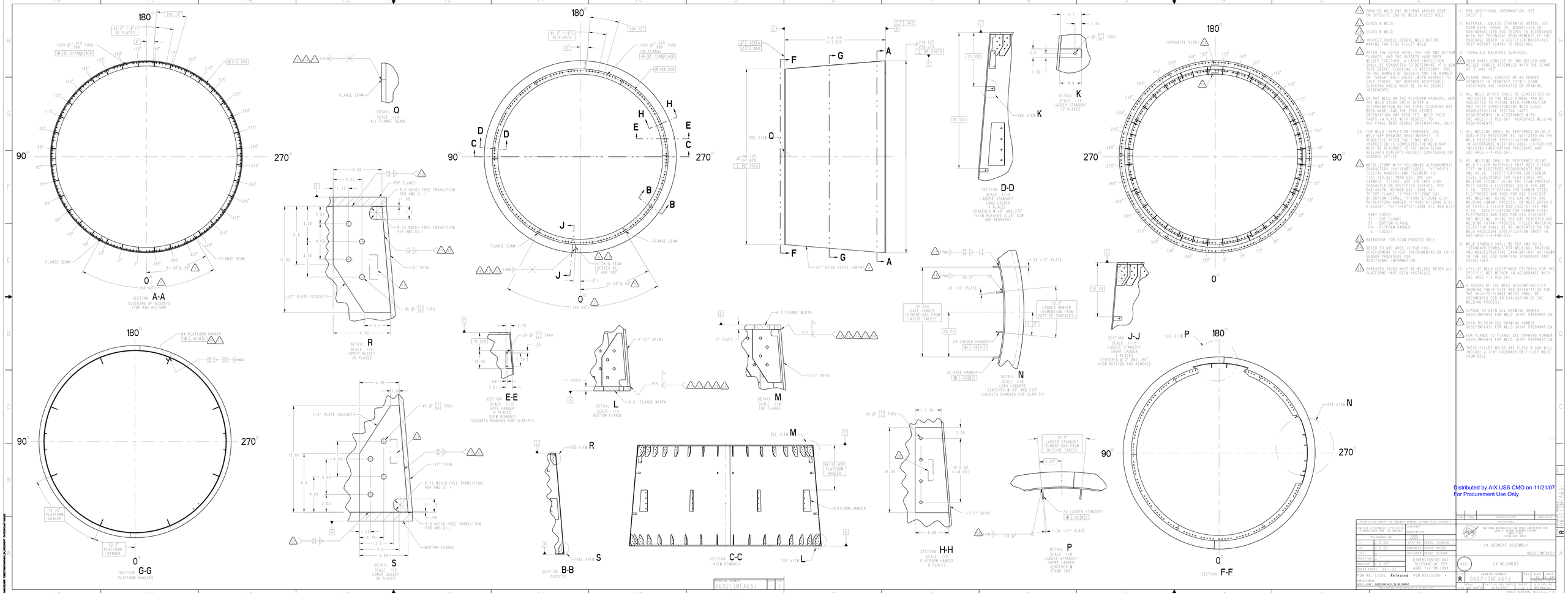

1. FOR ADDITIONAL INFORMATION, SEE SHEET 2.
2. MATERIAL: UNLESS OTHERWISE NOTED, USE ASTM A516, GRADE 70, NORMALIZED OR NON-NORMALIZED AND TESTED IN ACCORDANCE WITH THE TECHNICAL REQUIREMENTS OF THE PURCHASE ORDER. A CERTIFIED MATERIALS TEST REPORT (CMTR) IS REQUIRED.
3. 125Ra ALL MACHINED SURFACES.
4. SKIN SHALL CONSIST OF TWO ROLLED AND WELDED PANELS ASSEMBLED WITH THE SEAMS AT 0° AND 180°.
5. FLANGE SHALL CONSIST OF 60 DEGREE SEGMENTS; 6 SEGMENTS TOTAL; SEAM LOCATIONS ARE INDICATED ON DRAWING.
6. ALL WELD JOINTS SHALL BE CLASSIFIED AS INDICATED IN THE WELD SYMBOL AND BE SUBJECTED TO VISUAL WELD EXAMINATION AND THEIR CORRESPONDING WELD CLASS NONDESTRUCTIVE TESTING (NDT) REQUIREMENTS IN ACCORDANCE WITH GRC-ARES:1-4 REQ-061 AEROSPACE WELDING REQUIREMENTS.
7. ALL WELDING SHALL BE PERFORMED USING A QUALIFIED PROCEDURE AS INDICATED ON THE WELD PROCEDURE SPECIFICATION (WPS) IN ACCORDANCE WITH GRC-ARES:1-4 FAB-035 "WELDING FABRICATION PROCEDURE AND GRC-ARES:1-4 REQ-061.
8. ALL WELDING SHALL BE PERFORMED USING WELD FILLER MATERIALS THAT MEET EITHER ETI-1 (W ELECTRODE REQUIREMENTS PER AWS A5.20, "SPECIFICATION FOR CARBON STEEL-ELECTRODES FOR FLUX-CORED ARC WELDING (FCAW)" USING THE FCAW PROCESS, MEET ER70S-3 ELECTRODE; DOL-15 PER AWS 5.18, "SPECIFICATION FOR CARBON STEEL ELECTRODES AND RODS FOR GAS SHIELDED ARC WELDING" USING THE GAS METAL ARC WELDING (GMAW) PROCESS, MEET ER70S-2 OR ER70S-6 ELECTRODES; DOL-16 PER AWS A5.17, "SPECIFICATION FOR CARBON STEEL ELECTRODES AND RODS FOR GAS SHIELDED-ARC WELDING, USING THE GAS TUNGSTEN ARC WELDING (GTAW) PROCESS. FILLER MATERIAL SELECTION SHALL BE AS INDICATED ON THE WELD PROCEDURE SPECIFICATION (WPS) IN GRC-ARES:1-4 FAB-035.
9. WELD SYMBOLS SHALL BE PER AWS A2.4, "STANDARD SYMBOLS FOR WELDING, BRAZING, AND NONDESTRUCTIVE EXAMINATION" AS SHOWN IN THE GRC DRAFTING STANDARDS AND GUIDELINES.
10. UTILIZE WELD ACCEPTANCE CRITERIA FOR THE SPECIFIC NDT METHOD IN ACCORDANCE WITH GRC ARES 1-8 REQ-061.

A RECORD OF THE WELD DISCONTINUITIES, SHOWING THEIR SIZE AND ORIENTATION FOR THE SKIN-TO-FLANGE WELDS SHALL BE DOCUMENTED FOR AN EVALUATION OF THE WELDING PROCESS.

FLANGE TO SKIN SEE DRAWING NUMBER 06021MFA632 FOR WELD JOINT PREPARATION.

SKIN TO SKIN SEE DRAWING NUMBER 06021MFA931 FOR WELD JOINT PREPARATION.

FOR FLANGE TO FLANGE SEE DRAWING NUMBER 06021MFA930 FOR WELD JOINT PREPARATION.

THESE FILLET WELDS ARE CLASS B AND WILL INCLUDE A 1/4" HOLDBACK ON FILLET WELD FROM EDGE.

PROVIDE WELD END RETURNS AROUND EDGE ON OPPOSITE END OF WELD ACCESS HOLE.

CLASS A WELD.

CLASS B WELD.

INSPECT DOUBLE GROOVE WELD BEFORE MAKING FAR-SIDE FILLET WELD.

AFTER THE OUTER SKIN, THE TOP AND BOTTOM FLANGES, AND THE GUSSETS HAVE BEEN WELDED TOGETHER, A LASER INSPECTION OF THE PLATFORM HANGERS WILL BE USED TO ZERO-DEGREE CLOCKING. IF NECESSARY, DUE TO THE NUMBER OF GUSSETS (AND NUMBER OF "SHARE" BOLT HOLES) (WITH RESPECT TO EACH OTHER), THE DERIVED ACCEPTABLE CLOCKING ANGLE MUST BE IN 60 DEGREE INCREMENTS.

DO NOT WELD ON THE PLATFORM HANGERS, NOR THE WELD STUDS UNTIL AFTER A DETERMINATION ON THE FINAL CLOCKING HAS BEEN MADE, AND THE ZERO-DEGREE ORIENTATION HAS BEEN SET. WELD THESE PARTS IN PLACE WITH RESPECT TO THE FINAL ZERO DEGREE ORIENTATION, ONLY.

FOR WELD INSPCTION PURPOSES, USE WELD-MAP DRAWING 06021MFA951. IF REQUESTED AFTER THE FINAL WELD INSPECTION IS COMPLETED, THE WELD-MAP MUST BE RETURNED TO THE NASA GLENN RESEARCH CENTER'S PROJECT CONFIGURATION CONTROL OFFICE.

METAL STAMP WITH FOLLOWING ALPHANUMERIC CHARACTERS "XX"(PART CODE), "X"THRU"X" (SERIAL NUMBER) AND "SEGMENT 10" (151.152.153 THRU 157. 3M. 3A) EXAMPLE: TF1052. USE 3/8 INCH HIGH CHARACTER ON SPECIFIED SURFACE, PER SAE-AS478, METHOD 2A2 (ZONE XX1). BF-TOP FLANGE; "1"THRU"4"(ZONE G4) BF-BOTTOM FLANGE; "1"THRU"6"(ZONE G10) PH-PLATFORM HANGER; "1"THRU"4"(ZONE B16) G-GUSSET; "B1"THRU"12"(ZONE A13 AND B13).

PART CODES:
TF - TOP FLANGE
BF - BOTTOM FLANGE
PH - PLTFORM HANGER
G - GUSSET

BACKGOUGE FOR FCAW PROCESS ONLY.

REFER TO GRC-ARES:1X-FAB-100, DEVELOPMENT FLIGHT INSTRUMENTATION (DFI) SENSOR PROCEDURE FOR ADDITIONAL INFORMATION.

THREADED STUDS MUST BE WELDED AFTER ALL PLATFORMS HAVE BEEN INSTALLED.

REV	ECNO	DESCRIPTION	APPV DATE
		REVISIONS	

PRIOR TO USE VERIFY THE INTENDED PURPOSE IN PDM (TYPE ATTRIBUTE)

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES

TOLERANCE ON	
X	± 0.03
.XX	± 0.02
.XXX	±
FRACTION	±
ANGULAR	± 0.50°
BREAK EDGES	.02 - .03

CONTRACT NAS3-25952
CONTRACTOR
DRAFTER DEZIC REDDING
ENGINEER DEZIC WEBB
DESIGNER DEZIC BLASER

DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
JOHN H. GLENN RESEARCH CENTER
LEWIS FIELD
CLEVELAND, OHIO

SA SEGMENT ASSEMBLY

06021MFA650

PDM REL LEVEL: **Released** PDM REVISION: -
PDM DATABASE
MODEL NAME: 06021MFA651_SA WELDMENT
PROJECT NAME: SPACE STATION FLIGHT HARDWARE

SIZE	DRAWING NUMBER	REV	PLOT SCALE	SHEET
R	06021MFA651			1 OF 1

NEXT ASSY	USED ON
6651	

CAGE CODE	CRITICAL PRC CODE	CRITICAL ITEM
15142	SECONDARY	SECONDARY

FINISH NOTE: SEE DRAWING NOTES

PROJ VERSION: Wildfire 2.0

DRAWING NUMBER 06021MFA651 REV - SHT 1 OF 1

THIS DOCUMENT CONTAINS INFORMATION PROPRIETARY TO AIX USS CMO