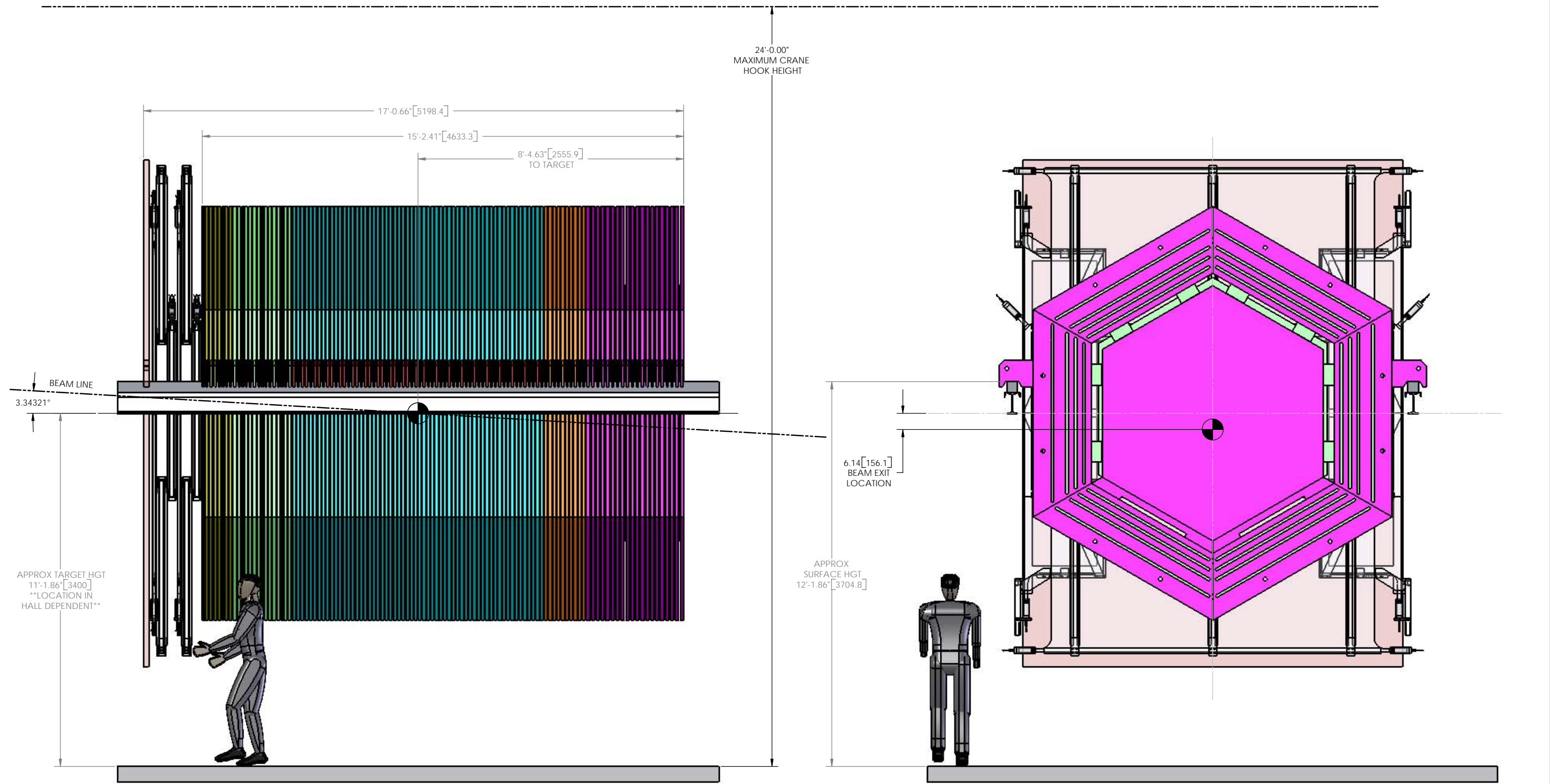


REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPRV
-	-	INITIAL ISSUE	-	-



APPROX TARGET HGT
11'-1.86" [3400]
LOCATION IN HALL DEPENDENT

APPROX SURFACE HGT
12'-1.86" [3704.8]

INCOMPLETE DRAWING

NOTE: DO NOT SCALE DRAWING!
ALL TOLERANCES UNLESS OTHERWISE SPECIFIED ARE

DIMENSIONS ARE IN:
 INCHES [mm] mm [IN]
 xxx [x] ± .010 [.3]
 xxx [xxx] ± .005 [.13]
 xxxxx [xxxx] ± .0005 [.013]
 xx/xx ± 1/32
 x' ± 1"

UNIVERSITY OF ROCHESTER
DEPT. OF PHYSICS AND ASTRONOMY
SIDNEY W. BARNES RESEARCH LABORATORY

TITLE
MINERVA DETECTOR ASS'Y

THIRD ANGLE PROJECTION	DRAWN RSF	DATE -
	CHECKED RSF	DATE -
	APPROVED RSF	DATE -

SIZE [DWG NO]	D	REV
SCALE	1:18	SHEET 1 OF 1

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPRV
-	-	INITIAL ISSUE	-	-

288.00 [7315.2]
MAXIMUM CRANE
HOOK HEIGHT

229.86 [5838.4]

212.38 [5394.4]

153.86 [3908]

145.86 [3704.8]

133.86 [3400]

55.34 [1405.6]

0 [0]

81.00 [2057.4]
76.00 [1930.4]

0 [0]

76.00 [1930.4]
81.00 [2057.4]

THE NUCLEAR TARGET SHOWN IS CONCEPTUAL ONLY
UPDATES TO THE CORRECT DESIGN ARE INPROCESS

6'-0 3/4" [1847.7]

SEE SHEET 3 FOR SUB-ASSEMBLY PARTS LIST

INCOMPLETE DRAWING

NOTE: DO NOT SCALE DRAWING !
ALL TOLERANCES UNLESS
OTHERWISE SPECIFIED ARE

DIMENSIONS ARE IN:
 INCHES [mm] mm [IN]
 x.xx [x,x] ± .010 [.3]
 x.xxx [x,xx] ± .005 [.13]
 x.xxxx [x,xxx] ± .0005 [.013]
 xx/xx ± 1/32
 x' ± 1"

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TITLE
MINERVA DETECTOR ASS'Y

THIRD ANGLE PROJECTION	DRAWN RSF	DATE -
	CHECKED RSF	DATE -
	APPROVED RSF	DATE -

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SIZE DWG NO	D	-	REV	-
SCALE	1:18	SHEET	1 OF 1	

WEIGHT: 411517 LBS

1 FILE: DETECTOR ASS'Y sht 001

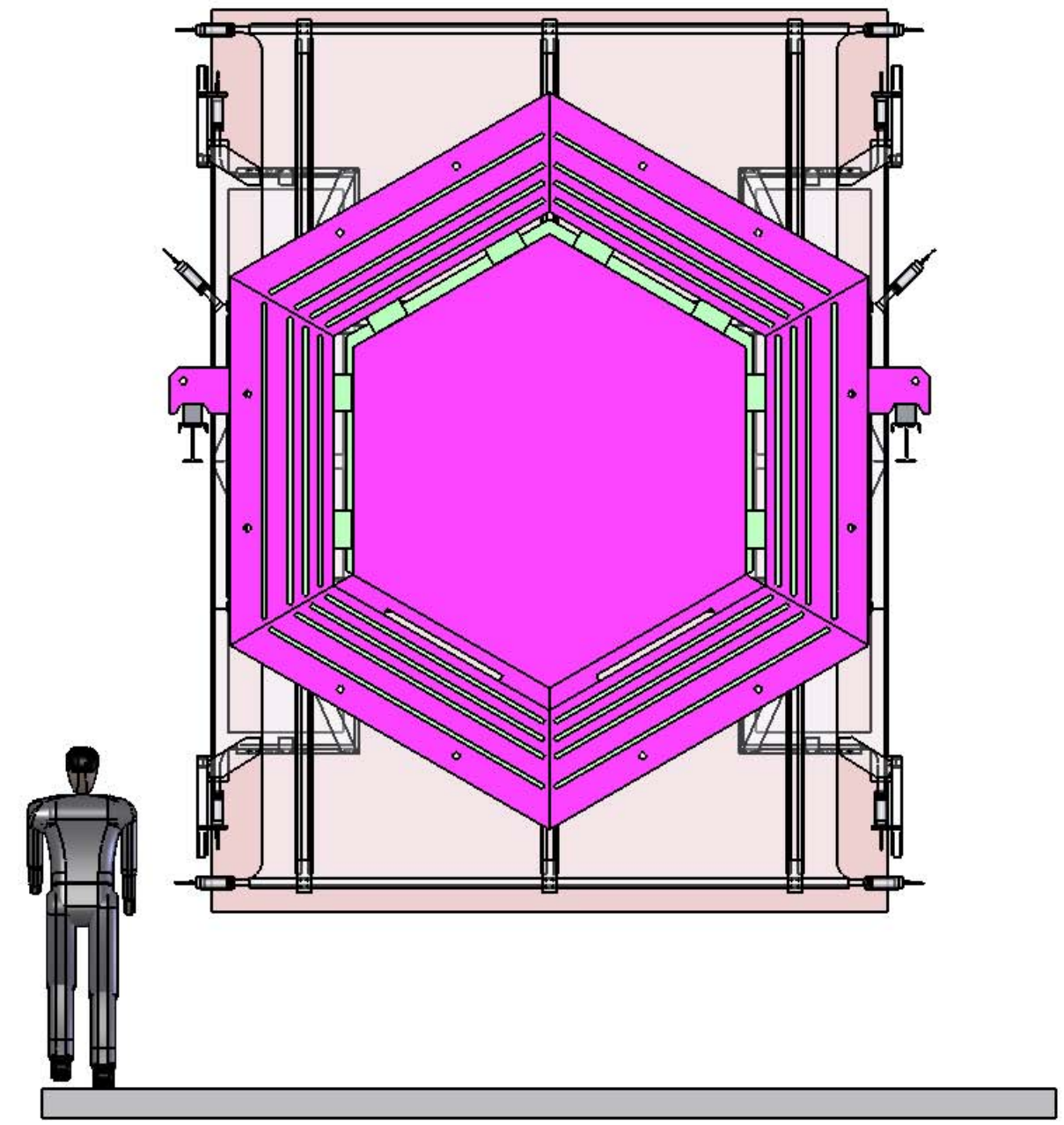
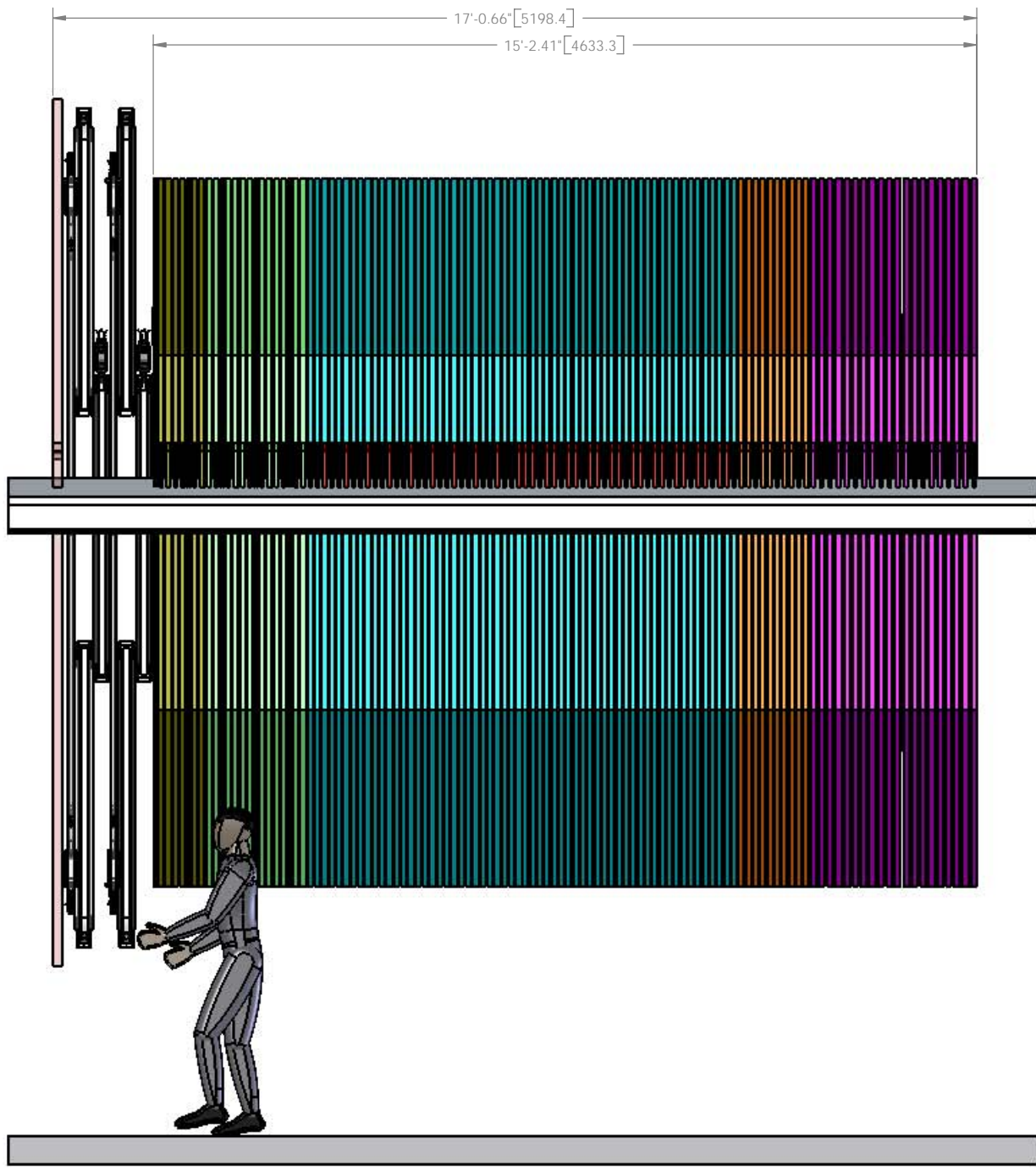
4

3

2

1

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPRV
-	-	INITIAL ISSUE	-	-



B

B

A

A

NOTE: DO NOT SCALE DRAWING!
ALL TOLERANCES UNLESS OTHERWISE SPECIFIED ARE

DIMENSIONS ARE IN:
 INCHES [mm] mm [IN]

xxx [x,x] ± .010 [.3]
 xxx [xxx] ± .005 [.13]
 xxx [xxxx] ± .0005 [.013]
 xx/xx ± 1/32
 x' ± 1"

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TITLE: MINERVA DETECTOR ASS'Y

THIRD ANGLE PROJECTION

DRAWN	RSF	DATE	-
CHECKED	RSF	DATE	-
APPROVED	RSF	DATE	-

SCALE: 1:18 SHEET: 1 OF 1

WEIGHT: 411517 LBS

FILE: DETECTOR ASS'Y sht 002

INCOMPLETE DRAWING

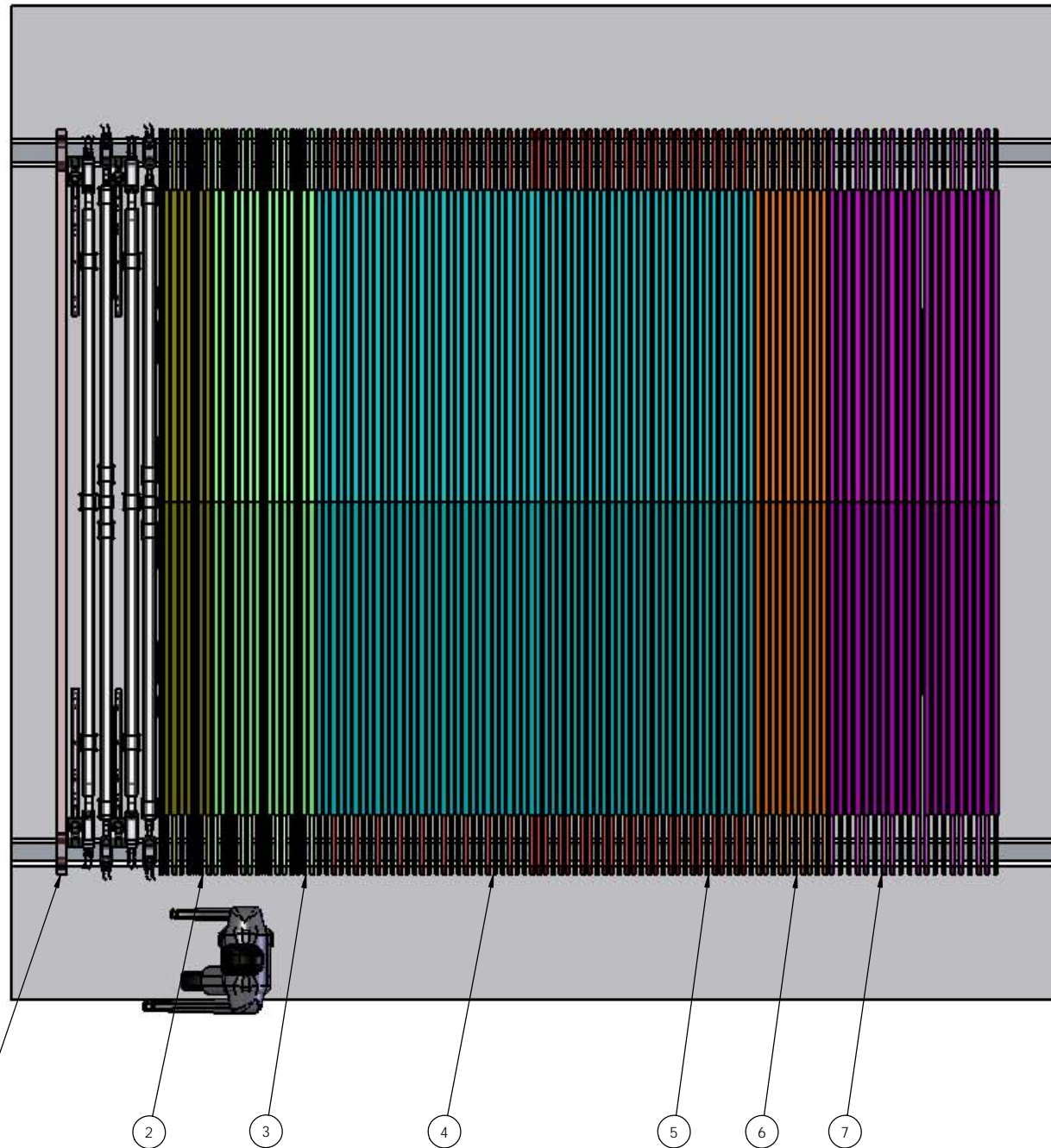
4

3

2

1

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPRV
-	-	INITIAL ISSUE	-	-



Parts List								
ITEM NO.	QTY	DET SHT	ASSY SHT	PART NUMBER	DESCRIPTION	MATERIAL	SIZE	WEIGHT
1	1	-	130	VETO WALL	VETO WALL	-	-	20115
2	1	-	10	USHCAL ASS'Y	UPSTREAM-HCAL ASSEMBLY	-	-	25482
3	1	-	30	USECAL ASS'Y	UPSTREAM-ECAL ASSEMBLY	-	-	47482
4	1	-	50	AT NARROW ASS'Y	ACTIVE TARGET ASSEMBLY- NARROW FRAME	-	-	94573
5	1	-	70	AT WIDE ASS'Y	ACTIVE TARGET ASSEMBLY-WIDE FRAME	-	-	94572
6	1	-	90	DSECAL ASS'Y	DOWNSTREAM ECAL ASSEMBLY	-	-	34307
7	1	-	110	DSHCAL ASS'Y	DOWNSTREAM HCAL ASSEMBLY	-	-	92727

THE OLD NOMENCLATURE IS SHOWN.
RESTRUCTURING AND NAMING CONVENTION CHANGES ARE IN
PROCESS FOR ALL SHEETS IN THE UPSTREAM AND ACTIVE
TARGET AREAS.

NOTE: DO NOT SCALE DRAWING !
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OTHERWISE SPECIFIED ARE

DIMENSIONS ARE IN:
 INCHES [mm] mm [IN]

x.xxx [x.x] ± .010 [.3]
 x.xxxx [x.xxx] ± .005 [.13]
 x.xxxxx [x.xxxx] ± .0005 [.013]
 xx/xx ± 1/32
 x' ± 1"

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TITLE: MINERVA DETECTOR ASS'Y

THIRD ANGLE PROJECTION

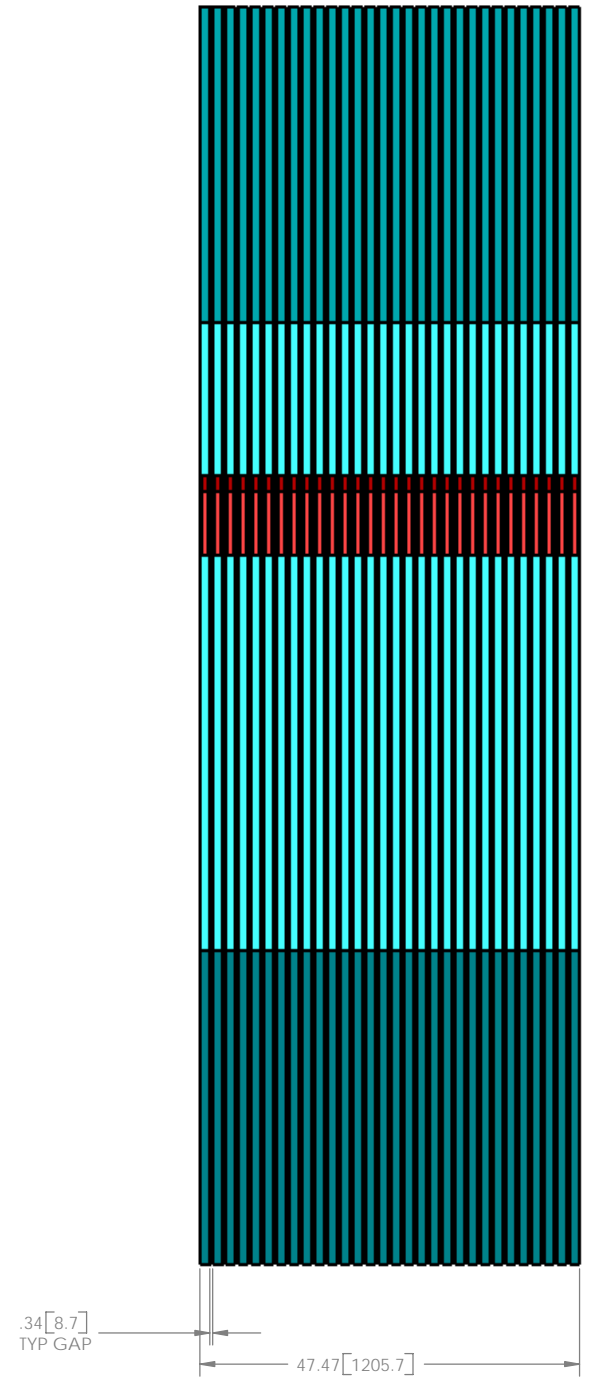
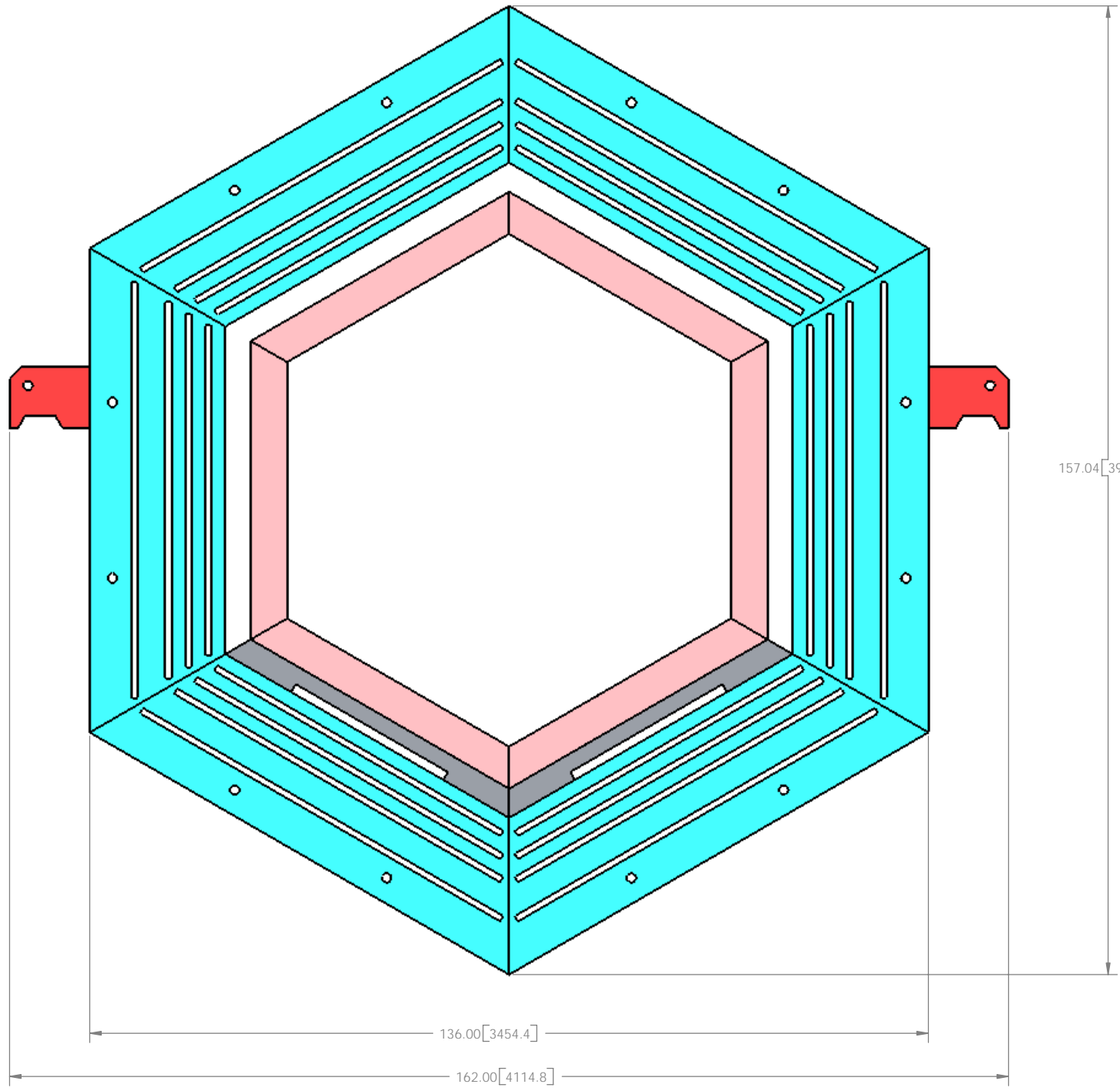
DRAWN	RSF	DATE	-
CHECKED	RSF	DATE	-
APPROVED	RSF	DATE	-

SCALE: 1:18 SHEET 1 OF 1

WEIGHT: 411517 LBS FILE: DETECTOR ASS'Y sht 003

INCOMPLETE DRAWING

REVISIONS					
ZONE	REV	DESCRIPTION	DATE	APPRV	
-	-	INITIAL ISSUE	-	-	-



Parts List								
ITEM NO.	QTY	DET SHT	ASSY SHT	PART NUMBER	DESCRIPTION	MATERIAL	SIZE	WEIGHT
1	15			AT MODULE NARROW ASSY	AT MODULE NARROW ASSY	-	-	6305

ACTIVE TARGET, NARROW FRAME ASSEMBLY
15 MODULES/ASSY

INCOMPLETE DRAWING

NOTE: DO NOT SCALE DRAWING !
ALL TOLERANCES UNLESS OTHERWISE SPECIFIED ARE

DIMENSIONS ARE IN:
 INCHES [mm] mm [IN]
xxx [x] ± .010 [.3]
xxxx [xxx] ± .005 [.13]
xxxxx [xxxx] ± .0005 [.013]
xx/xx ± 1/32
x' ± 1"

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TITLE: MINERVA DETECTOR ASS'Y

THIRD ANGLE PROJECTION

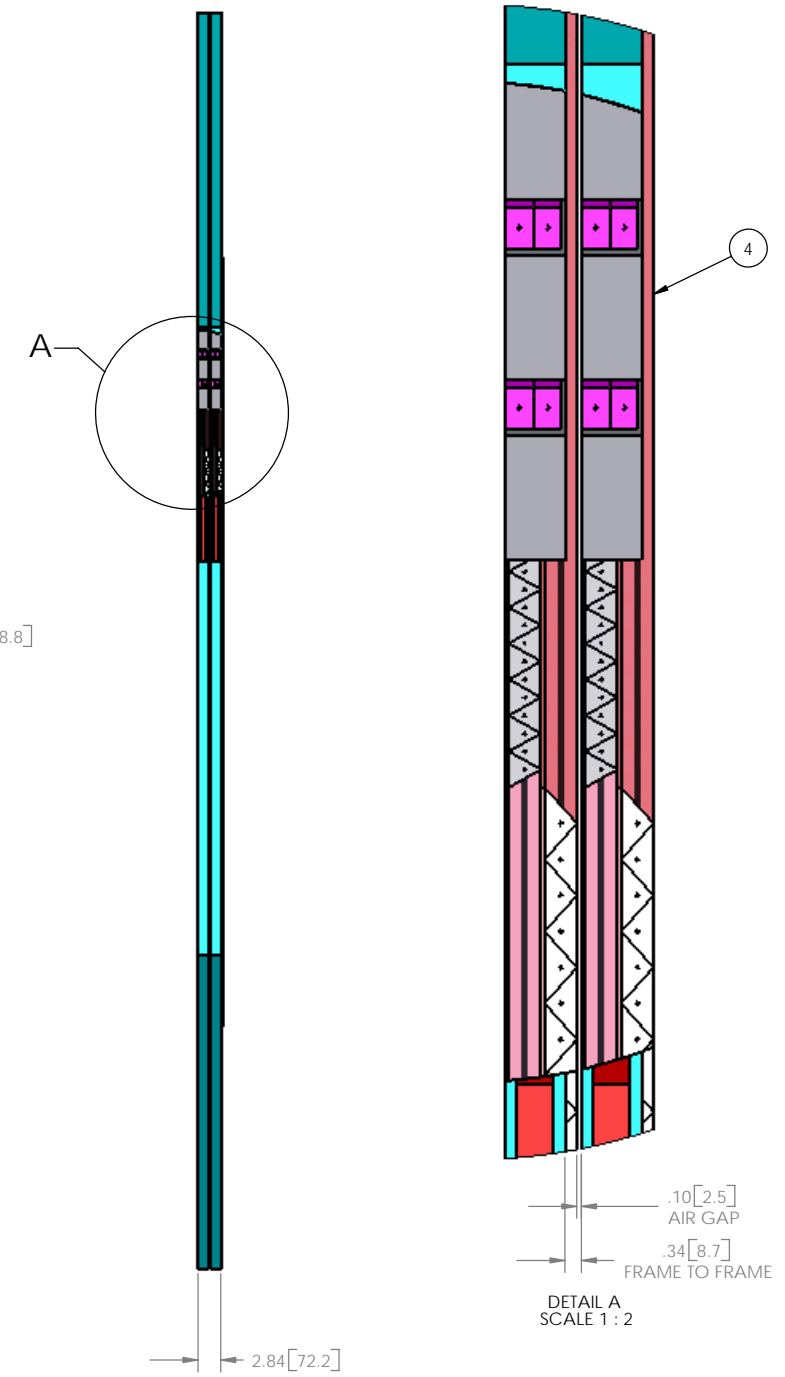
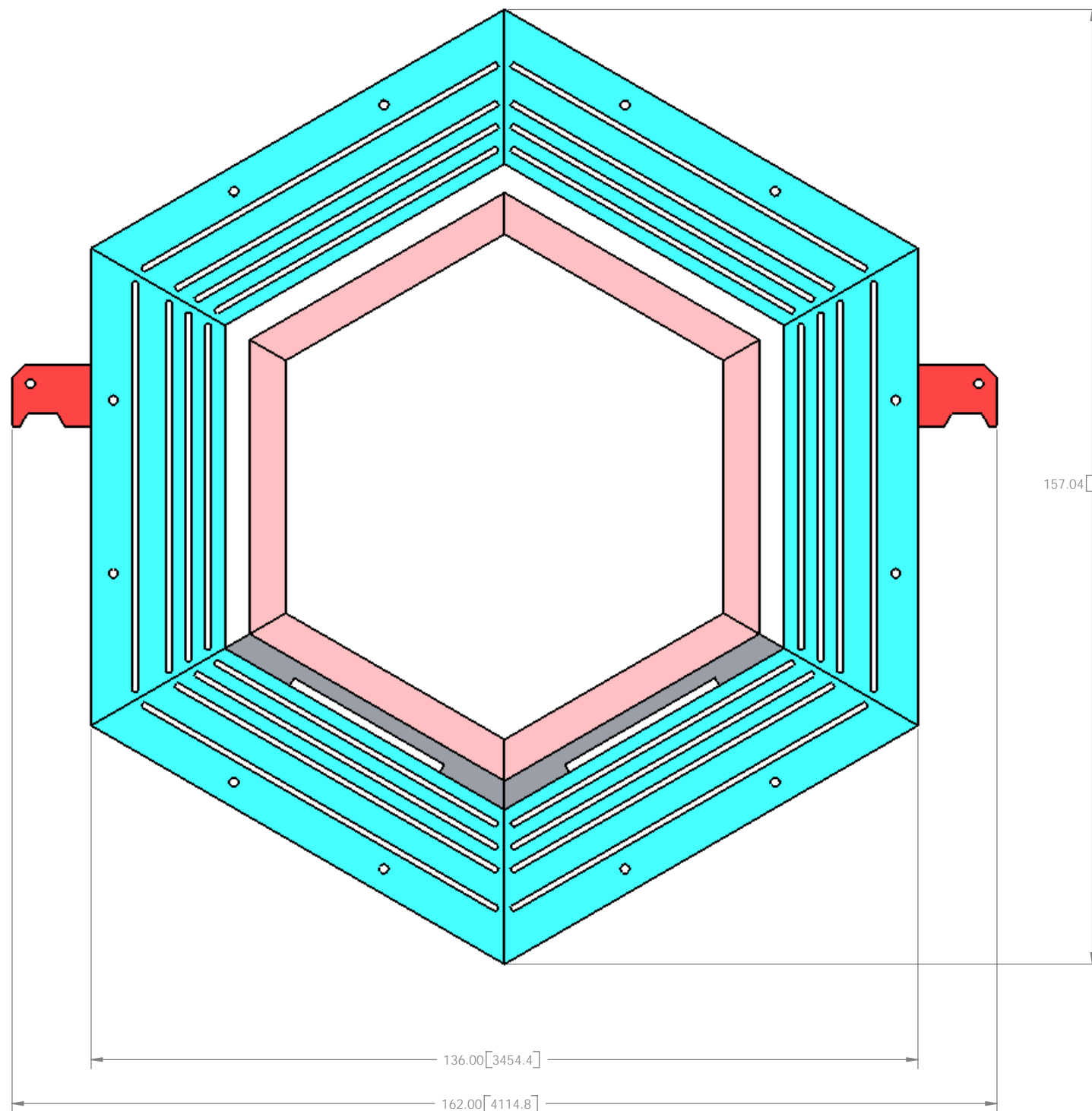
DRAWN	RSF	DATE	-
CHECKED	RSF	DATE	-
APPROVED	RSF	DATE	-

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SCALE: 1:12 SHEET: 1 OF 1 WEIGHT: 94573 LBS

FILE: DETECTOR ASS'Y sht 050

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPRV
-	-	INITIAL ISSUE	-	-



ACTIVE TARGET MODULE, NARROW FRAME
15 MODULES/ASSY

Parts List								
ITEM NO.	QTY	DET SHT	ASSY SHT	PART NUMBER	DESCRIPTION	MATERIAL	SIZE	WEIGHT
1	2			AT PLANE NARROW ASSY	AT PLANE NARROW ASSY	-	-	3152

NOTE: DO NOT SCALE DRAWING!
ALL TOLERANCES UNLESS OTHERWISE SPECIFIED ARE

DIMENSIONS ARE IN:
 INCHES [mm] mm [IN]
 x.xx [x] ± .010 [.3]
 x.xxx [xxx] ± .005 [.13]
 x.xxxx [xxxx] ± .0005 [.013]
 xx/xx ± 1/32
 x' ± 1"

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TITLE: MINERVA DETECTOR ASS'Y

THIRD ANGLE PROJECTION

DRAWN	RSF	DATE	-
CHECKED	RSF	DATE	-
APPROVED	RSF	DATE	-

INCOMPLETE DRAWING

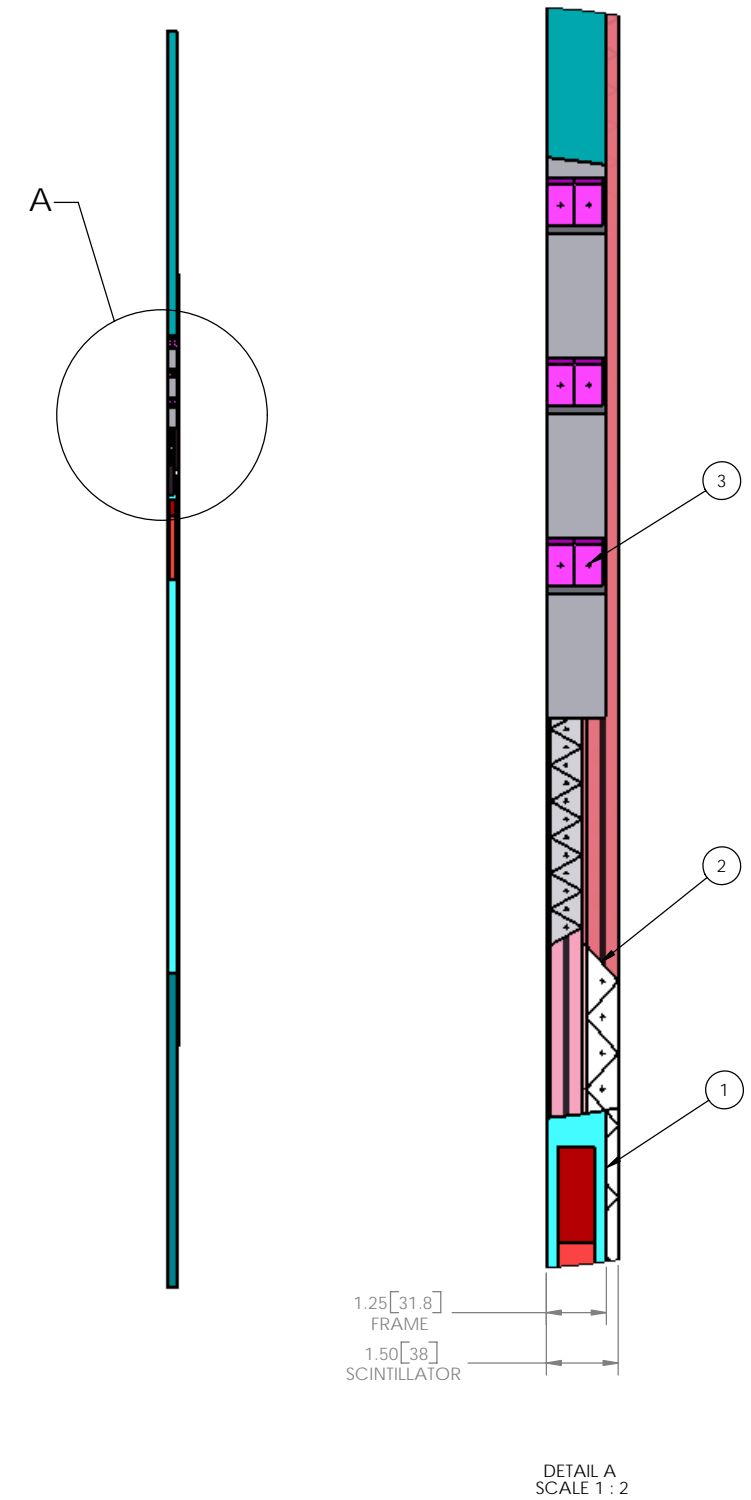
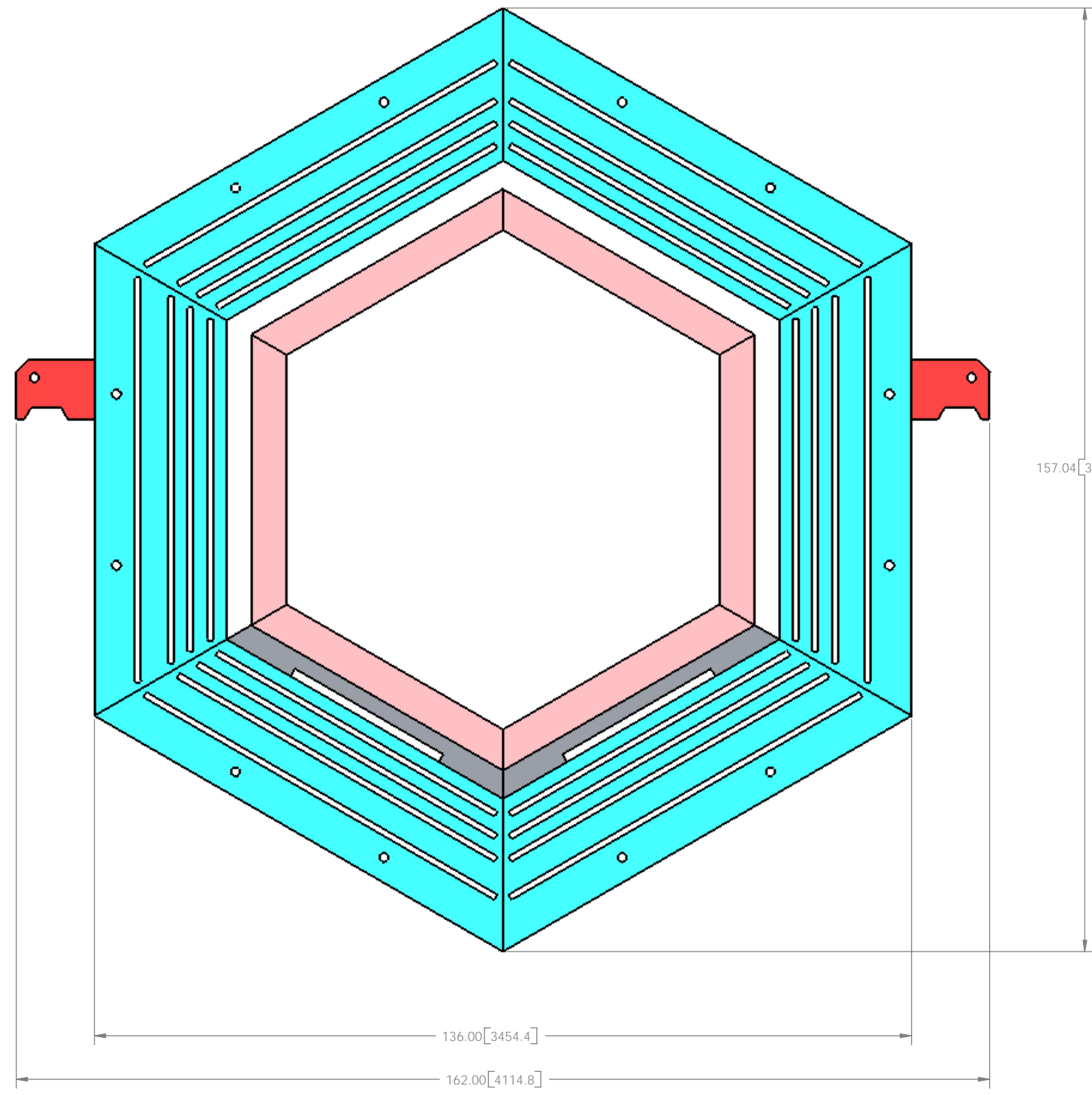
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WEIGHT: 6305 LBS

SCALE: 1:1 SHEET: 1 OF 1

FILE: DETECTOR ASSY sht 051

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPRV
-	-	INITIAL ISSUE	-	-



Parts List								
ITEM NO.	QTY	DET_SHT	ASSY_SHT	PART NUMBER	DESCRIPTION	MATERIAL	SIZE	WEIGHT
1	1	-	150	FRAME NARROW	FRAME ASSY - NARROW	-	-	2747.68
2	2	-	160	SCINTILLATOR ASS'Y	SCINTILLATOR ASS'Y	-	-	202
3	1	-	1	SCINTILLATOR-FRAME SLOTS ASS'Y	SCINTILLATOR-FRAME SEGMENTS ASS'Y	-	-	45

AT NARROW FRAME ASSY

INCOMPLETE DRAWING

NOTE: DO NOT SCALE DRAWING !
ALL TOLERANCES UNLESS OTHERWISE SPECIFIED ARE

DIMENSIONS ARE IN:
 INCHES [mm] mm [IN]

x.xxx [x.x] ± .010 [.3]
 x.xxxx [x.xxx] ± .005 [.13]
 x.xxxxx [x.xxxx] ± .0005 [.013]
 xx/xx ± 1/32
 x' ± 1"

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TITLE: **MINERVA DETECTOR ASS'Y**

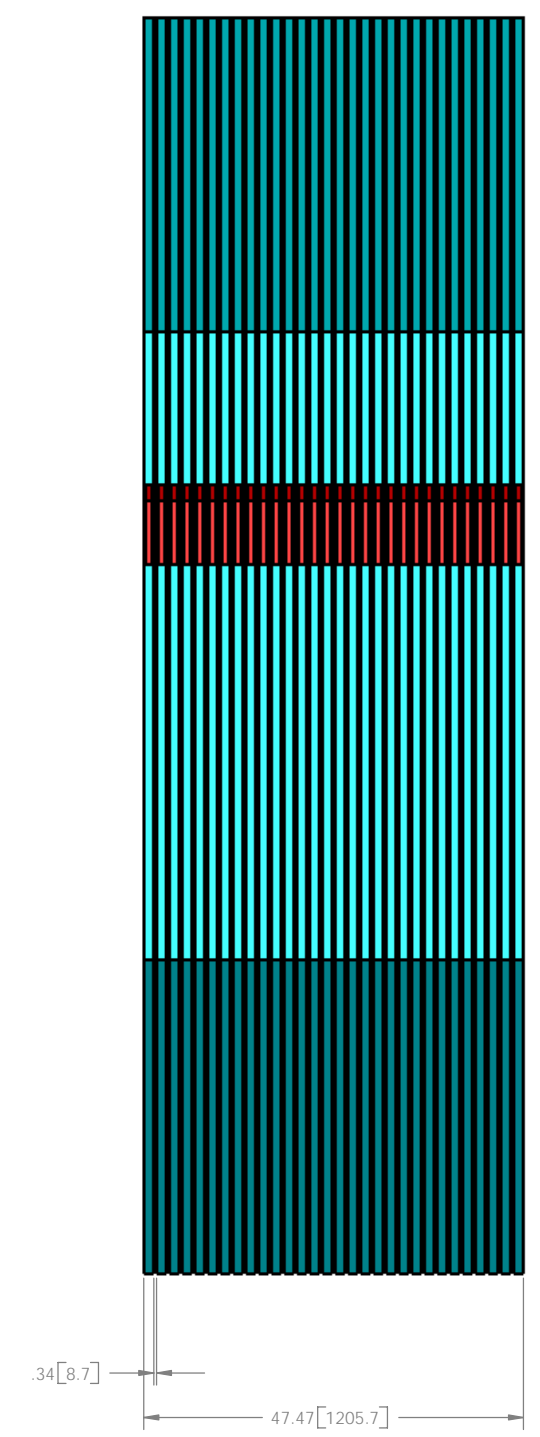
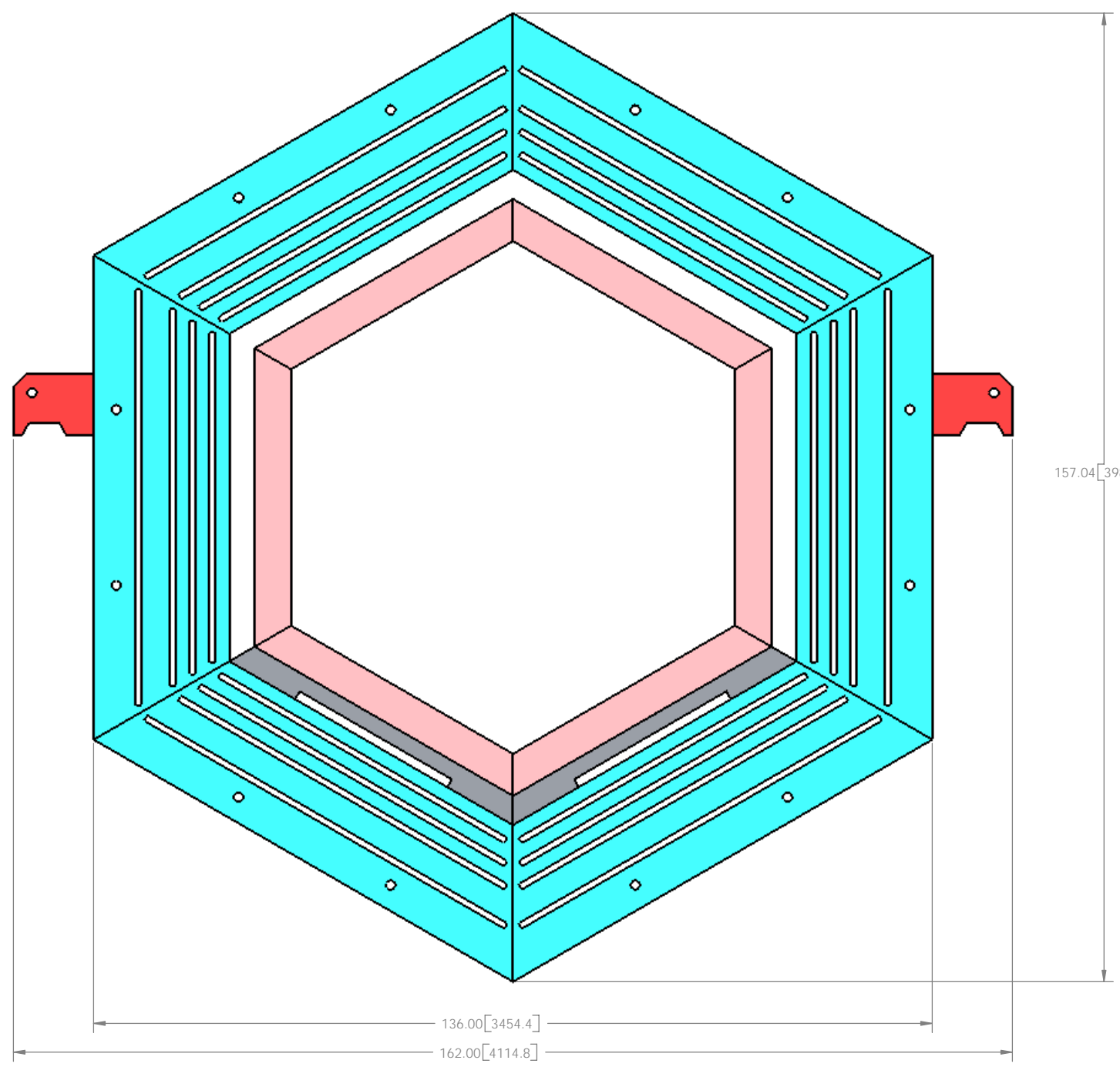
THIRD ANGLE PROJECTION

DRAWN	RSF	DATE	-
CHECKED	RSF	DATE	-
APPROVED	RSF	DATE	-

SCALE: 1:12 SHEET: 1 OF 1

WEIGHT: 3152 LBS **1** FILE: DETECTOR ASS'Y sht 052

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPRV
-	-	INITIAL ISSUE	-	-



ACTIVE TARGET, WIDE FRAME ASSEMBLY
15 MODULES/ASSY

Parts List								
ITEM NO.	QTY	DET SHT	ASSY SHT	PART NUMBER	DESCRIPTION	MATERIAL	SIZE	WEIGHT
1	15			AT MODULE WIDE ASSY	AT MODULE WIDE ASSY	-	-	6305

NOTE: DO NOT SCALE DRAWING !
ALL TOLERANCES UNLESS OTHERWISE SPECIFIED ARE

DIMENSIONS ARE IN:
 INCHES [mm] mm [IN]
 x.xx [x.x] ± .010 [.3]
 x.xxx [x.xxx] ± .005 [.13]
 x.xxxx [x.xxxx] ± .0005 [.013]
 xx/xx ± 1/32
 x' ± 1"

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TITLE: MINERVA DETECTOR ASS'Y

THIRD ANGLE PROJECTION

DRAWN	RSF	DATE	-
CHECKED	RSF	DATE	-
APPROVED	RSF	DATE	-

INCOMPLETE DRAWING

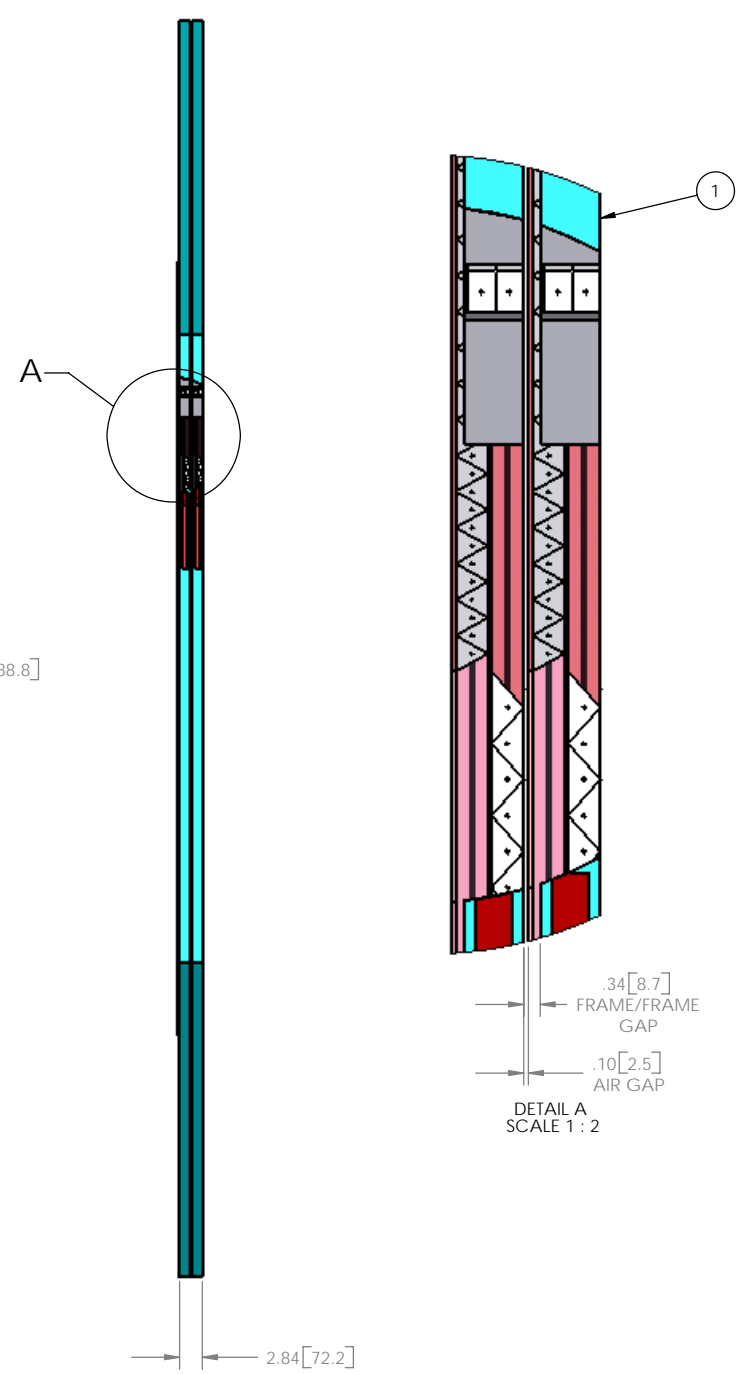
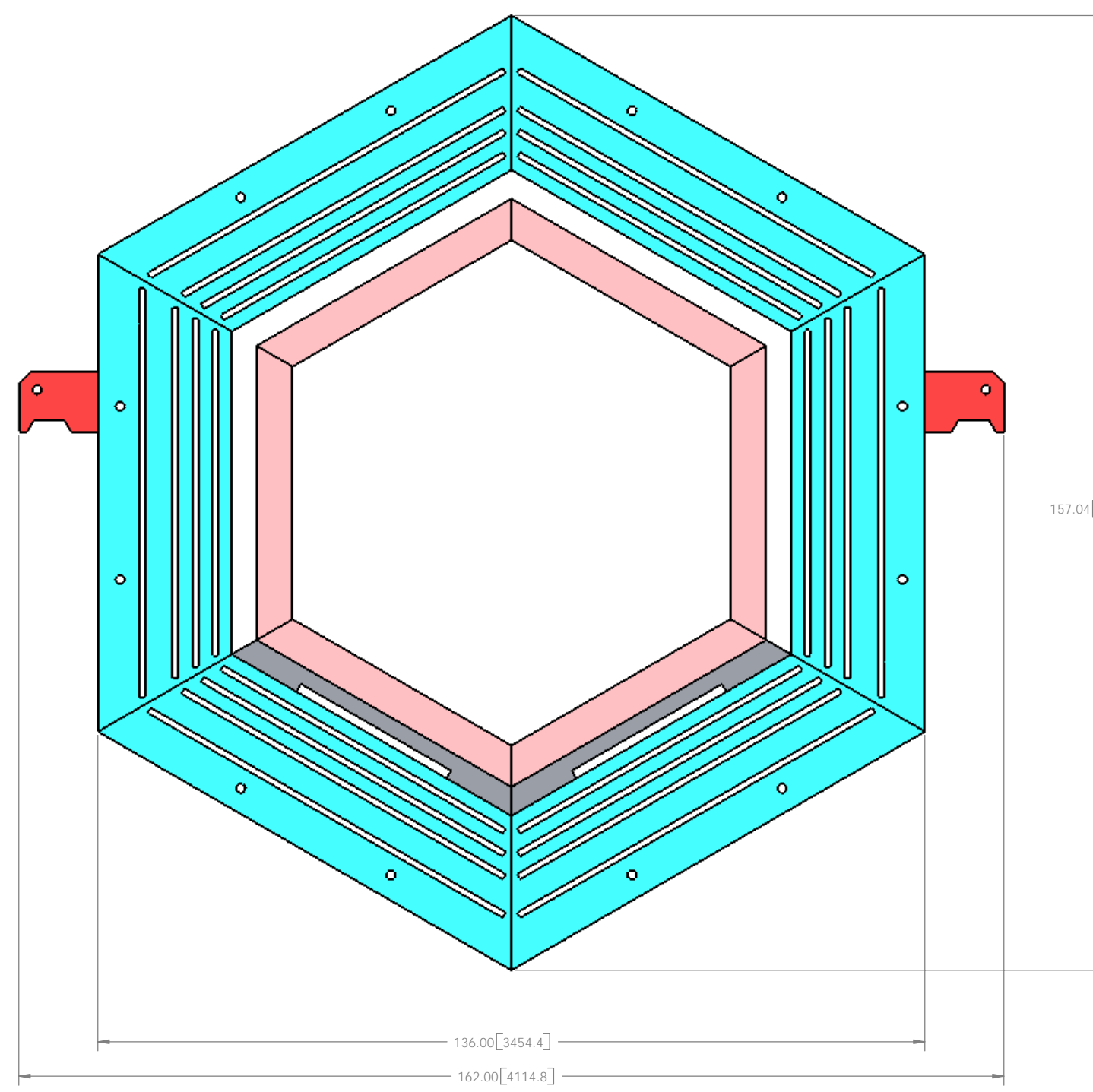
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WEIGHT: 94572 LBS

SCALE: 1:12 SHEET: 1 OF 1

FILE: DETECTOR ASS'Y sht 070

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPRV
-	-	INITIAL ISSUE	-	-



Parts List								
ITEM NO.	QTY	DET_SHT	ASSY_SHT	PART NUMBER	DESCRIPTION	MATERIAL	SIZE	WEIGHT
1	2	-	72	AT PLANE WIDE ASSY	AT PLANE WIDE ASSY	-	-	3153

ACTIVE TARGET MODULE, WIDE FRAME
15 MODULES/ASSY

INCOMPLETE DRAWING

NOTE: DO NOT SCALE DRAWING !
ALL TOLERANCES UNLESS OTHERWISE SPECIFIED ARE

DIMENSIONS ARE IN:
 INCHES [mm] mm [IN]

x.xx [x.x] ± .010 [.3]
x.xxx [x.xxx] ± .005 [.13]
x.xxxx [x.xxxx] ± .0005 [.013]
xx/xx ± 1/32
x' ± 1'

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TITLE: MINERVA DETECTOR ASS'Y

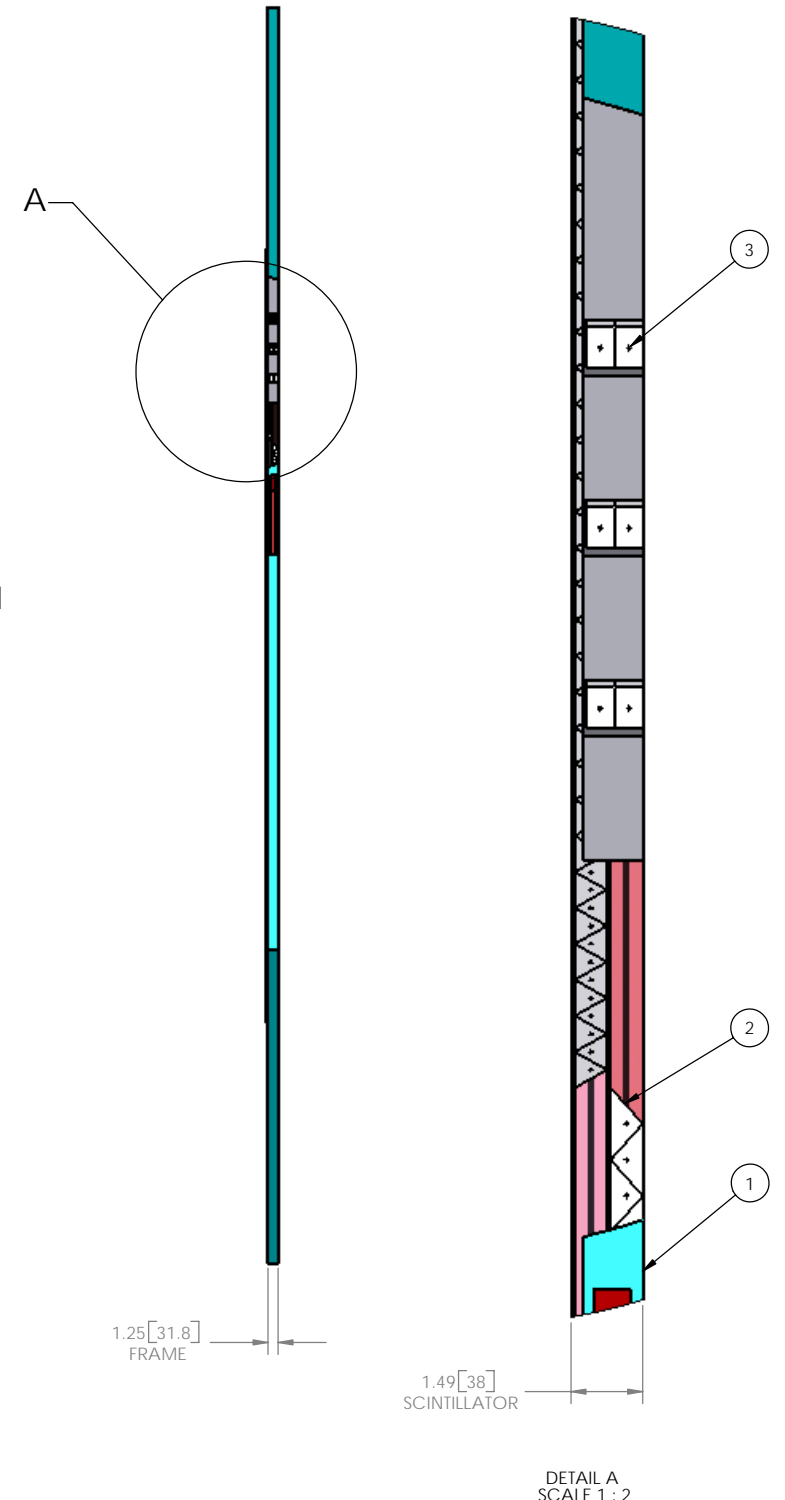
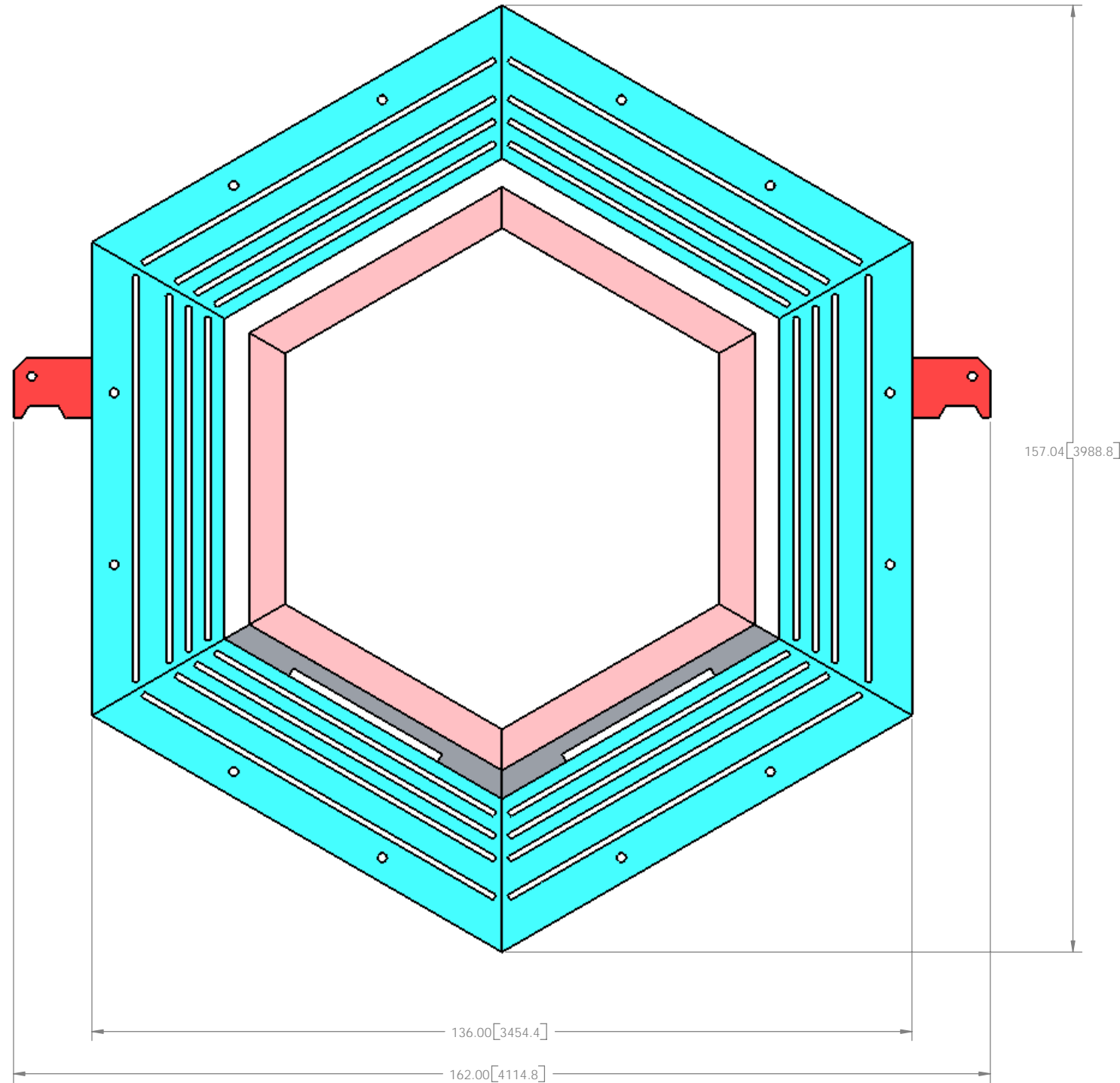
THIRD ANGLE PROJECTION

DRAWN	RSF	DATE	-
CHECKED	RSF	DATE	-
APPROVED	RSF	DATE	-

SCALE: 1:1 SHEET: 1 OF 1

WEIGHT: 6305 LBS FILE: DETECTOR ASSY sht 071

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPRV
-	-	INITIAL ISSUE	-	-



Parts List								
ITEM NO.	QTY	DET_SHT	ASSY_SHT	PART NUMBER	DESCRIPTION	MATERIAL	SIZE	WEIGHT
1	1	152	-	FRAME WIDE	FRAME ASSY - WIDE	-	-	2748.05
2	2	-	160	SCINTILLATOR ASS'Y	SCINTILLATOR ASS'Y	-	-	202
3	1	-	1	SCINTILLATOR-FRAME SLOTS ASS'Y	SCINTILLATOR-FRAME SEGMENTS ASS'Y	-	-	45

AT WIDE FRAME ASSY

INCOMPLETE DRAWING

NOTE: DO NOT SCALE DRAWING !
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DIMENSIONS ARE IN:
 INCHES [mm] mm [IN]

x.xxx [x.x] ± .010 [.3]
 x.xxxx [x.xxx] ± .005 [.13]
 x.xxxxx [x.xxxx] ± .0005 [.013]
 xx/xx ± 1/32
 x' ± 1"

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TITLE: **MINERVA DETECTOR ASS'Y**

THIRD ANGLE PROJECTION

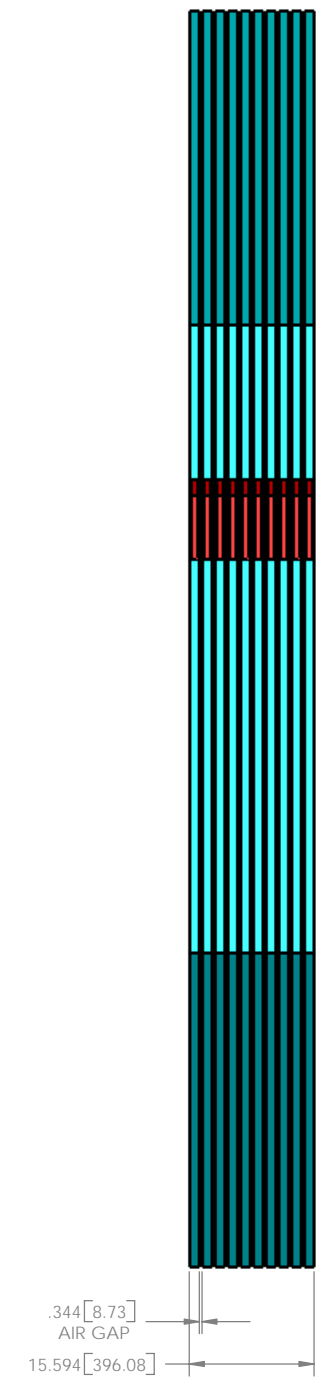
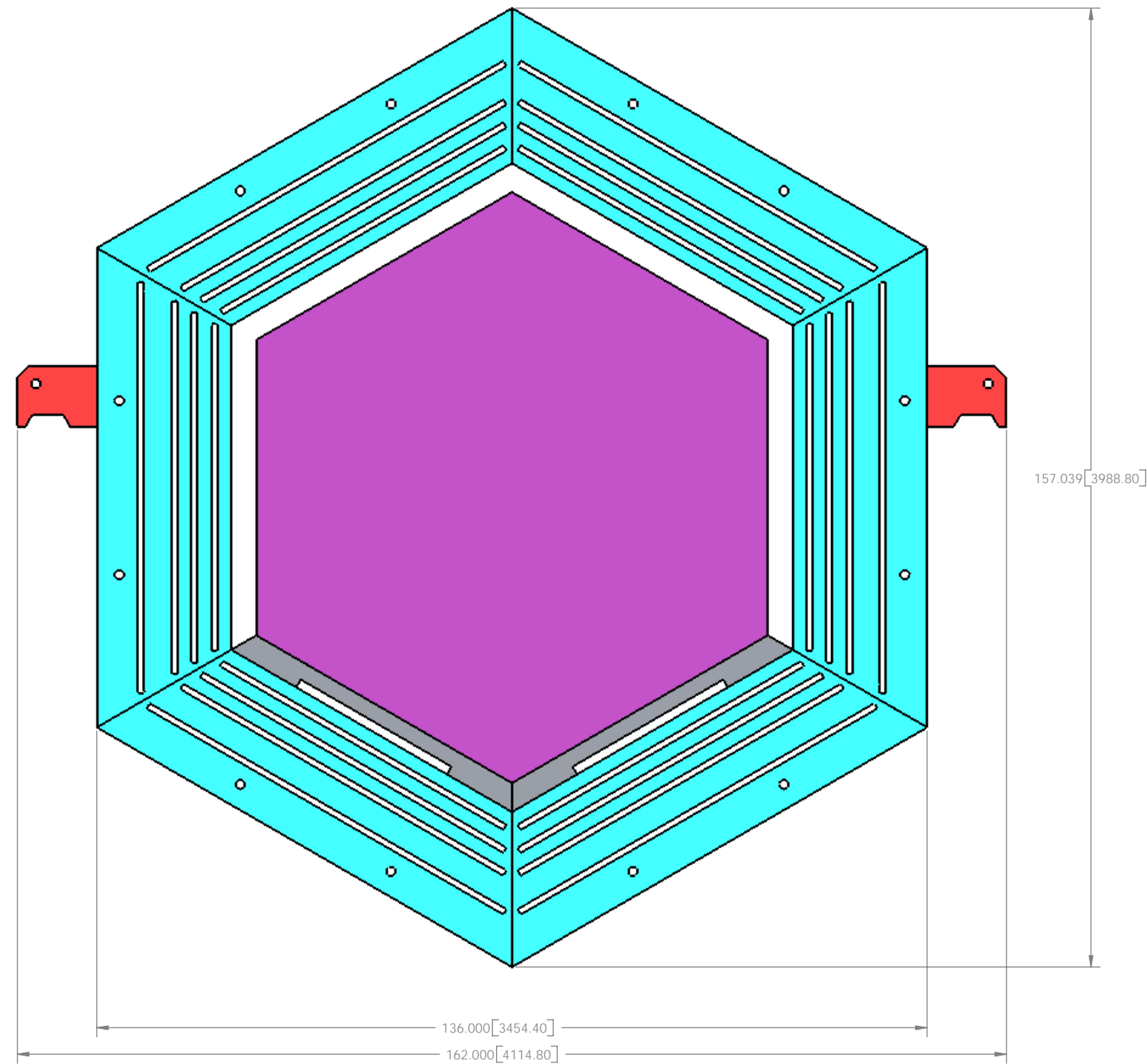
DRAWN	RSF	DATE	-
CHECKED	RSF	DATE	-
APPROVED	RSF	DATE	-

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SCALE: 1:12 SHEET: 1 OF 1 FILE: DETECTOR ASS'Y sht 072

WEIGHT: 3153 LBS

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPRV
-	-	INITIAL ISSUE	-	-



Parts List								
ITEM NO.	QTY	DET SHT	ASSY SHT	PART NUMBER	DESCRIPTION	MATERIAL	SIZE	WEIGHT
1	3			DSECAL MODULE WIDE ASSY	DSECAL MODULE WIDE ASSY	-	-	6536
2	2			DSECAL MODULE WIDE ASSY	DSECAL MODULE WIDE ASSY	-	-	6536

DOWNSTREAM ECAL ASSEMBLY

INCOMPLETE DRAWING

NOTE: DO NOT SCALE DRAWING !
ALL TOLERANCES UNLESS OTHERWISE SPECIFIED ARE

DIMENSIONS ARE IN:
 INCHES [mm] mm [IN]

x.xxx [x.x] ± .010 [.3]
 x.xxxx [x.xxx] ± .005 [.13]
 x.xxxxx [x.xxxx] ± .0005 [.013]
 xx/xx ± 1/32
 x' ± 1"

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TITLE: **MINERVA DETECTOR ASS'Y**

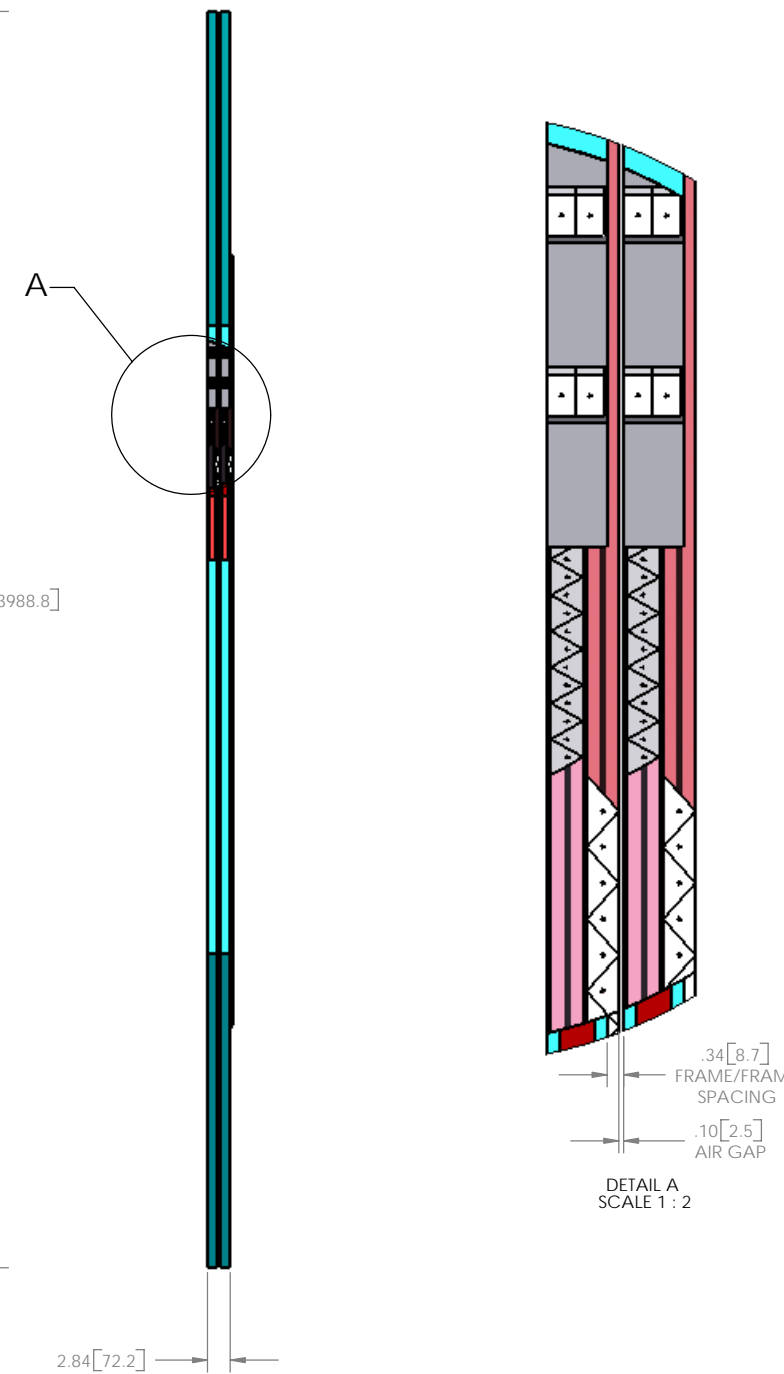
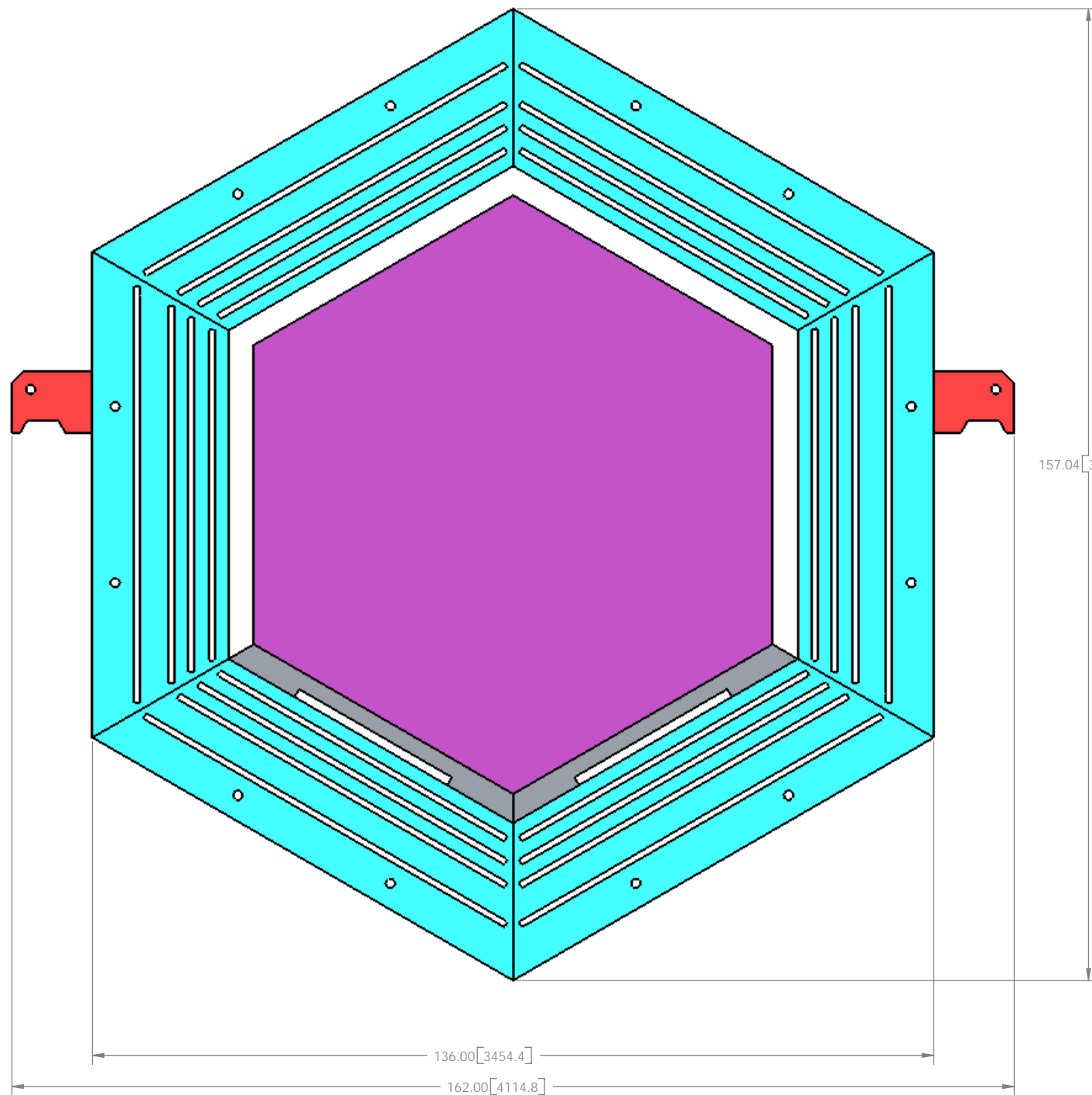
THIRD ANGLE PROJECTION

DRAWN	RSF	DATE	-
CHECKED	RSF	DATE	-
APPROVED	RSF	DATE	-

SCALE: 1:12 SHEET: 1 OF 1

WEIGHT: 34307 LBS FILE: DETECTOR ASS'Y sht 090

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPRV
-	-	INITIAL ISSUE	-	-



Parts List								
ITEM NO.	QTY	DET SHT	ASSY SHT	PART NUMBER	DESCRIPTION	MATERIAL	SIZE	WEIGHT
1	1			DSECAL PLANE WIDE ASSY	DSECAL PLANE WIDE ASSY	-	-	3471

DOWNSTREAM ECAL MODULE,
5 MODULES/ASSY

INCOMPLETE DRAWING

NOTE: DO NOT SCALE DRAWING !
ALL TOLERANCES UNLESS OTHERWISE SPECIFIED ARE

DIMENSIONS ARE IN:
 INCHES [mm] mm [IN]

x.xxx [x.x] ± .010 [.3]
 x.xxxx [x.xxx] ± .005 [.13]
 x.xxxxx [x.xxxx] ± .0005 [.013]
 xx/xx ± 1/32
 x' ± 1'

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TITLE: MINERVA DETECTOR ASS'Y

THIRD ANGLE PROJECTION

DRAWN	RSF	DATE	-
CHECKED	RSF	DATE	-
APPROVED	RSF	DATE	-

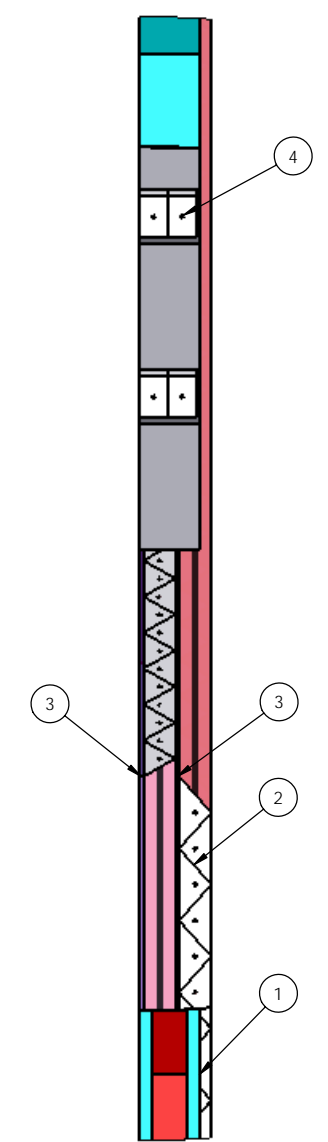
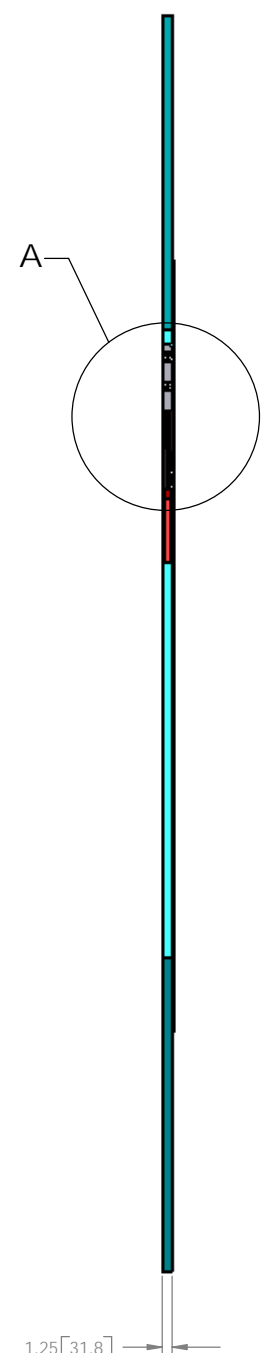
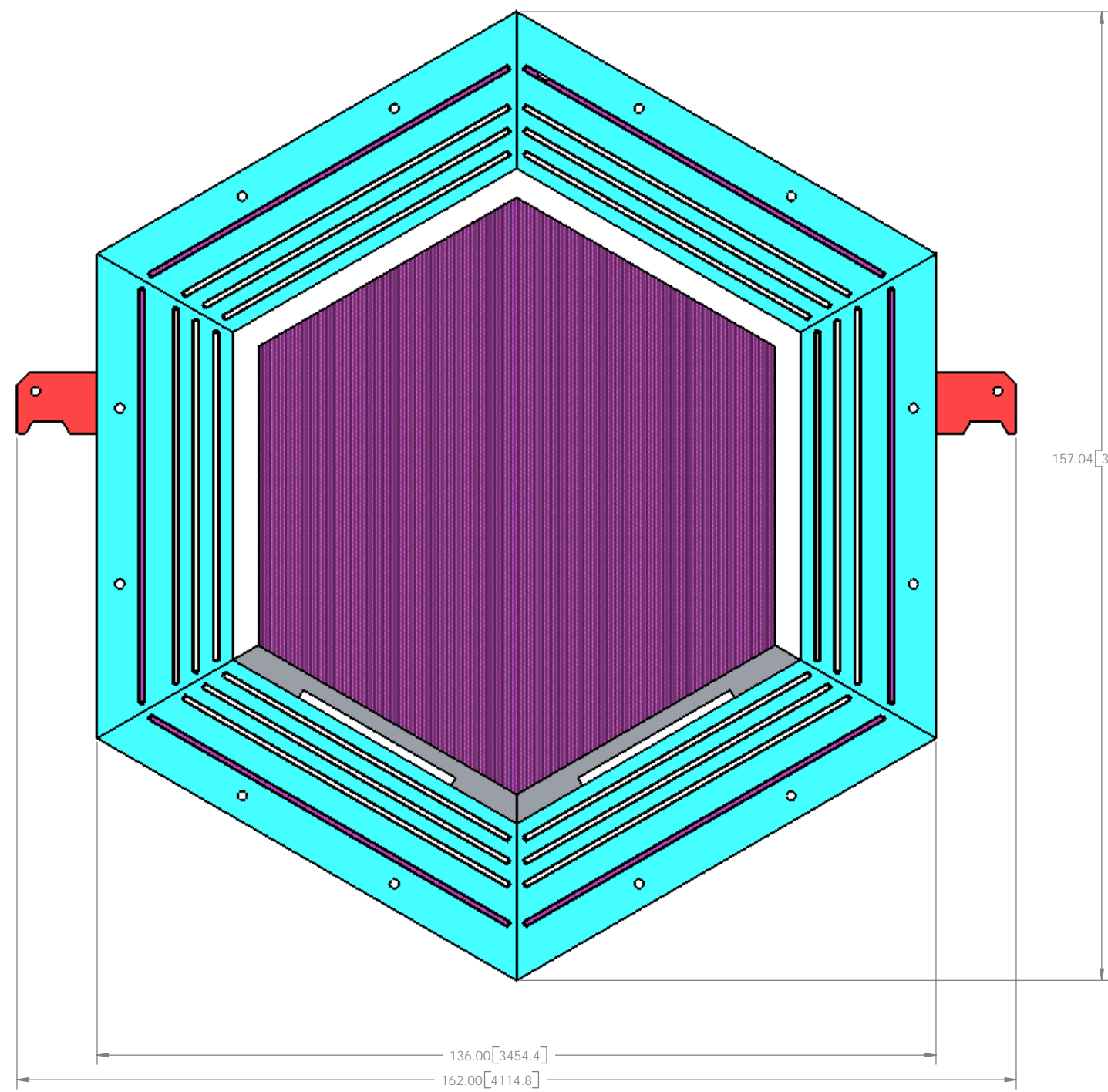
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WEIGHT: 6536 LBS

SCALE: 1:1 SHEET: 1 OF 1

FILE: DETECTOR ASSY sht 091

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPRV
-	-	INITIAL ISSUE	-	-



DOWNSTREAM ECAL MODULE,

INCOMPLETE DRAWING

Parts List								
ITEM NO.	QTY	DET_SHT	ASSY_SHT	PART NUMBER	DESCRIPTION	MATERIAL	SIZE	WEIGHT
1	1	-	150	FRAME NARROW	FRAME ASSY - NARROW	-	-	2747.68
2	2	-	160	SCINTILLATOR ASSY	SCINTILLATOR ASSY	-	-	153
3	2	-	-	Pb dSECAL	Pb dSECAL	PURE LEAD	.078 x 83.80 x 96.76	188.51
4	1	-	1	SCINTILLATOR-FRAME SLOTS ASSY	SCINTILLATOR-FRAME SEGMENTS ASSY	-	-	45

NOTE: DO NOT SCALE DRAWING !
ALL TOLERANCES UNLESS OTHERWISE SPECIFIED ARE

DIMENSIONS ARE IN:
 INCHES [mm] mm [IN]

x.xxx [x.x] ± .010 [.3]
 x.xxxx [x.xxx] ± .005 [.13]
 x.xxxxx [x.xxxx] ± .0005 [.013]
 xx/xx ± 1/32
 x' ± 1"

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TITLE: **MINERVA DETECTOR ASS'Y**

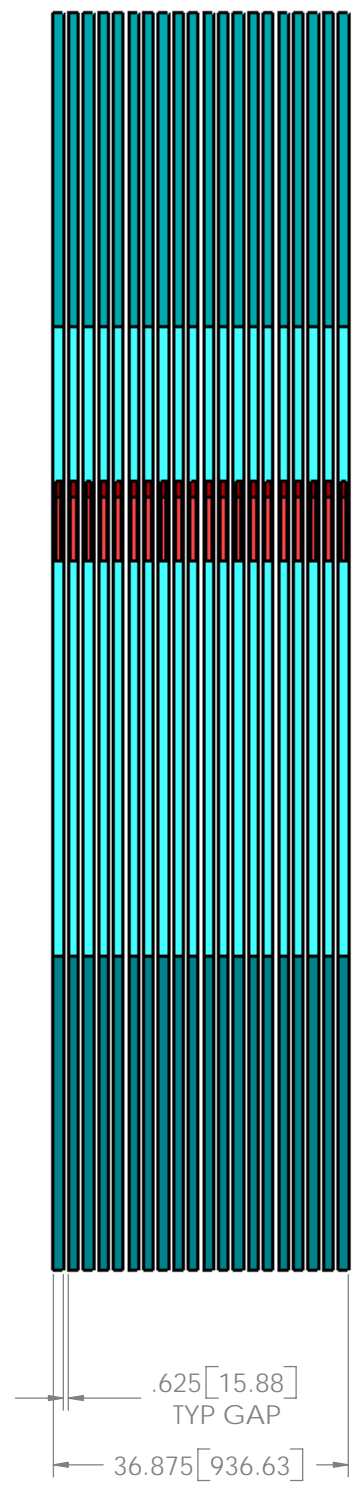
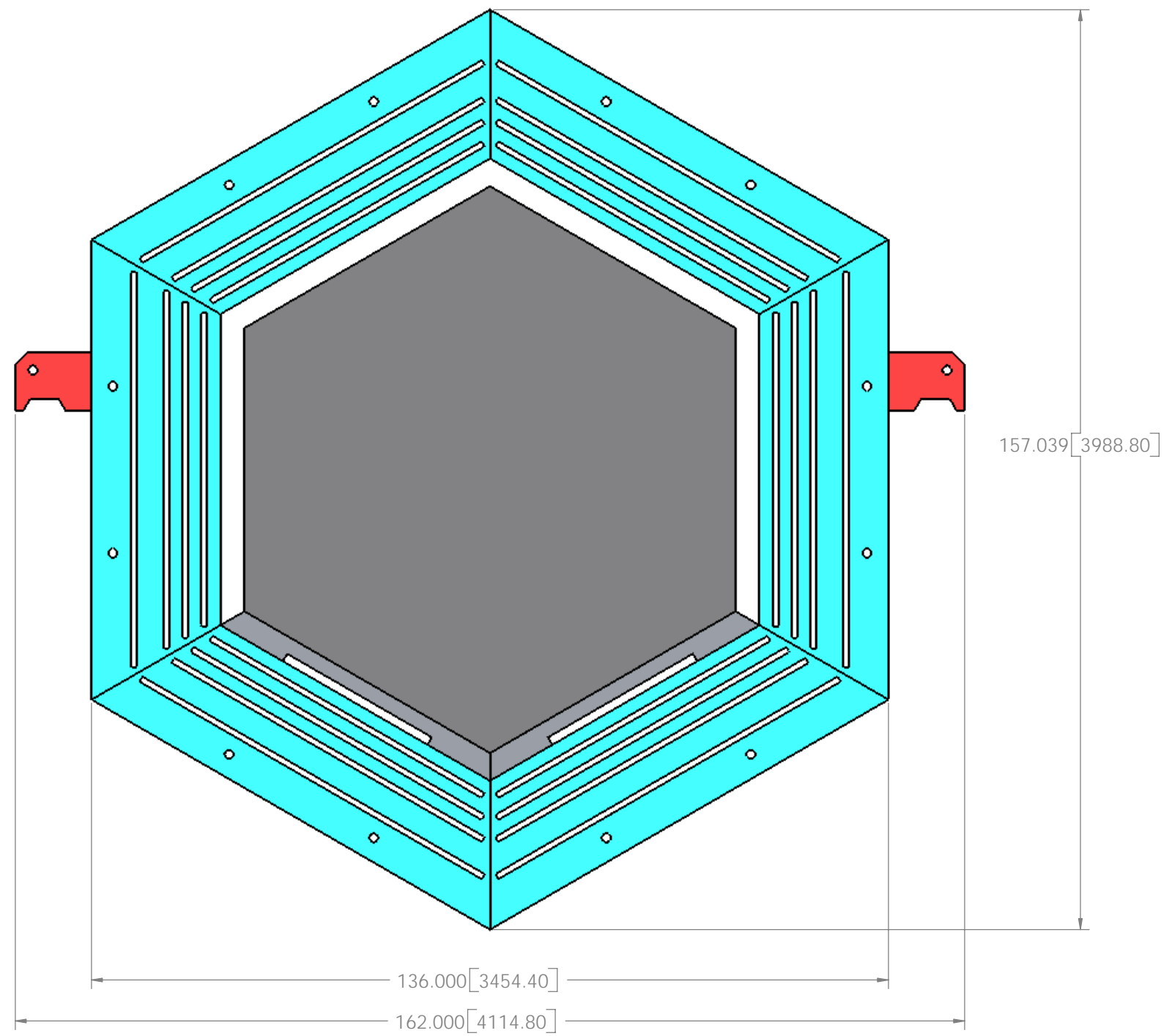
THIRD ANGLE PROJECTION

DRAWN	RSF	DATE	-
CHECKED	RSF	DATE	-
APPROVED	RSF	DATE	-

SCALE: 1:12 SHEET: 1 OF 1

WEIGHT: 3471 LBS FILE: DETECTOR ASS'Y sht 092

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPRV
-	-	INITIAL ISSUE	-	-



Parts List								
ITEM NO.	QTY	DET SHT	ASSY SHT	PART NUMBER	DESCRIPTION	MATERIAL	SIZE	WEIGHT
1	5			DSHCAL MODULE WIDE ASSY	DSHCAL MODULE WIDE ASSY	-	-	9273

DOWNSTREAM HCAL ASSEMBLY

INCOMPLETE DRAWING

NOTE: DO NOT SCALE DRAWING !
ALL TOLERANCES UNLESS OTHERWISE SPECIFIED ARE

DIMENSIONS ARE IN:
 INCHES [mm] mm [IN]

x.xxx [x.x] ± .010 [.3]
x.xxxx [x.xxx] ± .005 [.13]
x.xxxxx [x.xxxx] ± .0005 [.013]
xx/xx ± 1/32
x' ± 1"

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SIDNEY W. BARNES RESEARCH LABORATORY

TITLE: **MINERVA DETECTOR ASS'Y**

THIRD ANGLE PROJECTION

DRAWN	RSF	DATE	-
CHECKED	RSF	DATE	-
APPROVED	RSF	DATE	-

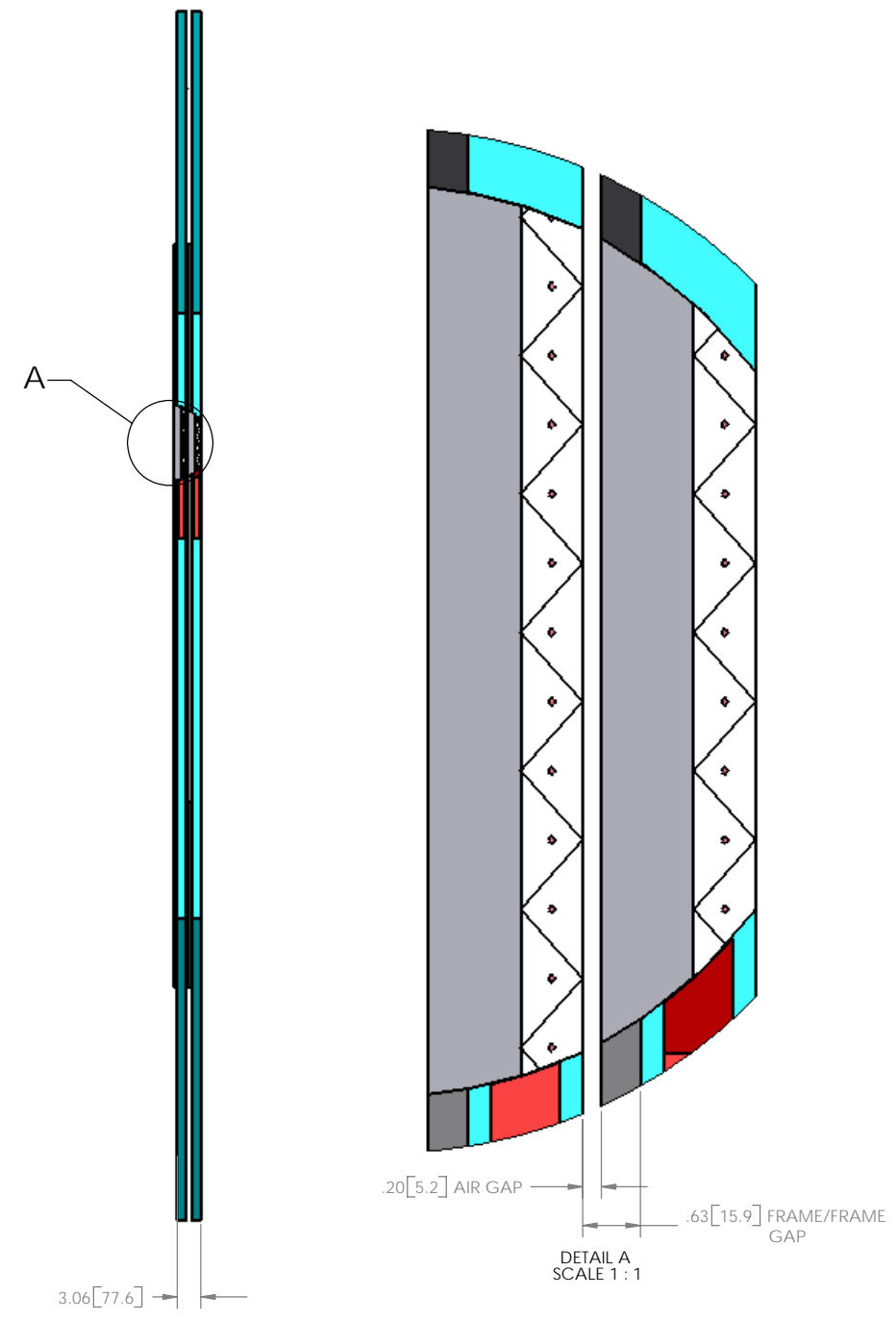
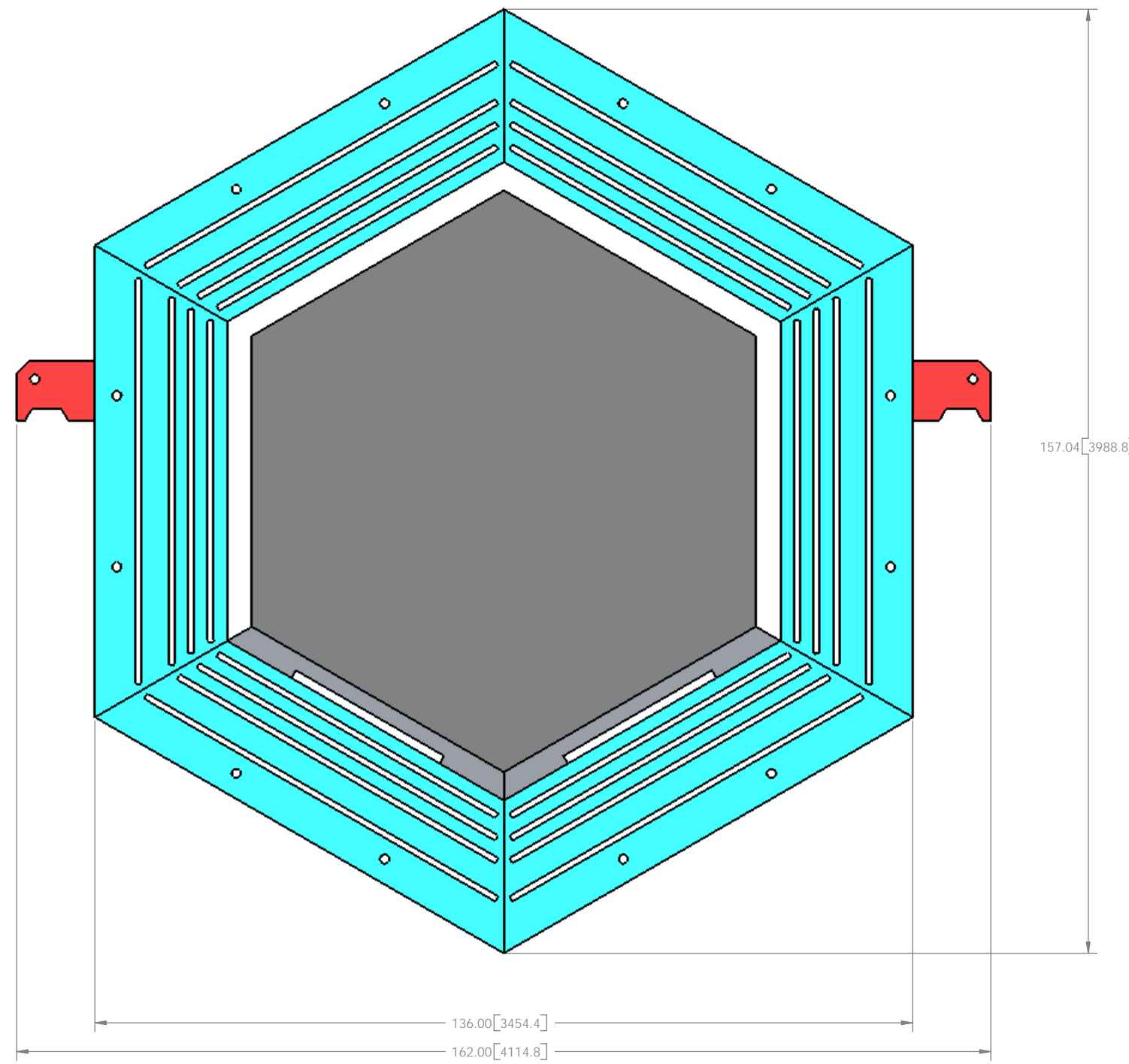
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WEIGHT: 92727 LBS

SCALE: 1:12 SHEET: 1 OF 1

FILE: DETECTOR ASS'Y sht 110

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPRV
-	-	INITIAL ISSUE	-	-



Parts List								
ITEM NO.	QTY.	DET SHT	ASSY SHT	PART NUMBER	DESCRIPTION	MATERIAL	SIZE	WEIGHT
1	1	-	112	DSHCAL PLANE WIDE ASSY	DSHCAL PLANE WIDE ASSY	-	-	4636

DOWNSTREAM HCAL MODULE
10 MODULES/ASSY

INCOMPLETE DRAWING

NOTE: DO NOT SCALE DRAWING !
ALL TOLERANCES UNLESS OTHERWISE SPECIFIED ARE

DIMENSIONS ARE IN:
 INCHES [mm] mm [IN]

x.xx [x] ± .010 [.3]
x.xxx [xxx] ± .005 [.13]
x.xxxx [xxxx] ± .0005 [.013]
xx/xx ± 1/32
x' ± 1'

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DEPT. OF PHYSICS AND ASTRONOMY
SIDNEY W. BARNES RESEARCH LABORATORY

TITLE: MINERVA DETECTOR ASS'Y

THIRD ANGLE PROJECTION

DRAWN	RSF	DATE	-
CHECKED	RSF	DATE	-
APPROVED	RSF	DATE	-

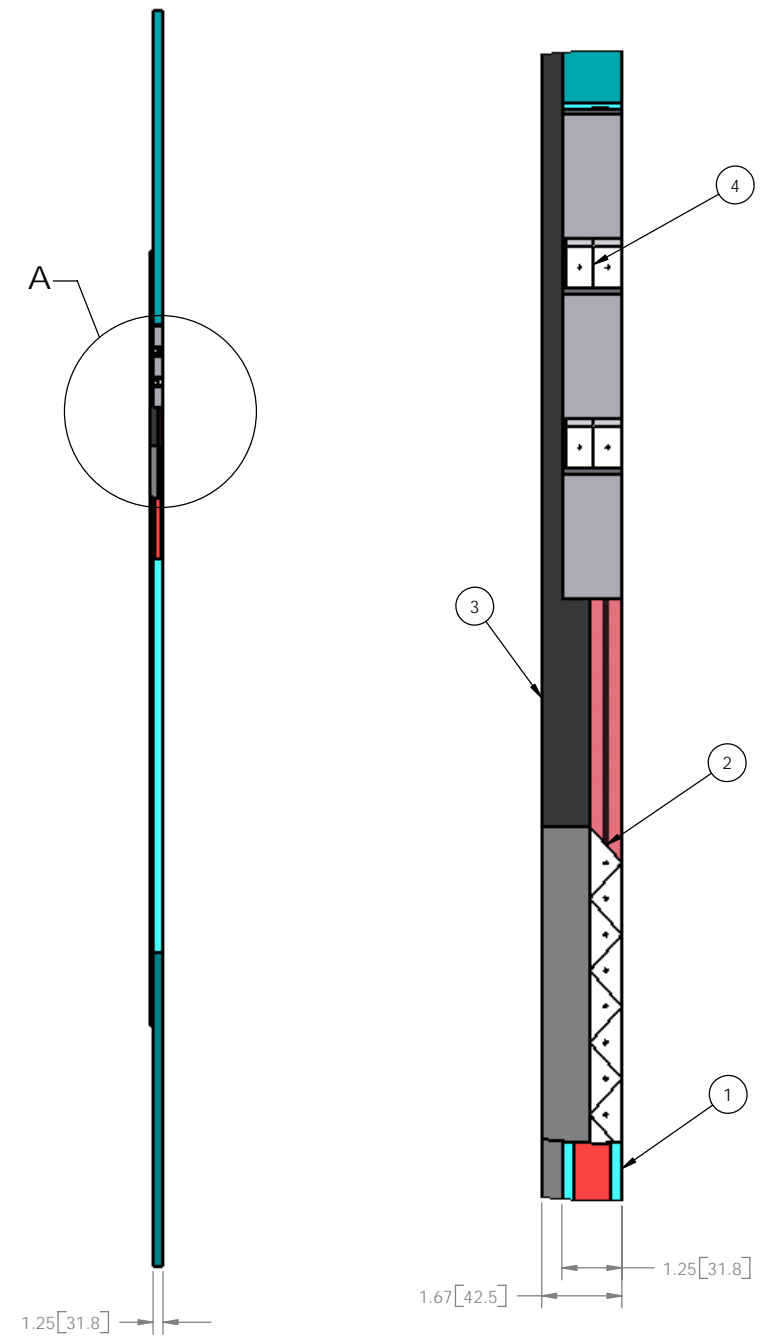
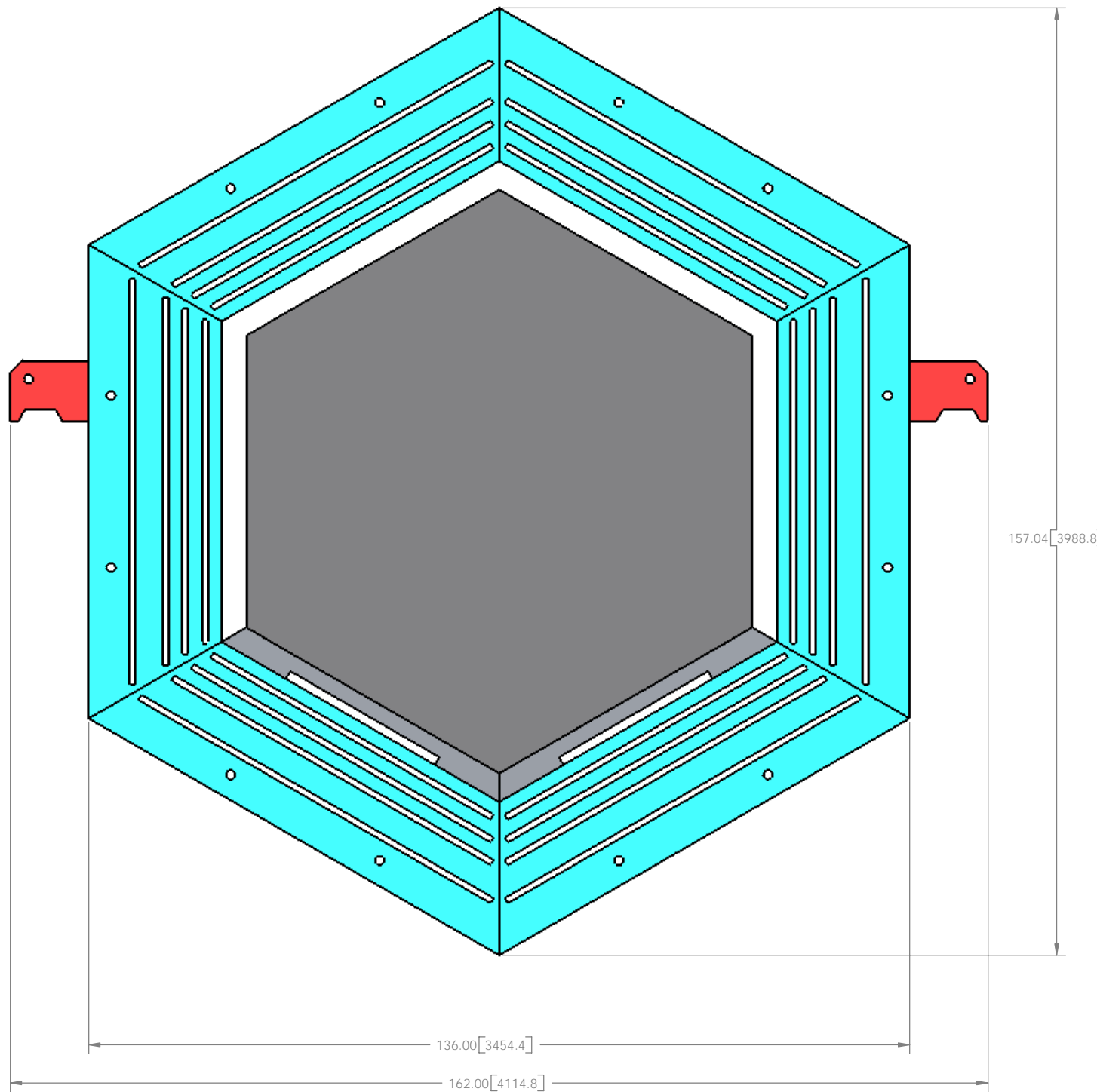
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WEIGHT: 9273 LBS

SCALE: 1:1 SHEET: 1 OF 1

FILE: DETECTOR ASSY sht 111

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPRV
-	-	INITIAL ISSUE	-	-



DOWNSTREAM HCAL PLANE

INCOMPLETE DRAWING

Parts List								
ITEM NO.	00-1 Default/ QTY.	DET_SHT	ASSY_SHT	PART NUMBER	DESCRIPTION	MATERIAL	SIZE	WEIGHT
1	1	152	-	FRAME WIDE	FRAME ASS'Y - WIDE	-	-	2747.68
2	1	-	160	SCINTILLATOR ASS'Y	SCINTILLATOR ASS'Y	-	-	153
3	1	-	-	STL DSHCAL	DSHCAL STEEL PLATE	HRS	1.00 x 83.80 x 96.76	1735.66
4	1	-	1	SCINTILLATOR-FRAME SLOTS ASS'Y	SCINTILLATOR-FRAME SEGMENTS ASS'Y	-	-	45

NOTE: DO NOT SCALE DRAWING !
ALL TOLERANCES UNLESS OTHERWISE SPECIFIED ARE

DIMENSIONS ARE IN:
 INCHES [mm] mm [IN]
 x.xx [x.x] ± .010 [.3]
 x.xxx [x.xxx] ± .005 [.13]
 x.xxxx [x.xxxx] ± .0005 [.013]
 xx/xx ± 1/32
 x' ± 1"

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TITLE: **MINERVA DETECTOR ASS'Y**

THIRD ANGLE PROJECTION

DRAWN	RSF	DATE	-
CHECKED	RSF	DATE	-
APPROVED	RSF	DATE	-

SCALE: 1:12 SHEET: 1 OF 1

WEIGHT: 4636 LBS FILE: DETECTOR ASS'Y sht 112

4

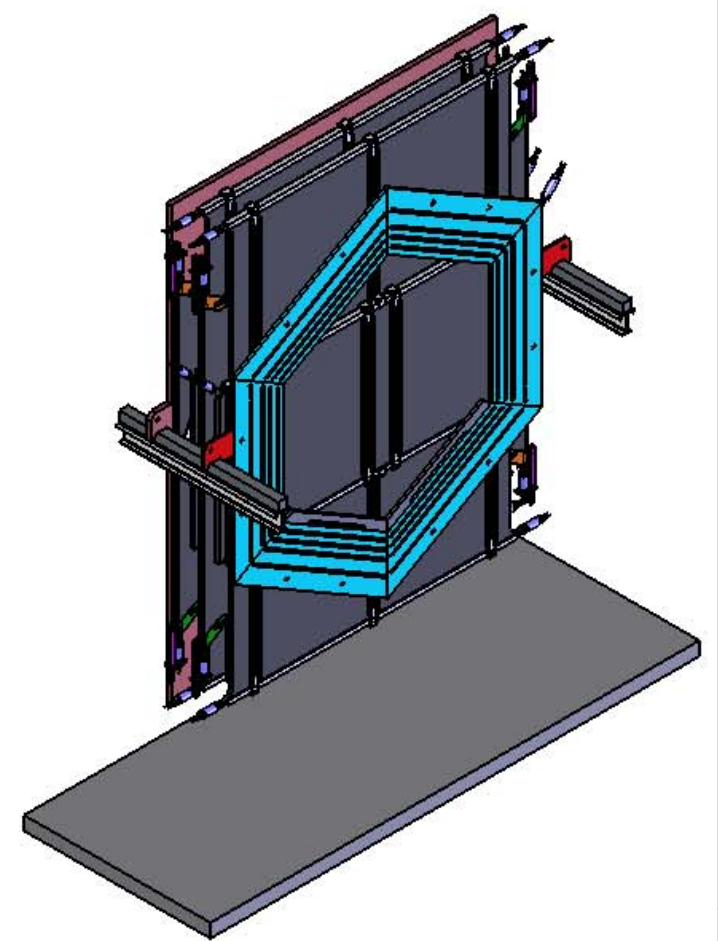
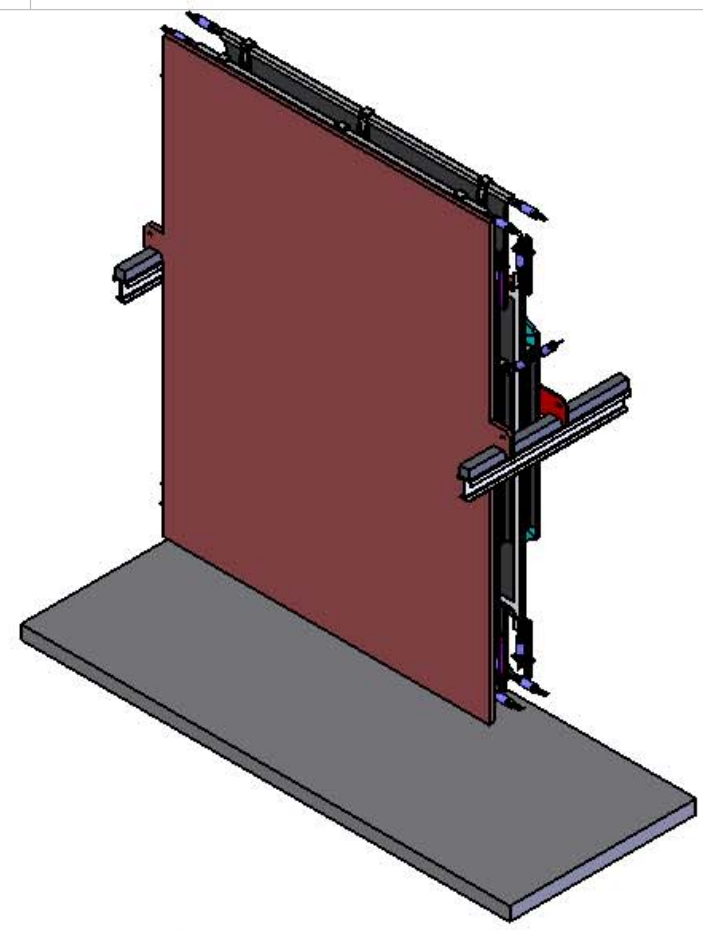
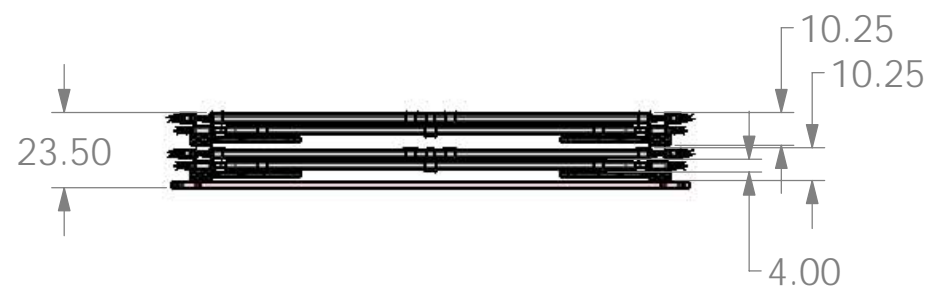
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2

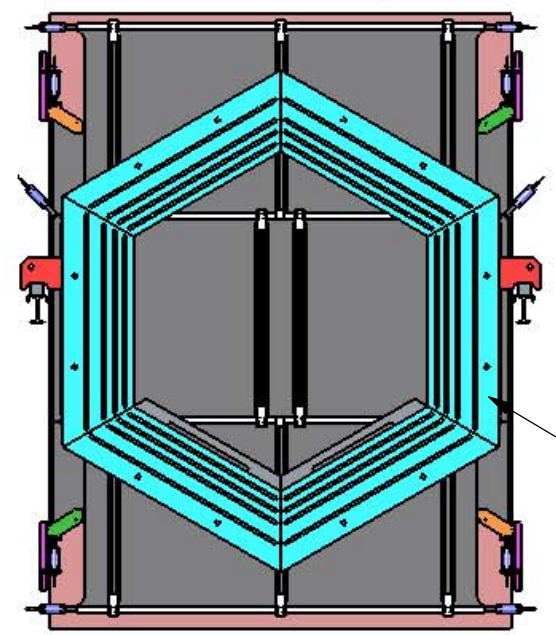
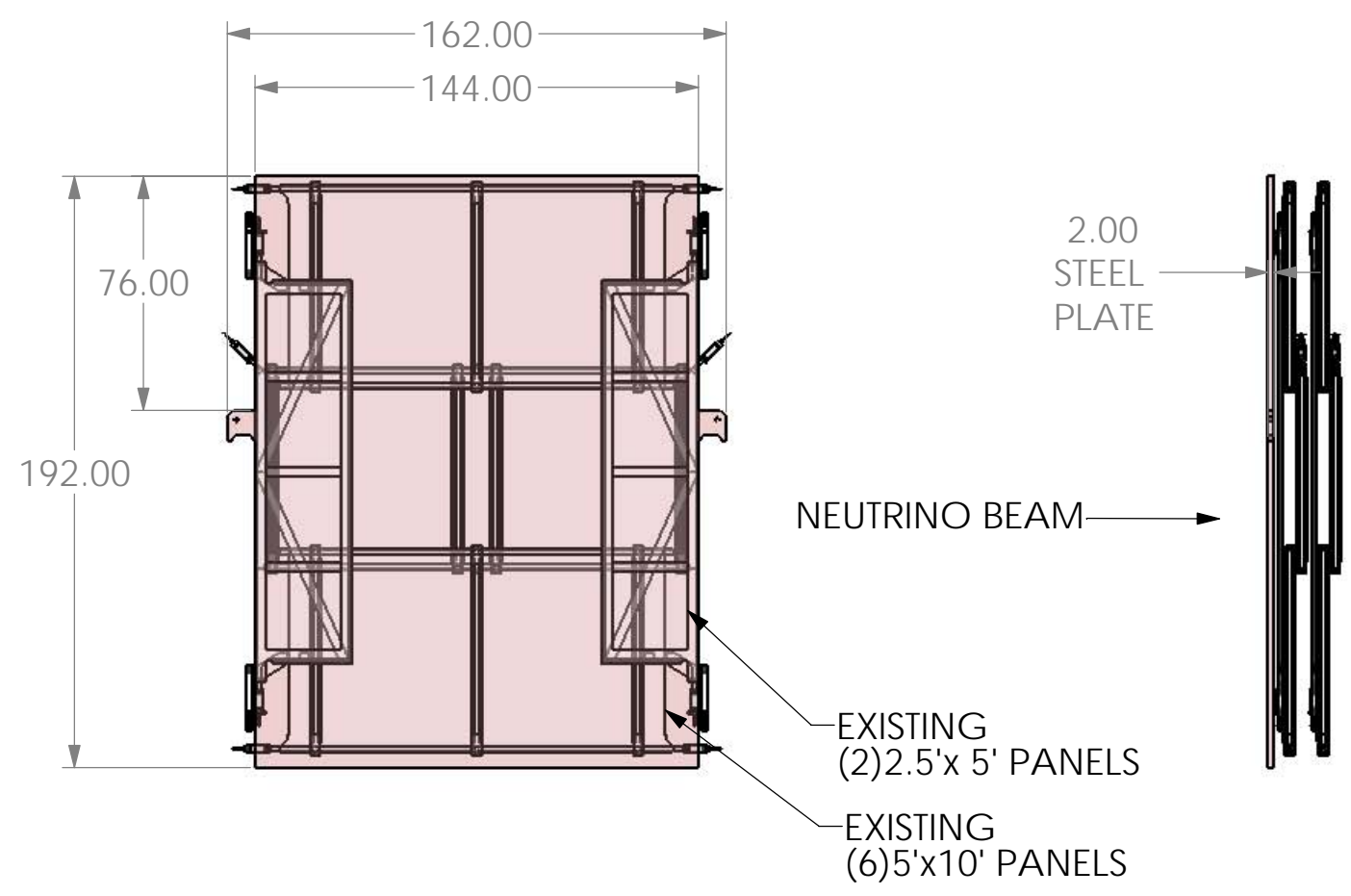
1

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPRV
-	-	INITIAL ISSUE	-	-

B



B



(1) FRAME SHOWN FOR SIZE & ORIENTATION REFERENCE

A

A

Parts List								
ITEM NO.	00 DEFAULT /QTY.	DET_SHT	ASSY_SHT	PART NUMBER	DESCRIPTION	MATERIAL	SIZE	WEIGHT
1	2	-	-	SCINT PANEL LARGE WALL	SCINT PANEL LARGE WALL	-	-	2224.672
2	1	-	-	STEEL VETO WALL	STEEL VETO WALL	HRS	2.00 x 144.00 x 192.00	15665.34
3	1	152	-	FRAME WIDE	FRAME ASSY - WIDE	-	-	2747.68
4	2	-	-	I-BEAM ASSY	I-BEAM ASSY	-	-	1556

NOTE: DO NOT SCALE DRAWING !
ALL TOLERANCES UNLESS OTHERWISE SPECIFIED ARE

DIMENSIONS ARE IN:
 INCHES [mm] mm [IN]
 x.xxx [x.x] ± .010 [.3]
 x.xxxx [x.xxx] ± .005 [.13]
 x.xxxxx [x.xxxx] ± .0005 [.013]
 xx/xx ± 1/32
 x' ± 1'

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TITLE: MINERVA DETECTOR ASS'Y

THIRD ANGLE PROJECTION

DRAWN	RSF	DATE	-
CHECKED	RSF	DATE	-
APPROVED	RSF	DATE	-

SCALE: 1:30 SHEET: 1 OF 1

INCOMPLETE DRAWING

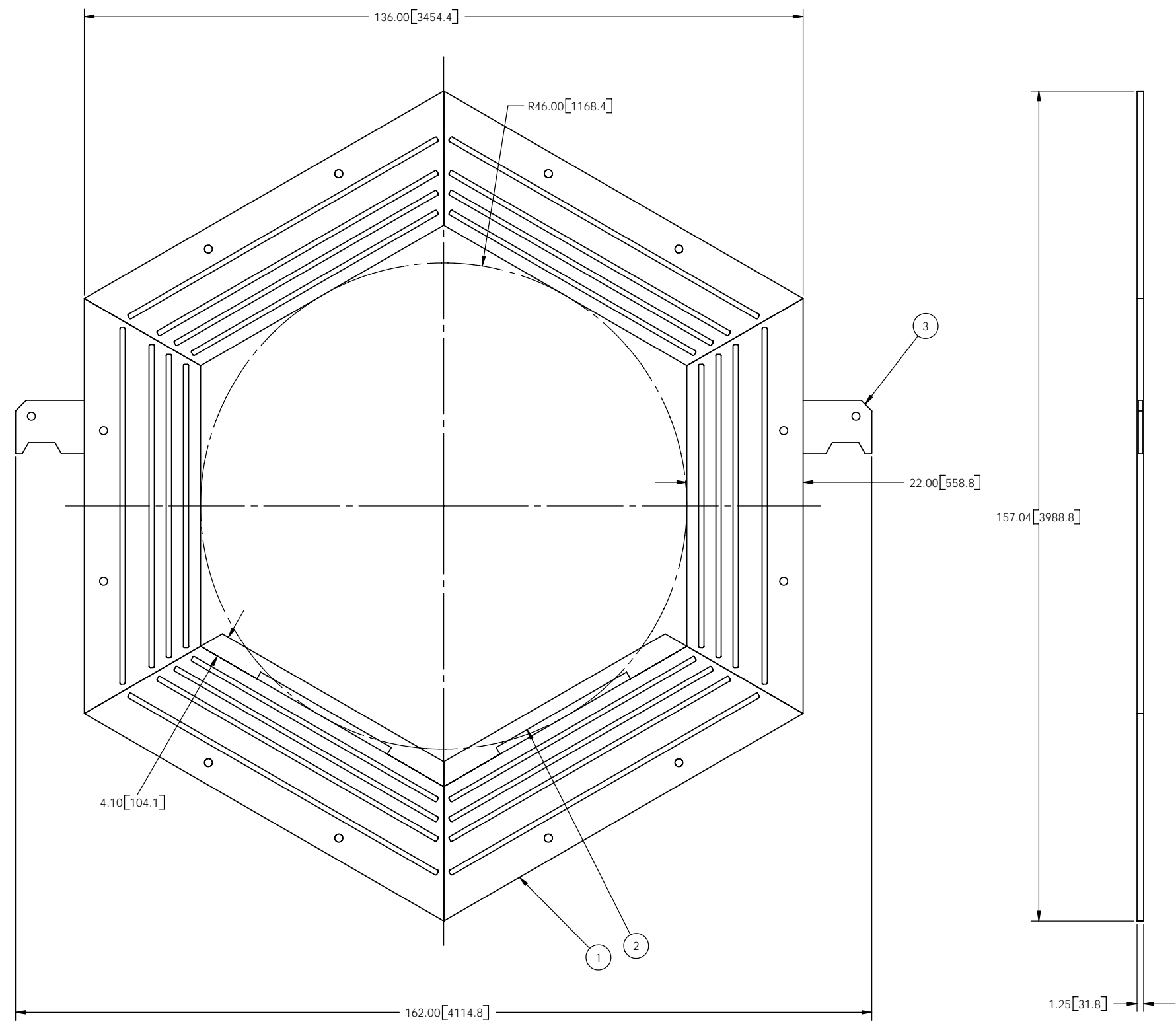
4

3

2

1

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPRV
-	-	INITIAL ISSUE	-	-



Parts List								
ITEM NO.	QTY	DET SHT	ASSY SHT	PART NUMBER	DESCRIPTION	MATERIAL	SIZE	WEIGHT
1	6	151	150	FRAME SEGMENT NARROW	FRAME SEGMENT NARROW	HRS	1.25 x 22.00 x 78.52	429.93
2	2	-	-	FRAME HOOK NARROW FRAME	FRAME HOOK, NARROW FRAME, 1ST POSITION	HRS	.75 x 10.00 x 32.00	24.08
3	2	-	-	SCINT SPACER LOWER	ALUM COIL SPACER	HRS	1.25 x 4.10 x 53.12	59.98

FRAME, NARROW, WELDED

INCOMPLETE DRAWING

NOTE: DO NOT SCALE DRAWING !
ALL TOLERANCES UNLESS OTHERWISE SPECIFIED ARE

DIMENSIONS ARE IN:
 □ INCHES [mm] □ mm [IN]
 x.xxx [x,x] ± .010 [.3]
 x.xxxx [x,xxx] ± .005 [.13]
 x.xxxxx [x,xxxx] ± .0005 [.013]
 xx/xx ± 1/32
 x' ± 1"

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TITLE: MINERVA DETECTOR ASS'Y

THIRD ANGLE PROJECTION

DRAWN	RSF	DATE	-
CHECKED	RSF	DATE	-
APPROVED	RSF	DATE	-

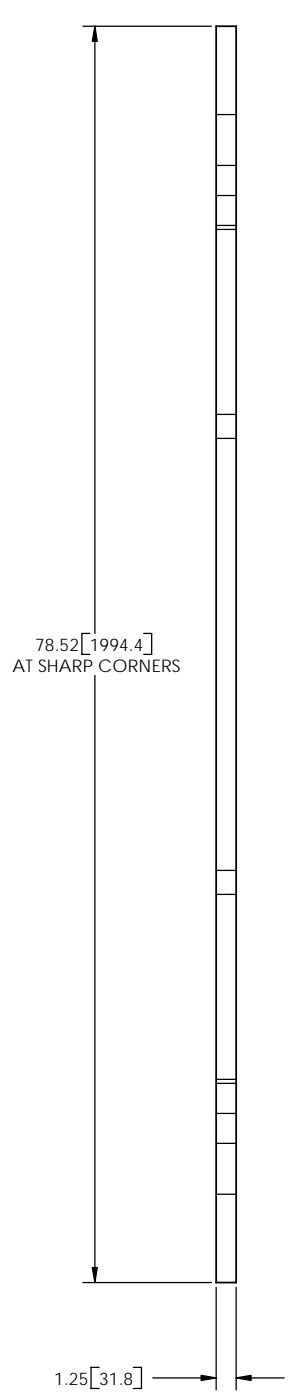
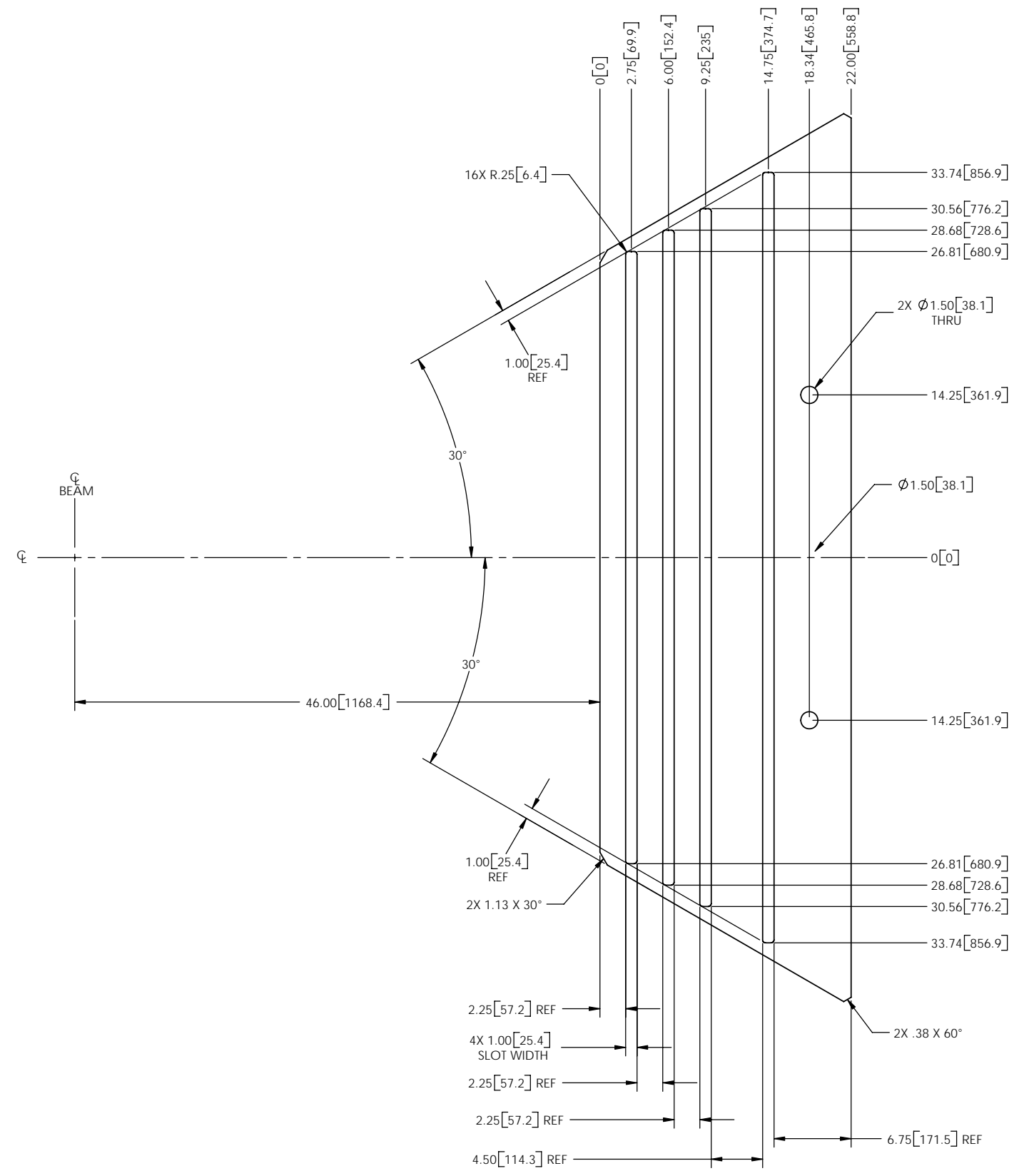
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SCALE: 1:12 SHEET: 1 OF 1

WEIGHT: 2747.68 LBS

FILE: DETECTOR ASSY sht 150

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPRV
-	-	INITIAL ISSUE	-	-



FRAME SEGMENT, NARROW

INCOMPLETE DRAWING

NAME: FRAME SEGMENT NARROW
 QTY: 288
 MAT'L: HRS
 HARD'N: -
 FINISH: -
 SIZE/TYPE: 1.25 x 22.00 x 78.52
 WEIGHT: 429.93

NOTE: DO NOT SCALE DRAWING!
 ALL TOLERANCES UNLESS OTHERWISE SPECIFIED ARE
 DIMENSIONS ARE IN:
 □ INCHES [mm] □ mm [IN]
 x.xx [x.x] ± .010 [.3]
 x.xxx [x.xxx] ± .005 [.13]
 x.xxxx [x.xxxx] ± .0005 [.013]
 xx/xx ± 1/32
 x' ± 1'

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TITLE: MINERVA DETECTOR ASS'Y

THIRD ANGLE PROJECTION

DRAWN	RSF	DATE	-
CHECKED	RSF	DATE	-
APPROVED	RSF	DATE	-

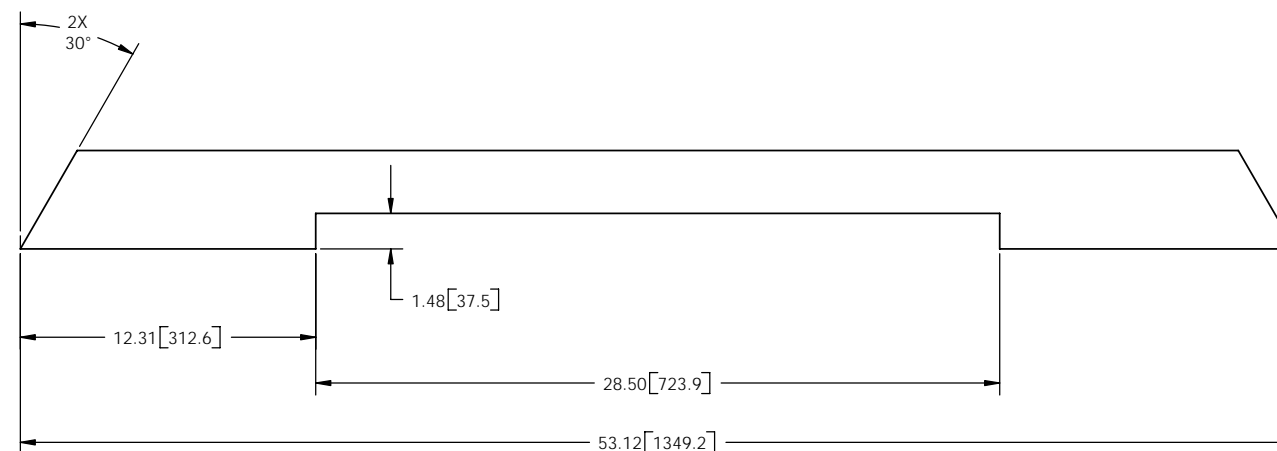
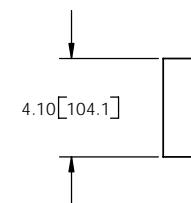
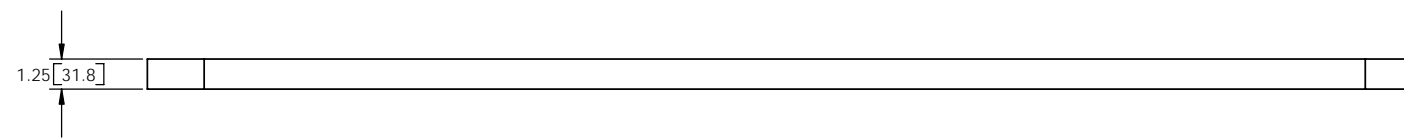
4

3

2

1

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPRV
-	-	INITIAL ISSUE	-	-



? NAME: SCINT SPACER LOWER
 QTY: 216
 MAT'L: STAINLESS STEEL
 HARD'N: -
 FINISH: -
 SIZE/TYPE: 1.25 x 4.10 x 53.12
 WEIGHT: 60

NOTE: DO NOT SCALE DRAWING !
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DIMENSIONS ARE IN:
 INCHES [mm] mm [IN]

x.xx [x,x] ± .010 [.3]
 x.xxx [x,xx] ± .005 [.13]
 x.xxxx [x,xxx] ± .0005 [.013]
 xx/xx ± 1/32
 x' ± 1"

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THIRD ANGLE PROJECTION

DRAWN	RSF	DATE	-
CHECKED	RSF	DATE	-
APPROVED	RSF	DATE	-

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WEIGHT: 60 LBS

SCALE: 1:4 SHEET 1 OF 1

FILE: DETECTOR ASS'Y sht 152

INCOMPLETE DRAWING

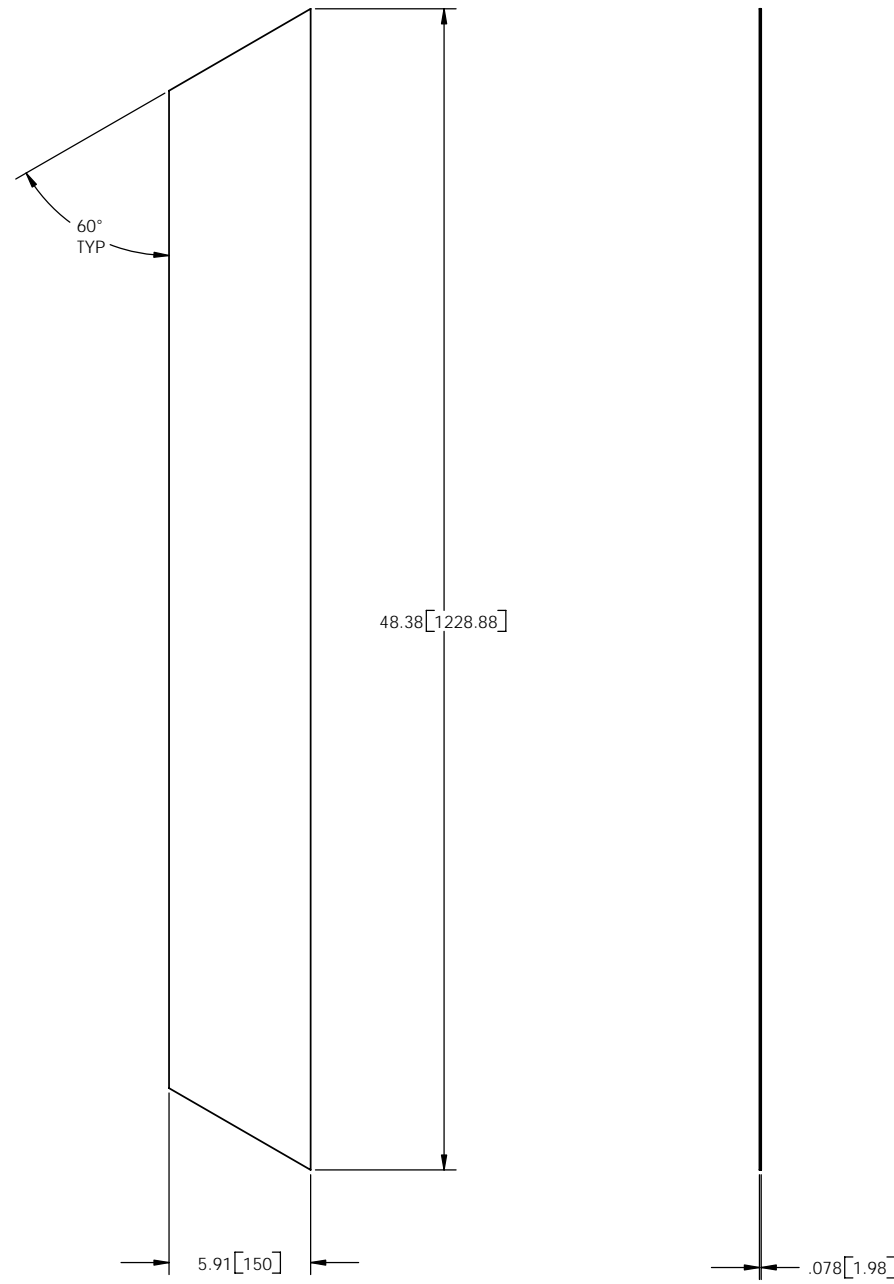
4

3

2

1

REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPRV
-	-	INITIAL ISSUE	-	-



Parts List								
ITEM NO.	QTY.	DET SHT	ASSY SHT	PART NUMBER	DESCRIPTION	MATERIAL	SIZE	WEIGHT
1	1			Pb SEGMENT NARROW EDGE	Pb SEGMENT NARROW EDGE	PURE LEAD	.078 x 5.91 x 48.38	8.23

LEAD PERIMETER SHIELD

INCOMPLETE DRAWING

NOTE: DO NOT SCALE DRAWING !
ALL TOLERANCES UNLESS OTHERWISE SPECIFIED ARE

DIMENSIONS ARE IN:
 INCHES [mm] mm [IN]
 x.xx [x,x] ± .010 [.3]
 x.xxx [x,xx] ± .005 [.13]
 x.xxxx [x,xxx] ± .0005 [.013]
 xx/xx ± 1/32
 x' ± 1"

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TITLE: MINERVA DETECTOR ASS'Y

THIRD ANGLE PROJECTION

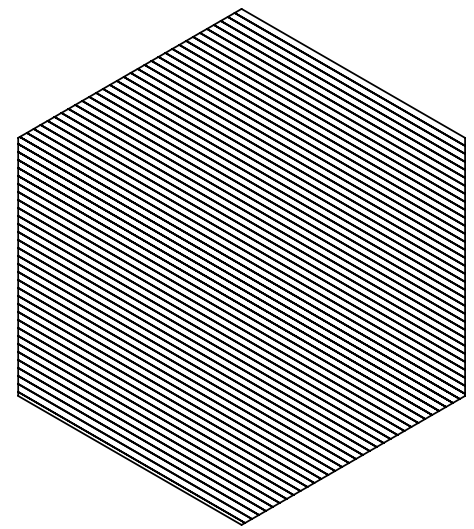
DRAWN	RSF	DATE	-
CHECKED	RSF	DATE	-
APPROVED	RSF	DATE	-

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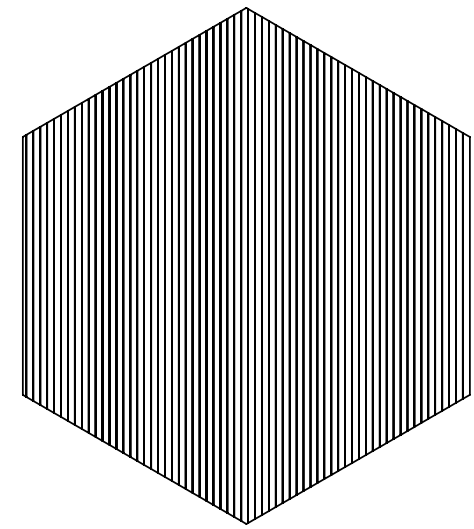
SCALE: 1:4 SHEET: 1 OF 1 WEIGHT: 8.23 LBS

FILE: DETECTOR ASS'Y sht 154

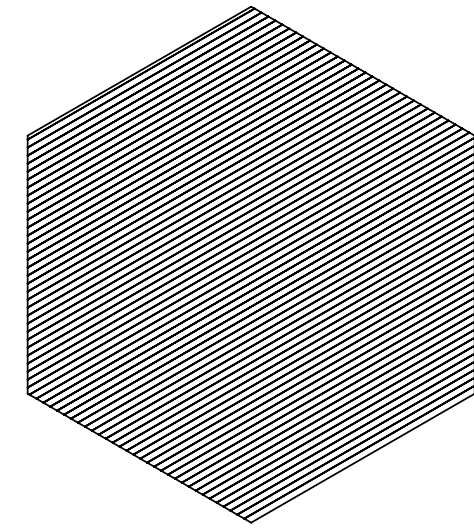
REVISIONS				
ZONE	REV	DESCRIPTION	DATE	APPRV
-	-	INITIAL ISSUE	-	-



"U" ORIENTATION

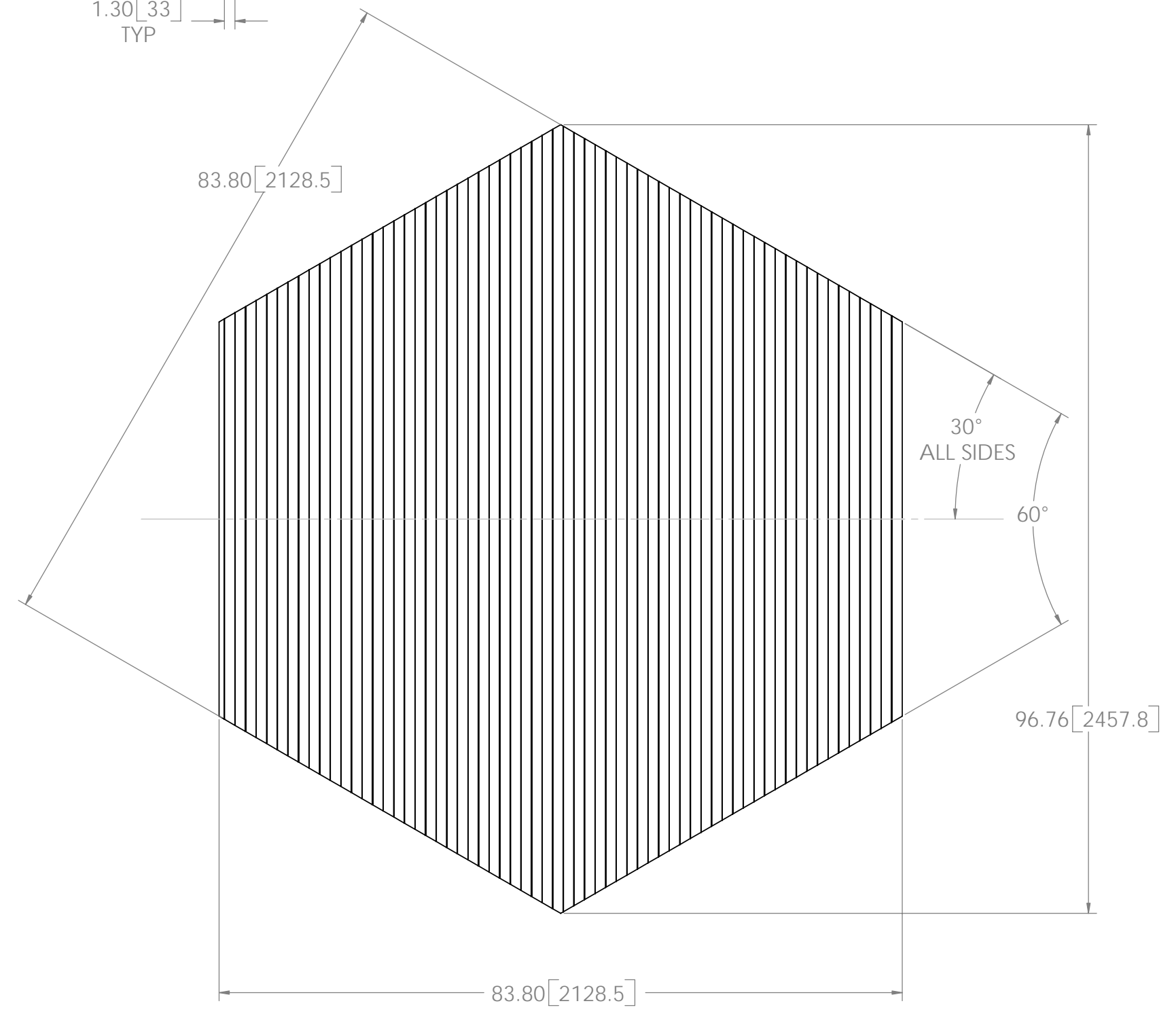
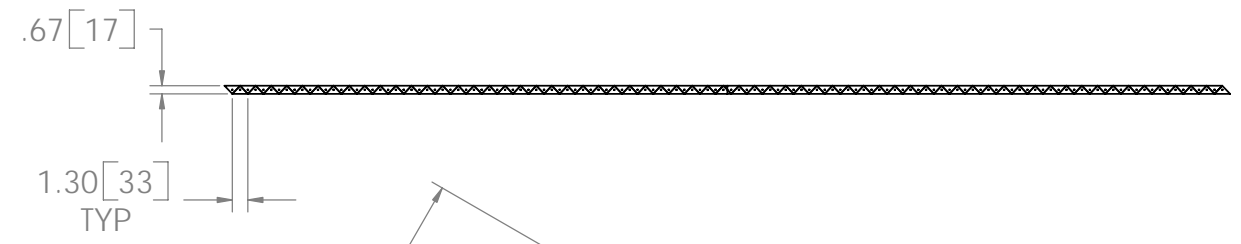


"X" ORIENTATION



"V" ORIENTATION

ORIENTATIONS USED PER CONSTRUCTION MATRIX



SCINTILLATOR PLANE

Parts List								
ITEM NO.	QTY.	DET SHT	ASSY SHT	PART NUMBER	DESCRIPTION	MATERIAL	SIZE	WEIGHT
1	128	-	-	SCINTILLATOR EXTRUSION	SCINTILLATOR EXTRUSION	POLYSTYRENE, DOW #PS663	.669 x 1.299 x 97.74	1.584

INCOMPLETE DRAWING

NOTE: DO NOT SCALE DRAWING !
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 INCHES [mm] mm [IN]

x.xxx [x.x] ± .010 [.3]
 x.xxxx [x.xxx] ± .005 [.13]
 x.xxxxx [x.xxxx] ± .0005 [.013]
 xx/xx ± 1/32
 x' ± 1"

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CHECKED	RSF	DATE	-
APPROVED	RSF	DATE	-

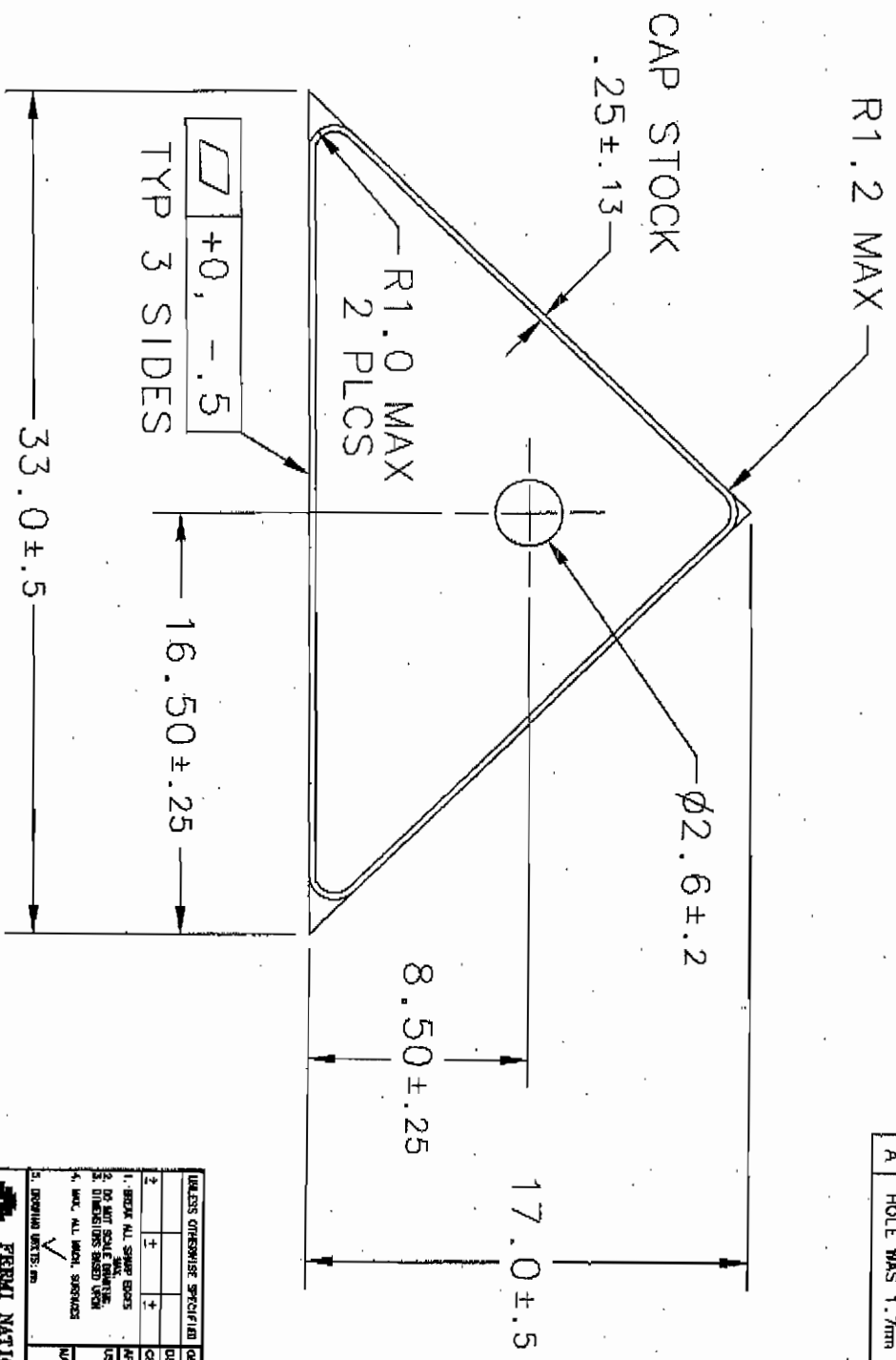
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SCALE: 1:8 SHEET: 1 OF 1

WEIGHT: 151 LBS

FILE: DETECTOR ASS'Y sht 160

REV	DESCRIPTION	BY	DATE
A	HOLE WAS 1.7mm	J. SCHLEPFER	08-24-2004




UNLESS OTHERWISE SPECIFIED	ORIGINATOR	DATE
1. DRAW ALL SHARP EDGES	C. SERRI TELLA	08-26-2003
2. DO NOT SCALE DIMENSIONS	J. SCHLEPFER	08-26-2003
3. DIMENSIONS BASED UPON	C. SERRI TELLA	13-08-2003
4. UNLESS ALL WORK SPECIFIED	A. PIA-D'AMICO	13-08-2003

1. DRAW ALL SHARP EDGES
2. DO NOT SCALE DIMENSIONS
3. DIMENSIONS BASED UPON
4. UNLESS ALL WORK SPECIFIED

1. DRAWING UNITS: mm

2. MATERIAL: SCINTILLATING POLYSTYRENE

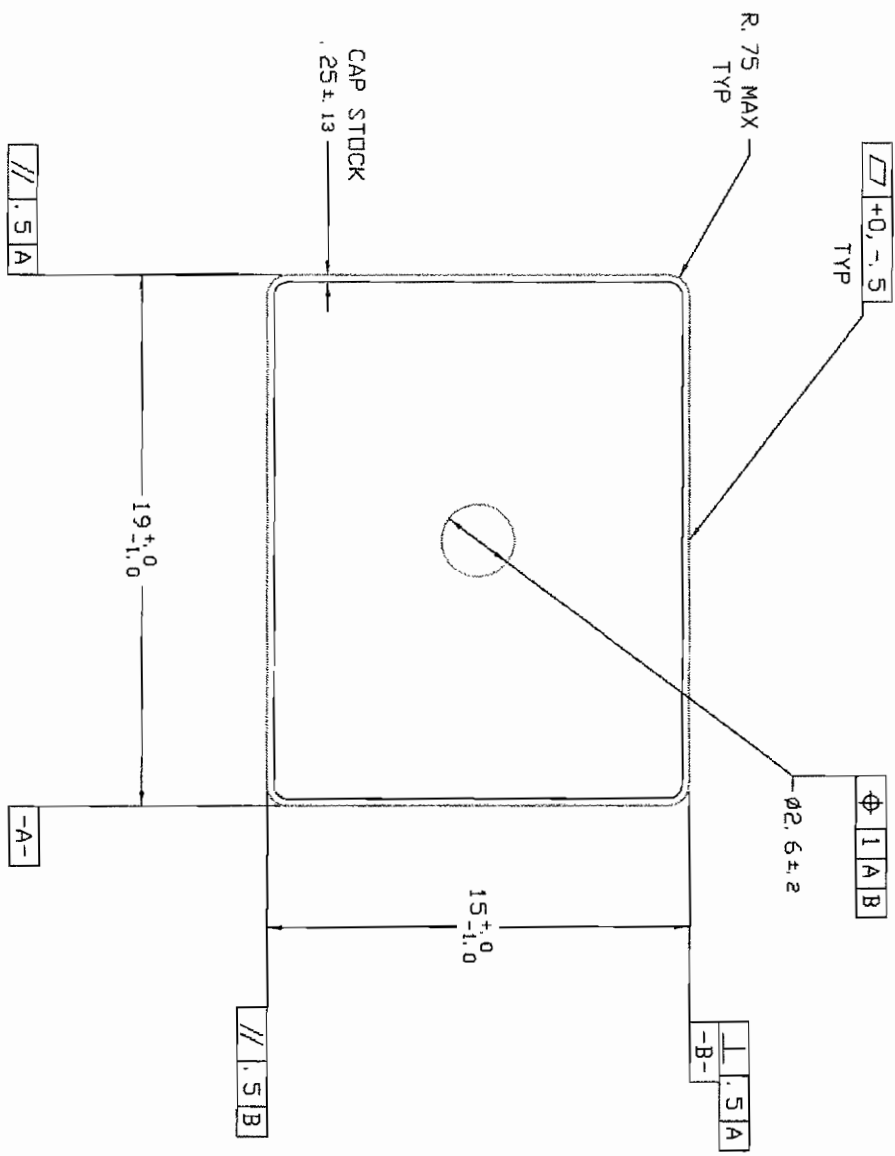

FERMI NATIONAL ACCELERATOR LABORATORY
 UNITED STATES DEPARTMENT OF ENERGY

PPD
 MINERVA
 TRIANGLE SHAPE

SCALE	DRAWING NUMBER	SHEET	REV
AS NOTED	9219.000-MB-241845	1 OF 1	A

CREATED WITH: Imastrim/Strive (GROUP: PPD/MECHANICAL DEPARTMENT)


REV	DESCRIPTION	DRAWN APPROVED	DATE
A	HOLE WAS 1.7mm	J. SCHELLEPFER	09-JUN-2006



UNLESS OTHERWISE SPECIFIED	ORIGINATOR	DATE
DRAWN	C. SERITTELLA	06-SEP-2005
CHECKED	J. SCHELLEPFER	06-SEP-2005
APPROVED	C. SERITTELLA	13-SEP-2005
USED ON	A. PUA-DUALMU	13-SEP-2005

1. BREAK ALL SHARP EDGES
 2. DO NOT SCALE DRAWING
 3. DIMENSIONS BASED UPON
 4. MAX. MIN. SURFACES
 5. DRAWING UNITS: mm

MATERIAL: SCINTILLATING POLYSTYRENE


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 UNITED STATES DEPARTMENT OF ENERGY

PPD
 MINERVA
 2 X 2 SHAPE

SCALE	DRAWING NUMBER	SHEET	REV
AS NOTED	9219, 000-MB-241843	1 OF 1	A

CREATED WITH: Ideas|InRoads | GROUP: PPD/MECHANICAL DEPARTMENT