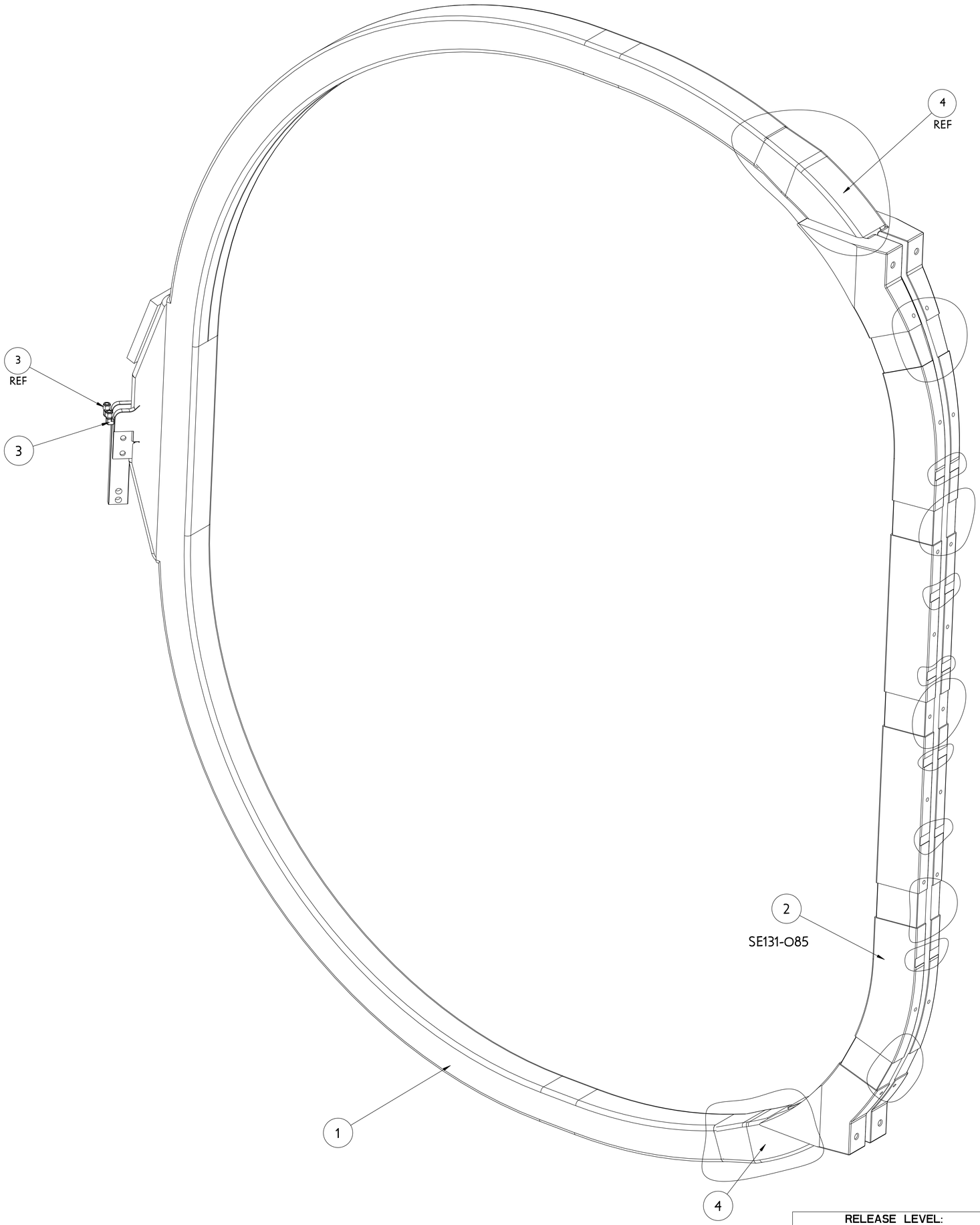
NO.	REVISION	BY	CH	SUP	APPROVED	DATE
1	REVISED PER ECN # 5103	JDR	MK	JS	M. KALISH	04/07/06
2	REVISED PER ECN # 5178	JDR	MK	JS	M. KALISH	11/15/06



NOTE

1. SEE SPECIFICATION NCSX-CSPEC-131-01-00 FOR ADDITIONAL INFORMATION AND/OR MATERIAL REQUIREMENTS
2. DIMENSIONS ARE IN INCHES.
3. DRAWINGS PREPARED IN ACCORDANCE WITH ASME Y14.100-2000
4. INTERPRET DIMENSIONS & TOLERANCES PER ASME Y14.5M-1994

PART NO.	DRAWING NO	NOMENCLATURE OR DESCRIPTION	MATERIAL	QTY REQD
6	EPOXY	EPOXY	CTD-101 K	AS REQD
5	GLASS	S2 GLASS	GLASS	AS REQD
4	SE131-077	RESTRAINING COLLAR	GLASS/EPOXY	2
3	SE131-013	SWAGELOK #B-600-9-6W 3/8 TUBE/WELD FITTING	BRASS	2
2	SE131-006	TF COIL WEDGE STRUCTURE (SE131-085 LEFT/RIGHT PAIR)	STN STL	1
1	SE131-005	TF COIL ASSEMBLY GROUNDWRAPPED	SEE DETAILS	1

PARTS LIST

WEIGHT
1418.2 lbs

MODEL NAME
SE131-003

WELDING ENGINEER

RELEASE LEVEL:
DWG VERSION NO:

COMPUTER GENERATED DRAWING
MANUAL CHANGES NOT PERMITTED

CENTRAL FILES:
UNLESS OTHERWISE SPECIFIED

Pro E

DO NOT VERIFY INFORMATION BY SCALING DRAWING

DIMENSIONS ARE IN INCHES
MACHINE SURFACES ▽

BREAK SHARP EDGES .005/.020

TOLERANCES NON-CUMULATIVE

NEXT ASSEMBLY

DECIMAL-INCH: .X +/-.100; .XX +/-.030; .XXX +/-.005; ANGULAR +/-0°-15'
FRACTIONS: 0"-12" +/-1/16; 12"-72" +/-1/8; 72"-120" +/-1/4; OVER 120" +/-1/2

PRINCETON PLASMA PHYSICS LABORATORY
PRINCETON UNIVERSITY
NATIONAL COMPACT STELLARATOR EXPERIMENT

STELLARATOR CORE
CONVENTIONAL COILS
TF COIL FINAL ASSEMBLY

DSN: J. RUSHINSKI	2/01/06	DRAWING NO:
CHK: M. KALISH/B. PAUL	2/01/06	SE131-003
ENGR: M. KALISH	2/01/06	
SUPV: J. SIEGEL	2/01/06	SHEET 1 OF 5 REV 2

NCSX_ASSY_FORMAT_E

NCSX-SE131-003

NO.	REVISION	BY	CH	SUP	APPROVED	DATE
1	REVISED PER ECN # 5103	JDR	MK	JS	M. KALISH	04/07/06
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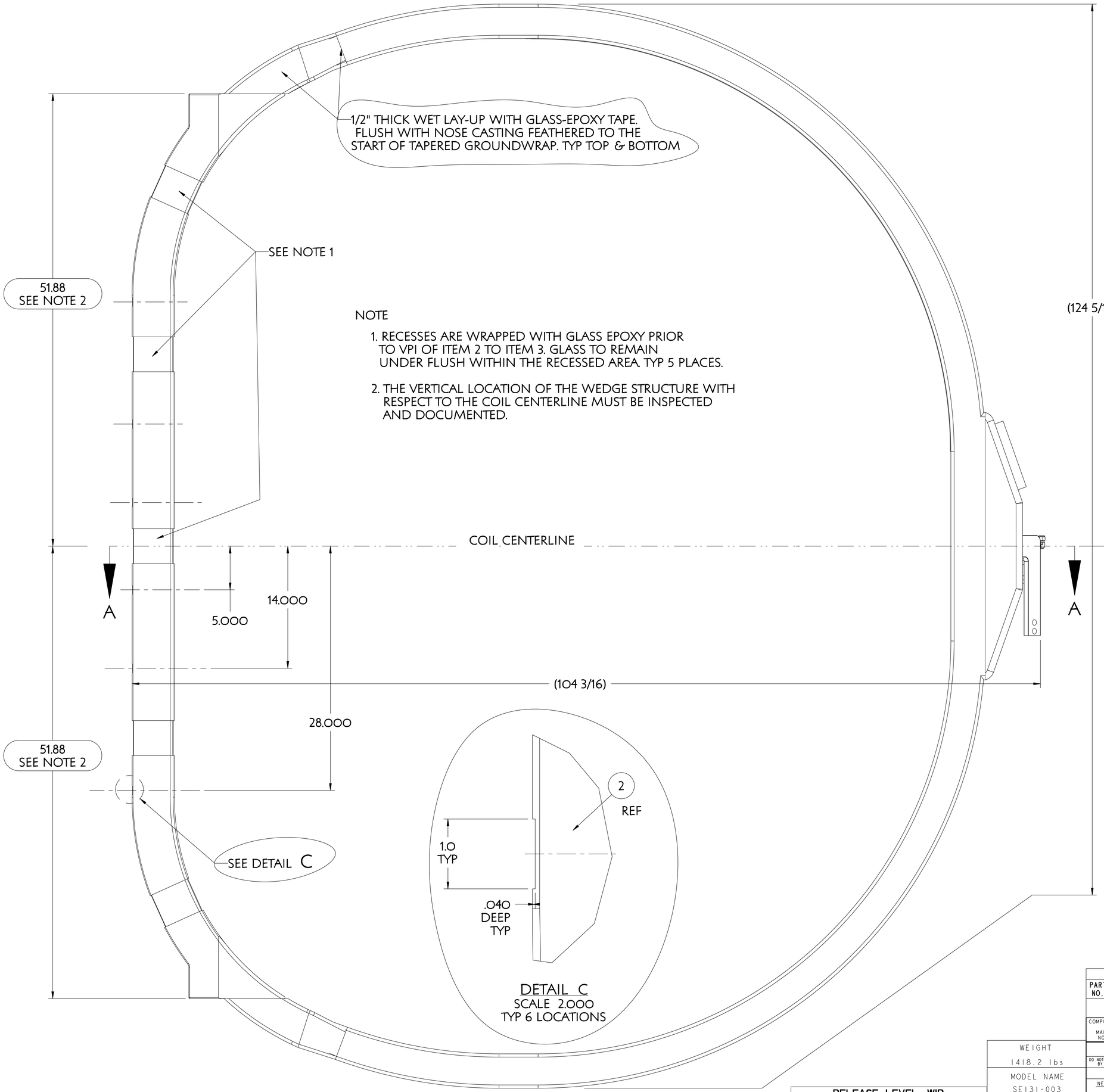

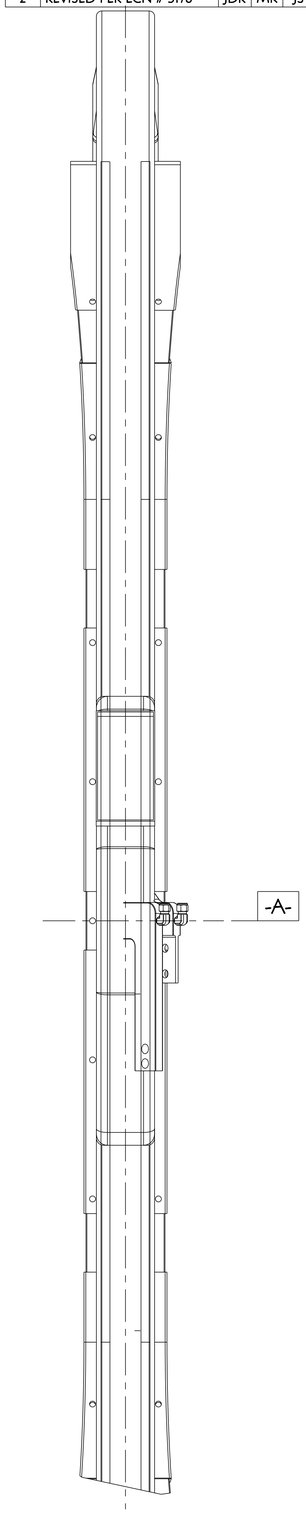

NOTE

1. RECESSES ARE WRAPPED WITH GLASS EPOXY PRIOR TO VPI OF ITEM 2 TO ITEM 3. GLASS TO REMAIN UNDER FLUSH WITHIN THE RECESSED AREA. TYP 5 PLACES.
2. THE VERTICAL LOCATION OF THE WEDGE STRUCTURE WITH RESPECT TO THE COIL CENTERLINE MUST BE INSPECTED AND DOCUMENTED.

DETAIL C
SCALE 2.000
TYP 6 LOCATIONS

PART NO.	DRAWING NO	NOMENCLATURE OR DESCRIPTION	MATERIAL	QTY REQD

PARTS LIST

COMPUTER GENERATED DRAWING MANUAL CHANGES NOT PERMITTED	CENTRAL FILES: UNLESS OTHERWISE SPECIFIED	PRINCETON PLASMA PHYSICS LABORATORY PRINCETON UNIVERSITY NATIONAL COMPACT STELLARATOR EXPERIMENT
Pro E	DIMENSIONS ARE IN INCHES MACHINE SURFACES 125	STELLERATOR CORE CONVENTIONAL COILS TF COIL FINAL ASSEMBLY
DO NOT VERIFY INFORMATION BY SCALING DRAWING	BREAK SHARP EDGES .005/.020	
	TOLERANCES NON-CUMULATIVE	DSN: J. RUSHINSKI 2/01/06 — DRAWING NO:
NEXT ASSEMBLY	DECIMAL-INCH: .X +/-.100, .XX +/-.030, .XXX +/-.005, ANGULAR +/-0°-15' — FRACTIONS: 0°-12° +/-1/16, 12°-72° +/-1/8, 72°-120° +/-1/4, OVER 120° +/-1/2	CHK: M. KALISH/B. PAUL 2/01/06 — SE131-003
		ENGR: M. KALISH 2/01/06
		SUPV: J. SIEGEL 2/01/06 — SHEET 2 OF 5 — REV 2

WEIGHT	RELEASE LEVEL: WIP
1418.2 lbs	DWG VERSION NO: 1
MODEL NAME SE131-003	
WELDING ENGINEER	

NCSX-SE131-003

NCSX_ASSY_FORMAT_E

NO.	REVISION	BY	CH	SUP	APPROVED	DATE
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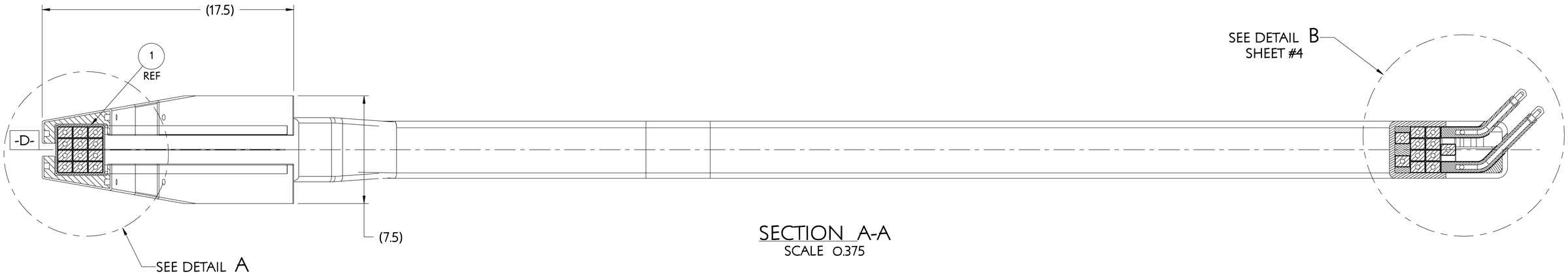
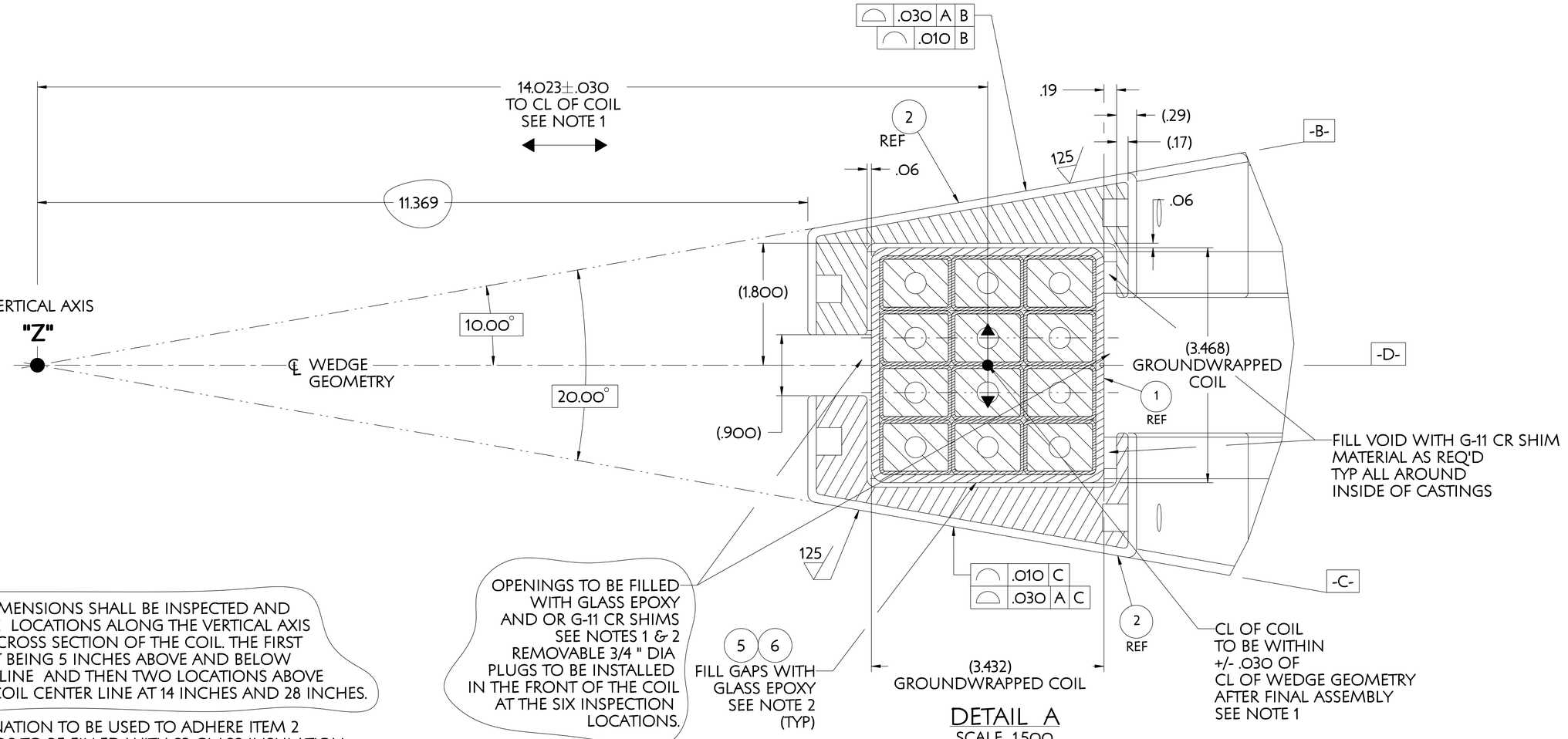


SECTION A-A
SCALE 0.375



DETAIL A
SCALE 1.500

NOTE

1. AFTER VPI THESE DIMENSIONS SHALL BE INSPECTED AND RECORDED AT SIX LOCATIONS ALONG THE VERTICAL AXIS OF THE WEDGED CROSS SECTION OF THE COIL. THE FIRST INSPECTION POINT BEING 5 INCHES ABOVE AND BELOW THE COIL CENTER LINE AND THEN TWO LOCATIONS ABOVE AND BELOW THE COIL CENTER LINE AT 14 INCHES AND 28 INCHES.
2. VACUUM IMPREGNATION TO BE USED TO ADHERE ITEM 2 TO ITEM 1. ALL VOIDS TO BE FILLED WITH S2 GLASS INSULATION TO ELIMINATE RESIN RICH AREAS. GLASS THICKNESS INSIDE WEDGE STRUCTURE TO BE ADJUSTED TO ACHIEVE REQUIRED DIMENSIONS WITHIN TOLERANCE.
3. ITEM 2 WEDGE STRUCTURE AND COIL SURFACE TO BE ROUGHENED BEFORE VPI TO ENSURE BEST POSSIBLE ADHESION.
4. POCKETS IN ITEM 2 ON MATING SURFACES TO BE FILLED WITH GLASS TAPE PRIOR TO VPI.

PART NO.	DRAWING NO	NOMENCLATURE OR DESCRIPTION	MATERIAL	QTY REQD

PARTS LIST

COMPUTER GENERATED DRAWING MANUAL CHANGES NOT PERMITTED	CENTRAL FILES: UNLESS OTHERWISE SPECIFIED	PRINCETON PLASMA PHYSICS LABORATORY PRINCETON UNIVERSITY NATIONAL COMPACT STELLARATOR EXPERIMENT
Pro E	DIMENSIONS ARE IN INCHES MACHINE SURFACES 125	STELLARATOR CORE CONVENTIONAL COILS TF COIL FINAL ASSEMBLY
DO NOT VERIFY INFORMATION BY SCALING DRAWING	BREAK SHARP EDGES .005/.020	
	TOLERANCES NON-CUMULATIVE	DSN: J. RUSHINSKI 2/01/06
NEXT ASSEMBLY	DECIMAL-INCH: .X +/-.100, .XX +/-.030, .XXX +/-.005; FRACTIONS: 0°-12° +/-1/16, 12°-72° +/-1/8, 72°-120° +/-1/4, ANGULAR +/-0°-15', OVER 120° +/-1/2	CHK: M. KALISH/B. PAUL 2/01/06; ENGR: M. KALISH 2/01/06; SUPV: J. SIEGEL 2/01/06; DRAWING NO: SE131-003; SHEET 3 OF 5; REV 2

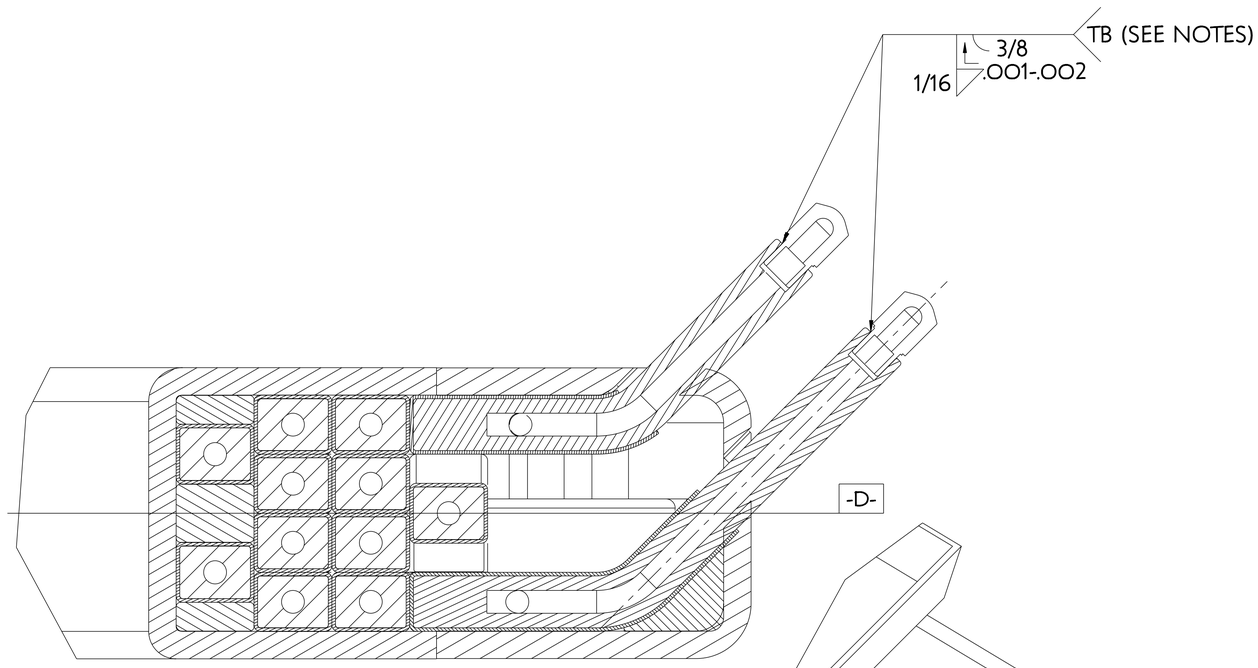
WEIGHT	1418.2 lbs
MODEL NAME	SE131-003
WELDING ENGINEER	

RELEASE LEVEL: WIP
DWG VERSION NO: 1

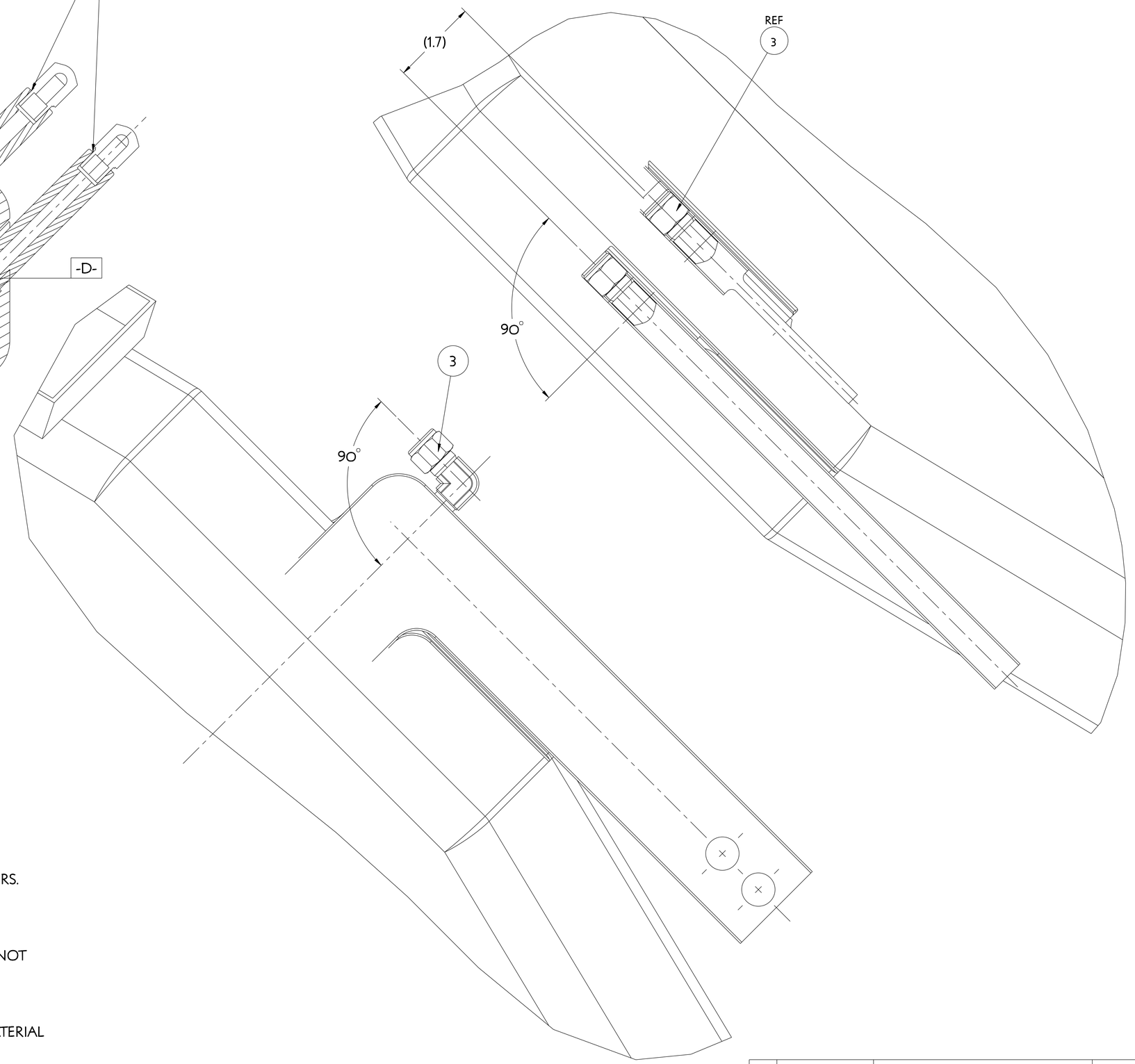
NCSX-SE131-003

NCSX_ASSY_FORMAT_E

NO.	REVISION	BY	CH	SUP	APPROVED	DATE
1	REVISED PER ECN # 5103	JDR	MK	JS	M. KALISH	04/07/06
2	REVISED PER ECN # 5178	JDR	MK	JS	M. KALISH	11/15/05



DETAIL B
SCALE 1.250



NOTES:

1. CLEAN THE JOINT AREAS (LEADS) WITH SCOTCH-BRITE, THEN WASH WITH ACETONE PRIOR TO INSTALLATION OF FITTINGS.
2. ASSEMBLE WITH CLEANED FITTINGS AND SIL-FOS WAFERS. SEE SPECIFICATION FOR TYPE OF SIL-FOS.
3. HEAT ASSEMBLED JOINT AREA WITH TORCH. CONTINUE TO HEAT THE AREA UNTIL THE SIL-FOS STARTS TO MELT, THEN ADD ADDITIONAL SIL-FOS AS NEEDED, AND DO NOT MOVE THE FITTING DURING BRAZING & COOLING.
4. FILE OR GRIND OFF EXCESS SIL-FOS FROM JOINT AREA. VISUAL INSPECTION OF BRAZE JOINT SHALL BE MADE TO INSURE THE COMPLETE FLOW OF SIL-FOS BRAZE MATERIAL INTO THE JOINTED AREA. JOINTS MUST BE FREE FROM CRACKS AND EXCESSIVE POROSITY.
5. PROTECT TURN AND GROUNDWRAP INSULATION FROM DAMAGE DURING ALL TORCH BRAZING OPERATIONS
6. SEE SPECIFICATION FOR QUALIFICATION AND TESTING REQUIREMENTS OF ALL BRAZE JOINTS.
7. FITTING (PART #3) TO BE BRAZED TO LEAD PRIOR TO GROUNDWRAP AND VPI.

PART NO.	DRAWING NO	NOMENCLATURE OR DESCRIPTION	MATERIAL	QTY REQD
		PARTS LIST		

COMPUTER GENERATED DRAWING MANUAL CHANGES NOT PERMITTED	CENTRAL FILES: UNLESS OTHERWISE SPECIFIED	PRINCETON PLASMA PHYSICS LABORATORY PRINCETON UNIVERSITY	NATIONAL COMPACT STELLARATOR EXPERIMENT
Pro E	DIMENSIONS ARE IN INCHES MACHINE SURFACES 63	STELLARATOR CORE CONVENTIONAL COILS TF COIL FINAL ASSEMBLY	
DO NOT VERIFY INFORMATION BY SCALING DRAWING	BREAK SHARP EDGES .005/.020		
	TOLERANCES NON-CUMULATIVE	DSN: J. RUSHINSKI 2/01/06	DRAWING NO:
NEXT ASSEMBLY	DECIMAL-INCH: .X +/-.100, .XX +/-.030, .XXX +/-.005, ANGULAR +/-0°-15' / FRACTIONS: 0"-12" +/-1/16, 12"-72" +/-1/8, 72"-120" +/-1/4, OVER 120" +/-1/2	CHK M. KALISH/B. PAUL 2/01/06	SE131-003
		ENGR: M. KALISH 2/01/06	
		SUPV: J. SIEGEL 2/01/06	SHEET 4 OF 5 REV 2

WEIGHT	1418.2 lbs
MODEL NAME	SE131-003
WELDING ENGINEER	

RELEASE LEVEL: WIP
DWG VERSION NO: 1

NCSX-SE131-003

NCSX_ASSY_FORMAT_E

NO.	REVISION	BY	CH	SUP	APPROVED	DATE
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2	REVISED PER ECN # 5178	JDR	MK	JS	M. KALISH	11/15/06

NOTE

1. TOLERANCES FOR THE NOMINAL POSITION OF THE CURRENT CENTROID WITH RESPECT TO VERTICAL AXIS "Z" ARE AS FOLLOWS:

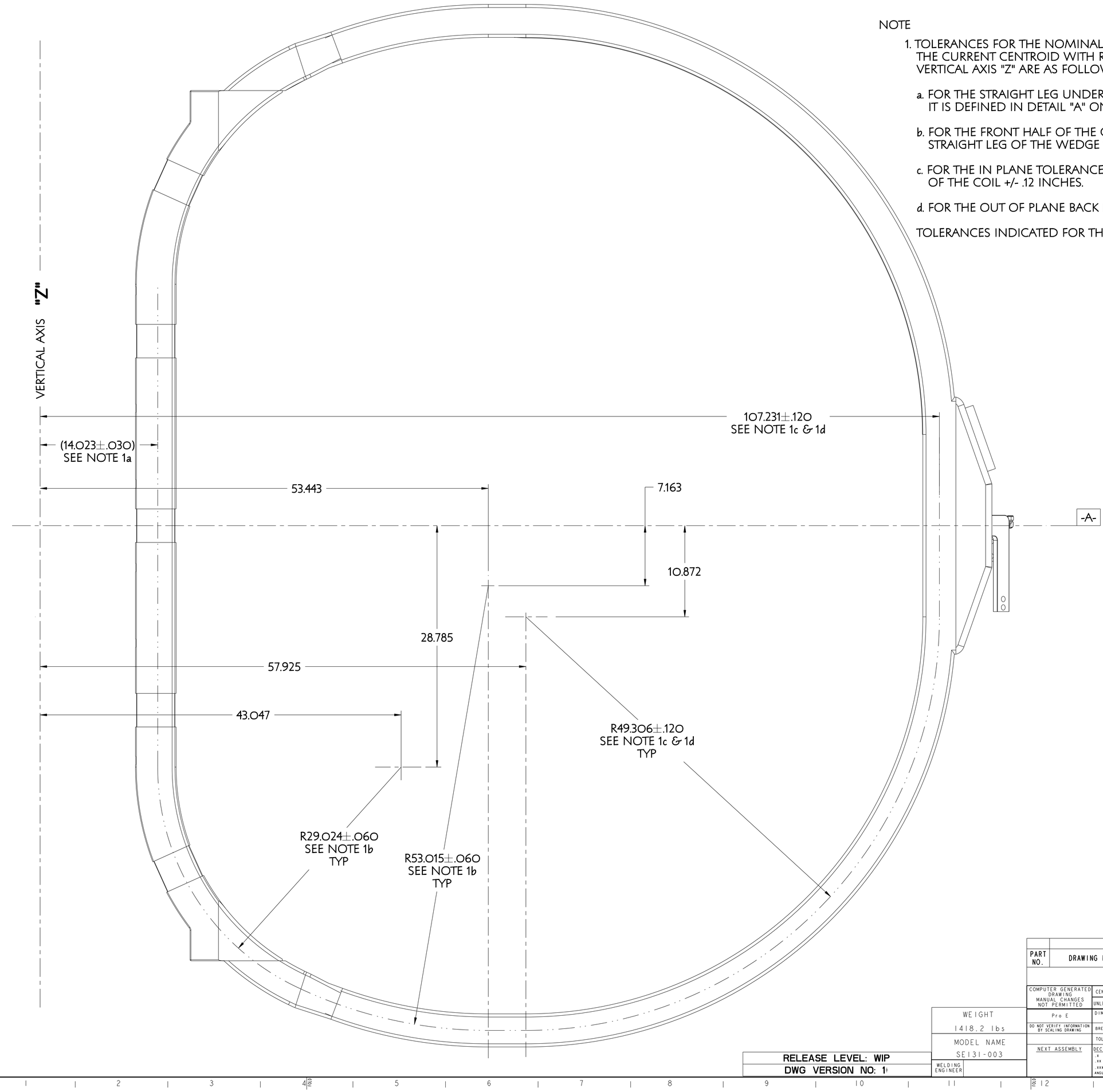
   a. FOR THE STRAIGHT LEG UNDER THE WEDGE STRUCTURE IT IS DEFINED IN DETAIL "A" ON SHEET 3.

   b. FOR THE FRONT HALF OF THE COIL EXCLUSIVE OF THE STRAIGHT LEG OF THE WEDGE STRUCTURE +/- .060 INCHES.

   c. FOR THE IN PLANE TOLERANCE ON THE BACK HALF (LEAD END) OF THE COIL +/- .12 INCHES.

   d. FOR THE OUT OF PLANE BACK HALF (LEAD END) OF THE COIL +/- .06 INCHES.

   TOLERANCES INDICATED FOR THE COIL IN THE UN-RESTRAINED CONDITION.



PART NO.	DRAWING NO	NOMENCLATURE OR DESCRIPTION	MATERIAL	QTY REQD

PARTS LIST

COMPUTER GENERATED DRAWING MANUAL CHANGES NOT PERMITTED	CENTRAL FILES: UNLESS OTHERWISE SPECIFIED	PRINCETON PLASMA PHYSICS LABORATORY PRINCETON UNIVERSITY NATIONAL COMPACT STELLARATOR EXPERIMENT		
Pro E	DIMENSIONS ARE IN INCHES MACHINE SURFACES 125	STELLARATOR CORE CONVENTIONAL COILS TF COIL FINAL ASSEMBLY		
DO NOT VERIFY INFORMATION BY SCALING DRAWING	BREAK SHARP EDGES .005/.020			
	TOLERANCES NON-CUMULATIVE	DSN: J. RUSHINSKI	2/01/06	DRAWING NO:
NEXT ASSEMBLY	DECIMAL-INCH: .X +/-.100, .XX +/-.030, .XXX +/-.005, ANGULAR +/-0°-15'; FRACTIONS: 0°-12° +/-1/16, 12°-72° +/-1/8, 72°-120° +/-1/4, OVER 120° +/-1/2	CHK: M. KALISH	2/01/06	SE131-003
		ENGR: M. KALISH	2/01/06	
		SUPV: J. SIEGEL	2/01/06	SHEET 5 OF 5 REV 2

WEIGHT	MODEL NAME	WELDING ENGINEER
1418.2 lbs	SE131-003	

RELEASE LEVEL: WIP
DWG VERSION NO: 1

NCSX-SE131-003

NCSX_ASSY_FORMAT_E