美国联邦通讯委员会 FCC 标准

美式六位插头技术要求-

1. 所有插头必须满足插头插拔规的要求。

2. B-B 部分适用于任意不包括插头触点的插座槽。

3. 出线口的最大厚度为 0.100inch，最大宽度为 0.200inch，圆弧状，开口在插头中心线部位，出线口尺寸、形状和位置的偏差可能影响网络插座的特殊性能。

4. 插头的最大标准长度是 0.460inch，也可比标准长度长或直接用于特殊线缆及无出线口的适配器、仪器及装备（须在 68.500 介绍部分限制性说明范围之内的。）比标准长度长的插头可能影响网络插座的特殊性能。

5. 手柄的最小长度要求是 0.474inch，最大长度不大于 0.520inch，更长的手柄使用受与注 4 相同的限制。

6. 为了能同多于 6 位的插座作到最佳配合，插头的头部最多可延长至 0.092inch。

7. 这些尺寸适用于插座内接触槽的定位，插头金片要尽可能位于槽的中心，但位于正中心不是必须的。

8 .238/.243 尺寸是为了能使插头在多于 6 个触点的插座中获得最大导通性能，.233/.243 的公差范围是允许的，但在 8 位插槽的插座中可能会产生问题。

9. 中轴线应和插头宽度（.380 为参照）的中心线在(+-)0.003inch 内相重合。

美国联邦通讯委员会 FCC 标准

（a）6 位插头/插座导通性能说明（续）

注：（适用于图 68.500 (a)(3)(i)）

1. 插头与插座的导通接触面应为厚度不小于 0.000050inch 的硬金，接触力不小于 100 克，任何非镀金的导通材料应和金具有相容性并能提供等效的导通性能，如图所示部分的接触面应光滑,无锐边。

2. 能提供与此方式相等或更优的导通性能并不会引起插头、插座损坏的其它导通方案也是允许的。注 1 的要求适用于所有可能出现的接触导通区域。

3. 插头接触件和前方塑料件的形状应防止在插头插入插座时引起插座接触部分的损坏。

4. 插头金片和插座金针接触部分的设计以 0.018inch 的有弹性的磷铜丝为基准。

5. 此为插头插入插座后插头与插座之间的最小建议角度，如果此角度大于 24°C,插头与插座间可能会发生电气性能损失，如果此角度小于 13 °C，会导致插头塑屑产生。

6. 为了避免电气导通性能损失，参考尺寸 B 点到最高点“X”最高应为 0.200inch，大于 0.211inch 会导致插头与插座间电气导通性能的损失，0.211 的最大值应被看作最大确定值。

7. 24 °C 的最小角度仅适用于正前方塑料壁高于 0.190 inch 的插头。

ATTACHMENT C

APPENDIX A-1 THROUGH A-36

REVISIONS TO SUBPART F

SECTION 63.500

SUBPART F ---- CONNECTORS

Section 68.500 Specifications

Proposed Rulemaking

Add General section shown on Appendix A-1 attached.

Replace Figure 68.500 (a)(1) with Figure 68.500(a)(1)(i).

Replace Figure 68.500(a)(2) with Figure 68.500(a)(2)(i).

Add Figure 68.500(a)(2)(ii) shown on Appendix A-4.

Add plug specification notes shown on Appendix A-5.

Replace Figure 68.500(a)(3) with Figure 68.500(a)(3)(i).

Add contact specification notes shown on Appendix A-7.

Replace Figure 68.500(a)(4) with Figure 68.500(a)(4)(i).

Replace Figure 68.500(a)(5) with Figure 68.500(a)(5)(i).

Delete Figure 68.500(b)(1).

Replace Figure 68.500(b)(2) with Figure 68.500(b)(2)(i).

Replace Figure 68.500(b)(3) with Figure 68.500(b)(3)(i).

Add jack specification notes shown on Appendix A-12 and Appendix A-13.

Replace Figure 68.500(c)(1) with Figure 68.500(c)(1)(i).

Replace Figure 68.500(c)(2) with Figure 68.500(c)(2)(i).

Add Figure 68.500(c)(2)(ii) shown on Appendix A-16.

Add plug specification notes shown on Appendix A-17.

Replace Figure 68.500(c)(3) with Figure 68.500(c)(3)(i).

Add contact specification notes shown on Appendix A-19.

Replace Figure 68.500(c)(4) with Figure 68.500(c)(4)(i).

Replace Figure 68.500(c)(5) with Figure 68.500(c)(5)(i).

Replace Figure 68.500(d)(2) with Figure 68.500(d)(2)(i).

Replace Figure 68.500(d)(3) with Figure 68.500(d)(3)(i).

Add jack specification notes shown on Appendix A-24 and Appendix A-25.

Replace Figure 68.500(i)(1) with Figure 68.500(i)(1)(i).

Replace Figure 68.500(i)(2) with Figure 68.500(i)(2)(i).

Add Figure 68.500(i)(2)(ii) shown on Appendix A-28.

Add keyed-plug specification notes shown on Appendix A-29.

Replace Figure 68.500(i)(3) with Figure 68.500(i)(3)(i).

Add contact specification notes shown on Appendix A-31.

Replace Figure 68.500(i)(4) with Figure 68.500(i)(4)(i).

Replace Figure 68.500(i)(5) with Figure 68.500(i)(5)(i).

Replace Figure 68.500(j)(2) with Figure 68.500(j)(2)(i).

Add jack specification notes shown on Appendix A-35 and Appendix A-36.

SUBPART F -- CONNECTORS

Section 68.500 Specifications

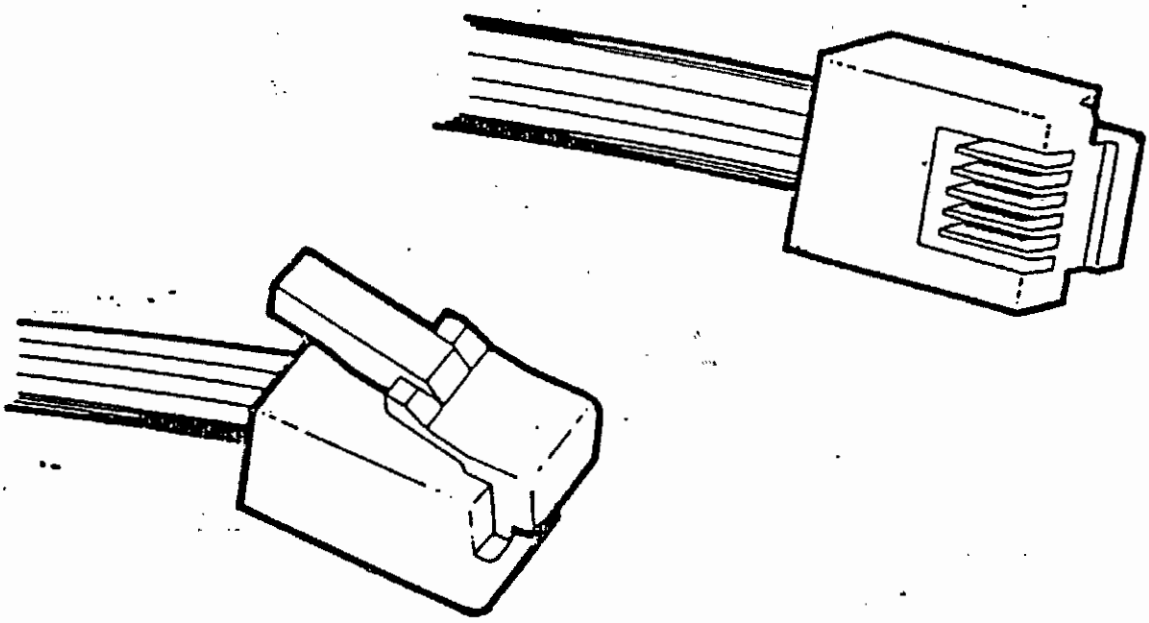
General

The plugs and jacks described in this section represent the standard connectors to be used for connections to the telephone network. The plug and jack designs shown are representative of generic types, and should not be interpreted as the only designs that may be used. Design innovation and improvement is expected; but for interchangeability to be maintained, alternative designs (the "or equivalent" permitted in Section 68.104) must be compatible with the plugs and jacks shown. The interface dimensions between mating plugs and jacks must be maintained.

Hardware used to mount, protect, and enclose standard jacks is not described. The only requirement on connecting blocks, housings, dust covers, outdoor boxes, and the like that contain standard network jacks is that they accept standard plugs with cordage.

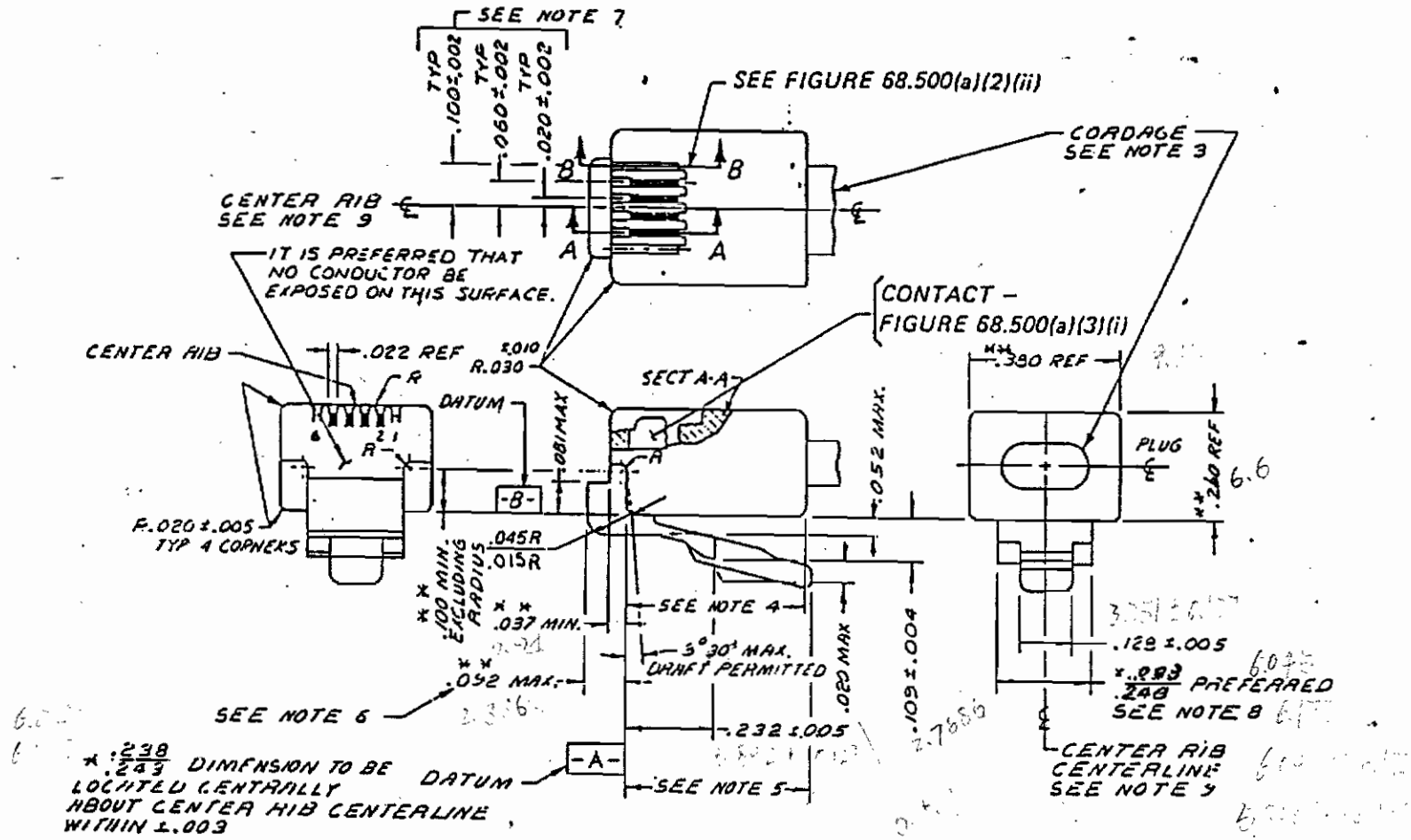
For special purpose applications, plugs may be made longer than shown or adapted for direct use on equipment or apparatus without cordage. The sliding modular plug used on the back of many modular wall telephone sets is an example of such a special purpose application. It is the responsibility of the designers and manufacturers of communication equipment who use such plugs to assure that they are compatible with the hardware used to mount standard jacks with which they plan to interface.

(a) Miniature 6-Position Plug:



(Note: This plug is depicted equipped with 4 contacts; it may be fabricated with its full 6 contact capability.)

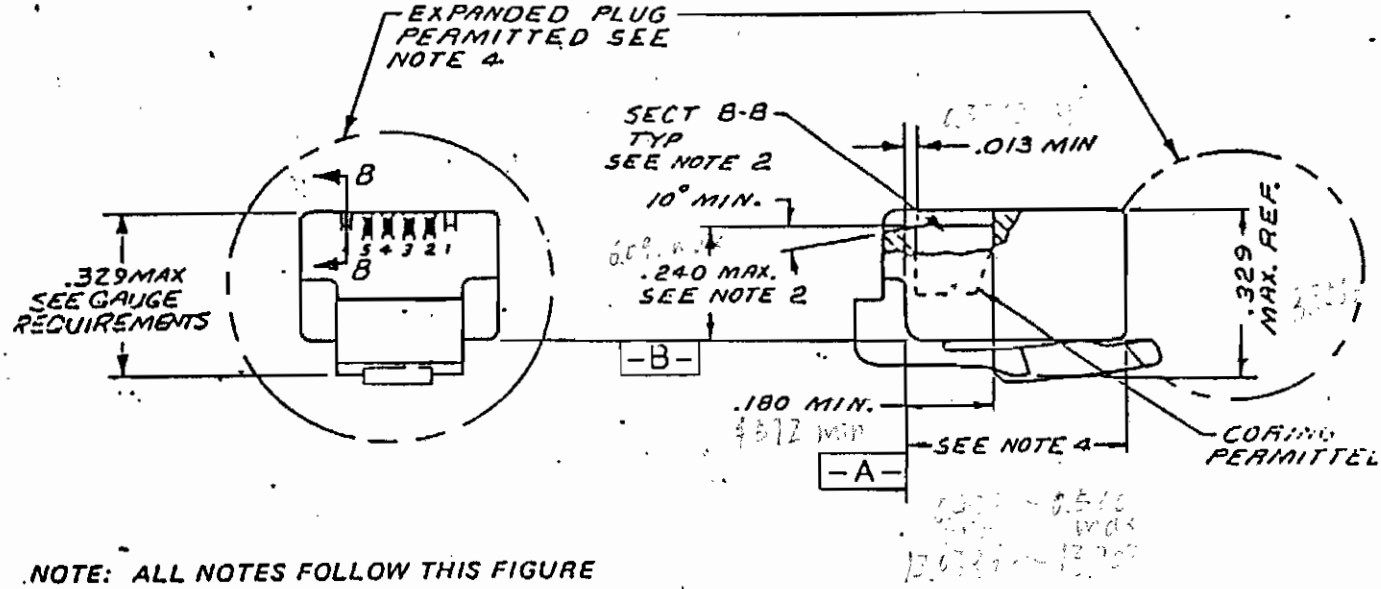
Figure 68.500(a)(1)(i)–View



* * SEE GAUGE REQUIREMENTS, FIGURE 68.500(a)(4)(i) & FIGURE 68.500 (a)(5)(i)

NOTE: ALL NOTES FOLLOW FIGURE 68.500(a)(2)(ii)

Figure 68.500(a)(2)(i) – 6 Position Plug Mechanical Specification



NOTE: ALL NOTES FOLLOW THIS FIGURE

Figure 68.500(a)(2)(ii) – 6 Position Plug Mechanical Specification (Continued)

(a) 6-Position Plug, Mechanical Specifications (continued)

Notes: (Notes apply to Figures 68.500(a)(2)(i) & 68.500(a)(2)(ii)

1. All plugs must be capable of meeting the requirements of the plug go and no-go gauges.

2. Section BB applies to any jack contact receiving slot which does not contain a plug contact.

3. The major cordage cross section should be .100 inch max. thick by .200 inch max. wide, with rounded corners. It should exit the plug on the plug centerline. Deviations in cordage size, shape, and location, may inhibit the special features of some network jack enclosures.

4. The standard plug length is .460 inch max. Plugs may be made longer than standard or adapted for direct use on special cords, adapters without cordage, and on apparatus or equipment subject to the limitations described in the Section 68.500 introductory paragraphs. Plugs longer than standard may inhibit the special features of some network jack enclosures.

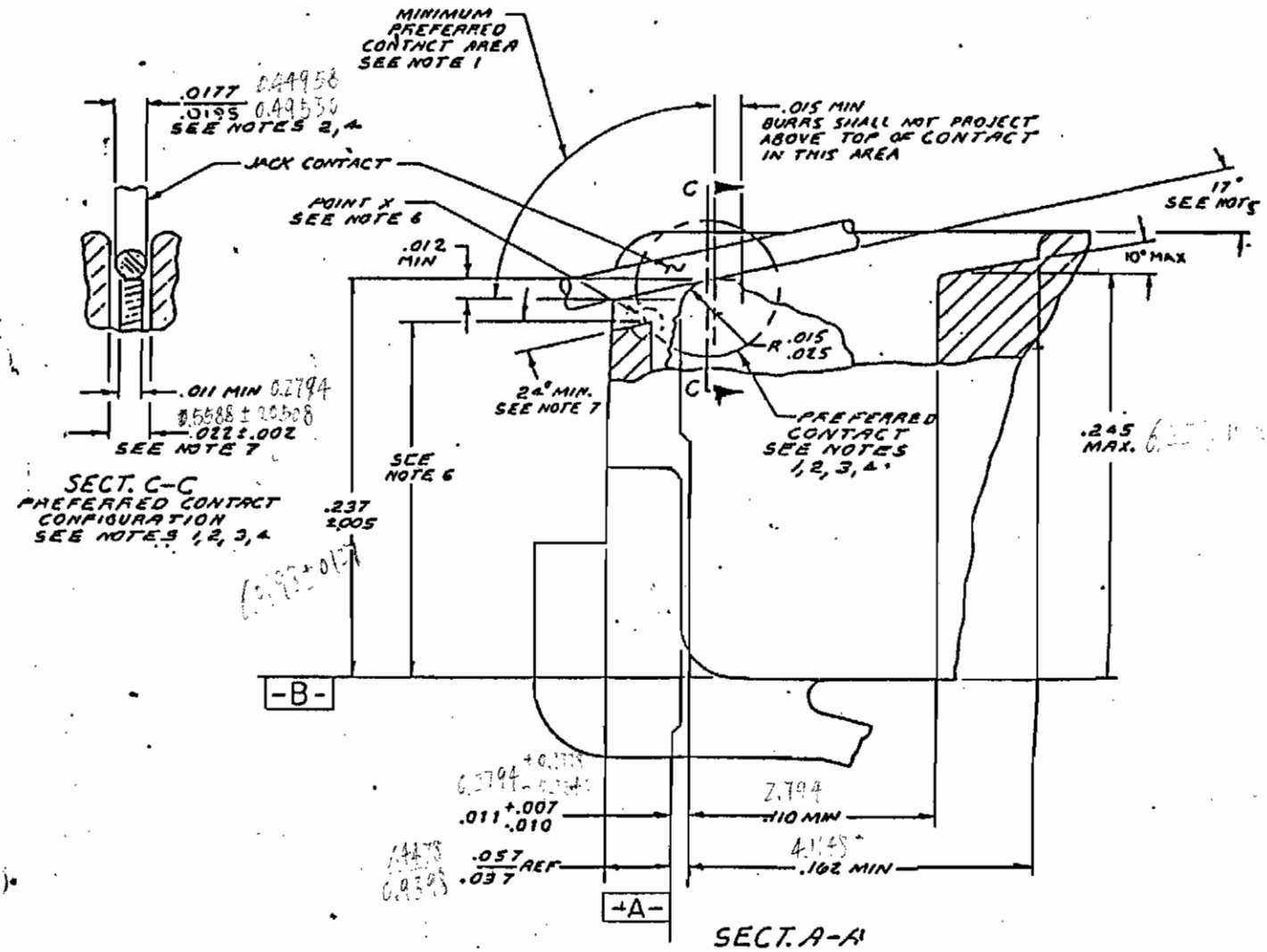
5. A .474 inch minimum tab length is required. It is preferred that a maximum tab length be no longer than .520 inch. Longer tabs may be used with the same limitations as described in Note 4.

6. To obtain maximum plug guidance in jacks with more than 6 conductors, it is desirable to extend the front plug nose to the .092 inch maximum.

7. These dimensions apply to the location of jack contact receiving slots. It is desirable that plug contacts be centered in these slots, but centering is not required.

8. The .238/.243 dimension is perferred to obtain maximum plug guidance in jacks with more than 6 conductors. A tolerance range of .233/.243 is permitted, but may create targeting problems in 8-position jacks.

9. The center rib centerline shall be coincident with the plug width (.380 ref.) centerline within ± .003 inch.



NOTE: ALL NOTES FOLLOW THIS FIGURE

NOTE: THE 8 POSITION PLUG/JACK CONTACT SPECIFICATION IS IDENTICAL

Figure 68.500(a)(3)(i) – 6 Position Plug Plug/Jack Contact Specification

(a) 6-Position Plug/Jack Contact Specification (continued)

Notes: (Notes apply to Figure 68.500(a)(3)(i))

1. The plug/jack contact interface should be hard gold to hard gold and should have a minimum gold thickness of 0.000050 inch on each side of the interface. The minimum contact force should be 100 grams. Any non-gold contact material must be compatible with gold and provide equivalent contact performance. A smooth, burr-free surface is required at the interface in the area shown.

2. Other contact configurations which provide contact performance equal to or better than the preferred configurations and do not cause damage to plug or jack contacts are permitted. The requirements of note 1 apply to all possible contact areas.

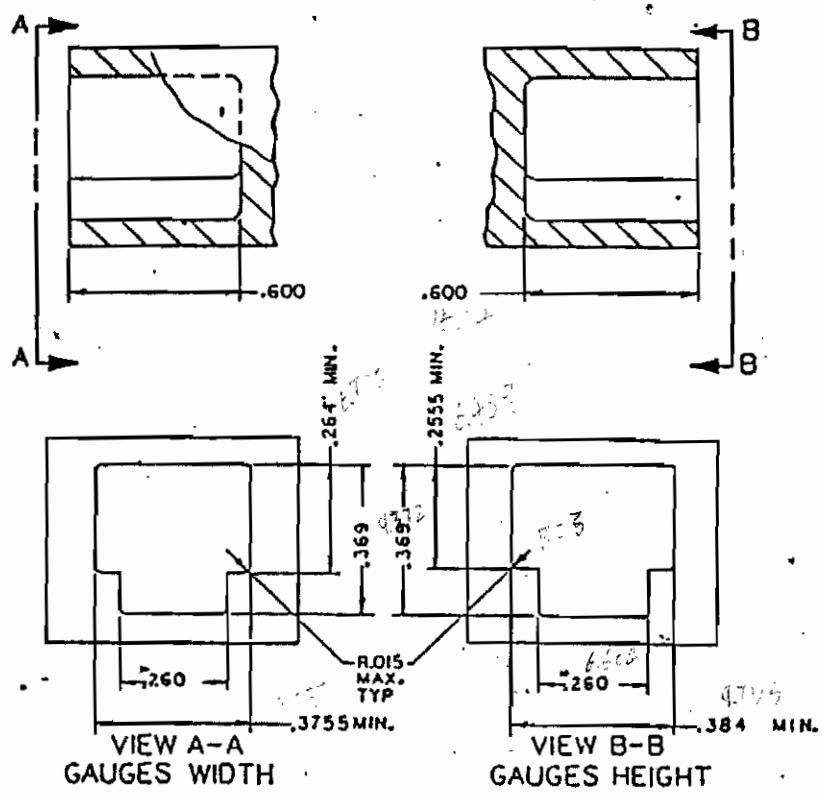
3. The configuration of the plug contact and the front plastic of the plug should prevent jack contacts from being damaged during plug insertion into jacks.

4. The modular plug blade and jack wire interface design is based upon .018 inch spring temper phosphor bronze wire.

5. This is the suggested nominal contact angle between plugs and jacks with the plug latched into the jack. If this angle becomes greater than 24 degrees loss of electrical contact may occur between the plug and jack. If the nominal contact angle becomes less than 13 degrees interference between jack contacts and the internal plastic in the plug may occur.

6. To avoid loss of electrical contact, the preferred dimension from datum B to the highest point "x" should be .200 inch max. A dimension greater than .211 inch may result in loss of electrical contact between plugs and jacks. The .211 inch max. shall be considered an absolute maximum.

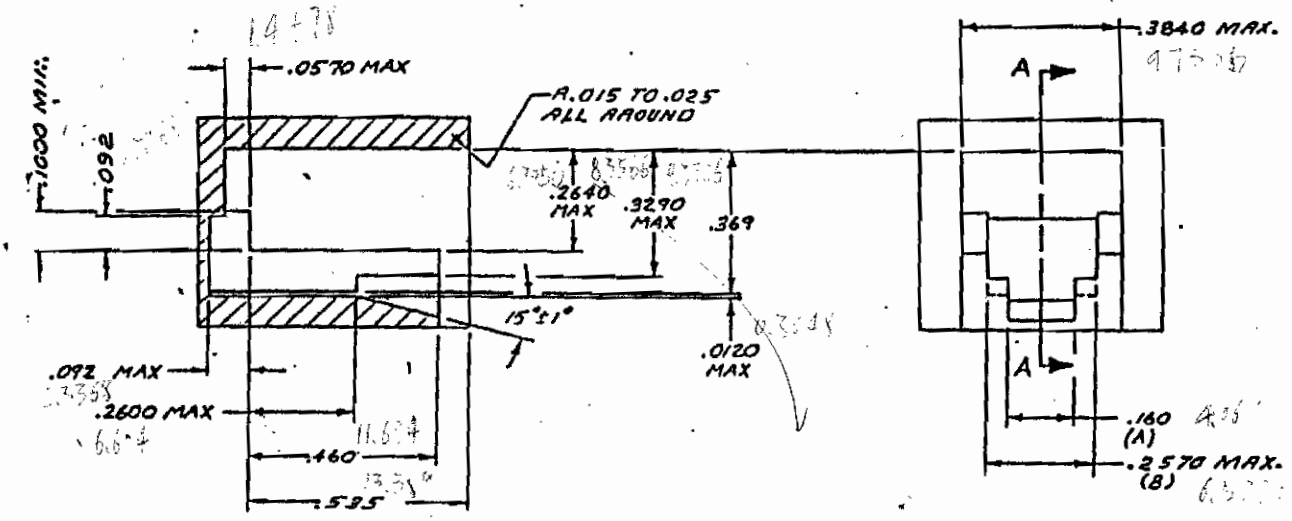
7. The 24 degree min. angle applies only to plugs with front plastic walls higher than .190 inches.



NO – GO GAUGE

1. The plug shall not be capable of entering the gauge more than .030 inch beyond Datum-A-(see figure 68.500 (a)(2)(i)) with 2.0 pounds insertion force.
2. Non-toleranced dimensions given to three places shall be within ±.002 inch.
3. *.260 Dimension to be centrally located with respect to .384 minimum and .3755 minimum within ±.002 inch.

Figure 68.500(a)(4)(i) – 6 Position Plug
Minimum Plug Size



SECT. A-A

GO GAUGE

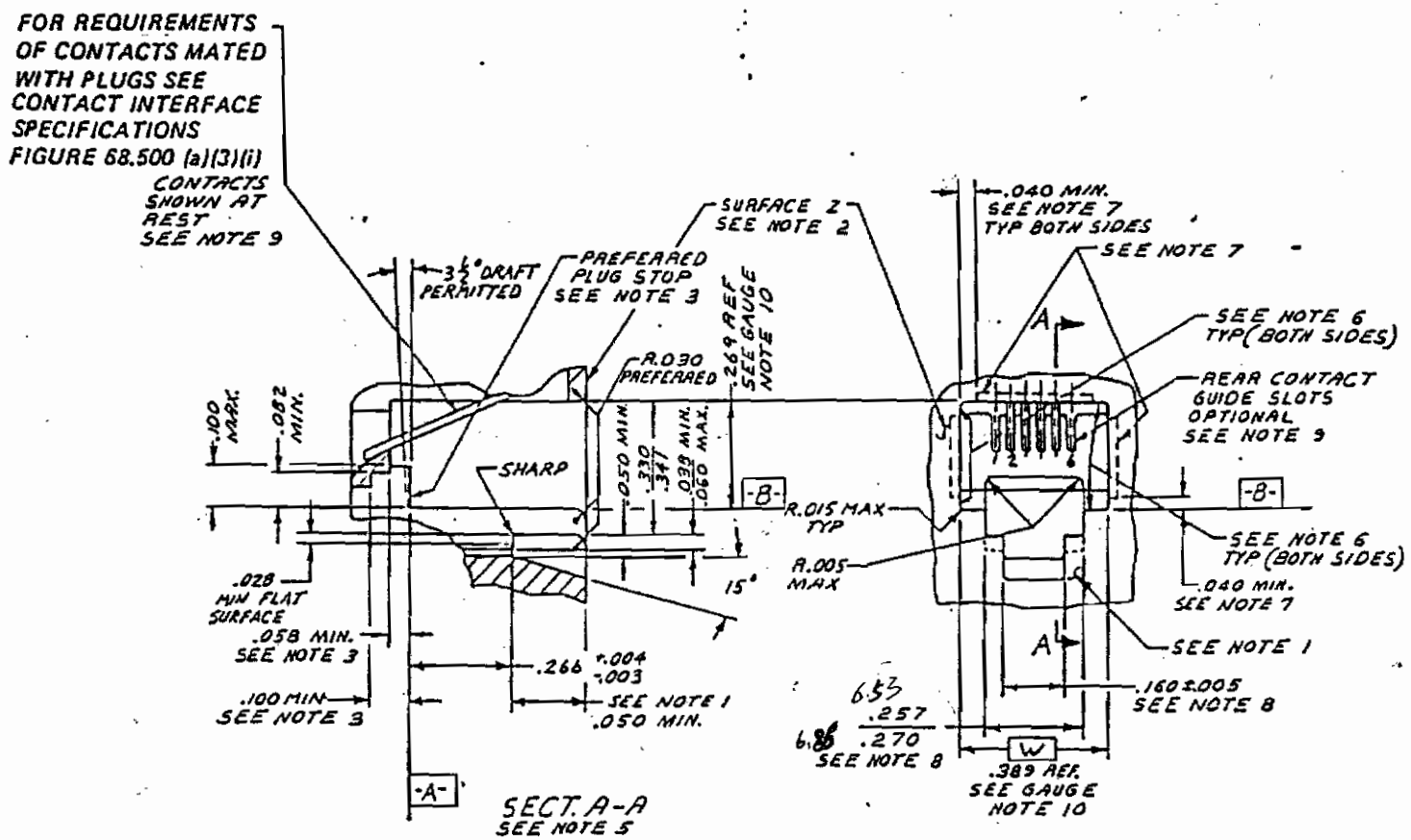
Notes:

1. The plug shall be capable of insertion and latching into the gauge with 5 pounds or less insertion force. Plug latching bar shall be depressed so as not to interfere with the plug entry. After insertion and latching, plug shall be capable of removal, with the latch depressed, with a removal force of 10 pounds or less applied at an advantageous angle.
2. Dimensions given to three decimal places shall be within ±.002 inch.
3. Dimensions (A) and (B) to be centrally located with respect to .3840 max. jack opening width within ±.001 inch.
4. Do not scale drawings for external configuration.

Figure 68.500(a)(5)(i) – 6 Position Plug
Maximum Plug Size

(b) Miniature 6-Position Jack:

(Note: This jack is depicted equipped with 4 contacts; it may be fabricated with its full 6 contact capacity.)



NOTE: ALL NOTES FOLLOW FIGURE 68.500 (b)(3)(i) UNLESS SPECIFIED.

Figure 68.500(b)(2)(i) – 6 Position Jack
Mechanical Specification

(b) 6-Position Jack, Mechanical Specifications (continued)

Notes: (Notes apply to Figures 68.500(b)(2)(i) & 68.500(b)(3)(i))

1. Front surface projections beyond the .050 min shall be configured so as not to prevent finger access to the plug release catch (Reference Figure 68.500(a)(2)(i), 6 - Position Plug, Mechanical Specifications). A catch length greater than .050 is beneficial in providing greater breakout strength.

2. Surface Z need not be planar or conincident with the surface under the plug release catch. Surface Z projections must not prevent insertion, latching, and unlatching of the standard 6-position plug described in Section 68.500(a).

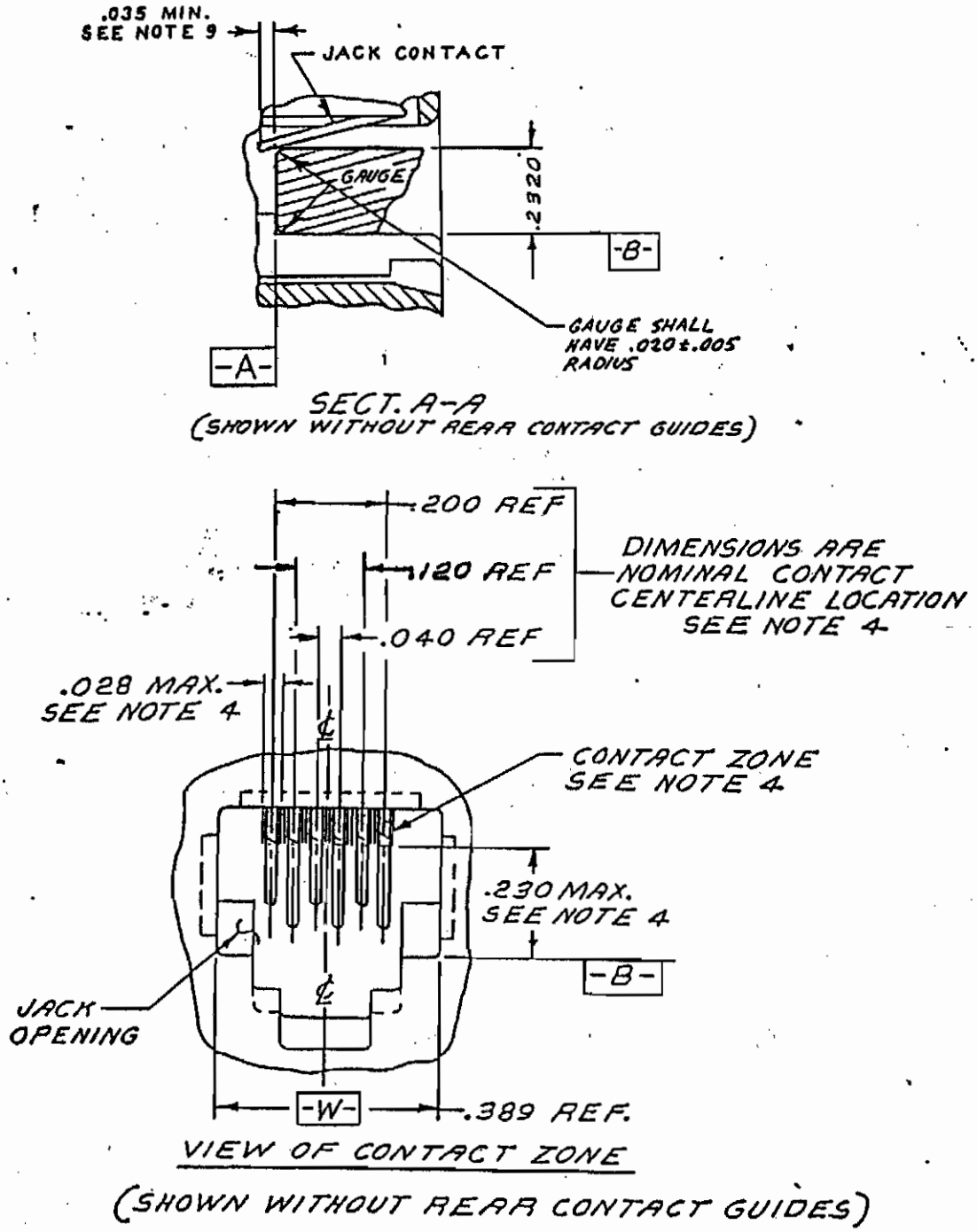
3. The preferred plug stop surface is indicated. If some other internal feature is used as a plug stop, it must be located so that the axial movement of a latched plug is no greater than 0.045 inch.

4. To prevent mistargeting between the plug and jack contacts, the jack contacts should be completely contained in their individual contact zones, (.028 inch max wide), where they extend into the jack openings. There is no location requirement for jack contacts below these zones (.230 inch max), but adequate contact separation must be maintained to prevent electrical breakdown. These shaded contact zones should be centrally located, (include all locating tolerances), about the jack opening width .389 Ref, (Datum -W-). Contacts located outside of these zones may result in mistargeting between the jack and plug contacts.

5. All inside and outside corners in the plug cavity to be .015 inch radius max unless specified.

6. These surfaces shall have 0°15' maximum draft.

7. Relief inside the dotted areas on 3 sides of the jack opening is permitted. The .269 Ref and .389 Ref Gauge Requirements must be maintained in each corner, (ref. 0.040 inch min), to assure proper plug/jack interface guidance. A .032 ± .005 relief on the top side, (opposite plug catch), is required on jacks in connecting blocks which mount and connect portable wall telephones so as to assure interface with the special purpose sliding modular plug used on many wall telephone sets.



NOTE: ALL NOTES FOLLOW THIS FIGURE

Figure 68.500(b)(3)(i) — 6 Position Jack
Mechanical Specifications (Continued)

(b) .6-Position Jack, Mechanical Specifications (continued)

NOTES: (continued)

8. 0.160 and .257/.270 inch dimensions to be centrally located to jack opening width -W- within ± 0.007 inch.

9. Minimum acceptable jacks contact length when guide slots are not used. When contact guide slots are used, the contacts shall be lengthened so that contacts at rest will always be contained in the guides.

10. Gauge Requirements:

Go: The jack shall be capable of accepting a 0.3840 x 0.2640 inch gauge and the gauge shall be capable of being removed with a maximum force of 2 pounds.

NO GO: The jack shall not accept either a 0.3940 x 0.254 inch horizontal width of opening gauge or a .2740 x .376 inch vertical height of opening gauge. However, if either gauge is accepted the force necessary to remove the gauge shall be minimum 3.0 ounces.

Removal forces do not include forces contributed by contact springs nor shall external forces be applied to the jack that will affect these removal forces.

Gauges shall have a 0.030 inch radius on the nose and a 0.015 inch radius on all edges with clearance provided for contacts.

(c) Miniature 8 - Position Plug, Unkeyed:

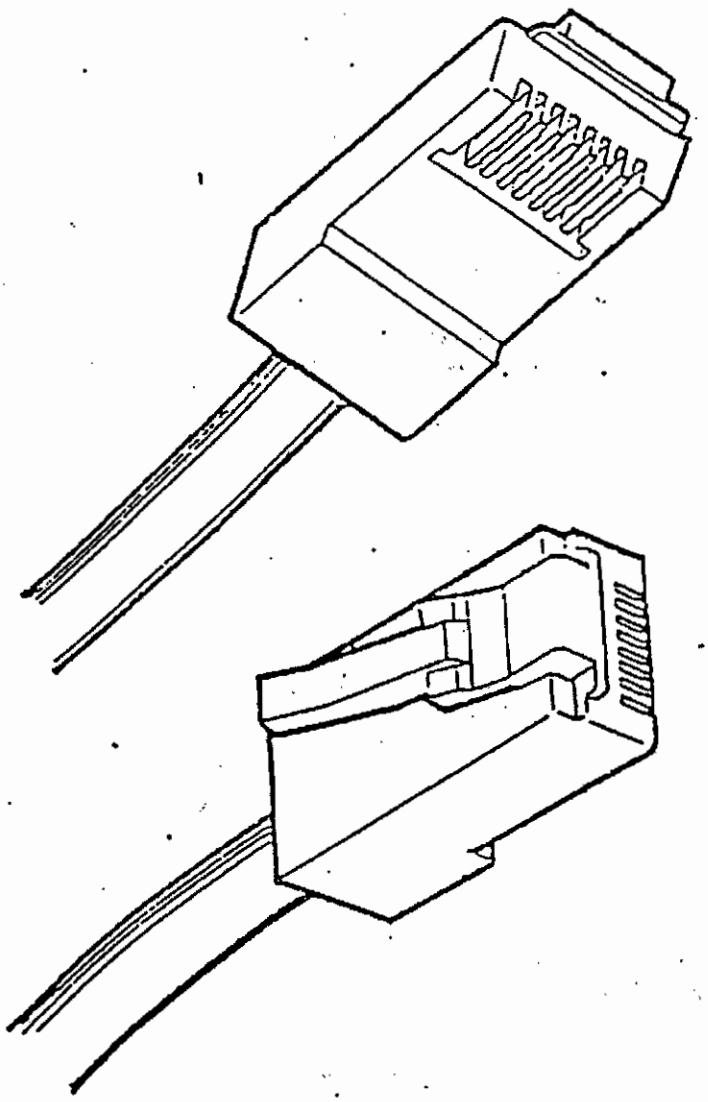
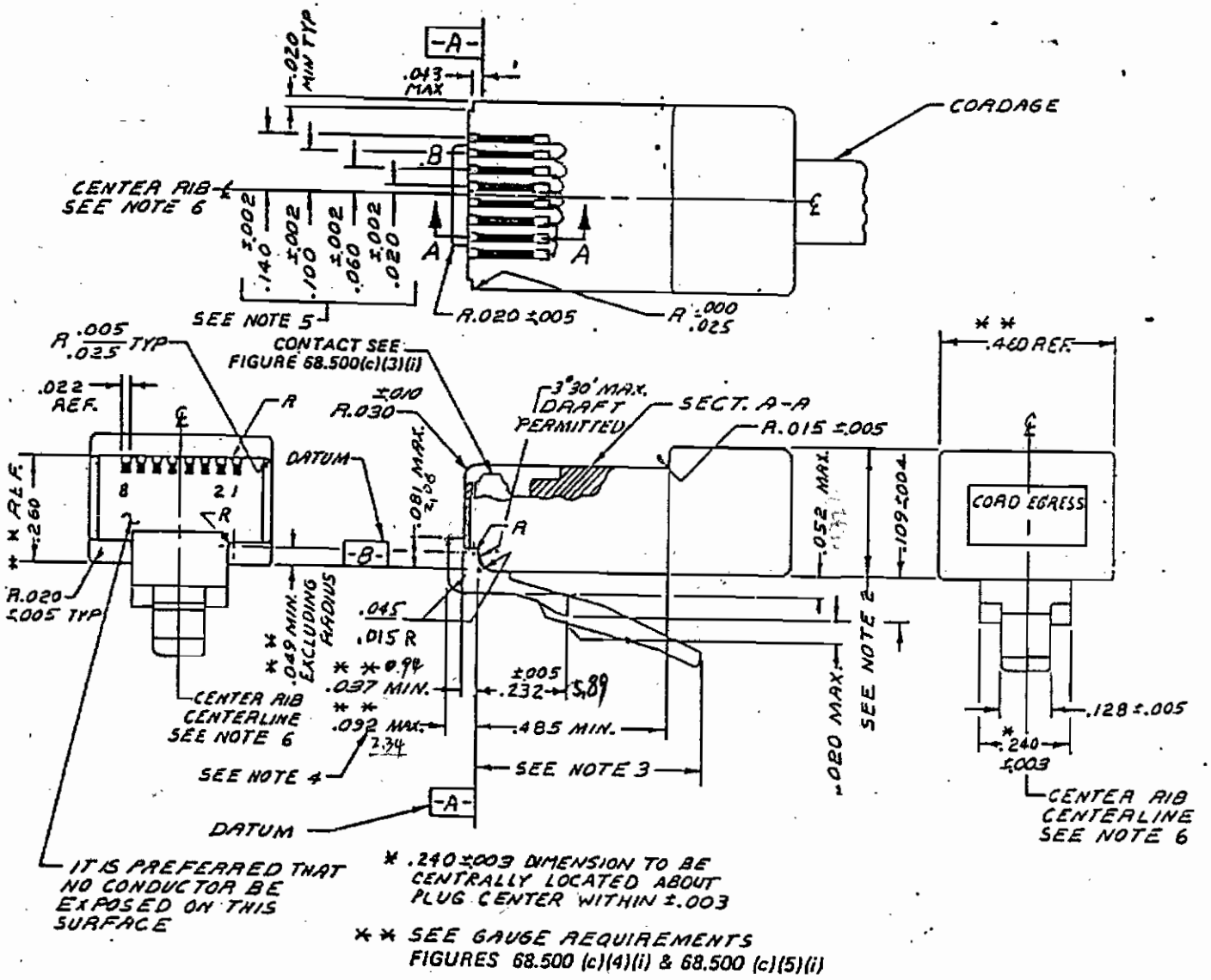


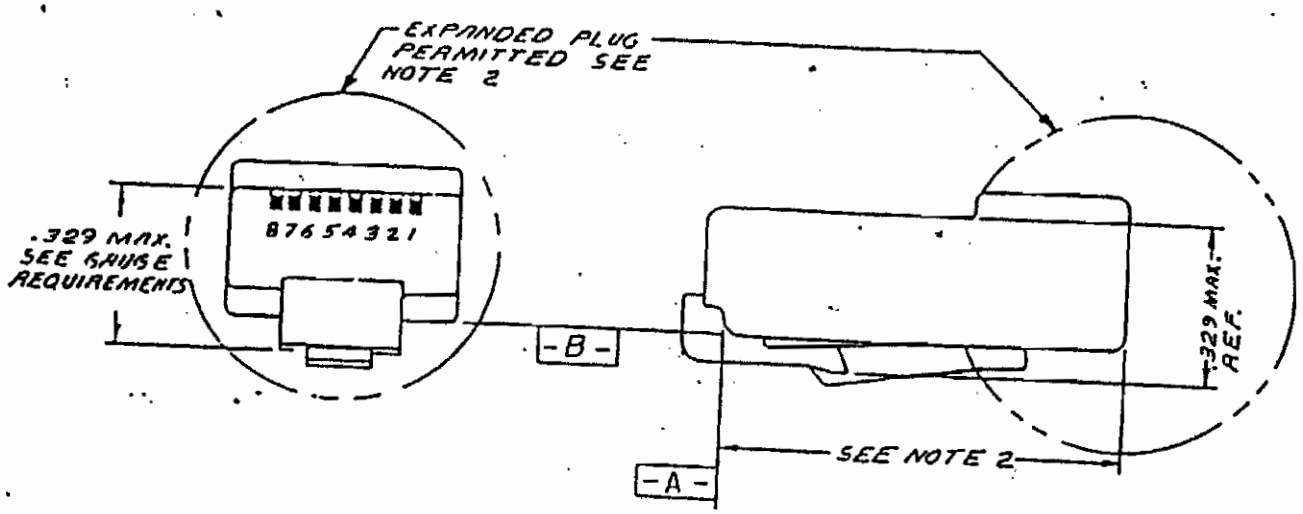
Figure 68.500(c)(1)(i) – View

Note: This plug is depicted [illegible] its full 8 contact capacity. It may be fabri[illegible]d with less than 8 contac[illegible]



NOTE: ALL NOTES FOLLOW FIGURE 68.500 (c)(2)(ii)

Figure 68.500(c)(2)i–8 Position Unkeyed Plug, Mechanical Specification



NOTE: ALL NOTES FOLLOW THIS FIGURE

Figure 68.500(c)(2)(ii)–8 Position Unkeyed Plug, Mechanical Specification (Continued)

(c).8-Position Unkeyed Plug, Mechanical Specification (continued)

Notes: (Notes apply to Figures 68.500(c)(2)(i) and 68.500(c)(2)(ii))

1. All plugs must be capable of meeting the requirements of the plug go and no-go gauges.

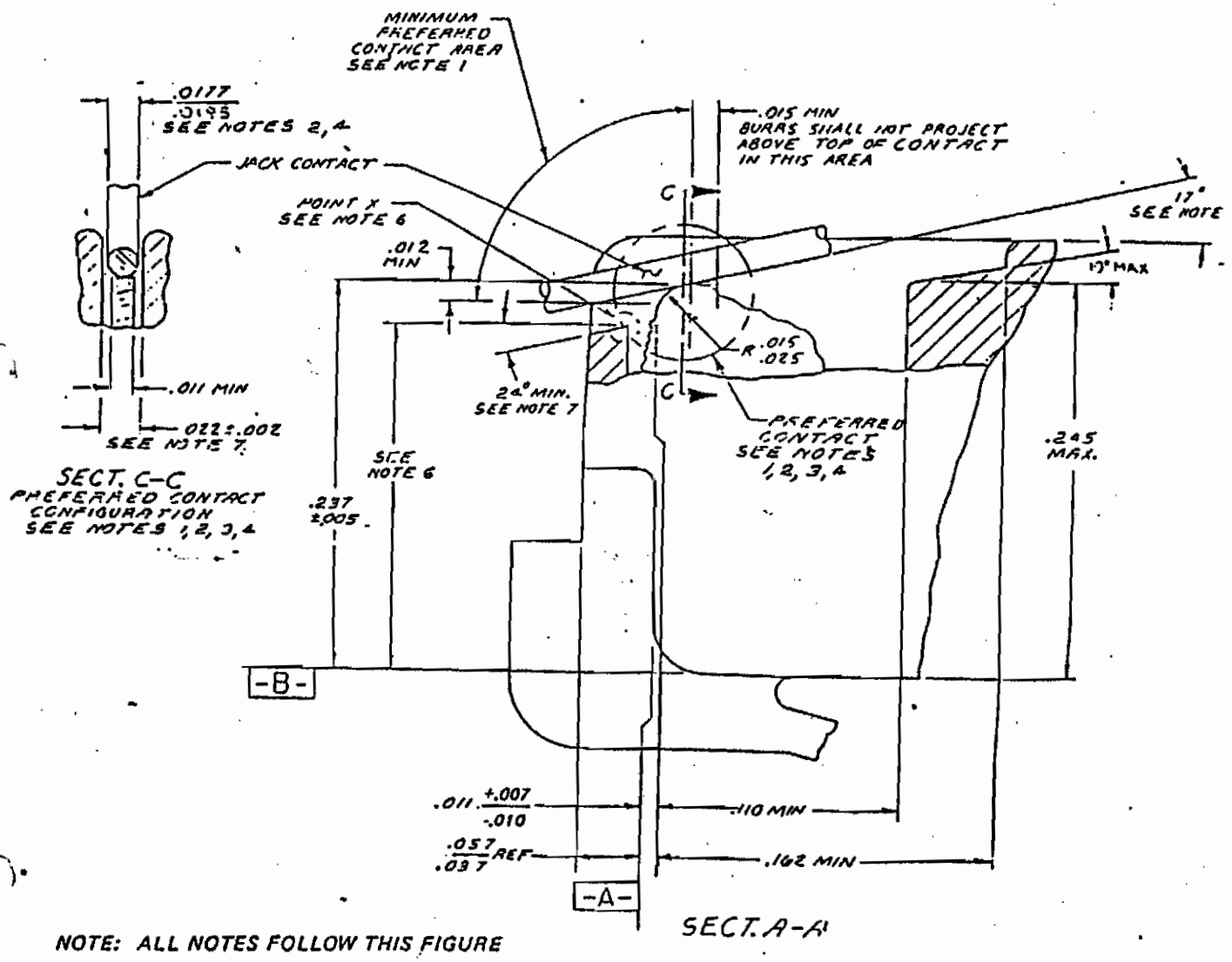
2. The standard plug height in the area shown is .315 inch maximum. The standard plug length is .910 inch maximum. Plugs may be made longer than standard or adapted for direct use on special cords, adapters without cordage, apparatus or equipment subject to the limitations described in the introductory paragraphs of 68.500. Plugs longer and/or higher than standard may inhibit the special features of some network jack enclosures.

3. A .575 inch minimum tab length is required. It is preferred that a maximum tab length be no longer than .625 inch. Longer tabs may be used with the same limitations described in Note 2.

4. To obtain maximum plug guidance in jacks, it is desirable to extend the front plug nose to the .092 inch maximum.

5. These dimensions apply to the location of jack contact receiving slots. It is desirable that plug contacts be centered in these slots, but centering is not required.

6. The center rib centerline shall be coincident with the plug width (.460 ref.) centerline within $\pm$ .003 inch.



NOTE: ALL NOTES FOLLOW THIS FIGURE

NOTE: THE 6 POSITION PLUG/JACK CONTACT SPECIFICATION IS IDENTICAL

Figure 68.500(c)(3)(i)–8 Position Unkeyed Plug
Plug/Jack Contact Specification

(c) 8-Position Plug/Jack Contact Specification (continued)

Notes: (Notes apply to Figure 68.500(c)(3)(i))

1. The plug/jack contact interface should be hard gold to hard gold and should have a minimum gold thickness of 0.000050 inch on each side of the interface. The minimum contact force should be 100 grams. Any non-gold contact material must be compatible with gold and provide equivalent contact performance. A smooth, burr-free surface is required at the interface in the area shown.

2. Other contact configurations which provide contact performance equal to or better than the preferred configurations and do not cause damage to plug or jack contacts are permitted. The requirements of note 1 apply to all possible contact areas.

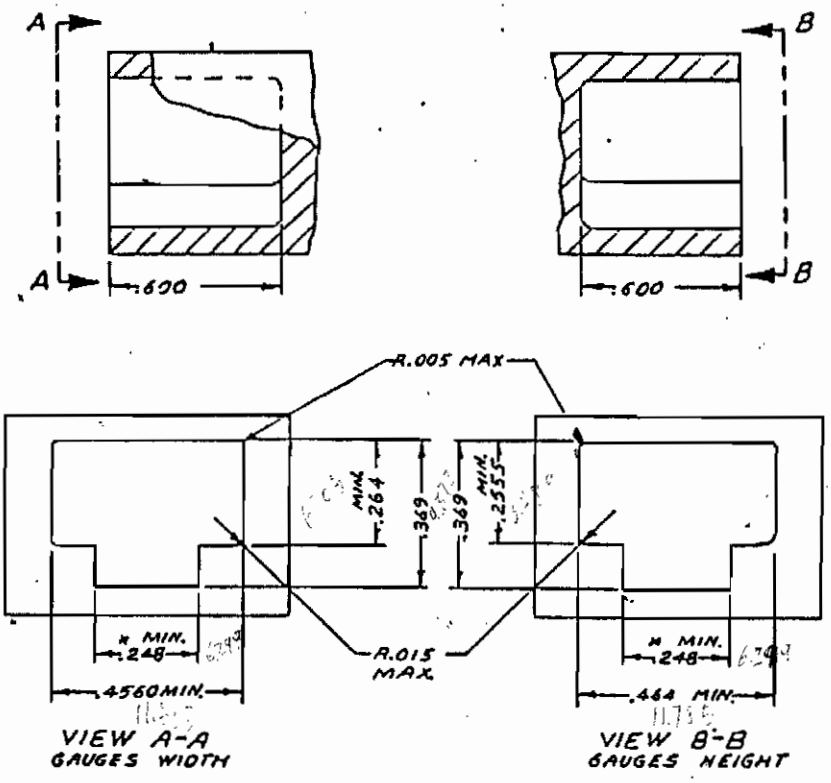
3. The configuration of the plug contact and the front plastic of the plug should prevent jack contacts from being damaged during plug insertion into jacks.

4. The modular plug blade and jack wire interface design is based upon .018 inch spring temper phosphor bronze wire.

5. This is the suggested nominal contact angle between plugs and jacks with the plug latched into the jack. If this angle becomes greater than 24 degrees loss of electrical contact may occur between the plug and jack. If the nominal contact angle becomes less than 13 degrees interference between jack contacts and the internal plastic in the plug may occur.

6. To avoid loss of electrical contact, the preferred dimension from datum B to the highest point "x" should be .200 inch max. A dimension greater than .211 inch may result in loss of electrical contact between plugs and jacks. The .211 inch max. shall be considered an absolute maximum.

7. The 24 degree min. angle applies only to plugs with front plastic walls higher than .190 inches.



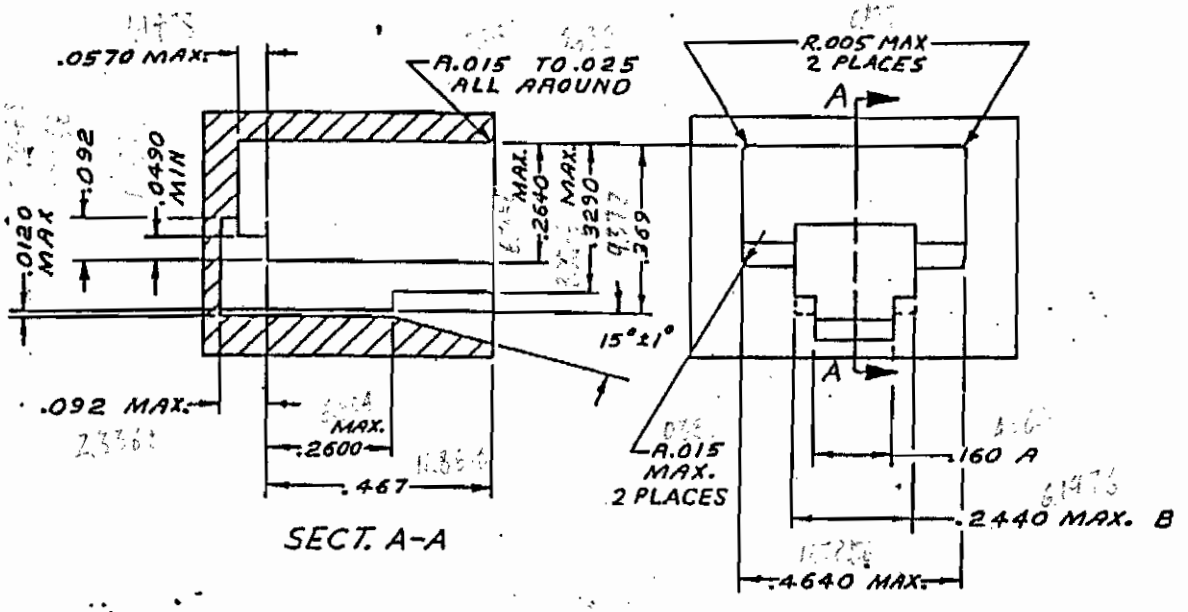
NO – GO GAUGE

1. The plug shall not be capable of entering the gauge more than .030-inch beyond datum –A– (see Figure 68.500(c)(2)(i)) with 2.0 pounds insertion force.

2. Non-toleranced dimensions given to three places shall be within ± .002 inch.

3. * .248 dimension to be centrally located with respect to .464 minimum and .4560 minimum within ± .002 inch.

Figure 68.500(c)(4)(i)–8 Position Unkeyed Plug, Minimum Plug Size



GO GAUGE

Notes:

1. The plug shall be capable of insertion and latching into the gauge with 5 pounds or less insertion force. Plug latching bar shall be depressed so as not to interfere with the plug entry. After insertion and latching, plug shall be capable of removal, with the latch depressed, with a removal force of 10 pounds or less applied at an advantageous angle.

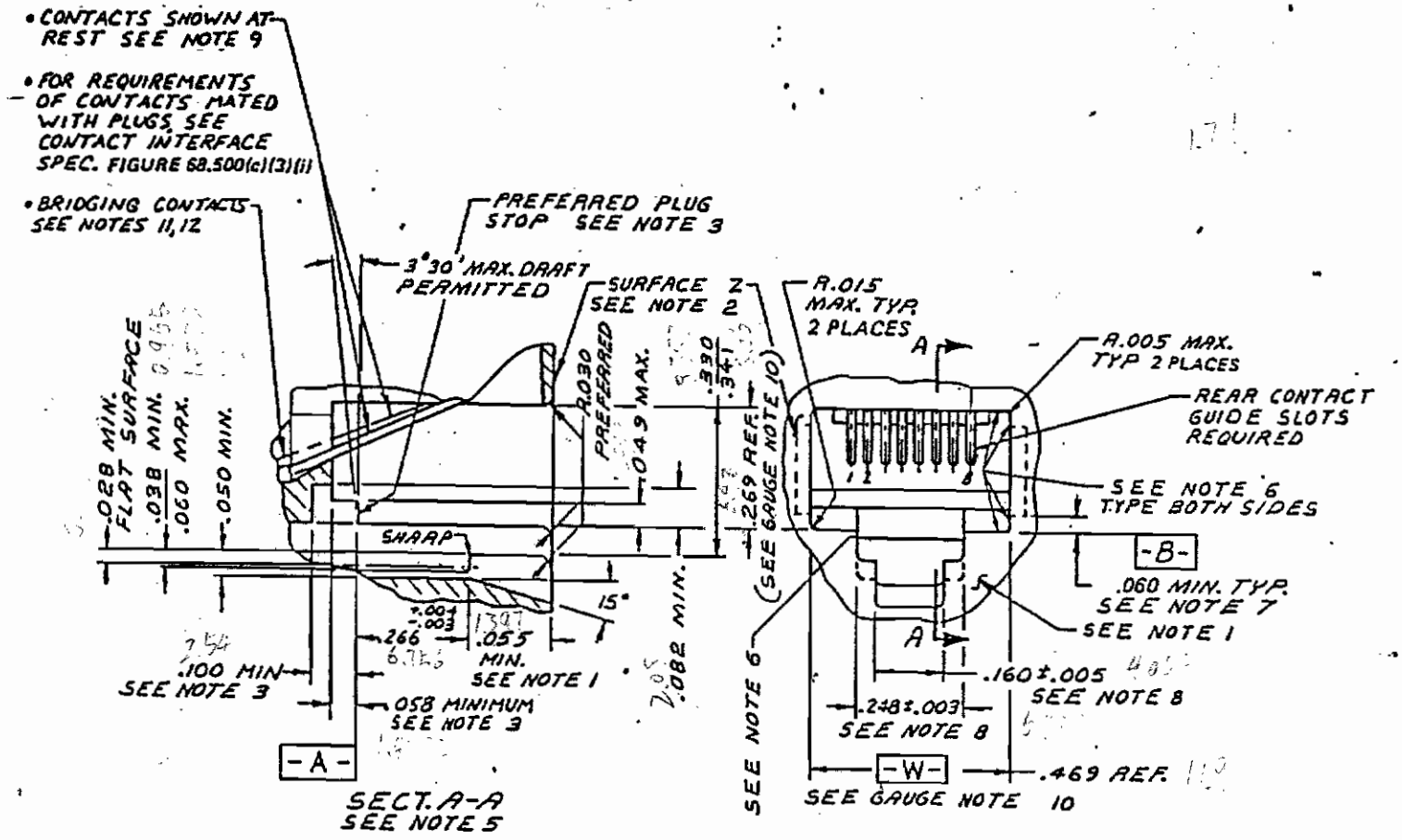
2. Dimensions given to three decimal places shall be within ± .002 inch.

3. Dimensions (A) and (B) to be centrally located with respect to .4640 max. jack opening width within ± .001 inch.

4. Do not scale drawings for external configuration.

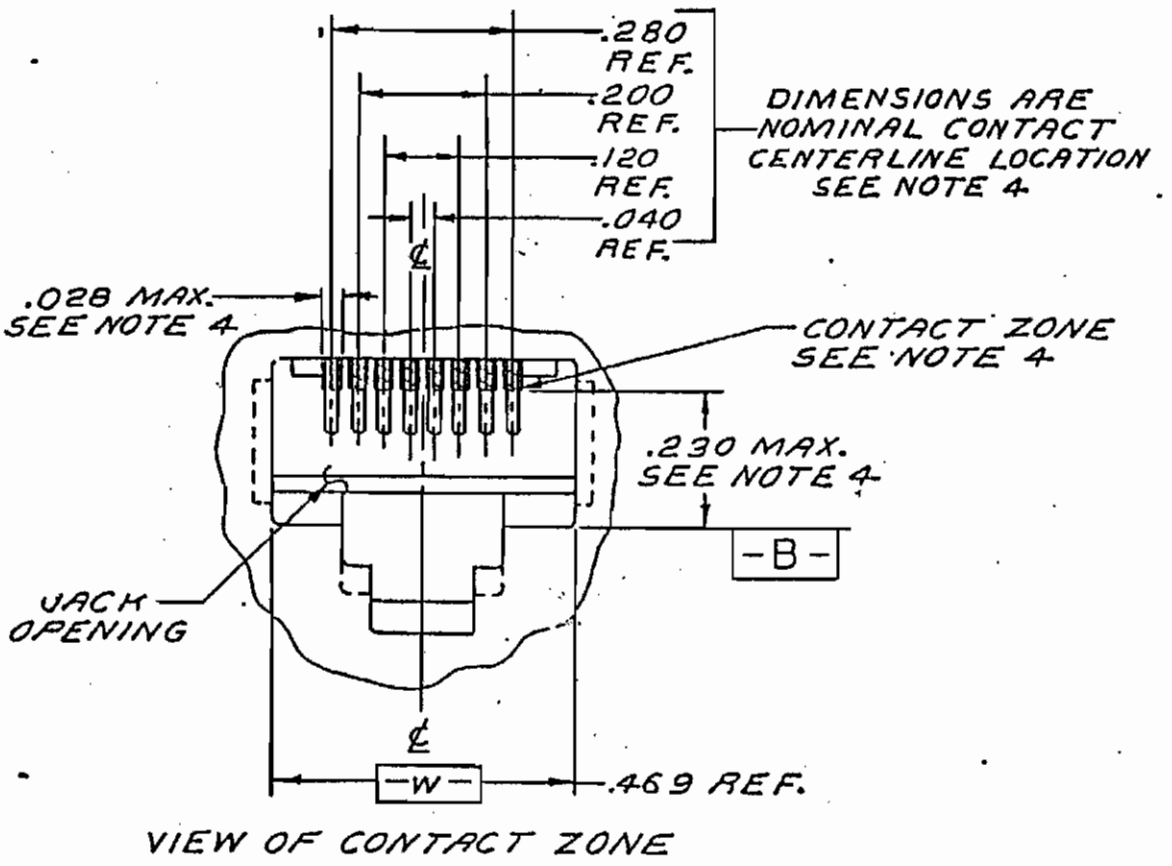
Figure 68.500(c)(5)i–8 Position Unkeyed Plug, Maximum Plug Size

Note: This jack is depicted with 8 contacts. It may be fabricated with less than 8 contacts.



NOTE: ALL NOTES FOLLOW FIGURE 68.500(d)(3)(i)

Figure 68.500(d)(2)(i)–8 Position Series Jack, Mechanical Specification



NOTE: ALL NOTES FOLLOW THIS FIGURE

Figure 68.500(d)(3)(i)–8 Position Series
Jack, Mechanical Specification (Continued)

(d) 8-Position Series Jack, Mechanical Specifications (continued)

Notes: (Notes apply to Figures 68.500(d)(2)(i) and 68.500(d)(3)(i))

1. Front surface projections beyond the .055 minimum shall be configured so as not to prevent finger access to the plug release catch (Reference Figure 68.500(a)(2)(i) and Figure 68.500(c)(2)(i), 6 & 8-Position Plug, Mechanical Specifications). A catch length greater than .055 is beneficial in providing for greater breakout strength and improved guidance when interfacing with a 6-position plug.

2. Surface Z need not be planar or coincident with the surface under the plug release catch. Surface Z projections must not prevent insertion, latching, and unlatching of the standard 8-position plug on Figure 68.500(c)(2)(i).

3. The preferred plug stop surface is indicated. If some other internal feature is used as a plug stop, it must be located so that the axial movement of a latched plug is no greater than 0.045-inch.

4. To prevent mistargeting between the plug and jack contacts, the jack contacts should be completely contained in their individual contact zones, (.028 inch max wide), where they extend into the jack openings. There is no location requirement for jack contacts below these zones (.230 inch max), but adequate contact separation must be maintained to prevent electrical breakdown. These shaded contact zones should be centrally located, (include all locating tolerances), about the jack opening width .469 Ref, (Datum -W-). Contacts located outside of these zones may result in mistargeting between the jack and plug contacts.

5. All inside and outside corners in the plug cavity to be .015 inch radius max unless specified.

6. These surfaces shall have 0°15' maximum draft.

7. Relief inside the dotted areas on both sides of the jack opening is permitted. The .269 Ref and .469 Ref Gauge Requirements must be maintained in each of the corners indicated, (Ref. 0.060 inch min), to assure proper plug/jack interface guidance.

(d) 8-Position Series Jack, Mechanical Specifications (continued)

Notes: (continued)

8. 0.160- and 0.248-inch dimensions to be centrally located to jack opening width -W- within ± .005-inch.

9. The minimum contact length shall be such that the contacts at rest will always be contained in the guides.

10. Gauge Requirements:

GO: The jack shall be capable of accepting a 0.4640-inch X 0.2640-inch gauge and the gauge shall be capable of being removed with a maximum force of 2.0 pounds.

NO GO: The jack shall not accept either a 0.4740-inch X 0.254-inch horizontal width of opening gauge or a 0.2740-inch X 0.456-inch vertical height of opening gauge. However, if the gauge is accepted, the force necessary to remove the gauge shall be minimum of 3.0 ounces.

Removal forces do not include forces contributed by contact springs nor shall external forces be applied to the jack that will affect these removal forces.

Gauges shall have a 0.030-inch radius on the nose and a 0.015-inch radius on all edges with clearance provided for contacts.

11. With no plug inserted, conductors 1 and 4 are bridged as well as conductors 5 and 8. With a miniature 8-position plug inserted into the jack, the bridge connectors are broken and a series connection can be made in both sides of the line. With a 6-position plug inserted, the bridged connections remain unbroken.

12. The jack contact/bridging interface should be hard gold to hard gold and should have a minimum gold thickness of 0.000050 inch on each side of the interface. The minimum contact bridging force should be 30 grams. Any non-gold contact material must be compatible with gold and provide equivalent contact performance.

(c) Miniature 8—position plug, keyed:

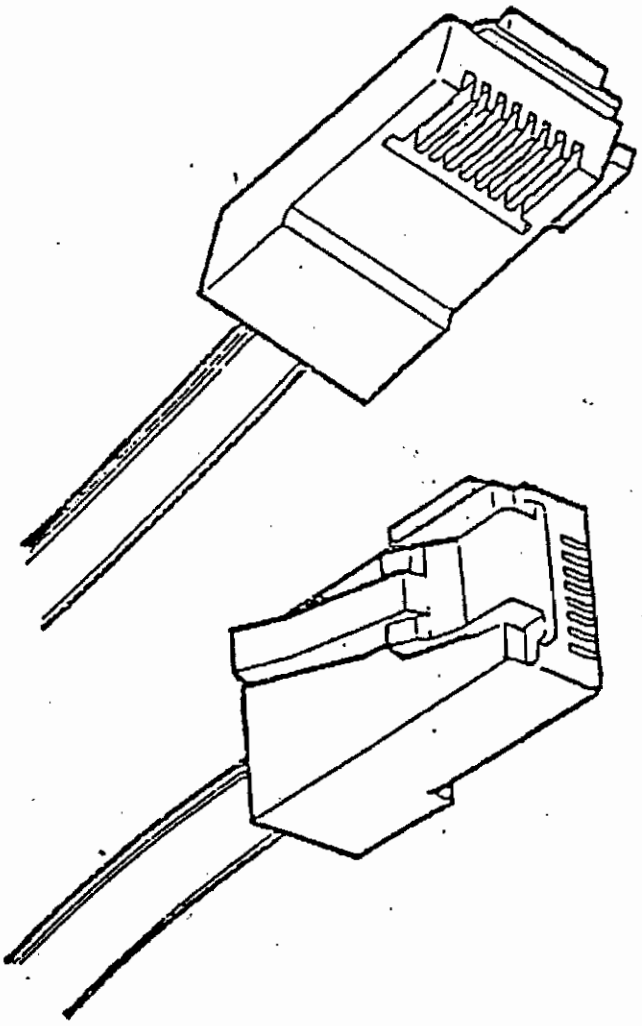
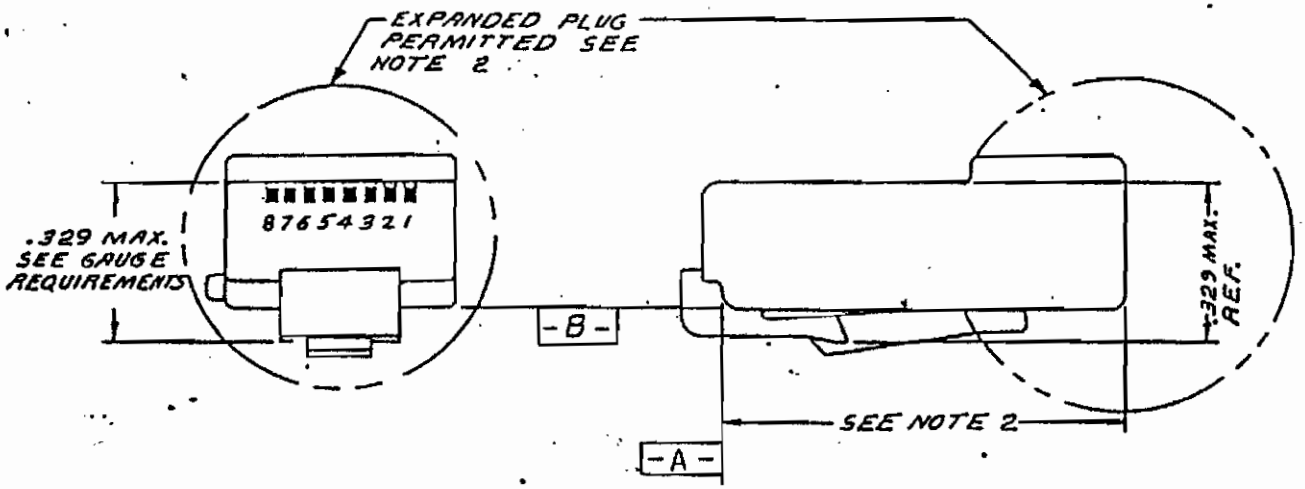
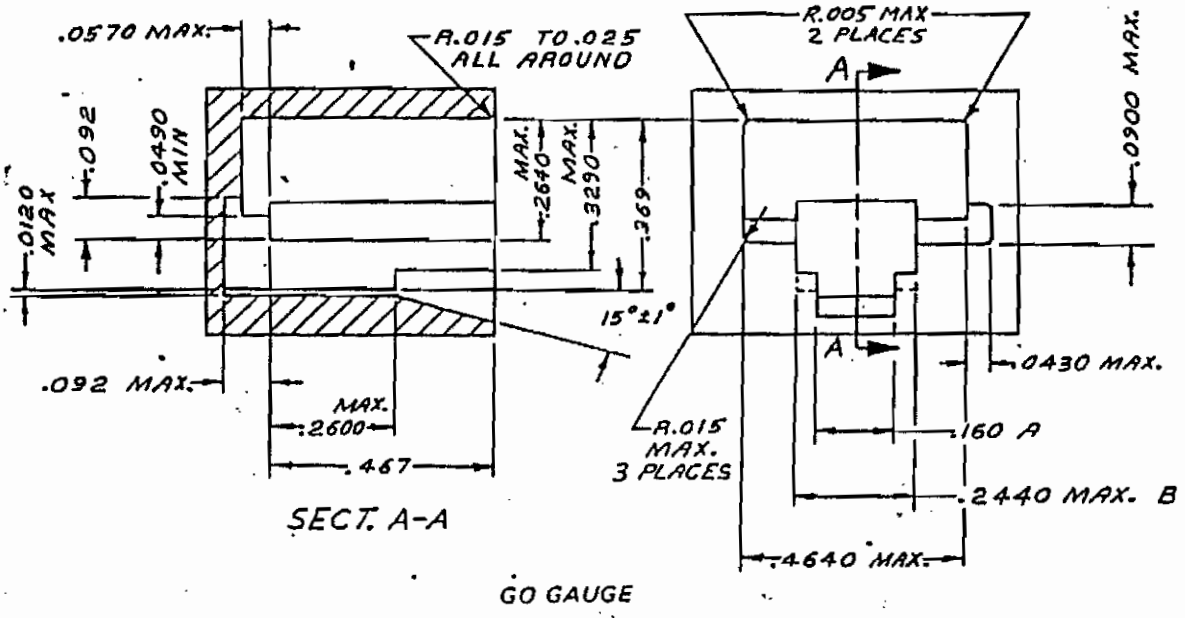


Figure 68.500(i)(1)(i)–View



NOTE: ALL NOTES FOLLOW THIS FIGURE

Figure 68.500(i)(2)(ii)–8 Position Keyed Plug, Mechanical Specification (Continued)



Notes:

1. The plug shall be capable of insertion and latching into the gauge with 5 pounds or less insertion force. Plug latching bar shall be depressed so as not to interfere with the plug entry. After insertion and latching, plug shall be capable of removal, with the latch depressed, with a removal force of 10 pounds or less applied at an advantageous angle.

2. Dimensions given to three decimal places shall be within ± .002 inch.

3. Dimensions (A) and (B) to be centrally located with respect to .4640 max. jack opening width within ± .001 inch.

4. Do not scale drawings for external configuration.

Figure 68.500(i)(4)(i)-8 Position Keyed Plug Maximum Plug Size

(i) 8-Position Keyed Plug, Mechanical Specification (continued)

Notes: (Notes apply to Figures 68.500(i)(2)(i) and 68.500(i)(2)(ii))

1. All plugs must be capable of meeting the requirements of the plug go and no-go gauges.

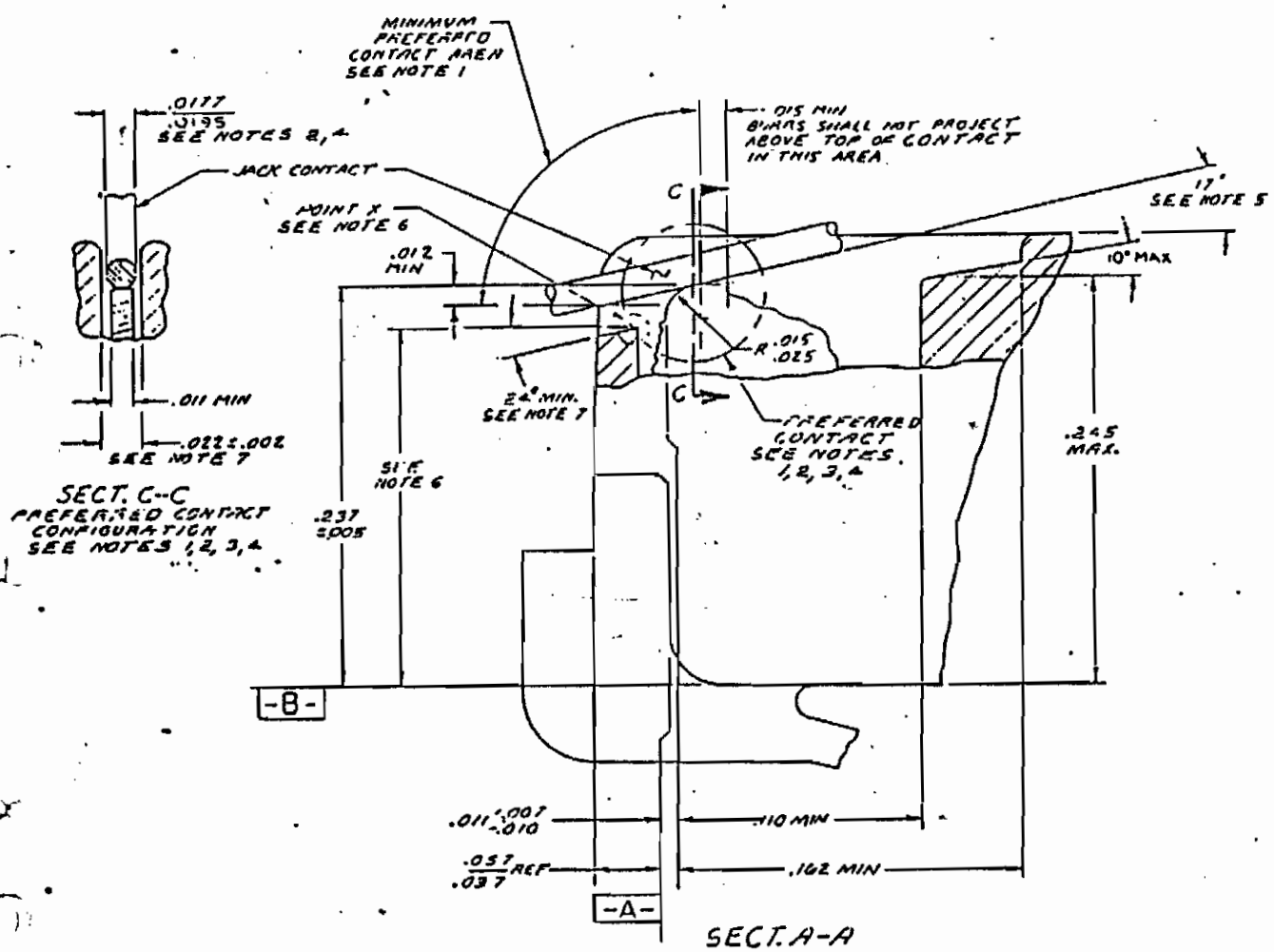
2. The standard plug height in the area shown is .315 inch maximum. The standard plug length is .910 inch maximum. Plugs may be made longer than standard or adapted for direct use on special cords, adapters without cordage, apparatus or equipment subject to the limitations described in the introductory paragraph of 68.500. Plugs longer and/or higher than standard may inhibit the special features of some network jack enclosures.

3. A .575 inch minimum tab length is required. It is preferred that a maximum tab length be no longer than .625 inch. Longer tabs may be used with the same limitations described in Note 2.

4. To obtain maximum plug guidance in jacks, it is desirable to extend the front plug nose to the .092 inch maximum.

5. These dimensions apply to the location of jack contact receiving slots. It is desirable that plug contacts be centered in these slots, but centering is not required.

6. The center rib centerline shall be coincident with the plug width (.460 ref.) center line within $\pm$ .003 inch.



NOTE: ALL NOTES FOLLOW THIS FIGURE

NOTE: THE 6 POSITION PLUG/JACK CONTACT SPECIFICATION IS IDENTICAL

Figure 68.500(i)(3)(i)–8 Position Keyed Plug, Plug/Jack Contact Specification

(i) 8-Position Plug/Jack Contact Specification (continued)

Notes: (Notes apply to Figure 68.500(i)(3)(i))

1. The plug/jack contact interface should be hard gold to hard gold and should have a minimum gold thickness of 0.000050 inch on each side of the interface. The minimum contact force should be 100 grams. Any non-gold contact material must be compatible with gold and provide equivalent contact performance. A smooth, burr-free surface is required at the interface in the area shown.

2. Other contact configurations which provide contact performance equal to or better than the preferred configurations and do not cause damage to plug or jack contacts are permitted. The requirements of note 1 apply to all possible contact areas.

3. The configuration of the plug contact and the front plastic of the plug should prevent jack contacts from being damaged during plug insertion into jacks.

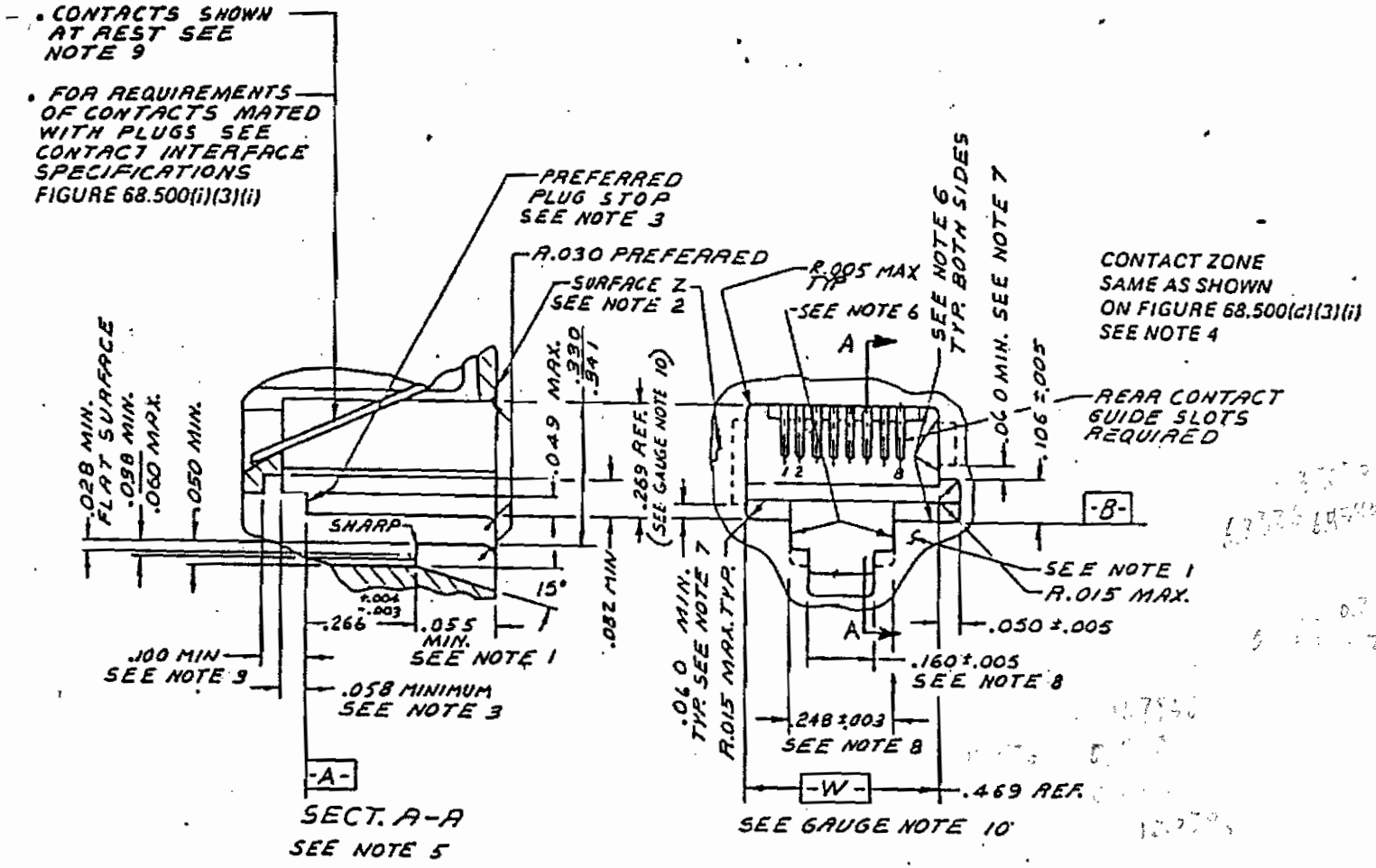
4. The modular plug blade and jack wire interface design is based upon .018 inch spring temper phosphor bronze wire.

5. This is the suggested nominal contact angle between plugs and jacks with the plug latched into the jack. If this angle becomes greater than 24 degrees loss of electrical contact may occur between the plug and jack. If the nominal contact angle becomes less than 13 degrees, interference between jack contacts and the internal plastic in the plug may occur.

6. To avoid loss of electrical contact, the preferred dimension from datum B to the highest point "x" should be .200 inch max. A dimension greater than .211 inch may result in loss of electrical contact between plugs and jacks. The .211 inch max. shall be considered an absolute maximum.

7. The 24 degree min. angle applies only to plugs with front plastic walls higher than .190 inches.

Note: This jack is depicted with all 8 contacts. It may be fabricated with less than 8 contacts.



NOTE: ALL NOTES FOLLOW THIS FIGURE

Figure 68.500(j)(2)(i)–8 Position Keyed Jack
Mechanical Specification

(j) 8-Position Keyed Jack, Mechanical Specifications (continued)

Notes: (Notes apply to Figure 68.500(j)(2)(i))

1. Front surface projections beyond the .055 minimum shall be configured so as not to prevent finger access to the plug release catch (Reference Figure 68.500(i)(2)(ii) & 8-Position Plug, Mechanical Specifications). A catch length greater than .055 is beneficial in providing for greater breakout strength and improved guidance when interfacing with a 6-position plug.

2. Surface Z need not be planar or coincident with the surface under the plug release catch. Surface Z projections must not prevent insertion, latching, and unlatching of the standard 8-position plug on Figure 68.500(i)(2)(i).

3. The preferred plug stop surface is indicated. If some other internal feature is used as a plug stop, it must be located so that the axial movement of a latched plug is no greater than 0.045-inch.

4. To prevent mistargeting between the plug and jack contacts, the jack contacts should be completely contained in their individual contact zones, (.028 inch max wide), where they extend into the jack openings. There is no location requirement for jack contacts below these zones (.230 inch max), but adequate contact separation must be maintained to prevent electrical breakdown. These shaded contact zones should be centrally located, (include all locating tolerances), about the jack opening width .469 Ref, (Datum -W-). Contacts located outside of these zones may result in mistargeting between the jack and plug contacts.

5. All inside and outside corners in the plug cavity to be .015 inch radius max unless specified.

6. These surfaces shall have 0°15' maximum draft.

7. Relief inside the dotted areas on both sides of the jack opening is permitted. The .269 Ref and .469 Ref Gauge Requirements must be maintained in each of the corners indicated, (Ref. 0.060 inch min), to assure proper plug/jack interface guidance.

(j) 8-Position Keyed Jack, Mechanical Specifications (continued)

Notes: (continued)

8. 0.160- and 0.248-inch dimensions to be centrally located to jack opening width -W- within ± .005-inch.

9. The minimum contact length shall be such that the contacts at rest will always be contained in the guides.

10. Gauge Requirements:

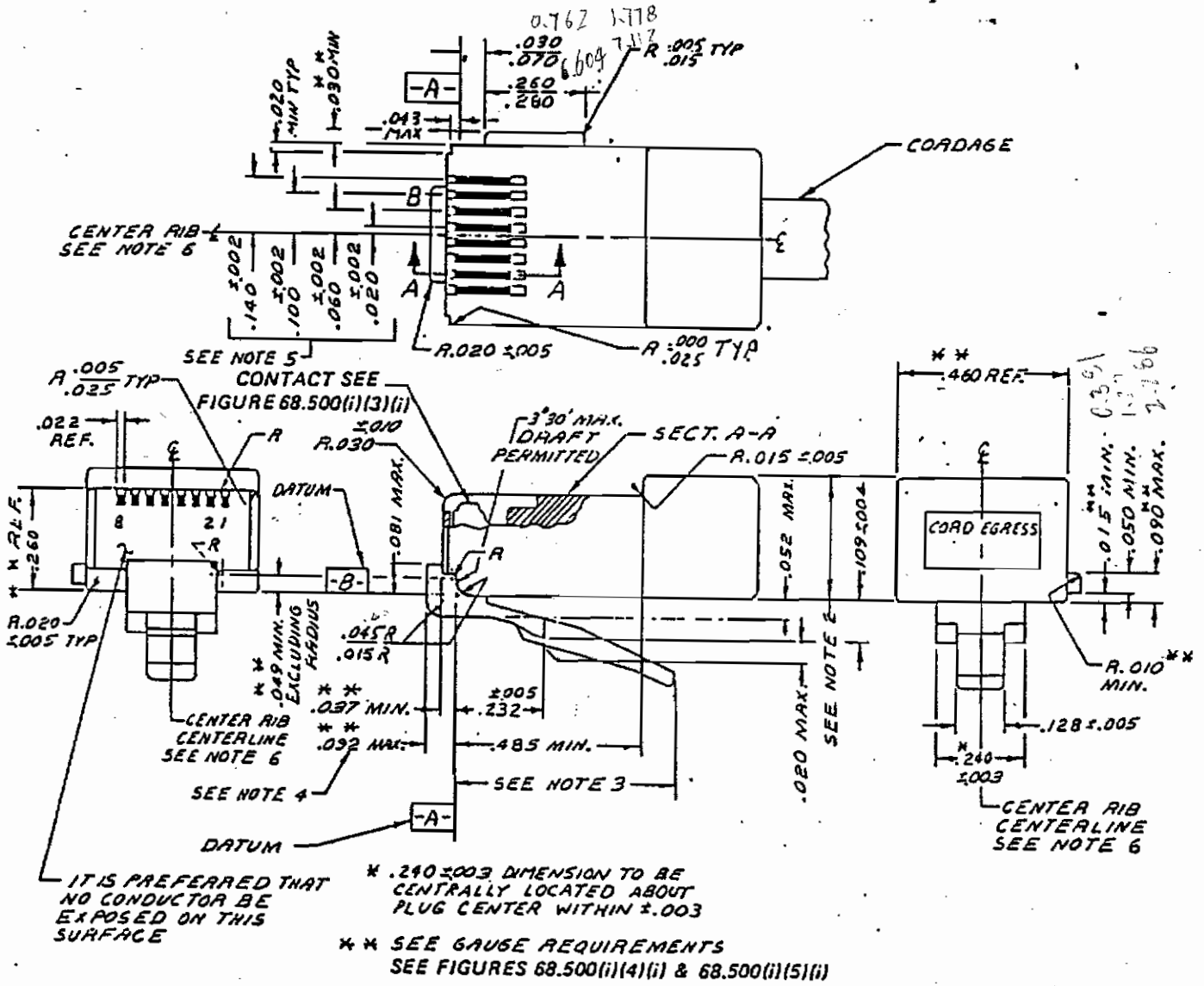
GO: The jack shall be capable of accepting a 0.4640-inch X 0.2640-inch gauge and the gauge shall be capable of being removed with a maximum force of 2.0 pounds.

NO GO: The jack shall not accept either a 0.4740-inch X 0.254-inch horizontal width of opening gauge or a 0.2740-inch X 0.456-inch vertical height of opening gauge. However, if the gauge is accepted, the force necessary to remove the gauge shall be minimum of 3.0 ounces.

Removal forces do not include forces contributed by contact springs nor shall external forces be applied to the jack that will affect these removal forces.

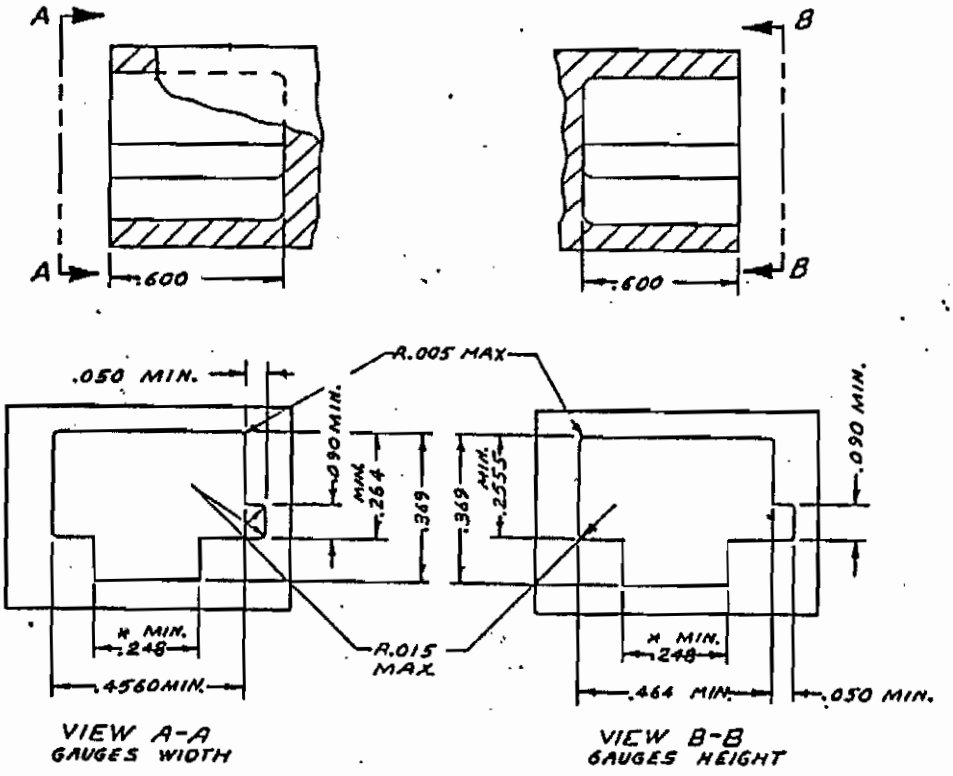
Gauges shall have a 0.030-inch radius on the nose and a 0.015-inch radius on all edges with clearance provided for contacts.

Note: This plug is depicted with its full 8 contact capacity. It may be fabricated with less than 8 contacts.



NOTE: ALL NOTES FOLLOW FIGURE 68.500(i)(2)(ii)

Figure 68.500(i)(2)(i)–8 Position Keyed Plug, Mechanical Specification



NO – GO GAUGE

1. The plug shall not be capable of entering the gauge more than .030-inch beyond datum –A– (see Figure 68.500(i)(2)(i)) with 2.0 pounds insertion force.
2. Non-toleranced dimensions given to three places shall be within ± .002 inch.
3. * .248 dimension to be centrally located with respect to .464 minimum and .4560 minimum within ± .002 inch.

Figure 68.500(i)(5)i–8 Position Keyed Plug
Minimum Plug Size