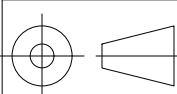
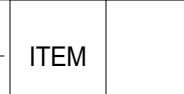

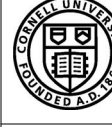
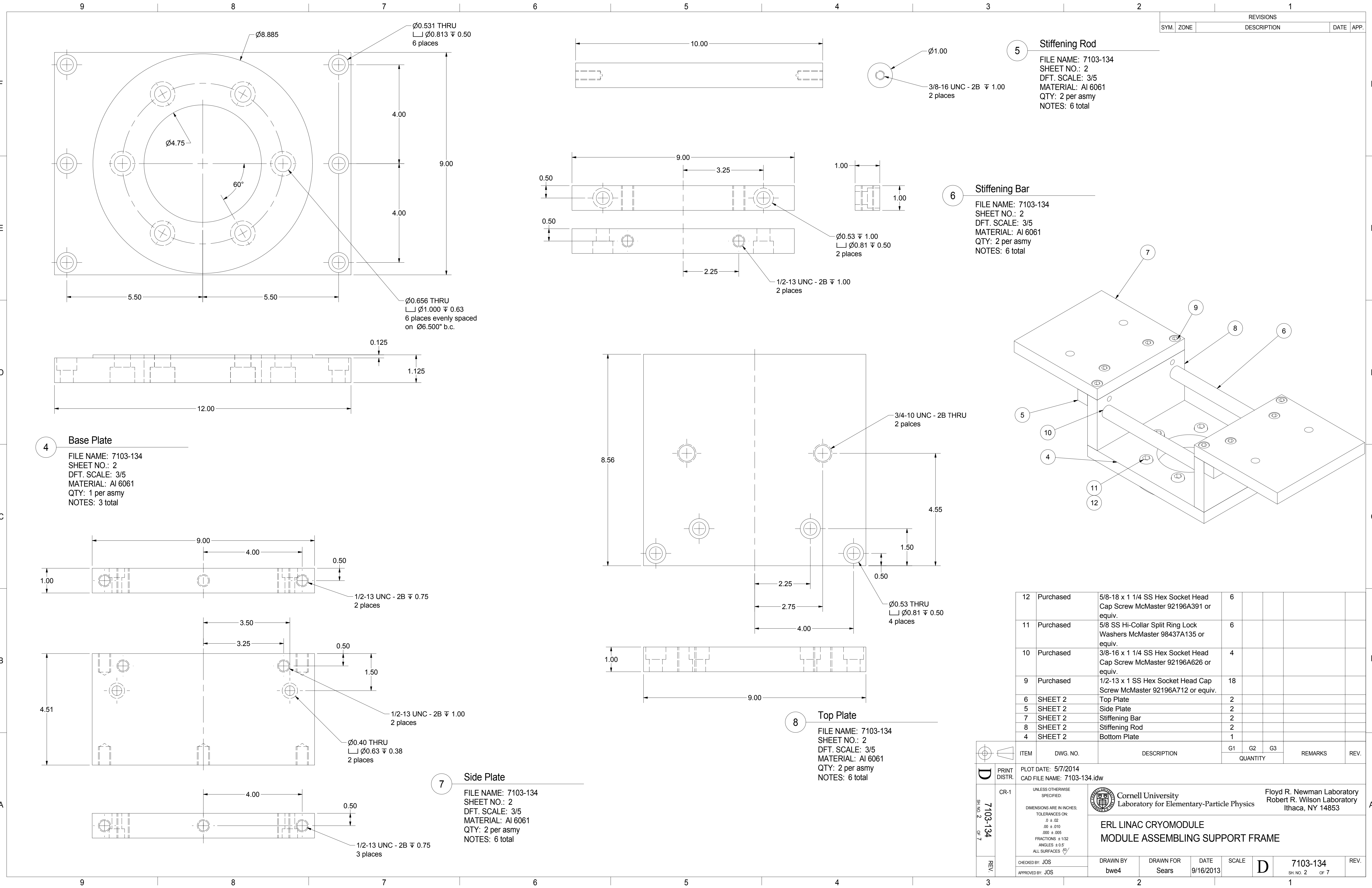


| REVISIONS | | | | |
|-----------|------|-------------|------|------|
| SYM. | ZONE | DESCRIPTION | DATE | APP. |

| | | | | | | | | |
|----|---------------------|----------------------------------|---|--|--|--|--|--|
| 14 | SHEET 4 | Leg Base Plate | 2 | | | | | |
| 13 | SHEET 3 | Protective Plate | 6 | | | | | |
| 3 | SHEET 2 | HGRP Winged Support | 3 | | | | | |
| 2 | 7102-072 / 7110-034 | Injector 80/20 Support Frame | 1 | | | | | |
| 1 | SHEET 4 | New 80/20 Support Frame Addition | 1 | | | | | |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|--|-----------------|--|--|--|-------------|--|------------------|--|----------|--|--------------------|--|----|--|-------------------|--|------------|--|---|--|--|--|------|--|--|--|--|--|--|--|--|--|--|--|
|  | | ITEM | | DWG. NO. | | DESCRIPTION | | | | G1 | | G2 | | G3 | | REMARKS | | REV. | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | QUANTITY | | | | | | | | | | | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D | | PRINT DISTR. | | PLOT DATE: 5/7/2014 CAD FILE NAME: 7103-134.idw | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7103-134 SH. NO. 1 OF 7 | | CR-1 | | <div>UNLESS OTHERWISE SPECIFIED:</div> <div>DIMENSIONS ARE IN INCHES:</div> <div>TOLERANCES ON:</div> <div>0 ± .02</div> <div>00 ± .010</div> <div>000 ± .005</div> <div>FRACTIONS ± 1/32</div> <div>ANGLES ± 0.5°</div> <div>ALL SURFACES </div> | | | | | | | | | | | | | | | | <div> Cornell University Laboratory for Elementary-Particle Physics</div> <div>Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853</div> | | | | | | | | | | | | | | | |
| | | | | <div>ERL LINAC CRYOMODULE</div> <div>MODULE ASSEMBLING SUPPORT FRAME</div> | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| REV. | | | | CHECKED BY: JOS | | | | DRAWN BY bwe4 | | | | DRAWN FOR Sears | | | | DATE 9/16/2013 | | SCALE D | | 7103-134 SH. NO. 1 OF 7 | | | | REV. | | | | | | | | | | | |
| | | | | APPROVED BY: JOS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |



| REVISIONS | | | | |
|-----------|------|-------------|------|------|
| SYM. | ZONE | DESCRIPTION | DATE | APP. |

5 Stiffening Rod

FILE NAME: 7103-134
SHEET NO.: 2
DFT. SCALE: 3/5
MATERIAL: Al 6061
QTY: 2 per asmy
NOTES: 6 total

6 Stiffening Bar

FILE NAME: 7103-134
SHEET NO.: 2
DFT. SCALE: 3/5
MATERIAL: Al 6061
QTY: 2 per asmy
NOTES: 6 total

7 Side Plate

FILE NAME: 7103-134
SHEET NO.: 2
DFT. SCALE: 3/5
MATERIAL: Al 6061
QTY: 2 per asmy
NOTES: 6 total

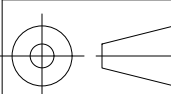


8 Top Plate

FILE NAME: 7103-134
SHEET NO.: 2
DFT. SCALE: 3/5
MATERIAL: Al 6061
QTY: 2 per asmy
NOTES: 6 total

4 Base Plate

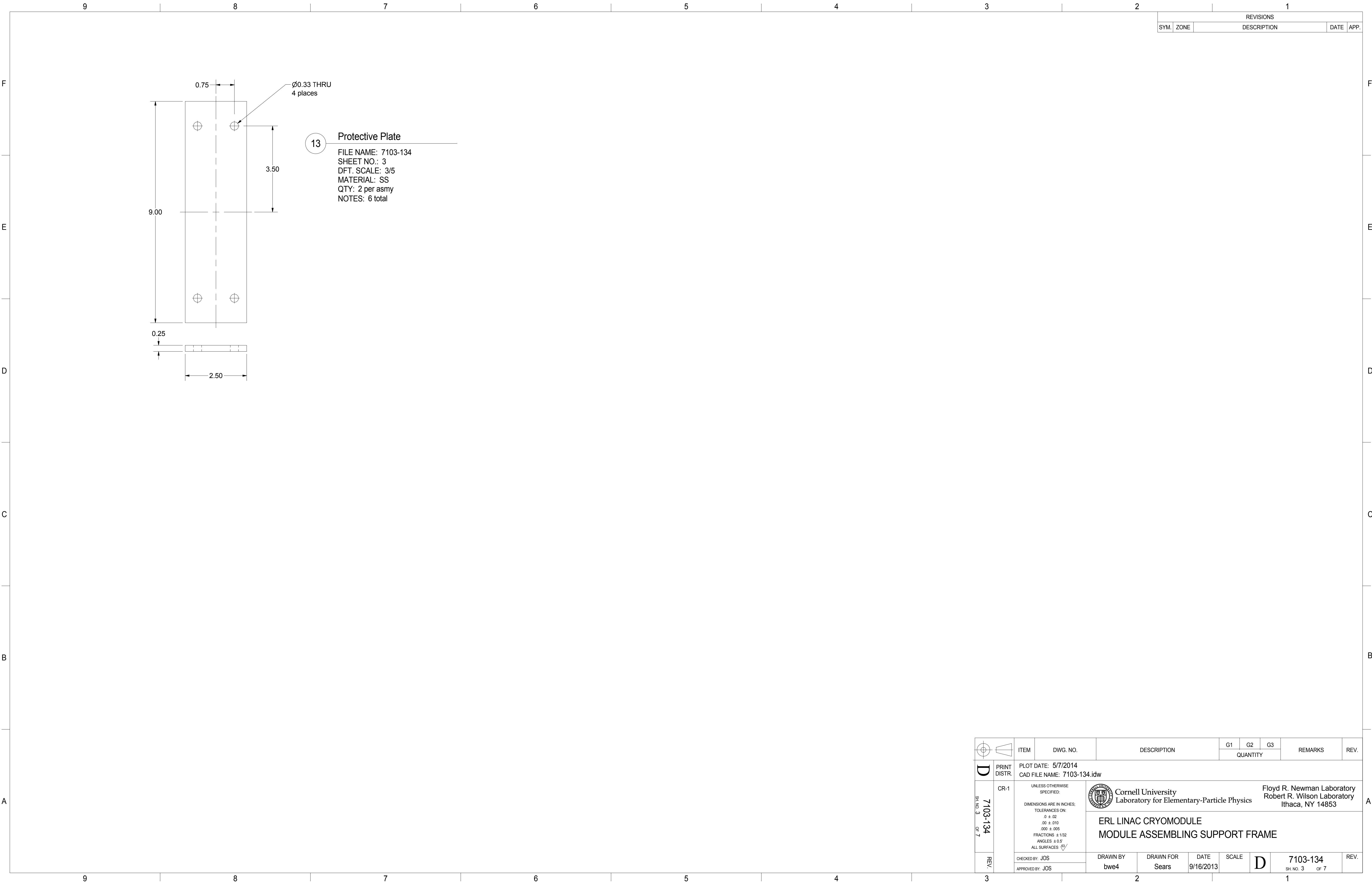
FILE NAME: 7103-134
SHEET NO.: 2
DFT. SCALE: 3/5
MATERIAL: Al 6061
QTY: 1 per asmy
NOTES: 3 total

| | | | | | | | | |
|----|-----------|--|----|--|--|--|--|--|
| 12 | Purchased | 5/8-18 x 1 1/4 SS Hex Socket Head Cap Screw McMaster 92196A391 or equiv. | 6 | | | | | |
| 11 | Purchased | 5/8 SS Hi-Collar Split Ring Lock Washers McMaster 98437A135 or equiv. | 6 | | | | | |
| 10 | Purchased | 3/8-16 x 1 1/4 SS Hex Socket Head Cap Screw McMaster 92196A626 or equiv. | 4 | | | | | |
| 9 | Purchased | 1/2-13 x 1 SS Hex Socket Head Cap Screw McMaster 92196A712 or equiv. | 18 | | | | | |
| 6 | SHEET 2 | Top Plate | 2 | | | | | |
| 5 | SHEET 2 | Side Plate | 2 | | | | | |
| 7 | SHEET 2 | Stiffening Bar | 2 | | | | | |
| 8 | SHEET 2 | Stiffening Rod | 2 | | | | | |
| 4 | SHEET 2 | Bottom Plate | 1 | | | | | |


| | | | | | | | | | |
|---|--|---|---|-----------|-----------|-------|---------|-------------------------------|------|
|  | ITEM | DWG. NO. | DESCRIPTION | G1 | G2 | G3 | REMARKS | REV. | |
| | | | | QUANTITY | | | | | |
| PRINT DISTR. | PLOT DATE: 5/7/2014 CAD FILE NAME: 7103-134.idw | | | | | | | | |
| 7103-134 SH. NO. 2 OF 7 | CR-1 | UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES; TOLERANCES ON: Ø ± .02 .000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES  |  Cornell University Laboratory for Elementary-Particle Physics Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853 | | | | | | |
| | | | ERL LINAC CRYOMODULE MODULE ASSEMBLING SUPPORT FRAME | | | | | | |
| REV. | CHECKED BY: JOS | | DRAWN BY | DRAWN FOR | DATE | SCALE | D | 7103-134 SH. NO. 2 OF 7 | REV. |
| | APPROVED BY: JOS | | bwe4 | Sears | 9/16/2013 | | | | |

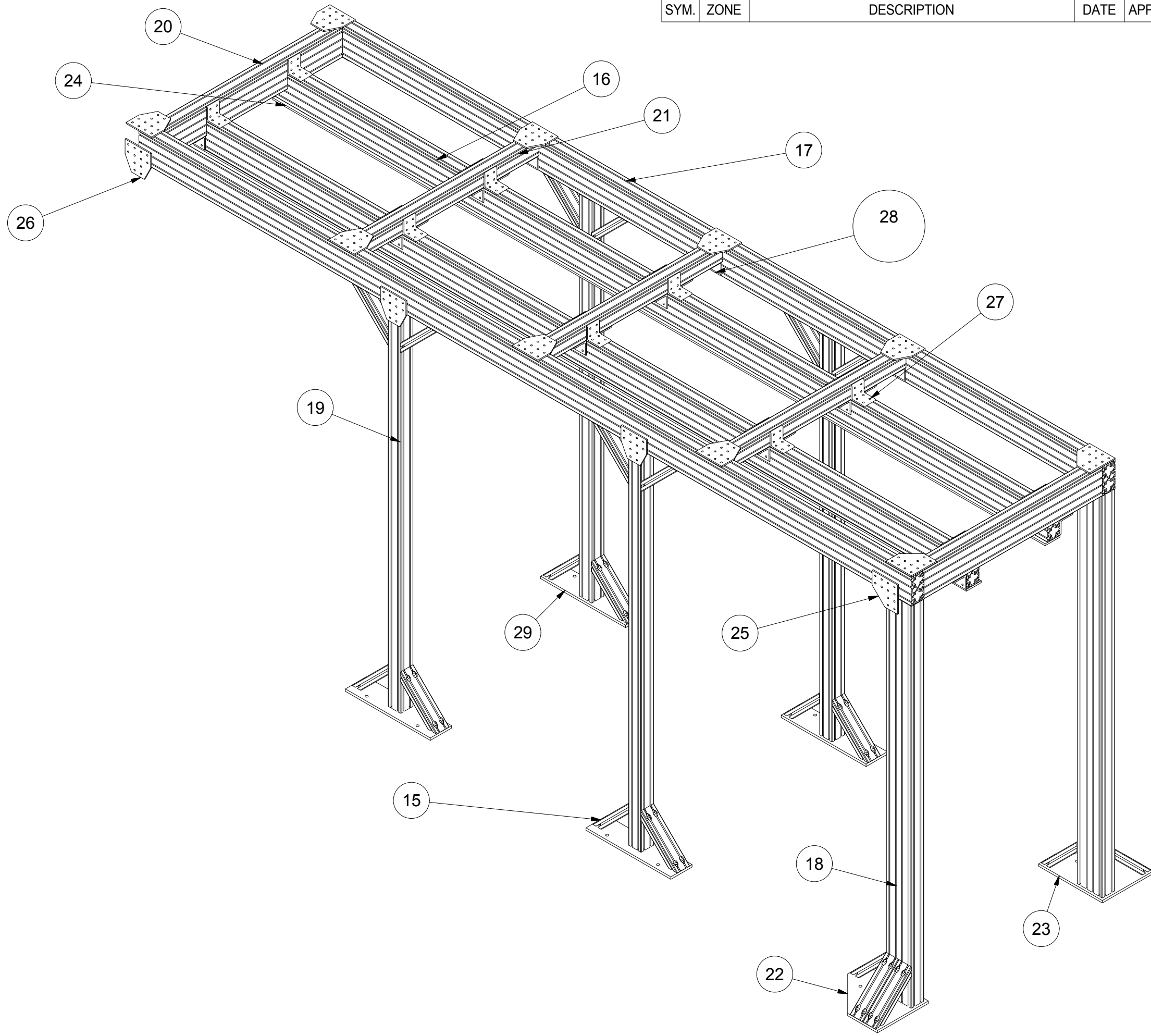
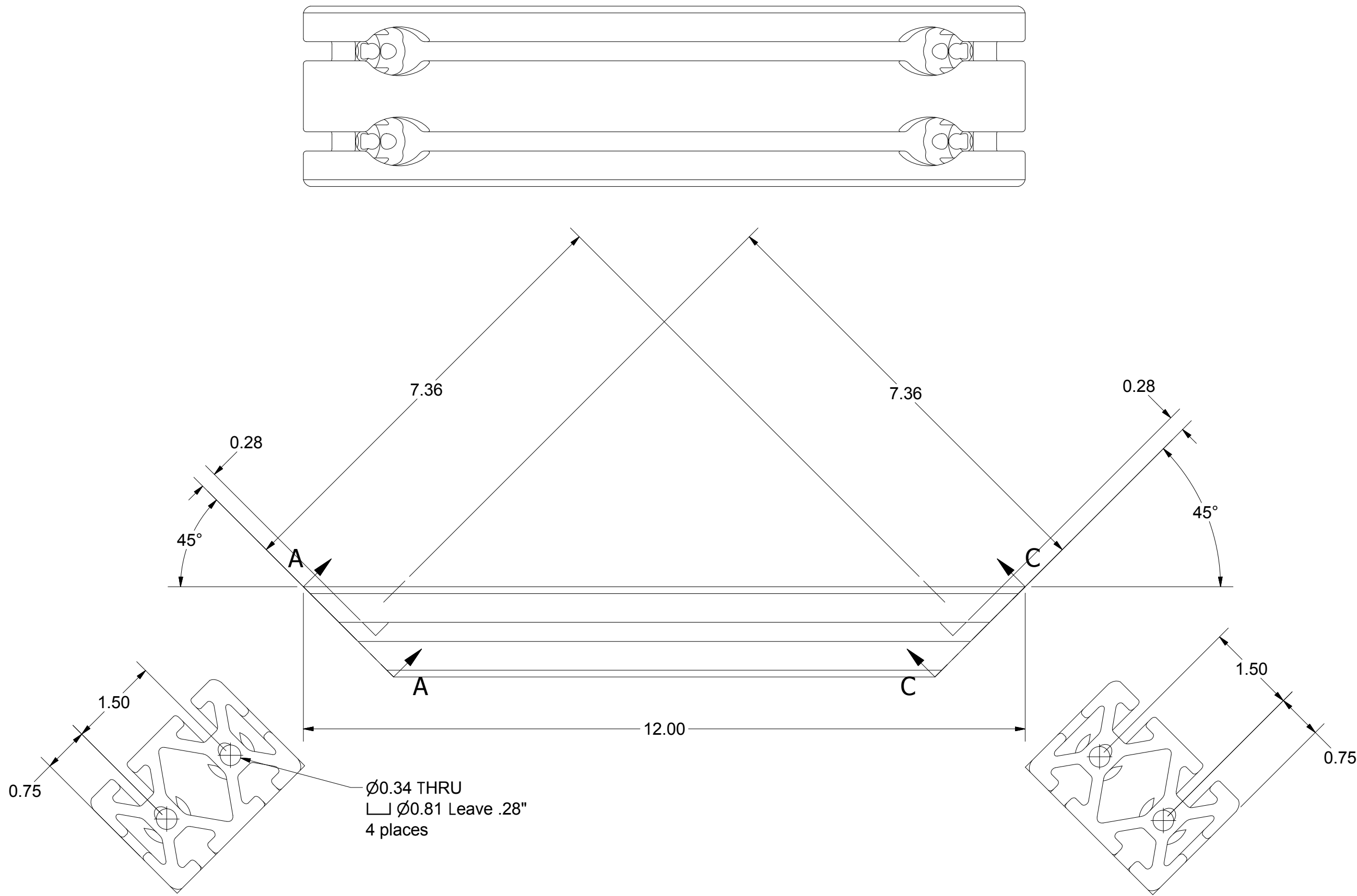
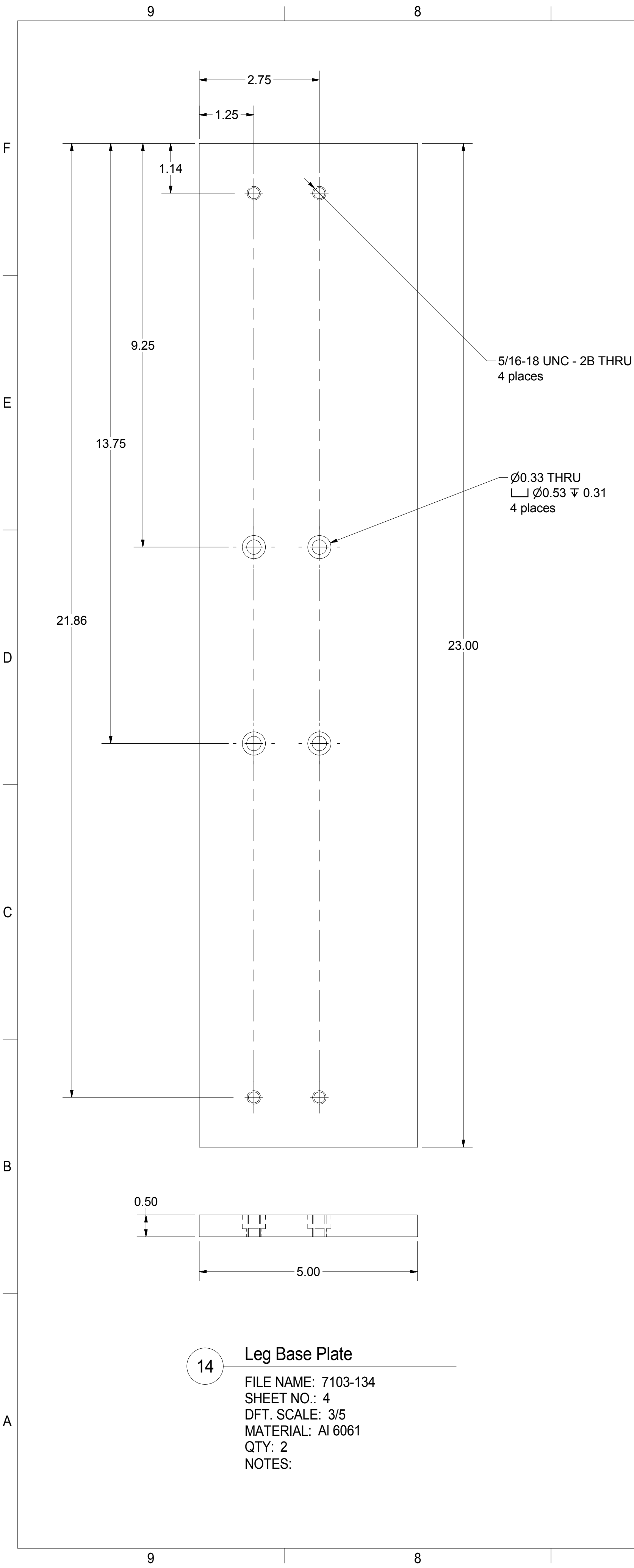
Cornell University
Laboratory for Elementary-Particle Physics
Floyd R. Newman Laboratory
Robert R. Wilson Laboratory
Ithaca, NY 14853

ERL LINAC CRYOMODULE
MODULE ASSEMBLING SUPPORT FRAME



| REVISIONS | | | | |
|-----------|------|-------------|------|------|
| SYM. | ZONE | DESCRIPTION | DATE | APP. |

| | | | | | | | | | | |
|------------------|-------------------------------|-----------------|---|------------------|-----------------|----------|----------------------------|----|---------|------|
| | ITEM | DWG. NO. | DESCRIPTION | | | G1 | G2 | G3 | REMARKS | REV. |
| | PRINT DISTR. | | | QUANTITY | | | | | | |
| D | 7103-134 SH. NO. 3 OF 7 | CR-1 | PLOT DATE: 5/7/2014 CAD FILE NAME: 7103-134.idw | | | | | | | |
| | | | <div> Cornell University Laboratory for Elementary-Particle Physics</div> <div>Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853</div> <div>ERL LINAC CRYOMODULE MODULE ASSEMBLING SUPPORT FRAME</div> | | | | | | | |
| REV. | 3 | CHECKED BY: JOS | DRAWN BY: bwe4 | DRAWN FOR: Sears | DATE: 9/16/2013 | SCALE: D | 7103-134 SH. NO. 3 OF 7 | | REV. | 1 |
| APPROVED BY: JOS | | | | | | | | | | |

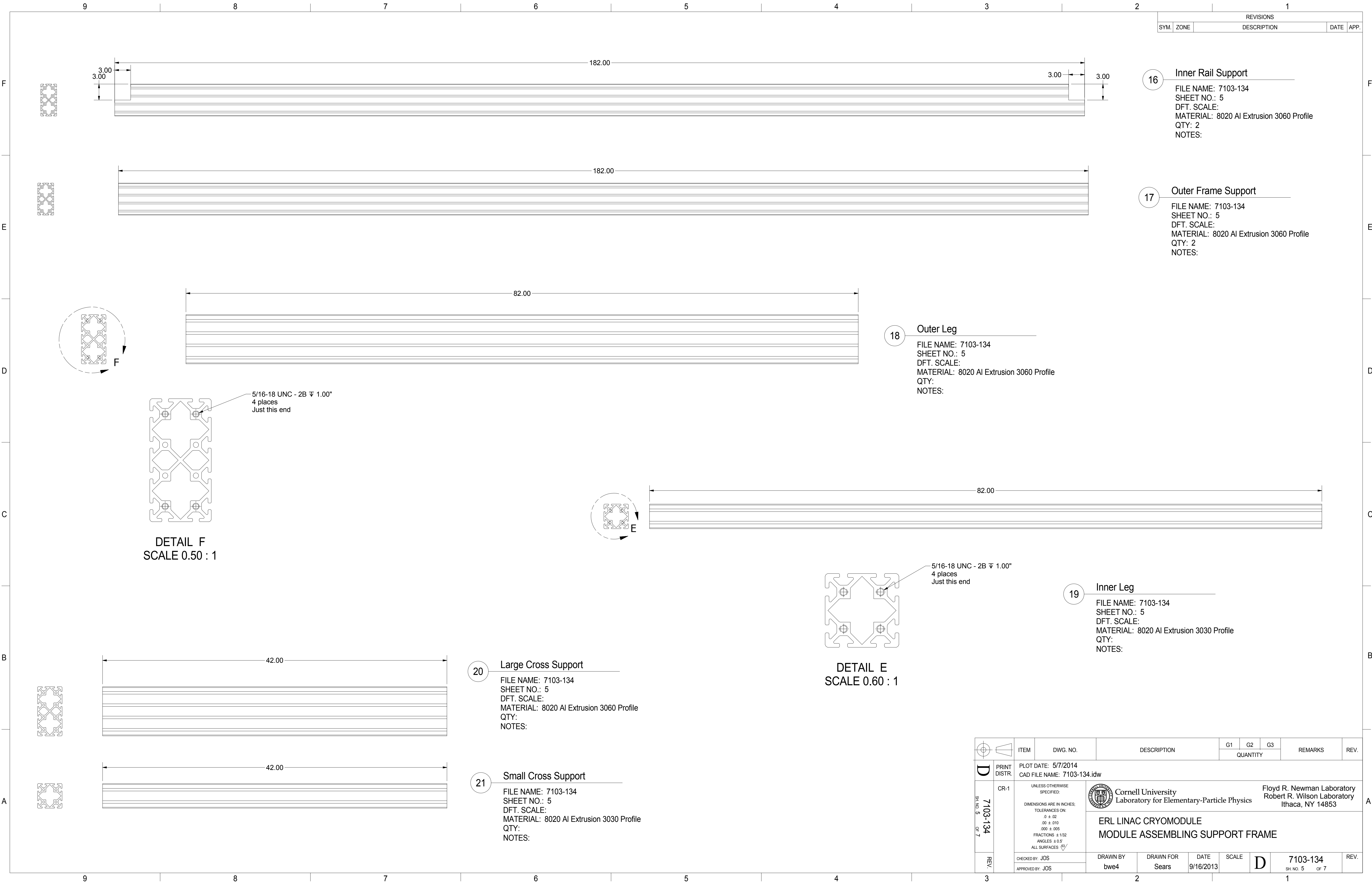


| | | | | | | | |
|----|---------------------|--|----|--|--|--|--|
| 15 | SHEET 4 | Diagonal Support - 1530 Extruded Aluminum 80/20 Profile | | | | | |
| 16 | SHEET 5 | New Inner Support - 3060 Extruded Aluminum 80/20 Profile | 2 | | | | |
| 17 | SHEET 5 | New Outer Support - 3060 Extruded Aluminum 80/20 Profile | 2 | | | | |
| 18 | SHEET 5 | Outer Leg - 3060 Extruded Aluminum 80/20 Profile | | | | | |
| 19 | SHEET 5 | Inner Leg - 3060 Extruded Aluminum 80/20 Profile | | | | | |
| 20 | SHEET 5 | Cross Support - 3060 Extruded Aluminum 80/20 Profile | | | | | |
| 21 | SHEET 5 | Cross Support - 3030 Extruded Aluminum 80/20 Profile | | | | | |
| 22 | 7102-072 / 7110-034 | End Base Plate | | | | | |
| 23 | 7102-072 / 7110-034 | End Base Plate - Mirror | | | | | |
| 24 | Sheet 6 | Rails | 2 | | | | |
| 25 | Purchased | 12 Hole 90 Deg Joining Plate (8020 PN 4328) | 4 | | | | |
| 26 | Purchased | 12 Hole Tee Joining Plate (8020 PN 4325) | 14 | | | | |
| 27 | Purchased | 8 Hole Inside Corner Bracket (8020 PN 4304) | 32 | | | | |
| 29 | 7102-072 / 7110-034 | Leg Base Plate - Original | | | | | |
| 28 | Purchased | 8 Hole Inside Gusset Corner Bracket (8020 PN 4338) | 6 | | | | |

14 Leg Base Plate
FILE NAME: 7103-134
SHEET NO.: 4
DFT. SCALE: 3/5
MATERIAL: Al 6061
QTY: 2
NOTES:

15 Diagonal Support
FILE NAME: 7103-134
SHEET NO.: 4
DFT. SCALE: 3/5
MATERIAL: 80/20 Extruded Al 1530 profile
QTY:
NOTES:

| | | | | | | | | |
|---|-----------------|--|---|------------------------------------|-----------------|---|---|----------------------------|
| D | PRINT DISTR. | PLOT DATE: 5/7/2014 CAD FILE NAME: 7103-134.idw | UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES; TOLERANCES ON: .0 ± .02 .00 ± .010 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES | | | Cornell University Laboratory for Elementary-Particle Physics ERL LINAC CRYOMODULE MODULE ASSEMBLING SUPPORT FRAME | Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853 | |
| | | | CHECKED BY: JOS APPROVED BY: JOS | DRAWN BY: bwe4 DRAWN FOR: Sears | DATE: 9/16/2013 | | SCALE: D | 7103-134 SH. NO. 4 OF 7 |



| REVISIONS | | | | |
|-----------|------|-------------|------|------|
| SYM. | ZONE | DESCRIPTION | DATE | APP. |

16 Inner Rail Support

FILE NAME: 7103-134
SHEET NO.: 5
DFT. SCALE:
MATERIAL: 8020 AI Extrusion 3060 Profile
QTY: 2
NOTES:

17 Outer Frame Support

FILE NAME: 7103-134
SHEET NO.: 5
DFT. SCALE:
MATERIAL: 8020 AI Extrusion 3060 Profile
QTY: 2
NOTES:

18 Outer Leg

FILE NAME: 7103-134
SHEET NO.: 5
DFT. SCALE:
MATERIAL: 8020 AI Extrusion 3060 Profile
QTY:
NOTES:

19 Inner Leg


FILE NAME: 7103-134
SHEET NO.: 5
DFT. SCALE:
MATERIAL: 8020 AI Extrusion 3030 Profile
QTY:
NOTES:

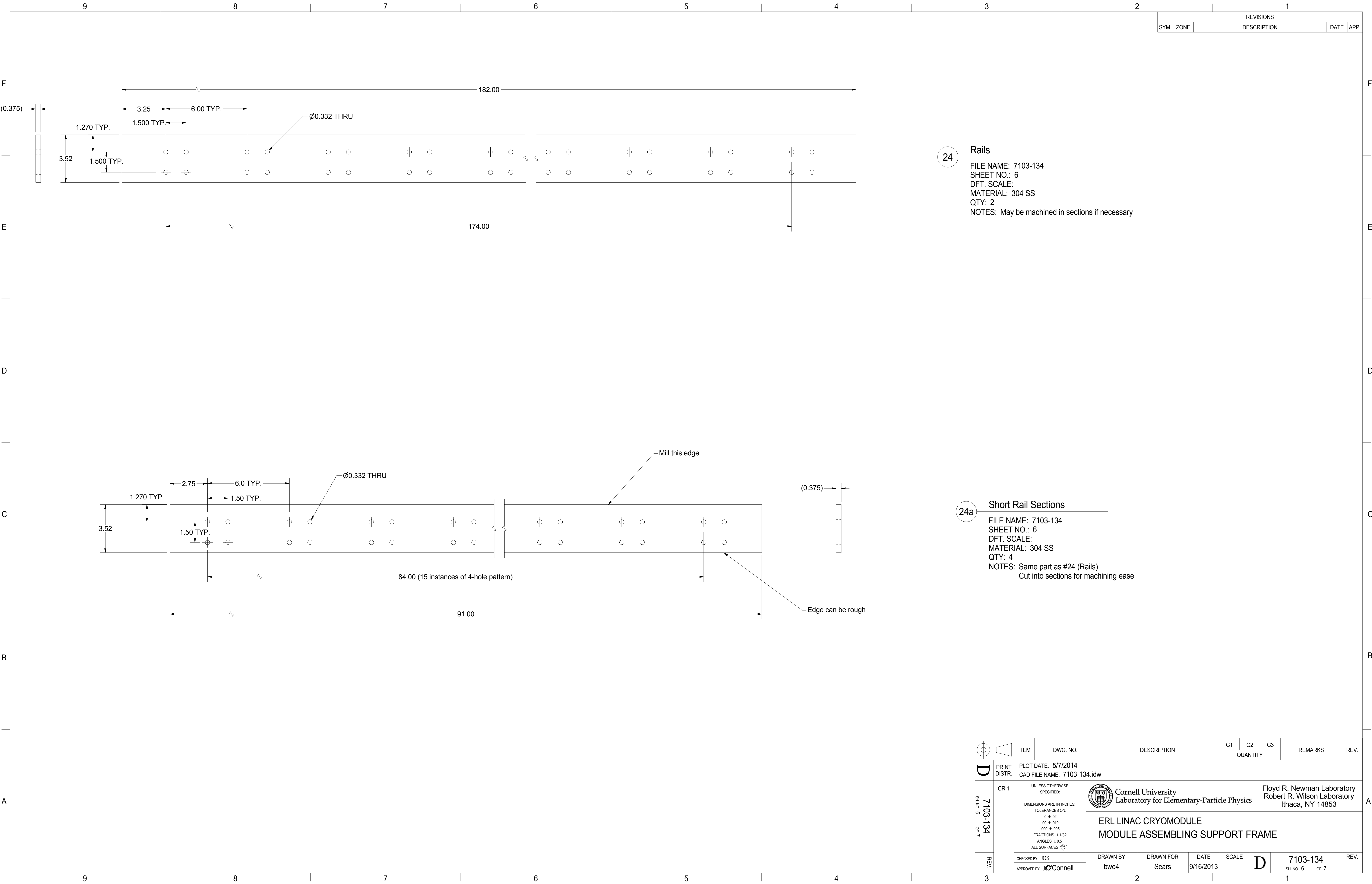
20 Large Cross Support

FILE NAME: 7103-134
SHEET NO.: 5
DFT. SCALE:
MATERIAL: 8020 AI Extrusion 3060 Profile
QTY:
NOTES:

21 Small Cross Support

FILE NAME: 7103-134
SHEET NO.: 5
DFT. SCALE:
MATERIAL: 8020 AI Extrusion 3030 Profile
QTY:
NOTES:

| | | | | | | | | | | | | |
|-------------------|-----------------|---|----------|--|--|-------------------|-------|----|---|----------|--|------|
| | | ITEM | DWG. NO. | DESCRIPTION | | | G1 | G2 | G3 | REMARKS | | REV. |
| | | QUANTITY | | | | | | | | | | |
| D | PRINT DISTR. | PLOT DATE: 5/7/2014 CAD FILE NAME: 7103-134.idw | | | | | | | | | | |
| | CR-1 | <p>UNLESS OTHERWISE SPECIFIED:</p> <p>DIMENSIONS ARE IN INCHES:</p> <p>TOLERANCES ON:</p> <p>0 ± .02</p> <p>.00 ± .010</p> <p>.000 ± .005</p> <p>FRACTIONS ± 1/32</p> <p>ANGLES ± 0.5°</p> <p>ALL SURFACES </p> | |  Cornell University Laboratory for Elementary-Particle Physics | | | | | Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853 | | | |
| SH. NO. 5 OF 7 | 7103-134 | ERL LINAC CRYOMODULE MODULE ASSEMBLING SUPPORT FRAME | | | | | | | | | | |
| REV. | CHECKED BY: JOS | DRAWN BY bwe4 | | DRAWN FOR Sears | | DATE 9/16/2013 | SCALE | D | | 7103-134 | | REV. |
| | | APPROVED BY: JOS | | SH. NO. 5 OF 7 | | | | | | | | |




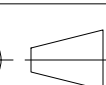





| REVISIONS | | | | |
|-----------|------|-------------|------|------|
| SYM. | ZONE | DESCRIPTION | DATE | APP. |

24 Rails

FILE NAME: 7103-134
SHEET NO.: 6
DFT. SCALE:
MATERIAL: 304 SS
QTY: 2
NOTES: May be machined in sections if necessary

24a Short Rail Sections

FILE NAME: 7103-134
SHEET NO.: 6
DFT. SCALE:
MATERIAL: 304 SS
QTY: 4
NOTES: Same part as #24 (Rails)
Cut into sections for machining ease

| | | | | | | | | | | | |
|---|-----------------|---|----------|-------------|---|--------------------|-------------------|-------|---|-------------------------------|------|
|   | | ITEM | DWG. NO. | DESCRIPTION | | | G1 | G2 | G3 | REMARKS | REV. |
| | | | | | | QUANTITY | | | | | |
|  | PRINT DISTR. | PLOT DATE: 5/7/2014 CAD FILE NAME: 7103-134.idw | | | | | | | | | |
| | CR-1 | UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES; TOLERANCES ON: 0 ± .02 .00 ± .010 .000 ± .005 FRACTIONS ± 1/32 ANGLES ± 0.5° ALL SURFACES  | | |  Cornell University Laboratory for Elementary-Particle Physics Floyd R. Newman Laboratory Robert R. Wilson Laboratory Ithaca, NY 14853 | | | | | | |
| 7103-134 SH. NO. 6 OF 7 | REV. | CHECKED BY: JOS APPROVED BY:  J. O'Connell | | | DRAWN BY bwe4 | DRAWN FOR Sears | DATE 9/16/2013 | SCALE |  | 7103-134 SH. NO. 6 OF 7 | REV. |
| | | ERL LINAC CRYOMODULE MODULE ASSEMBLING SUPPORT FRAME | | | | | | | | | |

