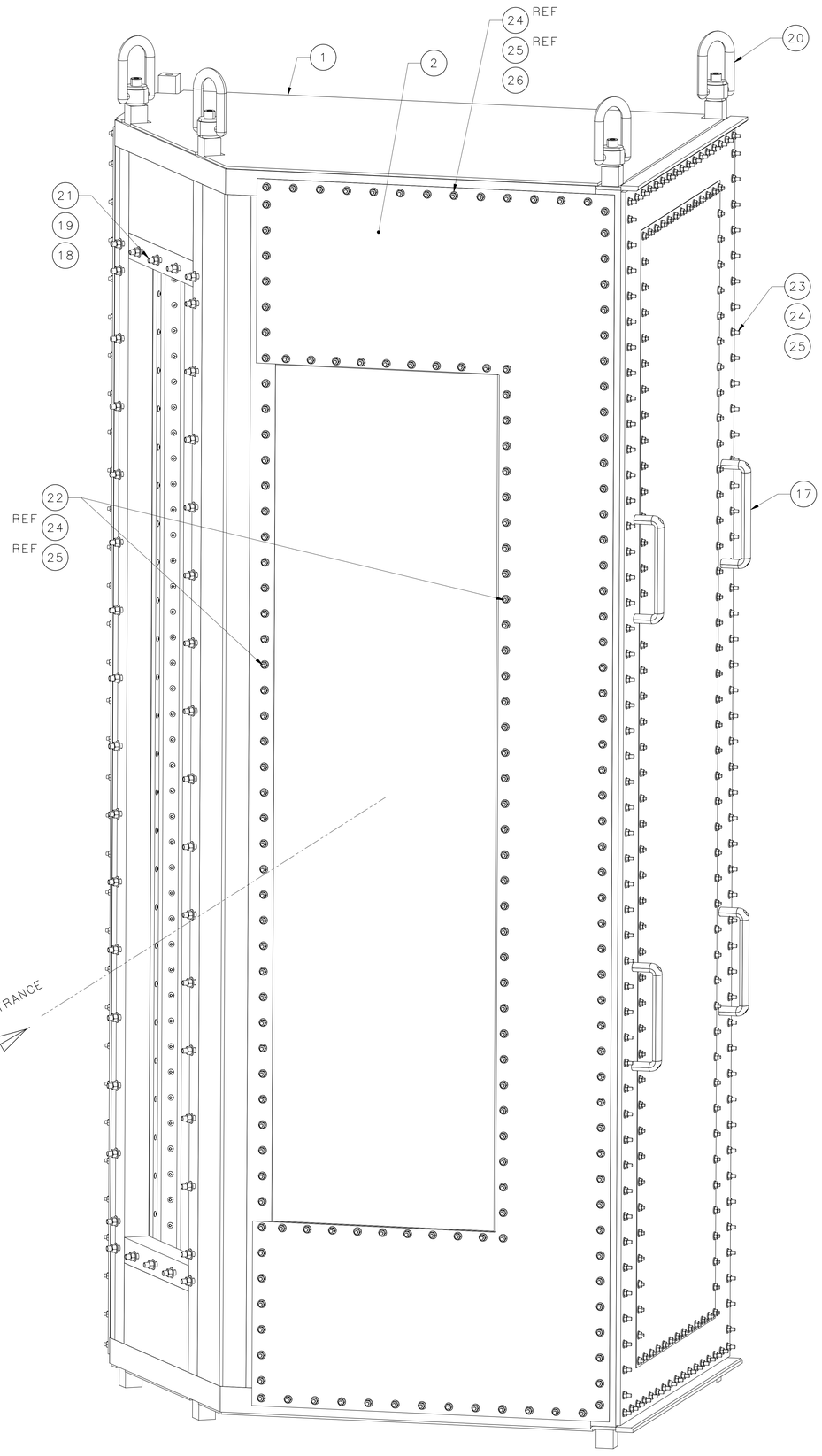
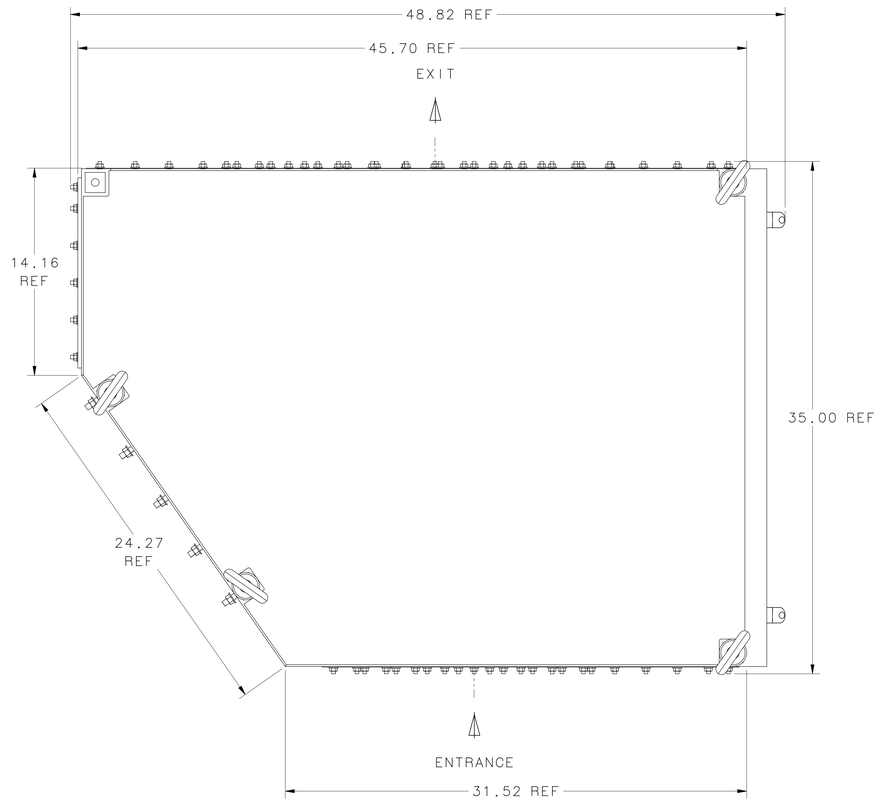
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



ISO VIEW 1-6A



TOP VIEW 1-4E

QTY REQD	ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	NOTES
220	26	MCMASTER-CARR 98164A213	BUTTON HD SOCKET CAP SCREW 1/4-20 UNC X 3/4 LG	STNLS STL 316	-
618	25	MMC 94804A029	NUT HEX 1/4-20 UNC	STNLS STL 316	-
619	24	MMC 91950A029	WASHER FLAT 1/4 RGLR 9/32 ID 5/8 OD	STNLS STL 316	-
128	23	MCMASTER-CARR 98164A226	BUTTON HD SOCKET CAP SCREW 1/4-20 UNC X 1-3/4 LG	STNLS STL 316	-
270	22	MCMASTER-CARR 98164A214	BUTTON HD SOCKET CAP SCREW 1/4-20 UNC X 1.0 LG	STNLS STL 316	-
40	21	MCMASTER-CARR 94288A326	FLG HEX HD 3/8-16 UNC X 3.0 LG	STNLS STL 304	-
4	20	MCMASTER-CARR 2994T65	HOIST RING, 2,500 LB CAP, 1/2-13 UNC THD	STEEL	-
40	19	MCMASTER CARR 94804A320	NUT HEX 3/8-16 UNC	STNLS STL 316	-
40	18	MC-MASTER CARR 91950A031	WASHER FLAT 3/8 RGLR 13/32 ID 13/16 OD	STNLS STL 316	-
1	17	A00000-01-01-3700	ACCESS DOOR ASSY	-	-
2	16	A00000-01-01-2516	FLAT SST 1 HOLE ENTR END	STNLS STL 316	SH 4
2	15	A00000-01-01-2515	FLAT SST 1 HOLE EXIT END	STNLS STL 316	SH 4
2	14	A00000-01-01-2514	FLAT SST 3 HOLE BETW CHAN	STNLS STL 316	SH 4
6	13	A00000-01-01-2513	FLAT SST 2 HOLE BETW CHAN	STNLS STL 316	SH 4
8	12	A00000-01-01-2512	FLAT SST 1 HOLE INS CHAN	STNLS STL 316	SH 4
2	11	A00000-01-01-2511	FLAT SST VERT FOR ACCESS	STNLS STL 316	SH 4
2	10	A00000-01-01-2510	FLAT EXIT WDO HORIZ	G-10 FIBERGLASS	SH 5
2	9	A00000-01-01-2509	FLAT EXIT WDO VERT	G-10 FIBERGLASS	SH 5
2	8	A00000-01-01-2508	FLAT ENTR WDO HORIZ	G-10 FIBERGLASS	SH 4
2	7	A00000-01-01-2507	FLAT ENTR WDO VERT	G-10 FIBERGLASS	SH 4
1	6	A00000-01-01-2506	AL SHEET 1/4 THK RH SIDE	ALUMINUM 6061-T6	SH 3
1	5	A00000-01-01-2505	WINDOW EXIT .005 IN THK	ALUMINUM 6061-T6	
1	4	A00000-01-01-2504	WINDOW ENTR .005 IN THK	ALUMINUM 6061-T6	-
1	3	A00000-01-01-2503	AL SHEET .040 EXIT	ALUMINUM 6061-T6	SH 2
1	2	A00000-01-01-2502	AL SHEET .040 ENTRANCE	ALUMINUM 6061-T6	-
1	1	A00000-01-01-2501	GRINCH STRUCTURAL WLDMT	STEEL A36	-

PARTS LIST

NOTES:
1. WEIGHT IS APPROXIMATELY 965 LBS.
2. THIS MAIN BOX ASSY IS ORIENTED FOR THE BEAM LEFT CONFIGURATION.

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

DIM & TOL PER ASME Y14.5. UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE: FRACTIONS ± N/A; DECIMAL .X ± .1, .XX ± .01, .XXX ± .005; ANGLES ± .50°

THIRD ANGLE PROJECTION

MATERIAL: SEE PARTS LIST

FINISH: MACHINED SURFACES 125 UNLESS OTHERWISE NOTED. DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DRAWN: S. ESP; DATE: 26 MAR 15

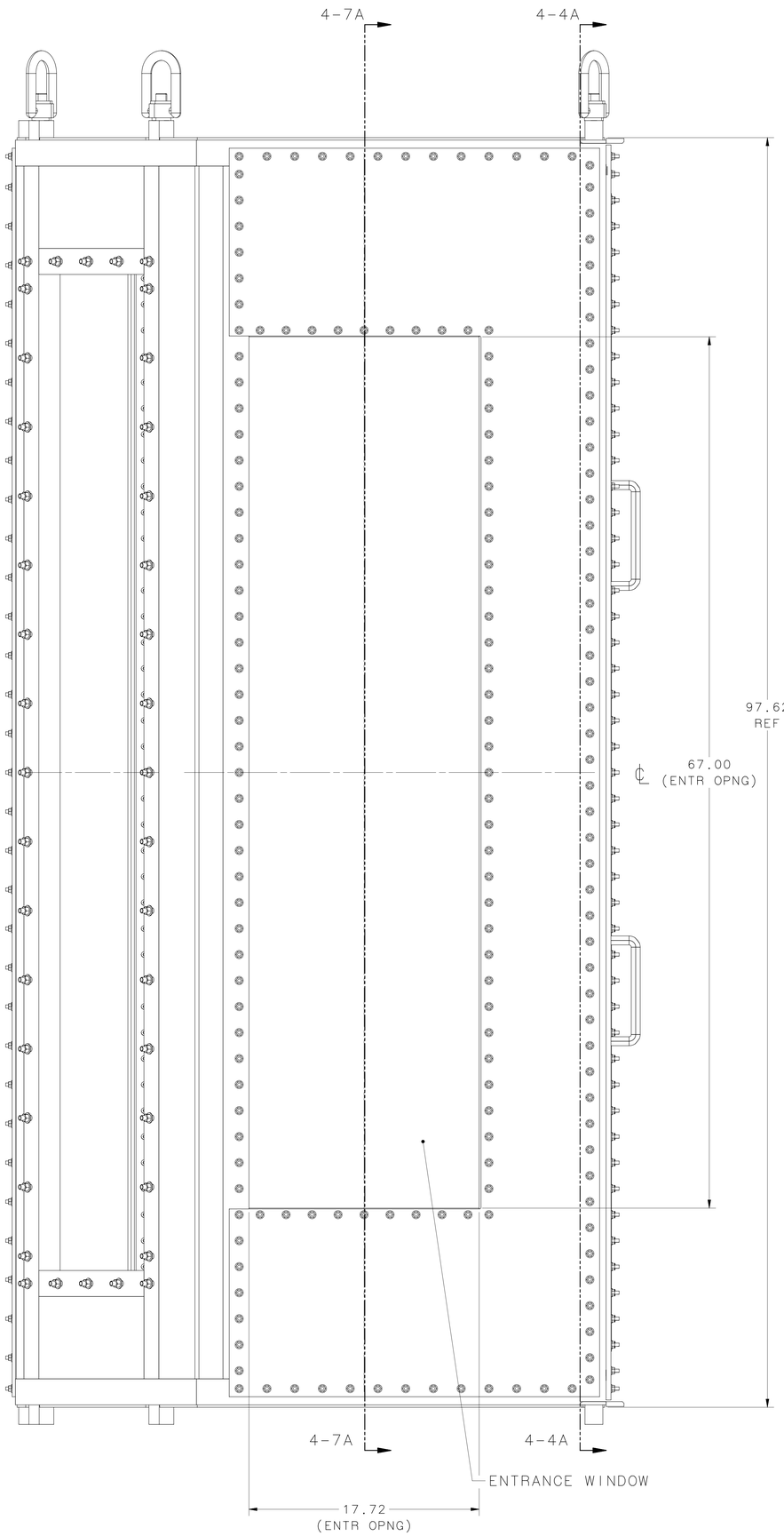
United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia

HALL A
GENL EQUIPMENT - PARTICLE ID
GRINCH DETECTOR ASSEMBLY
GRINCH MAIN BOX ASSY

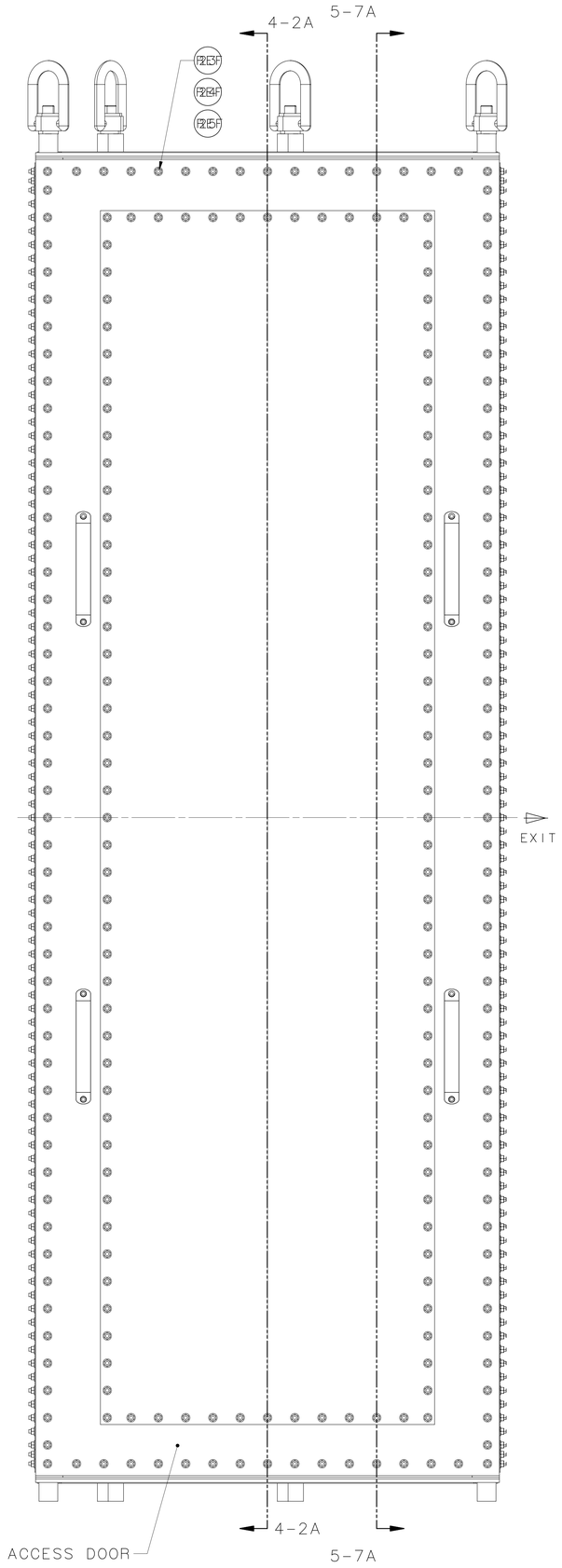
SIZE E; DWG. NO A00000-01-01-2500; REV. —

SCALE 1:4; USED ON ASSY NO. A00000-01-01-3200; SHEET 1 OF 5

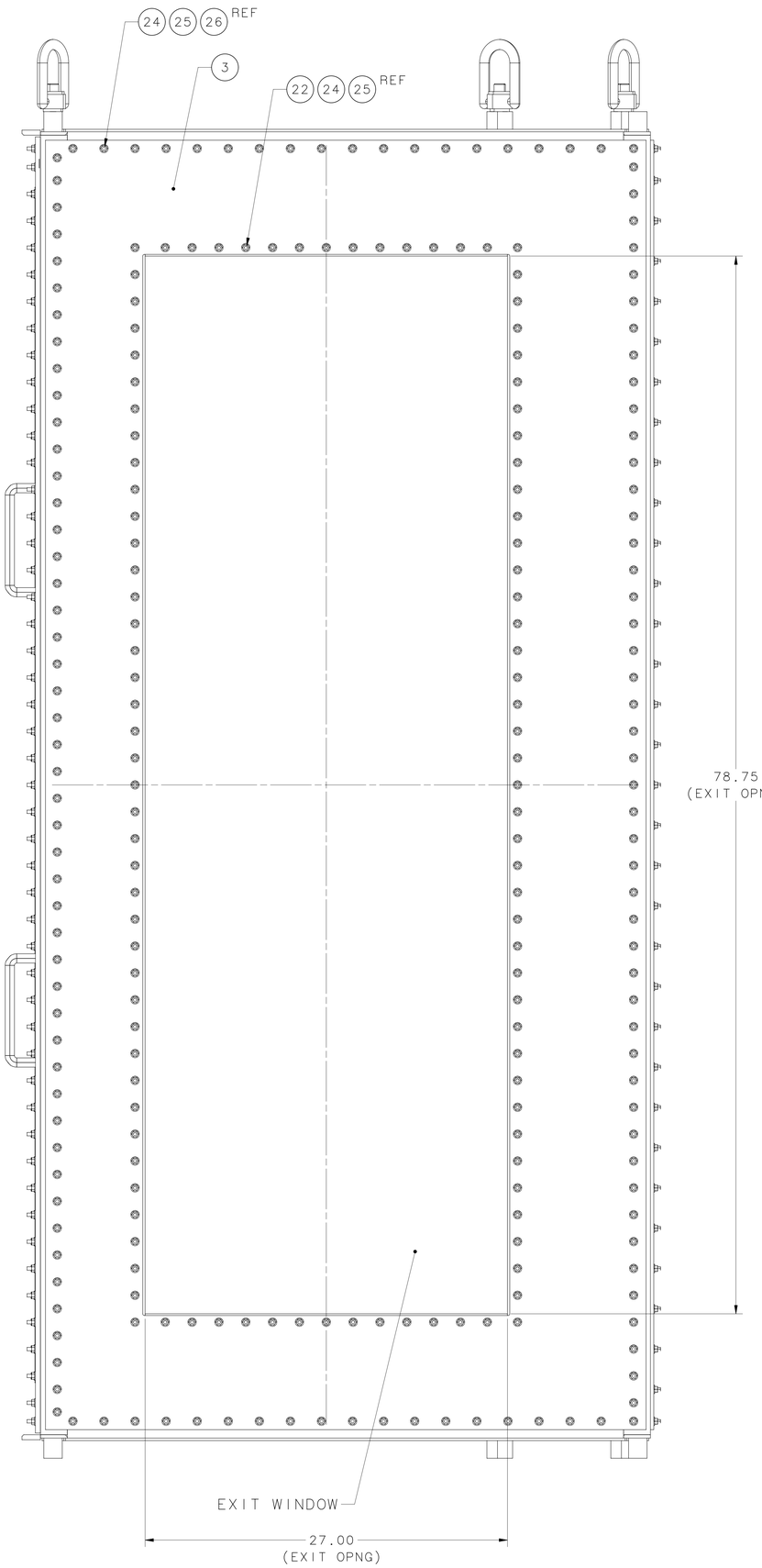
Approved: 4/1/2015; E-Sign ID : 297755; signed by: Ap. 1: B. Wojtsekhowski; Ap. 2: R. Wines; C.: A. Gavalya; D: T. Fuell



FRONT VIEW 2-7A



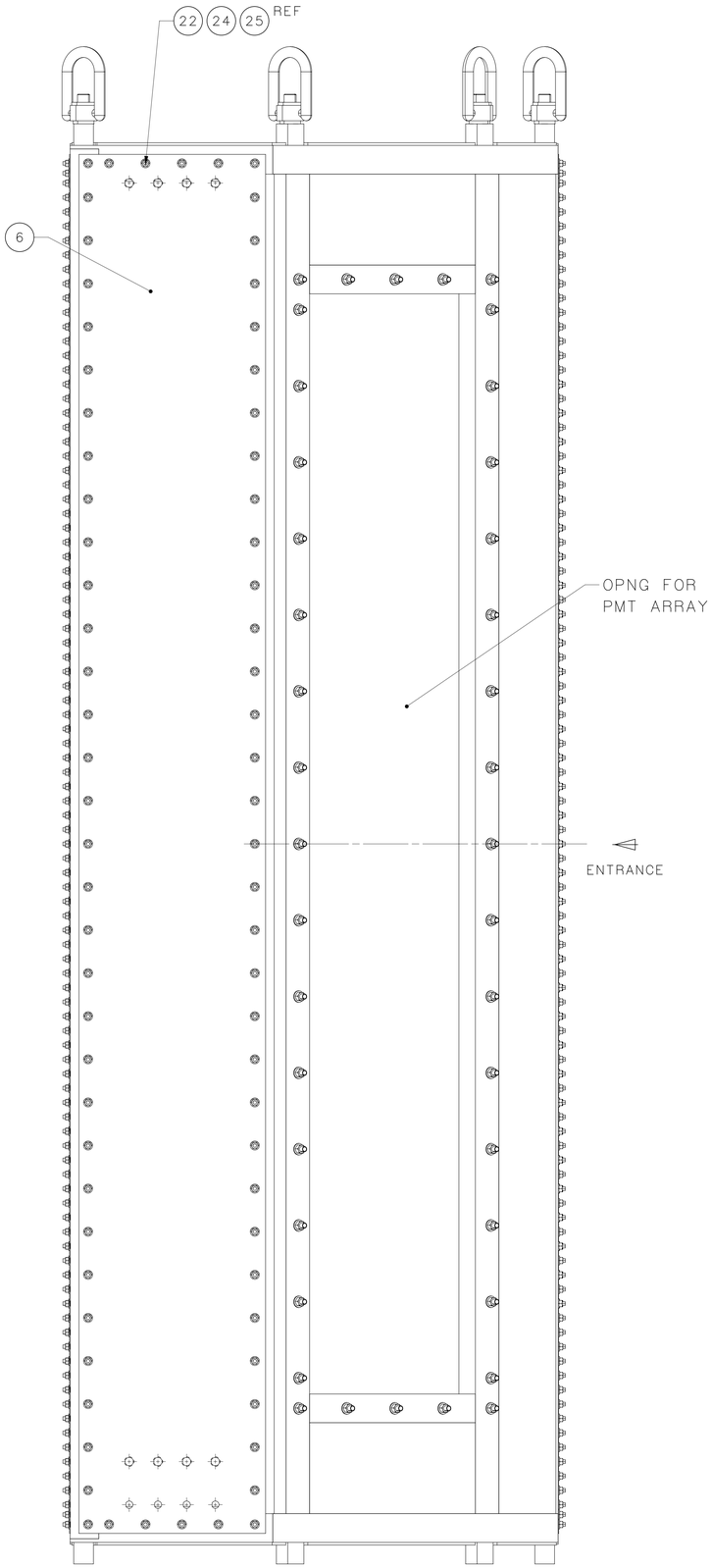
R SIDE VIEW 2-4A



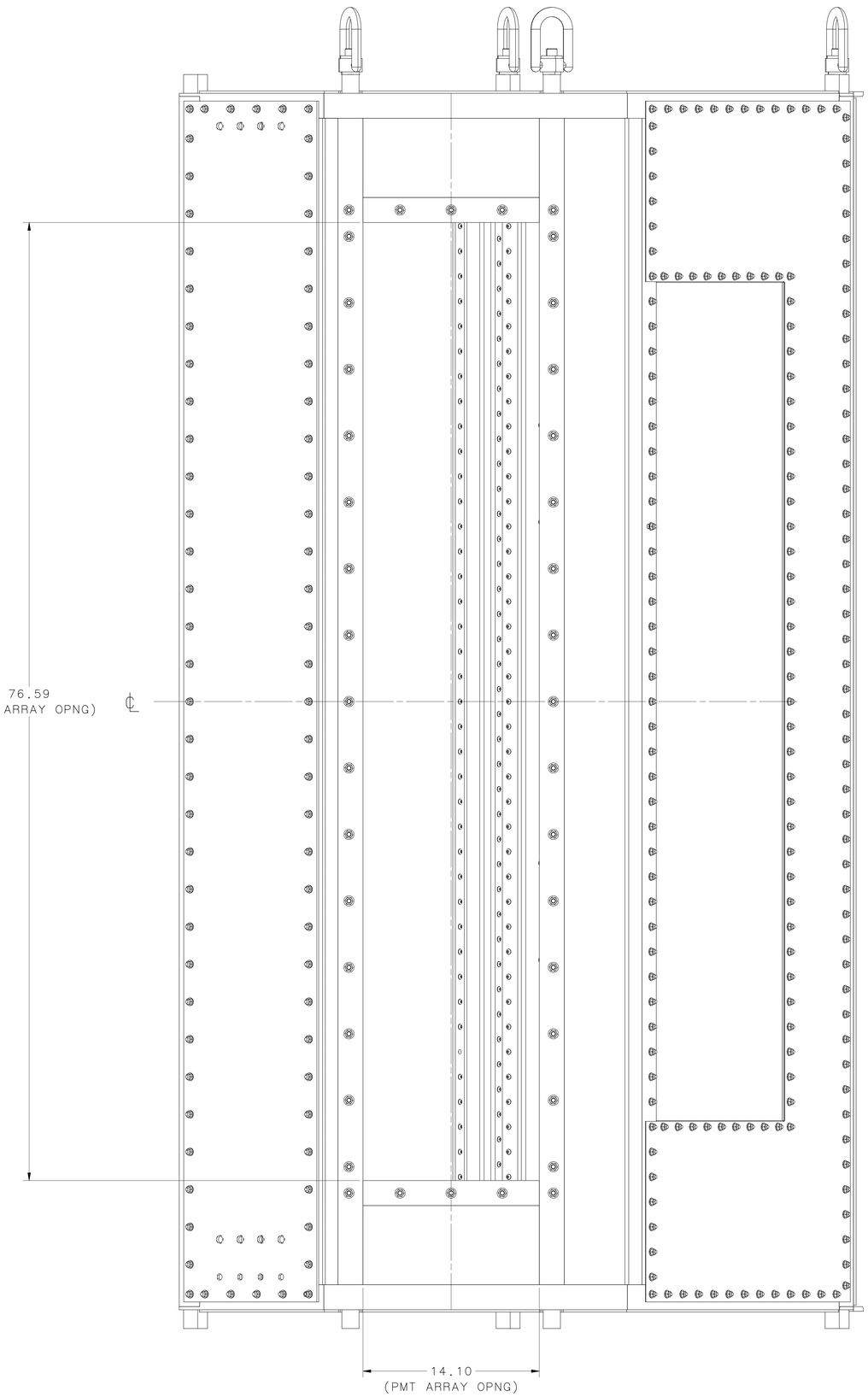
REAR VIEW 2-2A

SIZE	DWG. NO.	REV.
E	A00000-01-01-2500	–
SCALE 1:4	USED ON ASSY NO. A00000-01-01-3200	SHEET 2 OF 5

Approved: 4/1/2015; E-Sign ID : 297755; signed by: Ap. 1: B. Wojtsekhowski; Ap. 2: R. Wines; C.: A. Gavalya; D: T. Fuell



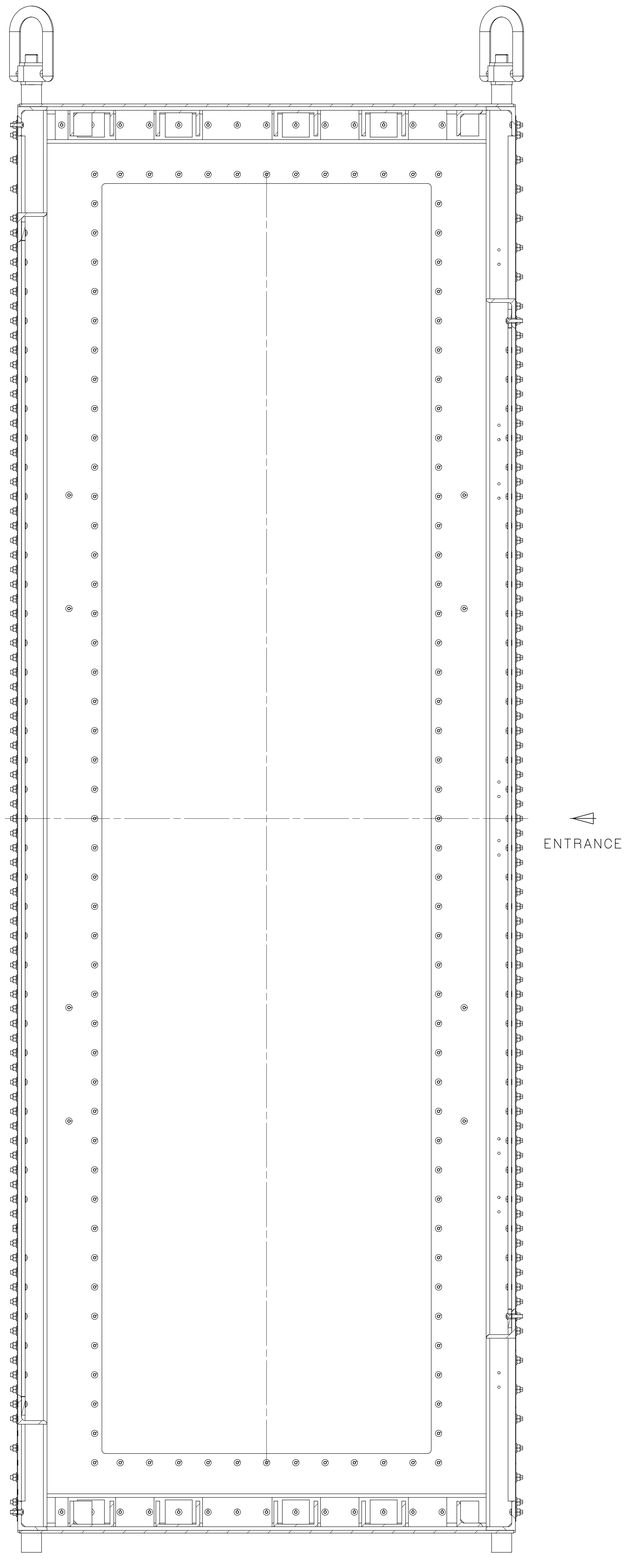
L SIDE VIEW 3-7A



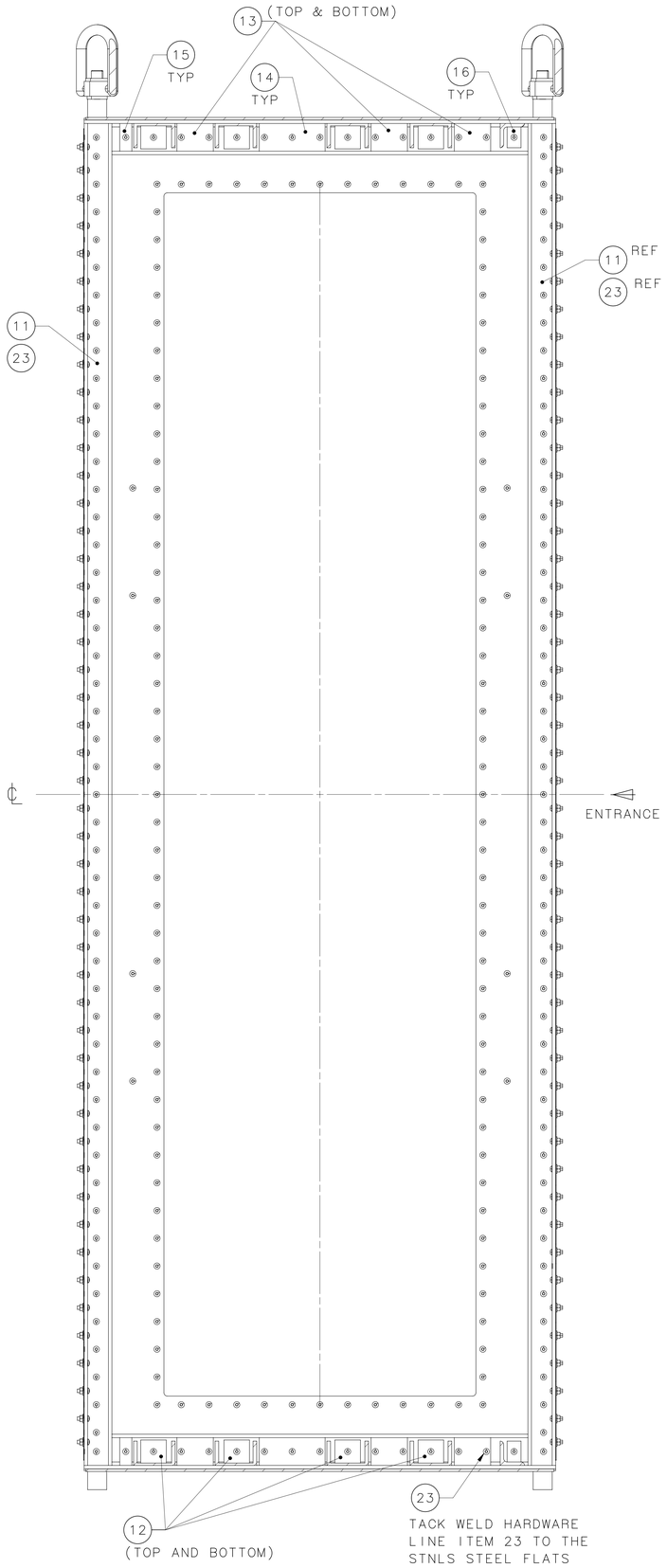
TRUE VIEW 3-4B

SIZE	DWG. NO.	REV.
E	A00000-01-01-2500	-
SCALE 1:4	USED ON ASSY NO. A00000-01-01-3200	SHEET 3 OF 5

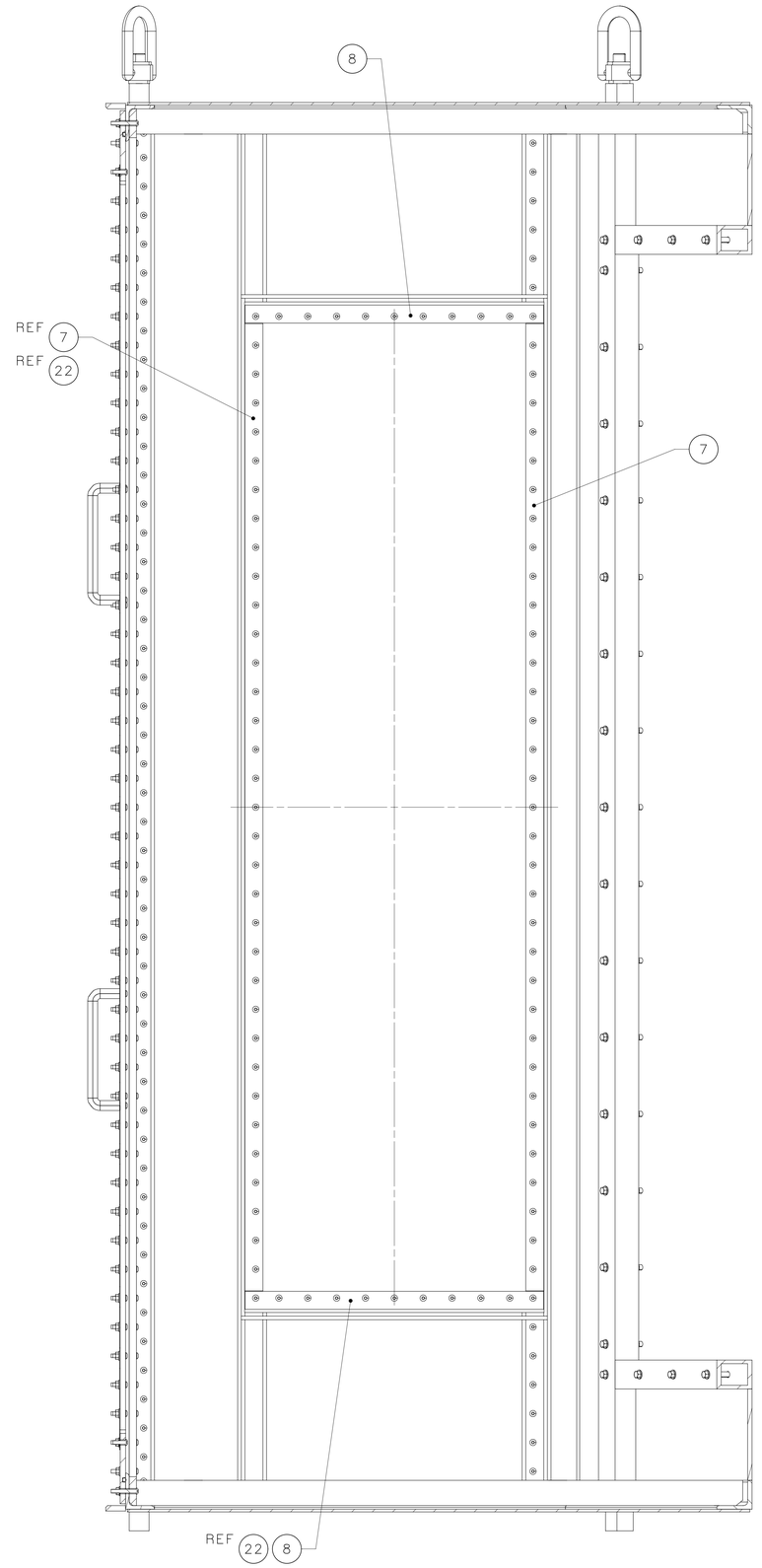
Approved: 4/1/2015; E-Sign ID : 297755; signed by: Ap. 1: B. Wojtsekhowski; Ap. 2: R. Wines; C.: A. Gavalya; D: T. Fuell



SECTION VIEW 4-7A
(2-7A)



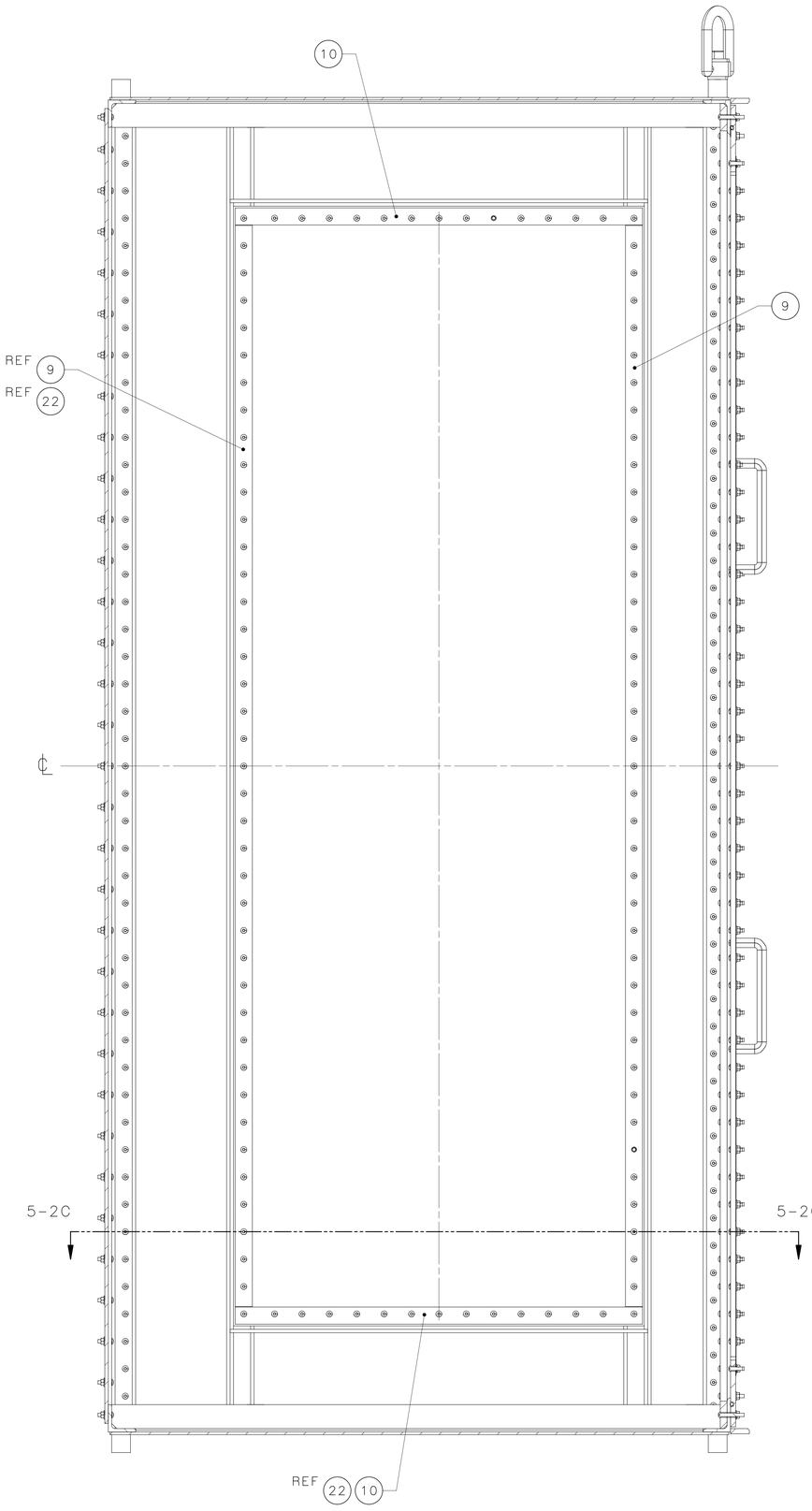
SECTION VIEW 4-4A
(2-7A)



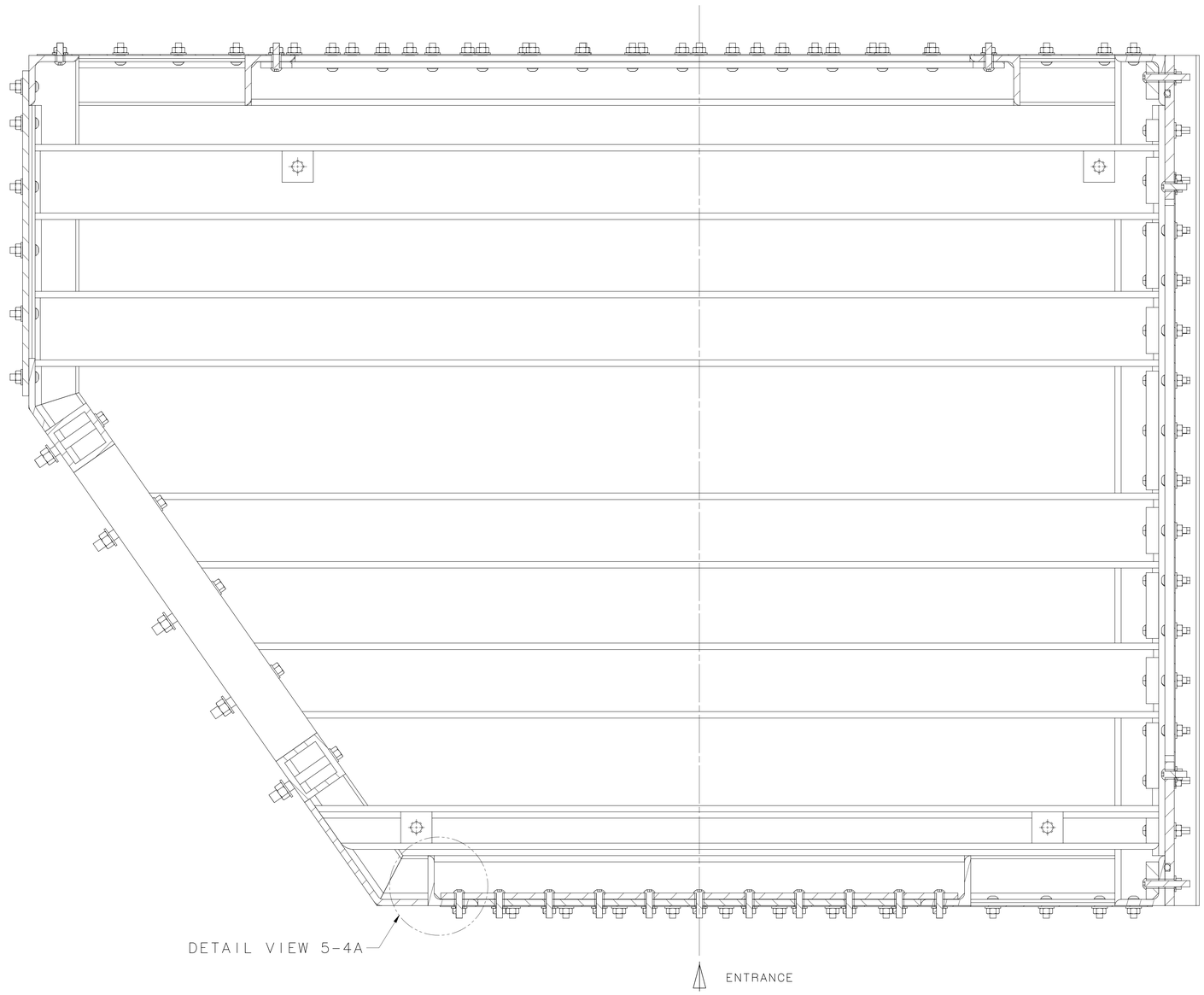
SECTION VIEW 4-2A
(2-4A)

SIZE	DWG. NO.	REV.
E	A00000-01-01-2500	–
SCALE 1:4	USED ON ASSY NO. A00000-01-01-3200	SHEET 4 OF 5

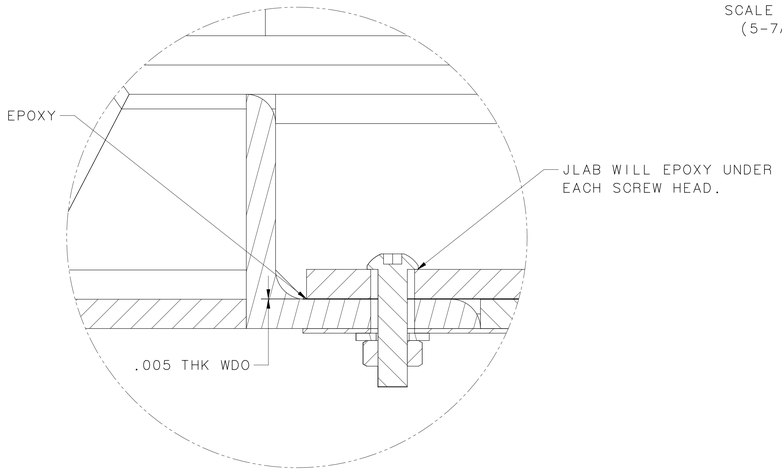
Approved: 4/1/2015; E-Sign ID : 297755; signed by: Ap. 1: B. Wojtsekhowski; Ap. 2: R. Wines; C.: A. Gavalya; D: T. Fuell



SECTION VIEW 5-7A
(2-4A)



SECTION VIEW 5-2C
SCALE 1:2
(5-7A)



DETAIL VIEW 5-4A
SCALE 2:1
(5-2C)

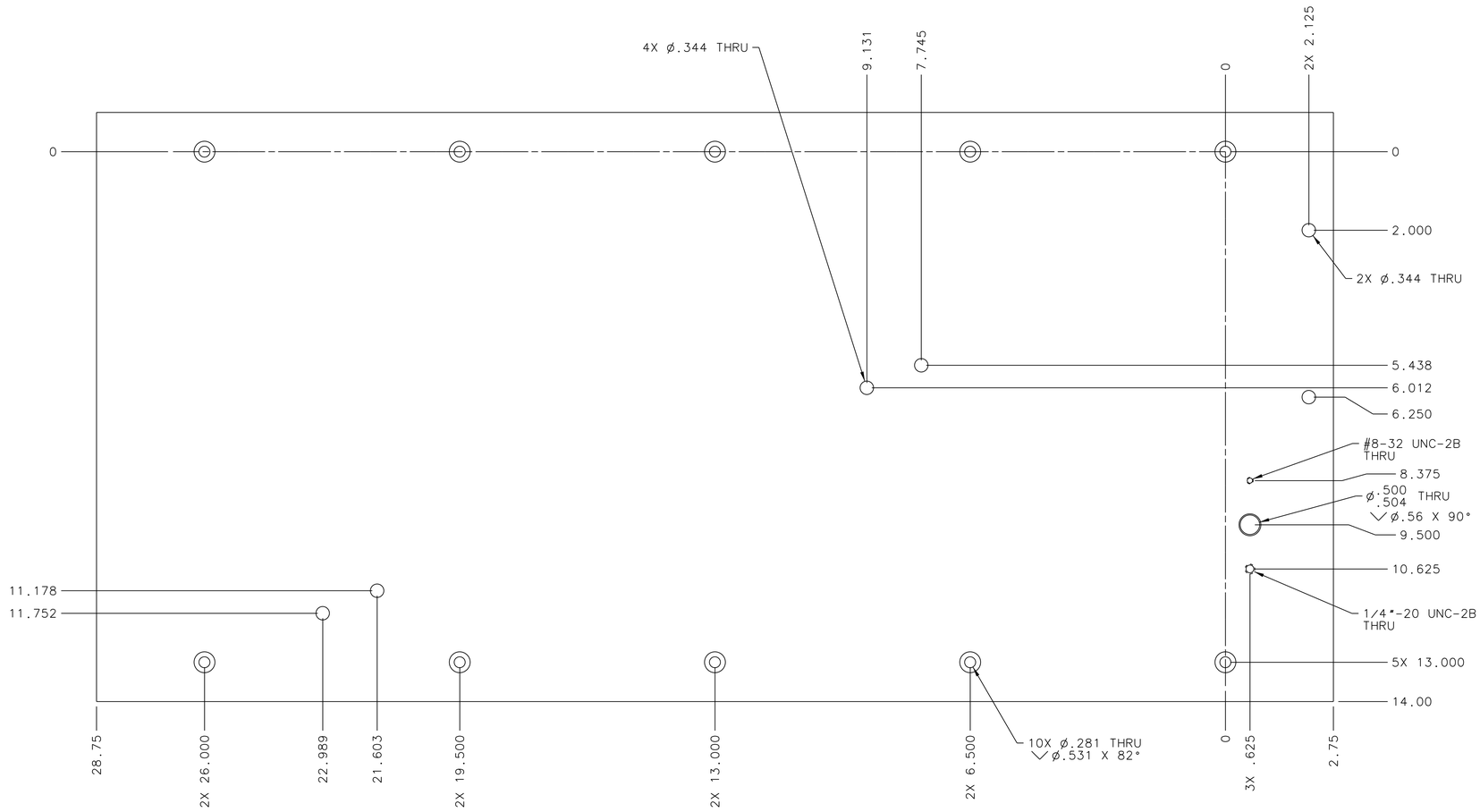
SIZE	DWG. NO.	REV.
E	A00000-01-01-2500	-
SCALE 1:4	USED ON ASSY NO. A00000-01-01-3200	SHEET 5 OF 5

Approved: 4/1/2015; E-Sign ID : 297755; signed by: Ap. 1: B. Wojtsekhowski; Ap. 2: R. Wines; C.: A. Gavalya; D: T. Fuell

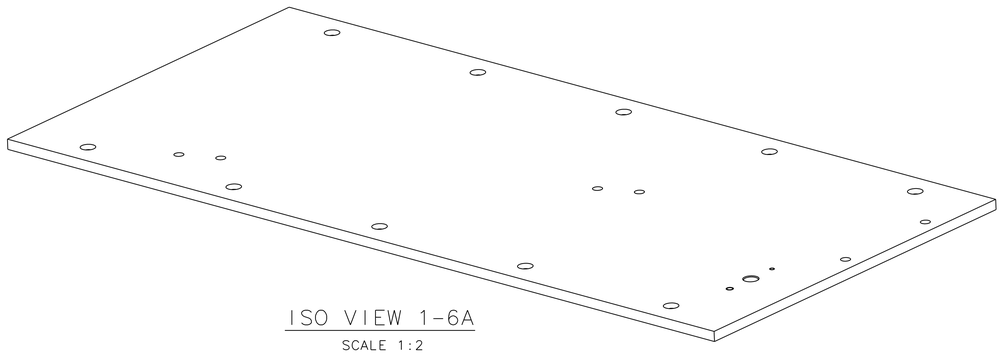
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



TOP VIEW 1-6G



FRONT VIEW 1-6C



ISO VIEW 1-6A

SCALE 1:2

NOTES:

1. WEIGHT IS APPROXIMATELY 18 LBS.
2. PART TO BE CONDITIONED FOR SAFE HANDLING. REMOVE ALL BURRS AND BREAK SHARP EDGES R.03 MAX UNLESS OTHERWISE SPECIFIED.

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

DOCUMENT CONTROL STAMP

DIM & TOL PER ASME Y14.5
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± N/A | DECIMAL .X ±.1, .XX ±.01, .XXX ±.005 | ANGLES ±.1°

MATERIAL
2024-T351 ASTM B209
ALUMINUM PLATE

FINISH
MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

THIRD ANGLE PROJECTION

TRACKING NO. N/A

APPROVALS	DATE
DRAWN C. SOOVA	04 FEB 16
CHECKED	
APPROVED	
APPROVED	

United States Department of Energy
Jefferson Lab — Thomas Jefferson National Accelerator Facility
Newport News Virginia

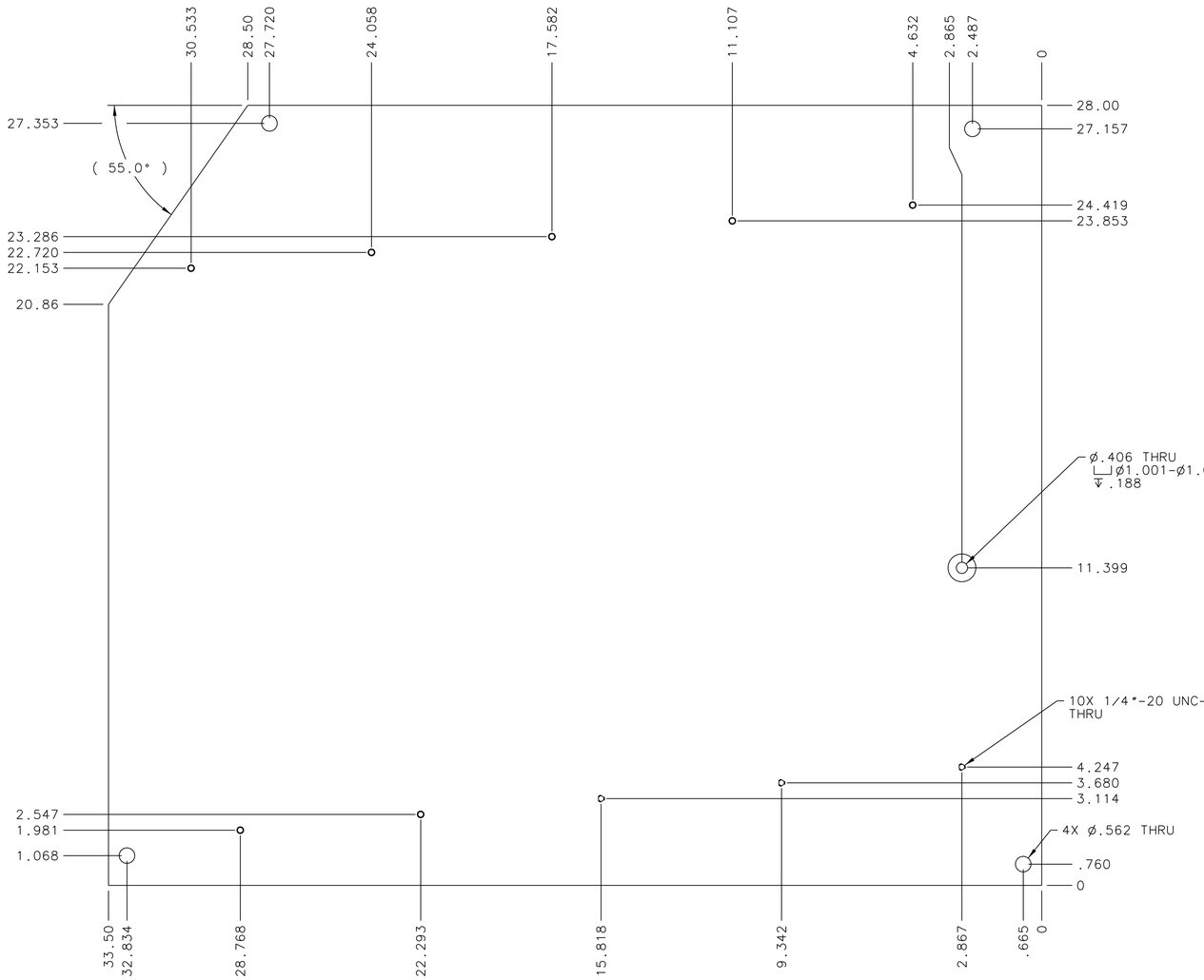
HALL A - TEMPLATE - A00000
GRINCH BL DETECTOR ASSY
GRINCH RAIL SYSTEM ASSY - UPR
PLATE - REFL ASSY SPRT UPR

SIZE E | DWG. NO. A00000-01-01-3902 | REV. —

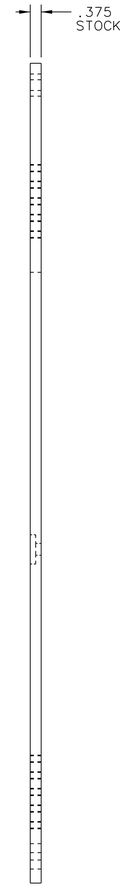
SCALE 1:2 | USED ON ASSY NO. A00000-01-01-3900 | SHEET 1 OF 1

Approved: 2/23/2016; E-Sign ID : 317888; signed by: Ap. 1: B. Wojtsekhowski; C.: A. Gavalya; D: T. Fuell

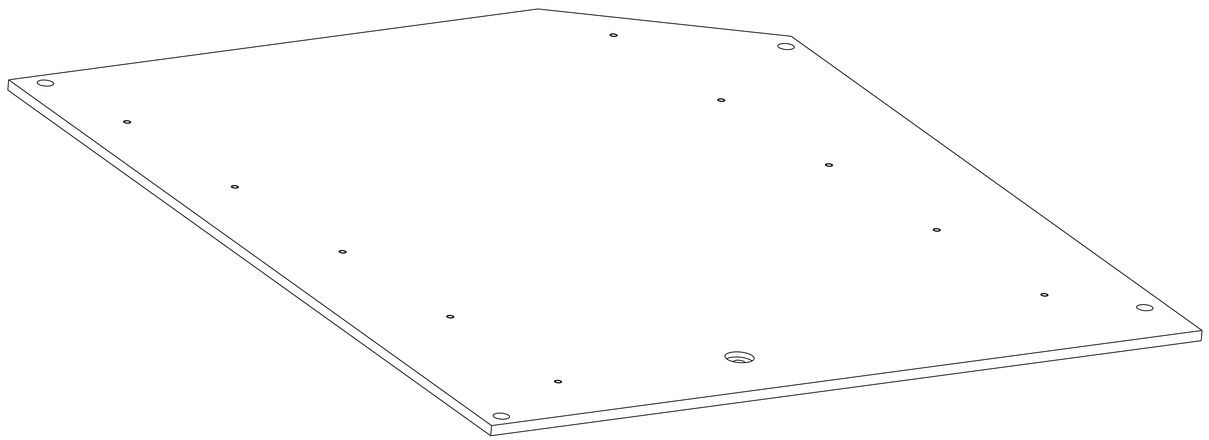
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



FRONT VIEW 1-6D



RHS VIEW 1-4D



ISO VIEW 1-6A

NOTES:

1. WEIGHT IS APPROXIMATELY 35 LBS.
2. PART TO BE CONDITIONED FOR SAFE HANDLING. REMOVE ALL BURRS AND BREAK SHARP EDGES R.03 MAX UNLESS OTHERWISE SPECIFIED.

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

DOCUMENT CONTROL STAMP

DIM & TOL PER ASME Y14.5
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± N/A DECIMAL .X ±.1 .XX ±.01 .XXX ±.005 ANGLES ±.1°

MATERIAL
2024-T351 ASTM B209
ALUMINUM PLATE

FINISH
MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

THIRD ANGLE PROJECTION

TRACKING NO.
N/A

APPROVALS	DATE
DRAWN C. SXOVA	04 FEB 16
CHECKED	
APPROVED	
APPROVED	

United States Department of Energy
Jefferson Lab
Thomas Jefferson National Accelerator Facility
Newport News Virginia

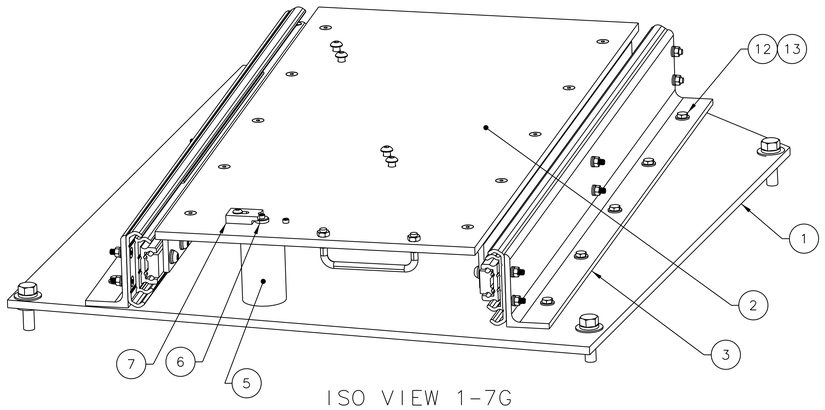
HALL A - TEMPLATE - A00000
GRINCH BL DETECTOR ASSY
GRINCH RAIL SYSTEM ASSY - UPR
PLATE - SLIDE RAIL SPRT UPR

SIZE E | DWG. NO. A00000-01-01-3901 | REV. –

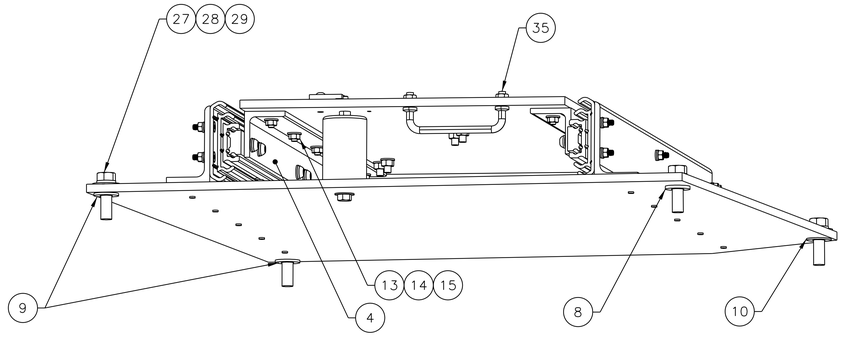
SCALE 1:2 | USED ON ASSY NO. A00000-01-01-3900 | SHEET 1 OF 1

Approved: 2/23/2016; E-Sign ID : 317886; signed by: Ap. 1: B. Wojtsekhowski; C.: A. Gavalya; D: T. Fuell

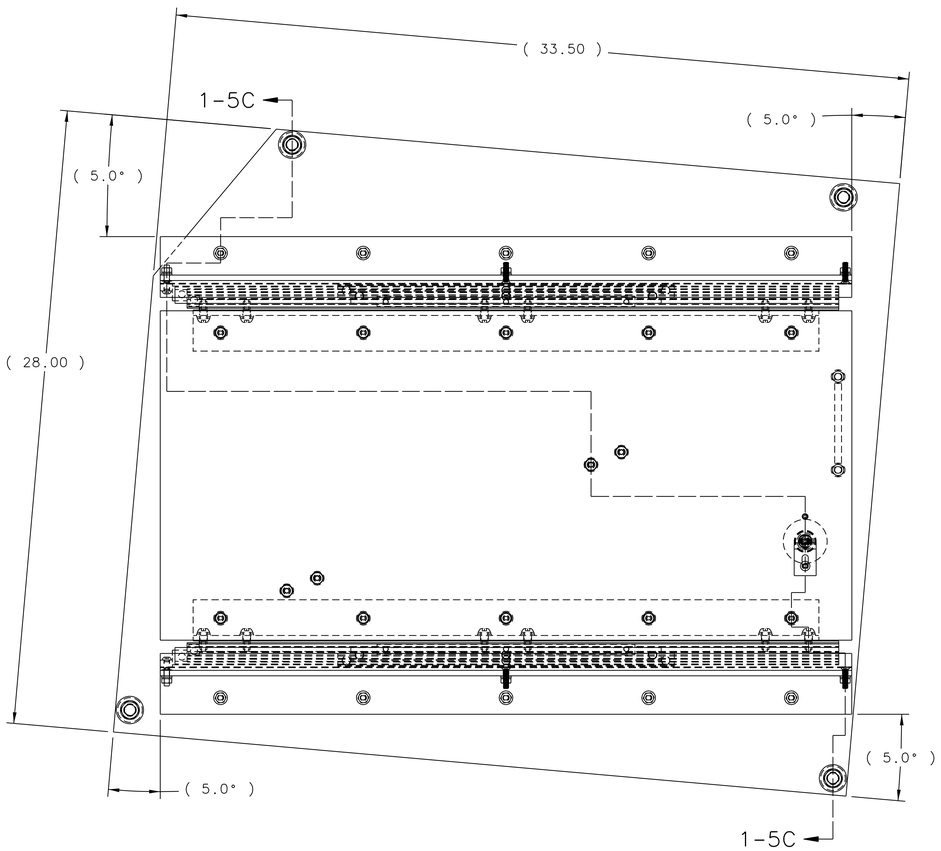
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



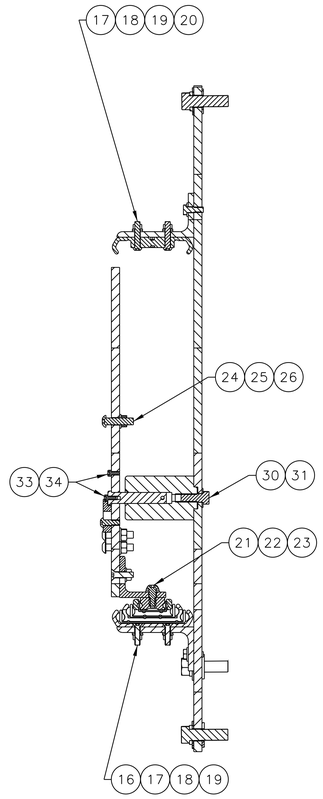
ISO VIEW 1-7G



ISO VIEW 1-4G



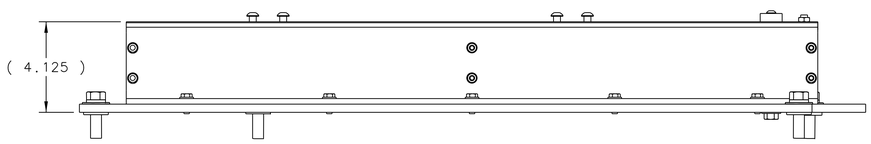
TOP VIEW 1-7C



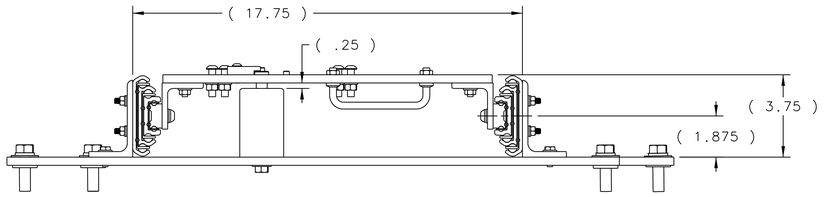
SECT VIEW 1-5C

NOTES:

1. WEIGHT IS APPROXIMATELY 70 LBS.
2. PART TO BE CONDITIONED FOR SAFE HANDLING. REMOVE ALL BURRS AND BREAK SHARP EDGES R.03 MAX UNLESS OTHERWISE SPECIFIED.
3. ITEM 34 (LANYARD) IS NOT SHOWN.
4. THE FOLLOWING ITEMS TO BE ASSEMBLED REQUIRE A RUNNING FIT FOR CLEVIS PIN (ITEM 6):
   ITEM 2 (PLATE)
   ITEM 5 (ROUND BAR)



FRONT VIEW 1-7A



RHS VIEW 1-4A

QTY REQD	ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	NOTES
1	35	FASTENAL 3242659	PULL HANDLE 4-1/4 X 5/16	ALUMINUM	-
1	34	McMASTER-CARR 90312A184	LANYARD, EYE/EYE, DIA. 1/16" COILED, UNCOATED, LG=1 FT	GALVANIZED STEEL WIRE	3
2	33	FASTENAL 79011	BUTTON SHCS #8-32 X 0.375	316 STAINLESS STEEL	-
1	32	FASTENAL 0178057	BUTTON SHCS 1/4"-20 X 0.75	316 STAINLESS STEEL	-
1	31	FASTENAL 71017	WASHER FLAT 3/8" SCREW	18-8 STAINLESS STEEL	-
1	30	FASTENAL 70105	HEX CAP SCREW 3/8"-16 X 1.00	18-8 STAINLESS STEEL	-
4	29	FASTENAL 71021	WASHER FLAT 1/2" SCREW	18-8 STAINLESS STEEL	-
4	28	FASTENAL 71071	WASHER SPLIT/LOCK 1/2" SCREW	18-8 STAINLESS STEEL	-
4	27	FASTENAL 70210	HEX CAP SCREW 1/2"-13 X 1.75	18-8 STAINLESS STEEL	-
4	26	FASTENAL 0144222	WASHER FLAT 5/16" SCREW	18-8 STAINLESS STEEL	-
4	25	FASTENAL 70711	HEX NUT 5/16"-18	18-8 STAINLESS STEEL	-
4	24	FASTENAL 73781	BUTTON SHCS 5/16"-18 X 1.25	18-8 STAINLESS STEEL	-
12	23	FASTENAL MW6380000A40000	WASHER FLAT M8 SCREW	Gr. A4 STAINLESS STEEL	-
12	22	FASTENAL ML6380000A40000	WASHER SPLIT/LOCK M8 SCREW	Gr. A4 STAINLESS STEEL	-
12	21	FASTENAL MB2580020A20000	BUTTON SHCS M8-1.25 X 20mm	Gr. A4 STAINLESS STEEL	-
4	20	FASTENAL MB2550030A20000	BUTTON SHCS M6-1.0 X 30mm	Gr. A4 STAINLESS STEEL	-
12	19	FASTENAL MW6360000A40000	WASHER FLAT M6 SCREW	Gr. A4 STAINLESS STEEL	-
12	18	FASTENAL ML6360000A40000	WASHER SPLIT/LOCK M6 SCREW	Gr. A4 STAINLESS STEEL	-
4	17	FASTENAL MN2550000A40000	HEX NUT M6-1.0	Gr. A4 STAINLESS STEEL	-
8	16	FASTENAL M42550025A40000	FLAT SHCS M6-1.0 X 30mm	Gr. A4 STAINLESS STEEL	-
10	15	FASTENAL 77710	HEX NUT 1/4"-20	316 STAINLESS STEEL	-
10	14	FASTENAL 0178194	FLAT SHCS 1/4"-20 X 1.00	316 STAINLESS STEEL	-
10	13	FASTENAL 78013	WASHER FLAT 1/4" SCREW	316 STAINLESS STEEL	-
10	12	FASTENAL 77003	HEX CAP SCREW 1/4"-20 X 0.75	316 STAINLESS STEEL	-
2	11	CHAMBRELAN RA774-0800	TELESCOPIC SLIDE - OVER EXTENSION - 1230 mm TRAVEL	STEEL, ZINC PLATING	-
1	10	A00000-01-01-3808 -GA15	SPACER - UNTHREADED (GAGE 15) THICKNESS = .0673	SEE PART DRAWING	-
2	9	A00000-01-01-3808 -GA12	SPACER - UNTHREADED (GAGE 12) THICKNESS = .1046	SEE PART DRAWING	-
1	8	A00000-01-01-3808 -GA10	SPACER - UNTHREADED (GAGE 10) THICKNESS = .1345	SEE PART DRAWING	-
1	7	A00000-01-01-3807	PLATE - PIN FLAT CLAMP	SEE PART DRAWING	-
1	6	A00000-01-01-3806	CLEVIS PIN - RAIL LOCATOR LOCK (VENDOR PIN MODIFICATION)	SEE PART DRAWING	4
1	5	A00000-01-01-3805	ROUND BAR - RAIL PIN LOCATOR	SEE PART DRAWING	4
2	4	A00000-01-01-3804	ANGLE - SLIDE RAIL BRACKET	SEE PART DRAWING	-
2	3	A00000-01-01-3803	ANGLE - SLIDE RAIL SPRT	SEE PART DRAWING	-
1	2	A00000-01-01-3902	PLATE - REFL ASSY SPRT UPR	SEE PART DRAWING	4
1	1	A00000-01-01-3901	PLATE - RAIL SYS SPRT UPR	SEE PART DRAWING	-

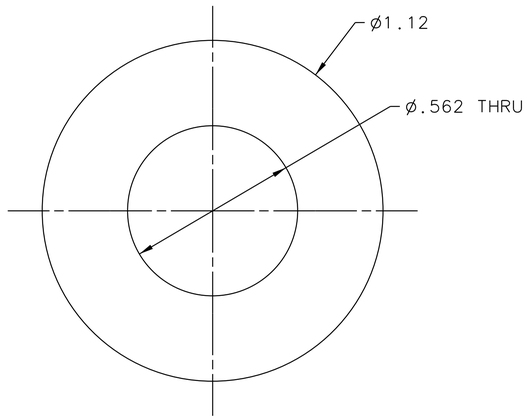
PARTS LIST

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

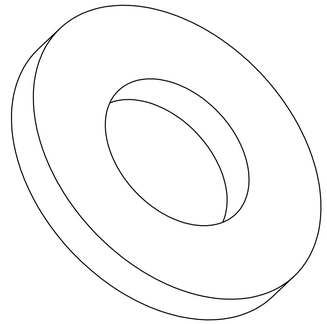
DOCUMENT CONTROL STAMP	DIM & TOL PER ASME Y14.5. UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS ± N/A; DECIMAL .X ±.1, .XX ±.01, .XXX ±.005; ANGLES ±.1°	TRACKING NO. N/A	United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia
MATERIAL SEE PARTS LIST	THIRD ANGLE PROJECTION	APPROVALS / DATE: DRAWN C. SOOVA 04 FEB 16; CHECKED; APPROVED; APPROVED	HALL A - TEMPLATE - A00000 DETECTOR - PARTICLE ID GRINCH BL DETECTOR ASSY GRINCH RAIL SYSTEM ASSY - UPR
FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED DEBURR & BREAK ALL SHARP EDGES			SIZE E; DWG. NO. A00000-01-01-3900; REV. —
DO NOT SCALE DRAWING			SCALE 3:8; USED ON ASSY NO. A00000-01-01-3200; SHEET 1 OF 1

Approved: 2/23/2016; E-Sign ID : 317884; signed by: Ap. 1: B. Wojtsekhowski; C.: A. Gavalya; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



TOP VIEW 1-6C



ISO VIEW 1-3C



FRONT VIEW 1-6B

QTY REQD	ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	NOTES
4	3	A00000-01-01-3808 -GA15	CARBON STEEL SHEET THICKNESS: GAGE No. 15	ASTM A1008	-
4	2	A00000-01-01-3808 -GA12	CARBON STEEL SHEET THICKNESS: GAGE No. 12	ASTM A1008	-
4	1	A00000-01-01-3808 -GA10	CARBON STEEL SHEET THICKNESS: GAGE No. 10	ASTM A1008	-

PARTS LIST

DOCUMENT CONTROL STAMP

MATERIAL
SEE
PARTS LIST

FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DIM & TOL PER ASME Y14.5
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± N/A DECIMAL .X ±.1 .XX ±.01 .XXX ±.005 ANGLES ±.1°

THIRD ANGLE PROJECTION

TRACKING NO.
N/A

APPROVALS	DATE
DRAWN C. SOOVA	04 FEB 16
CHECKED	
APPROVED	
APPROVED	

United States Department of Energy
Jefferson Lab
Thomas Jefferson National Accelerator Facility
Newport News Virginia

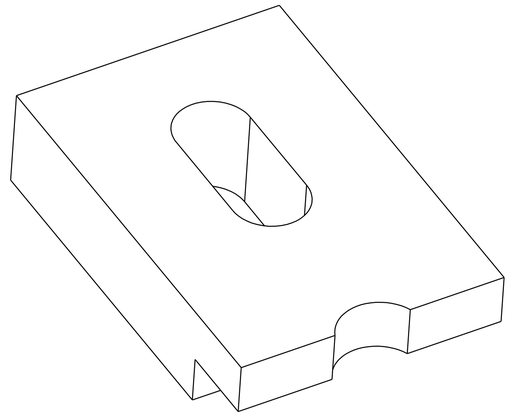
HALL A - TEMPLATE - A00000
GRINCH BL DETECTOR ASSY
GRINCH RAIL SYSTEM ASSY
SPACER - UNTHREADED

SIZE D | DWG. NO. A00000-01-01-3808 | REV. -

SCALE 4:1 | USED ON ASSY NO A000000-01-01-3800 | SHEET 1 OF 1

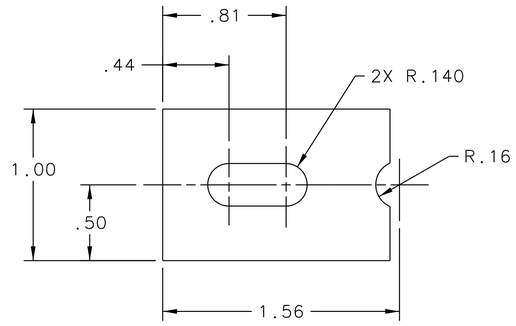
Approved: 2/23/2016; E-Sign ID : 317881; signed by: Ap. 1: B. Wojtsekhowski; C.: A. Gavalya; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED

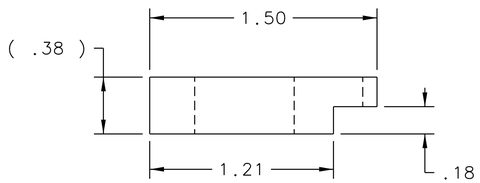


ISO VIEW 1-3C

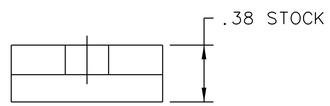
SCALE 4:1



TOP VIEW 1-7C



FRONT VIEW 1-7B



RHS VIEW 1-5B

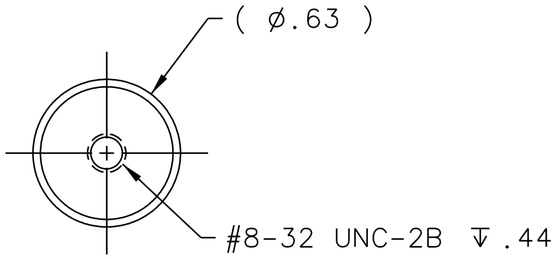
NOTES:

1. WEIGHT IS APPROXIMATELY .05 LBS.
2. PART TO BE CONDITIONED FOR SAFE HANDLING. REMOVE ALL BURRS AND BREAK SHARP EDGES R.03 MAX UNLESS OTHERWISE SPECIFIED.

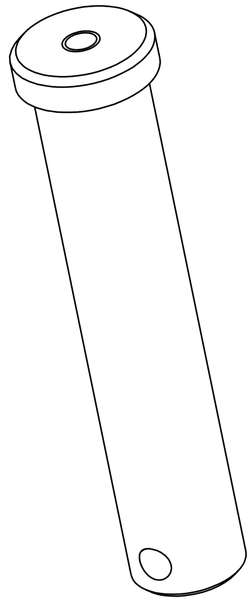
DOCUMENT CONTROL STAMP	DIM & TOL PER ASME Y14.5. UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES. TOLERANCES ARE: FRACTIONS ± N/A; DECIMAL .X ±.1, .XX ±.01, .XXX ±.005; ANGLES ±.1°	TRACKING NO. N/A	United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia
MATERIAL: ALUMINUM	THIRD ANGLE PROJECTION	APPROVALS / DATE	HALL A - TEMPLATE - A00000 GRINCH BL DETECTOR ASSY GRINCH RAIL SYSTEM ASSY PLATE - PIN FLAT CLAMP
FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED. DEBURR & BREAK ALL SHARP EDGES		DRAWN: C. SOOVA — 04 FEB 16	SIZE: D — DWG. NO.: A00000-01-01-3807 — REV.: –
DO NOT SCALE DRAWING		CHECKED	SCALE: 2:1 — USED ON ASSY NO.: A00000-01-01-3800 — SHEET 1 OF 1
		APPROVED	
		APPROVED	

Approved: 2/23/2016; E-Sign ID : 317880; signed by: C.: A. Gavalya; D: T. Fuell; Ap. 1: B. Wojtsekhowski

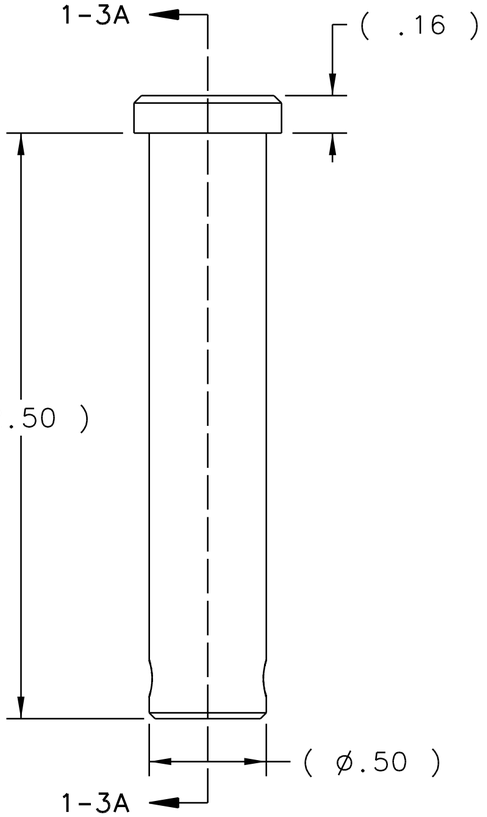
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



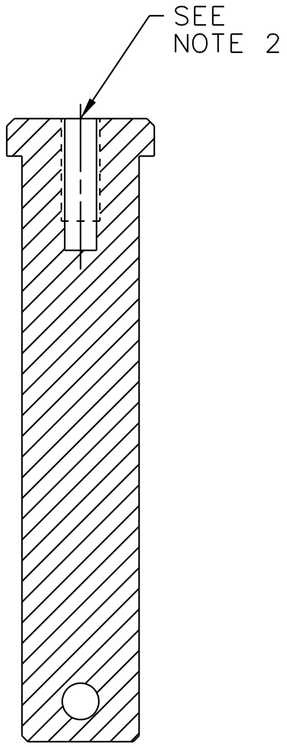
TOP VIEW 1-4C



ISO VIEW 1-2C



FRONT VIEW 1-4A



SECT VIEW 1-3A

NOTES:

1. WEIGHT IS APPROXIMATELY 0.15 LBS.
2. ITEM SHOWN IS A MODIFICATION OF AN ASSISTING VENDOR PART, USE ONE OF THE FOLLOWING OR AN EQUIVALENT:
   McMASTER-CARR 92390A391
   FASTENAL 0156955

DOCUMENT CONTROL STAMP	DIM & TOL PER ASME Y14.5. UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS ± N/A; DECIMAL .X ± .1, .XX ± .01, .XXX ± .005; ANGLES ± .1°	TRACKING NO. N/A
MATERIAL 18-8 STAINLESS STEEL CLEVIS PIN, SEE NOTE 2	THIRD ANGLE PROJECTION	APPROVALS / DATE DRAWN C. SOOVA 08 FEB 16 CHECKED APPROVED APPROVED
FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED DEBURR & BREAK ALL SHARP EDGES		
DO NOT SCALE DRAWING		

United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia

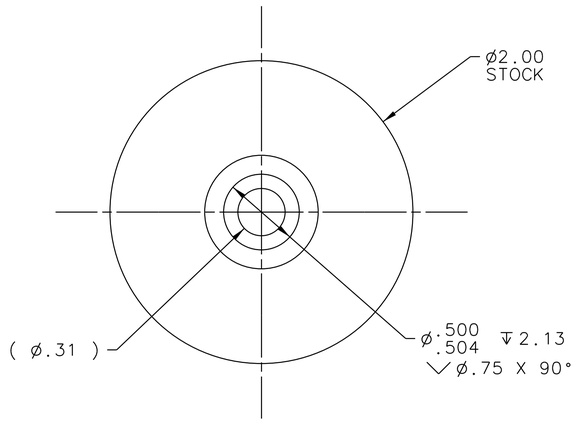
HALL A - TEMPLATE - A00000
GRINCH BL DETECTOR ASSY
GRINCH RAIL SYSTEM ASSY
CLEVIS PIN - RAIL LOCATOR LOCK

SIZE	DWG. NO.	REV.
C	A00000-01-01-3806	–

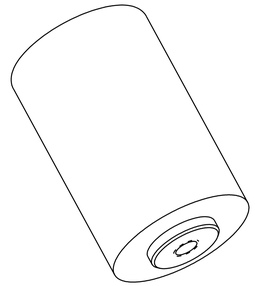
SCALE 2:1 | USED ON ASSY NO: A00000-01-01-3800 | SHEET 1 OF 1

Approved: 2/23/2016; E-Sign ID : 317878; signed by: Ap. 1: B. Wojtsekhowski; C.: A. Gavalya; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED

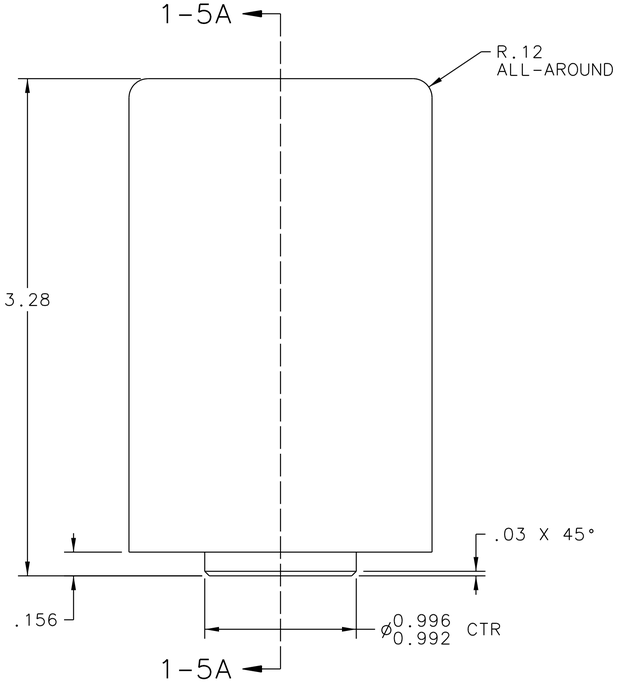


TOP VIEW 1-7C

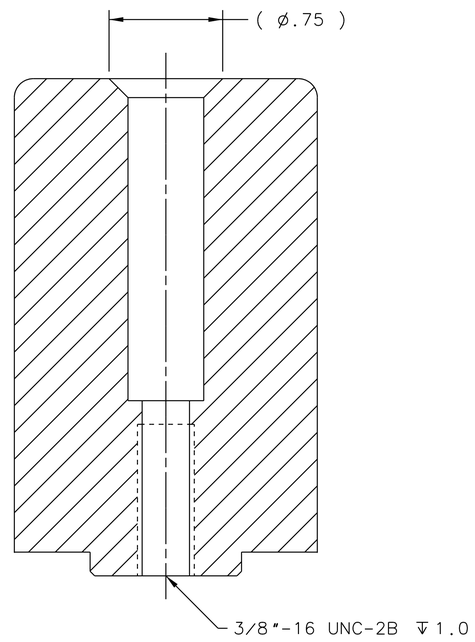


ISO VIEW 1-3C

SCALE 1:1



FRONT VIEW 1-7A



SECT VIEW 1-5A

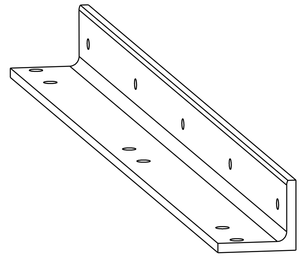
NOTES:

1. WEIGHT IS APPROXIMATELY 1.0 LBS.
2. PART TO BE CONDITIONED FOR SAFE HANDLING. REMOVE ALL BURRS AND BREAK SHARP EDGES R.03 MAX UNLESS OTHERWISE SPECIFIED.

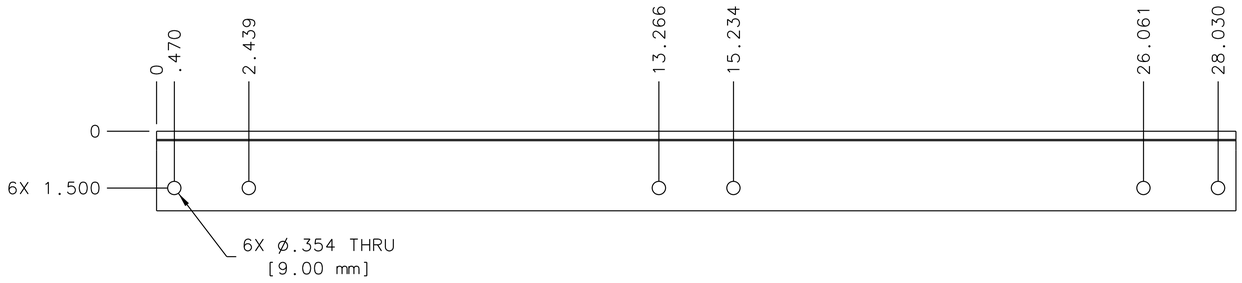
DOCUMENT CONTROL STAMP	DIM & TOL PER ASME Y14.5. UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS ± N/A; DECIMAL .X ±.1, .XX ±.01, .XXX ±.005; ANGLES ± .1°	TRACKING NO. N/A	United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia
MATERIAL 2024-T351 ALUMINUM ROUND BAR 2" DIA.	THIRD ANGLE PROJECTION	APPROVALS / DATE: DRAWN C. SOOVA 04 FEB 16; CHECKED; APPROVED; APPROVED	HALL A - TEMPLATE - A00000 GRINCH BL DETECTOR ASSY GRINCH RAIL SYSTEM ASSY ROUND BAR - RAIL PIN LOCATOR
FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED; DEBURR & BREAK ALL SHARP EDGES			SIZE D; DWG. NO. A00000-01-01-3805; REV. –
DO NOT SCALE DRAWING			SCALE 2:1; USED ON ASSY NO A000000-01-01-3800; SHEET 1 OF 1

Approved: 2/23/2016; E-Sign ID : 317877; signed by: Ap. 1: B. Wojtsekhowski; C.: A. Gavalya; D: T. Fuell

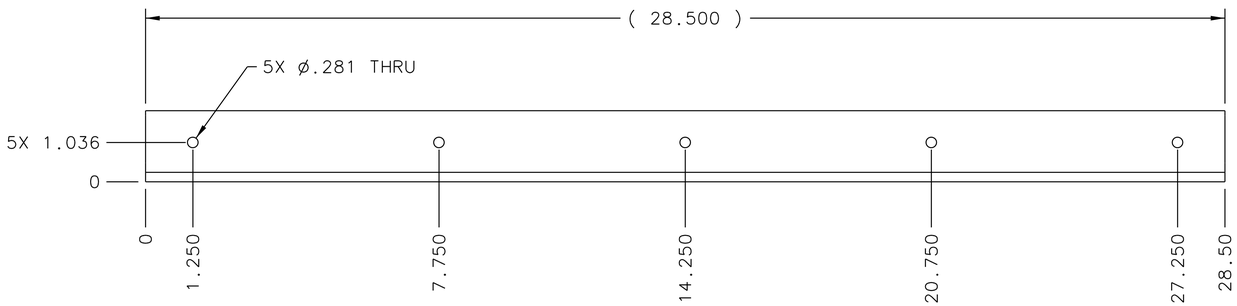
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



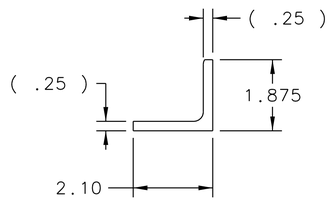
ISO VIEW 1-3D



TOP VIEW 1-6C



FRONT VIEW 1-6B



RHS VIEW 1-3B

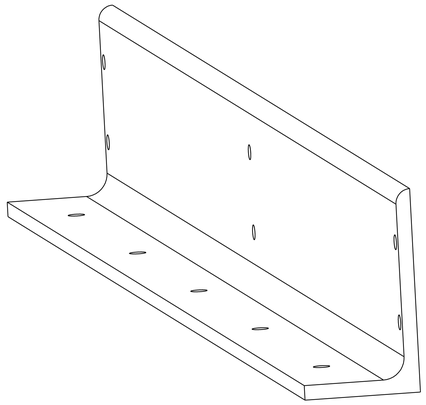
NOTES:

1. WEIGHT IS APPROXIMATELY 3 LBS.
2. PART TO BE CONDITIONED FOR SAFE HANDLING. REMOVE ALL BURRS AND BREAK SHARP EDGES R.03 MAX UNLESS OTHERWISE SPECIFIED.

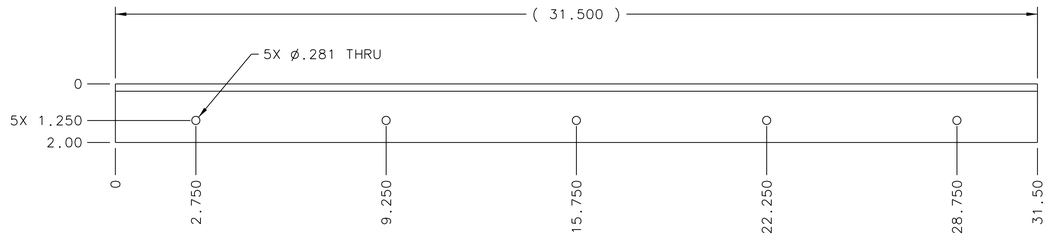
DOCUMENT CONTROL STAMP	DIM & TOL PER ASME Y14.5. UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS ± N/A; DECIMAL .X ±.1, .XX ±.01, .XXX ±.005; ANGLES ±.1°	TRACKING NO. N/A	United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia
MATERIAL 6061-T6 ALUMINUM ANGLE 2.5 X 2.0 X .25	THIRD ANGLE PROJECTION	APPROVALS / DATE: DRAWN C. SOOVA 04 FEB 16; CHECKED; APPROVED; APPROVED	HALL A - TEMPLATE - A00000 GRINCH BL DETECTOR ASSY GRINCH RAIL SYSTEM ASSY ANGLE - SLIDE RAIL BRACKET
FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED DEBURR & BREAK ALL SHARP EDGES			SIZE D; DWG. NO. A00000-01-01-3804; REV. –
DO NOT SCALE DRAWING			SCALE 1:2; USED ON ASSY NO. A00000-01-01-3800; SHEET 1 OF 1

Approved: 2/23/2016; E-Sign ID : 317876; signed by: Ap. 1: B. Wojtsekhowski; C.: A. Gavalya; D: T. Fuell

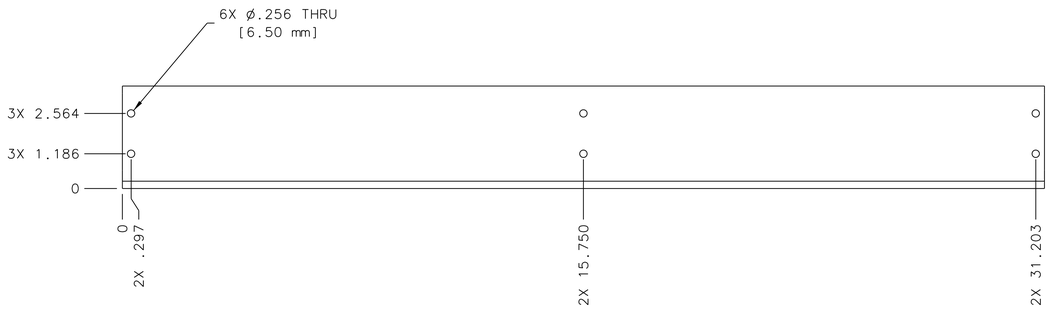
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



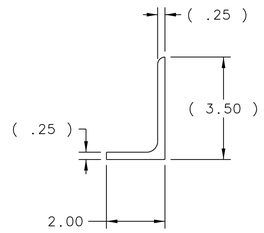
ISO VIEW 1-3F



TOP VIEW 1-6E



FRONT VIEW 1-6C



RHS VIEW 1-4C

NOTES:

1. WEIGHT IS APPROXIMATELY 4.1 LBS.
2. PART TO BE CONDITIONED FOR SAFE HANDLING. REMOVE ALL BURRS AND BREAK SHARP EDGES R.03 MAX UNLESS OTHERWISE SPECIFIED.

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

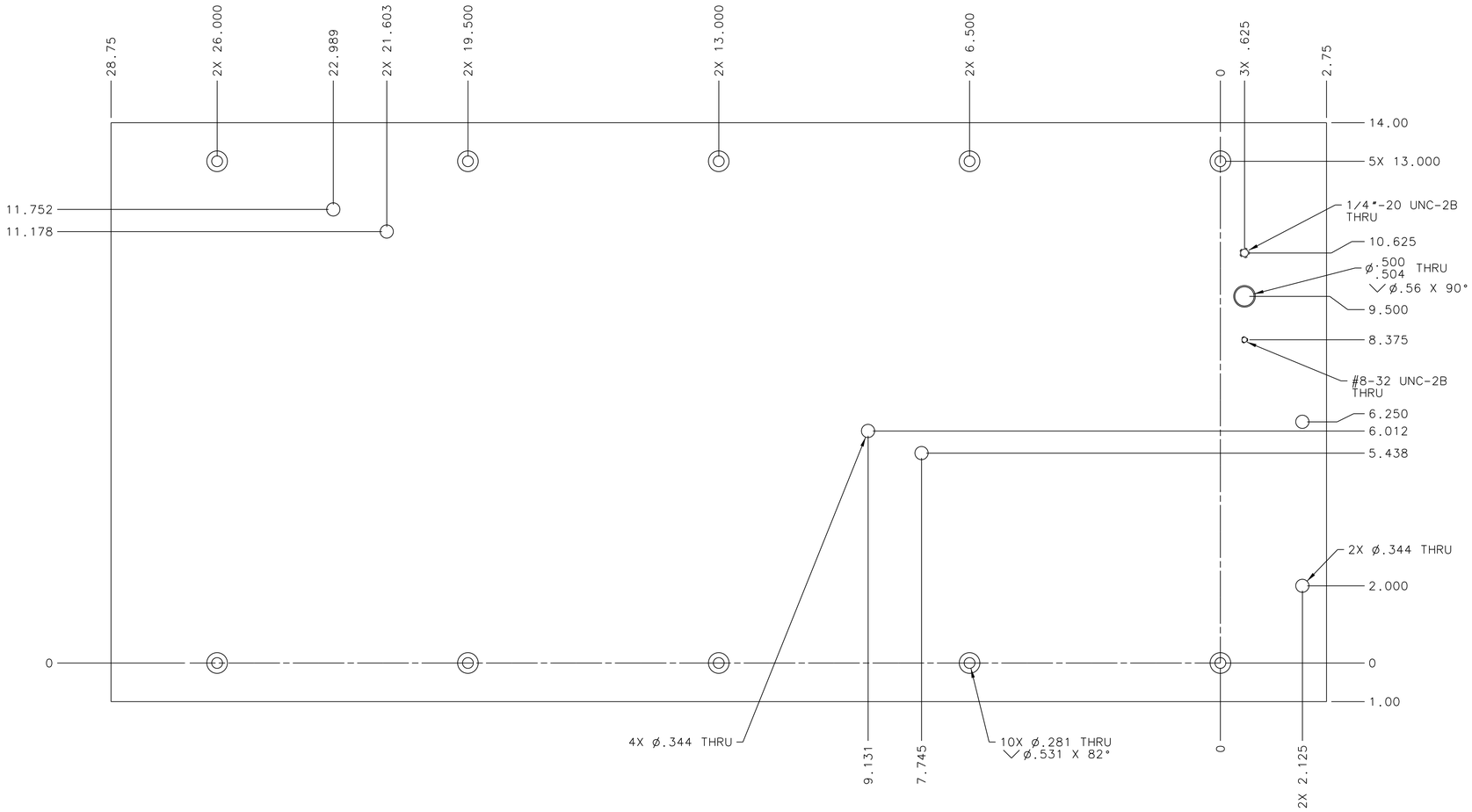
DOCUMENT CONTROL STAMP	DIM & TOL PER ASME Y14.5 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE FRACTIONS ± N/A DECIMAL .X ± .1 .XX ± .01 .XXX ± .005 ANGLES ± .1°	TRACKING NO. N/A	United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia
MATERIAL 6061-T6 ALUMINUM ANGLE 3.5 X 3.5 X .25	THIRD ANGLE PROJECTION	APPROVALS / DRAWN C. SOOVA / CHECKED / APPROVED / APPROVED	DATE 04 FEB 16
FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED DEBURR & BREAK ALL SHARP EDGES			HALL A - TEMPLATE - A00000 GRINCH BL DETECTOR ASSY GRINCH RAIL SYSTEM ASSY ANGLE - SLIDE RAIL SPRT
DO NOT SCALE DRAWING			SIZE E DWG. NO A00000-01-01-3803 REV. —
			SCALE 1:2 USED ON ASSY NO A00000-01-01-3800 SHEET 1 OF 1

Approved: 2/23/2016; E-Sign ID : 317875; signed by: Ap. 1: B. Wojtsekhowski; C.: A. Gavalya; D: T. Fuell

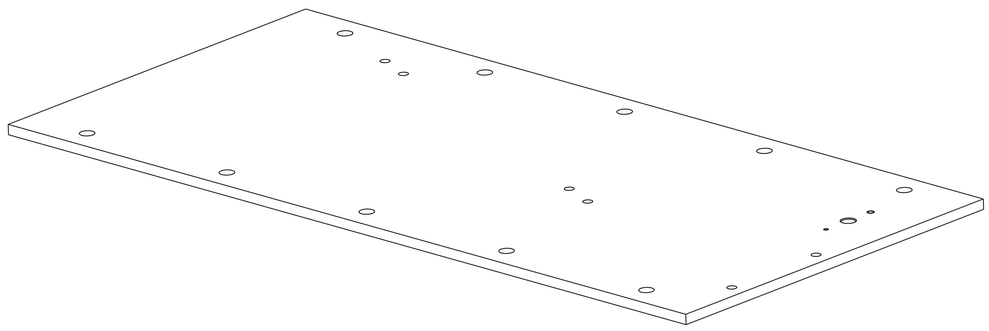
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



TOP VIEW 1-6G



FRONT VIEW 1-6C



ISO VIEW 1-6A

SCALE 1:2

NOTES:

1. WEIGHT IS APPROXIMATELY 18 LBS.
2. PART TO BE CONDITIONED FOR SAFE HANDLING. REMOVE ALL BURRS AND BREAK SHARP EDGES R.03 MAX UNLESS OTHERWISE SPECIFIED.

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

DOCUMENT CONTROL STAMP

MATERIAL
2024-T351 ASTM B209
ALUMINUM PLATE

FINISH
MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DIM & TOL PER ASME Y14.5
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± N/A
DECIMAL .X ±.1 .XX ±.01 .XXX ±.005
ANGLES ±.1°

THIRD ANGLE PROJECTION

TRACKING NO. N/A

APPROVALS	DATE
DRAWN C. SOOVA	04 FEB 16
CHECKED	
APPROVED	
APPROVED	

United States Department of Energy
Jefferson Lab
Thomas Jefferson National Accelerator Facility
Newport News Virginia

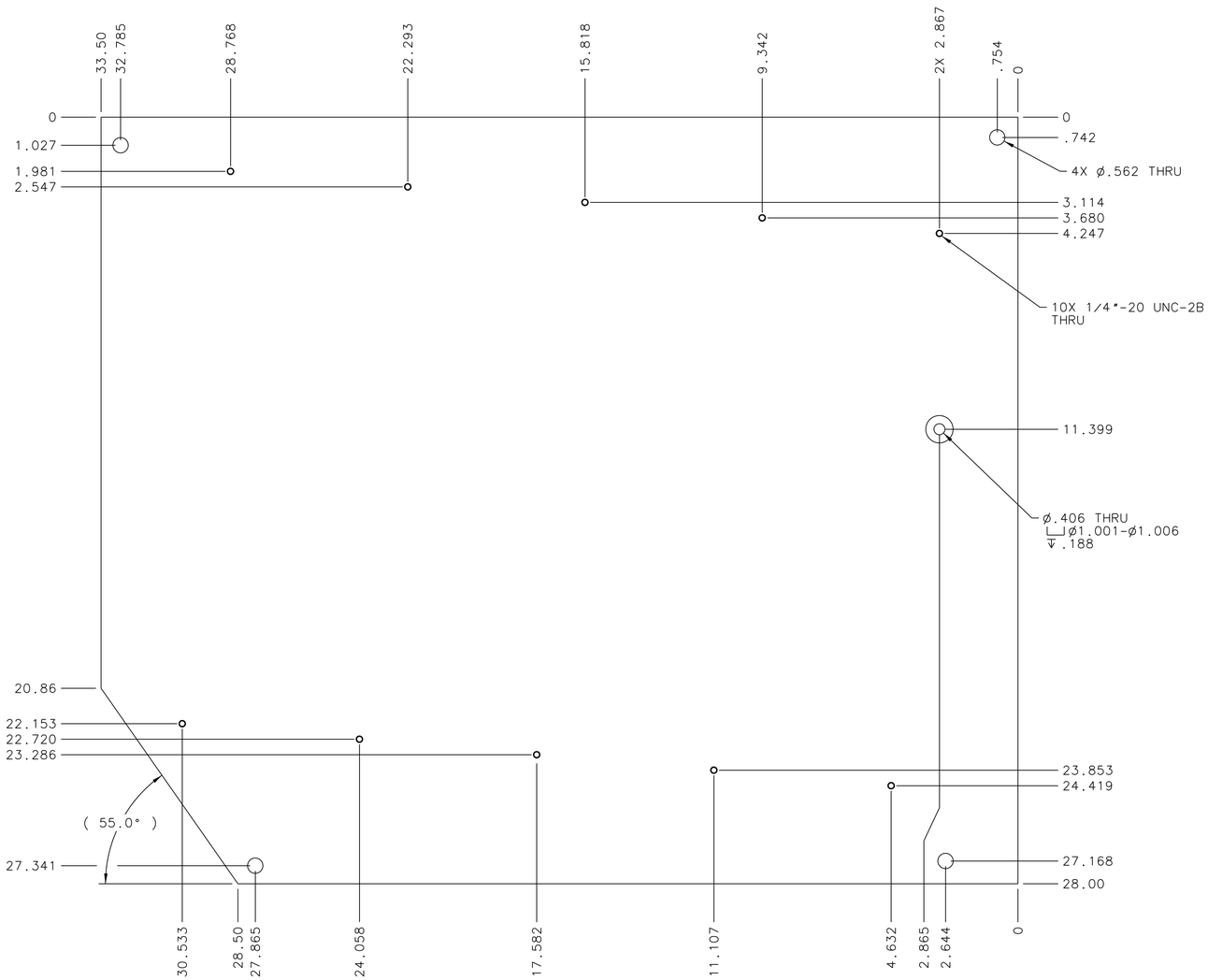
HALL A - TEMPLATE - A00000
GRINCH BL DETECTOR ASSY
GRINCH RAIL SYSTEM - LWR
PLATE - REFL ASSY SPRT - LWR

SIZE E | DWG. NO. A00000-01-01-3802 | REV. –

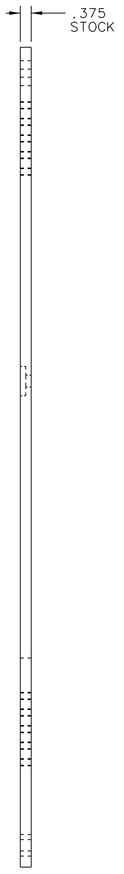
SCALE 3:4 | USED ON ASSY NO. A00000-01-01-3800 | SHEET 1 OF 1

Approved: 2/23/2016; E-Sign ID : 317874; signed by: Ap. 1: B. Wojtsekhowski; C.: A. Gavalya; D: T. Fuell

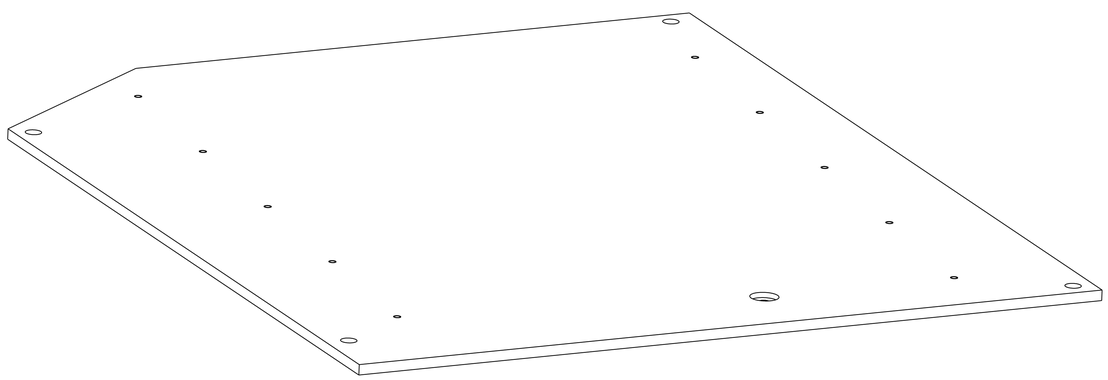
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



FRONT VIEW 1-6D



RHS VIEW 1-4D



ISO VIEW 1-4B

NOTES:

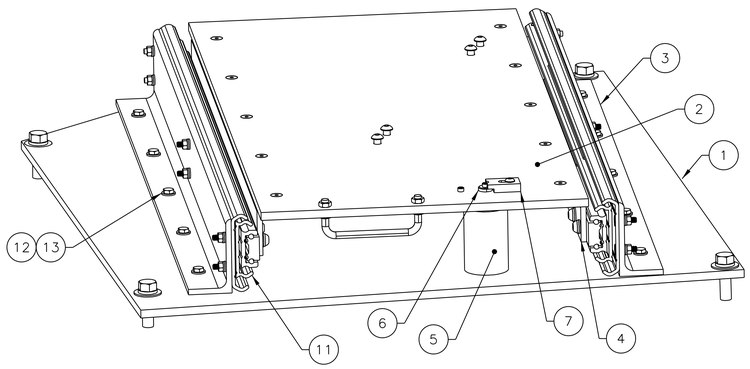
1. WEIGHT IS APPROXIMATELY 35 LBS.
2. PART TO BE CONDITIONED FOR SAFE HANDLING. REMOVE ALL BURRS AND BREAK SHARP EDGES R.03 MAX UNLESS OTHERWISE SPECIFIED.

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

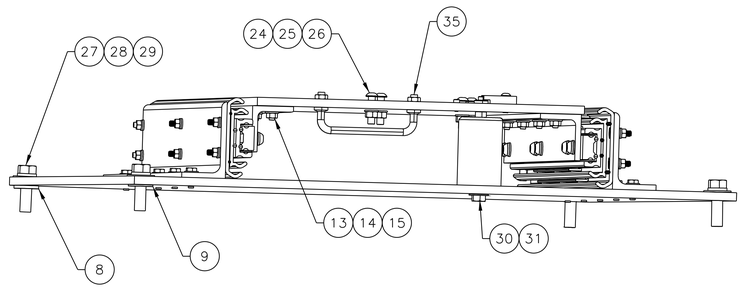
DOCUMENT CONTROL STAMP	DIM & TOL PER ASME Y14.5 UNLESS OTHERWISE SPECIFIED. DIMENSIONS ARE IN INCHES. TOLERANCES ARE: FRACTIONS ± N/A; DECIMAL .X ±.1, .XX ±.01, .XXX ±.005; ANGLES ±.1°	TRACKING NO. N/A	United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia
MATERIAL 2024-T351 ASTM B209 ALUMINUM PLATE	THIRD ANGLE PROJECTION	APPROVALS / DATE: DRAWN C. SOOVA 12 JAN 16; CHECKED; APPROVED; APPROVED	HALL A - TEMPLATE - A00000 GRINCH BL DETECTOR ASSY GRINCH RAIL SYSTEM ASSY - LWR PLATE - SLIDE RAIL SPRT LWR
FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED; DEBURR & BREAK ALL SHARP EDGES			SIZE E; DWG. NO. A00000-01-01-3801; REV. –
DO NOT SCALE DRAWING			SCALE 1:2; USED ON ASSY NO. A00000-01-01-3800; SHEET 1 OF 1

Approved: 2/23/2016; E-Sign ID : 317873; signed by: Ap. 1: B. Wojtsekhowski; C.: A. Gavalya; D: T. Fuell

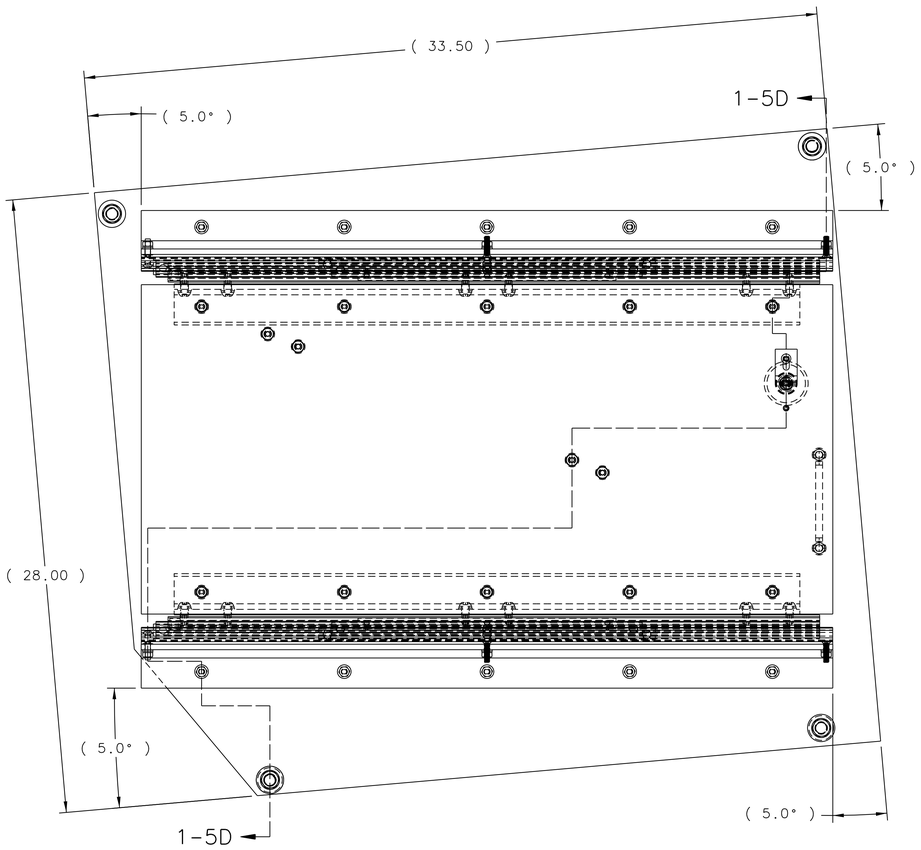
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



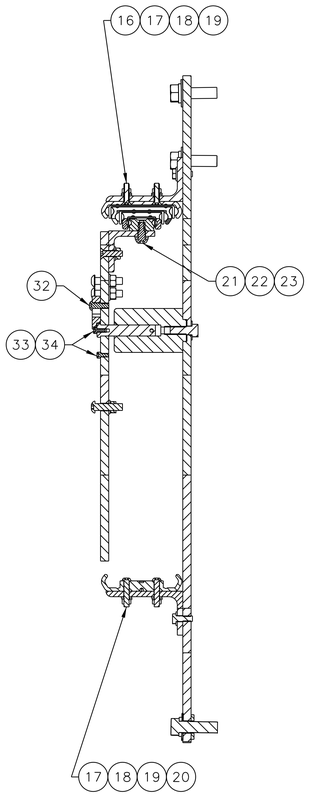
ISO VIEW 1-7G



ISO VIEW 1-4G



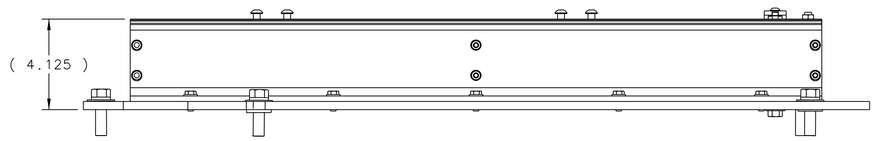
TOP VIEW 1-7C



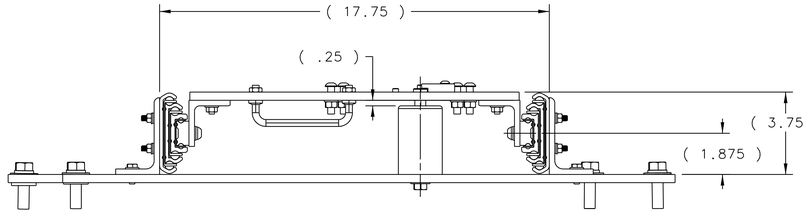
SECT VIEW 1-5C

NOTES:

1. WEIGHT IS APPROXIMATELY 70 LBS.
2. PART TO BE CONDITIONED FOR SAFE HANDLING. REMOVE ALL BURRS AND BREAK SHARP EDGES R.03 MAX UNLESS OTHERWISE SPECIFIED.
3. ITEM 34 (LANYARD) IS NOT SHOWN.
4. THE FOLLOWING ITEMS TO BE ASSEMBLED REQUIRE A RUNNING FIT FOR CLEVIS PIN (ITEM 6):
   ITEM 2 (PLATE)
   ITEM 5 (ROUND BAR)



FRONT VIEW 1-7A



RHS VIEW 1-4A

QTY. REQD	ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	NOTES
1	35	FASTENAL 3242659	PULL HANDLE 4-1/4 X 5/16	ALUMINUM	-
1	34	McMASTER-CARR 90312A184	LANYARD, EYE/EYE, DIA. 1/16" COILED, UNCOATED, LG=1 FT	GALVANIZED STEEL WIRE	3
2	33	FASTENAL 79011	BUTTON SHCS #8-32 X 0.375	316 STAINLESS STEEL	-
1	32	FASTENAL 0178057	BUTTON SHCS 1/4"-20 X 0.75	316 STAINLESS STEEL	-
1	31	FASTENAL 71017	WASHER FLAT 3/8" SCREW	18-8 STAINLESS STEEL	-
1	30	FASTENAL 70105	HEX CAP SCREW 3/8"-16 X 1.00	18-8 STAINLESS STEEL	-
4	29	FASTENAL 71021	WASHER FLAT 1/2" SCREW	18-8 STAINLESS STEEL	-
4	28	FASTENAL 71071	WASHER SPLIT/LOCK 1/2" SCREW	18-8 STAINLESS STEEL	-
4	27	FASTENAL 70210	HEX CAP SCREW 1/2"-13 X 1.75	18-8 STAINLESS STEEL	-
4	26	FASTENAL 0144222	WASHER FLAT 5/16" SCREW	18-8 STAINLESS STEEL	-
4	25	FASTENAL 70711	HEX NUT 5/16"-18	18-8 STAINLESS STEEL	-
4	24	FASTENAL 73781	BUTTON SHCS 5/16"-18 X 1.25	18-8 STAINLESS STEEL	-
12	23	FASTENAL MW6380000A40000	WASHER FLAT M8 SCREW	Gr. A4 STAINLESS STEEL	-
12	22	FASTENAL ML6380000A40000	WASHER SPLIT/LOCK M8 SCREW	Gr. A4 STAINLESS STEEL	-
12	21	FASTENAL MB2580020A20000	BUTTON SHCS M8-1.25 X 20mm	Gr. A4 STAINLESS STEEL	-
4	20	FASTENAL MB2550030A20000	BUTTON SHCS M6-1.0 X 30mm	Gr. A4 STAINLESS STEEL	-
12	19	FASTENAL MW6360000A40000	WASHER FLAT M6 SCREW	Gr. A4 STAINLESS STEEL	-
12	18	FASTENAL ML6360000A40000	WASHER SPLIT/LOCK M6 SCREW	Gr. A4 STAINLESS STEEL	-
4	17	FASTENAL MN2550000A40000	HEX NUT M6-1.0	Gr. A4 STAINLESS STEEL	-
8	16	FASTENAL M42550025A40000	FLAT SHCS M6-1.0 X 30mm	Gr. A4 STAINLESS STEEL	-
10	15	FASTENAL 77710	HEX NUT 1/4"-20	316 STAINLESS STEEL	-
10	14	FASTENAL 0178194	FLAT SHCS 1/4"-20 X 1.00	316 STAINLESS STEEL	-
10	13	FASTENAL 78013	WASHER FLAT 1/4" SCREW	316 STAINLESS STEEL	-
10	12	FASTENAL 77003	HEX CAP SCREW 1/4"-20 X 0.75	316 STAINLESS STEEL	-
2	11	CHAMBRELAN RA774-0800	TELESCOPIC SLIDE - OVER EXTENSION - 1230 mm TRAVEL	STEEL, ZINC PLATING	-
-	10	-	-	-	-
1	9	A00000-01-01-3808 -GA15	SPACER - UNTHREADED (GAGE 15) THICKNESS = .0673	SEE PART DRAWING	-
1	8	A00000-01-01-3808 -GA10	SPACER - UNTHREADED (GAGE 10) THICKNESS = .1345	SEE PART DRAWING	-
1	7	A00000-01-01-3807	PLATE - PIN FLAT CLAMP	SEE PART DRAWING	-
1	6	A00000-01-01-3806	CLEVIS PIN - RAIL LOCATOR LOCK (VENDOR PIN MODIFICATION)	SEE PART DRAWING	4
1	5	A00000-01-01-3805	ROUND BAR - RAIL PIN LOCATOR	SEE PART DRAWING	4
2	4	A00000-01-01-3804	ANGLE - SLIDE RAIL BRACKET	SEE PART DRAWING	-
2	3	A00000-01-01-3803	ANGLE - SLIDE RAIL SPRT	SEE PART DRAWING	-
1	2	A00000-01-01-3802	PLATE - REFL ASSY SPRT LWR	SEE PART DRAWING	4
1	1	A00000-01-01-3801	PLATE - SLIDE RAIL SPRT LWR	SEE PART DRAWING	-

PARTS LIST

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

DOCUMENT CONTROL STAMP

MATERIAL: SEE PARTS LIST

FINISH: MACHINED SURFACES 125 √ UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DIM & TOL PER ASME Y14.5
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± N/A
DECIMAL .X ±.1 .XX ±.01 .XXX ±.005
ANGLES ±.1°

THIRD ANGLE PROJECTION

TRACKING NO. N/A

APPROVALS	DATE
DRAWN C. SOOVA	11 JAN 16
CHECKED	
APPROVED	
APPROVED	

United States Department of Energy
Jefferson Lab — Thomas Jefferson National Accelerator Facility — Newport News Virginia

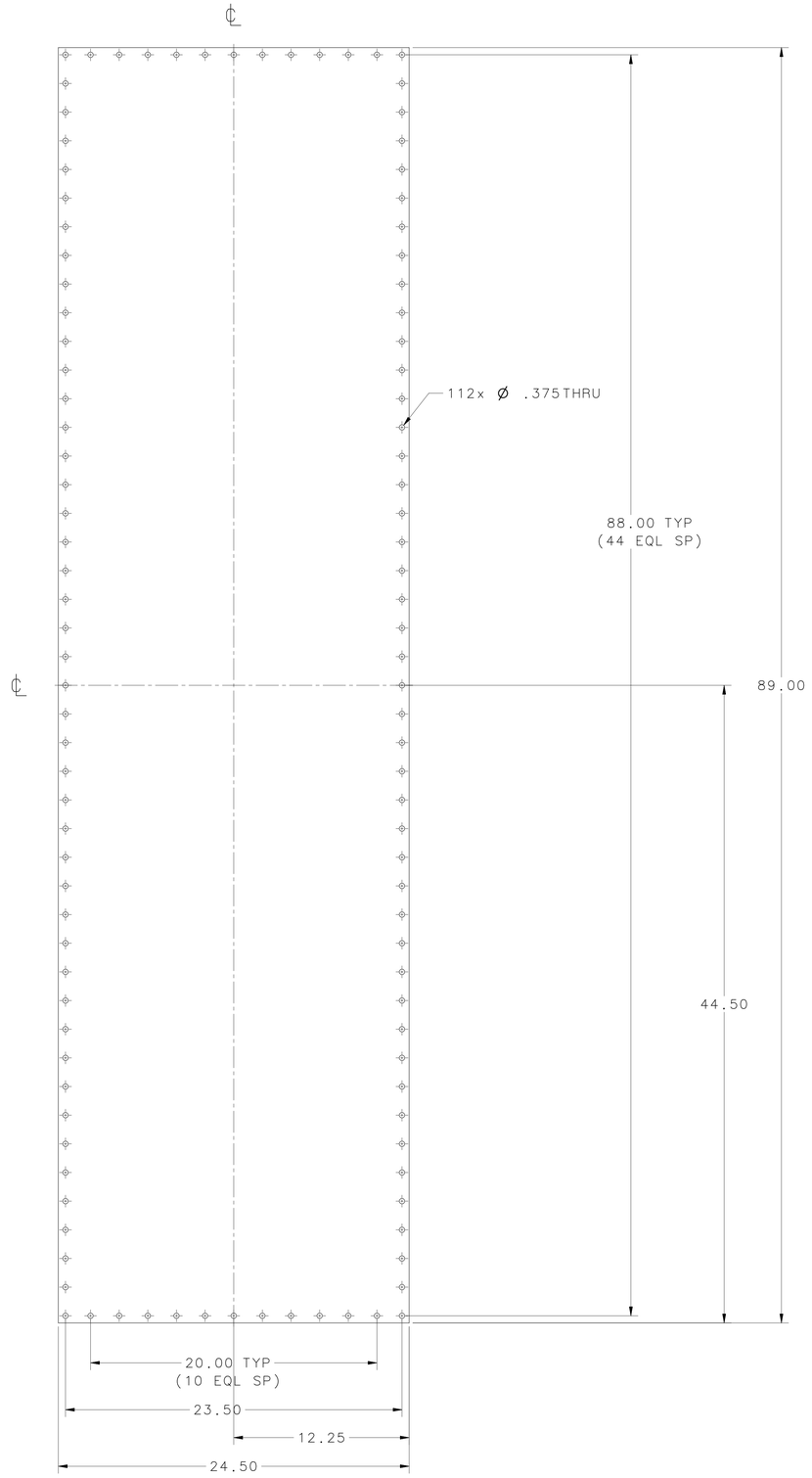
HALL A - TEMPLATE - A00000
DETECTOR - PARTICLE ID
GRINCH BL DETECTOR ASSY
GRINCH RAIL SYSTEM ASSY - LWR

SIZE E | DWG. NO. A00000-01-01-3800 | REV. —

SCALE 3:8 | USED ON ASSY NO. A00000-01-01-3200 | SHEET 1 OF 1

Approved: 2/23/2016; E-Sign ID : 317872; signed by: Ap. 1: B. Wojtsekhowski; C.: A. Gavaiya; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



FRONT VIEW 1-7B



RS VIEW 1-5B

NOTES:
1. WEIGHT IS APPROXIMATELY 8-1/2 LBS.
2. CLEAN AND REMOVE ALL SURFACE CONTAMINATION.
3. ANODIZE BLACK.

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

DIM & TOL PER ASME Y14.5.
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES.
TOLERANCES ARE:
FRACTIONS ± N/A
DECIMAL .X ± .1 .XX ± .01 .XXX ± .005
ANGLES ± .50°

THIRD ANGLE PROJECTION

MATERIAL: ALUMINUM 6061-T6

FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DRAWN: S. ESP
DATE: 18 MAR 15

United States Department of Energy
Jefferson Lab — Thomas Jefferson National Accelerator Facility
Newport News Virginia

HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
MAIN BOX ASSY - ACCESS DOOR
AL SHEET FOR ACCESS DOOR

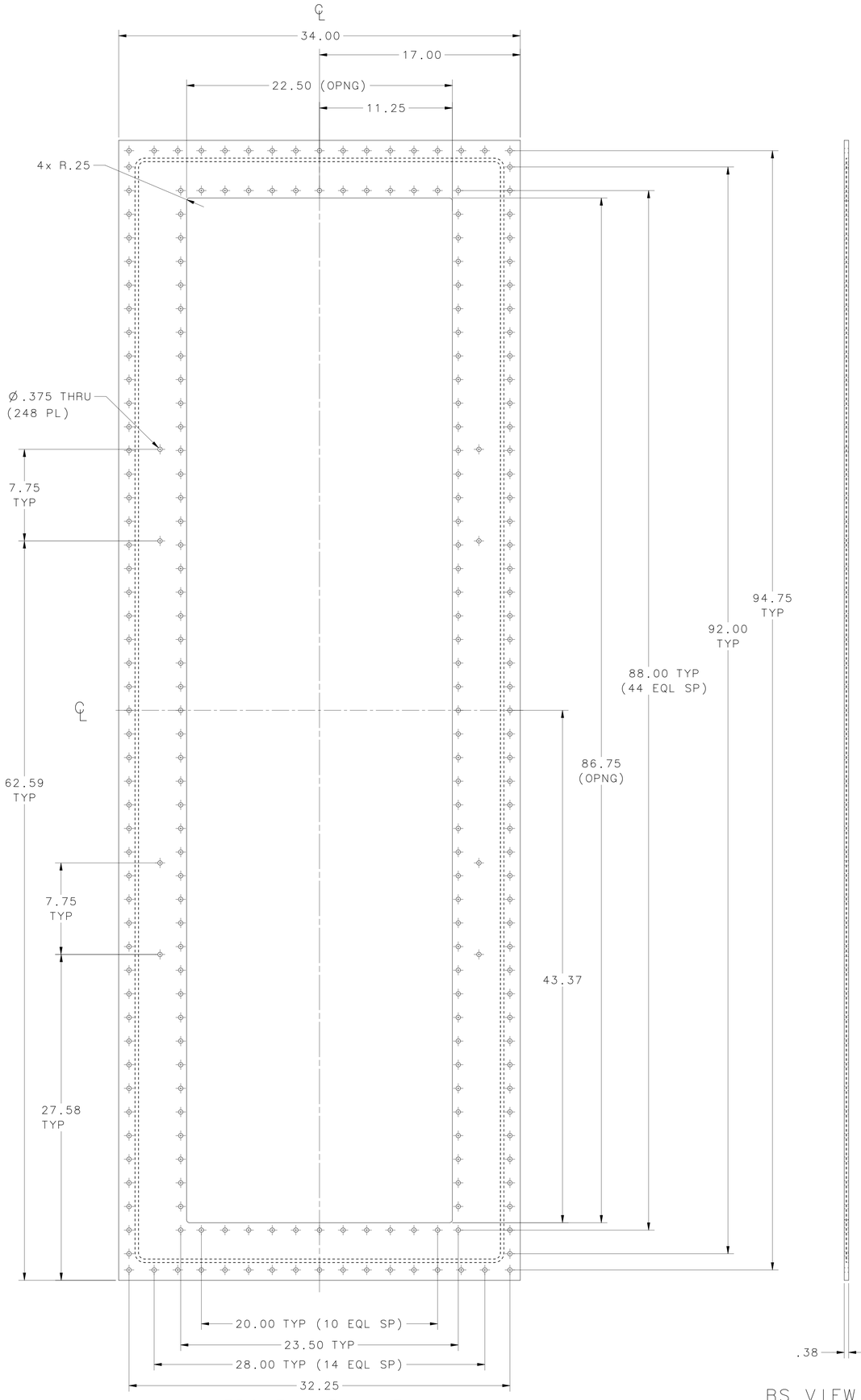
SIZE: E
DWG. NO.: A00000-01-01-3702
REV.: —
SCALE: 1:4
USED ON ASSY NO: A00000-01-01-3700
SHEET 1 OF 1

Approved: 4/1/2015; E-Sign ID : 297786; signed by: Ap. 1: B. Wojtsekhowski; Ap. 2: R. Wines; C.: A. Gavalya; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED

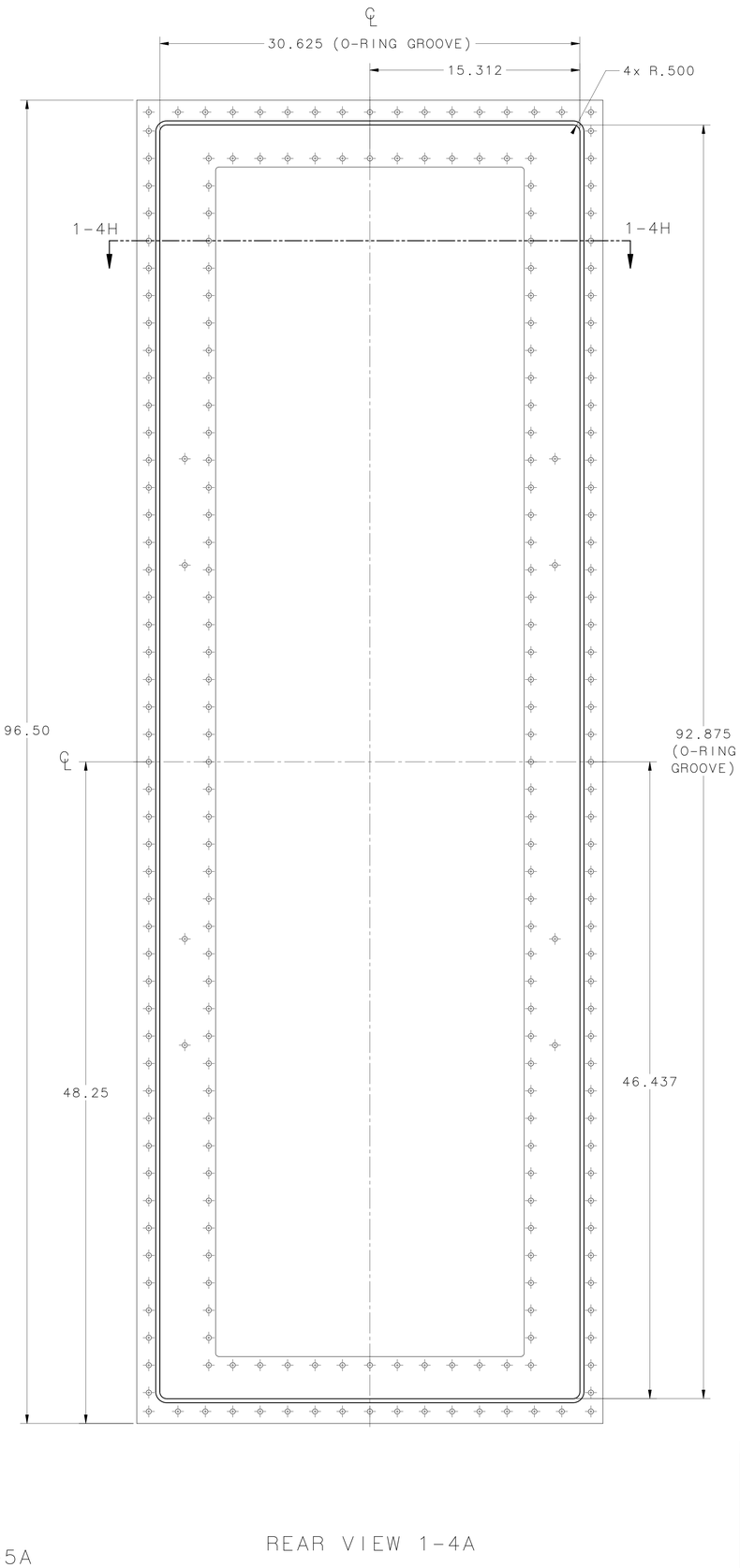


SECTION VIEW 1-4H
(1-4A)

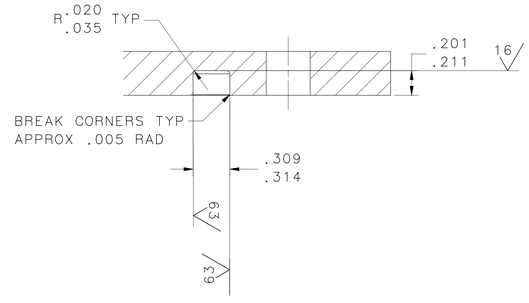


FRONT VIEW 1-7A

RS VIEW 1-5A



REAR VIEW 1-4A



DETAIL VIEW 1-1E
SCALE 2:1
(1-4H)

NOTES:
1. WEIGHT IS APPROXIMATELY 46 LBS.
2. CLEAN AND REMOVE ALL SURFACE CONTAMINATION.
3. ANODIZE BLACK.
4. MASKING OR POST-MACHINING OF O-RING GROOVE REQUIRED.

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

DIM & TOL PER ASME Y14.5. UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE:
FRACTIONS ± N/A | DECIMAL .X ±.1, .XX ±.01, .XXX ±.005 | ANGLES ±.50°

THIRD ANGLE PROJECTION

MATERIAL: ALUMINUM 6061-T6

FINISH: MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DRAWN: S. ESP | DATE: 18 MAR 15

United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia

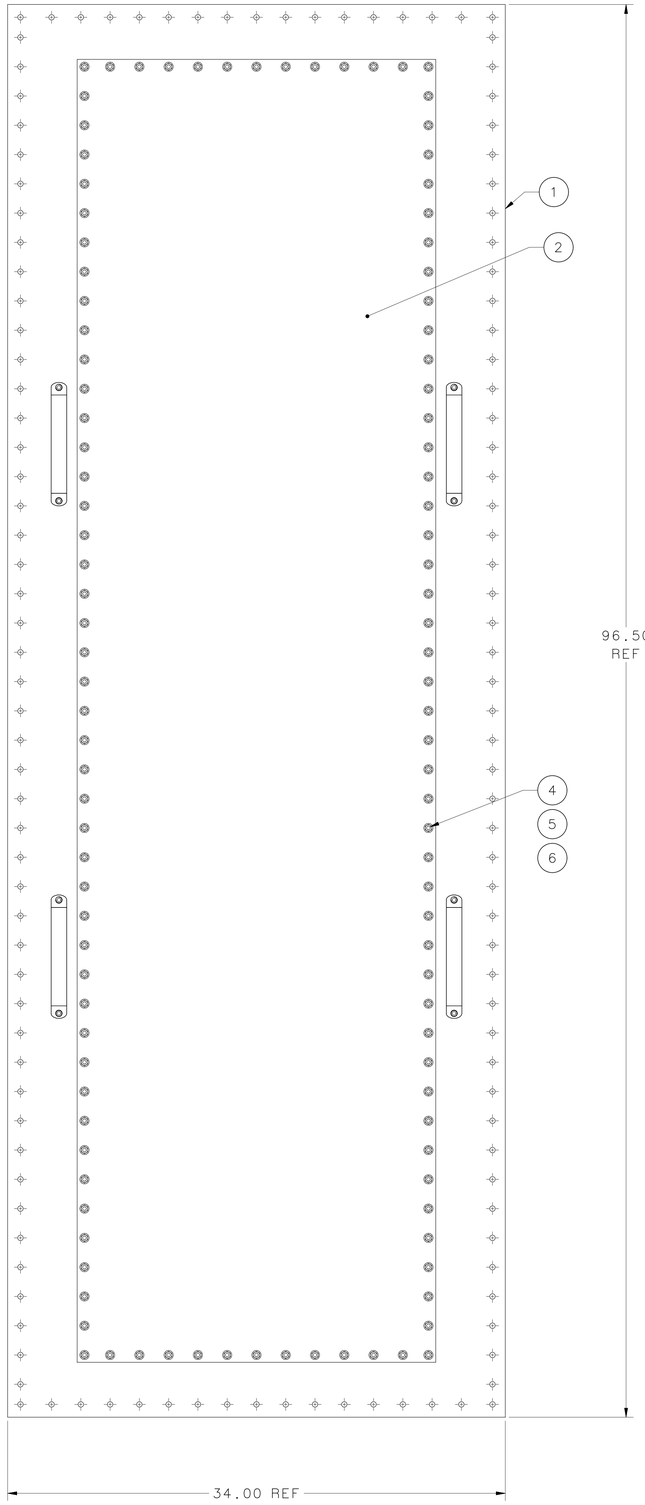
HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
MAIN BOX ASSY - ACCESS DOOR
O-RING PLATE 3/8 THK

SIZE	DWG. NO.	REV.
E	A00000-01-01-3701	–

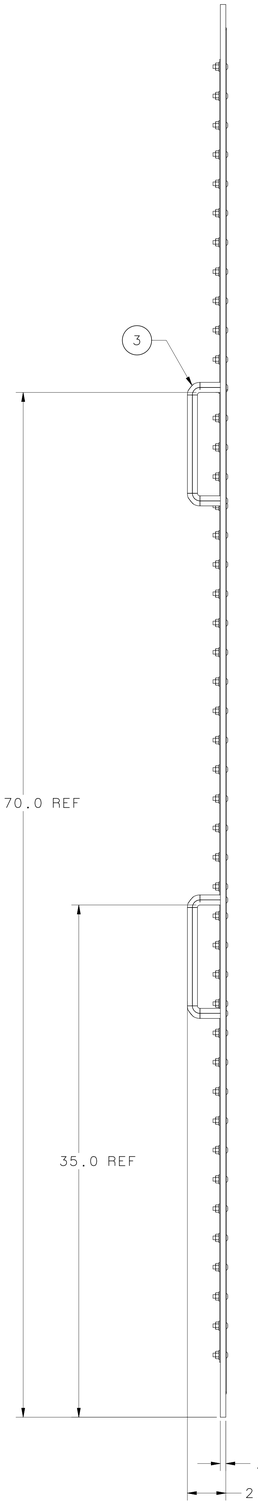
SCALE 1:4 | USED ON ASSY NO: A00000-01-01-3700 | SHEET 1 OF 1

Approved: 4/1/2015; E-Sign ID : 297785; signed by: Ap. 1: B. Wojtsekhowski; Ap. 2: R. Wines; C.: A. Gavalya; D: T. Fuell

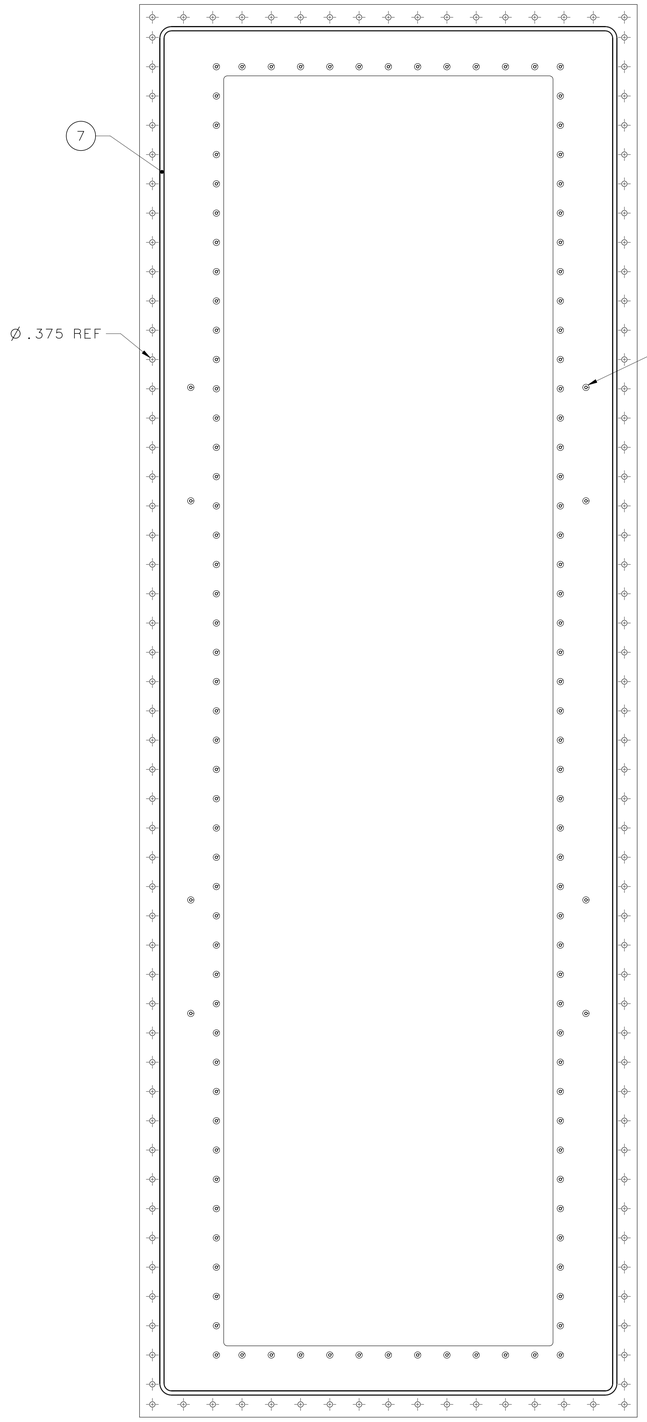
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



FRONT VIEW 1-7B



R SIDE VIEW 1-5B



REAR VIEW 1-3B

QTY REQD	ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	NOTES
1	7	JLAB PROVIDED	O-RING 1/4 INCH NOM DIA - 75 DUROMETER	VITON FLUOROELASTOMER	2
112	6	MMC 94804A029	NUT HEX 1/4-20 UNC	STNLS STL 316	-
112	5	MMC 91950A029	WASHER FLAT 1/4 RGLR 9/32 ID 5/8 OD	STNLS STL 316	-
120	4	MCMASTER-CARR 98164A519	BUTTON HD SOCKET CAP SCREW 1/4-20 UNC X 7/8 LG	STNLS STL 316	-
4	3	MCMASTER-CARR 5190A33	OVAL PULL HANDLE	ALUMINUM 6061-T6	-
1	2	A00000-01-01-3702	AL SHEET FOR ACCESS DOOR	ALUMINUM 6061-T6	-
1	1	A00000-01-01-3701	O-RING PLATE 3/8 THK	6061 T651 AL	-

PARTS LIST

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

DIM & TOL PER ASME Y14.5-2009
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES.
TOLERANCES ARE:
FRACTIONS ± N/A | DECIMAL .X ± .1, .XX ± .01, .XXX ± .005 | ANGLES ± .50°

THIRD ANGLE PROJECTION

MATERIAL: SEE PARTS LIST

FINISH: MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DRAWN: S. ESP | DATE: 18 MAR 15

United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia

HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
MAIN BOX ASSY
ACCESS DOOR ASSY

SIZE: E | DWG. NO.: A00000-01-01-3700 | REV.: -

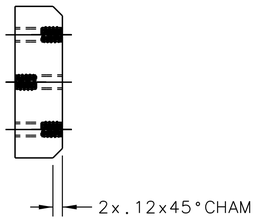
SCALE: 1:4 | USED ON ASSY NO: A00000-01-01-2500 | SHEET 1 OF 1

NOTES:

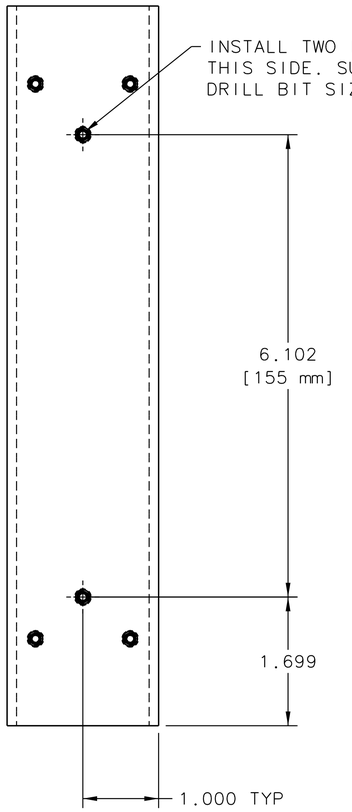
1. WEIGHT IS APPROXIMATELY 60 LBS.
2. ITEM 8: O-RING CORD IS APPROXIMATELY 248 IN LONG.

Approved: 4/1/2015; E-Sign ID : 297783; signed by: Ap. 1: B. Wojtsekhowski; Ap. 2: R. Wines; C.: A. Gavalya; D: T. Fuell

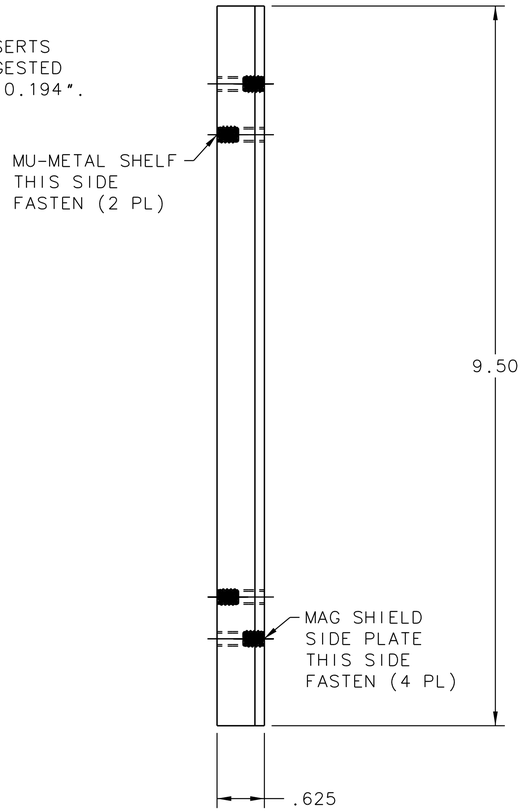
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
ALL	A	DIMENSIONS MODIFIED TO BE IN INCH / mm.	21 MAR 14	SME
				BBW



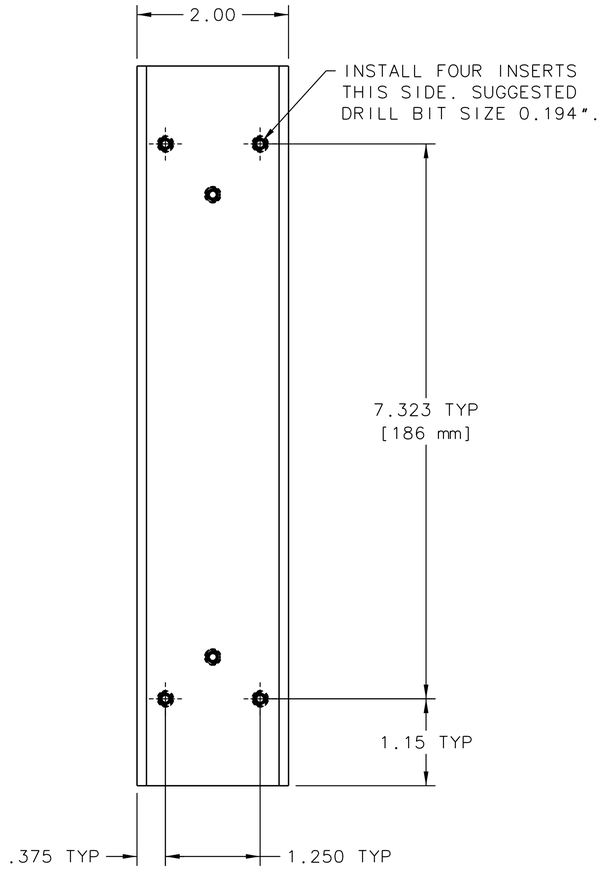
TOP VIEW 1-6D



L SIDE VIEW 1-7A



FRONT VIEW 1-6A



R SIDE VIEW 1-4A

NOTES:

1. WEIGHT IS APPROXIMATELY 1/2 LB.

QTY REQD	ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	NOTES
6	1	McMASTER-CARR 99362A300	TAPPING INSERT FOR PLASTIC #6-32 INTERNAL THD SIZE x 9/32 LG	BRASS	-

DOCUMENT CONTROL STAMP

MATERIAL: ACETAL (DELRIN)

FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DIM & TOL PER ASME Y14.5.
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± N/A
DECIMAL .X ±.1 .XX ±.01 .XXX ±.005
ANGLES ± .50°

THIRD ANGLE PROJECTION

TRACKING NO. N/A

APPROVALS	DATE
DRAWN S. ESP	25 NOV 13
CHECKED B. WOJTSEKHOWSKI	10 JAN 14
APPROVED W. SEAY	10 JAN 14
APPROVED B. WOJTSEKHOWSKI	10 JAN 14

United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia

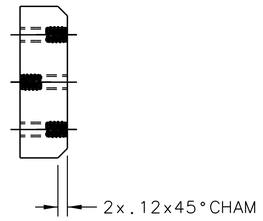
HALL A - GENL EQUIPMENT
GRINCH DET - PMT ARRAY BOX
MU-METAL SHELF ASSY
SPACER SIDE

SIZE	DWG. NO.	REV.
D	A00000-01-01-3603	A

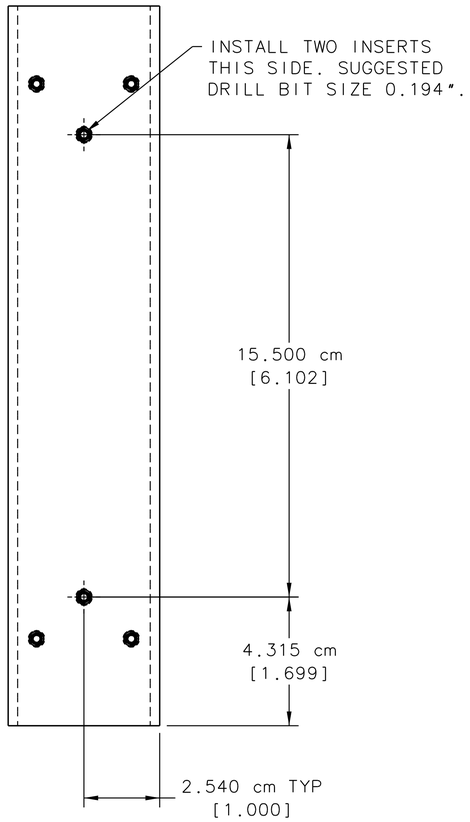
SCALE 1 : 1 | USED ON ASSY NO. A00000-01-01-3600 | SHEET 1 OF 1

Approved: 3/21/2014; E-Sign ID: 270297; signed by: Ap. 1: B. Wojtsekhowski; C.: B. Wojtsekhowski; D: T. Fuell

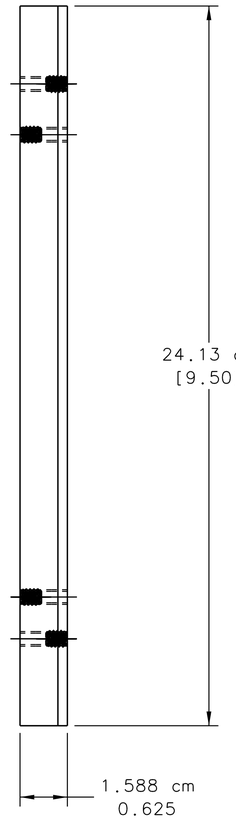
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



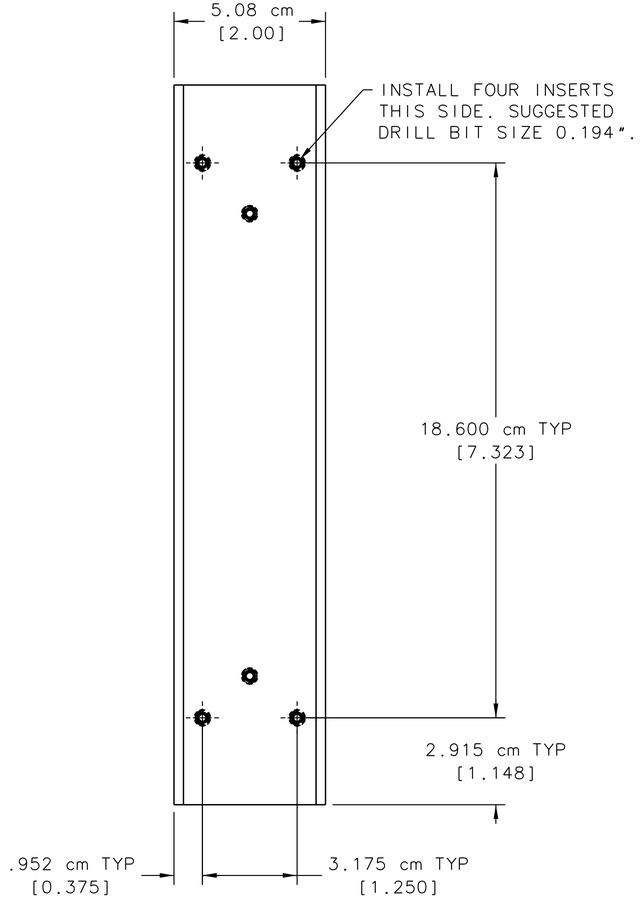
TOP VIEW 1-6D



L SIDE VIEW 1-7A



FRONT VIEW 1-6A



R SIDE VIEW 1-4A

QTY REQD	ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	NOTES
6	1	McMASTER-CARR 99362A300	TAPPING INSERT FOR PLASTIC #6-32 INTERNAL THD SIZE x 9/32 LG	BRASS	-

DOCUMENT CONTROL STAMP

MATERIAL
ACETAL (DELRIN)

FINISH
MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DIM & TOL PER ASME Y14.5.
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± N/A
DECIMAL .X ±.1 .XX ±.01 .XXX ±.005
ANGLES ± .50°

THIRD ANGLE PROJECTION

TRACKING NO.
N/A

APPROVALS	DATE
DRAWN S. ESP	25 NOV 13
CHECKED	
APPROVED	
APPROVED	

United States Department of Energy
Jefferson Lab
Thomas Jefferson National Accelerator Facility
Newport News Virginia

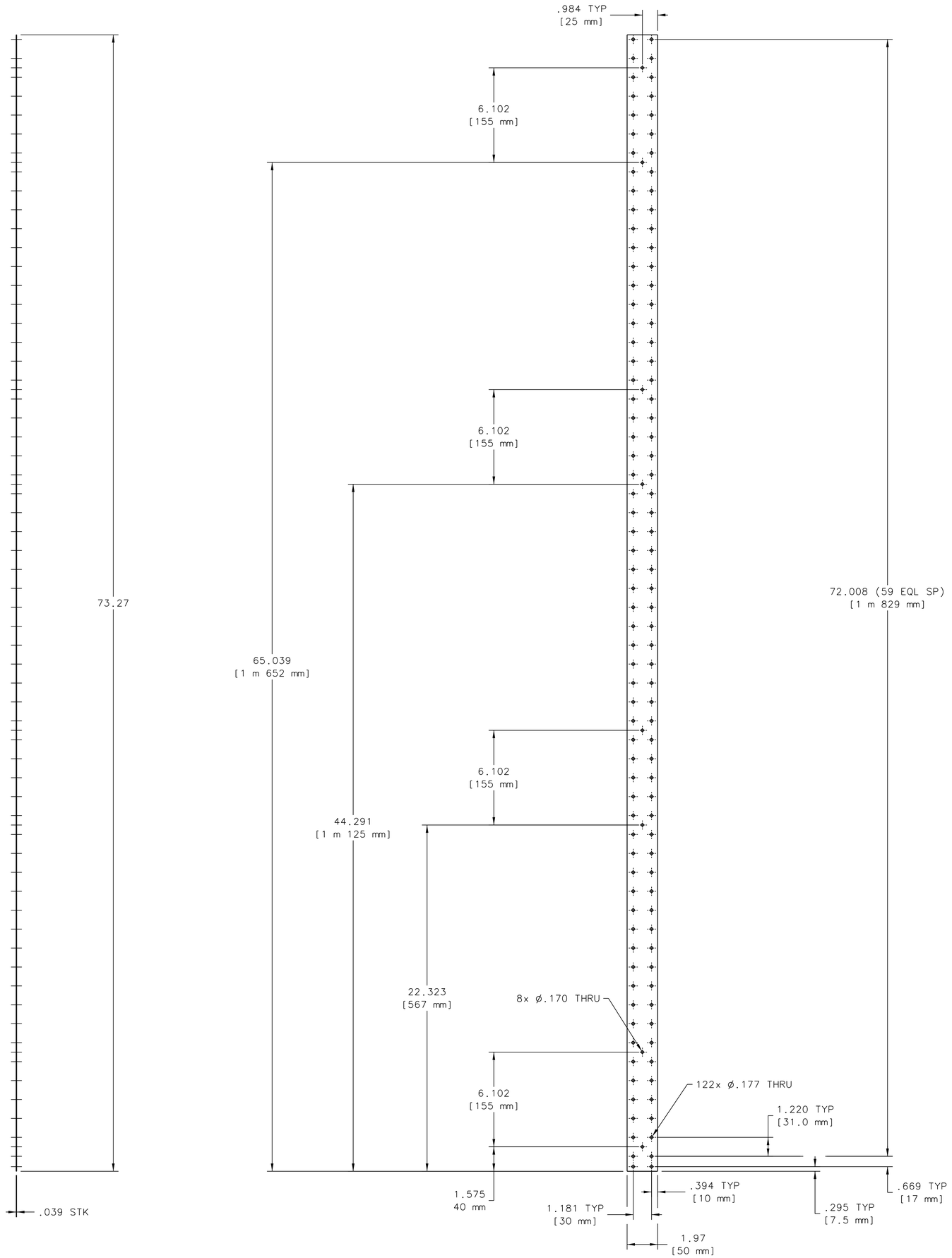
HALL A - GENL EQUIPMENT
GRINCH DET - PMT ARRAY BOX
MU-METAL SHELF ASSY
SPACER SIDE

SIZE	DWG. NO.	REV.
D	A00000-01-01-3603	-

SCALE 1:1 | USED ON ASSY NO. A00000-01-01-3600 | SHEET 1 OF 1

Approved: 11/0/2014; E-Sign ID : 264724; signed by: AP. 2: B. Wojtsekhowski; Ap. 1: W. Seay; C.: B. Wojtsekhowski; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
ALL	A	ADDED NOTE 2. DIMENSIONS MODIFIED TO BE IN INCH / mm.	21 MAR 14	SME BBW



FRONT VIEW 1-7A

R SIDE VIEW 1-5A

NOTES:

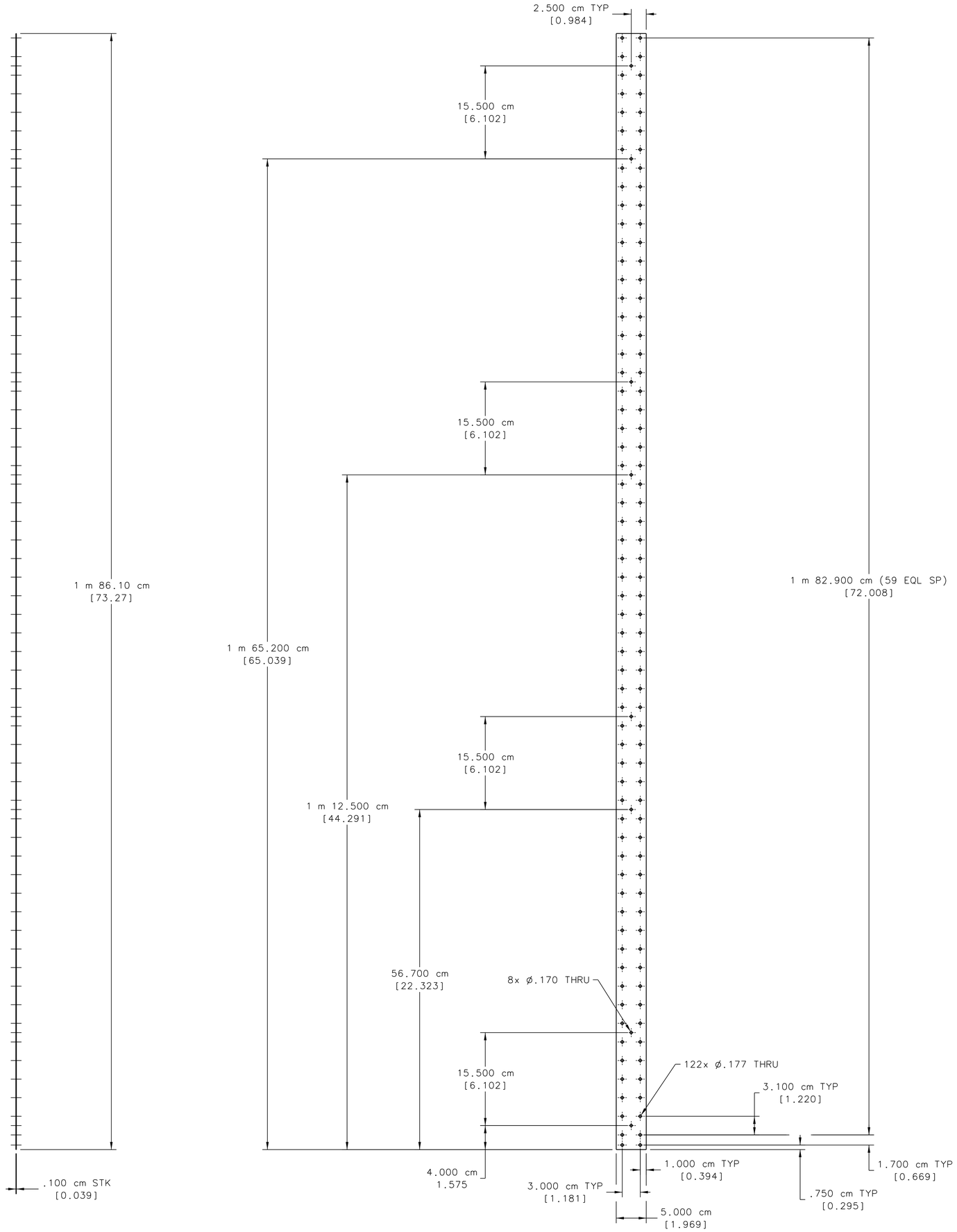
1. WEIGHT IS APPROXIMATELY 2 LBS.
2. ANNEAL AFTER MACHINING TO REMOVE LOCAL MAGNETIZATION.

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

DOCUMENT CONTROL STAMP	DIM & TOL PER ASME Y14.5 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMAL ANGLES ± N/A .X ±.1 ± .50° .XX ±.01 .XXX ±.005	TRACKING NO. N/A	United States Department of Energy — Jefferson Lab — Thomas Jefferson National Accelerator Facility — Newport News Virginia
MATERIAL MU-METAL	THIRD ANGLE PROJECTION	APPROVALS / DATE DRAWN S. ESP 25 NOV 13 CHECKED B. WOJTSEKHOWSKI 10 JAN 14 APPROVED W. SEAY 10 JAN 14 APPROVED B. WOJTSEKHOWSKI 10 JAN 14	HALL A - GENL EQUIPMENT GRINCH DET - PMT ARRAY BOX MU-METAL SHELF ASSY SIDE BAR
FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED DEBURR & BREAK ALL SHARP EDGES			SIZE E — DWG. NO. A00000-01-01-3602 — REV. A
DO NOT SCALE DRAWING			SCALE 3:8 — USED ON ASSY NO. A00000-01-01-3600 — SHEET 1 OF 1

Approved: 3/27/2014; E-Sign ID: 270296; signed by: Ap. 1: B. Wojtsekhowski; C.: B. Wojtsekhowski; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



FRONT VIEW 1-7A

R SIDE VIEW 1-5A

NOTES:

1. WEIGHT IS APPROXIMATELY 2 LBS.

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

DOCUMENT CONTROL STAMP

MATERIAL: MU-METAL

FINISH: MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DIM & TOL PER ASME Y14.5
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± N/A | DECIMAL .X ± .1, .XX ± .01, .XXX ± .005 | ANGLES ± .50°

THIRD ANGLE PROJECTION

TRACKING NO. N/A

APPROVALS	DATE
DRAWN S. ESP	25 NOV 13
CHECKED	
APPROVED	
APPROVED	

United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia

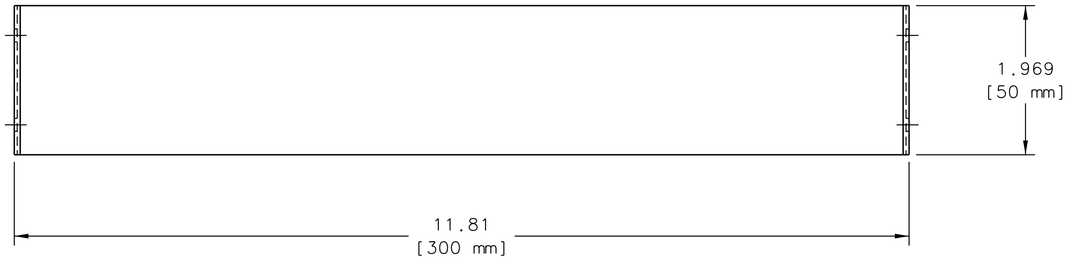
HALL A - GENL EQUIPMENT
GRINCH DET - PMT ARRAY BOX
MU-METAL SHELF ASSY
SIDE BAR

SIZE E | DWG. NO. A00000-01-01-3602 | REV. -

SCALE 3:8 | USED ON ASSY NO. A00000-01-01-3600 | SHEET 1 OF 1

Approved: 1/07/2014; E-Sign ID: 2647723; signed by: AP; 2: B. Wojtsekhowski; Ap. 1: W. Seay; C: B. Wojtsekhowski; D: T. Fuell

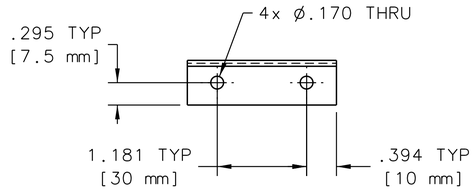
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
ALL	A	ADDED NOTES 1 AND 2.	21 MAR 14	SME
		DIMENSIONS MODIFIED TO BE IN INCH / mm.		BBW



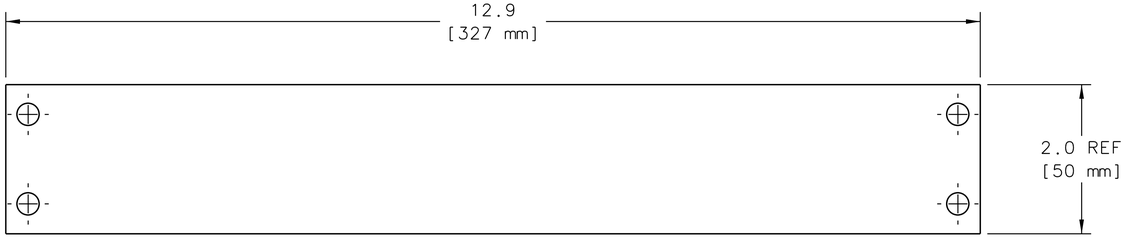
TOP VIEW 1-6D



FRONT VIEW 1-6C



R SIDE VIEW 1-3C



FLAT PATTERN 1-6A

NOTES:

1. WEIGHT IS APPROXIMATELY 1/2 LB.
2. ANNEAL AFTER MACHINING TO REMOVE LOCAL MAGNETIZATION.

DOCUMENT CONTROL STAMP

MATERIAL: MU-METAL

FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DIM & TOL PER ASME Y14.5
UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± N/A | DECIMAL .X ±.1, .XX ±.01, .XXX ±.005 | ANGLES ± .50°

THIRD ANGLE PROJECTION

TRACKING NO. N/A

APPROVALS	DATE
DRAWN S. ESP	25 NOV 13
CHECKED B. WOJTSEKHOWSKI	10 JAN 14
APPROVED W. SEAY	10 JAN 14
APPROVED B. WOJTSEKHOWSKI	10 JAN 14

United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia

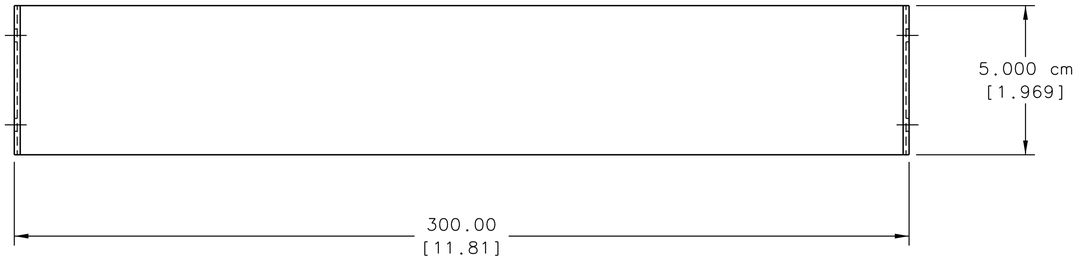
HALL A - GENL EQUIPMENT
GRINCH DET - PMT ARRAY BOX
MU-METAL SHELF ASSY
HORIZONTAL BAR

SIZE D | DWG. NO. A00000-01-01-3601 | REV. A

SCALE 1:1 | USED ON ASSY NO. A00000-01-01-3600 | SHEET 1 OF 1

Approved: 3/21/2014; E-Sign ID: 270295; signed by: Ap. 1:: B. Wojtsekhowski; C:: B. Wojtsekhowski; D:: T. Fuell

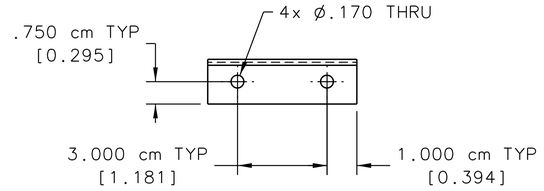
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



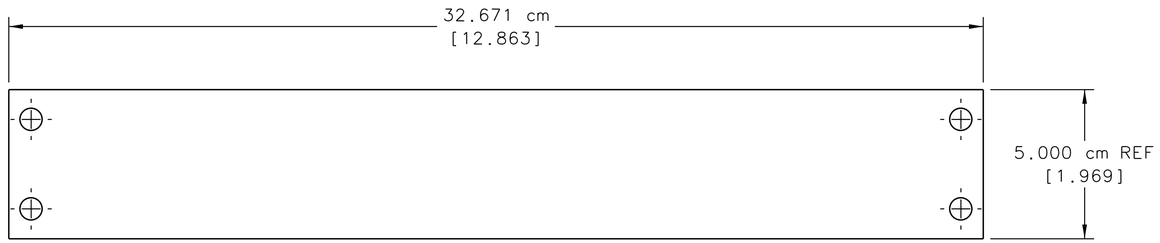
TOP VIEW 1-6D



FRONT VIEW 1-6C



R SIDE VIEW 1-3C

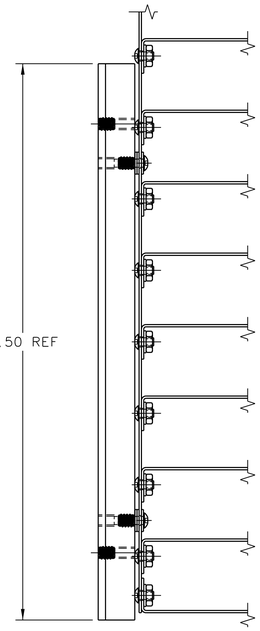


FLAT PATTERN 1-6A

Approved: 1/10/2014; E-Sign ID : 264722; signed by: AP. 2: B. Wojtsekhowski; Ap. 1: W. Seay; C.: B. Wojtsekhowski; D: T. Fuell

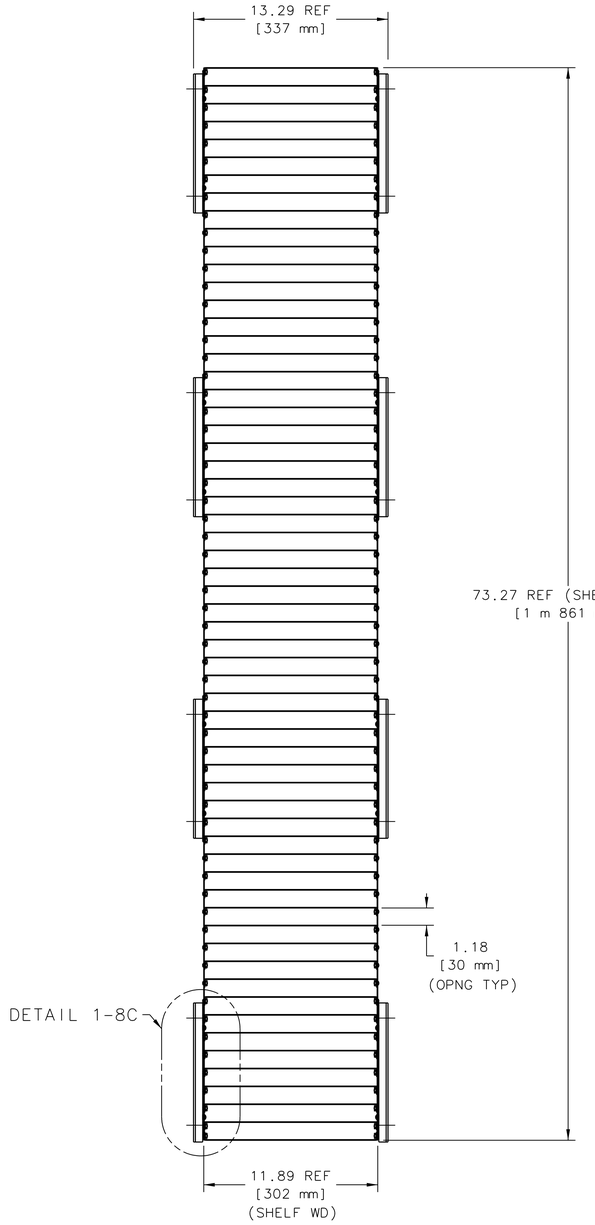
DOCUMENT CONTROL STAMP	DIM & TOL PER ASME Y14.5 UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMAL ANGLES ± N/A .X ±.1 ± .50° .XX ±.01 .XXX ±.005	TRACKING NO. N/A	United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia
MATERIAL: MU-METAL	THIRD ANGLE PROJECTION	APPROVALS / DATE DRAWN: S. ESP — 25 NOV 13 CHECKED APPROVED APPROVED	HALL A - GENL EQUIPMENT GRINCH DET - PMT ARRAY BOX MU-METAL SHELF ASSY HORIZONTAL BAR
FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED DEBURR & BREAK ALL SHARP EDGES			SIZE D — DWG. NO. A00000-01-01-3601 — REV. –
DO NOT SCALE DRAWING			SCALE 1:1 — USED ON ASSY NO. A00000-01-01-3600 — SHEET 1 OF 1

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
ALL	A	DIMENSIONS MODIFIED TO BE IN INCH / mm. ADDED NOTE 2.	21 MAR 14	SME BBW

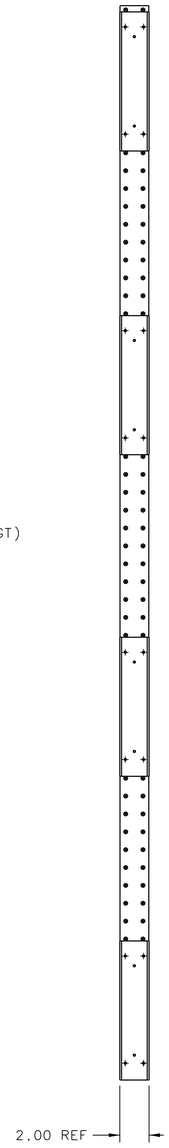


DETAIL VIEW 1-8C

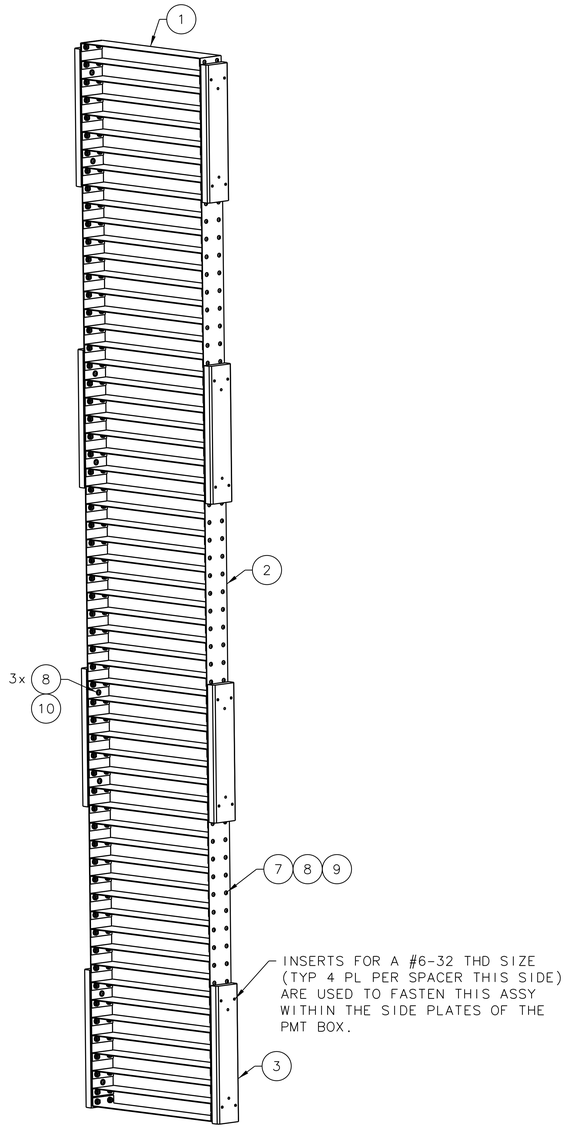
SCALE 1:1
(1-6C)



FRONT VIEW 1-6C



RS VIEW 1-5C



ISO VIEW 1-4C

QTY REQD	ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	NOTES
16	10	McMASTER-CARR 97715A104	BUTTON SOCKET HEAD CAP SCREW #6-32 UNC x 1/2 INCH LG	BRASS	-
244	9	McMASTER-CARR 92671A007	NUT HEX - #6-32 UNC	BRASS	-
292	8	McMASTER-CARR 92916A330	WASHER - #6 RGLR	BRASS	-
244	7	McMASTER-CARR 97715A102	BUTTON SOCKET HEAD CAP SCREW #6-32 UNC x 1/4 INCH LG	BRASS	-
-	6	-	-	-	-
-	5	-	-	-	-
-	4	-	-	-	-
8	3	A00000-01-01-3603	SPACER SIDE	ACETAL (DELRIN)	-
2	2	A00000-01-01-3602	SIDE BAR - 1 mm THICK	MU-METAL	-
61	1	A00000-01-01-3601	HORIZONTAL BAR - 1 mm THICK	MU-METAL	-

PARTS LIST

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

NOTES:

1. WEIGHT IS APPROXIMATELY 28-1/2 LBS.
2. ALL MU-METAL MUST BE ANNEALED AFTER MACHINING TO REMOVE LOCAL MAGNETIZATION.

DOCUMENT CONTROL STAMP

MATERIAL: AS NOTED

FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DIM & TOL PER ASME Y14.5
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± N/A DECIMAL .X ± .1 .XX ± .01 .XXX ± .005 ANGLES ± .50"

THIRD ANGLE PROJECTION

TRACKING NO. N/A

APPROVALS	DATE
DRAWN S. ESP	25 NOV 13
CHECKED B. WOJTSEKHOWSKI	10 JAN 14
APPROVED W. SEAY	10 JAN 14
APPROVED B. WOJTSEKHOWSKI	10 JAN 14

United States Department of Energy
Jefferson Lab
Thomas Jefferson National Accelerator Facility
Newport News Virginia

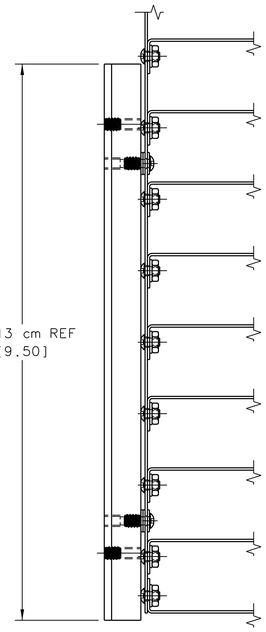
HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
PMT ARRAY BOX ASSY
MU-METAL SHELF ASSY

SIZE E | DWG. NO. A00000-01-01-3600 | REV. A

SCALE 1:4 | USED ON ASSY NO. A00000-01-01-3400 | SHEET 1 OF 1

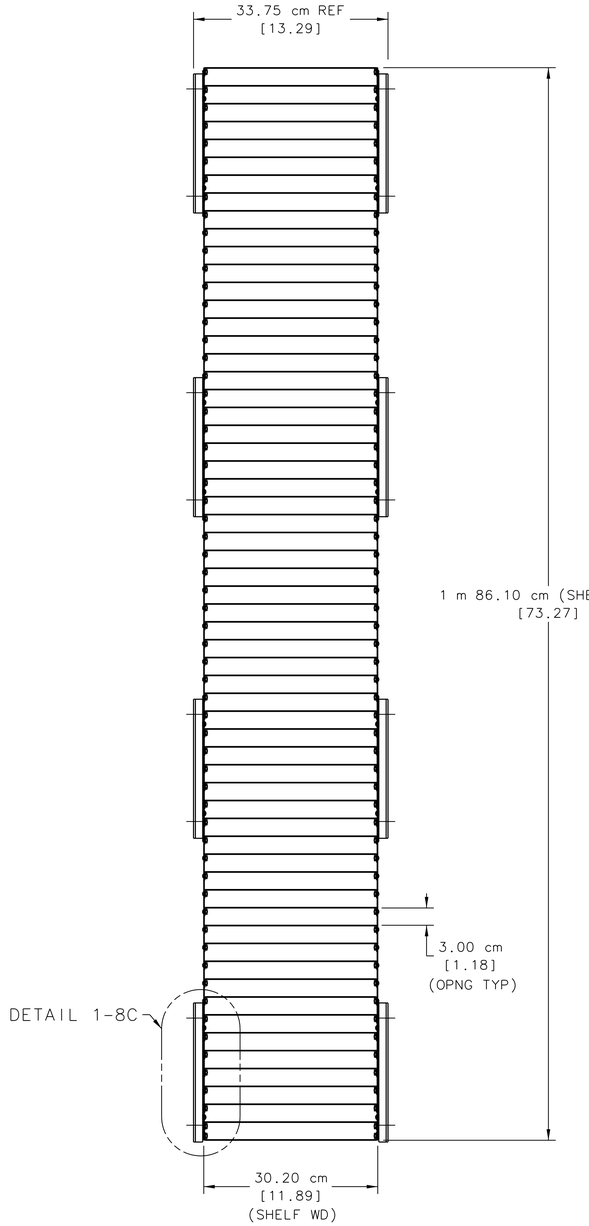
Approved: 3/21/2014; E-Sign ID: 270284; signed by: Ap. 1: B. Wojtsekhowski; Cr: B. Wojtsekhowski; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED

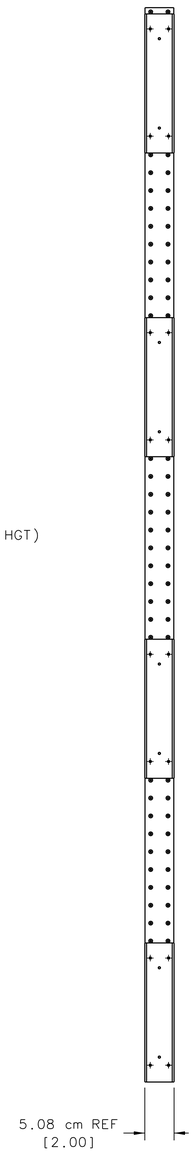


DETAIL VIEW 1-8C

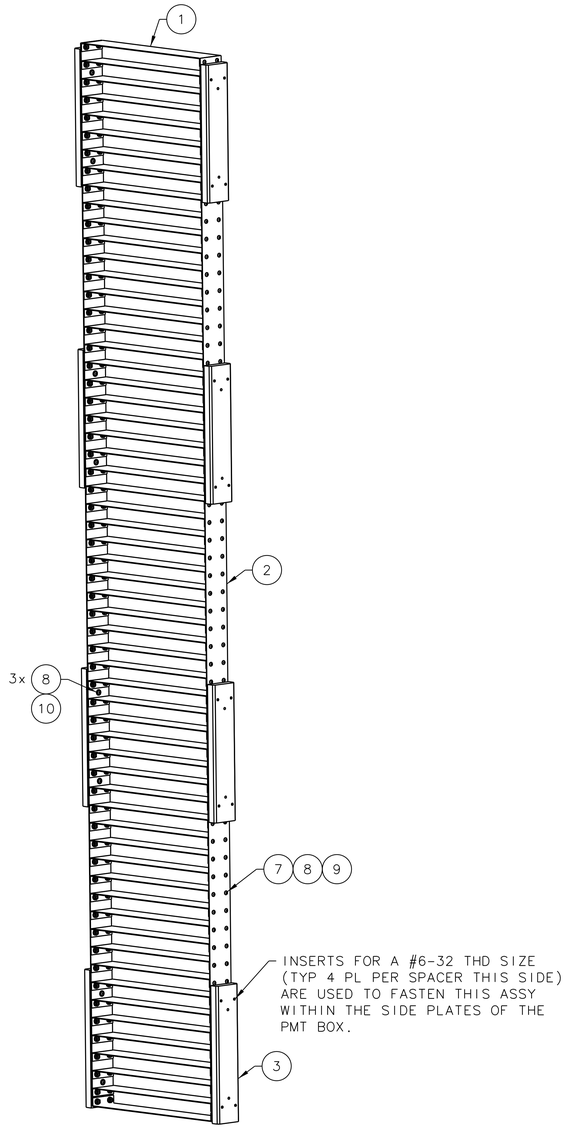
SCALE 1:1
(1-6C)



FRONT VIEW 1-6C



RS VIEW 1-5C



ISO VIEW 1-4C

QTY REQD	ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	NOTES
16	10	McMASTER-CARR 97715A104	BUTTON SOCKET HEAD CAP SCREW #6-32 UNC x 1/2 INCH LG	BRASS	-
244	9	McMASTER-CARR 92671A007	NUT HEX - #6-32 UNC	BRASS	-
292	8	McMASTER-CARR 92916A330	WASHER - #6 RGLR	BRASS	-
244	7	McMASTER-CARR 97715A102	BUTTON SOCKET HEAD CAP SCREW #6-32 UNC x 1/4 INCH LG	BRASS	-
-	6	-	-	-	-
-	5	-	-	-	-
-	4	-	-	-	-
8	3	A00000-01-01-3603	SPACER SIDE	ACETAL (DELRIN)	-
2	2	A00000-01-01-3602	SIDE BAR - 1 mm THICK	MU-METAL	-
61	1	A00000-01-01-3601	HORIZONTAL BAR - 1 mm THICK	MU-METAL	-

PARTS LIST

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

NOTES:

1. WEIGHT IS APPROXIMATELY 28-1/2 LBS.

DOCUMENT CONTROL STAMP

MATERIAL: AS NOTED

FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DIM & TOL PER ASME Y14.5
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± N/A | DECIMAL .X ± .1, .XX ± .01, .XXX ± .005 | ANGLES ± .50"

THIRD ANGLE PROJECTION

TRACKING NO. N/A

APPROVALS	DATE
DRAWN S. ESP	25 NOV 13
CHECKED	
APPROVED	
APPROVED	

United States Department of Energy
Jefferson Lab — Thomas Jefferson National Accelerator Facility
Newport News Virginia

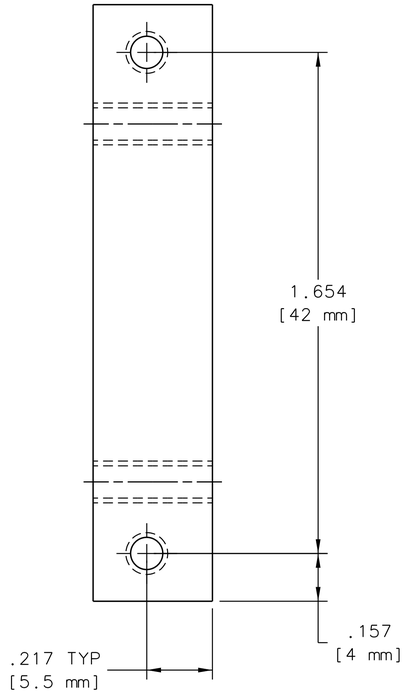
HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
PMT ARRAY BOX ASSY
MU-METAL SHELF ASSY

SIZE E | DWG. NO. A00000-01-01-3600 | REV. -

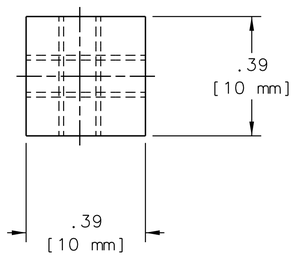
SCALE 1:4 | USED ON ASSY NO. A00000-01-01-3400 | SHEET 1 OF 1

Approved: 1/10/2014; E-Sign ID: 264720; signed by: AP 2: B. Wojtsekhowski; Ap. 1: W. Seay; C: B. Wojtsekhowski; D: T. Fuell

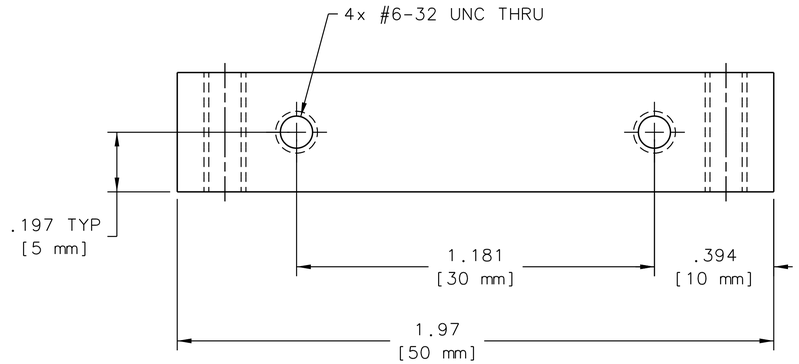
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
ALL	A	ADDED NOTES 1 THRU 3.	21 MAR 14	SME
		DIMENSIONS MODIFIED TO BE IN INCH / mm.		BBW



TOP VIEW 1-7C



FRONT VIEW 1-7A



R SIDE VIEW 1-4A

NOTES:

1. All SURFACES REQUIRE A UNIFORM COATING OF 10um NICKEL.
2. All SURFACES MUST BE CLEANED, FREE OF DIRT, CORROSION, AND DEFECTS BEFORE PLATING CAN BEGIN.
3. ANNEAL AFTER MACHINING TO REMOVE LOCAL MAGNETIZATION.

DOCUMENT CONTROL STAMP

MATERIAL: 1005 STEEL

FINISH: MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DIM & TOL PER ASME Y14.5
UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± N/A DECIMAL .X ±.1 .XX ±.01 .XXX ±.005 ANGLES ±.50°

THIRD ANGLE PROJECTION

TRACKING NO. N/A

APPROVALS	DATE
DRAWN S. ESP	25 NOV 13
CHECKED B. WOJTSEKHOWSKI	10 JAN 14
APPROVED W. SEAY	10 JAN 14
APPROVED B. WOJTSEKHOWSKI	10 JAN 14

United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia

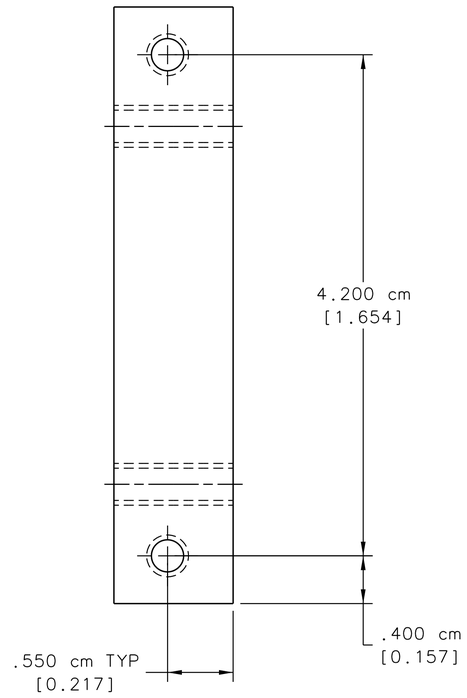
HALL A - GENL EQUIPMENT
GRINCH DET - PMT ARRAY BOX
STEEL HORIZONTAL TRAY ASSY
BAR MOUNT

SIZE D | DWG. NO. A00000-01-01-3502 | REV. A

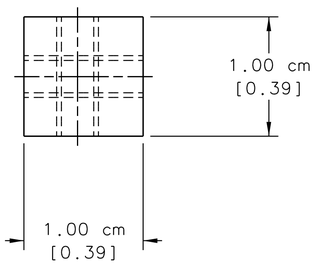
SCALE 4 : 1 | USED ON ASSY NO. A00000-01-01-3500 | SHEET 1 OF 1

Approved: 3/21/2014; E-Sign ID: 270300; signed by: Ap. 1: B. Wojtsekhowski; C: B. Wojtsekhowski; D: T. Fuell

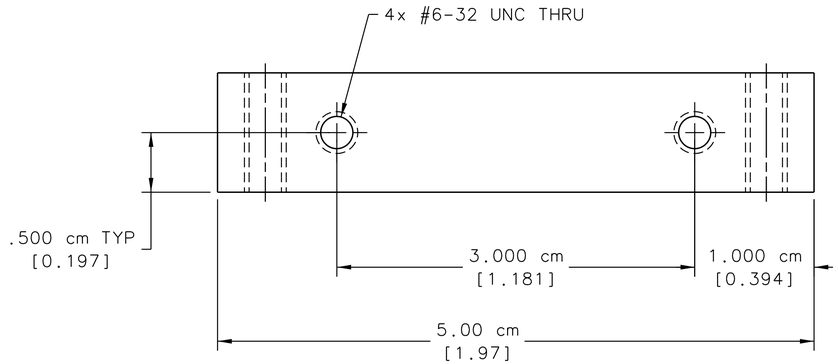
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



TOP VIEW 1-7C



FRONT VIEW 1-7A

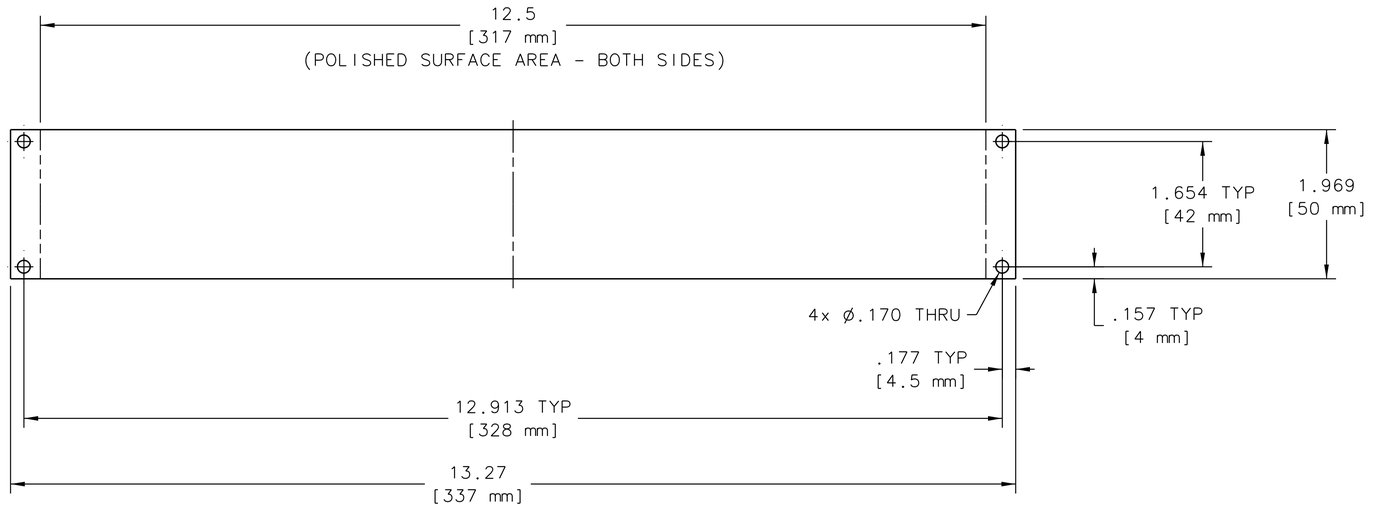


R SIDE VIEW 1-4A

DOCUMENT CONTROL STAMP	DIM & TOL PER ASME Y14.5 UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMAL ANGLES ± N/A .X ±.1 ± .50° .XX ±.01 .XXX ±.005	TRACKING NO. N/A	United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia
MATERIAL 1005 STEEL	THIRD ANGLE PROJECTION	APPROVALS / DRAWN S. ESP / CHECKED / APPROVED / APPROVED	DATE: 25 NOV 13
FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED DEBURR & BREAK ALL SHARP EDGES			HALL A - GENL EQUIPMENT GRINCH DET - PMT ARRAY BOX STEEL HORIZONTAL TRAY ASSY BAR MOUNT
DO NOT SCALE DRAWING			SIZE D — DWG. NO. A00000-01-01-3502 — REV. —
			SCALE 4:1 — USED ON ASSY NO. A00000-01-01-3500 — SHEET 1 OF 1

Approved: 1/10/2014; E-Sign ID: 264728; signed by: AP. 2: B. Wojtsekhowski; Ap. 1: W. Seay; C.: B. Wojtsekhowski; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
ALL	A	ADDED NOTES 1 THRU 4.	21 MAR 14	SME
		DIMENSIONS MODIFIED TO BE IN INCH / mm.		BBW



TOP VIEW 1-6C



FRONT VIEW 1-6B

NOTES:

1. ALL SURFACES REQUIRE A POLISHED FINISH.(1x50x317mm)mm^3.
2. All SURFACES REQUIRE A UNIFORM COATING OF 10um NICKEL.
3. All SURFACES MUST BE CLEANED, FREE OF DIRT, CORROSION, AND DEFECTS BEFORE PLATING CAN BEGIN.
4. ANNEAL AFTER MACHINING TO REMOVE LOCAL MAGNETIZATION.

DOCUMENT CONTROL STAMP

MATERIAL
1005 STEEL

FINISH
MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DIM & TOL PER ASME Y14.5 .
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± N/A
DECIMAL .X ± .1 .XX ± .01 .XXX ± .005
ANGLES ± .50°

THIRD ANGLE PROJECTION

TRACKING NO.
N/A

APPROVALS	DATE
DRAWN S. ESP	25 NOV 13
CHECKED B. WOJTSEKHOWSKI	10 JAN 14
APPROVED W. SEAY	10 JAN 14
APPROVED B. WOJTSEKHOWSKI	10 JAN 14

United States Department of Energy
Jefferson Lab
Thomas Jefferson National Accelerator Facility
Newport News Virginia

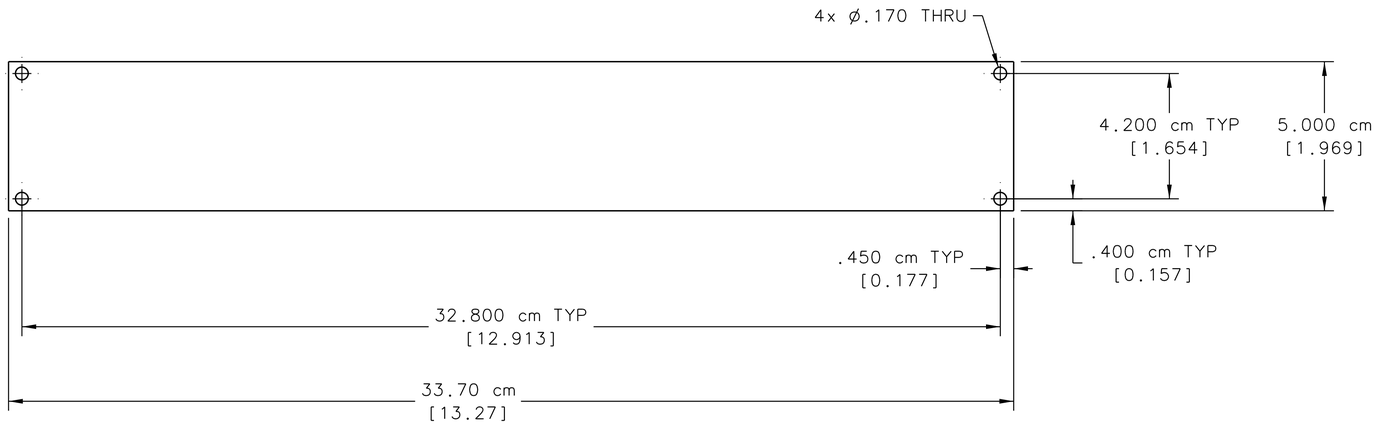
HALL A - GENL EQUIPMENT
GRINCH DET - PMT ARRAY BOX
STEEL HORIZONTAL TRAY ASSY
HORIZONTAL PLATE

SIZE D | DWG. NO. A00000-01-01-3501 | REV. A

SCALE 1 : 1 | USED ON ASSY NO. A00000-01-01-3500 | SHEET 1 OF 1

Approved: 3/21/2014, E-Sign ID : 270289 : signed by: Ap. 1: B. Wojtsekhowski; C.: B. Wojtsekhowski; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



TOP VIEW 1-6C

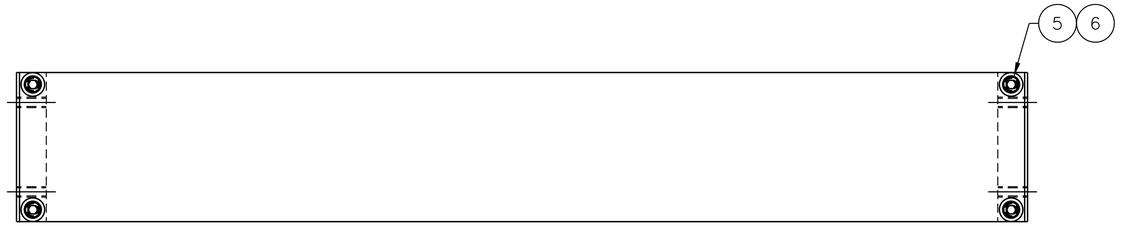


FRONT VIEW 1-6B

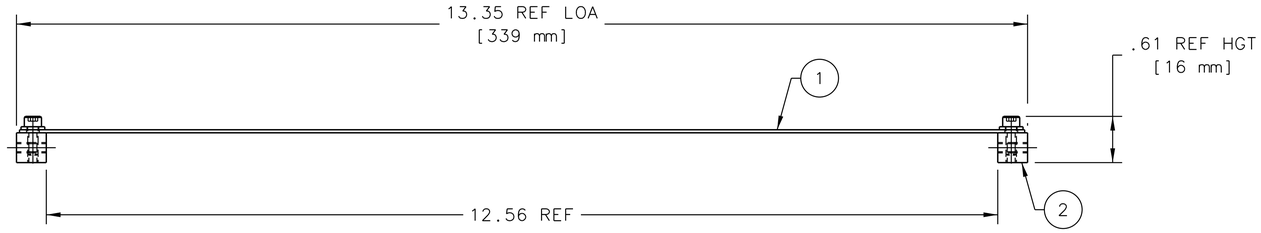
DOCUMENT CONTROL STAMP	DIM & TOL PER ASME Y14.5 . UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS ± N/A DECIMAL .X ±.1 .XX ±.01 .XXX ±.005 ANGLES ± .50°	TRACKING NO. N/A	United States Department of Energy — Jefferson Lab — Thomas Jefferson National Accelerator Facility — Newport News Virginia
MATERIAL 1005 STEEL	THIRD ANGLE PROJECTION	APPROVALS / DATE	HALL A - GENL EQUIPMENT GRINCH DET - PMT ARRAY BOX STEEL HORIZONTAL TRAY ASSY HORIZONTAL PLATE
FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED DEBURR & BREAK ALL SHARP EDGES		DRAWN S. ESP 25 NOV 13	SIZE D — DWG. NO. A00000-01-01-3501 — REV. –
DO NOT SCALE DRAWING		CHECKED	SCALE 1 : 1 — USED ON ASSY NO. A00000-01-01-3500 — SHEET 1 OF 1
		APPROVED	
		APPROVED	

Approved: 1/10/2014; E-Sign ID : 264728; signed by: AP. Z. B. WojtsekhowskI; Ap. 1: W. Seay; C.: B. WojtsekhowskI; D: T. Fuell

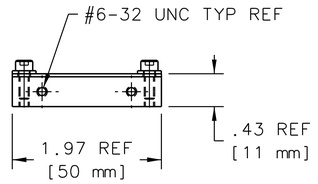
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
ALL	A	DIMENSIONS MODIFIED TO BE IN INCH / mm. ADDED NOTE 2.	21 MAR 14	SME BBW



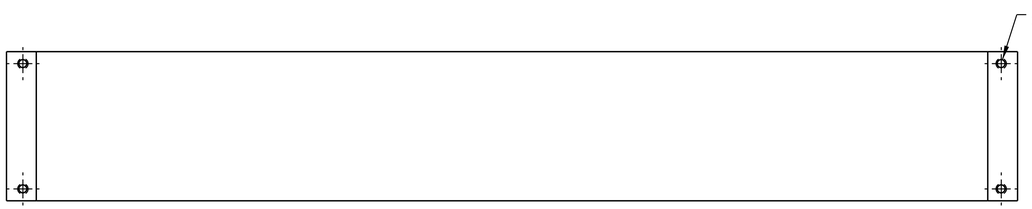
TOP VIEW 1-6D



FRONT VIEW 1-6C



RS VIEW 1-3C



BOTTOM VIEW 1-6B

NOTES:

1. WEIGHT IS APPROXIMATELY 1/2 LB.
2. ALL STEEL MUST BE ANNEALED AFTER MACHINING TO REMOVE LOCAL MAGNETIZATION.

QTY REQD	ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	NOTES
4	6	McMASTER-CARR 90107A007	WASHER - #6 RGLR	316 STNLS STL	-
4	5	McMASTER-CARR 92185A147	SOCKET HEAD CAP SCREW #6-32 UNC x 3/8 LG	316 STNLS STL	-
-	4	-	-	-	-
-	3	-	-	-	-
2	2	A00000-01-01-3502	BAR MOUNT - 1 cm SQ x 5 cm LG	1005 STEEL	-
1	1	A00000-01-01-3501	HORIZONTAL PLATE - 1 mm THICK	1005 STEEL	-

PARTS LIST

DOCUMENT CONTROL STAMP

MATERIAL: AS NOTED

FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DIM & TOL PER ASME Y14.5
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± N/A DECIMAL .X ±.1 .XX ±.01 .XXX ±.005 ANGLES ± .50°

THIRD ANGLE PROJECTION

TRACKING NO. N/A

APPROVALS	DATE
DRAWN S. ESP	25 NOV 13
CHECKED B. WOJTSEKHOWSKI	10 JAN 14
APPROVED W. SEAY	10 JAN 14
APPROVED B. WOJTSEKHOWSKI	10 JAN 14

United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia

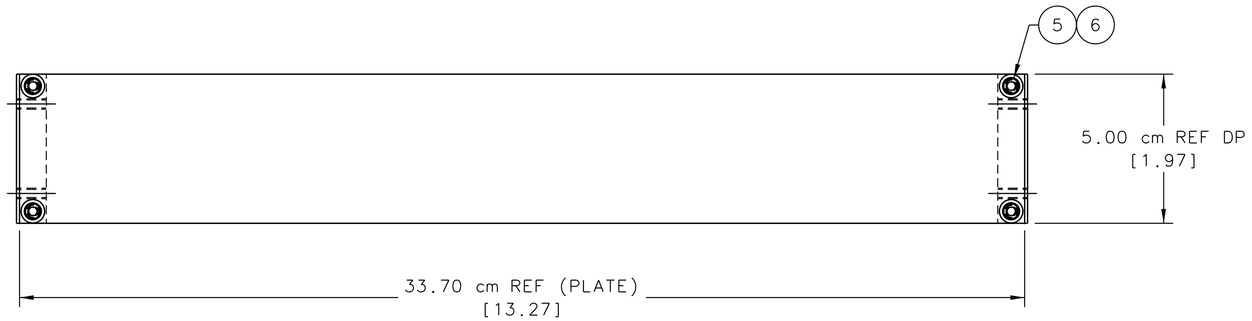
HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
PMT ARRAY BOX ASSY
STEEL HORIZONTAL TRAY ASSY

SIZE D | DWG. NO. A00000-01-01-3500 | REV. A

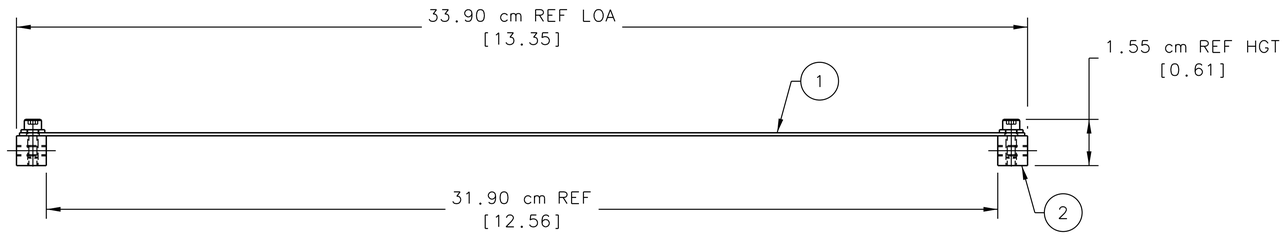
SCALE 1:1 | USED ON ASSY NO. A00000-01-01-3400 | SHEET 1 OF 1

Approved: 3/21/2014; E-Sign ID: 270286; signed by: Ap. 1: B. Wojtsekhowski; C: B. Wojtsekhowski; D: T. Fuell

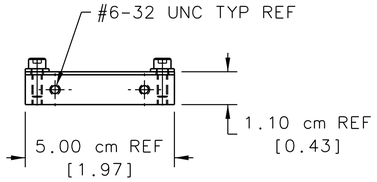
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



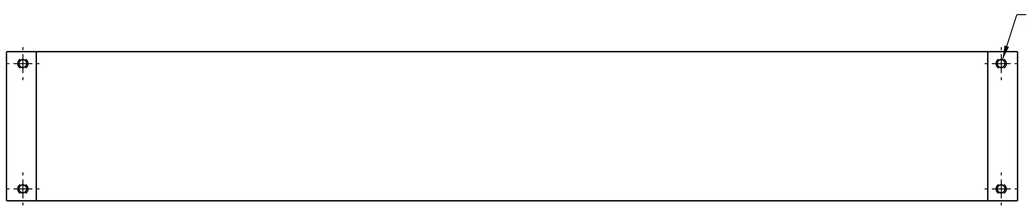
TOP VIEW 1-6D



FRONT VIEW 1-6C



RS VIEW 1-3C



BOTTOM VIEW 1-6B

NOTES:

1. WEIGHT IS APPROXIMATELY 1/2 LB.

QTY REQD	ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	NOTES
4	6	McMASTER-CARR 90107A007	WASHER - #6 RGLR	316 STNLS STL	-
4	5	McMASTER-CARR 92185A147	SOCKET HEAD CAP SCREW #6-32 UNC x 3/8 LG	316 STNLS STL	-
-	4	-	-	-	-
-	3	-	-	-	-
2	2	A00000-01-01-3502	BAR MOUNT - 1 cm SQ x 5 cm LG	1005 STEEL	-
1	1	A00000-01-01-3501	HORIZONTAL PLATE - 1 mm THICK	1005 STEEL	-

PARTS LIST

DOCUMENT CONTROL STAMP

MATERIAL: AS NOTED

FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DIM & TOL PER ASME Y14.5
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± N/A DECIMAL .X ±.1 .XX ±.01 .XXX ±.005 ANGLES ± .50°

THIRD ANGLE PROJECTION

TRACKING NO. N/A

APPROVALS	DATE
DRAWN S. ESP	25 NOV 13
CHECKED	
APPROVED	
APPROVED	

United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia

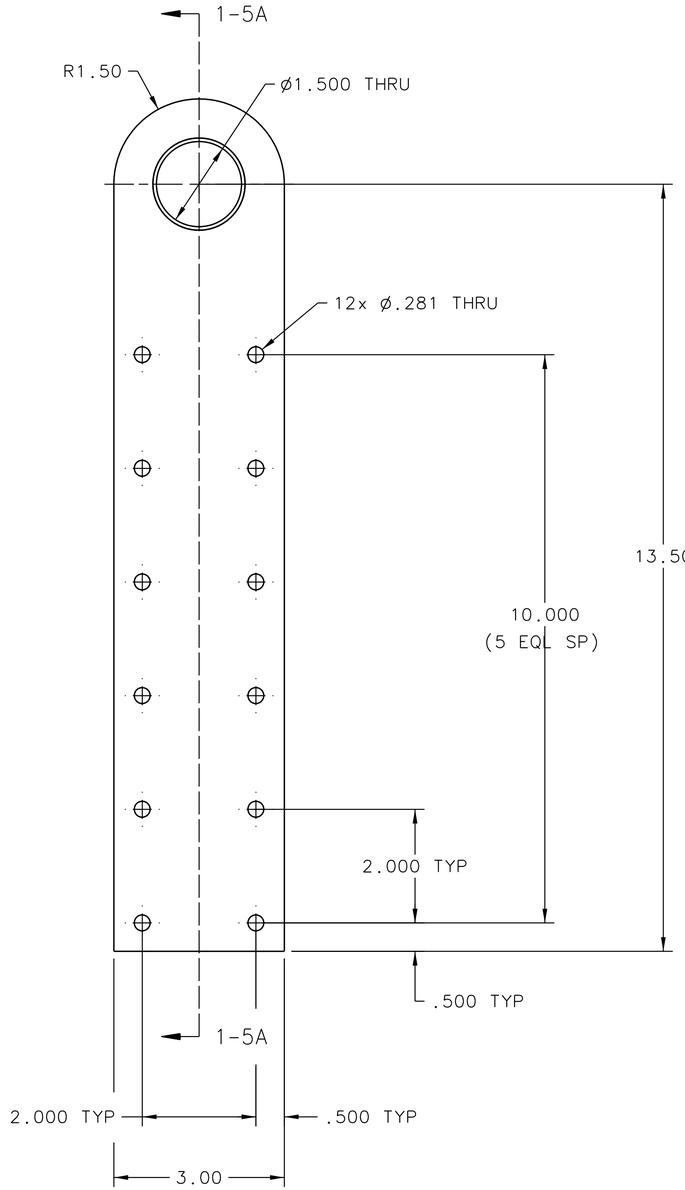
HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
PMT ARRAY BOX ASSY
STEEL HORIZONTAL TRAY ASSY

SIZE D | DWG. NO. A00000-01-01-3500 | REV. -

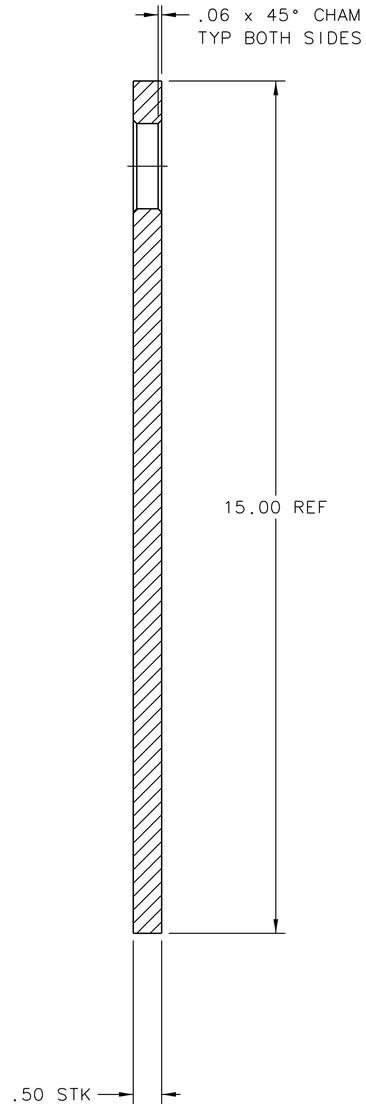
SCALE 1:1 | USED ON ASSY NO. A00000-01-01-3400 | SHEET 1 OF 1

Approved: 1/10/2014; E-Sign ID: 264725; signed by: AP. 2: B. Wojtsekhowski; Ap. 1: W. Seay; C.: B. Wojtsekhowski; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
ALL	A	MODIFIED NOTES. DIMENSIONS MODIFIED TO BE IN INCHES ONLY.	21 MAR 14 	SME BBW



FRONT VIEW 1-7A



SECTION VIEW 1-5A
(1-7A)

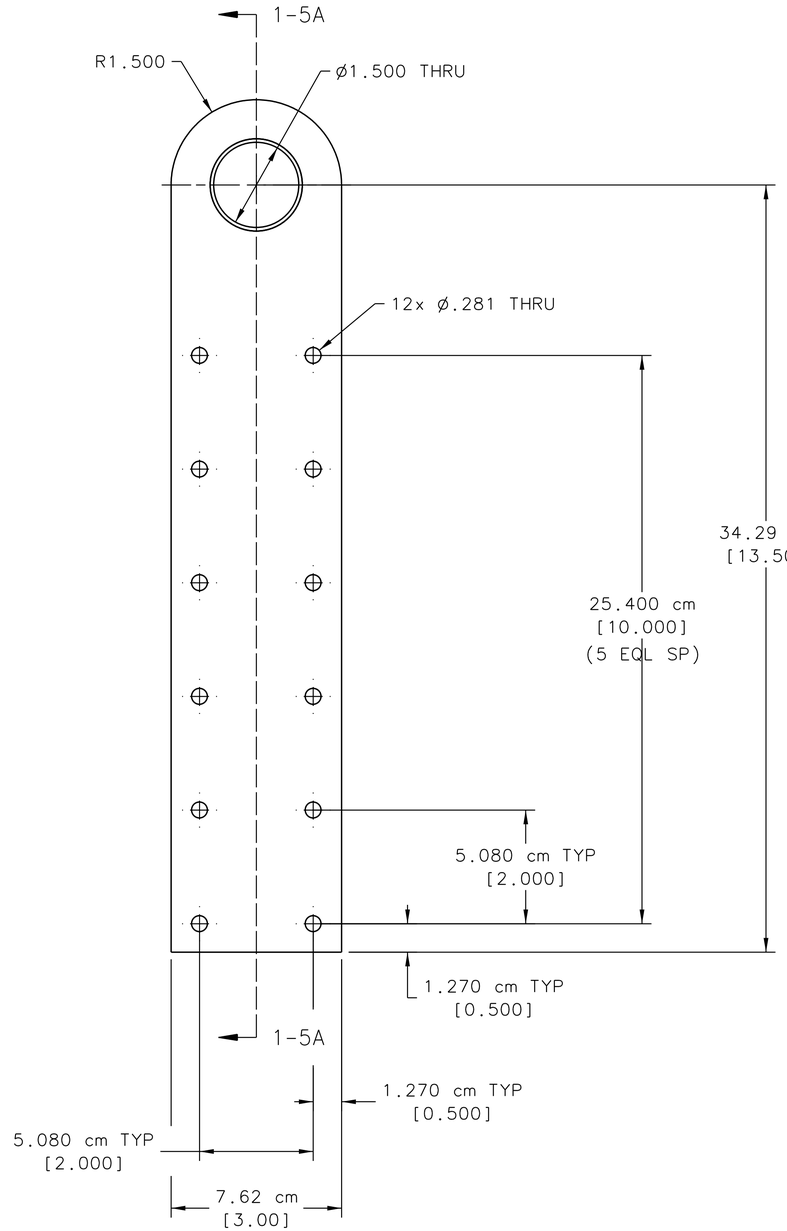
NOTES:

1. WEIGHT IS APPROXIMATELY 6 LBS.
2. All SURFACES REQUIRE A UNIFORM COATING OF 10um NICKEL.
3. All SURFACES MUST BE CLEANED, FREE OF DIRT, CORROSION, AND DEFECTS BEFORE PLATING CAN BEGIN.
4. ANNEAL AFTER MACHINING TO REMOVE LOCAL MAGNETIZATION.

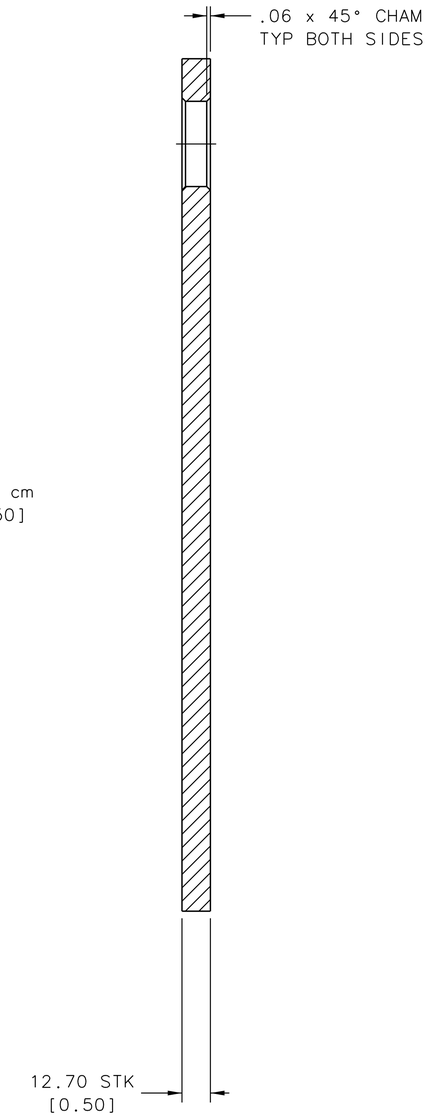
DOCUMENT CONTROL STAMP	DIM & TOL PER ASME Y14.5. UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS ± N/A DECIMAL .X ±.1 .XX ±.01 .XXX ±.005 ANGLES ± .50°	TRACKING NO. N/A	United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia
MATERIAL A36 STEEL	THIRD ANGLE PROJECTION	APPROVALS / DATE DRAWN S. ESP 25 NOV 13 CHECKED B. WOJTSEKHOWSKI 10 JAN 14 APPROVED W. SEAY 10 JAN 14 APPROVED B. WOJTSEKHOWSKI 10 JAN 14	HALL A - GENL EQUIPMENT GRINCH DETECTOR ASSY PMT ARRAY BOX ASSY LIFTING PLATE
FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED DEBURR & BREAK ALL SHARP EDGES			SIZE D — DWG. NO. A00000-01-01-3410 — REV. A
DO NOT SCALE DRAWING			SCALE 3:4 — USED ON ASSY NO. A00000-01-01-3400 — SHEET 1 OF 1

Approved: 9/21/2014; E-Sign ID : 270293; signed by: Ap. 1: B. Wojtsekhowski; C.: B. Wojtsekhowski; D: T. Ruell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



FRONT VIEW 1-7A



SECTION VIEW 1-5A
(1-7A)

NOTES:

1. WEIGHT IS APPROXIMATELY 6 LBS.
2. PART TO BE CONDITIONED FOR SAFE HANDLING. REMOVE ALL BURRS AND SHARP EDGES.
3. ALL SURFACES SHALL BE PRIMED WITH ONE 2.0 MIL COAT OF RUSTOLEAN #1573 OR EQUIVALENT. SURFACES SHALL BE PAINTED WITH ONE ADDITIONAL INTERMEDIATE 1.5 COAT OF RUSTOLEUM #2766. APPLY A FINISH COAT OF STD WHITE FULL GLOSS ALKYD PAINT OR EQUIVALENT.

DOCUMENT CONTROL STAMP

MATERIAL: A36 STEEL

FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DIM & TOL PER ASME Y14.5 - UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± N/A DECIMAL .X ± .1 .XX ± .01 .XXX ± .005 ANGLES ± .50°

THIRD ANGLE PROJECTION

TRACKING NO. N/A

APPROVALS	DATE
DRAWN S. ESP	25 NOV 13
CHECKED	
APPROVED	
APPROVED	

United States Department of Energy
Jefferson Lab — Thomas Jefferson National Accelerator Facility
Newport News Virginia

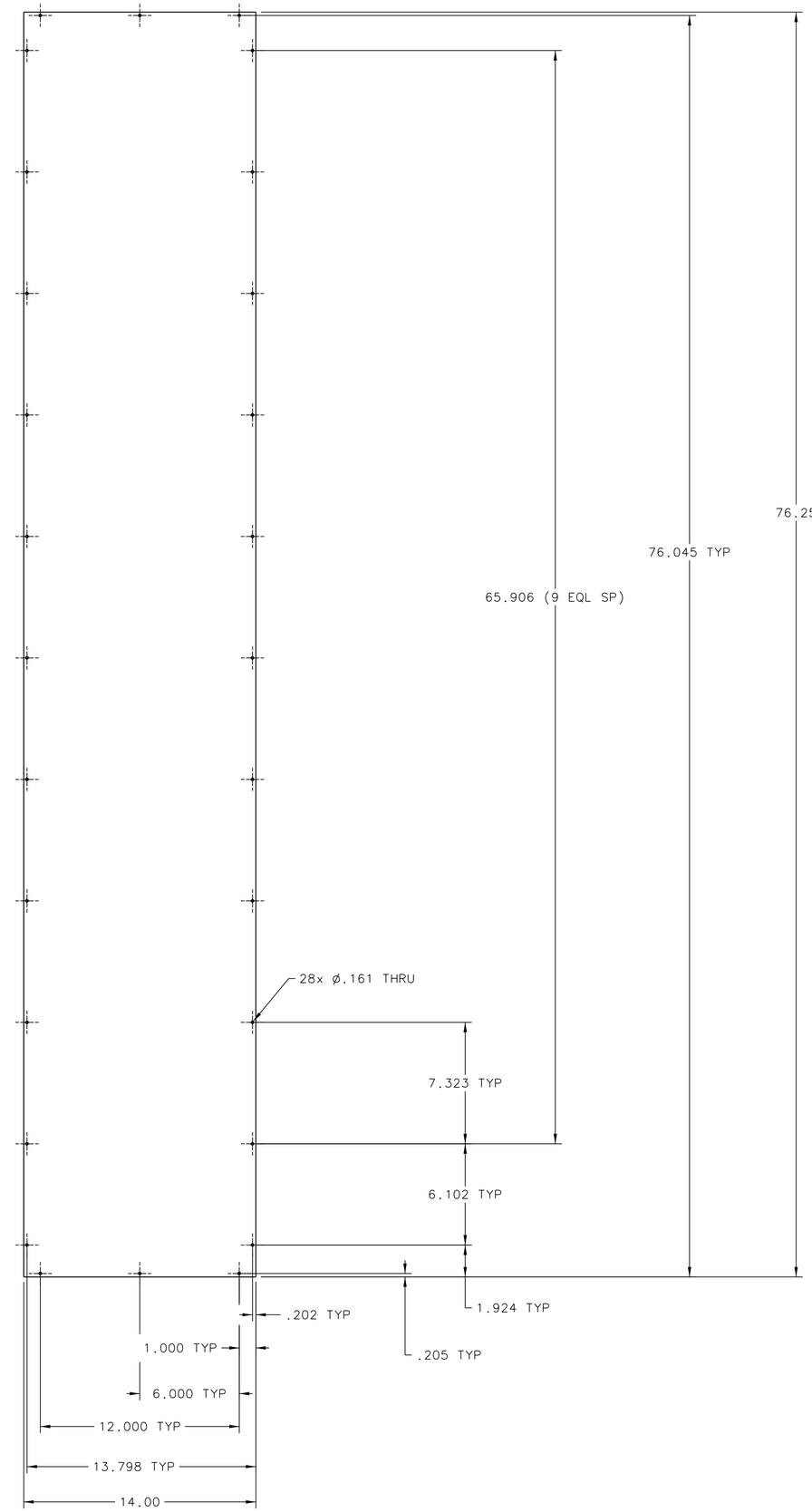
HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
PMT ARRAY BOX ASSY
LIFTING PLATE

SIZE D | DWG. NO. A00000-01-01-3410 | REV. –

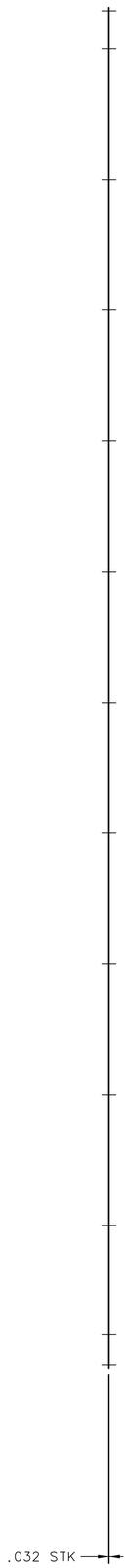
SCALE 3:4 | USED ON ASSY NO. A00000-01-01-3400 | SHEET 1 OF 1

Approved: 1/10/2014; E-Sign ID : 264718; signed by: AP. Z. B. WojtsekhowskI; Ap. 1: W. Seay; C.: B. WojtsekhowskI; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
ALL	A	DIMENSIONS MODIFIED TO BE IN INCHES ONLY.	21 MAR 14	SME
				BBW



FRONT VIEW 1-7A



RS VIEW 1-4A

NOTES:

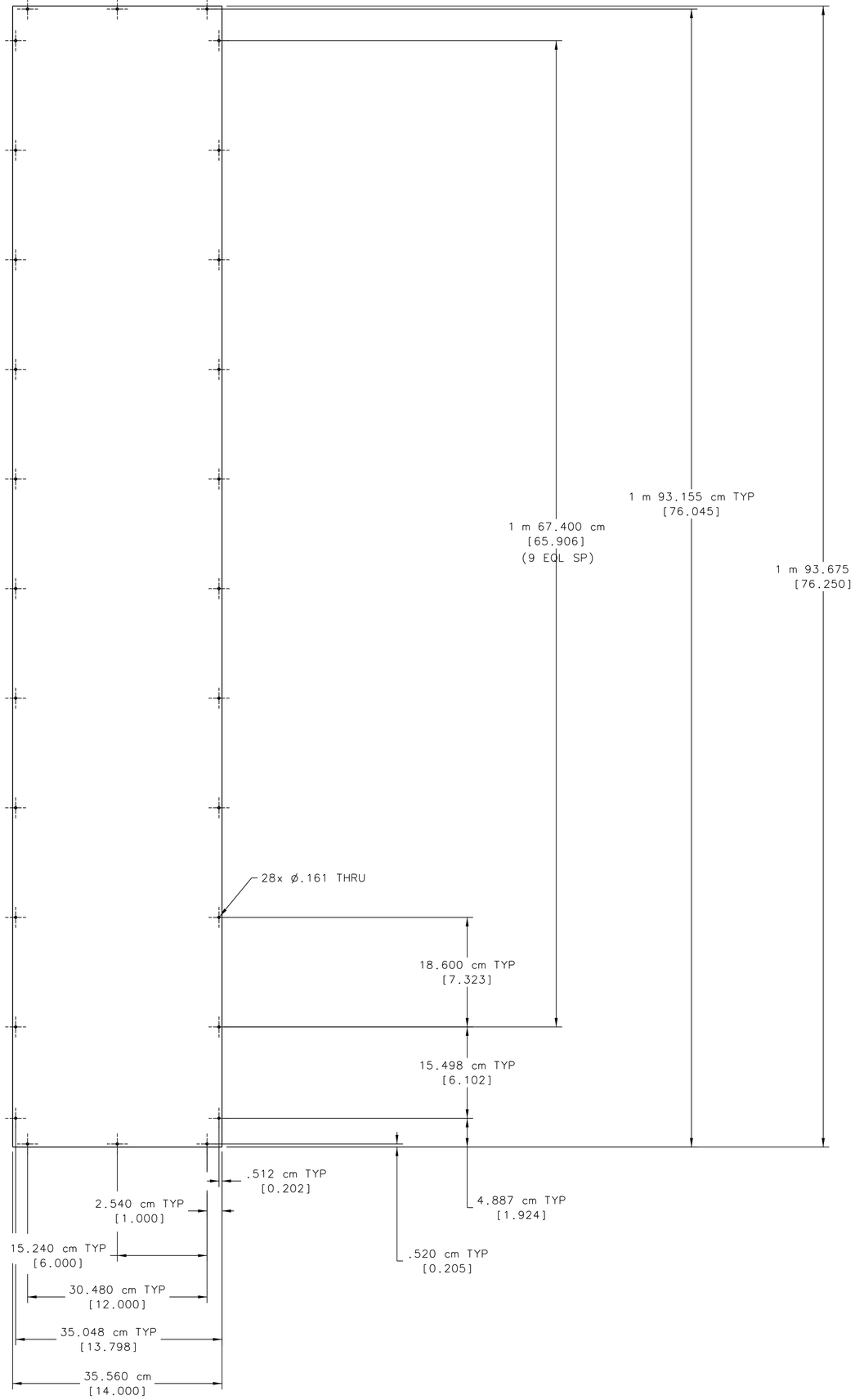
1. WEIGHT IS APPROXIMATELY 3-1/2 LBS.

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

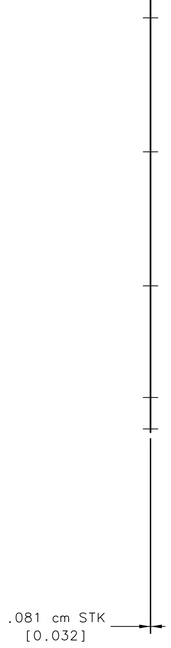
DOCUMENT CONTROL STAMP	DIM & TOL PER ASME Y14.5 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE FRACTIONS DECIMAL ANGLES ± N/A .X ±.1 ± .50° .XX ±.01 .XXX ±.005	TRACKING NO. N/A	United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia
MATERIAL 6061-T6 ALUMINUM	THIRD ANGLE PROJECTION	APPROVALS / DATE	HALL A - GENL EQUIPMENT GRINCH DETECTOR ASSY PMT ARRAY BOX ASSY TEMP AL COVER FRONT FACE
FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED DEBURR & BREAK ALL SHARP EDGES		DRAWN S. ESP 25 NOV 13	
DO NOT SCALE DRAWING		CHECKED B. WOJTSEKHOWSKI 10 JAN 14	
		APPROVED W. SEAY 10 JAN 14	SIZE E DWG. NO. A00000-01-01-3409 REV. A
		APPROVED B. WOJTSEKHOWSKI 10 JAN 14	SCALE 5:16 USED ON ASSY NO. A00000-01-01-3400 SHEET 1 OF 1

Approved: 3/21/2014; E-Sign ID : 270292; signed by: Apr 1; B. Wojtsekhowski; C: B. Wojtsekhowski; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



FRONT VIEW 1-7A



RS VIEW 1-4A

NOTES:

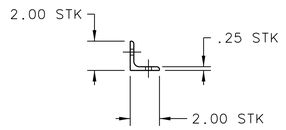
1. WEIGHT IS APPROXIMATELY 3-1/2 LBS.

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

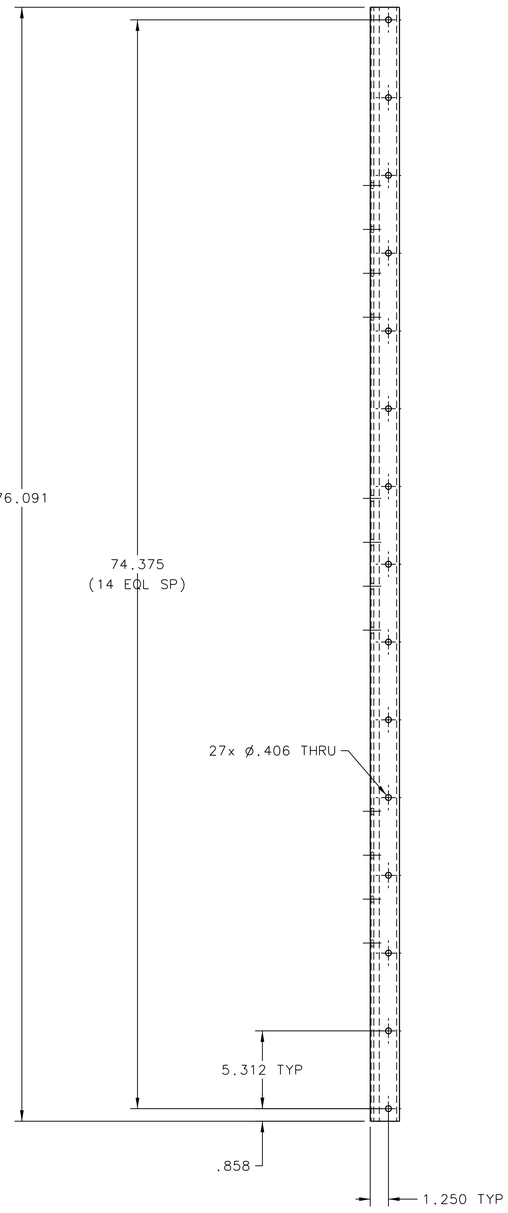
DOCUMENT CONTROL STAMP	DIM & TOL PER ASME Y14.5 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS ± N/A; DECIMAL .X ± .1, .XX ± .01, .XXX ± .005; ANGLES ± .50°	TRACKING NO. N/A	United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia
MATERIAL 6061-T6 ALUMINUM	THIRD ANGLE PROJECTION	APPROVALS / DRAWN S. ESP / DATE 25 NOV 13	HALL A - GENL EQUIPMENT GRINCH DETECTOR ASSY PMT ARRAY BOX ASSY TEMP AL COVER FRONT FACE
FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED DEBURR & BREAK ALL SHARP EDGES		CHECKED	
DO NOT SCALE DRAWING		APPROVED	SIZE E — DWG. NO. A00000-01-01-3409 — REV. —
		APPROVED	SCALE 5:16 — USED ON ASSY NO. A00000-01-01-3400 — SHEET 1 OF 1

Approved: 1/30/2014, E-Sign ID: 264717, signed by: AP, z: B. Wojtsekhowski; Ap. t: W. Seay; C: B. Wojtsekhowski; D: T. Fuell

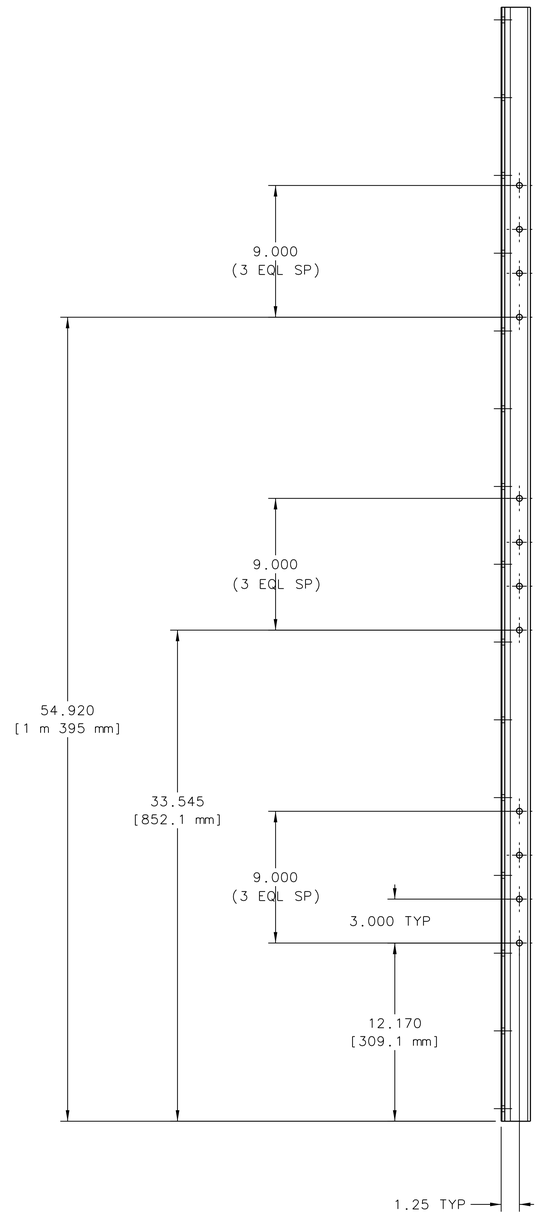
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
ALL	A	MODIFIED NOTES. DIMENSIONS MODIFIED TO BE IN INCH / mm.	21 MAR 14	SME BBW



TOP VIEW 1-6G



FRONT VIEW 1-6B



R SIDE VIEW 1-4B

NOTES:

1. WEIGHT IS APPROXIMATELY 20-1/2 LBS.
2. All SURFACES REQUIRE A UNIFORM COATING OF 10um NICKEL.
3. All SURFACES MUST BE CLEANED, FREE OF DIRT, CORROSION, AND DEFECTS BEFORE PLATING CAN BEGIN.
4. ANNEAL AFTER MACHINING TO REMOVE LOCAL MAGNETIZATION.

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

DOCUMENT CONTROL STAMP

MATERIAL: A36 STEEL ANGLE 2 x 2 x 1/4

FINISH: MACHINED SURFACES 125 UNLESS OTHERWISE NOTED. DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DIM & TOL PER ASME Y14.5. UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE: FRACTIONS ± N/A; DECIMAL .X ± .1, .XX ± .01, .XXX ± .005; ANGLES ± .50°

THIRD ANGLE PROJECTION

TRACKING NO. N/A

APPROVALS	DATE
DRAWN S. ESP	25 NOV 13
CHECKED B. WOJTSEKHOWSKI	10 JAN 14
APPROVED W. SEAY	10 JAN 14
APPROVED B. WOJTSEKHOWSKI	10 JAN 14

United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia

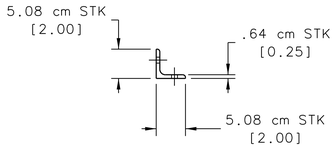
HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
PMT ARRAY BOX ASSY
ANGLE VERTICAL MOUNT

SIZE E | DWG. NO. A00000-01-01-3408 | REV. A

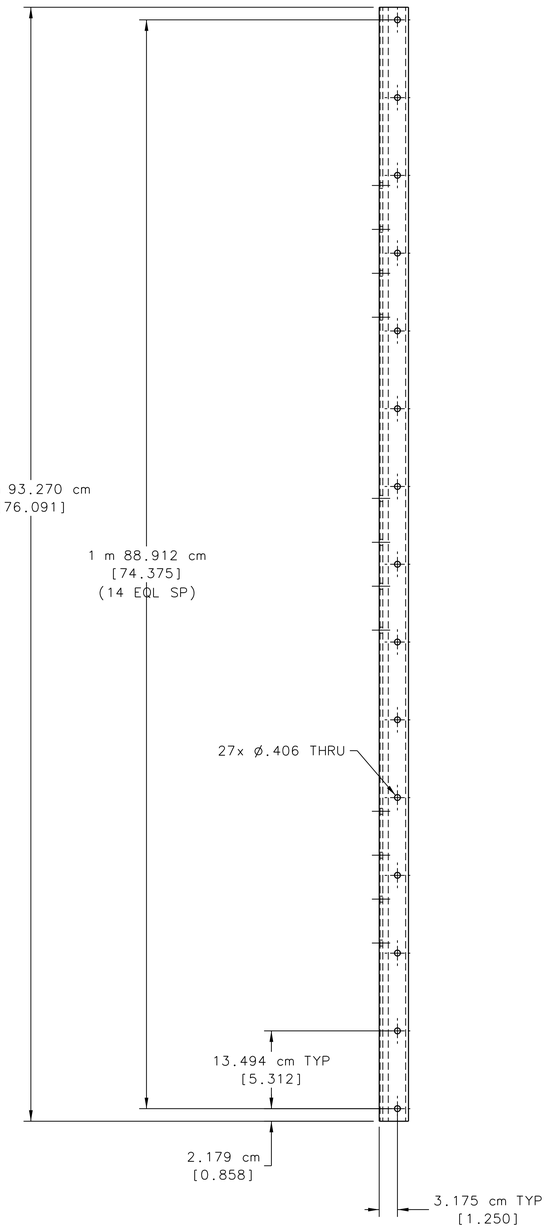
SCALE 1 : 4 | USED ON ASSY NO. A00000-01-01-3400 | SHEET 1 OF 1

Approved: 3/21/2014; E-Sign ID: 270290; signed by: Ap. 1: B. Wojtsekhowski; C.: B. Wojtsekhowski; D: T. Fuehl

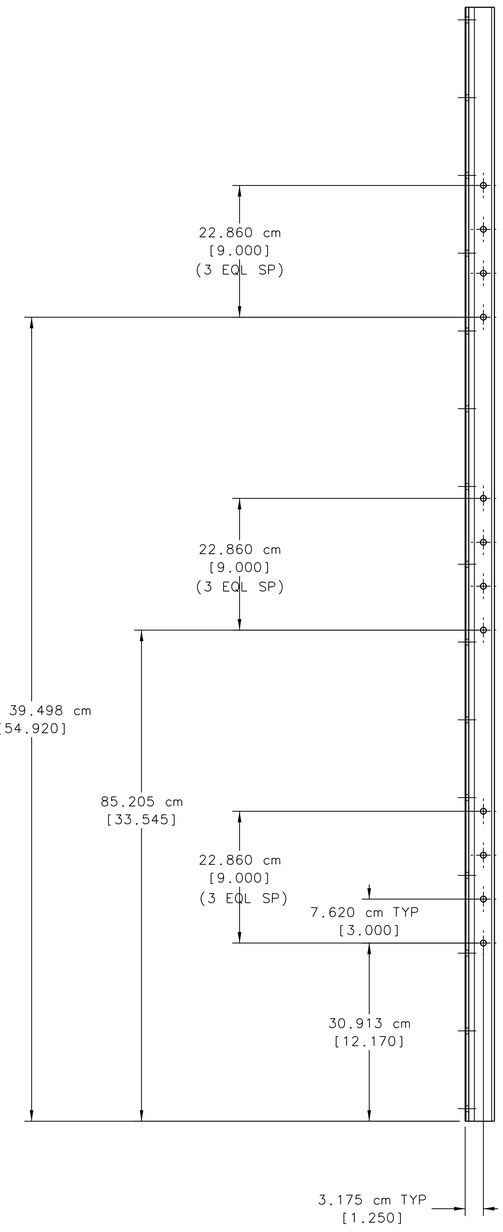
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



TOP VIEW 1-6G



FRONT VIEW 1-6B



R SIDE VIEW 1-4B

NOTES:

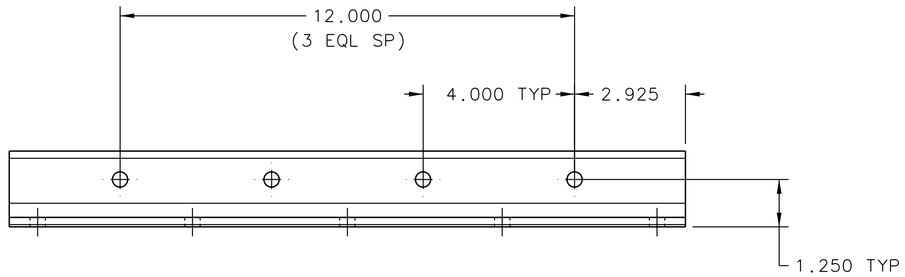
1. WEIGHT IS APPROXIMATELY 20-1/2 LBS.
2. PART TO BE CONDITIONED FOR SAFE HANDLING. REMOVE ALL BURRS AND SHARP EDGES.
3. ALL SURFACES SHALL BE PRIMED WITH ONE 2.0 MIL COAT OF RUSTOLEAN #1573 OR EQUIVALENT. SURFACES SHALL BE PAINTED WITH ONE ADDITIONAL INTERMEDIATE 1.5 COAT OF RUSTOLEUM #2766. APPLY A FINISH COAT OF STD WHITE FULL GLOSS ALKYD PAINT OR EQUIVALENT.

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

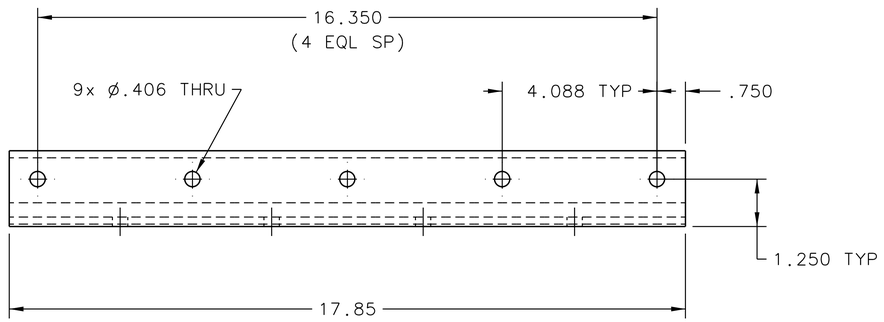
DOCUMENT CONTROL STAMP	DIM & TOL PER ASME Y14.5 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS ± N/A DECIMAL .X ± .1 .XX ± .01 .XXX ± .005 ANGLES ± .50° THIRD ANGLE PROJECTION	TRACKING NO. N/A	United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia
MATERIAL A36 STEEL ANGLE 2 x 2 x 1/4		APPROVALS / DATE	HALL A - GENL EQUIPMENT GRINCH DETECTOR ASSY PMT ARRAY BOX ASSY ANGLE VERTICAL MOUNT
FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED DEBURR & BREAK ALL SHARP EDGES		DRAWN S. ESP 25 NOV 13	
DO NOT SCALE DRAWING		CHECKED	SIZE E — DWG. NO. A00000-01-01-3408 — REV. –
		APPROVED	SCALE 1:4 — USED ON ASSY NO. A00000-01-01-3400 — SHEET 1 OF 1
		APPROVED	

Approved: 1/10/2014, E-Sign ID: 2647145 signed by: AP. 2: B. Wojtsekhowski; Ap. 1: W. Seay; C.: B. Wojtsekhowski; D: T. Fuehl

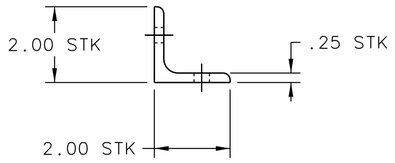
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
ALL	A	MODIFIED NOTES. DIMENSIONS MODIFIED TO BE IN INCHES ONLY.	21 MAR 14 	SME BBW



TOP VIEW 1-6C



FRONT VIEW 1-6B



RS VIEW 1-4B

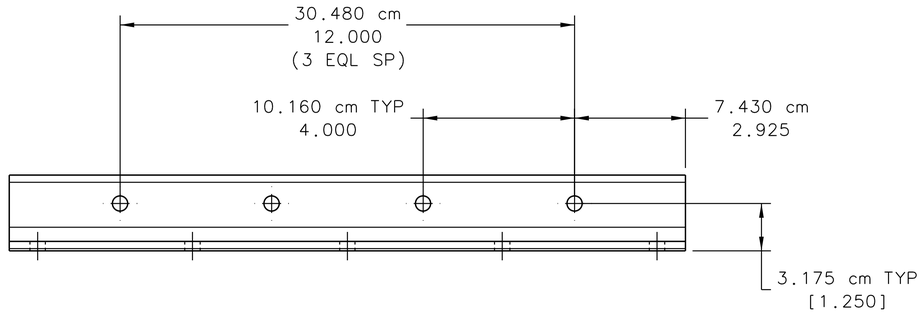
NOTES:

1. WEIGHT IS APPROXIMATELY 5 LBS.
2. All SURFACES REQUIRE A UNIFORM COATING OF 10um NICKEL.
3. All SURFACES MUST BE CLEANED, FREE OF DIRT, CORROSION, AND DEFECTS BEFORE PLATING CAN BEGIN.
4. ANNEAL AFTER MACHINING TO REMOVE LOCAL MAGNETIZATION.

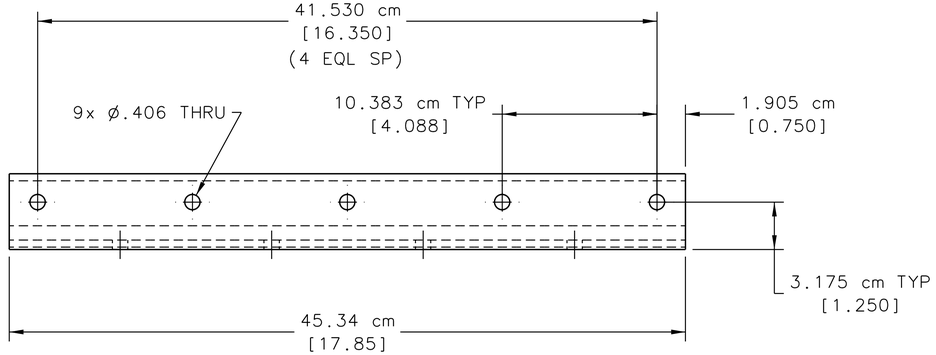
DOCUMENT CONTROL STAMP	DIM & TOL PER ASME Y14.5 UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS DECIMAL ANGLES ± N/A .X ±.1 ± .50° .XX ±.01 .XXX ±.005	TRACKING NO. N/A	United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia
MATERIAL A36 STEEL 2 x 2 x 1/4	THIRD ANGLE PROJECTION	APPROVALS / DATE DRAWN S. ESP 25 NOV 13 CHECKED B. WOJTSEKHOWSKI 10 JAN 14 APPROVED W. SEAY 10 JAN 14 APPROVED B. WOJTSEKHOWSKI 10 JAN 14	HALL A - GENL EQUIPMENT GRINCH DETECTOR ASSY PMT ARRAY BOX ASSY ANGLE HORIZONTAL MOUNT
FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED DEBURR & BREAK ALL SHARP EDGES			SIZE D — DWG. NO. A00000-01-01-3407 — REV. A
DO NOT SCALE DRAWING			SCALE 1:2 — USED ON ASSY NO. A00000-01-01-3400 — SHEET 1 OF 1

Approved: 3/21/2014; E-Sign ID : 270289; signed by: Ap. 1: B. WojtsekhowskI; C: : B. WojtsekhowskI; D: T. Fuell

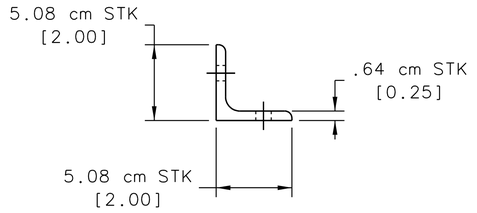
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



TOP VIEW 1-6C



FRONT VIEW 1-6B



RS VIEW 1-4B

NOTES:

1. WEIGHT IS APPROXIMATELY 5 LBS.
2. PART TO BE CONDITIONED FOR SAFE HANDLING. REMOVE ALL BURRS AND SHARP EDGES.
3. ALL SURFACES SHALL BE PRIMED WITH ONE 2.0 MIL COAT OF RUSTOLEAN #1573 OR EQUIVALENT. SURFACES SHALL BE PAINTED WITH ONE ADDITIONAL INTERMEDIATE 1.5 COAT OF RUSTOLEUM #2766. APPLY A FINISH COAT OF STD WHITE FULL GLOSS ALKYD PAINT OR EQUIVALENT.

DOCUMENT CONTROL STAMP

MATERIAL
A36 STEEL
2 x 2 x 1/4

FINISH
MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DIM & TOL PER ASME Y14.5
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± N/A
DECIMAL .X ± .1, .XX ± .01, .XXX ± .005
ANGLES ± .50°

THIRD ANGLE PROJECTION

TRACKING NO. N/A

APPROVALS	DATE
DRAWN S. ESP	25 NOV 13
CHECKED	
APPROVED	
APPROVED	

United States Department of Energy
Jefferson Lab
Thomas Jefferson National Accelerator Facility
Newport News Virginia

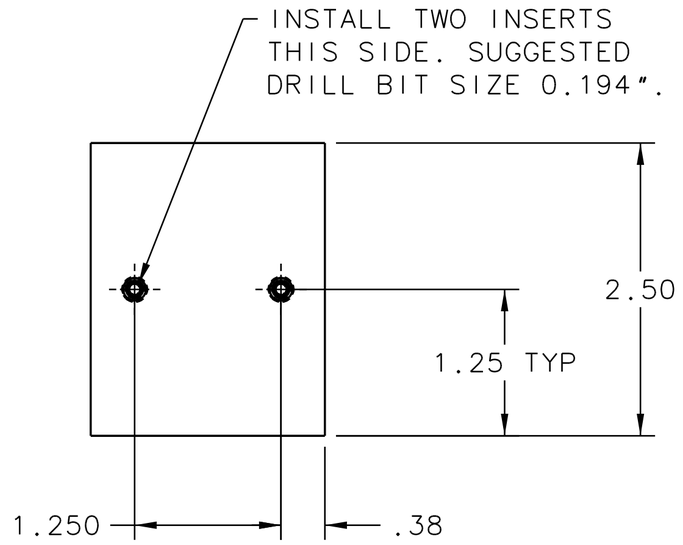
HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
PMT ARRAY BOX ASSY
ANGLE HORIZONTAL MOUNT

SIZE D | DWG. NO. A00000-01-01-3407 | REV. -

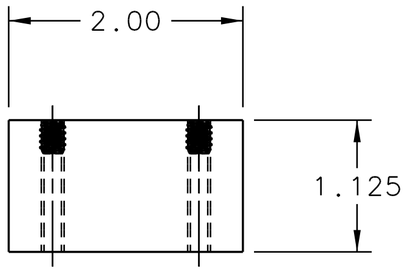
SCALE 1:2 | USED ON ASSY NO. A00000-01-01-3400 | SHEET 1 OF 1

Approved: 1/10/2014; E-Sign ID : 264711; signed by: AP. Z. B. Wojtsekhowski; Ap. 1: W. Seay; C.: B. Wojtsekhowski; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
ALL	A	DIMENSIONS MODIFIED TO BE IN INCHES ONLY.	21 MAR 14	SME
				BBW



TOP VIEW 1-4C



FRONT VIEW 1-4B

QTY REQD	ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	NOTES
2	1	McMASTER-CARR 99362A300	TPG INSERT FOR PLASTIC #6-32 INTL THD x 9/32 LG	BRASS	-

PARTS LIST

DOCUMENT CONTROL STAMP

MATERIAL
ACETAL (DELRIN)

FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DIM & TOL PER ASME Y14.5 .
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± N/A
DECIMAL .X ± .1 .XX ± .01 .XXX ± .005
ANGLES ± .50°

THIRD ANGLE PROJECTION

TRACKING NO.
N/A

APPROVALS	DATE
DRAWN S. ESP	25 NOV 13
CHECKED B. WOJTSEKHOWSKI	10 JAN 14
APPROVED W. SEAY	10 JAN 14
APPROVED B. WOJTSEKHOWSKI	10 JAN 14

United States Department of Energy
Jefferson Lab
Thomas Jefferson National Accelerator Facility
Newport News Virginia

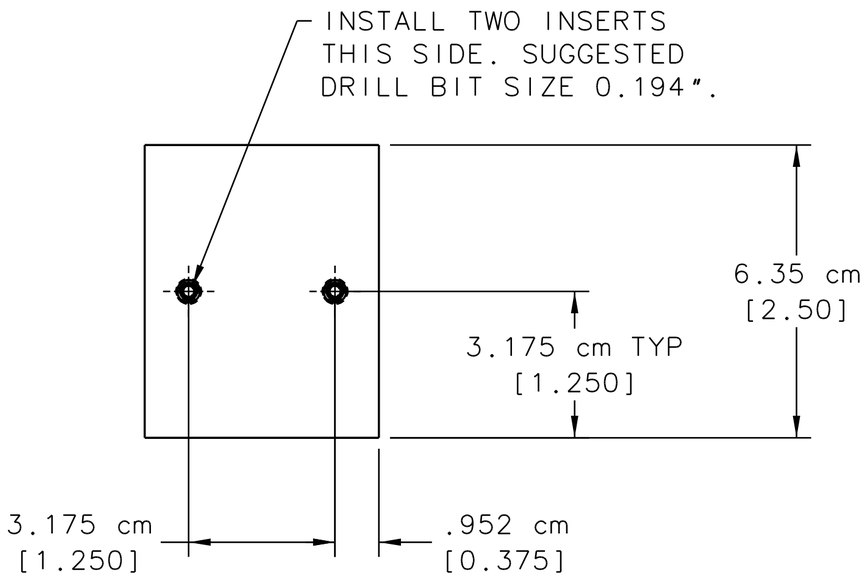
HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
PMT ARRAY BOX ASSY
SPACER TOP / BOTTOM

SIZE	DWG. NO.	REV.
C	A00000-01-01-3406	A

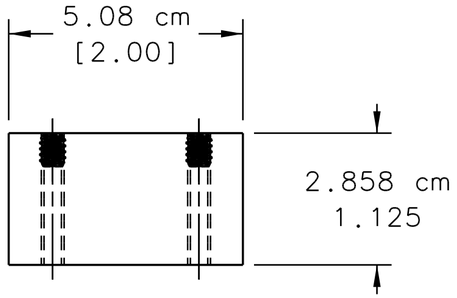
SCALE 1:1 USED ON ASSY NO. A00000-01-01-3400 SHEET 1 OF 1

Approved: 3/21/2014; E-Sign ID : 270287; signed by: Ap. 1: B. Wojtsekhowski; C.: B. Wojtsekhowski; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



TOP VIEW 1-4C



FRONT VIEW 1-4B

QTY REQD	ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	NOTES
2	1	McMASTER-CARR 99362A300	TPG INSERT FOR PLASTIC #6-32 INTL THD x 9/32 LG	BRASS	-

PARTS LIST

DOCUMENT CONTROL STAMP

MATERIAL
ACETAL (DELRIN)

FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DIM & TOL PER ASME Y14.5 .
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:

FRACTIONS	DECIMAL	ANGLES
± N/A	.X ± .1	± .50°
	.XX ± .01	
	.XXX ± .005	

THIRD ANGLE PROJECTION

TRACKING NO.
N/A

APPROVALS	DATE
DRAWN S. ESP	25 NOV 13
CHECKED	
APPROVED	
APPROVED	

United States Department of Energy
Jefferson Lab
Thomas Jefferson National Accelerator Facility
Newport News Virginia

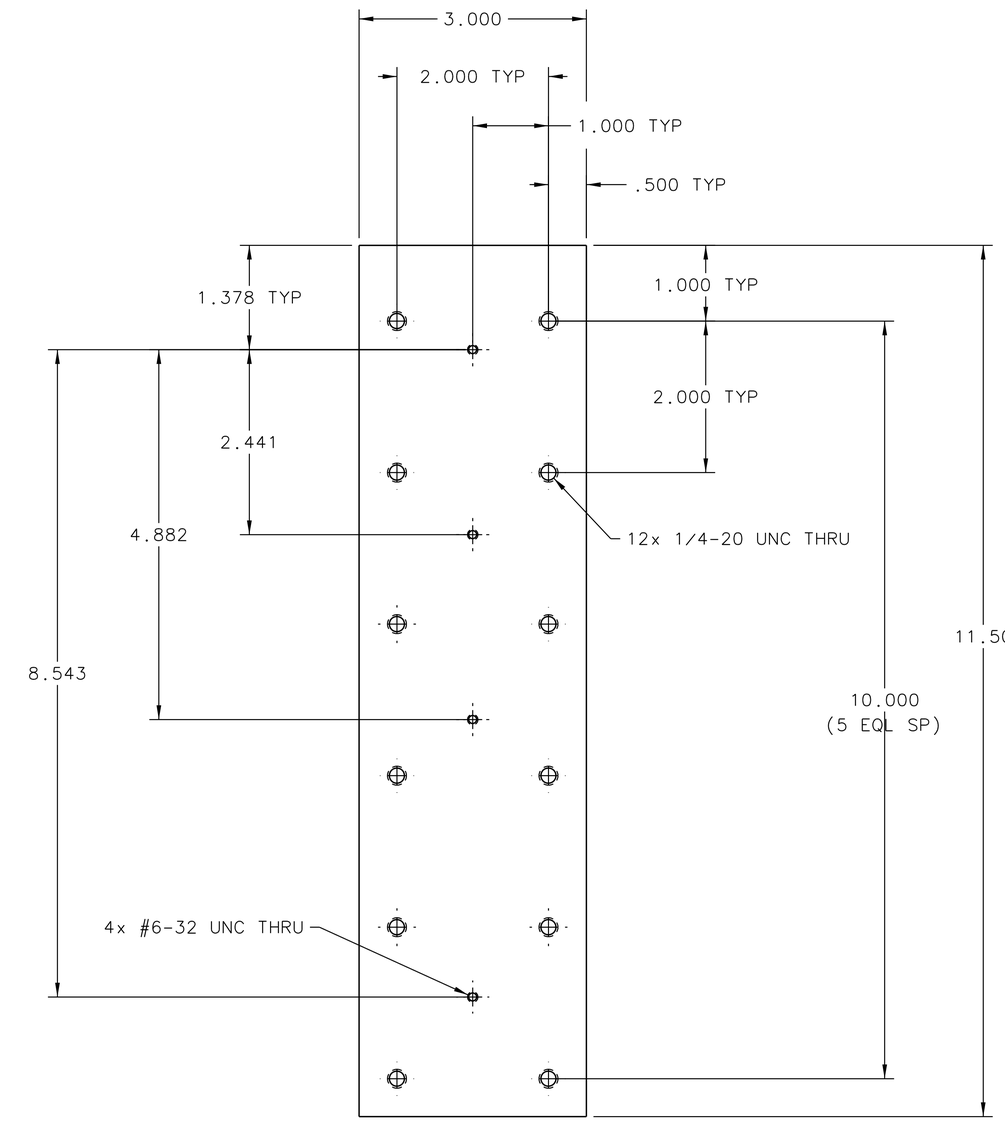
HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
PMT ARRAY BOX ASSY
SPACER TOP / BOTTOM

SIZE	DWG. NO.	REV.
C	A00000-01-01-3406	-

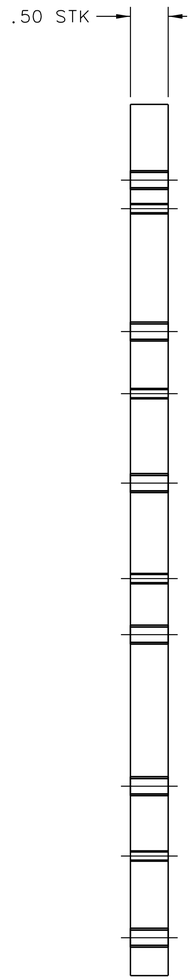
SCALE 1:1 USED ON ASSY NO. A00000-01-01-3400 SHEET 1 OF 1

Approved: 1/10/2014; E-Sign ID : 264710; signed by: AP. 2: B. Wojtsekhowski; Ap. 1: W. Seay; C:: B. Wojtsekhowski; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
ALL	A	ADDED NOTES 2 THRU 4.	21 MAR 14	SME
		DIMENSIONS MODIFIED TO BE IN INCHES ONLY.		BBW



FRONT VIEW 1-6A



R SIDE VIEW 1-4A

NOTES:

1. WEIGHT IS APPROXIMATELY 5 LBS.
2. All SURFACES REQUIRE A UNIFORM COATING OF 10um NICKEL.
3. All SURFACES MUST BE CLEANED, FREE OF DIRT, CORROSION, AND DEFECTS BEFORE PLATING CAN BEGIN.
4. ANNEAL AFTER MACHINING TO REMOVE LOCAL MAGNETIZATION.

DOCUMENT CONTROL STAMP

MATERIAL
1006 STEEL
1/2 INCH THICK PLATE

FINISH
MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DIM & TOL PER ASME Y14.5
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± N/A
DECIMAL .X ± .1, .XX ± .01, .XXX ± .005
ANGLES ± .50°

THIRD ANGLE PROJECTION

TRACKING NO.
N/A

APPROVALS	DATE
DRAWN S. ESP	25 NOV 13
CHECKED B. WOJTSEKHOWSKI	10 JAN 14
APPROVED W. SEAY	10 JAN 14
APPROVED B. WOJTSEKHOWSKI	10 JAN 14

United States Department of Energy
Jefferson Lab
Thomas Jefferson National Accelerator Facility
Newport News Virginia

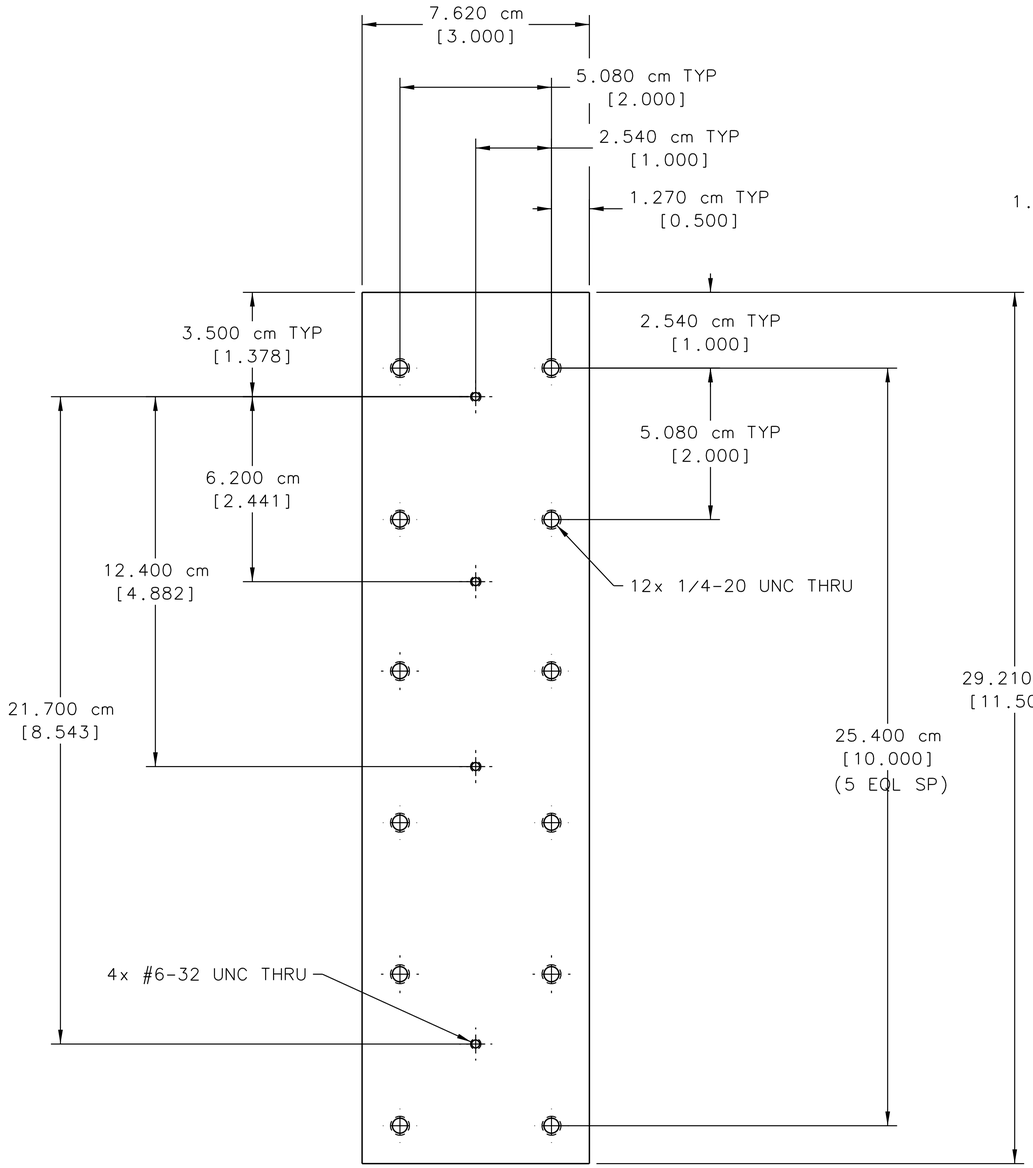
HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
PMT ARRAY BOX ASSY
BACKING PLATE

SIZE D | DWG. NO. A00000-01-01-3405 | REV. A

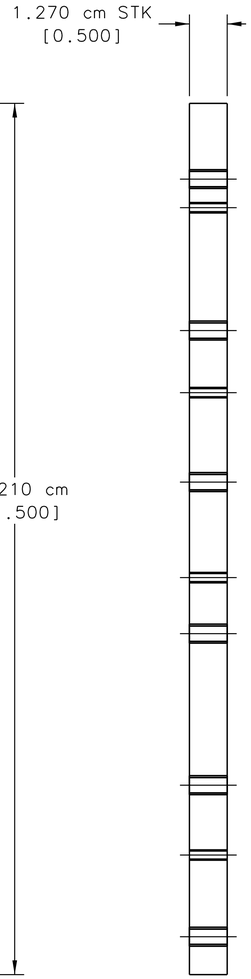
SCALE 1 : 1 | USED ON ASSY NO. A00000-01-01-3400 | SHEET 1 OF 1

Approved: 3/21/2014; E-Sign ID : 270286; signed by: Ap. 1: B. WojtsekhowskI; C.: B. WojtsekhowskI; D: T. FuellJ

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



FRONT VIEW 1-6A



R SIDE VIEW 1-4A

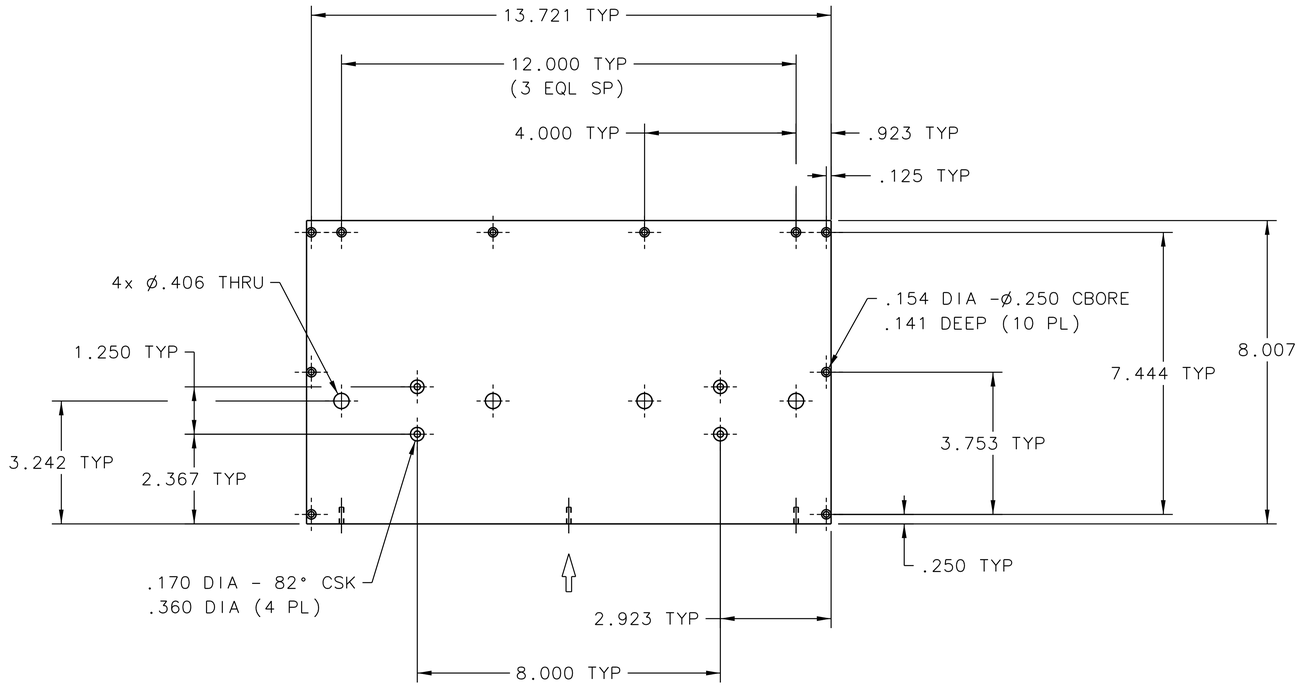
NOTES:

1. WEIGHT IS APPROXIMATELY 5 LBS.

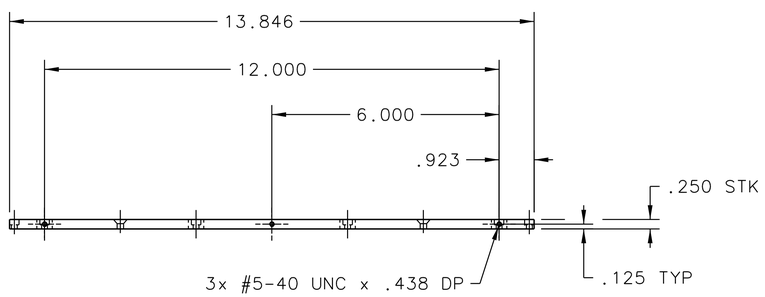
DOCUMENT CONTROL STAMP	DIM & TOL PER ASME Y14.5 - UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS ± N/A; DECIMAL .X ± .1, .XX ± .01, .XXX ± .005; ANGLES ± .50°	TRACKING NO. N/A	United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia
MATERIAL 1006 STEEL 1/2 INCH THICK PLATE	THIRD ANGLE PROJECTION	APPROVALS / DATE: DRAWN S. ESP 25 NOV 13; CHECKED; APPROVED; APPROVED	HALL A - GENL EQUIPMENT GRINCH DETECTOR ASSY PMT ARRAY BOX ASSY BACKING PLATE
FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED DEBURR & BREAK ALL SHARP EDGES			SIZE D; DWG. NO. A00000-01-01-3405; REV. –
DO NOT SCALE DRAWING			SCALE 1:1; USED ON ASSY NO. A00000-01-01-3400; SHEET 1 OF 1

Approved: 1/10/2014; E-Sign ID : 264709; signed by: AP: 2: B. Wojtsekhowski; Ap. 1: W. Seay; C.: B. Wojtsekhowski; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
ALL	A	ADDED NOTES 2 THRU 4.	21 MAR 14	SME
		DIMENSIONS MODIFIED TO BE IN INCHES ONLY.		BBW



TOP VIEW 1-6C



FRONT VIEW 1-6A

NOTES:

1. WEIGHT IS APPROXIMATELY 8 LBS.
2. ALL SURFACES REQUIRE A UNIFORM COATING OF 10um NICKEL.
3. ALL SURFACES MUST BE CLEANED, FREE OF DIRT, CORROSION, AND DEFECTS BEFORE PLATING CAN BEGIN.
4. ANNEAL AFTER MACHINING TO REMOVE LOCAL MAGNETIZATION.

DOCUMENT CONTROL STAMP

MATERIAL: 1006 STEEL

FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DIM & TOL PER ASME Y14.5 - UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± N/A DECIMAL .X ± .1 .XX ± .01 .XXX ± .005 ANGLES ± .50°

THIRD ANGLE PROJECTION

TRACKING NO. N/A

APPROVALS	DATE
DRAWN S. ESP	25 NOV 13
CHECKED B. WOJTSEKHOWSKI	10 JAN 14
APPROVED W. SEAY	10 JAN 14
APPROVED B. WOJTSEKHOWSKI	10 JAN 14

United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia

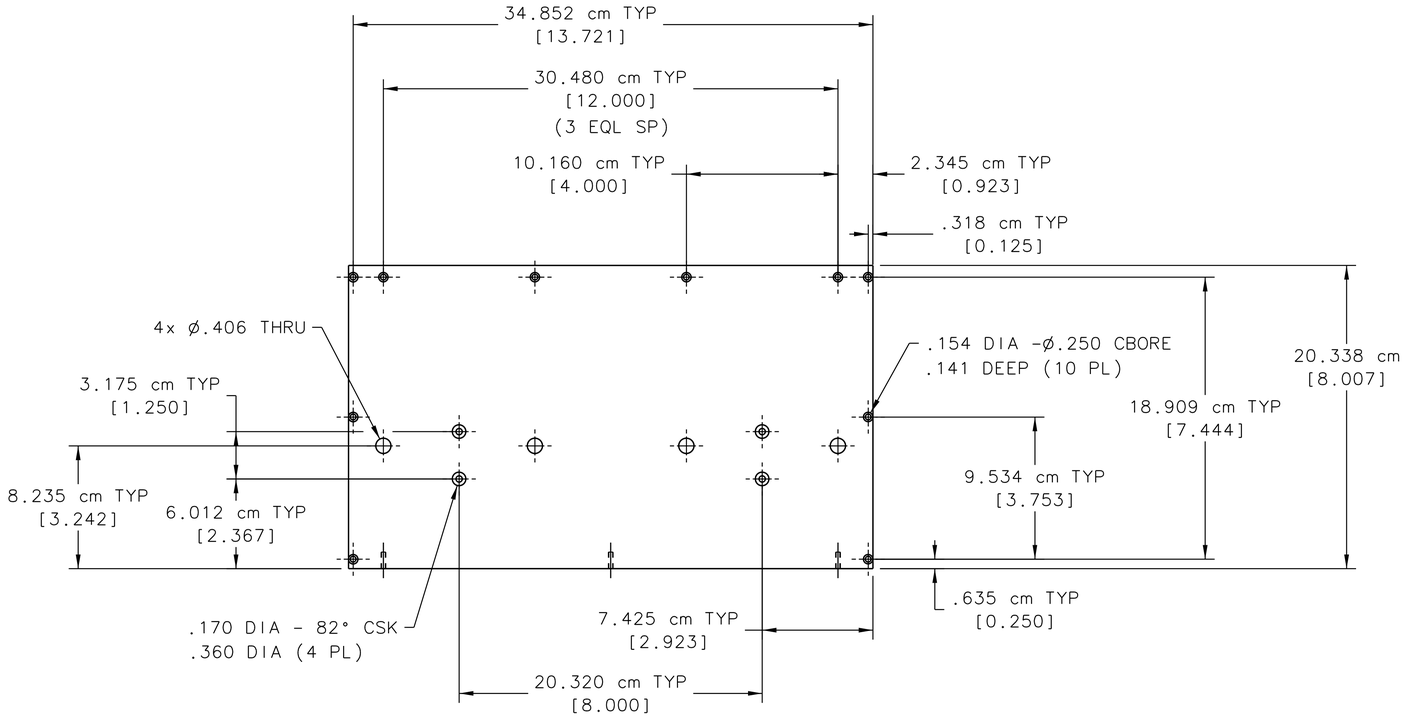
HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
PMT ARRAY BOX ASSY
MAG SHLD TOP / BOTTOM PLATE

SIZE D | DWG. NO. A00000-01-01-3404 | REV. A

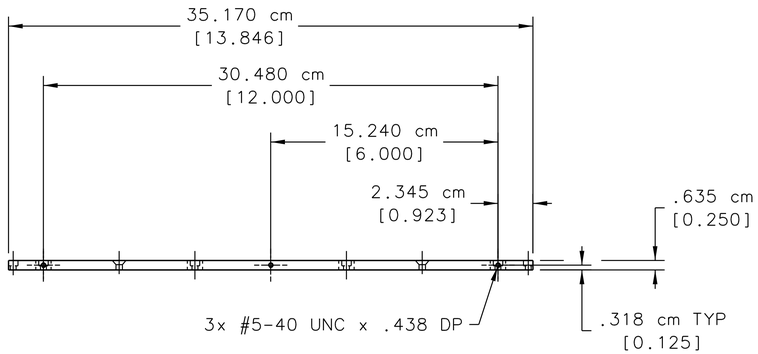
SCALE 1:2 | USED ON ASSY NO. A00000-01-01-3400 | SHEET 1 OF 1

Approved: 3/21/2014, E-Sign ID : 270285; signed by: Ap. 1: B. Wojtsekhowski; C.: B. Wojtsekhowski; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



TOP VIEW 1-6C



FRONT VIEW 1-6A

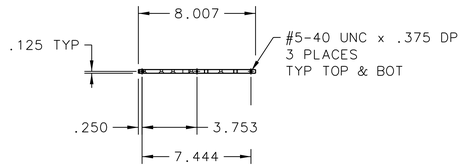
NOTES:

1. WEIGHT IS APPROXIMATELY 8 LBS.

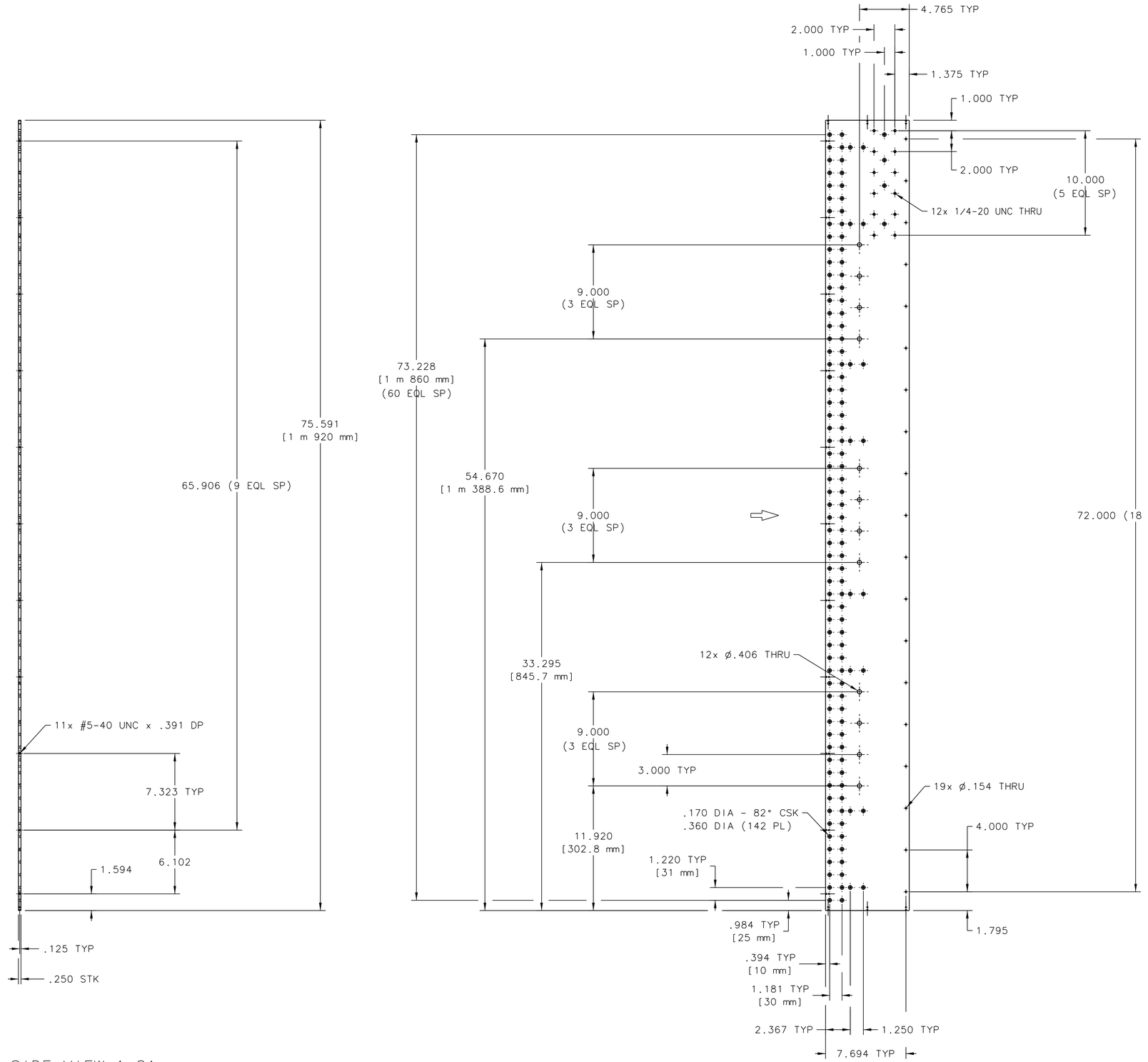
DOCUMENT CONTROL STAMP	DIM & TOL PER ASME Y14.5 - UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS ± N/A DECIMAL .X ± .1 .XX ± .01 .XXX ± .005 ANGLES ± .50°	TRACKING NO. N/A	United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia
MATERIAL 1006 STEEL	THIRD ANGLE PROJECTION	APPROVALS / DATE: DRAWN S. ESP 25 NOV 13; CHECKED; APPROVED; APPROVED	HALL A - GENL EQUIPMENT GRINCH DETECTOR ASSY PMT ARRAY BOX ASSY MAG SHLD TOP / BOTTOM PLATE
FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED DEBURR & BREAK ALL SHARP EDGES			SIZE D; DWG. NO. A00000-01-01-3404; REV. -
DO NOT SCALE DRAWING			SCALE 1:2; USED ON ASSY NO. A00000-01-01-3400; SHEET 1 OF 1

Approved: 1/10/2014; E-Sign ID : 264708; signed by: AP: Z. B. Wojtsekhowski; Ap. 1: W. Seay; C.: B. Wojtsekhowski; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
ALL	A	ADDED NOTES 2 THRU 4. DIMENSIONS MODIFIED TO BE IN INCH / mm.	21 MAR 14	SME BBW



TOP VIEW 1-4G



L SIDE VIEW 1-8A

FRONT VIEW 1-4A

NOTES:

1. WEIGHT IS APPROXIMATELY 42-1/2 LBS.
2. All SURFACES REQUIRE A UNIFORM COATING OF 10um NICKEL.
3. All SURFACES MUST BE CLEANED, FREE OF DIRT, CORROSION, AND DEFECTS BEFORE PLATING CAN BEGIN.
4. ANNEAL AFTER MACHINING TO REMOVE LOCAL MAGNETIZATION.

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

DOCUMENT CONTROL STAMP

MATERIAL: 1006 STEEL

FINISH: MACHINED SURFACES 125 UNLESS OTHERWISE NOTED. DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DIM & TOL PER ASME Y14.5. UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE: FRACTIONS ± N/A; DECIMAL .X ±.1, .XX ±.01, .XXX ±.005; ANGLES ± .50°

THIRD ANGLE PROJECTION

TRACKING NO. N/A

APPROVALS	DATE
DRAWN S. ESP	26 NOV 13
CHECKED B. WOJTSEKHOWSKI	10 JAN 14
APPROVED W. SEAY	10 JAN 14
APPROVED B. WOJTSEKHOWSKI	10 JAN 14

United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia

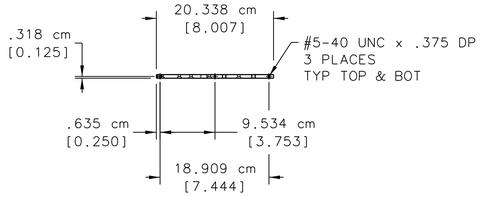
HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
PMT ARRAY BOX ASSY
MAG SHLD RIGHT SIDE PLATE

SIZE E | DWG. NO. A00000-01-01-3403 | REV. A

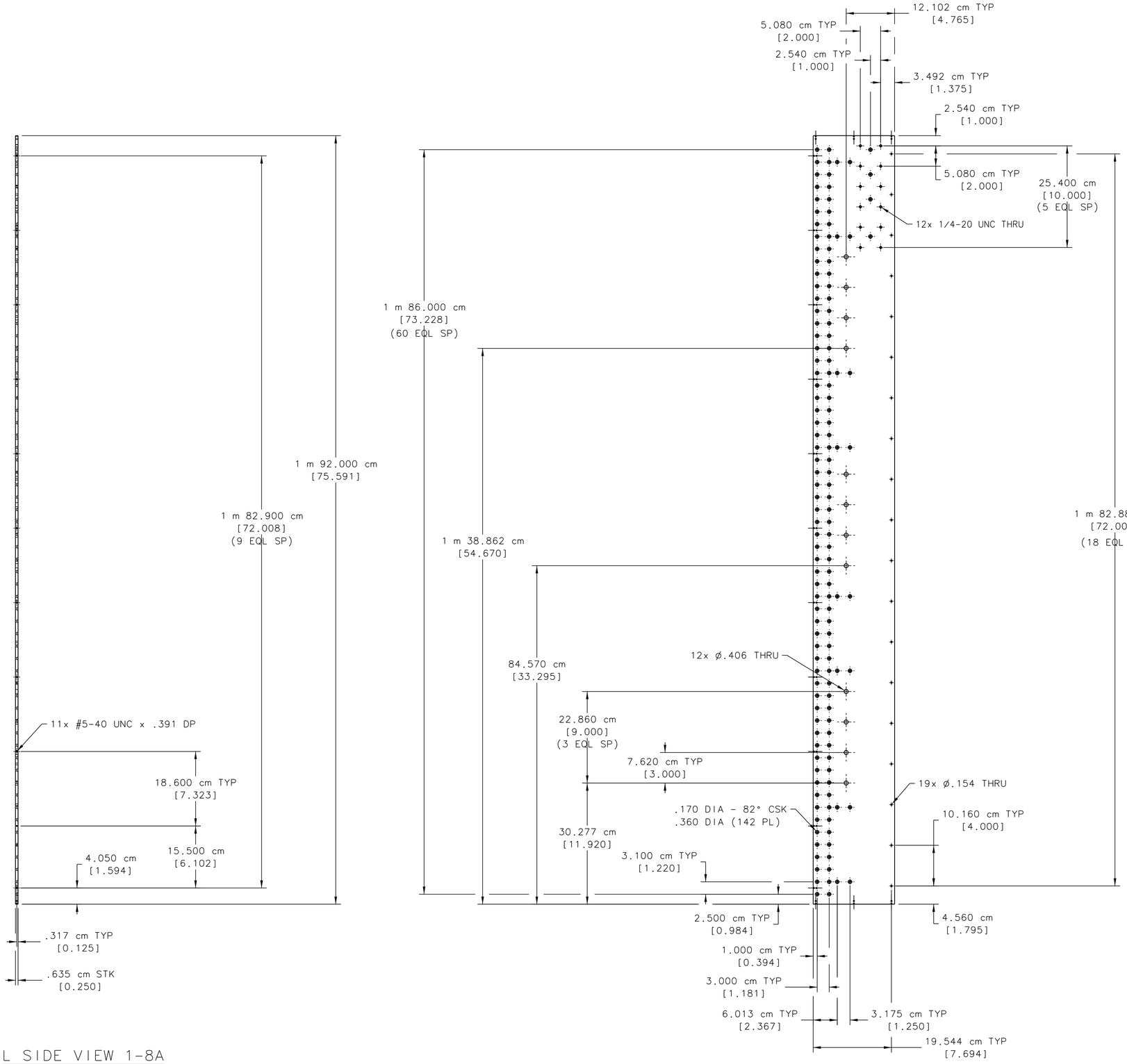
SCALE 1/4 | USED ON ASSY NO. A00000-01-01-3400 | SHEET 1 OF 1

Approved: 3/21/2014; E-Sign ID: 270284; signed by: Ap: 1: B. Wojtsekhowski; C: ; B. Wojtsekhowski; D: T. Fuehrer

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



TOP VIEW 1-4G



L SIDE VIEW 1-8A

FRONT VIEW 1-4A

1. WEIGHT IS APPROXIMATELY 42-1/2 LBS.

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

DOCUMENT CONTROL STAMP

DIM & TOL PER ASME Y14.5. UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± N/A DECIMAL .X ± .1 .XX ± .01 .XXX ± .005 ANGLES ± .50°

MATERIAL: 1006 STEEL

THIRD ANGLE PROJECTION

FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

TRACKING NO. N/A

APPROVALS	DATE
DRAWN S. ESP	26 NOV 13
CHECKED	
APPROVED	
APPROVED	

United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia

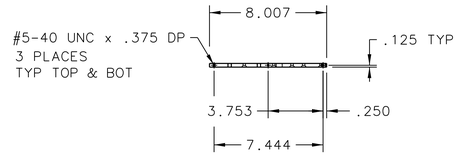
HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
PMT ARRAY BOX ASSY
MAG SHLD RIGHT SIDE PLATE

SIZE E | DWG. NO. A00000-01-01-3403 | REV. -

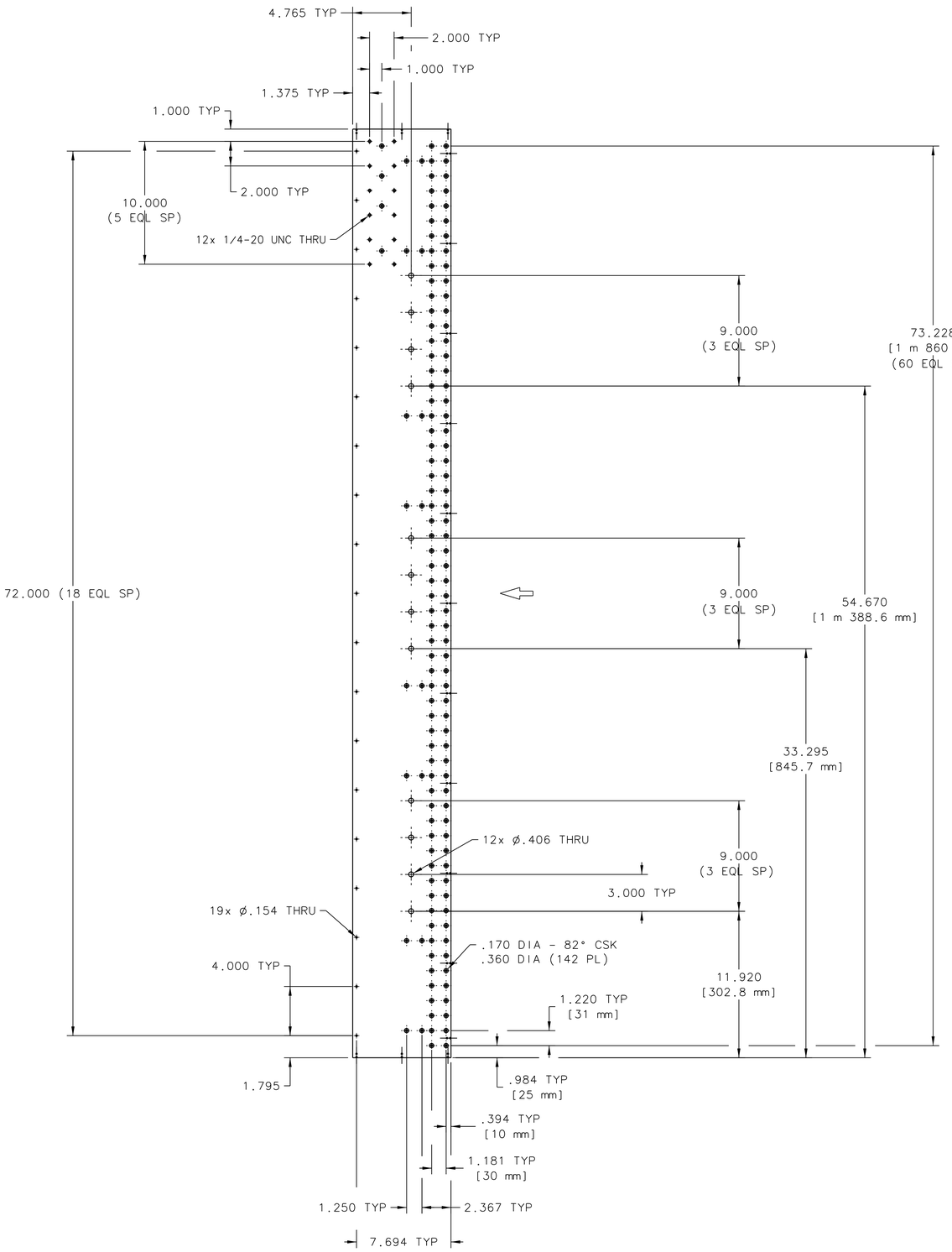
SCALE 1/4 | USED ON ASSY NO. A00000-01-01-3400 | SHEET 1 OF 1

Approved: 12/02/2014; E-Sign ID: 264707; signed by: AP: 2; B. Wojtsekhowski; Ap. 1: W. Seay; C: B. Wojtsekhowski; D: T. Fuell

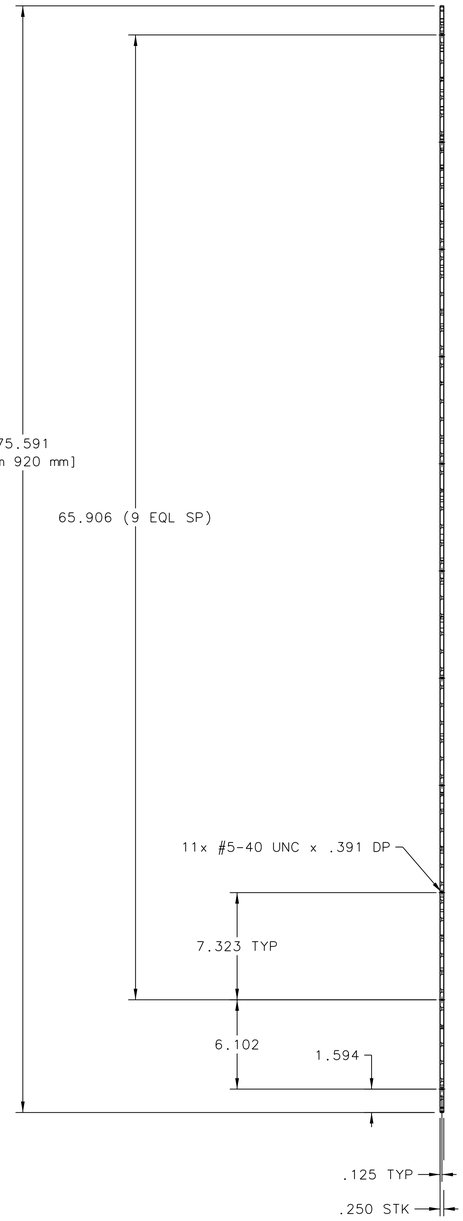
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
ALL	A	ADDED NOTES 2 THRU 4. DIMENSIONS MODIFIED TO BE IN INCH / mm.	21 MAR 14	SME BBW



TOP VIEW 1-7G



FRONT VIEW 1-7A



R SIDE VIEW 1-3A

NOTES:

1. WEIGHT IS APPROXIMATELY 42-1/2 LBS.
2. ALL SURFACES REQUIRE A UNIFORM COATING OF 10um NICKEL.
3. ALL SURFACES MUST BE CLEANED, FREE OF DIRT, CORROSION, AND DEFECTS BEFORE PLATING CAN BEGIN.
4. ANNEAL AFTER MACHINING TO REMOVE LOCAL MAGNETIZATION.

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

DOCUMENT CONTROL STAMP

MATERIAL: 1006 STEEL

FINISH: MACHINED SURFACES 125 UNLESS OTHERWISE NOTED. DEBURR & BREAK ALL SHARP EDGES.

DO NOT SCALE DRAWING

DIM & TOL PER ASME Y14.5 UNLESS OTHERWISE SPECIFIED. DIMENSIONS ARE IN INCHES. TOLERANCES ARE:
FRACTIONS ± N/A | DECIMAL .X ± .1, .XX ± .01, .XXX ± .005 | ANGLES ± .50°

THIRD ANGLE PROJECTION

TRACKING NO. N/A

APPROVALS	DATE
DRAWN S. ESP	26 NOV 13
CHECKED B. MOJTSEKHOWSKI	10 JAN 14
APPROVED W. SEAY	10 JAN 14
APPROVED B. MOJTSEKHOWSKI	10 JAN 14

United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia

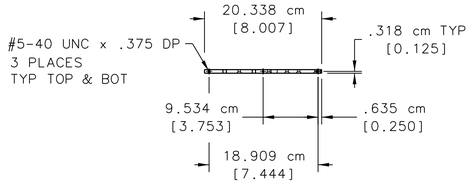
HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
PMT ARRAY BOX ASSY
MAG SHLD LEFT SIDE PLATE

SIZE E | DWG. NO. A00000-01-01-3402 | REV. A

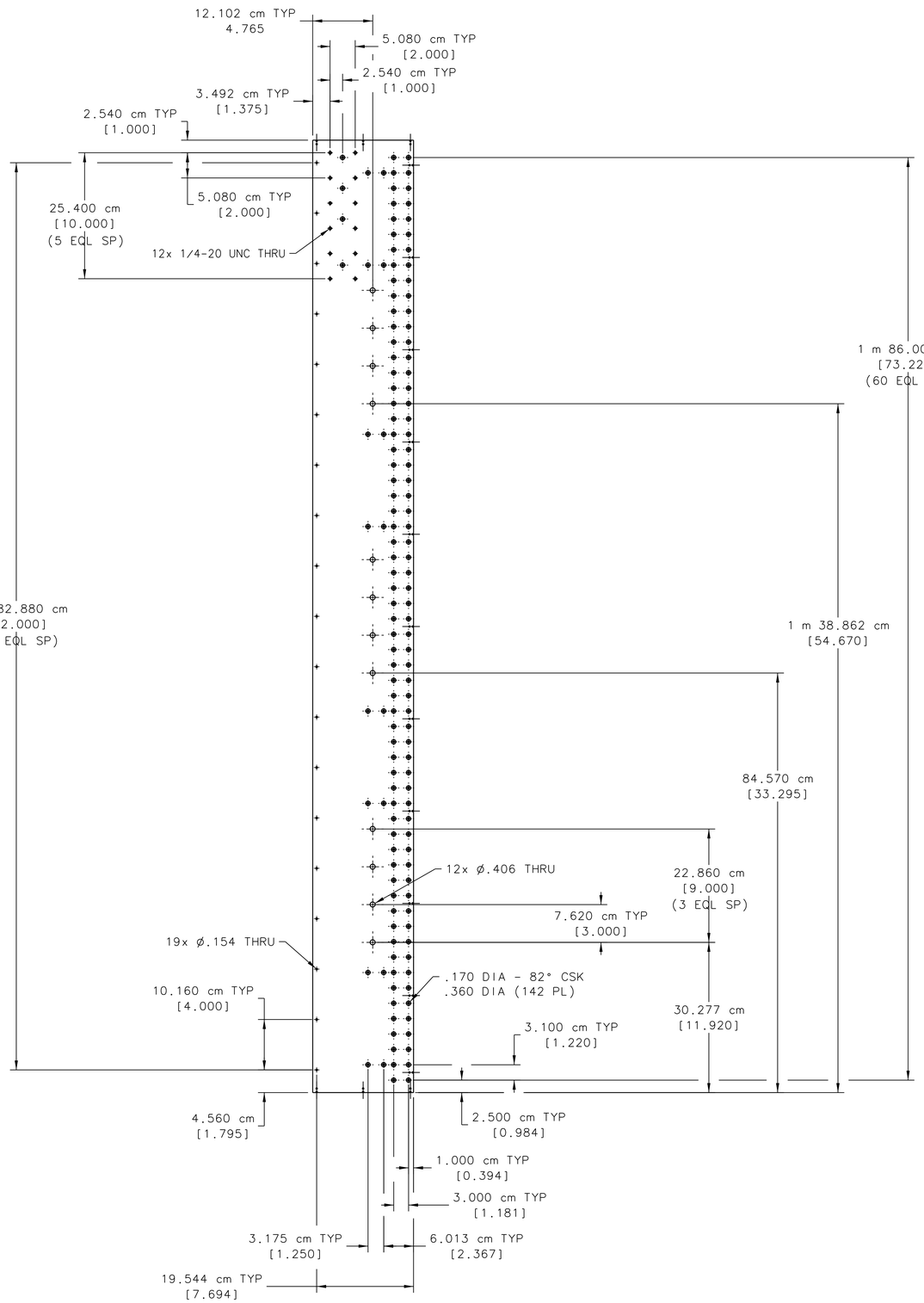
SCALE 1/4 | USED ON ASSY NO. A00000-01-01-3400 | SHEET 1 OF 1

Approved: 3/21/2014; E-Sign ID: 270283; signed by: Ap. 1 B. Wojtsekhowski; C: B. Wojtsekhowski; D: T. Fuell

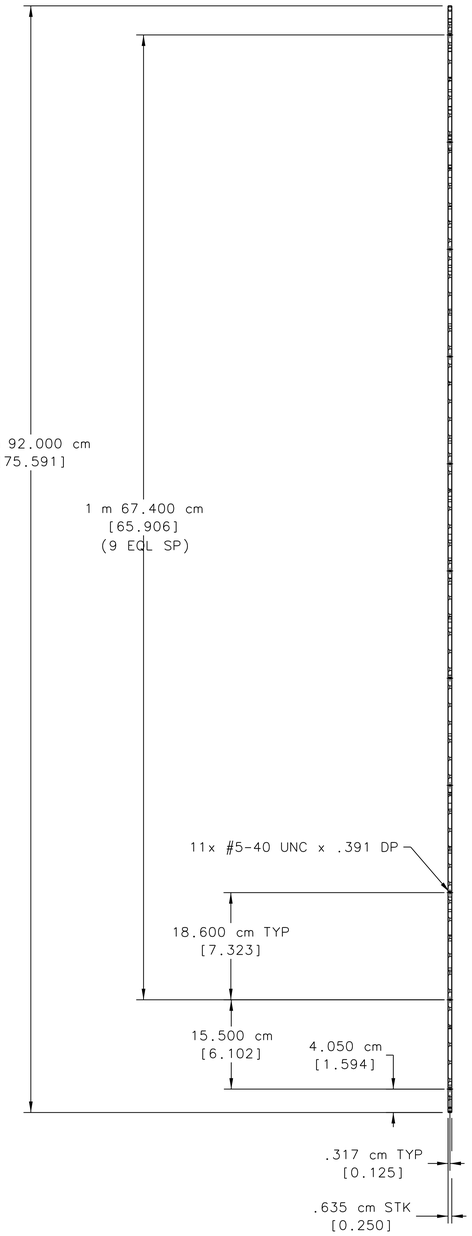
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



TOP VIEW 1-7G



FRONT VIEW 1-7A



R SIDE VIEW 1-3A

NOTES:

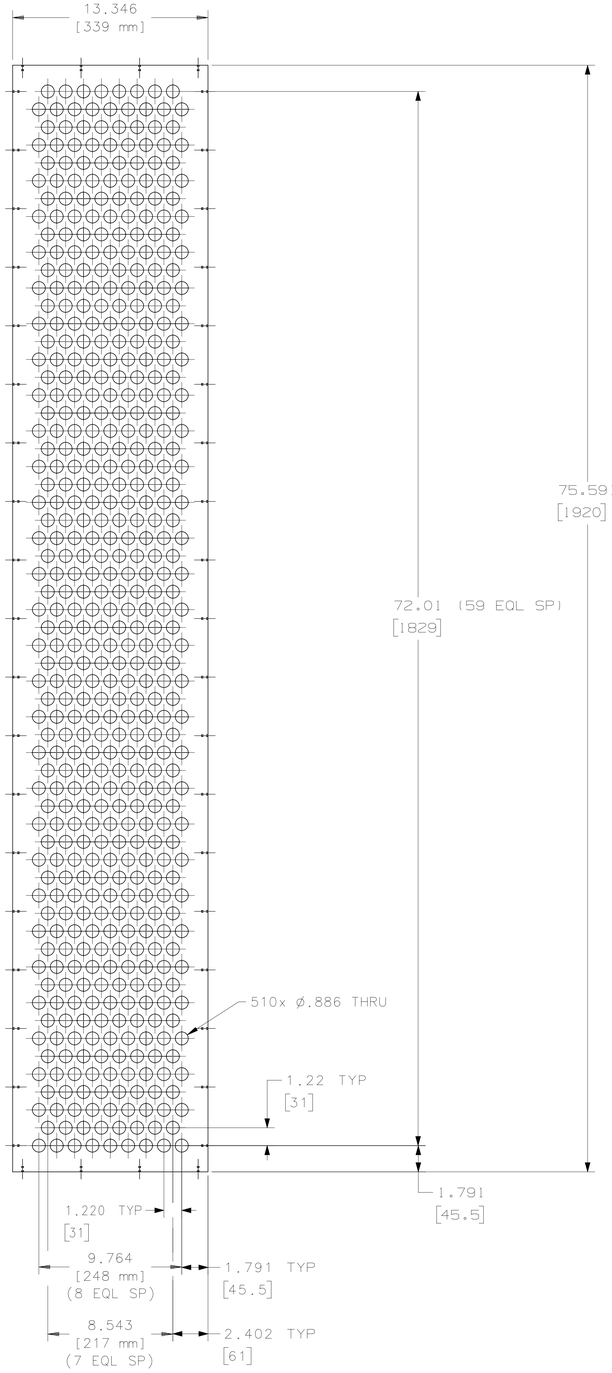
1. WEIGHT IS APPROXIMATELY 42-1/2 LBS.

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

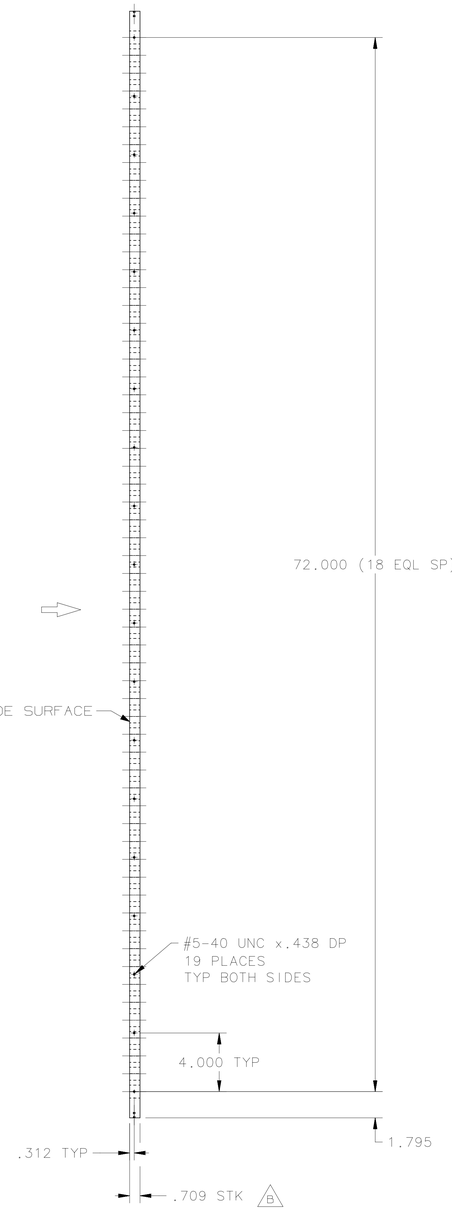
DOCUMENT CONTROL STAMP	DIM & TOL PER ASME Y14.5 UNLESS OTHERWISE SPECIFIED. DIMENSIONS ARE IN INCHES. TOLERANCES ARE: FRACTIONS ± N/A; DECIMAL .X ± .1, .XX ± .01, .XXX ± .005; ANGLES ± .50°	TRACKING NO. N/A	United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia
MATERIAL 1006 STEEL	THIRD ANGLE PROJECTION	APPROVALS / DATE: DRAWN S. ESP 26 NOV 13; CHECKED; APPROVED; APPROVED	HALL A - GENL EQUIPMENT GRINCH DETECTOR ASSY PMT ARRAY BOX ASSY MAG SHLD LEFT SIDE PLATE
FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED. DEBURR & BREAK ALL SHARP EDGES.			SIZE E; DWG. NO. A00000-01-01-3402; REV. -
DO NOT SCALE DRAWING			SCALE 1/4; USED ON ASSY NO. A00000-01-01-3400; SHEET 1 OF 1

Approved: 1/07/2014; E-Sign ID: 264706; signed by: AP 2; B. Wojtaszkowski; Ap. 1; W. Seay; C.; B. Wojtaszkowski; D.; T. Fuell

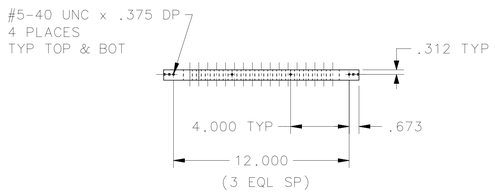
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
ALL	A	ADDED NOTES 2 THRU 4. DIMENSIONS MODIFIED TO BE IN INCH / mm.	21 MAR 14 21 MAR 14	SME BBW
1-4B	B	PLATE THKNS MODIFIED FROM .625 THICK TO .709 THICK. WEIGHT GAIN FROM 123 LBS TO 140 LBS.	14 NOV 14 14 NOV 14	SME BBW
1-7A	C	THE TOP VIEW 1-7G MODIFIED TO BE THE BOTTOM VIEW 1-7A. ADDED NOTE NO.: 5.	01 DEC 14 01 DEC 14	SME BBW



FRONT VIEW 1-7C



R SIDE VIEW 1-4C



BOTTOM VIEW 1-7A C

NOTES:

1. WEIGHT IS APPROXIMATELY 140 LBS.
2. ALL SURFACES REQUIRE A UNIFORM COATING OF 10um NICKEL.
3. ALL SURFACES MUST BE CLEANED, FREE OF DIRT, CORROSION, AND DEFECTS BEFORE PLATING CAN BEGIN.
4. ANNEAL AFTER MACHINING TO REMOVE LOCAL MAGNETIZATION.
5. UNITS ARE IN INCH / mm.

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

DOCUMENT CONTROL STAMP

MATERIAL: 1006 STEEL

FINISH: MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DIM & TOL PER ASME Y14.5
UNLESS OTHERWISE SPECIFIED:
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± N/A | DECIMAL .X ±.1, .XX ±.01, .XXX ±.005 | ANGLES ± .50°

THIRD ANGLE PROJECTION

TRACKING NO. N/A

APPROVALS	DATE
DRAWN: S. ESP	25 NOV 13
CHECKED: B. WOJTSEKHOWSKI	10 JAN 14
APPROVED: W. SEAY	10 JAN 14
APPROVED: B. WOJTSEKHOWSKI	10 JAN 14

United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia

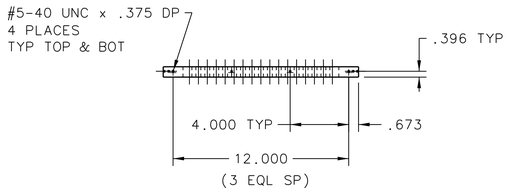
HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
PMT ARRAY BOX ASSY
MAG SHLD REAR PL W/ PMT CUTOUTS

SIZE E | DWG. NO. A00000-01-01-3401 | REV. C

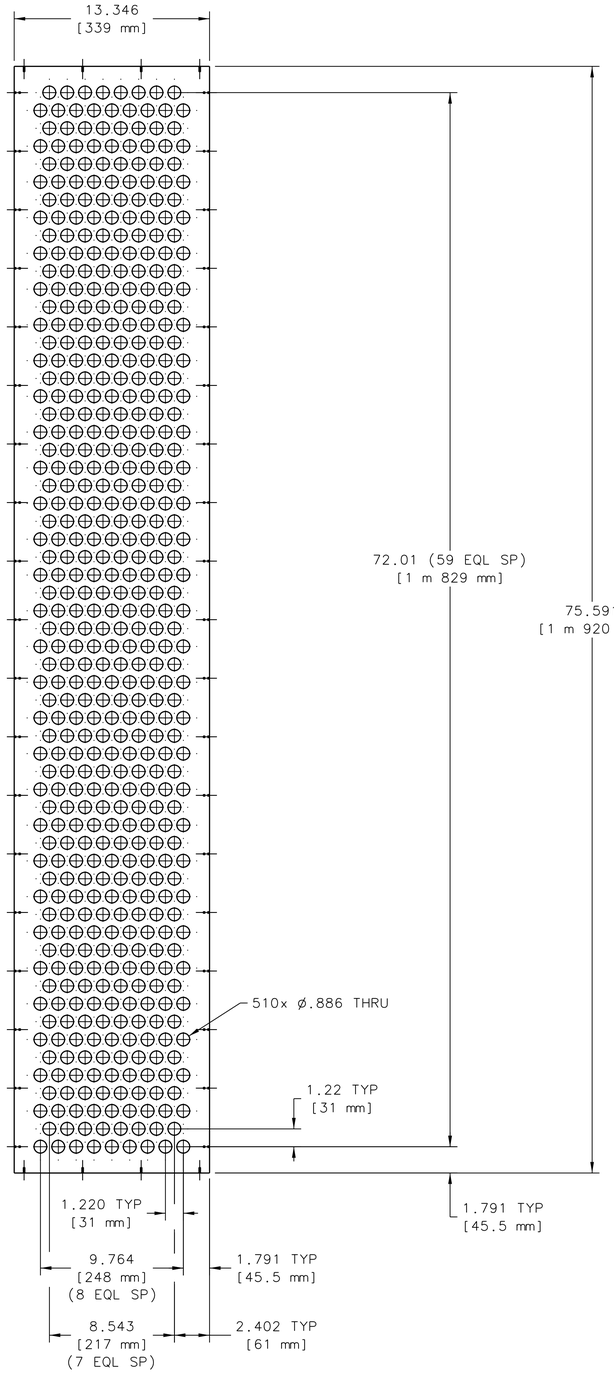
SCALE 1:4 | USED ON ASSY NO. A00000-01-01-3400 | SHEET 1 OF 1

Approved: 12/1/2014; E-Sign ID : 289006; signed by: Ap. 1: B. Wojtsekhowski; C.: B. Wojtsekhowski; D: T. Fuell

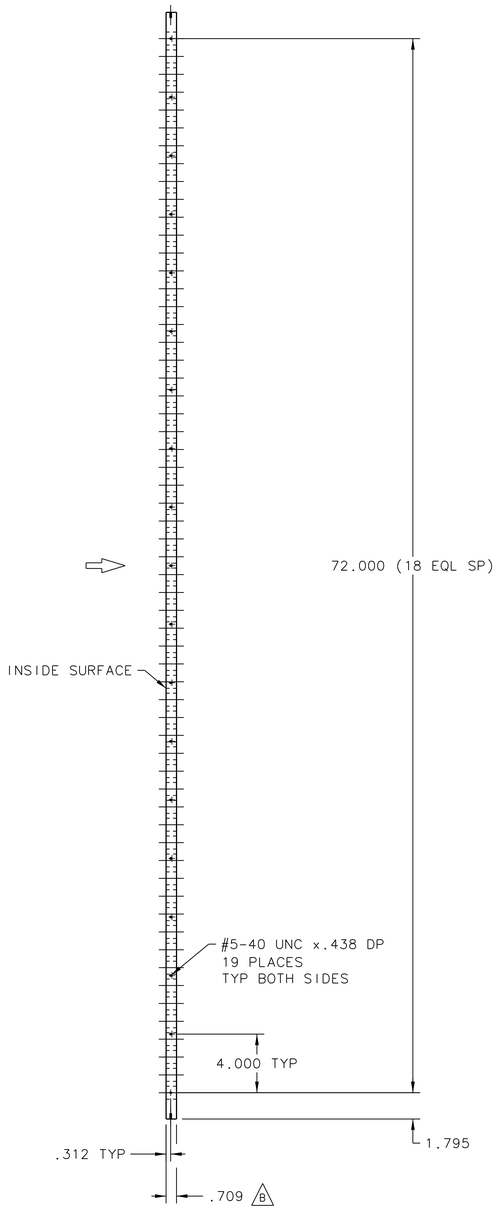
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
ALL	A	ADDED NOTES 2 THRU 4. DIMENSIONS MODIFIED TO BE IN INCH / mm.	21 MAR 14 21 MAR 14	SME BBW
1-4B	B	PLATE THKNS MODIFIED FROM .625 THICK TO .709 THICK. WEIGHT GAIN FROM 123 LBS TO 140 LBS.	14 NOV 14 14 NOV 14	SME BBW



TOP VIEW 1-7G



FRONT VIEW 1-7A



R SIDE VIEW 1-4A

NOTES:

1. WEIGHT IS APPROXIMATELY 140 LBS.
2. ALL SURFACES REQUIRE A UNIFORM COATING OF 10um NICKEL.
3. ALL SURFACES MUST BE CLEANED, FREE OF DIRT, CORROSION, AND DEFECTS BEFORE PLATING CAN BEGIN.
4. ANNEAL AFTER MACHINING TO REMOVE LOCAL MAGNETIZATION.

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

DOCUMENT CONTROL STAMP

MATERIAL: 1006 STEEL

FINISH: MACHINED 125 UNLESS OTHERWISE NOTED SURFACES. DEBURR & BREAK ALL SHARP EDGES.

DO NOT SCALE DRAWING

DIM & TOL PER ASME Y14.5 UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± N/A | DECIMAL .X ± .1, .XX ± .01, .XXX ± .005 | ANGLES ± .50°

THIRD ANGLE PROJECTION

TRACKING NO. N/A

APPROVALS	DATE
DRAWN S. ESP	25 NOV 13
CHECKED B. WOJTSEKHOWSKI	10 JAN 14
APPROVED W. SEAY	10 JAN 14
APPROVED B. WOJTSEKHOWSKI	10 JAN 14

United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia

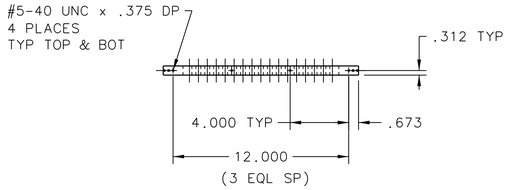
HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
PMT ARRAY BOX ASSY
MAG SHLD REAR PL W/ PMT CUTOUTS

SIZE E | DWG. NO. A00000-01-01-3401 | REV. B

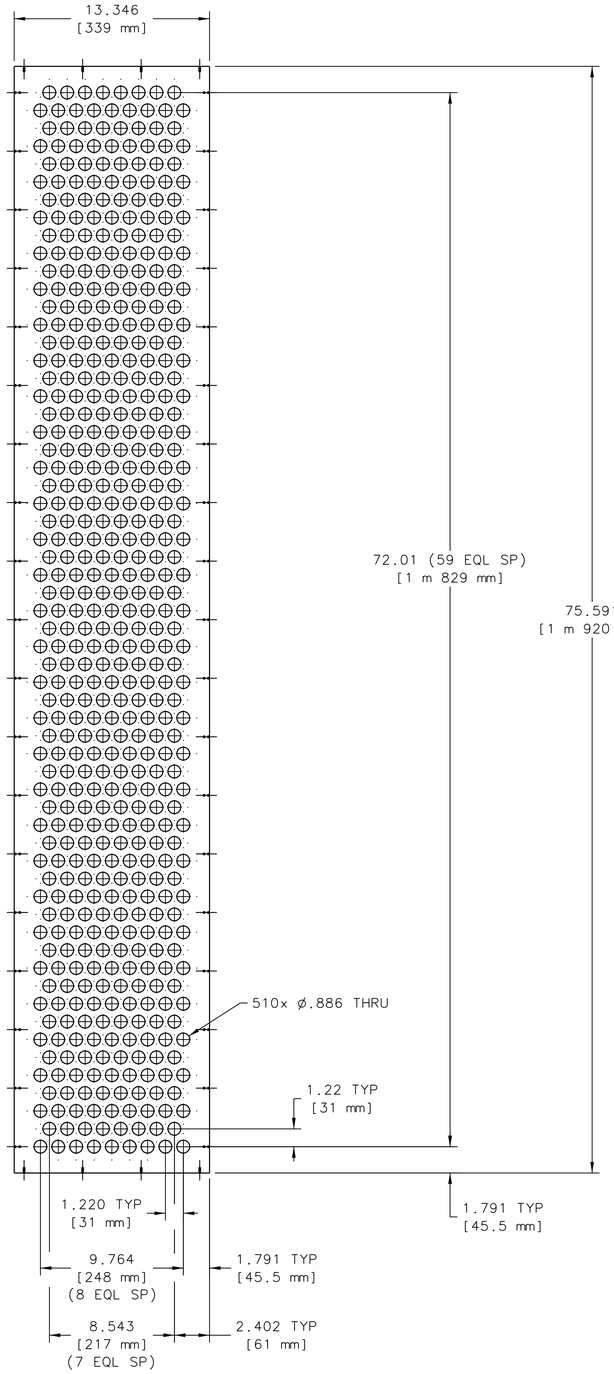
SCALE 1 : 4 | ISSD ON ASSY NO. A00000-01-01-3400 | SHEET 1 OF 1

Approved: 11/4/2014; E-Sign ID : 288171; signed by: Ap: 1: B. Wojtsekhowski; C: B. Wojtsekhowski; D: T. Fuell

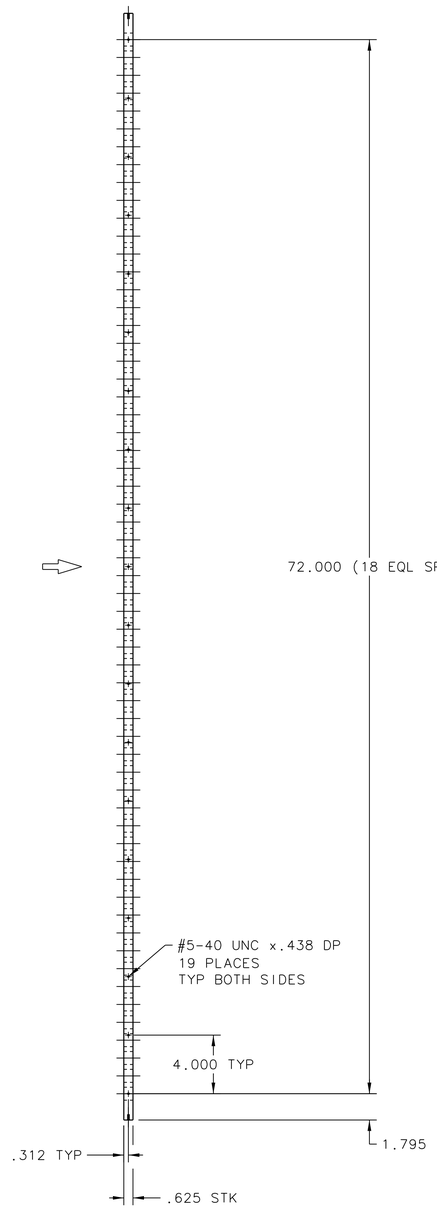
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
ALL	A	ADDED NOTES 2 THRU 4. DIMENSIONS MODIFIED TO BE IN INCH / mm.	21 MAR 14	SME BBW



TOP VIEW 1-7G



FRONT VIEW 1-7A



R SIDE VIEW 1-4A

NOTES:

1. WEIGHT IS APPROXIMATELY 123 LBS.
2. ALL SURFACES REQUIRE A UNIFORM COATING OF 10um NICKEL.
3. ALL SURFACES MUST BE CLEANED, FREE OF DIRT, CORROSION, AND DEFECTS BEFORE PLATING CAN BEGIN.
4. ANNEAL AFTER MACHINING TO REMOVE LOCAL MAGNETIZATION.

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

DOCUMENT CONTROL STAMP

DIM & TOL PER ASME Y14.5
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± N/A | DECIMAL .X ± .1, .XX ± .01, .XXX ± .005 | ANGLES ± .50°

MATERIAL
1006 STEEL
5/8 INCH THICK PLATE

FINISH
MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES.

DO NOT SCALE DRAWING

THIRD ANGLE PROJECTION

TRACKING NO. N/A

APPROVALS	DATE
DRAWN S. ESP	25 NOV 13
CHECKED B. WOJTSEKHOWSKI	10 JAN 14
APPROVED W. SEAY	10 JAN 14
APPROVED B. WOJTSEKHOWSKI	10 JAN 14

United States Department of Energy
Jefferson Lab — Thomas Jefferson National Accelerator Facility
Newport News Virginia

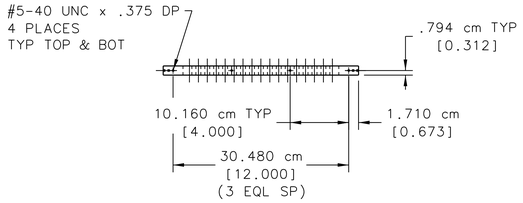
HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
PMT ARRAY BOX ASSY
MAG SHLD REAR PL W/ PMT CUTOUTS

SIZE E | DWG. NO. A00000-01-01-3401 | REV. A

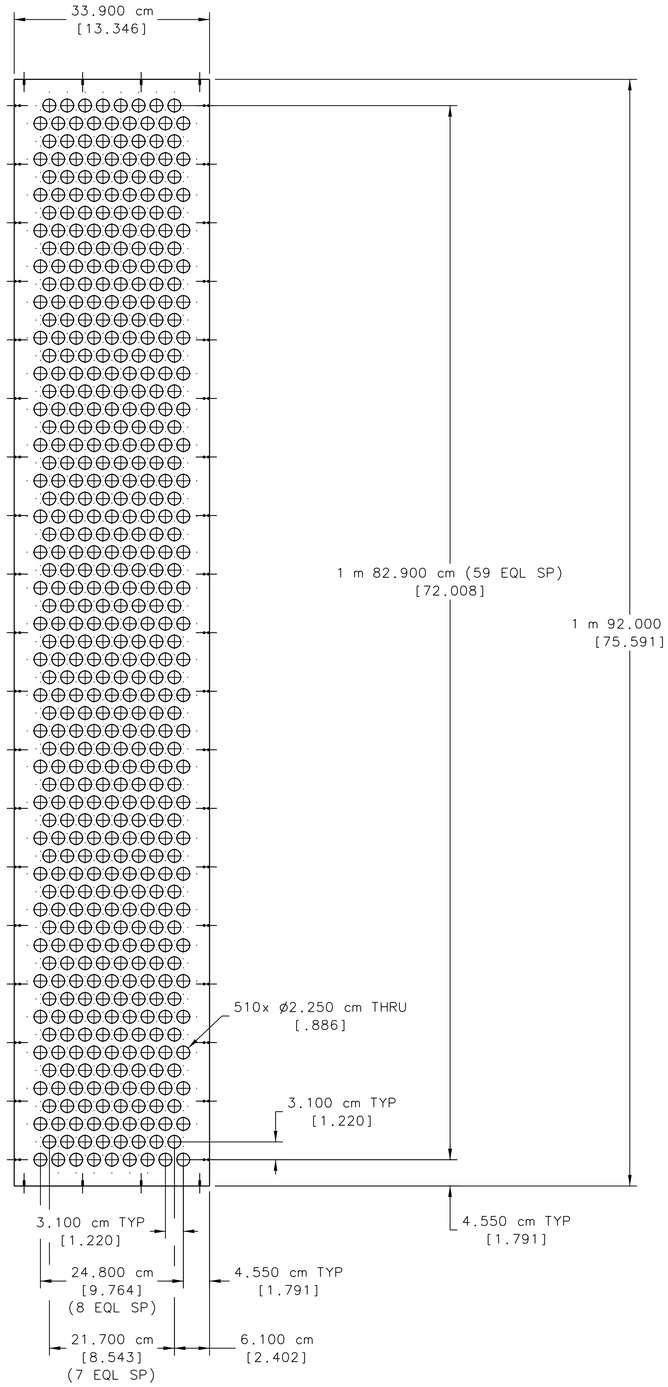
SCALE 1 : 4 | USED ON ASSY NO. A00000-01-01-3400 | SHEET 1 OF 1

Approved: 3/21/2014; E-Sign ID : 270281; signed by: Apr 1; B. Wojtsekhowski; C.; B. Wojtsekhowski; D; T. Fuell

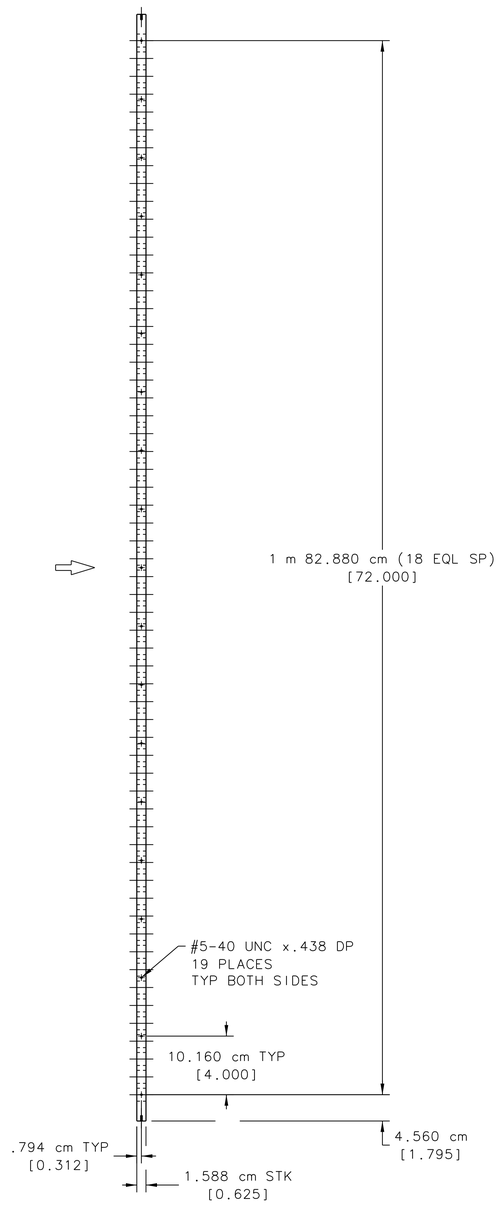
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



TOP VIEW 1-7G



FRONT VIEW 1-7A



R SIDE VIEW 1-4A

NOTES:

1. WEIGHT IS APPROXIMATELY 123 LBS.

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

DOCUMENT CONTROL STAMP

DIM & TOL PER ASME Y14.5
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± N/A | DECIMAL .X ± .1, .XX ± .01, .XXX ± .005 | ANGLES ± .50°

MATERIAL: 1006 STEEL 5/8 INCH THICK PLATE

FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES.

DO NOT SCALE DRAWING

THIRD ANGLE PROJECTION

TRACKING NO. N/A

APPROVALS	DATE
DRAWN S. ESP	25 NOV 13
CHECKED	
APPROVED	
APPROVED	

United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia

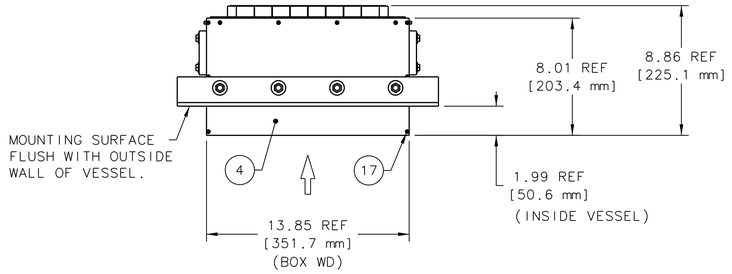
HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
PMT ARRAY BOX ASSY
MAG SHLD REAR PL W/ PMT CUTOUTS

SIZE E | DWG. NO. A00000-01-01-3401 | REV. —

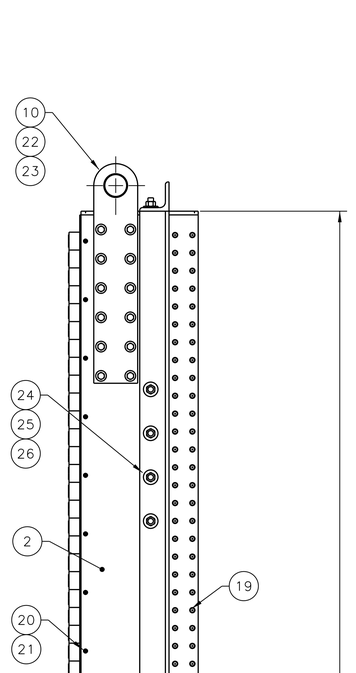
SCALE 1:4 | USED ON ASSY NO. A00000-01-01-3400 | SHEET 1 OF 1

Approved: 1/30/2014, E-Sign ID: 26470S; signed by: AP, z; B. Wojtsekhowski; Ap. z: W. Seay; C.: B. Wojtsekhowski; D: T. Fuell

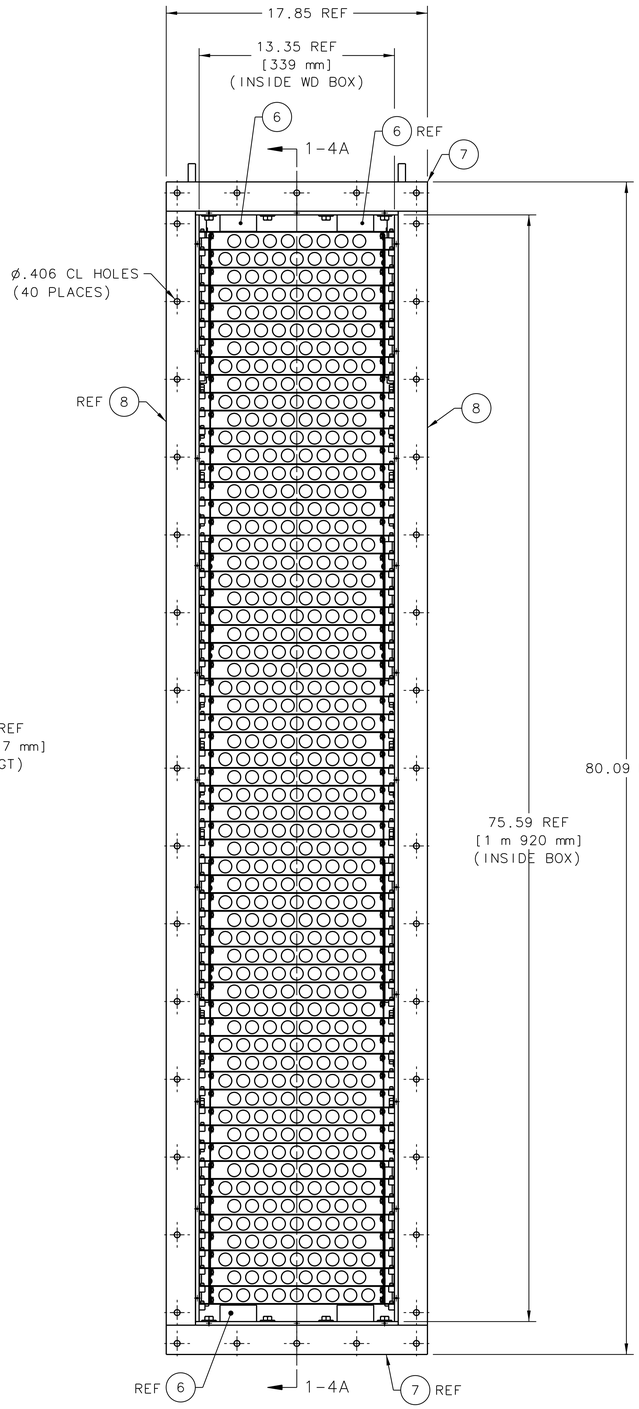
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
ALL	A	DIMENSIONS MODIFIED TO BE IN INCH / mm.	21 MAR 14	SME
			21 MAR 14	BBW
ALL	B	MODIFIED ITEM 1 - MAG SHLD REAR PL W/ PMT CUTOUTS TO REV B. WEIGHT GAIN FROM 525 LBS TO 542 LBS.	14 NOV 14	SME
			14 NOV 14	BBW



TOP VIEW 1-6G

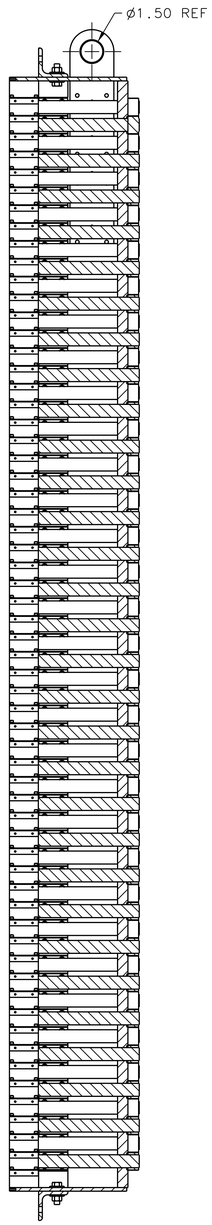


L SIDE VIEW 1-7A



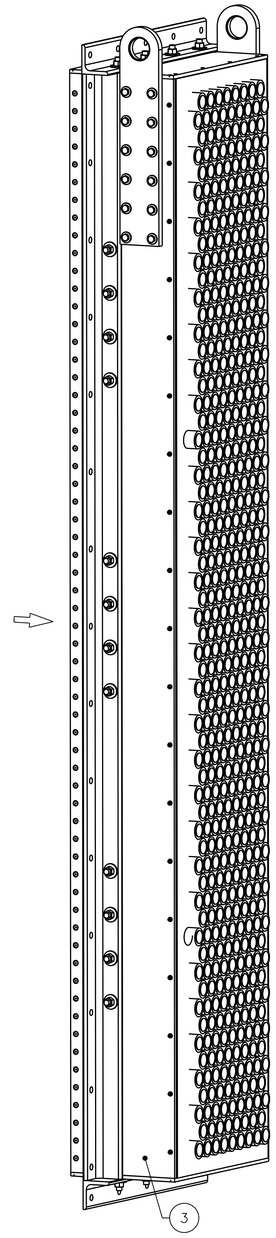
FRONT VIEW 1-6A

(TEMP AL COVER NOT SHOWN FOR CLARITY)



SECTION VIEW 1-4A

(1-6A)



ISO VIEW 1-3C

NOTES:

B
1. WEIGHT IS APPROXIMATELY 542 LBS.
2. ALL STEEL AND MU-METAL MUST BE ANNEALED AFTER MACHINING TO REMOVE LOCAL MAGNETIZATION.
3. AS SHOWN IN THE ISO VIEW 2-7A A 1/32 INCH ALUMINUM SHEET WILL BE ATTACHED TO THE FRONT FACE OF THE BOX FOR PROTECTION OF THE PMT'S AND FOR ALIGNMENT OF THE MIRRORS.

QTY REQD	ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	NOTES
32	26	McMASTER-CARR 90499A031	NUT HEX 3/8-16 UNC	GRADE 8 STEEL	-
64	25	McMASTER-CARR 92217A525	WASHER 3/8 RGLR	18-8 STNLS STL	-
32	24	McMASTER-CARR 92620A626	HEX HEAD CAP SCREW 3/8-16 UNC x 1-1/4 LG	HIGH-STRENGTH STEEL	-
24	23	McMASTER-CARR 91081A129	WASHER 1/4 RGLR	PLAIN STEEL	-
24	22	McMASTER-CARR 91257A535	HEX HEAD CAP SCREW 1/4-20 UNC x 1-3/8 LG	HIGH-STRENGTH STEEL	-
66	21	McMASTER-CARR 90107A006	WASHER #5 RGLR	316 STNLS STL	-
38	20	McMASTER-CARR 92185A138	SOCKET HEAD CAP SCREW #5-40 UNC x 5/8 LG	316 STNLS STL	-
260	19	McMASTER-CARR 90585A214	FLAT SOCKET HEAD CAP SCREW #6-32 UNC x 1/2 LG	316 STNLS STL	-
32	18	McMASTER-CARR 90585A215	FLAT SOCKET HEAD CAP SCREW #6-32 UNC x 5/8 LG	316 STNLS STL	SH 2
48	17	McMASTER-CARR 92185A134	SOCKET HEAD CAP SCREW #5-40 UNC x 3/8 LG	316 STNLS STL	-
-	16	-	-	-	-
510	15	NCA&T PROVIDED	PHOTOMULTIPLIER TUBES (PMTs)	-	SH 2
61	14	A00000-01-01-3500	STEEL HORIZONTAL TRAY ASSY	-	SH 2
1	13	A00000-01-01-3600	MU-METAL SHELF ASSY	-	SH 2
-	12	-	-	-	-
-	11	-	-	-	-
2	10	A00000-01-01-3410	LIFTING PLATE	A36 STEEL	-
1	9	A00000-01-01-3409	TEMP AL COVER FRONT FACE	6061-T6 ALUMINUM	SH 2
2	8	A00000-01-01-3408	ANGLE VERTICAL MOUNT 2 x 2 x 1/4	A36 STEEL	-
2	7	A00000-01-01-3407	ANGLE HORIZONTAL MOUNT 2 x 2 x 1/4	A36 STEEL	-
4	6	A00000-01-01-3406	SPACER TOP / BOTTOM	ACETAL (DELRIN)	-
2	5	A00000-01-01-3405	BACKING PLATE	1006 STEEL	SH 2
2	4	A00000-01-01-3404	MAG SHLD TOP / BOTTOM PLATE	1006 STEEL	-
1	3	A00000-01-01-3403	MAG SHLD RIGHT SIDE PLATE	1006 STEEL	-
1	2	A00000-01-01-3402	MAG SHLD LEFT SIDE PLATE	1006 STEEL	-
B 1	1	A00000-01-01-3401	MAG SHLD REAR PL W/ PMT CUTOUTS	1006 STEEL	SH 2

PARTS LIST

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

DOCUMENT CONTROL STAMP

DO NOT SCALE DRAWING

DIM & TOL PER ASME Y14.5
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± N/A
DECIMAL .X ± .1 .XX ± .01 .XXX ± .005
ANGLES ± .50°

THIRD ANGLE PROJECTION

MATERIAL: AS NOTED

FINISH: MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

TRACKING NO. N/A

APPROVALS	DATE
DRAWN S. ESP	02 DEC 13
CHECKED B. WOJTSEKHOWSKI	10 JAN 14
APPROVED W. SEAY	10 JAN 14
APPROVED B. WOJTSEKHOWSKI	10 JAN 14

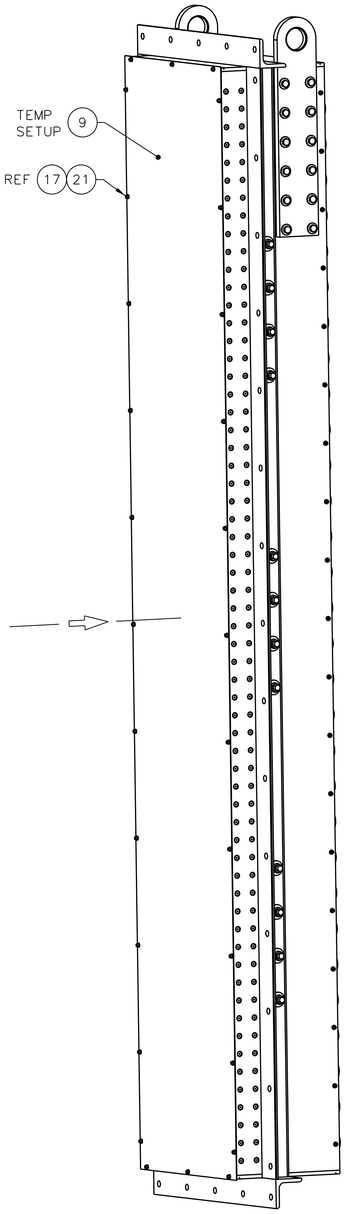
United States Department of Energy
Jefferson Lab — Thomas Jefferson National Accelerator Facility
Newport News Virginia

HALL A
GENL EQUIPMENT - PARTICLE ID
GRINCH DETECTOR ASSY
PMT ARRAY BOX ASSY

SIZE E | DWG. NO. A00000-01-01-3400 | REV. B

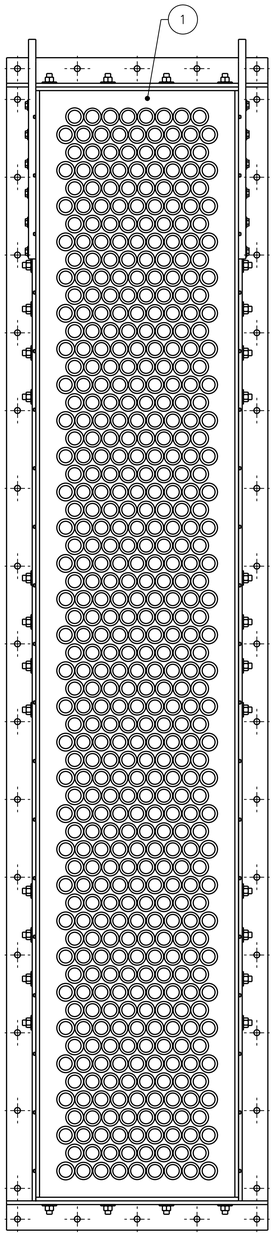
SCALE 1 : 4 | USED ON ASSY NO. A00000-01-01-3200 | SHEET 1 OF 2

Approved: 11/17/2014; E-Sign ID: 288257; signed by: Ap 1: B. Wojtsekhowski; C: B. Wojtsekhowski; D: T. Fuehl

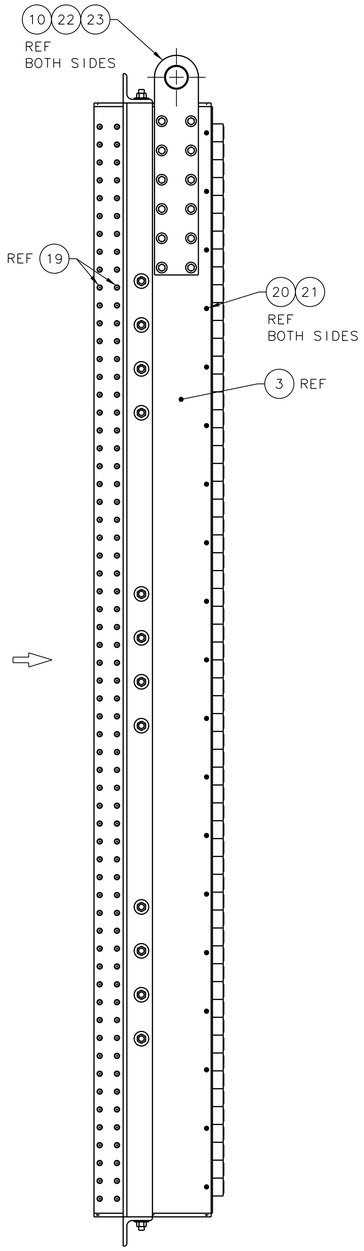


ISO VIEW 2-7A

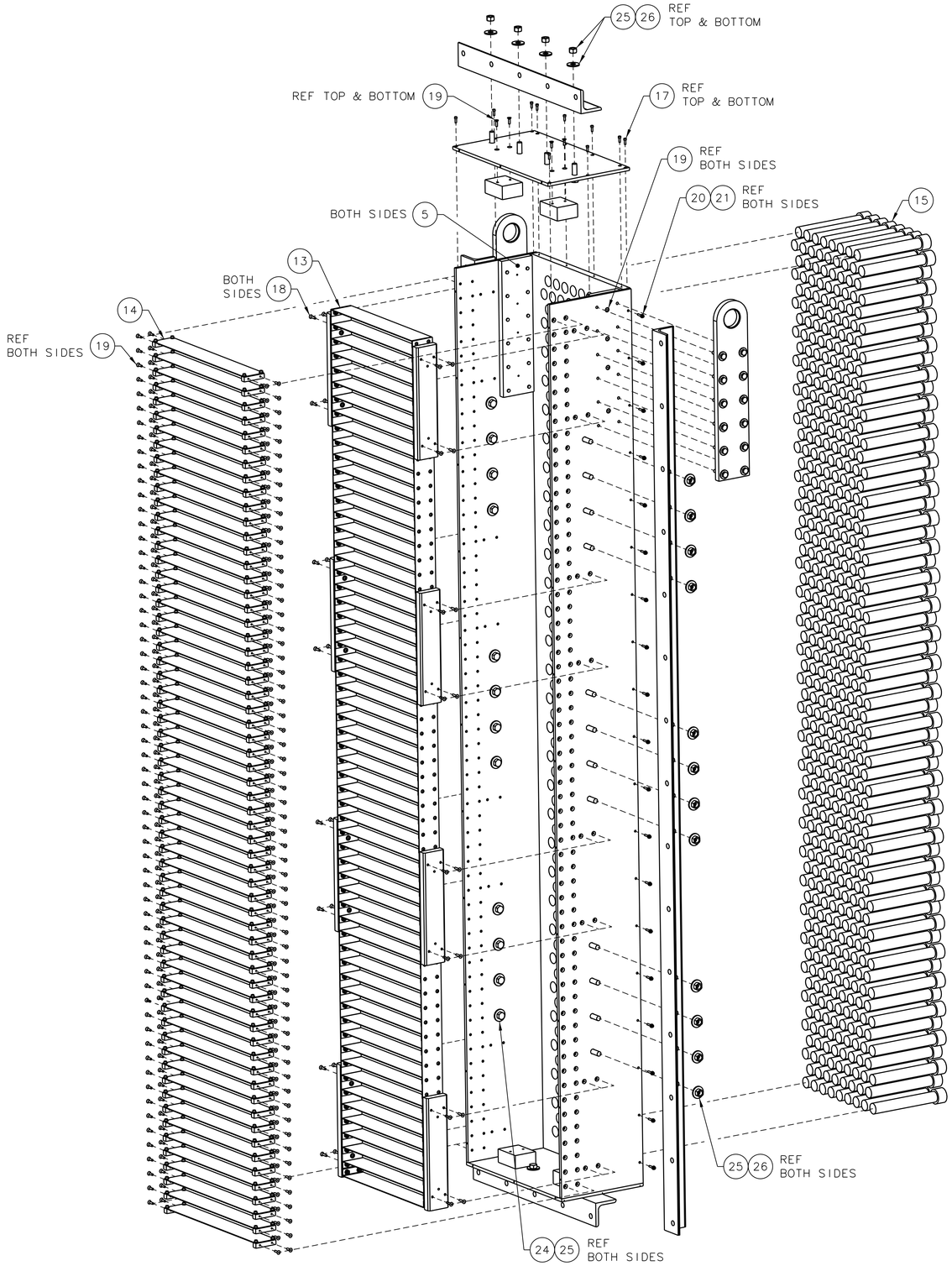
(TEMP AL COVER W/ HDW SHOWN))



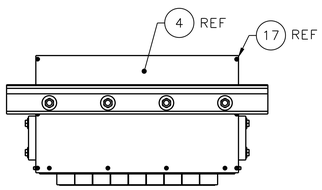
REAR VIEW 2-6B



R SIDE VIEW 2-5B



EXPLODED VIEW 2-2B

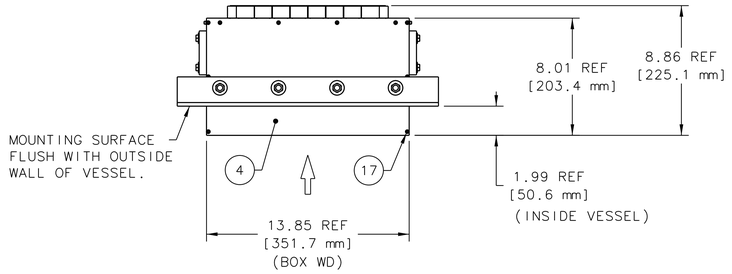


BOTTOM VIEW 2-6A

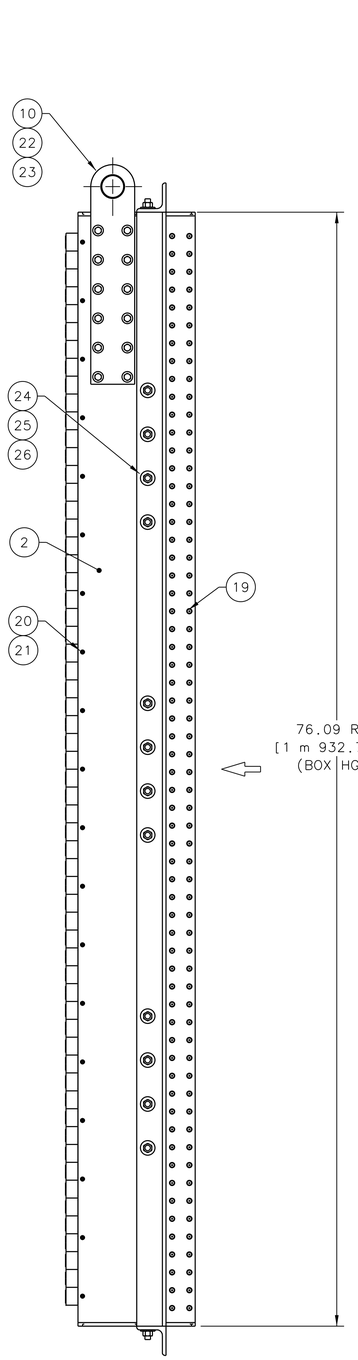
Approved: 11/17/2014; E-Sign ID : 2882571; signed by: Ap. 1 B. Wojtaszkiewski; C: B. Wojtaszkiewski; D: T. Fuell

DOCUMENT CONTROL STAMP	SIZE	DWG. NO.	REV.
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	SCALE 1 : 4	USED ON ASSY NO. A00000-01-01-3200	SHEET 2 OF 2

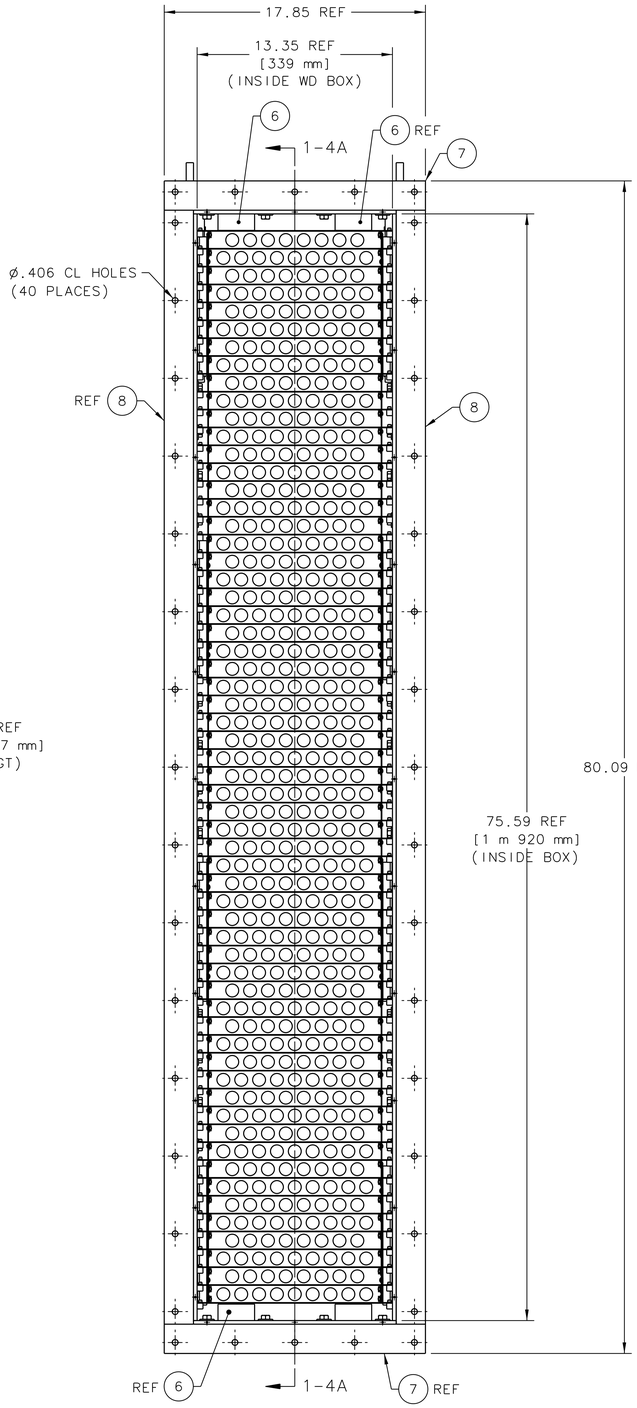
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
ALL	A	DIMENSIONS MODIFIED TO BE IN INCH / mm.	21 MAR 14	SME
				BBW



TOP VIEW 1-6G

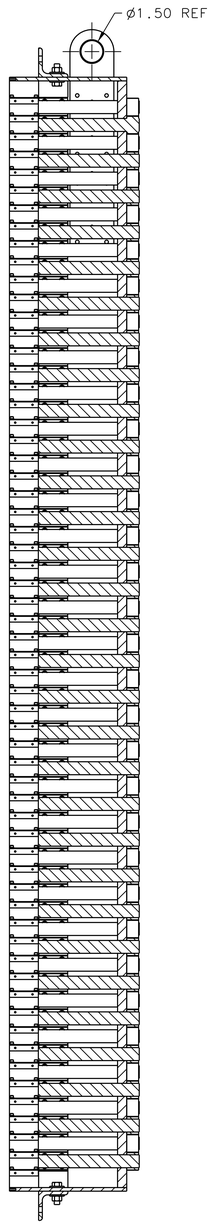


L SIDE VIEW 1-7A



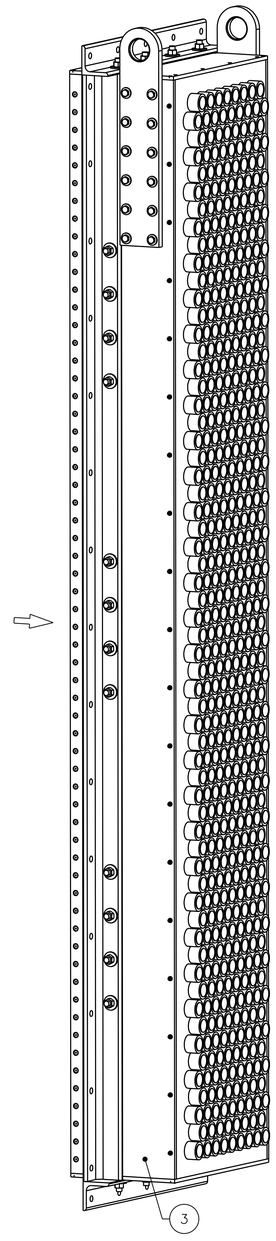
FRONT VIEW 1-6A

(TEMP AL COVER NOT SHOWN FOR CLARITY)



SECTION VIEW 1-4A

(1-6A)



ISO VIEW 1-3C

NOTES:

1. WEIGHT IS APPROXIMATELY 525 LBS.
2. ALL STEEL AND MU-METAL MUST BE ANNEALED AFTER MACHINING TO REMOVE LOCAL MAGNETIZATION.
3. AS SHOWN IN THE ISO VIEW 2-7A A 1/32 INCH ALUMINUM SHEET WILL BE ATTACHED TO THE FRONT FACE OF THE BOX FOR PROTECTION OF THE PMT'S AND FOR ALIGNMENT OF THE MIRRORS.

QTY. REQD	ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	NOTES
32	26	McMASTER-CARR 90499A031	NUT HEX 3/8-16 UNC	GRADE 8 STEEL	-
64	25	McMASTER-CARR 92217A525	WASHER 3/8 RGLR	18-8 STNLS STL	-
32	24	McMASTER-CARR 92620A626	HEX HEAD CAP SCREW 3/8-16 UNC x 1-1/4 LG	HIGH-STRENGTH STEEL	-
24	23	McMASTER-CARR 91081A129	WASHER 1/4 RGLR	PLAIN STEEL	-
24	22	McMASTER-CARR 91257A535	HEX HEAD CAP SCREW 1/4-20 UNC x 1-3/8 LG	HIGH-STRENGTH STEEL	-
66	21	McMASTER-CARR 90107A006	WASHER #5 RGLR	316 STNLS STL	-
38	20	McMASTER-CARR 92185A138	SOCKET HEAD CAP SCREW #5-40 UNC x 5/8 LG	316 STNLS STL	-
260	19	McMASTER-CARR 90585A214	FLAT SOCKET HEAD CAP SCREW #6-32 UNC x 1/2 LG	316 STNLS STL	-
32	18	McMASTER-CARR 90585A215	FLAT SOCKET HEAD CAP SCREW #6-32 UNC x 5/8 LG	316 STNLS STL	SH 2
48	17	McMASTER-CARR 92185A134	SOCKET HEAD CAP SCREW #5-40 UNC x 3/8 LG	316 STNLS STL	-
-	16	-	-	-	-
510	15	NCA&T PROVIDED	PHOTOMULTIPLIER TUBES (PMTs)	-	SH 2
61	14	A00000-01-01-3500	STEEL HORIZONTAL TRAY ASSY	-	SH 2
1	13	A00000-01-01-3600	MU-METAL SHELF ASSY	-	SH 2
-	12	-	-	-	-
-	11	-	-	-	-
2	10	A00000-01-01-3410	LIFTING PLATE	A36 STEEL	-
1	9	A00000-01-01-3409	TEMP AL COVER FRONT FACE	6061-T6 ALUMINUM	SH 2
2	8	A00000-01-01-3408	ANGLE VERTICAL MOUNT 2 x 2 x 1/4	A36 STEEL	-
2	7	A00000-01-01-3407	ANGLE HORIZONTAL MOUNT 2 x 2 x 1/4	A36 STEEL	-
4	6	A00000-01-01-3406	SPACER TOP / BOTTOM	ACETAL (DELRIN)	-
2	5	A00000-01-01-3405	BACKING PLATE	1006 STEEL	SH 2
2	4	A00000-01-01-3404	MAG SHLD TOP / BOTTOM PLATE	1006 STEEL	-
1	3	A00000-01-01-3403	MAG SHLD RIGHT SIDE PLATE	1006 STEEL	-
1	2	A00000-01-01-3402	MAG SHLD LEFT SIDE PLATE	1006 STEEL	-
1	1	A00000-01-01-3401	MAG SHLD REAR PL W/ PMT CUTOUTS	1006 STEEL	SH 2

PARTS LIST

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

DOCUMENT CONTROL STAMP

MATERIAL: AS NOTED

FINISH MACHINED SURFACES: 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DIM & TOL PER ASME Y14.5
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± N/A
DECIMAL .X ±.1 .XX ±.01 .XXX ±.005
ANGLES ± .50°

THIRD ANGLE PROJECTION

TRACKING NO. N/A

APPROVALS	DATE
DRAWN S. ESP	02 DEC 13
CHECKED B. WOJTSEKHOWSKI	10 JAN 14
APPROVED W. SEAY	10 JAN 14
APPROVED B. WOJTSEKHOWSKI	10 JAN 14

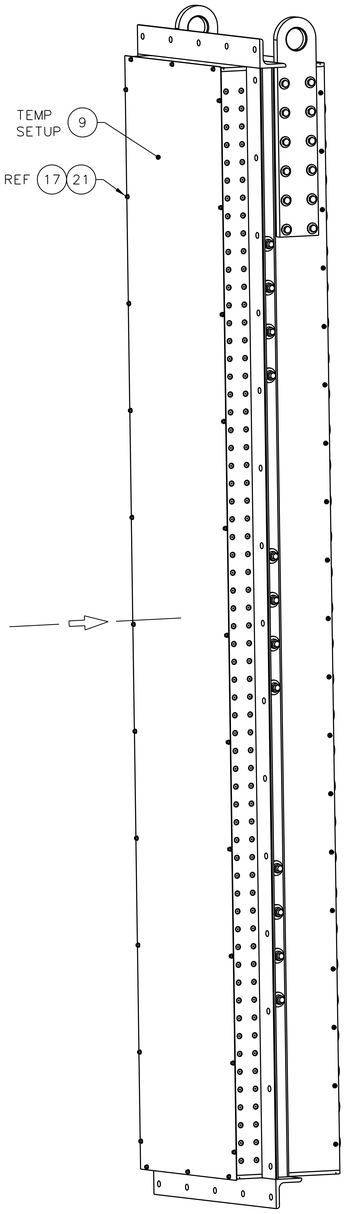
United States Department of Energy
Jefferson Lab — Thomas Jefferson National Accelerator Facility — Newport News Virginia

HALL A
GENL EQUIPMENT - PARTICLE ID
GRINCH DETECTOR ASSY
PMT ARRAY BOX ASSY

SIZE E | DWG. NO. A00000-01-01-3400 | REV. A

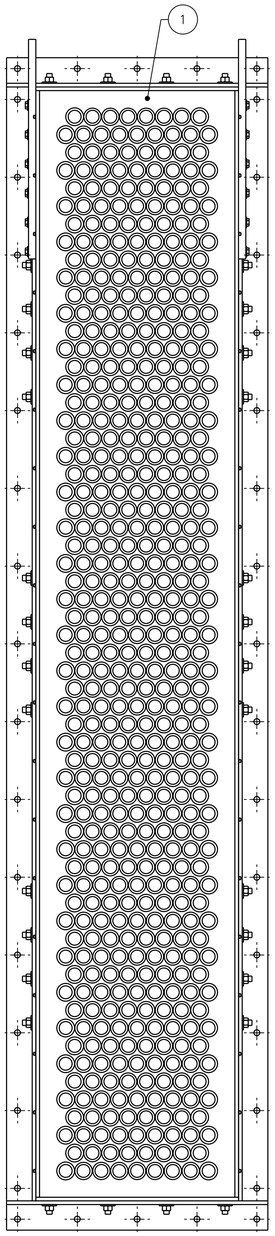
SCALE 1 : 4 | USED ON ASSY NO. A00000-01-01-3200 | SHEET 1 OF 2

Approved: 3/21/2014; E-Sign ID : 270280; signed by: Ap. 1: B. Wojtsekhowski; C.: B. Wojtsekhowski; D: T. Fuehl

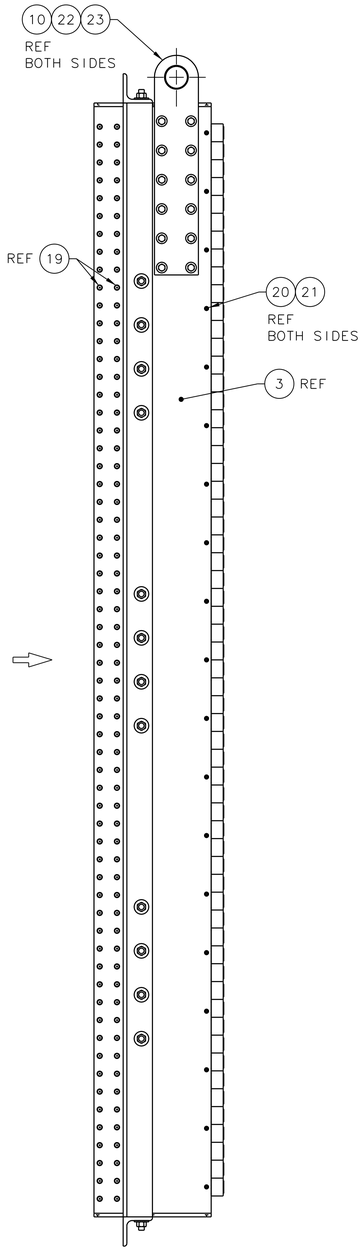


ISO VIEW 2-7A

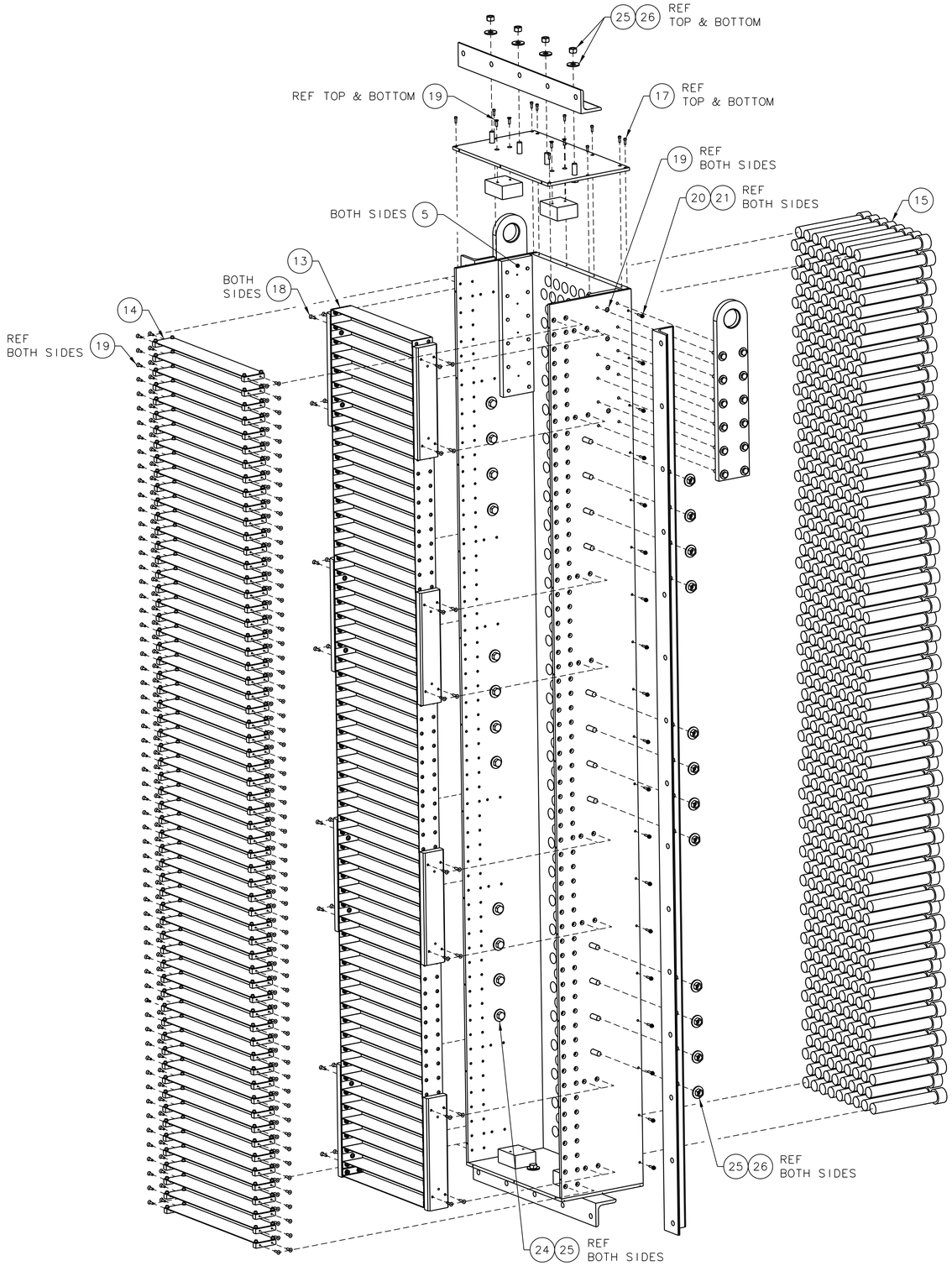
(TEMP AL COVER W/ HDW SHOWN))



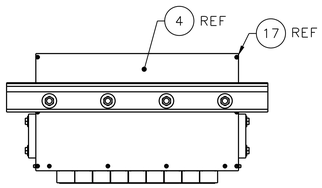
REAR VIEW 2-6B



R SIDE VIEW 2-5B



EXPLODED VIEW 2-2B

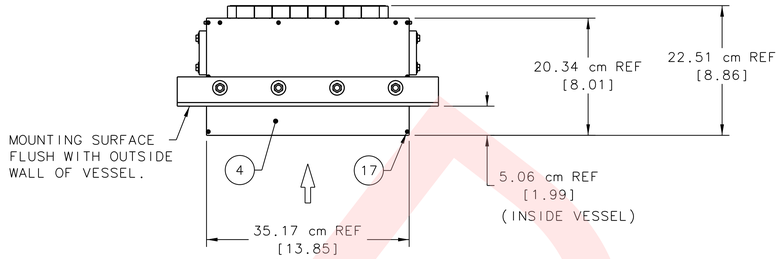


BOTTOM VIEW 2-6A

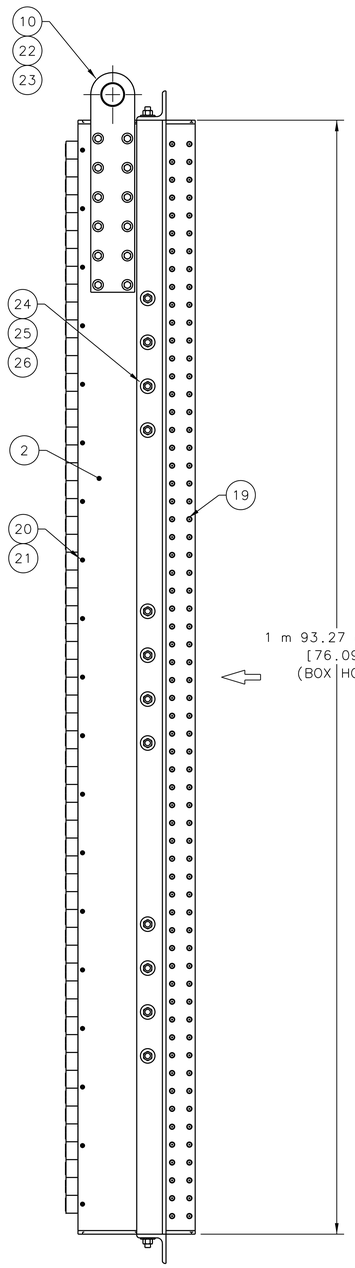
Approved: 3/21/2014; E-Sign ID : 270289; signed by: Ap. I B. Wojtaszkiewski; C: B. Wojtaszkiewski; D: T. Fuell

DOCUMENT CONTROL STAMP	SIZE	DWG. NO.	REV.
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	SCALE 1 : 4	USED ON ASSY NO. A00000-01-01-3200	SHEET 2 OF 2

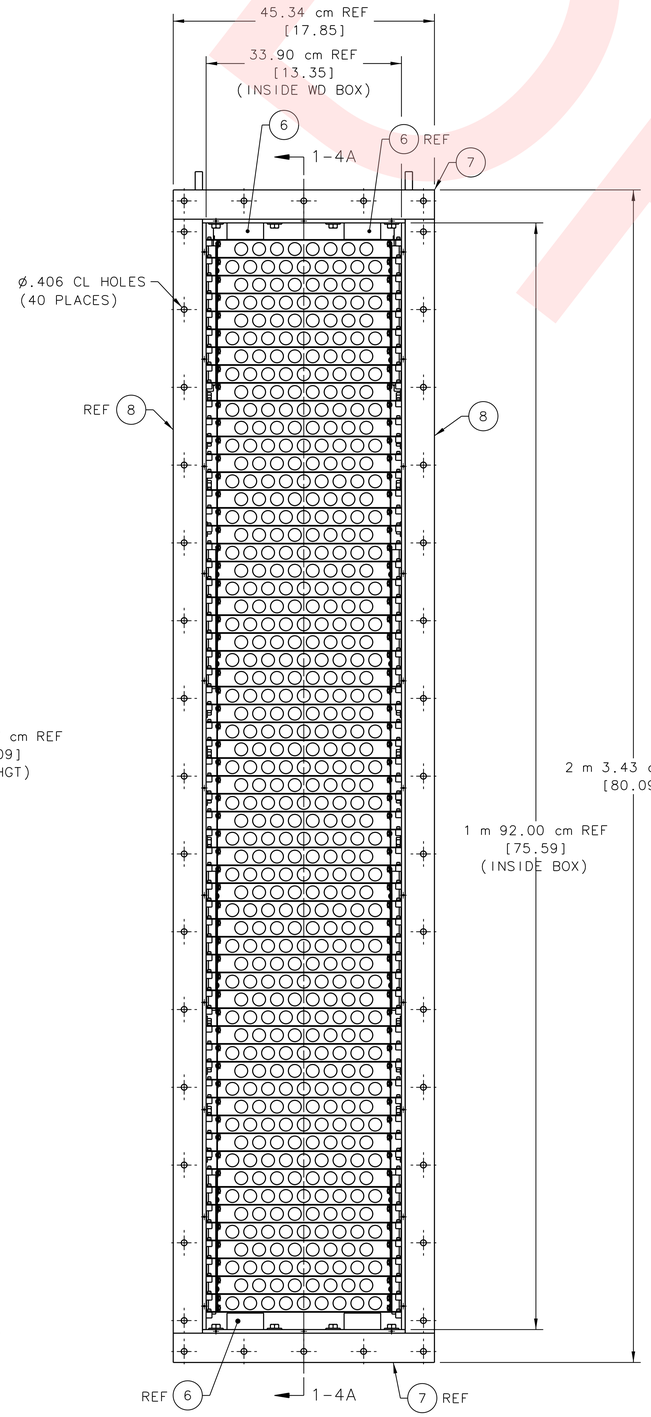
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ZONE	REV	DESCRIPTION	DATE	APPROVED



TOP VIEW 1-6G

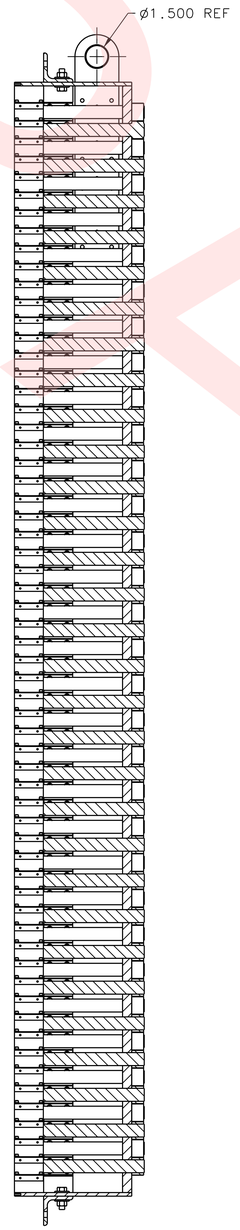


L SIDE VIEW 1-7A



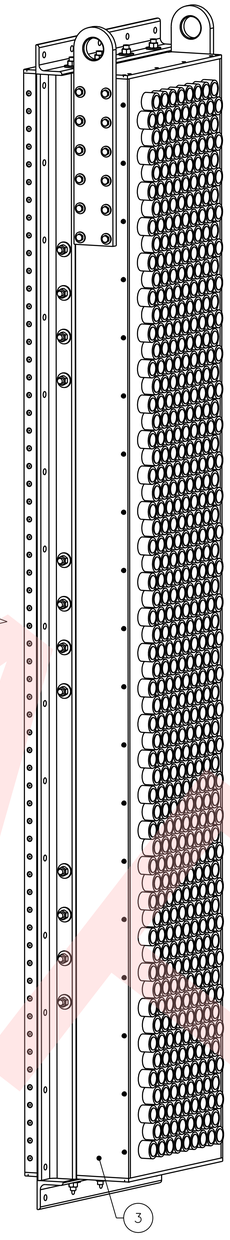
FRONT VIEW 1-6A

(TEMP AL COVER NOT SHOWN FOR CLARITY)



SECTION VIEW 1-4A

(1-6A)



ISO VIEW 1-3C

NOTES:

1. WEIGHT IS APPROXIMATELY 525 LBS.
2. ALL STEEL AND MU-METAL MUST BE ANNEALED AFTER MACHINING TO REMOVE LOCAL MAGNETIZATION.
3. AS SHOWN IN THE ISO VIEW 2-7A A 1/32 INCH ALUMINUM SHEET WILL BE ATTACHED TO THE FRONT FACE OF THE BOX FOR PROTECTION OF THE PMT'S AND FOR ALIGNMENT OF THE MIRRORS.

QTY REQD	ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	NOTES
32	26	McMASTER-CARR 90499A031	NUT HEX 3/8-16 UNC	GRADE 8 STEEL	-
64	25	McMASTER-CARR 92217A525	WASHER 3/8 RGLR	18-8 STNLS STL	-
32	24	McMASTER-CARR 92620A626	HEX HEAD CAP SCREW 3/8-16 UNC x 1-1/4 LG	HIGH-STRENGTH STEEL	-
24	23	McMASTER-CARR 91081A129	WASHER 1/4 RGLR	PLAIN STEEL	-
24	22	McMASTER-CARR 91257A535	HEX HEAD CAP SCREW 1/4-20 UNC x 1-3/8 LG	HIGH-STRENGTH STEEL	-
66	21	McMASTER-CARR 90107A006	WASHER #5 RGLR	316 STNLS STL	-
38	20	McMASTER-CARR 92185A138	SOCKET HEAD CAP SCREW #5-40 UNC x 5/8 LG	316 STNLS STL	-
260	19	McMASTER-CARR 90585A214	FLAT SOCKET HEAD CAP SCREW #6-32 UNC x 1/2 LG	316 STNLS STL	-
32	18	McMASTER-CARR 90585A215	FLAT SOCKET HEAD CAP SCREW #6-32 UNC x 5/8 LG	316 STNLS STL	SH 2
48	17	McMASTER-CARR 92185A134	SOCKET HEAD CAP SCREW #5-40 UNC x 3/8 LG	316 STNLS STL	-
-	16	-	-	-	-
510	15	NCA&T PROVIDED	PHOTOMULTIPLIER TUBES (PMTs)	-	SH 2
61	14	A00000-01-01-3500	STEEL HORIZONTAL TRAY ASSY	-	SH 2
1	13	A00000-01-01-3600	MU-METAL SHELF ASSY	-	SH 2
-	12	-	-	-	-
-	11	-	-	-	-
2	10	A00000-01-01-3410	LIFTING PLATE	A36 STEEL	-
1	9	A00000-01-01-3409	TEMP AL COVER FRONT FACE	6061-T6 ALUMINUM	SH 2
2	8	A00000-01-01-3408	ANGLE VERTICAL MOUNT 2 x 2 x 1/4	A36 STEEL	-
2	7	A00000-01-01-3407	ANGLE HORIZONTAL MOUNT 2 x 2 x 1/4	A36 STEEL	-
4	6	A00000-01-01-3406	SPACER TOP / BOTTOM	ACETAL (DELRIN)	-
2	5	A00000-01-01-3405	BACKING PLATE	1006 STEEL	SH 2
2	4	A00000-01-01-3404	MAG SHLD TOP / BOTTOM PLATE	1006 STEEL	-
1	3	A00000-01-01-3403	MAG SHLD RIGHT SIDE PLATE	1006 STEEL	-
1	2	A00000-01-01-3402	MAG SHLD LEFT SIDE PLATE	1006 STEEL	-
1	1	A00000-01-01-3401	MAG SHLD REAR PL W/ PMT CUTOUTS	1006 STEEL	SH 2

PARTS LIST

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

DOCUMENT CONTROL STAMP

MATERIAL: AS NOTED

FINISH MACHINED SURFACES: 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DIM & TOL PER ASME Y14.5
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± N/A
DECIMAL .X ± .1 .XX ± .01 .XXX ± .005
ANGLES ± .50°

THIRD ANGLE PROJECTION

TRACKING NO. N/A

APPROVALS	DATE
DRAWN S. ESP	02 DEC 13
CHECKED	
APPROVED	
APPROVED	

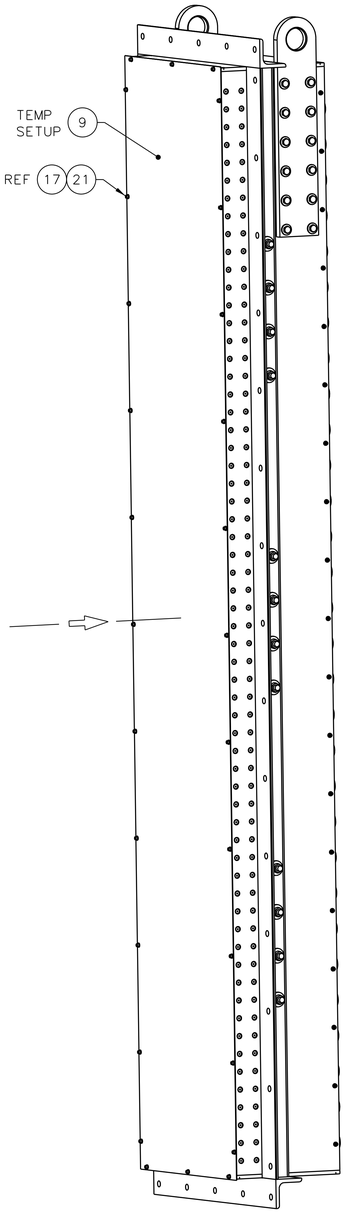
United States Department of Energy
Jefferson Lab — Thomas Jefferson National Accelerator Facility
Newport News Virginia

HALL A
GENL EQUIPMENT - PARTICLE ID
GRINCH DETECTOR ASSY
PMT ARRAY BOX ASSY

SIZE E | DWG. NO. A00000-01-01-3400 | REV. -

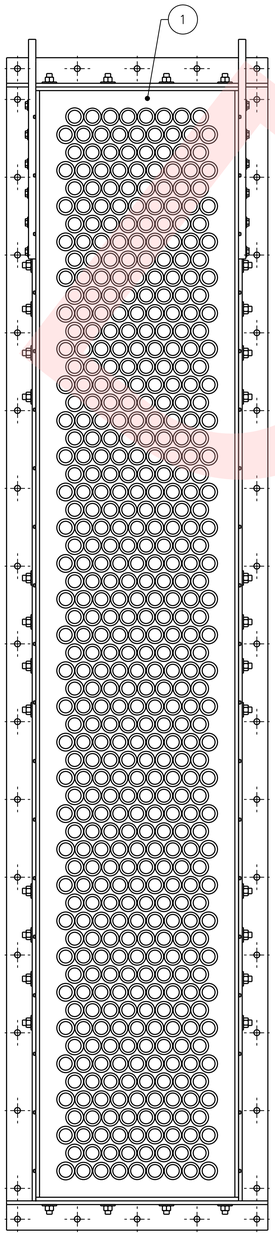
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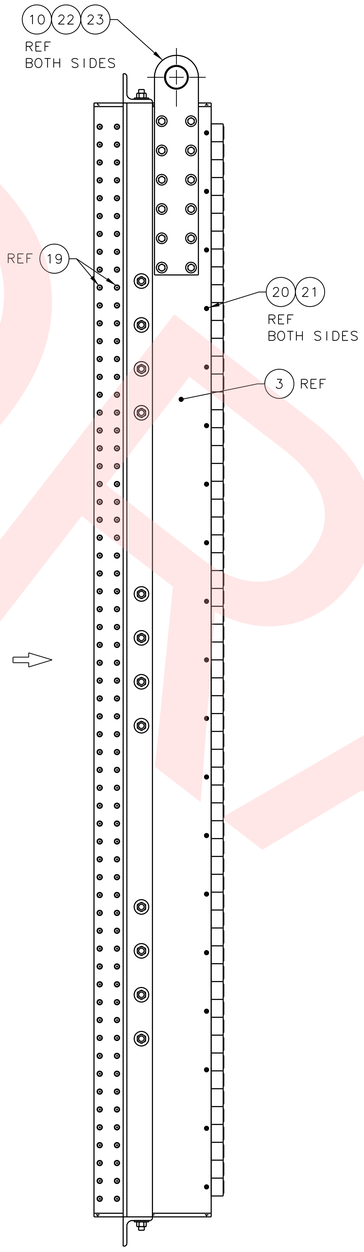


ISO VIEW 2-7A

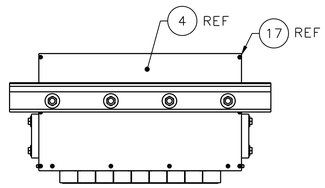
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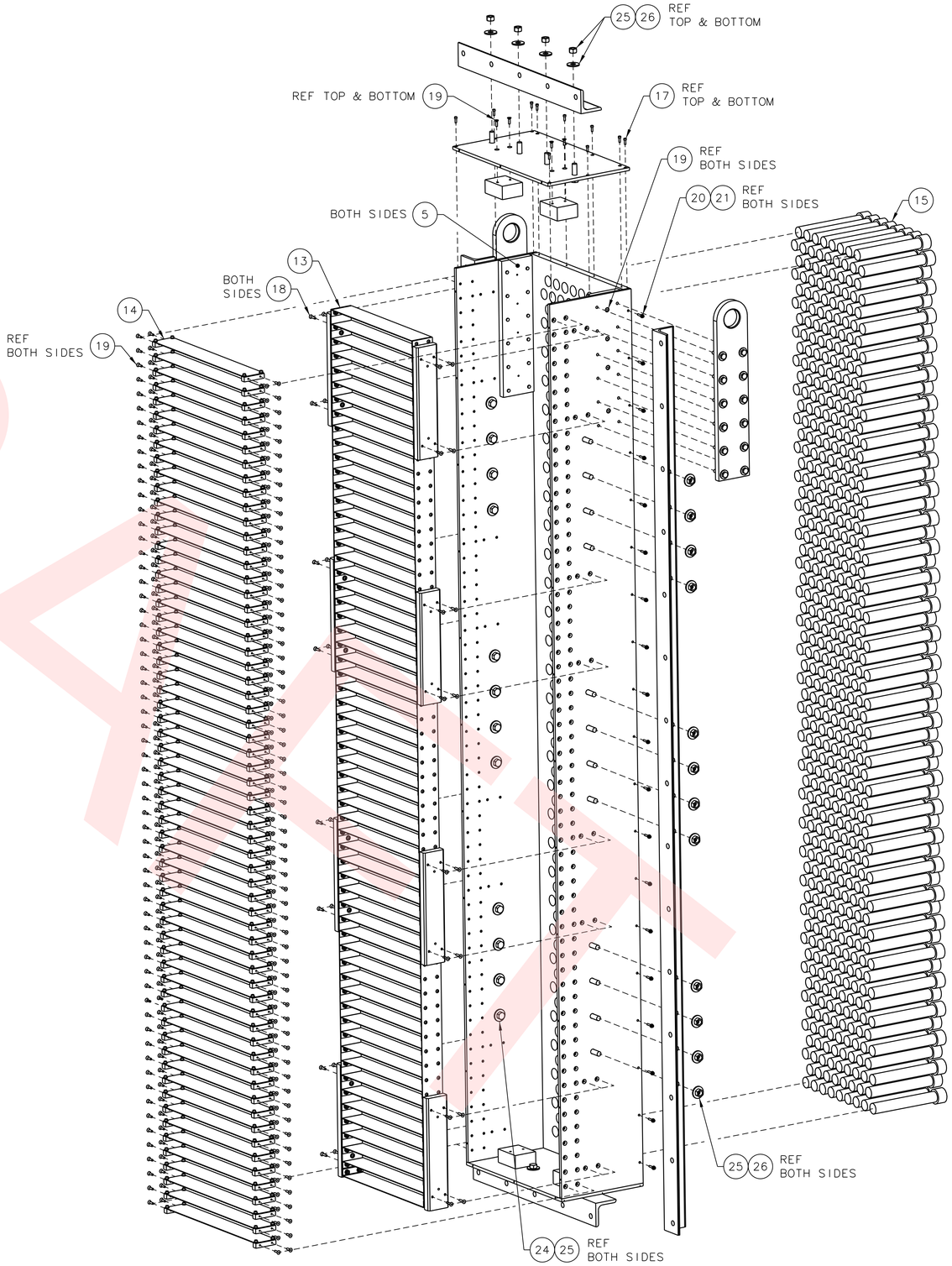
REAR VIEW 2-6B



R SIDE VIEW 2-5B



BOTTOM VIEW 2-6A

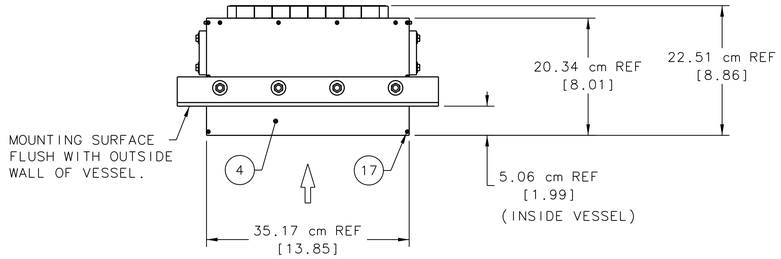


EXPLODED VIEW 2-2B

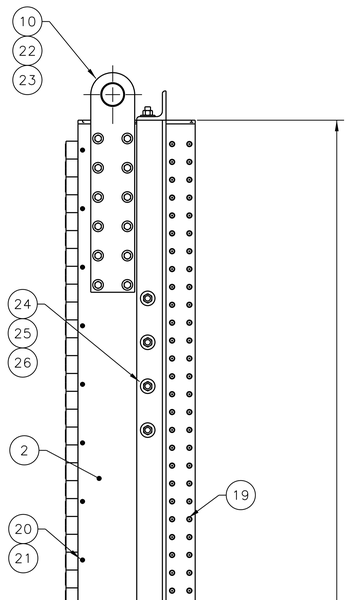
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	E	A00000-01-01-3400	–
	SCALE 1:4	USED ON ASSY NO. A00000-01-01-3200	SHEET 2 OF 2

Electronic Signature REJECTED.

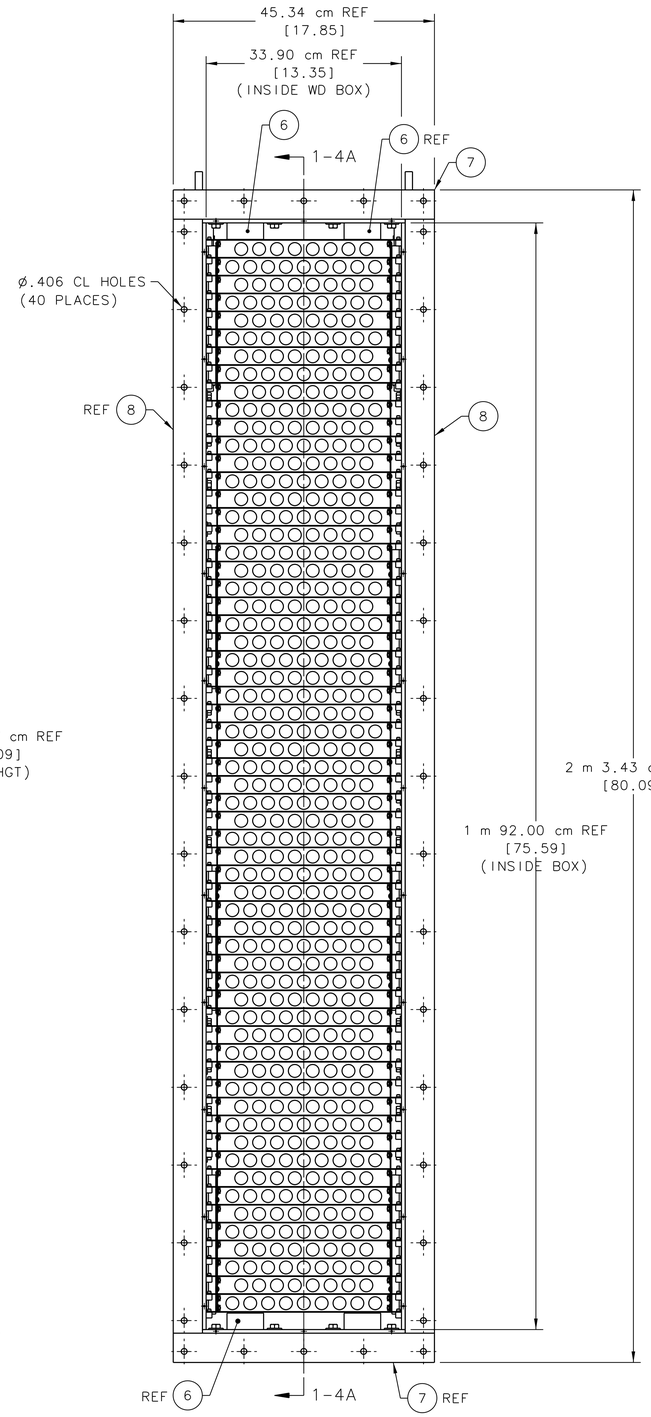
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



TOP VIEW 1-6G

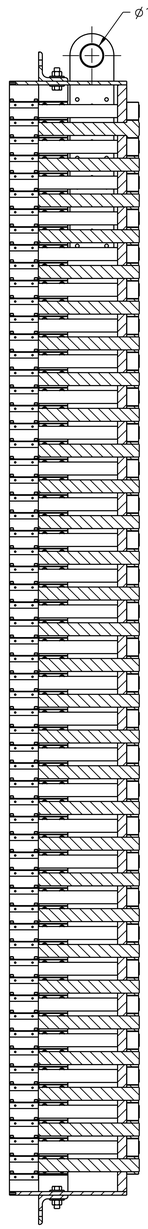


L SIDE VIEW 1-7A



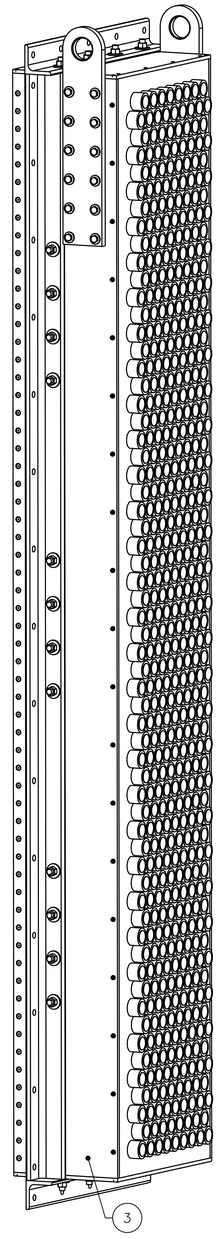
FRONT VIEW 1-6A

(TEMP AL COVER NOT SHOWN FOR CLARITY)



SECTION VIEW 1-4A

(1-6A)



ISO VIEW 1-3C

NOTES:

1. WEIGHT IS APPROXIMATELY 525 LBS.
2. ALL STEEL AND MU-METAL MUST BE ANNEALED AFTER MACHINING TO REMOVE LOCAL MAGNETIZATION.
3. AS SHOWN IN THE ISO VIEW 2-7A A 1/32 INCH ALUMINUM SHEET WILL BE ATTACHED TO THE FRONT FACE OF THE BOX FOR PROTECTION OF THE PMT'S AND FOR ALIGNMENT OF THE MIRRORS.

QTY. REQD	ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	NOTES
32	26	McMASTER-CARR 90499A031	NUT HEX 3/8-16 UNC	GRADE 8 STEEL	-
64	25	McMASTER-CARR 92217A525	WASHER 3/8 RGLR	18-8 STNLS STL	-
32	24	McMASTER-CARR 92620A626	HEX HEAD CAP SCREW 3/8-16 UNC x 1-1/4 LG	HIGH-STRENGTH STEEL	-
24	23	McMASTER-CARR 91081A129	WASHER 1/4 RGLR	PLAIN STEEL	-
24	22	McMASTER-CARR 91257A535	HEX HEAD CAP SCREW 1/4-20 UNC x 1-3/8 LG	HIGH-STRENGTH STEEL	-
66	21	McMASTER-CARR 90107A006	WASHER #5 RGLR	316 STNLS STL	-
38	20	McMASTER-CARR 92185A138	SOCKET HEAD CAP SCREW #5-40 UNC x 5/8 LG	316 STNLS STL	-
260	19	McMASTER-CARR 90585A214	FLAT SOCKET HEAD CAP SCREW #6-32 UNC x 1/2 LG	316 STNLS STL	-
32	18	McMASTER-CARR 90585A215	FLAT SOCKET HEAD CAP SCREW #6-32 UNC x 5/8 LG	316 STNLS STL	SH 2
48	17	McMASTER-CARR 92185A134	SOCKET HEAD CAP SCREW #5-40 UNC x 3/8 LG	316 STNLS STL	-
-	16	-	-	-	-
510	15	NCA&T PROVIDED	PHOTOMULTIPLIER TUBES (PMTs)	-	SH 2
61	14	A00000-01-01-3500	STEEL HORIZONTAL TRAY ASSY	-	SH 2
1	13	A00000-01-01-3600	MU-METAL SHELF ASSY	-	SH 2
-	12	-	-	-	-
-	11	-	-	-	-
2	10	A00000-01-01-3410	LIFTING PLATE	A36 STEEL	-
1	9	A00000-01-01-3409	TEMP AL COVER FRONT FACE	6061-T6 ALUMINUM	SH 2
2	8	A00000-01-01-3408	ANGLE VERTICAL MOUNT 2 x 2 x 1/4	A36 STEEL	-
2	7	A00000-01-01-3407	ANGLE HORIZONTAL MOUNT 2 x 2 x 1/4	A36 STEEL	-
4	6	A00000-01-01-3406	SPACER TOP / BOTTOM	ACETAL (DELRIN)	-
2	5	A00000-01-01-3405	BACKING PLATE	1006 STEEL	SH 2
2	4	A00000-01-01-3404	MAG SHLD TOP / BOTTOM PLATE	1006 STEEL	-
1	3	A00000-01-01-3403	MAG SHLD RIGHT SIDE PLATE	1006 STEEL	-
1	2	A00000-01-01-3402	MAG SHLD LEFT SIDE PLATE	1006 STEEL	-
1	1	A00000-01-01-3401	MAG SHLD REAR PL W/ PMT CUTOUTS	1006 STEEL	SH 2

PARTS LIST

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

DOCUMENT CONTROL STAMP

MATERIAL: AS NOTED

FINISH MACHINED SURFACES: 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DIM & TOL PER ASME Y14.5
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± N/A
DECIMAL .X ±.1 .XX ±.01 .XXX ±.005
ANGLES ± .50°

THIRD ANGLE PROJECTION

TRACKING NO. N/A

APPROVALS	DATE
DRAWN S. ESP	02 DEC 13
CHECKED	
APPROVED	
APPROVED	

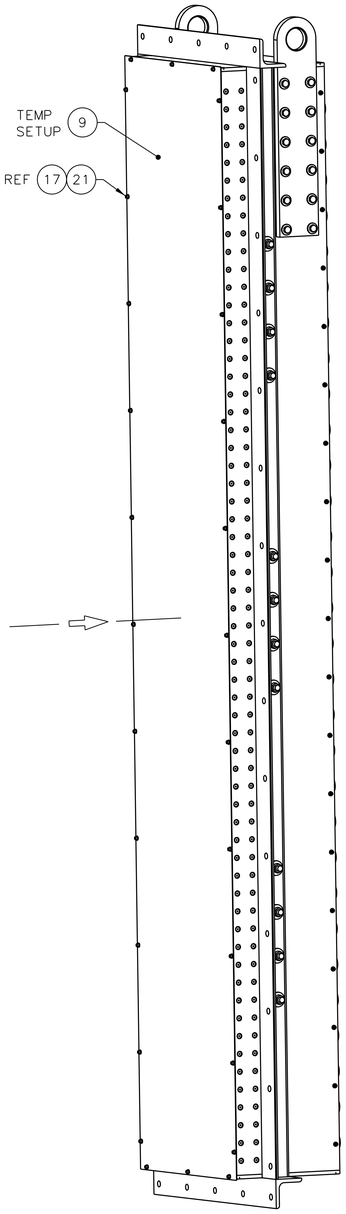
United States Department of Energy
Jefferson Lab — Thomas Jefferson National Accelerator Facility
Newport News Virginia

HALL A
GENL EQUIPMENT - PARTICLE ID
GRINCH DETECTOR ASSY
PMT ARRAY BOX ASSY

SIZE E | DWG. NO. A00000-01-01-3400 | REV. -

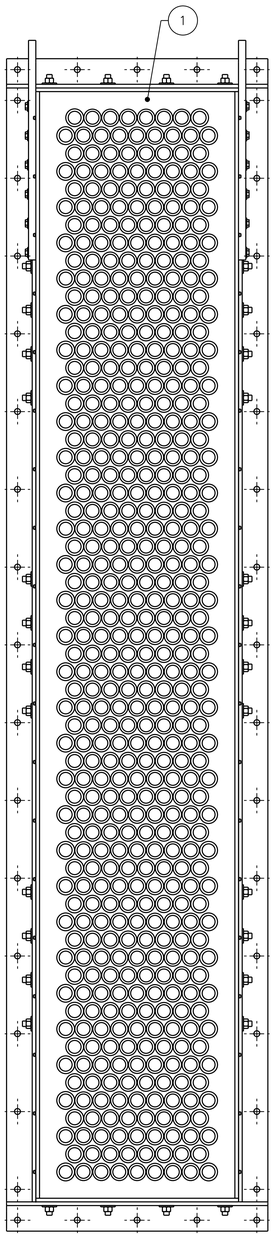
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Approved: 11/07/2014, E-Sign ID: 2647f4, signed by: Ap. I. W. Sawy, C: B. Wojtsekhowski, D: T. Fuehl, AP: 2, B. Wojtsekhowski

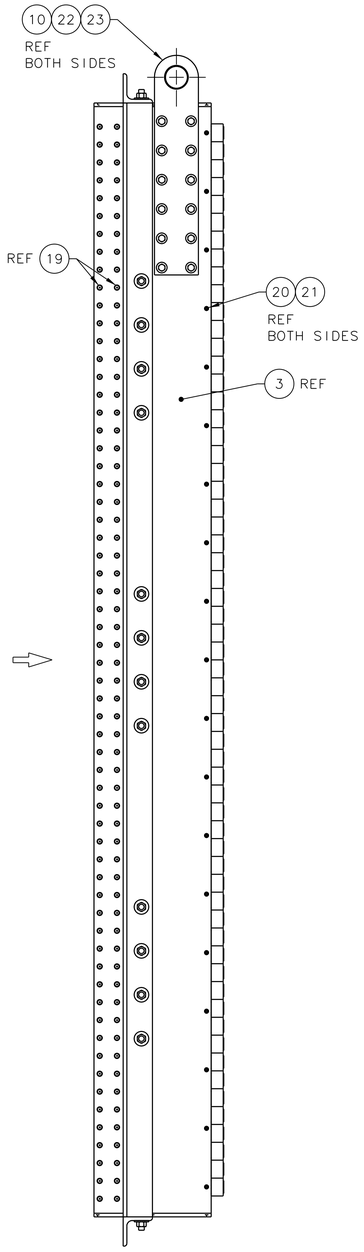


ISO VIEW 2-7A

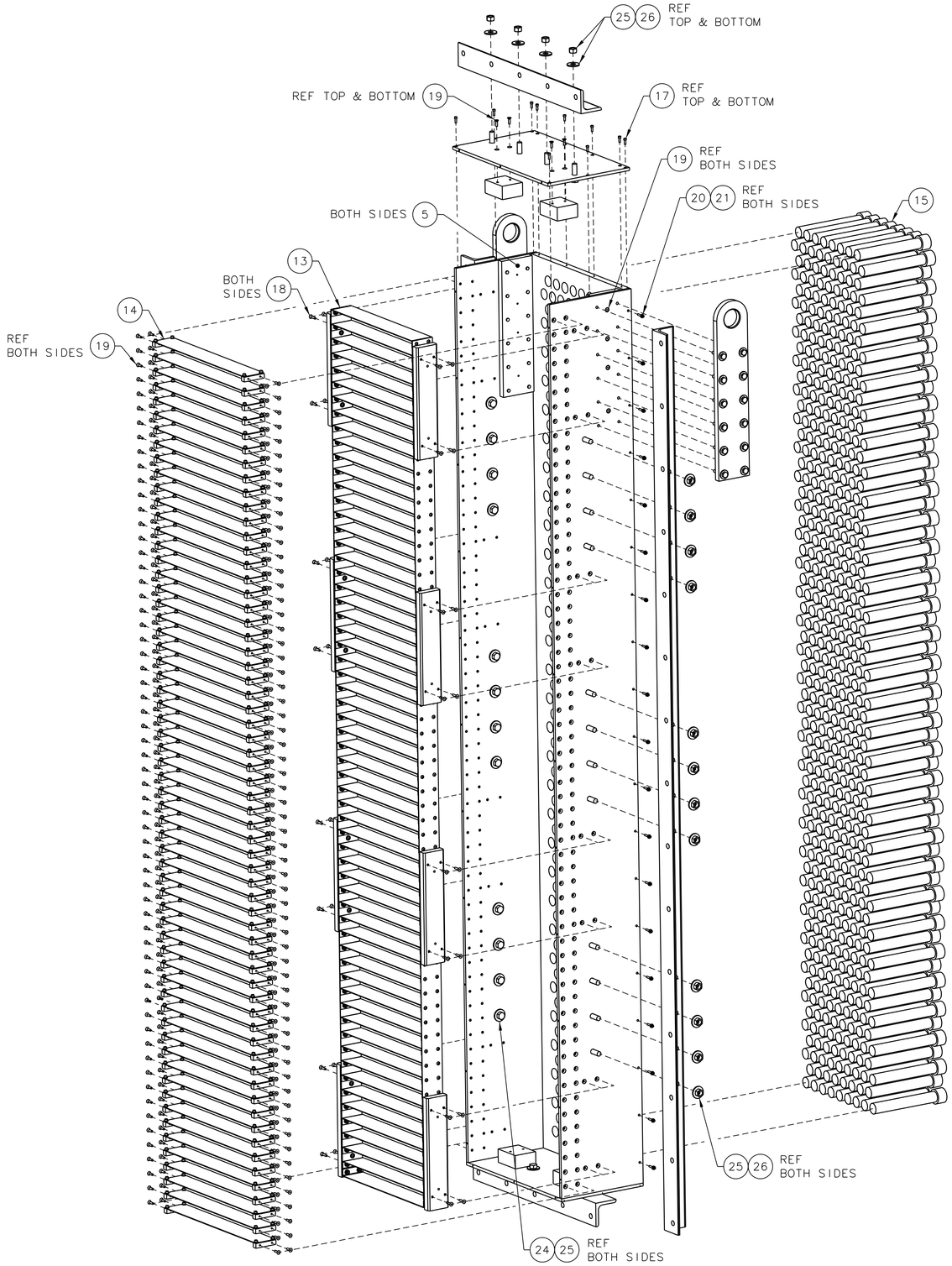
(TEMP AL COVER W/ HDW SHOWN))



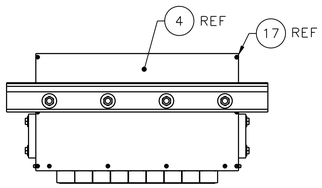
REAR VIEW 2-6B



R SIDE VIEW 2-5B



EXPLODED VIEW 2-2B

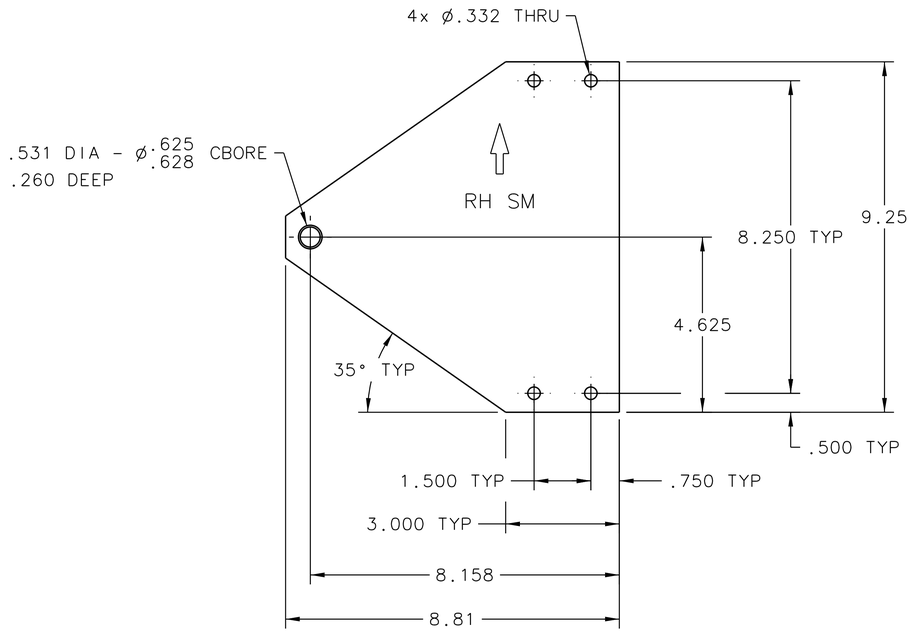


BOTTOM VIEW 2-6A

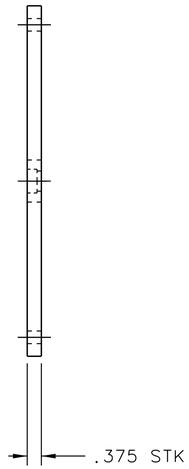
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	SCALE 1 : 4	USED ON ASSY NO. A00000-01-01-3200	SHEET 2 OF 2

Approved: 1/30/2014; E-Sign ID : 2647041; signed by: Ap. 1: W. Seay; C: B. Wojtaszkowski; D: T. Fuehl; AP. 2: B. Wojtaszkowski

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



L SIDE VIEW 1-6B



FRONT VIEW 1-4B

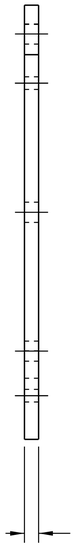
NOTES:

1. PART TO BE CONDITIONED FOR SAFE HANDLING.
   REMOVE ALL BURRS AND SHARP EDGES.
2. WEIGHT IS APPROXIMATELY 2 LBS.
3. DENOTE UP DIRECTION AS SHOWN ON THE LEFT SIDE OF THE PLATE.

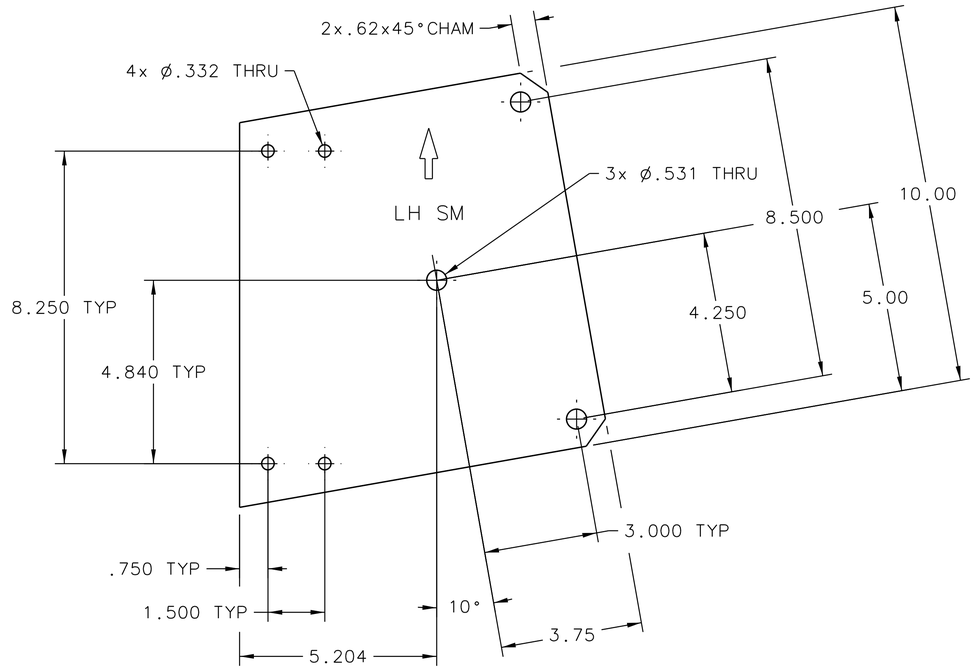
DOCUMENT CONTROL STAMP	DIM & TOL PER ASME Y14.5. UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS ± N/A; DECIMAL .X ± .1, .XX ± .01, .XXX ± .005; ANGLES ± .50°	TRACKING NO. N/A	United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia
MATERIAL 6061-T6 ALUMINUM	THIRD ANGLE PROJECTION	APPROVALS / DATE: DRAWN S. ESP 03 OCT 13; CHECKED; APPROVED; APPROVED	HALL A - GENL EQUIPMENT GRINCH DETECTOR ASSY SPRT FRAME FOR REFLECTORS MOUNTING BRACKET RH SMALL
FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED DEBURR & BREAK ALL SHARP EDGES			SIZE D; DWG. NO. A00000-01-01-2706; REV. –
DO NOT SCALE DRAWING			SCALE 1:2; USED ON ASSY NO. A00000-01-01-2700; SHEET 1 OF 1

Approved: 10/15/2013; E-Sign ID : 244712; signed by: Ap. 2: R. Wines; Ap. 1: B. WojtsekhowskI; C.: B. WojtsekhowskI; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



FRONT VIEW 1-7B



R SIDE VIEW 1-5B

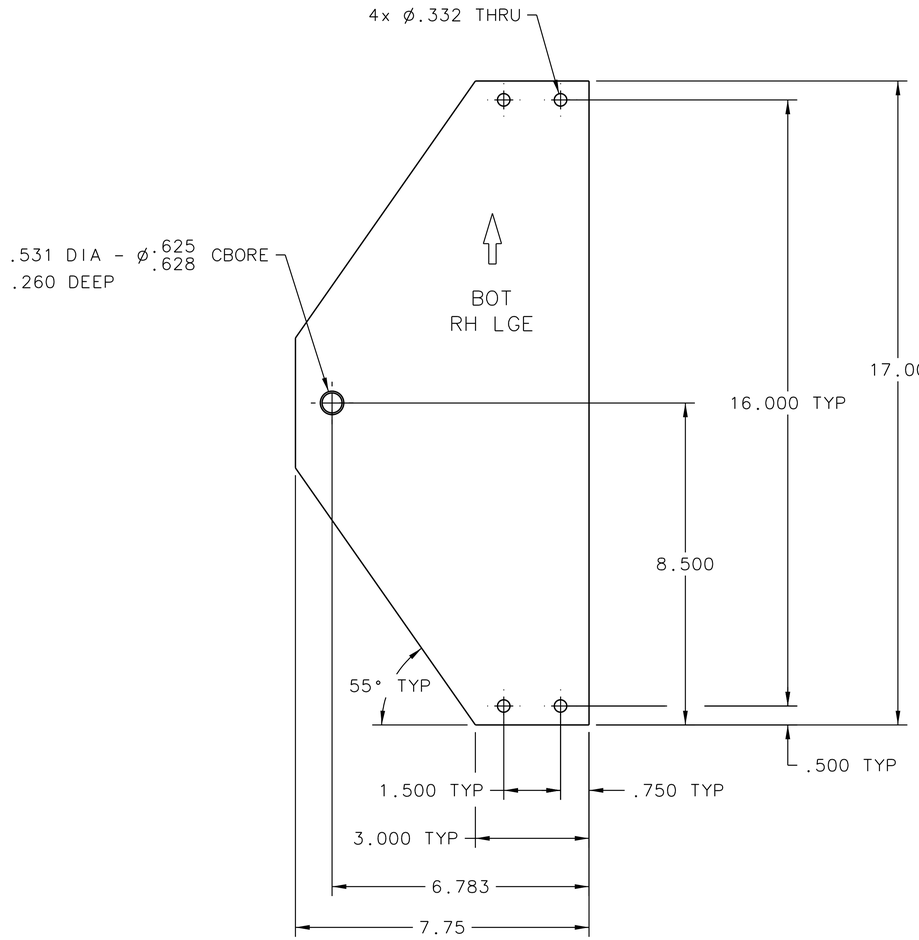
NOTES:

1. PART TO BE CONDITIONED FOR SAFE HANDLING.
   REMOVE ALL BURRS AND SHARP EDGES.
2. WEIGHT IS APPROXIMATELY 3-1/2 LBS.
3. DENOTE UP DIRECTION AS SHOWN ON THE RIGHT SIDE OF THE PLATE.

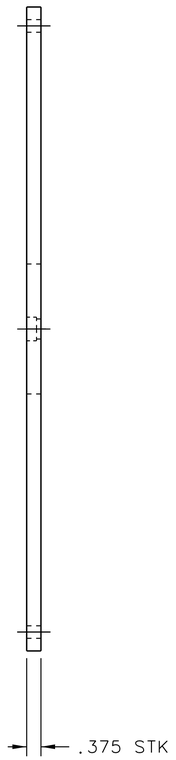
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MATERIAL 6061-T6 ALUMINUM	THIRD ANGLE PROJECTION	APPROVALS / DRAWN S. ESP / DATE 03 OCT 13 / CHECKED / APPROVED / APPROVED	HALL A - GENL EQUIPMENT GRINCH DETECTOR ASSY SPRT FRAME FOR REFLECTORS MOUNTING BRACKET LH SMALL
FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED DEBURR & BREAK ALL SHARP EDGES			SIZE D — DWG. NO. A00000-01-01-2705 — REV. –
DO NOT SCALE DRAWING			SCALE 1:2 — USED ON ASSY NO. A00000-01-01-2700 — SHEET 1 OF 1

Approved: 10/15/2013; E-Sign ID: 244710; signed by: Ap. 2: R. Wines; Ap. 1: B. Wojtsekhowski; C: B. Wojtsekhowski; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



L SIDE VIEW 1-6B



FRONT VIEW 1-4B

NOTES:

1. PART TO BE CONDITIONED FOR SAFE HANDLING.
   REMOVE ALL BURRS AND SHARP EDGES.
2. WEIGHT IS APPROXIMATELY 4 LBS.
3. DENOTE UP DIRECTION AS SHOWN ON THE LEFT SIDE OF THE PLATE.

DOCUMENT CONTROL STAMP

MATERIAL
6061-T6 ALUMINUM

FINISH
MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DIM & TOL PER ASME Y14.5 .
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± N/A
DECIMAL .X ± .1 .XX ± .01 .XXX ± .005
ANGLES ± .50°

THIRD ANGLE PROJECTION

TRACKING NO.
N/A

APPROVALS	DATE
DRAWN S. ESP	03 OCT 13
CHECKED	
APPROVED	
APPROVED	

United States Department of Energy
Jefferson Lab
Thomas Jefferson National Accelerator Facility
Newport News Virginia

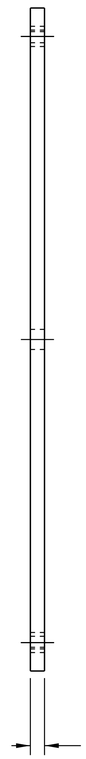
HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
SPRT FRAME FOR REFLECTORS
MOUNTING BRACKET BOT RH LGE

SIZE	DWG. NO.	REV.
D	A00000-01-01-2704	–

SCALE 1:2 | USED ON ASSY NO. A00000-01-01-2700 | SHEET 1 OF 1

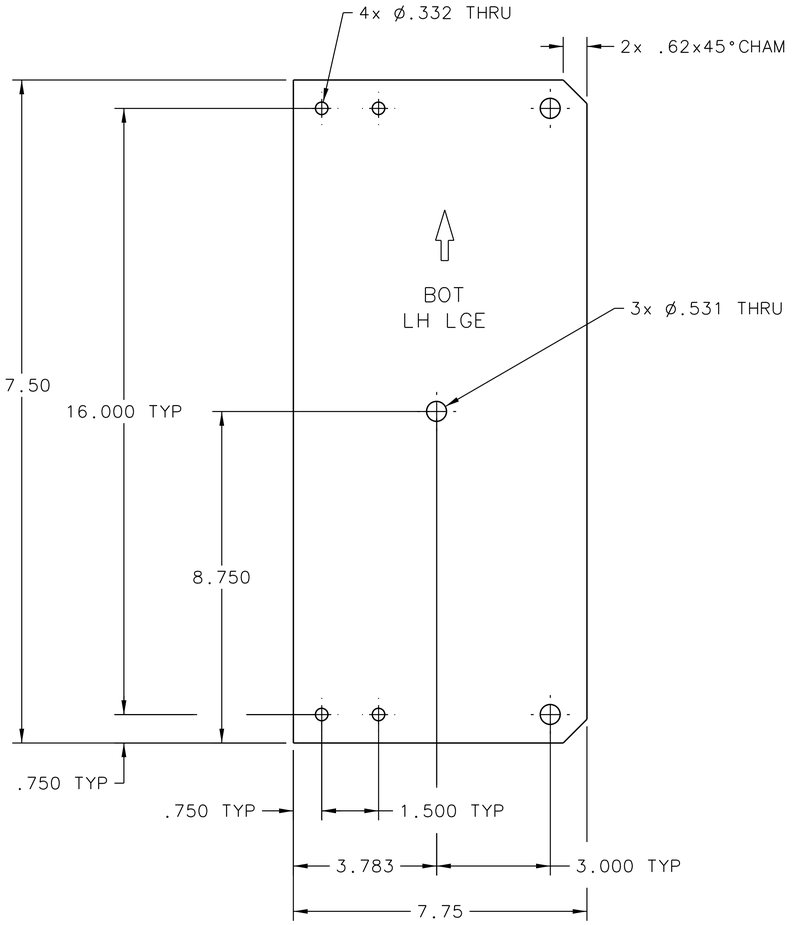
Approved: 10/15/2013; E-Sign ID : 244708; signed by: Ap. 2: R. Wines; Ap. 1: B. Wojtsekhowski; C.: B. Wojtsekhowski; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



.375 STK

FRONT VIEW 1-7B



R SIDE VIEW 1-5B

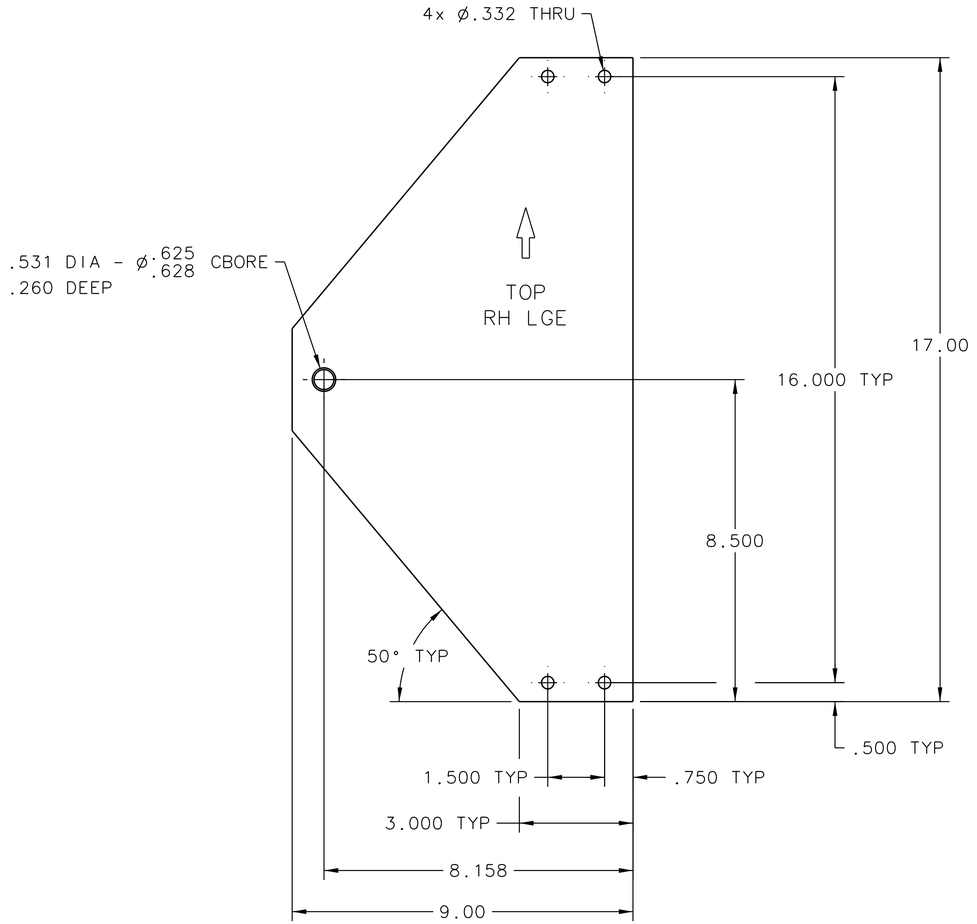
NOTES:

1. PART TO BE CONDITIONED FOR SAFE HANDLING.
   REMOVE ALL BURRS AND SHARP EDGES.
2. WEIGHT IS APPROXIMATELY 5 LBS.
3. DENOTE UP DIRECTION AS SHOWN ON THE RIGHT SIDE OF THE PLATE.

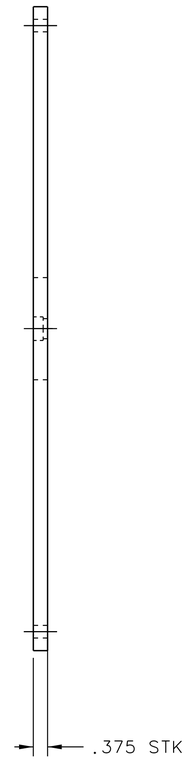
DOCUMENT CONTROL STAMP	DIM & TOL PER ASME Y14.5. UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS ± N/A DECIMAL .X ±.1 .XX ±.01 .XXX ±.005 ANGLES ± .50°	TRACKING NO. N/A	United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia
MATERIAL 6061-T6 ALUMINUM	THIRD ANGLE PROJECTION	APPROVALS / DATE: DRAWN S. ESP 03 OCT 13; CHECKED; APPROVED; APPROVED	HALL A - GENL EQUIPMENT GRINCH DETECTOR ASSY SPRT FRAME FOR REFLECTORS MOUNTING BRACKET BOT LH LGE
FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED DEBURR & BREAK ALL SHARP EDGES			SIZE D; DWG. NO. A00000-01-01-2703; REV. -
DO NOT SCALE DRAWING			SCALE 1:2; USED ON ASSY NO. A00000-01-01-2700; SHEET 1 OF 1

Approved: 10/15/2013; E-Sign ID: 244707; signed by: Ap. 2: R. Wines; Ap. 1: B. Wojtsekhowski; C.: B. Wojtsekhowski; D: T. Ruell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



L SIDE VIEW 1-6B



FRONT VIEW 1-4B

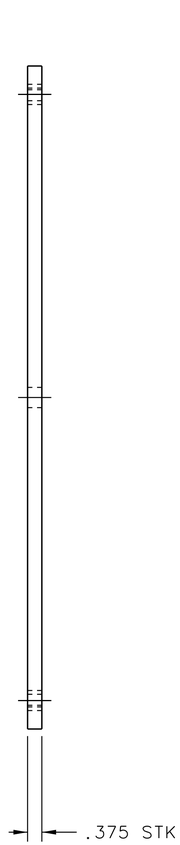
NOTES:

1. PART TO BE CONDITIONED FOR SAFE HANDLING.
   REMOVE ALL BURRS AND SHARP EDGES.
2. WEIGHT IS APPROXIMATELY 4 LBS.
3. DENOTE UP DIRECTION AS SHOWN ON THE LEFT SIDE OF THE PLATE.

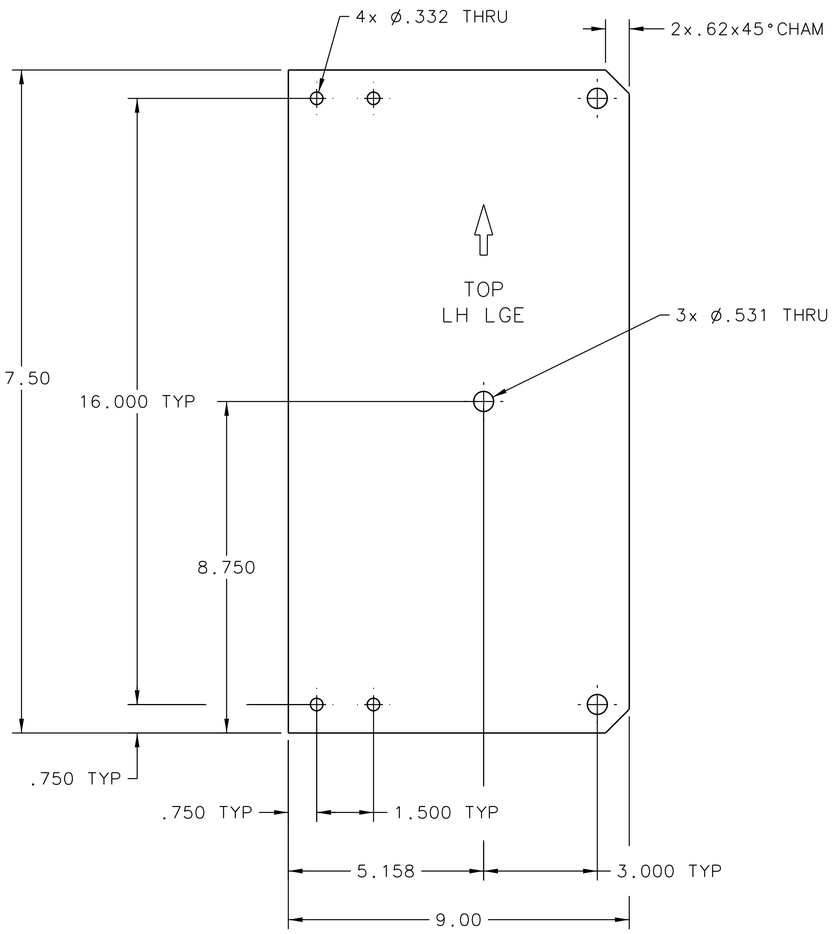
DOCUMENT CONTROL STAMP	DIM & TOL PER ASME Y14.5. UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS ± N/A; DECIMAL .X ±.1, .XX ±.01, .XXX ±.005; ANGLES ± .50°	TRACKING NO. N/A	United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia
MATERIAL 6061-T6 ALUMINUM	THIRD ANGLE PROJECTION	APPROVALS / DATE: DRAWN S. ESP 03 OCT 13; CHECKED; APPROVED; APPROVED	HALL A - GENL EQUIPMENT GRINCH DETECTOR ASSY SPRT FRAME FOR REFLECTORS MOUNTING BRACKET TOP RH LGE
FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED DEBURR & BREAK ALL SHARP EDGES			SIZE D; DWG. NO. A00000-01-01-2702; REV. –
DO NOT SCALE DRAWING			SCALE 1:2; USED ON ASSY NO. A00000-01-01-2700; SHEET 1 OF 1

Approved: 10/15/2013; E-Sign ID: 244706; signed by: Ap. 2: R. Wines; Ap. 1: B. Wojtsekhowski; C.: B. Wojtsekhowski; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



FRONT VIEW 1-7B



R SIDE VIEW 1-5B

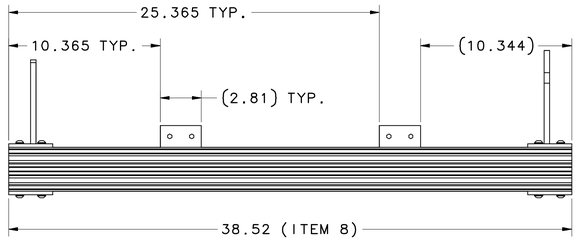
NOTES:

1. PART TO BE CONDITIONED FOR SAFE HANDLING.
   REMOVE ALL BURRS AND SHARP EDGES.
2. WEIGHT IS APPROXIMATELY 6 LBS.
3. DENOTE UP DIRECTION AS SHOWN ON THE RIGHT SIDE OF THE PLATE.

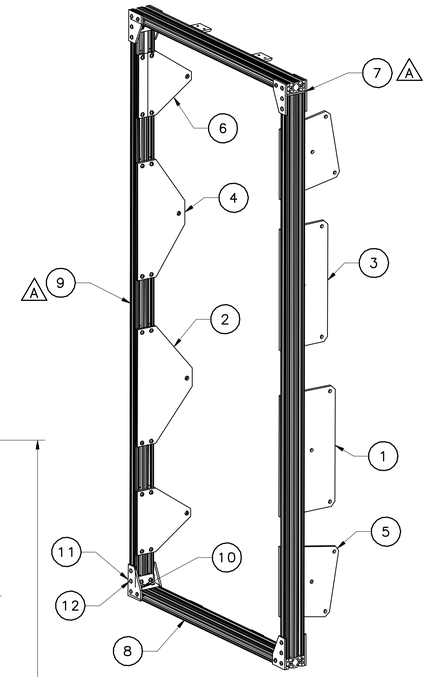
DOCUMENT CONTROL STAMP	DIM & TOL PER ASME Y14.5. UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS ± N/A; DECIMAL .X ±.1, .XX ±.01, .XXX ±.005; ANGLES ± .50°	TRACKING NO. N/A	United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia
MATERIAL 6061-T6 ALUMINUM	THIRD ANGLE PROJECTION	APPROVALS / DATE	HALL A - GENL EQUIPMENT GRINCH DETECTOR ASSY SPRT FRAME FOR REFLECTORS MOUNTING BRACKET TOP LH LGE
FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED DEBURR & BREAK ALL SHARP EDGES		DRAWN S. ESP 03 OCT 13	SIZE D; DWG. NO. A00000-01-01-2701; REV. –
DO NOT SCALE DRAWING		CHECKED APPROVED APPROVED	SCALE 1:2; USED ON ASSY NO. A00000-01-01-2700; SHEET 1 OF 1

Approved: 10/15/2013; E-Sign ID: 244705; signed by: Ap. 2: R. Wines; Ap. 1: B. WojtsekhowskI; C.: B. WojtsekhowskI; D: T. FuellJ

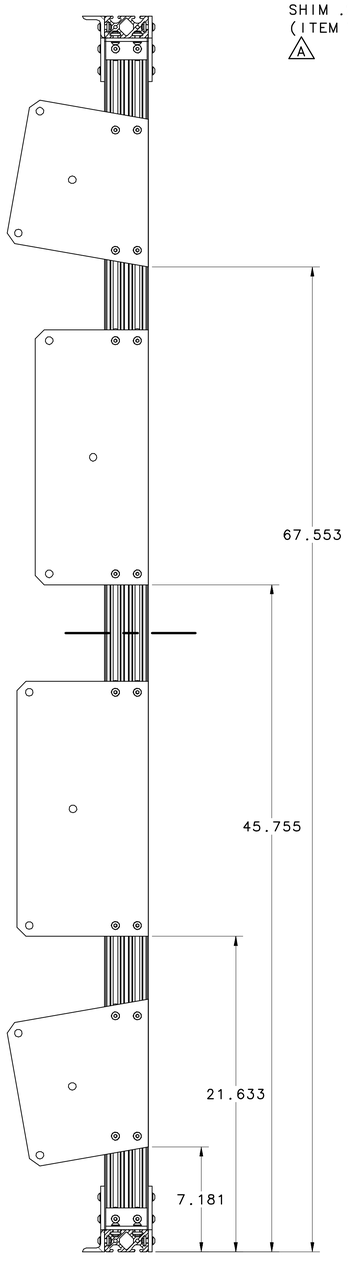
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
A	ALL	ADDED: ITEM 7 (SHIM) IN TWO LOCATIONS, AND ITEM 7 DETAIL VIEW 2-2A. REVISED: ASSEMBLY HAS BEEN ROTATED TO SHOW CORRECT ORIENTATION IN VIEWS FOR BEAM LEFT INSTALLATION. ALL MOUNTING BRACKETS HAVE REVISED LOCATIONS, WHICH STILL ALLOW FOR GRINCH BOX TO BE ROTATED FOR BEAM RIGHT SETUP. REVISED: ITEMS 9,10, & 12. ITEM 9 LENGTH WAS 82.00. ITEM 10 QTY. WAS 12, AND ITEM 12 QTY. WAS 96.	19 FEB 16	CS



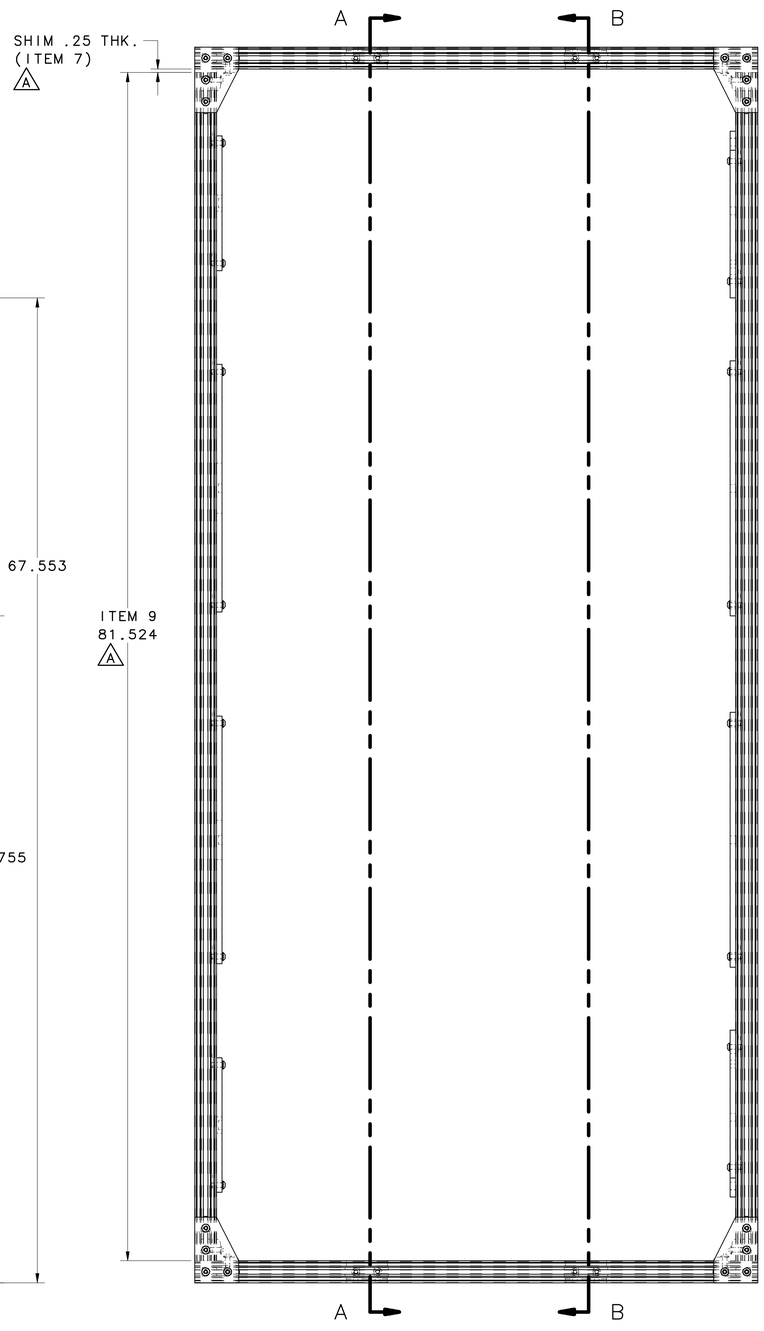
TOP VIEW 1-6G



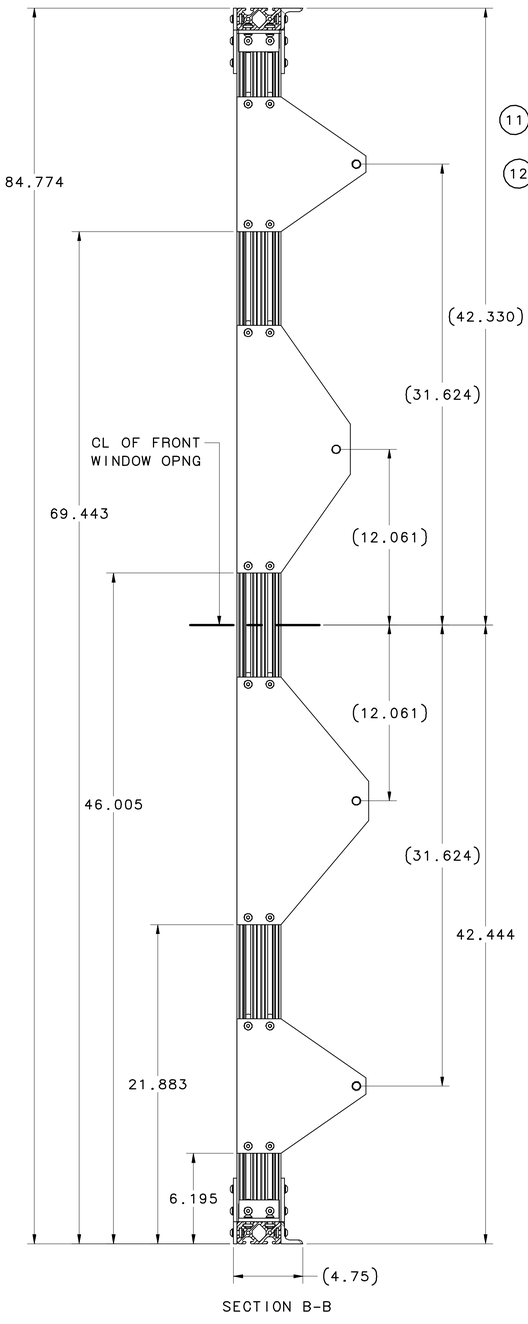
ISO VIEW 1-32F
SCALE 1:8



SECTION A-A



FRONT VIEW 1-6A
(LOOKING DOWNSTREAM)



SECTION B-B

NOTES:
1. WEIGHT IS APPROXIMATELY 88 LBS AND 107 LBS WITH TEMP SPRT.
2. ACCOUNT FOR AND PLACE ALL OF THE FASTENERS (LOADING FROM THE END OF THE EXTRUSIONS) BEFORE FINAL ASSY OF THE VERTICAL AND HORIZONTAL EXTRUSIONS.
3. ITEMS 13 THRU 19 ARE USED FOR A TEMPORARY SUPPORT STAND WITH REMOVABLE HARDWARE SHOWN ON SHEET 2. 80/20 INC. MACHINING SERVICE FOR ITEM 14:
   1515x60.0"LG W/ #7065 30° LEFT END & #7082 LEFT END.
   1515x60.0"LG W/ #7065 60° RIGHT END & #7082 RIGHT END.
   SEE VIEW 2-2C, APPROXIMATELY 7 LBS EACH.
4. SHIMS (ITEM 7) TO BE INSTALLED AFTER THE SPRT FRAME HAS BEEN ATTCHED TO THE UPR & LWR RAIL SYSTEM ASSEMBLY (NOT SHOWN). ITEM 7 DETAIL VIEWS ARE SHOWN ON SHEET 2.

QTY. REQD.	ITEM NO	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	NOTES
8	19	8020 INC PART 3323	BOLT KIT 5/16-18 UNC X 11/16		3
12	18	8020 INC PART 4376-JL0018995	BOLT ASSY 5/16-18 X 3/4 DROP-IN T-STUD		3
2	17	8020 INC 3468	BOLT ASSY 5/16-18 UNC		3
4	16	8020 INC PART 4302	2 HOLE INSIDE CORNER BRKT	6061 T651 AL	3
2	15	8020 INC PART 4330	JOINING PLATE 6 HOLE 30 DEG	6061 T651 AL	3
1	14	8020 INC PART 1515-JL0018980	TEMP XBRA 1515 EXTRN X 35.52 LG	6061 T651 AL	3
2	13	8020 INC PART 1515-JL0018978	TEMP SPRT 1515 EXTRN MITER X 60 LG	6061 T651 AL	3
A 88	12	8020 INC PART 3630 - 1/4 PL	BOLT KIT 15 SERIES 1/4 THK PL		
8	11	8020 INC PART 4350	4 HOLE 90 DEG JOINING PLATE	6061 T651 AL	
A 8	10	8020 INC PART 4303-JL0018988	4 HOLE INSIDE CORNER BRKT	6061 T651 AL	
A 2	9	8020 INC PART 1530-JL0033221	VERT EXTRN T-SLOT PROFILE 1.5X3.0	6061-T6 AL	
2	8	JL0033233	80/20 #1530 HORIZ UPR EXTRN, L=38.52 IN	6061-T6 AL	
A 2	7	JL0033245	SHIM - REFL SPRT FRAME	ALUMINUM 6061-T6	4
2	6	A00000-01-01-2706	MOUNTING BRACKET RH SMALL	6061 T651 AL	
2	5	A00000-01-01-2705	MOUNTING BRACKET LH SMALL	6061 T651 AL	
1	4	A00000-01-01-2704	MOUNTING BRACKET BOT RH LGE	6061 T651 AL	
1	3	A00000-01-01-2703	MOUNTING BRACKET BOT LH LGE	6061 T651 AL	
1	2	A00000-01-01-2702	MOUNTING BRACKET TOP RH LGE	6061 T651 AL	
1	1	A00000-01-01-2701	MOUNTING BRACKET TOP LH LGE	6061 T651 AL	

PARTS LIST

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL

DIM & TOL PER ASME Y14.5
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES
TOLERANCES ARE
FRACTIONS ± N/A
DECIMAL X ± 1 / XX ± 01 / XXX ± 005
ANGLES ± 1°
THIRD ANGLE PROJECTION

MATERIAL: SEE PARTS LIST

FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DRAWN C. SOOVA | DATE 12 FEB 16

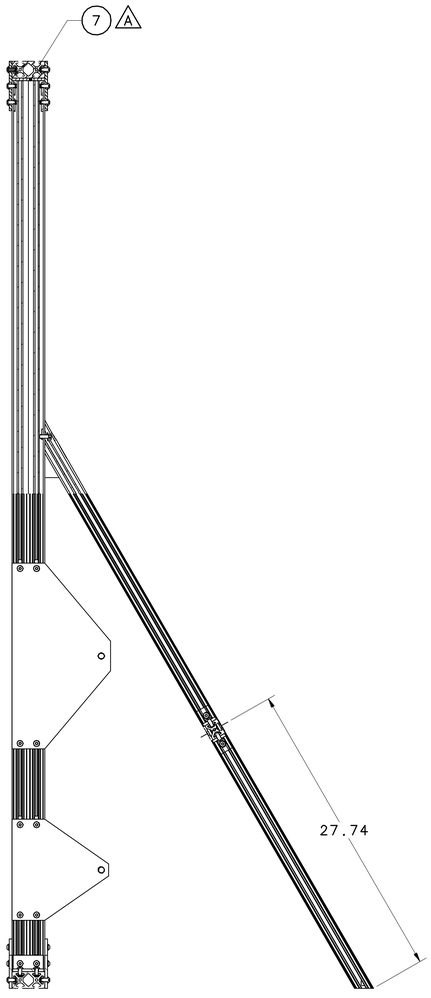
United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia

HALL A - GENERAL EQUIPMENT
DETECTOR - PARTICLE ID
GRINCH BL DETECTOR ASSY
SPRT FRAME FOR REFLECTORS ASSY

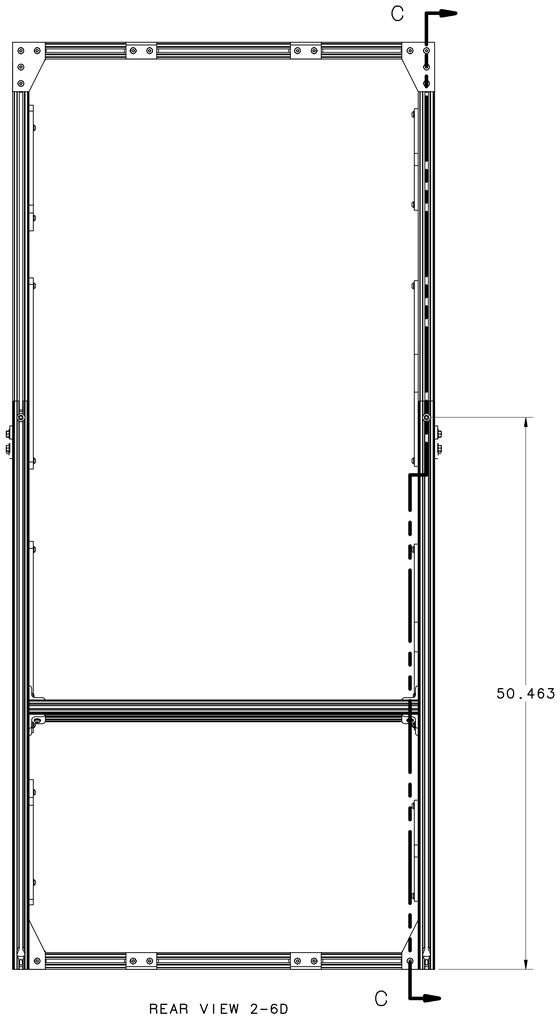
SIZE E | DWG NO A00000-01-01-2700 | REV A

SCALE 1:4 | USED ON ASSY NO A00000-01-01-2300 | SHEET 1 OF 2

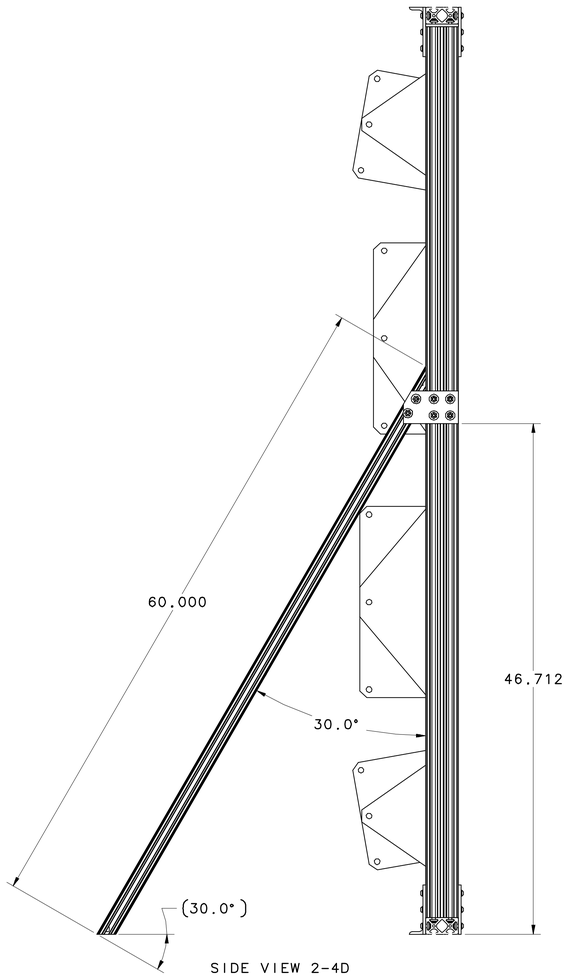
Approved: 2/23/2016; E-Sign ID : 317871; signed by: Ap. 1: B. Wojtsekhowski; C.: A. Gavalya; D: T. Fuell



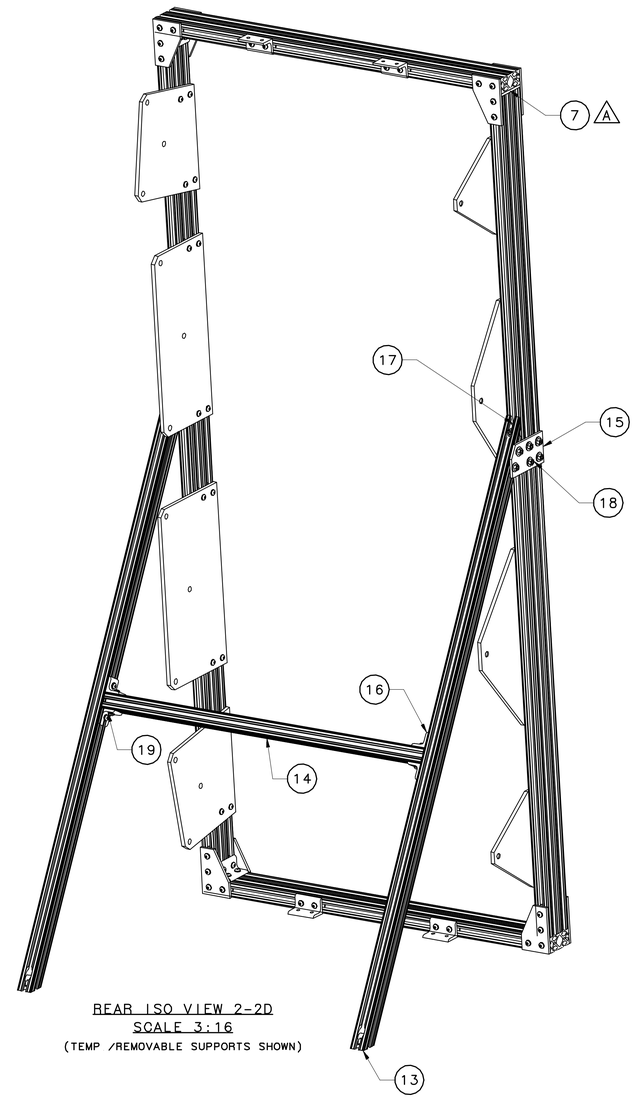
SECTION C-C



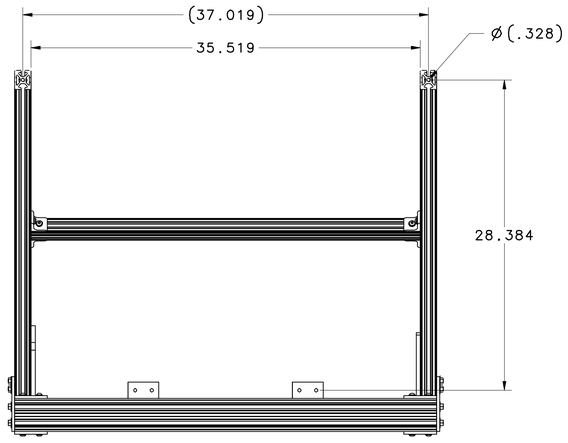
REAR VIEW 2-6D
SCALE 3:16



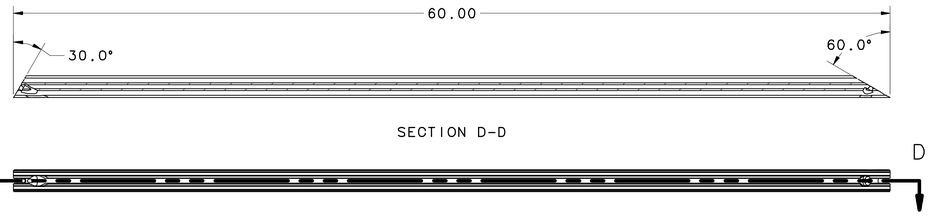
SIDE VIEW 2-4D
SCALE 3:16



REAR ISO VIEW 2-2D
SCALE 3:16
(TEMP /REMOVABLE SUPPORTS SHOWN)

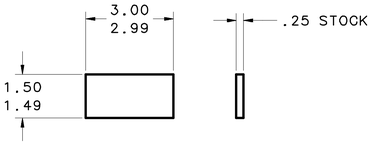


BOTTOM VIEW 2-6B
SCALE 3:16



SECTION D-D

ITEM 13 FRONT VIEW 2-2B
SCALE 1:4

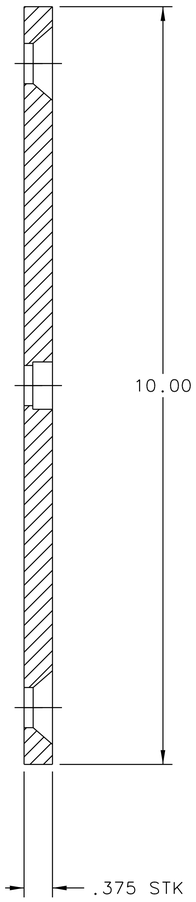


A ITEM 7 DETAIL VIEW 2-2A
SCALE 1:2

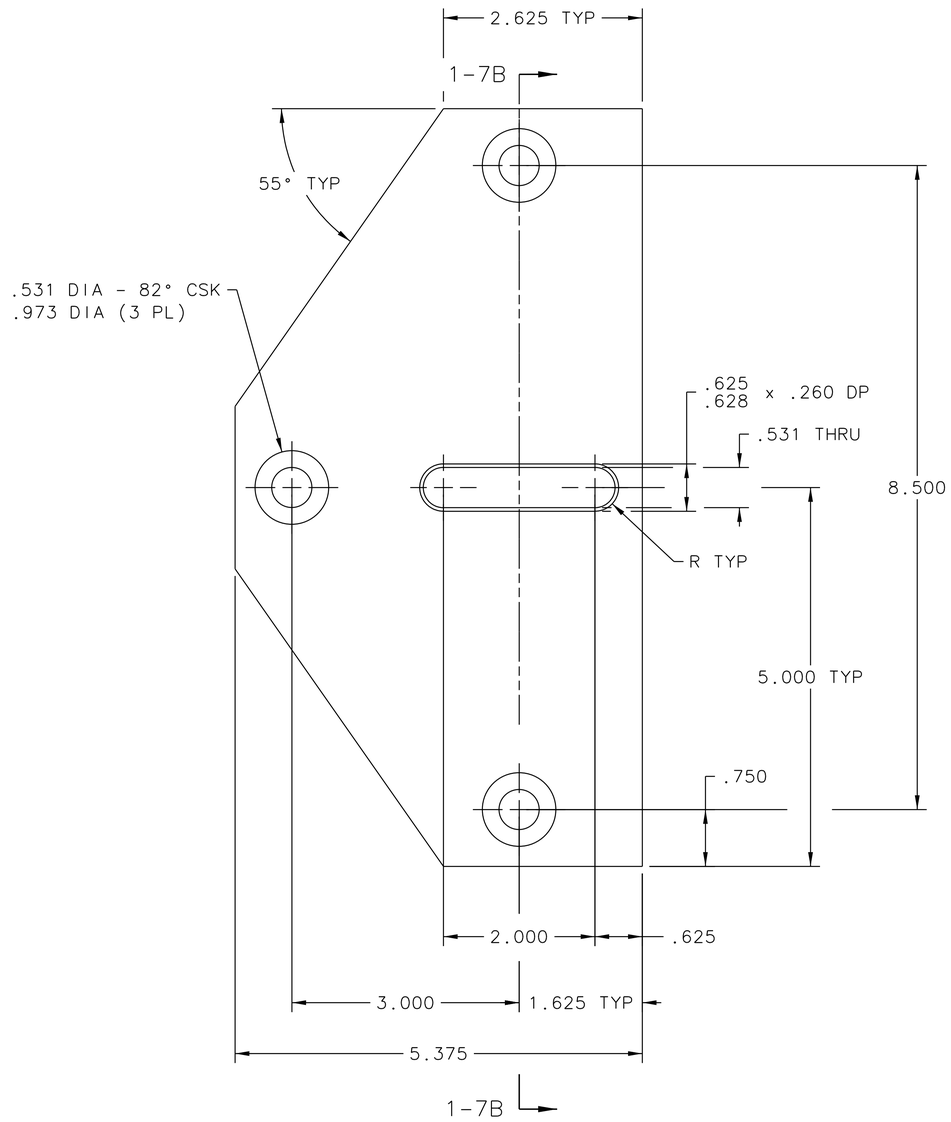
SIZE	DWG NO	REV
E	A00000-01-01-2700	A
SCALE 1:1	USED ON ASSY NO	SHEET 2 OF 2

Approved: 2/23/2016; E-Sign ID : 317871; signed by: Ap. 1: B. Wojtsekhowski; C.: A. Gavalya; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



FRONT VIEW 1-7B
(1-5B)



R SIDE VIEW 1-5B

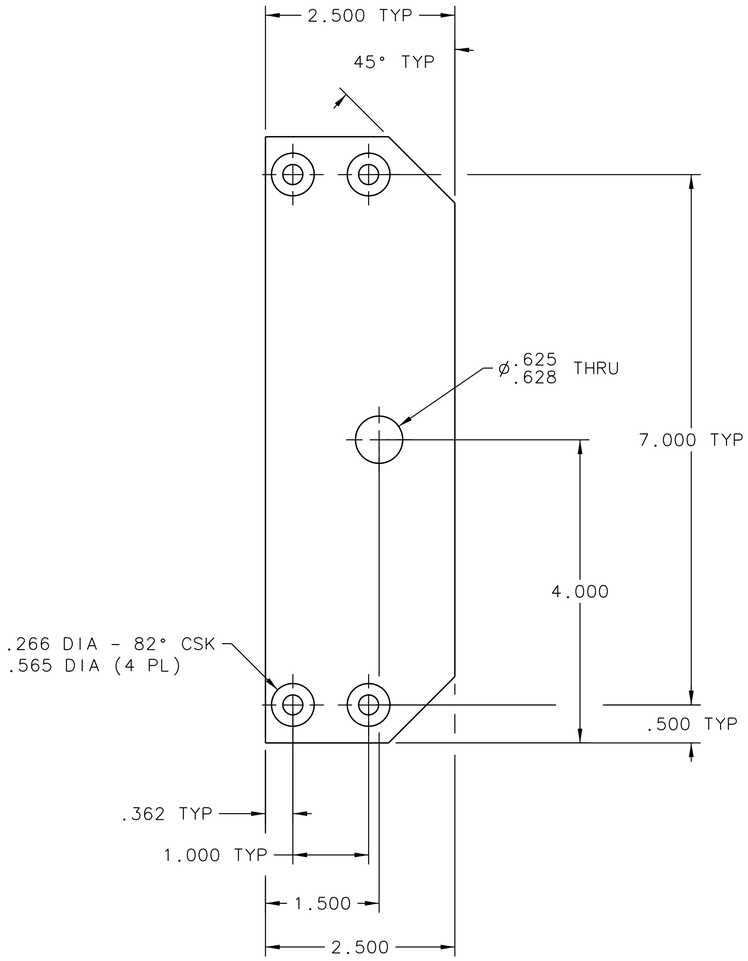
NOTES:

1. PART TO BE CONDITIONED FOR SAFE HANDLING. REMOVE ALL BURRS AND SHARP EDGES.
2. WEIGHT IS APPROXIMATELY 1-1/2 LBS.

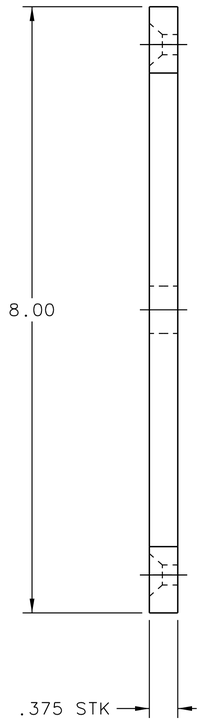
DOCUMENT CONTROL STAMP	DIM & TOL PER ASME Y14.5. UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES. TOLERANCES ARE: FRACTIONS ± N/A; DECIMAL .X ±.1, .XX ±.01, .XXX ±.005; ANGLES ±.1°	TRACKING NO. N/A	United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia
MATERIAL 6061-T6 ALUMINUM	THIRD ANGLE PROJECTION	APPROVALS / DATE: DRAWN S. ESP 03 OCT 13; CHECKED; APPROVED; APPROVED	HALL A - GENL EQUIPMENT GRINCH DETECTOR ASSY SMALL REFLECTOR ASSY PLATE STATIC SMALL
FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED DEBURR & BREAK ALL SHARP EDGES			SIZE D; DWG. NO. A00000-01-01-2605; REV. –
DO NOT SCALE DRAWING			SCALE 1:1; USED ON ASSY NO. A00000-01-01-2600; SHEET 1 OF 1

Approved: 10/15/2013; E-Sign ID: 244731; signed by: Ap. 2: R. Wines; Ap. 1: B. Wojtsekhowski; C.: B. Wojtsekhowski; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



L SIDE VIEW 1-7B



FRONT VIEW 1-5B

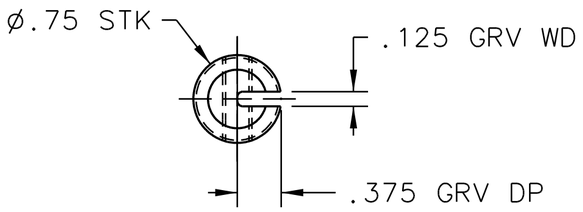
NOTES:

1. PART TO BE CONDITIONED FOR SAFE HANDLING.
   REMOVE ALL BURRS AND SHARP EDGES.
2. WEIGHT IS APPROXIMATELY 3/4 LB.

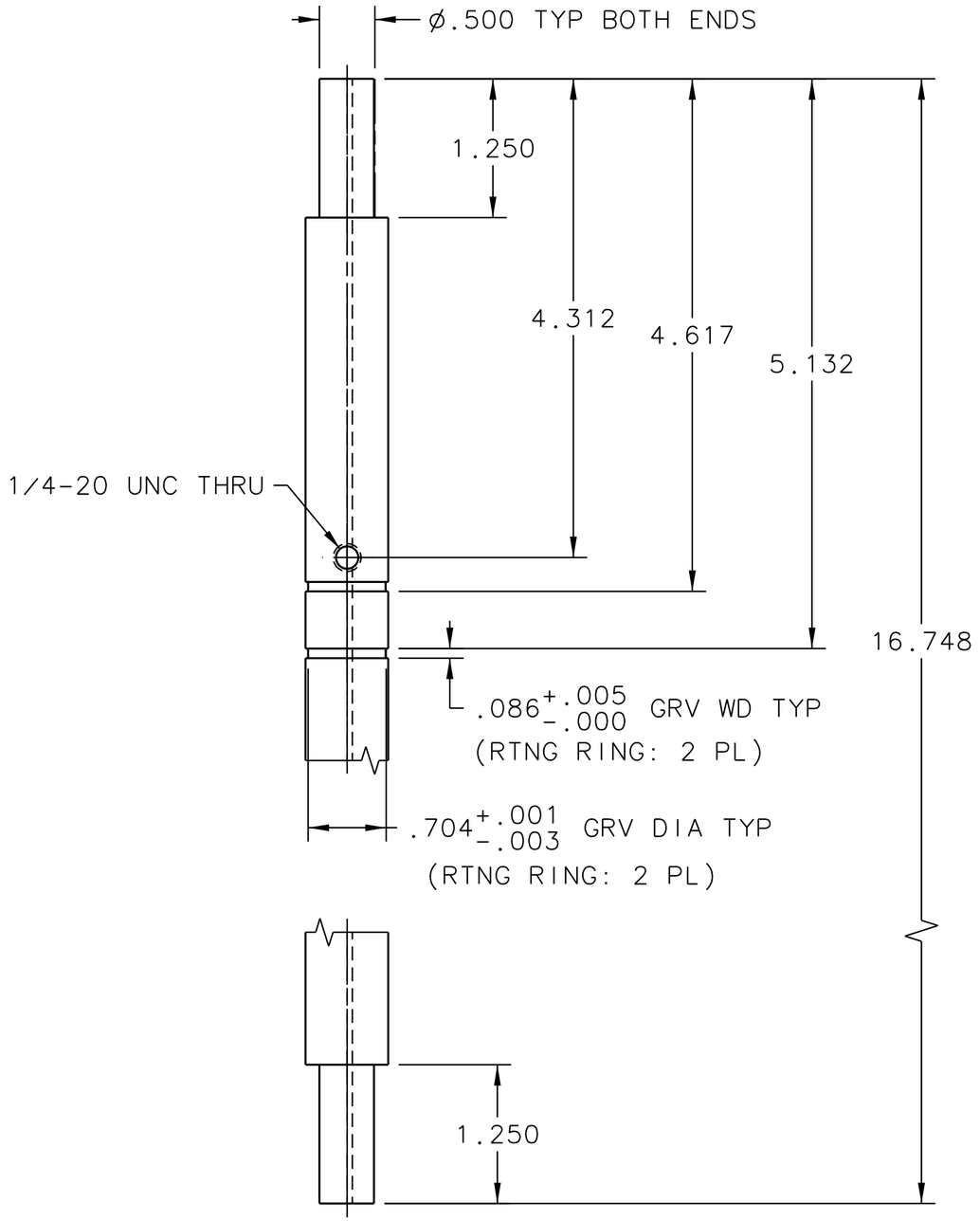
DOCUMENT CONTROL STAMP	DIM & TOL PER ASME Y14.5. UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS ± N/A DECIMAL .X ±.1 .XX ±.01 .XXX ±.005 ANGLES ± .50°	TRACKING NO. N/A	United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia
MATERIAL 6061-T6 ALUMINUM	THIRD ANGLE PROJECTION	APPROVALS / DATE: DRAWN S. ESP 03 OCT 13; CHECKED; APPROVED; APPROVED	HALL A - GENL EQUIPMENT GRINCH DETECTOR ASSY SMALL REFLECTOR ASSY PLATE ROTATIONAL SM
FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED DEBURR & BREAK ALL SHARP EDGES			SIZE D; DWG. NO. A00000-01-01-2603; REV. -
DO NOT SCALE DRAWING			SCALE 1:1; USED ON ASSY NO. A00000-01-01-2600; SHEET 1 OF 1

Approved: 10/15/2013; E-Sign ID : 244736; signed by: Ap. 2: R. Wines; Ap. 1: B. Wojtsekhowski; C.: B. Wojtsekhowski; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



TOP VIEW 1-4D



FRONT VIEW 1-4A

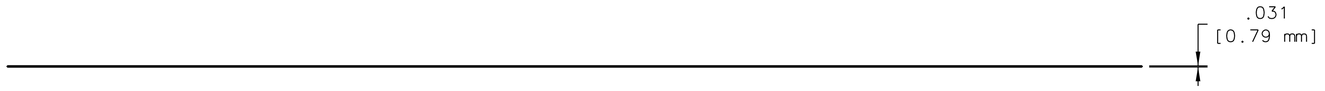
NOTES:

1. PART TO BE CONDITIONED FOR SAFE HANDLING. REMOVE ALL BURRS AND SHARP EDGES.
2. WEIGHT IS APPROXIMATELY 1/2 LB.

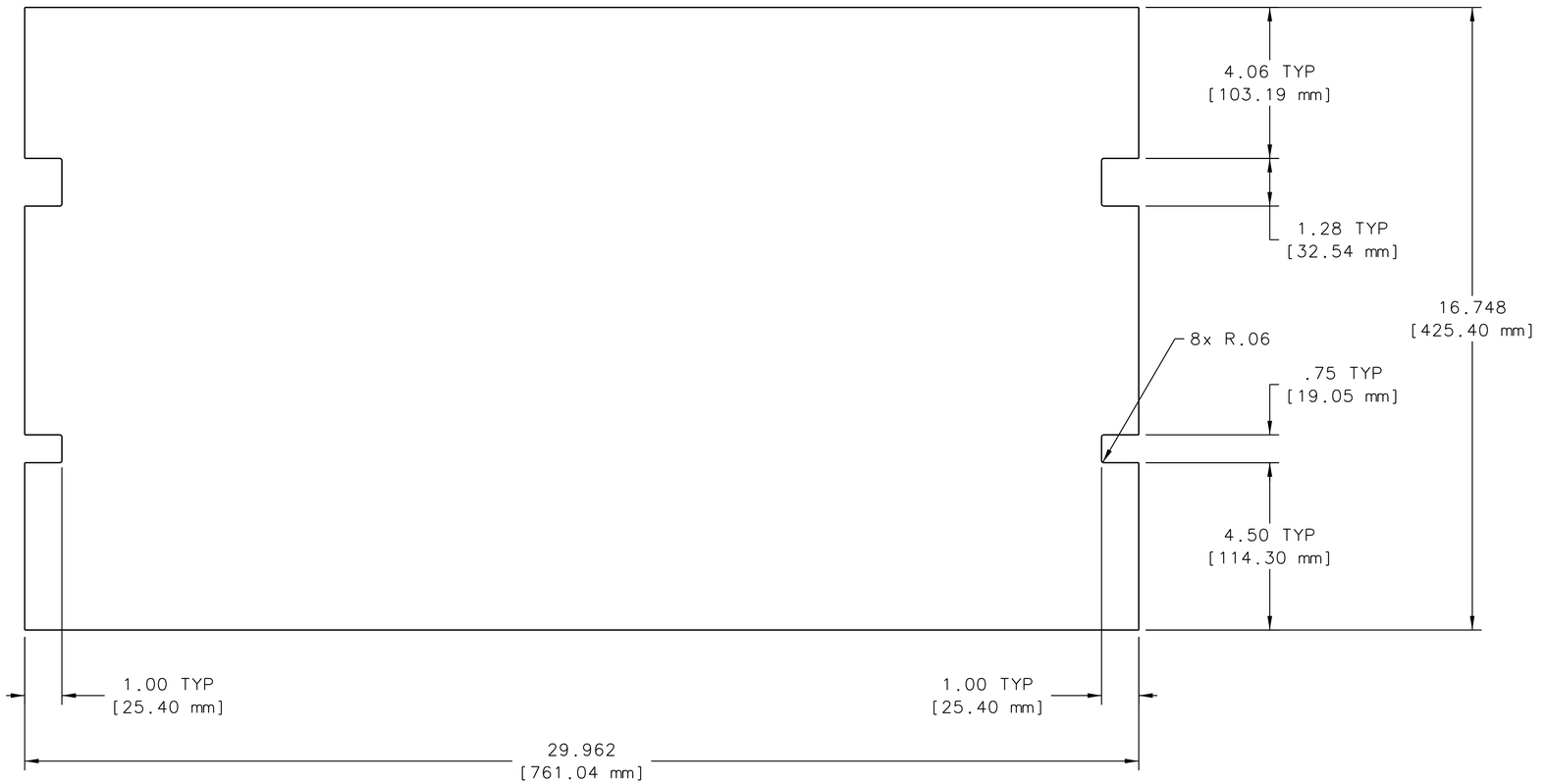
DOCUMENT CONTROL STAMP	DIM & TOL PER ASME Y14.5. UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS ± N/A; DECIMAL .X ±.1, .XX ±.01, .XXX ±.005; ANGLES ± .50°	TRACKING NO. N/A	United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia
MATERIAL 6061-T6 ALUMINUM ROUND	THIRD ANGLE PROJECTION	APPROVALS / DATE: DRAWN S. ESP 03 OCT 13; CHECKED; APPROVED; APPROVED	HALL A - GENL EQUIPMENT GRINCH DETECTOR ASSY SMALL REFLECTOR ASSY ROUND 3/4 OD SM REFL HOLDER
FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED DEBURR & BREAK ALL SHARP EDGES			SIZE C; DWG. NO. A00000-01-01-2602; REV. –
DO NOT SCALE DRAWING			SCALE 1:1; USED ON ASSY NO. A00000-01-01-2600; SHEET 1 OF 1

Approved: 10/15/2013; E-Sign ID : 244729; signed by: Ap. 2: R. Wines; Ap. 1: B. Wojtsekhowski; C.: B. Wojtsekhowski; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



TOP VIEW 1-6D



FRONT VIEW 1-6A

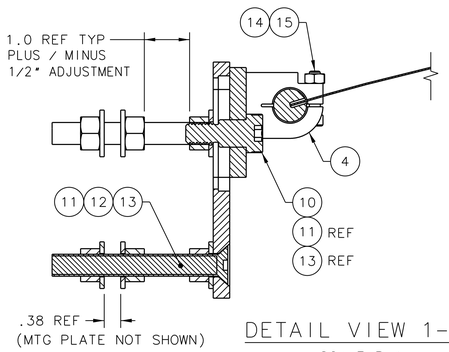
NOTES:

1. PART TO BE CONDITIONED FOR SAFE HANDLING. REMOVE ALL BURRS AND SHARP EDGES.
2. WEIGHT IS APPROXIMATELY 1-1/2 LBS.

DOCUMENT CONTROL STAMP	DIM & TOL PER ASME Y14.5 - UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS ± N/A; DECIMAL .X ±.1, .XX ±.01, .XXX ±.005; ANGLES ± .50°	TRACKING NO. N/A	United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia
MATERIAL: ALUMINUM	THIRD ANGLE PROJECTION	APPROVALS / DATE: DRAWN S. ESP 03 OCT 13; CHECKED; APPROVED; APPROVED	HALL A - GENL EQUIPMENT GRINCH DETECTOR ASSY SMALL REFLECTOR ASSY REFLECTOR SMALL - FLAT PATTERN
FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED; DEBURR & BREAK ALL SHARP EDGES			SIZE D; DWG. NO. A00000-01-01-2601; REV. -
DO NOT SCALE DRAWING			SCALE 1:2; USED ON ASSY NO. A00000-01-01-2600; SHEET 1 OF 1

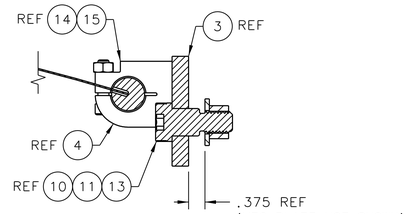
Approved: 10/15/2013; E-Sign ID: 244728; signed by: Ap. 2: R. Wines; Ap. 1: B. Wojtsekhowski; C.: B. Wojtsekhowski; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



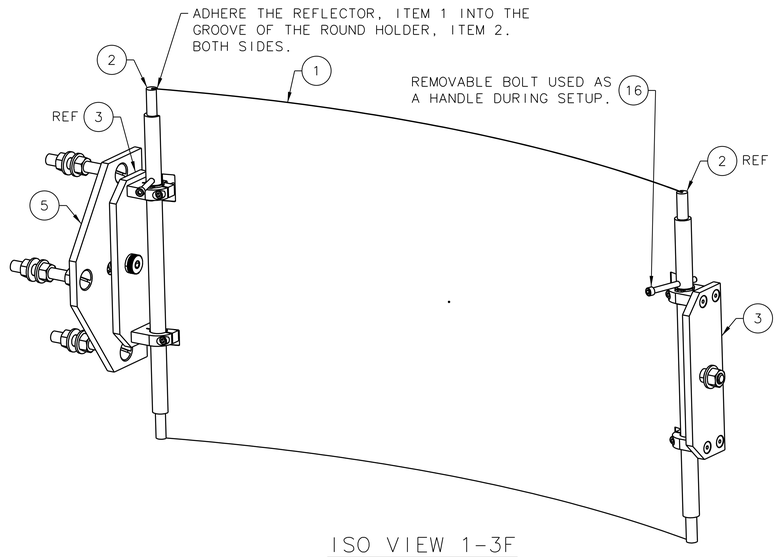
DETAIL VIEW 1-7G

SCALE 3:4
(1-6E)

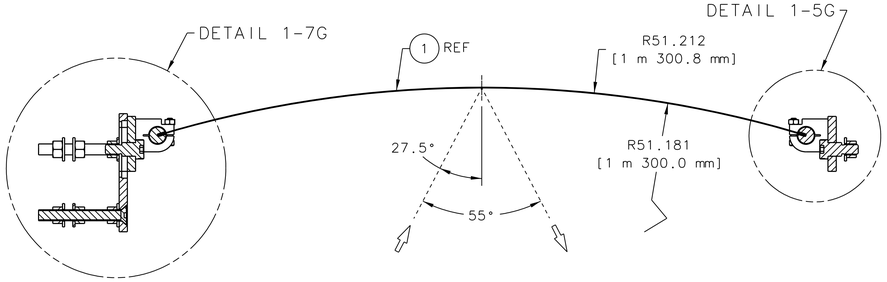


DETAIL VIEW 1-5G

SCALE 3:4
(1-6E)

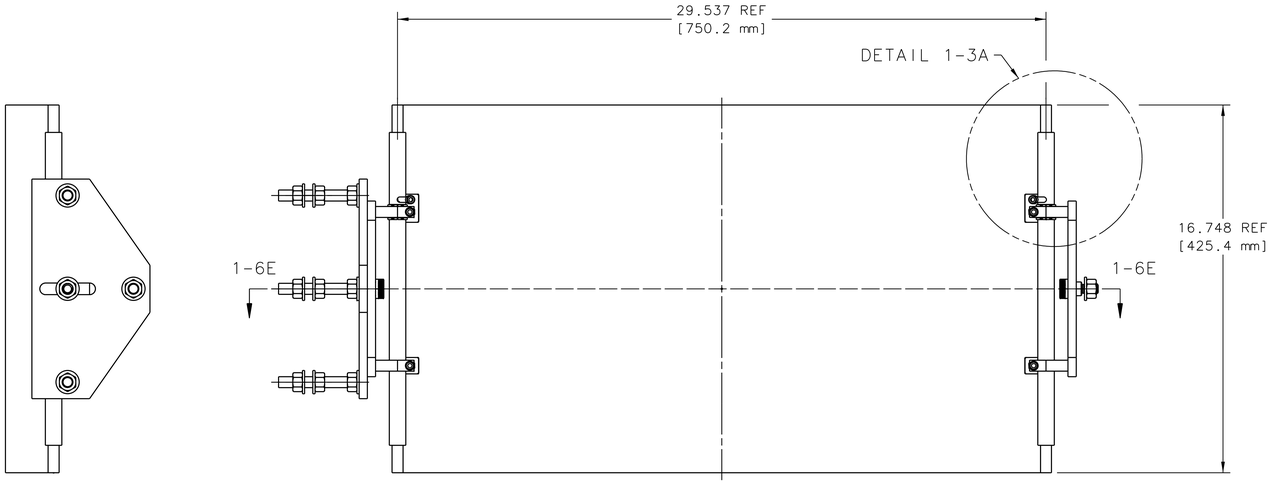


ISO VIEW 1-3F



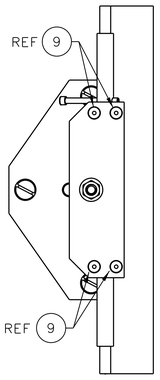
SECTION VIEW 1-6E

(1-6C)

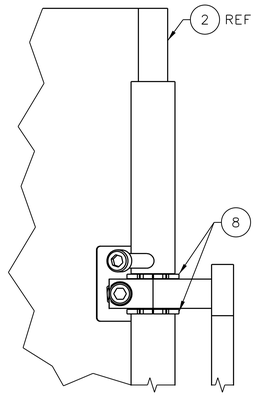


L SIDE VIEW 1-8C

FRONT VIEW 1-6C



R SIDE VIEW 1-4C



DETAIL 1-3A

(TYP BOTH SIDES)
SCALE 1:1
(1-6C)

QTY REQD	ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	NOTES
2	16	McMASTER-CARR 92196A552	SOCKET HEAD CAP SCREW 1/4-20 UNC x 2-1/2" LG	18-8 STNLS STL	-
4	15	McMASTER-CARR 94804A305	NUT HEX 1/4-28 UNF RGLR	316 STNLS STL	-
4	14	McMASTER-CARR 92185A564	SOCKET HEAD CAP SCREW 1/4-28 UNF x 1.0" LG	316 STNLS STL	-
11	13	McMASTER-CARR 91950A033	WASHER 1/2 RGLR	316 STNLS STL	-
3	12	BOLT DEPOT 3573	SLOTTED FLAT HEAD SCREW 1/2-13 UNC x 4.0" LG	18-8 STNLS STL	-
11	11	McMASTER-CARR 94804A340	NUT HEX 1/2-13 UNC THD	316 STNLS STL	-
2	10	McMASTER-CARR 90298A791	SHOULDER SCREW - 5/8" SHLDR DIA x 5/8" LG, 1/2-13 x 3/4 LG THD	18-8 STNLS STL	-
8	9	McMASTER-CARR 90585A540	1/4-20 UNC x 3/4" LG FLAT SOCKET HEAD CAP SCREW	316 STNLS STL	-
4	8	McMASTER-CARR 93416A309	RETAINING RING HEAVY DUTY EXTERNAL FOR 3/4 SHAFT DIA	17-7 PH STNLS STL	-
-	7	-	-	-	-
-	6	-	-	-	-
1	5	A00000-01-01-2605	PLATE STATIC SMALL 3/8 INCH THICK	6061-T6 ALUMINUM	-
4	4	A00000-01-01-2404	ONE-PIECE CLAMP-ON SHAFT COLLAR 1/2 INCH THICK	6061-T6 ALUMINUM	-
2	3	A00000-01-01-2603	PLATE ROTATIONAL SM 3/8 INCH THICK	6061-T6 ALUMINUM	-
2	2	A00000-01-01-2602	ROUND 3/4 OD SM REFL HOLDER	6061-T6 ALUMINUM	-
1	1	A00000-01-01-2601	REFLECTOR SMALL - FLAT PATTERN 1/32 INCH THICK	ALUMINUM	-

PARTS LIST

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

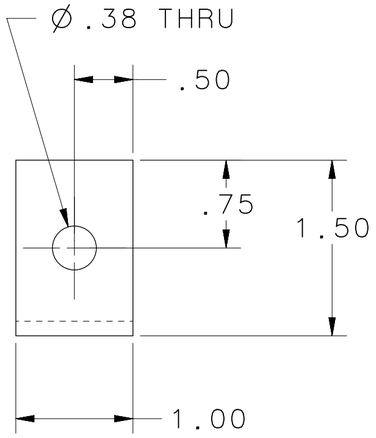
NOTES:

1. WEIGHT IS APPROXIMATELY 8 LBS.

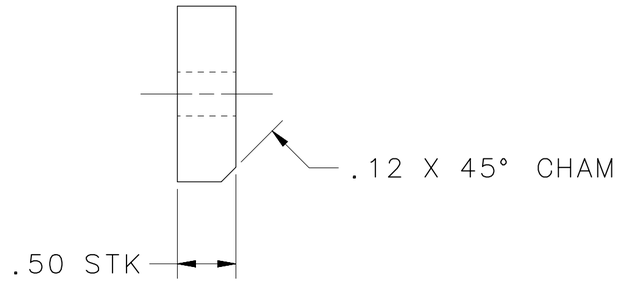
DOCUMENT CONTROL STAMP	DIM & TOL PER ASME Y14.5 UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS ± N/A; DECIMAL .X ±.1, .XX ±.01, .XXX ±.005; ANGLES ±.50"	TRACKING NO. N/A	United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia
MATERIAL AS NOTED	THIRD ANGLE PROJECTION	APPROVALS / DATE: DRAWN S. ESP 03 OCT 13; CHECKED; APPROVED; APPROVED	HALL A - GENL EQUIPMENT DETECTOR - PARTICLE ID GRINCH DETECTOR ASSY SMALL REFLECTOR ASSY
FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED DEBURR & BREAK ALL SHARP EDGES			SIZE E; DWG. NO. A00000-01-01-2600; REV. -
DO NOT SCALE DRAWING			SCALE 3:8; USED ON ASSY NO. A00000-01-01-2300; SHEET 1 OF 1

Approved: 10/15/2013, E-Sign ID: 244727, signed by: Ap. 2: R. Wines, Ap. 1: B. Wojtsekhowski, C.: B. Wojtsekhowski, D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



FRONT VIEW 1-4B

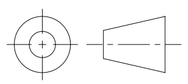


RS VIEW 1-3B

NOTES:
1. CLEAN AND REMOVE ALL SURFACE CONTAMINATION.

DIM & TOL PER ASME Y14.5.
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± N/A
DECIMAL .X ±.1 .XX ±.01 .XXX ±.005
ANGLES ± .50°

THIRD ANGLE PROJECTION



MATERIAL
STNLS STL 316

FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DRAWN S. ESP
DATE 18 MAR 15

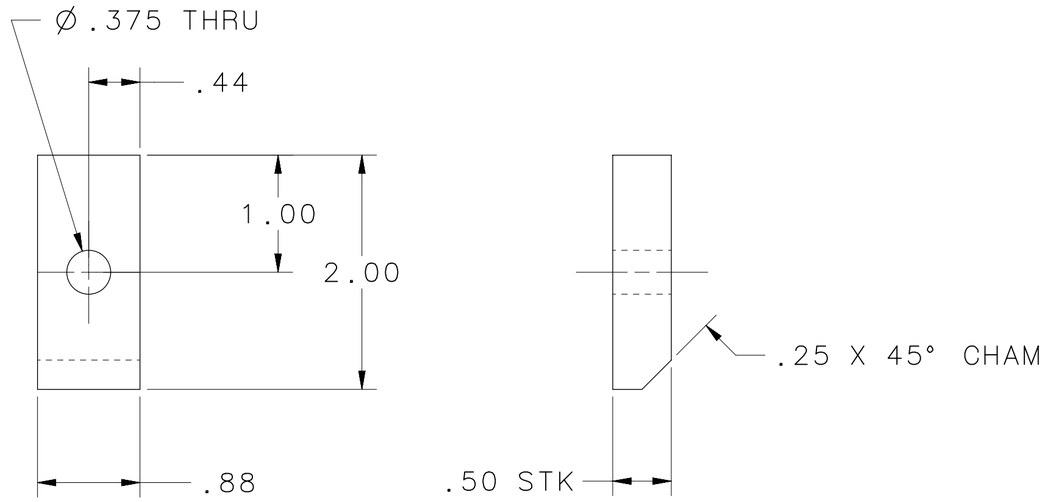
United States Department of Energy
Jefferson Lab
Thomas Jefferson National Accelerator Facility
Newport News Virginia

HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
MAIN BOX ASSY
FLAT SST 1 HOLE ENTR END

SIZE C
DWG. NO. A00000-01-01-2516
REV. –
SCALE 1:1
USED ON ASSY NO. A00000-01-01-2500
SHEET 1 OF 1

Approved: 4/1/2015; E-Sign ID : 297781; signed by: Ap. 1: B. Wojtsekhowski; Ap. 2: R. Wines; C.: A. Gavalya; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



FRONT VIEW 1-4B

RS VIEW 1-3B

NOTES:
1. CLEAN AND REMOVE ALL SURFACE CONTAMINATION.

DIM & TOL PER ASME Y14.5.
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:

FRACTIONS	DECIMAL	ANGLES
± N/A	.X ±.1	± .50°
	.XX ±.01	
	.XXX ±.005	

THIRD ANGLE PROJECTION

MATERIAL: STNLS STL 316

FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DRAWN: S. ESP
DATE: 18 MAR 15

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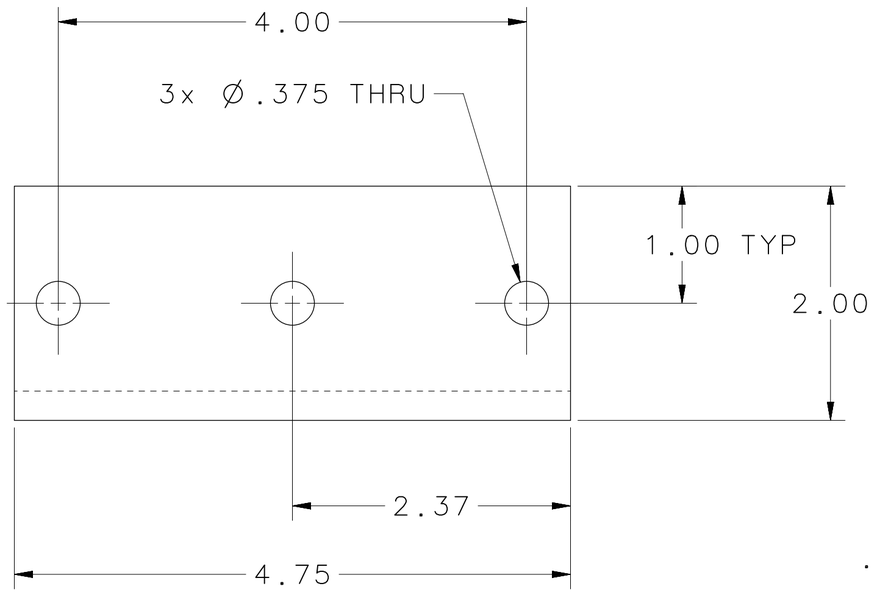
HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
MAIN BOX ASSY
FLAT SST 1 HOLE EXIT END

SIZE	DWG. NO.	REV.
C	A00000-01-01-2515	–

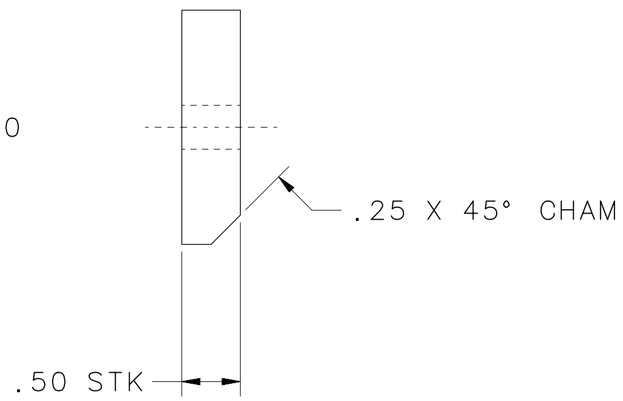
SCALE 1:1 | USED ON ASSY NO. A00000-01-01-2500 | SHEET 1 OF 1

Approved: 4/1/2015; E-Sign ID : 297780; signed by: Ap. 1: B. Wojtsekhowski; Ap. 2: R. Wines; C.: A. Gavalya; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



FRONT VIEW 1-3B



RS VIEW 1-2B

NOTES:

1. WEIGHT IS APPROXIMATELY 1-1/2 LBS.
2. CLEAN AND REMOVE ALL SURFACE CONTAMINATION.

DIM & TOL PER ASME Y14.5.
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:

FRACTIONS	DECIMAL	ANGLES
± N/A	.X ±.1	± .50°
	.XX ±.01	
	.XXX ±.005	

THIRD ANGLE PROJECTION

MATERIAL: STNLS STL 316

FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DRAWN: S. ESP
DATE: 18 MAR 15

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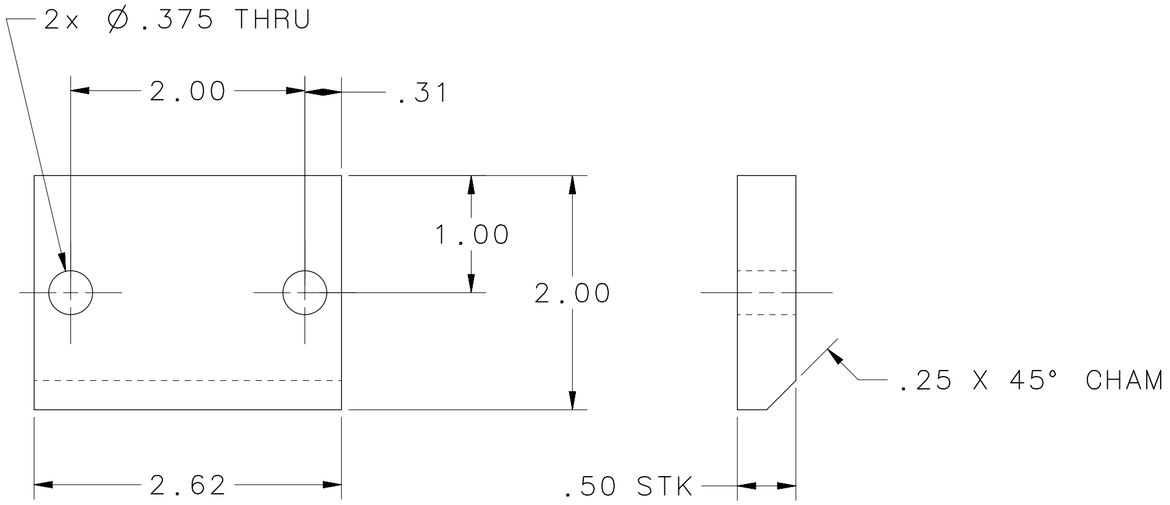
HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
MAIN BOX ASSY
FLAT SST 3 HOLE BETW CHAN

SIZE	DWG. NO.	REV.
C	A00000-01-01-2514	–

SCALE 1:1 | USED ON ASSY NO. A00000-01-01-2500 | SHEET 1 OF 1

Approved: 4/1/2015; E-Sign ID : 297779; signed by: Ap. 1: B. Wojtsekhowski; Ap. 2: R. Wines; C.: A. Gavalya; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



FRONT VIEW 1-4B

RS VIEW 1-3B

NOTES:

1. WEIGHT IS APPROXIMATELY 1 LB.
2. CLEAN AND REMOVE ALL SURFACE CONTAMINATION.

DIM & TOL PER ASME Y14.5.
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:

FRACTIONS	DECIMAL	ANGLES
± N/A	.X ±.1	± .50°
	.XX ±.01	
	.XXX ±.005	

THIRD ANGLE PROJECTION

MATERIAL: STNLS STL 316

FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DRAWN: S. ESP
DATE: 18 MAR 15

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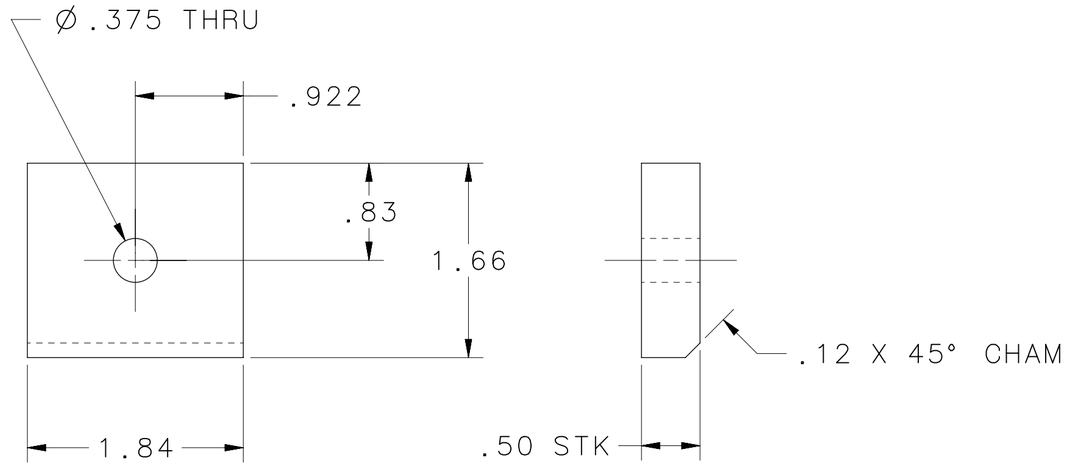
HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
MAIN BOX ASSY
FLAT SST 2 HOLE BETW CHAN

SIZE	DWG. NO.	REV.
C	A00000-01-01-2513	–

SCALE 1:1 | USED ON ASSY NO. A00000-01-01-2500 | SHEET 1 OF 1

Approved: 4/1/2015; E-Sign ID : 297778; signed by: Ap. 1: B. Wojtsekhowski; Ap. 2: R. Wines; C.: A. Gavalya; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



FRONT VIEW 1-4B

RS VIEW 1-3B

NOTES:

1. WEIGHT IS APPROXIMATELY 1/2 LB.
2. CLEAN AND REMOVE ALL SURFACE CONTAMINATION.

DIM & TOL PER ASME Y14.5.
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:

FRACTIONS	DECIMAL	ANGLES
± N/A	.X ±.1	± .50°
	.XX ±.01	
	.XXX ±.005	

THIRD ANGLE PROJECTION

MATERIAL: STNLS STL 316

FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DRAWN: S. ESP
DATE: 18 MAR 15

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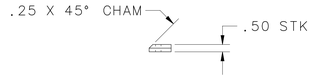
HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
MAIN BOX ASSY
FLAT SST 1 HOLE INS CHAN

SIZE	DWG. NO.	REV.
C	A00000-01-01-2512	–

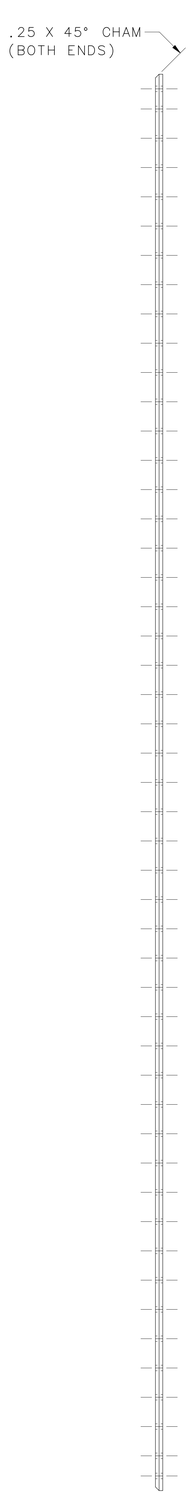
SCALE 1:1 | USED ON ASSY NO. A00000-01-01-2500 | SHEET 1 OF 1

Approved: 4/1/2015; E-Sign ID : 297777; signed by: Ap. 1: B. Wojtsekhowski; Ap. 2: R. Wines; C.: A. Gavalya; D: T. Fuell

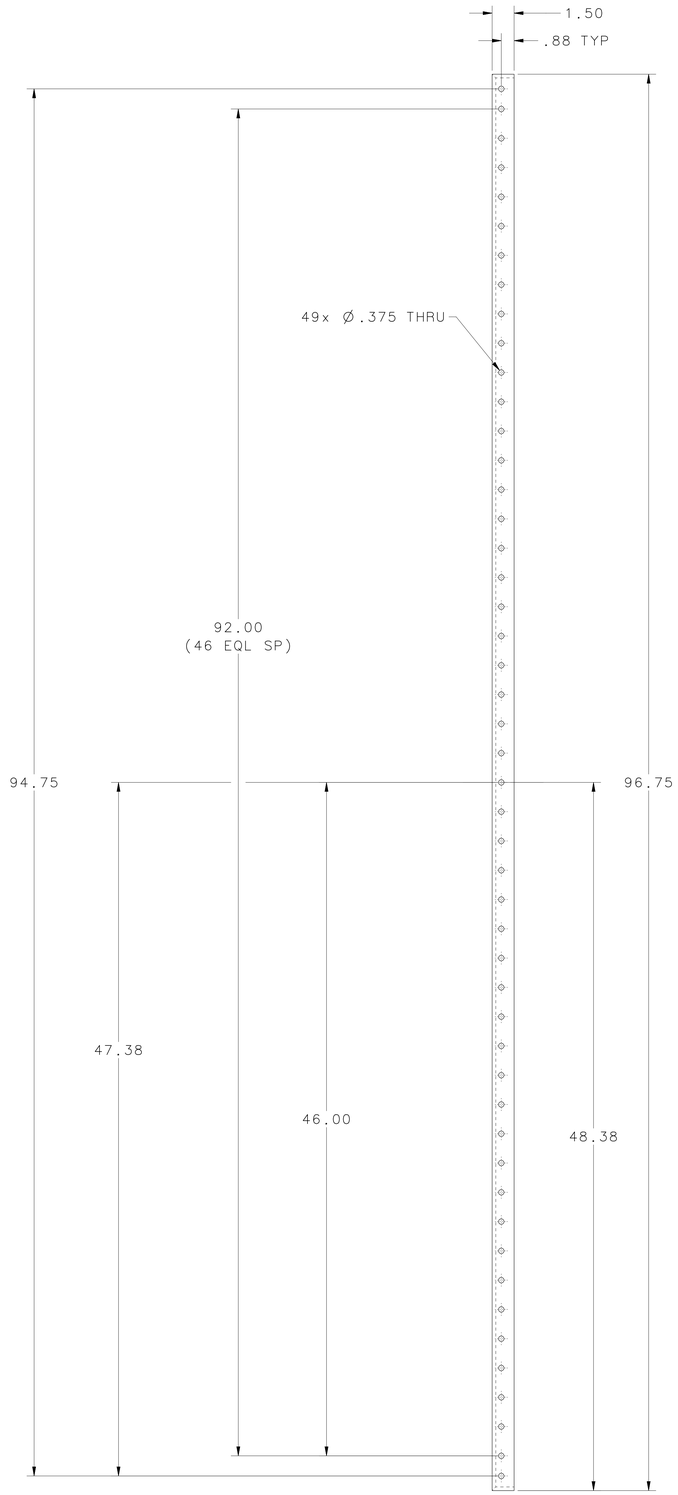
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



TOP VIEW 1-5H



LS VIEW 1-7A



FRONT VIEW 1-5A

NOTES:
1. WEIGHT IS APPROXIMATELY 19 LBS.
2. CLEAN AND REMOVE ALL SURFACE CONTAMINATION.
3. ANODIZE BLACK.

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

DIM & TOL PER ASME Y14.5. UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE:
FRACTIONS ± N/A
DECIMAL .X ± .1, .XX ± .01, .XXX ± .005
ANGLES ± .50°

THIRD ANGLE PROJECTION

MATERIAL: STNLS STL 316

FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DRAWN: S. ESP
DATE: 18 MAR 15

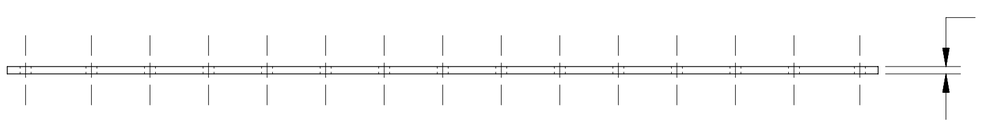
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Jefferson Lab — Thomas Jefferson National Accelerator Facility
Newport News Virginia

HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
MAIN BOX ASSY
FLAT SST VERT FOR ACCESS

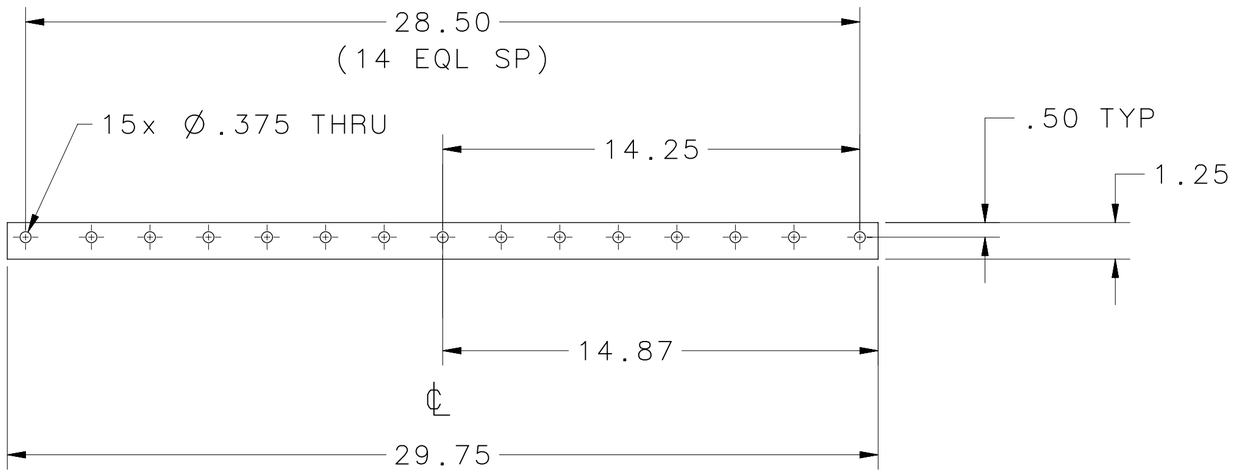
SIZE: E
DWG. NO.: A00000-01-01-2511
REV.: —
SCALE: 1:4
USED ON ASSY NO. A00000-01-01-2500
SHEET 1 OF 1

Approved: 4/1/2015; E-Sign ID : 297776; signed by: Ap. 1: B. Wojtsekhowski; Ap. 2: R. Wines; C.: A. Gavalya; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



TOP VIEW 1-3C



FRONT VIEW 1-3B

NOTES:
1. WEIGHT IS APPROXIMATELY 1/2 LB.

DIM & TOL PER ASME Y14.5.
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± N/A
DECIMAL .X ±.1, .XX ±.01, .XXX ±.005
ANGLES ± .50°

THIRD ANGLE PROJECTION

MATERIAL: G10 - BLACK

FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DRAWN: S. ESP
DATE: 18 MAR 15

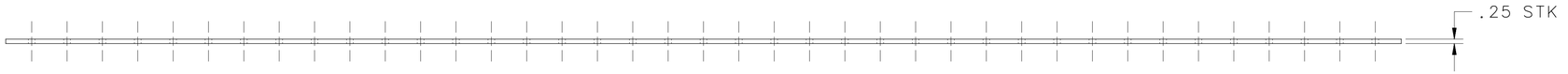
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Jefferson Lab — Thomas Jefferson National Accelerator Facility
Newport News Virginia

HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
MAIN BOX ASSY
FLAT EXIT WDO HORIZ

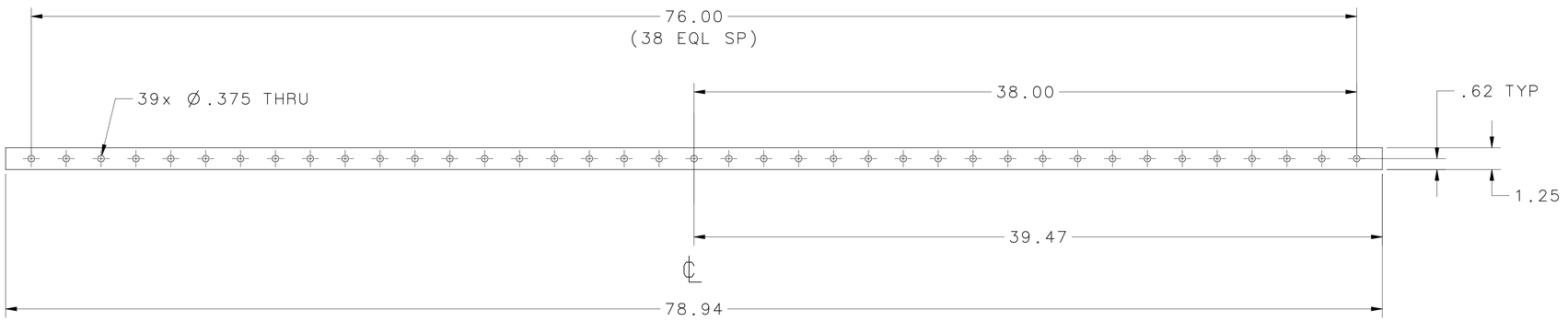
SIZE C | DWG. NO. A00000-01-01-2510 | REV. –
SCALE 1:4 | USED ON ASSY NO. A00000-01-01-2500 | SHEET 1 OF 1

Approved: 4/1/2015; E-Sign ID : 297775; signed by: Ap. 1: B. Wojtsekhowski; Ap. 2: R. Wines; C.: A. Gavalya; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



TOP VIEW 1-5C



FRONT VIEW 1-5B

NOTES:
1. WEIGHT IS APPROXIMATELY 1-1/2 LBS.

DIM & TOL PER ASME Y14.5, UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES.
TOLERANCES ARE:
FRACTIONS ± N/A
DECIMAL .X ±.1 .XX ±.01 .XXX ±.005
ANGLES ±.50°
THIRD ANGLE PROJECTION

MATERIAL: G10 - BLACK
FINISH: MACHINE SURFACES 1:4 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES
DO NOT SCALE DRAWING
DRAWN: S. ESP
DATE: 18 MAR 15

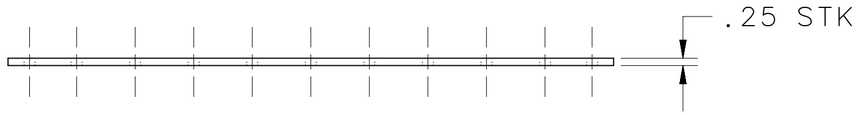
United States Department of Energy
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Thomas Jefferson National Accelerator Facility
Newport News Virginia

HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
MAIN BOX ASSY
FLAT EXIT WDO VERT

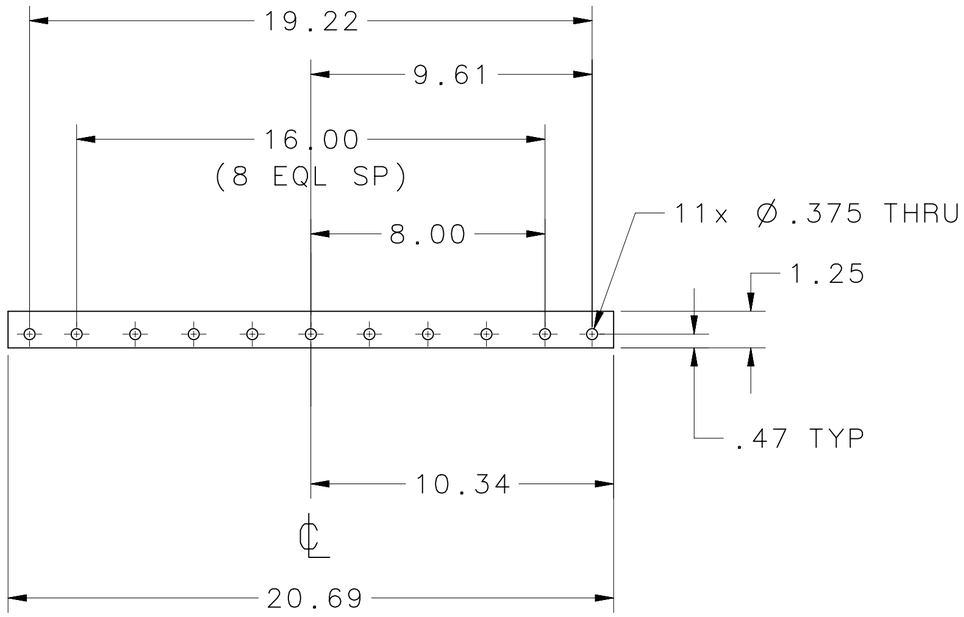
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SCALE 1:4 | USED ON ASSY NO. A00000-01-01-2500 | SHEET 1 OF 1

Approved: 4/1/2015; E-Sign ID : 297774; signed by: Ap. 1: B. Wojtsekhowski; Ap. 2: R. Wines; C.: A. Gavalya; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



TOP VIEW 1-3C



FRONT VIEW 1-3B

NOTES:
1. WEIGHT IS APPROXIMATELY 1/2 LB.

DIM & TOL PER ASME Y14.5.
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± N/A
DECIMAL .X ±.1, .XX ±.01, .XXX ±.005
ANGLES ± .50°

THIRD ANGLE PROJECTION

MATERIAL: G10 - BLACK

FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DRAWN: S. ESP
DATE: 18 MAR 15

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Thomas Jefferson National Accelerator Facility
Newport News Virginia

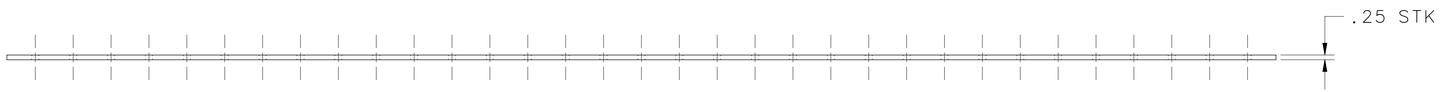
HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
MAIN BOX ASSY
FLAT ENTR WDO HORIZ

SIZE	DWG. NO.	REV.
C	A00000-01-01-2508	–

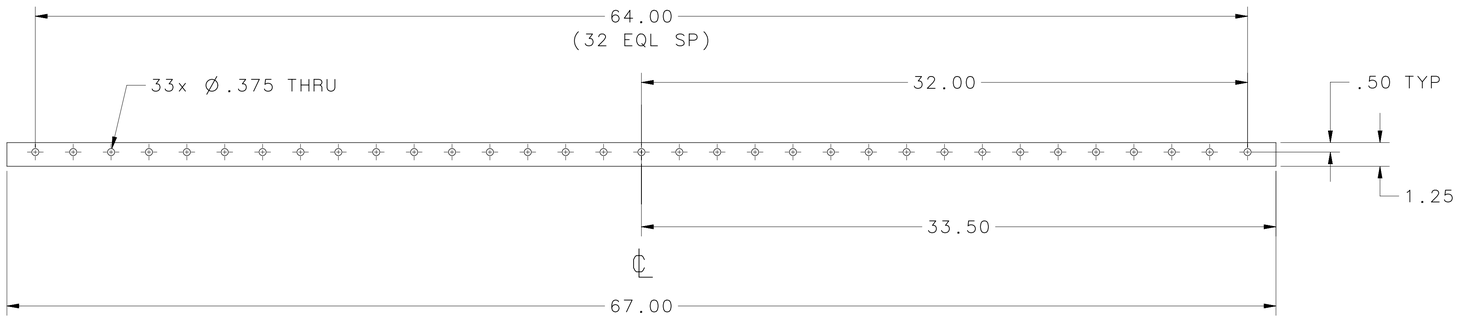
SCALE 1:4 | USED ON ASSY NO. A00000-01-01-2500 | SHEET 1 OF 1

Approved: 4/1/2015; E-Sign ID : 297773; signed by: Ap. 1: B. Wojtsekhowski; Ap. 2: R. Wines; C.: A. Gavalya; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



TOP VIEW 1-6C



FRONT VIEW 1-6B

NOTES:

1. WEIGHT IS APPROXIMATELY 1-1/2 LBS.

DIM & TOL PER ASME Y14.5.
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES.
TOLERANCES ARE:
FRACTIONS ± N/A
DECIMAL .X ±.1 .XX ±.01 .XXX ±.005
ANGLES ±.50°

THIRD ANGLE PROJECTION

MATERIAL: G10 - BLACK

FINISH MACHINE SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DRAWN: S. ESP
DATE: 18 MAR 15

United States Department of Energy
Jefferson Lab
Thomas Jefferson National Accelerator Facility
Newport News Virginia

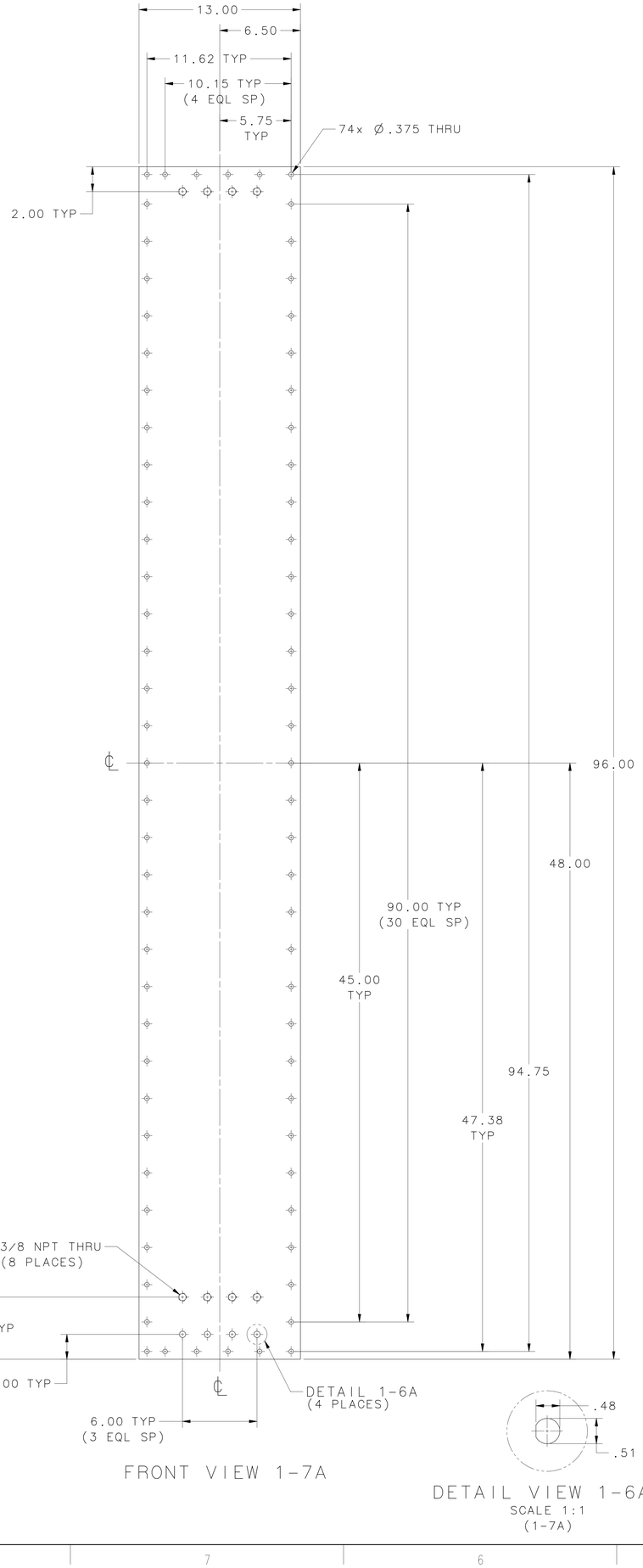
HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
MAIN BOX ASSY
FLAT ENTR WDO VERT

SIZE D | DWG. NO. A00000-01-01-2507 | REV. –

SCALE 1:4 | USED ON ASSY NO. A00000-01-01-2500 | SHEET 1 OF 1

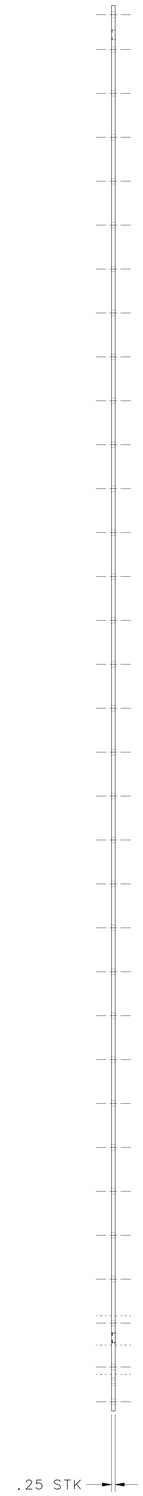
Approved: 4/1/2015; E-Sign ID : 297769; signed by: Ap. 1: B. Wojtsekhowski; Ap. 2: R. Wines; C.: A. Gavalya; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



FRONT VIEW 1-7A

DETAIL VIEW 1-6A
SCALE 1:1
(1-7A)



RS VIEW 1-4A

NOTES:
1. WEIGHT IS APPROXIMATELY 30 LBS.
2. CLEAN AND REMOVE ALL SURFACE CONTAMINATION.
3. ANODIZE BLACK.

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

DIM & TOL PER ASME Y14.5, UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES.
TOLERANCES ARE:
FRACTIONS ± N/A | DECIMAL .X ±.1, .XX ±.01, .XXX ±.005 | ANGLES ± .50°

THIRD ANGLE PROJECTION

MATERIAL: ALUMINUM 6061-T6

FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DRAWN: S. ESP | DATE: 18 MAR 15

United States Department of Energy
Jefferson Lab — Thomas Jefferson National Accelerator Facility
Newport News Virginia

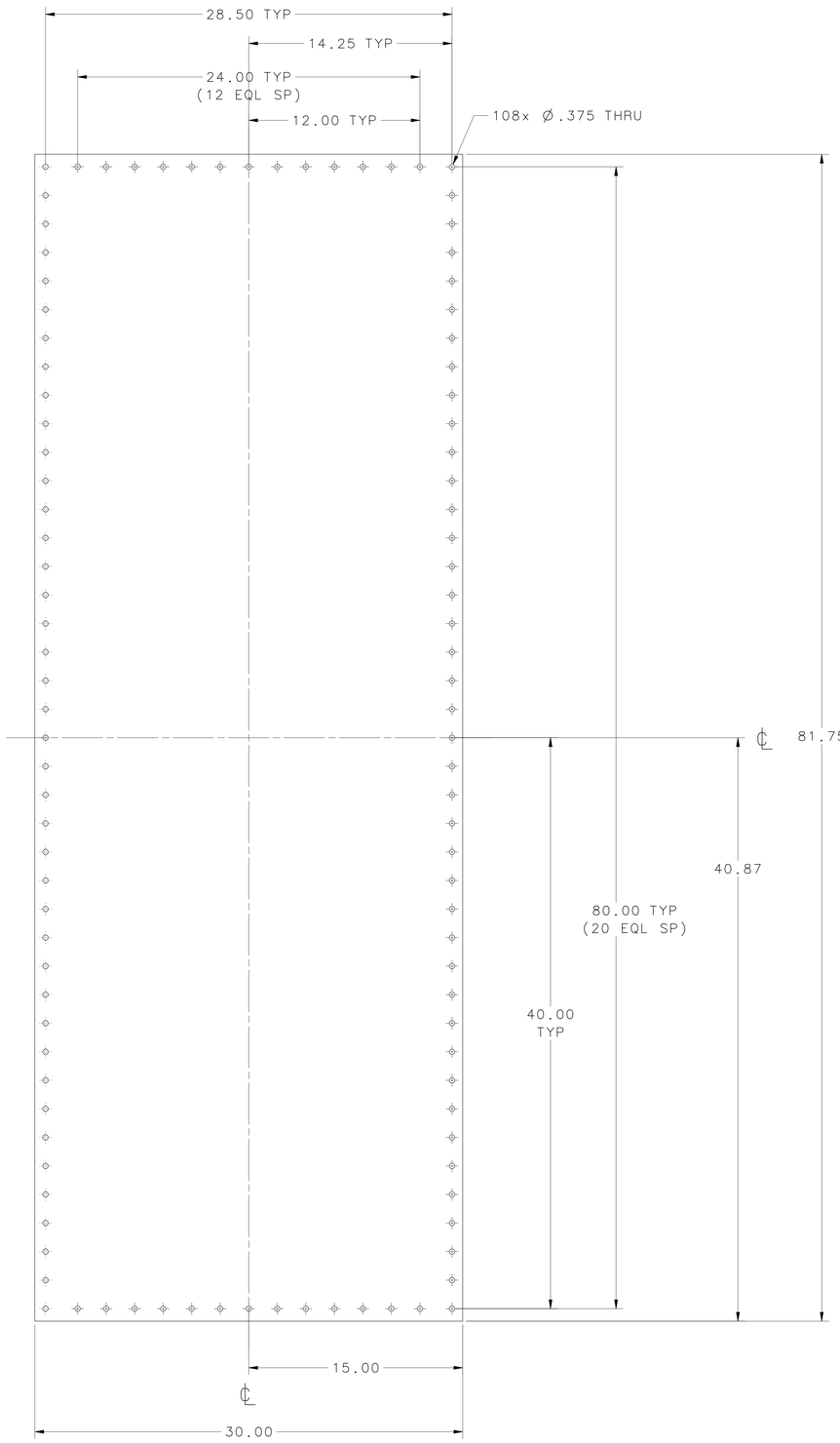
HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
MAIN BOX ASSY
AL SHEET 1/4 THK RH SIDE

SIZE E | DWG. NO. A00000-01-01-2506 | REV. —

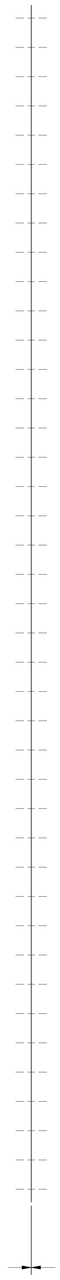
SCALE 1:4 | USED ON ASSY NO. A00000-01-01-2500 | SHEET 1 OF 1

Approved: 4/1/2015; E-Sign ID : 297768; signed by: Ap. 1: B. Wojtsekhowski; Ap. 2: R. Wines; C.: A. Gavalya; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



FRONT VIEW 1-6B



RS VIEW 1-4B

NOTES:

1. WEIGHT IS APPROXIMATELY 1 LB.
2. CLEAN AND REMOVE ALL SURFACE CONTAMINATION.

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

DIM & TOL PER ASME Y14.5
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± N/A | DECIMAL .X ± .1, .XX ± .01, .XXX ± .005 | ANGLES ± .50°

THIRD ANGLE PROJECTION

MATERIAL: ALUMINUM

FINISH: MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DRAWN: S. ESP | DATE: 18 MAR 15

United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia

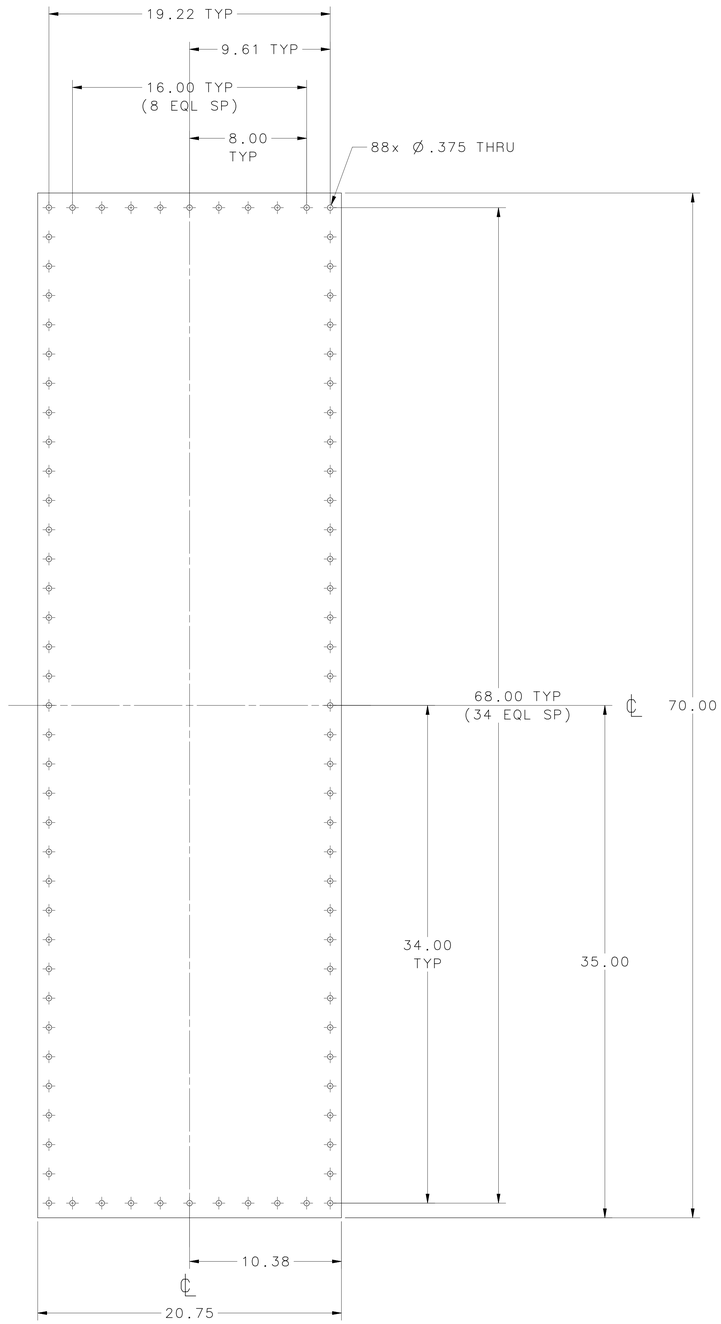
HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
MAIN BOX ASSY
WINDOW EXIT .005 IN THK

SIZE	DWG. NO.	REV.
E	A00000-01-01-2505	–

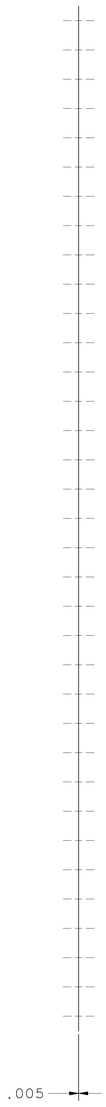
SCALE 1:4 | USED ON ASSY NO: A00000-01-01-2500 | SHEET 1 OF 1

Approved: 4/1/2015; E-Sign ID : 297767; signed by: Ap. 2: R. Wines; C.: A. Gavalya; Ap. 1: B. Wojtsekhowski; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



FRONT VIEW 1-7B



RS VIEW 1-5B

NOTES:

1. WEIGHT IS APPROXIMATELY 1 LB.
2. CLEAN AND REMOVE ALL SURFACE CONTAMINATION.

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

DIM & TOL PER ASME Y14.5M
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± N/A | DECIMAL .X ± .1, .XX ± .01, .XXX ± .005 | ANGLES ± .50°

THIRD ANGLE PROJECTION

MATERIAL: ALUMINUM

FINISH: MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DRAWN: S. ESP | DATE: 18 MAR 15

United States Department of Energy
Jefferson Lab
Thomas Jefferson National Accelerator Facility
Newport News Virginia

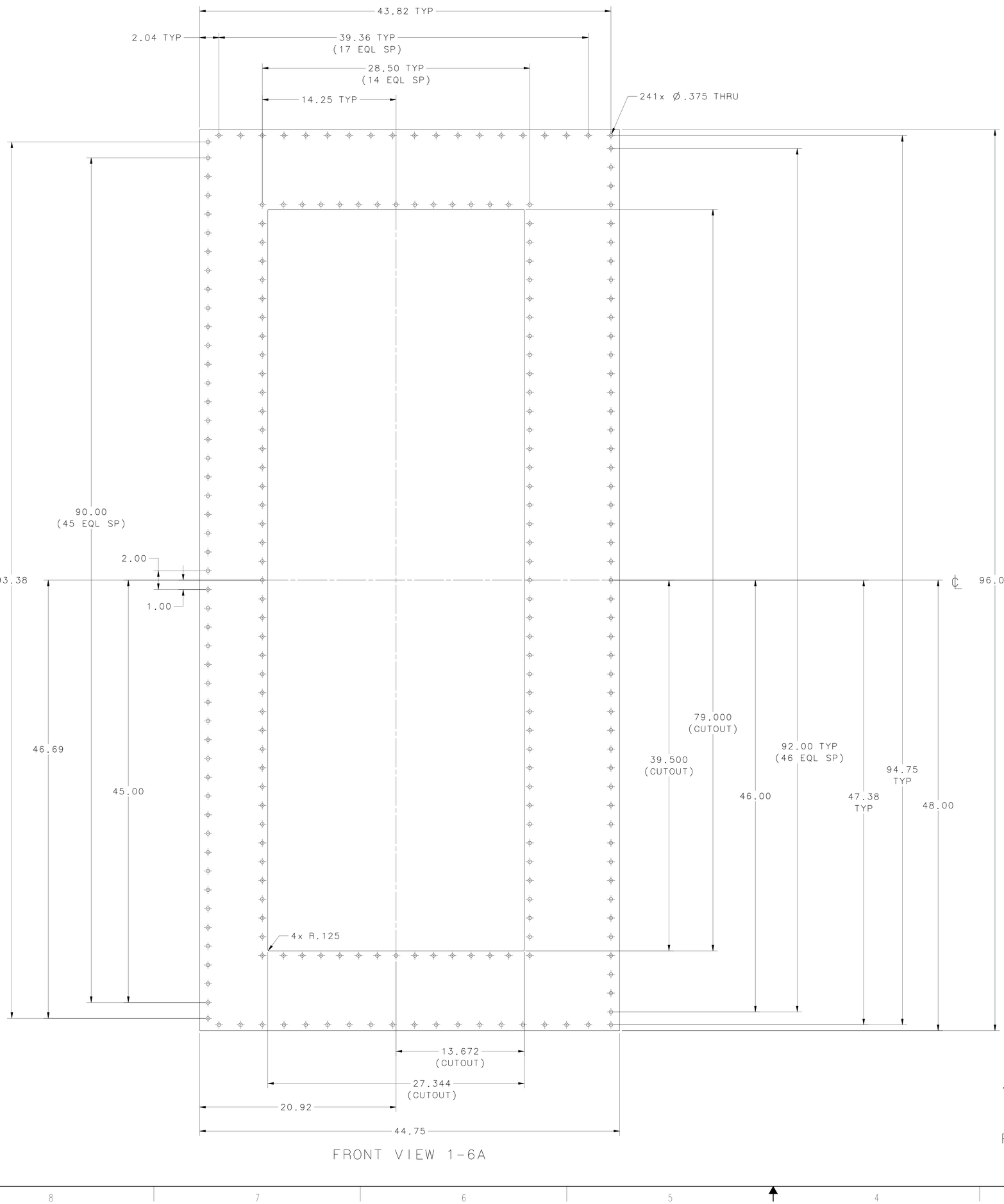
HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
MAIN BOX ASSY
WINDOW ENTR .005 IN THK

SIZE: E | DWG. NO.: A00000-01-01-2504 | REV.: –

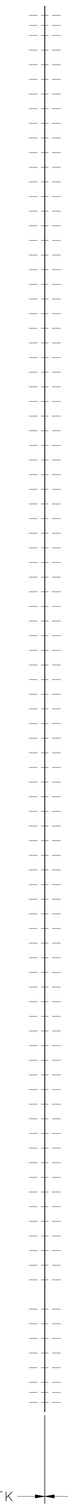
SCALE: 1:4 | USED ON ASSY NO: A00000-01-01-2500 | SHEET 1 OF 1

Approved: 4/1/2015; E-Sign ID : 297766; signed by: Ap. 1: B. Wojtsekhowski; Ap. 2: R. Wines; C.: A. Gavalya; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



FRONT VIEW 1-6A



RS VIEW 1-3A

NOTES:

1. WEIGHT IS APPROXIMATELY 8 LBS.
2. CLEAN AND REMOVE ALL SURFACE CONTAMINATION.
3. ANODIZE BLACK.

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

DIM & TOL PER ASME Y14.5. UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE:
FRACTIONS ± N/A | DECIMAL .X ± .1, .XX ± .01, .XXX ± .005 | ANGLES ± .50°

THIRD ANGLE PROJECTION

MATERIAL: ALUMINUM 6061-T6

FINISH: MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DRAWN: S. ESP | DATE: 18 MAR 15

United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia

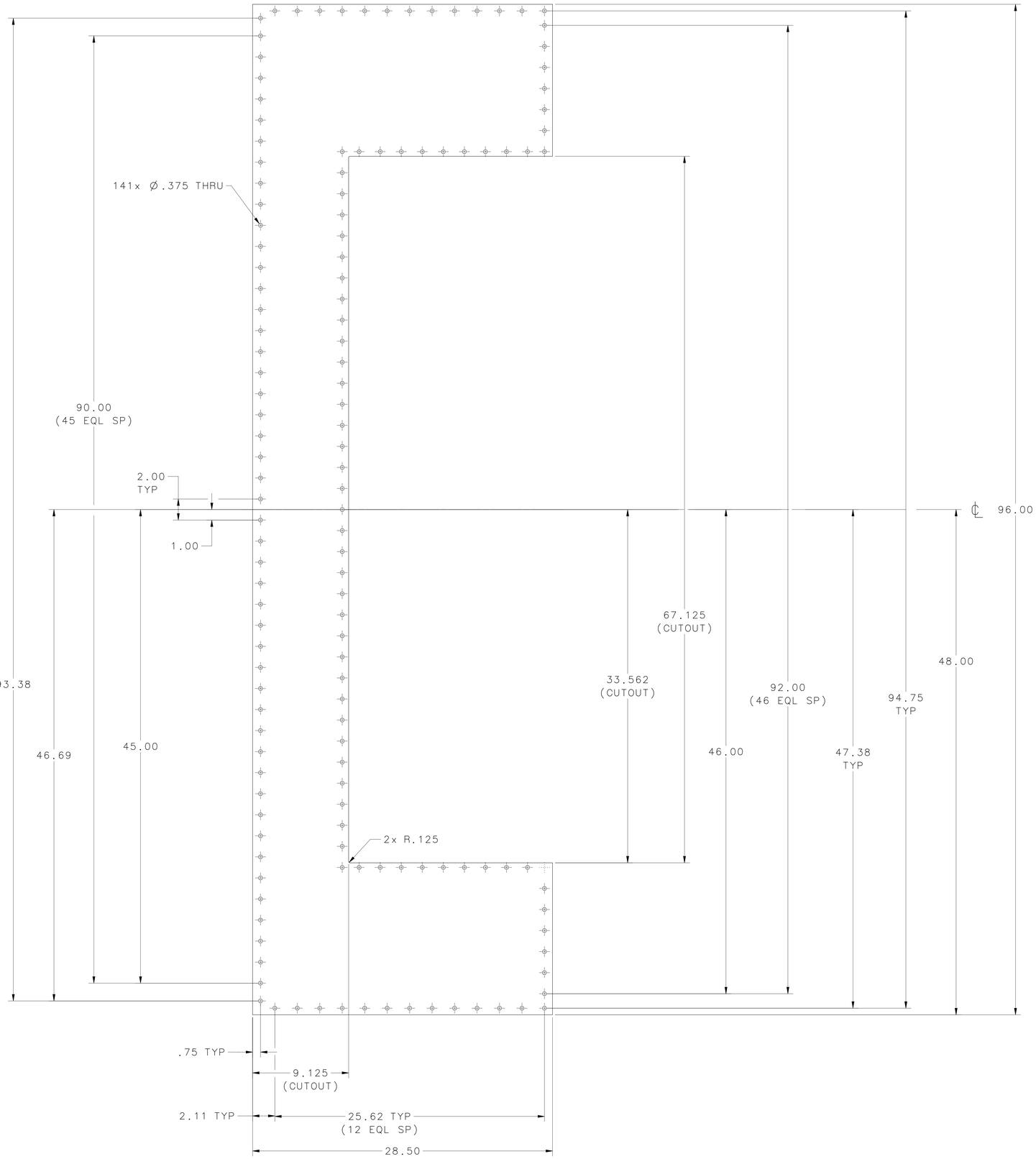
HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
MAIN BOX ASSY
AL SHEET .040 EXIT

SIZE: E | DWG. NO.: A00000-01-01-2503 | REV.: –

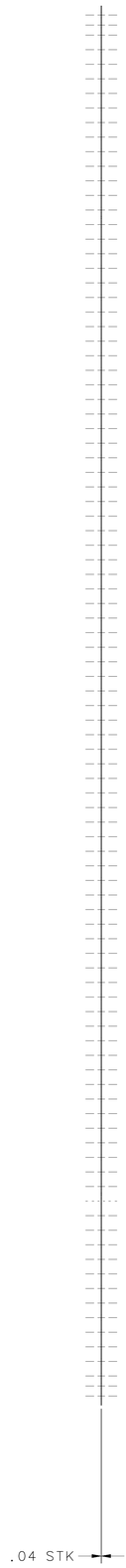
SCALE: 1:4 | USED ON ASSY NO.: A00000-01-01-2500 | SHEET 1 OF 1

Approved: 4/1/2015; E-Sign ID : 297765; signed by: Ap. 1: B. Wojtsekhowski; Ap. 2: R. Wines; C.: A. Gavalya; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



FRONT VIEW 1-6A



RS VIEW 1-3A

NOTES:
1. WEIGHT IS APPROXIMATELY 5-1/2 LBS.
2. CLEAN AND REMOVE ALL SURFACE CONTAMINATION.
3. ANODIZE BLACK.

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

DIM & TOL PER ASME Y14.5. UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE:
FRACTIONS ± N/A | DECIMAL .X ±.1, .XX ±.01, .XXX ±.005 | ANGLES ±.50°

THIRD ANGLE PROJECTION

MATERIAL: ALUMINUM 6061-T6

FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DRAWN: S. ESP | DATE: 18 MAR 15

United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia

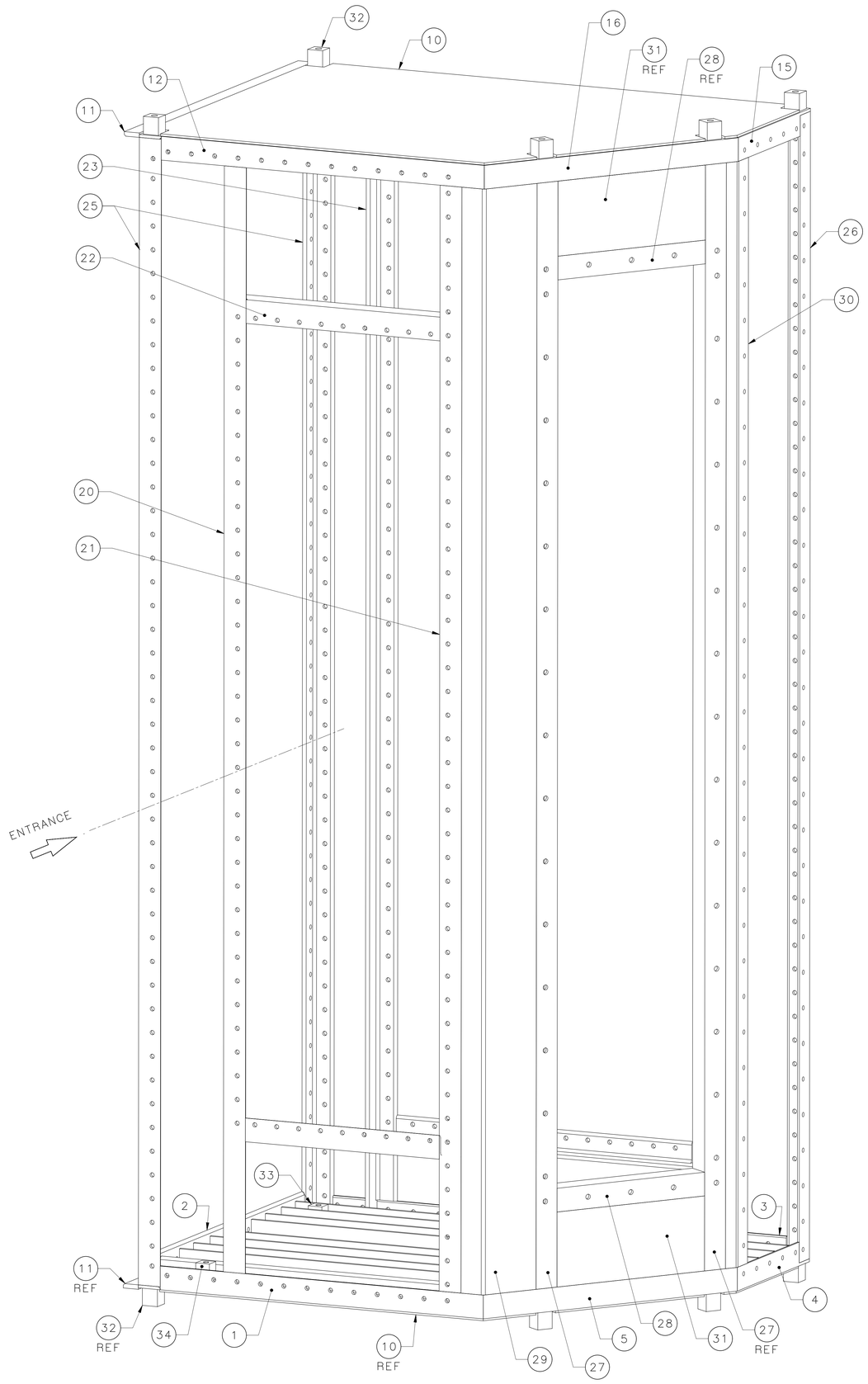
HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
MAIN BOX ASSY
AL SHEET .040 ENTRANCE

SIZE E | DWG. NO. A00000-01-01-2502 | REV. –

SCALE 1:4 | USED ON ASSY NO. A00000-01-01-2500 | SHEET 1 OF 1

Approved: 4/1/2015; E-Sign ID : 297760; signed by: Ap. 1: B. Wojtsekhowski; Ap. 2: R. Wines; C.: A. Gavalya; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED
1-8A	A	ADDED NOTE 6. FINISH: POWDER COAT, BLACK.	20 AUG 15	SME



ISO VIEW 1-4A

QTY. REQD	ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	NOTES
4	34	-	THD BLOCK ENTR BASE MOUNT	STEEL A36	-
4	33	-	THD BLOCK EXIT BASE MOUNT	STEEL A36	-
10	32	-	THREADED BLOCK FOR HOIST RING	STEEL A36	-
2	31	-	RECT 1/4 THK PL PMT SIDE	STEEL A36	-
1	30	-	PL 1/4 IN THK VERT 145 DEG ANG	STEEL A36	-
1	29	-	PL 1/4 IN THK VERT 125 DEG ANG	STEEL A36	-
2	28	-	TBG SQ 2 X 1/4 HORIZ PMT SPRT	STEEL A36	-
2	27	-	TBG SQ 2 X 1/4 VERT PMT SPRT	STEEL A36	-
1	26	-	ANGLE 2 X 2 X 1/4 REAR VERT CORNER	STEEL A36	-
2	25	-	ANGLE 2 X 2 X 1/4 VERT CORNER	STEEL A36	SH 3
2	24	-	ANGLE 2X2X1/4 HORIZ EXIT WDO	STEEL A36	SH 4
2	23	-	ANGLE 2 X 2 X 1/4 EXIT VERT WDO SPRT	STEEL A36	-
2	22	-	ANGLE 2X2X1/4 HORIZ ENTR WDO	STEEL A36	-
1	21	-	ANGLE 2X2X1/4 ENTR RH VERT WDO SPRT	STEEL A36	-
1	20	-	ANGLE 2X2X1/4 ENTR LH VERT WDO SPRT	STEEL A36	-
1	19	MIRROR ITEM 9	ANGLE 1-3/4 X 1-3/4 X 1/4 BASE MBR	STEEL A36	SH 3
1	18	MIRROR ITEM 8	CHANNEL BASE ENTR C3 X 4.1	STEEL A36	SH 3
1	17	MIRROR ITEM 7	CHANNEL BASE CTR C3 X 4.1	STEEL A36	SH 3
1	16	MIRROR ITEM 5	ANGLE 2 X 2 X 1/4 ANG BOT	STEEL A36	-
1	15	MIRROR ITEM 4	ANGLE 2 X 2 X 1/4 RH BOT	STEEL A36	-
1	14	MIRROR ITEM 3	ANGLE 2 X 2 X 1/4 REAR	STEEL A36	SH 3
1	13	MIRROR ITEM 2	ANGLE 2-1/2 X 2 X 1/4 LH BOT	STEEL A36	SH 3
1	12	MIRROR ITEM 1	ANGLE 2 X 2 X 1/4 FR BOT	STEEL A36	-
2	11	-	LEDGE	STEEL A36	
2	10	-	PL 3/16 IN THK TOP & BOTTOM	STEEL A36	-
1	9	-	ANGLE 1-3/4 X 1-3/4 X 1/4 BASE MBR	STEEL A36	SH 3
1	8	-	CHANNEL BASE ENTR C3 X 4.1	STEEL A36	SH 3
1	7	-	CHANNEL BASE CTR C3 X 4.1	STEEL A36	SH 3
4	6	-	CHANNEL BASE EXIT C3 X 4.1	STEEL A36	SH 3
1	5	-	ANGLE 2 X 2 X 1/4 ANG BOT	STEEL A36	-
1	4	-	ANGLE 2 X 2 X 1/4 RH BOT	STEEL A36	-
1	3	-	ANGLE 2 X 2 X 1/4 REAR	STEEL A36	-
1	2	-	ANGLE 2-1/2 X 2 X 1/4 LH BOT	STEEL A36	-
1	1	-	ANGLE 2 X 2 X 1/4 FR BOT	STEEL A36	-

PARTS LIST

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

NOTES:
1. WEIGHT IS APPROXIMATELY 770 LBS.
2. DRILL HOLES AFTER WELDING.
3. ALL WELDING SHALL BE IN COMPLIANCE WITH JLAB DRAWING NO.: A00000-23-00-0001.
4. THE JLAB RISK CODE IS 1; ALL WELDS ARE JLAB CLASS "A"; JLAB WPS 006 REVISION 1 SHALL BE USED. HOWEVER, IF THE WELDMENT IS FABRICATED BY A VENDOR OF JLAB, THIS SPECIFIC REQUIREMENT SHALL BE IGNORED.
5. ALL SURFACES SHALL BE SANDBLASTED DOWN TO BARE METAL. REMOVE SHARP CORNERS. CLEAN THOROUGHLY.
6. FINISH: POWDER COAT, BLACK.

DIM & TOL PER ASME Y14.5. UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES. TOLERANCES ARE: FRACTIONS ± N/A; DECIMAL .X ±.1, .XX ±.01, .XXX ±.005; ANGLES ± .50°

THIRD ANGLE PROJECTION

MATERIAL: SEE PARTS LIST

FINISH: MACHINED SURFACES 125 UNLESS OTHERWISE NOTED. DEBURR & BREAK ALL SHARP EDGES.

DO NOT SCALE DRAWING

DRAWN: S. ESP; DATE: 27 MAR 15

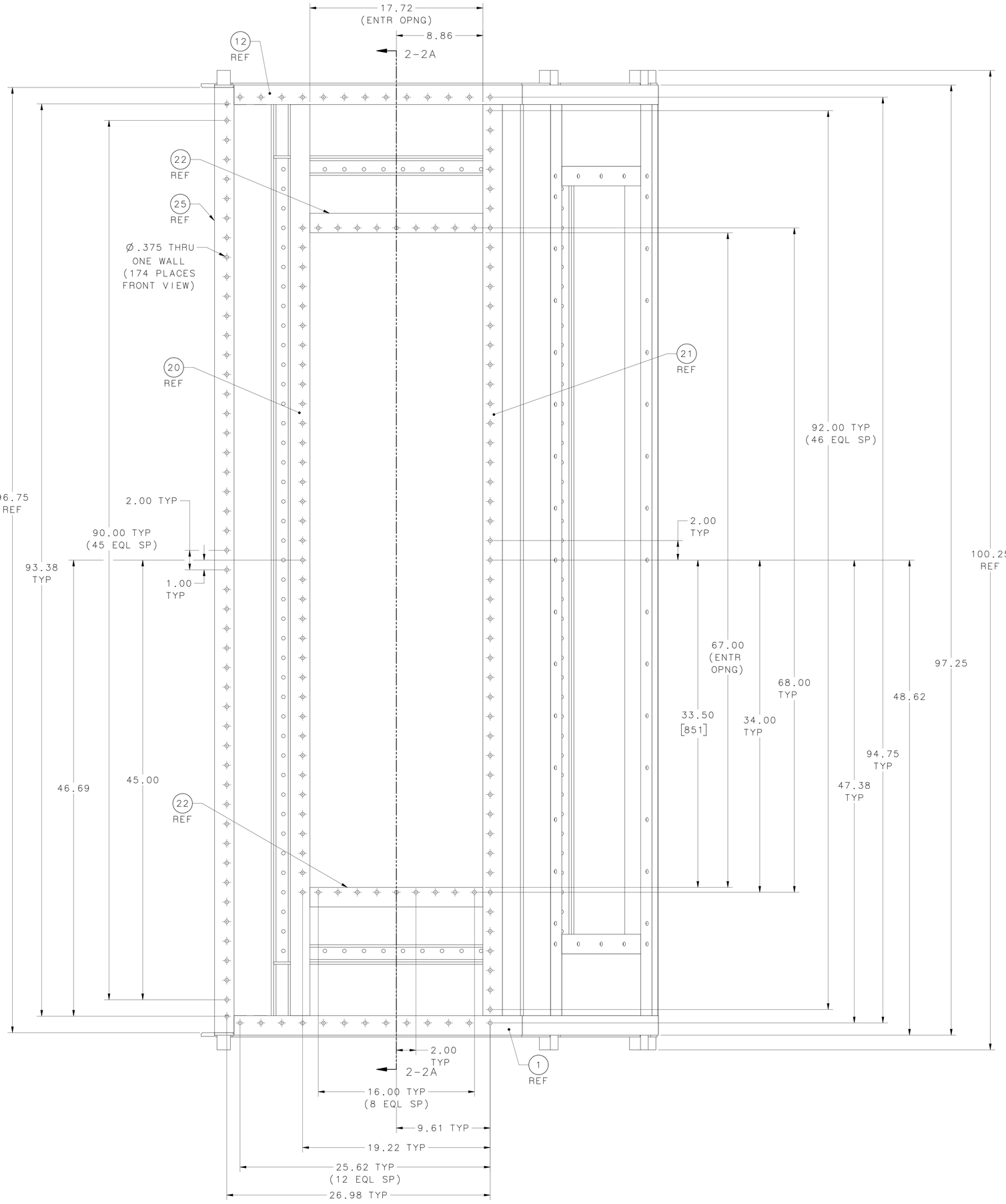
United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia

HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
MAIN BOX ASSY
GRINCH STRUCTURAL WLDMT

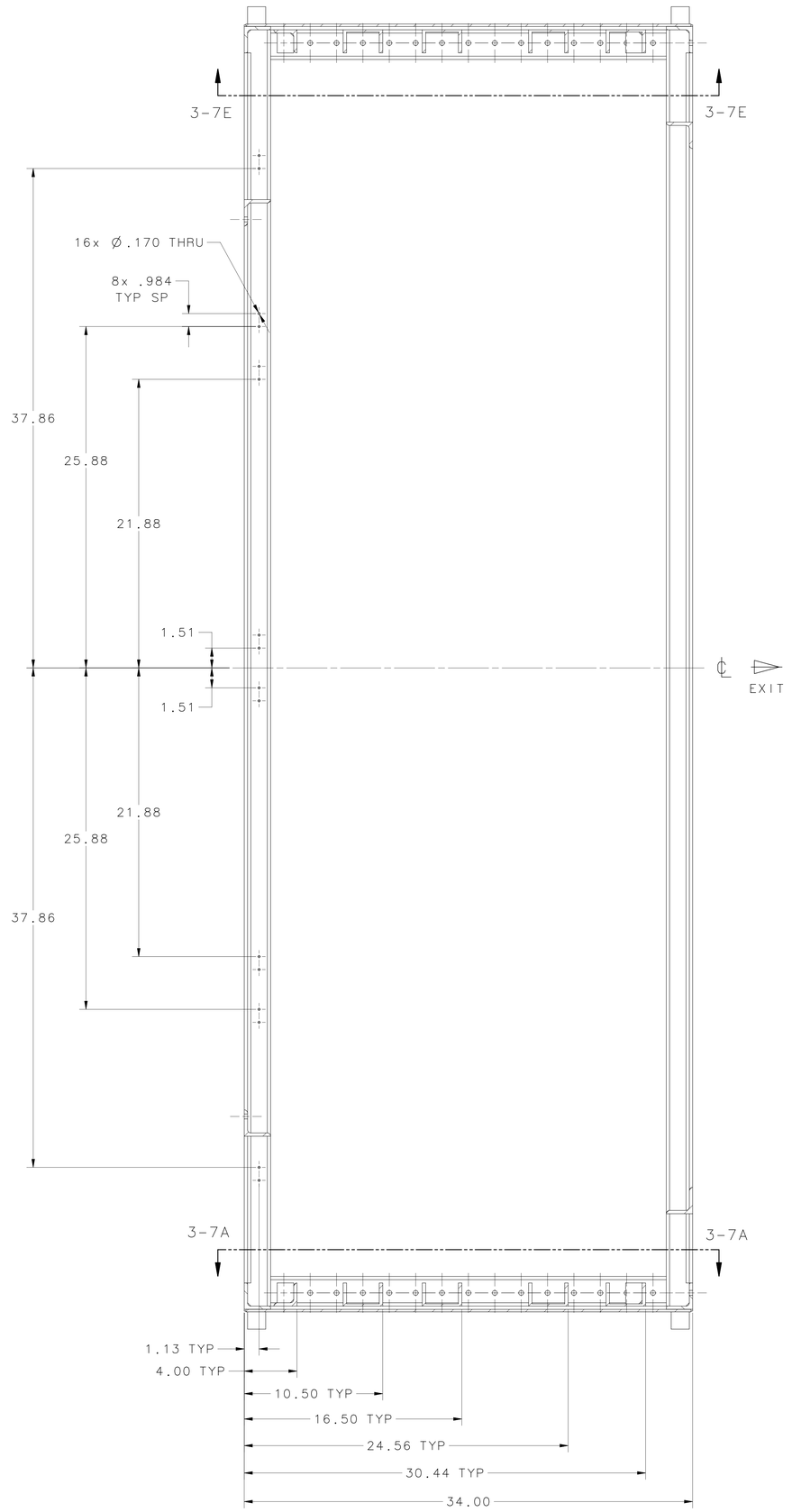
SIZE: E; DWG. NO.: A00000-01-01-2501; REV.: A

SCALE: 1:4; USED ON ASSY NO. A00000-01-01-2500; SHEET 1 OF 9

Approved: 8/21/2015; E-Sign ID : 307976; signed by: Ap. 1: W. Seay; C.: W. Seay; D: T. Fuell



FRONT VIEW 2-6A

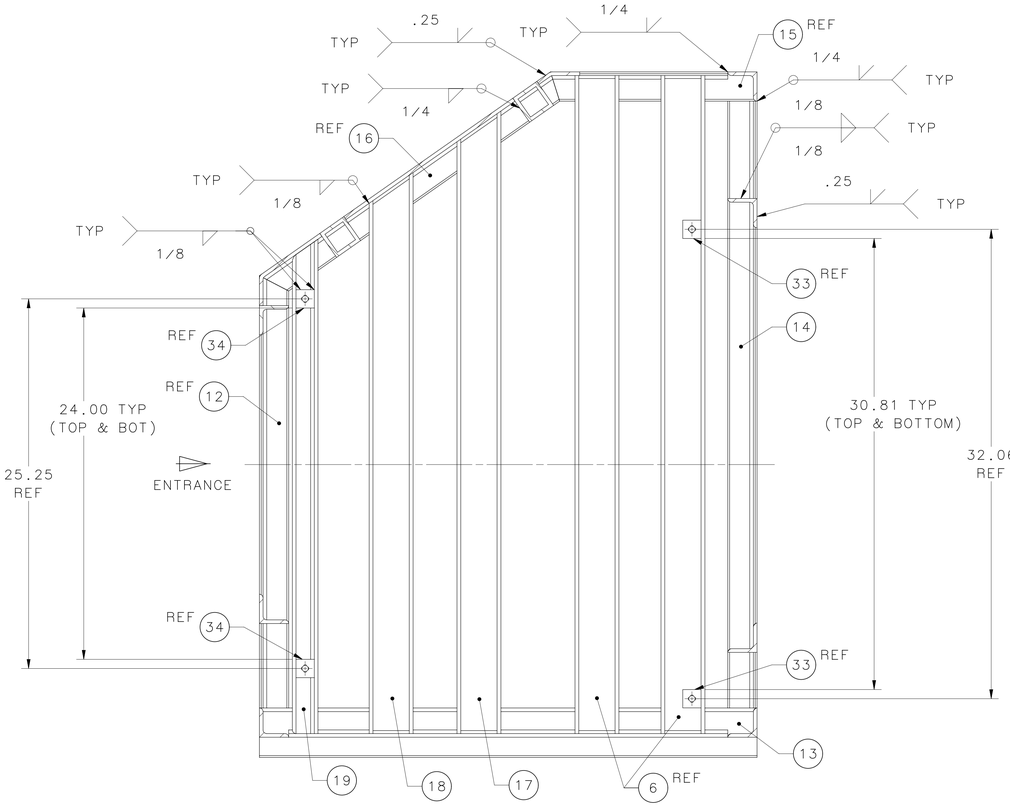


SECTION VIEW 2-2A

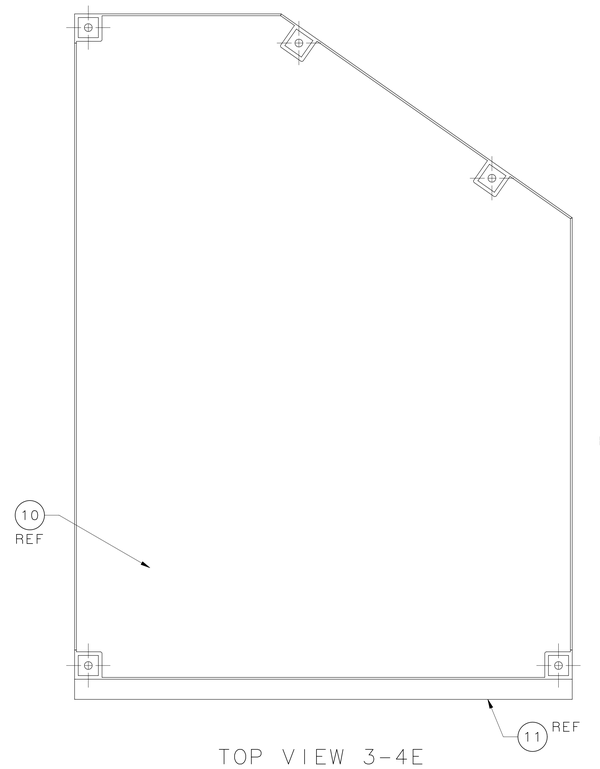
TOP & BOTTOM SECTION VIEWS ARE MIRROR IMAGES.
(2-6A)

SIZE	DWG. NO.	REV.
E	A00000-01-01-2501	A
SCALE 1:4	USED ON ASSY NO. A00000-01-01-2500	SHEET 2 OF 9

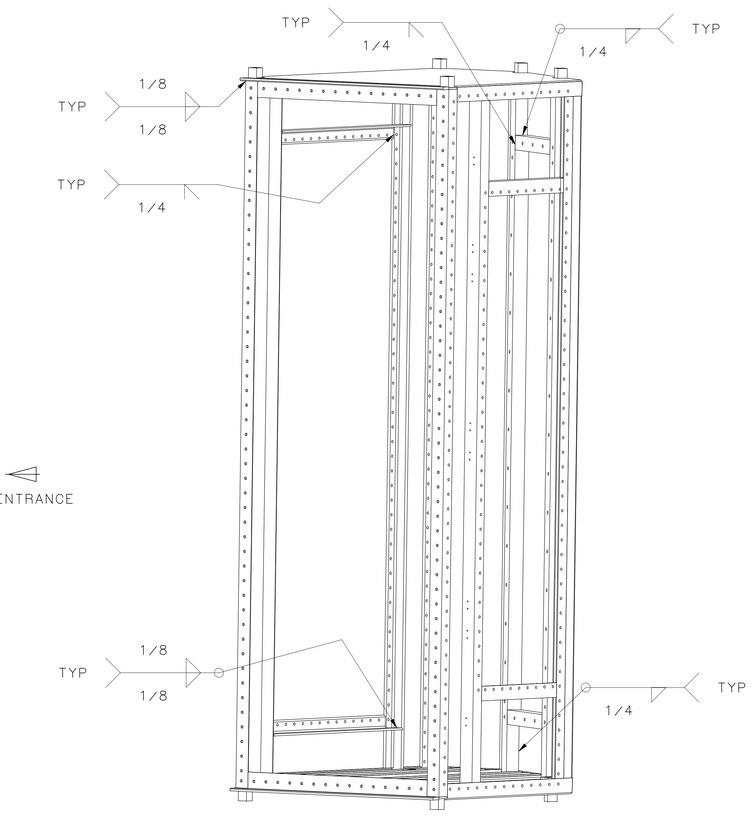
Approved: 8/21/2015; E-Sign ID : 307976; signed by: Ap. 1: W. Seay; C.: W. Seay; D: T. Fuell



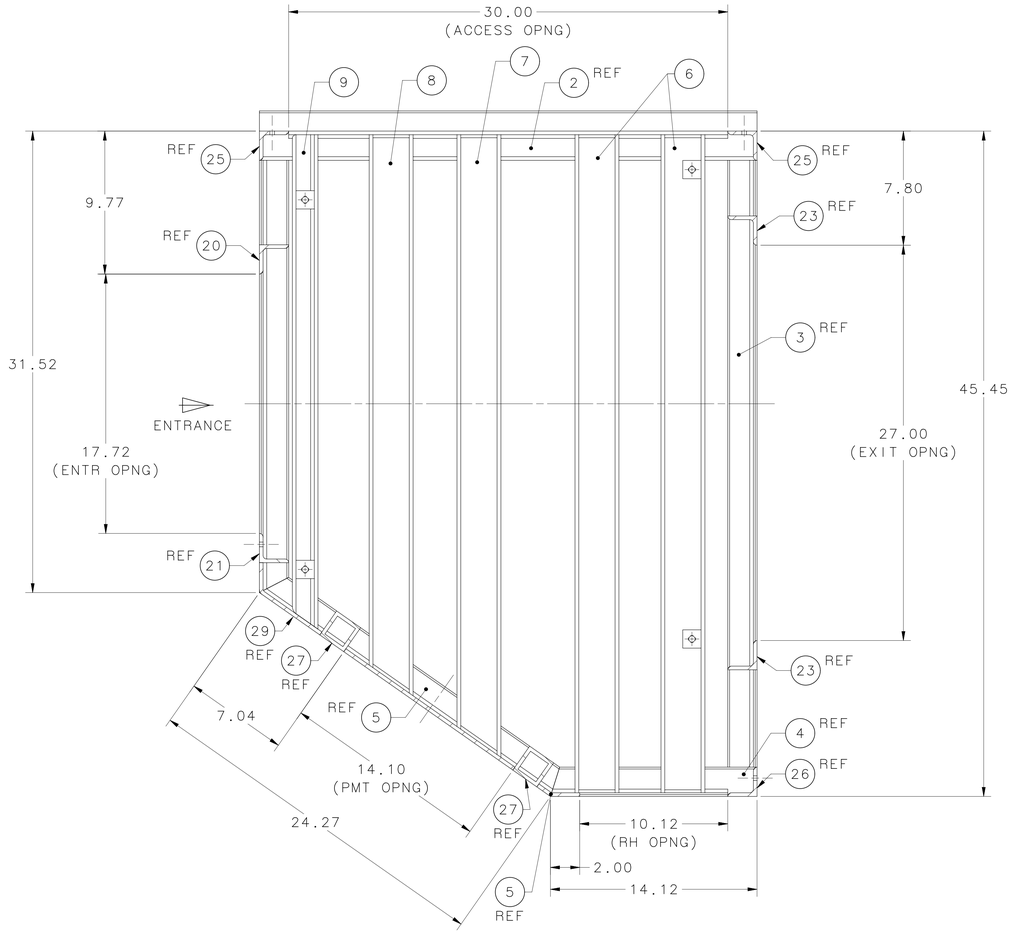
SECTION VIEW 3-7E
(2-2A)



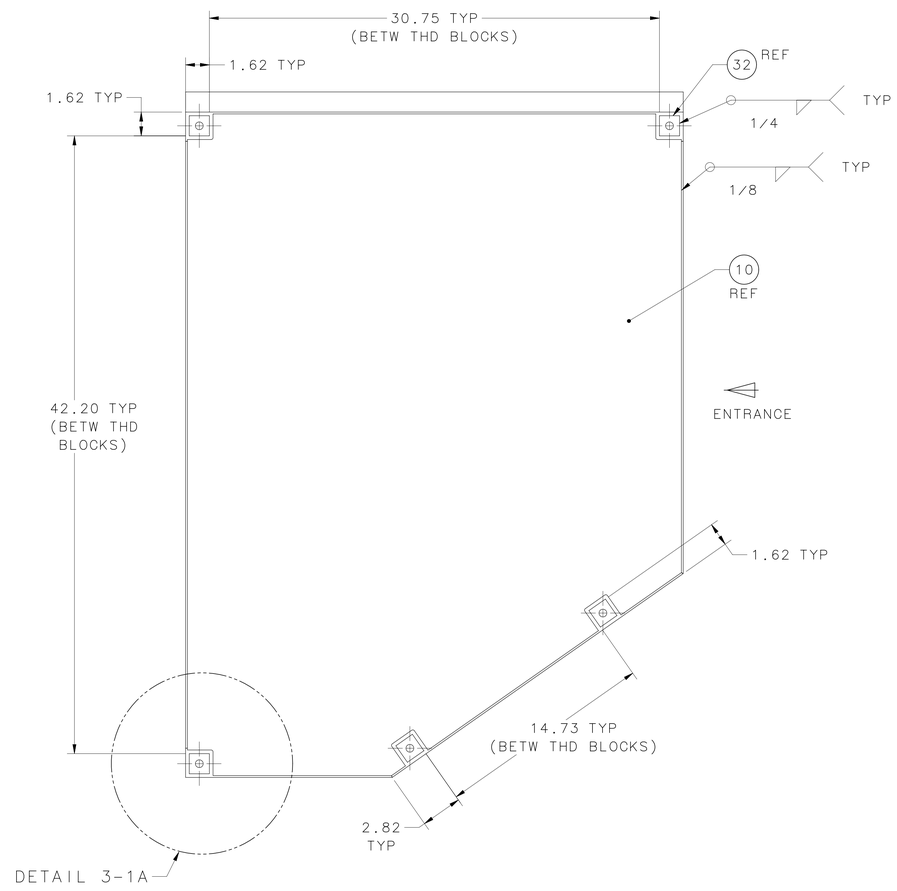
TOP VIEW 3-4E



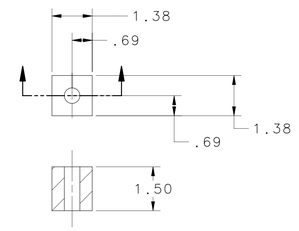
ISO VIEW 3-2E



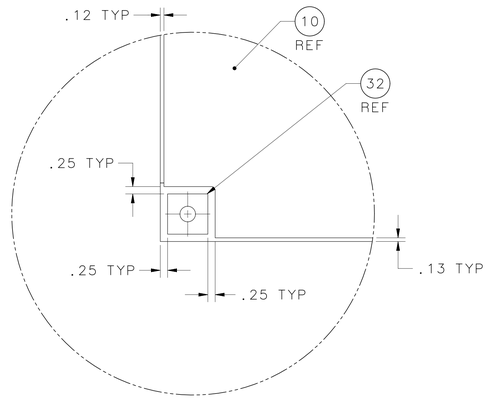
SECTION VIEW 3-7A
(2-2A)



BOTTOM VIEW 3-4A



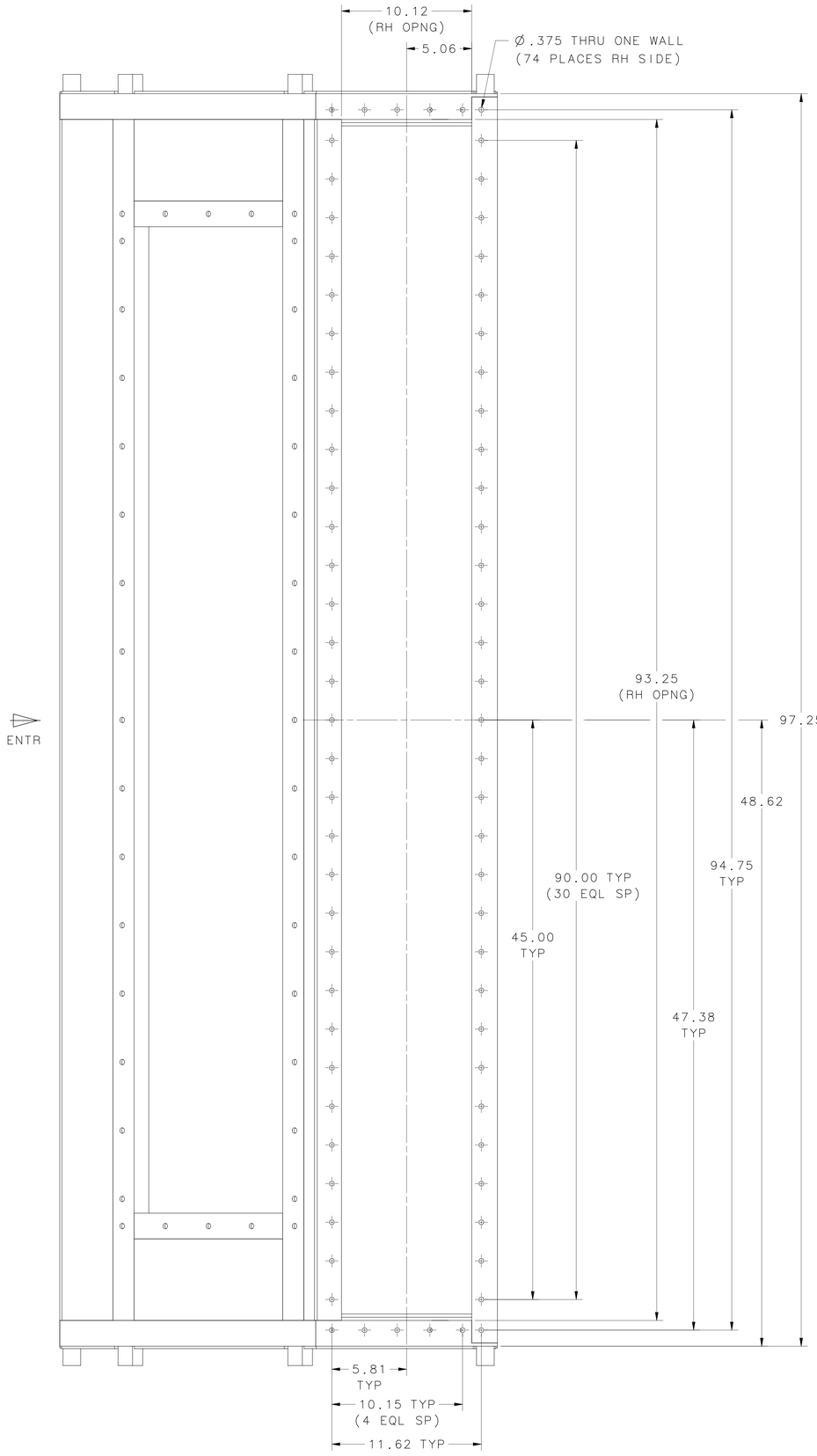
ITEMS 32 DETAIL - 3-1D
SCALE 1:2
(10 REQUIRED)



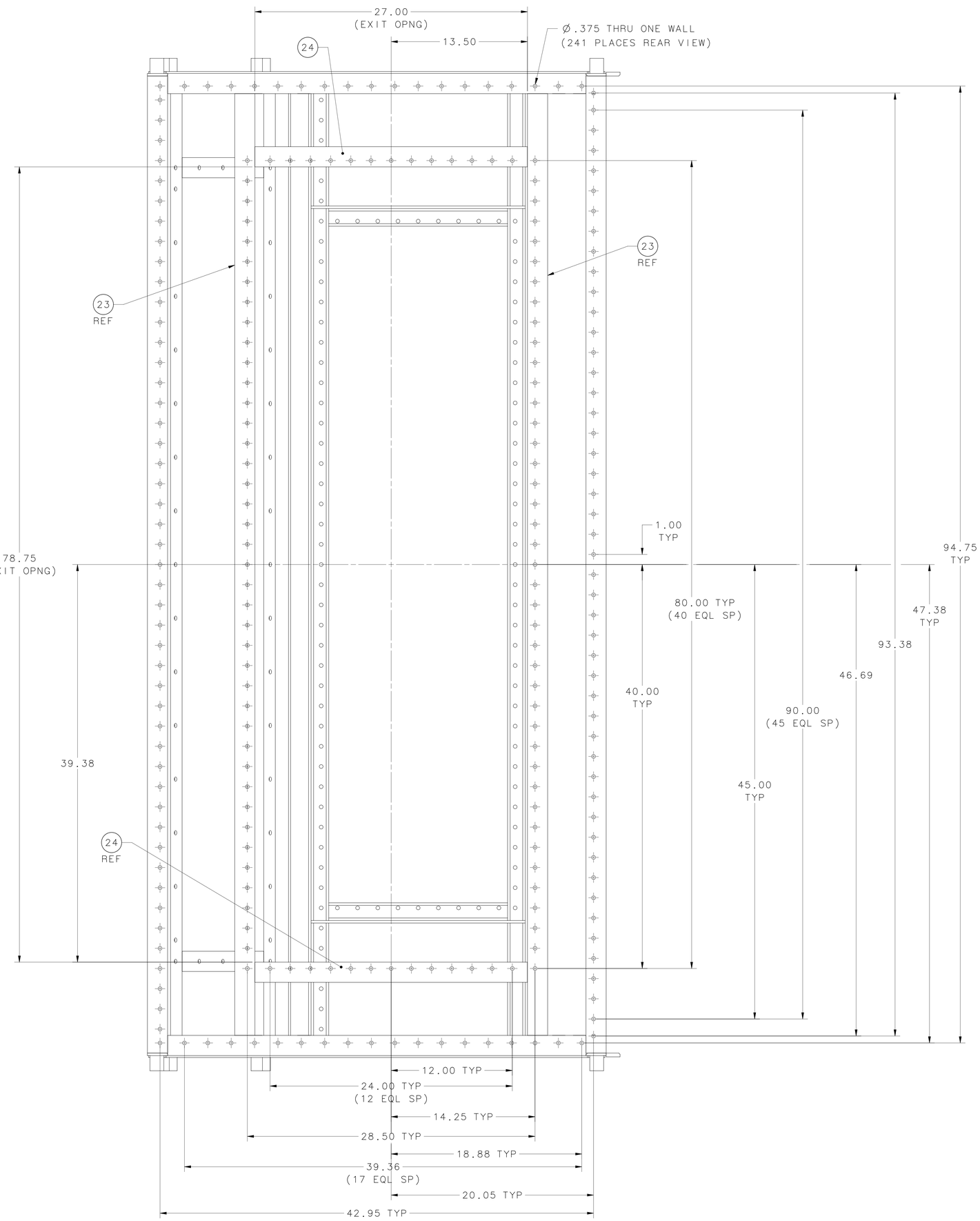
DETAIL VIEW 3-1A
SCALE 1:2
(3-4A)

SIZE	DWG. NO.	REV.
E	A00000-01-01-2501	A
SCALE 1:4	USED ON ASSY NO. A00000-01-01-2500	SHEET 3 OF 9

Approved: 8/21/2015; E-Sign ID : 307976; signed by: Ap. 1: W. Seay; C.: W. Seay; D: T. Fuell



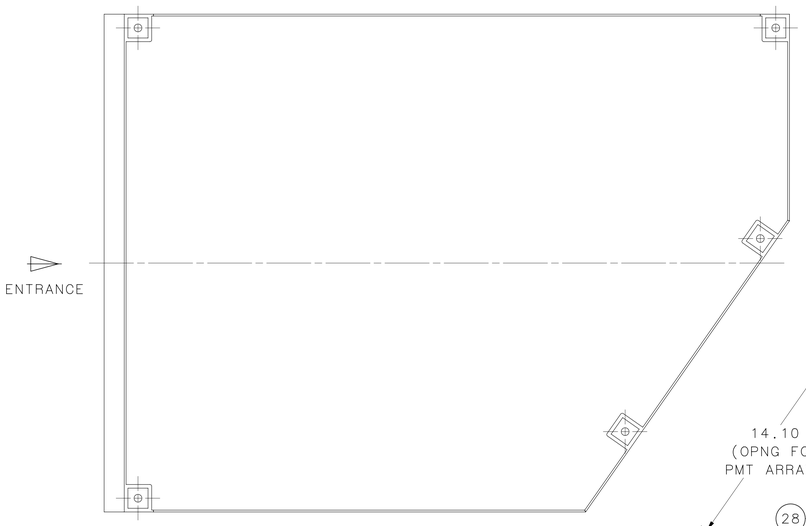
R SIDE VIEW 4-7A



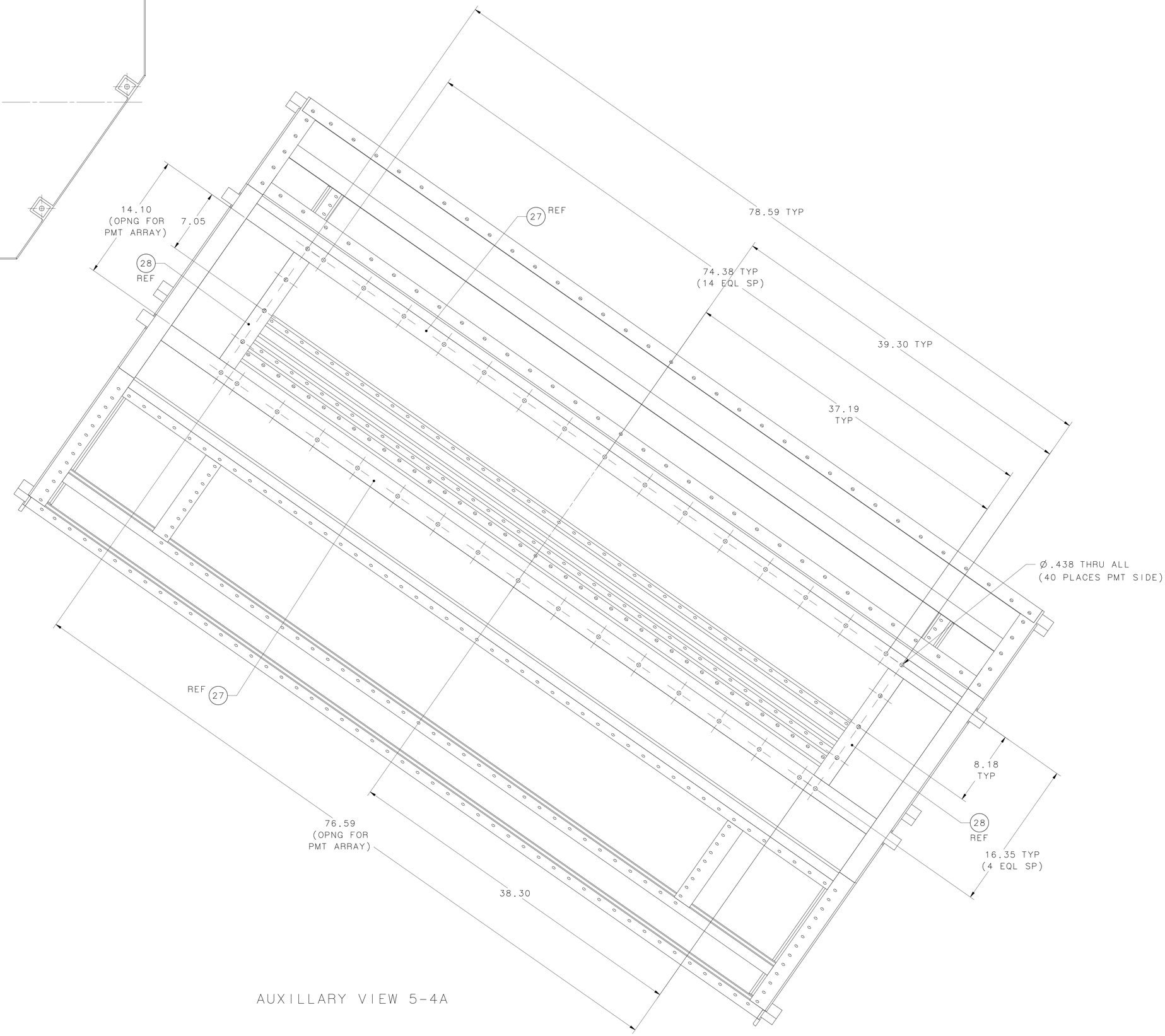
REAR VIEW 4-3A

SIZE	DWG. NO.	REV.
E	A00000-01-01-2501	A
SCALE 1:4	USED ON ASSY NO. A00000-01-01-2500	SHEET 4 OF 9

Approved: 8/21/2015; E-Sign ID : 307976; signed by: Ap. 1: W. Seay; C.: W. Seay; D: T. Fuell



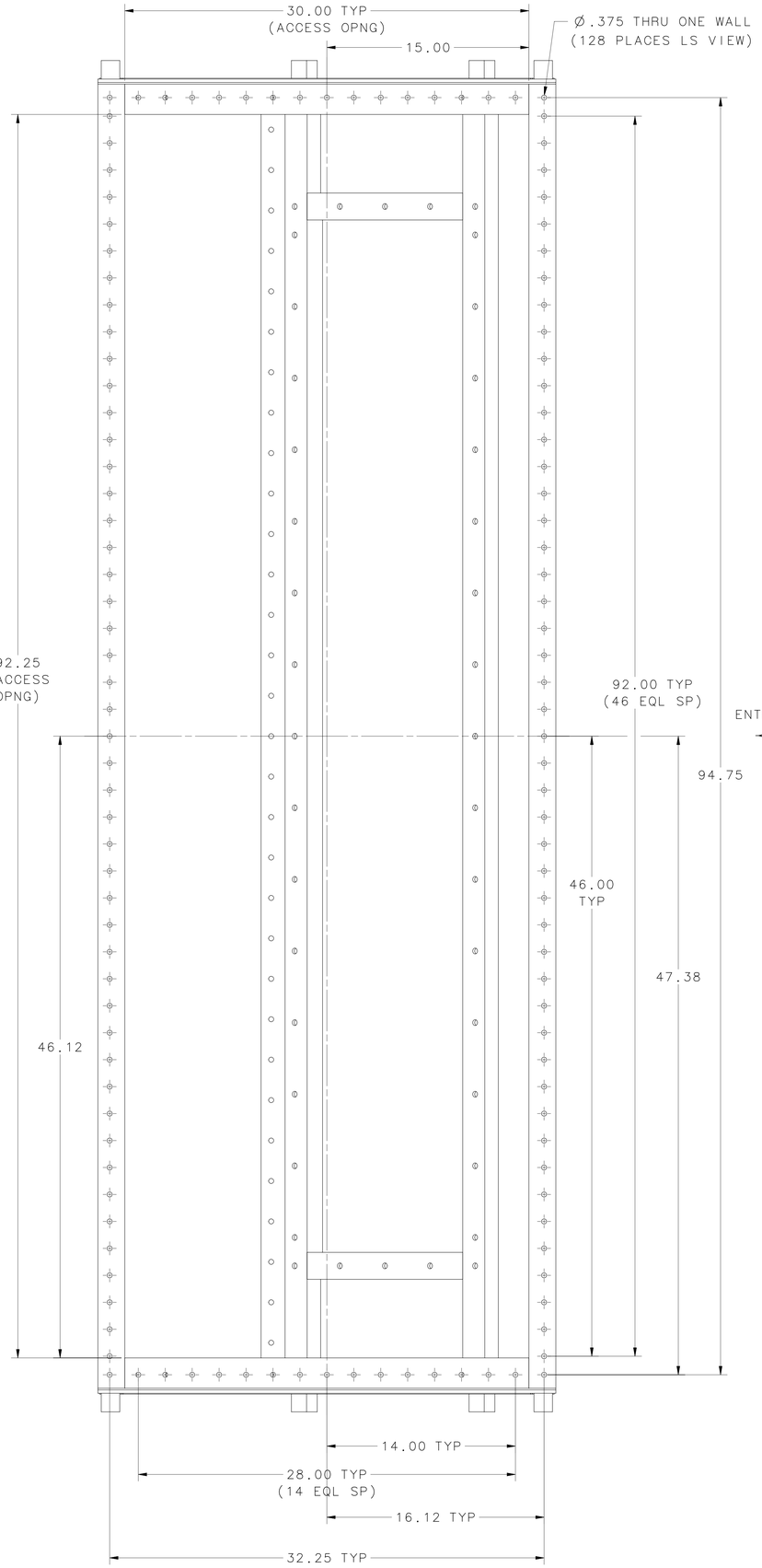
TOP VIEW 5-7F



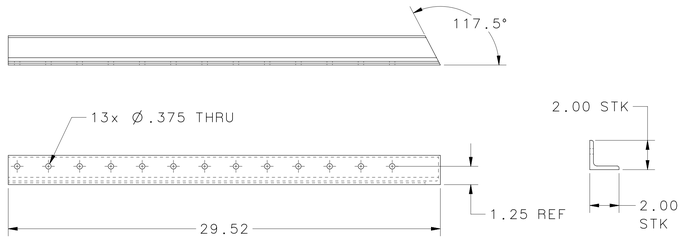
AUXILLARY VIEW 5-4A

SIZE	DWG. NO.	REV.
E	A00000-01-01-2501	A
SCALE 1:4	USED ON ASSY NO. A00000-01-01-2500	SHEET 5 OF 9

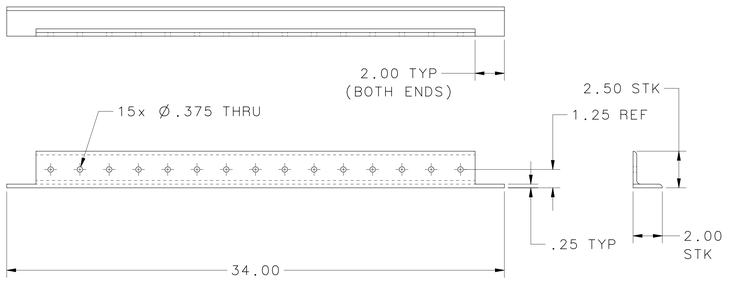
Approved: 8/21/2015; E-Sign ID : 307976; signed by: Ap. 1: W. Seay; C:. W. Seay; D: T. Fuell



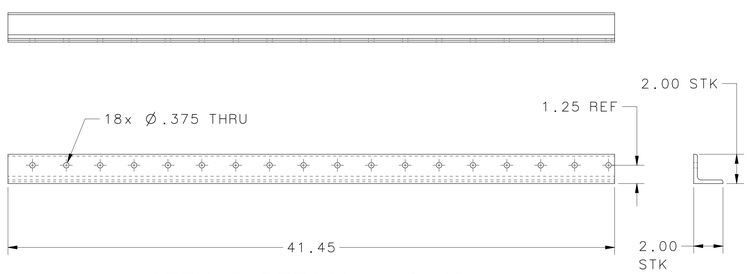
L SIDE VIEW 6-7A



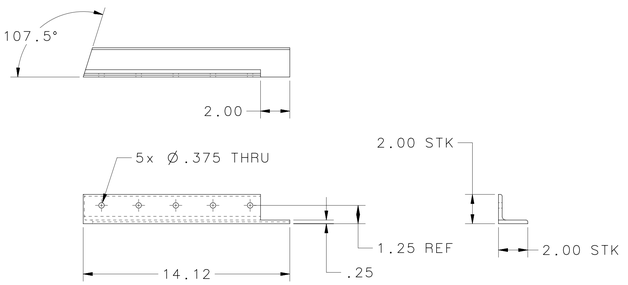
ITEM 1 DETAIL - 6-4G
(1 REQUIRED)



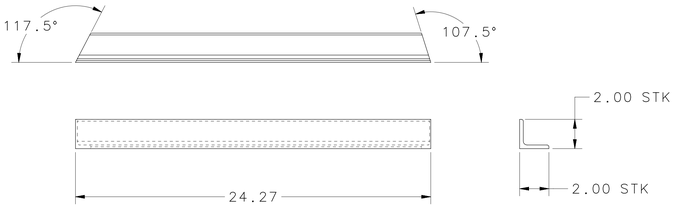
ITEM 2 DETAIL - 6-4E
(1 REQUIRED)



ITEM 3 DETAIL - 6-4D
(1 REQUIRED)



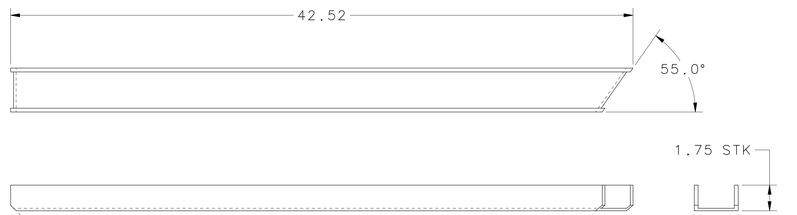
ITEM 4 DETAIL - 6-4A
(1 REQUIRED)



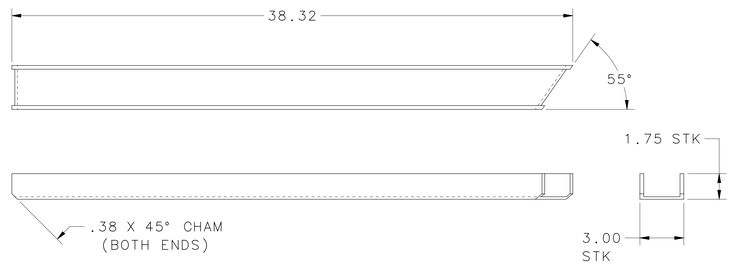
ITEM 5 DETAIL - 6-2G
(1 REQUIRED)



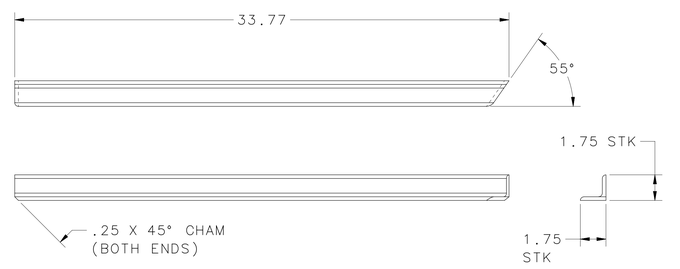
ITEM 6 DETAIL - 6-2F
(4 REQUIRED)



ITEM 7 DETAIL - 6-2D
(1 REQUIRED)



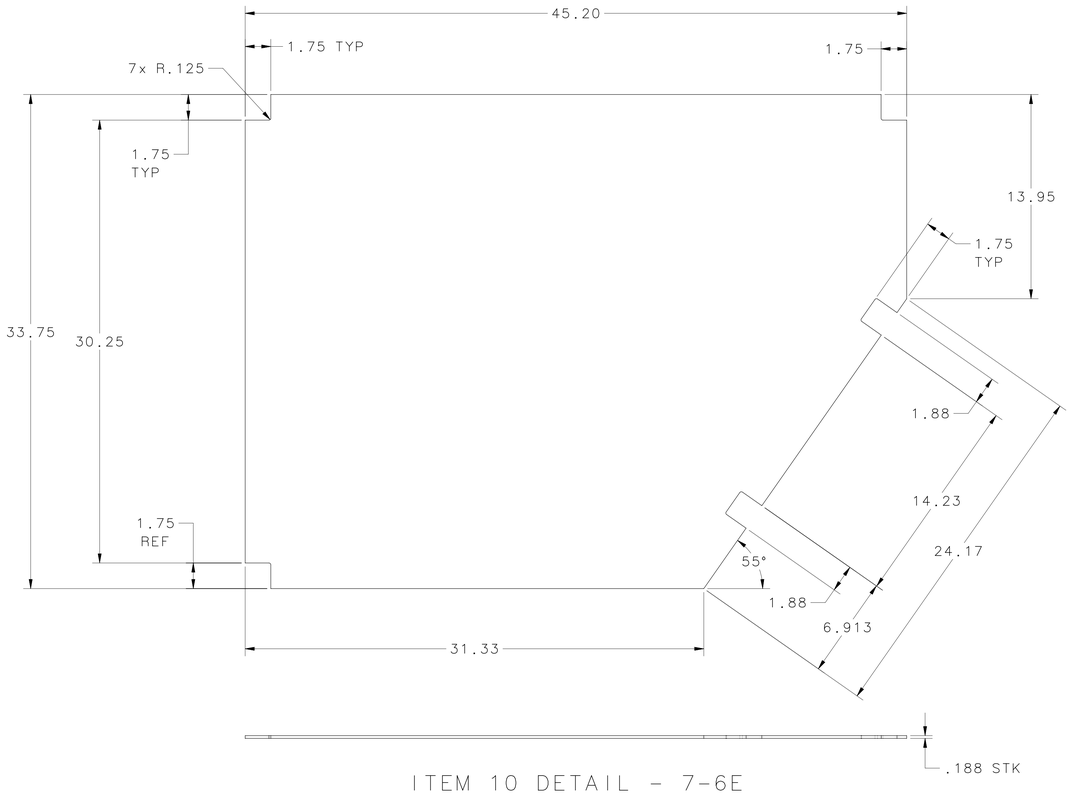
ITEM 8 DETAIL - 6-2C
(1 REQUIRED)



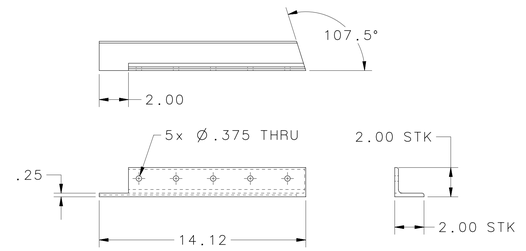
ITEM 9 DETAIL - 6-1A
(1 REQUIRED)

SIZE	DWG. NO.	REV.
E	A00000-01-01-2501	A
SCALE 1:4	USED ON ASSY NO. A00000-01-01-2500	SHEET 6 OF 9

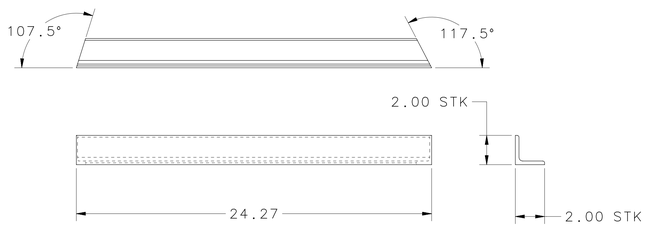
Approved: 8/21/2015; E-Sign ID : 307976; signed by: Ap. 1: W. Seay; C.: W. Seay; D: T. Fuell



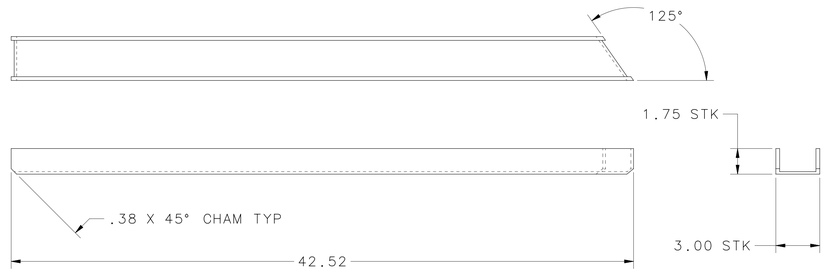
ITEM 10 DETAIL - 7-6E
(2 REQUIRED)



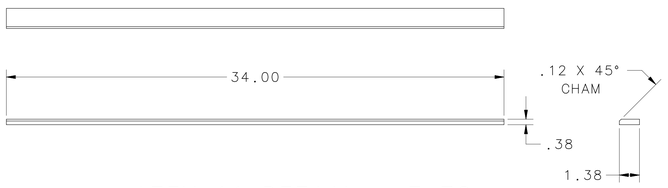
ITEM 15 DETAIL - 7-3G
(1 REQUIRED)



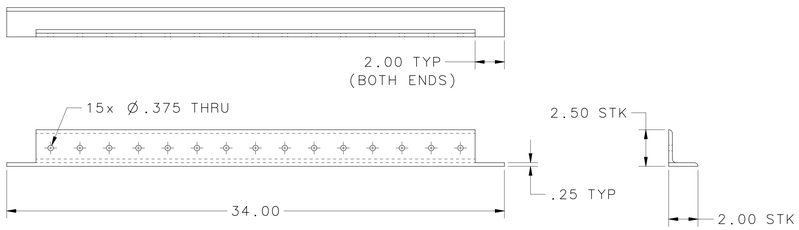
ITEM 16 DETAIL - 7-2F
(1 REQUIRED)



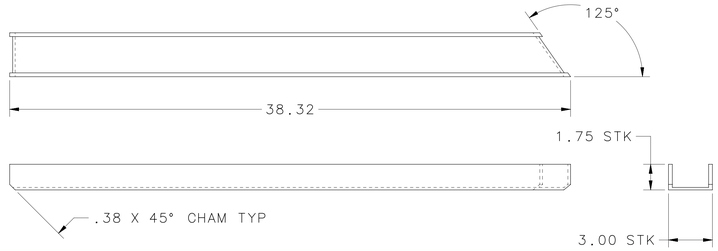
ITEM 17 DETAIL - 7-2D
(1 REQUIRED)



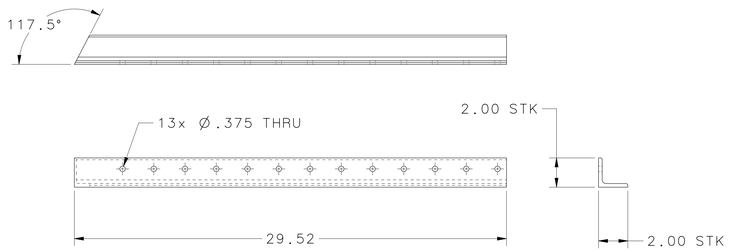
ITEM 11 DETAIL - 7-7C
(1 REQUIRED)



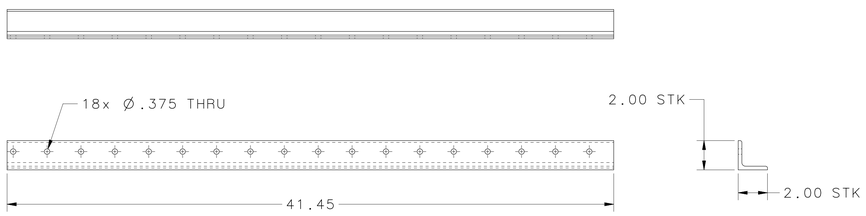
ITEM 13 DETAIL - 7-5B
(1 REQUIRED)



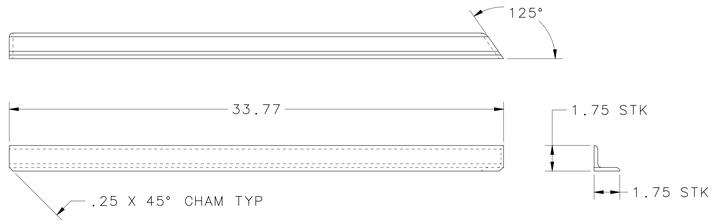
ITEM 18 DETAIL - 7-2C
(1 REQUIRED)



ITEM 12 DETAIL - 7-7A
(1 REQUIRED)



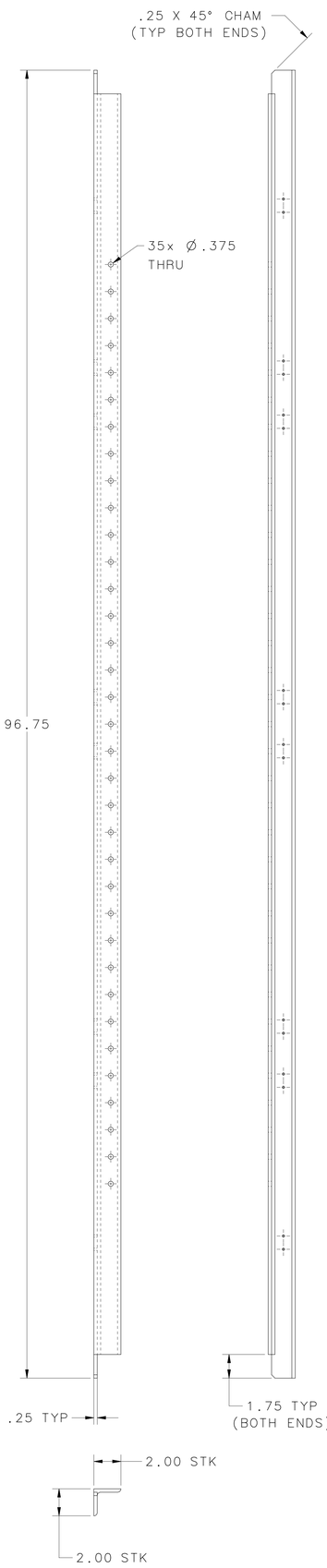
ITEM 14 DETAIL - 7-4A
(1 REQUIRED)



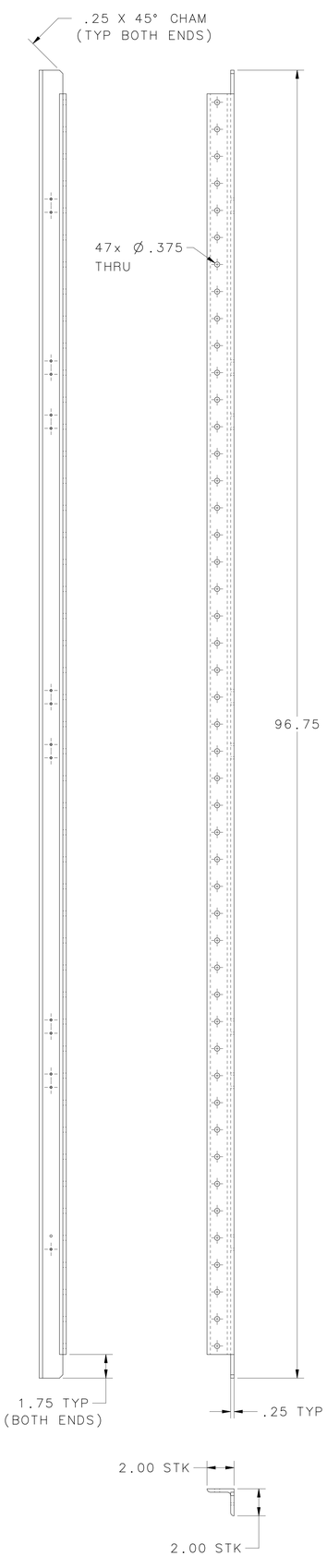
ITEM 19 DETAIL - 7-2A
(1 REQUIRED)

SIZE	DWG. NO.	REV.
E	A00000-01-01-2501	A
SCALE 1:4	USED ON ASSY NO. A00000-01-01-2500	SHEET 7 OF 9

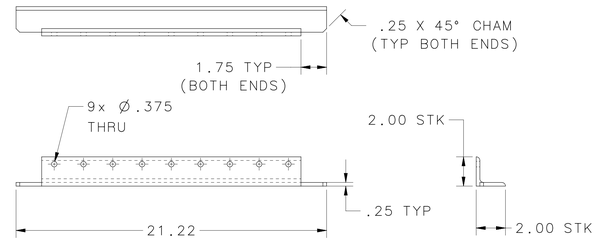
Approved: 8/21/2015; E-Sign ID : 307976; signed by: Ap. 1: W. Seay; C.: W. Seay; D: T. Fuell



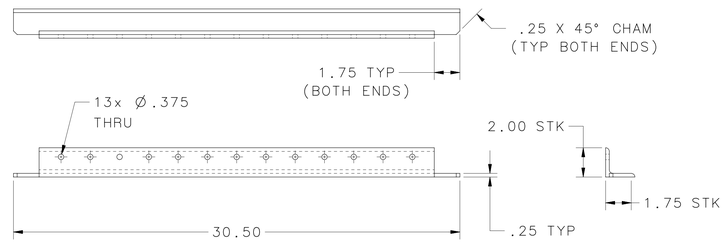
ITEM 20 DETAIL 8-7A
(1 REQUIRED)



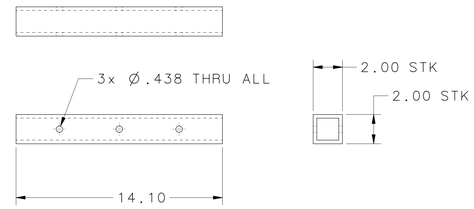
ITEM 21 DETAIL 8-6A
(1 REQUIRED)



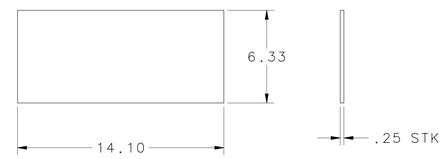
ITEM 22 DETAIL 8-4G
(2 REQUIRED)



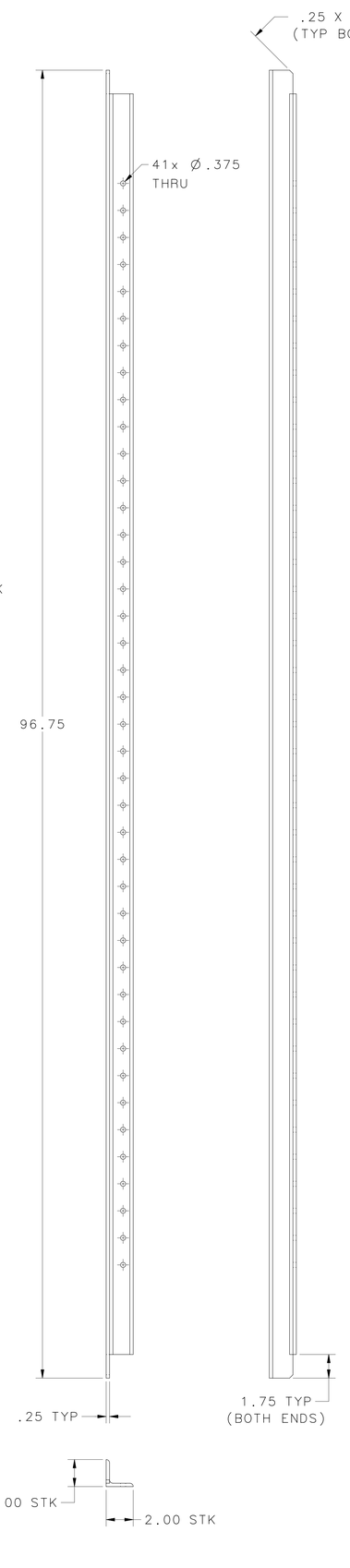
ITEM 24 DETAIL 8-4E
(2 REQUIRED)



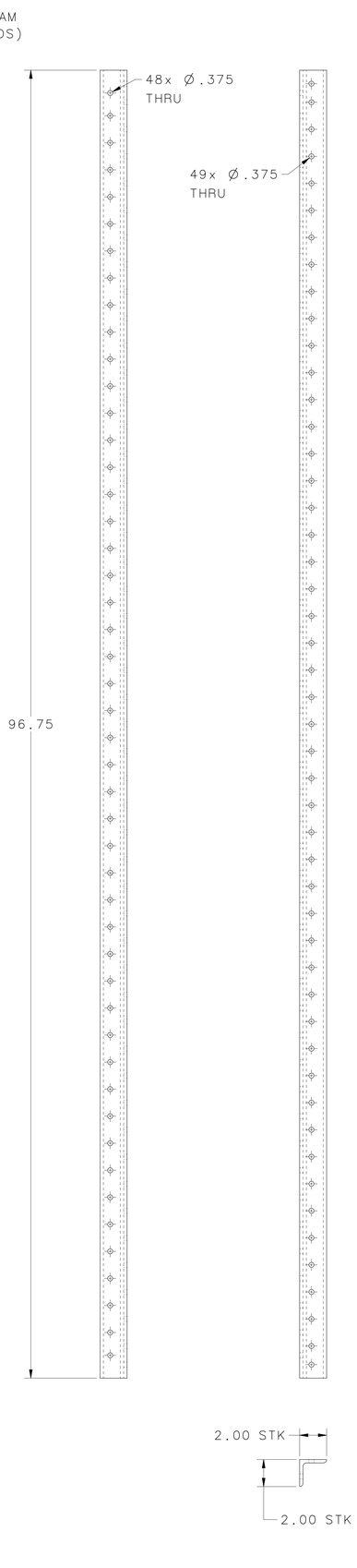
ITEM 28 DETAIL 8-4D
(2 REQUIRED)



ITEM 31 DETAIL 8-4C
(2 REQUIRED)



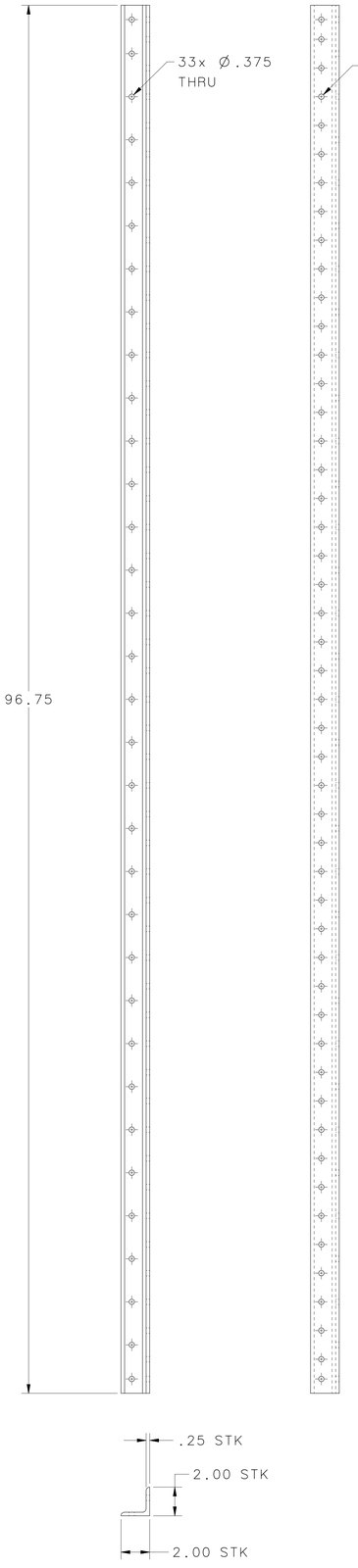
ITEM 23 DETAIL 8-2A
(2 REQUIRED)



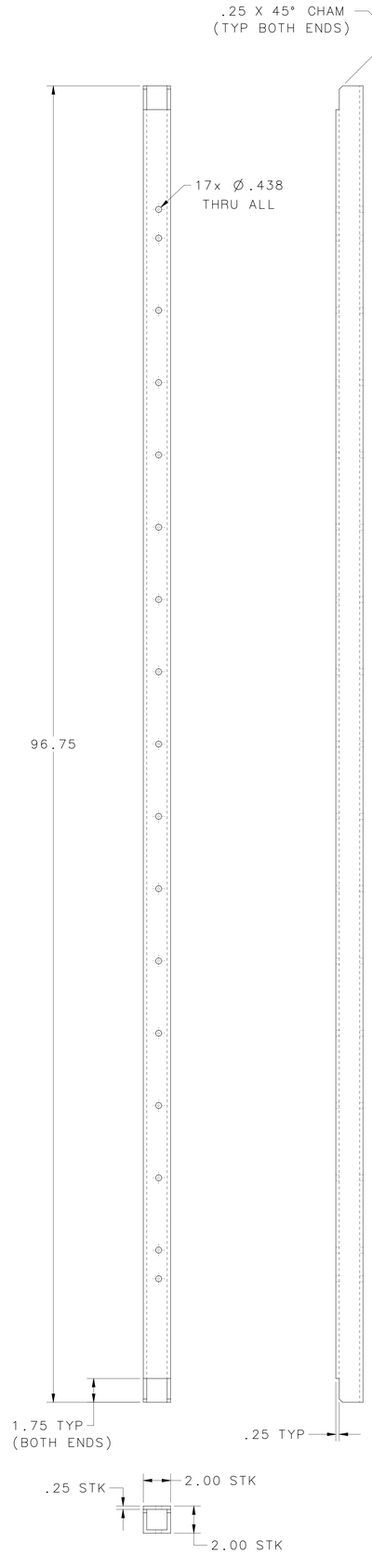
ITEM 25 DETAIL 8-1A
(2 REQUIRED)

SIZE	DWG. NO.	REV.
E	A00000-01-01-2501	A
SCALE 1:4	USED ON ASSY NO. A00000-01-01-2500	SHEET 8 OF 9

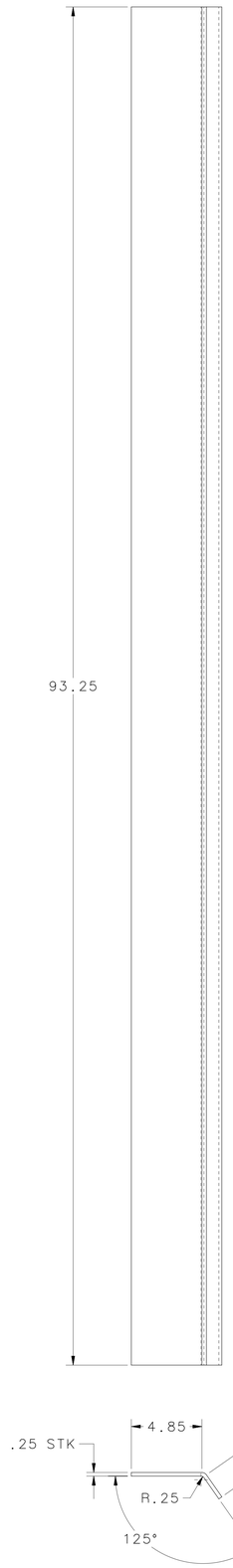
Approved: 8/21/2015; E-Sign ID : 307976; signed by: Ap. 1: W. Seay; C.: W. Seay; D: T. Fuell



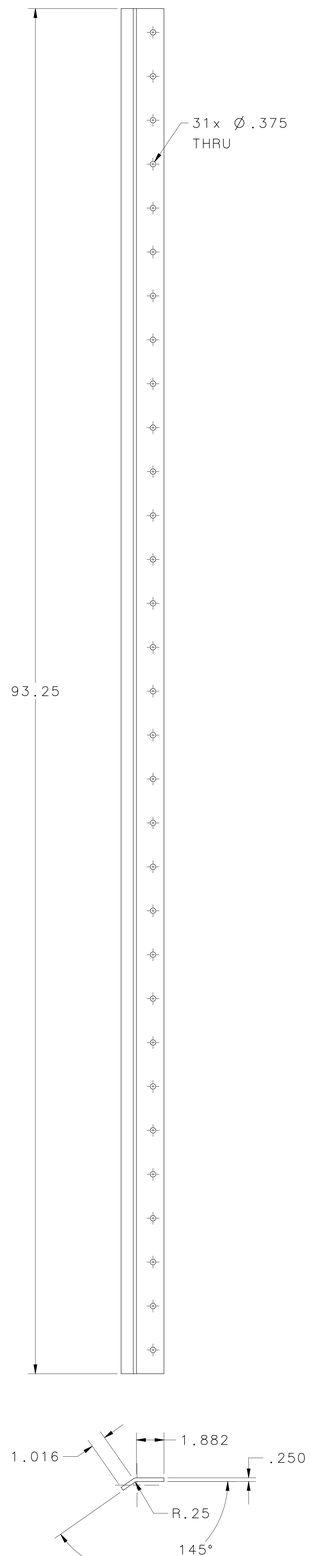
ITEM 26 DETAIL 9-7A
(1 REQUIRED)



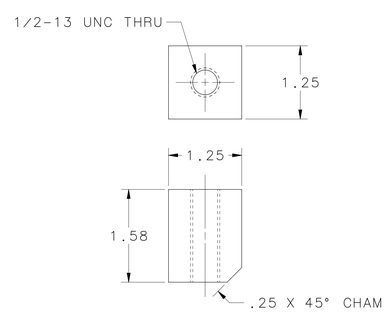
ITEM 27 DETAIL 9-5A
(2 REQUIRED)



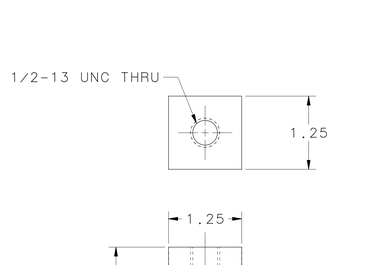
ITEM 29 DETAIL 9-4A
(1 REQUIRED)



ITEM 30 DETAIL 9-2A
(1 REQUIRED)



ITEM 33 DETAIL 9-1G
(4 REQUIRED)

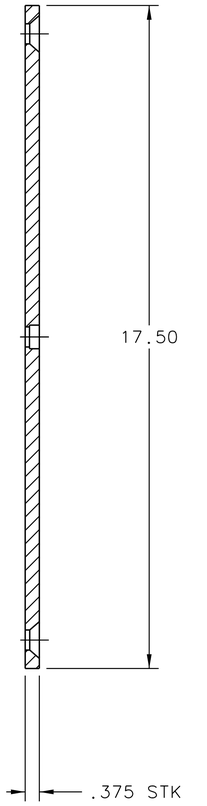


ITEM 34 DETAIL 9-1E
(4 REQUIRED)

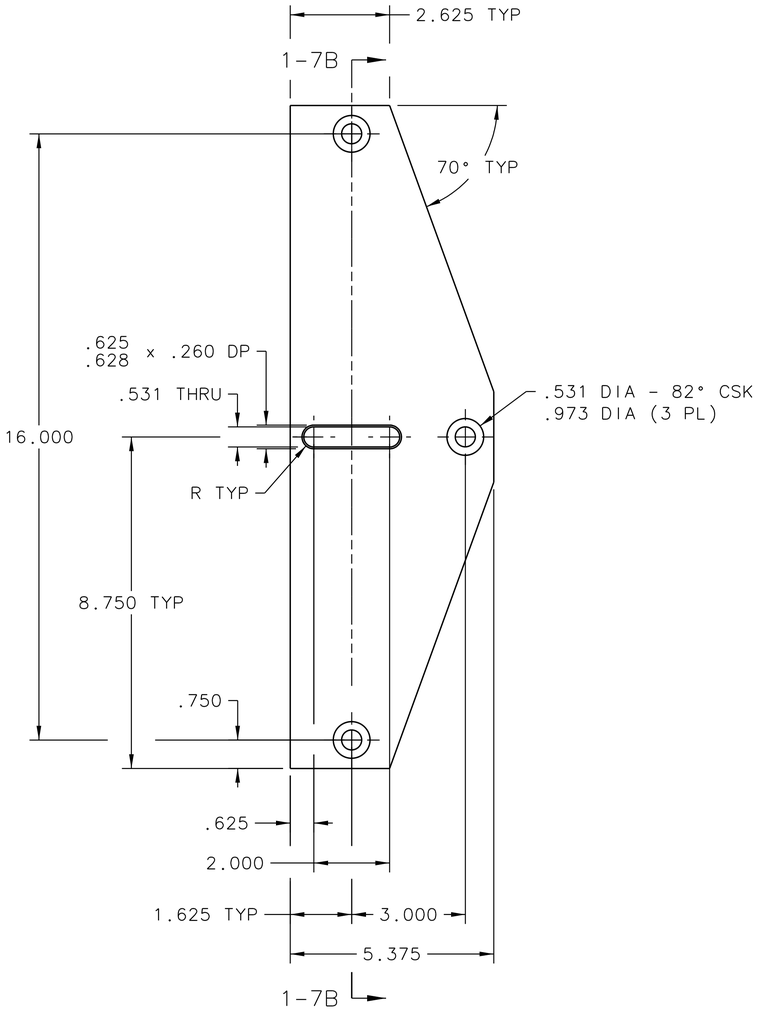
SIZE	DWG. NO.	REV.
E	A00000-01-01-2501	A
SCALE 1:4	USED ON ASSY NO. A00000-01-01-2500	SHEET 9 OF 9

Approved: 8/21/2015; E-Sign ID : 307976; signed by: Ap. 1: W. Seay; C.: W. Seay; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



FRONT VIEW 1-7B
(1-5B)



R SIDE VIEW 1-5B

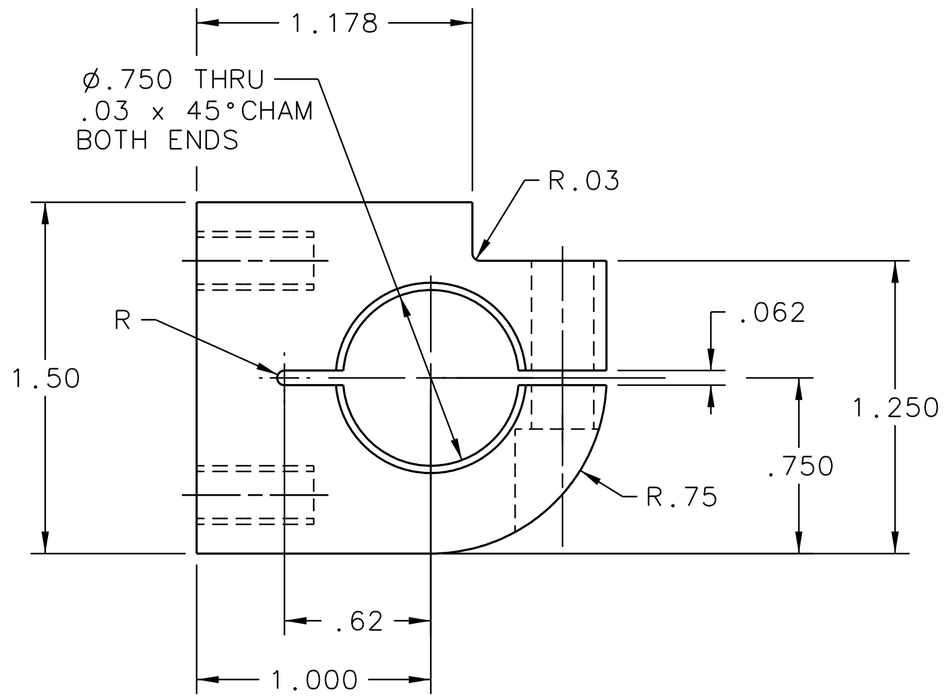
NOTES:

1. PART TO BE CONDITIONED FOR SAFE HANDLING. REMOVE ALL BURRS AND SHARP EDGES.
2. WEIGHT IS APPROXIMATELY 2-1/2 LBS.

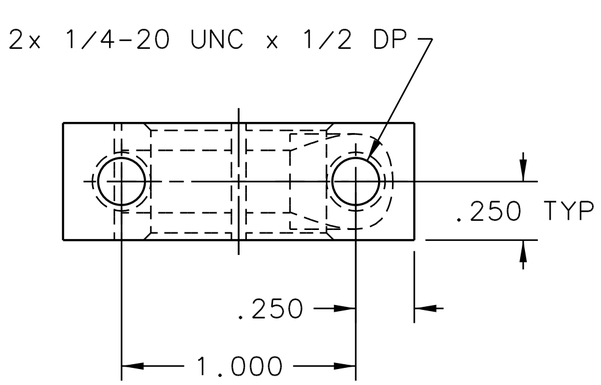
DOCUMENT CONTROL STAMP	DIM & TOL PER ASME Y14.5. UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES. TOLERANCES ARE: FRACTIONS ± N/A; DECIMAL .X ±.1, .XX ±.01, .XXX ±.005; ANGLES ± .50°	TRACKING NO. N/A	United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia
MATERIAL 6061-T6 ALUMINUM	THIRD ANGLE PROJECTION	APPROVALS / DATE: DRAWN S. ESP 03 OCT 13; CHECKED; APPROVED; APPROVED	HALL A - GENL EQUIPMENT GRINCH DETECTOR ASSY LARGE REFLECTOR ASSY PLATE STATIC LARGE
FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED; DEBURR & BREAK ALL SHARP EDGES			SIZE D; DWG. NO. A00000-01-01-2405; REV. –
DO NOT SCALE DRAWING			SCALE 1:2; USED ON ASSY NO. A00000-01-01-2400; SHEET 1 OF 1

Approved: 10/15/2013, E-Sign ID: 244726, signed by: Ap. 2: R. Wines; Ap. 1: B. Wojtsekhowski; C.: B. Wojtsekhowski; D: T. Fuell

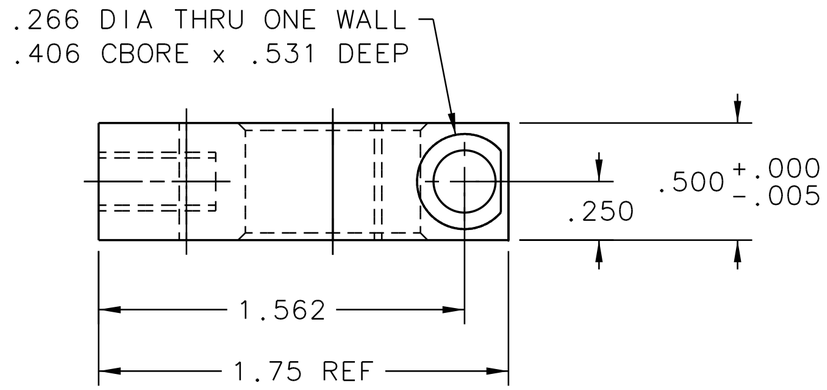
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



TOP VIEW 1-3C



L SIDE VIEW 1-4B



FRONT VIEW 1-3B

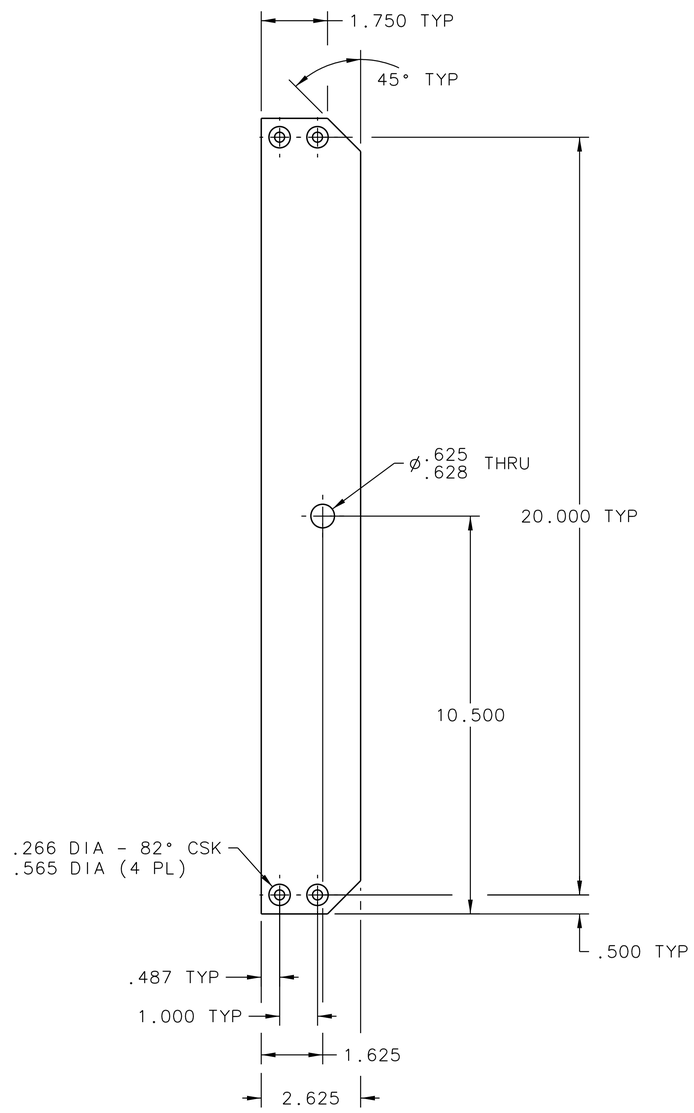
NOTES:

1. PART TO BE CONDITIONED FOR SAFE HANDLING. REMOVE ALL BURRS AND SHARP EDGES.

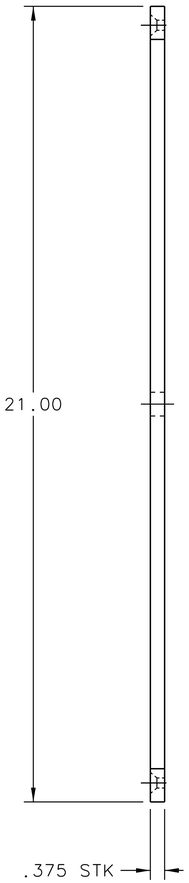
DOCUMENT CONTROL STAMP	DIM & TOL PER ASME Y14.5. UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS ± N/A; DECIMAL .X ± .1, .XX ± .01, .XXX ± .005; ANGLES ± .50°	TRACKING NO. N/A	United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia
MATERIAL 6061-T6 ALUMINUM	THIRD ANGLE PROJECTION	APPROVALS / DATE	HALL A - GENL EQUIPMENT GRINCH DETECTOR ASSY LARGE REFLECTOR ASSY ONE-PIECE CLAMP-ON SHAFT COLLAR
FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED DEBURR & BREAK ALL SHARP EDGES		DRAWN S. ESP — 03 OCT 13	SIZE C — DWG. NO. A00000-01-01-2404 — REV. –
DO NOT SCALE DRAWING		CHECKED	SCALE 2:1 — USED ON ASSY NO. A00000-01-01-2400 — SHEET 1 OF 1
		APPROVED	
		APPROVED	

Approved: 10/15/2013; E-Sign ID : 244725; signed by: Ap. 2: R. Wines; Ap. 1: B. Wojtsekhowski; C.: B. Wojtsekhowski; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



L SIDE VIEW 1-7B



FRONT VIEW 1-5B

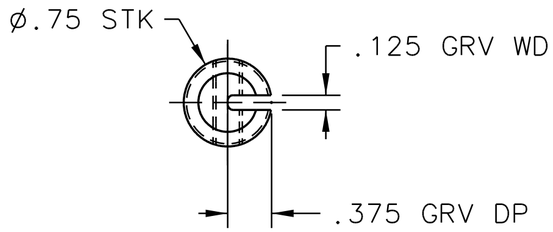
NOTES:

1. PART TO BE CONDITIONED FOR SAFE HANDLING. REMOVE ALL BURRS AND SHARP EDGES.
2. WEIGHT IS APPROXIMATELY 2 LBS.

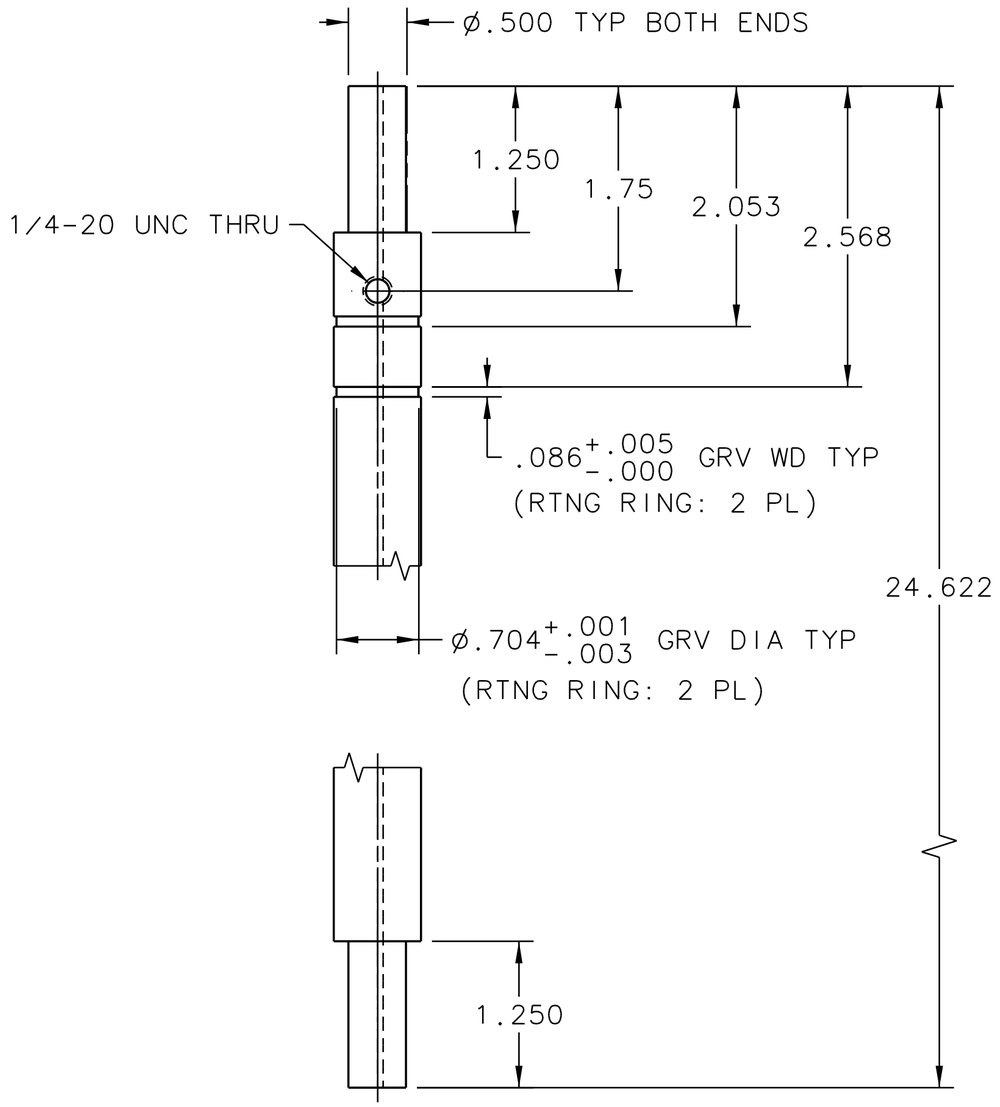
DOCUMENT CONTROL STAMP	DIM & TOL PER ASME Y14.5 - UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS ± N/A DECIMAL .X ±.1 .XX ±.01 .XXX ±.005 ANGLES ± .50°	TRACKING NO. N/A	United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia
MATERIAL 6061-T6 ALUMINUM	THIRD ANGLE PROJECTION	APPROVALS / DATE: DRAWN S. ESP 03 OCT 13; CHECKED; APPROVED; APPROVED	HALL A - GENL EQUIPMENT GRINCH DETECTOR ASSY LARGE REFLECTOR ASSY PLATE ROTATIONAL LGE
FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED DEBURR & BREAK ALL SHARP EDGES			SIZE D; DWG. NO. A00000-01-01-2403; REV. -
DO NOT SCALE DRAWING			SCALE 1:2; USED ON ASSY NO. A00000-01-01-2400; SHEET 1 OF 1

Approved: 10/15/2013; E-Sign ID: 244724; signed by: Ap. 2: R. Wines; Ap. 1: B. Wojtsekhowski; C.: B. Wojtsekhowski; D: T. Ruell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



TOP VIEW 1-4D



FRONT VIEW 1-4A

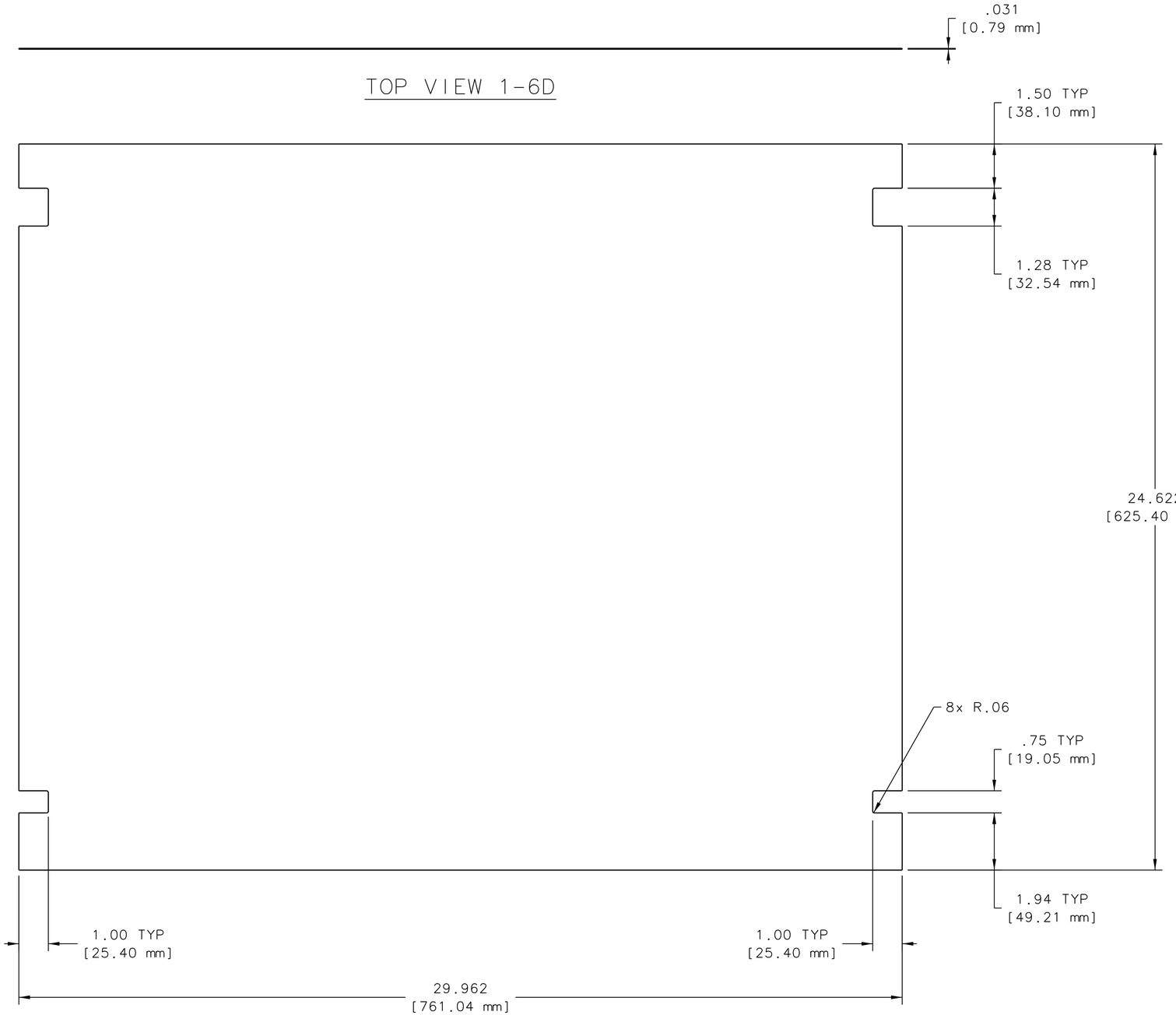
NOTES:

1. PART TO BE CONDITIONED FOR SAFE HANDLING. REMOVE ALL BURRS AND SHARP EDGES.
2. WEIGHT IS APPROXIMATELY 1 LB.

DOCUMENT CONTROL STAMP	DIM & TOL PER ASME Y14.5. UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: FRACTIONS ± N/A; DECIMAL .X ±.1, .XX ±.01, .XXX ±.005; ANGLES ± .50°	TRACKING NO. N/A	United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia
MATERIAL 6061-T6 ALUMINUM ROUND	THIRD ANGLE PROJECTION	APPROVALS / DATE	HALL A - GENL EQUIPMENT GRINCH DETECTOR ASSY LARGE REFLECTOR ASSY ROUND 3/4 OD LGE REFL HOLDER
FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED DEBURR & BREAK ALL SHARP EDGES		DRAWN S. ESP 03 OCT 13	SIZE C; DWG. NO. A00000-01-01-2402; REV. -
DO NOT SCALE DRAWING		CHECKED	SCALE 1:1; USED ON ASSY NO. A00000-01-01-2400; SHEET 1 OF 1
		APPROVED	
		APPROVED	

Approved: 10/15/2013; E-Sign ID : 244715; signed by: Ap. 2: R. Wines; Ap. 1: B. Wojtsekhowski; C.: B. Wojtsekhowski; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



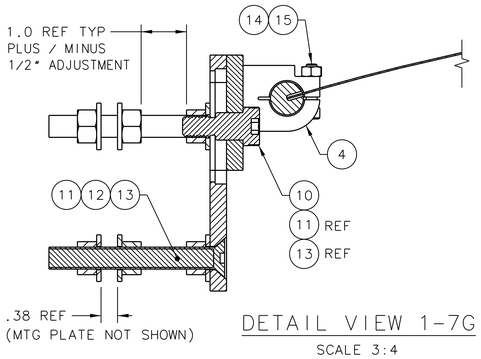
NOTES:

1. PART TO BE CONDITIONED FOR SAFE HANDLING. REMOVE ALL BURRS AND SHARP EDGES.
2. WEIGHT IS APPROXIMATELY 2 LBS.

DOCUMENT CONTROL STAMP	DIM & TOL PER ASME Y14.5. UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES. TOLERANCES ARE: FRACTIONS ± N/A; DECIMAL .X ±.1, .XX ±.01, .XXX ±.005; ANGLES ±.50°	TRACKING NO. N/A	United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia
MATERIAL: ALUMINUM	THIRD ANGLE PROJECTION	APPROVALS / DATE: DRAWN S. ESP 03 OCT 13; CHECKED; APPROVED; APPROVED	HALL A - GENL EQUIPMENT GRINCH DETECTOR ASSY LARGE REFLECTOR ASSY REFLECTOR LARGE - FLAT PATTERN
FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED: DEBURR & BREAK ALL SHARP EDGES			SIZE D; DWG. NO. A00000-01-01-2401; REV. –
DO NOT SCALE DRAWING			SCALE 1:2; USED ON ASSY NO. A00000-01-01-2400; SHEET 1 OF 1

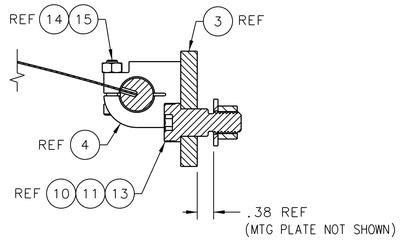
Approved: 10/15/2013; E-Sign ID: 244714; signed by: Ap. 2: R. Wines; Ap. 1: B. Wojtsekhowski; C.: B. Wojtsekhowski; D: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



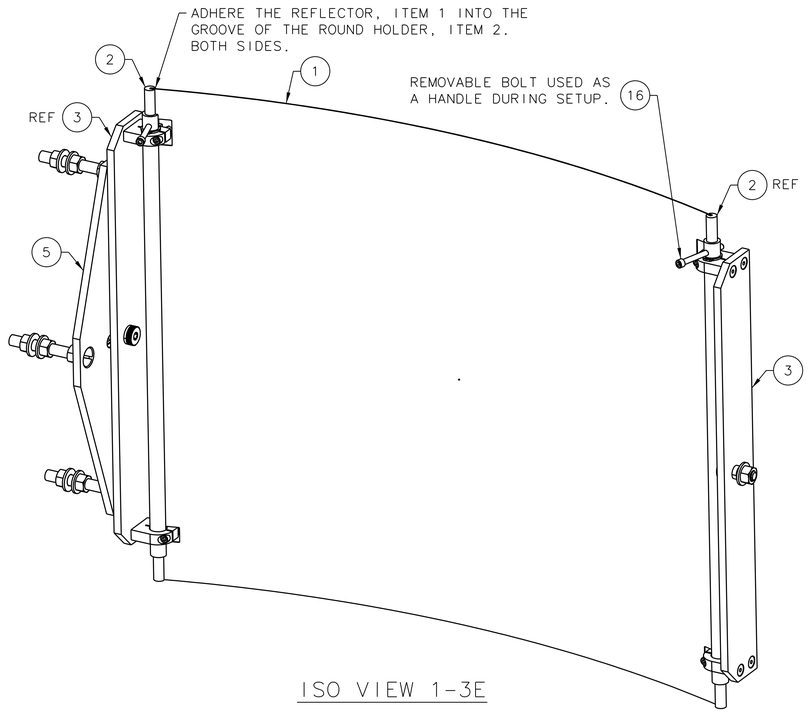
DETAIL VIEW 1-7G

SCALE 3:4
(1-6E)

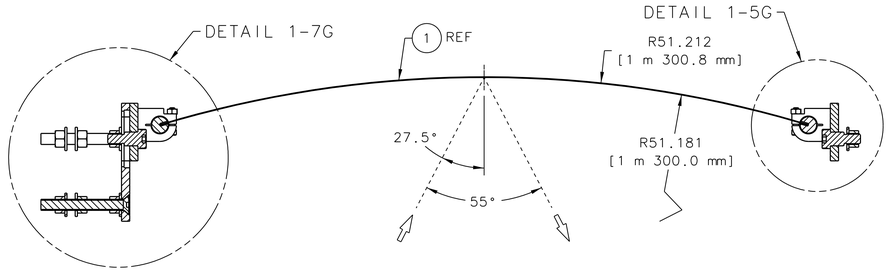


DETAIL VIEW 1-5G

SCALE 3:4
(1-6E)

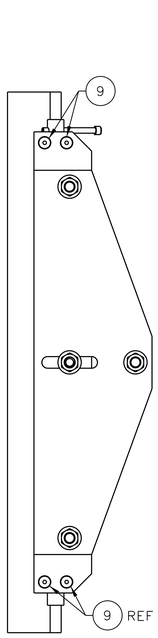


ISO VIEW 1-3E

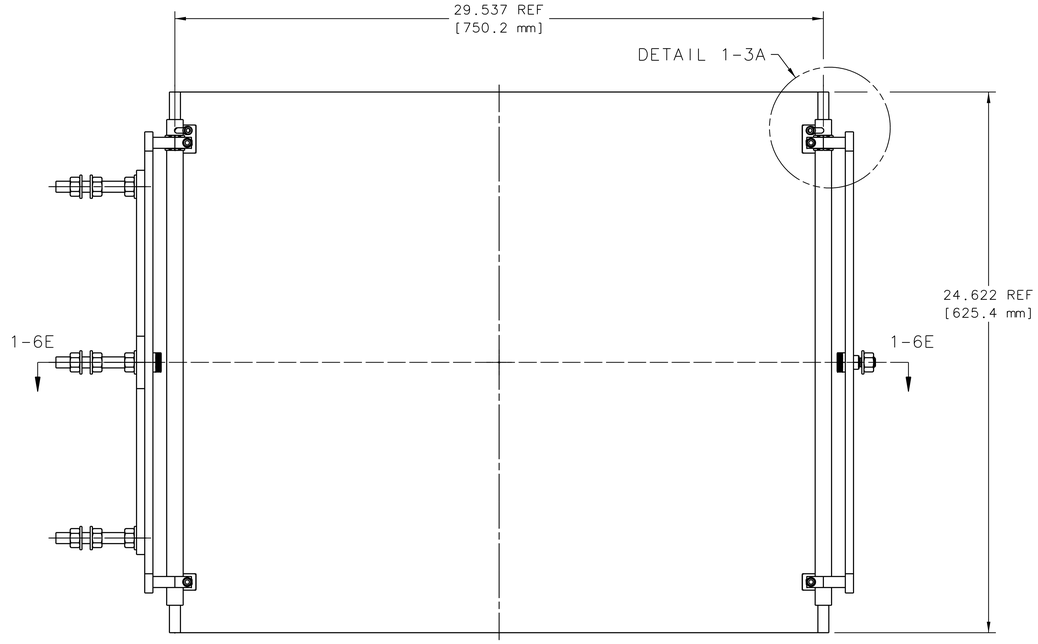


SECTION VIEW 1-6E

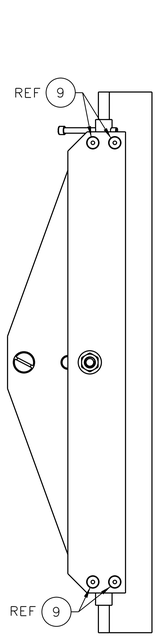
(1-6B)



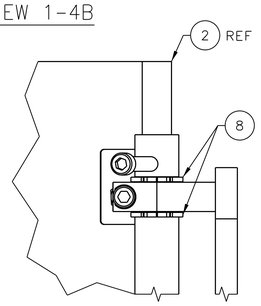
L SIDE VIEW 1-8B



FRONT VIEW 1-6B



R SIDE VIEW 1-4B



DETAIL 1-3A

(TYP BOTOH SIDES)
SCALE 1:1
(1-6B)

NOTES:

1. WEIGHT IS APPROXIMATELY 13 LBS.

QTY REQD	ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	NOTES
2	16	McMASTER-CARR 92196A552	SOCKET HEAD CAP SCREW 1/4-20 UNC x 2-1/2" LG	18-8 STNLS STL	-
4	15	McMASTER-CARR 94804A305	NUT HEX 1/4-28 UNF RGLR	316 STNLS STL	-
4	14	McMASTER-CARR 92185A564	SOCKET HEAD CAP SCREW 1/4-28 UNF x 1.0" LG	316 STNLS STL	-
11	13	McMASTER-CARR 91950A033	WASHER 1/2 RGLR	316 STNLS STL	-
3	12	BOLT DEPOT 3573	SLOTTED FLAT HEAD SCREW 1/2-13 UNC x 4.0" LG	18-8 STNLS STL	-
11	11	McMASTER-CARR 94804A340	NUT HEX 1/2-13 UNC THD	316 STNLS STL	-
2	10	McMASTER-CARR 90298A791	SHOULDER SCREW - 5/8" SHLDR DIA x 5/8" LG, 1/2-13 x 3/4 LG THD	18-8 STNLS STL	-
8	9	McMASTER-CARR 90585A540	1/4-20 UNC x 3/4" LG FLAT SOCKET HEAD CAP SCREW	316 STNLS STL	-
4	8	McMASTER-CARR 93416A309	RETAINING RING HEAVY DUTY EXTERNAL FOR 3/4 SHAFT DIA	17-7 PH STNLS STL	-
-	7	-	-	-	-
-	6	-	-	-	-
1	5	A00000-01-01-2405	PLATE STATIC LARGE 3/8 INCH THICK	6061-T6 ALUMINUM	-
4	4	A00000-01-01-2404	ONE-PIECE CLAMP-ON SHAFT COLLAR 1/2 INCH THICK	6061-T6 ALUMINUM	-
2	3	A00000-01-01-2403	PLATE ROTATIONAL LGE 3/8 INCH THICK	6061-T6 ALUMINUM	-
2	2	A00000-01-01-2402	ROUND 3/4 OD LGE REFL HOLDER	6061-T6 ALUMINUM	-
1	1	A00000-01-01-2401	REFLECTOR LARGE - FLAT PATTERN 1/32 INCH THICK	ALUMINUM	-

PARTS LIST

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

DOCUMENT CONTROL STAMP

MATERIAL: AS NOTED

FINISH: MACHINED SURFACES 125 UNLESS OTHERWISE NOTED. DEBURR & BREAK ALL SHARP EDGES.

DO NOT SCALE DRAWING

DIM & TOL PER ASME Y14.5. UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE:
FRACTIONS ± N/A; DECIMAL .X ± .1, .XX ± .01, .XXX ± .005; ANGLES ± .50°

THIRD ANGLE PROJECTION

TRACKING NO. N/A

APPROVALS	DATE
DRAWN S. ESP	03 OCT 13
CHECKED	
APPROVED	
APPROVED	

United States Department of Energy — Jefferson Lab, Thomas Jefferson National Accelerator Facility — Newport News Virginia

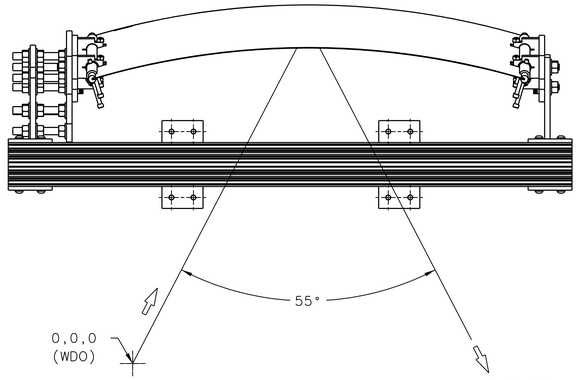
HALL A - GENL EQUIPMENT
DETECTOR - PARTICLE ID
GRINCH DETECTOR ASSY
LARGE REFLECTOR ASSY

SIZE E | DWG. NO. A00000-01-01-2400 | REV. -

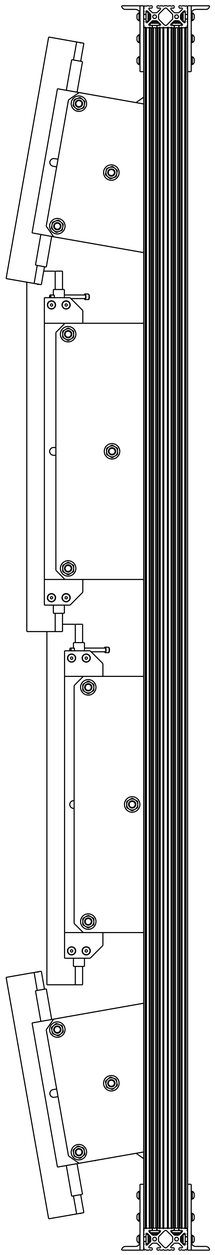
SCALE 3:8 | USED ON NEXT NO. A00000-01-01-2300 | SHEET 1 OF 1

Approved: 10/15/2013; E-Sign ID: 244723; signed by: Ap. 2: R. Wines; Ap. 1: B. Wojtsekhowski; C: B. Wojtsekhowski; D: T. Fuell

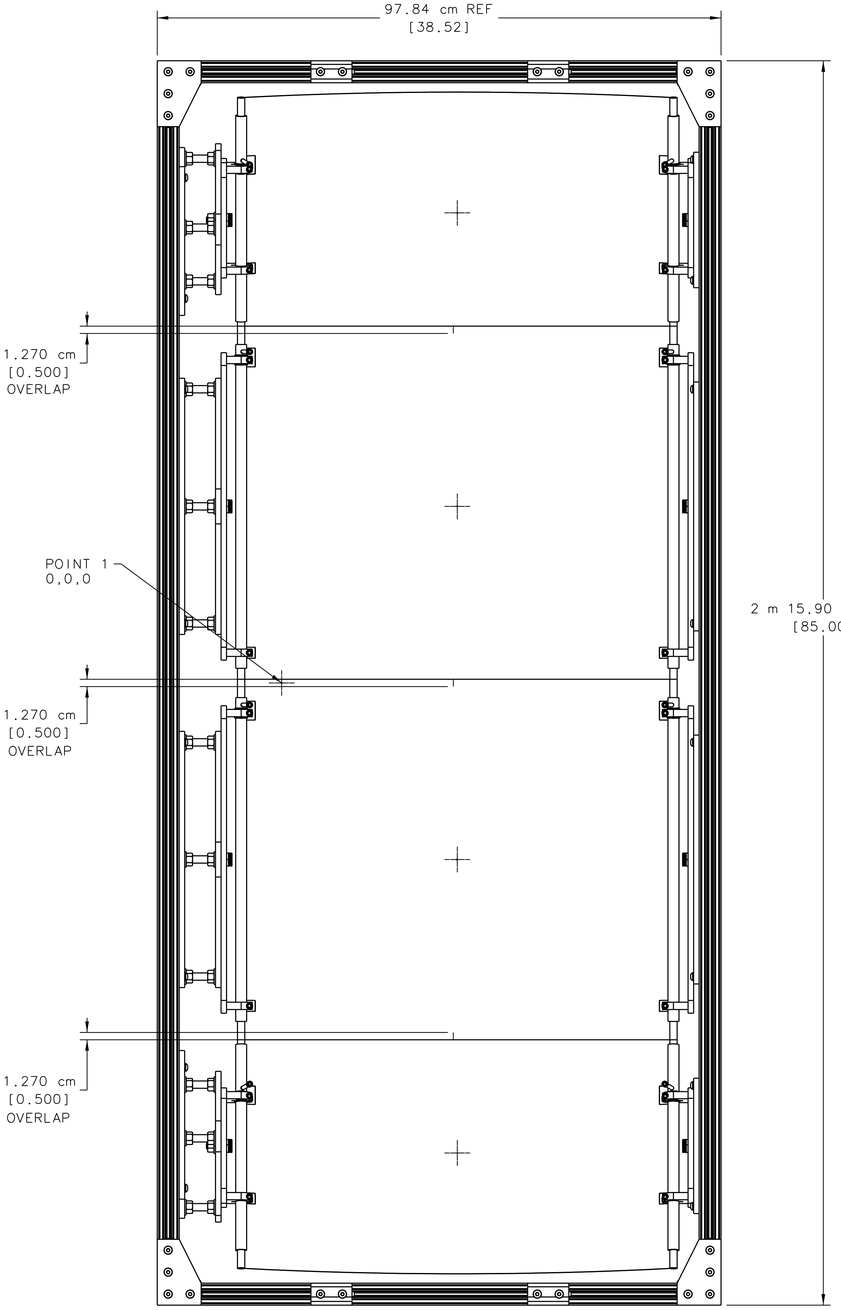
REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



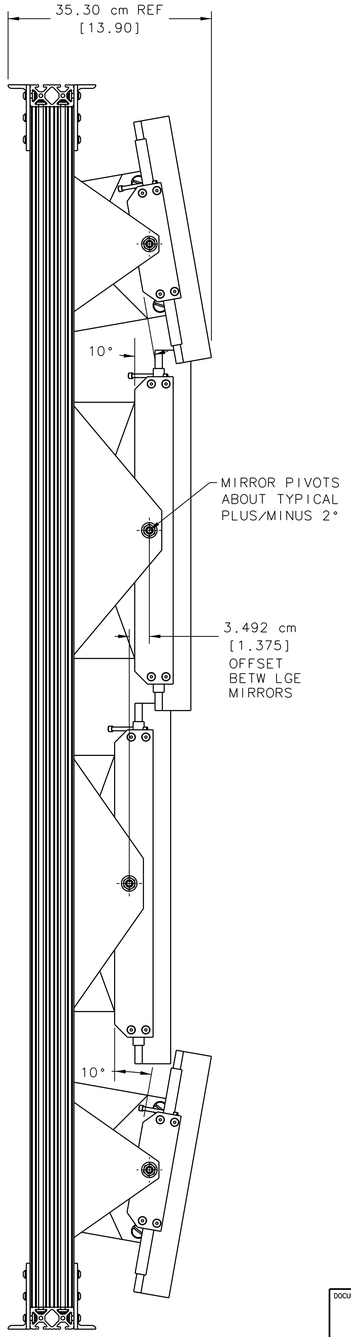
TOP VIEW 1-6G



L SIDE VIEW 1-7A



FRONT VIEW 1-6A



R SIDE VIEW 1-3A

NOTES:

1. WEIGHT IS APPROXIMATELY 130 LBS.

QTY. REQD	ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	NOTES
1	3	A00000-01-01-2700	SUPPORT FRAME FOR REFLECTORS	-	-
2	2	A00000-01-01-2600	SMALL REFLECTOR ASSY	-	-
2	1	A00000-01-01-2400	LARGE REFLECTOR ASSY	-	-

PARTS LIST

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

DOCUMENT CONTROL STAMP

MATERIAL
AS NOTED

FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DIM & TOL PER ASME Y14.5 .
UNLESS OTHERWISE SPECIFIED
DIMENSIONS ARE IN INCHES
TOLERANCES ARE:
FRACTIONS ± N/A
DECIMAL .X ± .1 .XX ± .01 .XXX ± .005
ANGLES ± .50°

THIRD ANGLE PROJECTION

TRACKING NO. N/A

APPROVALS	DATE
DRAWN S. ESP	08 OCT 13
CHECKED	
APPROVED	
APPROVED	

United States Department of Energy
Jefferson Lab
Thomas Jefferson National Accelerator Facility
Newport News Virginia

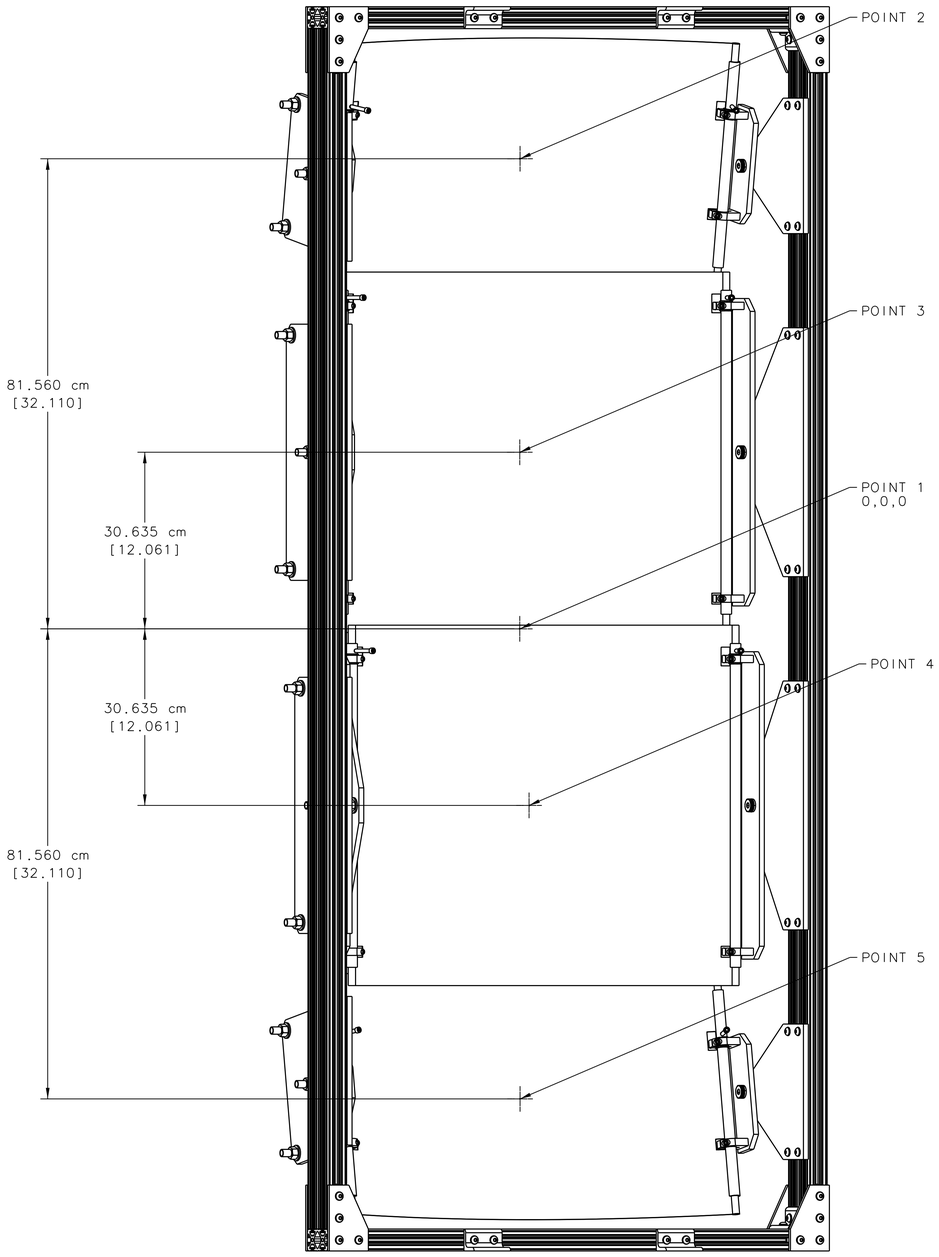
HALL A
GENL EQUIPMENT - PARTICLE ID
GRINCH DETECTOR ASSY
LGE / SM REFL IN SPRT FRAME ASSY

SIZE	DWG. NO.	REV.
E	A00000-01-01-2300	-

SCALE 1:4 USED ON ASSY NO. A00000-01-01-3200 SHEET 1 OF 2

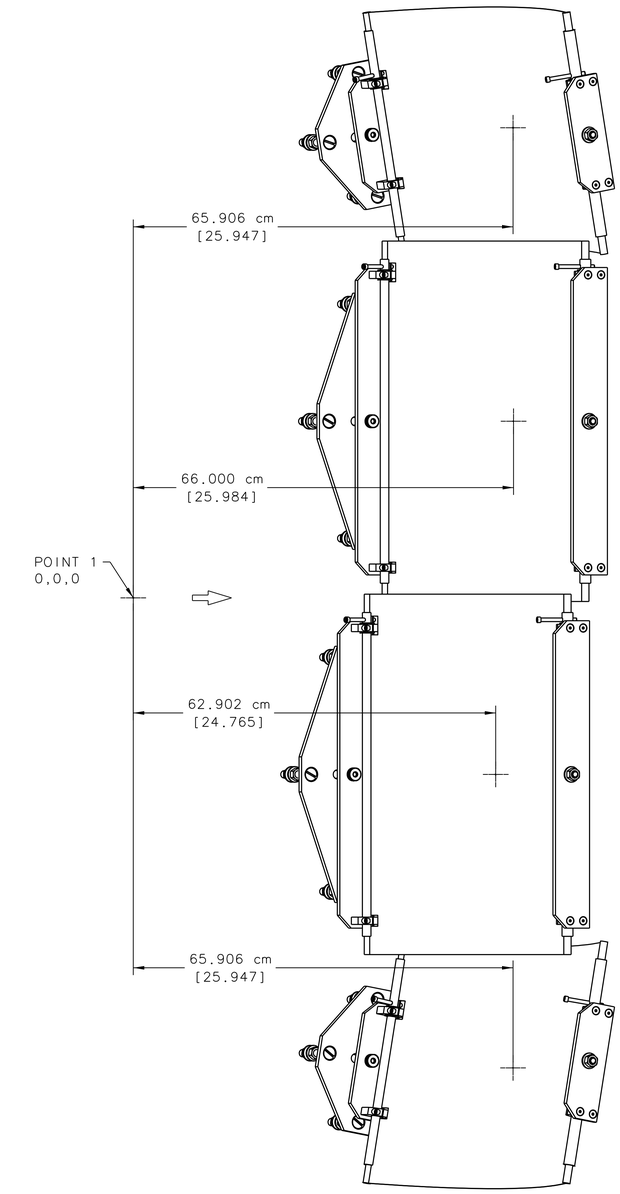
Approved: 10/15/2013; E-Sign ID: 244884; signed by: Ap. 2: R. Wines; Ap. 1: B. Wojtsekhowski; C: B. Wojtsekhowski; D: T. Fuell

MIRROR FRONT FACE CENTER COORDINATES			
UNITS ARE IN CM	CENTER		
	X	Y	Z
1. OPNG OF FRONT WINDOW:	0.000	0.000	0.000
2. TOP SMALL MIRROR:	0.049	81.560	-65.906
3. TOP LARGE MIRROR:	0.000	30.635	-66.000
4. BOTTOM LARGE MIRROR:	1.613	-30.635	-62.902
5. BOTTOM SMALL MIRROR:	0.049	-81.560	-65.906



LOOKING ALONG Z - VIEW 2-6A

(LOOKING DOWNSTREAM)



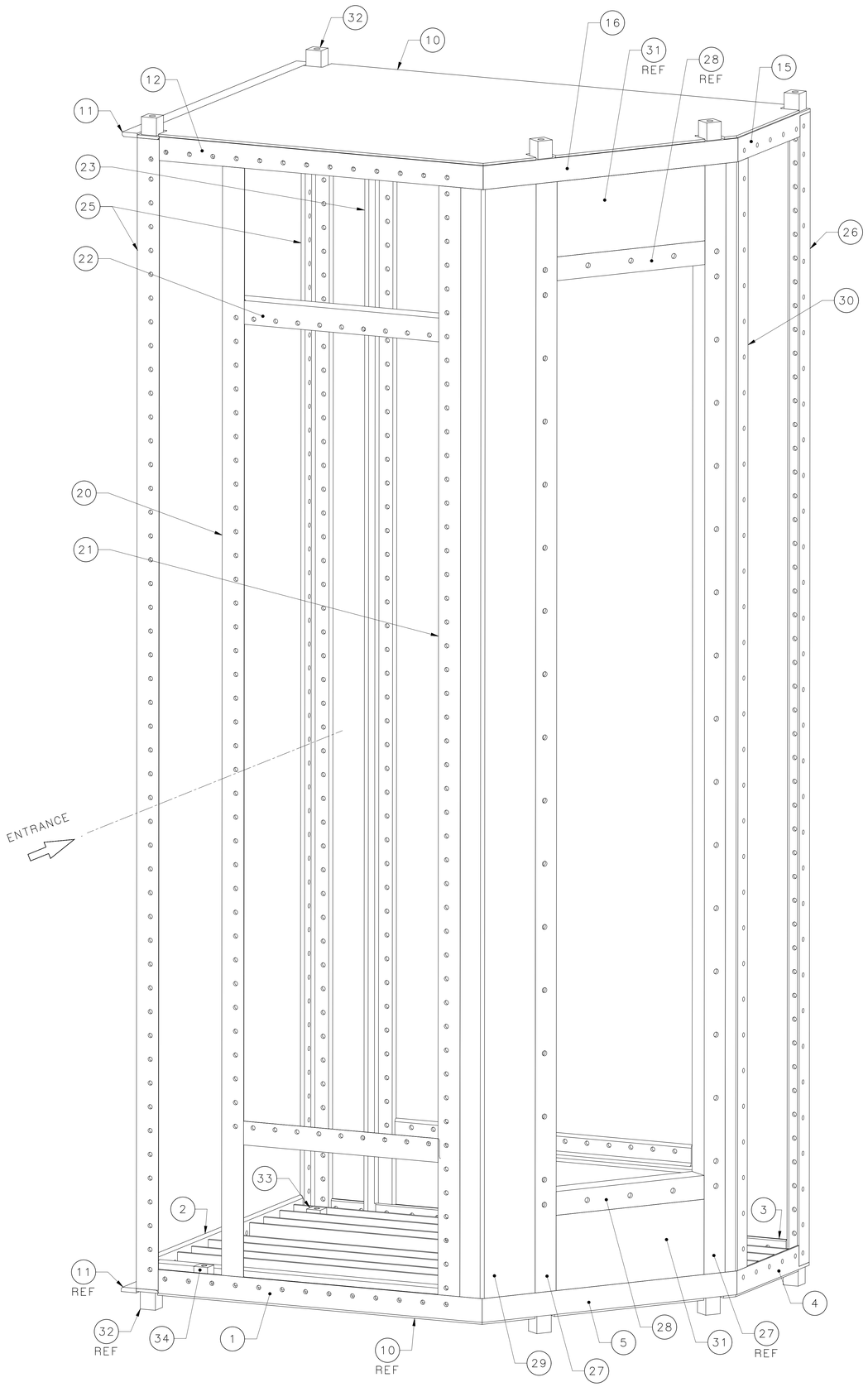
R SIDE VIEW 2-3A

(FRAME NOT SHOWN FOR CLARITY)

DOCUMENT CONTROL STAMP	SIZE	DWG. NO.	REV.
	E	A00000-01-01-2300	-
	SCALE 1:4	USED ON ASSY NO. A00000-01-01-3200	SHEET 2 OF 2

Approved: 10/15/2013; E-Sign ID : 2446814; signed by: Ap. 2: R. Wines; Ap. 1: B. Wojtaszkhowski; Cr: B. Wojtaszkhowski; Dr: T. Fuell

REVISION HISTORY				
ZONE	REV	DESCRIPTION	DATE	APPROVED



ISO VIEW 1-4A

QTY. REQD	ITEM NO.	PART OR IDENTIFYING NO.	NOMENCLATURE OR DESCRIPTION	MATERIAL SPECIFICATION	NOTES
4	34	-	THD BLOCK ENTR BASE MOUNT	STEEL A36	-
4	33	-	THD BLOCK EXIT BASE MOUNT	STEEL A36	-
10	32	-	THREADED BLOCK FOR HOIST RING	STEEL A36	-
2	31	-	RECT 1/4 THK PL PMT SIDE	STEEL A36	-
1	30	-	PL 1/4 IN THK VERT 145 DEG ANG	STEEL A36	-
1	29	-	PL 1/4 IN THK VERT 125 DEG ANG	STEEL A36	-
2	28	-	TBG SQ 2 X 1/4 HORIZ PMT SPRT	STEEL A36	-
2	27	-	TBG SQ 2 X 1/4 VERT PMT SPRT	STEEL A36	-
1	26	-	ANGLE 2 X 2 X 1/4 REAR VERT CORNER	STEEL A36	-
2	25	-	ANGLE 2 X 2 X 1/4 VERT CORNER	STEEL A36	SH 3
2	24	-	ANGLE 2X2X1/4 HORIZ EXIT WDO	STEEL A36	SH 4
2	23	-	ANGLE 2 X 2 X 1/4 EXIT VERT WDO SPRT	STEEL A36	-
2	22	-	ANGLE 2X2X1/4 HORIZ ENTR WDO	STEEL A36	-
1	21	-	ANGLE 2X2X1/4 ENTR RH VERT WDO SPRT	STEEL A36	-
1	20	-	ANGLE 2X2X1/4 ENTR LH VERT WDO SPRT	STEEL A36	-
1	19	MIRROR ITEM 9	ANGLE 1-3/4 X 1-3/4 X 1/4 BASE MBR	STEEL A36	SH 3
1	18	MIRROR ITEM 8	CHANNEL BASE ENTR C3 X 4.1	STEEL A36	SH 3
1	17	MIRROR ITEM 7	CHANNEL BASE CTR C3 X 4.1	STEEL A36	SH 3
1	16	MIRROR ITEM 5	ANGLE 2 X 2 X 1/4 ANG BOT	STEEL A36	-
1	15	MIRROR ITEM 4	ANGLE 2 X 2 X 1/4 RH BOT	STEEL A36	-
1	14	MIRROR ITEM 3	ANGLE 2 X 2 X 1/4 REAR	STEEL A36	SH 3
1	13	MIRROR ITEM 2	ANGLE 2-1/2 X 2 X 1/4 LH BOT	STEEL A36	SH 3
1	12	MIRROR ITEM 1	ANGLE 2 X 2 X 1/4 FR BOT	STEEL A36	-
2	11	-	LEDGE	STEEL A36	
2	10	-	PL 3/16 IN THK TOP & BOTTOM	STEEL A36	-
1	9	-	ANGLE 1-3/4 X 1-3/4 X 1/4 BASE MBR	STEEL A36	SH 3
1	8	-	CHANNEL BASE ENTR C3 X 4.1	STEEL A36	SH 3
1	7	-	CHANNEL BASE CTR C3 X 4.1	STEEL A36	SH 3
4	6	-	CHANNEL BASE EXIT C3 X 4.1	STEEL A36	SH 3
1	5	-	ANGLE 2 X 2 X 1/4 ANG BOT	STEEL A36	-
1	4	-	ANGLE 2 X 2 X 1/4 RH BOT	STEEL A36	-
1	3	-	ANGLE 2 X 2 X 1/4 REAR	STEEL A36	-
1	2	-	ANGLE 2-1/2 X 2 X 1/4 LH BOT	STEEL A36	-
1	1	-	ANGLE 2 X 2 X 1/4 FR BOT	STEEL A36	-

PARTS LIST

EACH SHEET OF MULTI-SHEET DRAWINGS SHALL ALWAYS HAVE THE SAME REVISION LEVEL.

NOTES:
1. WEIGHT IS APPROXIMATELY 770 LBS.
2. DRILL HOLES AFTER WELDING.
3. ALL WELDING SHALL BE IN COMPLIANCE WITH JLAB DRAWING NO.: A00000-23-00-0001.
4. THE JLAB RISK CODE IS 1; ALL WELDS ARE JLAB CLASS "A"; JLAB WPS 006 REVISION 1 SHALL BE USED. HOWEVER, IF THE WELDMENT IS FABRICATED BY A VENDOR OF JLAB, THIS SPECIFIC REQUIREMENT SHALL BE IGNORED.
5. ALL SURFACES SHALL BE SANDBLASTED DOWN TO BARE METAL. REMOVE SHARP CORNERS. CLEAN THOROUGHLY.

DIM & TOL PER ASME Y14.5.
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES.
TOLERANCES ARE:
FRACTIONS ± N/A | DECIMAL .X ±.1, .XX ±.01, .XXX ±.005 | ANGLES ± .50°

THIRD ANGLE PROJECTION

MATERIAL: SEE PARTS LIST

FINISH MACHINED SURFACES 125 UNLESS OTHERWISE NOTED
DEBURR & BREAK ALL SHARP EDGES

DO NOT SCALE DRAWING

DRAWN: S. ESP | DATE: 27 MAR 15

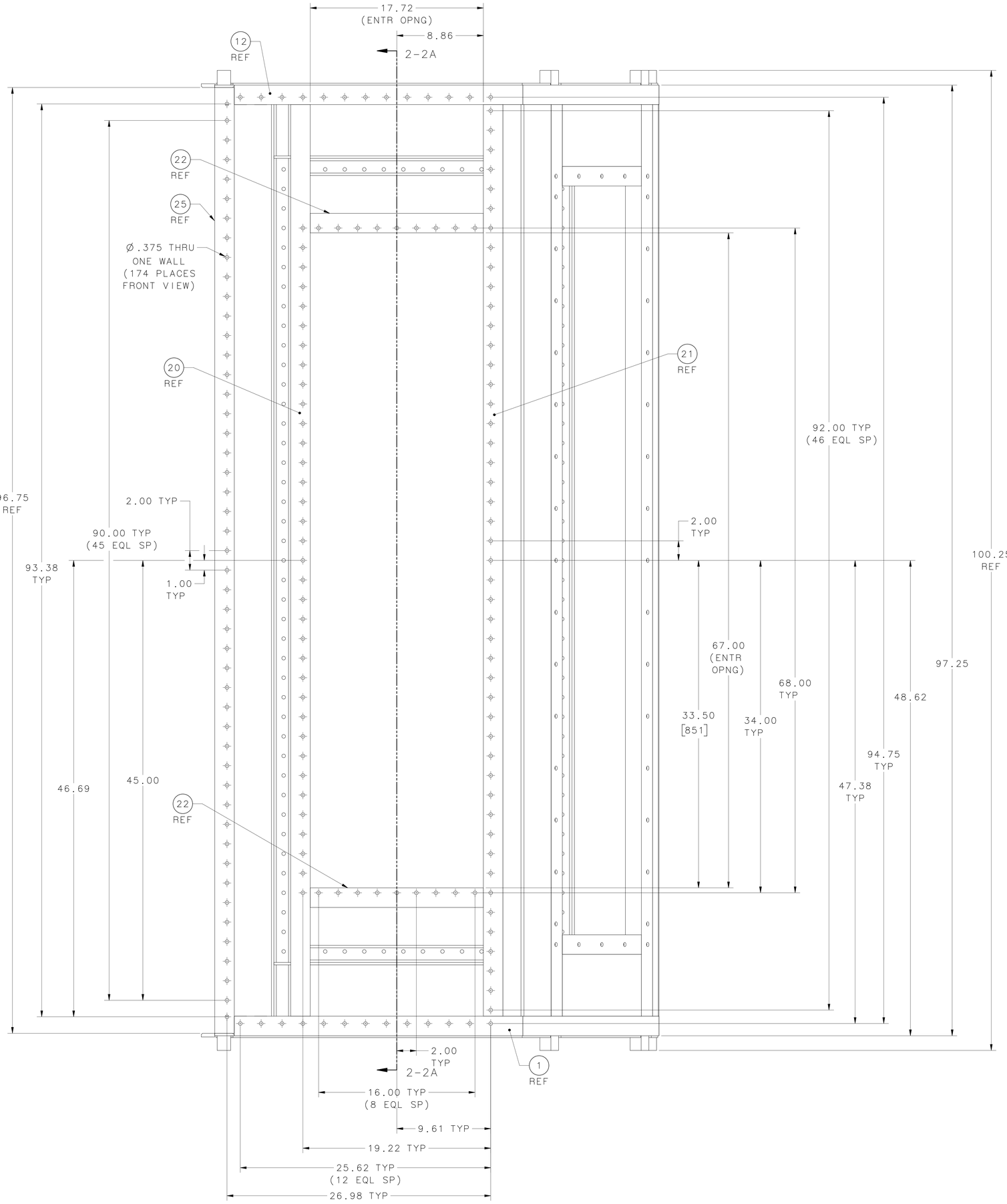
United States Department of Energy
Jefferson Lab — Thomas Jefferson National Accelerator Facility
Newport News Virginia

HALL A - GENL EQUIPMENT
GRINCH DETECTOR ASSY
MAIN BOX ASSY
GRINCH STRUCTURAL WLDMT

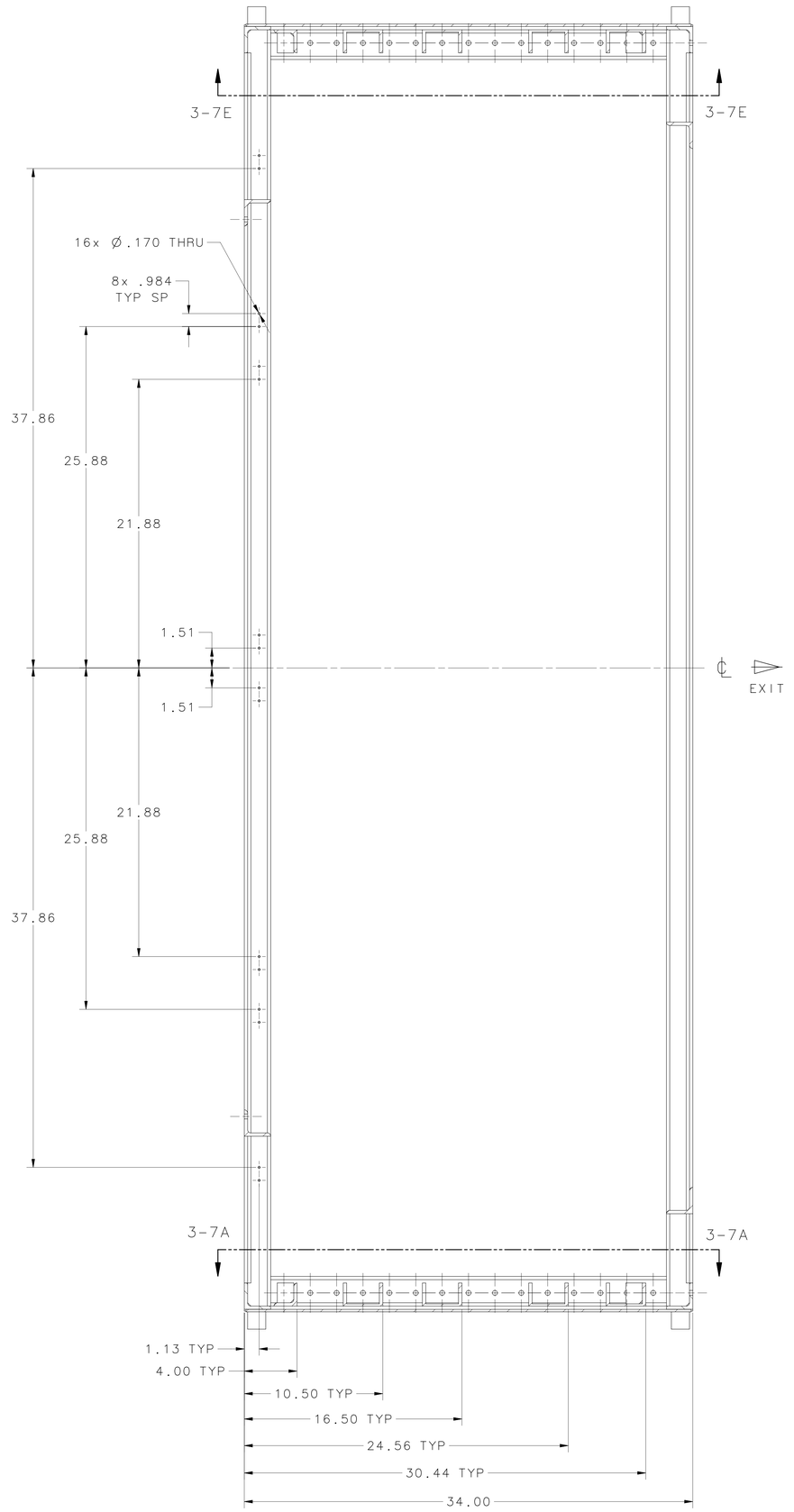
SIZE	DWG. NO.	REV.
E	A00000-01-01-2501	-

SCALE 1:4 | USED ON ASSY NO. A00000-01-01-2500 | SHEET 1 OF 9

Approved: 4/1/2015; E-Sign ID : 297753; signed by: Ap. 1: B. Wojtsekhowski; Ap. 2: W. Seay; C.: A. Gavalya; D: T. Fuell



FRONT VIEW 2-6A

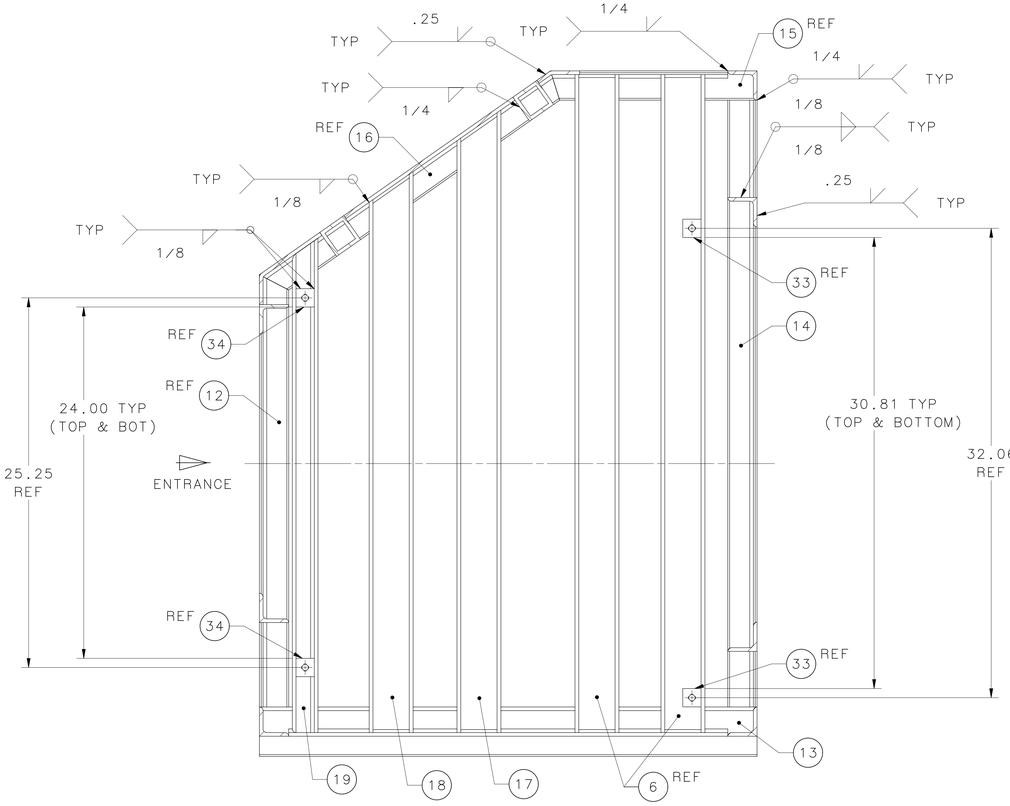


SECTION VIEW 2-2A

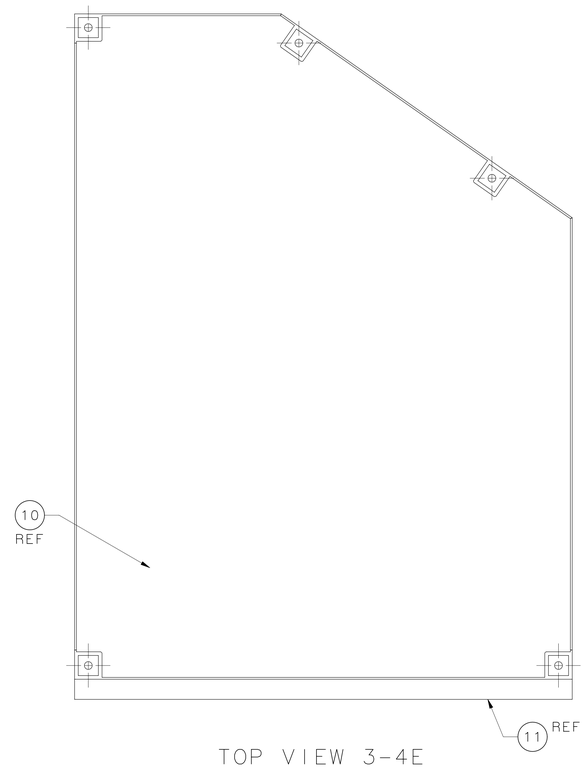
TOP & BOTTOM SECTION VIEWS ARE MIRROR IMAGES.
(2-6A)

SIZE	DWG. NO.	REV.
E	A00000-01-01-2501	–
SCALE 1:4	USED ON ASSY NO. A00000-01-01-2500	SHEET 2 OF 9

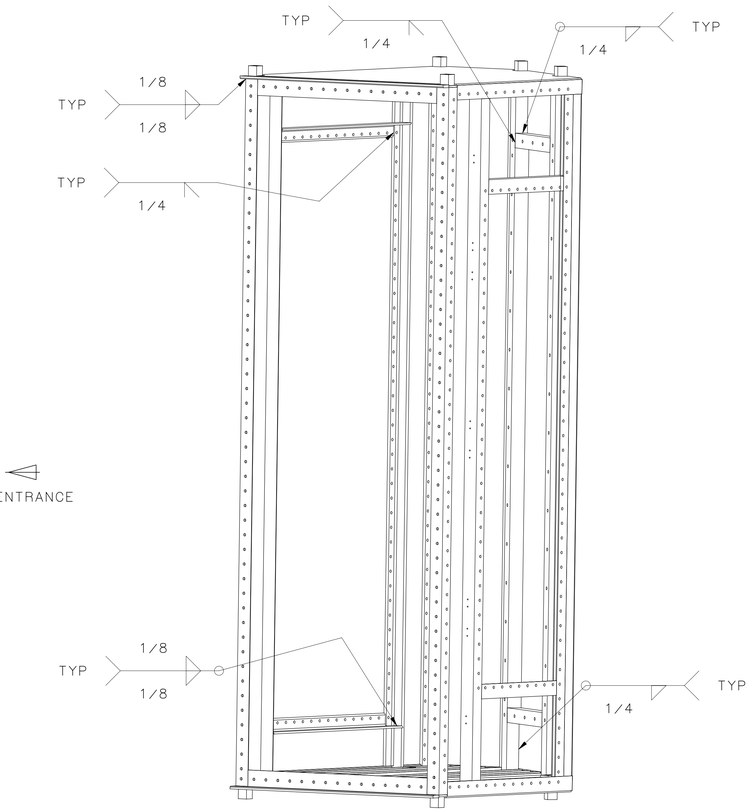
Approved: 4/1/2015; E-Sign ID : 297753; signed by: Ap. 1: B. Wojtsekhowski; Ap. 2: W. Seay; C.: A. Gavalya; D: T. Fuell



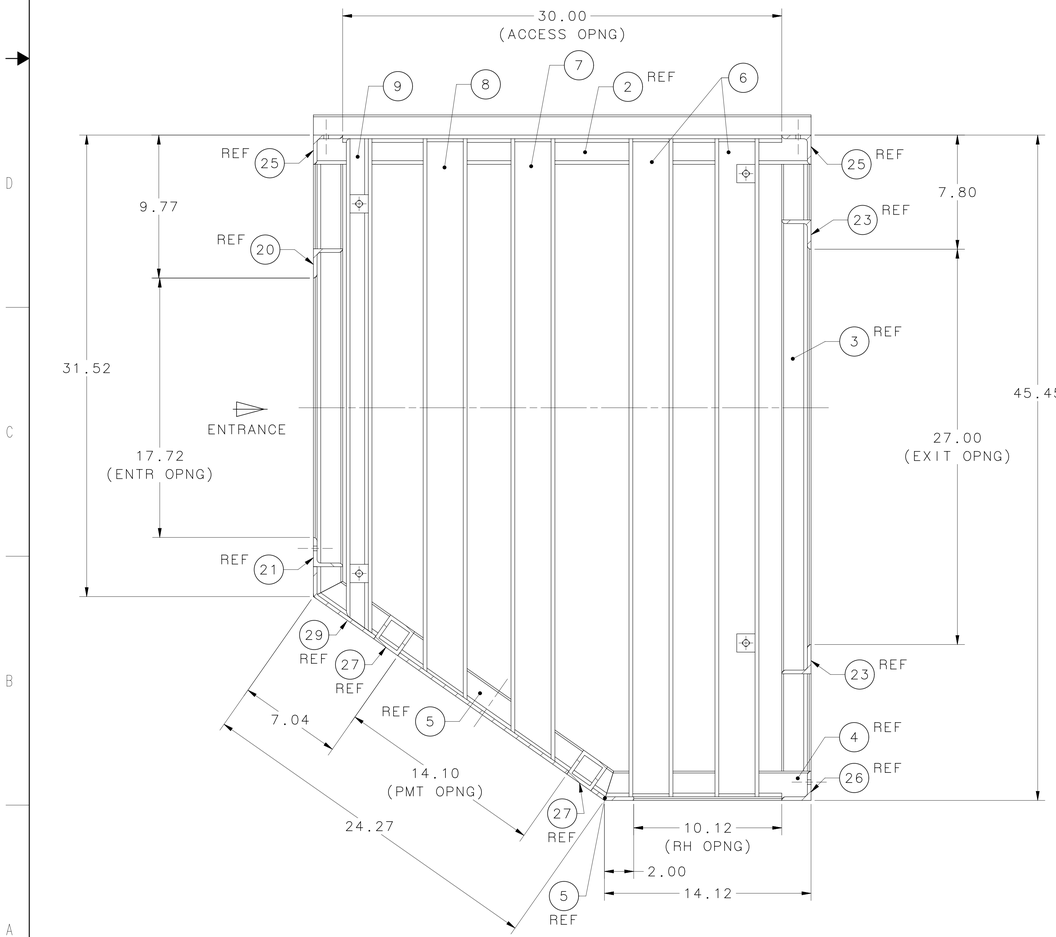
SECTION VIEW 3-7E
(2-2A)



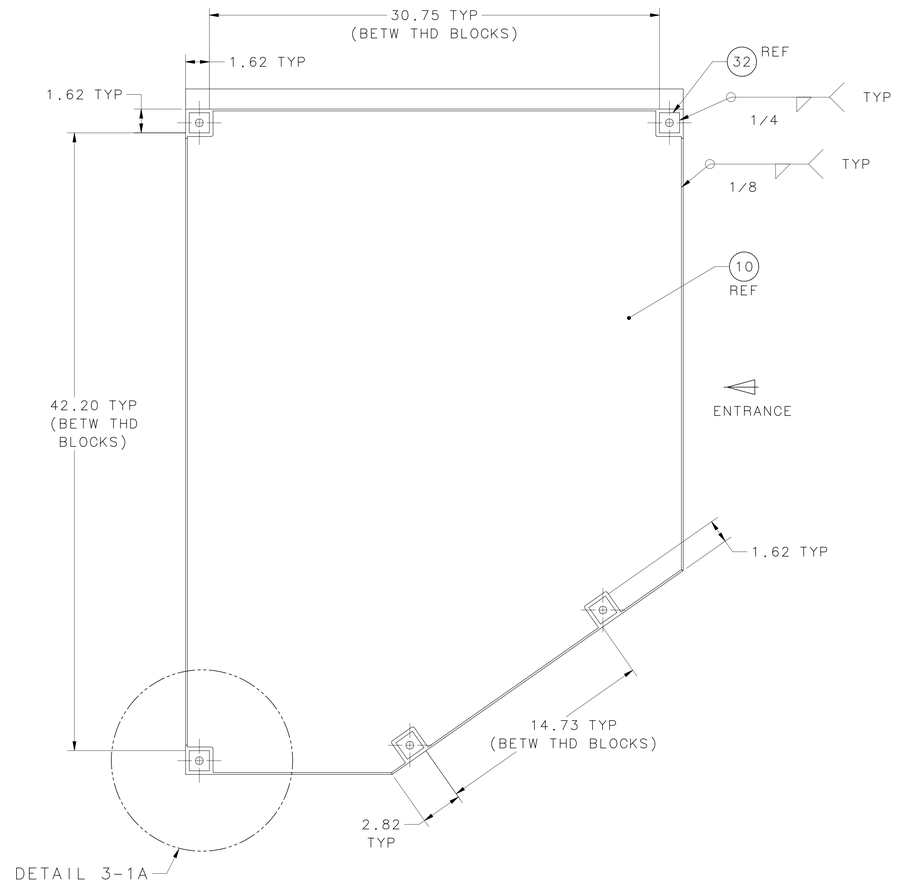
TOP VIEW 3-4E



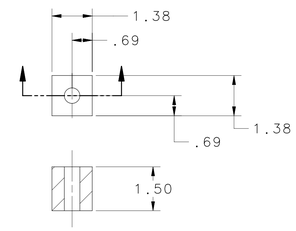
ISO VIEW 3-2E



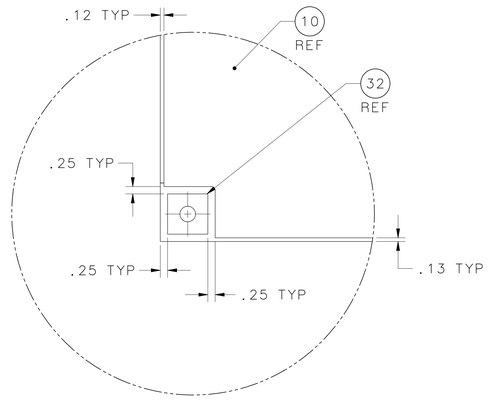
SECTION VIEW 3-7A
(2-2A)



BOTTOM VIEW 3-4A



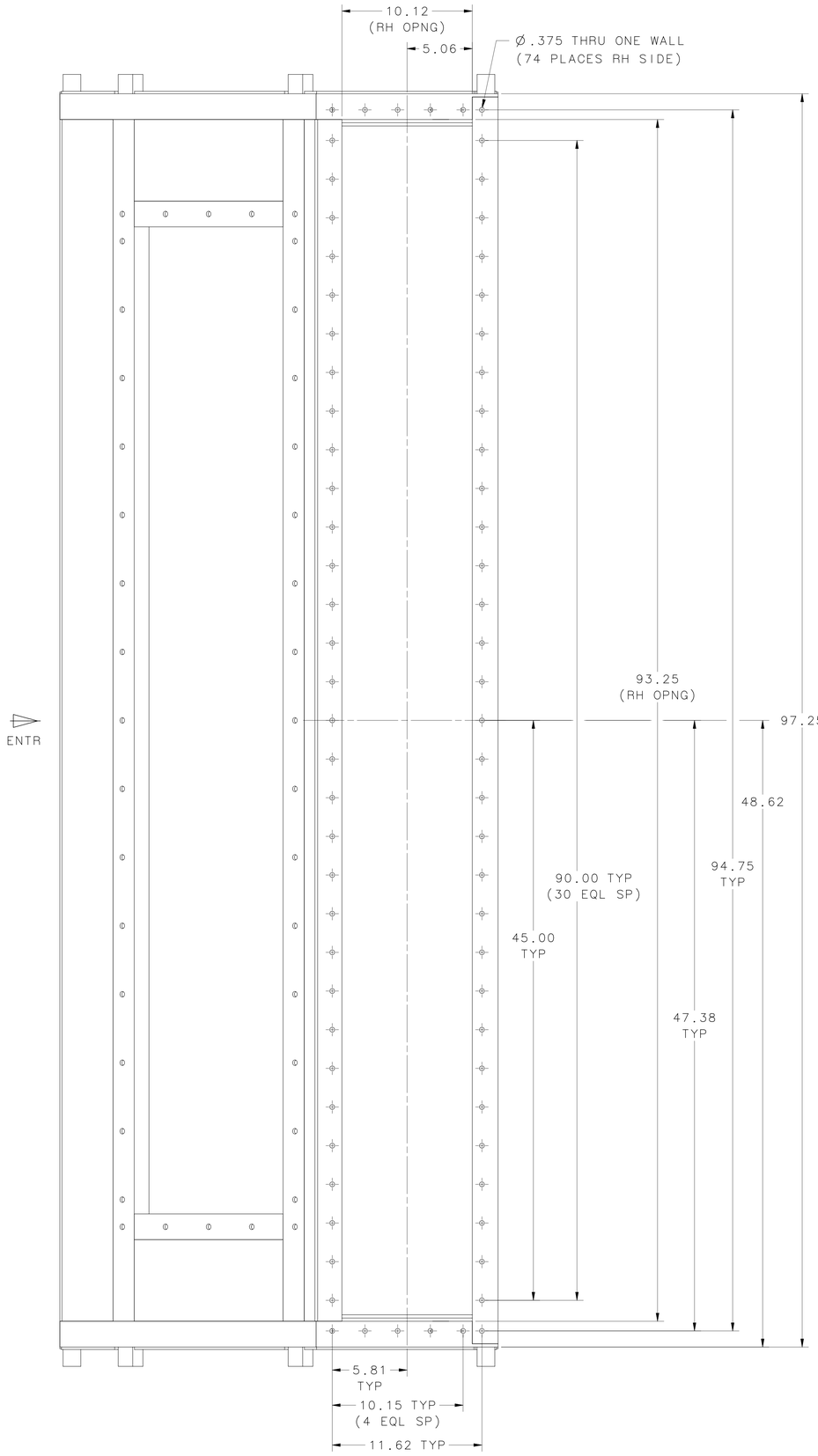
ITEMS 32 DETAIL - 3-1D
SCALE 1:2
(10 REQUIRED)



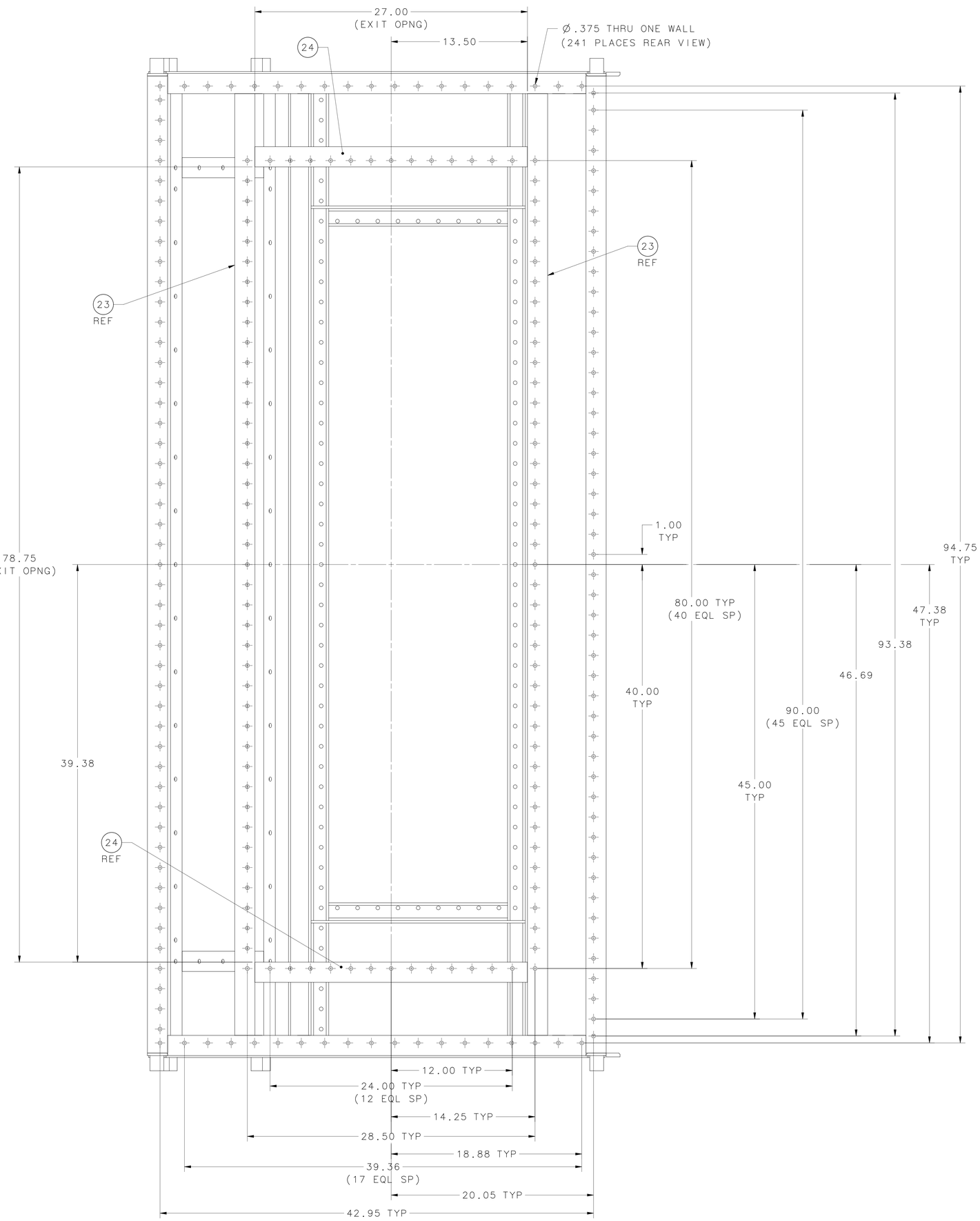
DETAIL VIEW 3-1A
SCALE 1:2
(3-4A)

SIZE	DWG. NO.	REV.
E	A00000-01-01-2501	–
SCALE 1:4	USED ON ASSY NO. A00000-01-01-2500	SHEET 3 OF 9

Approved: 4/1/2015; E-Sign ID : 297753; signed by: Ap. 1: B. Wojtsekhowski; Ap. 2: W. Seay; C.: A. Gavalya; D: T. Fuell



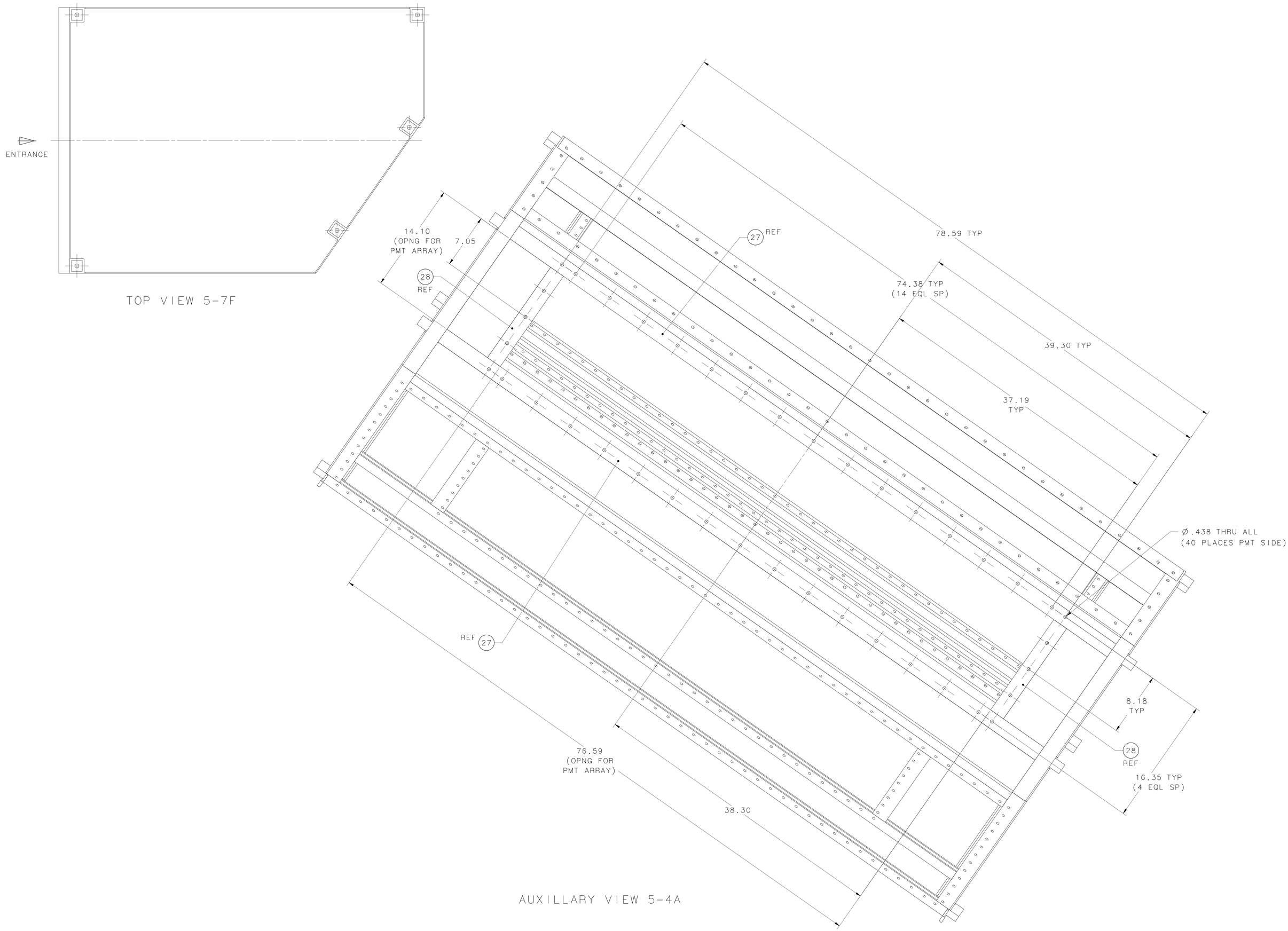
R SIDE VIEW 4-7A



REAR VIEW 4-3A

SIZE	DWG. NO.	REV.
E	A00000-01-01-2501	-
SCALE 1:4	USED ON ASSY NO. A00000-01-01-2500	SHEET 4 OF 9

Approved: 4/1/2015; E-Sign ID : 297753; signed by: Ap. 1: B. Wojtsekhowski; Ap. 2: W. Seay; C.: A. Gavalya; D: T. Fuell

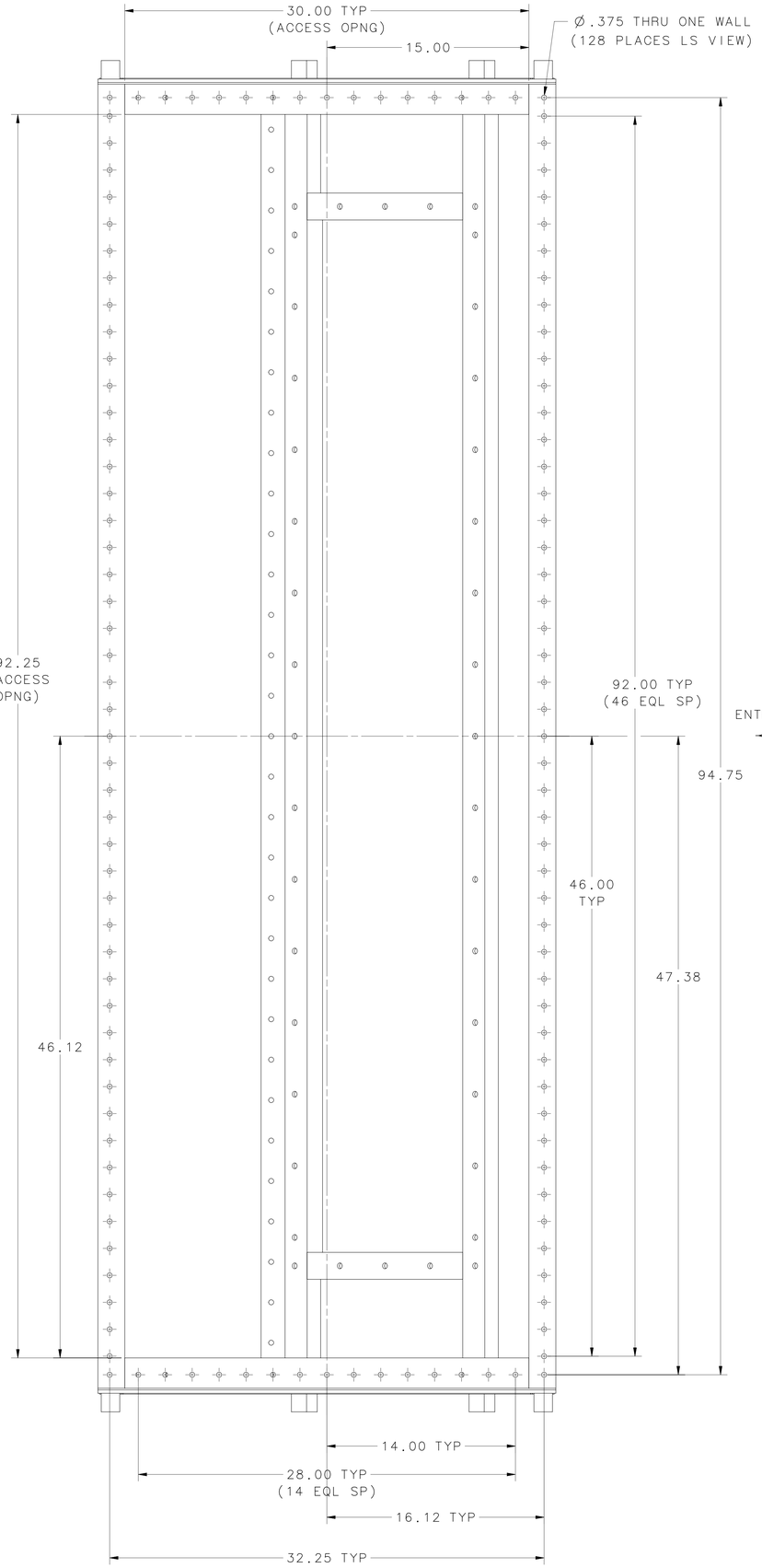


TOP VIEW 5-7F

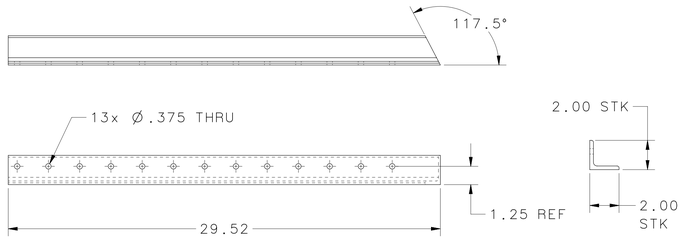
AUXILLARY VIEW 5-4A

SIZE	DWG. NO.	REV.
E	A00000-01-01-2501	–
SCALE 1:4	USED ON ASSY NO. A00000-01-01-2500	SHEET 5 OF 9

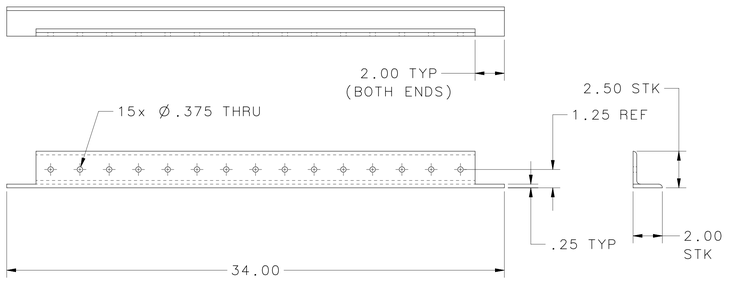
Approved: 4/1/2015; E-Sign ID : 297753; signed by: Ap. 1: B. Wojtsekhowski; Ap. 2: W. Seay; C.: A. Gavalya; D: T. Fuell



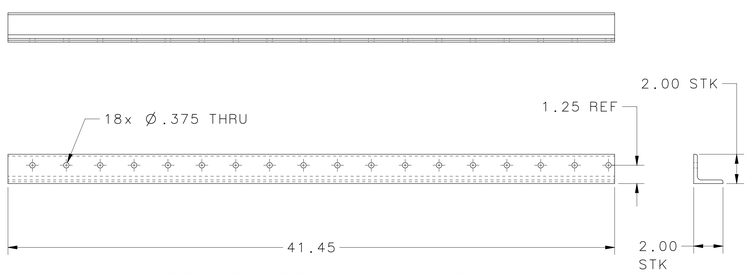
L SIDE VIEW 6-7A



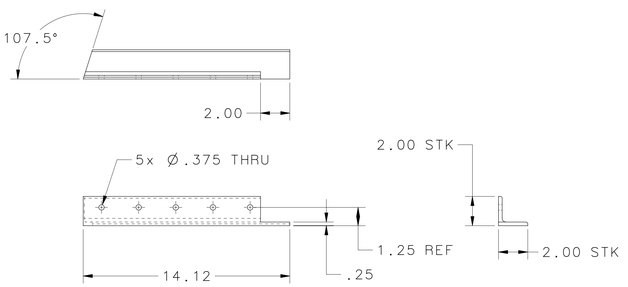
ITEM 1 DETAIL - 6-4G
(1 REQUIRED)



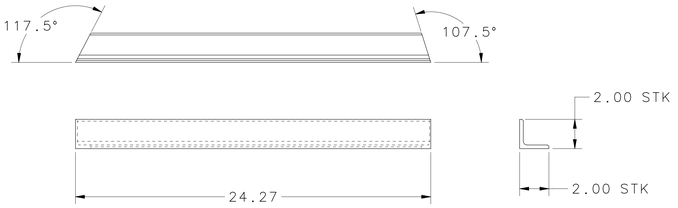
ITEM 2 DETAIL - 6-4E
(1 REQUIRED)



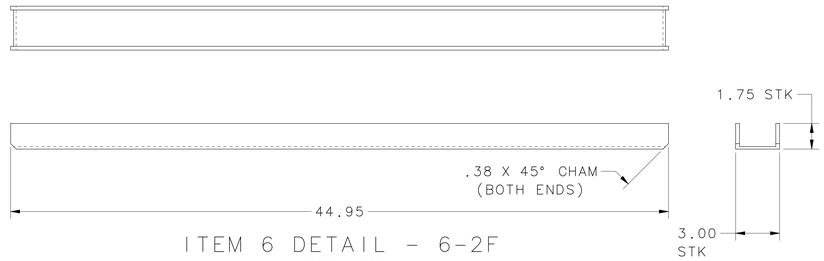
ITEM 3 DETAIL - 6-4D
(1 REQUIRED)



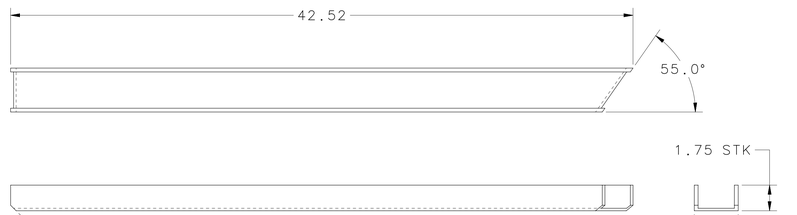
ITEM 4 DETAIL - 6-4A
(1 REQUIRED)



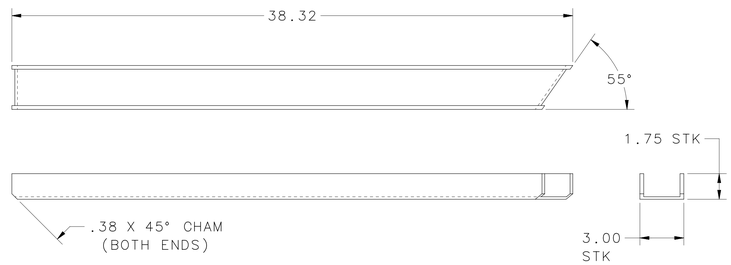
ITEM 5 DETAIL - 6-2G
(1 REQUIRED)



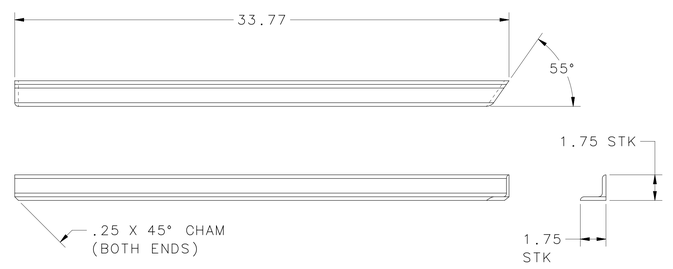
ITEM 6 DETAIL - 6-2F
(4 REQUIRED)



ITEM 7 DETAIL - 6-2D
(1 REQUIRED)



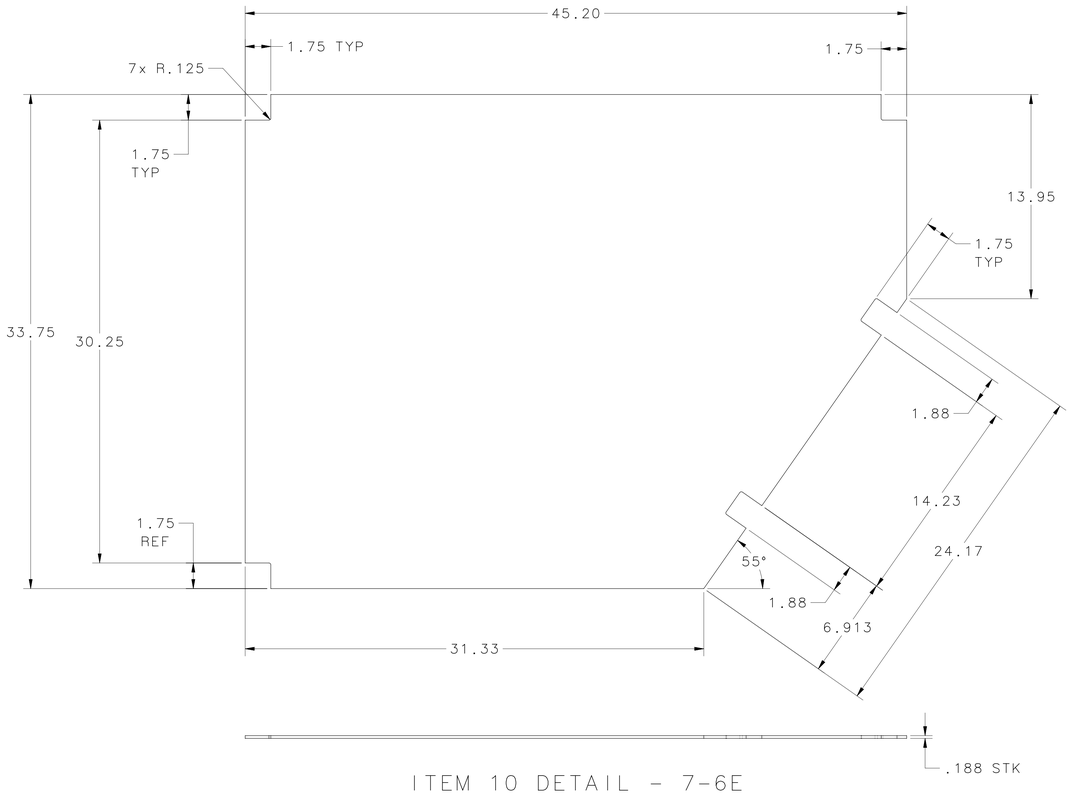
ITEM 8 DETAIL - 6-2C
(1 REQUIRED)



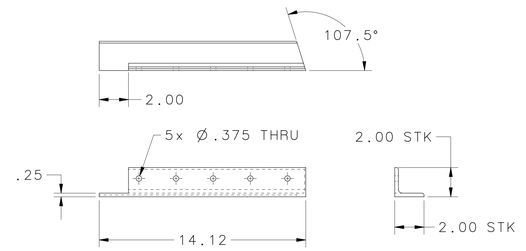
ITEM 9 DETAIL - 6-1A
(1 REQUIRED)

SIZE	DWG. NO.	REV.
E	A00000-01-01-2501	–
SCALE 1:4	USED ON ASSY NO. A00000-01-01-2500	SHEET 6 OF 9

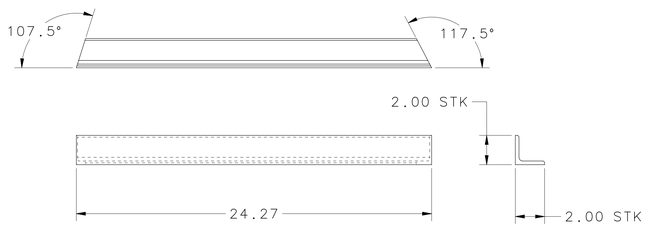
Approved: 4/1/2015; E-Sign ID : 297753; signed by: Ap. 1: B. Wojtsekhowski; Ap. 2: W. Seay; C.: A. Gavalya; D: T. Fuell



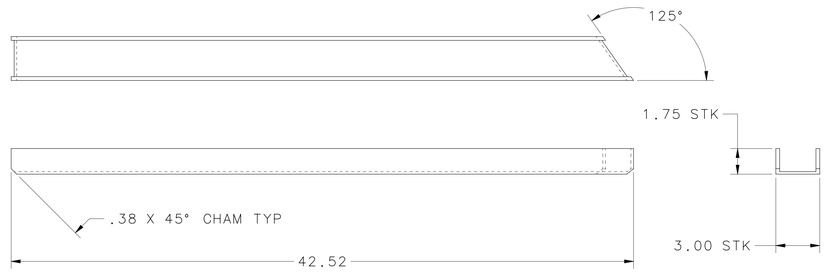
ITEM 10 DETAIL - 7-6E
(2 REQUIRED)



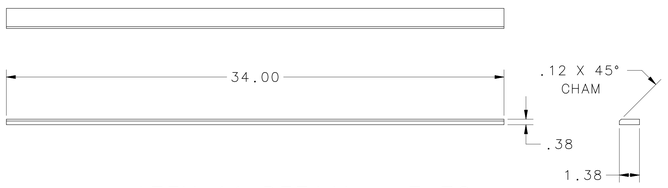
ITEM 15 DETAIL - 7-3G
(1 REQUIRED)



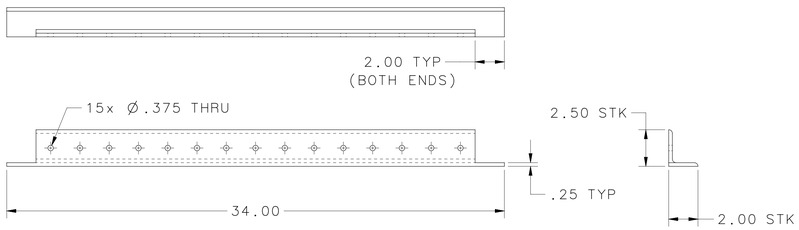
ITEM 16 DETAIL - 7-2F
(1 REQUIRED)



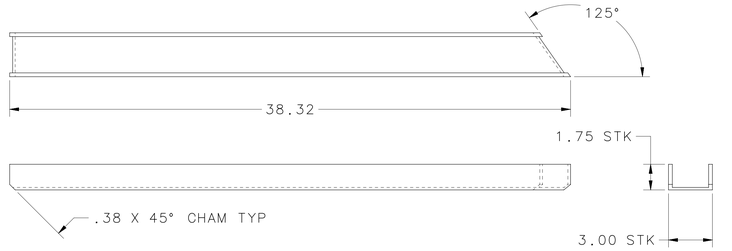
ITEM 17 DETAIL - 7-2D
(1 REQUIRED)



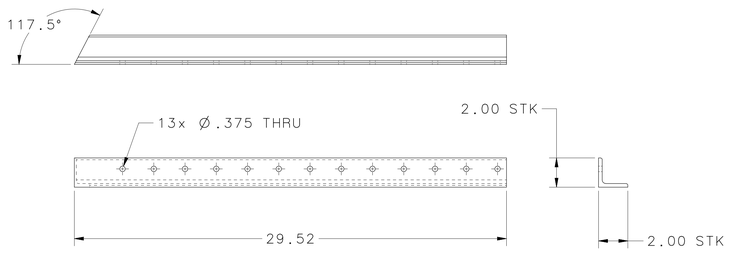
ITEM 11 DETAIL - 7-7C
(1 REQUIRED)



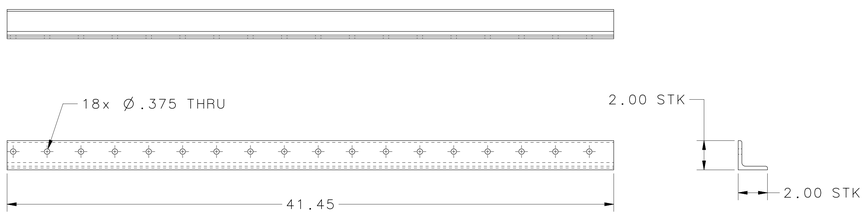
ITEM 13 DETAIL - 7-5B
(1 REQUIRED)



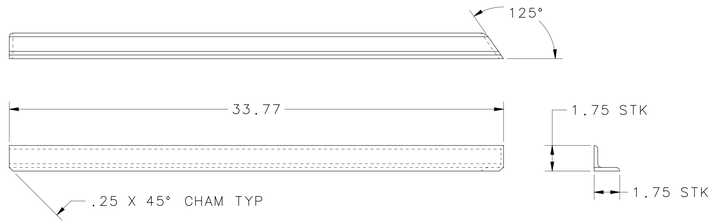
ITEM 18 DETAIL - 7-2C
(1 REQUIRED)



ITEM 12 DETAIL - 7-7A
(1 REQUIRED)



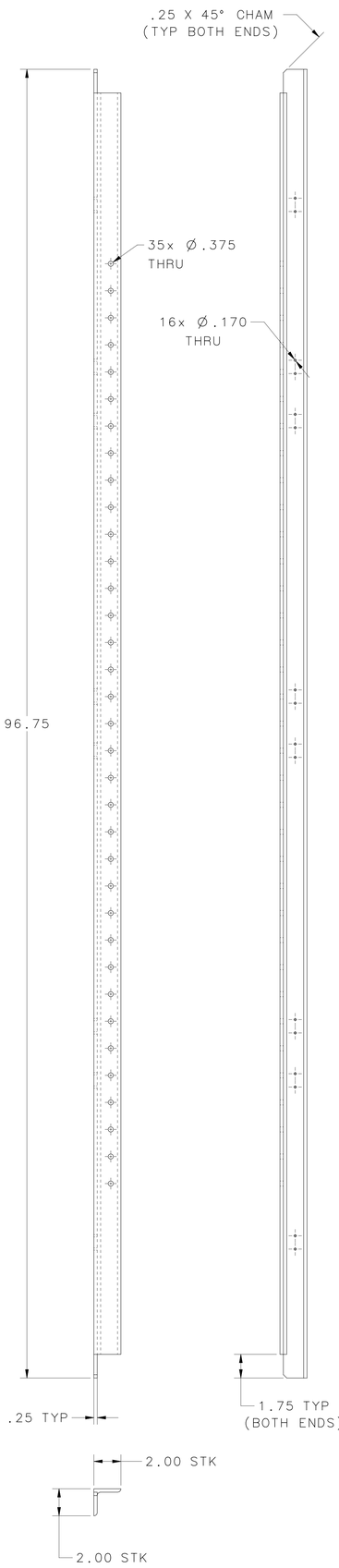
ITEM 14 DETAIL - 7-4A
(1 REQUIRED)



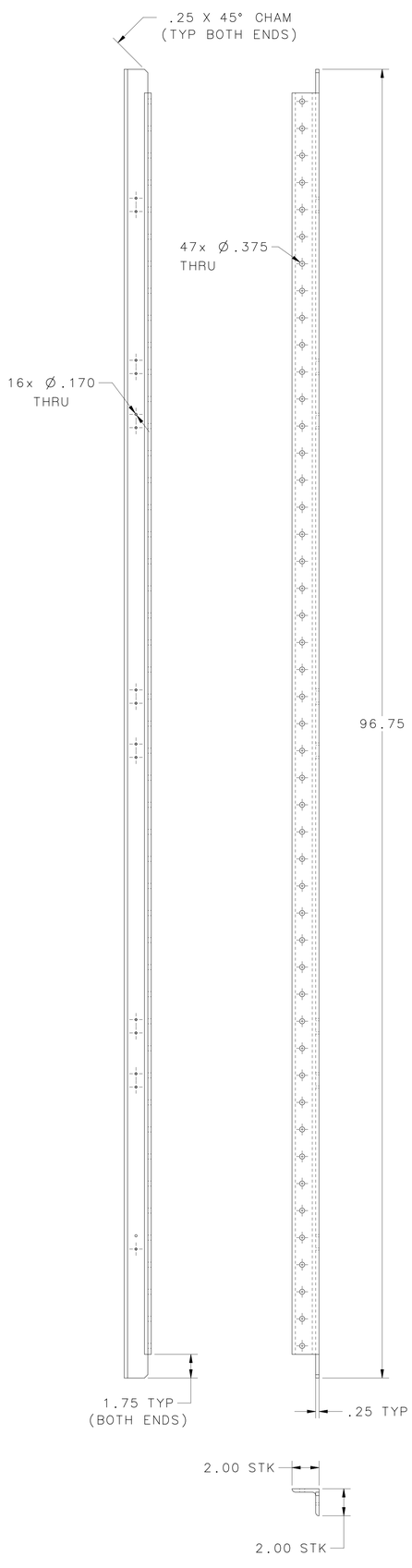
ITEM 19 DETAIL - 7-2A
(1 REQUIRED)

SIZE	DWG. NO.	REV.
E	A00000-01-01-2501	-
SCALE 1:4	USED ON ASSY NO. A00000-01-01-2500	SHEET 7 OF 9

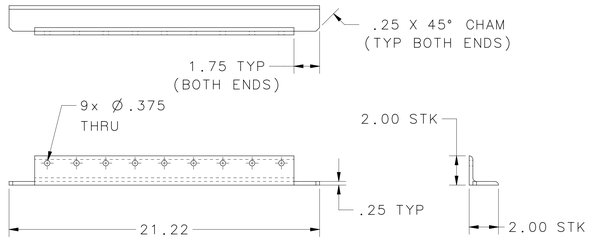
Approved: 4/1/2015; E-Sign ID : 297753; signed by: Ap. 1: B. Wojtsekhowski; Ap. 2: W. Seay; C.: A. Gavalya; D: T. Fuell



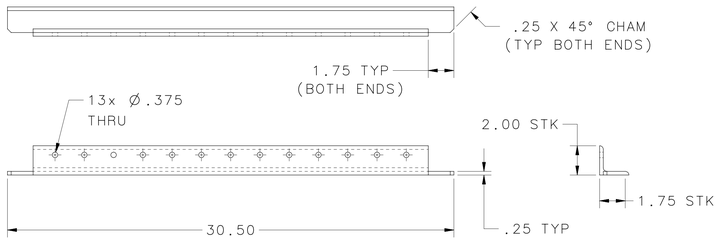
ITEM 20 DETAIL 8-7A
(1 REQUIRED)



ITEM 21 DETAIL 8-6A
(1 REQUIRED)

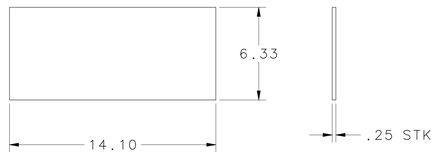


ITEM 22 DETAIL 8-4G
(2 REQUIRED)

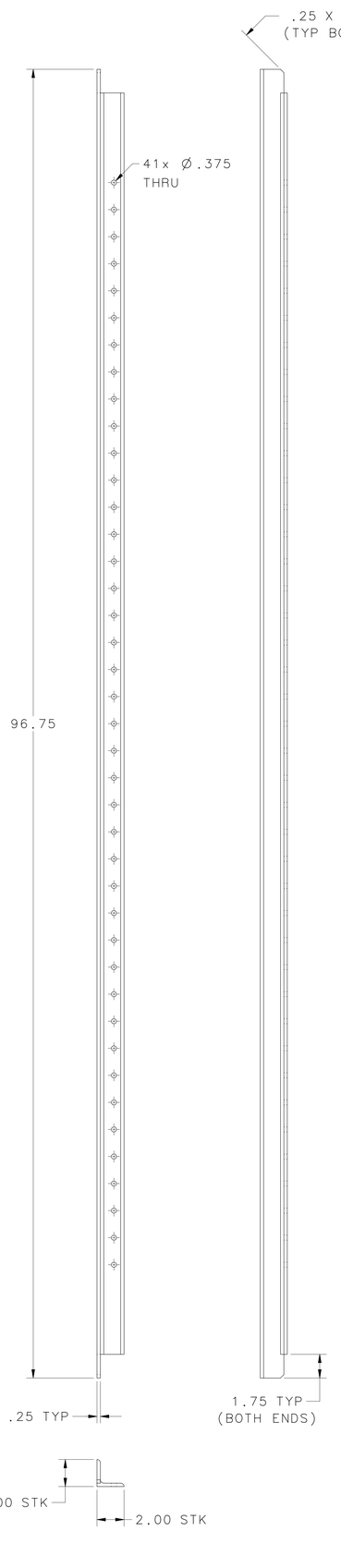


ITEM 24 DETAIL 8-4E
(2 REQUIRED)

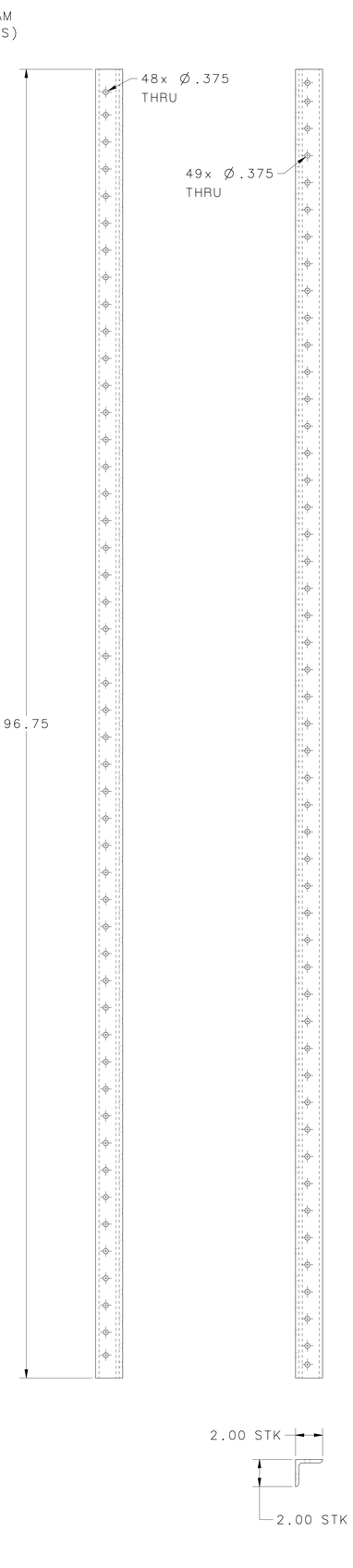
ITEM 28 DETAIL 8-4D
(2 REQUIRED)



ITEM 31 DETAIL 8-4C
(2 REQUIRED)



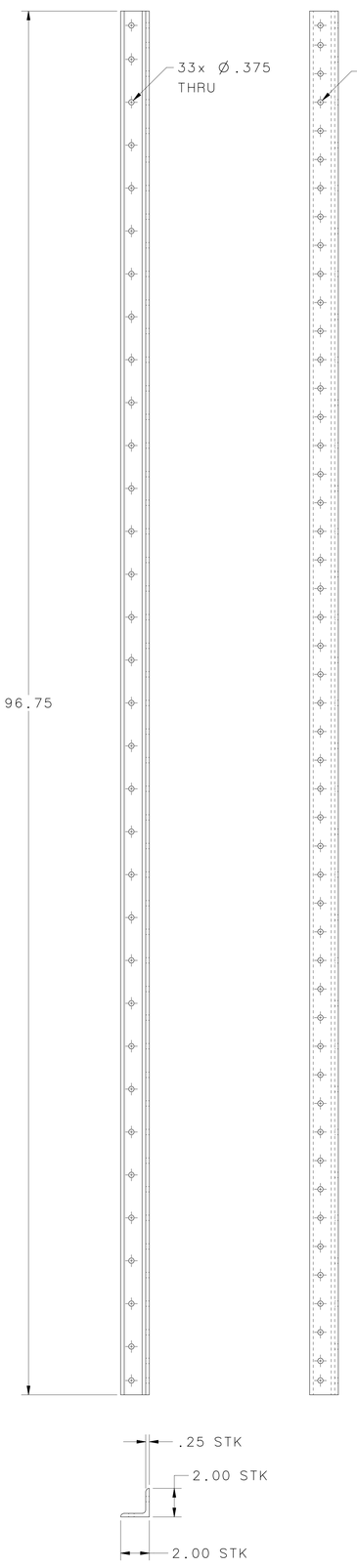
ITEM 23 DETAIL 8-2A
(2 REQUIRED)



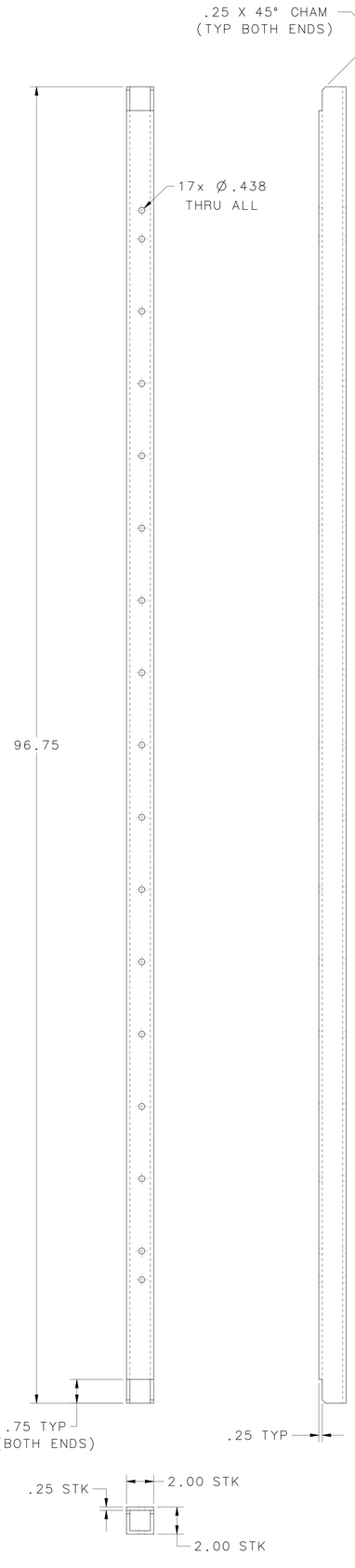
ITEM 25 DETAIL 8-1A
(2 REQUIRED)

SIZE	DWG. NO.	REV.
E	A00000-01-01-2501	-
SCALE 1:4	USED ON ASSY NO. A00000-01-01-2500	SHEET 8 OF 9

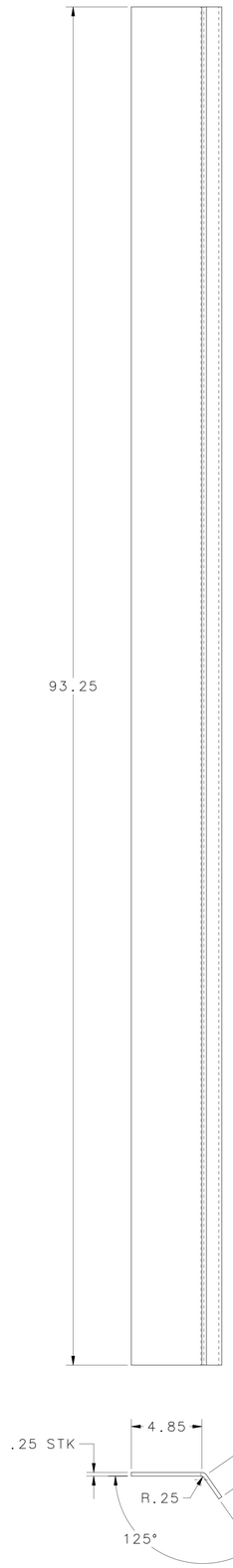
Approved: 4/1/2015; E-Sign ID : 297753; signed by: Ap. 1: B. Wojtsekhowski; Ap. 2: W. Seay; C.: A. Gavalya; D: T. Fuell



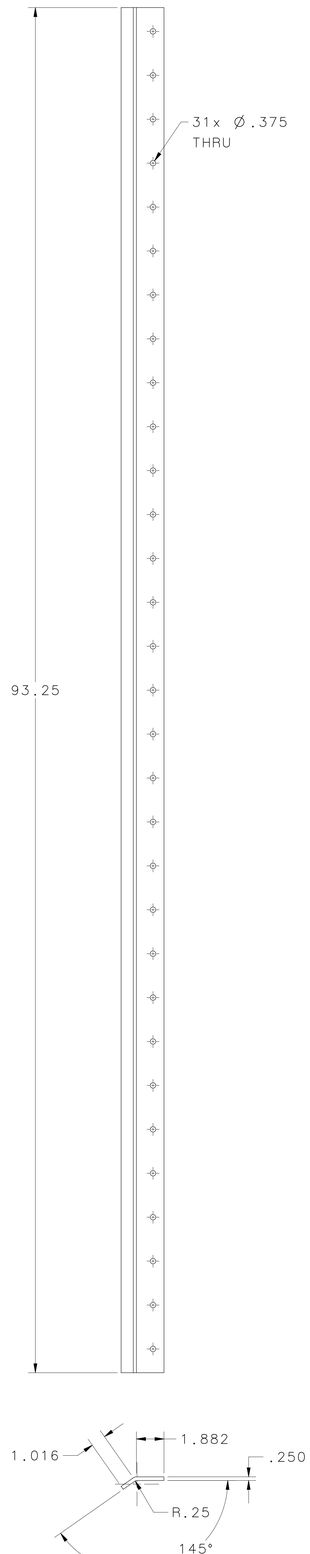
ITEM 26 DETAIL 9-7A
(1 REQUIRED)



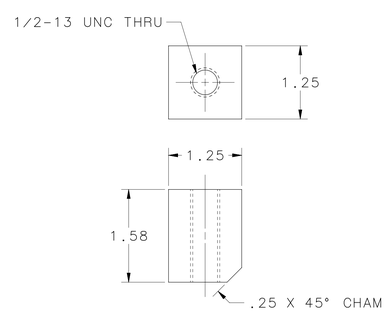
ITEM 27 DETAIL 9-5A
(2 REQUIRED)



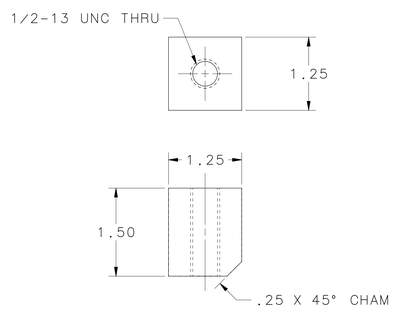
ITEM 29 DETAIL 9-4A
(1 REQUIRED)



ITEM 30 DETAIL 9-2A
(1 REQUIRED)



ITEM 33 DETAIL 9-1G
(4 REQUIRED)



ITEM 34 DETAIL 9-1E
(4 REQUIRED)

SIZE	DWG. NO.	REV.
E	A00000-01-01-2501	–
SCALE 1:4	USED ON ASSY NO. A00000-01-01-2500	SHEET 9 OF 9

Approved: 4/1/2015; E-Sign ID : 297753; signed by: Ap. 1: B. Wojtsekhowski; Ap. 2: W. Seay; C.: A. Gavalya; D: T. Fuell