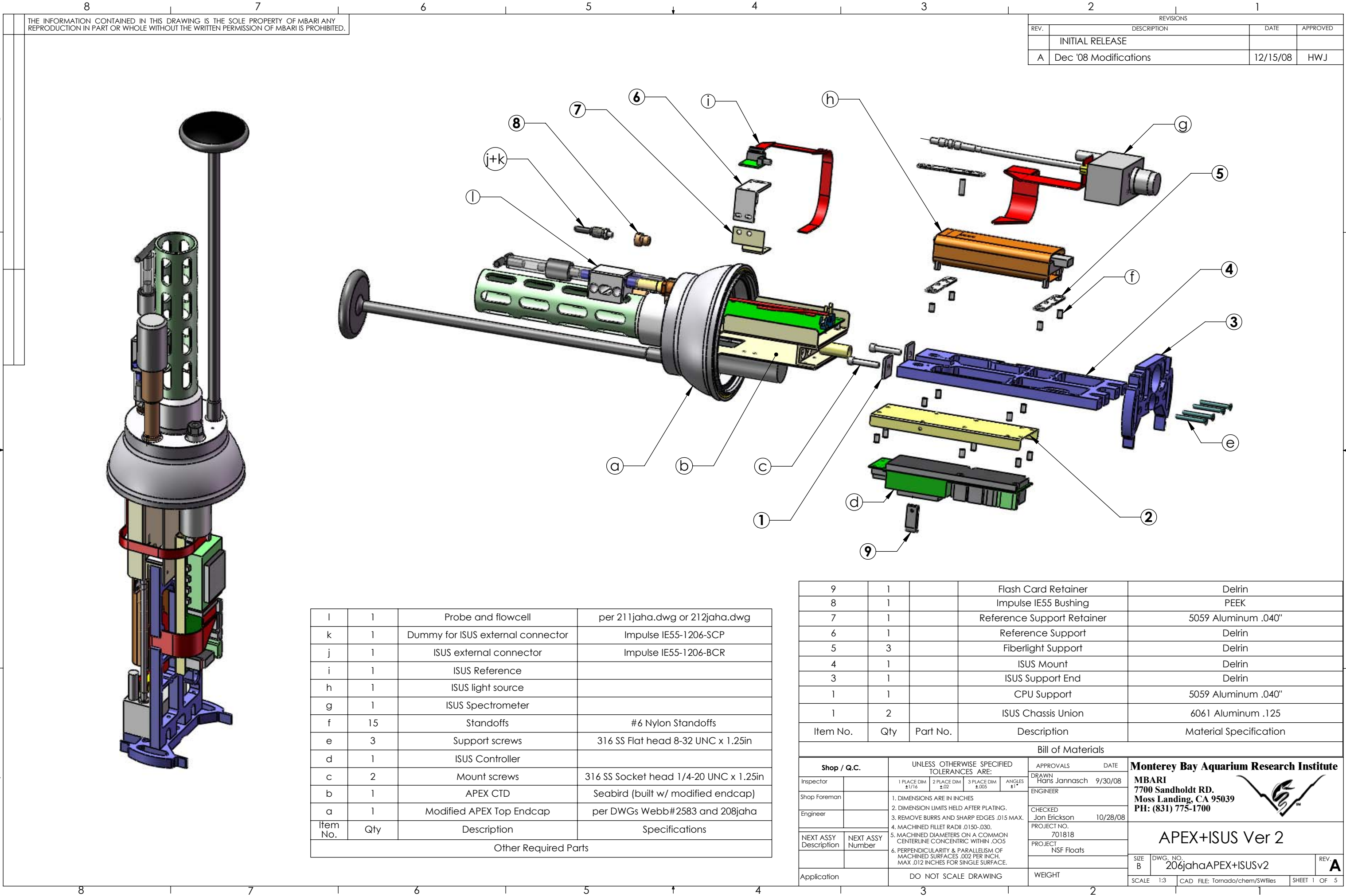




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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
	INITIAL RELEASE		
A	Dec '08 Modifications	12/15/08	HWJ

i	1	Probe and flowcell	per 211jaha.dwg or 212jaha.dwg
k	1	Dummy for ISUS external connector	Impulse IE55-1206-SCP
j	1	ISUS external connector	Impulse IE55-1206-BCR
i	1	ISUS Reference	
h	1	ISUS light source	
g	1	ISUS Spectrometer	
f	15	Standoffs	#6 Nylon Standoffs
e	3	Support screws	316 SS Flat head 8-32 UNC x 1.25in
d	1	ISUS Controller	
c	2	Mount screws	316 SS Socket head 1/4-20 UNC x 1.25in
b	1	APEX CTD	Seabird (built w/ modified endcap)
a	1	Modified APEX Top Endcap	per DWGs Webb#2583 and 208jaha
Item No.	Qty	Description	Specifications
Other Required Parts			

9	1		Flash Card Retainer	Delrin
8	1		Impulse IE55 Bushing	PEEK
7	1		Reference Support Retainer	5059 Aluminum .040"
6	1		Reference Support	Delrin
5	3		Fiberlight Support	Delrin
4	1		ISUS Mount	Delrin
3	1		ISUS Support End	Delrin
1	1		CPU Support	5059 Aluminum .040"
1	2		ISUS Chassis Union	6061 Aluminum .125
Item No.	Qty	Part No.	Description	Material Specification

Shop / Q.C.

Inspector

Shop Foreman

Engineer

NEXT ASSY Description

Application

UNLESS OTHERWISE SPECIFIED TOLERANCES ARE:

1. PLACE DIM ±1/16

2. PLACE DIM ±.02

3. PLACE DIM ±.005

ANGLES ±1°

1. DIMENSIONS ARE IN INCHES

2. DIMENSION LIMITS HELD AFTER PLATING.

3. REMOVE BURRS AND SHARP EDGES .015 MAX.

4. MACHINED FILLET RADII .0150-.030.

5. MACHINED DIAMETERS ON A COMMON CENTERLINE CONCENTRIC WITHIN .005

6. PERPENDICULARITY & PARALLELISM OF MACHINED SURFACES .002 PER INCH. MAX .012 INCHES FOR SINGLE SURFACE.

DO NOT SCALE DRAWING

APPROVALS

DATE

DRAWN

ENGINEER

CHECKED

PROJECT NO.

PROJECT

WEIGHT

Monterey Bay Aquarium Research Institute

MBARI

7700 Sandholdt RD.

Moss Landing, CA 95039

PH: (831) 775-1700

APEX+ISUS Ver 2

SIZE B

DWG. NO. 206jahaAPEX+ISUSv2

REV. A

SCALE 1:3

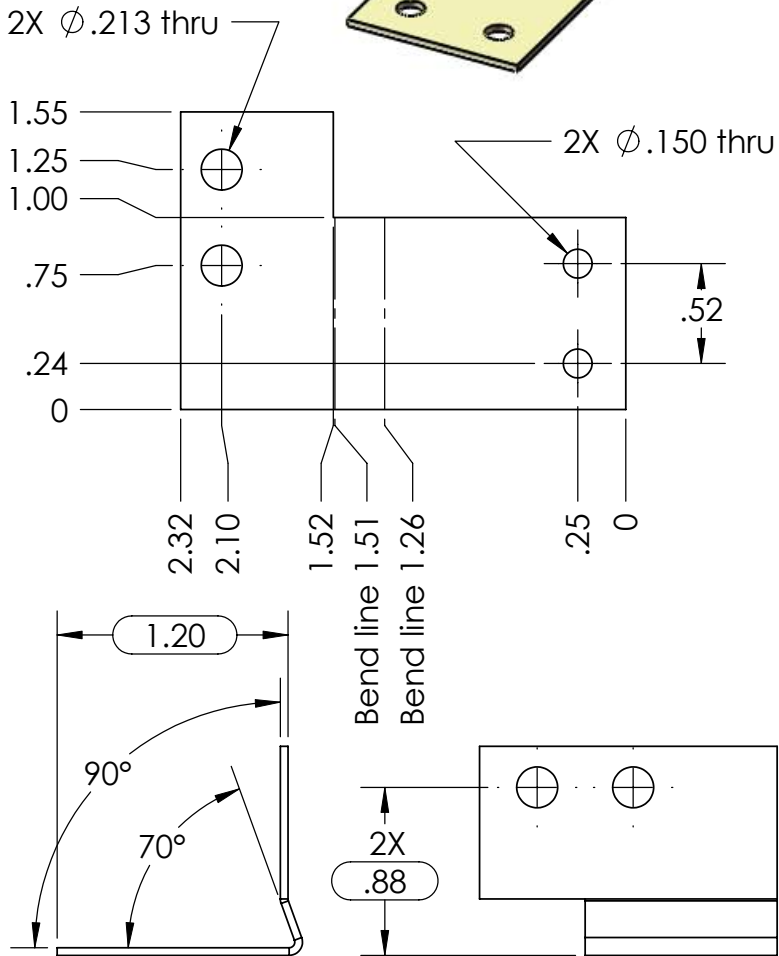
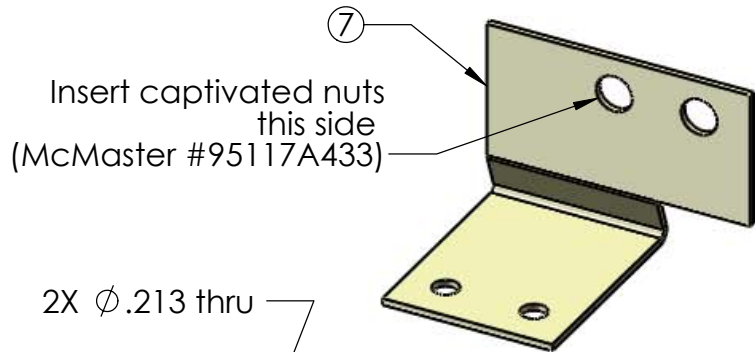
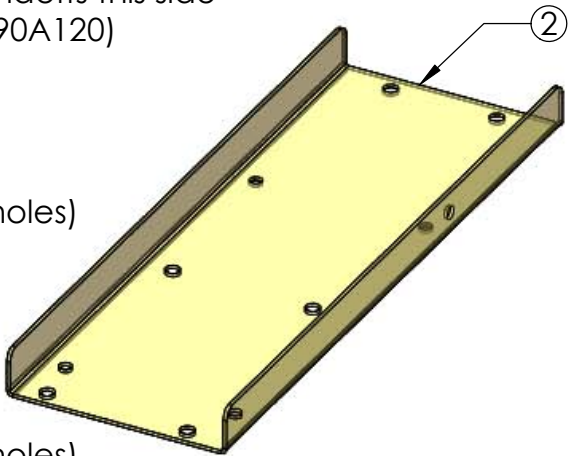
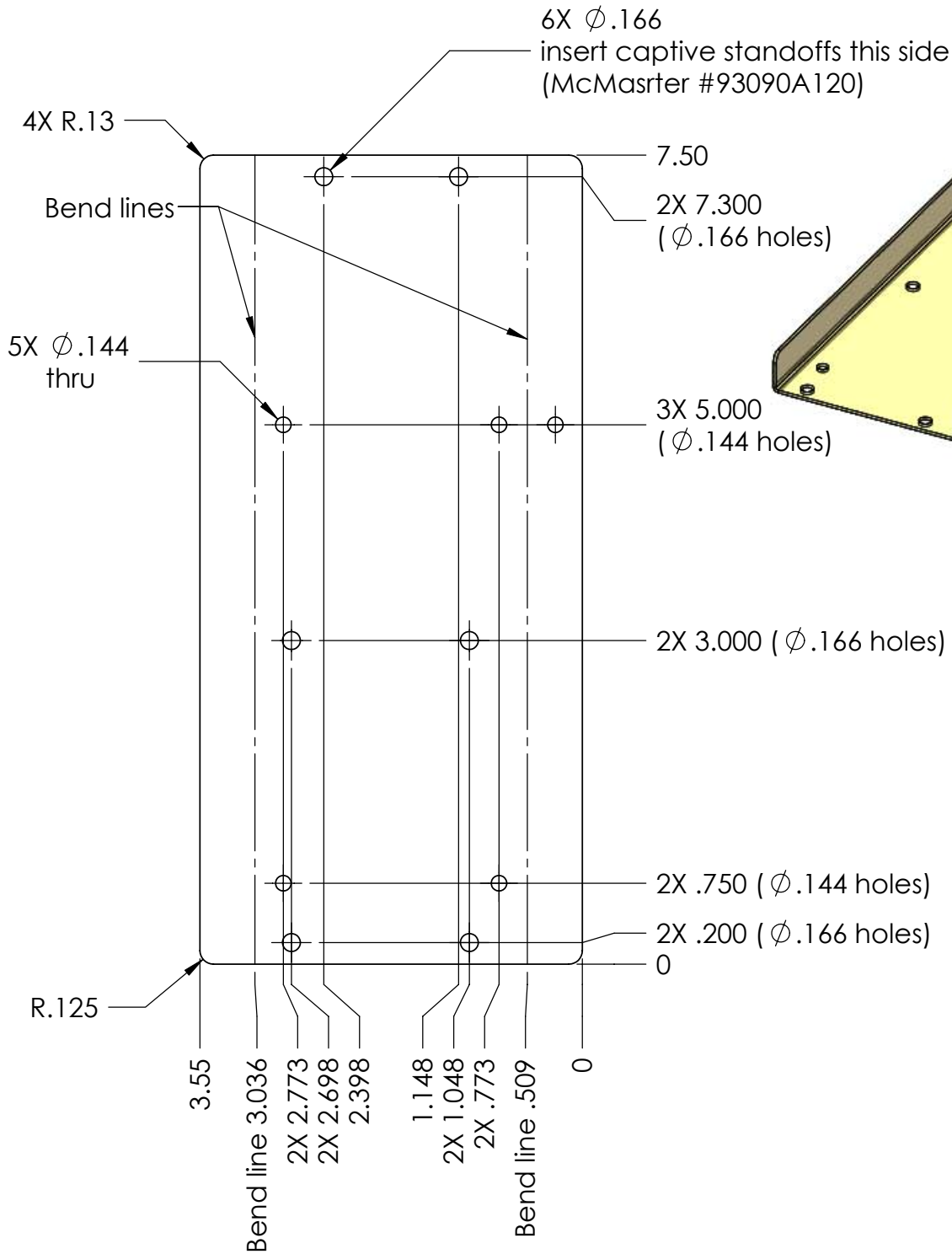
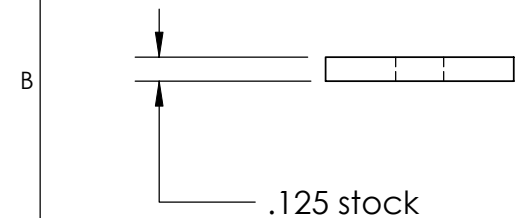
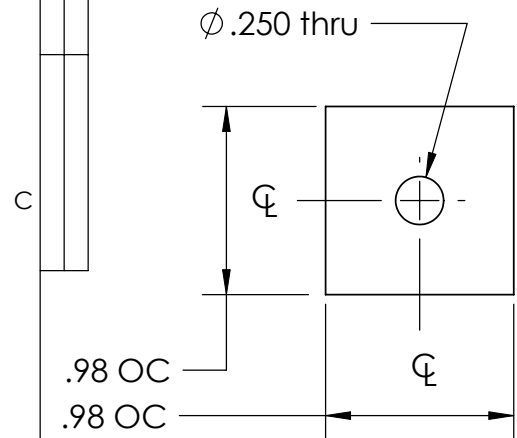
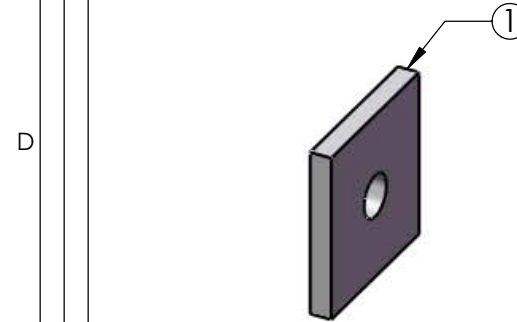
CAD FILE: Tornado/chem/SWfiles

SHEET 1 OF 5

8 7 6 5 4 3 2 1

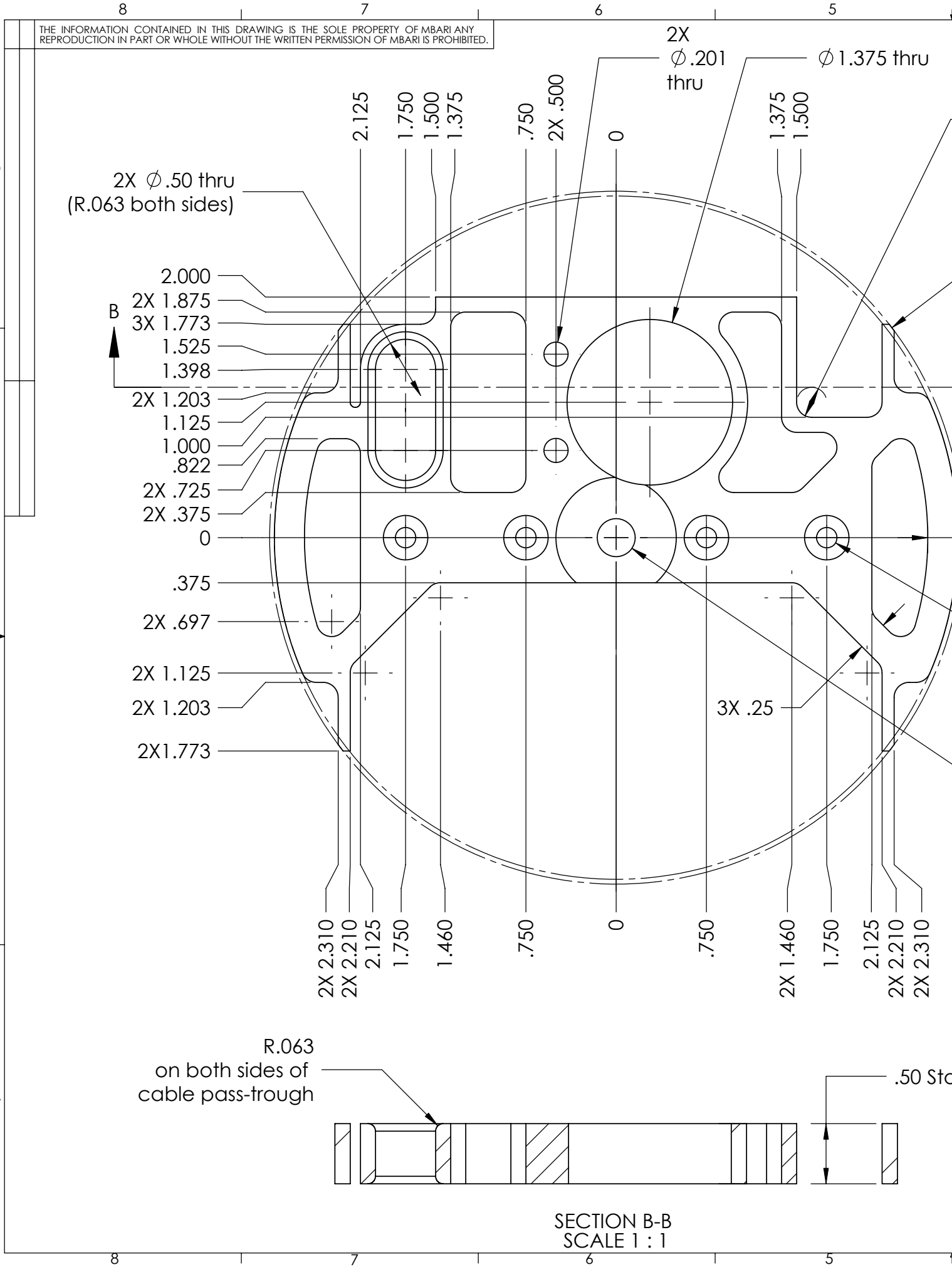
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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
INITIAL RELEASE			
A	Dec '08 Modifications	12/15/08	HWJ



7	1		Reference Support Retainer	5059 Aluminum .040"
2	1		CPU Support	5059 Aluminum .040"
1	2		ISUS Chassis Union	6061 Aluminum .125
Item No.	Qty	Part No.	Description	Material Specification

Shop / Q.C.				UNLESS OTHERWISE SPECIFIED TOLERANCES ARE:				APPROVALS		DATE		Monterey Bay Aquarium Research Institute		
Inspector				1 PLACE DIM ±1/16	2 PLACE DIM ±.02	3 PLACE DIM ±.005	ANGLES ±1°	DRAWN Hans Jannasch	9/30/08		 MBARI 7700 Sandholdt RD. Moss Landing, CA 95039 PH: (831) 775-1700			
Shop Foreman				1. DIMENSIONS ARE IN INCHES 2. DIMENSION LIMITS HELD AFTER PLATING. 3. REMOVE BURRS AND SHARP EDGES .015 MAX. 4. MACHINED FILLET RADII .0150-.030. 5. MACHINED DIAMETERS ON A COMMON CENTERLINE CONCENTRIC WITHIN .005 6. PERPENDICULARITY & PARALLELISM OF MACHINED SURFACES .002 PER INCH. MAX .012 INCHES FOR SINGLE SURFACE.				ENGINEER						
Engineer								CHECKED Jon Erickson	10/28/08					
								PROJECT NO.	701818		APEX+ISUS Ver 2			
NEXT ASSY Description		NEXT ASSY Number						PROJECT	NSF Floats					
Application				DO NOT SCALE DRAWING				WEIGHT		SIZE B		DWG. NO. 206jahaAPEX+ISUSv2		REV. A
										SCALE 1:3		CAD FILE: Tornado/chem/SWfiles		SHEET 2 OF 5



87

76

65

54

43

32

21

10

8

7

6

5

4

3

2

1

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REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	Dec '08 Modifications	12/15/08	HWJ

2X ϕ .50 thru
(R.063 both sides)

2.000

2X 1.875

3X 1.773

1.525

1.398

2X 1.203

1.125

1.000

.822

2X .725

2X .375

0

.375

2X .697

2X 1.125

2X 1.203

2X 1.773

2X 2.310

2X 2.210

2.125

1.750

1.460

.750

0

.750

2X 1.460

1.750

2.125

2X 2.210

2X 2.310

2X ϕ .201 thru

ϕ 1.375 thru

1.375

1.500

17X ϕ .25

4X ϕ 5.760
5.750

2X ϕ 5.680
5.670

2X .250

4X ϕ .170 thru
 $\surd$ 82° ϕ .375

ϕ .316 thru
 $\surd$ ϕ 1

3X .25

R.063
on both sides of
cable pass-trough

.50 Stock

SECTION B-B
SCALE 1 : 1

3

1

Part No.

ISUS Support End

Delrin

Item No.

Qty

Description

Material Specification

Shop / Q.C.

UNLESS OTHERWISE SPECIFIED TOLERANCES ARE:

APPROVALS

DATE

Inspector

1 PLACE DIM
 $\pm$ 1/16

2 PLACE DIM
 $\pm$.02

3 PLACE DIM
 $\pm$.005

ANGLES
 $\pm$ 1°

DRAWN
Hans Jannasch
ENGINEER

9/30/08

Shop Foreman

1. DIMENSIONS ARE IN INCHES

2. DIMENSION LIMITS HELD AFTER PLATING.

3. REMOVE BURRS AND SHARP EDGES .015 MAX.

4. MACHINED FILLET RADII .0150-.030.

5. MACHINED DIAMETERS ON A COMMON CENTERLINE CONCENTRIC WITHIN .005

6. PERPENDICULARITY & PARALLELISM OF MACHINED SURFACES .002 PER INCH. MAX .012 INCHES FOR SINGLE SURFACE.

CHECKED
Jon Erickson
PROJECT NO.
701818

10/28/08

Engineer

PROJECT
NSF Floats

NEXT ASSY Description

NEXT ASSY Number

WEIGHT

Application

DO NOT SCALE DRAWING

Monterey Bay Aquarium Research Institute
MBARI
7700 Sandholdt RD.
Moss Landing, CA 95039
PH: (831) 775-1700

APEX+ISUS Ver 2

SIZE
B

DWG. NO.
206jahaAPEX+ISUSv2

REV.
A

SCALE 1:3

CAD FILE: Tornado/chem/SWfiles

SHEET 3 OF 5

3

1

Part No.

ISUS Support End

Delrin

Item No.

Qty

Description

Material Specification

Shop / Q.C.

UNLESS OTHERWISE SPECIFIED TOLERANCES ARE:

APPROVALS

DATE

Inspector

1 PLACE DIM
 $\pm$ 1/16

2 PLACE DIM
 $\pm$.02

3 PLACE DIM
 $\pm$.005

ANGLES
 $\pm$ 1°

DRAWN
Hans Jannasch
ENGINEER

9/30/08

Shop Foreman

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CHECKED
Jon Erickson
PROJECT NO.
701818

10/28/08

Engineer

PROJECT
NSF Floats

NEXT ASSY Description

NEXT ASSY Number

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Application

DO NOT SCALE DRAWING

Monterey Bay Aquarium Research Institute
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APEX+ISUS Ver 2

SIZE
B

DWG. NO.
206jahaAPEX+ISUSv2

REV.
A

SCALE 1:3

CAD FILE: Tornado/chem/SWfiles

SHEET 3 OF 5

3

1

Part No.

ISUS Support End

Delrin

Item No.

Qty

Description

Material Specification

Shop / Q.C.

UNLESS OTHERWISE SPECIFIED TOLERANCES ARE:

APPROVALS

DATE

Inspector

1 PLACE DIM
 $\pm$ 1/16

2 PLACE DIM
 $\pm$.02

3 PLACE DIM
 $\pm$.005

ANGLES
 $\pm$ 1°

DRAWN
Hans Jannasch
ENGINEER

9/30/08

Shop Foreman

1. DIMENSIONS ARE IN INCHES

2. DIMENSION LIMITS HELD AFTER PLATING.

3. REMOVE BURRS AND SHARP EDGES .015 MAX.

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6. PERPENDICULARITY & PARALLELISM OF MACHINED SURFACES .002 PER INCH. MAX .012 INCHES FOR SINGLE SURFACE.

CHECKED
Jon Erickson
PROJECT NO.
701818

10/28/08

Engineer

PROJECT
NSF Floats

NEXT ASSY Description

NEXT ASSY Number

WEIGHT

Application

DO NOT SCALE DRAWING

Monterey Bay Aquarium Research Institute
MBARI
7700 Sandholdt RD.
Moss Landing, CA 95039
PH: (831) 775-1700

APEX+ISUS Ver 2

SIZE
B

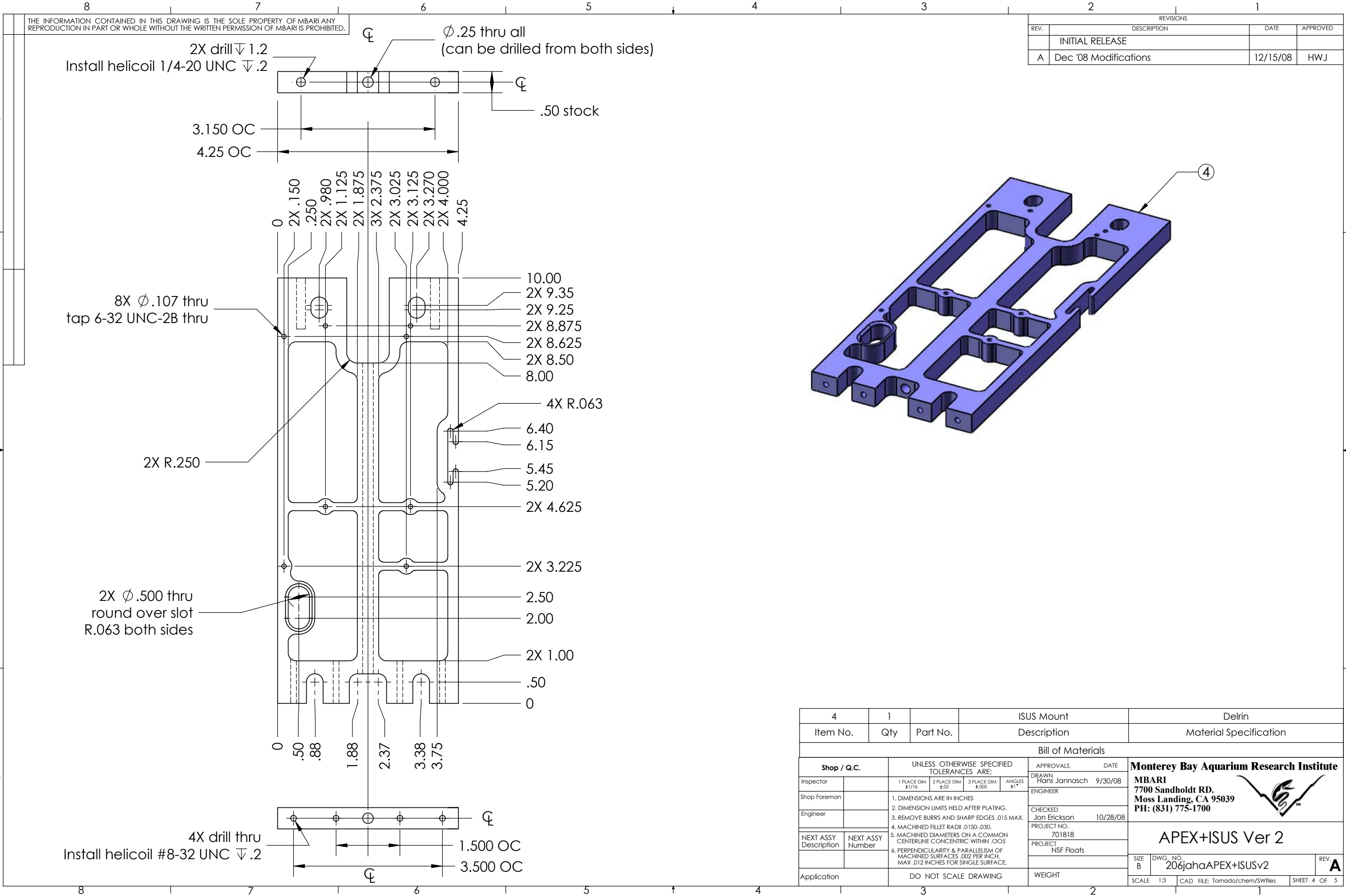
DWG. NO.
206jahaAPEX+ISUSv2

REV.
A

SCALE 1:3

CAD FILE: Tornado/chem/SWfiles

SHEET 3 OF 5



87

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5

5X .144 slots thru

2X 3.025

3.25

2.65

2.40

2.250

2X .144 thru

1.65

1.50

1.40

1.25

2X .400

2X .150

.65

4X R.15

8X .150

4X .400

.478

4X .55

.063 stock

6

3X R.03

2X .13

.070

.63

1.50

.32

.10

7

2X 1.250

1.50

2X .150

1.00

.80

.65

.30

.15

0

8

2X 1.250

1.50

2X .150

1.00

.80

.65

.30

.15

0

9

OK to waterjet part

.500 (stock)

.144 thru front only

.107 thru tap 6-32 UNC-2B thru

4X R.05

.045

.040

.50

1.33

1.23

R.25

.43

.25

.08

0

6

3X 6-32 UNC-2B thru

1.00

.75

.525

.25

2X .150

0

2.13

1.96

1.675

.274

.225

0

7

2X 1.250

1.50

2X .150

1.00

.80

.65

.30

.15

0

8

2X 1.250

1.50

2X .150

1.00

.80

.65

.30

.15

0

9

OK to waterjet part

.500 (stock)

.144 thru front only

.107 thru tap 6-32 UNC-2B thru

4X R.05

.045

.040

.50

1.33

1.23

R.25

.43

.25

.08

0

2

1

REVISIONS

REV. DESCRIPTION DATE APPROVED

A INITIAL RELEASE

A Dec '08 Modifications 12/15/08 HWJ

8

2X 1.250

1.50

2X .150

1.00

.80

.65

.30

.15

0

9

OK to waterjet part

.500 (stock)

.144 thru front only

.107 thru tap 6-32 UNC-2B thru

4X R.05

.045

.040

.50

1.33

1.23

R.25

.43

.25

.08

0

1

2X 1.250

1.50

2X .150

1.00

.80

.65

.30

.15

0

2

2X 1.250

1.50

2X .150

1.00

.80

.65

.30

.15

0

3

2X 1.250

1.50

2X .150

1.00

.80

.65

.30

.15

0

4

2X 1.250

1.50

2X .150

1.00

.80

.65

.30

.15

0

5

2X 1.250

1.50

2X .150

1.00

.80

.65

.30

.15

0

6

2X 1.250

1.50

2X .150

1.00

.80

.65

.30

.15

0

7

2X 1.250

1.50

2X .150

1.00

.80

.65

.30

.15

0

8

2X 1.250

1.50

2X .150

1.00

.80

.65

.30

.15

0

9

2X 1.250

1.50

2X .150

1.00

.80

.65

.30

.15

0

9	1		Flash Card Retainer	Delrin
8	1		Impulse IE55 Bushing	PEEK
6	1		Reference Support	Delrin
5	3		Fiberlight Support	Delrin
Item No.	Qty	Part No.	Description	Material Specification
Bill of Materials				
Shop / Q.C.		UNLESS OTHERWISE SPECIFIED TOLERANCES ARE:		APPROVALS DATE
Inspector		1 PLACE DIM ±1/16	2 PLACE DIM ±.02	3 PLACE DIM ±.005
Shop Foreman		1. DIMENSIONS ARE IN INCHES		
Engineer		2. DIMENSION LIMITS HELD AFTER PLATING.		
		3. REMOVE BURRS AND SHARP EDGES .015 MAX.		
		4. MACHINED FILLET RADII .0150-.030.		
NEXT ASSY Description	NEXT ASSY Number	5. MACHINED DIAMETERS ON A COMMON CENTERLINE CONCENTRIC WITHIN .005		
		6. PERPENDICULARITY & PARALLELISM OF MACHINED SURFACES .002 PER INCH. MAX .012 INCHES FOR SINGLE SURFACE.		
Application		DO NOT SCALE DRAWING		WEIGHT