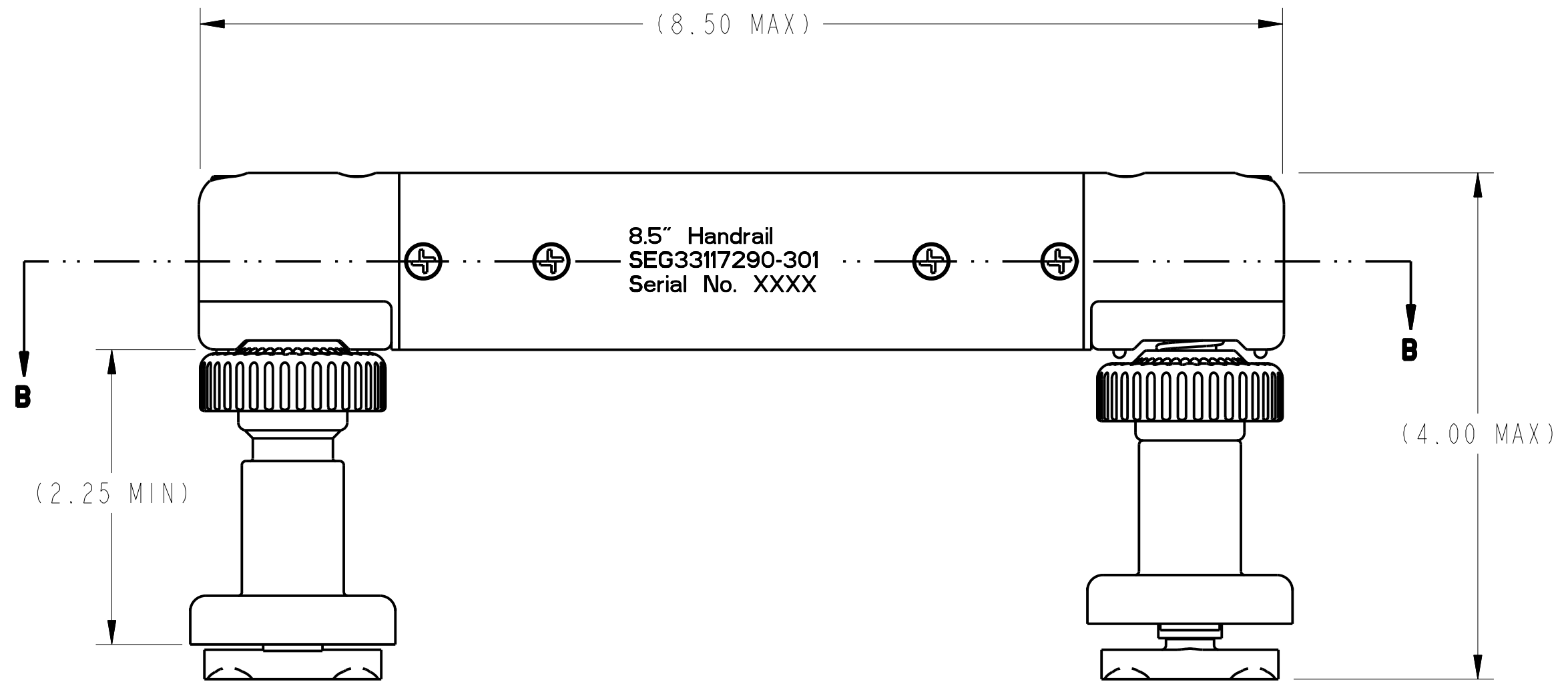
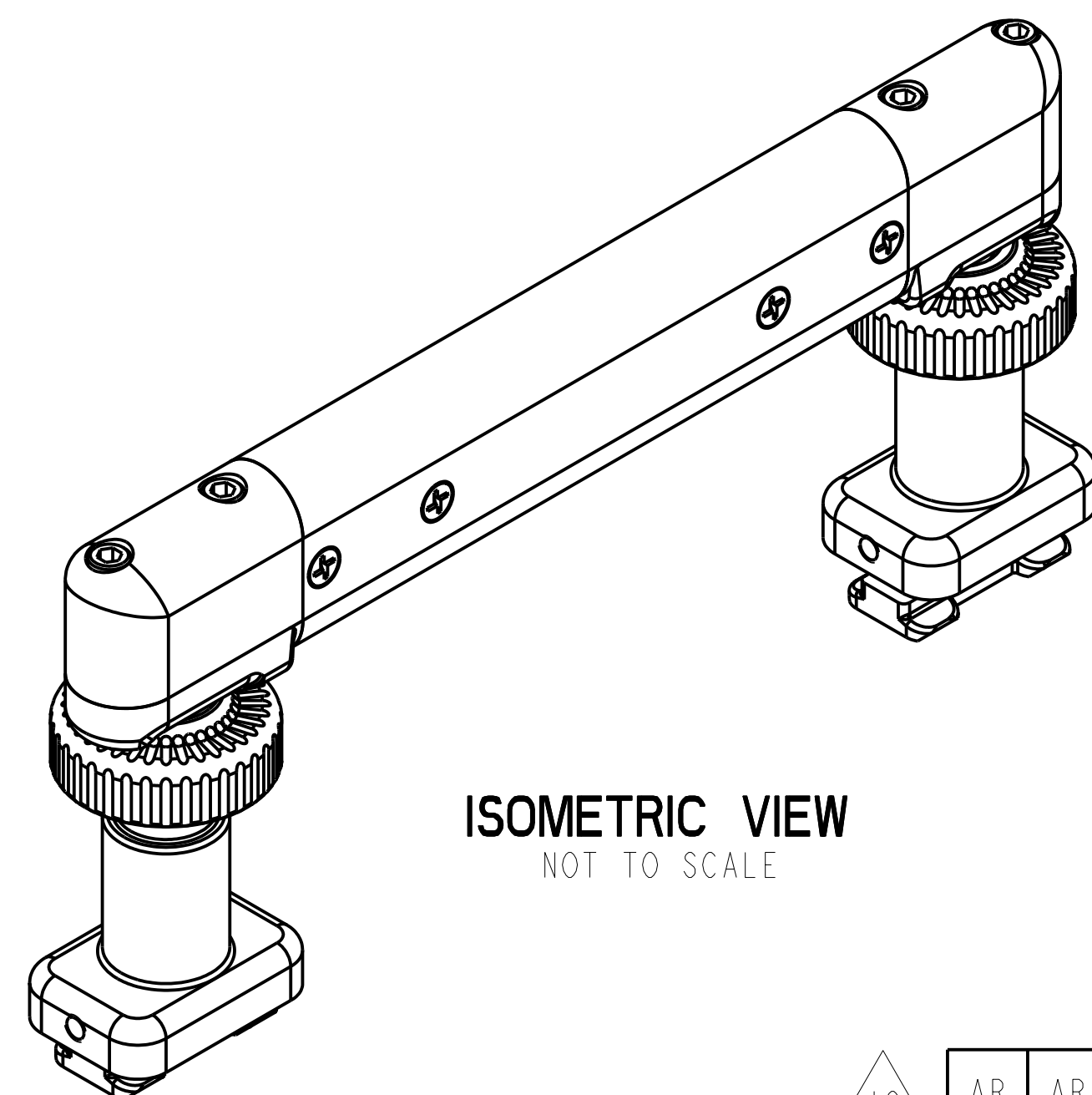
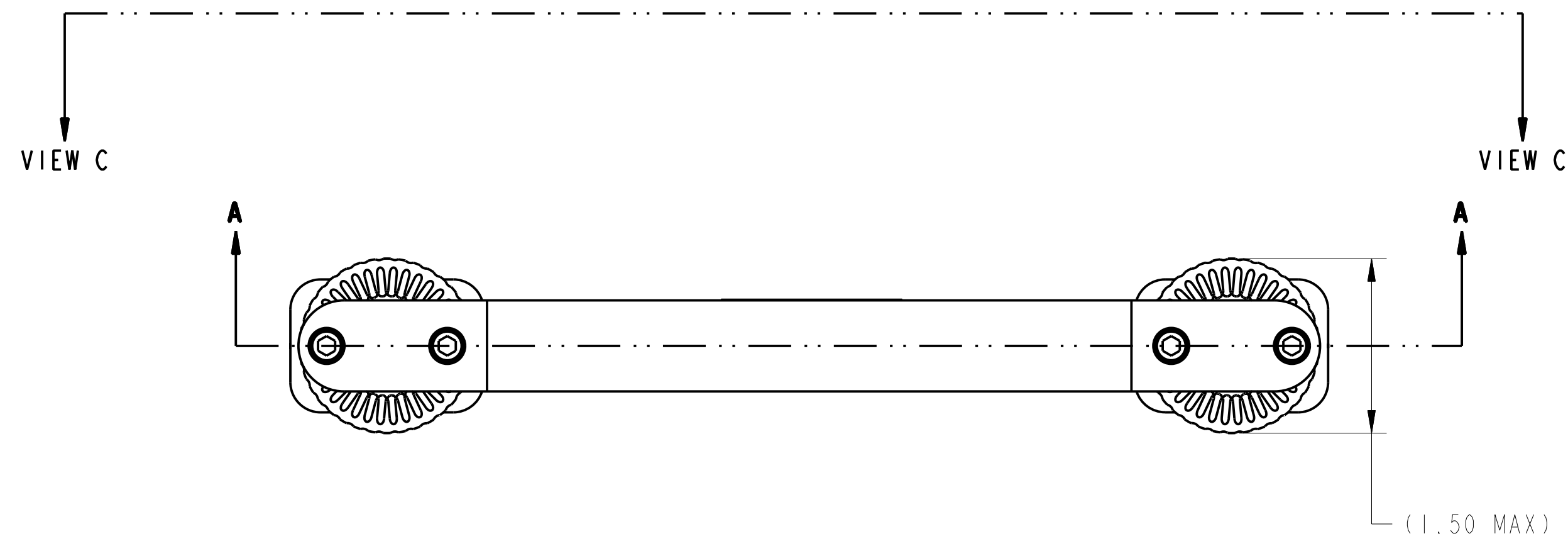


REV	ZONE	DESCRIPTION OF CHANGE
A	B5/1 C3/3	ADDED NOTE 18. ADDED TABLE 1. DELETED DATUM SYMBOL -A- ON ALL VIEWS.



SHOWN IN "LOCKED" POSITION

-301 8.50 LG SHOWN

-303 21.50 LG

-305 41.50 LG

SHOWN IN "FREE-SLIDE" POSITION

18. REFER TO TABLE 1 ON SHEET 3 FOR HANDRAIL INSTALLATION PROCEDURE.

- 17. SOURCE OF SUPPLY:
HOUSTON AEROSPACE, INC
100 E. NASA ROAD ONE #404
WEBSTER, TX 77598
- 16. BAG AND TAG PER NASA/JSC PRC-9002.
- 15. THIS ASSEMBLY DOES NOT CONTAIN FRACTURE CRITICAL PARTS.
- 14. THIS SPRING MAY BE REPLACED WITH AN ACCEPTABLE SUBSTITUTE OF SIMILAR SIZE AND SPRING RATE. THE MATERIAL SHALL BE 302 SS.
- 13. IF REQUIRED, ADHERE IMS LABEL TO HANDRAIL PER SSP 50007. LOCATE APPROX. AS SHOWN IN VIEW C.
- 12. SOURCE OF SUPPLY:
PRC-DESOTO INTERNATIONAL, INC.
5430 SAN FERNANDO ROAD
GLENDALE, CA 91209
- 11. SOURCE OF SUPPLY:
VLIER
40 GUEST STREET
BRIGHTON, MA 02135
- 10. SOURCE OF SUPPLY:
ASSOCIATED SPRING-BARNES GROUP, INC
SOUTH CENTRAL SALES DIVISION
3443 MORSE DRIVE
DALLAS, TX 75236

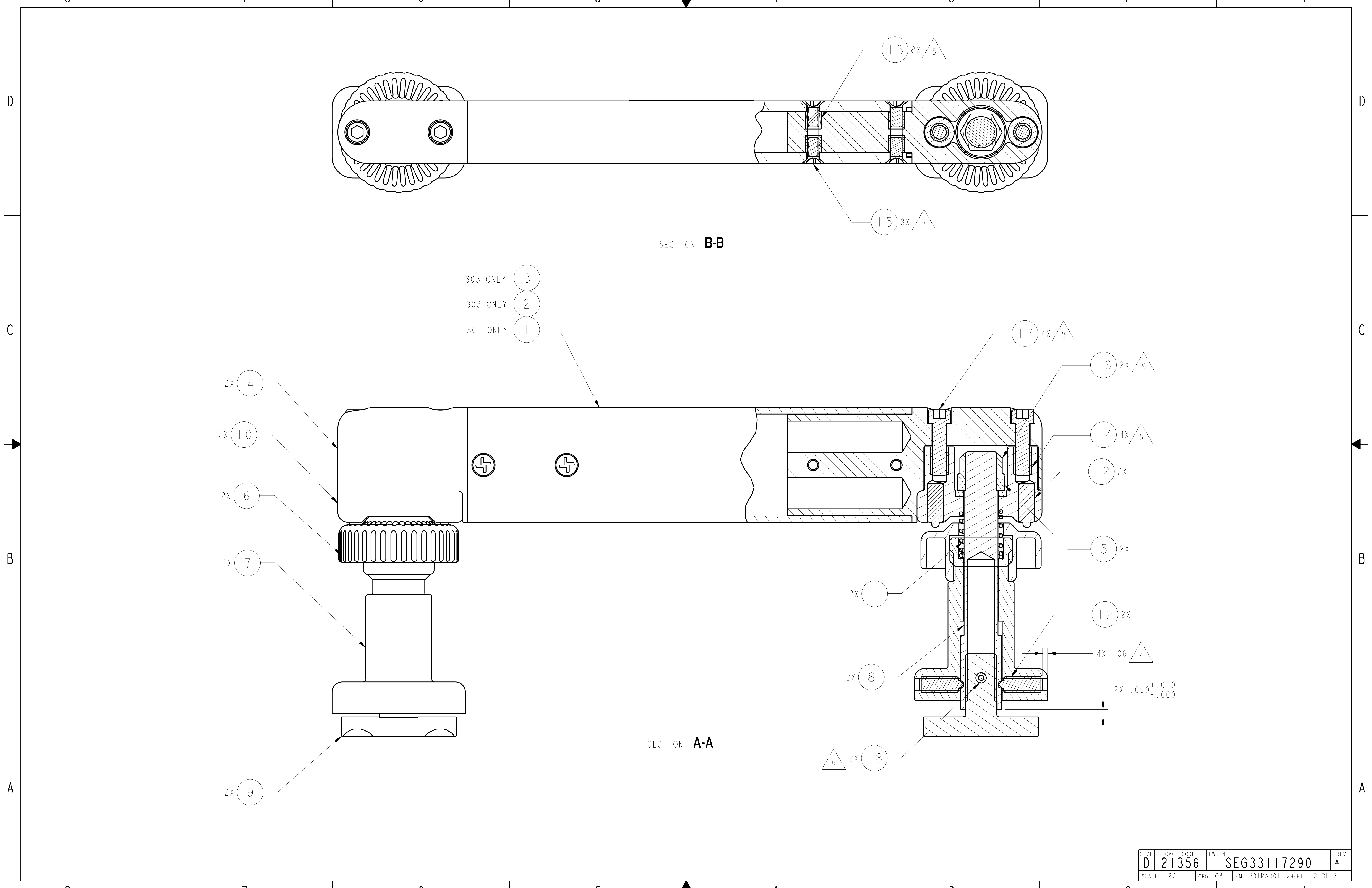
- 9. INSTALL NUTS, ITEM 16, PER NASA/JSC PRC-9007. TORQUE 30 IN-LBS ABOVE LOCKING TORQUE. LOCKING TORQUE SHALL BE 9.5 - 80 IN-LBS PER NASM25027.
 - 8. INSTALL FASTENERS, ITEM 17, PER NASA/JSC PRC-9007. TORQUE 18 IN-LBS ABOVE LOCKING TORQUE. LOCKING TORQUE SHALL BE 1.5 - 9 IN-LBS PER NASM8846.
 - 7. INSTALL FASTENERS, ITEM 15, PER NASA/JSC PRC-9007. TORQUE 15 IN-LBS ABOVE LOCKING TORQUE. LOCKING TORQUE SHALL BE 1.0 - 6 IN-LBS PER NASM8846.
 - 6. LOCATE ITEM 9 AS SHOWN. MATCH DRILL \varnothing .125 HOLE THRU ITEM 9 USING HOLE IN ITEM 8 FOR LOCATION. INSTALL ITEM 18 SUCH THAT IT IS APPROX. CENTERED IN HOLE (.03 DEPTH).
 - 5. INSTALL HELICAL COIL INSERTS PER NASA/JSC PRC-9008. SEAL INSERTS WITH SUPER KOROPON PRIMER PER NASA/JSC PRC-4004.
 - 4. APPROX. DEPTH OF ITEM 12 SHOWN. ADJUST IF NECESSARY TO ENSURE BALL PLUNGER CAN MAINTAIN SLOT ENGAGEMENT AGAINST SPRING LOAD.
3. CLEAN TO GENERALLY CLEAN PER NASA/JSC PRC-5001.
2. FABRICATE PER NASA/JSC SKZ36103755 JSC FABRICATION TOLERANCES AND PRACTICES.
1. INTERPRET DRAWING PER JPG 8500.4 ENGINEERING DRAWING SYSTEM MANUAL.

NOTES: UNLESS OTHERWISE SPECIFIED

QTY	UNIT	QTY	UNIT	QTY	UNIT	PART NUMBER	DESCRIPTION	MATERIAL	SPECIFICATION	ITEM
19						515-700XX1KG22K	PRIMER, EPOXY FLUID RESISTANT INTERIOR	PRC-DESOTO SUPER KOROPON OR EQUIVALENT		19
2	2	2	2			NASI407N9M7	PIN-SPRING COILED	302 SS .125 DIA X .438 L		18
4	4	4	4			NASI352N08-10	SCREW, CAP, SOCKET HEAD UNDRILLED	A286 CRES .164-32 UNRC-3A X 0.625 L		17
2	2	2	2			NASI291C6M	NUT, SELF-LOCKING HEX, LOW HEIGHT	A286 CRES .375-24 UNJF-3B		16
8	8	8	8			NASI102E06-5	SCREW, MACHINE, FLAT-HD 100 DEG, OFFSET CRUCIFORM	CRES A286 .138-32 UNJC-3A X .313 L		15
4	4	4	4			MS21209C0820L	INSERT, HELICAL SELF-LOCKING	CRES .164-32 X .328 L		14
8	8	8	8			MS21209C0615L	INSERT, HELICAL SELF-LOCKING	CRES .138-32 X .207 L		13
8	8	8	8			SSM52P	SPRING LOADED DEVICE, STUBBY PLUNGER	300 SERIES SS 10-32 UNF-2A X .468L		12
2	2	2	2			C0480-045-1000S	COMPRESSION SPRING	302 SS .48 OD X 1.00 L X .045 WIRE		11
2	2	2	2			SEG33117299-701	FIXTURE CAP ASSY			10
2	2	2	2			SDG33117298-801	FITTING, SEAT TRACK ALTERED ITEM DRAWING			9
2	2	2	2			SDG33117297-001	LOCK SHAFT			8
2	2	2	2			SDG33117296-001	RAIL HOUSING			7
2	2	2	2			SDG33117295-001	JAM WHEEL			6
2	2	2	2			SDG33117294-001	CAM-90			5
2	2	2	2			SDG33117292-001	TUBE FIXTURE			4
1						SDG33117291-005	OVAL RAIL 38.34 LG			3
	1					SDG33117291-003	OVAL RAIL 18.34 LG			2
		1				SDG33117291-001	OVAL RAIL 5.34 LG			1
						-305	HANDRAIL ASSY 41.50 LG			
						-303	HANDRAIL ASSY 21.50 LG			
						-301	HANDRAIL ASSY 8.50 LG			

UNLESS NOTED OTHERWISE DIM ARE IN INCHES, TOL ARE:		SIGNATURES		DATE	NATIONAL AERONAUTICS AND SPACE ADMINISTRATION		
.0 ± .1	.000 ± .005	DR	C. BIERMAN	07-21-04	LYNDON B. JOHNSON SPACE CENTER HOUSTON, TEXAS		
.00 ± .02	ANGULAR ± .5°	ENG	C. BIERMAN	07-21-04	PROJECT HANDRAIL		
SURFACE FINISH IN MICROINCHES RMS UNLESS NOTED OTHERWISE		CH	M. MAENZA	02/23/05			
FRACTURE CRITICAL		APP	H. TABIBIAN	02/25/05			
NEXT ASSY N/A		QE	J. BARREDA	02/24/05			
<input type="checkbox"/> YES	DWG FILENAME SEG33117290.DRW	MATL	C. CHANG	02/24/05	SIZE	CAGE CODE	DWG NO
<input checked="" type="checkbox"/> NO		STRESS	C. MODLIN	02/24/05	D	21356	SEG33117290
<input checked="" type="checkbox"/> FLT HDWR	<input type="checkbox"/> APPLICABLE GSE	AUTH	R. LEE	02/25/05	SCALE	1/1	ORG OB
<input type="checkbox"/> OTHER (SPECIFY)		FINAL APP		2/25/05	FMT	POIMAROI	SHEET 1 OF 3

STATUS: Check for DCNs against the drawing.

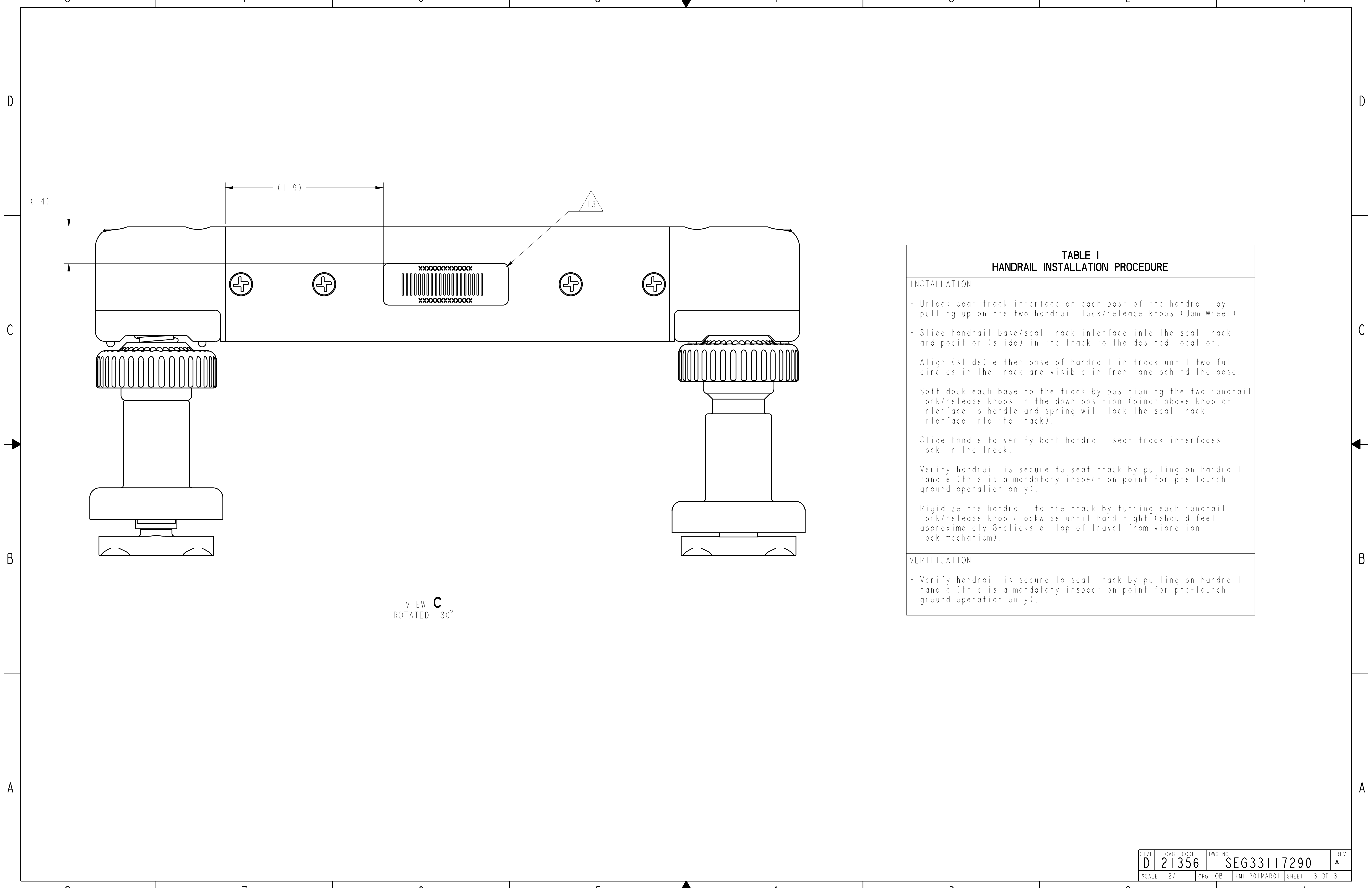


-305 ONLY (3)
 -303 ONLY (2)
 -301 ONLY (1)

SECTION B-B

SECTION A-A

SIZE	CAGE CODE	DWG NO	REV
D	21356	SEG33117290	A
SCALE	2/1	ORG OB	FMT POIMAR01 SHEET 2 OF 3



VIEW C
ROTATED 180°

TABLE I
HANDRAIL INSTALLATION PROCEDURE

INSTALLATION
- Unlock seat track interface on each post of the handrail by pulling up on the two handrail lock/release knobs (Jam Wheel).
- Slide handrail base/seat track interface into the seat track and position (slide) in the track to the desired location.
- Align (slide) either base of handrail in track until two full circles in the track are visible in front and behind the base.
- Soft dock each base to the track by positioning the two handrail lock/release knobs in the down position (pinch above knob at interface to handle and spring will lock the seat track interface into the track).
- Slide handle to verify both handrail seat track interfaces lock in the track.
- Verify handrail is secure to seat track by pulling on handrail handle (this is a mandatory inspection point for pre-launch ground operation only).
- Rigidize the handrail to the track by turning each handrail lock/release knob clockwise until hand tight (should feel approximately 8+clicks at top of travel from vibration lock mechanism).
VERIFICATION
- Verify handrail is secure to seat track by pulling on handrail handle (this is a mandatory inspection point for pre-launch ground operation only).