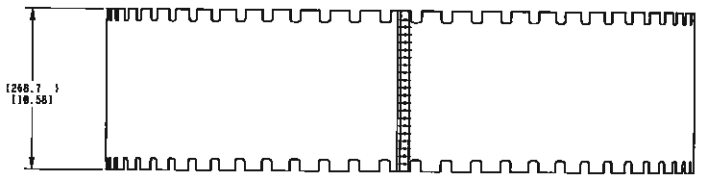
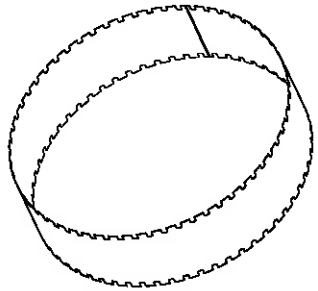
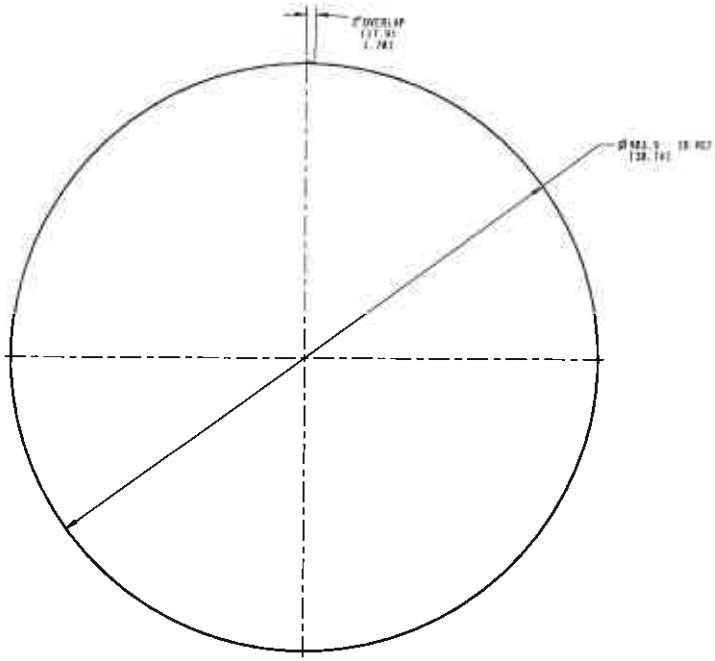
REVISIONS				
REV	ZONE	DESCRIPTION	APPROVAL	REL DATE
1				SEE RELEASE DATE





SCALE 1/8

ISO VIEW
FOR REFERENCE ONLY



NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL006 IN MSFC DDMS.
   - ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. MATERIAL: 0.063" STK 6061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.
4. 125 ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.
5. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.
6. IDENTIFY PART PER MIL-STD-130, METHOD BAS AND TAG PER MIL-STD-129.
7. CLEAN AND MAINTAIN TO CxP 70145 - GENERALLY CLEAN LEVEL.
8. MATERIAL TRACEABILITY IS REQUIRED. RECORDS SHALL BE MAINTAINED OF: (1) ACTUAL CHEMICAL AND PHYSICAL MATERIAL VERIFICATION TEST RESULTS, (2) CERTIFICATES OF CONFORMANCE, (3) DETAILED PROCESS, INSPECTION, DISCREPANCY RECORDS TRACEABLE TO THE MATERIAL FROM WHICH FABRICATION ORIGINATED, AND (4) IN-HOUSE CHEMICAL AND PHYSICAL VERIFICATION TESTING.
9. PILOT FOR 1/8" DIAMETER RIVET.

01PTL006-001 SHOWN

1	01PTL045-001	TIP PALLET
TOTAL QTY	NEXT ASSY	USED ON
APPLICATION (WRITE IN RELEASE RECORDS)		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM [IN]
TOLERANCES
DECIMALS .XX±.8 [.03] .XXX±.25 [.010] ANGLES ±0.5°
MATERIAL 3
HEAT TREATMENT
FINISH 5

DRAWING INFORMATION		MODEL INFORMATION	
DRAWING STATE	RELEASED	MODEL STATE	RELEASED
DRAWING VERSION	1.16	MODEL VERSION	1.19
DRAWING NUMBER	01PTL006	MODEL NUMBER	01PTL006

ORIGINAL DRAWING APPROVALS	
DESIGN ORG.	E421
DRAWN BY	JIM BEEBE
ENGINEER	A. WAYNE
CHECKER	J. SEIVAL
MATERIALS	
STRESS	
S & MA	
PRODUC-MANUF	
PRODUC-CONTR	
NEXT ASSEMBLY	
DESN BRANCH CHF	
RELEASE DATE	13-AUG-2010

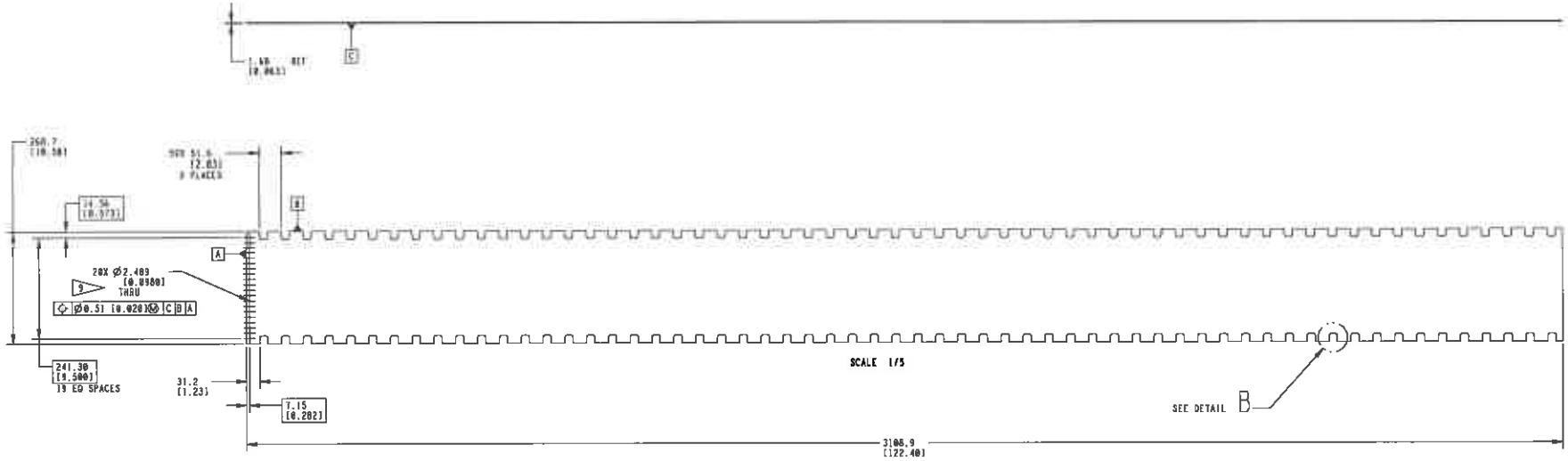
GEORGE C. MARSHALL SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

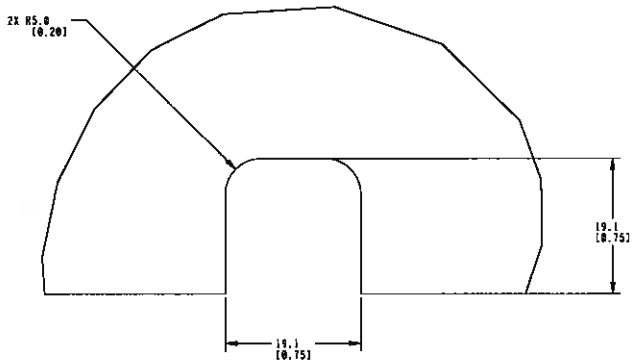
WEB, CENTRAL CYLINDER (TIP PALLET LANDER)

SIZE	CODE	DRAWING NUMBER	REV
D	339B2	01PTL006	1

SCALE 1/4 MASS (KGT WEIGHT) 3.426 KG SHEET 1 OF 2

MSFC_DWG_D_FORMAT_REVISED COMMERCIAL, 20001





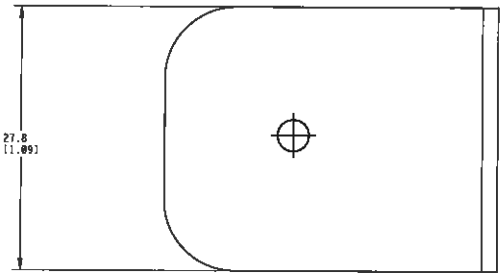
DETAIL B
SCALE 3/1
TYPICAL [20 PLACES

DRAWING STATE RELEASED	SIZE D	CODE 33982	DRAWING NUMBER 01PTL006	REV 1
DRAWING VERSION 1.16			SHEET 2 OF 2	
DRAWING INFORMATION				

REVISIONS				
REV	ZONE	DESCRIPTION	APPROVAL	DATE
1				SEE RELEASE DATE

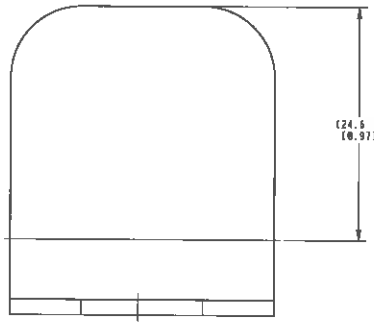
NOTES:

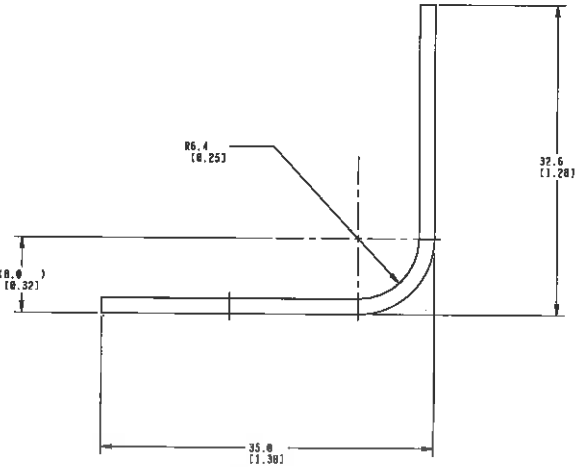
1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL007 IN MSFC DDMS.
   - ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. MATERIAL: 0.063" STK 6061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.
4. 125 ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.
5. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.
6. IDENTIFY PART PER MIL-STD-130, METHOD BAG AND TAG PER MIL-STD-129.
7. CLEAN AND MAINTAIN TO CxP 70145 - GENERALLY CLEAN LEVEL.
8. MATERIAL TRACEABILITY IS REQUIRED. RECORDS SHALL BE MAINTAINED OF: (1) ACTUAL CHEMICAL AND PHYSICAL MATERIAL VERIFICATION TEST RESULTS, (2) CERTIFICATES OF CONFORMANCE, (3) DETAILED PROCESS, INSPECTION, DISCREPANCY RECORDS TRACEABLE TO THE MATERIAL FROM WHICH FABRICATION ORIGINATED, AND (4) IN-HOUSE CHEMICAL AND PHYSICAL VERIFICATION TESTING.
9. PILOT FOR 1/4" DIAMETER HI-LOK.



SCALE 2/1

ISO VIEW
FOR REFERENCE ONLY





01PTL007-001 SHOWN

120	01PTL004	TIP PALLET
TOTAL QTY	NEXT ASSY	USED ON

APPLICATION
(VERIFY IN RELEASE RECORDS)

DRAWING STATE	RELEASED	MODEL STATE	RELEASED
DRAWING VERSION	1.10	MODEL VERSION	1.9
DRAWING NUMBER	01PTL007	MODEL NUMBER	01PTL007

DRAWING INFORMATION

MODEL INFORMATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM [IN]

TOLERANCES

DECIMALS	ANGLES
.X±0.8 [.03] .XX±0.25 [.010]	±0.5°

MATERIAL 3.

HEAT TREATMENT

FINISH 5.

ORIGINAL DRAWING APPROVALS	
DESIGN ENG.	ESE1
DRAWN BY	JOHN SEITAL
ENGINEER	A.WAYNE
CHECKER	JIM GLEBO
MATERIALS	
STRESS	
S & MA	
PRODUC-MANUF	
PRODUC-CONTR	
NEXT ASSEMBLY	
DESN BRANCH CHF	
RELEASE DATE	14-AUG-2013

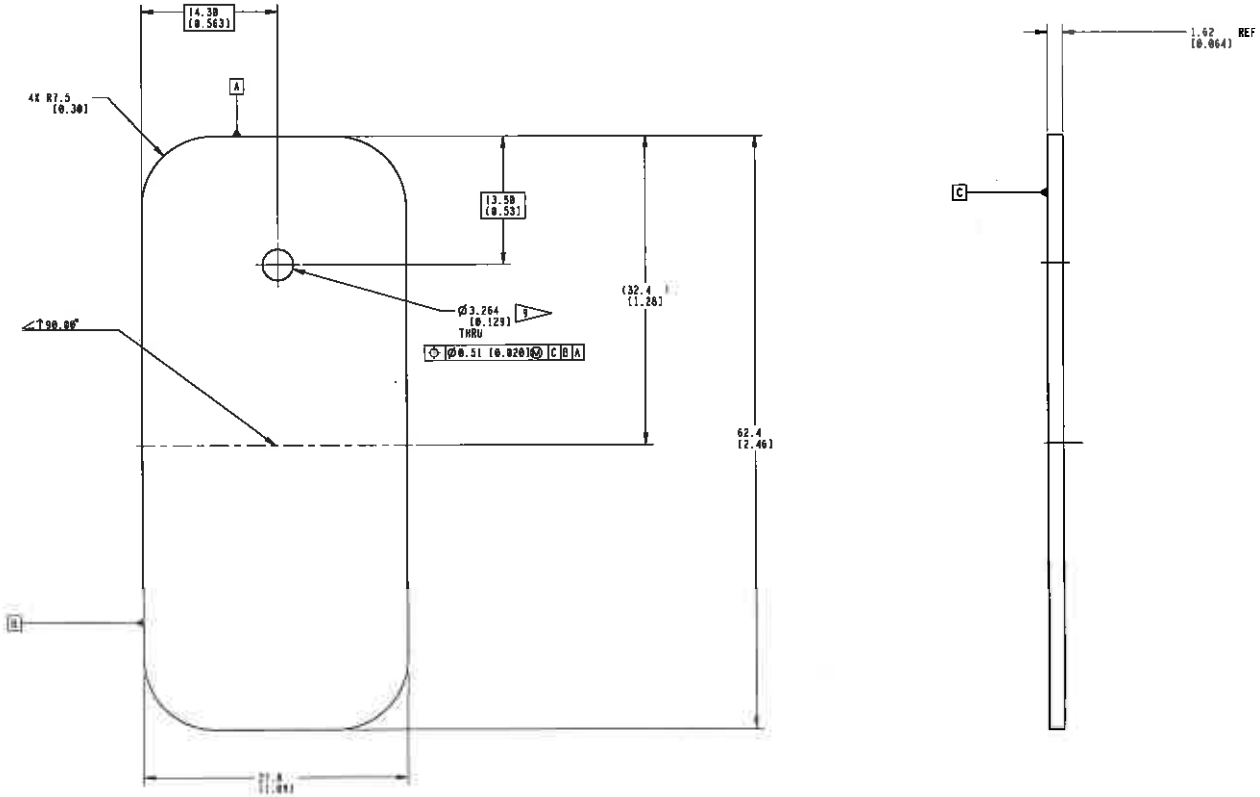
GEORGE C. MARSHALL SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

CLIP,
CENTRAL CYLINDER
(TIP PALLET LANDER)

SIZE	CODE	DRAWING NUMBER	REV
D	339B2	01PTL007	1

SCALE 4/1 | MASS (UNIT WEIGHT) 0.007 KG | SHEET 1 OF 2

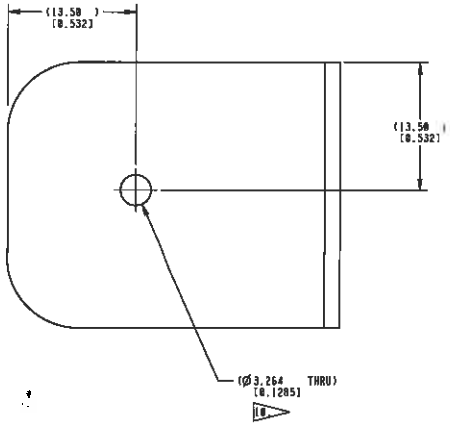
MSFC_DWG_D_FORMAT_REV(A) (AUGUST, 2009)



01PTL007-001 FLAT PATTERN SHOWN

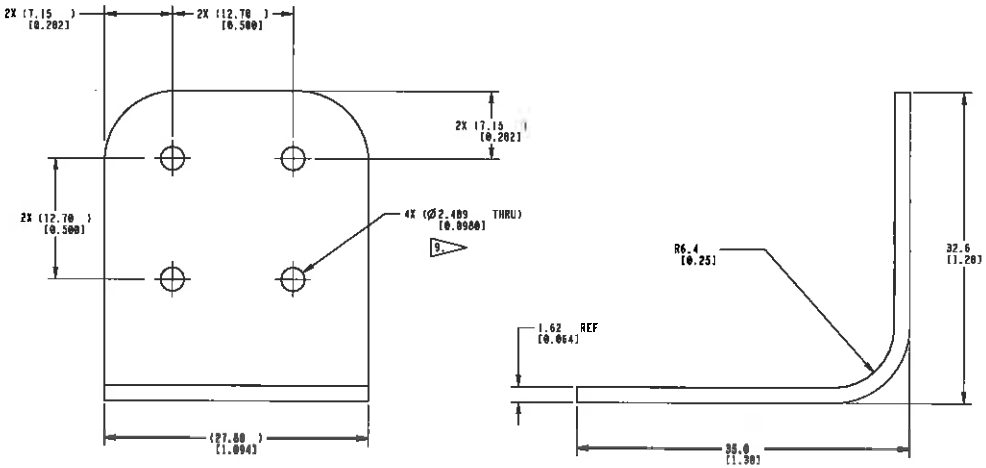
DRAWING TITLE		D	33982	01PTL007
DRAWING INFORMATION				

REVISIONS				
REV	ZONE	DESCRIPTION	APPROVAL	RELEASE DATE
A				NEW RELEASE DATE



SCALE 4/1

ISO VIEW
FOR REFERENCE ONLY



NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL008 IN MSFC DDMS.
   - ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. MATERIAL: 0.063" STK 6061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.
4. 125 ✓ ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.
5. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.
6. IDENTIFY PART PER MIL-STD-130, METHOD BAG AND TAG PER MIL-STD-129.
7. CLEAN AND MAINTAIN TO CsP 70145 - GENERALLY CLEAN LEVEL.
8. MATERIAL TRACEABILITY IS REQUIRED. RECORDS SHALL BE MAINTAINED OF: (1) ACTUAL CHEMICAL AND PHYSICAL MATERIAL VERIFICATION TEST RESULTS, (2) CERTIFICATES OF CONFORMANCE, (3) DETAILED PROCESS, INSPECTION, DISCREPANCY RECORDS TRACEABLE TO THE MATERIAL FROM WHICH FABRICATION ORIGINATED, AND (4) IN-HOUSE CHEMICAL AND PHYSICAL VERIFICATION TESTING.
9. PILOT FOR 1/8" DIAMETER RIVET.
10. PILOT FOR 1/4" DIAMETER HI-LOK.

01PTL008-001 SHOWN

120	01PTL004-001	TIP PALLET	
TOTAL QTY	NEXT ASSY	USED ON	
APPLICATION (VERIFY IN RELEASE RECORDS)			
DRAWING STATE		RELEASED	
DRAWING VERSION		1.0	
DRAWING NUMBER		01PTL008	
DRAWING INFORMATION			

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM [IN]

TOLERANCES	
DECIMALS .XX ±0.0 [.XX ±0.03] .XXX ±0.25 [.XXX ±0.010]	ANGLES ±0.5°
MATERIAL	3.
HEAT TREATMENT	
FINISH	5.
MODEL STATE	RELEASED
MODEL VERSION	1.0
MODEL NUMBER	01PTL008
MODEL INFORMATION	

ORIGINAL DRAWING APPROVALS	
DESIGN ORG.	EGPE
DRAWN BY	JOAO BECERRA
ENGINEER	ANDY WAYNE
CHECKER	JIM BLERD
MATERIALS	
STRESS	
S & MA	
PRODUC-MANUF	
PRODUC-CONTR	
TEST ASSEMBLY	
DESN BRANCH CHF	
RELEASE DATE	14-AUG-2013

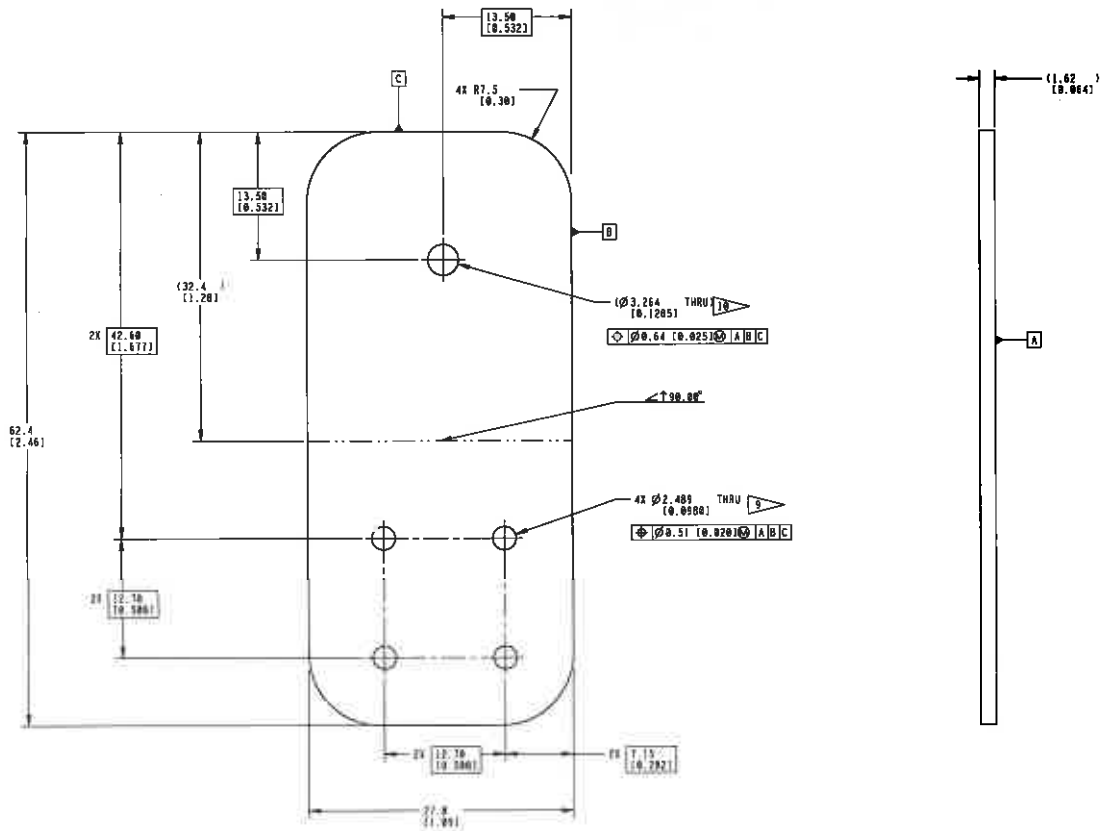
GEORGE C. MARSHALL SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

CLIP, PILOTED, CENTRAL CYLINDER (TIP PALLET LANDER)

SIZE	CODE	DRAWING NUMBER	REV
D	339B2	01PTL008	1

SCALE 4/1 | MASS (UNIT WEIGHT) 0.007 KG | SHEET 1 OF 2

MSFC_RDB_B_FORMAT_REVEA3 (AUGUST, 2009)



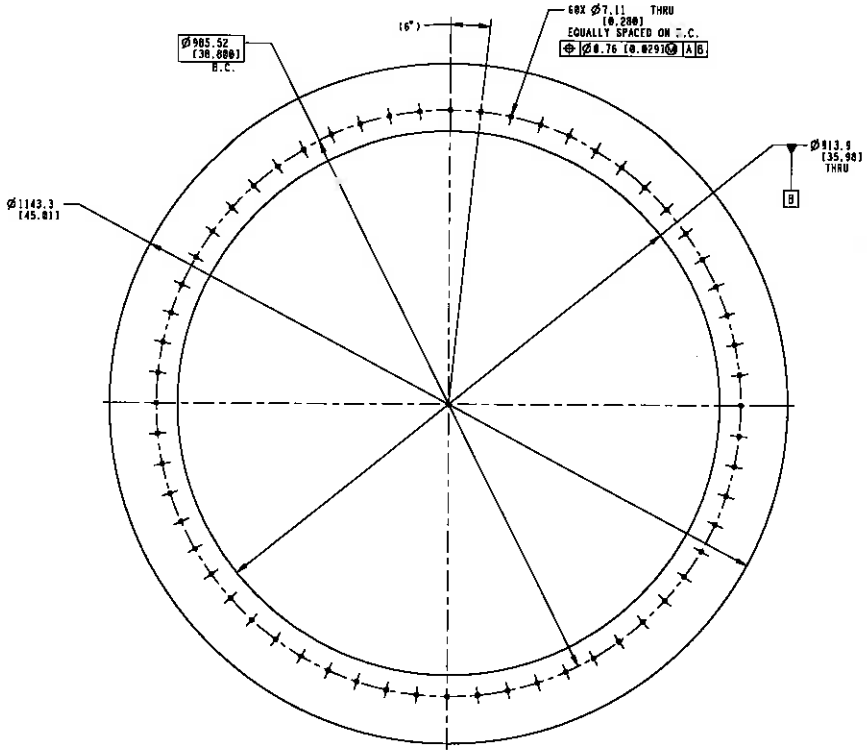
01PTL008-001 FLAT PATTERN SHOWN

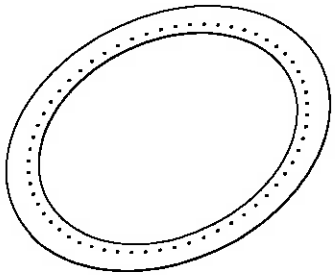
		D	33982	01PTL008	1
DRAWING INFORMATION				

REVISIONS				
REV	ZONE	DESCRIPTION	APPROVAL	RELEASE DATE
1				RE RELEASE DATE

NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL009 IN MSFC DBMS.
   - ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. MATERIAL: 0.125" STK 6061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.
4. 125 ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.
5. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.
6. IDENTIFY PART PER MIL-STD-130, METHOD BAG AND TAG PER MIL-STD-129.
7. CLEAN AND MAINTAIN TO CvP T0145 - GENERALLY CLEAN LEVEL.
8. MATERIAL TRACEABILITY IS REQUIRED. RECORDS SHALL BE MAINTAINED OF: (1) ACTUAL CHEMICAL AND PHYSICAL MATERIAL VERIFICATION TEST RESULTS, (2) CERTIFICATES OF CONFORMANCE, (3) DETAILED PROCESS, INSPECTION, DISCREPANCY RECORDS TRACEABLE TO THE MATERIAL FROM WHICH FABRICATION ORIGINATED, AND (4) IN-HOUSE CHEMICAL AND PHYSICAL VERIFICATION TESTING.





SCALE 1/8

ISO VIEW
FOR REFERENCE ONLY

01PTL009-001 SHOWN

2	01PTL005-001	TIP PALLET		
TOTAL QTY	NEXT ASSY	USED ON		
APPLICATION (VERIFY IN RELEASE RECORDS)				
DRAWING STATE		RELEASED		
DRAWING VERSION		1.12		
DRAWING NUMBER		01PTL009		
DRAWING INFORMATION				

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM [IN]

TOLERANCES	
DECIMALS .XX±.4 [0.03] .XXX±.25 [0.010]	ANGLES ±0.5°
MATERIAL	3
HEAT TREATMENT	
FINISH	5

MODEL STATE	RELEASED
MODEL VERSION	1.9
MODEL NUMBER	01PTL005
MODEL INFORMATION	

ORIGINAL DRAWING APPROVALS	
DESIGN ORG.	ES21
DRAWN BY	JIM ALERD
ENGINEER	A.WAYNE
CHECKER	JOAQ SEIRAL
MATERIALS	
STRESS	
M & MA	
PRODUC-MANUF	
PRODUC-CONTR	
NEXT ASSEMBLY	
NEW BRANCH CHF	
RELEASE DATE	13-AUG-2013

GEORGE C. MARSHALL SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

FLANGE, CENTRAL CYLINDER (TIP PALLET LANDER)

SIZE	CODE	DRAWING NUMBER	REV
D	339B2	01PTL009	1

SCALE 1/4 MASS (UNIT WEIGHT) 3.168 KG SHEET 1 OF 1

MSFC_DWG_D_FORMAT_REV10 (AUGUST, 2003)

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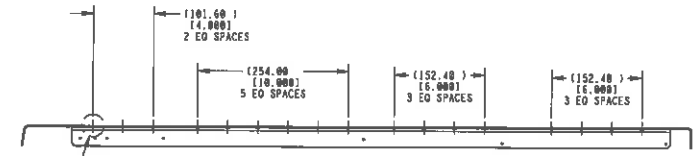
REVISIONS				
REV	ZONE	DESCRIPTION	APPROVAL	REL DATE
1				SEE RELEASE DATE

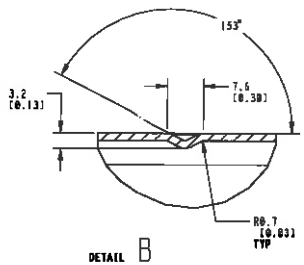


SCALE 1/8

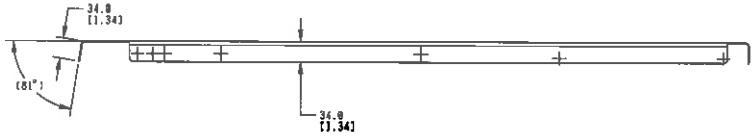
ISO VIEW
FOR REFERENCE ONLY

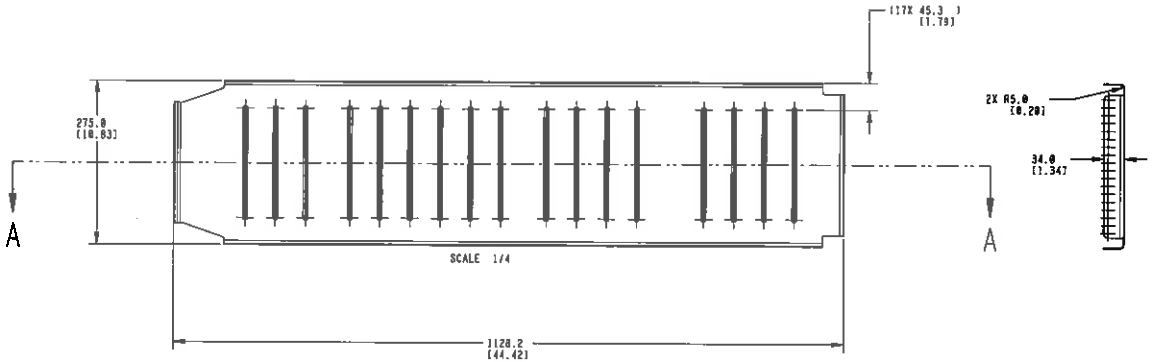
NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL010 IN MSFC DDMS.
   - ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. MATERIAL: 0.063" STK 6061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.
4. 125 ✓ ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.
5. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.
6. IDENTIFY PART PER MIL-STD-130, METHOD BAG AND TAG PER MIL-STD-129.
7. CLEAN AND MAINTAIN TO CxP 70145 - GENERALLY CLEAN LEVEL.
8. MATERIAL TRACEABILITY IS REQUIRED. RECORDS SHALL BE MAINTAINED OF: (1) ACTUAL CHEMICAL AND PHYSICAL MATERIAL VERIFICATION TEST RESULTS, (2) CERTIFICATES OF CONFORMANCE, (3) DETAILED PROCESS, INSPECTION, DISCREPANCY RECORDS TRACEABLE TO THE MATERIAL FROM WHICH FABRICATION ORIGINATED, AND (4) IN-HOUSE CHEMICAL AND PHYSICAL VERIFICATION TESTING.
9. PILOT FOR 1/8" DIAMETER RIVET.
10. PILOT FOR 1/4" DIAMETER HI-LOK.

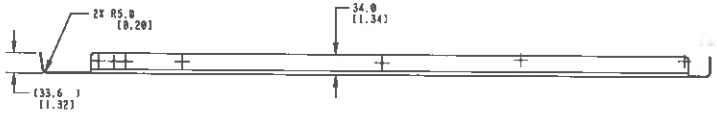


DETAIL B
SCALE 2/1
TYPICAL 17 PLACES





SCALE 1/4



TYPICAL 2 PLACES

01PTL010-001 SHOWN

4	01PTL003-001	TIP LANDER		
TOTAL QTY	NEXT ASSY	USED ON		
APPLICATION (VERIFY IN RELEASE RECORDS)				
DRAWING STATE	RELEASED	MODEL STATE	RELEASED	
DRAWING VERSION	1.01	MODEL VERSION	1.10	
DRAWING NUMBER	01PTL010	MODEL NUMBER	01PTL010	
DRAWING INFORMATION		MODEL INFORMATION		

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM (IN)
TOLERANCES
DECIMALS .XX±.5 (.XXX±.25) ±0.01
ANGLES ±0.5°
MATERIAL 3.
HEAT TREATMENT
FINISH 5.

ORIGINAL DRAWING APPROVALS	
DESIGN ORG.	ES21
DRAWN BY	JOAO SEIXAS
ENGINEER	A.WAYNE
CHECKER	JIM ELCOB
MATERIALS	
STRESS	
E S MA	
PRODUC-MANUF	
PRODUC-CONTR	
NEXT ASSEMBLY	
MAIN BRANCH CHT	
RELEASE DATE	13-AUG-2013

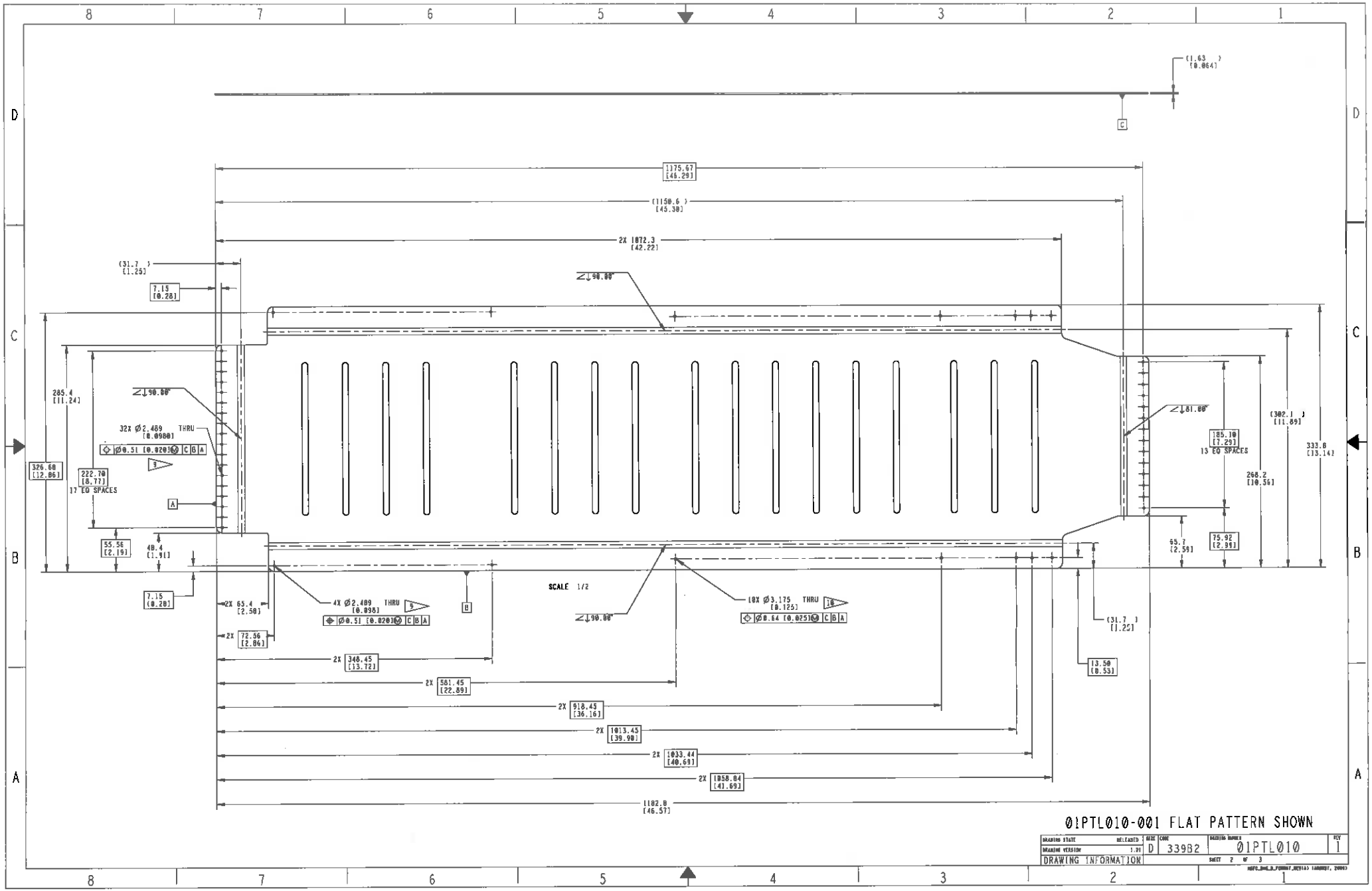
GEORGE C. MARSHALL SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

RIB,
STA 65
(PALLET LANDER)

SIZE	CODE	DRAWING NUMBER	REV
D	33982	01PTL010	1

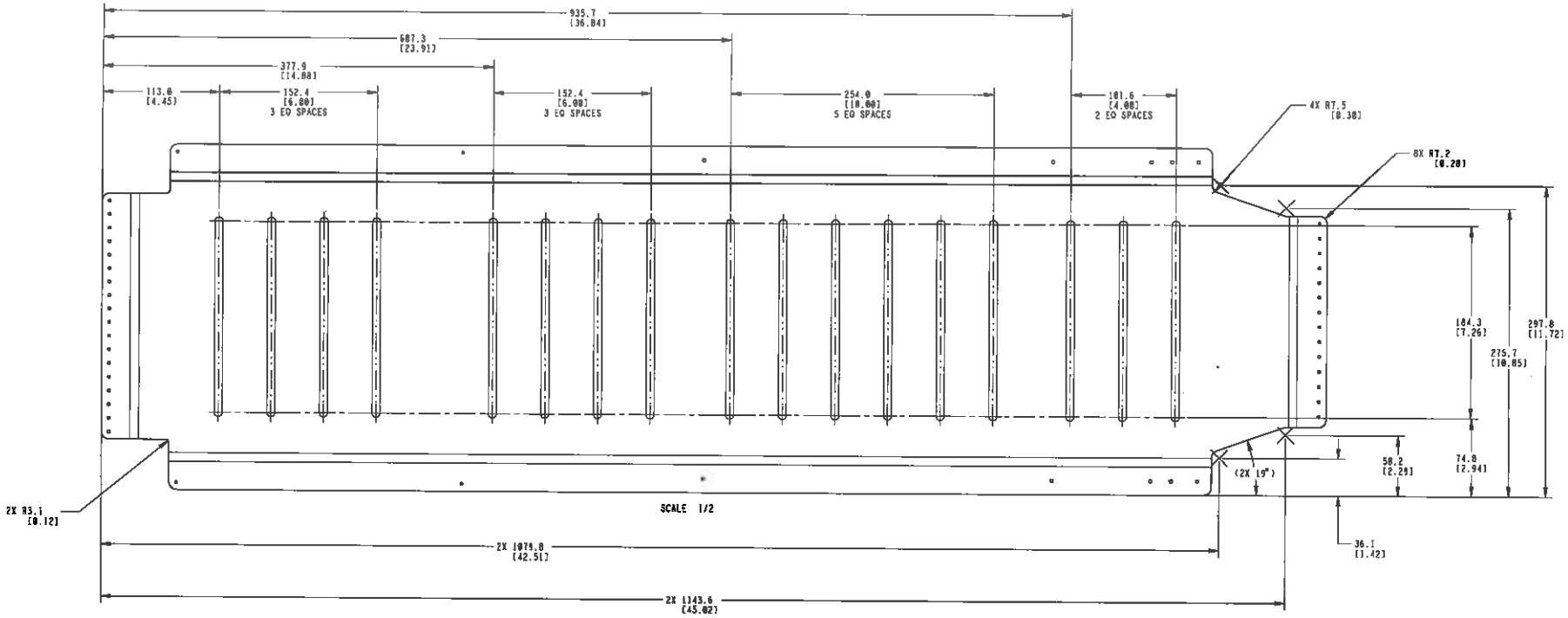
SCALE 1/2 | MASS (KG) (LB) WEIGHT: 1.662 KG | SHEET 1 OF 3

MSFC_DWG_D_FORMAT_REV(A) (AUGUST, 2003)



01PTL010-001 FLAT PATTERN SHOWN

DRAWING STATE	RELEASED	SIZE	CODE	DRAWING NUMBER	REV
DRAWING VERSION	1.01	D	339B2	01PTL010	1
DRAWING INFORMATION				SHEET 2 OF 3	

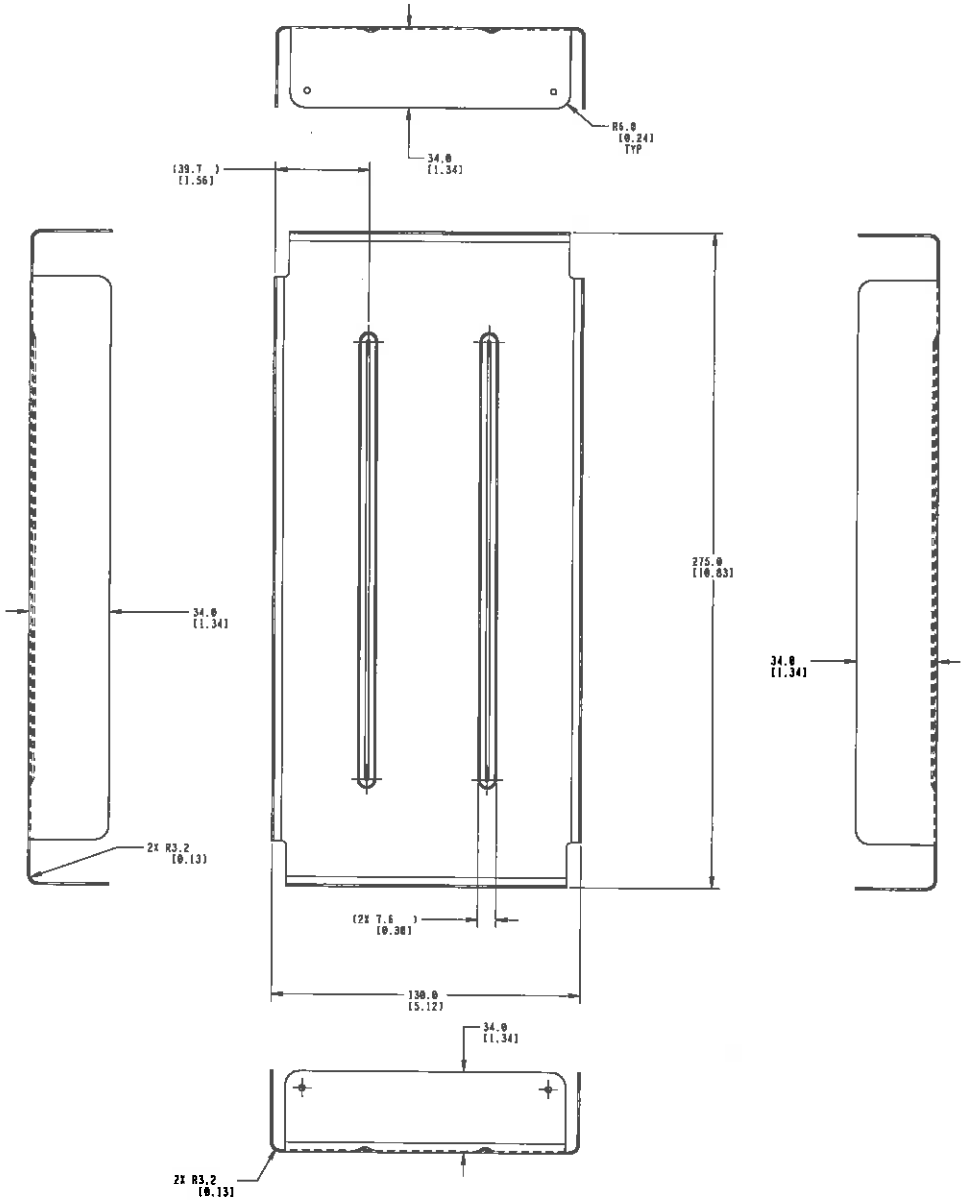


01PTL010-001 FLAT PATTERN SHOWN

DRAWING STATE RELEASED	SIZE D	CODE 33962	DRAWING NUMBER 01PTL010	REV 1
DRAWING VERSION 1.21				
DRAWING INFORMATION			SHEET 3 OF 3	

Blank

REVISIONS				
REV	ZONE	DESCRIPTION	APPROVAL	REL DATE
1				SEE RELEASE DATE

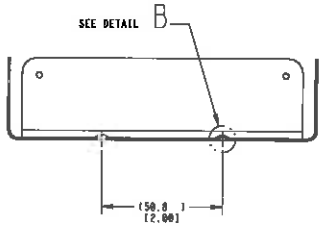


SCALE 1/2

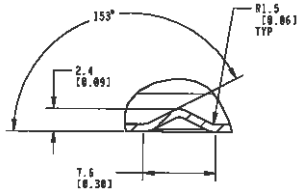
ISO VIEW
FOR REFERENCE ONLY

NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL011 IN MSFC DBMS.
   - ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. MATERIAL: 0.032" STK 6061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.
4. 125 ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.
5. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.
6. IDENTIFY PART PER MIL-STD-130, METHOD BAG AND TAG PER MIL-STD-129.
7. CLEAN AND MAINTAIN TO CxP 70145 - GENERALLY CLEAN LEVEL.
8. MATERIAL TRACEABILITY IS REQUIRED. RECORDS SHALL BE MAINTAINED OF: (1) ACTUAL CHEMICAL AND PHYSICAL MATERIAL VERIFICATION TEST RESULTS, (2) CERTIFICATES OF CONFORMANCE, (3) DETAILED PROCESS, INSPECTION, DISCREPANCY RECORDS TRACEABLE TO THE MATERIAL FROM WHICH FABRICATION ORIGINATED, AND (4) IN-HOUSE CHEMICAL AND PHYSICAL VERIFICATION TESTING.
9. PILOT FOR 1/8" DIAMETER RIVET.



SECTION A-A



DETAIL B
SCALE 4/1
TYPICAL 2 PLACES

01PTL011-001 SHOWN

6	01PTL003-001	TIP PALLET	
TOTAL QTY	NEXT ASSY	USED ON	

APPLICATION
(VERIFY IN RELEASE RECORDS)

DRAWING STATE	RELEASED
DRAWING VERSION	1.13
DRAWING NUMBER	01PTL011

DRAWING INFORMATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN mm [IN]
TOLERANCES
DECIMALS .XX±.0 (.03) .XXX±.25 (.010)
ANGLES ±0.5°
MATERIAL 3
HEAT TREATMENT
FINISH 5

MODEL STATE	RELEASED
MODEL VERSION	1.13
MODEL NUMBER	01PTL011

MODEL INFORMATION

ORIGINAL DRAWING APPROVALS	
DESIGN ORG.	ES21
DRAWN BY	JOAQ BEERAL
ENGINEER	A.WAYNE
CHECKER	JIM SLEBD
MATERIALS	
STRESS	
S & MA	
PRODUC-MANUF	
PRODUC-CONTR	
NEXT ASSEMBLY	
DESN BRANCH CHF	
RELEASE DATE	13-AUG-2013

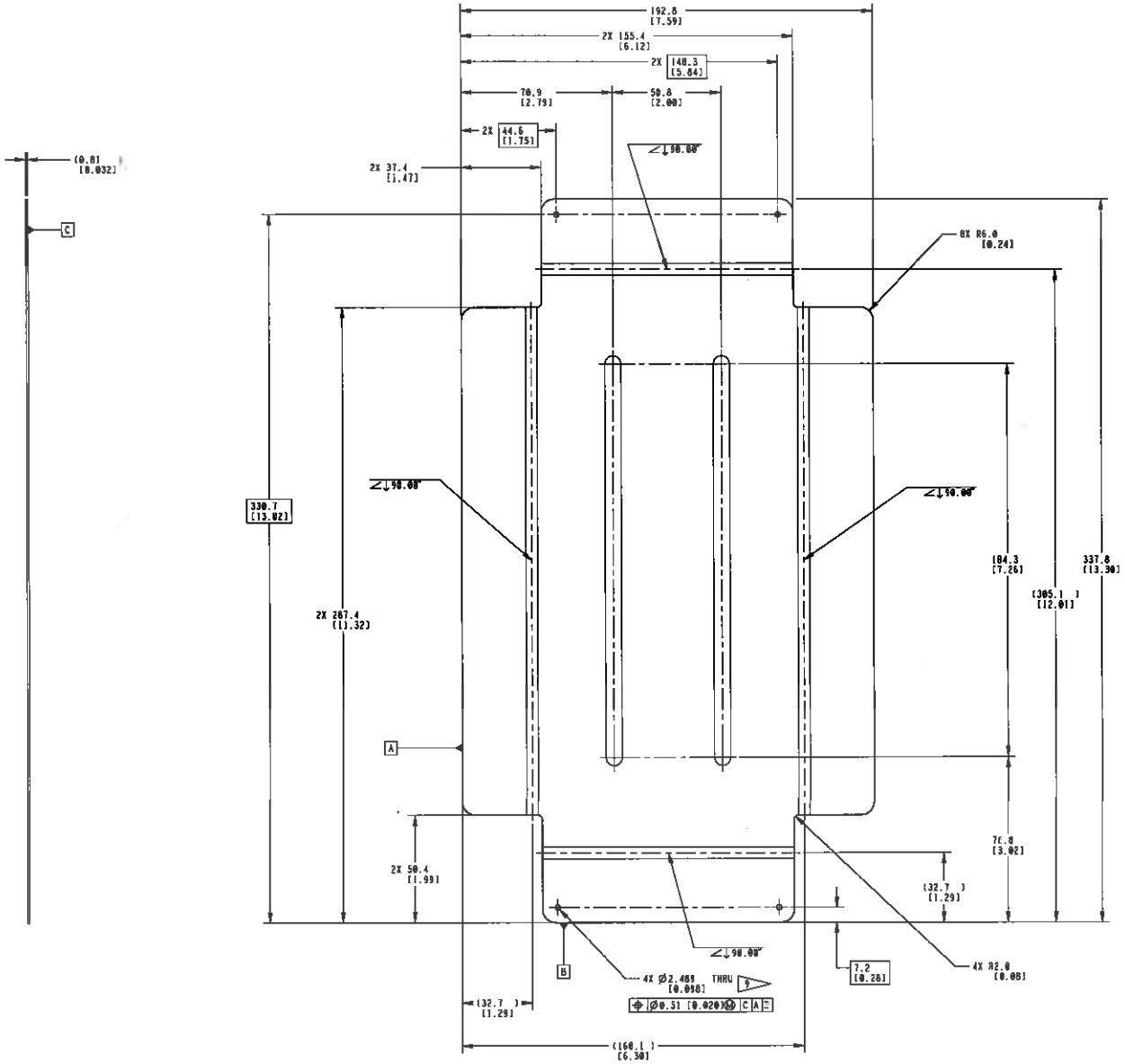
GEORGE C. MARSHALL SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

RIB,
BL 750, CENTER
(TIP PALLET LANDER)

SIZE	CODE	DRAWING NUMBER	REV
D	339B2	01PTL011	1

SCALE 1/1 | MASS (UNIT WEIGHT) 0.127 KG | SHEET 1 OF 2

MSFC_DWG_D_FORMAT_REV13 (AUGUST, 2009)



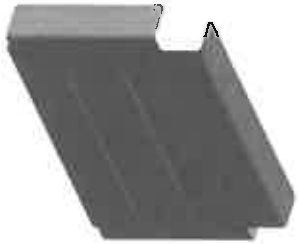
01PTL011-001 FLAT PATTERN SHOWN

DRAWING STATE	RELEASED	SIZE D	CODE 339B2	DRAWING NUMBER 01PTL011
DRAWING VERSION	1.13			REV 1
DRAWING INFORMATION				SHEET 2 OF 2

REVISIONS				
REV	ZONE	DESCRIPTION	APPROVAL	REL DATE
1				SEE RELEASE DATE

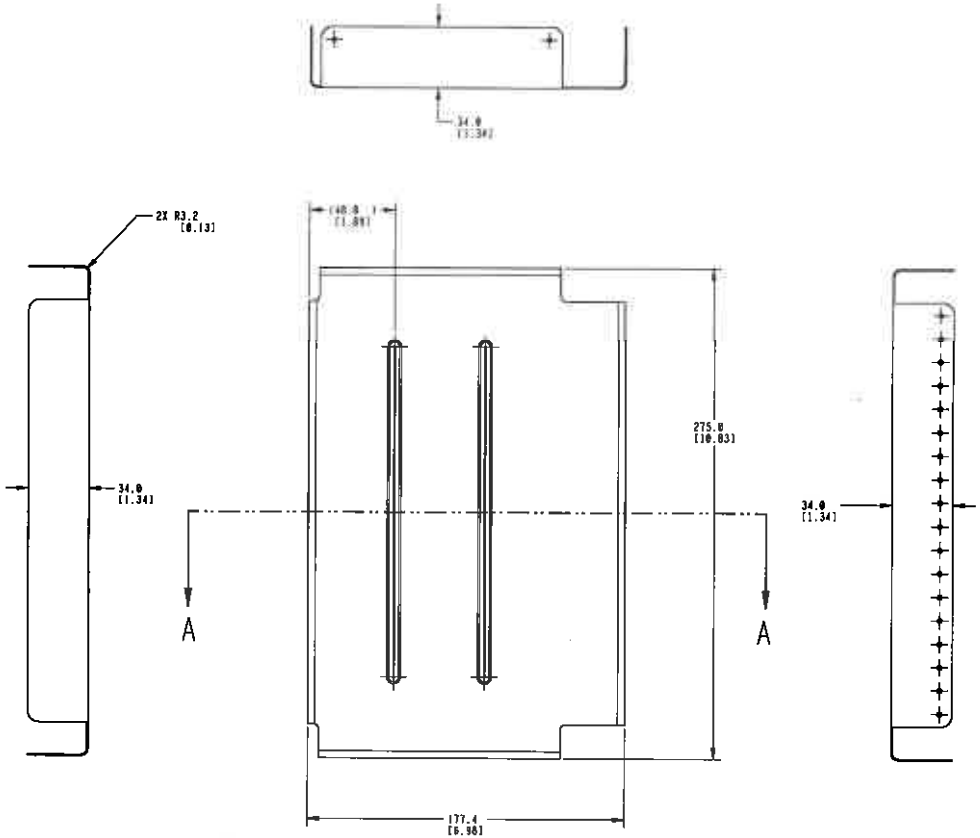
NOTES:

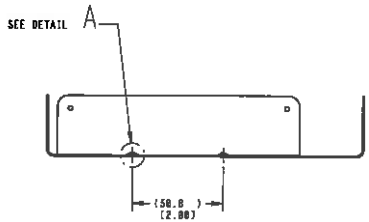
1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT AMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL012 IN MSFC DOMS.
   - ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. MATERIAL: 0.032" STK 6061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.
4. 125 ✓ ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.
5. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.
6. IDENTIFY PART PER MIL-STD-130, METHOD BAG AND TAG PER MIL-STD-129.
7. CLEAN AND MAINTAIN TO CrF 70145 - GENERALLY CLEAN LEVEL.
8. MATERIAL TRACEABILITY IS REQUIRED. RECORDS SHALL BE MAINTAINED OF: (1) ACTUAL CHEMICAL AND PHYSICAL MATERIAL VERIFICATION TEST RESULTS, (2) CERTIFICATES OF CONFORMANCE, (3) DETAILED PROCESS, INSPECTION, DISCREPANCY RECORDS TRACEABLE TO THE MATERIAL FROM WHICH FABRICATION ORIGINATED, AND (4) IN-HOUSE CHEMICAL AND PHYSICAL VERIFICATION TESTING.
9. PILOT FOR 1/8" DIAMETER RIVET.



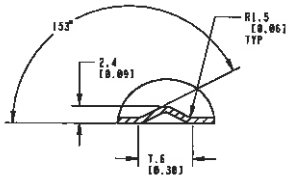
SCALE 1/2

ISO VIEW
FOR REFERENCE ONLY

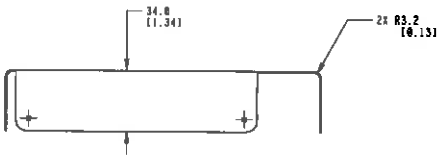




SECTION A-A



DETAIL A
SCALE 3/1
2 PLACES



01PTL012-001 SHOWN

12	01PTL003-001	TIP PALLET
TOTAL QTY	NEXT ASSY	USED ON

APPLICATION
(VERIFY IN RELEASE RECORDS)

DRAWING STATE	RELEASED
DRAWING VERSION	1.00
DRAWING NUMBER	01PTL012

DRAWING INFORMATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM [IN]

TOLERANCES

DECIMALS	ANGLES
XXX.X (.01) XXX.XX (.030)	±0.5°

MATERIAL	3.
HEAT TREATMENT	
FINISH	5.
MODEL STATE	RELEASED
MODEL VERSION	1.12
MODEL NUMBER	01PTL012

MODEL INFORMATION

ORIGINAL DRAWING APPROVALS	
DESIGN ORG.	ES21
DRAWN BY	JOHN SEITZAL
ENGINEER	A.WAYNE
CHECKER	JIM SLEDD
MATERIALS	
STRESS	
R & MA	
PRODUC-MANUF	
PRODUC-CONTR	
HEAT ASSEMBLY	
DERA BRANCH CHF	
RELEASE DATE	13-AUG-2013

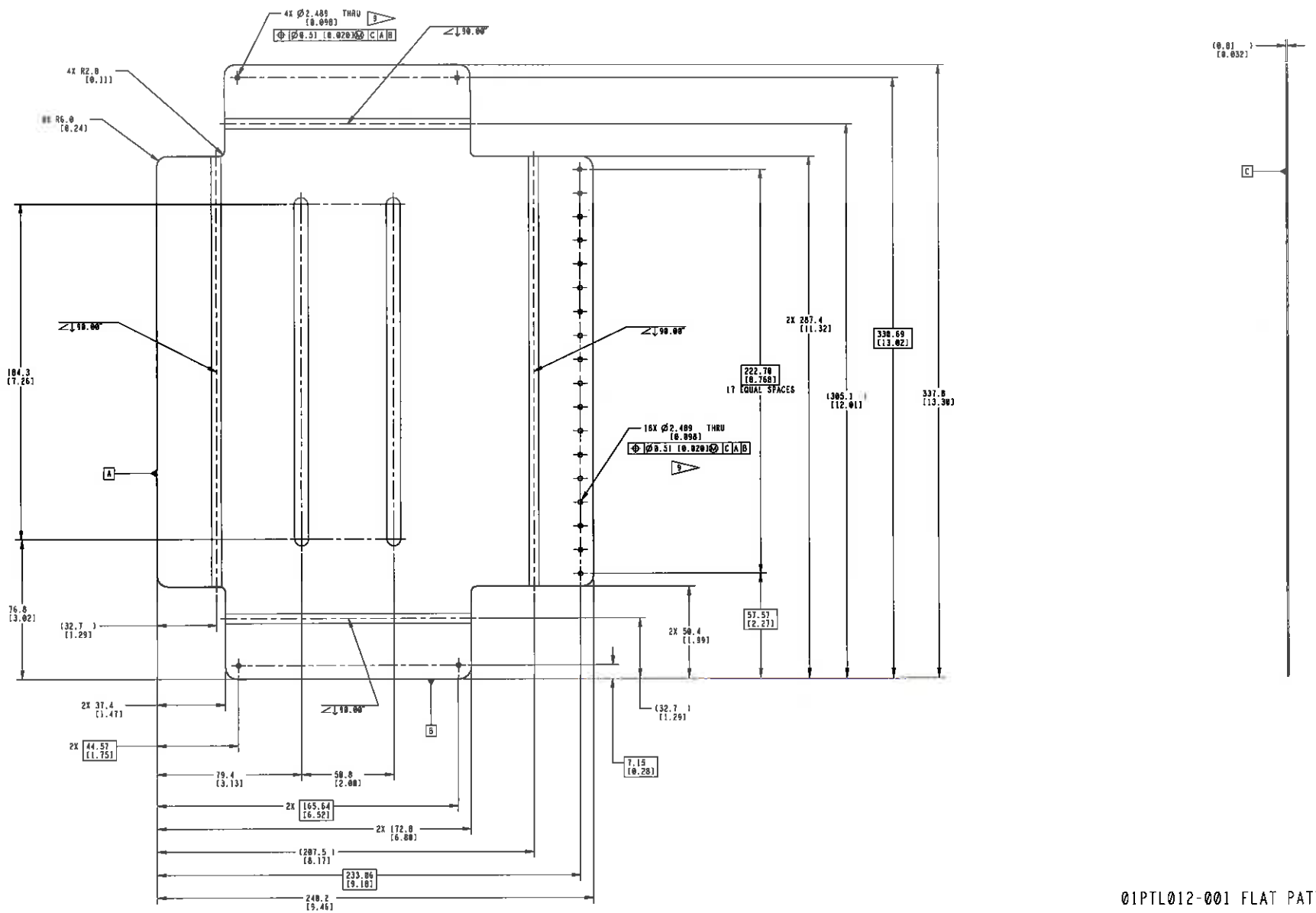
GEORGE C. MARSHALL
SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

RIB,
BL 750, MID
(TIP PALLET LANDER)

SIZE	CODE	DRAWING NUMBER	REV
D	339B2	01PTL012	1

SCALE 3/4 MASS (UNIT WEIGHT) 0.155 KG SHEET 1 OF 2

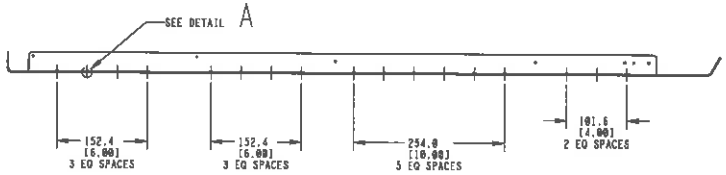
MSFC_DWG_D_FORMAT_REV13 (AUGUST, 2009)



01PTL012-001 FLAT PATTERN SHOWN

DRAWING STATE: RELEASED	SIZE: D	CODE: 339B2	DRAWING NUMBER: 01PTL012	REV: 1
DRAWING VERSION: 1.10				
DRAWING INFORMATION			SHEET 2 OF 2	

REVISIONS				
REV	ZONE	DESCRIPTION	APPROVAL	REL DATE
1				SEE RELEASE DATE

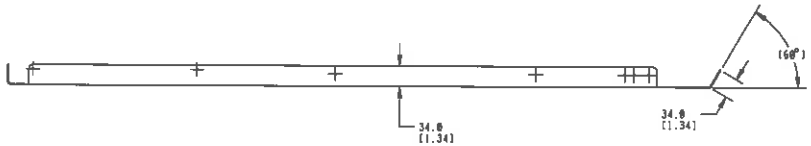


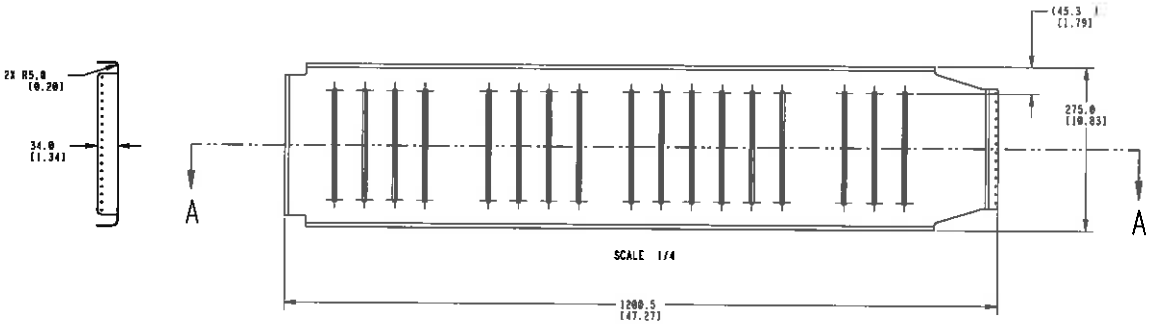
SECTION A - A
SCALE 1/4

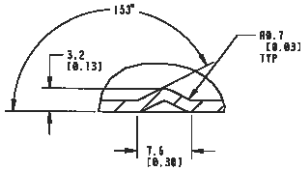
ISO VIEW
FOR REFERENCE ONLY

NOTES:

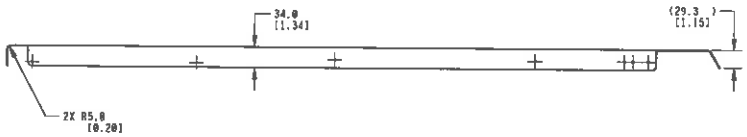
1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL013 IN MSFC DDMS.
   - ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. MATERIAL: 0.063" STK 6061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.
4. 125 ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.
5. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.
6. IDENTIFY PART PER MIL-STD-130, METHOD BA6 AND TAG PER MIL-STD-129.
7. CLEAN AND MAINTAIN TO CxP 70145 - GENERALLY CLEAN LEVEL.
8. MATERIAL TRACEABILITY IS REQUIRED. RECORDS SHALL BE MAINTAINED OF: (1) ACTUAL CHEMICAL AND PHYSICAL MATERIAL VERIFICATION TEST RESULTS, (2) CERTIFICATES OF CONFORMANCE, (3) DETAILED PROCESS, INSPECTION, DISCREPANCY RECORDS TRACEABLE TO THE MATERIAL FROM WHICH FABRICATION ORIGINATED, AND (4) IN-HOUSE CHEMICAL AND PHYSICAL VERIFICATION TESTING.
9. PILOT FOR 1/8" DIAMETER RIVET.
10. PILOT FOR 1/4" DIAMETER HI-LOK.







DETAIL A
SCALE 3/1
17 PLACES



01PTL013-001 SHOWN

4	01PTL003-001	TIP LANDER
TOTAL QTY	NEXT ASSY	USED ON

APPLICATION
(VERIFY IN RELEASE RECORDS)

DRAWING STATE	RELEASED
DRAWING VERSION	1.13
DRAWING NUMBER	01PTL013

DRAWING INFORMATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM [IN]
TOLERANCES
DECIMALS .XX: ± 0.03 .XXX: ± 0.25 [.01] ANGLES ±0.5°
MATERIAL 3.
HEAT TREATMENT
FINISH 5.

MODEL STATE	RELEASED
MODEL VERSION	1.14
MODEL NUMBER	01PTL013

MODEL INFORMATION

ORIGINAL DRAWING APPROVALS

DESIGN ENG.	ESPI
DRAWN BY	JOAO SEIXAL
ENGINEER	A.WAYNE
CHECKER	JIM WLEDO
MATERIALS	
STRESS	
S & MA	
PRODUC-MANUF	
PRODUC-CONTR	
NEXT ASSEMBLY	
DESIGN BRANCH CHIEF	
RELEASE DATE	13-AUG-2013

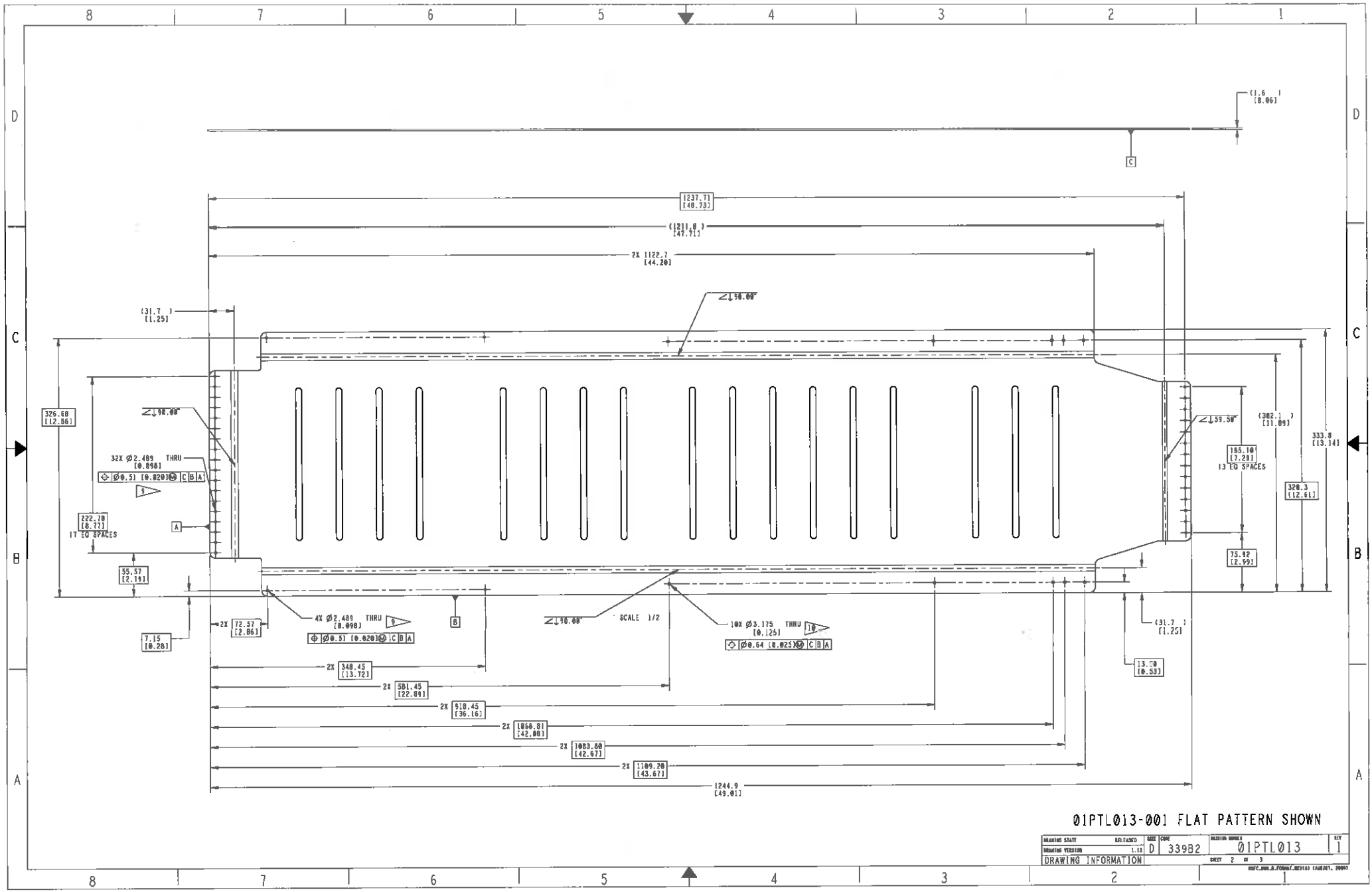
GEORGE C. MARSHALL SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

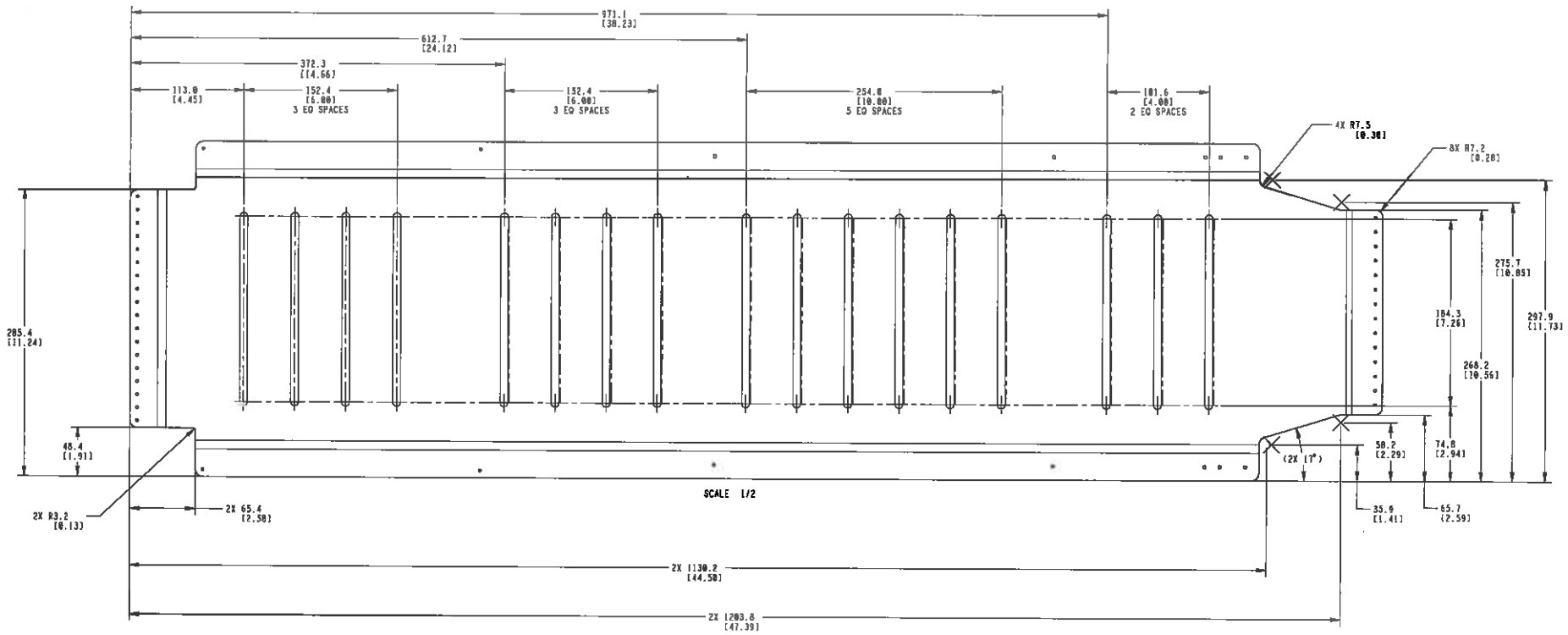
RIB,
STA 244
(TIP PALLET LANDER)

SIZE	CODE	DRAWING NUMBER	REV
D	33982	01PTL013	1

SCALE 1/6 WGHT (LBS) WEIGHT 1.747 KG SHEET 1 OF 3

MSFC_DWG_B_FORMAT_REVISED (AUGUST, 2006)


(1.6)
[0.06]
C
[237.7]
[40.73]
(1211.0)
[47.71]
2X 1122.7
[44.20]
(31.7)
[1.25]
90.00°
326.68
[12.86]
98.00°
32X Ø2.489 THRU
[0.098]
Ø0.5 [0.020] C B A
9
222.78
[8.77]
17 EQ SPACES
A
55.57
[2.19]
7.15
[0.28]
2X 72.57
[2.86]
4X Ø2.489 THRU
[0.098]
9
Ø0.5 [0.020] C B A
B
90.00°
SCALE 1/2
10X Ø3.175 THRU
[0.125]
10
Ø0.64 [0.025] C B A
2X 348.45
[13.72]
2X 581.45
[22.89]
2X 918.45
[36.16]
2X 1068.81
[42.08]
2X 1083.80
[42.67]
2X 1109.20
[43.67]
1244.9
[49.01]
59.50°
(302.1)
[11.89]
333.8
[13.14]
185.10
[7.29]
13 EQ SPACES
320.3
[12.61]
75.92
[2.99]
(31.7)
[1.25]
13.20
[0.53]
01PTL013-001 FLAT PATTERN SHOWN
DRAWING STATE RELEASED
DRAWING VERSION 1.12
DRAWING INFORMATION
SIZE D
CODE 339B2
DRAWING NUMBER 01PTL013
REV 1
SHEET 2 OF 3

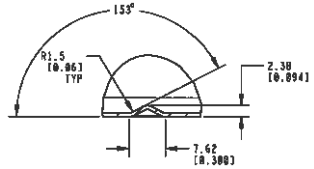


01PTL013-001 FLAT PATTERN SHOWN

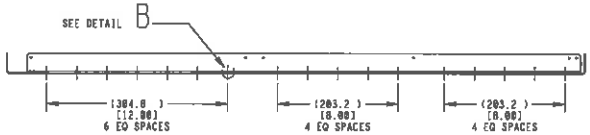
DRAWING STATE	RELEASED	SIZE	CODE	DRAWING NUMBER	REV
DRAWING VERSION	1.15	D	339B2	01PTL013	1
DRAWING INFORMATION				SHEET 3 OF 3	

BLANK

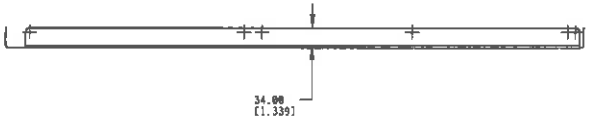
REVISIONS				
REV	ZONE	DESCRIPTION	APPROVAL	REL DATE
1				SEE RELEASE DATE



DETAIL B
SCALE 2/1
17 PLACES



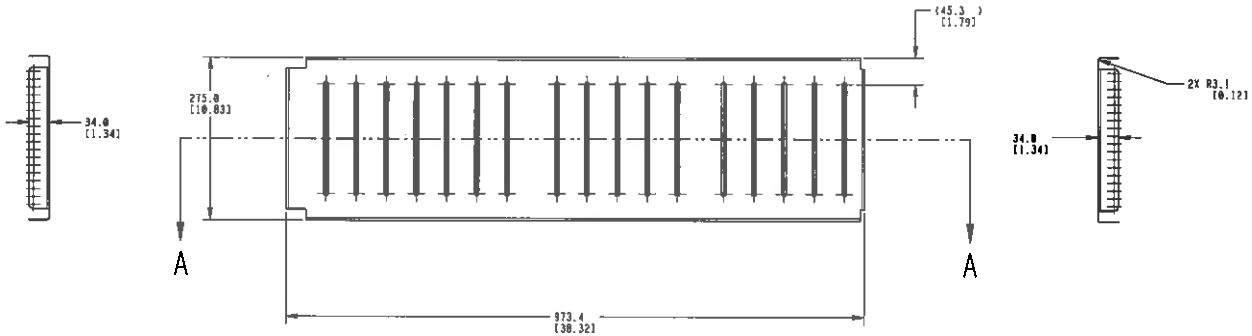
SECTION A-A

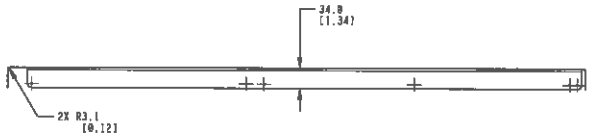


SCALE 1/8
ISO VIEW
FOR REFERENCE ONLY

NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL014 IN MSFC DOMS.
   - ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. MATERIAL: 0.032" STK 6061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.
4. 125 ✓ ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.
5. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.
6. IDENTIFY PART PER MIL-STD-130, METHOD BAG AND TAG PER MIL-STD-129.
7. CLEAN AND MAINTAIN TO CxP 70145 - GENERALLY CLEAN LEVEL.
8. MATERIAL TRACEABILITY IS REQUIRED. RECORDS SHALL BE MAINTAINED OF: (1) ACTUAL CHEMICAL AND PHYSICAL MATERIAL VERIFICATION TEST RESULTS, (2) CERTIFICATES OF CONFORMANCE, (3) DETAILED PROCESS, INSPECTION, DISCREPANCY RECORDS TRACEABLE TO THE MATERIAL FROM WHICH FABRICATION ORIGINATED, AND (4) IN-HOUSE CHEMICAL AND PHYSICAL VERIFICATION TESTING.
9. PILOT HOLE FOR 1/8" DIAMETER RIVET.





01PTL014-001 SHOWN

2	01PTL003-001	TIP LANDER
TOTAL QTY	NEXT ASSY	USED ON

APPLICATION
(VERIFY IN RELEASE RECORDS)

DRAWING INFORMATION		MODEL INFORMATION	
DRAWING STATE	RELEASED	MODEL STATE	RELEASED
DRAWING VERSION	1.17	MODEL VERSION	1.15
DRAWING NUMBER	01PTL014	MODEL NUMBER	01PTL014

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM [IN]
TOLERANCES
DECIMALS .X±.8 [.03] .XX±.25 [.010] ANGLES ±0.5°
MATERIAL 3
HEAT TREATMENT
FINISH 5

ORIGINAL DRAWING APPROVALS	
DESIGN CONF.	CEPI
DRAWN BY	JOAN REIFAL
ENGINEER	ANDY WAYNE
CHECKER	JIM SLEBO
MATERIALS	
STRESS	
S & MA	
PROPUL-MAMF	
PROPUL-CONTR	
NEXT ASSEMBLY	
NEXT BRANCH CHF	
RELEASE DATE	13-AUG-2013

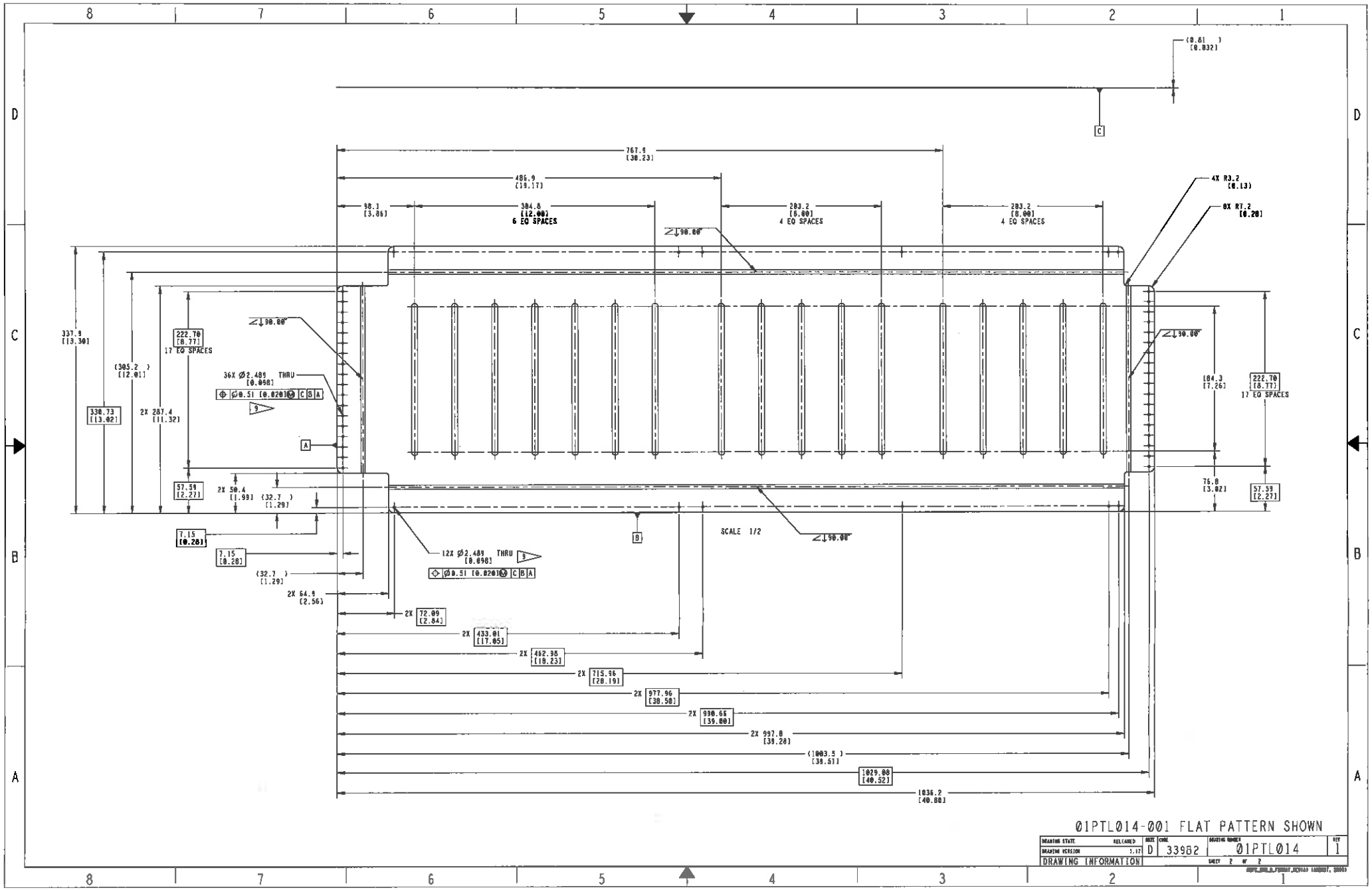
GEORGE C. MARSHALL SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

RIB,
BL 750 OUTER
(TIP PALLET LANDER)

SIZE	CODE	DRAWING NUMBER	REV
D	33982	01PTL014	1

SCALE 1/4 | MASS (UNIT MEMBER): 0.751 KG | SHEET 1 OF 2

MSFC_DWG_D_FORMAT_REVISED JANUARY, 2003

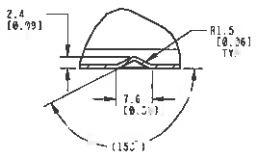


01PTL014-001 FLAT PATTERN SHOWN

DRAWING STATE	RELEASED	SIZE D	CODE 33982	DRAWING NUMBER 01PTL014	REV 1
DRAWING VERSION	1.17			
DRAWING INFORMATION				SHEET 2 OF 2

SECTION A-A

SCALE 1/5
ISO VIEW
FOR REFERENCE ONLY



DETAIL B
SCALE 2/1
TYPICAL (1) PLACES

NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:

   UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL015 IN MSFC DEMS.
   ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   IGNORE ALL MODEL ANNOTATIONS.

2. REMOVE ALL BURRS AND SHARP EDGES

3. MATERIAL: 0.032" STK 6061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.

4. 125 ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.

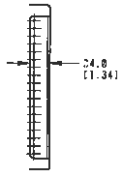
5. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.

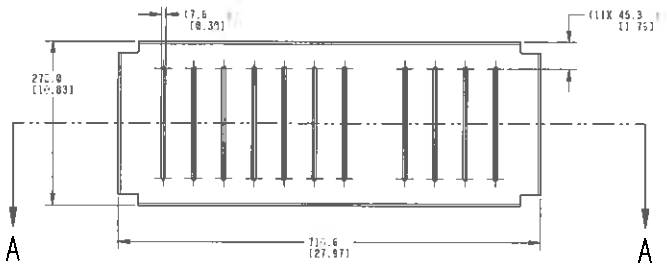
6. IDENTIFY PART PER MIL-STD-130, METHOD 2A1 AND 2B2 PER MIL-STD-129.

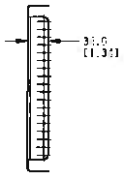
7. CLEAN AND MAINTAIN TO GC (GENERALLY CLEAN) LEVEL PER JSC-SN-C-0005.

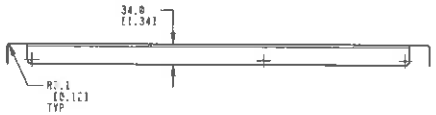
8. MATERIAL TRACEABILITY IS REQUIRED. RECORDS SHALL BE MAINTAINED OF: (1) ACTUAL CHEMICAL AND PHYSICAL MATERIAL VERIFICATION TEST RESULTS, (2) CERTIFICATES OF CONFORMANCE, (3) DETAILED PROCESS, INSPECTION, DISCREPANCY RECORDS TRACEABLE TO THE MATERIAL FROM WHICH FABRICATED ORIGINATED, AND (4) IN-HOUSE CHEMICAL AND PHYSICAL VERIFICATION TESTING.

9. FILCT HOLE FOR 1/8" DIAMETER RIVET.









01PTL015-001 SHOWN

4	01PTL003-001	TIP LANDER	
TOTAL QTY	NEXT ASSY	USED ON	
APPLICATION (VERIFY IN DESIGN RECORDS)			

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM [IN]
TOLERANCES
DECIMALS .XX ± 0.03 [.XX ± .25 X.XX]
ANGLES ±0.5°

MATERIAL 3
HEAT TREATMENT
FINISH 5

DRAWING STATE	RELEASED
DRAWING VERSION	1.20
DRAWING NAME	01PTL015
MODEL STATE	RELEASED
MODEL VERSION	1.20
MODEL NUMBER	01PTL015

DRAWING INFORMATION
MODEL INFORMATION

ORIGINAL DRAWING APPROVALS

DESIGN ORG	ES21
DRAWN BY	JIM GLEDO
ENGINEER	ANDY WAYNE
CHECKER	MARK BETEAL
MATERIALS	
STRESS	
S & MA	
PRODUC-MANUF	
PRODUC-QUALTY	
NEXT ASSEMBLY	
MECH DESIGN CHK	
RELEASE DATE	02/12/2013

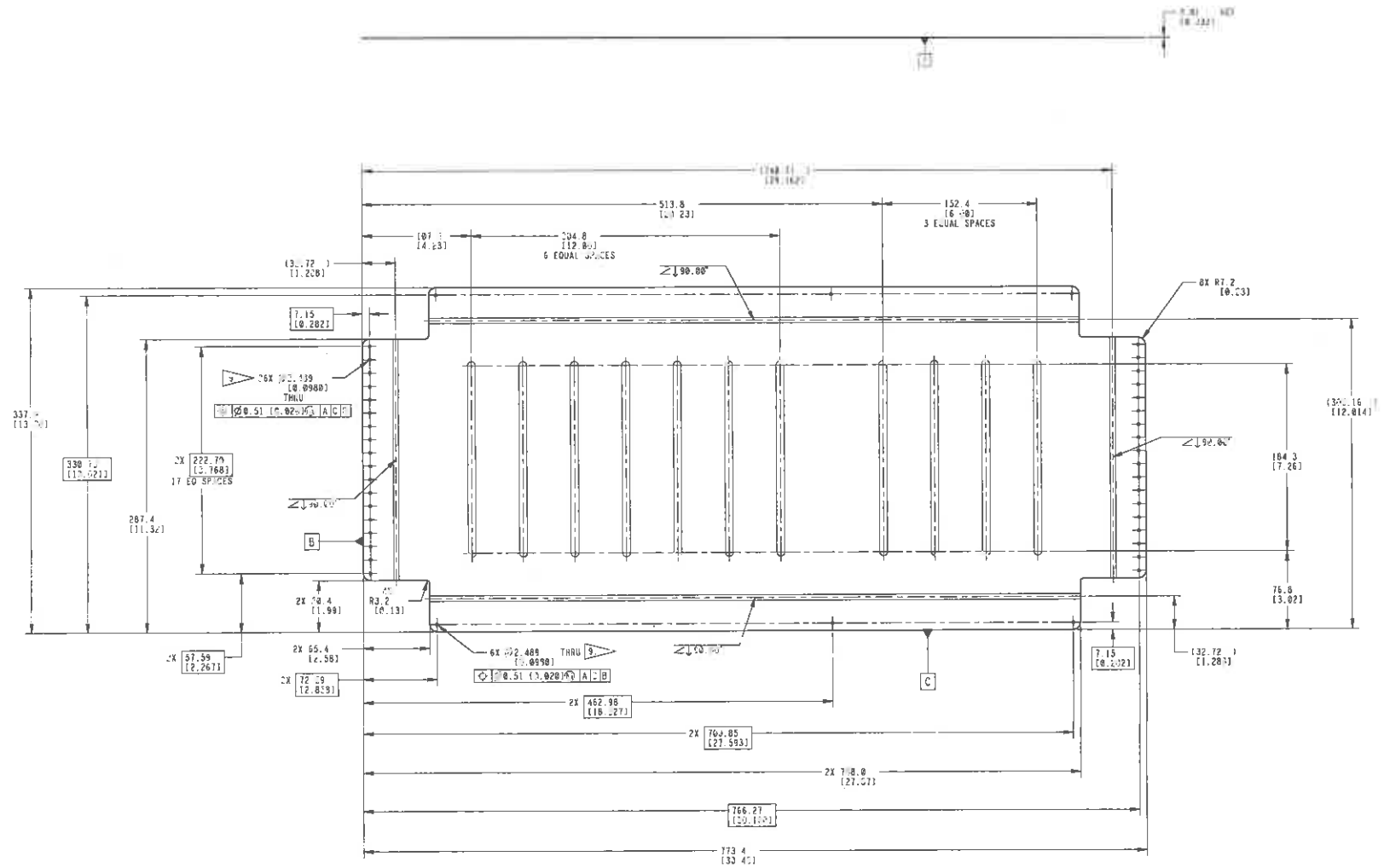
GEORGE C. MARSHALL SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

RIB,
BL 1087
(TIP PALLET LANDER)

SIZE	CODE	DOCUMENT NUMBER	REV
D	33982	01PTL015	1

SCALE 1:1 (NONE STATED) 0.048 KG SHEET 1 OF 2

MSFC.DWG.D.FORMAT_REV13 AUGUST, 2009

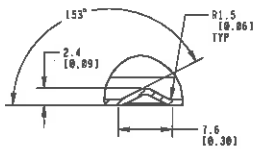


SCALE 1/2

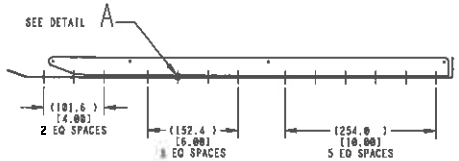
01PTL015-001 FLAT PATTERN SHOWN

DRAWING STATE	RELEASED	SIZE	CODE	DRAWING NUMBER	REV
DRAWING VERSION	1.13	D	33982	01PTL015	1
DRAWING INFORMATION				SHEET 2 OF 2	

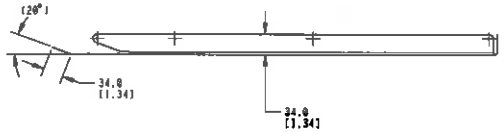
REVISIONS				
REV	ZONE	DESCRIPTION	APPROVAL	REL DATE
1				SEE RELEASE DATE

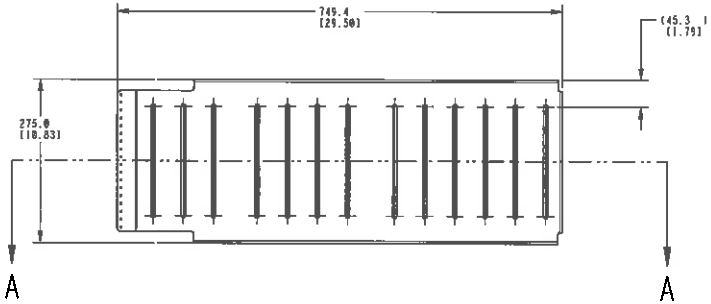


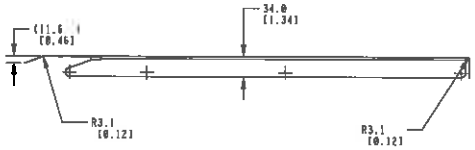
DETAIL A
SCALE 3/1
13 PLACES



SECTION A-A

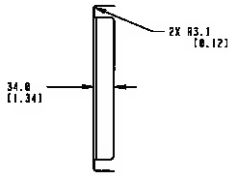






SCALE 1/8

ISO VIEW
FOR REFERENCE ONLY



NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL017 IN MSFC DDMS.
   - ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. MATERIAL: 0.032" STK 6061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.
4. 125 ✓ ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.
5. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.
6. IDENTIFY PART PER MIL-STD-130, METHOD BAG AND TAG PER MIL-STD-129.
7. CLEAN AND MAINTAIN TO CsP 78145 - GENERALLY CLEAN LEVEL.
8. MATERIAL TRACEABILITY IS REQUIRED. RECORDS SHALL BE MAINTAINED OF: (1) ACTUAL CHEMICAL AND PHYSICAL MATERIAL VERIFICATION TEST RESULTS, (2) CERTIFICATES OF CONFORMANCE, (3) DETAILED PROCESS, INSPECTION, DISCREPANCY RECORDS TRACEABLE TO THE MATERIAL FROM WHICH FABRICATION ORIGINATED, AND (4) IN-HOUSE CHEMICAL AND PHYSICAL VERIFICATION TESTING.
9. PILOT HOLE FOR 1/8" DIAMETER RIVET.

01PTL017-001 SHOWN

4	01PTL003-001	TIP LANDER
TOTAL QTY	NEXT ASSY	USED ON

APPLICATION
(VERIFIY IN RELEASE RECORDS)

DRAWING INFORMATION		MODEL INFORMATION	
DRAWING STATE	RELEASED	MODEL STATE	RELEASED
DRAWING VERSION	1.12	MODEL VERSION	1.14
DRAWING NUMBER	01PTL017	MODEL NUMBER	01PTL017

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM [IN]
TOLERANCES
DECIMALS: .XX ± 0 [.03] / .XXX ± 25 [.010]
ANGLES: ±0.5°
MATERIAL 3
HEAT TREATMENT
FINISH 5

ORIGINAL DRAWING APPROVALS	
DESIGN ENG.	CS21
DRAWN BY	JOAQ SETRAL
ENGINEER	ANDY WAYNE
CHECKER	JIM GLEED
MATERIALS	
STRESS	
S & MA	
PRODUC-NAME	
PRODUC-CENTR	
NEXT ASSEMBLY	
DESN BRANCH CHF	
RELEASE DATE	13-AUG-2013

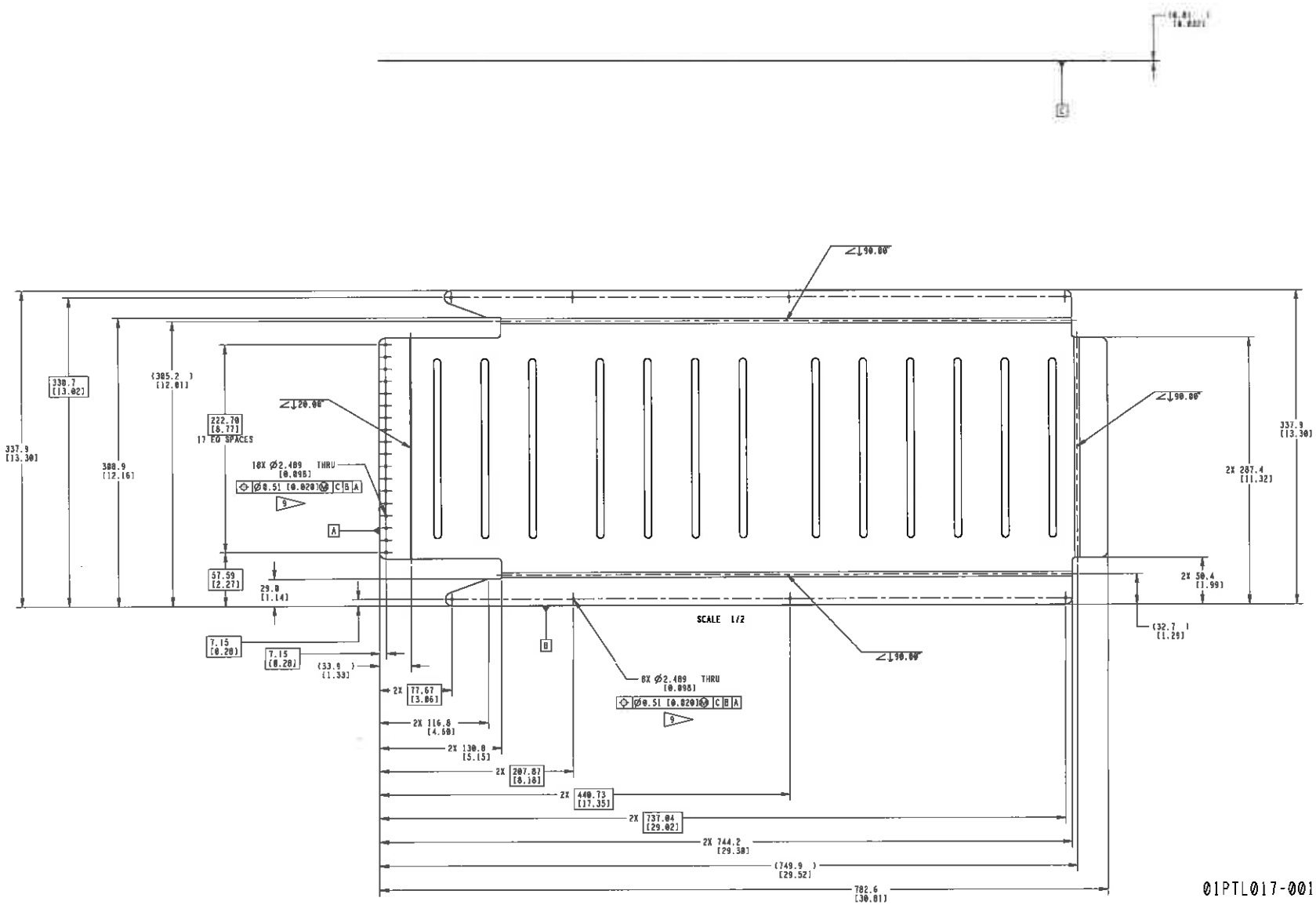
GEORGE C. MARSHALL SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

RIB,
STA 957 OUTER
(TIP PALLET LANDER)

SIZE	CODE	DRAWING NUMBER	REV
D	33982	01PTL017	1

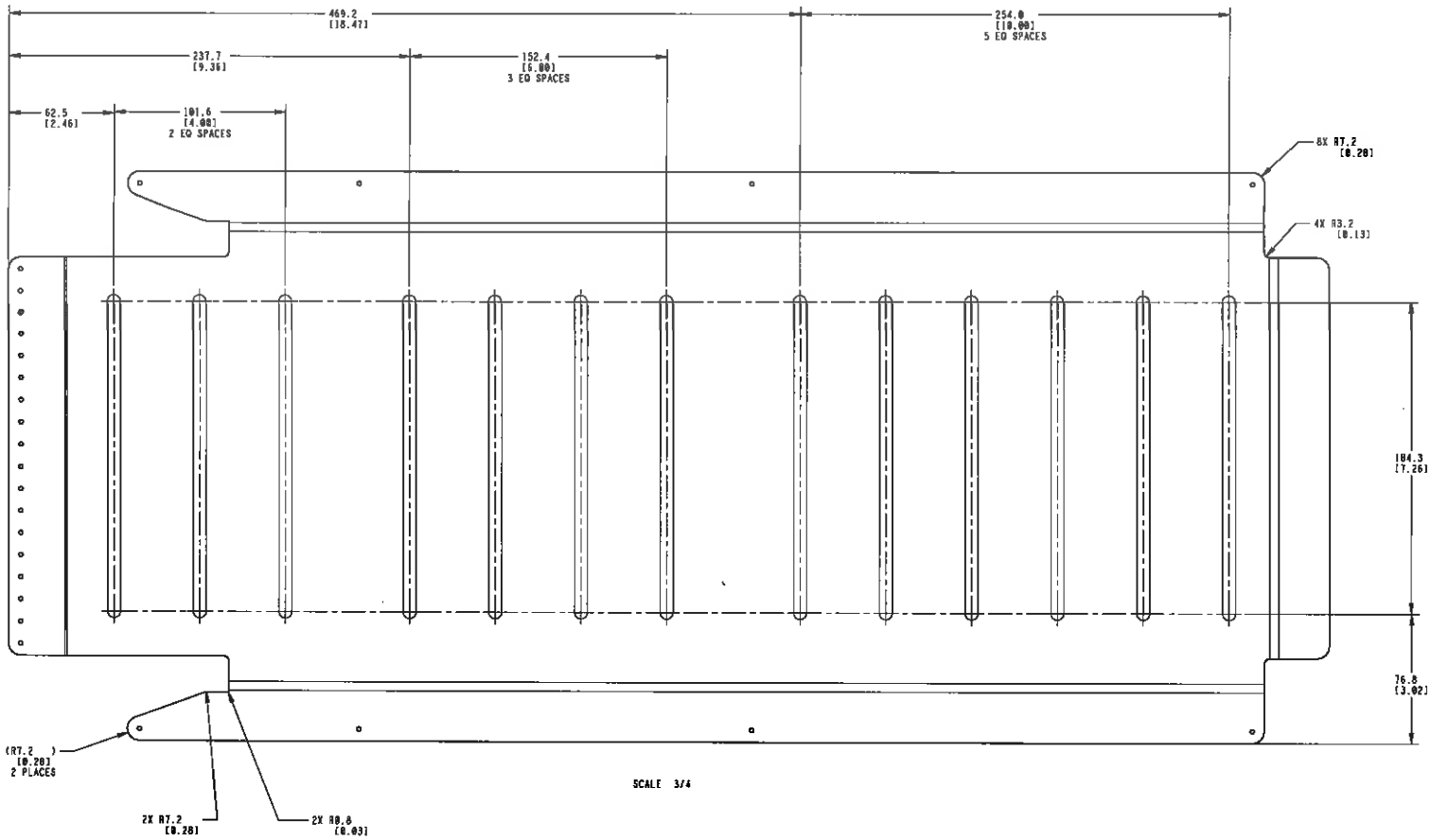
SCALE 1/4 | MASS UNIT WEIGHT 0.553 KG | SHEET 1 OF 3

MSFC_DWG_D_TOPMOST_REVISI (AUGUST, 2003)



01PTL017-001 FLAT PATTERN SHOWN

DRAWING STATE	RELEASED	SIZE	CODE	DRAWING NUMBER	REV
DRAWING VERSION	1.12	D	33982	01PTL017	1
DRAWING INFORMATION				SHEET 2 OF 3	



01PTL017-001 FLAT PATTERN SHOWN

DRAWING STATE: RELEASED	SIZE: D	CMC: 339B2	DRAWING NUMBER: 01PTL017	REV: 1
DRAWING VERSION: 1.12				
DRAWING INFORMATION			SHEET 3 OF 3	

ASME_DWG_B_FORMAT_REV(A) (AUGUST, 2009)

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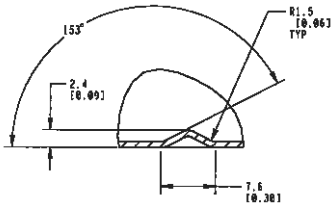
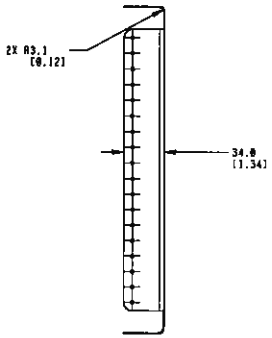


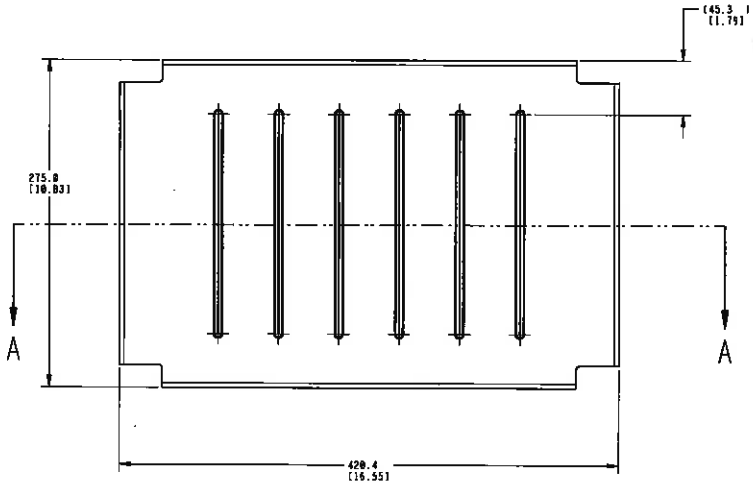
DETAIL A
SCALE 3/1
6 PLACES

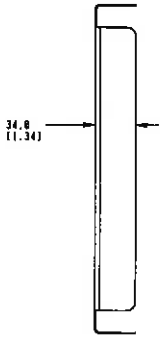
SECTION A-A

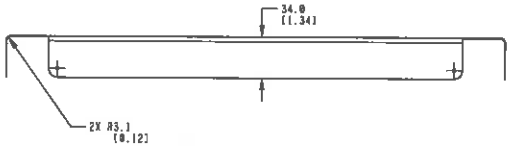
SCALE 1/4

ISO VIEW
FOR REFERENCE ONLY









NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL018 IN MSFC DDMS.
   - ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. MATERIAL: 0.032" STR 6061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.
4. 125 ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.
5. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.
6. IDENTIFY PART PER MIL-STD-130, METHOD BAG AND TAG PER MIL-STD-129.
7. CLEAN AND MAINTAIN TO CxP 70145 - GENERALLY CLEAN LEVEL.
8. MATERIAL TRACEABILITY IS REQUIRED. RECORDS SHALL BE MAINTAINED OF: (1) ACTUAL CHEMICAL AND PHYSICAL MATERIAL VERIFICATION TEST RESULTS, (2) CERTIFICATES OF CONFORMANCE, (3) DETAILED PROCESS, INSPECTION, DISCREPANCY RECORDS TRACEABLE TO THE MATERIAL FROM WHICH FABRICATION ORIGINATED, AND (4) IN-HOUSE CHEMICAL AND PHYSICAL VERIFICATION TESTING.
9. PILOT HOLE FOR 1/8" DIAMETER RIVET.

01PTL018-001 SHOWN

REVISIONS				
REV	ZONE	DESCRIPTION	APPROVAL	DATE
1				SEE RELEASE DATE

4	01PTL003-001	TIP LANDER
TOTAL QTY	NEXT ASSY	USED ON

APPLICATION
(VERIFY IN RELEASE RECORDS)

DRAWING INFORMATION		MODEL INFORMATION	
DRAWING STATE	RELEASED	MODEL STATE	RELEASED
DRAWING VERSION	1.9	MODEL VERSION	1.11
DRAWING NUMBER	01PTL018	MODEL NUMBER	01PTL018

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM [IN]
TOLERANCES
DECIMALS .XX ±0.0 [±.03] .XXX ±0.25 [±.010]
ANGLES ±0.5°
MATERIAL 3
HEAT TREATMENT
FINISH 5

ORIGINAL DRAWING APPROVALS	
DESIGN ORG.	ESPI
DRAWN BY	JOAO DEIDAL
ENGINEER	ANDY WAYNE
CHECKER	JIN SLEDD
MAT_DIAG	
STRESS	
S & MA	
PRODUC-NAME	
PRODUC-CONTR	
NEXT ASSEMBLY	
DESD BRANCH CNT	
RELEASE DATE	13-APR-2013

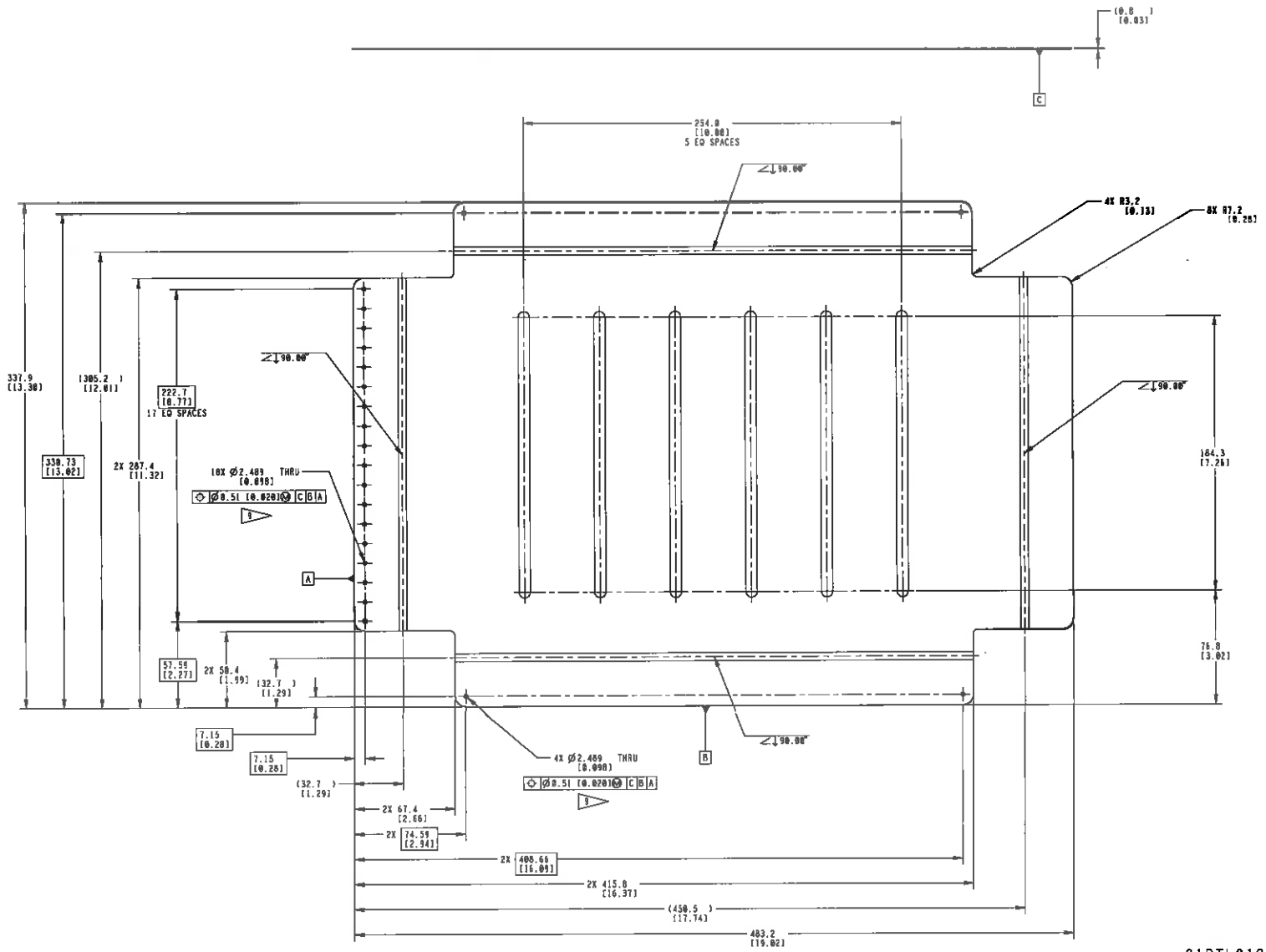
GEORGE C. MARSHALL SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

RIB,
STA 957 MID
(TIP PALLET LANDER)

SIZE	CODE	DRAWING NUMBER	REV
D	33982	01PTL018	1

SCALE 1/2 MASS (UNIT WEIGHT) 0.330 KG SHEET 1 OF 2

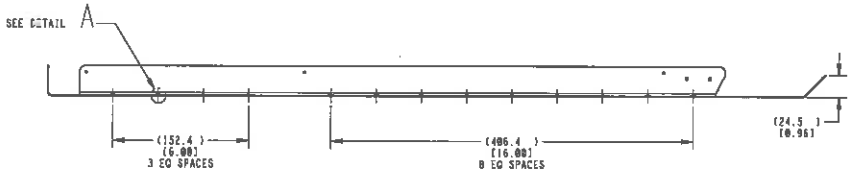
MSFC_DWG_D_FORMAT_REVCA1 (AUGUST, 2003)



01PTL018-001 FLAT PATTERN SHOWN

DRAWING STATE	RELEASED	SIZE	CODE	DRAWING NUMBER	REV
DRAWING VERSION	L.9	D	339B2	01PTL018	1
DRAWING INFORMATION				SHEET 2 OF 2	

REVISIONS				
REV	ZONE	DESCRIPTION	APPROVAL	REL DATE
1				SEE RELEASE DATE



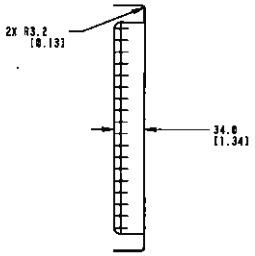
SECTION A - A
SCALE 3/8

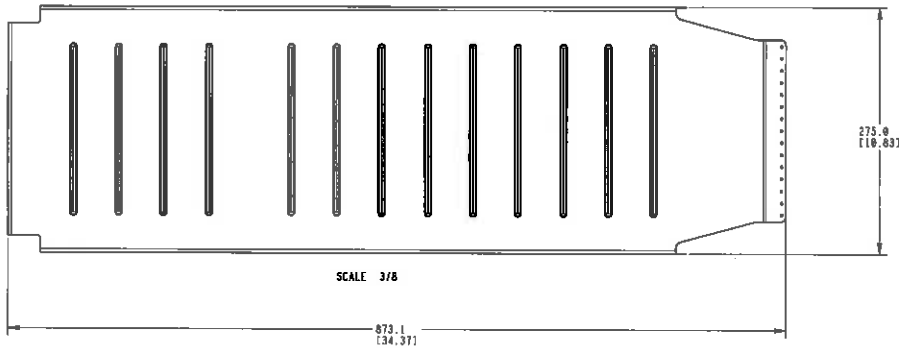
SCALE 1/8

ISO VIEW
FOR REFERENCE ONLY

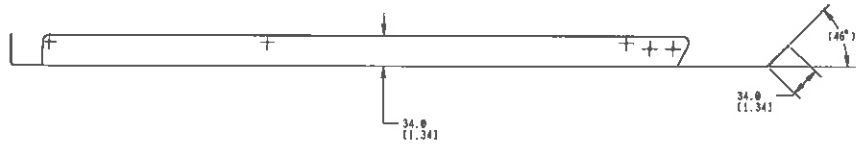
NOTES:

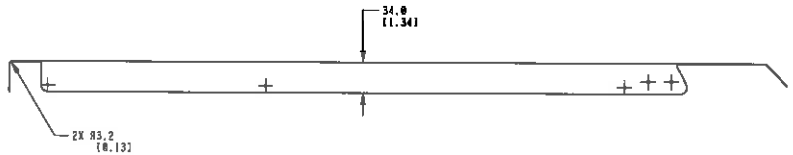
1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL019 IN MSFC DDMS.
   - ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. MATERIAL: 0.032" STK 6061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.
4. 125 ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.
5. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.
6. IDENTIFY PART PER MIL-STD-130, METHOD BAG AND TAG PER MIL-STD-129.
7. CLEAN AND MAINTAIN TO CxP 70145 - GENERALLY CLEAN LEVEL.
8. MATERIAL TRACEABILITY IS REQUIRED. RECORDS SHALL BE MAINTAINED OF: (1) ACTUAL CHEMICAL AND PHYSICAL MATERIAL VERIFICATION TEST RESULTS, (2) CERTIFICATES OF CONFORMANCE, (3) DETAILED PROCESS, INSPECTION, DISCREPANCY RECORDS TRACEABLE TO THE MATERIAL FROM WHICH FABRICATION ORIGINATED, AND (4) IN-HOUSE CHEMICAL AND PHYSICAL VERIFICATION TESTING.
9. PILOT FOR 1/8" DIAMETER RIVET.
10. PILOT FOR 1/4" DIAMETER HI-LOK.

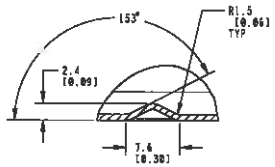




SCALE 3/8







DETAIL A
SCALE 3/1
TYPICAL 13 PLACES

01PTL019-001 SHOWN

4	01PTL003-001	TIP LANDER	
TOTAL QTY	NEXT ASSY	USED ON	

APPLICATION
(VERIFY IN RELEASE RECORDS)

DRAWING STATE	RELEASED
DRAWING VERSION	1.14
DRAWING NUMBER	01PTL019

DRAWING INFORMATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM [IN]
TOLERANCES
DECIMALS .XX±.5 [.03] .XXX±.25 [.010]
ANGLES ±0.5°
MATERIAL 3
HEAT TREATMENT
FINISH 5

MODEL STATE	RELEASED
MODEL VERSION	1.19
MODEL NUMBER	01PTL019

MODEL INFORMATION

ORIGINAL DRAWING APPROVALS

DESIGN ORG.	EV21
DRAWN BY	JOHN SEIZAL
ENGINEER	A.WAYNE
CHECKER	JIM ELCOD
MATERIALS	
STRESS	
S & MA	
PRODUC-MANUF	
PRODUC-CONTR	
NEXT ASSEMBLY	
NEXT BRANCH CHF	
RELEASE DATE	14-AUG-2013

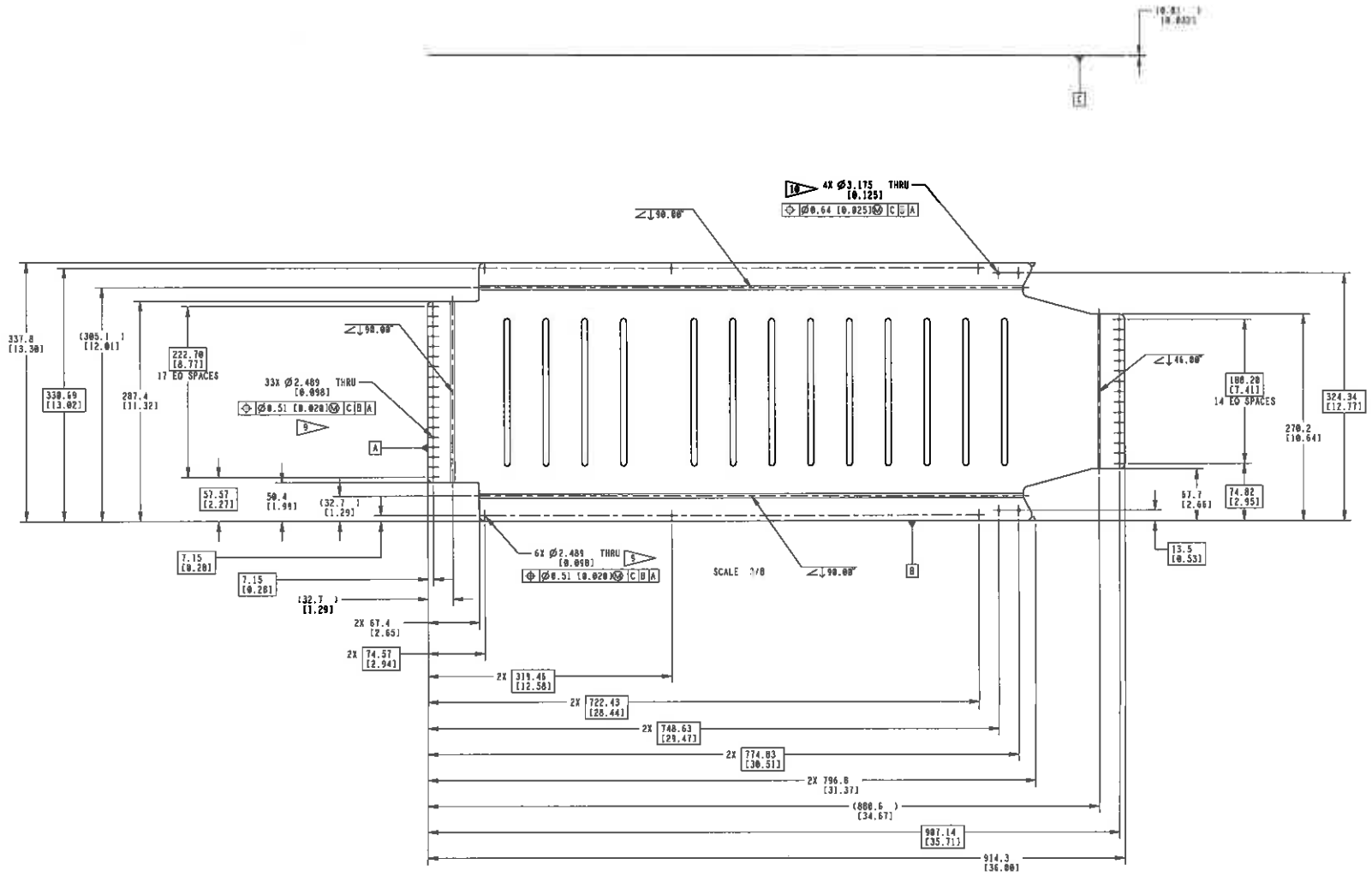
GEORGE C. MARSHALL SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

RIB,
BL 328
(TIP PALLET LANDER)

SIZE	CODE	DRAWING NUMBER	REV
D	339B2	01PTL019	1

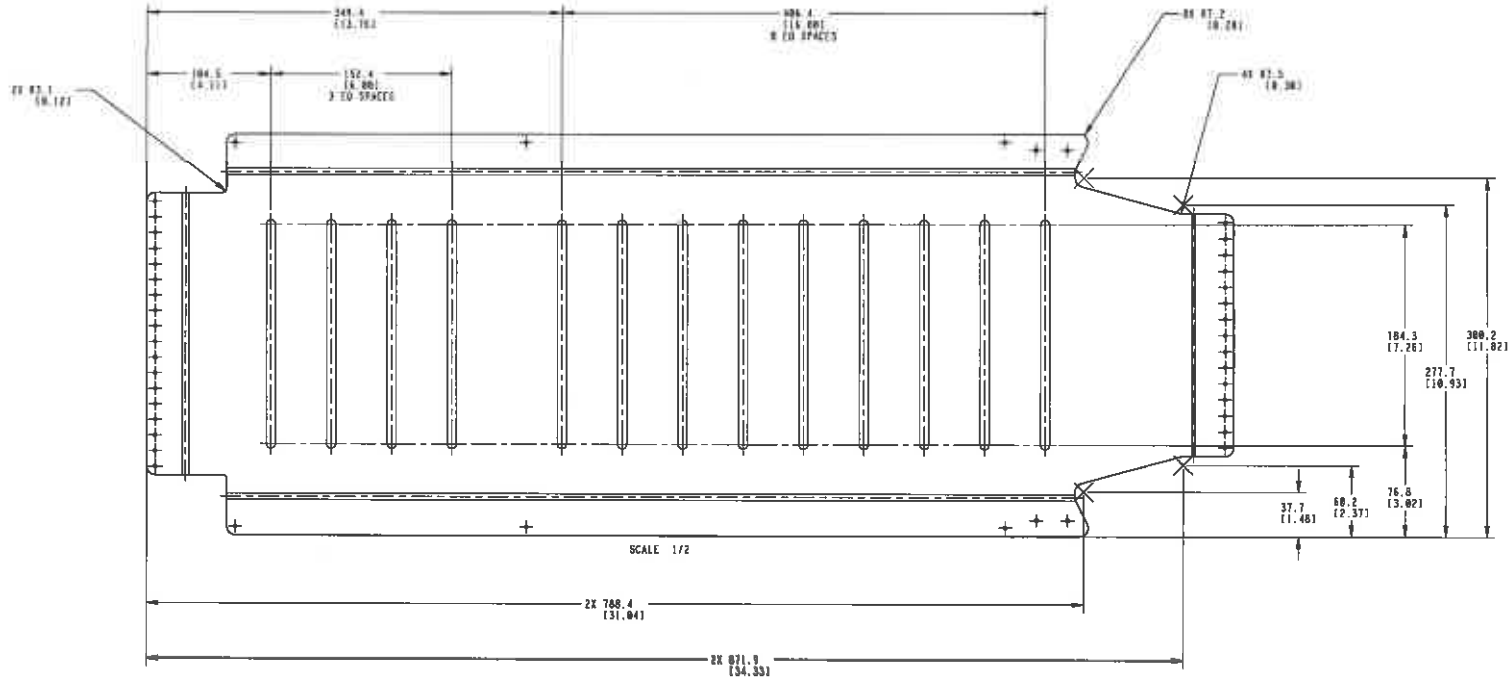
SCALE 1/4 MASS (UNIT WEIGHT) 0.633 KG SHEET 1 OF 3

MSFC_DWG_D_FORMAT_REV10 (JANUARY, 2003)



01PTL019-001 FLAT PATTERN SHOWN

DRAWING STATE	RELEASED	SIZE	CODE	DRAWING NUMBER	REV
DRAWING VERSION	1.14	D	33982	01PTL019	1
DRAWING INFORMATION				SHEET 2 OF 3	

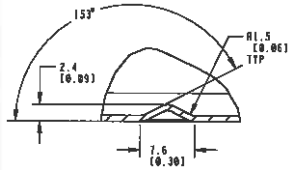


01PTL019-001 FLAT PATTERN SHOWN

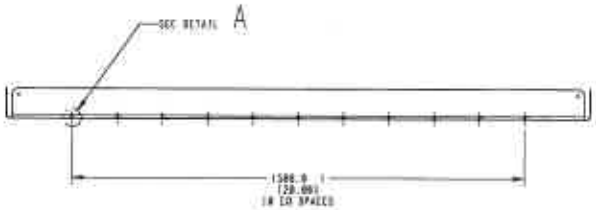
DRAWING STATE	RELEASED	SIZE	CODE	DRAWING NUMBER	REV
DRAWING VERSION	1.14	D	339B2	01PTL019	1
DRAWING INFORMATION				SHEET 3 OF 3	

[illegible]

REVISIONS				
REV	ITEM	DESCRIPTION	APPROVAL	REL DATE
1				SEE RELEASE DATE



DETAIL A
SCALE 3/1
TYPICAL 11 PLACES



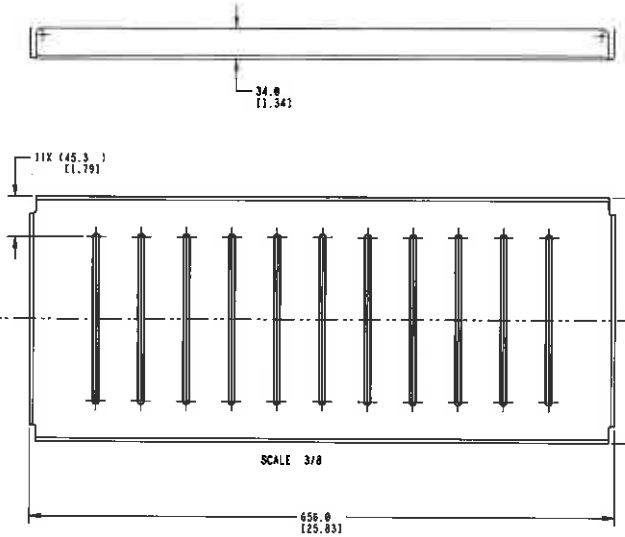
SECTION B-B

SCALE 1/4

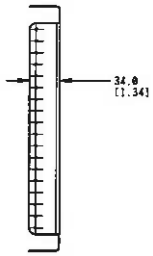
ISO VIEW
FOR REFERENCE ONLY

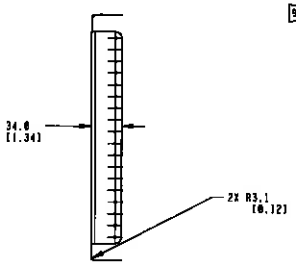
NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL021 IN MSFC DOMS.
   - ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. MATERIAL: 0.032" STK 6061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.
4. 125/ ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.
5. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.
6. IDENTIFY PART PER MIL-STD-130, METHOD BAG AND TAG PER MIL-STD-129.
7. CLEAN AND MAINTAIN TO CxP 70145 - GENERALLY CLEAN LEVEL.
8. MATERIAL TRACEABILITY IS REQUIRED. RECORDS SHALL BE MAINTAINED OF: (1) ACTUAL CHEMICAL AND PHYSICAL MATERIAL VERIFICATION TEST RESULTS, (2) CERTIFICATES OF CONFORMANCE, (3) DETAILED PROCESS, INSPECTION, DISCREPANCY RECORDS TRACEABLE TO THE MATERIAL FROM WHICH FABRICATION ORIGINATED, AND (4) IN-HOUSE CHEMICAL AND PHYSICAL VERIFICATION TESTING.
9. PILOT FOR 1/8" DIAMETER RIVET.



SCALE 3/8





01PTL021-001 SHOWN

2	01PTL003-001	TIP LANDER
TOTAL QTY	NEXT ASSY	USED ON

APPLICATION
(VERIFY IN RELEASE RECORDS)

DRAWING STATE: RELEASED
DRAWING VERSION: 1.2
DRAWING NUMBER: 01PTL021

DRAWING INFORMATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETERS
TOLERANCES
DECIMALS: .XX ± 0.13 (.XXX ± .25 ± .010)
ANGLES: ±0.5°
MATERIAL 3.
HEAT TREATMENT
FINISH 5.

MODEL STATE: RELEASED
MODEL VERSION: 1.0
MODEL NUMBER: 01PTL021

MODEL INFORMATION

ORIGINAL DRAWING APPROVALS	
DESIGN ORG.	EG21
DRAWN BY	JOAO REISAL
ENGINEER	ANDY WAYNE
CHECKER	JIN GLEDO
MATERIALS	
STRESS	
S & MA	
PRODUC-RANGE	
PRODUC-CONTR	
NEXT ASSEMBLY	
DESN BRANCH CHF	
RELEASE DATE	14-AUG-2014

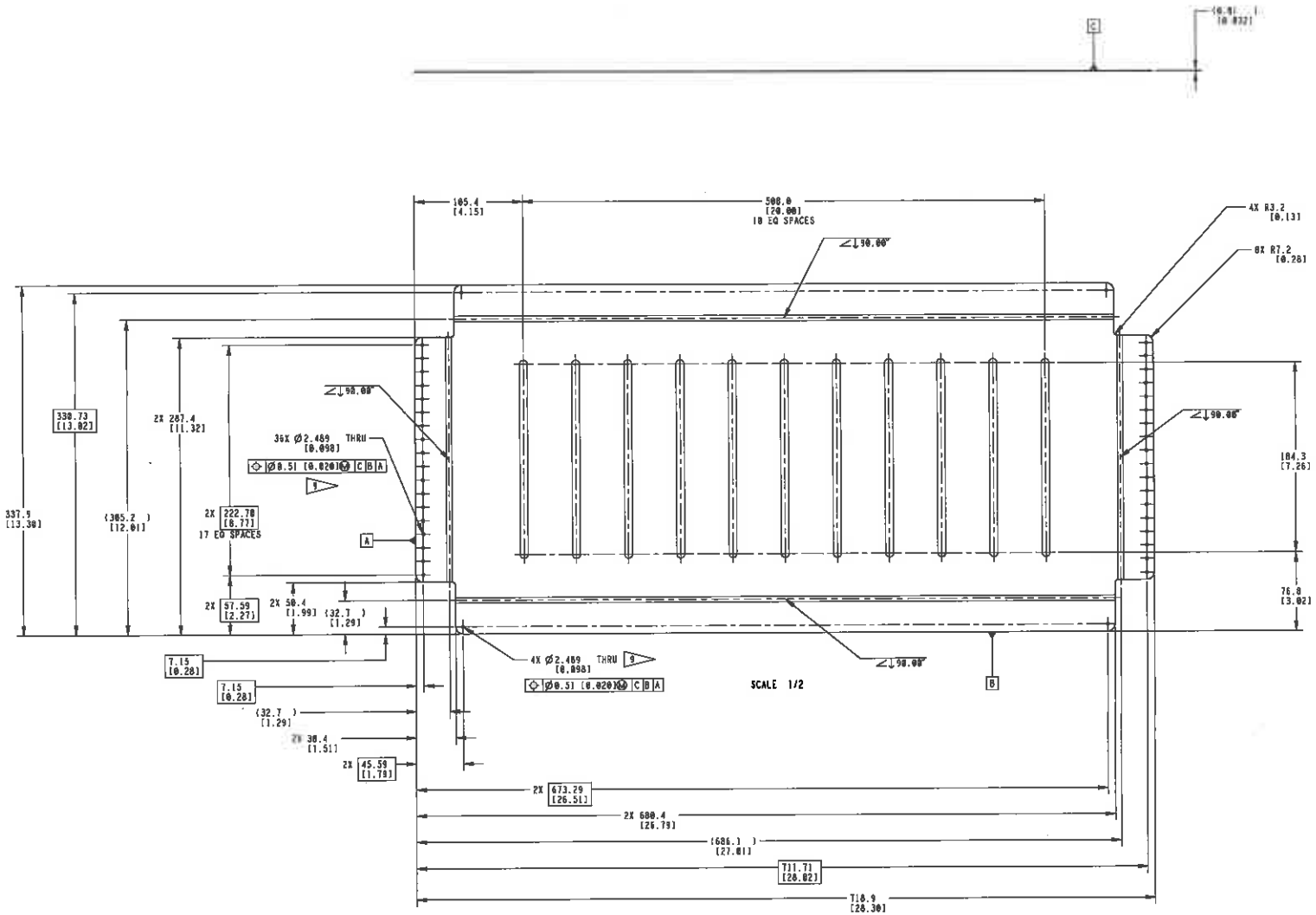
GEORGE C. MARSHALL SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

RIB,
STA 957 CENTER
(TIP PALLET LANDER)

SIZE	CODE	DRAWING NUMBER	REV
D	.339B2	01PTL021	1

SCALE 1/4 WGT (KG) 0.519 KG SHEET 1 OF 2

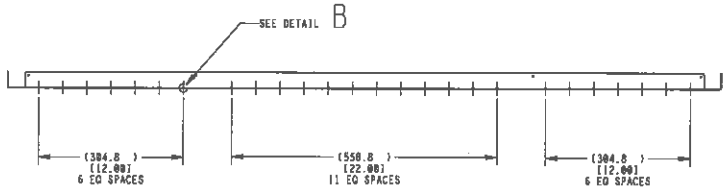
MSFC.DWG.D.FORMAT_REV(A) (AUGUST, 2009)



01PTL021-001 FLAT PATTERN SHOWN

DRAWING STATE	RELEASED	SIZE	CODE	DRAWING NUMBER	REV
DRAWING VERSION	1.7	D	339B2	01PTL021	1
DRAWING INFORMATION				SHEET 2 OF 2	

REVISIONS				
REV	ZONE	DESCRIPTION	APPROVAL	REL DATE
1				SEE RELEASE DATE



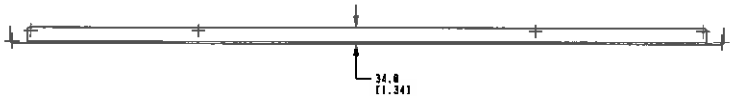
SECTION A - A

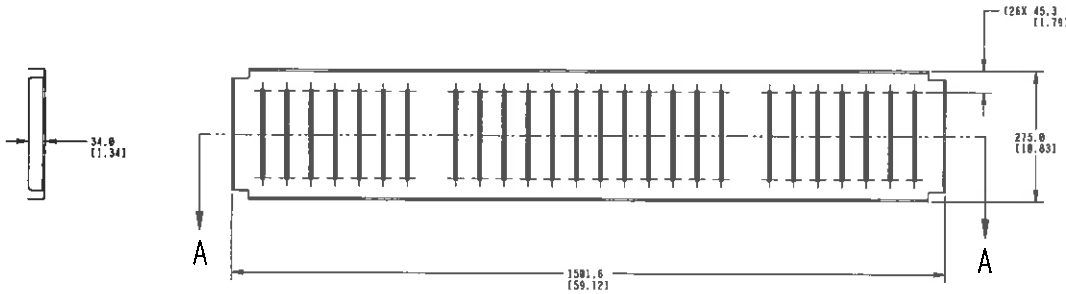
SCALE 1/10

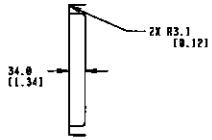
ISO VIEW
FOR REFERENCE ONLY

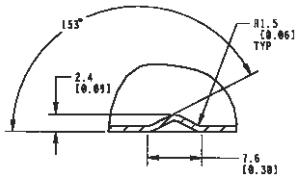
NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL022 IN MSFC DDMS.
   - ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. MATERIAL: 0.032" STK 6061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.
4. 125 ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.
5. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.
6. IDENTIFY PART PER MIL-STD-130, METHOD BAG AND TAG PER MIL-STD-129.
7. CLEAN AND MAINTAIN TO CxP 70145 - GENERALLY CLEAN LEVEL.
8. MATERIAL TRACEABILITY IS REQUIRED. RECORDS SHALL BE MAINTAINED OF: (1) ACTUAL CHEMICAL AND PHYSICAL MATERIAL VERIFICATION TEST RESULTS, (2) CERTIFICATES OF CONFORMANCE, (3) DETAILED PROCESS, INSPECTION, DISCREPANCY RECORDS TRACEABLE TO THE MATERIAL FROM WHICH FABRICATION ORIGINATED, AND (4) IN-HOUSE CHEMICAL AND PHYSICAL VERIFICATION TESTING.
9. PILOT HOLE FOR 1/8" DIAMETER RIVET.

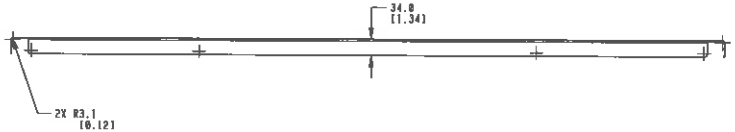








DETAIL B
SCALE 3/1
26 PLACES



01PTL022-001 SHOWN

2	01PTL003-001	TIP LANDER
TOTAL QTY	NEXT ASSY	USED ON

APPLICATION
(PRODIFY IN RELEASE RECORDS)

DRAWING STATE	RELEASED	MODEL STATE	RELEASED
DRAWING VERSION	1.0	MODEL VERSION	1.12
DRAWING NUMBER	01PTL022	MODEL NUMBER	01PTL022

DRAWING INFORMATION

MODEL INFORMATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM [IN]

TOLERANCES

DECIMALS	ANGLES
.XX: ± 1.00 [.XXX: ± 1.010]	±0.5°

MATERIAL 3

HEAT TREATMENT

FINISH 5

ORIGINAL DRAWING APPROVALS	
DESIGN ORG.	EX21
DRAWN BY	JOAO SEIXAS
ENGINEER	ABBY WAYNE
CHECKER	JIM BLEDO
MATERIALS	
STRESS	
E & MA	
PRODUC-MANUF	
PRODUC-CONTR	
NEXT ASSEMBLY	
DESN BRANCH CHF	
RELEASE DATE	14-AUG-2013

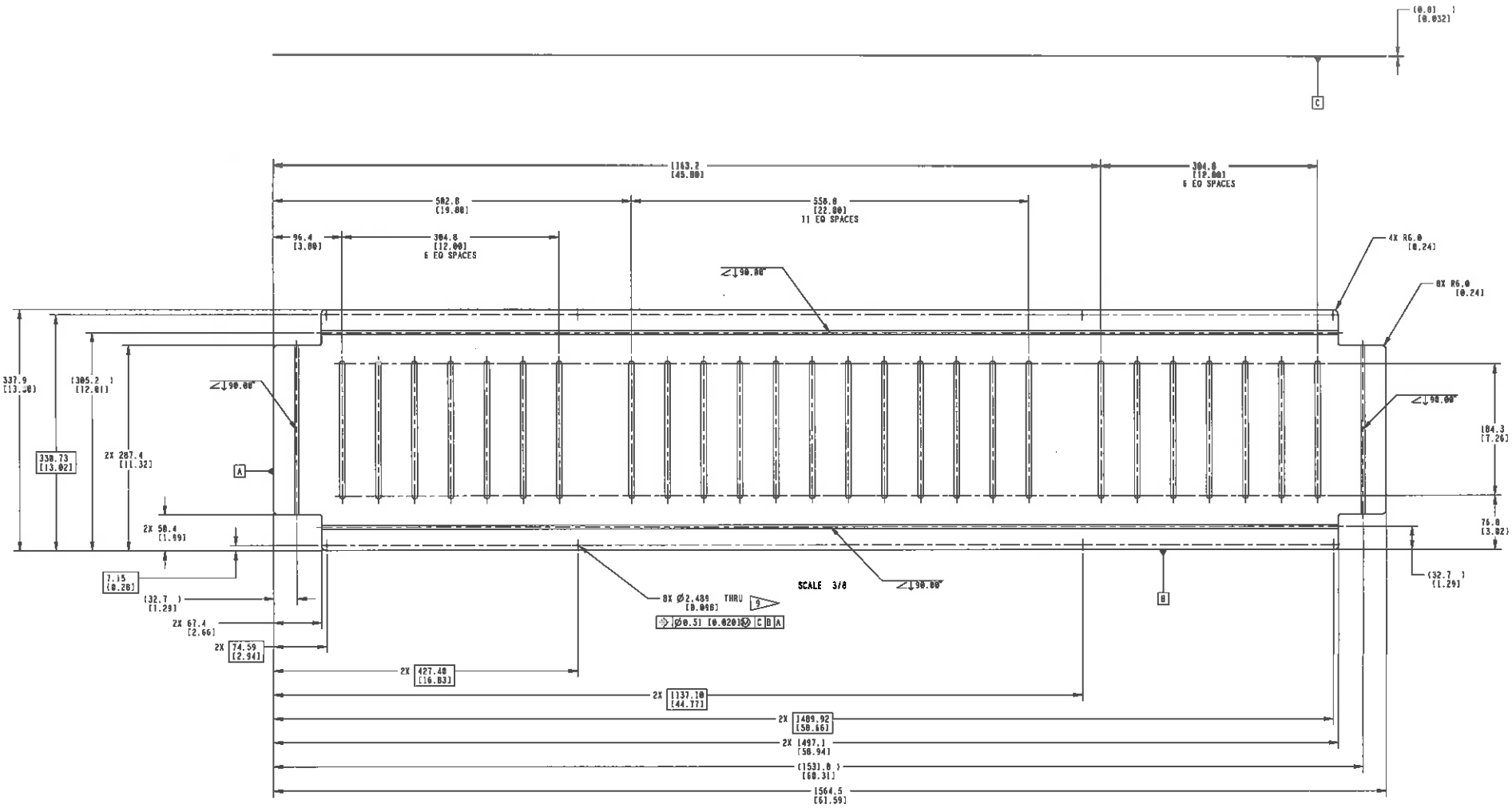
GEORGE C. MARSHALL
SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

RIB,
STA 1219
(TIP PALLET LANDER)

SIZE	CODE	DRAWING NUMBER	REV
D	339B2	01PTL022	1

SCALE 1/5 | MASS (UNIT WEIGHT) 1.139 KG | SHEET 1 OF 2

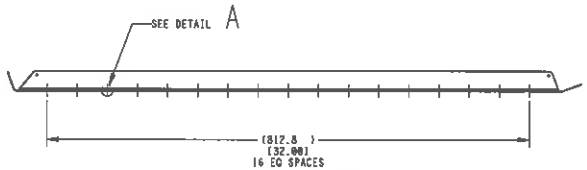
MSFC_DWG_D_FORMAT_REVLAS (AUGUST, 2009)



01PTL022-001 FLAT PATTERN SHOWN

DRAWING STATE RELEASED	SIZE D	CODE 339B2	DRAWING NUMBER 01PTL022	REV 1
DRAWING VERSION 1.6				
DRAWING INFORMATION			SHEET 2 OF 2	

REVISIONS				
REV	ZONE	DESCRIPTION	APPROVAL	REL DATE
1				SEE RELEASE DATE



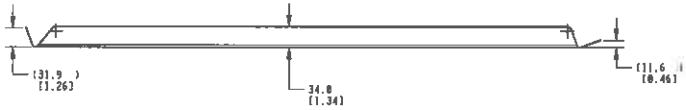
SECTION A - A

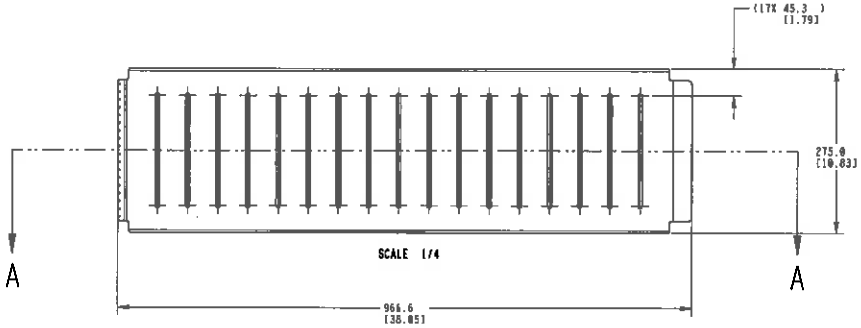
SCALE 1/8

ISO VIEW
FOR REFERENCE ONLY

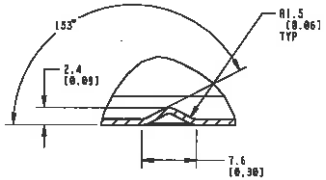
NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90-DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL023 IN MSFC DEMS.
   - ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. MATERIAL: 0.032" STK 6061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.
4. 125 ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.
5. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.
6. IDENTIFY PART PER MIL-STD-130, METHOD BAG AND TAG PER MIL-STD-129.
7. CLEAN AND MAINTAIN TO CxP 70145 - GENERALLY CLEAN LEVEL.
8. MATERIAL TRACEABILITY IS REQUIRED. RECORDS SHALL BE MAINTAINED OF: (1) ACTUAL CHEMICAL AND PHYSICAL MATERIAL VERIFICATION TEST RESULTS, (2) CERTIFICATES OF CONFORMANCE, (3) DETAILED PROCESS, INSPECTION, DISCREPANCY RECORDS TRACEABLE TO THE MATERIAL FROM WHICH FABRICATION ORIGINATED, AND (4) IN-HOUSE CHEMICAL AND PHYSICAL VERIFICATION TESTING.
9. PILOT FOR 1/8" DIAMETER RIVET.

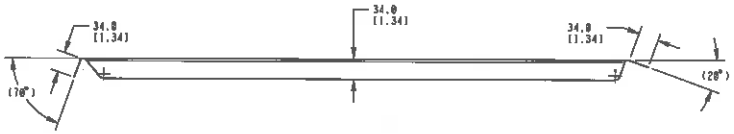




SCALE 1/4



DETAIL A
SCALE 3/1
17 PLACES



01PTL023-001 SHOWN

4	01PTL003-001	TIP PALLET
TOTAL QTY	NEXT ASSY	USED ON

APPLICATION
(VERIFY IN RELEASE RECORDS)

DRAWING INFORMATION		MODEL INFORMATION	
DRAWING STATE	RELEASED	MODEL STATE	RELEASED
DRAWING VERSION	1.2	MODEL VERSION	1.11
DRAWING NUMBER	01PTL023	MODEL NUMBER	01PTL023

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM [IN]
TOLERANCES
DECIMALS .XX±.0 [.0X] .XXX±.25 [.00X] ANGLES ±0.5°
MATERIAL 3.
HEAT TREATMENT
FINISH 5.

ORIGINAL DRAWING APPROVALS	
DESIGN ORG.	EX21
DRAWN BY	JOAO SEIGAL
ENGINEER	A.WAYNE
CHECKER	JIM SLEDD
MATERIALS	
STRESS	
S & MA	
PRODUC-MANUF	
PRODUC-COATS	
NEXT ASSEMBLY	
MSFC BRANCH CHF	
RELEASE DATE	14-AUG-2013

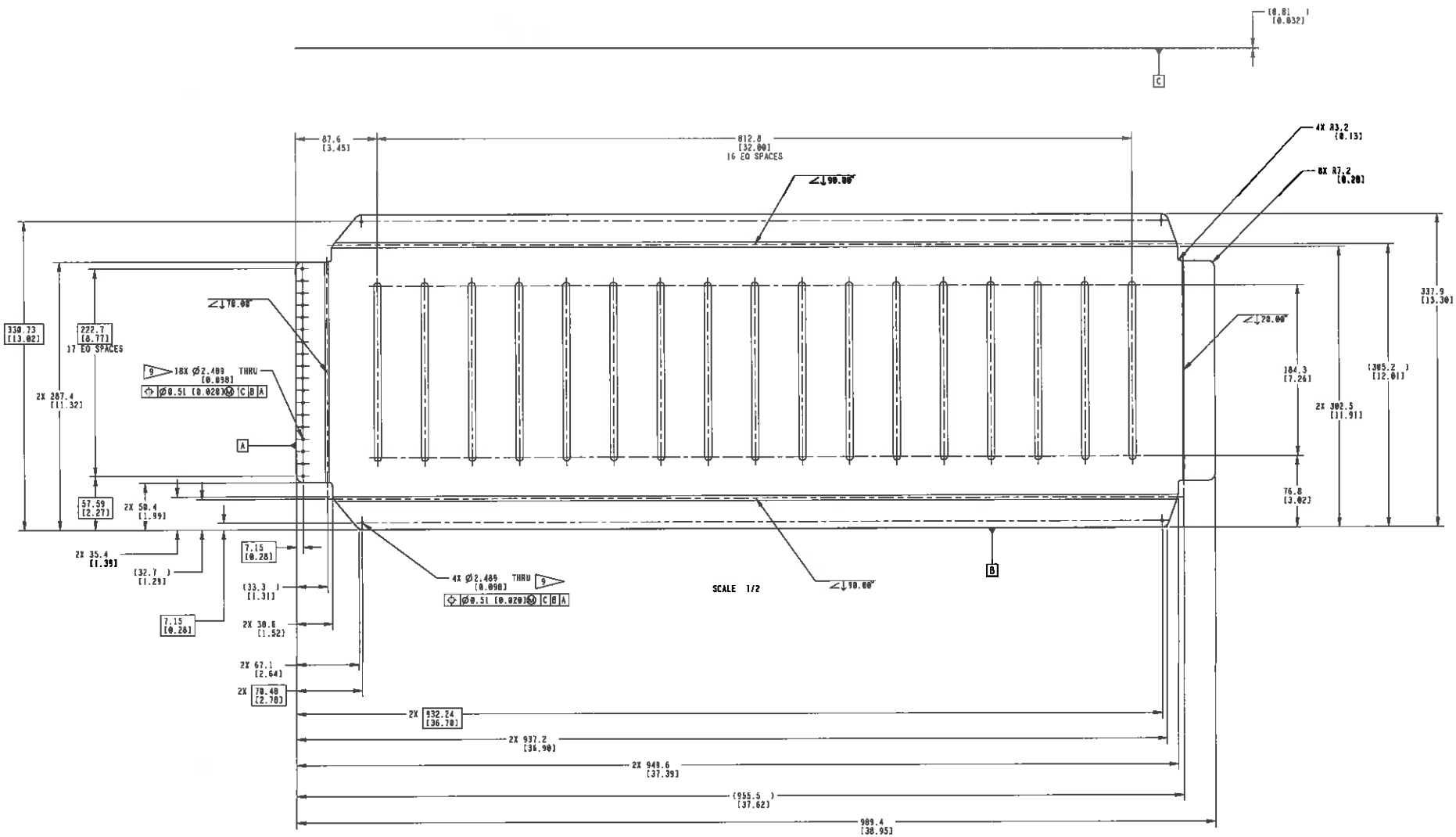
GEORGE C. MARSHALL SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

RIB, DIAGONAL
OUTER
(TIP PALLET LANDER)

SIZE	CODE	DRAWING NUMBER	REV
D	339B2	01PTL023	1

SCALE 1/5 MASS (UNIT WEIGHT) 0.719 KG SHEET 1 OF 2

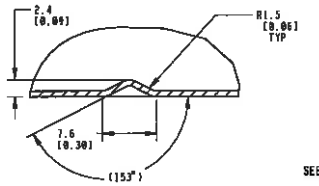
MSFC_DWG_B_FORMAT_REV03 (AUGUST, 2009)



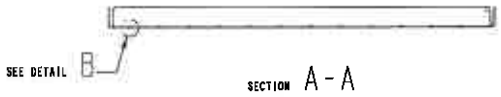
01PTL023-001 FLAT PATTERN SHOWN

DRAWING STATE RELEASED	SIZE D	CODE 33982	DRAWING NUMBER 01PTL023	REV 1
DRAWING VERSION 1.7				
DRAWING INFORMATION			SHEET 2 OF 2	

REVISIONS				
REV	ZONE	DESCRIPTION	APPROVAL	REL DATE
A				SEE RELEASE DATE



DETAIL B
SCALE 3/1
TYPICAL 12 PLACES



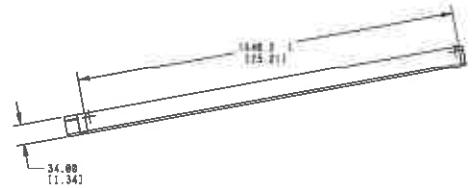
SECTION A-A

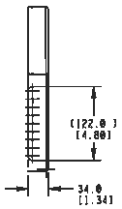
SCALE 1/5

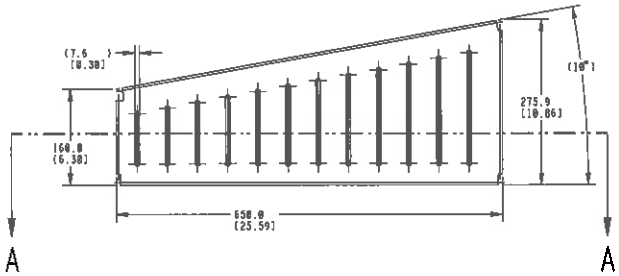
ISO VIEW
FOR REFERENCE ONLY

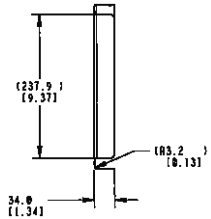
NOTES:

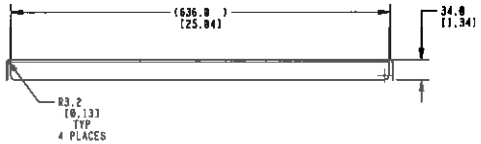
1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL024 IN MSFC DDMS.
   - ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. MATERIAL: 0.032" STK 6061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.
4. 125 ✓ ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.
5. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.
6. IDENTIFY PART WITH PART PER MIL-STD-130, METHOD BAG AND TAG PER MIL-STD-129.
7. CLEAN AND MAINTAIN TO CxP 70145 - GENERALLY CLEAN LEVEL.
8. MATERIAL TRACEABILITY IS REQUIRED. RECORDS SHALL BE MAINTAINED OF: (1) ACTUAL CHEMICAL AND PHYSICAL MATERIAL VERIFICATION TEST RESULTS, (2) CERTIFICATES OF CONFORMANCE, (3) DETAILED PROCESS, INSPECTION, DISCREPANCY RECORDS TRACEABLE TO THE MATERIAL FROM WHICH FABRICATION ORIGINATED, AND (4) IN-HOUSE CHEMICAL AND PHYSICAL VERIFICATION TESTING.
9. PILOT FOR 1/8" DIAMETER RIVET.











01PTL024-001 SHOWN

4	01PTL003-001	TIP PALLET		
TOTAL QTY	NEXT ASSY	USED ON		
APPLICATION (VERIFY IN RELEASE RECORDS)				
DRAWING STATE		RELEASED	MODEL STATE	RELEASED
DRAWING VERSION		1.12	MODEL VERSION	1.10
DRAWING NUMBER		01PTL024	MODEL NUMBER	01PTL024
DRAWING INFORMATION			MODEL INFORMATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM [IN]

TOLERANCES	
DECIMALS .X±.5 [.0X±.25 [.00X]	ANGLES ±0.5°
MATERIAL	3.
HEAT TREATMENT	
FINISH	5.

ORIGINAL DRAWING APPROVALS	
DESIGN ORG.	EV21
DRAWN BY	JIM BLEDW
ENGINEER	ANDY BRYNE
CHECKER	JOAO NEIRAL
MATERIALS	
STRESS	
S & MA	
PROGRAM-NASAW	
PROGRAM-CONTR	
NEXT ASSEMBLY	
BCDR BRANCH CKT	
RELEASE DATE	13-AUG-2013

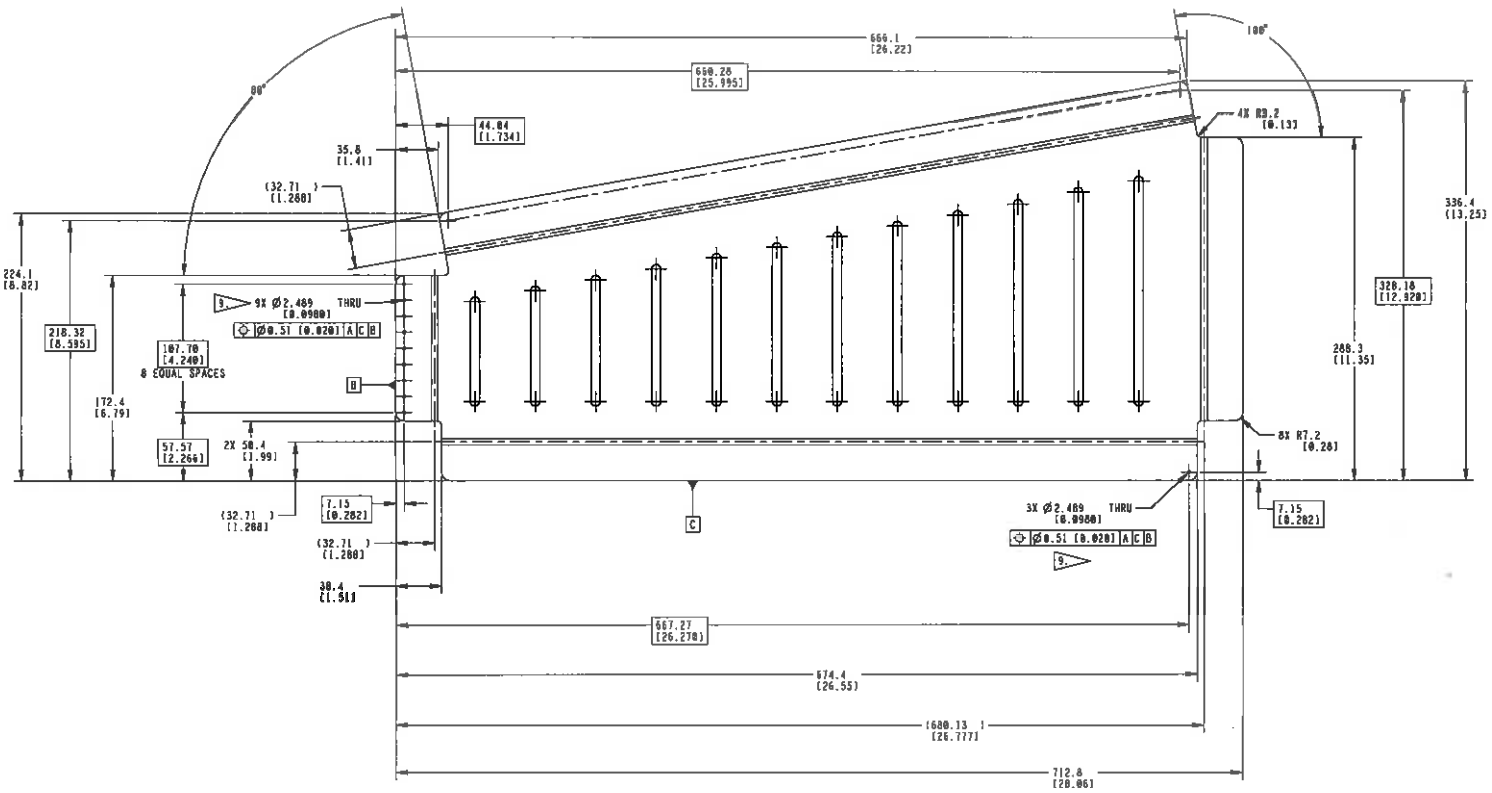
GEORGE C. MARSHALL SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

RIB,
RAMP 1
(TIP PALLET LANDER)

SIZE	CODE	DRAWING NUMBER	REV
D	339B2	01PTL024	1

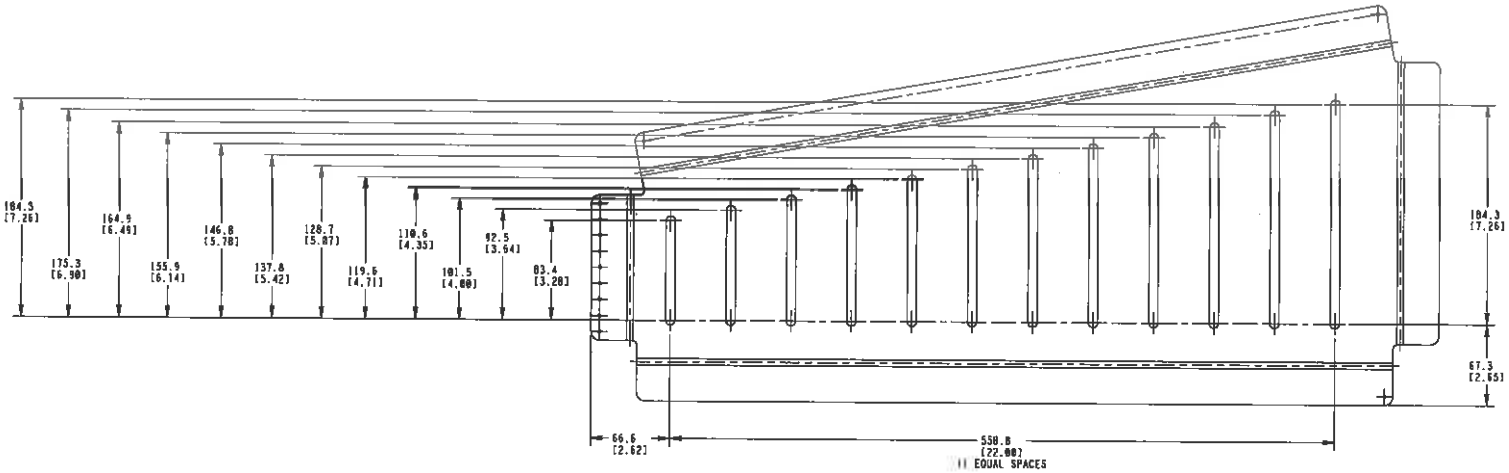
SCALE 1/4 MASS (UNIT WEIGHT) .400 KG SHEET 1 OF 3

MSFC_000_D_FORMAT_REV13 JANUARY, 2009



01PTL024-001 FLAT PATTERN SHOWN

DRAWING STATE	RELEASED	SIZE	CAGE	DRAWING NUMBER	REV
DRAWING VERSION	1.12	D	339B2	01PTL024	1
DRAWING INFORMATION				SHEET 2 OF 3	



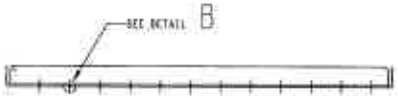
SCALE 1/2

01PTL024-001 FLAT PATTERN SHOWN

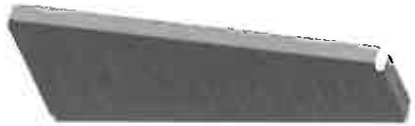
DRAWING STATE RELEASED	SIZE	CODE	DRAWING NUMBER	REV
DRAWING VERSION 1.12	D	33982	01PTL024	1
DRAWING INFORMATION			SHEET 3 OF 3	

Blank

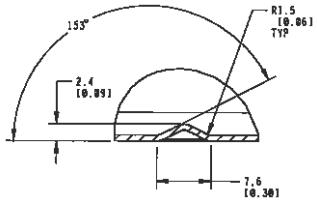
REVISIONS				
REV	ZONE	DESCRIPTION	APPROVAL	DEL DATE / RDY RELEASE DATE
1				



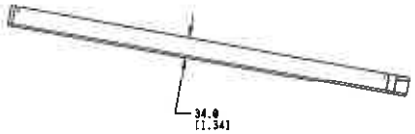
SECTION A-A

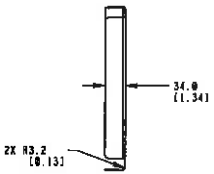


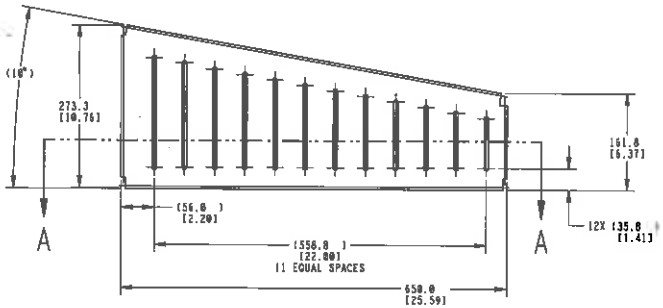
ISO VIEW
FOR REFERENCE ONLY

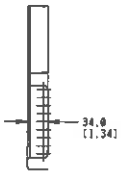


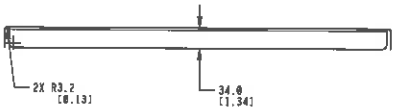
DETAIL B
SCALE 3/1
TYPICAL 12 PLACES











NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL025 IN MSFC DDMS.
   - ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. MATERIAL: 0.032" STK 6061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.
4. 125 ✓ ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.
5. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.
6. IDENTIFY PART WITH PART PER MIL-STD-130, METHOD BAG AND TAG PER MIL-STD-129.
7. CLEAN AND MAINTAIN TO CxP 70145 - GENERALLY CLEAN LEVEL.
8. MATERIAL TRACEABILITY IS REQUIRED. RECORDS SHALL BE MAINTAINED OF: (1) ACTUAL CHEMICAL AND PHYSICAL MATERIAL VERIFICATION TEST RESULTS, (2) CERTIFICATES OF CONFORMANCE, (3) DETAILED PROCESS, INSPECTION, DISCREPANCY RECORDS TRACEABLE TO THE MATERIAL FROM WHICH FABRICATION ORIGINATED, AND (4) IN-HOUSE CHEMICAL AND PHYSICAL VERIFICATION TESTING.
9. PILOT FOR 1/8" DIAMETER RIVET.

01PTL025-001 SHOWN

4	01PTL003-001	TIP PALLET
TOTAL QTY	NEXT ASSY	USED ON

APPLICATION
(VERIFY IN RELEASE RECORDS)

DRAWING STATE	RELEASED
DRAWING VERSION	1.11
DRAWING NUMBER	01PTL025

DRAWING INFORMATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM [IN]
TOLERANCES
DECIMALS .XX ±.01 (.XXX ±.25 [.010]) ANGLES ±.5°
MATERIAL 3.
HEAT TREATMENT
FINISH 5.

MODEL STATE	RELEASED
MODEL VERSION	1.10
MODEL NUMBER	01PTL025

MODEL INFORMATION

ORIGINAL DRAWING APPROVALS

DESIGN ORG.	EG21
DRAWN BY	JOAO SETEAL
ENGINEER	ANDY DAYNE
CHECKER	JIM BLEKO
MATERIALS	
STRESS	
S & MA	
PROGRAM-NAMMF	
PROGRAM-CONTR	
NEXT ASSEMBLY	
DESIGN BRANCH CHF	
RELEASE DATE	14-AUG-2013

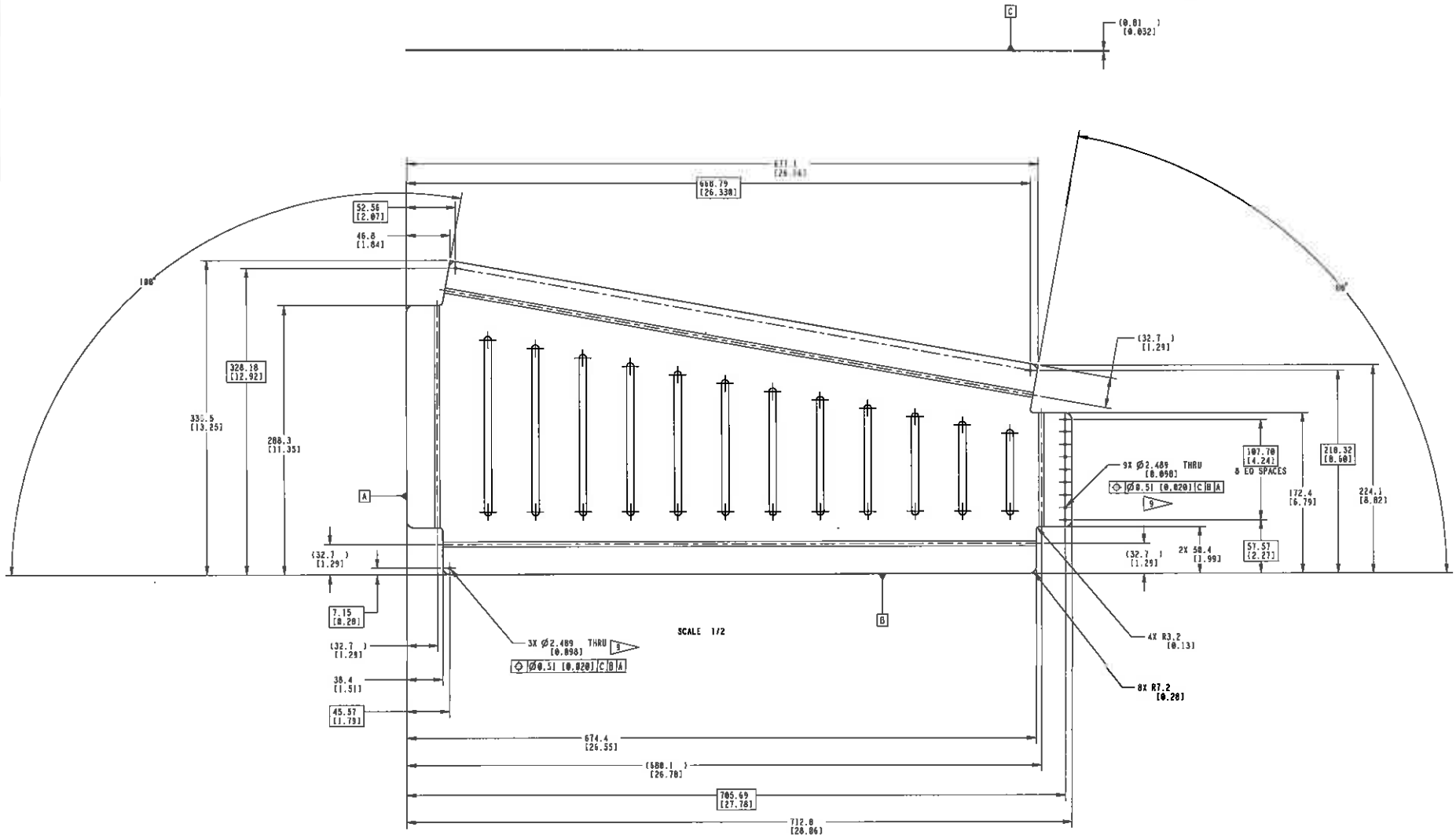
GEORGE C. MARSHALL SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

RIB,
RAMP 2
(TIP PALLET LANDER)

SIZE	CODE	DRAWING NUMBER	REV
D	33982	01PTL025	1

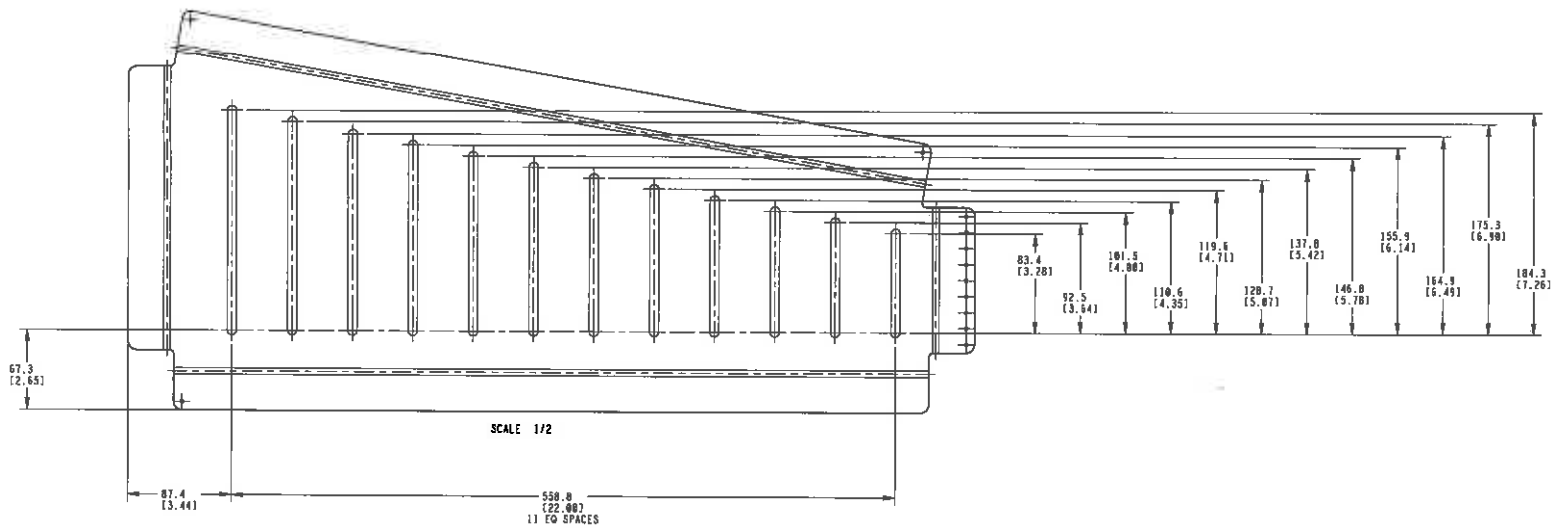
SCALE 1/4 (WHEN WIDTH) .400 KG SHEET 1 of 3

MSFC_DWG_D_FORMAT_REV.01 (AUGUST, 2009)



01PTL025-001 FLAT PATTERN SHOWN

DRAWING STATE RELEASED	SIZE D	CODE 339B2	DRAWING NUMBER 01PTL025	REV 1
DRAWING VERSION 1.1X				
DRAWING INFORMATION			SHEET 2 OF 3	



01PTL025-001 FLAT PATTERN SHOWN

DRAWING STATE	RELEASED	SIZE	CODE	DRAWING NUMBER	REV
DRAWING VERSION	1.11	D	339B2	01PTL025	1
DRAWING INFORMATION				SHEET 3 OF 3	

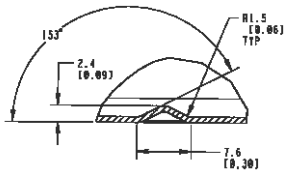
Blank

REVISIONS				
REV	ZONE	DESCRIPTION	APPROVAL	DATE
1				SEE RELEASE DATE

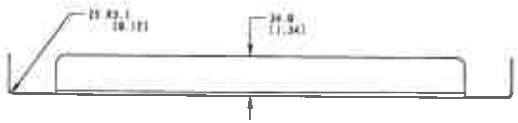
SECTION A-A

SCALE 1/4

ISO VIEW
FOR REFERENCE ONLY

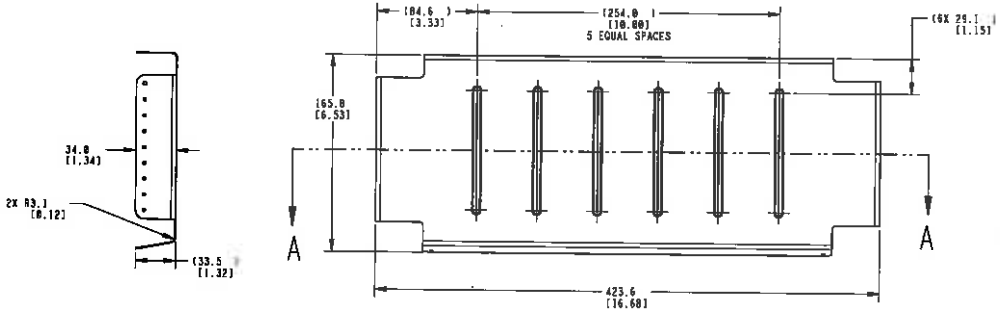


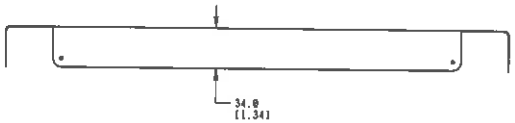
DETAIL B
SCALE 3/1
6 PLACES



NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL026 IN MSFC ODMS.
   - ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. MATERIAL: 0.032" STK 6061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.
4. 125 ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.
5. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.
6. IDENTIFY PART WITH PART PER MIL-STD-130, METHOD BAG AND TAG PER MIL-STD-129.
7. CLEAN AND MAINTAIN TO CxP 70145 - GENERALLY CLEAN LEVEL.
8. MATERIAL TRACEABILITY IS REQUIRED. RECORDS SHALL BE MAINTAINED OF: (1) ACTUAL CHEMICAL AND PHYSICAL MATERIAL VERIFICATION TEST RESULTS, (2) CERTIFICATES OF CONFORMANCE, (3) DETAILED PROCESS, INSPECTION, DISCREPANCY RECORDS TRACEABLE TO THE MATERIAL FROM WHICH FABRICATION ORIGINATED, AND (4) IN-HOUSE CHEMICAL AND PHYSICAL VERIFICATION TESTING.
9. PILOT FOR 1/8" DIAMETER RIVET.





01PTL026-001 SHOWN

4	01PTL003-001	TIP PALLET
TOTAL QTY	NEXT ASSY	USED ON

APPLICATION
(VERIFY IN RELEASE RECORDS)

DRAWING INFORMATION		MODEL INFORMATION	
DRAWING STATE	RELEASED	MODEL STATE	RELEASED
DRAWING VERSION	1.10	MODEL VERSION	1.10
DRAWING NUMBER	01PTL026	MODEL NUMBER	01PTL026

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM [IN]
TOLERANCES
DECIMALS .XX±.0 [.003] .XXX±.25 [.0101]
ANGLES ±.5°
MATERIAL 3
HEAT TREATMENT
FINISH 5

ORIGINAL DRAWING APPROVALS	
DESIGN ORG.	CA21
DRAWN BY	JOAQ SEIVAL
ENGINEER	ANDY WAYNE
CHECKER	JIM BLEND
MATERIALS	
STRESS	
S & MA	
PRODUC-MANUF	
PRODUC-CONTR	
KEY ASSEMBLY	
DESN BRANCH CHIEF	
RELEASE DATE	14-AUG-2013

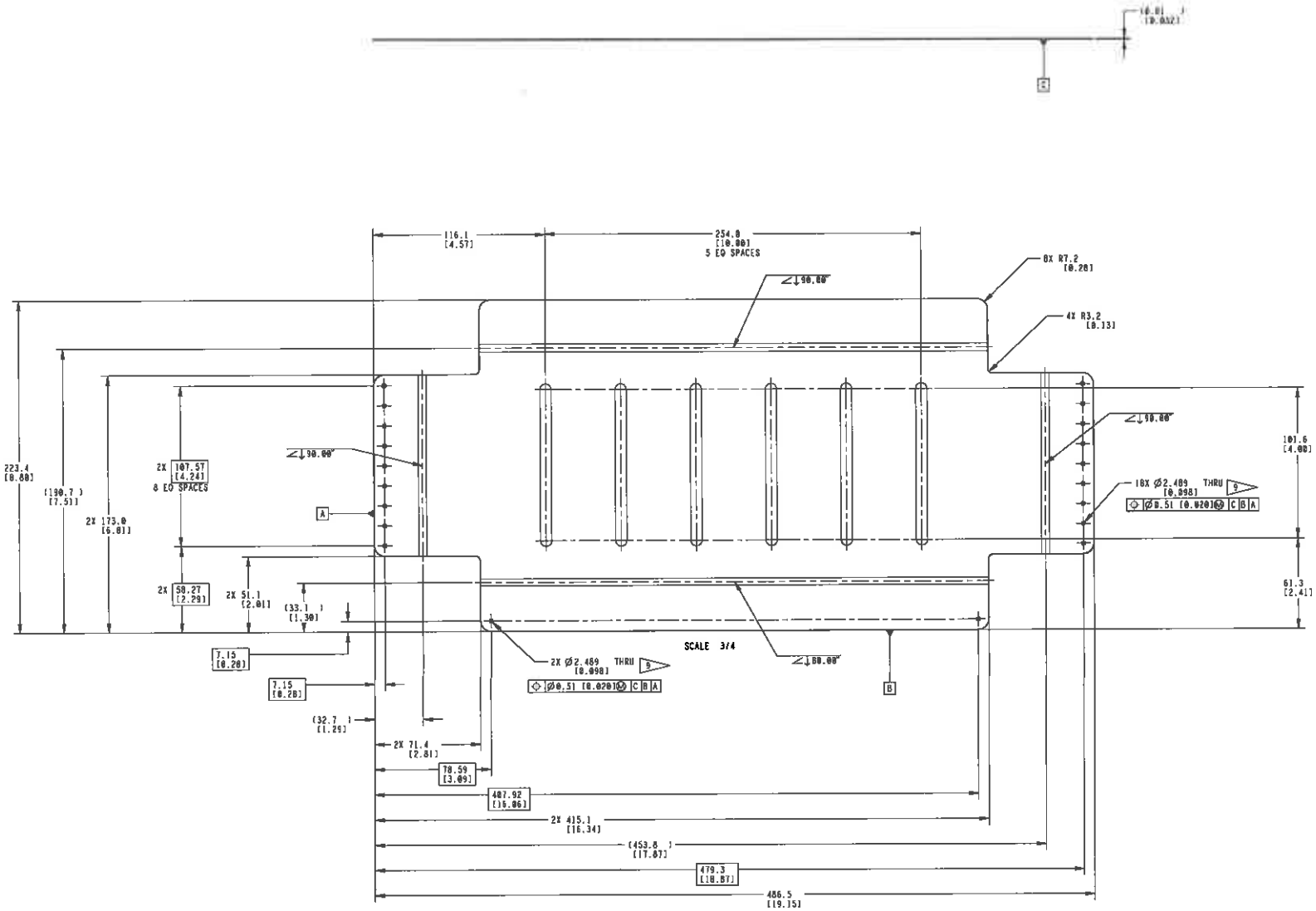
GEORGE C. MARSHALL SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

RIB,
STA 1868 RAMP
(TIP PALLET LANDER)

SIZE	CODE	DRAWING NUMBER	REV
D	339B2	01PTL026	1

SCALE 1/2 MASS (UNIT WEIGHT) .187 KG SHEET 1 OF 2

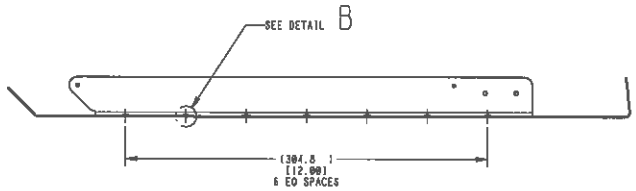
MSFC_DWG_D_FORMAT_REVEAT CANDIDT, 2009]



01PTL026-001 FLAT PATTERN SHOWN

DRAWING STATE	RELEASED	SIZE	CODE	DRAWING NUMBER	REV
DRAWING VERSION	1.00	D	339B2	01PTL026	1
DRAWING INFORMATION		SHEET 2 OF 2			

REVISIONS				
REV	ZONE	DESCRIPTION	APPROVAL	REL DATE
1				SEE RELEASE DATE

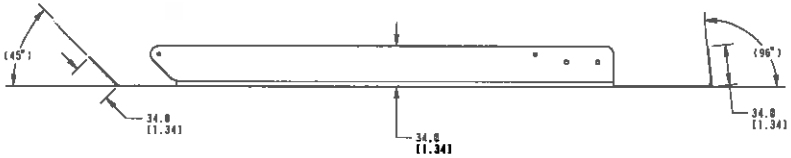


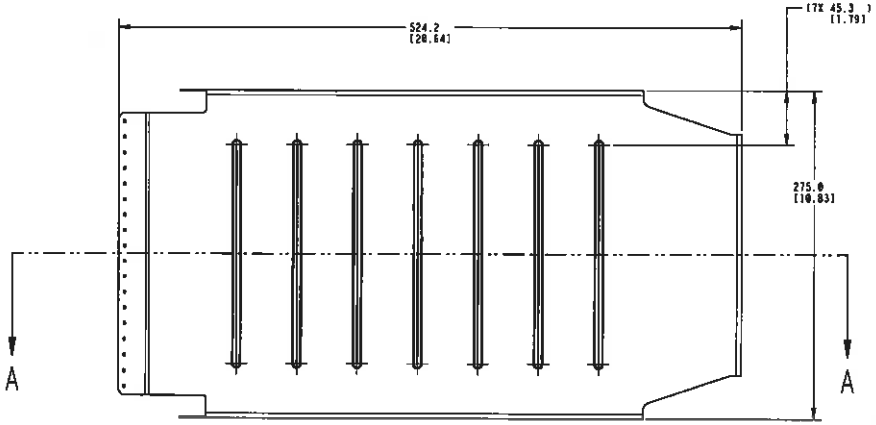
SECTION A - A

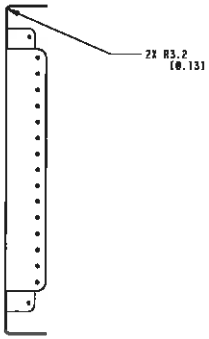
ISO VIEW
FOR REFERENCE ONLY

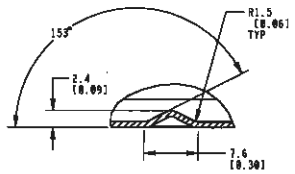
NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL027 IN MSFC DDMS.
   - ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. MATERIAL: 0.032" STK 6061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.
4. 125 ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.
5. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.
6. IDENTIFY PART WITH PART PER MIL-STD-130, METHOD BAG AND TAG PER MIL-STD-129.
7. CLEAN AND MAINTAIN TO CxP 70145 - GENERALLY CLEAN LEVEL.
8. MATERIAL TRACEABILITY IS REQUIRED. RECORDS SHALL BE MAINTAINED OF: (1) ACTUAL CHEMICAL AND PHYSICAL MATERIAL VERIFICATION TEST RESULTS, (2) CERTIFICATES OF CONFORMANCE, (3) DETAILED PROCESS, INSPECTION, DISCREPANCY RECORDS TRACEABLE TO THE MATERIAL FROM WHICH FABRICATION ORIGINATED, AND (4) IN-HOUSE CHEMICAL AND PHYSICAL VERIFICATION TESTING.
9. PILOT FOR 1/8" DIAMETER RIVET.
10. PILOT FOR 1/4" DIAMETER HI-LOK.

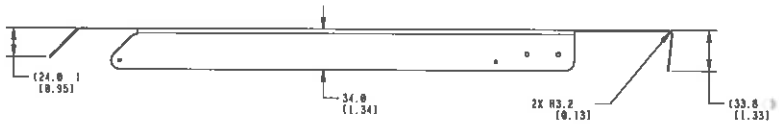








DETAIL B
SCALE 3/1
7 PLACES



01PTL027-001 SHOWN

4	01PTL003-001	TIP PALLET
TOTAL QTY	NEXT ASSY	USED ON

APPLICATION
(VERIFY IN RELEASE RECORDS)

MAPDMS STATE	RELEASED	MODEL STATE	RELEASED
DRAWING VERSION	1.14	MODEL VERSION	1.23
DRAWING NUMBER	01PTL027	MODEL NUMBER	01PTL027

DRAWING INFORMATION

MODEL INFORMATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM [IN]

TOLERANCES

DECIMALS	ANGLES
.XX: ± 1.03 [.0X: ± 1.010]	±0.5°

MATERIAL 3

HEAT TREATMENT

FINISH 5

ORIGINAL DRAWING APPROVALS

DESIGN ORG.	ES21
DRAWN BY	JOAO SEIXAS
ENGINEER	ANDY WAYNE
CHECKER	JIM GLENN
MATERIALS	
STRESS	
S & MA	
PRODUC-MANUF	
PRODUC-CONTR	
REQT ASSEMBLY	
DCAA BRANCH CDR	
RELEASE DATE	14-AUG-2013

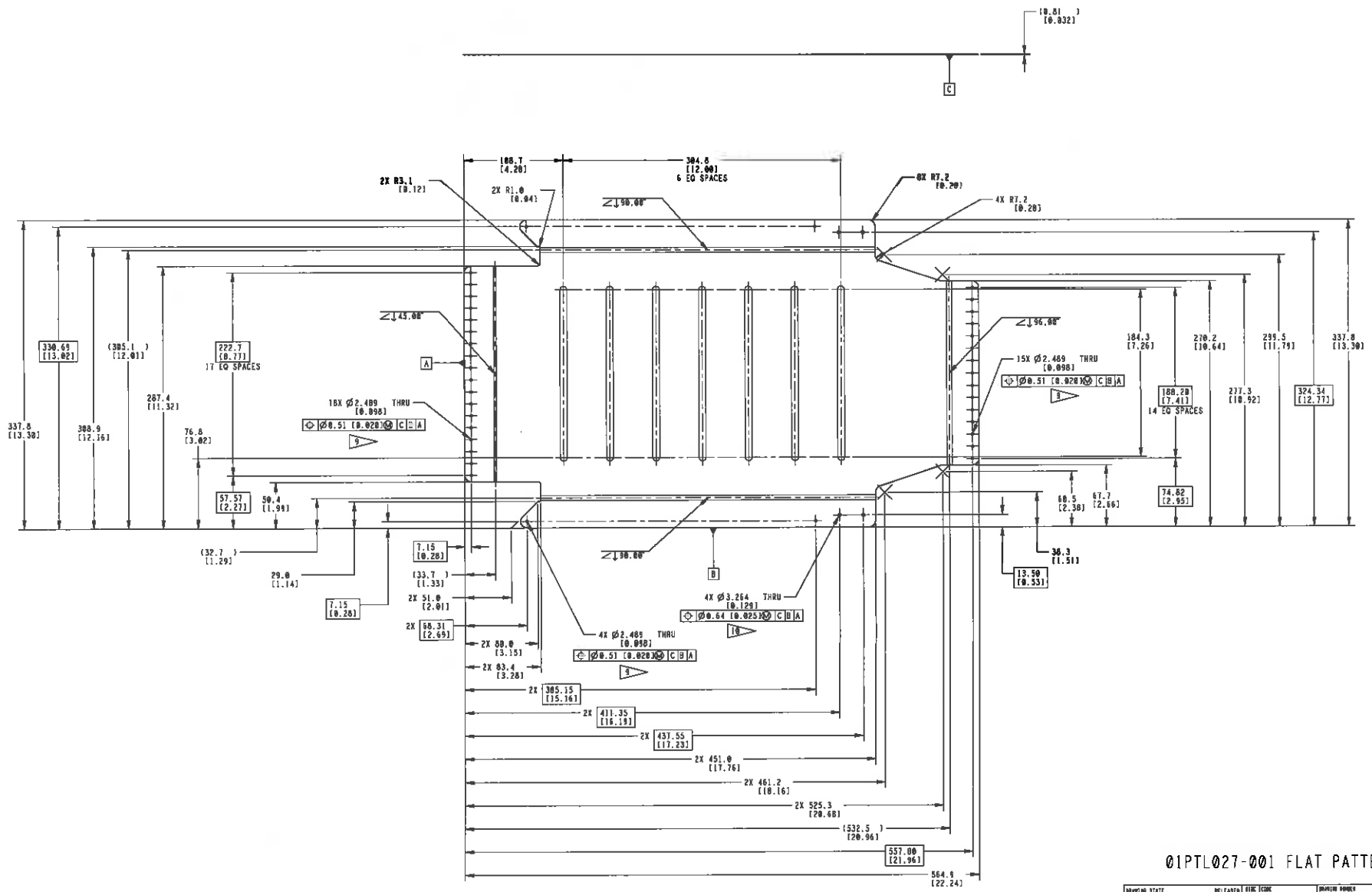
GEORGE C. MARSHALL
SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

RIB,
CENTER DIAGONAL
(TIP PALLET LANDER)

SIZE	CODE	DRAWING NUMBER	REV
D	339B2	01PTL027	1

SCALE 1/2 MASS (KG) (WEIGHT) 0.374 KG SHEET 1 OF 2

MSFC_DDM_B_FORMAT_REVEX1 (AUGUST, 2009)



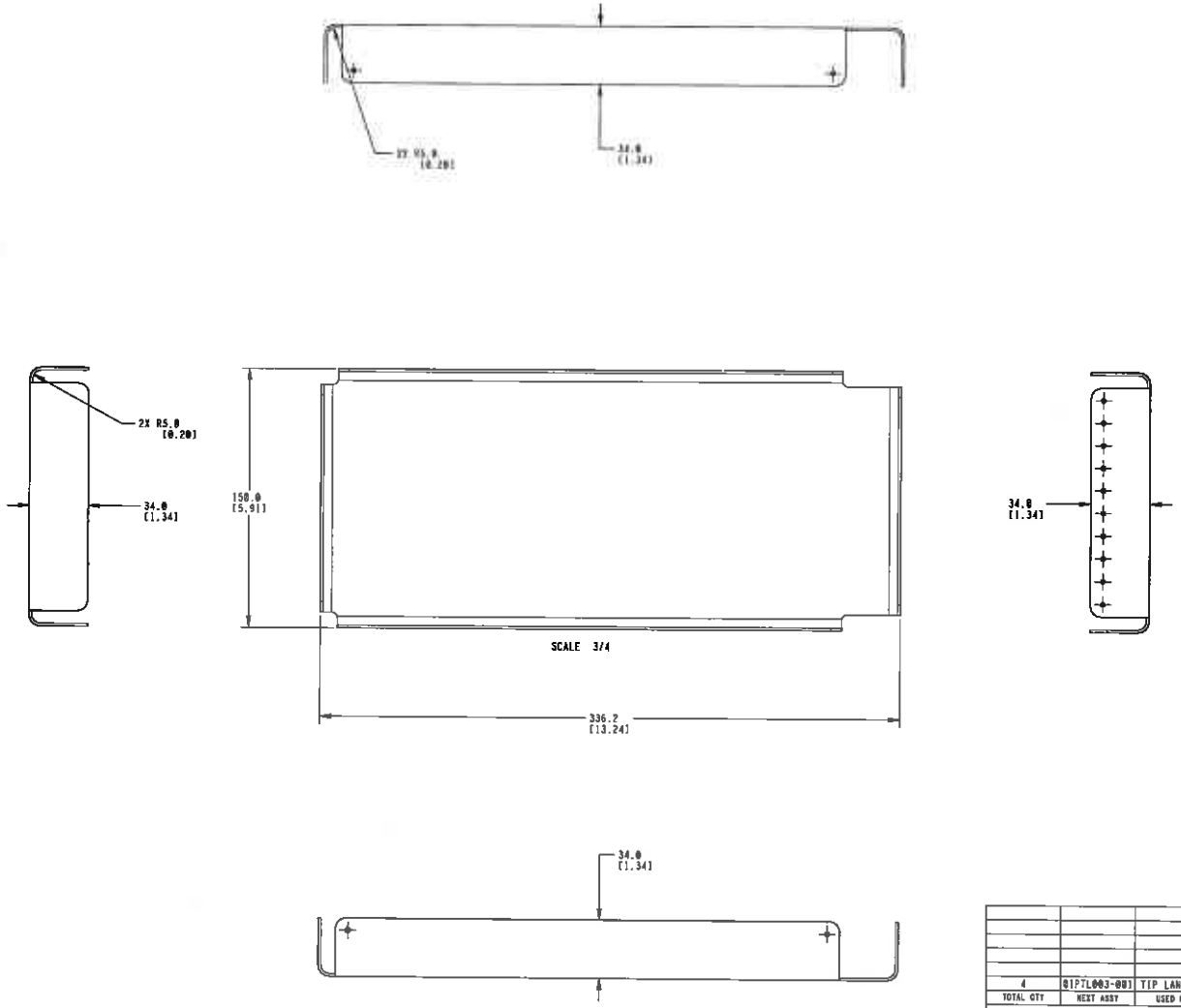
01PTL027-001 FLAT PATTERN SHOWN

DRAWING STATE RELEASED	SIZE D	CODE 33982	DRAWING NUMBER 01PTL027	REV 1
DRAWING VERSION 1.14				
DRAWING INFORMATION			SHEET 2 OF 2	

REVISIONS				
REV	ZONE	DESCRIPTION	APPROVAL	DEL DATE
1				SEE RELEASE DATE

NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL028 IN MSFC DMS.
   - ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. MATERIAL: 0.032" STK 6061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.
4. 125 ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.
5. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.
6. IDENTIFY PART PER MIL-STD-130, METHOD BAG AND TAG PER MIL-STD-129.
7. CLEAN AND MAINTAIN TO VISIBLY CLEAN - STANDARD LEVEL.
8. PILOT FOR 1/8" DIAMETER RIVET



01PTL028-001 SHOWN

4	01PTL003-001	TIP LANDER		
TOTAL QTY	NEXT ASSY	USED ON		
APPLICATION (VERIFY IN RELEASE RECORDS)				
DRAWING STATE		RELEASED		
DRAWING VERSION		1.10		
DRAWING NUMBER		01PTL028		
DRAWING INFORMATION				

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN METRIC
TOLERANCES
DECIMALS .XX±.5 (.03) .XXX±.25 (.010) ANGLES ±.5°
MATERIAL 3.
HEAT TREATMENT
FINISH 5.
MODEL STATE RELEASED
MODEL VERSION 1.5
MODEL NUMBER 01PTL028
MODEL INFORMATION

ORIGINAL DRAWING APPROVALS	
DESIGN ORG.	ER31
DRAWN BY	JOAO SEIXAS
ENGINEER	R.WAYNE
CHECKER	JIM SLEDD
MATERIALS	
STRESS	
S & MA	
PRODUC-NAMAF	
PRODUC-CONTR	
NEXT ASSEMBLY	01PTL003
DESN BRANCH CHF	
RELEASE DATE	14-AUG-2013

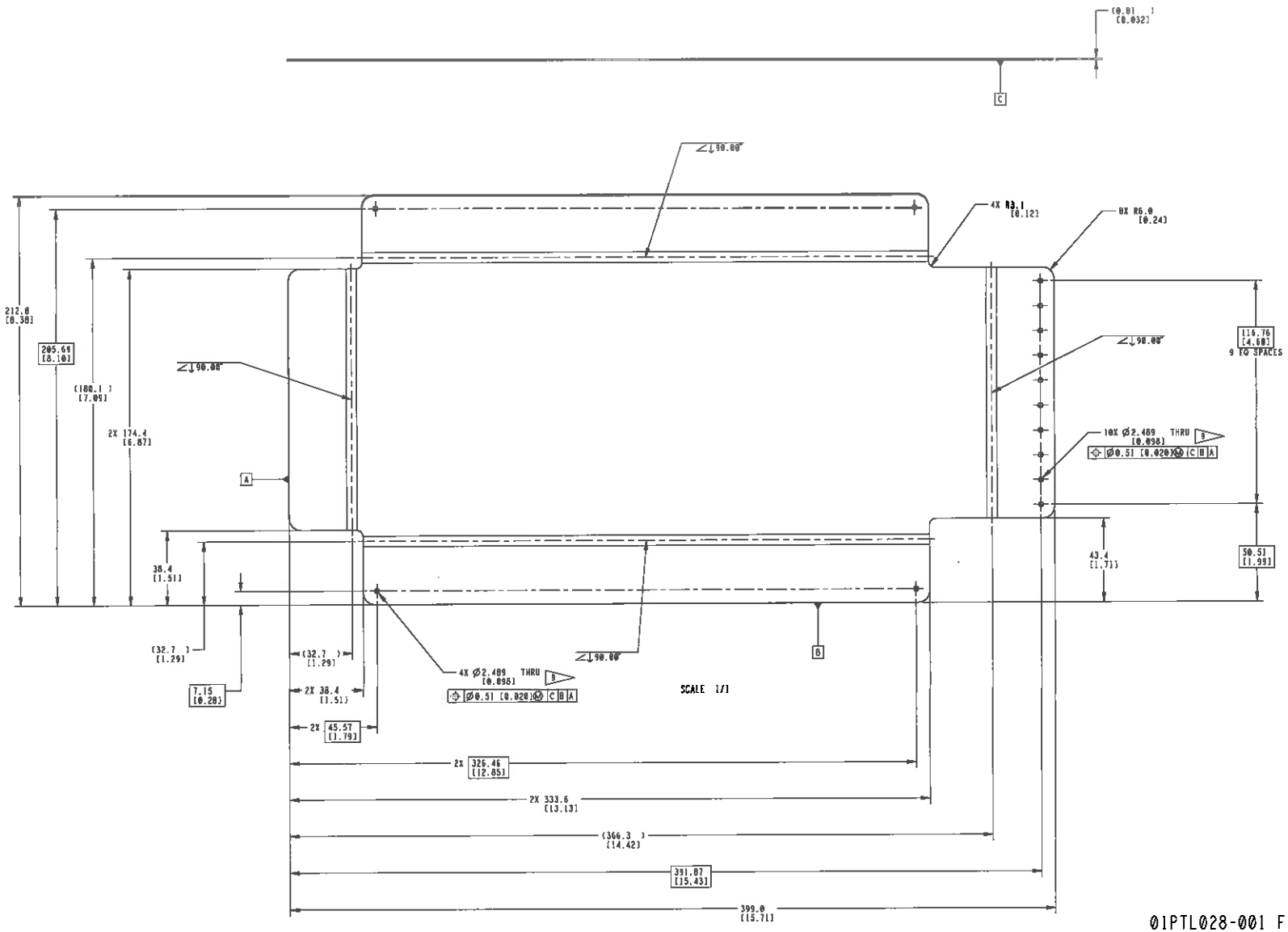
GEORGE C. MARSHALL SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

RIB,
LANDING GEAR
(TIP PALLET LANDER)

SIZE	CODE	DRAWING NUMBER	REV
D	33982	01PTL028	1

SCALE 3/4 MASS 1961 0.328 SHEET 1 OF 2

MSFC_DMS_D_FORMAT_REVISAT (AUGUST, 2006)



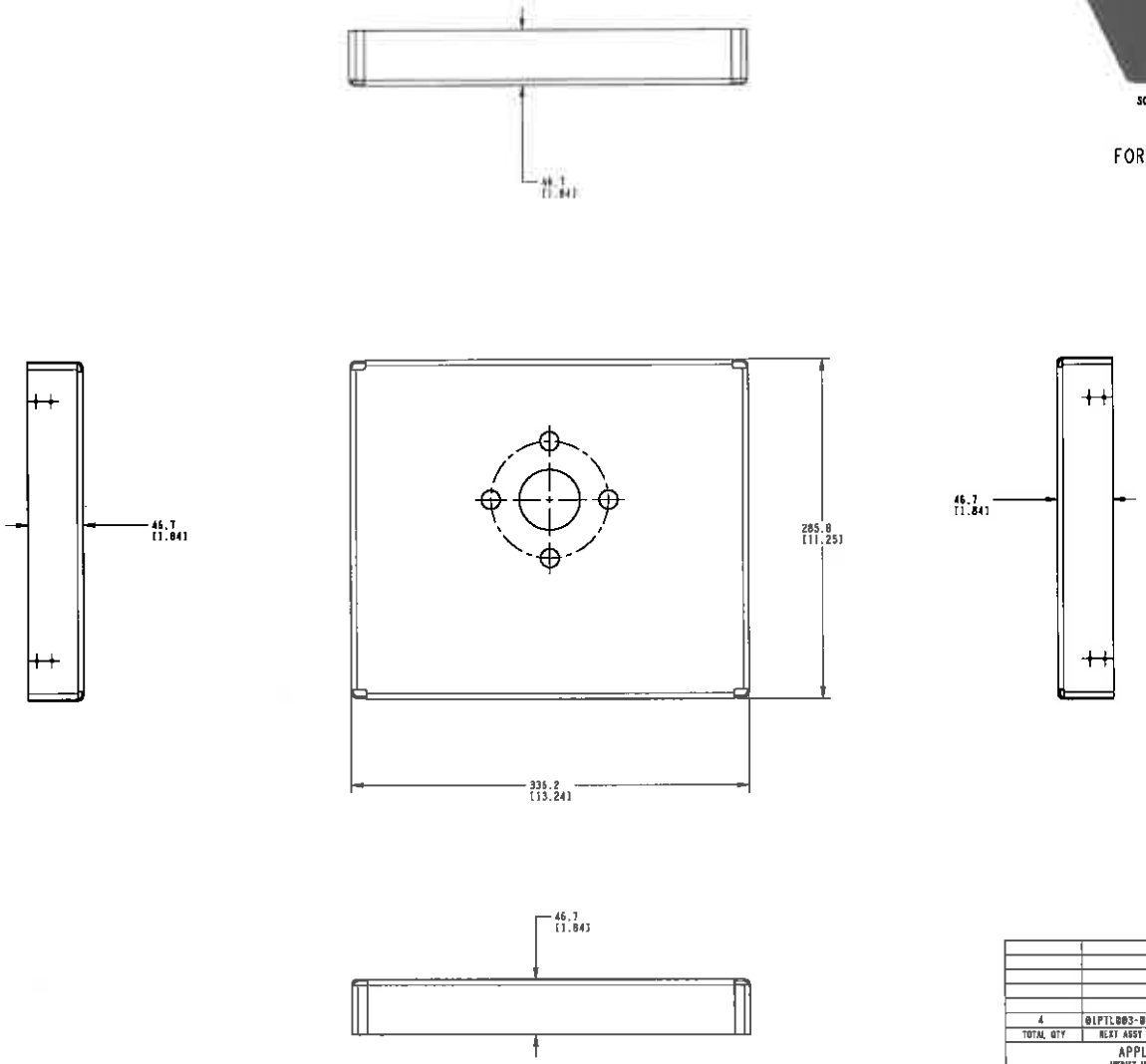
01PTL028-001 FLAT PATTERN SHOWN

DRAWING STATE	RELEASED	SIZE	CODE	DRAWING NUMBER	REV
DRAWING VERSION	1.10	D	33982	01PTL028	1
DRAWING INFORMATION				SHEET 2 OF 2	

REVISIONS				
REV	ZONE	DESCRIPTION	APPROVAL	REL DATE
1				DRW RELEASE DATE

NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL029 IN MSFC DDMS.
   - ALL DIMENSIONS ARE MODELLED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. MATERIAL: 0.063" STK 6061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.
4. 125 ✓ ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.
5. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.
6. IDENTIFY PART PER MIL-STD-130, METHOD BAG AND TAG PER MIL-STD-129.
7. CLEAN AND MAINTAIN TO CxP 70145 - GENERALLY CLEAN LEVEL.
8. MATERIAL TRACEABILITY IS REQUIRED. RECORDS SHALL BE MAINTAINED OF: (1) ACTUAL CHEMICAL AND PHYSICAL MATERIAL VERIFICATION TEST RESULTS, (2) CERTIFICATES OF CONFORMANCE, (3) DETAILED PROCESS, INSPECTION, DISCREPANCY RECORDS TRACEABLE TO THE MATERIAL FROM WHICH FABRICATION ORIGINATED, AND (4) IN-HOUSE CHEMICAL AND PHYSICAL VERIFICATION TESTING.
9. PILOT FOR 1/8" DIAMETER RIVET.



01PTL029-001 SHOWN

4	01PTL003-001	TIP PALLET	
TOTAL QTY	NEXT ASSY	BSED ON	
APPLICATION (VERIFY IN RELEASE RECORDS)			

DRAWING STATE	RELEASED	MODEL STATE	RELEASED
DRAWING VERSION	1.3	MODEL VERSION	1.10
DRAWING NUMBER	01PTL029	MODEL NUMBER	01PTL029
DRAWING INFORMATION		MODEL INFORMATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM [IN]

TOLERANCES

DECIMALS	ANGLES
.XX±.0 [.03] .XXX±.25 [.010]	±0.5°

MATERIAL 3.

HEAT TREATMENT

FINISH 5.

ORIGINAL DRAWING APPROVALS	
DESIGN ORG.	EX21
DRAWN BY	JONAS SEITRAL
ENGINEER	A.WAYNE
CHECKER	JIM GLEDO
MATERIALS	
STRESS	
E & NA	
PRODUC-MANUF	
PRODUC-CONTR	
NEXT ASSEMBLY	
DESN TRANCH CHF	
RELEASE DATE	14-JUN-2013

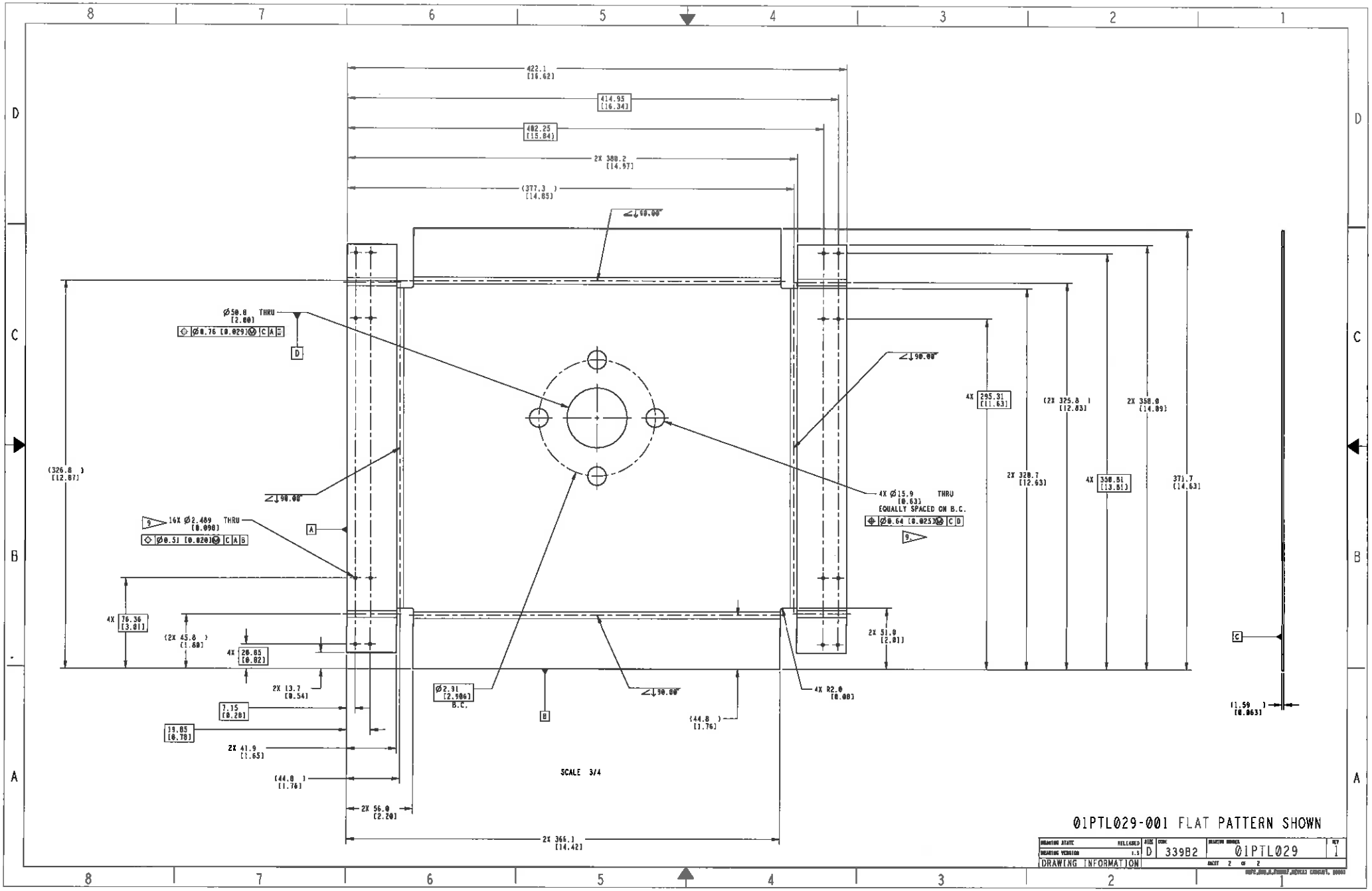
GEORGE C. MARSHALL SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

PAN,
LANDING GEAR
(TIP PALLET LANDER)

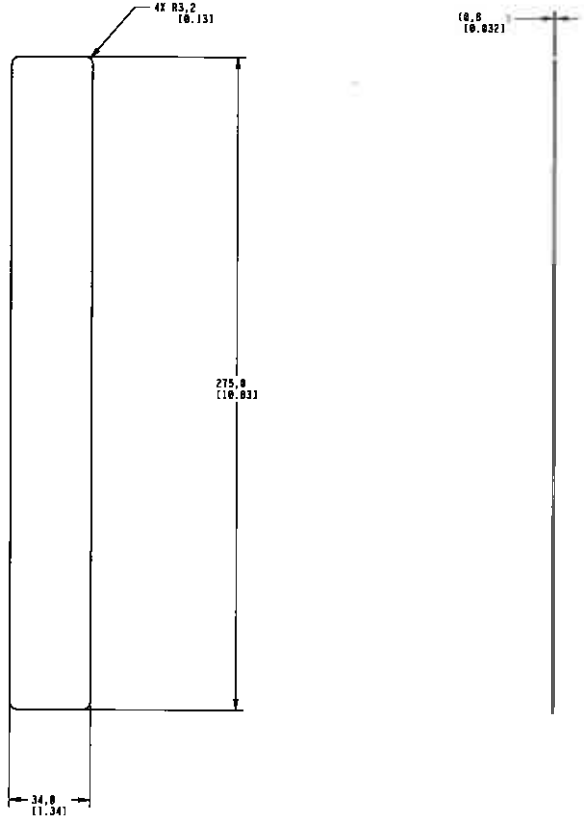
SIZE	CODE	DRAWING NUMBER	REV
D	339B2	01PTL029	1

SCALE 1/2 MASS (ONLY WEIGHT) 0.648 KG SHEET 1 OF 2

MSFC_DWG_D_FORM03_REVCAT (AUGUST, 2009)


422.1 [16.62]
414.95 [16.34]
402.25 [15.84]
2X 388.2 [14.97]
(377.3) [14.85]
90.00°
Ø50.8 THRU [2.00]
Ø0.76 [0.029] C A B
D
90.00°
4X 295.31 [11.63]
(2X 325.8) [12.83]
2X 358.0 [14.09]
(326.8) [12.87]
2X 328.7 [12.63]
4X 358.51 [13.51]
371.7 [14.63]
90.00°
4X Ø15.9 THRU [0.63] EQUALLY SPACED ON B.C.
Ø0.64 [0.025] C D
9
9 16X Ø2.489 THRU [0.098]
Ø0.51 [0.020] C A B
A
4X 76.36 [3.01]
(2X 45.8) [1.80]
4X 20.85 [0.82]
2X 51.8 [2.01]
2X 13.7 [0.54]
7.15 [0.28]
19.85 [0.78]
2X 41.9 [1.65]
(44.8) [1.76]
Ø2.91 [2.906] B.C.
B
90.00°
(44.8) [1.76]
4X R2.0 [0.08]
C
(1.59) [0.063]
SCALE 3/4
2X 56.0 [2.20]
2X 366.1 [14.42]
01PTL029-001 FLAT PATTERN SHOWN
DRAWING STATE RELEASED
DRAWING VERSION 1.3
DRAWING INFORMATION
SIZE D
CODE 339B2
DRAWING NUMBER 01PTL029
REV 1
SHEET 2 OF 2

REVISIONS				
REV	ZONE	DESCRIPTION	APPROVAL	REL DATE
1				REF RELEASE DATE



NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL030 IN MSFC DDMS.
   - ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. MATERIAL: 0.032" STK (061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.
4. 125 ✓ ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.
5. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.
6. IDENTIFY PART PER MIL-STD-130, METHOD BAG AND TAG PER MIL-STD-129.
7. CLEAN AND MAINTAIN TO VISIBLY CLEAN - STANDARD LEVEL.

01PTL030-001 SHOWN

4	01PTL003-001	TIP LANDER
TOTAL QTY	NEXT ASSY	USED ON

APPLICATION (VERIFY IN RELEASE RECORDS)

DRAWING INFORMATION		MODEL INFORMATION	
DRAWING STATE	RELEASED	MODEL STATE	RELEASED
DRAWING VERSION	1.2	MODEL VERSION	1.5
DRAWING NUMBER	01PTL030	MODEL NUMBER	01PTL030

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN METRIC

TOLERANCES

DECIMALS	ANGLES
.XX±.5 [.03] .XXX±.25 [.010]	±.5°

MATERIAL 3

HEAT TREATMENT

FINISH 5

ORIGINAL DRAWING APPROVALS	
DESIGN ORG.	EX21
DRAWN BY	JOAD BEEKM.
ENGINEER	A.WAYNE
CHECKER	JIM BLEED
MATERIALS	
STRESS	
S & MA	
PRODUC-MANUF	
PRODUC-CONTR	
NEXT ASSEMBLY	
DESN BRANCH CKT	
RELEASE DATE	14-AUG-2013

GEORGE C. MARSHALL SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

SHIM, RAMP, LANDING GEAR (TIP PALLET LANDER)

SIZE	CODE	DRAWING NUMBER	REV
D	339B2	01PTL030	1

SCALE 1/1 MASS (KG) .021 SHEET 1 OF 1

MSFC.DWG.D.FORMAT_REV13 (2008)T. 00001

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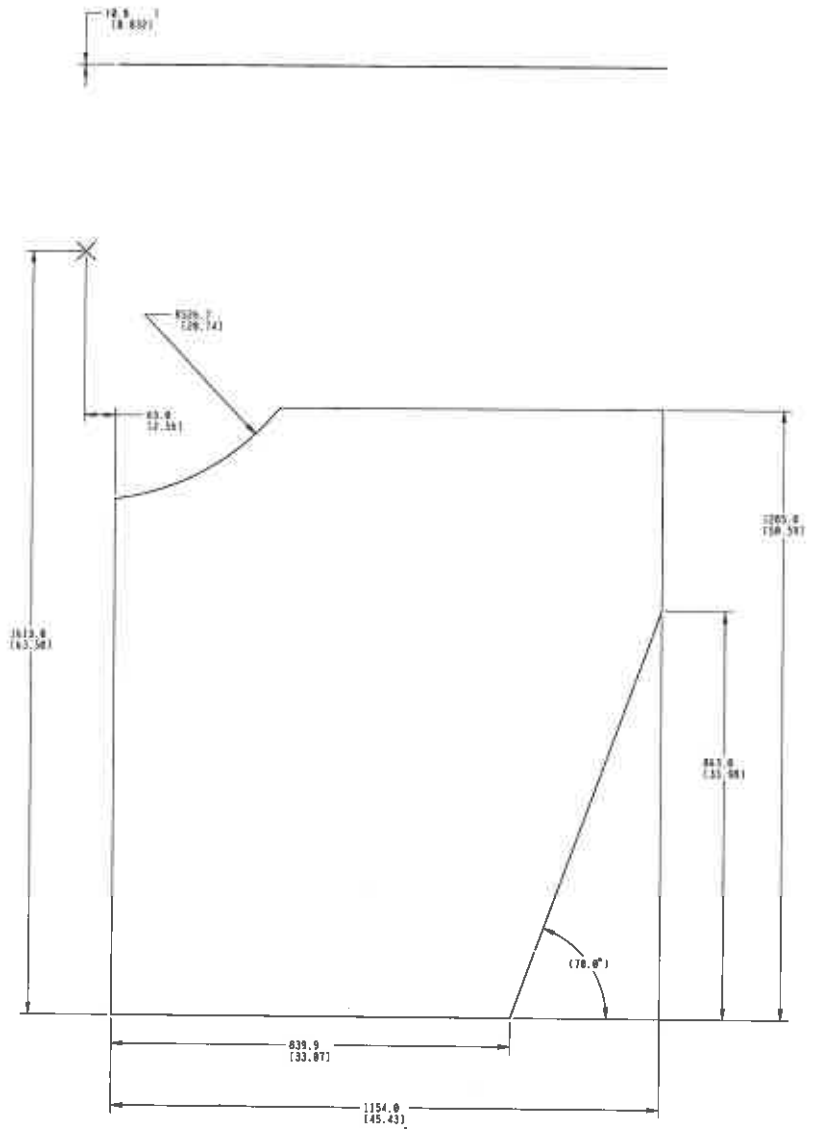
REVISIONS				
REV	ZONE	DESCRIPTION	APPROVED	MO DATE
1				SEE RELEASE DATE



NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL031 IN MSFC DDMS.
   - ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. MATERIAL: 0.032" STK 6061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.
4. 125 ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.
5. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.
6. IDENTIFY PART PER MIL-STD-130, METHOD BAG AND TAG PER MIL-STD-129.
7. CLEAN AND MAINTAIN TO VISIBLY CLEAN - STANDARD LEVEL.

01PTL031-001 SHOWN

4	01PTL002-001	TIP LANDER
TOTAL QTY	NEXT ASSY	USED ON

APPLICATION (VERIFY IN RELEASE RECORDS)

DRAWING INFORMATION	
DRAWING STATE	RELEASED
DRAWING VERSION	1.5
DRAWING NUMBER	01PTL031

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN METRIC

TOLERANCES	
DECIMALS	ANGLES
.XX±.0 (.02) .XXX±.25 (.010)	±.5°

MODEL INFORMATION	
MATERIAL	3.
HEAT TREATMENT	
FINISH	5.
MODEL STATE	RELEASED
MODEL VERSION	1.5
MODEL NUMBER	01PTL031

ORIGINAL DRAWING APPROVALS	
DESIGN ORG.	ES24
DRAWN BY	JOAQUIN SEGURA
ENGINEER	A. WAYNE
CHECKED	JIM ALBERG
MATERIALS	
STRESS	
S & MA	
PRODUCT-MANUF	
PRODUCT-CONTR	
HEAT ASSEMBLY	
DESN BRANCH CHF	
RELEASE DATE	14-AUG-2013

GEORGE C. MARSHALL SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

DECK, NARROW (TIP PALLET LANDER)

SIZE	CODE	DRAWING NUMBER	REV
D	33982	01PTL031	1

SCALE 1/5 MASS (KG) 2.982 SHEET 1 OF 1

MSFC_DWG_D_FORMAT_REVCAT AUGUST, 2003

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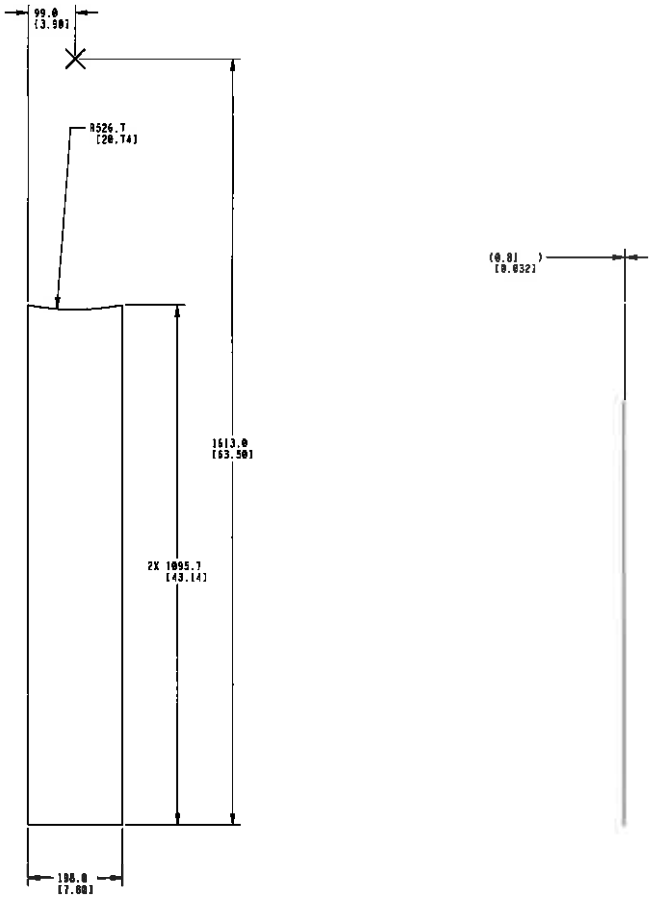
REVISIONS				
REV	ZONE	DESCRIPTION	APPROVAL	MO DATE
1				REV RELEASE DATE



NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL032 IN MSFC DDMS.
   - ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. MATERIAL: 0.032" STX 6061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.
4. 125 ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.
5. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.
6. IDENTIFY PART PER MIL-STD-130, METHOD BAG AND TAG PER MIL-STD-129.
7. CLEAN AND MAINTAIN TO VISIBLY CLEAN - STANDARD LEVEL.

01PTL032-001 SHOWN

2	01PTL002-001	TIP LANDER	
TOTAL QTY	NEXT ASSY	USED ON	
APPLICATION (VERIFY IN RELEASE RECORDS)			
DRAWING STATE		RELEASED	
DRAWING VERSION		1.4	
DRAWING NUMBER		01PTL032	
DRAWING INFORMATION			

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN METRIC

TOLERANCES	
DECIMALS .XXX ± 1.03 .XXXX ± .25 (.0101)	ANGLES ±0.5°
MATERIAL	3.
HEAT TREATMENT	
FINISH	5.
MODEL STATE	RELEASED
MODEL VERSION	1.5
MODEL NUMBER	01PTL032
MODEL INFORMATION	

ORIGINAL DRAWING APPROVALS	
DESIGN ORG.	ES21
DRAWN BY	JOAO REISAL
ENGINEER	A.WAYNE
CHECKER	JIN SLEDD
MATERIALS	
STRESS	
S & MA	
PRODUC-MANUF	
PRODUC-CONTR	
NEXT ASSEMBLY	01PTL002
DESN BRANCH CHF	
RELEASE DATE	14-AUG-2013

GEORGE C. MARSHALL SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

DECK, NARROW (TIP PALLET LANDER)

SIZE	CODE	DRAWING NUMBER	REV
D	339B2	01PTL032	1

SCALE 1/4 MASS (lbs) .475 SHEET 1 OF 1

MSFC_DWG_D_FORMAT_REV10 (AUGUST, 2003)

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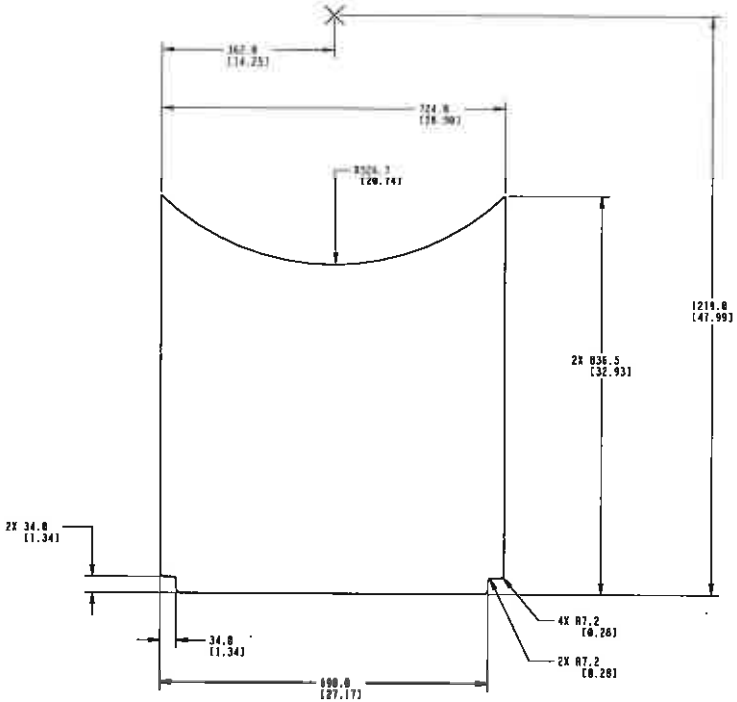
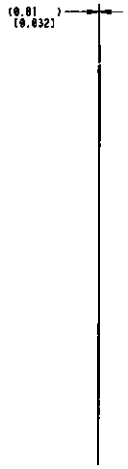
REVISIONS				
REV	ZONE	DESCRIPTION	APPROVAL	REL DATE
1				RCE RELEASE DATE





NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL033 IN MSFC DDMS.
   - ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. MATERIAL: 0.032" STK 6061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.
4. 125 ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.
5. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.
6. IDENTIFY PART PER MIL-STD-130, METHOD BAG AND TAG PER MIL-STD-129.
7. CLEAN AND MAINTAIN TO VISIBLY CLEAN - STANDARD LEVEL.

01PTL033-001 SHOWN

2	01PTL002-001	TIP LANDER
TOTAL QTY	NEXT ASSY	USED ON

APPLICATION (VERIFY IN RELEASE RECORDS)

DRAWING INFORMATION	
DRAWING STATE	RELEASED
DRAWING VERSION	1.5
DRAWING NUMBER	01PTL033

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN METRIC

TOLERANCES

DECIMALS	ANGLES
.XX±.0 (.03) .XXX±.25 (.010)	±.5°

MODEL INFORMATION	
MATERIAL	3
HEAT TREATMENT	
FINISH	5
MODEL STATE	RELEASED
MODEL VERSION	1.5
MODEL NUMBER	01PTL033

ORIGINAL DRAWING APPROVALS	
DESIGN CHK.	E321
DRAWN BY	JOAQ SCIXAL
ENGINEER	A.WAYNE
CHECKER	JIM ULENO
MATERIALS	
STRESS	
S & MA	
PRODUC-MANUF	
PRODUC-CONTR	
NEXT ASSEMBLY	01PTL002
DESN BRANCH CHF	
RELEASE DATE	14-AUG-2013

GEORGE C. MARSHALL SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

DECK, CENTRAL (TIP PALLET LANDER)

SIZE	CODE	DRAWING NUMBER	REV
D	33982	01PTL033	1

SCALE 1/1 WGT (KG) 1.171 SHEET 1 OF 1

MSFC_DWG_D_FORMAT_REVA1 (AUGUST, 2009)

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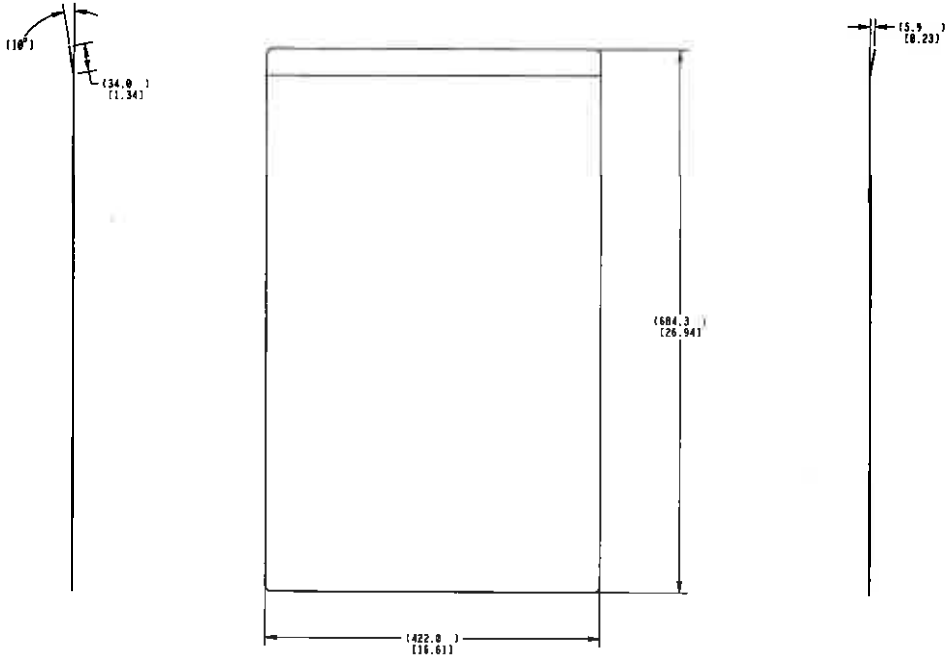
REVISIONS				
REV	ZONE	DESCRIPTION	APPROVAL	REL DATE
1				SEE RELEASE DATE

NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL034 IN MSFC DDMS.
   - ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. MATERIAL: 0.032" STK 6061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.
4. 125 ✓ ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.
5. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.
6. IDENTIFY PART PER MIL-STD-130, METHOD BAG AND TAG PER MIL-STD-129.
7. CLEAN AND MAINTAIN TO VISIBLY CLEAN - STANDARD LEVEL.



01PTL034-001 SHOWN

4	01PTL002	TIP LANDER		
TOTAL QTY	NEXT ASSY	USED ON		
APPLICATION (VERIFY IN RELEASE RECORDS)				
DRAWING STATE		RELEASED		
DRAWING VERSION		1.4		
DRAWING NUMBER		01PTL034		
DRAWING INFORMATION				

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN METRIC

TOLERANCES	
DECIMALS	ANGLES
.XX±.0 (.03) .XXX±.25 (.010)	±.5°
MATERIAL	3
HEAT TREATMENT	
FINISH	5
MODEL STATE	RELEASED
MODEL VERSION	1.8
MODEL NUMBER	01PTL034
MODEL INFORMATION	

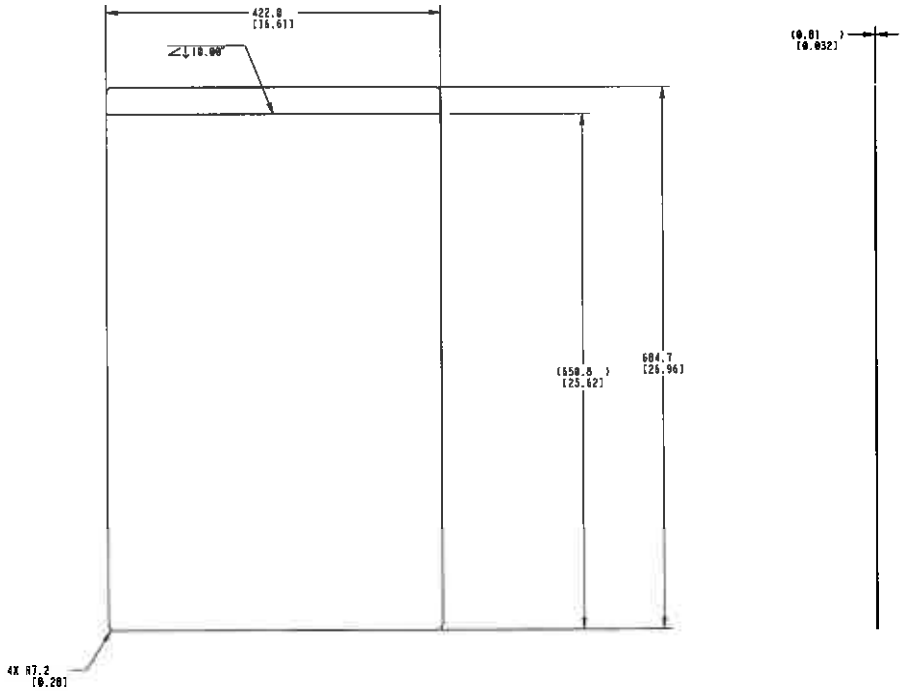
ORIGINAL DRAWING APPROVALS	
DESIGN ORG.	EX01
DRAWN BY	JOAD ZEIZAL
ENGINEER	A.WAYNE
CHECKER	JIM GASON
MATERIALS	
STRESS	
R & RA	
PRODUC-MANUF	
PRODUC-CONTR	
NEXT ASSEMBLY	01PTL002
DESN BRANCH CHF	
RELEASE DATE	14-JUN-2013

GEORGE C. MARSHALL SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

DECK, RAMP (TIP PALLET LANDER)

SIZE	CODE	DRAWING NUMBER	REV
D	339B2	01PTL034	1
SCALE 1/1 (MADE 1:1)		.636 SHEET 1 OF 2	

MSFC.DWG.D.FORMAT_REVIA3 (ADMIN), 2009



01PTL034-001 FLAT PATTERN SHOWN

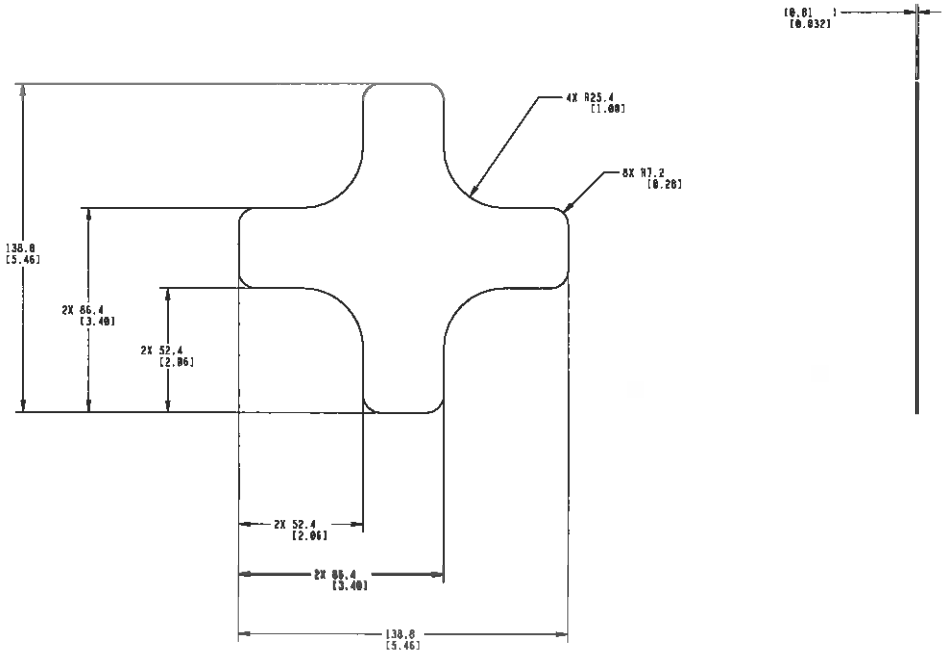
DRAWING STATUS: RELEASED	REV SYMB: D	33982	DRAWING NUMBER: 01PTL034
DRAWING SYSTEM: 1.4			REV: 1
DRAWING INFORMATION			SHEET 1 OF 1

MDFC_DWG_D_FORMAT_REVISED CONRADT, 20001

REVISIONS				
REV	CODE	DESCRIPTION	APPROVAL	REL DATE
1				SEE RELEASE DATE

NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL038 IN MSFC DDMS.
   - ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. MATERIAL: 0.032" STK 6061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.
4. 125 ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.
5. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.
6. IDENTIFY PART PER PER MIL-STD-130, METHOD TAG PER MIL-STD-129.



01PTL035-001 SHOWN

36	01PTL002-001	TIP PALLET
TOTAL QTY	NEXT ASSY	USED ON

APPLICATION (VERIFY IN RELEASE RECORDS)

DRAWING INFORMATION		MODEL INFORMATION	
DRAWING STATE	RELEASED	MODEL STATE	RELEASED
DRAWING VERSION	1.3	MODEL VERSION	1.3
DRAWING NUMBER	01PTL035	MODEL NUMBER	01PTL038

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM [IN]

TOLERANCES

DECIMALS	ANGLES
.XX ± .01 [.XX ± .25 ± .010]	±1°

MATERIAL 3.

HEAT TREATMENT

FINISH 5.

ORIGINAL DRAWING APPROVALS	
DESIGN ORG.	CE21
DRAWN BY	JOAQUIN SEIDAL
ENGINEER	A. WAYNE
CHECKED	JIM DIEBO
MATERIALS	
STRESS	
S & MA	
PROGRAM-MANAGR	
PROGRAM-CONTRL	
NEXT ASSEMBLY	01PTL002
DESIGN BRANCH CHIEF	
RELEASE DATE	14-AUG-2013

GEORGE C. MARSHALL SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

SPLICE PLATE, PLUS
(TIP PALLET LANDER)

SIZE	CODE	DRAWING NUMBER	REV
D	339B2	01PTL035	1

SCALE 2/1 MASS (UNIT WEIGHT) 0.019 KG SHEET 1 OF 1

MSFC_DWG_D_FORMAT_REVISAL CANDRET, 20091

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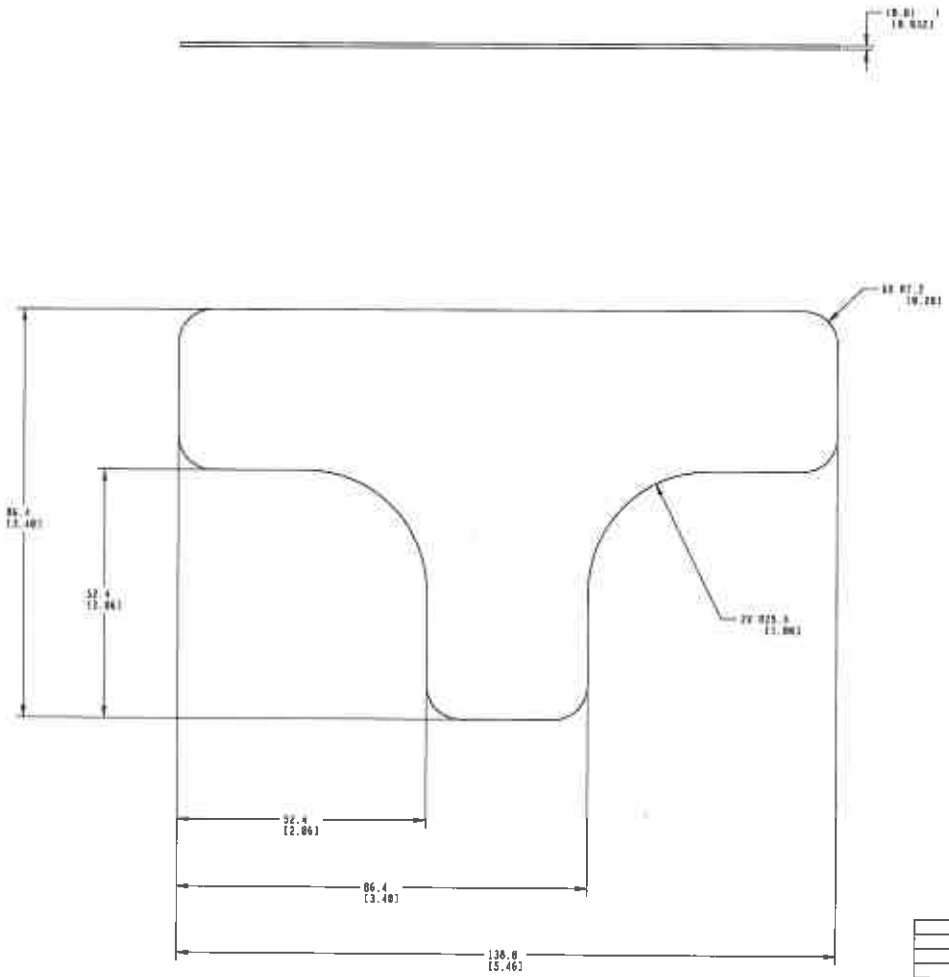
REVISIONS				
REV	ECNC	DESCRIPTION	APPROVED	REL DATE
1				SEE RELEASE DATE

NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL038 IN MSFC DOMS.
   - ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. MATERIAL: 0.032" STK 6061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.
4. 125 ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.
5. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.
6. IDENTIFY PART PER PER MIL-STD-130, METHOD TAG PER MIL-STD-129.



01PTL036-001 SHOWN

12	01PTL002-001	TIP PALLET	
TOTAL QTY	NEXT ASSY	USED ON	
APPLICATION (VERIFY IN RELEASE RECORDS)			
DRAWING STATE	RELEASED	MODEL STATE	RELEASED
DRAWING VERSION	1.7	MODEL VERSION	1.3
DRAWING NUMBER	01PTL035	MODEL NUMBER	01PTL030
DRAWING INFORMATION		MODEL INFORMATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM [IN]

TOLERANCES

DECIMALS	ANGLES
.X±0.8 [.03] .XXX±0.25 [.0101]	±.5°

MATERIAL 3

HEAT TREATMENT

FINISH 5

ORIGINAL DRAWING APPROVALS	
DESIGN ENG.	EX21
DRAWN BY	JOAO SZIDAL
ENGINEER	A. WAYNE
CHECKER	JIN SLEMP
MATERIALS	
STRESS	
R & RA	
PRODUC-MANUF	
PRODUC-CONTR	
NEXT ASSEMBLY	01PTL002
DESN BRANCH CHF	
RELEASE DATE	14-JUN-2013

GEORGE C. MARSHALL SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

SPLICE PLATE, TEE (TIP PALLET LANDER)

SIZE	CODE	DRAWING NUMBER	REV
D	339B2	01PTL036	1

SCALE 2/1 | MASS (WHEN WEIGHT) 0.010 KG | SHEET 1 OF 1

MSFC_DOM_D_FORMAT_REVC41 (AUGUST, 2009)

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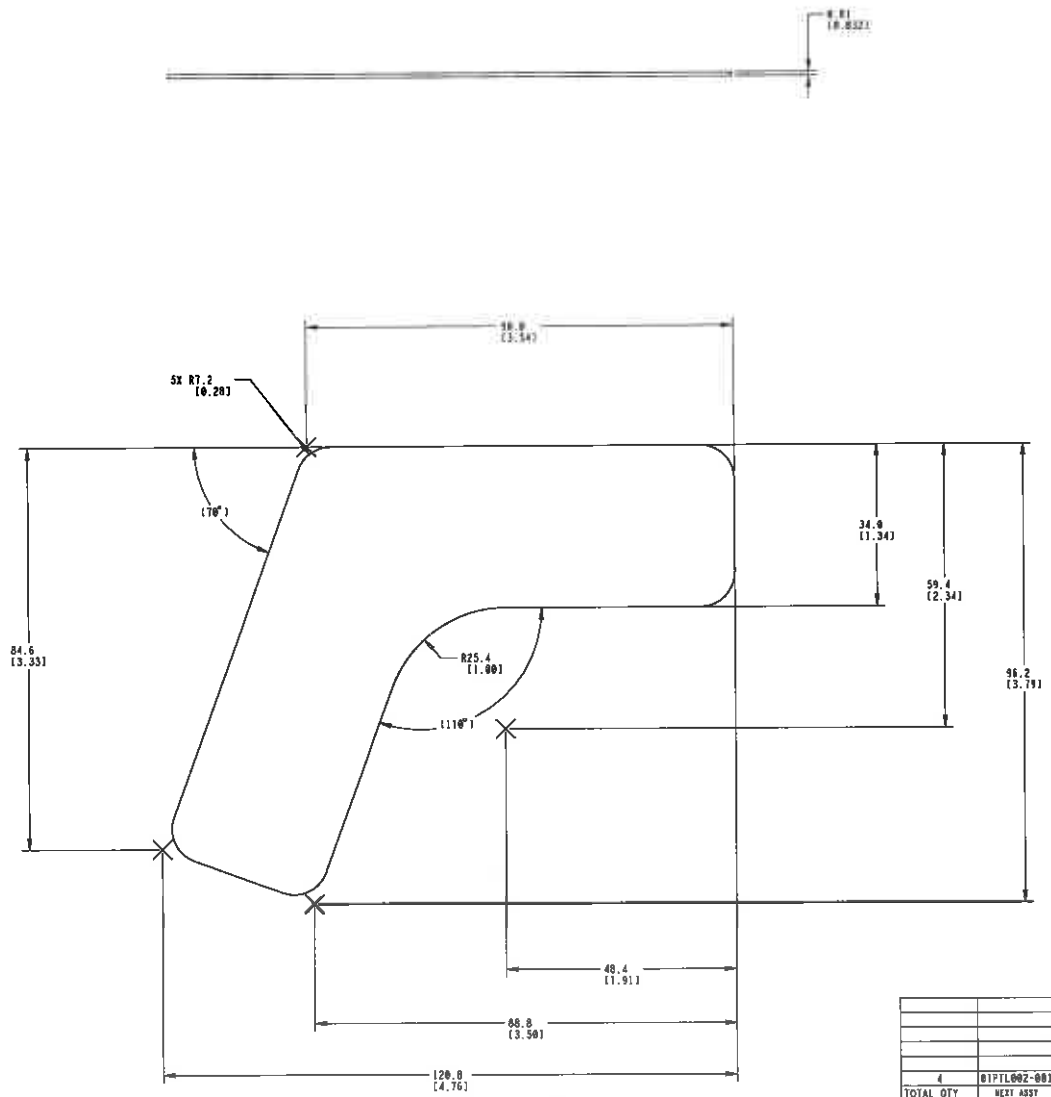
REVISIONS				
REV	ZONE	DESCRIPTION	APPROVAL	REL DATE
1				SEE RELEASE DATE



NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL038 IN MSFC DDMS.
   - ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. MATERIAL: 0.032" STK 6061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.
4. 125 ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.
5. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.
6. IDENTIFY PART PER PER MIL-STD-130, METHOD TAG PER MIL-STD-129.

01PTL037-001 SHOWN

4	01PTL002-001	TIP PALLET
TOTAL QTY	NEXT ASSY	USED ON
APPLICATION (VERIFY IN RELEASE RECORDS)		

DRAWING INFORMATION		MODEL INFORMATION	
DRAWING STATE	RELEASED	MODEL STATE	RELEASED
DRAWING VERSION	1.5	MODEL VERSION	1.3
DRAWING NUMBER	01PTL037	MODEL NUMBER	01PTL038

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM (IN)

TOLERANCES	
DECIMALS .XX: ± 0.03 (.XXX: ± 0.010)	ANGLES ±0.5°
MATERIAL	3.
HEAT TREATMENT	
FINISH	5.

ORIGINAL DRAWING APPROVALS	
DESIGN ORG.	EXPT
DRAWN BY	JOHN SEITZAL
ENGINEER	A. DAYNE
CHECKER	JIM ALEGO
MATERIALS	
STRESS	
S & MA	
PRODUC-MANUF	
PRODUC-CONTR	
NEXT ASSEMBLY	01PTL002
NEW BRANCH CAT	
RELEASE DATE	14-AUG-2013

GEORGE C. MARSHALL SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

SPLICE PLATE, 110 ANGLE (TIP PALLET LANDER)

SIZE	CODE	DRAWING NUMBER	REV
D	33982	01PTL037	1

SCALE 2/1 | WGT (UNIT WEIGHT) 0.012 KG | SHEET 1 OF 1

MSFC,PWD,D,FORMAT,REVISA 1AUGUST, 2001

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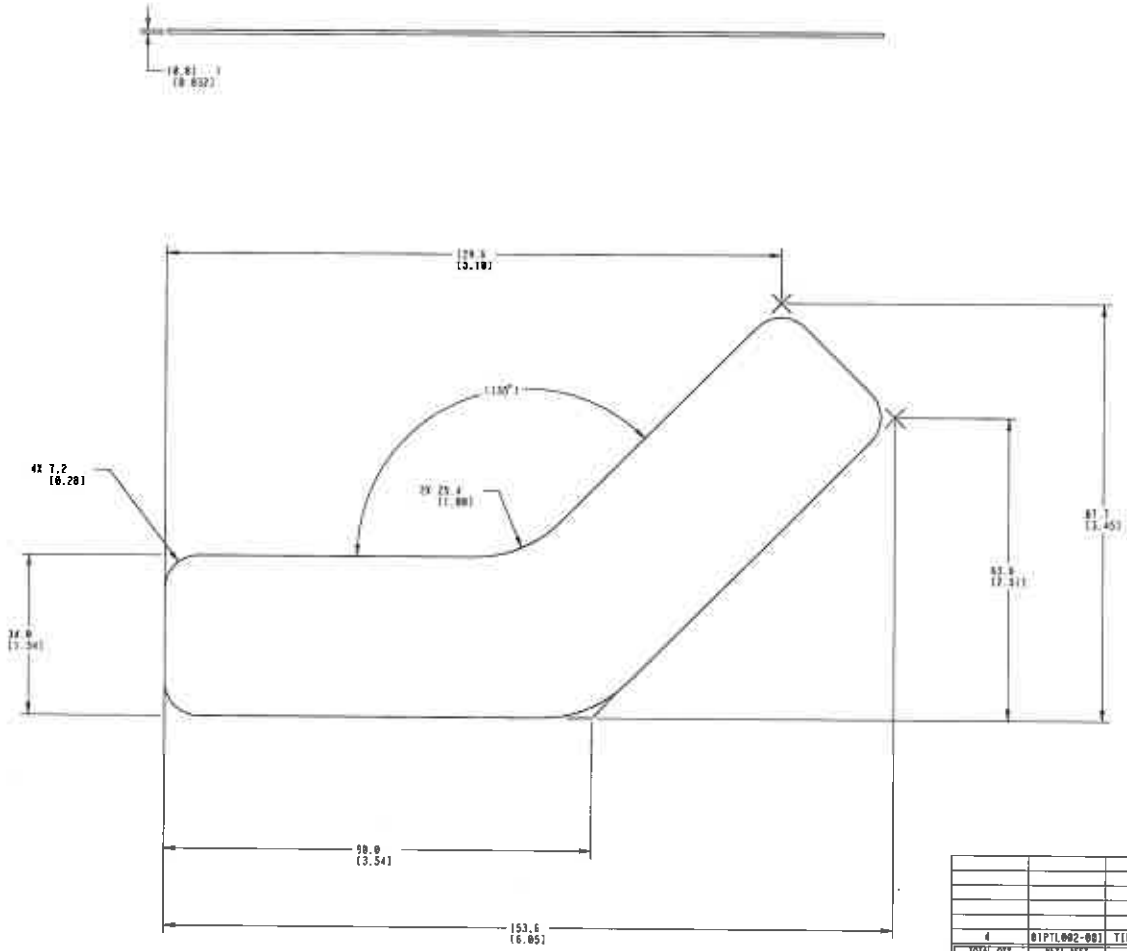
REVISIONS				
REV	ZONE	DESCRIPTION	APPROVAL	REL DATE
				SEE RELEASE DATE

NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL038 IN MSFC DDMS.
   - ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. MATERIAL: 0.032" STK 6061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.
4. 125 ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.
5. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.
6. IDENTIFY PART PER PER MIL-STD-130, METHOD TAG PER MIL-STD-129.



01PTL038-001 SHOWN

4	01PTL002-001	TIP PALLET	
TOTAL QTY	NEXT ASSY	USED ON	

APPLICATION (VERIFY IN RELEASE RECORDS)

DRAWING STATE	RELEASED
DRAWING VERSION	1.7
DRAWING NUMBER	01PTL038

DRAWING INFORMATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MM (IN)

TOLERANCES

DECIMALS	ANGLES
.XX=±0.0 (.05) .XXX=±0.25 (.010)	±0.5°

MATERIAL	3.
HEAT TREATMENT	
FINISH	5.
MODEL STATE	RELEASED
MODEL VERSION	1.5
MODEL NUMBER	01PTL038

MODEL INFORMATION

ORIGINAL DRAWING APPROVALS	
DESIGN ORG.	EX21
DRAWN BY	JOAQ SEIBAL
ENGINEER	A. WAYNE
CHECKER	JIM GLENN
MATERIALS	
STRESS	
S & MA	
PRODUC-MANUF	
PRODUC-CONTR	
NEXT ASSEMBLY	01PTL002
DESN BRANCH CDR	
RELEASE DATE	SEE RELEASE DATE

GEORGE C. MARSHALL SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

SPLICE PLATE, 45 ANGLE (TIP PALLET LANDER)

SIZE	CODE	DRAWING NUMBER	REV
D	339B2	01PTL038	1

SCALE 2/1 (NOT TO SCALE) 0.012 KG SHEET 1 OF 1

MSFC_DWG_D_FORMAT_REVCAT 16MAR07, 20003

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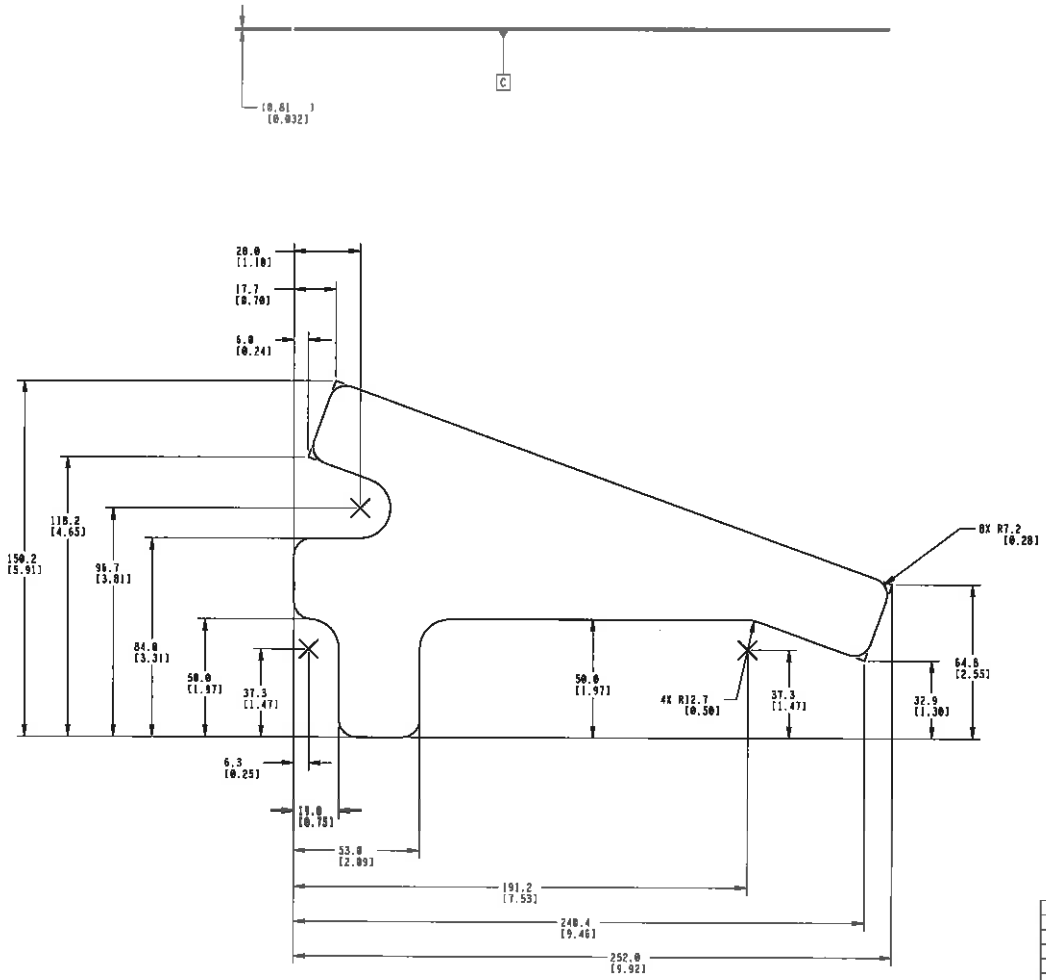
REVISIONS				
REV	ZONE	DESCRIPTION	APPROVAL	REL DATE
1				SEE RELEASE DATE

NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL039 IN MSFC DDMS.
   - ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. MATERIAL: 0.032" STK 6061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.
4. 125 ✓ ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.
5. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.
6. IDENTIFY PART PER MIL-STD-130, METHOD BAG AND TAG PER MIL-STD-129.
7. CLEAN AND MAINTAIN TO VISIBLY CLEAN - STANDARD LEVEL.



01PTL039-001 SHOWN

4	01PTL002-001	TIP LANDER
TOTAL QTY	NEXT ASSY	USED ON

APPLICATION (CHECKED IN RELEASE RECORDS)

DRAWING INFORMATION		MODEL INFORMATION	
DRAWING STATE	RELEASED	MODEL STATE	RELEASED
DRAWING VERSION	1.0	MODEL VERSION	1.0
DRAWING NUMBER	01PTL009	MODEL NUMBER	01PTL039

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN METRIC

TOLERANCES: DECIMALS .XX±.01 (.XXX±.25 [.0010]); ANGLES ±0.5°

MATERIAL 3

HEAT TREATMENT

FINISH 5

ORIGINAL DRAWING APPROVALS	
DESIGN ORG.	ES21
DRAWN BY	JOAQ SEIBAL
ENGINEER	A.WAYNE
CHECKER	JIM BLEED
MATERIALS	
STRESS	
E & MA	
PRODUC-MANUF	
PRODUC-CONTR	
NEXT ASSEMBLY	01PTL002
DESN BRANCH CHF	
RELEASE DATE	14-AUG-2013

GEORGE C. MARSHALL SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

SPLICE PLATE,
Y
(TIP PALLET LANDER)

SIZE	CODE	DRAWING NUMBER	REV
D	33982	01PTL039	1

SCALE 1/1 UNIT (MM) 0.035 (INCH) SHEET 1 OF 1

MSFC_DWG_D_FORMAT_REV.A1 CANVAS7, 20001

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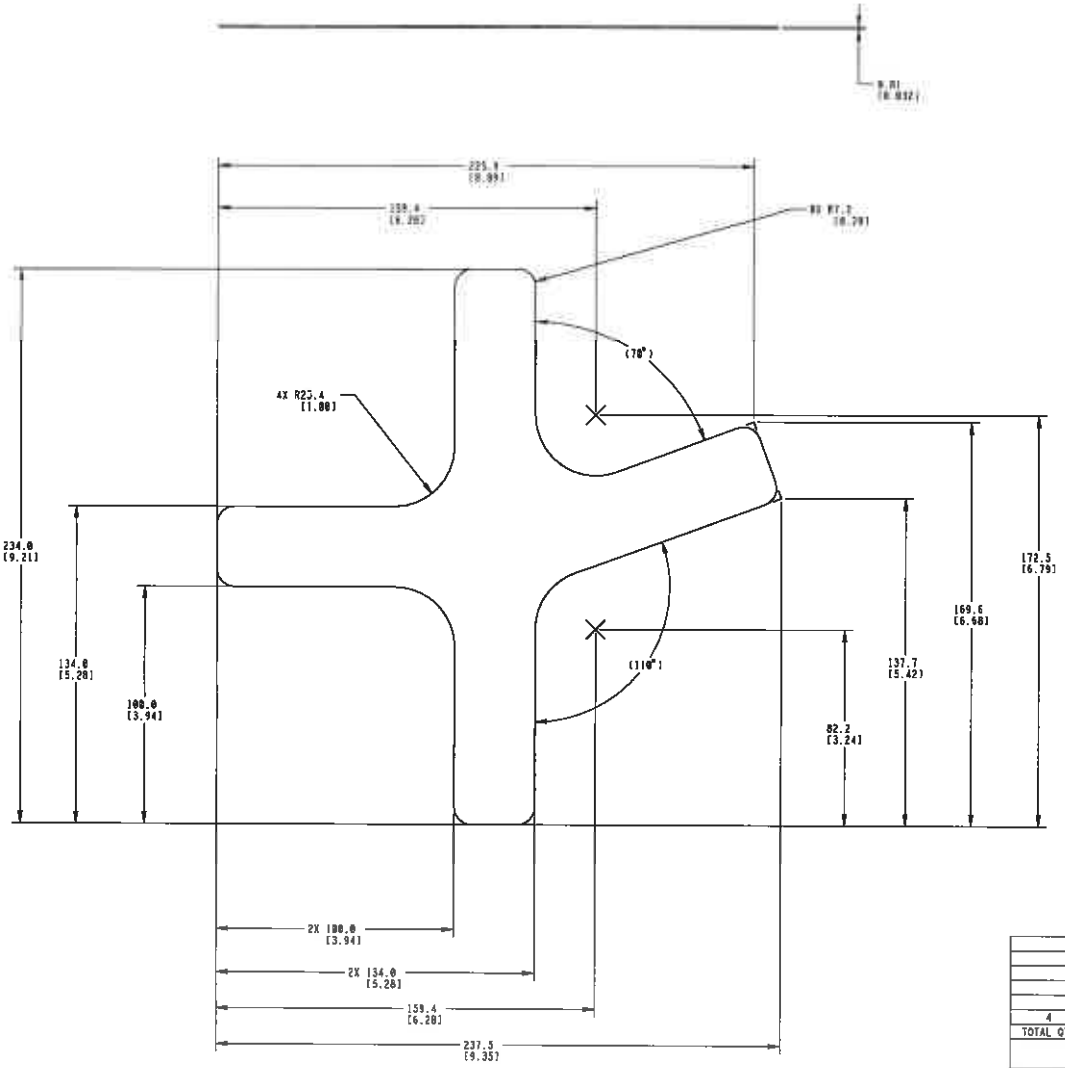
REVISIONS				
REV	ECN#	DESCRIPTION	APPROVAL	REL DATE
1				MRC RELEASE DATE



NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL040 IN MSFC DDMS.
   - ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. MATERIAL: 0.032" STK 6061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.
4. 125 ✓ ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.
3. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.
6. IDENTIFY PART PER MIL-STD-130, METHOD BAG AND TAG PER MIL-STD-129.
7. CLEAN AND MAINTAIN TO VISIBLY CLEAN - STANDARD LEVEL.

01PTL040-001 SHOWN

4	01PTL002-001	TIP PALLET
TOTAL QTY	NEXT ASSY	USED ON

APPLICATION (VERIFY IN RELEASE RECORDS)

DRAWING INFORMATION		MODEL INFORMATION	
DRAWING STATE	RELEASED	MODEL STATE	RELEASED
DRAWING VERSION	1.3	MODEL VERSION	-.7
DRAWING NUMBER	01PTL040	MODEL NUMBER	01PTL040

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN METRIC

TOLERANCES	
DECIMALS	ANGLES
.X±.0 (.0) .XX±.25 (.010)	±.5°

MATERIAL	3
HEAT TREATMENT	
FINISH	5

ORIGINAL DRAWING APPROVALS	
DESIGN ENG.	ESPI
DRAWN BY	JONAS GEIGAL
ENGINEER	J. WUFFY
CHECKER	JIM BLEND
MATERIALS	
STRESS	
S & MA	
PROONC-MANUF	
PROONC-CONTR	
NEXT ASSEMBLY	01PTL000
DEN BRANCH CHF	
RELEASE DATE	14-AUG-2013

GEORGE C. MARSHALL SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

SPLICE PLATE, RAMP (TIP PALLET LANDER)

SIZE	CODE	DRAWING NUMBER	REV
D	339B2	01PTL040	1

SCALE: 1/1 MASS (UNIT WEIGHT): 1.737 SHEET 1 OF 1

MSFC_DWG_D_FORMAT_REV(A3) (AUGUST, 2009)

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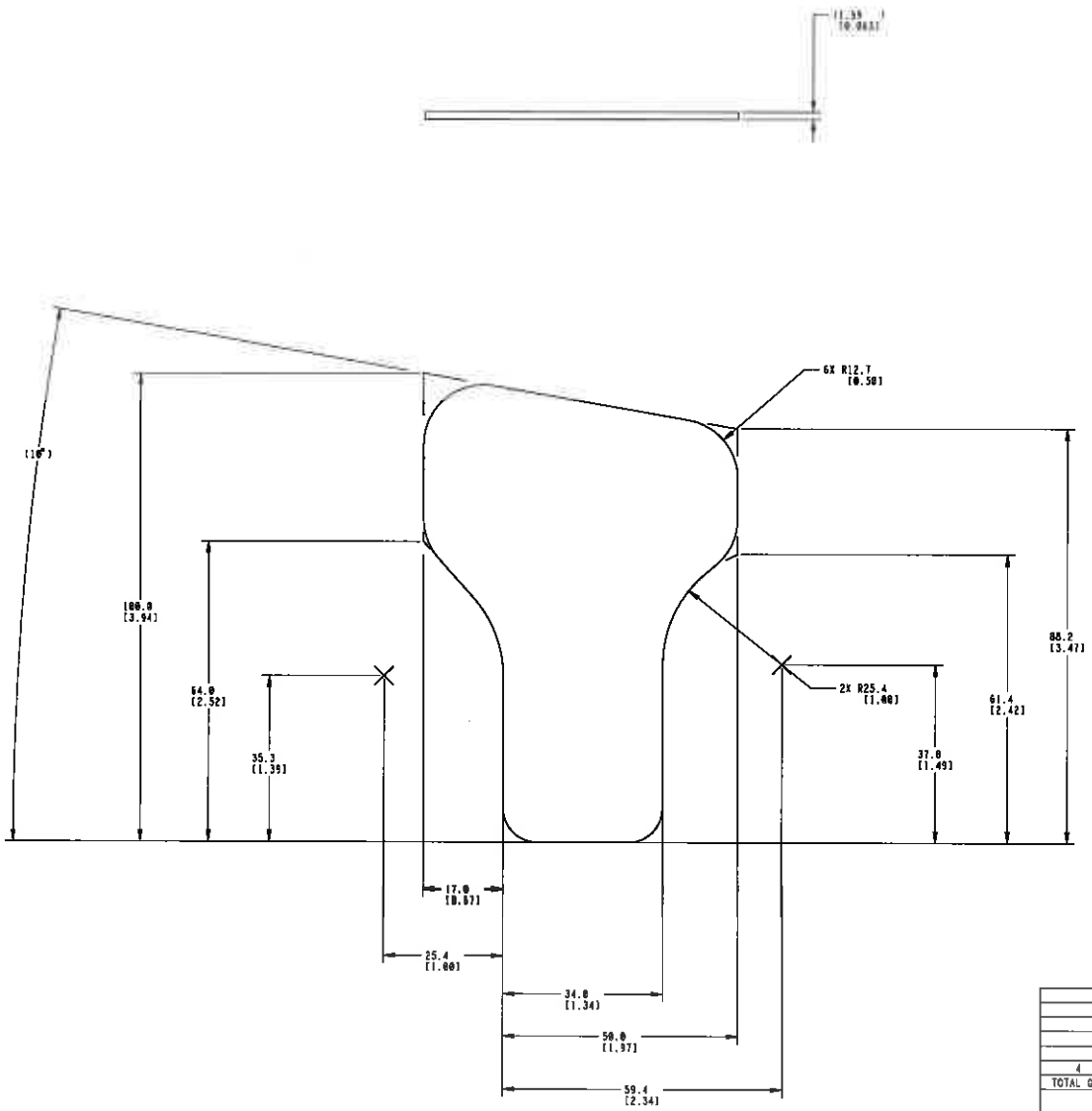
REVISIONS				
REV	ZONE	DESCRIPTION	APPROVAL	ECO DATE
0				REV RELEASE DATE



NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL041 IN MSFC DDMS.
   - ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. MATERIAL: 0.063" STK 6061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.
4. 125 ✓ ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.
5. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.
6. IDENTIFY PART PER MIL-STD-130, METHOD BAG AND TAG PER MIL-STD-129.
7. CLEAN AND MAINTAIN TO VISIBLY CLEAN - STANDARD LEVEL.

01PTL041-001 SHOWN

4	01PTL002-001	TIP LANDER	
TOTAL QTY	NEXT ASSY	USED ON	
APPLICATION (VERIFY IN RELEASE RECORDS)			

DRAWING STATE	RELEASED
DRAWING VERSION	1.6
DRAWING NUMBER	01PTL041
DRAWING INFORMATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN METRIC

TOLERANCES	
DECIMALS	ANGLES
.XX±.5 [.03] .XXX±.25 [.010]	±0.5°

MATERIAL	3
HEAT TREATMENT	
FINISH	5
MODEL STATE	RELEASED
MODEL VERSION	-.T
MODEL NUMBER	01PTL041
MODEL INFORMATION	

ORIGINAL DRAWING APPROVALS	
DESIGN ORG.	EG21
DRAWN BY	JOAO BEZERAL
ENGINEER	A. WAYNE
CHECKER	JIM SLEDD
MATERIALS	
ATMOS	
E & ME	
PRODUC-MANUF	
PRODUC-CONTR	
NEXT ASSEMBLY	01PTL002
OGEM BRANCH CHF	
RELEASE DATE	14-AUG-2013

GEORGE C. MARSHALL SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

SPLICE PLATE, CENTRAL CYLINDER STA 65 (TIP PALLET LANDER)

SIZE	CODE	DRAWING NUMBER	REV
D	33982	01PTL041	1

SCALE 2/1 | WGT (KGM) 0.019 | SHEET 1 OF 1

MSFC_DWG_B_FORM3_REV(A) (AUGUST, 2004)

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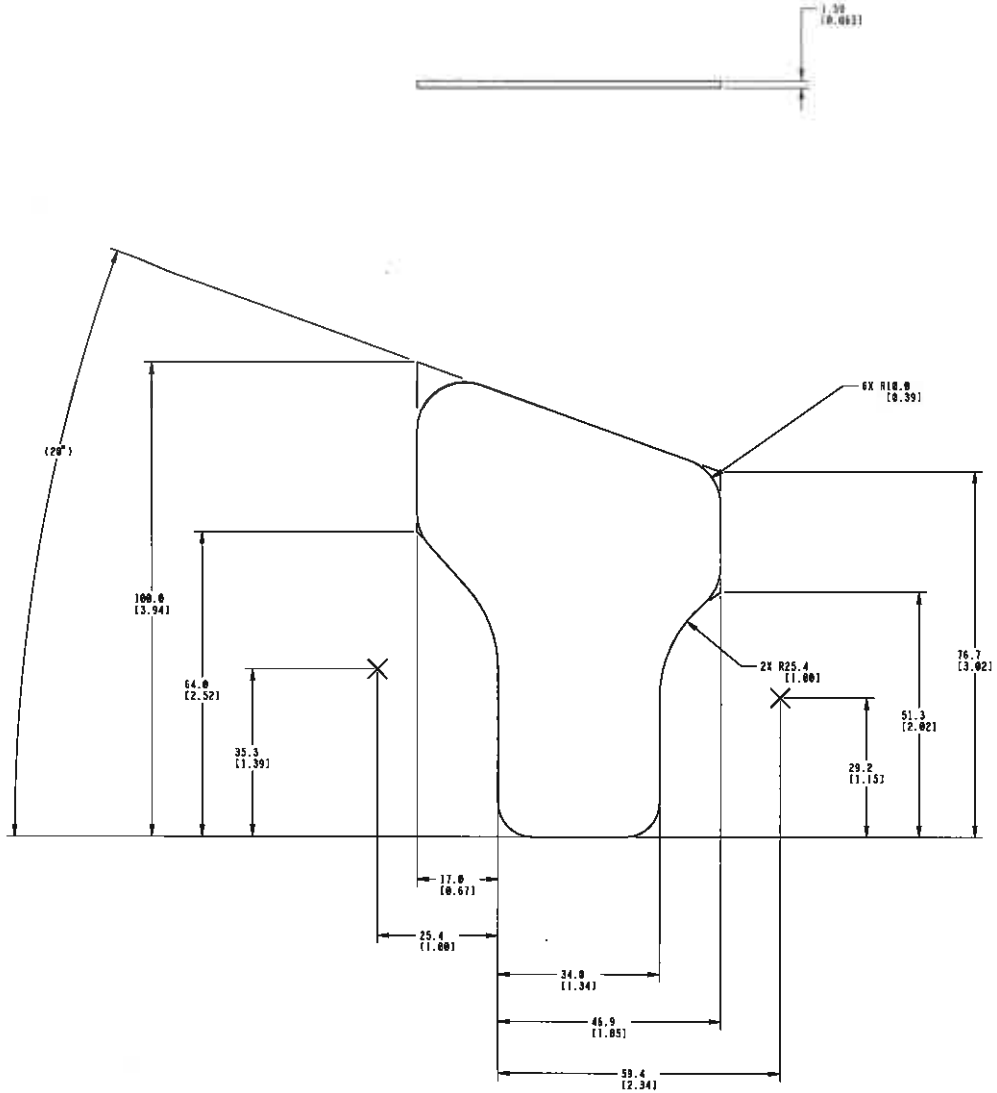
REVISIONS				
REV	ZONE	DESCRIPTION	APPROVAL	REL DATE
1				REF. RELEASE DATE



NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL042 IN MSFC DDMS.
   - ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. MATERIAL: 0.063" STX 6061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.
4. 125 ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.
5. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.
6. IDENTIFY PART PER MIL-STD-130, METHOD BAG AND TAG PER MIL-STD-129.
7. CLEAN AND MAINTAIN TO VISIBLY CLEAN - STANDARD LEVEL.

01PTL042-001 SHOWN

4	01PTL002-001	TIP LANDER
TOTAL QTY	NEXT ASSY	USED ON
APPLICATION (VERIFY TO RELEASE RECORDS)		

DRAWING INFORMATION		MODEL INFORMATION	
DRAWING STATE	RELEASED	MODEL STATE	RELEASED
DRAWING VERSION	1.4	MODEL VERSION	-.1
DRAWING NUMBER	01PTL042	MODEL NUMBER	01PTL042

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN METRIC

TOLERANCES	
DECIMALS .XX±.0 (.03) .XXX±.25 (.010)	ANGLES ±.5°
MATERIAL	3.
HEAT TREATMENT	
FINISH	5.

ORIGINAL DRAWING APPROVALS	
DESIGN ORG.	ES21
DRAWN BY	JOAO ATIZAL
ENGINEER	A. WAYNE
CHECKER	JIM GLENN
MATERIALS	
STRESS	
S & MA	
PROMOC-NAMMF	
PROMOC-STRUTH	
NEXT ASSEMBLY	01PTL002
MESH BRANCH CHT	
RELEASE DATE	14-AUG-2013

GEORGE C. MARSHALL SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

SPLICE PLATE, CENTRAL CYLINDER STA 244 (TIP PALLET LANDER)

SIZE	CODE	DRAWING NUMBER	REV
D	339B2	01PTL042	1

SCALE 2/1 | MASS (ONLY WEIGHT) 0.017 | SHEET 1 OF 1

MSFC_MAL_B_FORMAT_REVEA1 FAB4DT, 20091

INITIALS/TIME/DATE REL DESK	SHEET A-1	SHEETS 2 OF 2

INPUT FORM FOR COMPUTER PREPARED DOCUMENTATION RELEASE LIST OR ENGINEERING PARTS LIST

SEQ. NO.	B S	DRAWING/PART NO.	DWG REV	DRL/FPL DASH	DEV	DESCRIPTION (MAXIMUM 60 POSITIONS)
		01PTL045-001	—	101	—	WEB, CENTRAL CYLINDER ASSEMBLY (TIP PALLET LANDER)

MAKE FROM	DRAWING/PART NO.	DWG REV	DRL/FPL DASH	MLV	TBC CODE	CCBD NO.	PCI NO.	UNIT WEIGHT	QTY.	TOP ASSEMBLY	PROJ CODE	EFFECTIVITY	DOC REQ'D ECC
								3.426	1	01PTL002-001			

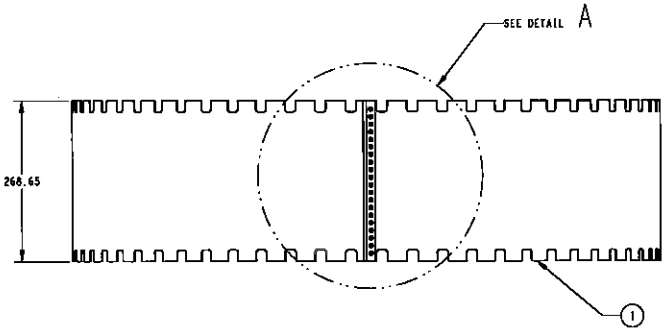
DWG ZONE	FIND OR ITEM NUMBER	B S	DRAWING/PART NUMBER	CONT IDENT REV	BA	QTY	UNIT WEIGHT	NOTES	TYPE	DESCRIPTION (MAXIMUM 20 POSITIONS)
	1		01PTL006-001	339	B2	1	3.426			WEB, CENTRAL CYLINDER
	2		MS20470-AD-4-5			20	0.0			RIVET, SOLID, AL, 1/8"X5/16"

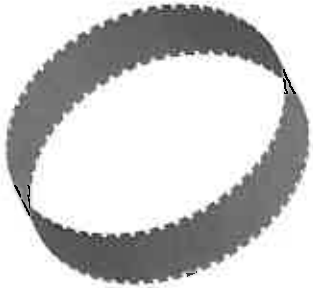
PAGE NO.	RESP ORGANIZATION	REV DESCRIPTION					
	DESIGNER	ENGINEER (PRINT)	CHECKER	MATERIAL	STRESS	APPROVED	APPROVED
SIGNATURE	JIM SLEDD	ANDY WAYNE	JOAO SEIXAL				
DATE	08-05-2013	08-05-2013	08-13-2013				

NSFC-Form 450 (Rev. June 1983) (Computer Generated FMC-I version 1.0)

RELEASED			
1.0	339B2	01PTL045	1
DRAWING INFORMATION		2 2	

REVISIONS				
REV	ZONE	DESCRIPTION	APPROVAL	MM DD YY
1				SEE RELEASE DATE





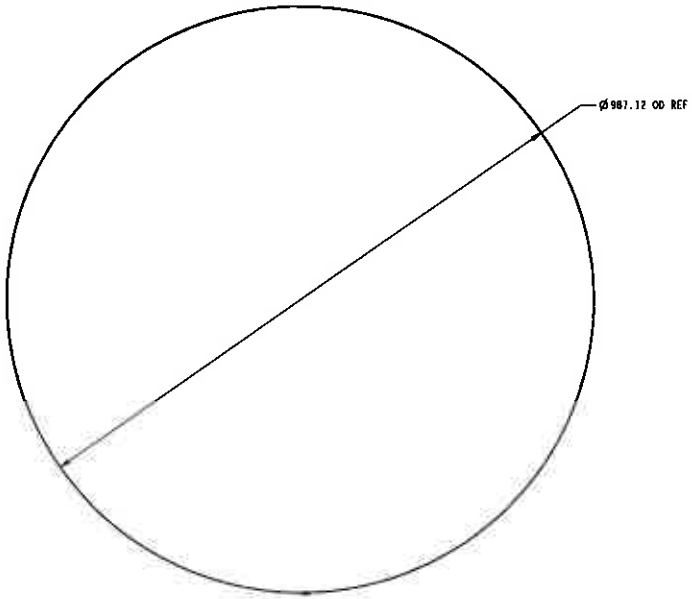
SCALE 1/8

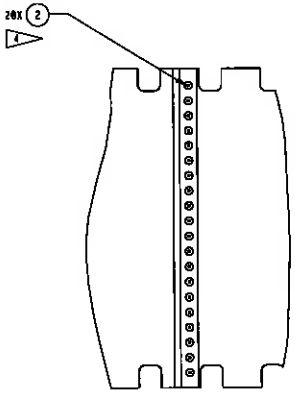
ISO VIEW
FOR REFERENCE ONLY

NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL045 IN MSFC DDMS.
   - ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
   - AXONOMETRIC VIEWS SHALL NOT BE DIMENSIONED.
2. IDENTIFY PART PER MIL-STD-130, METHOD BAG AND TAG PER MIL-STD-129.
3. CLEAN AND MAINTAIN TO CsP 70145 - GENERALLY CLEAN LEVEL.
5. MATERIAL TRACEABILITY IS REQUIRED. RECORDS SHALL BE MAINTAINED OF: (1) ACTUAL CHEMICAL AND PHYSICAL MATERIAL VERIFICATION TEST RESULTS, (2) CERTIFICATES OF CONFORMANCE, (3) DETAILED PROCESS, INSPECTION, DISCREPANCY RECORDS TRACEABLE TO THE MATERIAL FROM WHICH FABRICATION ORIGINATED, AND (4) IN-HOUSE CHEMICAL AND PHYSICAL VERIFICATION TESTING

4. DRILL AND INSTALL RIVETS PER MSFC-STD-156





DETAIL A
SCALE 1/2

SEE SEPARATE PARTS LIST

01PTL045-001 SHOWN

1	01PTL005-001	TIP PALLET
TOTAL QTY	NEXT ASSY	USED ON

APPLICATION
(VERIFY IN RELEASE RECORDS)

ORDERING STATE	RELEASED
DRAWING VERSION	1.3
DRAWING NUMBER	01PTL045

DRAWING INFORMATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN METRIC

TOLERANCES

DECIMALS	ANGLES
.XX±.0 (.001) .XXX±.25 (.010)	±.5°

MATERIAL	
HEAT TREATMENT	
FINISH	
MODEL STATE	RELEASED
MODEL VERSION	1.3
MODEL NUMBER	01PTL045

MODEL INFORMATION

ORIGINAL DRAWING APPROVALS	
DESIGN ORG.	EG21
DRAWN BY	JIM BLEDSO
ENGINEER	ANDY WAYNE
CHECKER	JOAO SEZERA
MATERIALS	
STRESS	
S & MA	
PRODUC-MANUF	
PRODUC-CONTR	
REST ASSEMBLY	
DESN BRANCH CHF	
RELEASE DATE	23-AUG-2013

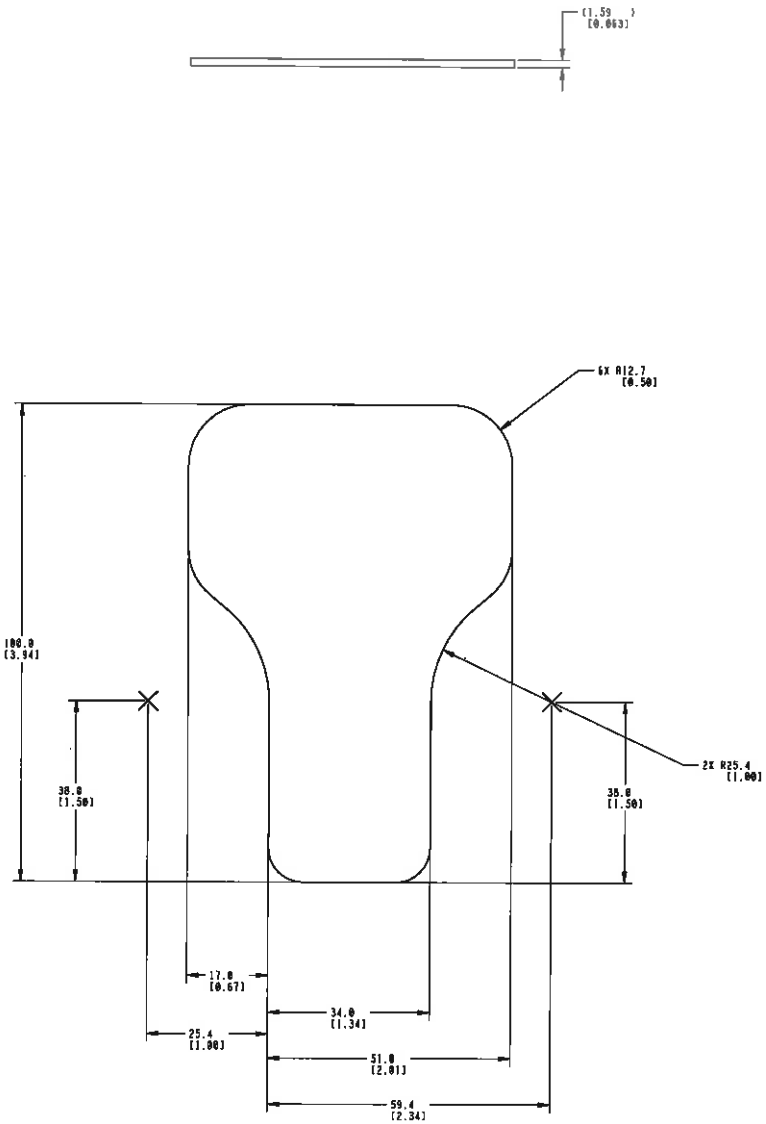
GEORGE C. MARSHALL SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

WEB,
CENTRAL CYLINDER ASSEMBLY
(TIP PALLET LANDER)

SIZE	CODE	DRAWING NUMBER	REV
D	33982	01PTL045	1

SCALE 1/4 MASS (KG) 3.426 KG SHEET 1 OF 2

REVISIONS				
REV	ZONE	DESCRIPTION	APPROVAL	REL DATE
1				SEE RELEASE DATE



NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL043 IN MSFC DDMS.
   - ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. MATERIAL: 0.063" STK 6061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.
4. 125 ✓ ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.
5. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.
6. IDENTIFY PART PER MIL-STD-130, METHOD BAG AND TAG PER MIL-STD-129.
7. CLEAN AND MAINTAIN TO VISIBLY CLEAN - STANDARD LEVEL.

01PTL043-001 SHOWN

TOTAL QTY	NEXT ASSY	USED ON
4	01PTL002-001	TIP LANDER

APPLICATION (VERIFY IN RELEASE RECORDS)

MATERIAL	3
HEAT TREATMENT	
FINISH	5

DRAWING STATE	RELEASED
DRAWING VERSION	1.6
DRAWING NUMBER	01PTL043

DRAWING INFORMATION

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN METRIC

TOLERANCES

DECIMALS	ANGLES
.XX±0.5 [.0X] .XXX±0.25 [.00X]	±0.5°

MODEL STATE	RELEASED
MODEL VERSION	-.7
MODEL NUMBER	01PTL043

MODEL INFORMATION

ORIGINAL DRAWING APPROVALS

DESIGN ORG.	ES21
DRAWN BY	JOAD SEIZAL
CHECKED BY	A. WAYNE
CHECKER	JIM SLEDD
MATERIALS	
STRESS	
S & MA	
PRODUC-MANUF	
PRODUC-CONTR	
NEXT ASSEMBLY	01PTL002
DCAN BRANCH CHF	
RELEASE DATE	10-300-2010

GEORGE C. MARSHALL SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

SPLICE PLATE, CENTRAL CYLINDER DIAG (TIP PALLET LANDER)

SIZE	CODE	DRAWING NUMBER	REV
D	33982	01PTL043	1

SCALE 2/1 UNITS (CUST) MEASURE 0.021 SHEET 1 OF 1

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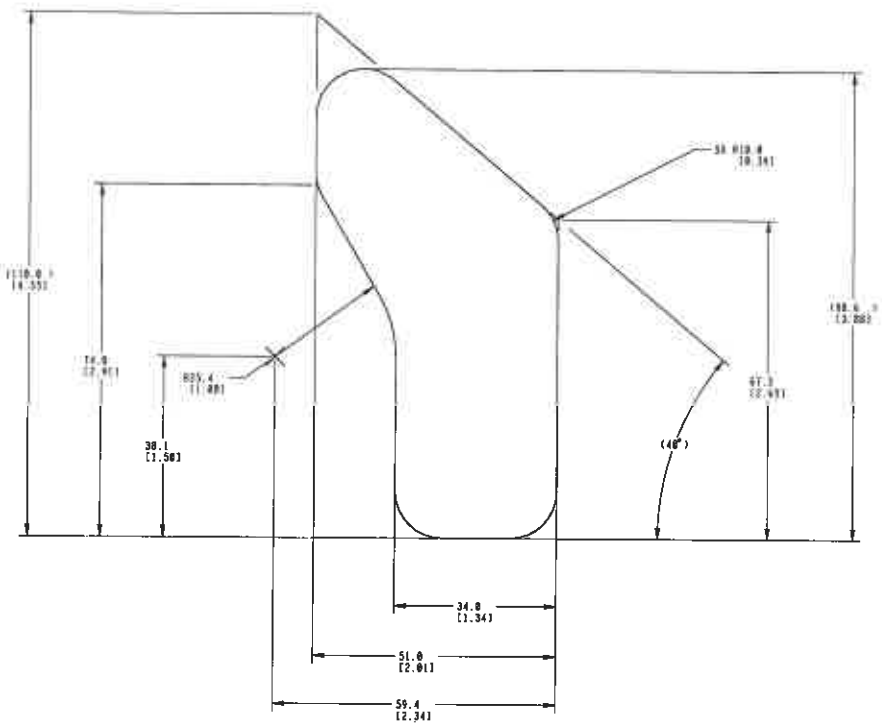
REVISIONS				
REV	ZONE	DESCRIPTION	APPROVAL	REL DATE
1				REL RELEASE DATE



NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.41-2003 EXCEPT AS NOTED BELOW:
   - UNLESS SEPARATE TOLERANCES ARE SHOWN, PERFECT ORIENTATION AT MMC FOR RELATED FEATURES IS REQUIRED.
   - GENERAL ANGULAR TOLERANCE DOES NOT APPLY TO IMPLIED 90 DEGREE ANGLES.
   - FOR PRODUCT DEFINITION DATA SET, REFERENCE 01PTL044 IN MSFC DDMS.
   - ALL DIMENSIONS ARE MODELED AT MEAN VALUE, EXCEPT FOR DRILLED/REAMED HOLES.
   - IGNORE ALL MODEL ANNOTATIONS.
2. REMOVE ALL BURRS AND SHARP EDGES.
3. MATERIAL: 0.063" STK 6061-T6 ALUMINUM ALLOY SHEET PER AMS 4027.
4. 125 ALL MACHINED SURFACES UNLESS OTHERWISE SPECIFIED. SURFACE ROUGHNESS IN ACCORDANCE WITH ASME B46.1.
5. CHEMICAL CONVERSION COAT PER MIL-DTL-5541, CLASS 3.
6. IDENTIFY PART PER MIL-STD-130, METHOD BAG AND TAG PER MIL-STD-129.
7. CLEAN AND MAINTAIN TO VISIBLY CLEAN - STANDARD LEVEL.

01PTL044-001 SHOWN

4	01PTL002-001	TIP LANDER
TOTAL QTY	NEXT ASSY	USED ON
APPLICATION (VERIFY IN RELEASE RECORDS)		

DRAWING STATE	RELEASED
DRAWING VERSION	1.5
DRAWING NUMBER	01PTL044
DRAWING INFORMATION	

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN METRIC

TOLERANCES	
DECIMALS	ANGLES
.XX±.0 [.X±] .XXX±.25 [.XX±]	±.5°
MATERIAL 3.	
HEAT TREATMENT	
FINISH 5.	

MODEL STATE	RELEASED
MODEL VERSION	-.7
MODEL NUMBER	01PTL044
MODEL INFORMATION	

ORIGINAL DRAWING APPROVALS	
DESIGN ORG.	ES21
DRAWN BY	JOAN SEIBAL
ENGINEER	A. WAYNE
CHECKER	JIM GLEDD
MATERIALS	
STRESS	
S & MA	
PRODUCT-MANUF	
PRODUCT-CONTR	
NEXT ASSEMBLY	01PTL002
MESH BRANCH CHT	
RELEASE DATE	14-AUG-2013

GEORGE C. MARSHALL SPACE FLIGHT CENTER
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
HUNTSVILLE, ALABAMA

SPLICE PLATE, CENTRAL CYLINDER BL 328 (TIP PALLET LANDER)

SIZE	CODE	DRAWING NUMBER	REV
D	33982	01PTL044	1

SCALE 2/1 | WEIGHT 0.014 | SHEET 1 OF 1

MSFC-DWG-D, FORMAT, REVISED FEBRUARY, 2009

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