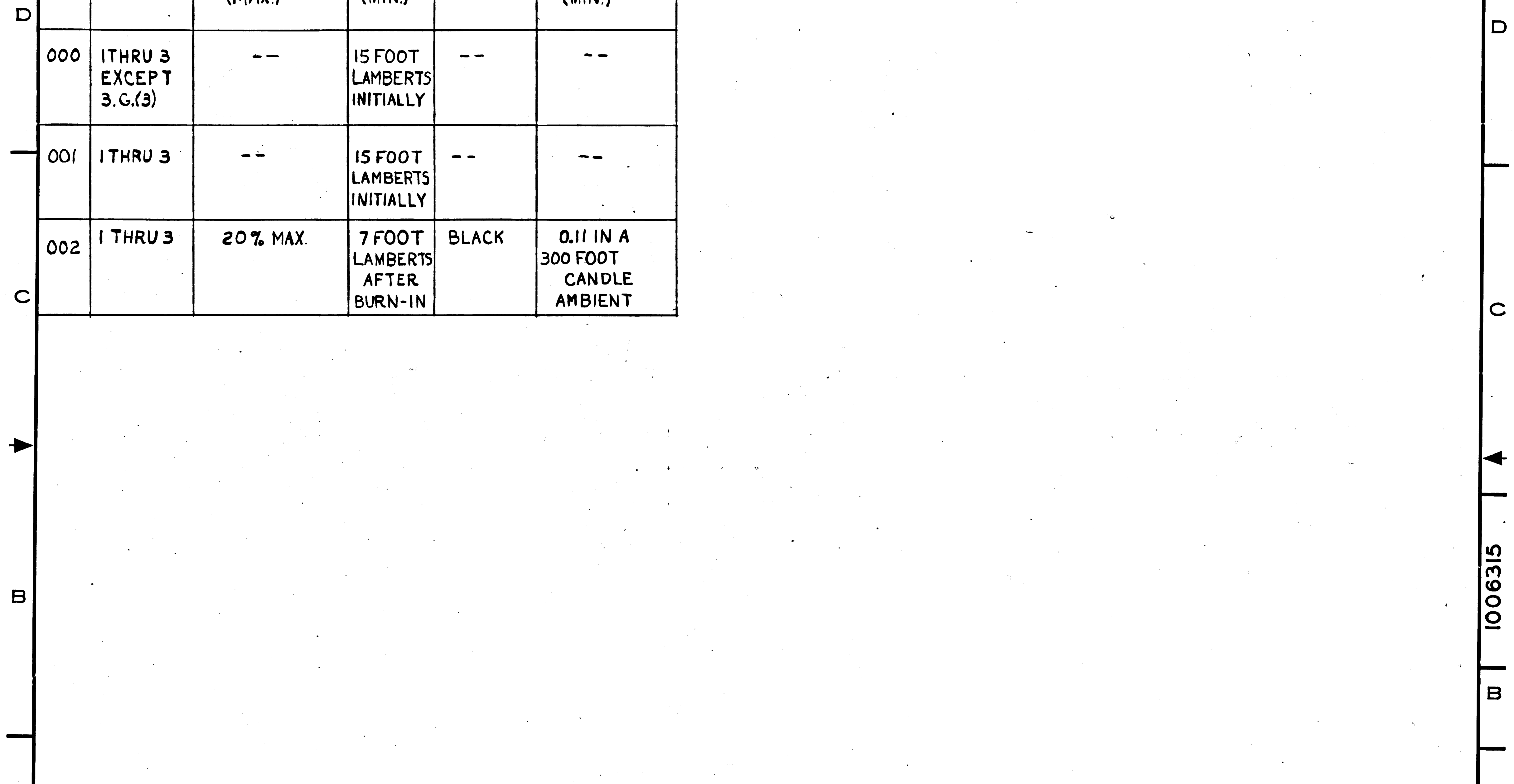
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES  
CAPACITOR VALUES ARE IN  $\mu$ f  
RESISTOR VALUES ARE IN OHMS  
TOLERANCES ON FRACTIONS DECIMALS ANGLES  
± ± ±  
DO NOT SCALE THIS DRAWING

MATERIAL  
SEE NOTE

QTY REQD	PART OR IDENTIFYING NO.	MATERIAL OR NOTES	NOMENCLATURE OR DESCRIPTION	FIND NO.
LIST OF MATERIALS				
	MIT INSTRUMENTATION LAB CAMBRIDGE, MASS.		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
	INDICATOR, DIGITAL, ELECTROLUMINESCENT			
	SPECIFICATION CONTROL DRAWING			
	APPROVED MIT	APPROVED MSC	CODE IDENT NO. SIZE 80230 C	DRAWING NO. 1006315
	NEXT ASSY	USED ON	DATE	SHEET 2 OF 3
	APPLICATION		SCALE NONE	

NOTE APPLICATIONS					
DASH NO.	APPLICABLE NOTES	REFLECTION FROM DISPLAY SURFACE (MAX.)	LIGHT INTENSITY (MIN.)	BACKGROUND COLOR	CONTRAST RATIO (MIN.)
000	1 THRU 3 EXCEPT 3.G.(3)	--	15 FOOT LAMBERTS INITIALLY	--	--
001	1 THRU 3	--	15 FOOT LAMBERTS INITIALLY	--	--
002	1 THRU 3	20% MAX.	7 FOOT LAMBERTS AFTER BURN-IN	BLACK	0.11 IN A 300 FOOT CANDLE AMBIENT

REVISIONS				
ZONE	LTR	DESCRIPTION	CHG. NO.	DATE
D		THIS SHEET ADDED PER TDRR 31697		1 NOV 66
E		REVISION STATUS CHANGED		17 FEB 67



MIL-1052C K		UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ON		MIT INSTRUMENTATION LAB CAMBRIDGE, MASS		MANNED SPACECRAFT CENTER HOUSTON, TEXAS	
		2 PLACE 3 PLACE DECIMALS DECIMALS ANGLES		DRAWN <u>D. MOUEY</u> DATE <u>21 MAR 65</u>		INDICATOR, DIGITAL, ELECTROLUMINESCENT	
		+ + +		CHECKED <u>G. WOL KOUREZ</u> 31 MAR 65		SPECIFICATION CONTROL DRAWING	
		- - -		APPROVAL <u>E. HALL</u> 21 MAR 65			
		DO NOT SCALE THIS DRAWING		CONTRACT			
		MATERIAL		MSC APPROVAL <u>W. KEYFER</u> 2 JUN 66		SIZE CODE IDENT NO. <b>C 80230</b>	
NEXT ASSY USED ON APPLICATION		APPROVAL		MIT APPROVAL <u>W. MIRLAEN</u> 6 JUN 66		SCALE SHEET 3 OF 3	