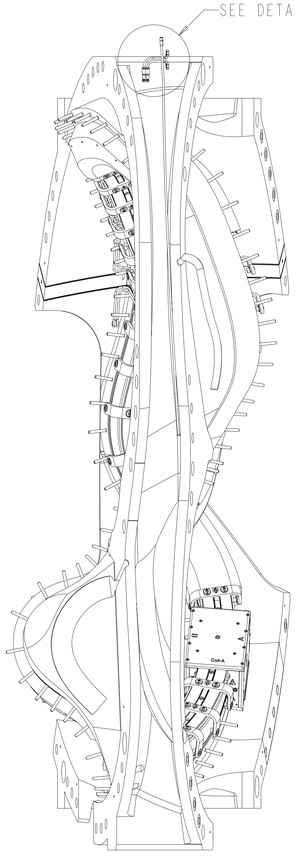

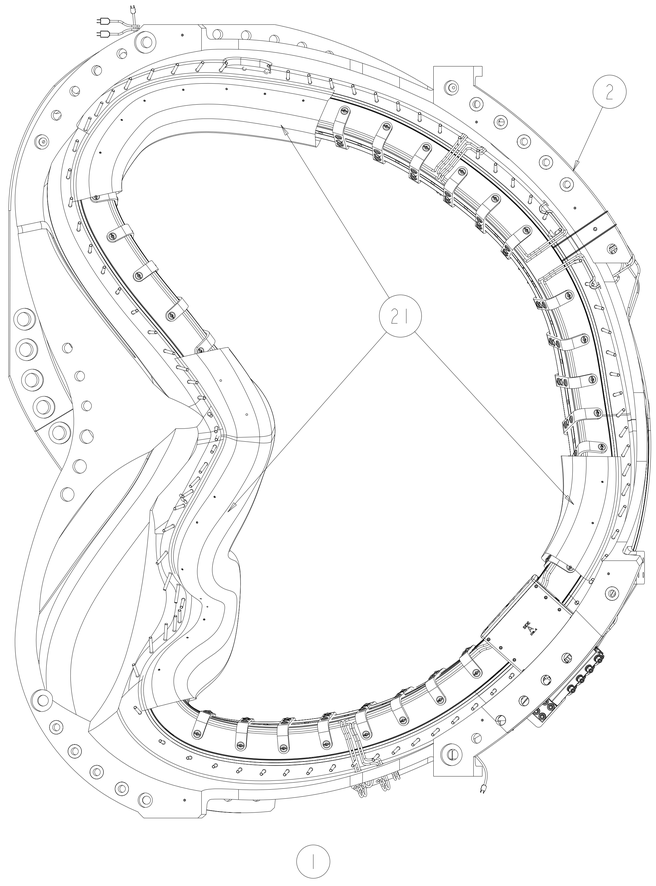

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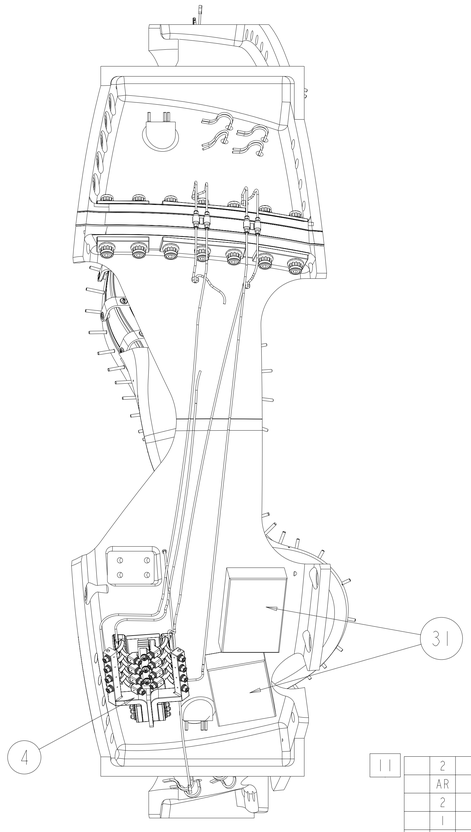
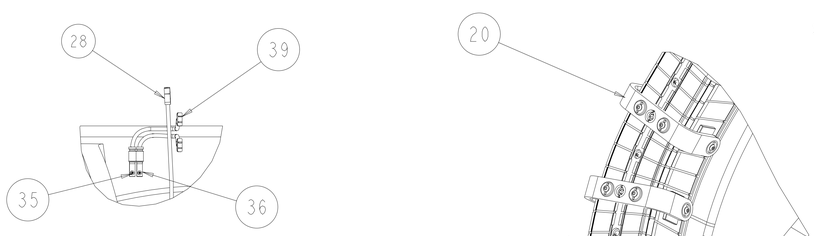
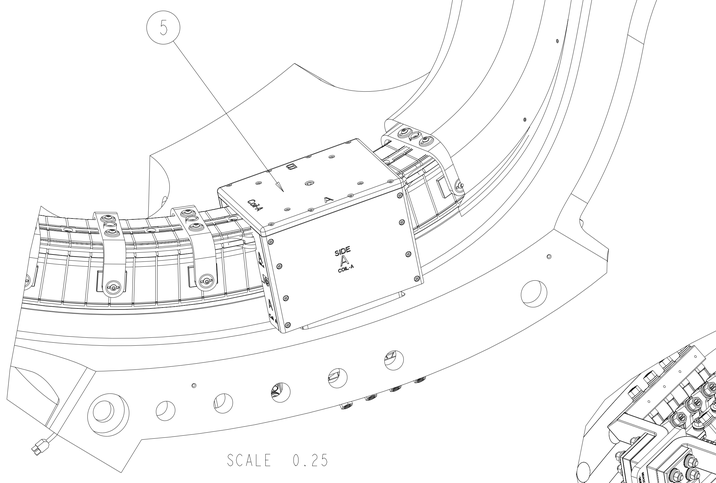




DETAIL A
SCALE 0.25



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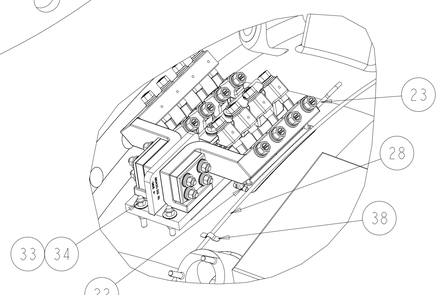

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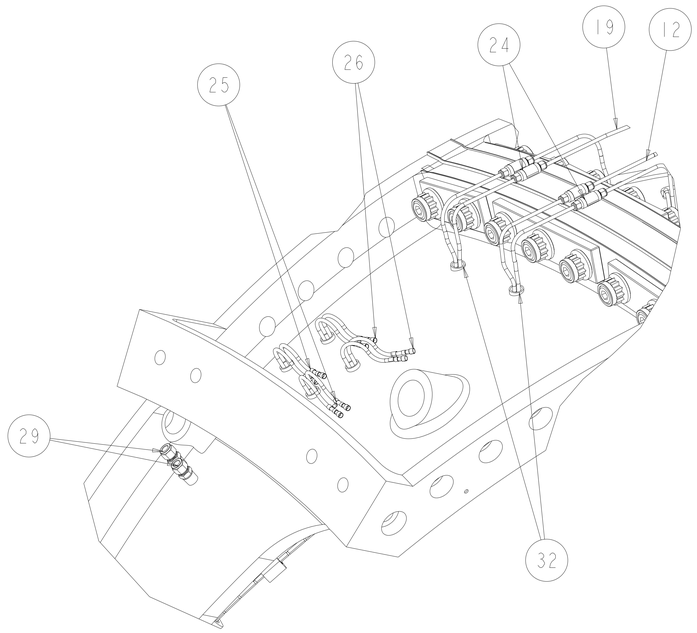


SCALE 0.25

NOTES:
1. DRAWING PREPARED IN ACCORDANCE WITH ASME Y14.100-2000.
2. INTERPRET DIMENSIONS AND TOLERANCES PER ANSI Y14.5M
3. DIMENSIONS ARE IN INCHES
4. DIMENSIONS APPLY AT ROOM TEMPERATURE. OPERATING TEMP 80 K.
5. LEADS AREA SHALL BE COVERED OR SPRAYED WITH AN INSULATING MATERIAL TO PREVENT DEBRIS FROM CAUSING AN ELECTRICAL SHORT DURING OPERATION.
6. VENDOR INFORMATION: ASPEN AEROGEL
NORTHBOROUGH, MA 01532
WWW.AEROGEL.COM
508-691-1111
7. SEE LATEST REVISION OF PROCEDURE D-NCSX-MCF-001 FOR ADDITIONAL REQUIREMENTS.
8. WELDING SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF PPPL PROCEDURE NO. ENG-037. VISUAL WELD INSPECTION SHALL BE PERFORMED IN ACCORDANCE WITH THE ACCEPTANCE CRITERIA OF AWS D1.6.
9. VENDOR INFORMATION: TRULY TUBULAR FITTING CORP
PO BOX 1160
MT VERNON, NY 10550
914-664-8686 OR WWW.TRULYTUBULAR.COM
10. VENDOR INFORMATION: FISO FIBER OPTICS
500 ST. JEAN BAPTISTE AVE SUITE 195
QUEBEC QC, G2E 5R CANADA
418-688-8065 OR WWW.FISO.COM
11. VENDOR INFORMATION: OMEGA ENGINEERING CORP
ONE OMEGA DRIVE
STAMFORD, CT 06907
800-848-4286 OR WWW.OMEGA.COM
12. SOME PARTS IN THIS ASSEMBLY ARE GRAPHIC REPRESENTATIONS OF ACTUAL PARTS/ASSEMBLIES. PART IDENTIFICATION NUMBERS REFER TO ACTUAL PARTS. FOR FULL MODELED ASSEMBLY SEE SE140-102-
13. TYPE "A" COIL: REMOVE NOTED STUDS AFTER CLAMP AND INSULATION BLANKETS ARE ASSEMBLED (POST VPI).

		CAGE CODE	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	FIND NO
			NEXT ASSEMBLY	PARTS LIST			
SE140-003	-1						
AR			-1	MCWF-TYPE A ASM			1
			SE142A-251	SIDE "A" WINDINGS ASSEMBLY			8
			SE142A-254-4	SIDE "A" LOWER CLADDING (BASE)			7
			SE142A-254-3	SIDE "A" UPPER CLADDING (SEPTUM)			6
			SE142A-080	TYPE "A" LEADS ASSEMBLY			5
			SE142C-050	TYPE "A" TERMINAL ASSEMBLY			4
			SE141-121	STUDS (SEE SHT 2)			3
			SE141-101	MOD COIL WINDING FORM ASSEMBLY TYPE-A			2
			SE142A-253	SIDE-A WP GROUNDWRAP			9
			SE142A-241	SIDE "B" WINDING ASSEMBLY			15
			SE142A-244-4	SIDE "B" LOWER CLADDING (BASE)			14
			SE142A-244-3	SIDE "B" UPPER CLADDING (SEPTUM)			13
			SE142A-258	SIDE A COOLING TUBES			12
			SE142A-256-4	SIDE A LOWER CHILL PLATES (SIDE)			11
			SE142A-256-3	SIDE A UPPER CHILL PLATES (TOP)			10
			SE142A-243	SIDE "B" GROUNDWRAP			16
			SE142A-246-4	SIDE "B" CHILL PLATES (SIDE)			18
			SE142A-246-3	SIDE "B" UPPER CHILL PLATES (TOP)			17
			SE142A-248	SIDE B COOLING TUBES			19
			SE142A-010	CLAMP ASSEMBLY			20
6			-21	WINDING FORM INSULATION ASSY		AEROGEL PYROGEL 5523	21
9			90FF-4	TRULY TUBULAR 1/4 ELBOW		BRAZETYTE	23
			10FF-4	TRULY TUBULAR 1/4 UNION		BRAZETYTE	22
			SE141-204	FLANGE BUSHINGS			27
			SE142C-011	TUBE CLAMP			25
			SE142A-025	POL BR CONNECTOR ASSEMBLY			24
10			SS-810-1-8	BLEED VALVE			29
11			XC1B-K-3-2-10	THERMOCOUPLER - PLUG STYLE			28
			SE142C-013	FISO FIBER OPTIC STRAIN SENSOR			30
			SE142C-014	LINED INSULATING SLEEVE			32
			SE142C-015	3"X8"X12" FLUX LOOP BOX			31
			94819A049	3/8 - 16UNC HEX NUT		SS 316L	33
			9195A031	3/8 FLAT WASHER		SS 316L	34
			91735A46	PAN HEAD SCREW		SS 316L	35
			SE123-155	THERMOCOUPLER MTG BLOCK			36
			SE142C-303	SHORT CLAMP ASSEMBLY			37
			SE142B-030	WIRE CLAMP			38
11			XC1B-K-4-2-3	THERMOCOUPLER - SURFACE MOUNT			39

REV	DESCRIPTION	BY	DATE	CHK	DEPT	DATE	PE	REQ	DATE	ORNL	DOE	DATE
0	ORIGINAL ISSUE	GL	06/07									

REVISION OR ISSUE PURPOSE — REVISION APPROVAL

SCALE NOTED
TOLERANCES UNLESS OTHERWISE SPECIFIED
FRACTIONS :
XX DECIMALS ±.01
XXX DECIMALS ±.005
ANGLES ±0°15'
BREAK SHARP EDGES .06 MAX
FINISH .125 UNLESS OTHERWISE SPECIFIED

DRAWING APPROVALS		DATE
DES	D WILLIAMSON	06/07
DRW	G LOVETT	06/07
CHK	M COLE	06/07
SECT	:	:
DEPT	:	:
PE	D WILLIAMSON	06/07
CR	:	:
PJ	:	:
REQ	:	:
PPPL DRFT	J SIEGLE	06/07
	:	:

UT-BATTELLE
Oak Ridge National Laboratory
managed for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725
UT-BATTELLE, LLC. Oak Ridge, Tennessee
PROJECT NAME
NATIONAL COMPACT STELLARATOR EXPERIMENT

MCWF TYPE "A"
FULL COIL ASSEMBLY

VERSION NO.	PLANT	BLDG	FL	SHT OF	TYPE	CLASS
46+	ORNL	5700	3	1 2	S	U
RELEASE LEVEL WIP	SE140-101					REV 0

SE140-101 B

P THIS DRAWING PRODUCED ON PRO-ENGINEER

SUGGESTED LOCATION FOR CONCENTRATED STRAIN SENSORS
ALIGN SENSORS ON WINDING LAW PLANE AS SHOWN
IN DETAIL X

13 REMOVE STUDS (SIDE "A")
BETWEEN HOLE LOCS 32 AND 38.

13 REMOVE STUDS (SIDE "A")
BETWEEN HOLE LOCS 24 AND 27.

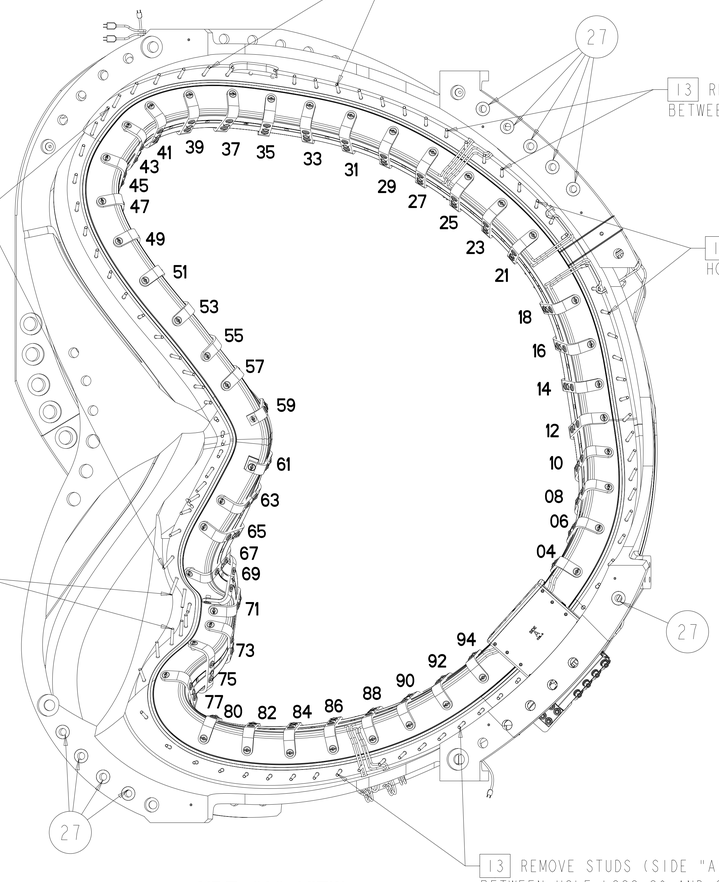
13 REMOVE STUDS (SIDE "A")
BETWEEN HOLE LOC 43 AND 67

13 REMOVE STUDS (SIDE "A"_
HOLE LOCS BETWEEN 17 AND 22.

SUGGESTED STRIN SENSOR PLACEMENT LOCATION
ON WINDING LAW PLANE BETWEEN HOLE
LOCATIONS 61-65.

13 REMOVE STUDS (SIDE "A")
BETWEEN HOLE LOCS 68 AND 75.

13 REMOVE STUDS (SIDE "A")
BETWEEN HOLE LOCS 86 AND 92



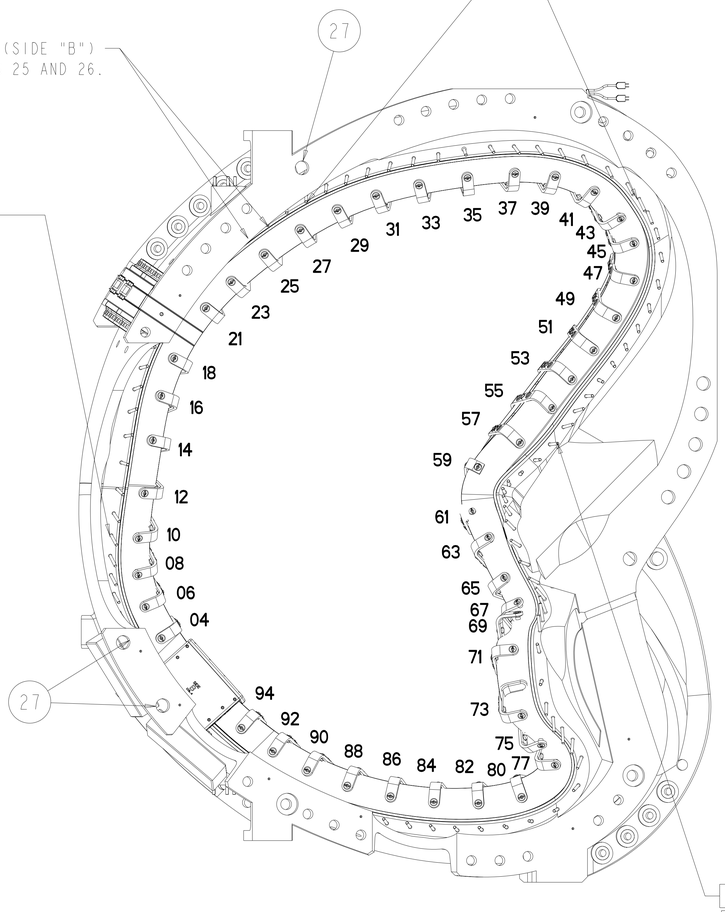
SIDE "A" VIEW
SCALE 0.125
CLAMP / HOLE NUMBER LOCATIONS

13 REMOVE STUDS (SIDE "B")
BETWEEN HOLE LOCATIONS 28 AND 43

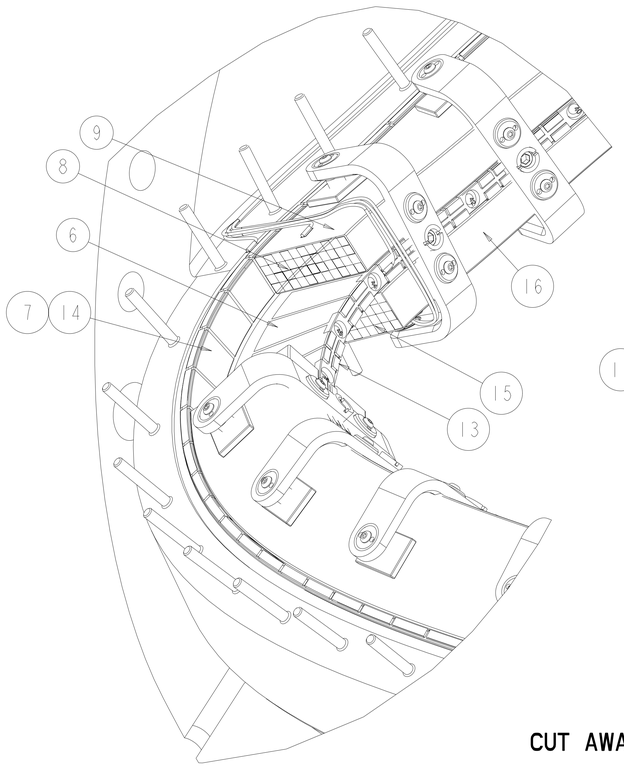
13 REMOVE STUDS (SIDE "B")
AT HOLE LOCATIONS 25 AND 26.

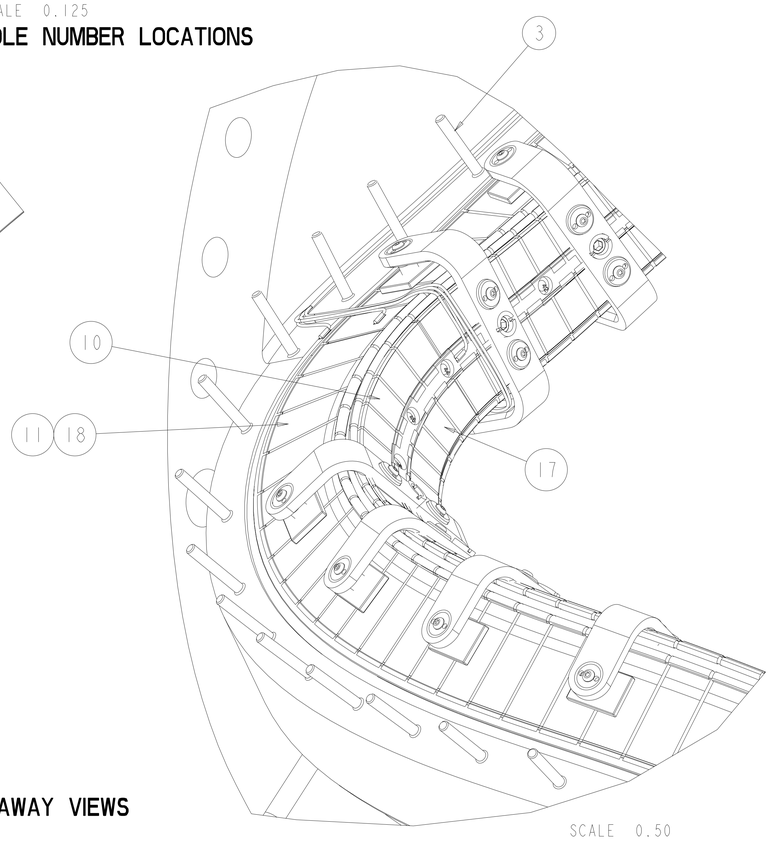
13 REMOVE STUDS (SIDE "B")
BETWEEN HOLES 10 AND 23

13 REMOVE STUDS (SIDE "B")
BETWEEN HOLE LOCATIONS 56 AND 89



SIDE "B" VIEW
SCALE 0.125
CLAMP / HOLE NUMBER LOCATIONS



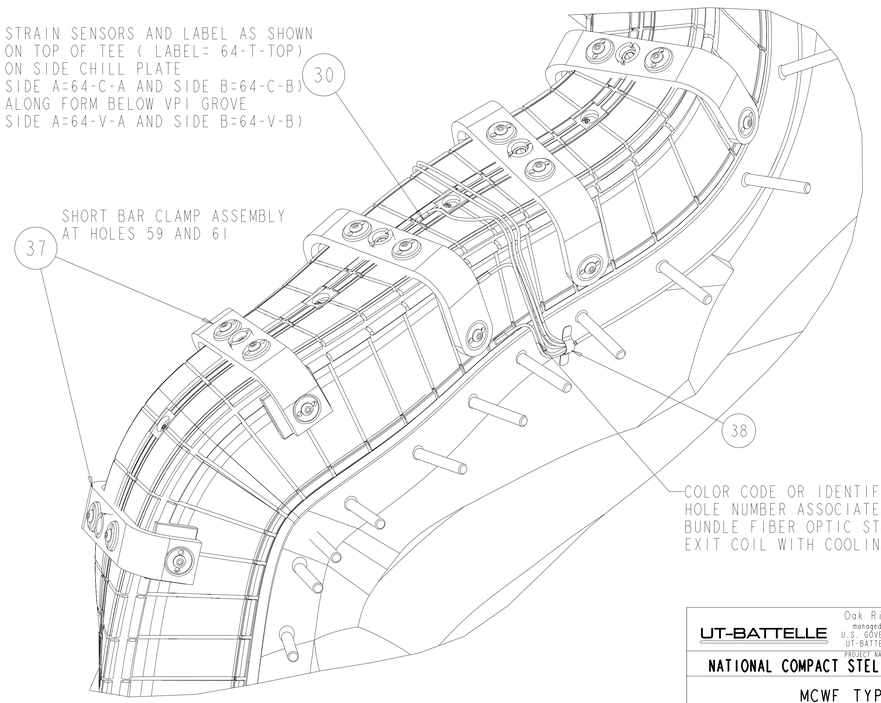


CUT AWAY VIEWS
SCALE 0.50

LOCATE STRAIN SENSORS AND LABEL AS SHOWN
1 EACH ON TOP OF TEE (LABEL= 64-T-TOP)
2 EACH ON SIDE CHILL PLATE
(LABEL SIDE A=64-C-A AND SIDE B=64-C-B)
2 EACH ALONG FORM BELOW VPI GROVE
(LABEL SIDE A=64-V-A AND SIDE B=64-V-B)

SHORT BAR CLAMP ASSEMBLY
AT HOLES 59 AND 61

COLOR CODE OR IDENTIFY EACH CABLE WITH
HOLE NUMBER ASSOCIATED AND LOCATION
BUNDLE FIBER OPTIC STRAIN SENSOR CABLE
EXIT COIL WITH COOLING TUBES.



SCALE 0.50

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NATIONAL COMPACT STELLARATOR EXPERIMENT

MCWF TYPE "A"
FULL COIL ASSEMBLY

VERSION NO.	PLANT	BLDG	FL	SHT	OF	TYPE	CLASS
60	ORNL	5700	3	2	2	S	U

RELEASE LEVEL		REV
WIP	SE140-101	0

SE140-101