X3T9.2/92-091

molex

April 8, 1992

George Penokie
IBM Corporation
Dept 289 Bldg 114-2
37th Street & Highway 52N
Rochester, MN 55901

Dear George;

Attached is the tolerance analysis of the "P" cable connection regarding our suggested changes to improve wipe. Molex feels this change is 100% compatible with all product already installed in units. But to be sure, we should ask all manufacturers of this connector to review this tolerance analysis for compatibility with their design.

Jim McGrath
Molex Incorporated

cc: Claude Mosley - IBM
Joe Dambach - Molex

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MOLEX INCORPORATED
2222 WELLINGTON COURT LISLE, IL 60532-1682
TEL 708-969-4550
FAX 708-969-1752 TLX 254069

PROPOSED SCREW LOCK HEIGHT FOR SCSI–3 "TYPE P" CONNECTOR

(REFER TO FIGURE 2 FOR THE FOLLOWING DIMENSIONS)

I. REQUIREMENTS:

1) SEAT MATED CONNECTORS AT SCREW LOCK FACE.

2) $A \geq B13$

3) $(A-A16)MAX. \leq (B17+B16)MIN.$

4) $A13 \leq (B16+B17)$ _

II. GIVEN: (FROM SCSI–3)

A16 = .010±.005	B13 = .197±.005	
A13 = .193±.004	B14 = .135±.007	(PROPOSED)
A18 = .104 MIN.	B17 = .060 ±.005	

III. FIND: DIMENSIONS: "A" AND "B16"

IV. SOLUTION:

$A = B17 + B16 + A16$

BY REQUIREMENT #2: $B17 + B16 + A16 \geq B13$

$.060\pm.005 \pm B16 \pm .010+.005 \geq .197\pm.005$

THEN: $B16 \geq .202 - .055 - .005$

$B16 \geq .142$

LET: $B16 = .144\pm.002$

THEN: $A = .060\pm.005 + .144\pm.002 + .010\pm.005$

$A = .214\pm.007$ (RMS)

BY REQUIREMENT #3: $.214\pm.007 - .010\pm.005 \leq .060\pm.005 + .144\pm.002$

$.204\pm.009$ (RMS) $\leq .204\pm.007$

SO: ADD .002 TO B16 TO COMPENSATE

THEN: **B16 = .146±.002**

BY REQUIREMENT #4: $.193\pm.004 \leq .146\pm.002 + .060\pm.005$

.197 MAX. < .199 MIN.

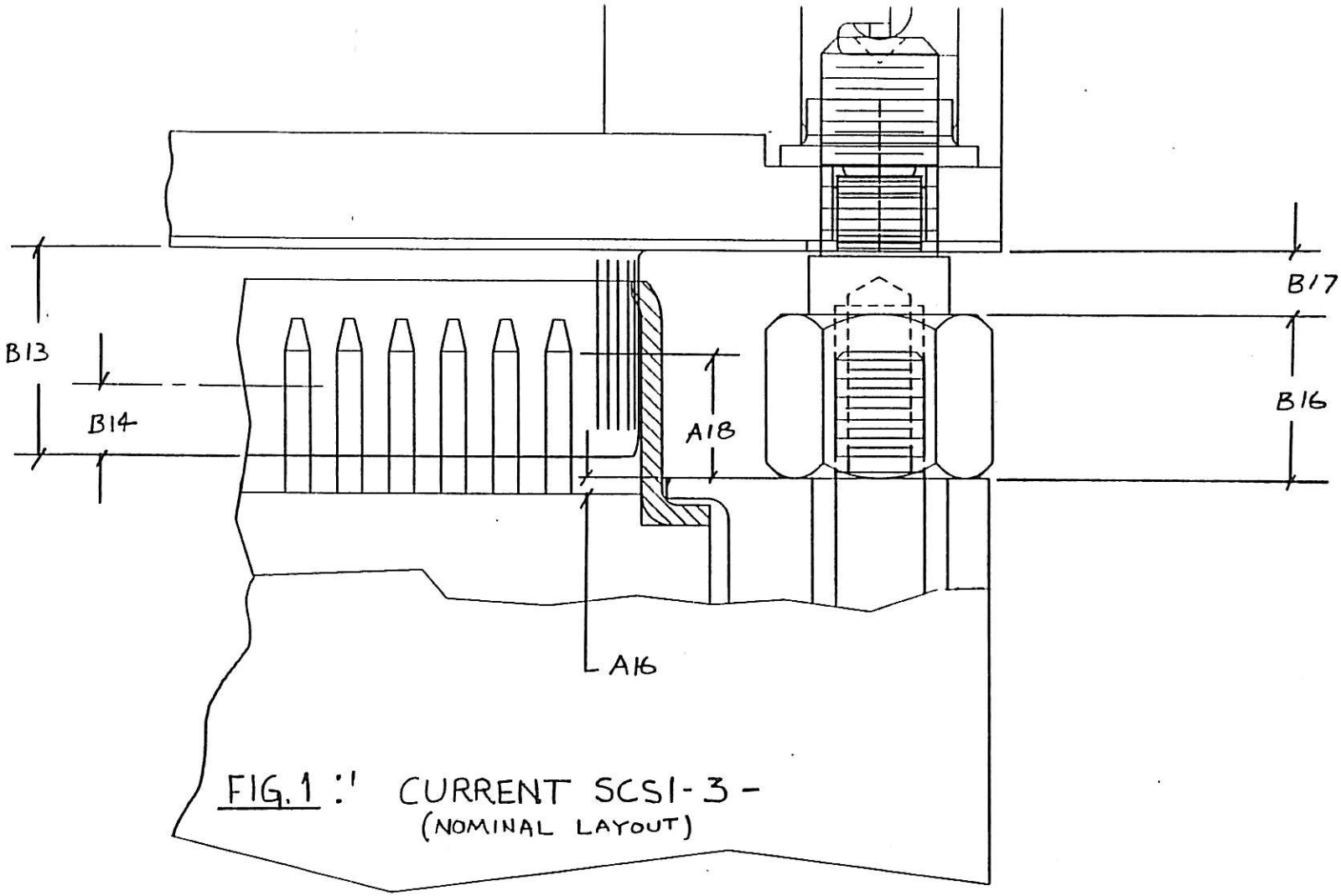


FIG. 1 :' CURRENT SCSI-3 -
(NOMINAL LAYOUT)

WIPE = A18 - [(B16 + B17) - B13 + B14]
= .104 MIN. - [(.157 ± 2 + .060 ± 5) - .197 ± 5 + .065 MAX.]
= .019 ± 12 (WORST CASE)

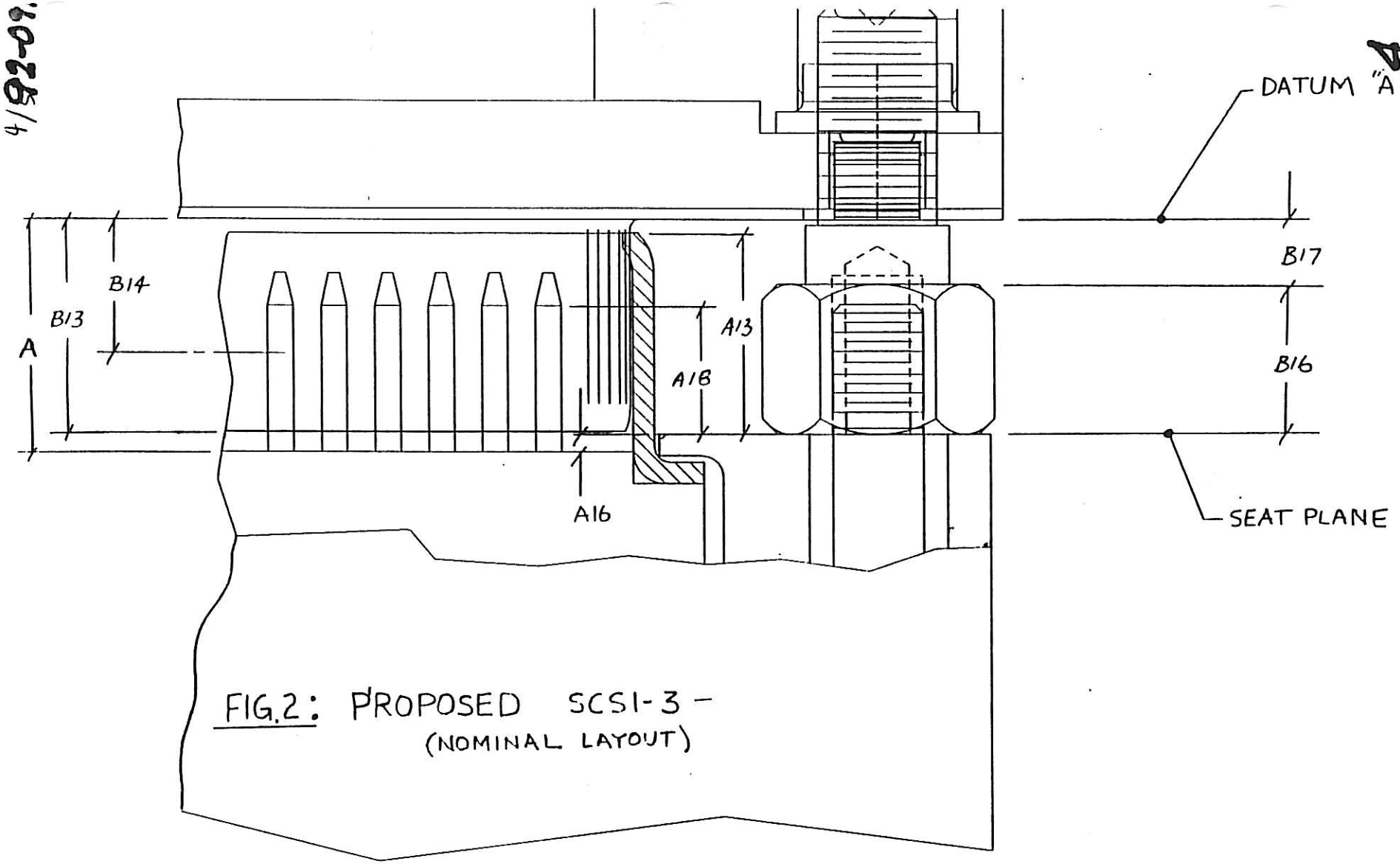
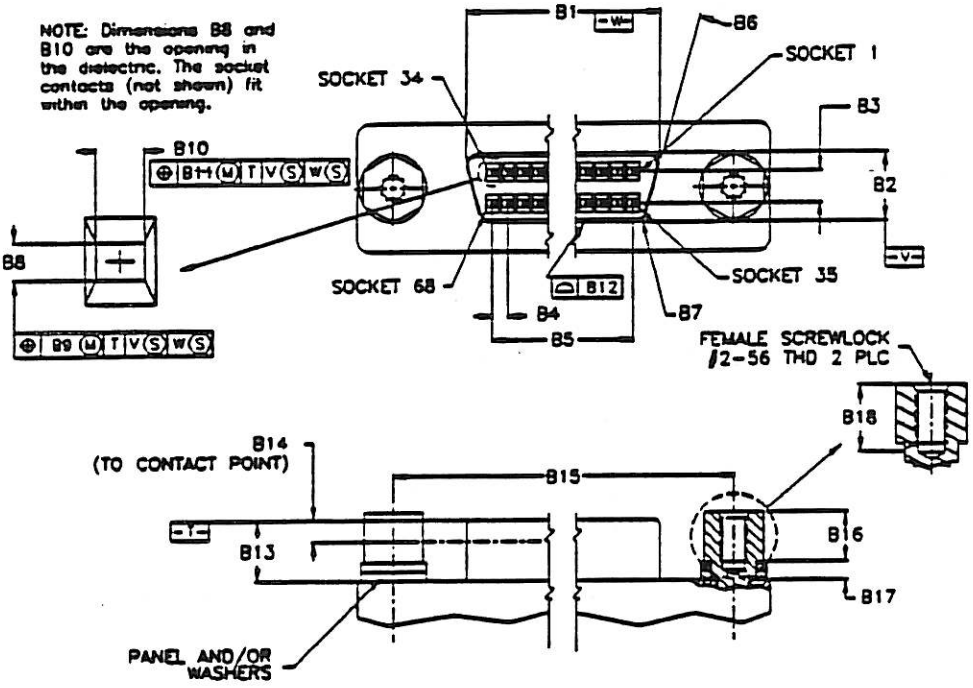


FIG.2: PROPOSED SCSI-3 - (NOMINAL LAYOUT)

WIPE = B14 - (B16 + B17 - A18)
= .135 ± 7 - (.146 ± 2 + .060 ± 5 - .113 ± 9)
= .042 ± 13 (RMS)
= .042 ± 23 (WORST CASE)



DIMENSIONS	MILLIMETERS	INCHES
B1	46.13	1.816
B2	5.54	0.218
B3	2.54	0.100
B4	1.27	0.050
B5	41.91	1.650
B6	15°	15°
B7	1.00 R	0.039 R
B8	0.81±0.05	0.024±0.002
B9	0.15	0.006
B10	0.86±0.10	0.034±0.004
B11	0.15	0.006
B12	0.05	0.002
B13	5.00±0.13	0.197±0.005
B14	1.65 MAX	0.065 MAX
B15	57.91±0.13	2.280±0.005
B16	3.99±0.05	0.157±0.002
B17	1.52±0.13	0.060±0.005
B18	3.86 MIN	0.152 MIN

Figure 8: 68-Contact Shielded Device Connector (P/Q Cable)