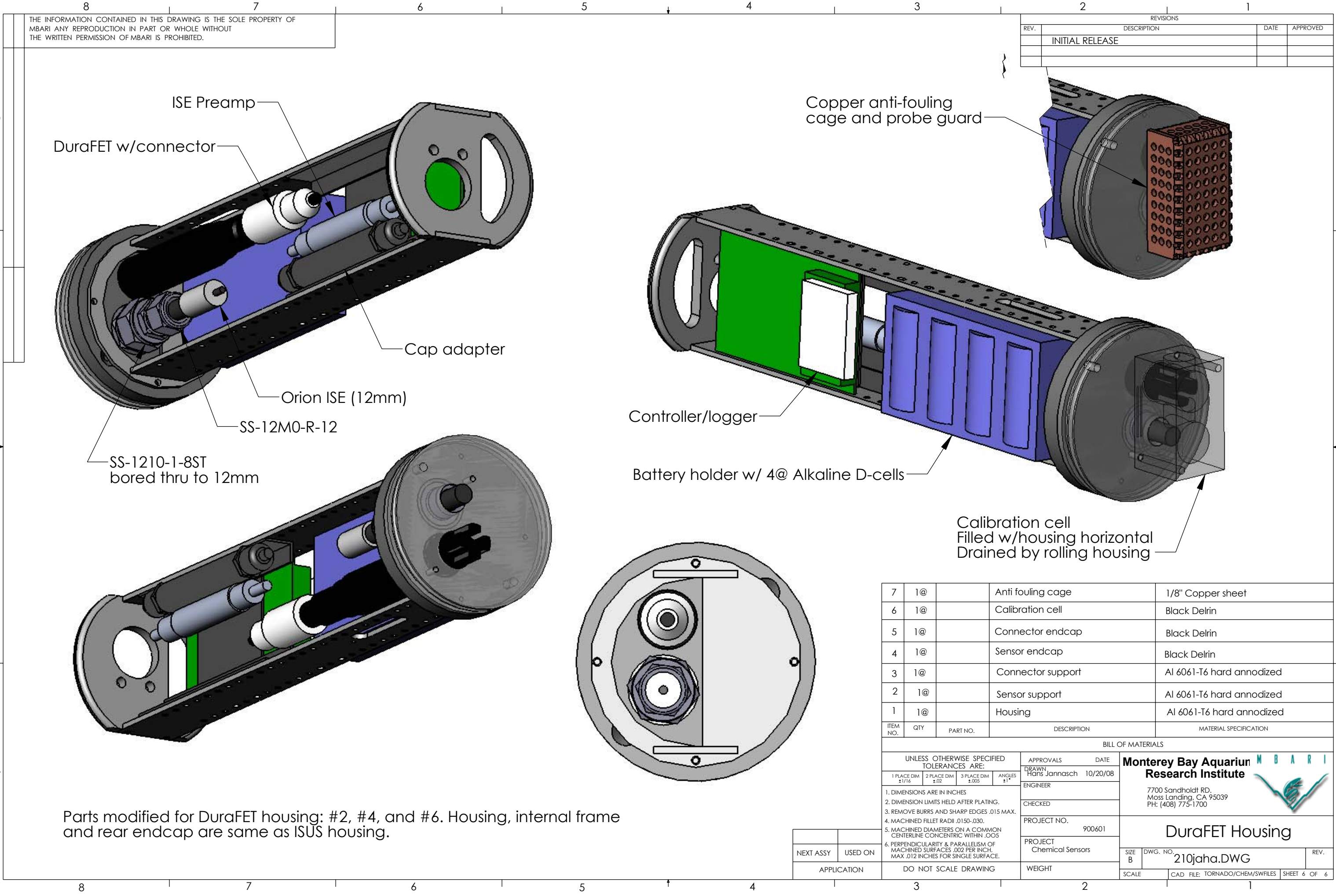
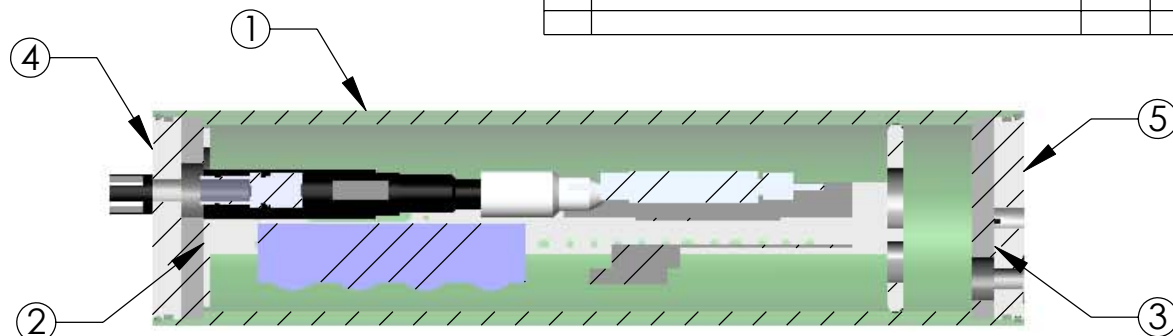




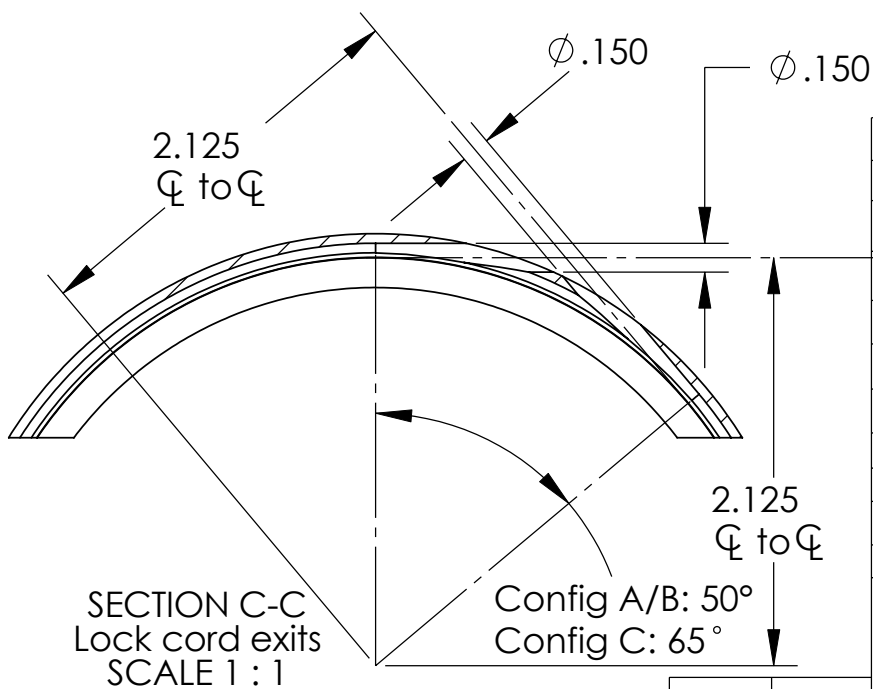
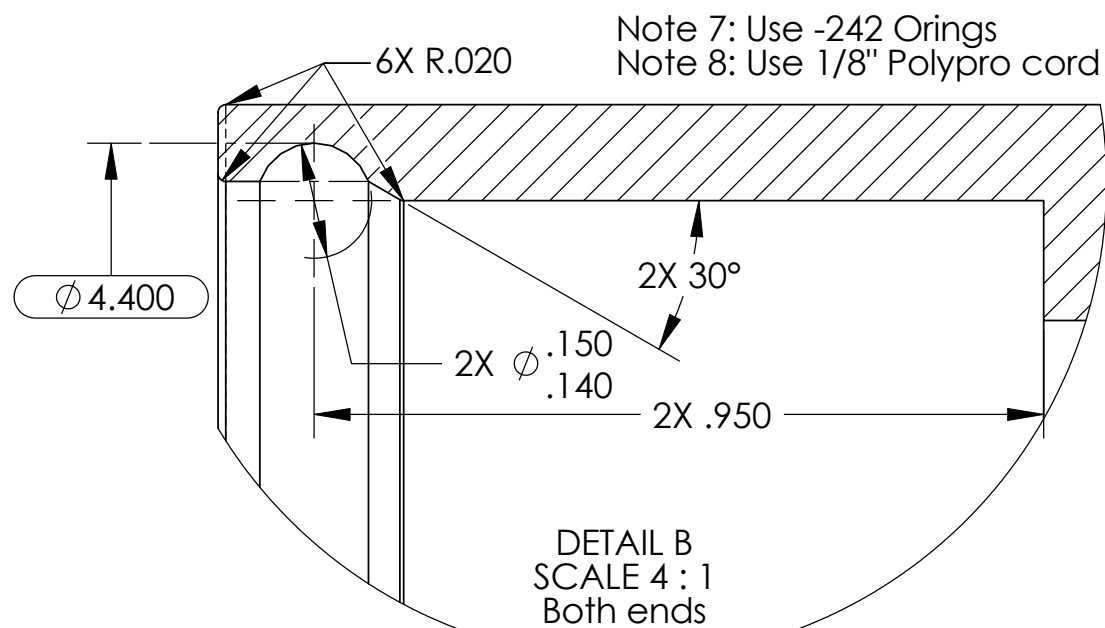
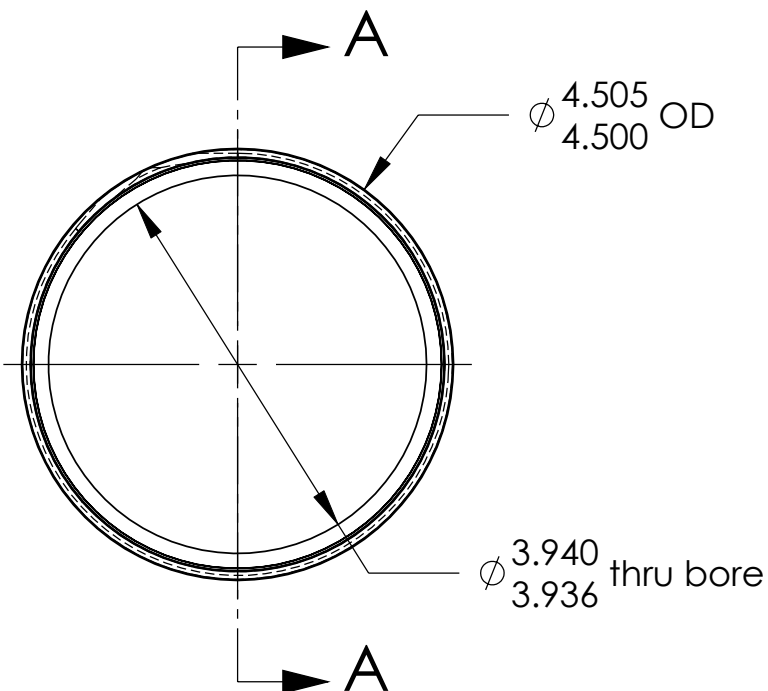
| REVISIONS |                 |      |          |
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| REV.      | DESCRIPTION     | DATE | APPROVED |
|           | INITIAL RELEASE |      |          |
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SECTION A-A  
SCALE 1 : 2

Dimensions shown:

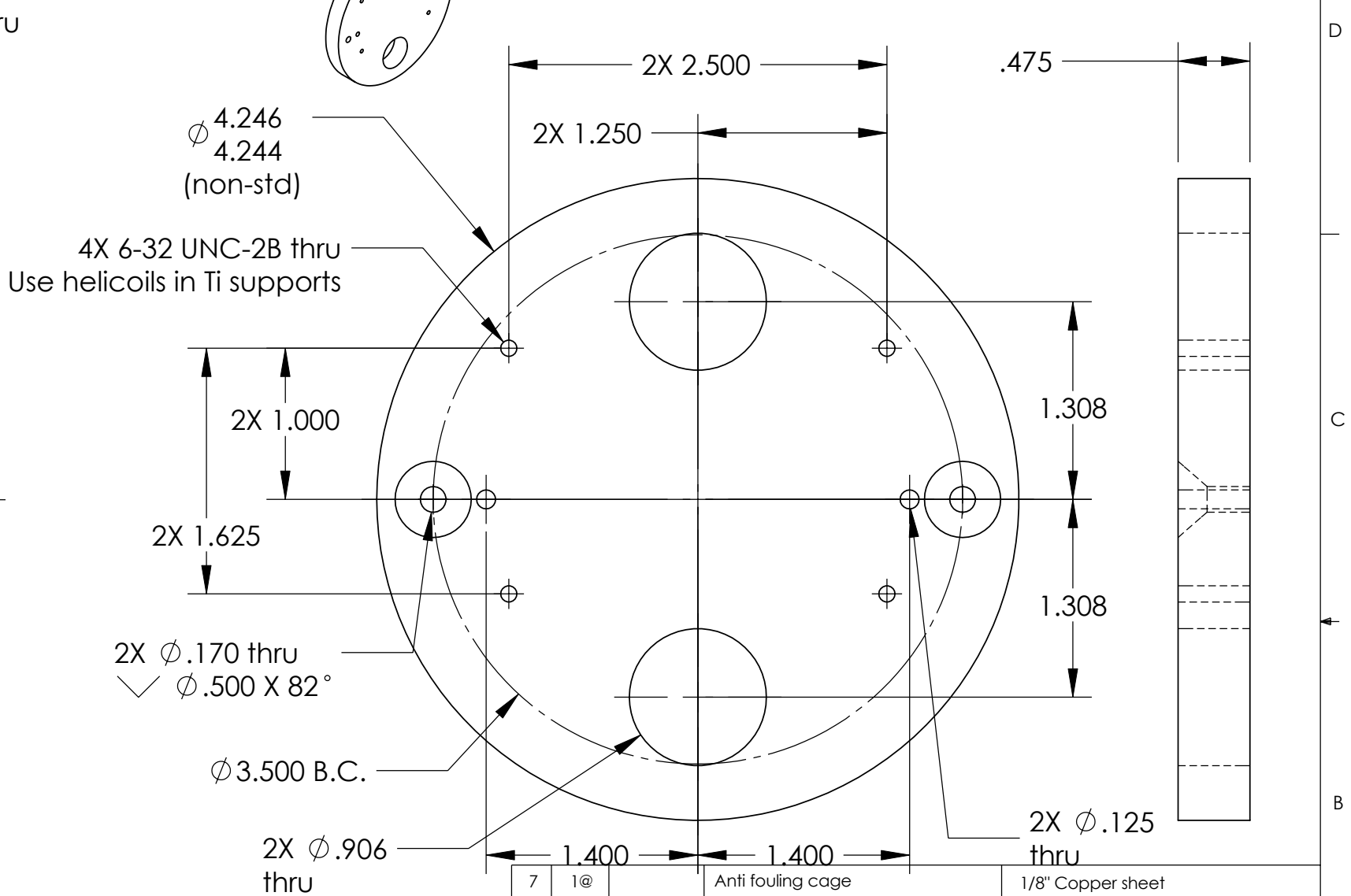
- Wall thickness: 16.000
- Floor slab thickness: 1.075
- Foundation thickness: 1.075
- Overall width: 18.150
- Wall thickness (top): 4.300 (nominal), 4.298 (actual)
- Wall thickness (bottom): 4.252 (nominal), 4.250 (actual)
- Radius: 2X 1.075



|          |     |          |                   |                           |
|----------|-----|----------|-------------------|---------------------------|
| 7        | 1@  |          | Anti fouling cage | 1/8" Copper sheet         |
| 6        | 1@  |          | Calibration cell  | Black Delrin              |
| 5        | 1@  |          | Connector endcap  | Black Delrin              |
| 4        | 1@  |          | Sensor endcap     | Black Delrin              |
| 3        | 1@  |          | Connector support | Al 6061-T6 hard annodized |
| 2        | 1@  |          | Sensor support    | Al 6061-T6 hard annodized |
| 1        | 1@  |          | Housing           | Al 6061-T6 hard annodized |
| ITEM NO. | QTY | PART NO. | DESCRIPTION       | MATERIAL SPECIFICATION    |

|                                                                                                                                                                                                                                                                                                                                                |                     |                      |               |                                                                                                                                                            |                                                                                                                     |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------|---------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| UNLESS OTHERWISE SPECIFIED TOLERANCES ARE:                                                                                                                                                                                                                                                                                                     |                     |                      |               | BILL OF MATERIALS<br><b>Monterey Bay Aquarium Research Institute</b>  |                                                                                                                     |
| 1 PLACE DIM<br>±1/16                                                                                                                                                                                                                                                                                                                           | 2 PLACE DIM<br>±.02 | 3 PLACE DIM<br>±.005 | ANGLES<br>±1° | APPROVALS DATE<br>DRAWN<br>Hans Jannasch 10/20/08<br>ENGINEER                                                                                              | 7700 Sandholdt RD.<br>Moss Landing, CA 95039<br>PH: (408) 775-1700                                                  |
| 1. DIMENSIONS ARE IN INCHES<br>2. DIMENSION LIMITS HELD AFTER PLATING.<br>3. REMOVE BURRS AND SHARP EDGES .015 MAX.<br>4. MACHINED FILLET RADI .0150-.030.<br>5. MACHINED DIAMETERS ON A COMMON CENTERLINE CONCENTRIC WITHIN .005<br>6. PERPENDICULARITY & PARALLELISM OF MACHINED SURFACES .002 PER INCH. MAX .012 INCHES FOR SINGLE SURFACE. |                     |                      |               | CHECKED                                                                                                                                                    | <b>DuraFET Housing</b><br><br>SIZE B DWG. NO. 210jaha.DWG REV.<br>SCALE CAD FILE: TORNADO/CHEM/SWFILES SHEET 6 OF 6 |
| PROJECT NO. 900601                                                                                                                                                                                                                                                                                                                             |                     |                      |               | PROJECT Chemical Sensors                                                                                                                                   |                                                                                                                     |
| DO NOT SCALE DRAWING                                                                                                                                                                                                                                                                                                                           |                     |                      |               | WEIGHT                                                                                                                                                     |                                                                                                                     |

| REVISIONS |                 |      |          |
|-----------|-----------------|------|----------|
| REV.      | DESCRIPTION     | DATE | APPROVED |
|           | INITIAL RELEASE |      |          |
|           |                 |      |          |
|           |                 |      |          |



|   |    |  |                   |                          |
|---|----|--|-------------------|--------------------------|
| 7 | 1@ |  | Anti fouling cage | 1/8" Copper sheet        |
| 6 | 1@ |  | Calibration cell  | Black Delrin             |
| 5 | 1@ |  | Connector endcap  | Black Delrin             |
| 4 | 1@ |  | Sensor endcap     | Black Delrin             |
| 3 | 1@ |  | Connector support | Al 6061-T6 hard anodized |
| 2 | 1@ |  | Sensor support    | Al 6061-T6 hard anodized |
| 1 | 1@ |  | Housing           | Al 6061-T6 hard anodized |

|                                                                                                           |                  |                   |                  |                                                                                                                                                                                                                                                                               |
|-----------------------------------------------------------------------------------------------------------|------------------|-------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ITEM NO.                                                                                                  | QTY              | PART NO.          | DESCRIPTION      | MATERIAL SPECIFICATION                                                                                                                                                                                                                                                        |
| BILL OF MATERIALS                                                                                         |                  |                   |                  |                                                                                                                                                                                                                                                                               |
| UNLESS OTHERWISE SPECIFIED TOLERANCES ARE:                                                                |                  |                   | APPROVALS        | DATE                                                                                                                                                                                                                                                                          |
| 1 PLACE DIM ±1/16                                                                                         | 2 PLACE DIM ±.02 | 3 PLACE DIM ±.005 | ANGLES ±1°       | <div>  <p> <b>Monterey Bay Aquarium Research Institute</b><br/>           7700 Sandholdt Rd.<br/>           Moss Landing, CA 95039<br/>           PH: (408) 775-1700         </p> </div> |
| 1. DIMENSIONS ARE IN INCHES                                                                               |                  |                   | ENGINEER         |                                                                                                                                                                                                                                                                               |
| 2. DIMENSION LIMITS HELD AFTER PLATING.                                                                   |                  |                   | CHECKED          |                                                                                                                                                                                                                                                                               |
| 3. REMOVE BURRS AND SHARP EDGES .015 MAX.                                                                 |                  |                   | PROJECT NO.      |                                                                                                                                                                                                                                                                               |
| 4. MACHINED FILLET RADII .0150-.030.                                                                      |                  |                   | 900601           |                                                                                                                                                                                                                                                                               |
| 5. MACHINED DIAMETERS ON A COMMON CENTERLINE CONCENTRIC WITHIN .005                                       |                  |                   | PROJECT          |                                                                                                                                                                                                                                                                               |
| 6. PERPENDICULARITY & PARALLELISM OF MACHINED SURFACES .002 PER INCH. MAX .012 INCHES FOR SINGLE SURFACE. |                  |                   | Chemical Sensors |                                                                                                                                                                                                                                                                               |
| DO NOT SCALE DRAWING                                                                                      |                  |                   | WEIGHT           |                                                                                                                                                                                                                                                                               |
|                                                                                                           |                  |                   | SIZE B           | DWG. NO. 210jaha.DWG                                                                                                                                                                                                                                                          |
|                                                                                                           |                  |                   | SCALE            | CAD FILE: TORNADO/CHEM/SWFILES SHEET 6 OF 6                                                                                                                                                                                                                                   |

**Monterey Bay Aquarium  
Research Institute**

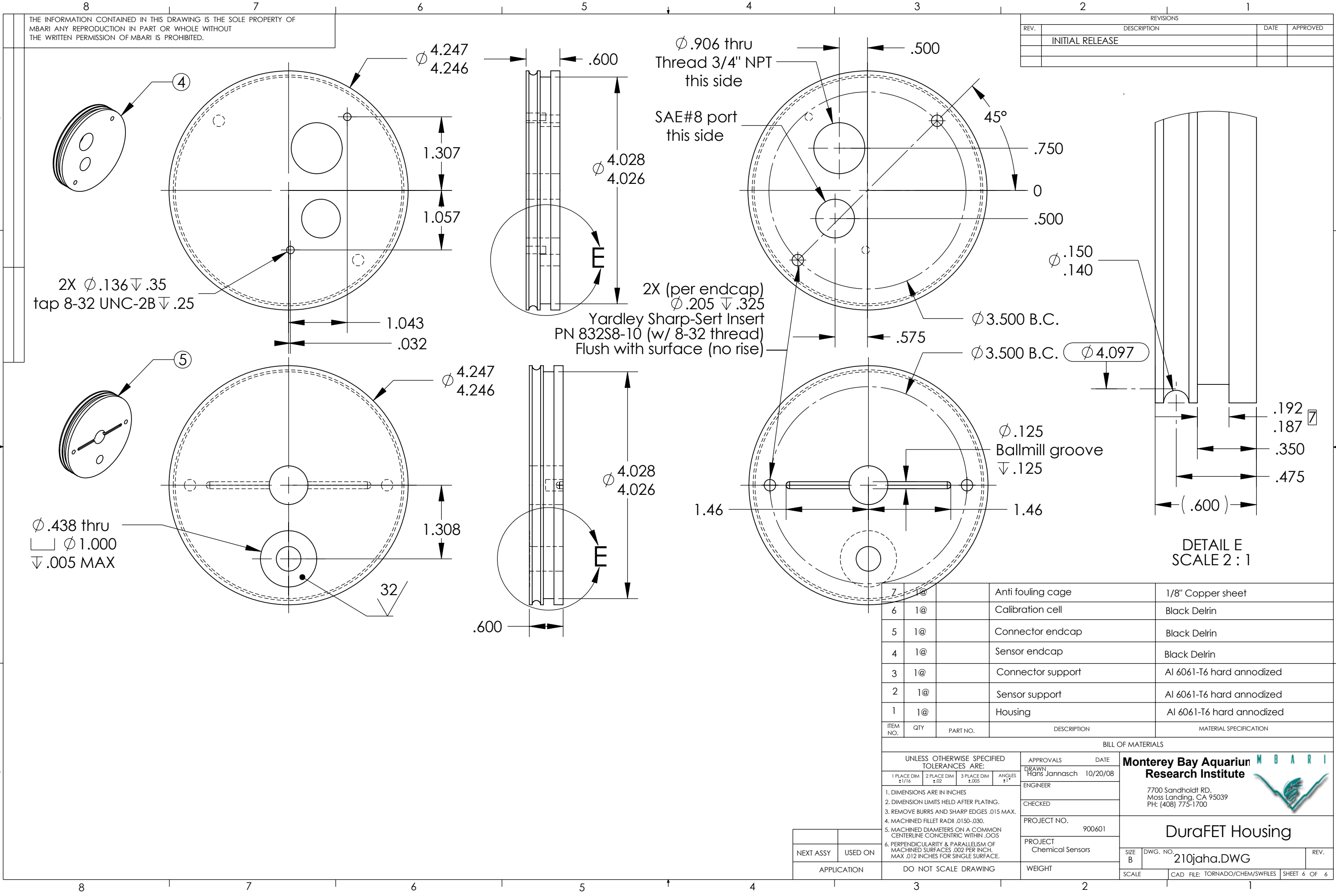
7700 Sandholdt RD.  
Moss Landing, CA 95039  
PH: (408) 775-1700

The logo for the Monterey Bay Aquarium Research Institute (MBARI) features the letters 'M B A R I' in a stylized, blue, serif font. Below the letters is a graphic of a blue, stylized fish or whale, possibly a humpback whale, swimming towards the right. The fish is composed of several curved segments, giving it a dynamic, flowing appearance.

## DuraFET Housing

|           |                         |      |
|-----------|-------------------------|------|
| SIZE<br>B | DWG. NO.<br>210jaha.DWG | REV. |
|-----------|-------------------------|------|

SCALE | CAD FILE: TORNADO/CHEM/SWFILES | SHEET 6 OF 6



THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF MBARI ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF MBARI IS PROHIBITED.

| REVISIONS |                 |      |          |
|-----------|-----------------|------|----------|
| REV.      | DESCRIPTION     | DATE | APPROVED |
|           | INITIAL RELEASE |      |          |
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|           |                 |      |          |

2X  $\phi .136 \nabla .35$   
tap 8-32 UNC-2B  $\nabla .25$

$\phi .438$  thru  
 $\square \phi 1.000$   
 $\nabla .005$  MAX

$\phi .906$  thru  
Thread 3/4" NPT  
this side

SAE#8 port  
this side

2X (per endcap)  
 $\phi .205 \nabla .325$   
Yardley Sharp-Sert Insert  
PN 832S8-10 (w/ 8-32 thread)  
Flush with surface (no rise)

$\phi 3.500$  B.C.

$\phi 3.500$  B.C.

$\phi 4.097$

$\phi .125$   
Ballmill groove  
 $\nabla .125$

DETAIL E  
SCALE 2 : 1

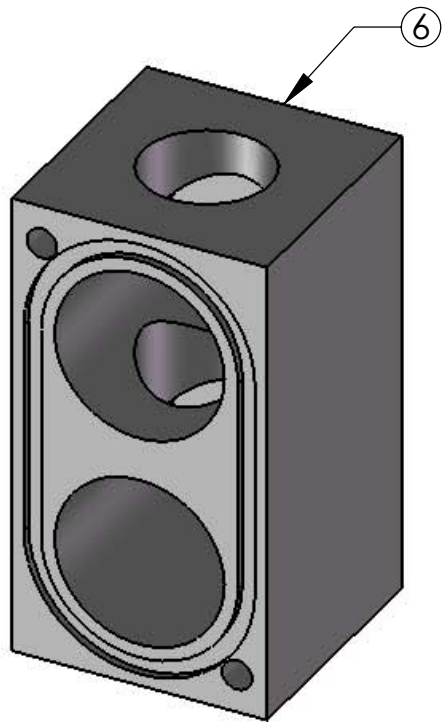
| ITEM NO. | QTY | PART NO. | DESCRIPTION       | MATERIAL SPECIFICATION    |
|----------|-----|----------|-------------------|---------------------------|
| 7        | 1@  |          | Anti fouling cage | 1/8" Copper sheet         |
| 6        | 1@  |          | Calibration cell  | Black Delrin              |
| 5        | 1@  |          | Connector endcap  | Black Delrin              |
| 4        | 1@  |          | Sensor endcap     | Black Delrin              |
| 3        | 1@  |          | Connector support | Al 6061-T6 hard annodized |
| 2        | 1@  |          | Sensor support    | Al 6061-T6 hard annodized |
| 1        | 1@  |          | Housing           | Al 6061-T6 hard annodized |

| UNLESS OTHERWISE SPECIFIED TOLERANCES ARE:                                                                                                                                                                                                                                                                                                      |                          |                           |                         | APPROVALS   |                  | DATE     | Monterey Bay Aquarium Research Institute                                              |                      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|---------------------------|-------------------------|-------------|------------------|----------|---------------------------------------------------------------------------------------|----------------------|
| 1 PLACE DIM<br>$\pm 1/16$                                                                                                                                                                                                                                                                                                                       | 2 PLACE DIM<br>$\pm .02$ | 3 PLACE DIM<br>$\pm .005$ | ANGLES<br>$\pm 1^\circ$ | DRAWN       | Hans Jannasch    | 10/20/08 |  |                      |
| 1. DIMENSIONS ARE IN INCHES<br>2. DIMENSION LIMITS HELD AFTER PLATING.<br>3. REMOVE BURRS AND SHARP EDGES .015 MAX.<br>4. MACHINED FILLET RADII .0150-.030.<br>5. MACHINED DIAMETERS ON A COMMON CENTERLINE CONCENTRIC WITHIN .005<br>6. PERPENDICULARITY & PARALLELISM OF MACHINED SURFACES .002 PER INCH. MAX .012 INCHES FOR SINGLE SURFACE. |                          |                           |                         | ENGINEER    |                  |          |                                                                                       |                      |
|                                                                                                                                                                                                                                                                                                                                                 |                          |                           |                         | CHECKED     |                  |          | 7700 Sandholdt RD.<br>Moss Landing, CA 95039<br>PH: (408) 775-1700                    |                      |
|                                                                                                                                                                                                                                                                                                                                                 |                          |                           |                         | PROJECT NO. | 900601           |          |                                                                                       |                      |
|                                                                                                                                                                                                                                                                                                                                                 |                          |                           |                         | PROJECT     | Chemical Sensors |          | DuraFET Housing                                                                       |                      |
|                                                                                                                                                                                                                                                                                                                                                 |                          |                           |                         | WEIGHT      |                  |          |                                                                                       |                      |
|                                                                                                                                                                                                                                                                                                                                                 |                          |                           |                         | SCALE       |                  |          | SIZE B                                                                                | DWG. NO. 210jaha.DWG |
|                                                                                                                                                                                                                                                                                                                                                 |                          |                           |                         | SCALE       |                  |          | CAD FILE: TORNADO/CHEM/SWFILES                                                        | REV.                 |

| NEXT ASSY   | USED ON              |
|-------------|----------------------|
|             |                      |
| APPLICATION | DO NOT SCALE DRAWING |

|       |                                |              |
|-------|--------------------------------|--------------|
| SCALE | CAD FILE: TORNADO/CHEM/SWFILES | SHEET 6 OF 6 |
|-------|--------------------------------|--------------|

| REVISIONS |                 |      |          |
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| REV.      | DESCRIPTION     | DATE | APPROVED |
|           | INITIAL RELEASE |      |          |
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|           |                 |      |          |



|          |     |          |                   |                          |
|----------|-----|----------|-------------------|--------------------------|
| 7        | 1@  |          | Anti fouling cage | 1/8" Copper sheet        |
| 6        | 1@  |          | Calibration cell  | Black Delrin             |
| 5        | 1@  |          | Connector endcap  | Black Delrin             |
| 4        | 1@  |          | Sensor endcap     | Black Delrin             |
| 3        | 1@  |          | Connector support | Al 6061-T6 hard anodized |
| 2        | 1@  |          | Sensor support    | Al 6061-T6 hard anodized |
| 1        | 1@  |          | Housing           | Al 6061-T6 hard anodized |
| ITEM NO. | QTY | PART NO. | DESCRIPTION       | MATERIAL SPECIFICATION   |

|                                                                                                                 |  |                             |  |                                                                                       |  |
|-----------------------------------------------------------------------------------------------------------------|--|-----------------------------|--|---------------------------------------------------------------------------------------|--|
| UNLESS OTHERWISE SPECIFIED<br>TOLERANCES ARE:                                                                   |  |                             |  | BILL OF MATERIALS                                                                     |  |
| 1 PLACE DIM<br>±1/16                                                                                            |  | 2 PLACE DIM<br>±.02         |  | 3 PLACE DIM<br>±.005                                                                  |  |
| ANGLES<br>±1°                                                                                                   |  | APPROVALS DATE              |  | DRAWN<br>Hans Jannasch 10/20/08                                                       |  |
| 1. DIMENSIONS ARE IN INCHES                                                                                     |  | ENGINEER                    |  | Monterey Bay Aquarium<br>Research Institute                                           |  |
| 2. DIMENSION LIMITS HELD AFTER PLATING.                                                                         |  | CHECKED                     |  | 7700 Sandholdt RD.<br>Moss Landing, CA 95039<br>PH: (408) 775-1700                    |  |
| 3. REMOVE BURRS AND SHARP EDGES .015 MAX.                                                                       |  | PROJECT NO.                 |  |  |  |
| 4. MACHINED FILLET RADII .0150-.030.                                                                            |  | 900601                      |  | DuraFET Housing                                                                       |  |
| 5. MACHINED DIAMETERS ON A COMMON<br>CENTERLINE CONCENTRIC WITHIN .005                                          |  | PROJECT<br>Chemical Sensors |  | SIZE B DWG. NO. 210jaha.DWG REV.                                                      |  |
| 6. PERPENDICULARITY & PARALLELISM OF<br>MACHINED SURFACES .002 PER INCH.<br>MAX .012 INCHES FOR SINGLE SURFACE. |  | WEIGHT                      |  | SCALE CAD FILE: TORNADO/CHEM/SWFILES SHEET 6 OF 6                                     |  |
| DO NOT SCALE DRAWING                                                                                            |  |                             |  |                                                                                       |  |

**Monterey Bay Aquarium  
Research Institute**

7700 Sandholdt RD.  
Moss Landing, CA 95039  
PH: (408) 775-1700

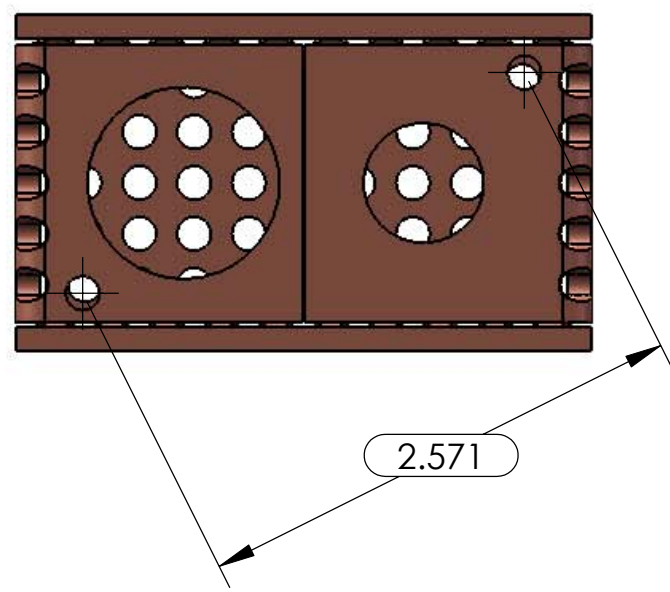
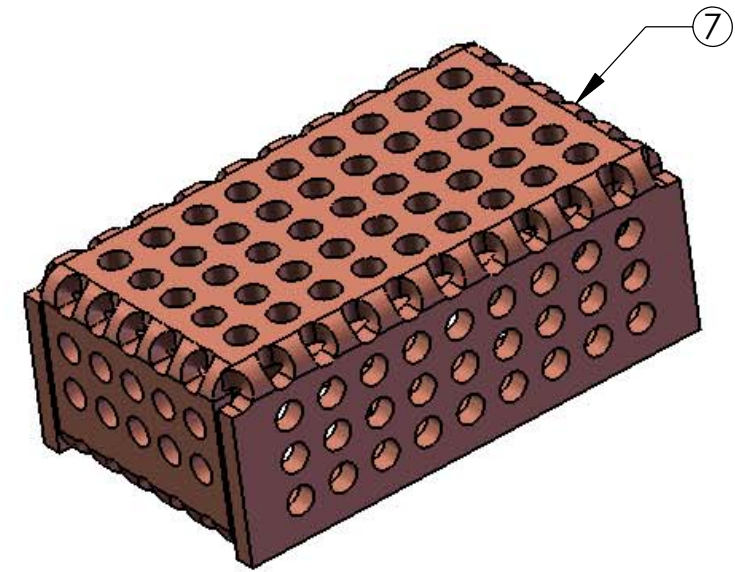
The logo for the Monterey Bay Aquarium Research Institute (MBARI). It features the letters 'M B A R I' in a stylized, blue, serif font at the top. Below the letters is a graphic of a blue, stylized fish or whale, possibly a humpback whale, with its tail fluke visible. The fish is facing left and appears to be swimming. The entire logo is set against a white background.

## DuraFET Housing

|           |                         |      |
|-----------|-------------------------|------|
| SIZE<br>B | DWG. NO.<br>210jaha.DWG | REV. |
|-----------|-------------------------|------|

|       |                                |              |
|-------|--------------------------------|--------------|
| SCALE | CAD FILE: TORNADO/CHEM/SWFILES | SHEET 6 OF 6 |
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| REVISIONS |                 |      |          |
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| REV.      | DESCRIPTION     | DATE | APPROVED |
|           | INITIAL RELEASE |      |          |
|           |                 |      |          |
|           |                 |      |          |



|          |     |          |                   |                           |
|----------|-----|----------|-------------------|---------------------------|
| 7        | 1@  |          | Anti fouling cage | 1/8" Copper sheet         |
| 6        | 1@  |          | Calibration cell  | Black Delrin              |
| 5        | 1@  |          | Connector endcap  | Black Delrin              |
| 4        | 1@  |          | Sensor endcap     | Black Delrin              |
| 3        | 1@  |          | Connector support | Al 6061-T6 hard annodized |
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| 1        | 1@  |          | Housing           | Al 6061-T6 hard annodized |
| ITEM NO. | QTY | PART NO. | DESCRIPTION       | MATERIAL SPECIFICATION    |

|                                                                                                                                                                                                                                                                                                                                                 |                     |                      |               |                        |                  |        |       |                         |                                                                                                                                                                                                                                                                 |      |              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|----------------------|---------------|------------------------|------------------|--------|-------|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------|
| UNLESS OTHERWISE SPECIFIED TOLERANCES ARE:                                                                                                                                                                                                                                                                                                      |                     |                      |               |                        | APPROVALS        |        | DATE  |                         | <div>Monterey Bay Aquarium Research Institute</div> <div></div> <div>7700 Sandholdt Rd.<br/>Moss Landing, CA 95039<br/>PH: (408) 775-1700</div> <div>DuraFET Housing</div> |      |              |
| 1 PLACE DIM<br>±1/16                                                                                                                                                                                                                                                                                                                            | 2 PLACE DIM<br>±.02 | 3 PLACE DIM<br>±.005 | ANGLES<br>±1° | DRAWN<br>Hans Jannasch | 10/20/08         |        |       |                         |                                                                                                                                                                                                                                                                 |      |              |
| 1. DIMENSIONS ARE IN INCHES<br>2. DIMENSION LIMITS HELD AFTER PLATING.<br>3. REMOVE BURRS AND SHARP EDGES .015 MAX.<br>4. MACHINED FILLET RADII .0150-.030.<br>5. MACHINED DIAMETERS ON A COMMON CENTERLINE CONCENTRIC WITHIN .005<br>6. PERPENDICULARITY & PARALLELISM OF MACHINED SURFACES .002 PER INCH. MAX .012 INCHES FOR SINGLE SURFACE. |                     |                      |               | ENGINEER               |                  |        |       |                         |                                                                                                                                                                                                                                                                 |      |              |
|                                                                                                                                                                                                                                                                                                                                                 |                     |                      |               | CHECKED                |                  |        |       |                         |                                                                                                                                                                                                                                                                 |      |              |
|                                                                                                                                                                                                                                                                                                                                                 |                     |                      |               | PROJECT NO.            | 900601           |        |       |                         |                                                                                                                                                                                                                                                                 |      |              |
|                                                                                                                                                                                                                                                                                                                                                 |                     |                      |               | PROJECT                | Chemical Sensors | SIZE B |       | DWG. NO.<br>210jaha.DWG |                                                                                                                                                                                                                                                                 | REV. |              |
| DO NOT SCALE DRAWING                                                                                                                                                                                                                                                                                                                            |                     |                      |               | WEIGHT                 |                  |        | SCALE |                         | CAD FILE: TORNADO/CHEM/SWFILES                                                                                                                                                                                                                                  |      | SHEET 6 OF 6 |

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