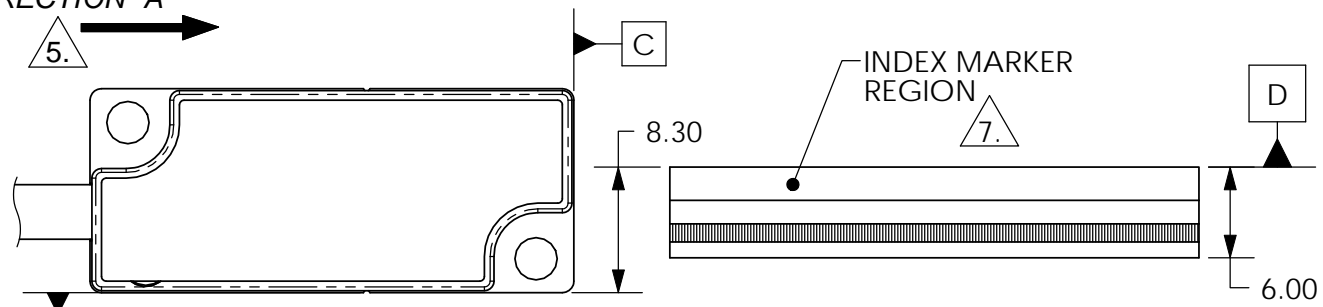


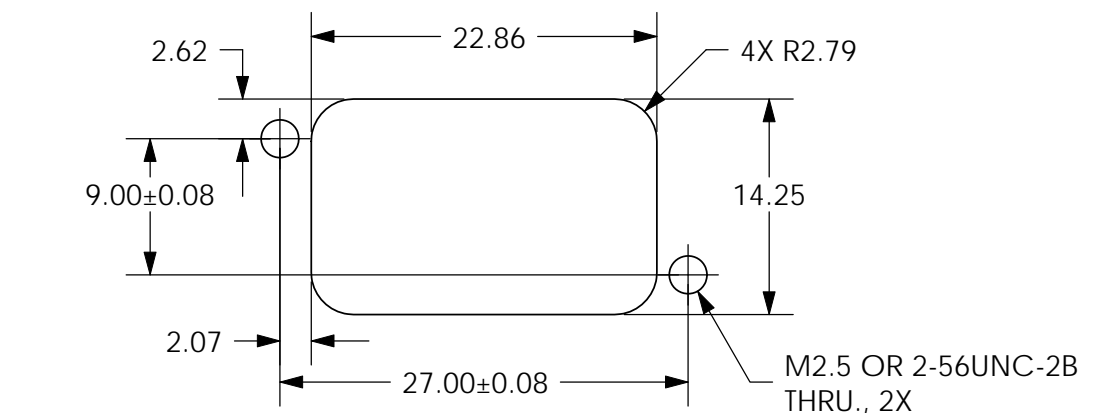
THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF MicroE Systems Corp. AND SHALL NOT BE REPRODUCED OR COPIED OR USED AS THE BASIS FOR MANUFACTURE OR SALE OF APPARATUS WITHOUT EXPRESS WRITTEN AUTHORIZATION FROM MicroE Systems Corp.

REVISIONS				
LTR	ECO	DESCRIPTION	DATE	APPROVED
A	----	RELEASE TO PRODUCTION	7/16/10	VB

**DIRECTION "A"**



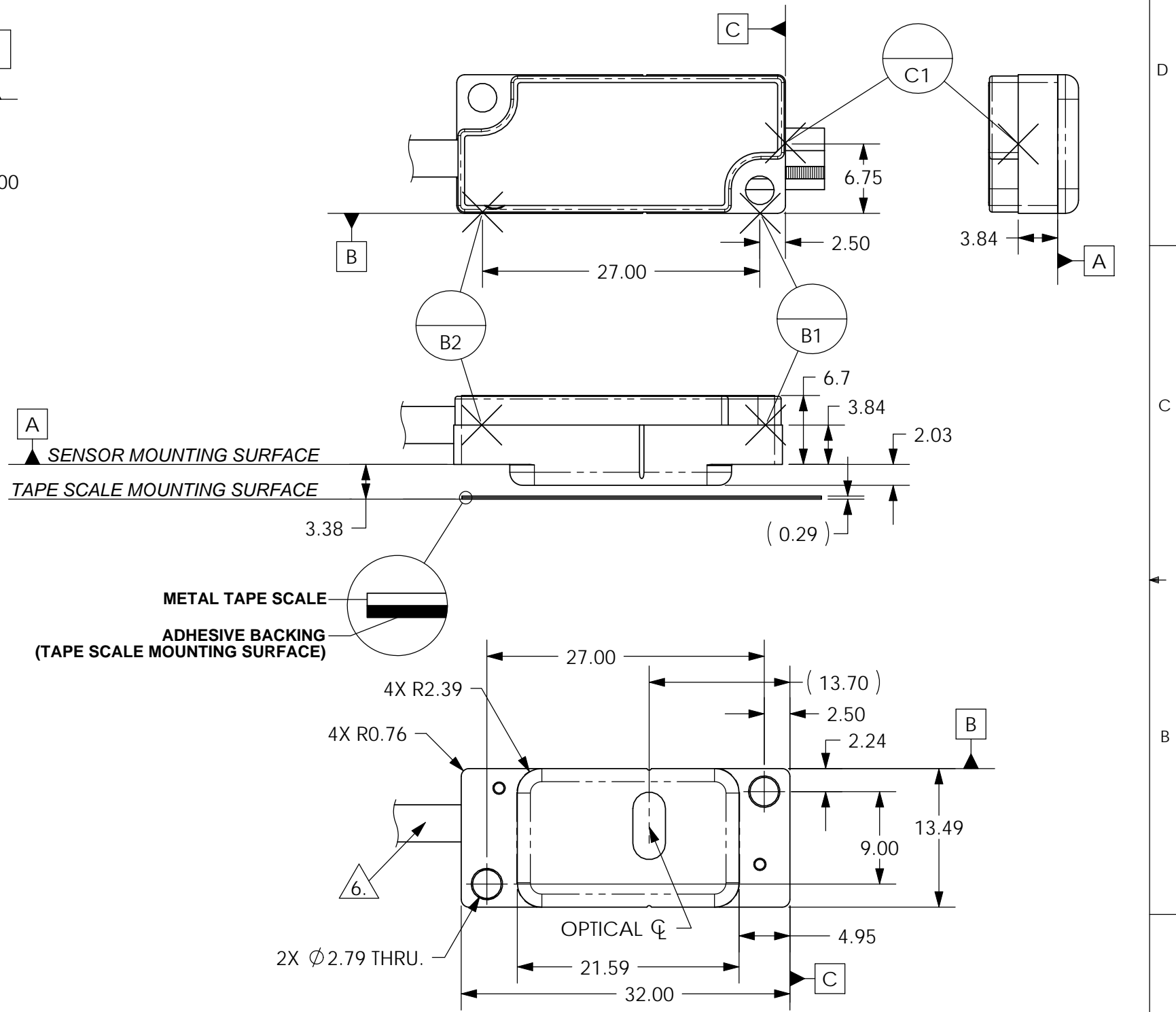
**TAPE SCALE SHOWN IN THIS VIEW TRANSLATED IN X-AXIS OUT OF OPERATING RANGE FOR CLARITY**



**SENSOR MOUNTING PLATE RECOMMENDATION**

- NOTES:**
1. RECOMMENDED MOUNTING HARDWARE:  
2-56 OR M2.5 SCREWS.
  2. IF BENCHING PINS ARE TO BE USED, PINS MUST BE PLACED ALONG DATUM EDGES OF SENSOR FOR PROPER ALIGNMENT. (REFERENCE DATUMS B1, B2, AND C1).
  3. HEIGHT OF SENSOR BENCHING PINS MUST BE A MINIMUM OF 4.06mm IN HEIGHT FROM DATUM A.
  4. RECOMMENDED SENSOR MOUNTING PLATE THICKNESS:  
MINIMUM: 4 SCREW THREADS  
MAXIMUM: ALLOW CLEARANCE TO SCALE AND SCALE MOUNTING HARDWARE (BENCHING SURFACES, TRENCHES, ETC.)

5. WHEN SCALES MOVES IN DIRECTION "A" WITH RESPECT TO A STATIONARY SENSOR, OUTPUT SIGNAL A+ (PIN 14) LEADS OUTPUT SIGNAL B+ (PIN 13).
6. SEE PAGE 2 FOR CABLE CONNECTORS, PIN FUNCTIONS AND LENGTHS.
7. SEE PAGE 3 FOR DIMENSIONS FOR LOCATIONS OF INDEX MARKERS.

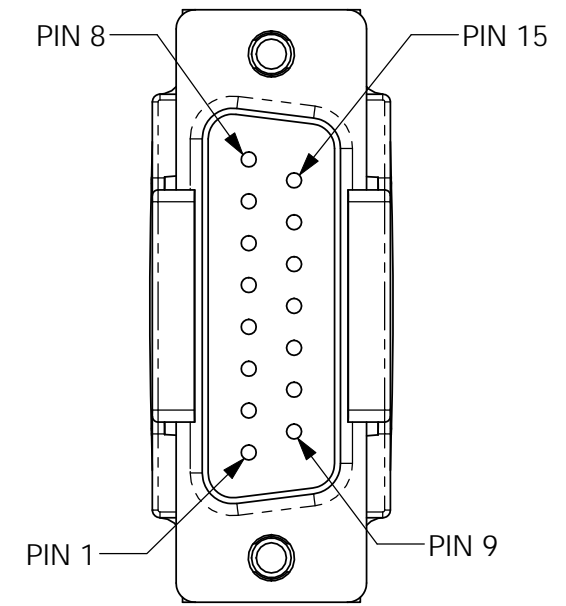
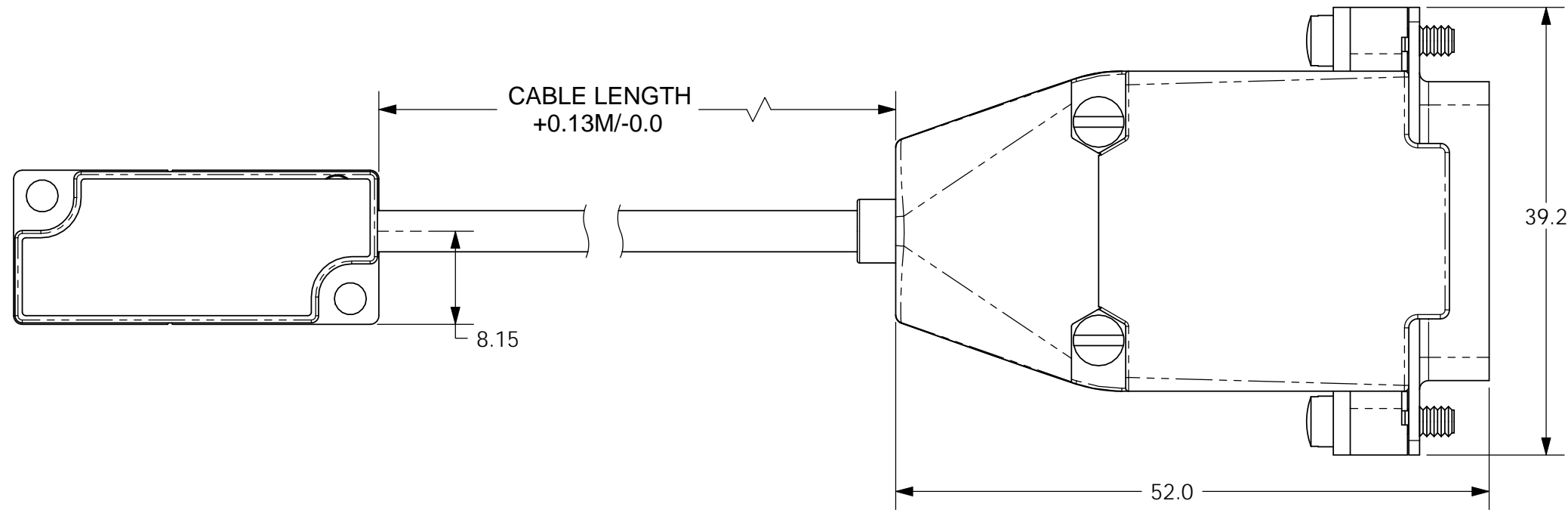


UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN MILLIMETERS DIM. APPLY AFTER PROCESSING INTERPRET ALL GEOMETRIC TOLS. PER ANSI Y14.5M-1994  TOLERANCES ARE: DECIMALS: .X ± 0.25 .XX ± 0.13	APPROVALS DRAWN S.BUTURLIA CHECKED	DATE 6/2/2010	 <b>MicroE Systems</b> Division of GSI Group 125 Middlesex Tpk. Bedford, MA 01730	
	ENGRG. A.GOLDMAN MFG ENG D.McLOUGHLIN QA A.VILLARROEL	DATE 7/13/10 7/15/10 7/15/10		DESCRIPTION: <b>INTERFACE, ENCODER, 20um,          TAPE SCALE w/INDEX MARKERS,          MERCURY II 1600 SENSOR</b>
	SIZE B	DWG. NO. <b>ID-00375</b>		REV. A

SCALE: 2:1 CAD FILE: 3RD ANGLE PROJECTION SHEET 1 OF 4

UNITS: mm

THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF MicroE Systems Corp. AND SHALL NOT BE REPRODUCED OR COPIED OR USED AS THE BASIS FOR MANUFACTURE OR SALE OF APPARATUS WITHOUT EXPRESS WRITTEN AUTHORIZATION FROM MicroE Systems Corp.



SEE TABLE 2. FOR PIN FUNCTIONS

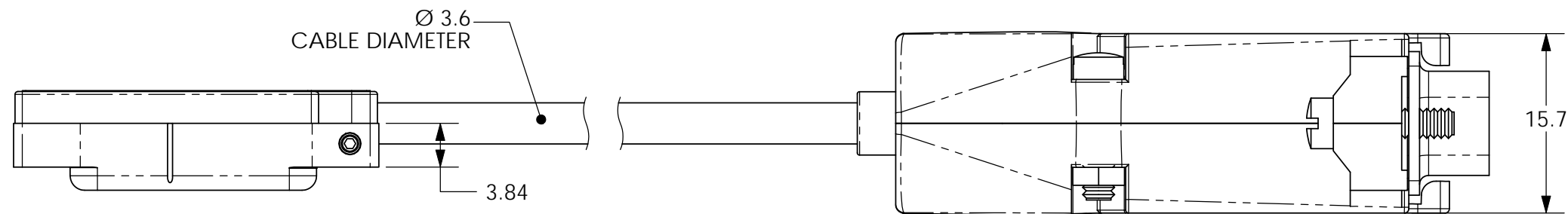


TABLE 2.

Mercury II 1600 15-Plug		
Pin	Wire color	Function
1	-	Do Not Connect
2	Black	GND
3	-	Do Not Connect
4	Brown	IW-
5	Blue	B-
6	Yellow	A-
8	Red	5V
9	Black	GND
10	White	COS+
11	Gray	SIN+
12	Orange	IW+
13	Violet	B+
14	Green	A+
15	-	Do Not Connect

TABLE 1.

Cable Lengths	
1 Meter	
3 Meter	
5 Meter	
Custom	

NOTES:

- HIGHLIGHTED PINS ARE INTERNALLY CONNECTED INSIDE D-SUB WITH JUMPER WIRES.

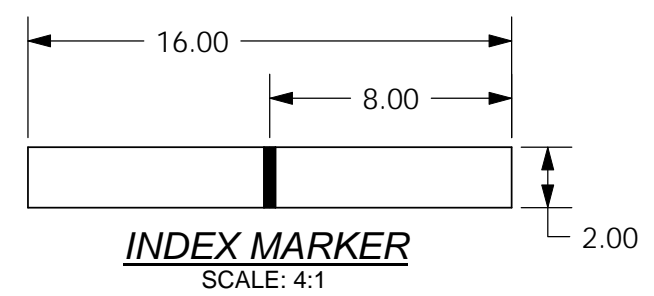
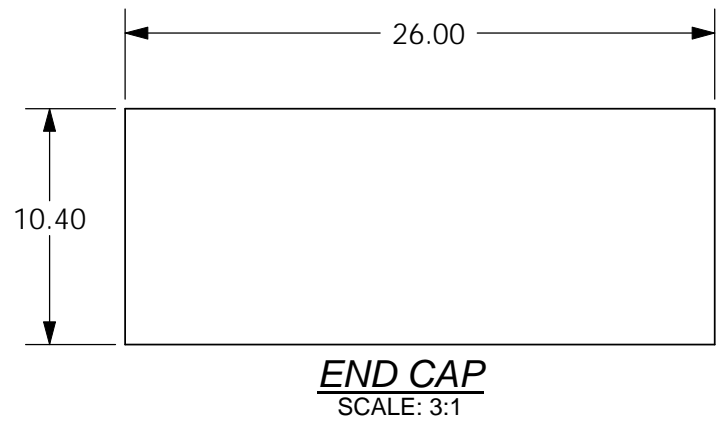
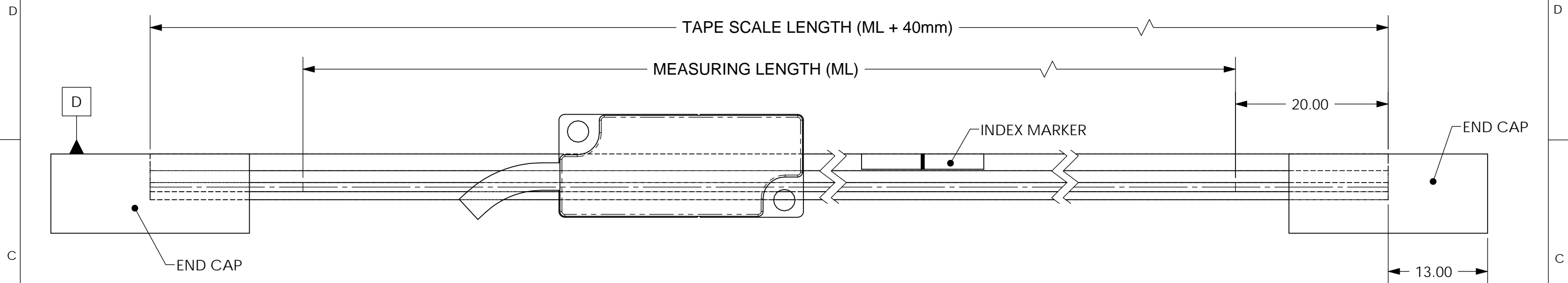
UNITS: mm

**GSI** MicroE Systems  
 MicroE Systems  
 Division of GSI Group  
 125 Middlesex Tpk.  
 Bedford, MA 01730

DESCRIPTION:  
 INTERFACE, ENCODER, 20um,  
 TAPE SCALE w/INDEX MARKERS,  
 MERCURY II 1600 SENSOR

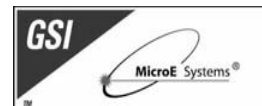
SIZE: B DWG. NO. ID-00375 REV. A  
 SCALE: NONE CAD FILE: 3RD ANGLE PROJECTION SHEET 2 OF 4

THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF MicroE Systems Corp. AND SHALL NOT BE REPRODUCED OR COPIED OR USED AS THE BASIS FOR MANUFACTURE OR SALE OF APPARATUS WITHOUT EXPRESS WRITTEN AUTHORIZATION FROM MicroE Systems Corp.



- NOTES:**
1. BEFORE PLACING INDEX MARKERS AND END CAPS, REMOVE BLUE PROTECTIVE FILM FROM TAPE SCALE.
  2. NOTE DATUM EDGE OF TAPE SCALE AND INDEX MARKER REGION BEFORE APPLYING MARKERS.
  3. END CAPS AND INDEX MARKERS ARE OPTIONAL (SEE INSTALLATION MANUAL).
  4. END CAPS AND INDEX MARKERS SHALL NOT OVERLAP (MAY CAUSE INTERFERENCE WITH SENSOR).
  5. FOR LONGER OR SHORTER LENGTHS OF INDEX MARKERS CALL MICROE SYSTEMS FOR DETAILS.

UNITS: mm

		<b>MicroE Systems</b> Division of GSI Group	
		125 Middlesex Tpk. Bedford, MA 01730	
DESCRIPTION: <b>INTERFACE, ENCODER, 20um,          TAPE SCALE w/INDEX MARKERS,          MERCURY II 1600 SENSOR</b>			
SIZE B	DWG. NO. <b>ID-00375</b>	REV. <b>A</b>	
SCALE: 2:1	CAD FILE:	3rd ANGLE PROJECTION	SHEET 3 OF 4

THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF MicroE Systems Corp. AND SHALL NOT BE REPRODUCED OR COPIED OR USED AS THE BASIS FOR MANUFACTURE OR SALE OF APPARATUS WITHOUT EXPRESS WRITTEN AUTHORIZATION FROM MicroE Systems Corp.

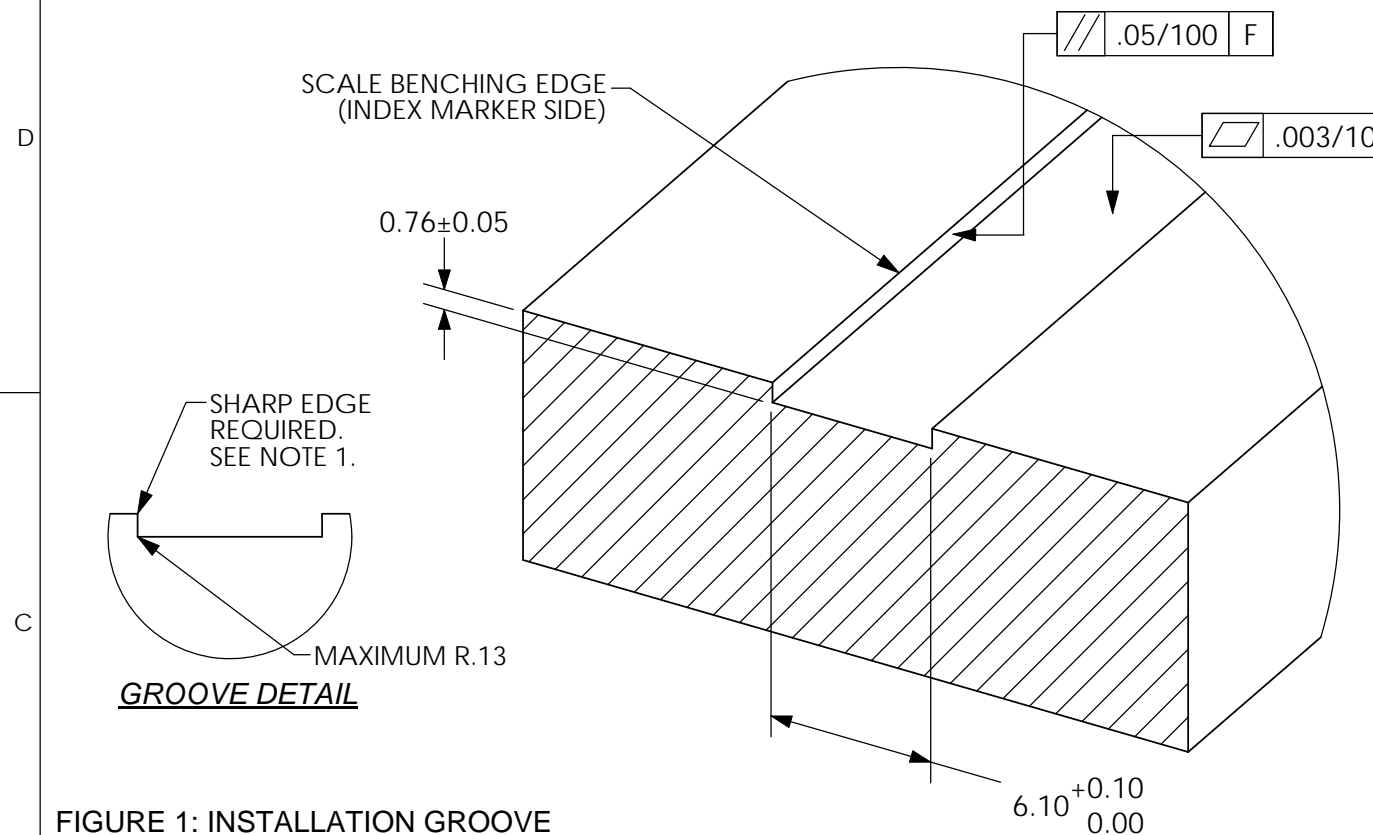


FIGURE 1: INSTALLATION GROOVE  
HAND APPLICATION ONLY  
F = MACHINE GUIDEWAY

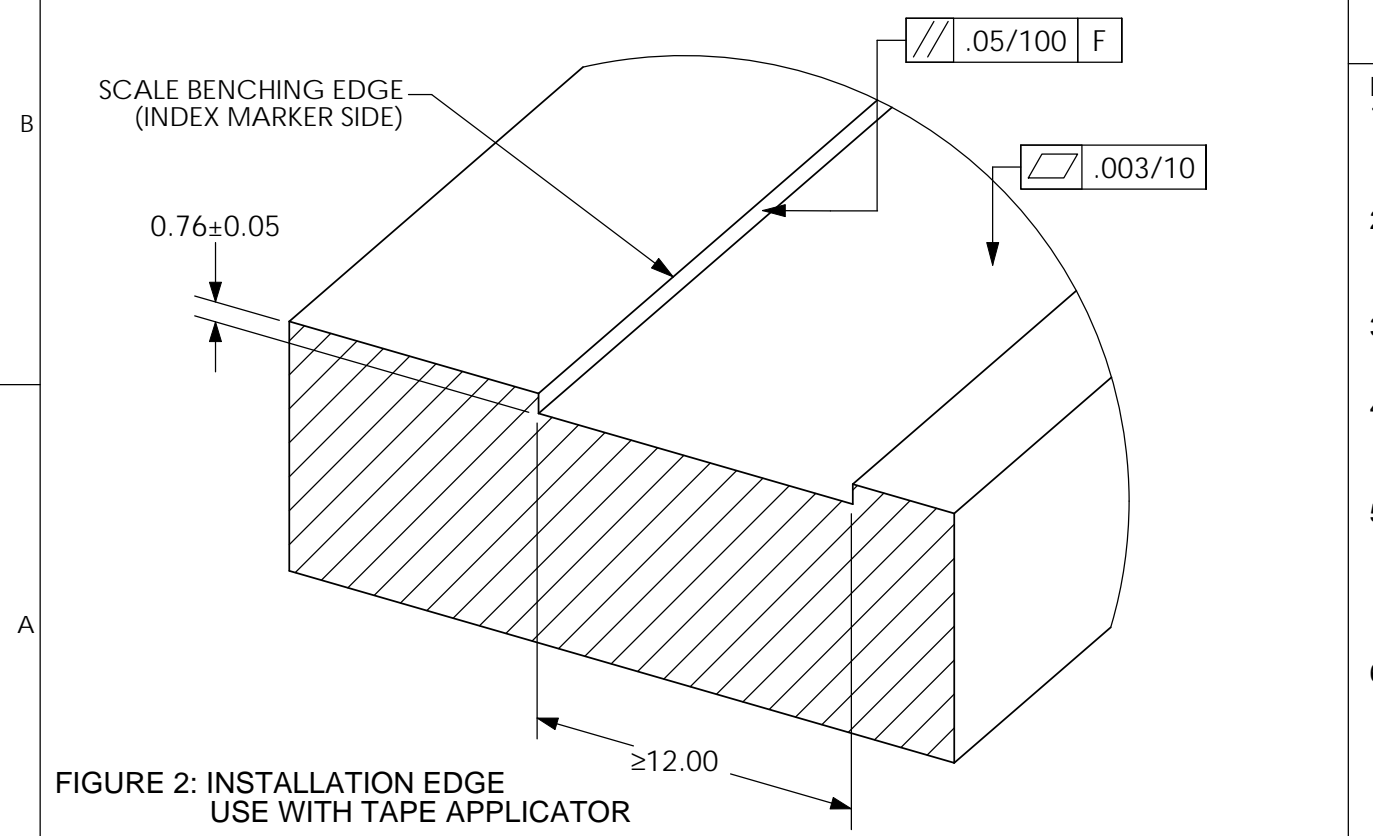


FIGURE 2: INSTALLATION EDGE  
USE WITH TAPE APPLICATOR  
F = MACHINE GUIDEWAY

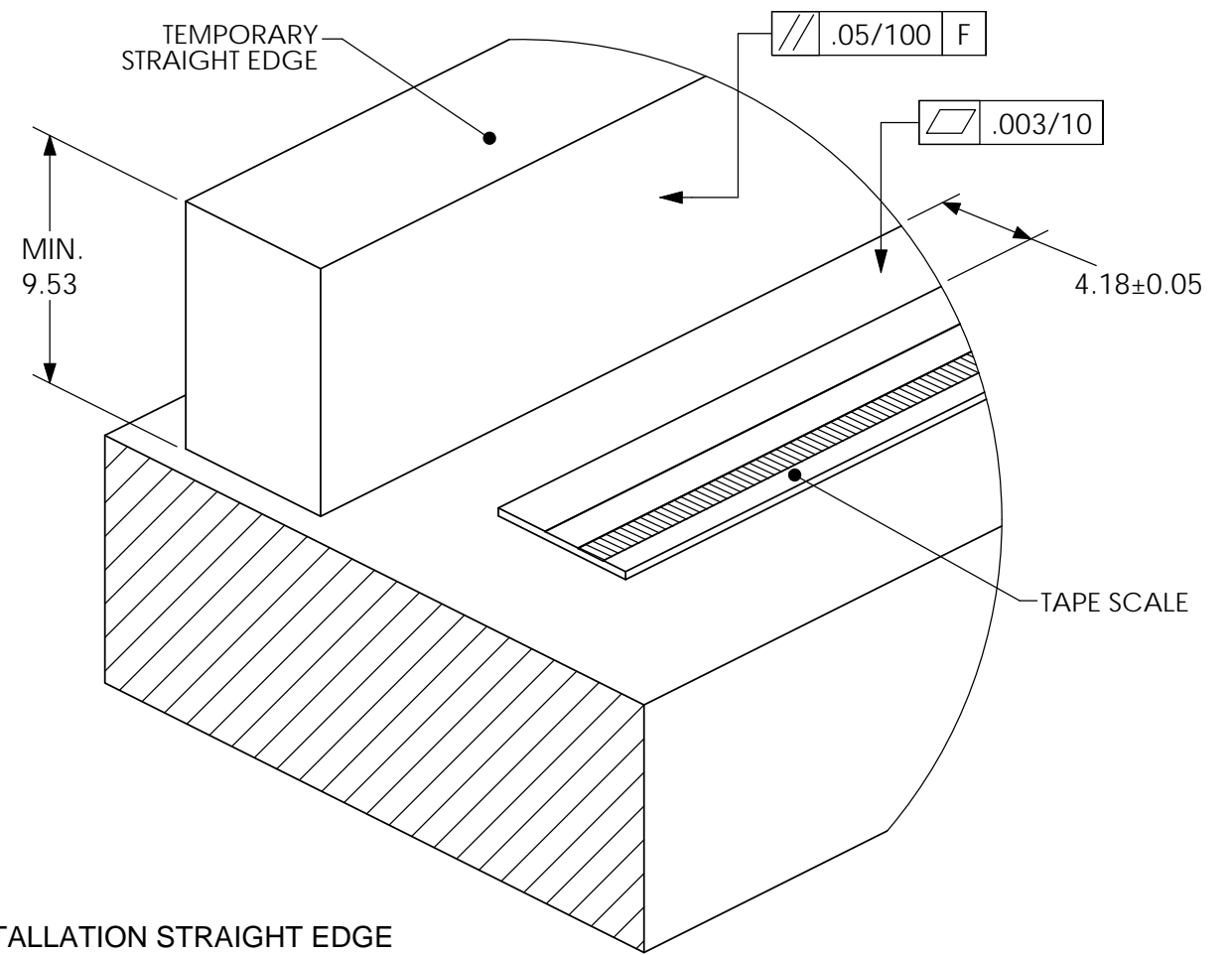


FIGURE 3: INSTALLATION STRAIGHT EDGE  
USE WITH TAPE APPLICATOR  
F = MACHINE GUIDEWAY

NOTES:

1. MICROE SYSTEMS RECOMMENDS UTILIZING AN EDGE AS A GUIDE IN ORDER TO MAINTAIN STRAIGHTNESS OF THE SCALE DURING MOUNTING. THIS EDGE MAY BE TEMPORARY OR PERMANENT AND SHOULD FOLLOW THE APPLICATION GUIDELINES IN FIGURES 1-3.
2. THE TAPE SCALE APPLICATOR TOOL IS RECOMMENDED FOR INSTALLATION OF SCALES AND, IN PARTICULAR, THOSE LONGER THAN 250 MILLIMETERS. SHORTER SCALES MAY BE APPLIED EITHER BY HAND OR WITH APPLICATOR TOOL. PLEASE SEE INSTRUCTION MANUAL FOR DETAILS.
3. THE INSTALLATION METHOD SHOWN IN FIGURE 1 SHOULD INVOLVE HAND INSTALLATIONS ONLY. THE APPLICATOR TOOL IS NOT COMPATIBLE WITH THIS METHOD. IN ADDITION END CAPS CANNOT BE USED WITH THIS METHOD.
4. FOR APPLICATIONS WHERE MACHINING THE MOUNTING SURFACE IS NOT DESIRED, A TEMPORARY STRAIGHTEDGE CAN BE USED. A STAINLESS STEEL RULE MAY BE USED AS IN FIGURE 2 IF THE RULE MEETS THE THICKNESS REQUIREMENT. OTHERWISE, THE TEMPORARY STRAIGHTEDGE MAY BE USED AS SHOWN IN FIGURE 3.
5. IN FIGURE 3, THE OUTSIDE REFERENCE SURFACE OF THE TOOL SLIDES AGAINST THE TEMPORARY EDGE, AND THE TAPE SCALE IS THEREFORE OFFSET FROM THE EDGE AS SHOWN. IF THIS OFFSET IS TOO SMALL FOR THE APPLICATION, THE CUSTOMER MAY DESIRE TO CREATE A SPACER THAN CAN ATTACH TO THE OUTSIDE SURFACE OF THE TOOL. PLEASE SEE INSTRUCTION MANUAL FOR DETAILS.
6. IN FIGURES 1 AND 2, THE SCALE BENCHING EDGE IS INTENDED TO AID THE INSTALLATION OF INDEX MARKERS. FOR APPLICATIONS SUCH AS IN FIGURE 3, THE CUSTOMER MAY USE A TEMPORARY BENCHING SURFACE TO INSURE THE PROPER INSTALLATION OF THE INDEX MARKERS. PLEASE SEE INSTRUCTION MANUAL FOR DETAILS. THE EDGE OF THE GROOVE OR STRAIGHTEDGE MUST BE SHARP ON BENCHING SIDE IN ORDER FOR APPLICATOR TO USE AS A GUIDE. IN ORDER FOR THE TAPE SCALE TO MOUNT CLOSE TO THIS EDGE, A MAXIMUM RADIUS OF .13 SHOULD BE USED WHERE THE EDGE MEETS THE BOTTOM OF THE MOUNTING SURFACE.

		MicroE Systems Division of GSI Group	
125 Middlesex Tpk. Bedford, MA 01730		DESCRIPTION: <b>INTERFACE, ENCODER, 20um,          TAPE SCALE w/INDEX MARKERS,          MERCURY II 1600 SENSOR</b>	
SIZE	DWG. NO.	REV.	
B	ID-00375	A	
SCALE: 4:1	CAD FILE:	3RD ANGLE PROJECTION	SHEET 4 OF 4