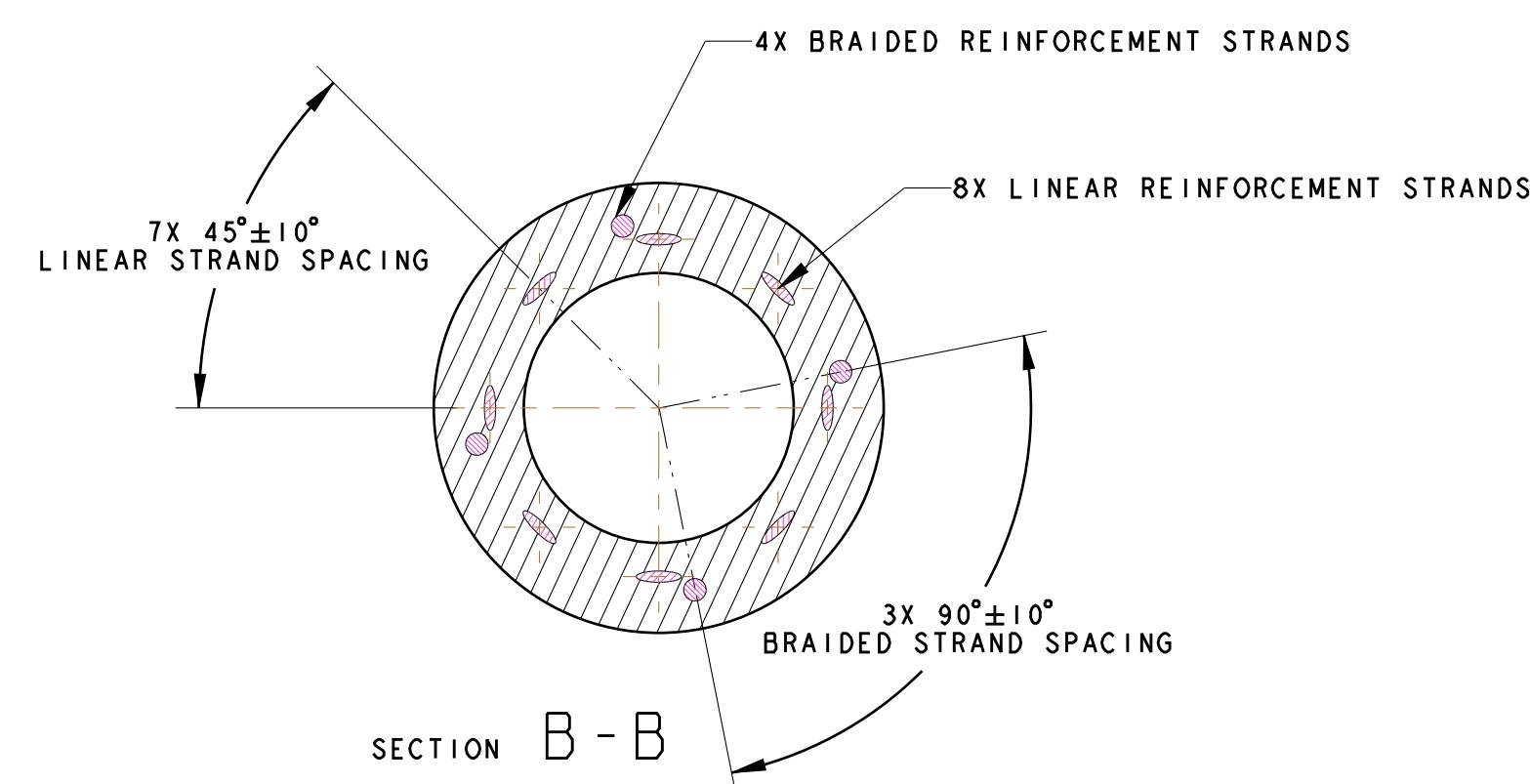
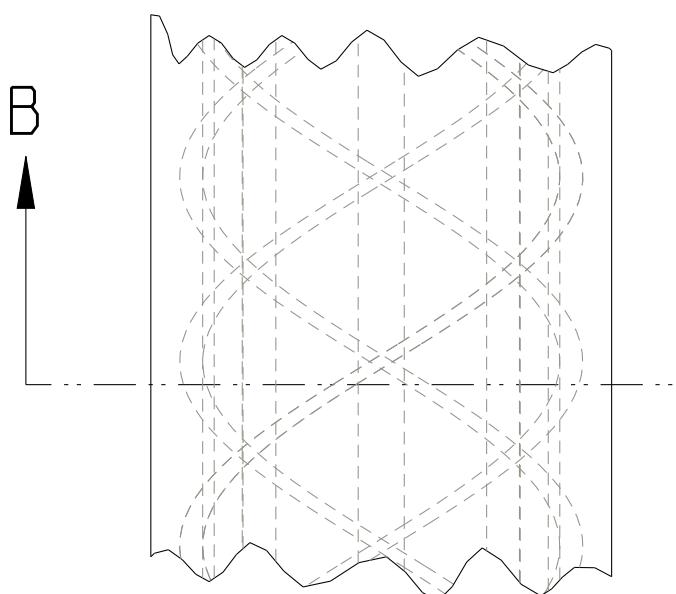
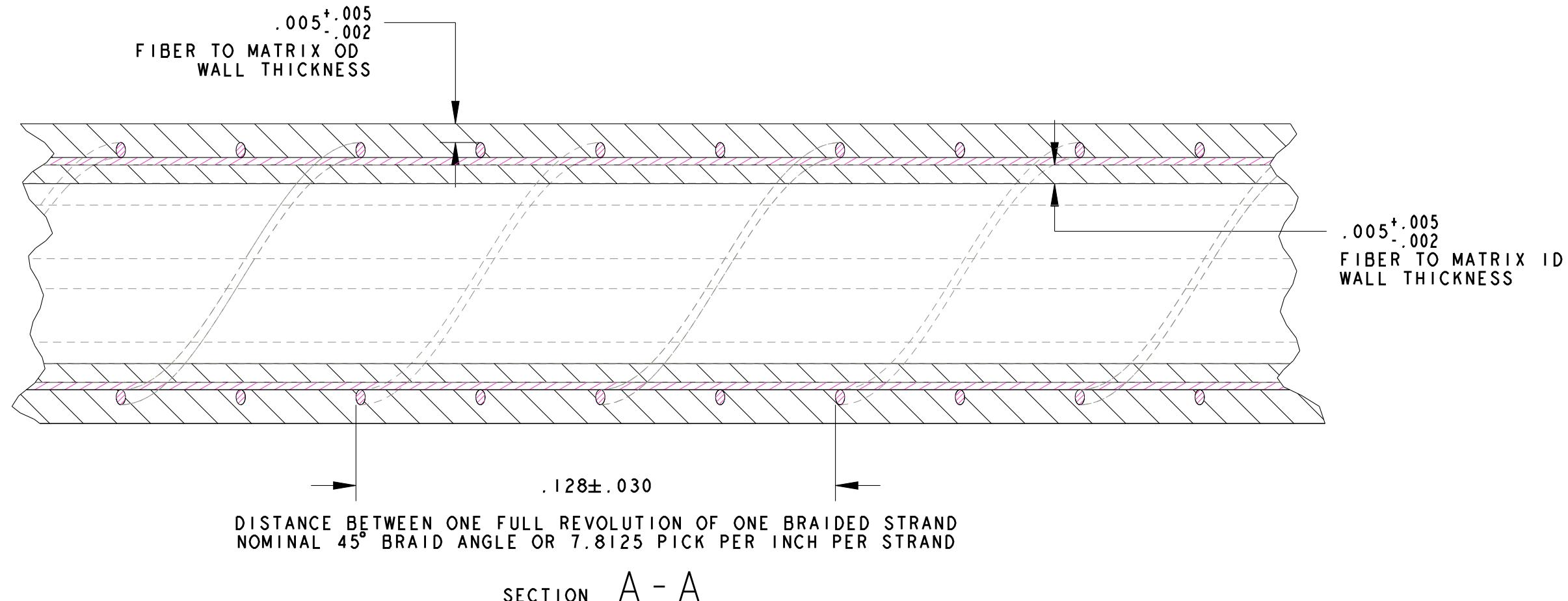
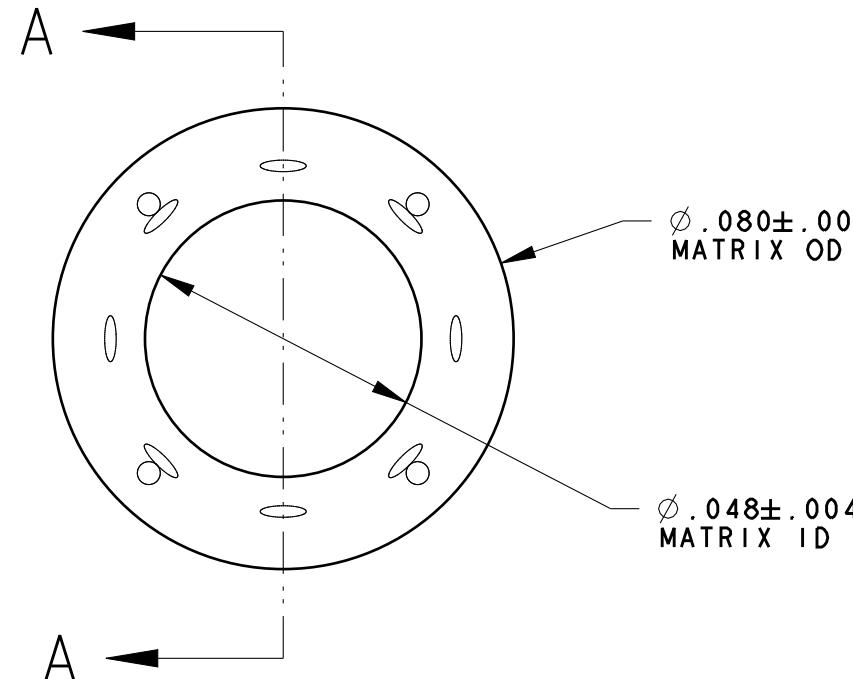




4. LINEAR REINFORCEMENT  
 A. 8 TWISTED 100 DENIER STRANDS OF FIBER  
 B. NOMINAL 45 DEGREE STRAND TO STRAND SPACING AS SHOWN  
 C. FINAL STRAND SHAPE AND RADIAL POSITION RELATIVE TO BRAIDED STRANDS MAY VARY FROM THOSE SHOWN IN DRAWING, LINEAR STRANDS CAN INTERWEAVE WITH BRAIDED STRANDS SO LONG AS FIBER TO MATRIX WALL THICKNESSES SHOWN ARE MAINTAINED

5. CUT TUBING TO  $120 \pm 1$  INCH LENGTH



| CURRENT ISSUE APPROVALS |                 | DATE      |
|-------------------------|-----------------|-----------|
| DRAWN:                  | J. SHELTON 2614 | 4/20/2010 |
| CHECKED:                | J. SHELTON 2614 |           |
| DESIGNED:               | J. SHELTON 2614 |           |
| APPROVED:               | R. WILD 2614    |           |

| DRAWING: REINFORCED_TUBING        | TITLE                  |            |                           |
|-----------------------------------|------------------------|------------|---------------------------|
| MODEL: REINFORCED_TUBING          | TUBING, REINFORCED     |            |                           |
| TYPE: ASSEM                       |                        |            |                           |
| SANDIA NATIONAL LABORATORIES (NM) | PART CLASSIFICATION    |            |                           |
| ENGLISH                           | UNCLASSIFIED           |            |                           |
| THIRD ANGLE PROJECTION            | DRAWING CLASSIFICATION | SIZE       | DRAWING NUMBER            |
|                                   | UNCLASSIFIED           | C          | -                         |
|                                   |                        |            |                           |
| ORIGIN PRO/E-WILDFIRE             | CAGEC 14213            | SCALE 30/1 | STATUS SA-CHK - 4/20/2010 |

4. LINEAR REINFORCEMENT

- 4 TWISTED 100 DENIER STRANDS OF FIBER
- NOMINAL 90 DEGREE STRAND TO STRAND SPACING AS SHOWN
- FINAL STRAND SHAPE AND RADIAL POSITION RELATIVE TO BRAIDED STRANDS MAY VARY FROM THOSE SHOWN IN DRAWING, LINEAR STRANDS CAN INTERWEAVE WITH BRAIDED STRANDS SO LONG AS FIBER TO MATRIX WALL THICKNESSES SHOWN ARE MAINTAINED

5. CUT TUBING TO  $120 \pm 1$  INCH LENGTH

## NOTES:

- MATERIALS
  - MATRIX: ARKEMA PEBAX 3533
  - FIBER: DUPONT KEVLAR 29
- EXTRUDE TUBING OVER NON-METALLIC MANDREL
- BRAIDED REINFORCEMENT
  - 8 TWISTED 100 DENIER STRANDS OF FIBER
  - NOMINAL 45 DEGREE STRAND TO STRAND SPACING AS SHOWN
  - NOMINAL 7.8125 PICKS PER INCH PER STRAND AS SHOWN
  - FINAL STRAND SHAPE AND RADIAL POSITION RELATIVE TO LINEAR STRANDS MAY VARY FROM THOSE SHOWN IN DRAWING, BRAIDED STRANDS CAN INTERWEAVE WITH LINEAR STRANDS SO LONG AS FIBER TO MATRIX WALL THICKNESSES SHOWN ARE MAINTAINED

## PART NUMBER

-

A

A

ORIGINAL ISSUE

4/22/10

## REVISIONS

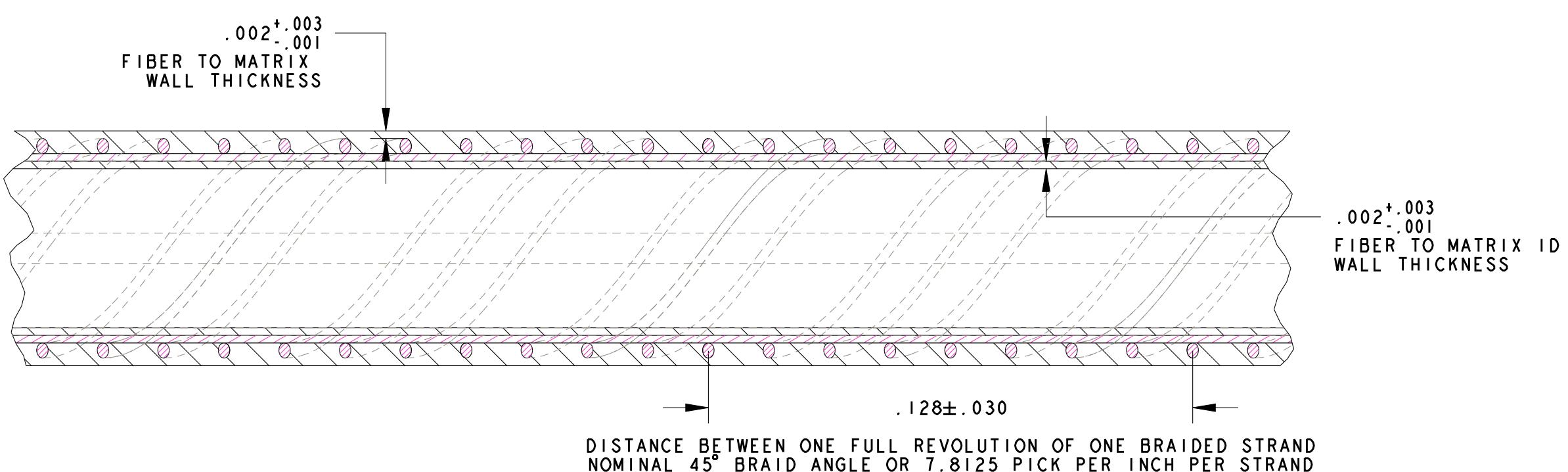
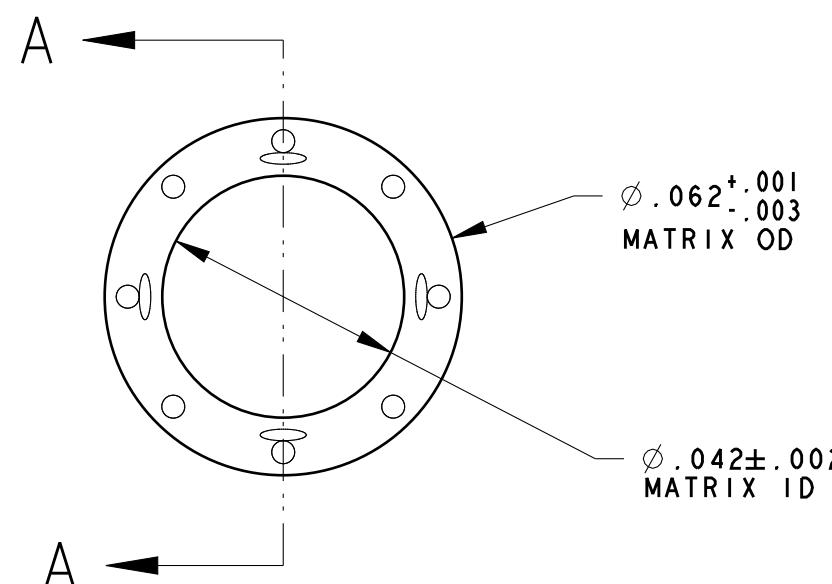
ISS

SHEET

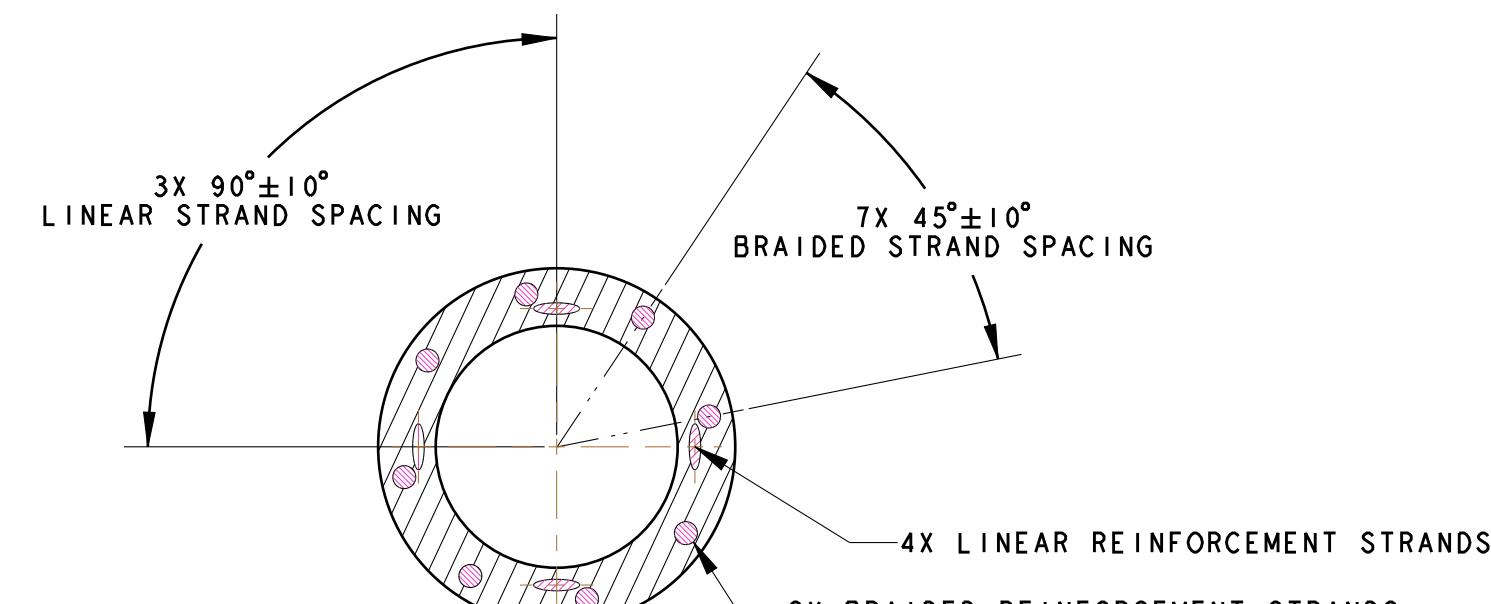
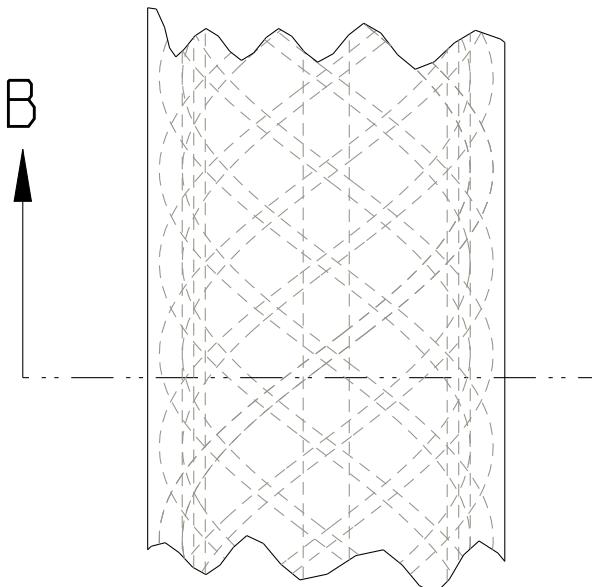
ZONE

DESCRIPTION

DATE



SECTION A - A



SECTION B - B

| CURRENT ISSUE APPROVALS |                 | DATE    |
|-------------------------|-----------------|---------|
| DRAWN:                  | J. SHELTON 2614 | 4/22/10 |
| CHECKED:                | J. SHELTON 2614 |         |
| DESIGNED:               | J. SHELTON 2614 |         |
| APPROVED:               | R. WILD 2614    |         |

|                                   |       |   |           |
|-----------------------------------|-------|---|-----------|
| DRAWING: INDV_RIBBON_TUBE         | TITLE | INDV RIBBON TUBE                                |           |
| MODEL: INDV_RIBBON_TUBE           |       |   | 4 LINEAR  |
| TYPE: ASSEM                       |       |   | 8 BRAIDED |
| SANDIA NATIONAL LABORATORIES (NM) |       |   |           |
| ENGLISH                           |       |   |           |
| UNCLASSIFIED                      |       |   |           |
| DRAWING CLASSIFICATION            | SIZE  | DRAWING NUMBER                                  |           |
| UNCLASSIFIED                      | C     | -   |           |
| THIRD ANGLE PROJECTION            |       | CAGEC 14213 SCALE 30/1 SHEET 1 OF 1             |           |
|                                   |       | ORIGIN PRO/E-WILDFIRE 4 STATUS SA-CHK - 4/22/10 |           |

## NOTES:

1. MATERIALS  
MATRIX: ARKEMA PEBAX 3533  
FIBER: DUPONT KEVLAR 29
2. FORM INDIVIDUAL FIBER REINFORCED TUBING PER  
"INDV RIBBON TUBE" DRAWING
3. BOND INDIVIDUAL FIBER REINFORCED TUBES TOGETHER  
USING ADDITIONAL MATRIX MATERIAL AND SUFFICIENTLY  
HIGH PROCESSING TEMPERATURES SUCH THAT A SINGLE  
CONTINUOUS MATRIX IS FORMED
4. OUTER DIMENSIONS OF THE FINAL PRODUCT MUST MEET  
THE REQUIREMENTS SHOWN AFTER ALL THERMAL PROCESSING  
IS COMPLETE
5. MATRIX THICKNESS BETWEEN ANY FIBER AND EXTERNAL BOUNDARY  
(INCLUDING INNER DIAMETER) MUST BE .001 INCHES OR GREATER  
AFTER ALL THERMAL PROCESSING IS COMPLETE
6. CUT TUBING TO  $120 \pm 1$  INCH LENGTH

PART NUMBER

ISS

SHEET

ZONE

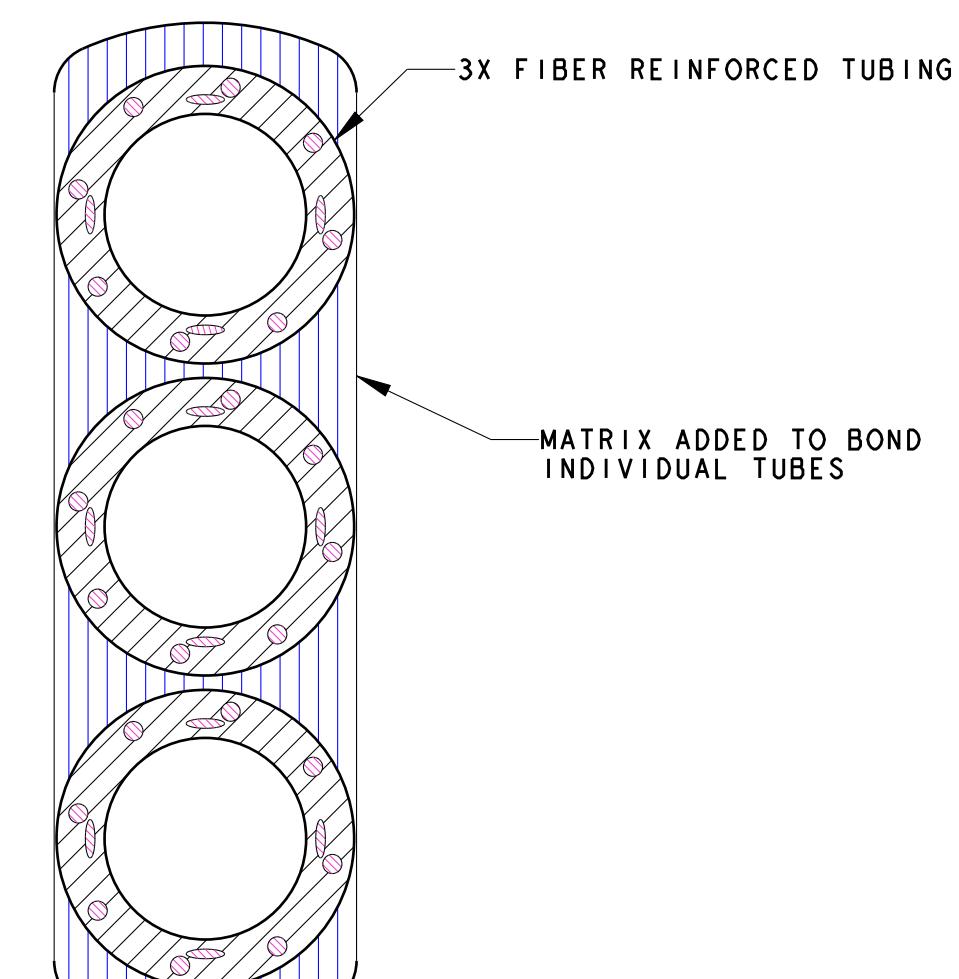
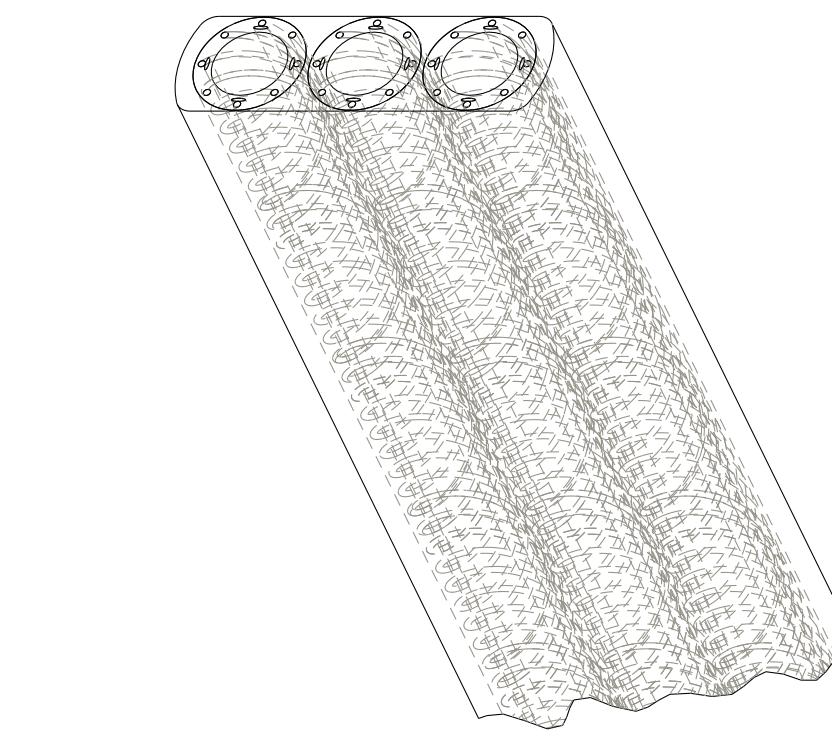
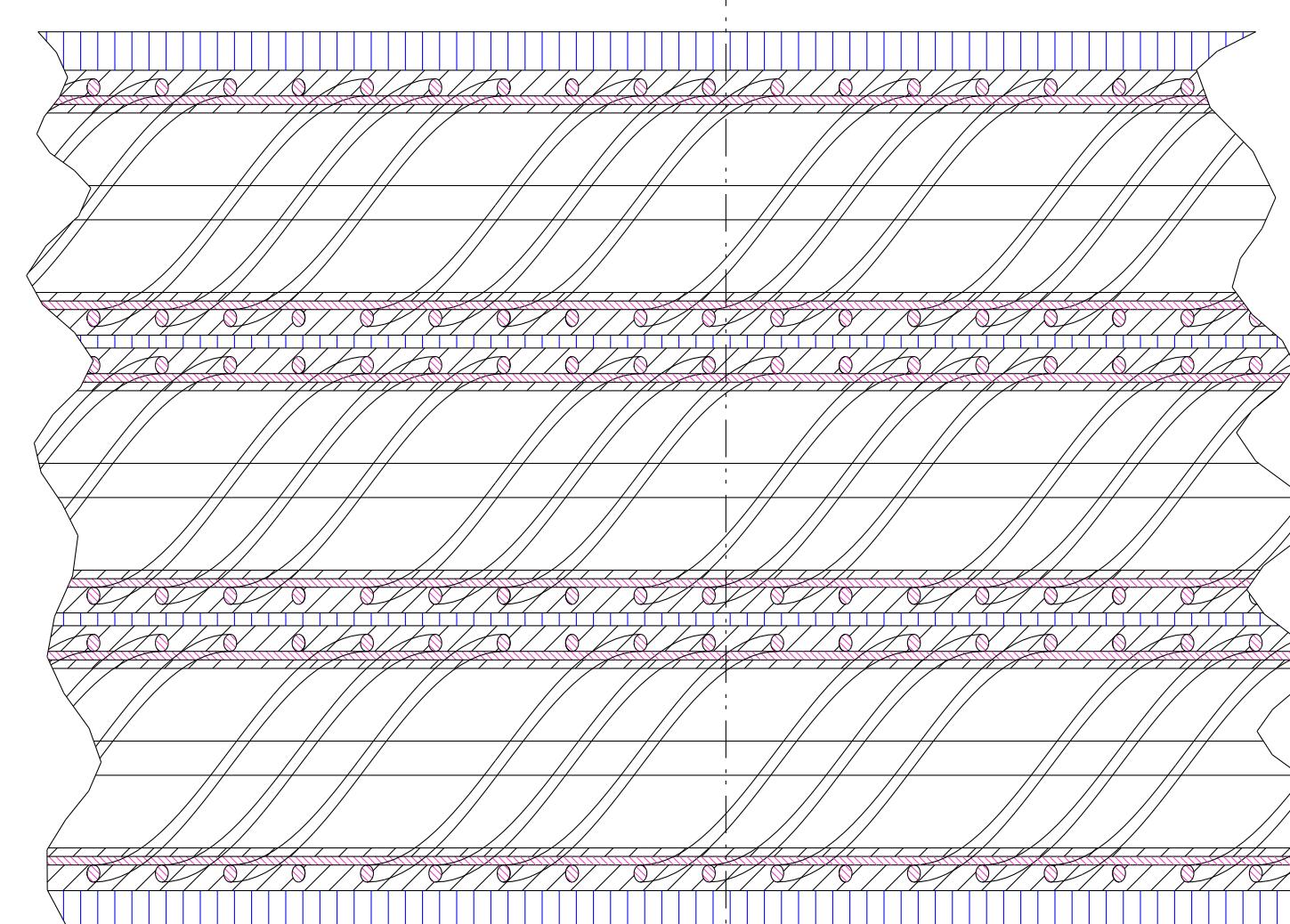
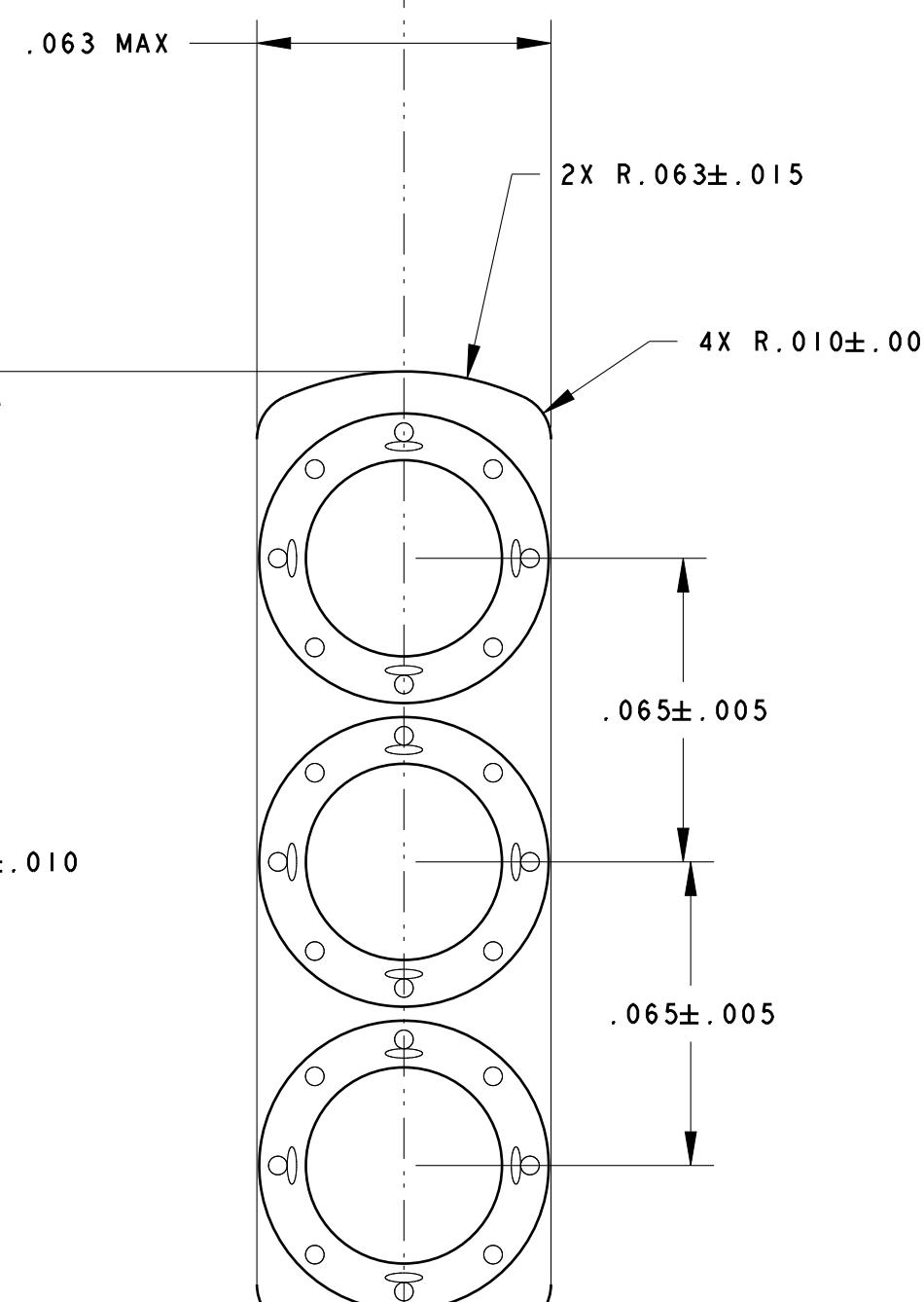
REVISIONS

A

-

DESCRIPTION

ORIGINAL ISSUE

DATE  
4/26/10

SECTION A - A

SECTION B - B

| CURRENT ISSUE APPROVALS |                  | DATE    |
|-------------------------|------------------|---------|
| DRAWN:                  | J. SHELTON, 2614 | 4/26/10 |
| CHECKED:                | J. SHELTON, 2614 |         |
| DESIGNED:               | J. SHELTON, 2614 |         |
| APPROVED:               | R. WILD, 2614    |         |

DRAWING: 3\_CARRIER\_RIBBON  
MODEL: 3\_CARRIER\_RIBBON  
TYPE: ASSEM

SANDIA NATIONAL  
LABORATORIES (NM)  
ENGLISH

THIRD ANGLE  
PROJECTION

UNCLASSIFIED  
DRAWING CLASSIFICATION  
UNCLASSIFIED

UNCLASSIFIED  
DRAWING NUMBER  
CAGEC 14213

ORIGIN PRO/E-WILDFIRE

TITLE  
3 CARRIER RIBBON TUBING

SIZE C  
DRAWING NUMBER  
-  
CAGEC 14213  
SCALE 25/1  
SHEET 1 OF 1  
ISSUE A

ORIGIN PRO/E-WILDFIRE  
4 STATUS SA-CHK - 4/26/10