

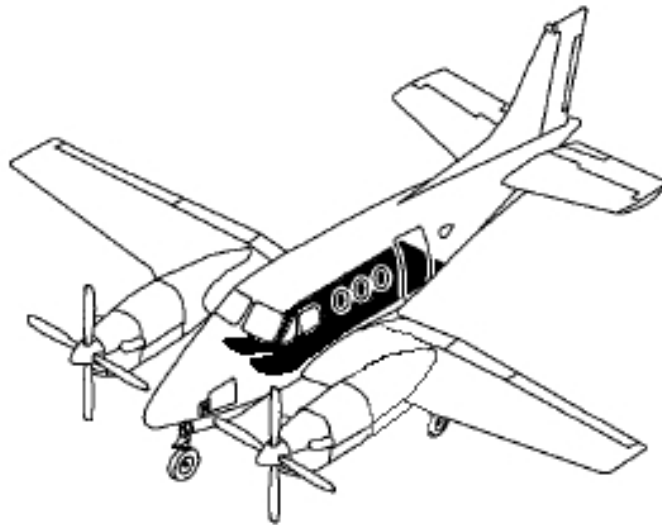
Raisbeck Engineering, Inc.

INSTALLATION INSTRUCTIONS

DOCUMENT NO. BI 7201

REPLACEMENT
FLOOR PANELS

FOR THE KING AIR
SERIES OF AIRCRAFT



Raisbeck Engineering, Inc.

INSTALLATION INSTRUCTIONS

Document No. BI 7201

Raisbeck Engineering's replacement floor panels for applicable King Air models are approved by the Federal Aviation Administration (FAA) under Parts Manufacturer Approval (PMA). The floor panels are direct replacements for OEM King Air floorboards.

| | |
|------------------|-------------------|
| INITIAL RELEASE: | May 4, 2015 |
| REVISION A | July 27, 2015 |
| REVISION B | November 11, 2015 |
| REVISION C | May 25, 2016 |
| REVISION D | March 23, 2017 |
| REVISION E | December 1, 2017 |
| REVISION F | February 1, 2018 |
| REVISION G | March 9, 2018 |
| REVISION H | June 11, 2018 |

| | | |
|-----------|----------------|----------|
| Drawn: | J. Whitcomb | 07/27/15 |
| Checked: | J. Whitcomb | 01/05/15 |
| Engineer: | J. Whitcomb | 01/05/15 |
| Stress: | P. Andersson | 03/10/15 |
| Approved: | W. Butterfield | 07/27/15 |

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LOG OF REVISIONS

| Rev | Description | Date | Approved By |
|-----|---|----------|----------------|
| IR | Initial Release | 05/04/15 | W. Butterfield |
| A | Adjust core size and panel length on panel -129 to match OEM panel. Change dimension in View A-A for off set of ply 8 and ply 9. | 07/27/15 | W. Butterfield |
| B | Addition of 99 series for the -125 and 100 series for the -125, -127 & -129. | 11/11/15 | W. Butterfield |
| C | Addition of the -121 & -123 panels. | 05/25/16 | W. Butterfield |
| D | Addition of -145 panel. | 03/23/17 | W. Butterfield |
| E | Company name changed from Butterfield Industries to Raisbeck Engineering. | 12/01/17 | K. Anderson |
| F | Clarified applicable aircraft models, removed ICA from document. See DCN F for details. | 02/01/18 | K. Anderson |
| G | Clarified applicable aircraft models. See DCN G for details. | 03/09/18 | N. Lachendro |
| H | Layout, formatting, and spelling corrections. Added required documents to Section 2.0. Formatted Section 3.0 into Table 1. Deleted panel description Sections 3.1 & 3.2. Added list of tools to Section 3.2. Deleted Sections 4.0 & 5.0. Clarified sound proofing and floor panel installation/replacement in Section 4.0 (was 6.0). Added Figure 1. See DCN H for details. | | |

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1.0 INTRODUCTION

This document provides detailed instructions for installation the Raisbeck Engineering's PMA replacement floor panels on eligible models of King Air aircraft.

The floor panels are direct replacements for existing floorboards on the King Air models listed in Table 1. Due to variances from aircraft to aircraft, fastener holes must be match drilled upon floor panel replacement.

2.0 REQUIRED DOCUMENTATION

2.1 Raisbeck Engineering Supplied

The following required document is provided with each kit:

- BI 7201 Installation Instructions

2.2 Customer/Installer Supplied

The following documents, of the latest revision in effect at the time of kit installation, shall be supplied by the customer/installer:

- AC 43.13-1B Acceptable Methods, Techniques, and Practices – Aircraft Inspection and Repair
- AC 43.13-2B Acceptable Methods, Techniques, and Practices – Aircraft Alterations
- Applicable King Air Maintenance Manual
- Applicable King Air Structural Inspection and Repair Manual

3.0 GENERAL

The replacement floor panels fit the center isle from the flight compartment and aft to the entry door. The floor panels, in order, are:

| | |
|--------------------|---|
| Flight Compartment | BI-7221-121 BI-7221-123 Spar |
| Cabin | BI-7221-125 BI-7221-127 BI-7221-129 |
| Entry Door Panel | BI-7221-145 |

These replacement floor panels are eligible, per the applicable King Air Illustrated Parts Catalog (IPC), for installation on King Air models shown in Table 1. Each of the six floor panels has its own kit number and model eligibility.

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Table 1: Replacement Floor Panels

| King Air Floorboard Part Number | Raisbeck Replacement Floor Panel Part Number | Eligible King Air Models | Raisbeck Kit Part Number |
|--------------------------------------|--|---|--------------------------|
| 101-420060-1 | BI-7221-121 | 200, 200T, 200C, 200CT, B200, B200T, B200C, B200C (C-12F, UC-12M, C-12R, UC-12F), B200CT | 18BI-53-121 |
| 101-420061-1 | BI-7221-123 | 200, 200T, 200C, 200CT, B200, B200T, B200C, B200C (C-12F, UC-12M, C-12R, UC-12F), B200CT | 18BI-53-123 |
| 50-420014-327 | BI-7221-125 | 99, A99, 99A, 99A (FACH), A99A, 100, A100 (U-12F), B100, 65-A90, B90, C90, C90A, E90, F90, 200, 200T, B200, B200T | 18BI-53-125 |
| 100-430057 | BI-7221-127 | 100, A100 (U-12F), B100, 200, 200T, B200, B200T | 18BI-53-127 |
| 100-430058 | BI-7221-129 | 100, A100 (U-12F), B100, 200, 200T, B200, B200T | 18BI-53-129 |
| 50-440012-553 or 50-440012-655 | BI-7221-145 | 99, A99, C99, C90, C90A, E90, C90GT, C90GTi, F90, 200, 200T, 200C, 200CT, B200, B200T, 300, 300LW, B300 | 18BI-53-145 |

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3.1 Kit Contents

Each kit includes a replacement floor panel, installation hardware, and these installation instructions.

3.2 Specialized Tooling Required

- MS-ALP Cross Pin Installation Tool, or equivalent
- HS-471 Hole Saw, or equivalent
- T-26 Retaining Ring Installation Tool, or equivalent
- 4P43 Camloc Pliers, or equivalent
- Rivet Nut Installation Tool, or equivalent

4.0 PANEL INSTALLATION

Reference FIGURE 1.

Unless otherwise specified, installation of all hardware shall conform to AC 43.13-1B.

Remove equipment and furnishing as necessary to gain access to the floorboard(s). Soundproofing material may be salvaged and reinstalled or replaced at the installer's discretion. Refer to the applicable King Air IPC and Maintenance Manual for soundproofing installation/replacement.

4.1 Flight Compartment and Cabin Floor Panels

Center floor panel on the support structure. Trim opposite edges of the panel equally as needed such that they do not contact vertical support structure. Place a light beneath the floor panel to silhouette and mark fastener locations. Match drill fastener locations and install fasteners as follows:

BI-7221-121 & BI-7221-123 Floor Panels:

Drill 19/64 inch diameter holes at the marked locations. Install 98292-2-180 Studs and 99836 Cross Pins in match drilled holes.

BI-7221-125 Floor Panel:

Drill .478 to .473 inch diameter holes at the marked locations. Install 40G6-2 Grommets, R4G Retaining Rings, and 40S5-3 Stud Assemblies in match drilled holes.

BI-7221-127 & BI-7221-129 Floor Panel:

Drill 19/64 inch diameter holes at the marked locations. Install 98292-2-160 Studs and 99836 Cross Pins in match drilled holes.

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4.2 Entry Door Floor Panel BI-7221-145

Remove rivets securing OEM floorboard along the right hand side of the fuselage. Remove screws securing the floorboard through the door sill support.

Remove and discard floorboard and attaching hardware. If replacing Floorboard (P/N 50-440012-553), also remove and discard Stiffener (P/N 50-440012-555).

Place replacement Floor Panel (BI-7221-145) into position. Trim opposite edges equally as needed such that they do not contact vertical support structure. Mark and match drill the fastener locations as follows:

Match drill rivet locations along the right hand side of the fuselage to match the diameter of the removed rivets. Reference the applicable King Air Structural Inspection and Repair Manual as necessary for oversized fastener holes.

Center mark screw locations along the door sill support and drill .303 - .297 inch diameter holes at the marked locations. Install ITR10-130SK Rivnuts per the manufactures recommendations (alternate part: AEKS8-1032-130).

Install replacement Floor Panel with MS40470AD or NAS1738B Rivets along the right side. Installer is responsible for determining appropriate diameter and grip length of rivets. Install ITR10-130SK Screws through the door sill support.

5.0 Return Aircraft to Service

Reinstall equipment and furnishings removed to gain access to the floorboards(s).

Make appropriate logbook entry and return airplane to service.

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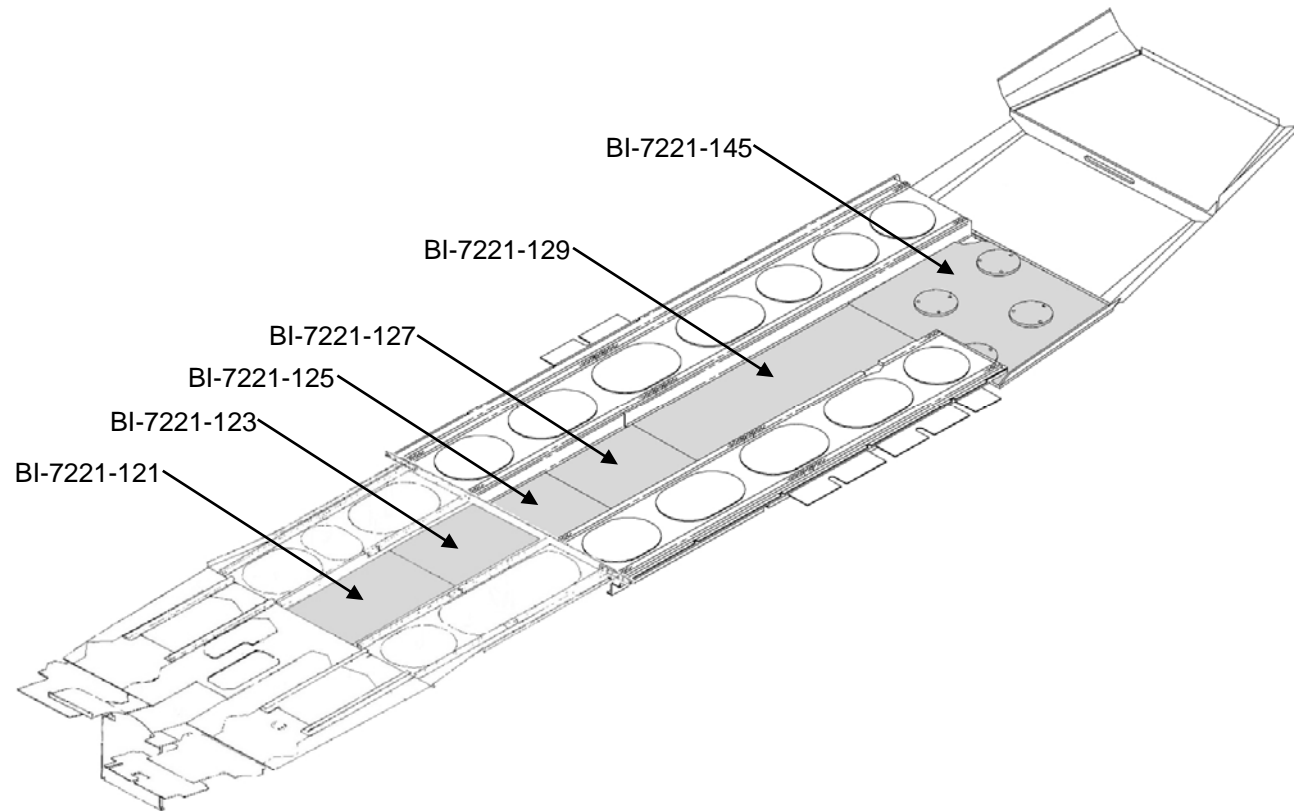
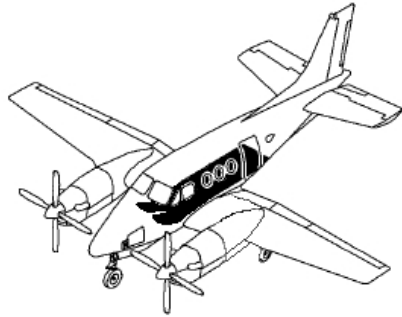


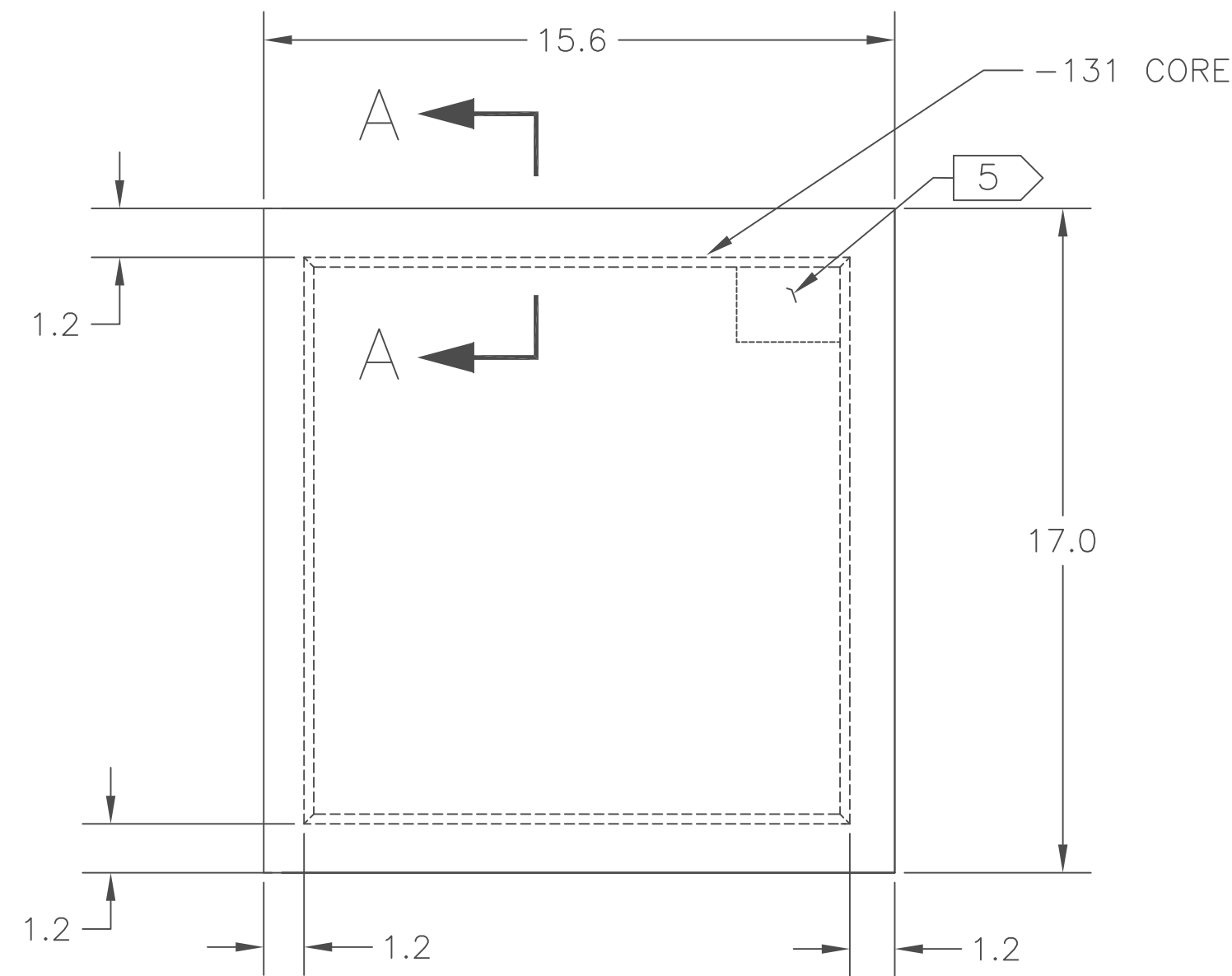
FIGURE 1: Replacement Floor Panels

NOTES:

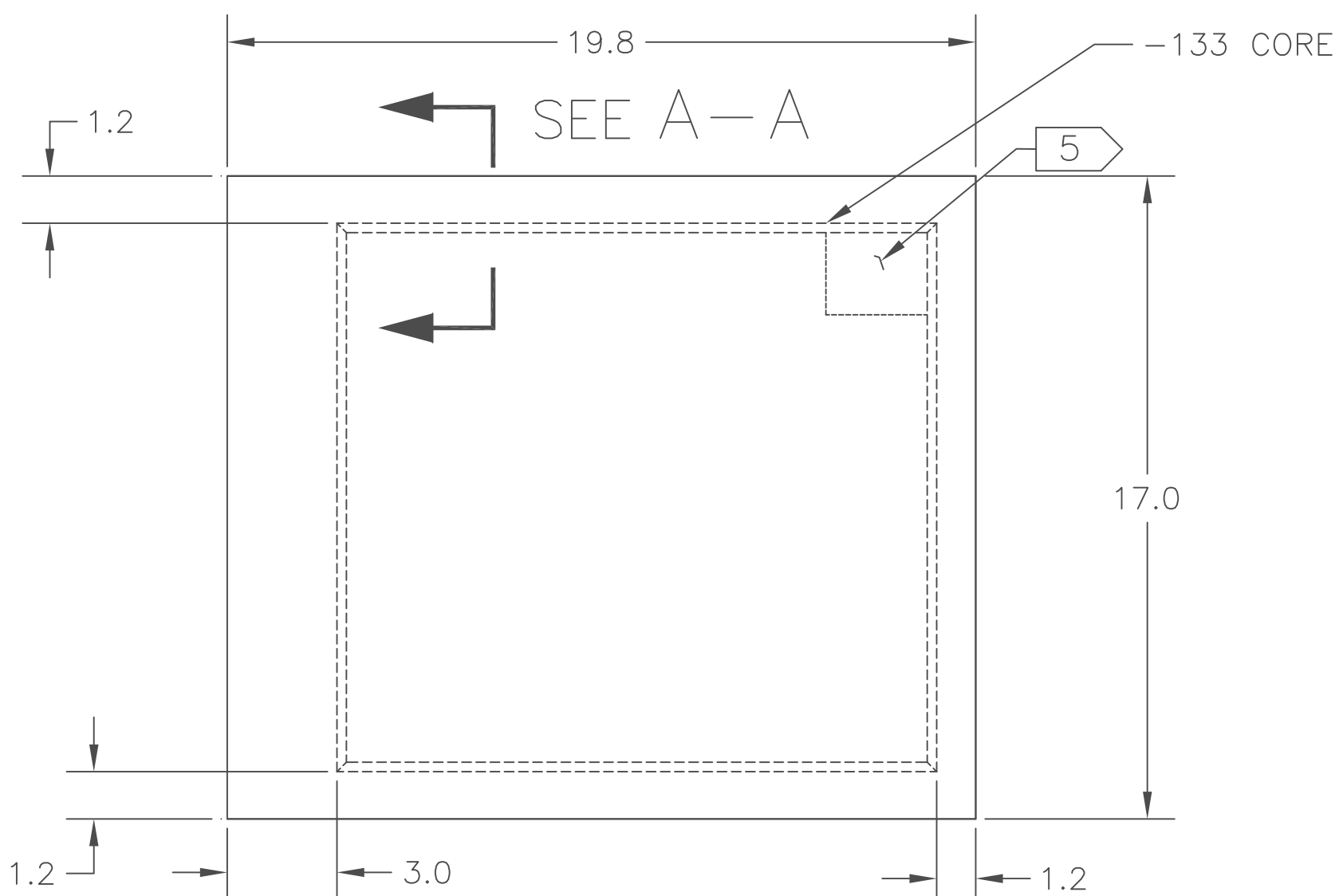
- 1 FABRICATE PER BI-PS-10.
- 2 .250 THICK DIVINYCELL HT101.
- 3 6781 S2 GLASS + ADTECH EL320 RESIN WITH ADTECH EL320 HARDENER.
- 4 OPTIONAL PLY ORIENTATION. MITER CORNERS AS REQUIRED.
- 5 PART MARK WITH PERMANENT INK OR EQUIVALENT, PART NUMBER, SERIAL NUMBER LOCATED ON THE FORWARD CORNER OF THE UNDERSIDE SURFACE BETWEEN LAYER 8 AND 9.
- 6 OPTIONAL TO USE MS20426AD3 AND SQUEEZE TO INSTALL.
- 7. BREAK SHARP EDGES R.02 MAX.
- 8 PART MARK WITH PERMANENT INK OR EQUIVALENT, PART NUMBER, SERIAL NUMBER LOCATED ON THE FORWARD CORNER OF THE UNDERSIDE SURFACE BETWEEN LAYER 7 AND 8.

| PLY TABLE | | | |
|-------------|-------|-----------------|----------|
| PART NUMBER | PLY | PLY ORIENTATION | MATERIAL |
| -121 | PLY 1 | 0° OR 90° | 3 |
| -123 | PLY 2 | 0° OR 90° | 3 |
| -125 | PLY 3 | 0° OR 90° | 3 |
| -127 | PLY 4 | 0° OR 90° | 3 |
| -129 | PLY 5 | 0° OR 90° | 3 |
| | PLY 6 | 0° OR 90° | 3 |
| | PLY 7 | 0° OR 90° | 3 |
| | PLY 8 | 4 | 3 |
| | PLY 9 | 4 | 3 |

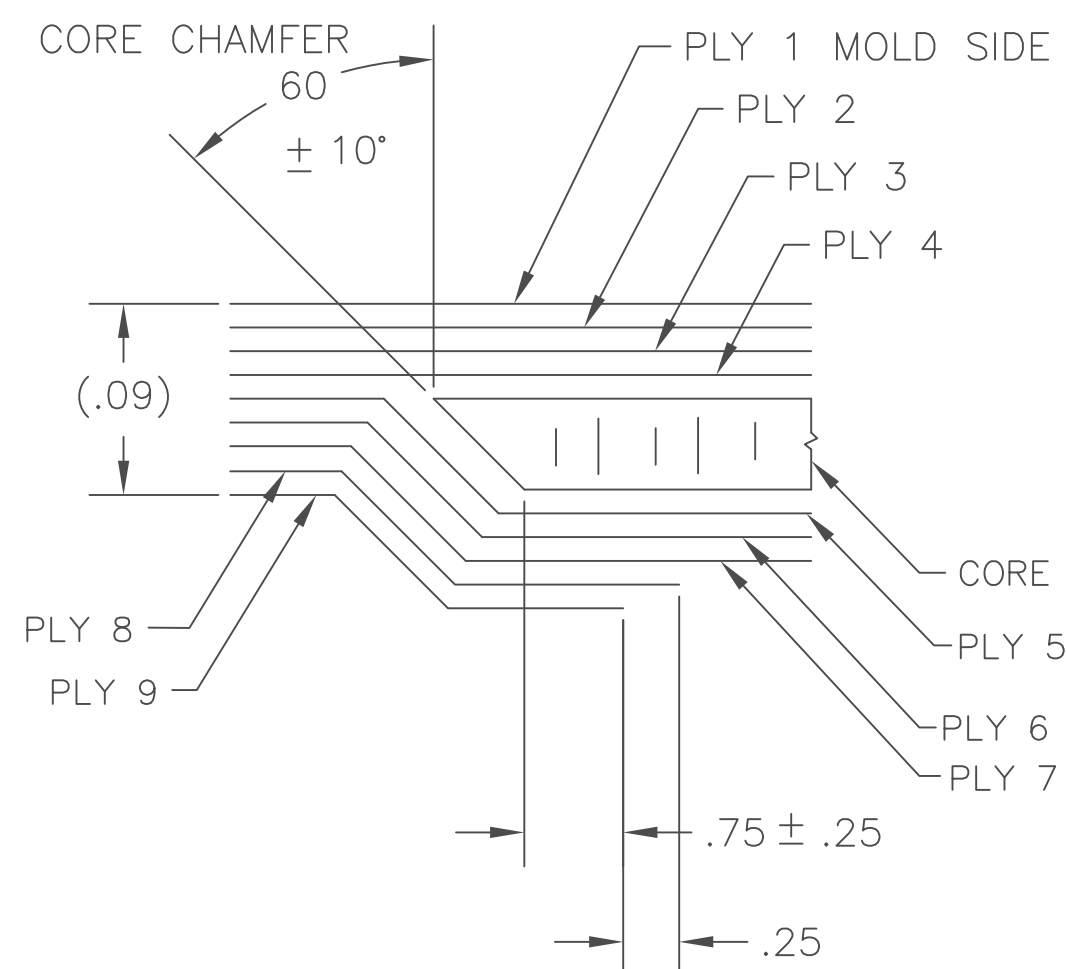
| REVISIONS | | | |
|-----------|---|------------|--------------|
| REV | DESCRIPTION | DATE | APPROVED |
| A | REVISED -129 FLOOR PANEL ASSY REVISED -125 FLOOR PANEL ASSY REVISED VIEW A-A ADDED-139 CORE REASON: COMPLETE BASIC DESIGN PRODUCTION INFO: ALL PARTS MUST COMPLY | 7/29/2015 | J. WHITCOMB |
| B | UPDATE FLAGNOTE 5 REASON: COMPLETE BASIC DESIGN PRODUCTION INFO: ALL EXISTING PARTS SATISFACTORY FUTURE PARTS IN ACCORD | 9/29/2015 | J. WHITCOMB |
| C | ADDED -121 & -123 ASSY TO NEW SHEET 2 REASON: COMPLETE BASIC DESIGN PRODUCTION INFO: ALL EXISTING PARTS SATISFACTORY FUTURE PARTS IN ACCORD | 2/08/2016 | J. WHITCOMB |
| D | SEE SHEET 2 FOR CONTUNUATION | 12/17/2016 | J. WHITCOMB |
| E | SEE DCN E FOR DETAILS | 3/2/2018 | M. JOEL SHAW |
| F | SEE DCN F FOR DETAILS | | |



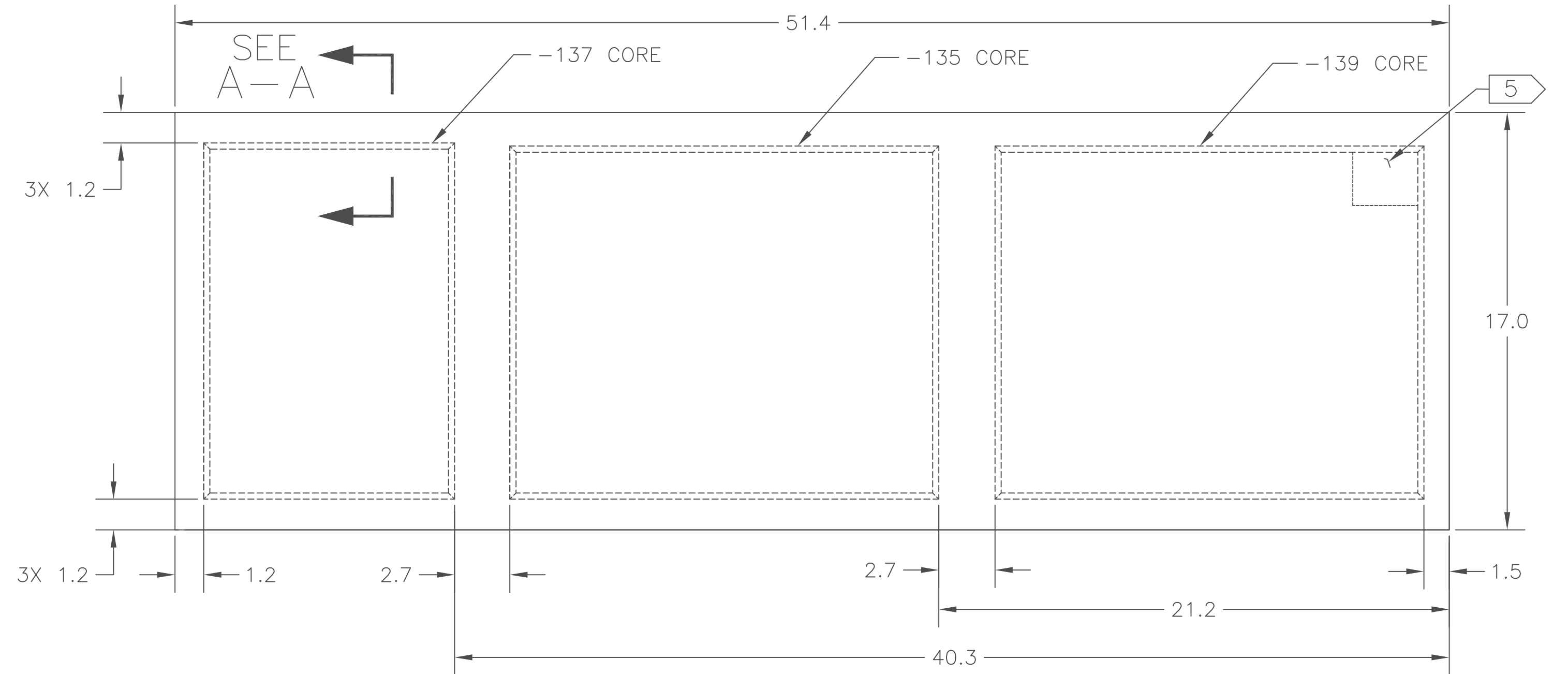
-125 FLOOR PANEL ASSY



-127 FLOOR PANEL ASSY



SECTION A-A
ROTATED 90° CCW
SCALE: NONE



-129 FLOOR PANEL ASSY

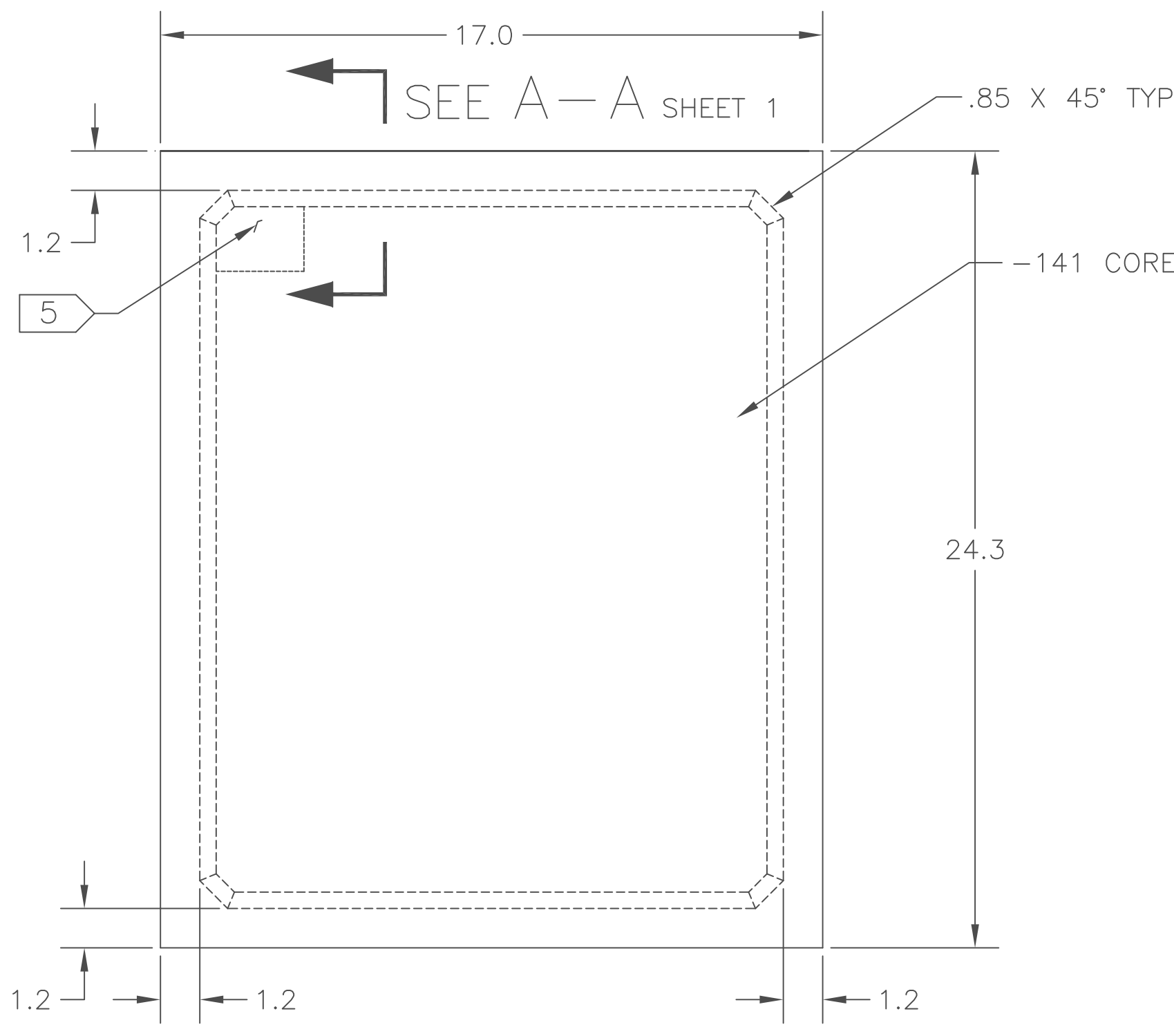
SEE SHEET 2 & 3 FOR PL CONTINUATION

| QTY REQD | PART OR IDENTIFYING NO. | NOMENCLATURE OR DESCRIPTION | MATERIAL SPECIFICATION | ZONE | FINISH | PART MARK | ITEM NO. |
|----------|-------------------------|-----------------------------|------------------------|------|--------|-----------|----------|
| 1 | -139 | CORE | | | | | 8 |
| 1 | -137 | CORE | | | | | 7 |
| 1 | -135 | CORE | | | | | 6 |
| 1 | -133 | CORE | | | | | 5 |
| 1 | -131 | CORE | | | | | 4 |
| - | -129 | FLOOR PANEL ASSY | | B2 | | 5 | 3 |
| - | -127 | FLOOR PANEL ASSY | | A1 | | 5 | 2 |
| - | -125 | FLOOR PANEL ASSY | | B4 | | 5 | 1 |

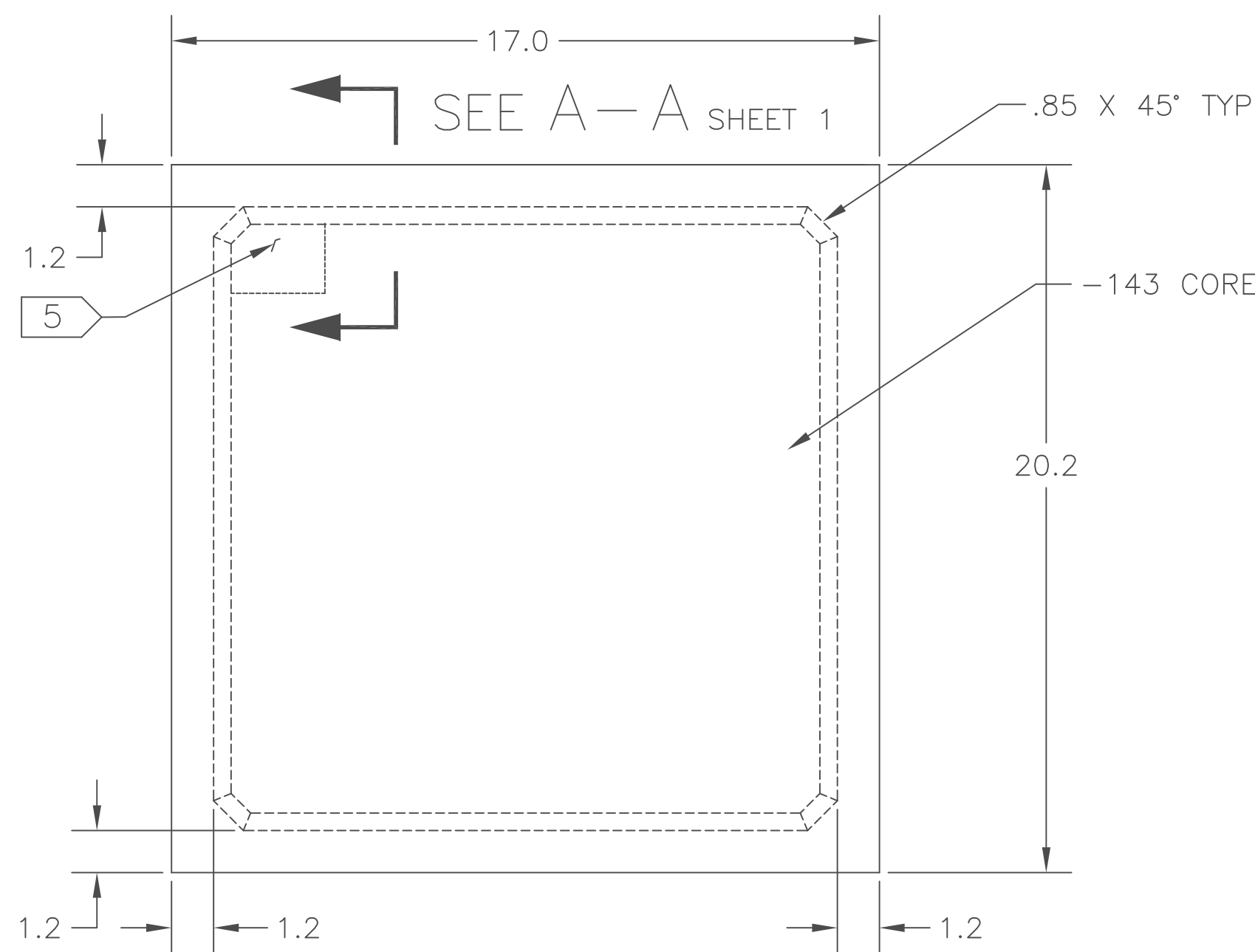
| | | | | | | | | | | |
|---------------|-----------|---------|-------------|---|---|---------------------------------------|-------------------------|---|--|---|
| PART DASH NO. | NEXT ASSY | USED ON | APPLICATION | UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES -TOLERANCES- .X ± .10 .XX ± .03 .XXX ± .010 ANGULAR ± 2° | DRAWN J.W. JR. 02-07-15 CHECKED D. MOILANEN 2-7-15 ENGR J.Whitcomb 2-7-15 STRESS P. ANDERSSON | PARTS LIST APPVD J.Whitcomb 2-7-15 | | RAISBECK ENGINEERING, INC. SEATTLE, WA | | FLOOR PANEL ASSY SIZE D DWG NO. BI-7221 REV LTR F |
| | | | | | PROPRIETARY NOTICE RAISBECK ENGINEERING, INC. PROPRIETARY RIGHTS ARE INCLUDED IN THE INFORMATION DISCLOSED HEREIN. NEITHER THIS DOCUMENT NOR THE INFORMATION DISCLOSED HEREIN SHALL BE REPRODUCED, USED OR DISCLOSED IN WHOLE OR IN PART WITHOUT THE WRITTEN PERMISSION OF RAISBECK ENGINEERING, INC. THE FOREGOING DOES NOT APPLY TO VENDOR DATA. | | SCALE NONE RLSE DATE | SHEET 1 OF 3 | | |

SEE SHEET 1 FOR NOTES

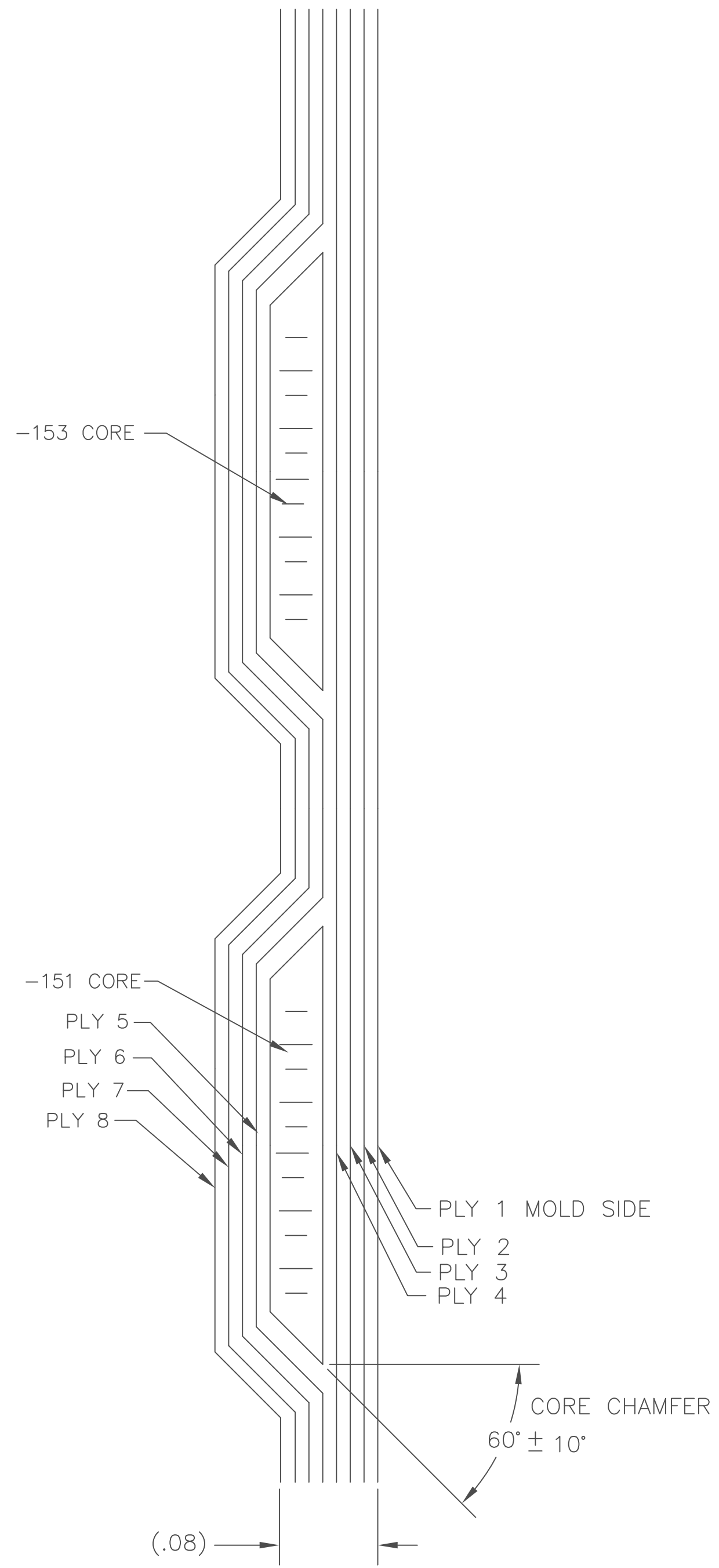
| REVISIONS | | | |
|-----------|---|------------|--------------|
| REV | DESCRIPTION | DATE | APPROVED |
| D | ADDED FLAGNOTE 6 & 8 TO SH 1. ADDED NOTE 7 TO SH 1 ADDED 5 TO SH 1 & SH 2. RELOCATED PART MARK LOCATION ON -121 & -123 ADDED 8 TO SH 2. ADDED -145 ASSY (LAYUP) (ZONE B2) ADDED -145 ASSY AND ALL COMPONENTS TO NEW SHEET 3 REASON: COMPLETE BASIC DESIGN PRODUCTION INFO: ALL EXISTING PARTS SATISFACTORY FUTURE PARTS IN ACCORD | 12/17/2016 | J. WHITCOMB |
| E | SEE DCN E FOR DETAILS | 3/2/2018 | M. JOEL SHAW |
| F | SEE DCN F FOR DETAILS | | |



-121 FLOOR PANEL ASSY

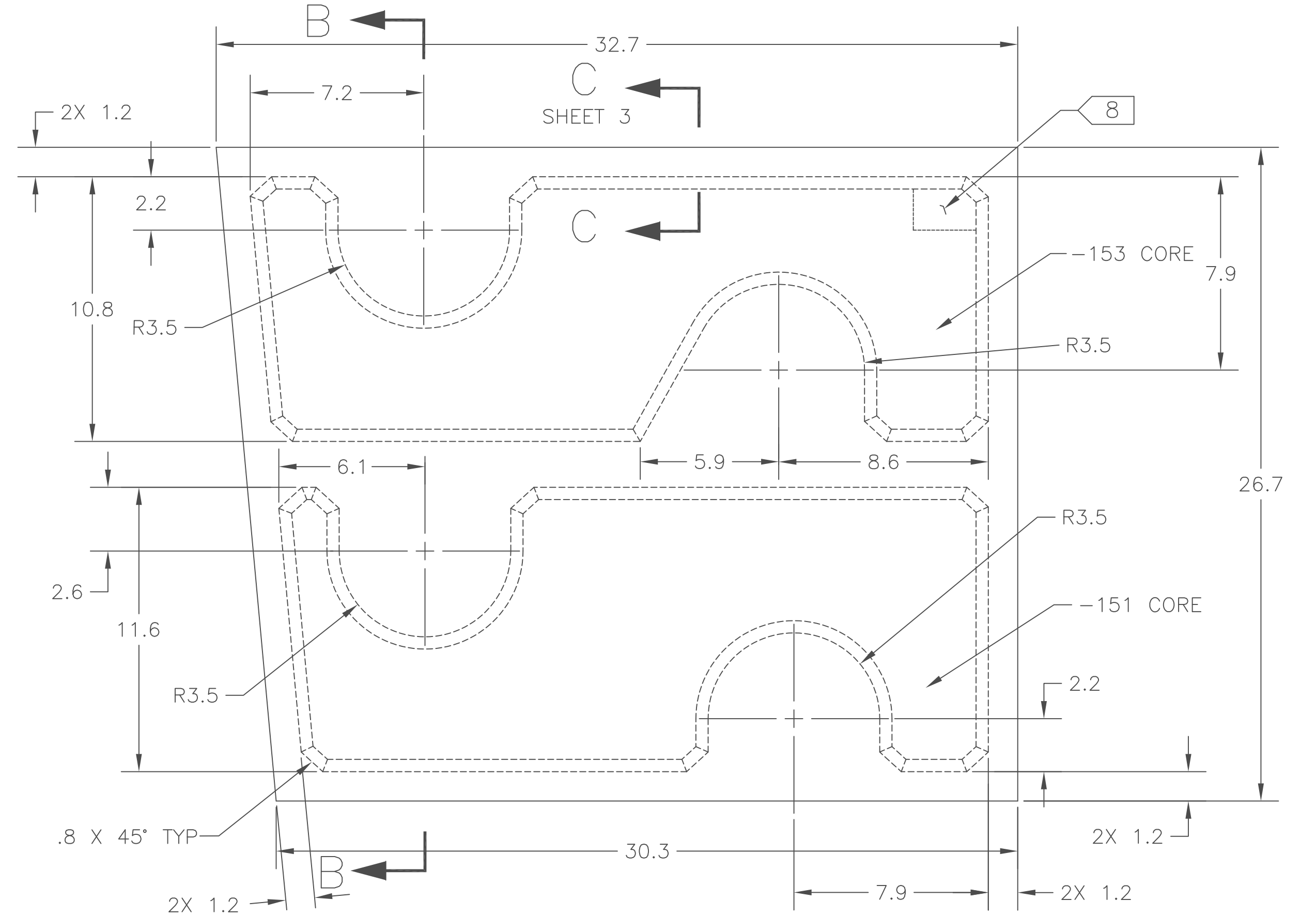


-123 FLOOR PANEL ASSY



SECTION B-B

SCALE: NONE
SEE SHEET 3 FOR PLY TABLE



-145 FLOOR PANEL ASSY (LAYUP)
SEE SHEET 3 FOR COMPLETE ASSY

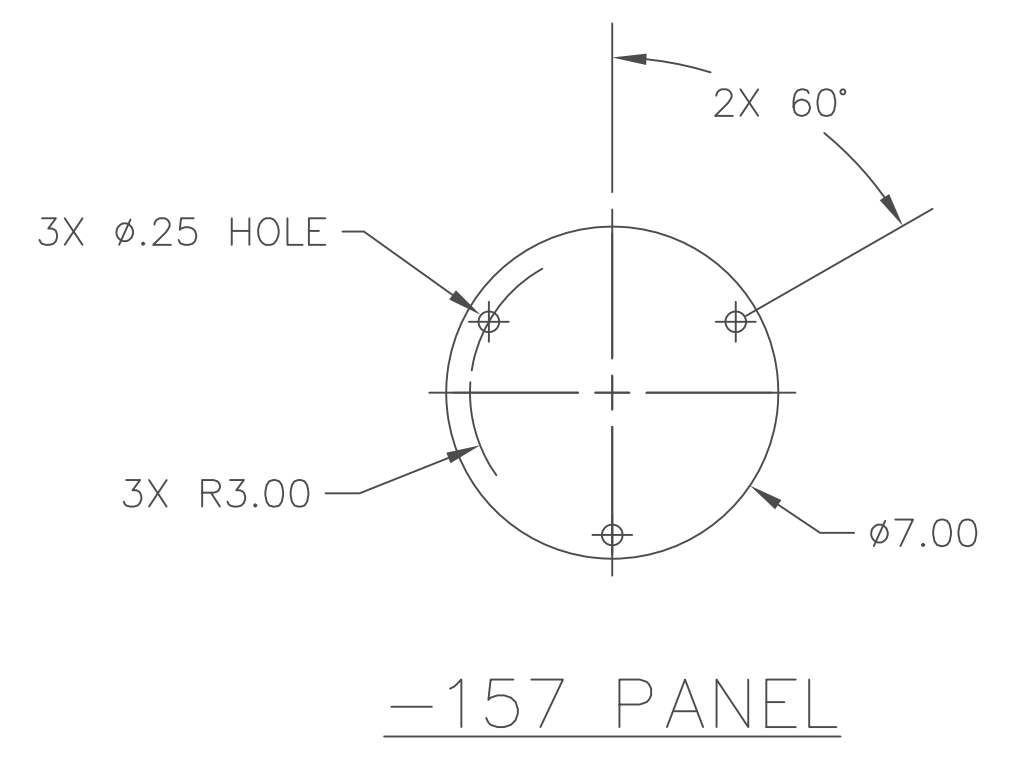
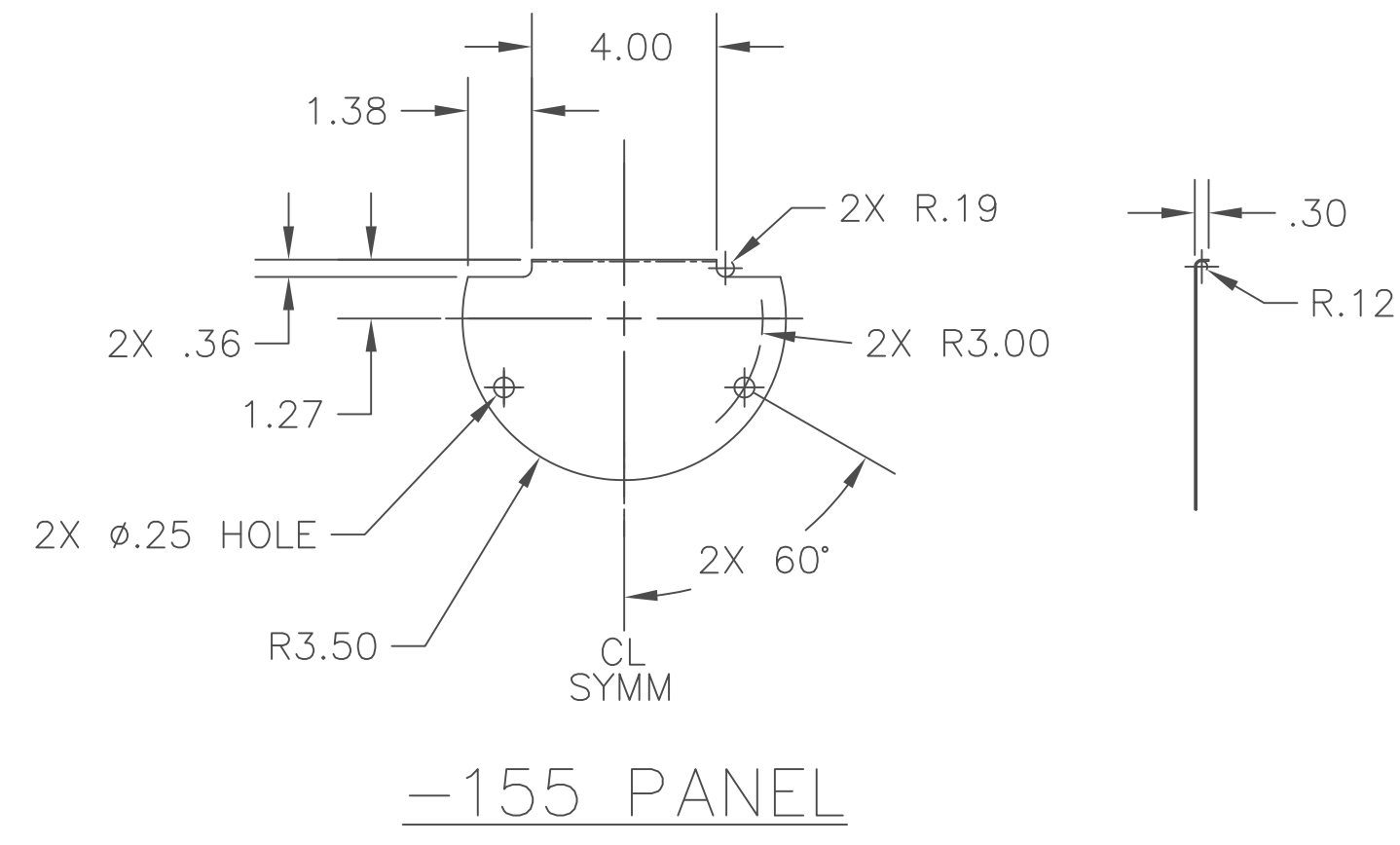
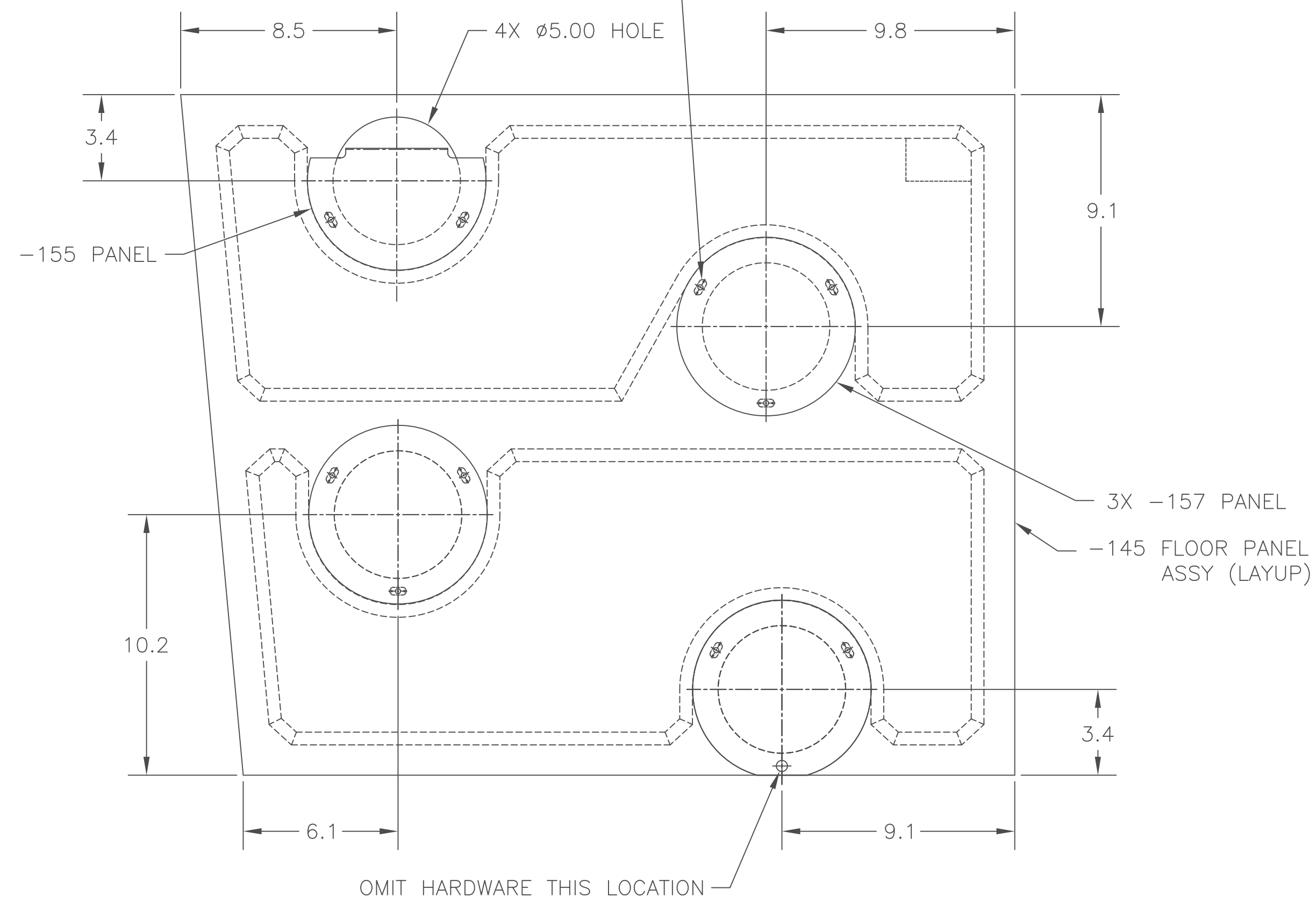
| QTY REQD | PART OR IDENTIFYING NO. | NOMENCLATURE OR DESCRIPTION | MATERIAL SPECIFICATION | ZONE | FINISH | PART MARK | ITEM NO. |
|----------|-------------------------|-----------------------------|------------------------|------|--------|-----------|----------|
| 1 | -153 | CORE | 2 | D2 | | | 7 |
| 1 | -151 | CORE | 2 | C2 | | | 6 |
| - | -145 | FLOOR PANEL ASSY (LAYUP) | 1 | B2 | | 8 | 5 |
| 1 | -143 | CORE | 2 | B3 | | | 4 |
| 1 | -141 | CORE | 2 | D3 | | | 3 |
| - | -123 | FLOOR PANEL ASSY | 1 | A4 | | 5 | 2 |
| - | -121 | FLOOR PANEL ASSY | 1 | B4 | | 5 | 1 |

| | | | | |
|--|---|---|--|--|
| <p>UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES</p> <p>-TOLERANCES-</p> <p>.X ± .10 .XX ± .03 .XXX ± .010 ANGULAR ± 2'</p> <p>PROPRIETARY NOTICE RAISBECK ENGINEERING, INC. PROPRIETARY RIGHTS ARE INCLUDED IN THE INFORMATION DISCLOSED HEREIN. NEITHER THIS DOCUMENT NOR THE INFORMATION DISCLOSED HEREIN SHALL BE REPRODUCED, USED OR DISCLOSED IN WHOLE OR IN PART WITHOUT THE WRITTEN PERMISSION OF RAISBECK ENGINEERING, INC. THE FOREGOING DOES NOT APPLY TO VENDOR DATA.</p> | <p>DRAWN J.W. JR. 2/8/2016</p> <p>CHECKED D. MOILANEN 2/8/2016</p> <p>ENGR J. Whitcomb 2/8/2016</p> <p>STRESS P. ANDERSSON 2/8/2016</p> | <p>RAISBECK ENGINEERING, INC. SEATTLE, WA</p> | | |
| | <p>APPVD J. Whitcomb 2/8/2016</p> | <p>FLOOR PANEL ASSY</p> | | |
| | <p>SIZE D DWG NO. BI-7221</p> | <p>REV LTR F</p> | <p>SCALE NONE RLSE DATE SHEET 2 OF 3</p> | |
| | <p>APPLICATION</p> | <p>APPLICATION</p> | | |

SEE SHEET 1 FOR NOTES

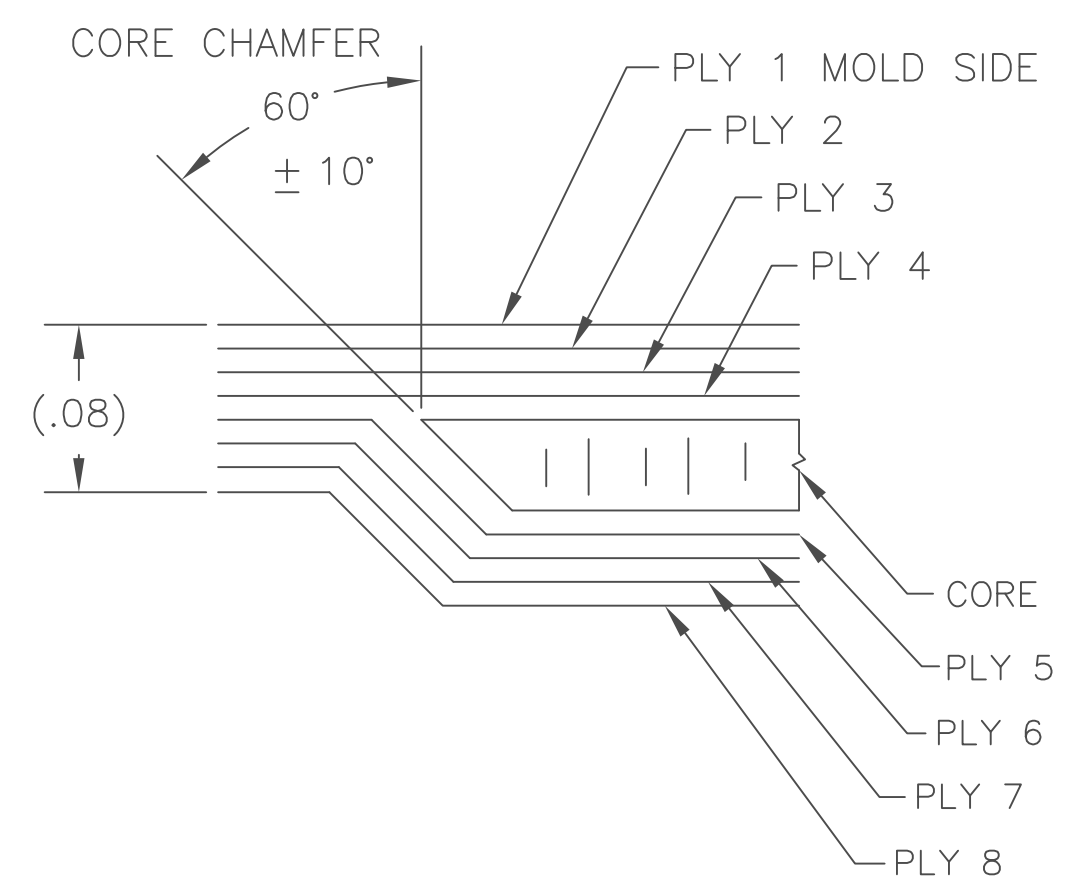
| REVISIONS | | | |
|-----------|---|------------|--------------|
| REV | DESCRIPTION | DATE | APPROVED |
| D | UPDATED REVISION LETTER TO D TO MATCH SHEET 1 & 2 | 12/17/2016 | J. WHITCOMB |
| E | SEE DCN E FOR DETAILS | 3/2/2018 | M. JOEL SHAW |
| F | SEE DCN F FOR DETAILS | | |

10 X ϕ .218-.229 HOLE THRU -145 TO MATCH -155 & -157 PANELS
 10 X MS21059L3 NUT PLATE FAR SIDE OF -145
 20 X CCR264SS-3-2 RIVET CSK ϕ .180-.190 NEARSIDE OF -145
 10 X NAS603-6 SCREW



-145 FLOOR PANEL ASSY

| PLY TABLE | | | |
|-------------|-------|-----------------|----------|
| PART NUMBER | PLY | PLY ORIENTATION | MATERIAL |
| -145 | PLY 1 | 0° OR 90° | 3 |
| | PLY 2 | 0° OR 90° | 3 |
| | PLY 3 | 0° OR 90° | 3 |
| | PLY 4 | 0° OR 90° | 3 |
| | PLY 5 | 0° OR 90° | 3 |
| | PLY 6 | 0° OR 90° | 3 |
| | PLY 7 | 0° OR 90° | 3 |
| | PLY 8 | 0° OR 90° | 3 |



SECTION C-C SHEET 2
 ROTATED 90° CCW
 SCALE: NONE

| QTY REQD | PART OR IDENTIFYING NO. | NOMENCLATURE OR DESCRIPTION | MATERIAL SPECIFICATION | ZONE | FINISH | PART MARK | ITEM NO. |
|----------|-------------------------|-----------------------------|---------------------------|------|--------|-----------|----------|
| 10 | NAS603-6 | SCREW | | | | | 7 |
| 20 | CCR264SS-3-2 | RIVET CSK 6 | | | | | 6 |
| 10 | MS21059L3 | NUT PLATE | | | | | 5 |
| 3 | -157 | PANEL | .032 6061-T6 PER AMS 4027 | B2 | | | 4 |
| 1 | -155 | PANEL | .032 6061-T6 PER AMS 4027 | C2 | | | 3 |
| 1 | -145 | FLOOR PANEL ASSY (LAYUP) | | 2B1 | | | 2 |
| - | -145 | FLOOR PANEL ASSY | | B4 | | | 1 |

| | | | | | | |
|---------------|-------------|---------|---|-----------------------------|--|-----------------------------------|
| PART DASH NO. | NEXT ASSY | USED ON | UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN INCHES -TOLERANCES- .X ± .10 .XX ± .03 .XXX ± .010 ANGULAR ± 2° | DRAWN J.W. JR. 12-17-16 | RAISBECK ENGINEERING, INC. SEATTLE, WA | |
| | APPLICATION | | | CHECKED D.MOILANEN 12-17-16 | | FLOOR PANEL ASSY |
| | | | | ENGR J.Whitcomb 12-17-16 | | |
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