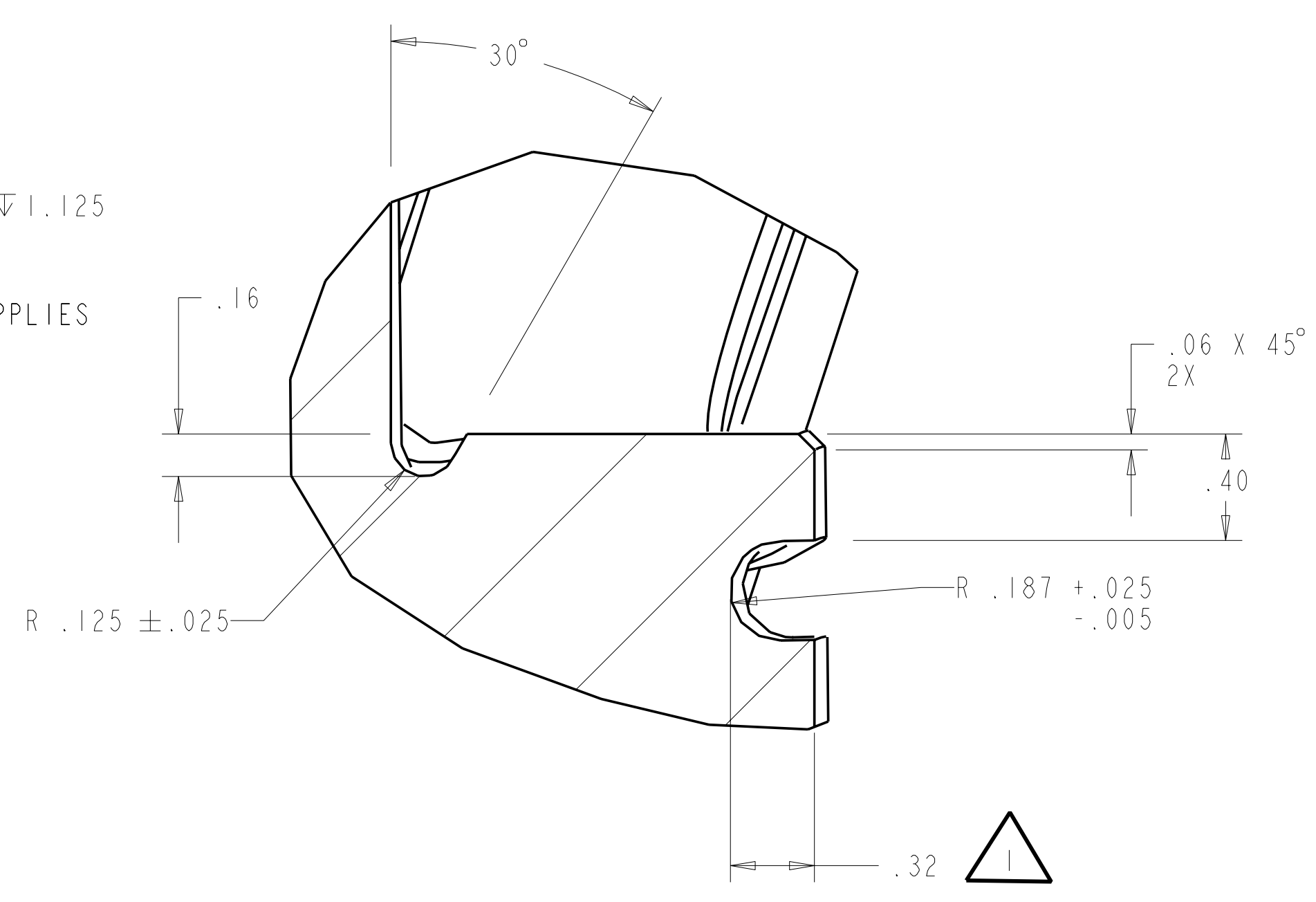
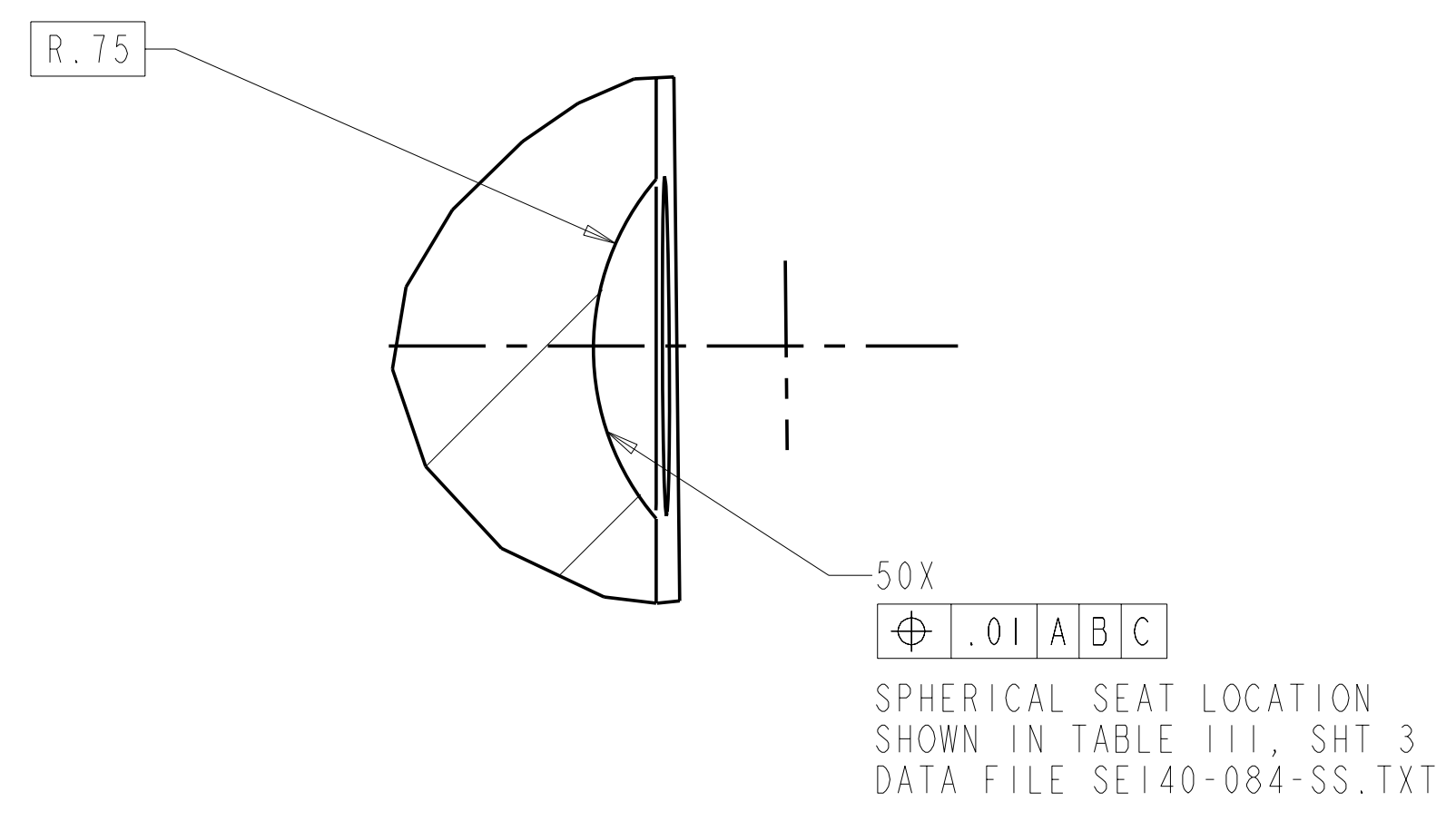


DETAIL 1
SCALE 2.0

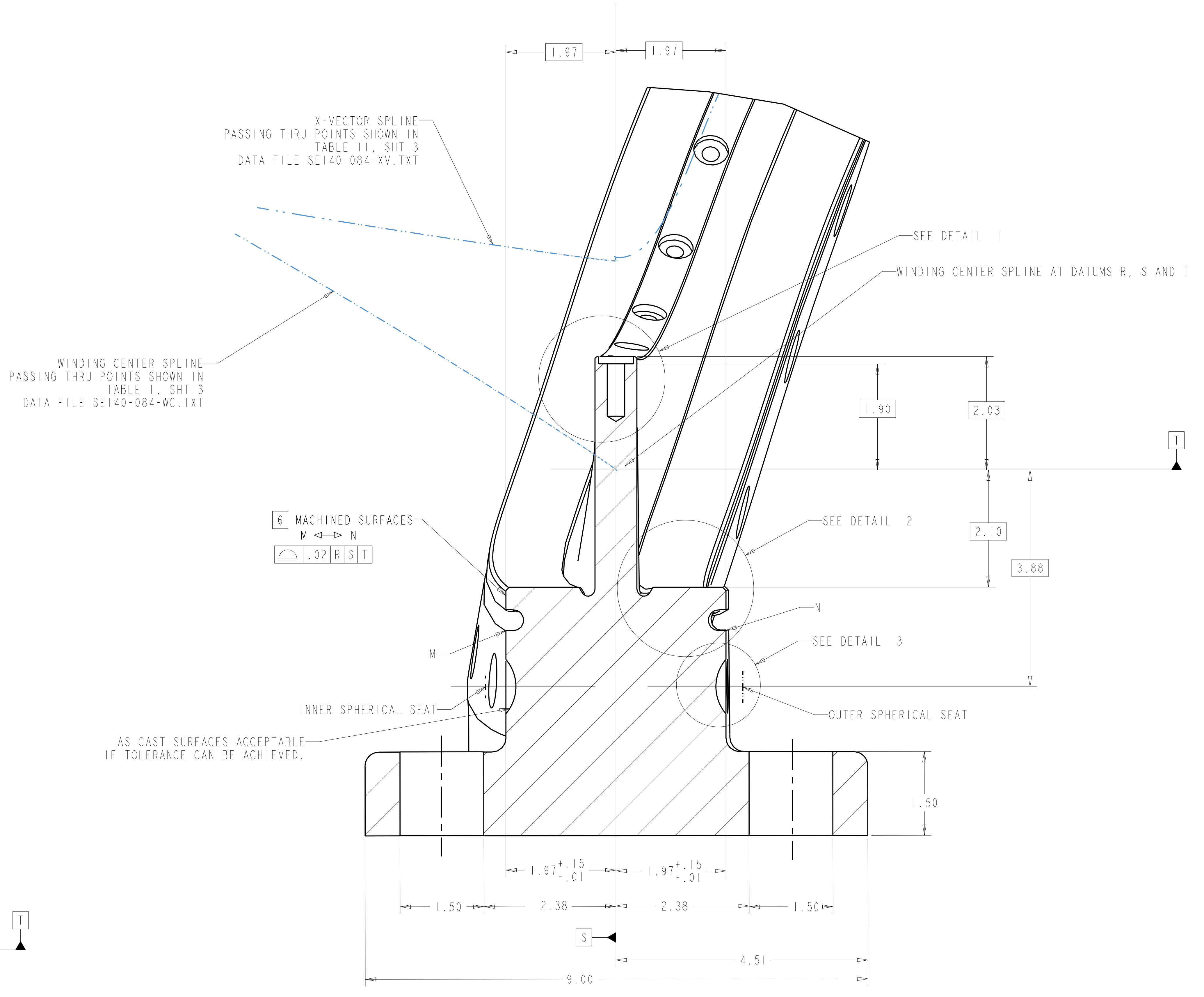
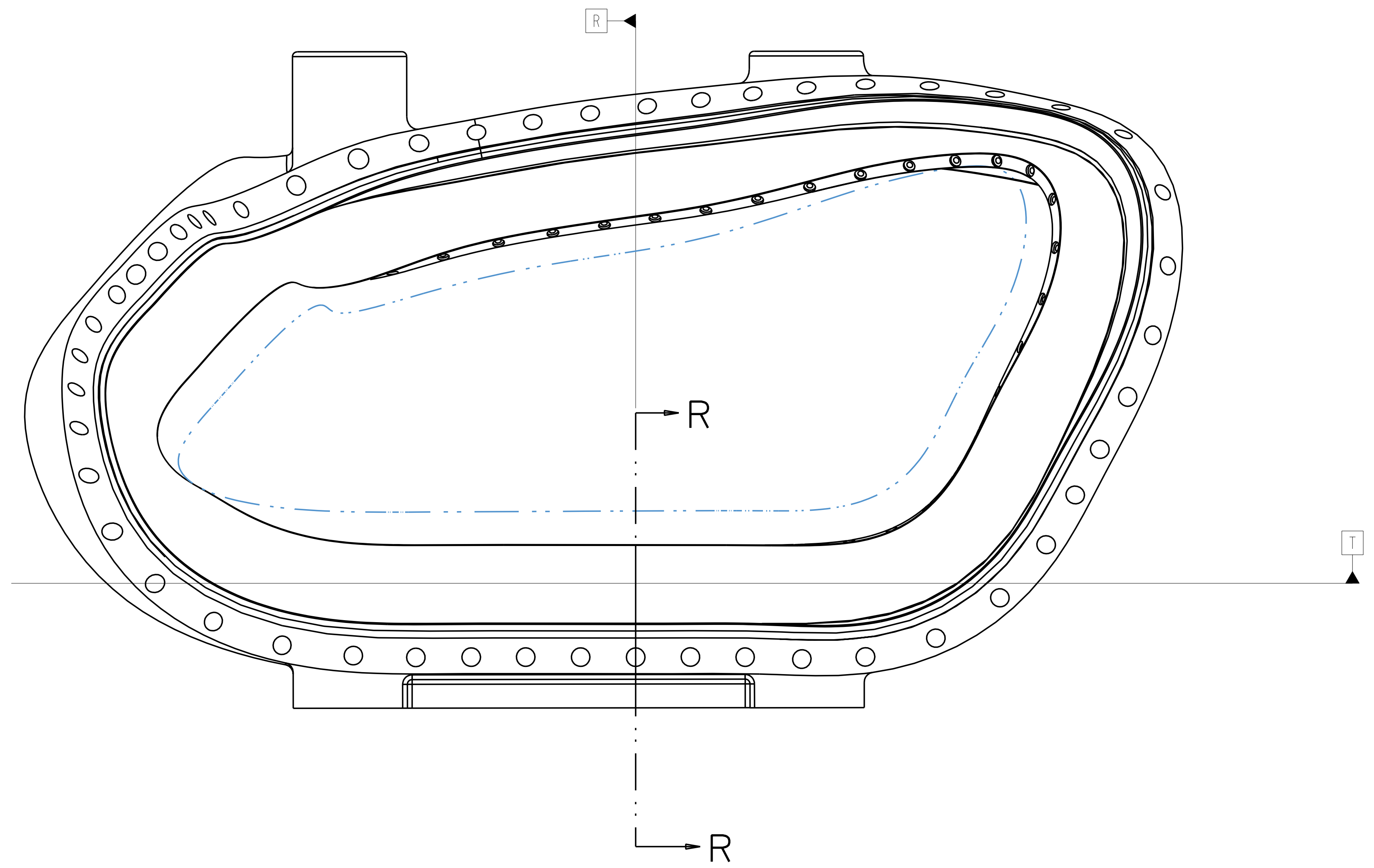


DETAIL 2
SCALE 2.0
VPI GROOVE TO BE MACHINED BY
BALL END MILL OR DISC CUTTER IF
SAME TOLERANCE CAN BE ACHIEVED.



DETAIL 3
SCALE 2.0

DATUM R = PLANE NORMAL TO WINDING CENTER
 DATUM S = PLANE PASSING THRU WINDING CENTER AND
 X-VECTOR AT DATUM R
 DATUM T = PLANE PASSING THRU WINDING CENTER ORTHOGONAL
 TO DATUM S



SECTION R-R
SCALE 1.0
APPLIES AT ALL POINTS
ALONG WINDING CENTER

**RELEASED FOR
FABRICATION / INSTALLATION**
PPPL Drafting:

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:							
UT-BATTELLE NATIONAL COMPACT STELLARATOR EXPERIMENT							
TWISTED RACETRACK WINDING FORM							
VERSION NO.	PLANT	BLDG	FL	SHT OF	TYPE	CLASS	
0	X-10	5700	3	2 3	S	U	
RELEASE LEVEL	SEI40-084						
Fabrication							

SEI40-084

TABLE I
WINDING CENTER SPLINE CO-ORDINATE DATA FILE
(FILE SE140-084-WC.TXT)

Winding Center Coordinates	No.	X	Y	Z
1	0.000	-0.002	-10.953	
2	2.888	0.000	-10.949	
3	5.776	-0.001	-10.943	
4	8.663	0.004	-10.941	
5	11.551	0.022	-10.948	
6	14.436	-0.064	-10.879	
7	17.253	-0.559	-10.536	
8	19.814	-1.656	-9.812	
9	21.983	-3.261	-8.800	
10	23.752	-5.211	-7.621	
11	25.159	-7.389	-6.355	
12	26.194	-9.738	-5.037	
13	26.839	-12.205	-3.688	
14	27.012	-14.732	-2.310	
15	26.577	-17.184	-0.862	
16	25.442	-19.264	0.767	
17	23.707	-20.381	2.725	
18	21.776	-19.871	4.754	
19	20.163	-17.961	6.131	
20	19.161	-15.315	6.616	
21	18.513	-12.503	6.551	
22	17.430	-9.840	6.500	
23	15.490	-7.744	6.789	
24	13.018	-6.372	7.327	
25	10.303	-5.628	7.950	
26	7.489	-5.400	8.544	
27	4.650	-5.491	9.059	
28	1.796	-5.531	9.490	
29	-1.050	-5.228	9.856	
30	-3.841	-4.581	10.216	
31	-6.584	-3.789	10.646	
32	-9.331	-3.046	11.134	
33	-12.109	-2.381	11.559	
34	-14.894	-1.656	11.781	
35	-17.614	-0.692	11.762	
36	-20.149	0.657	11.512	
37	-22.263	2.438	10.737	
38	-23.533	4.238	8.929	
39	-23.706	5.254	6.268	
40	-23.071	5.377	3.467	
41	-22.027	4.851	0.834	
42	-20.898	3.781	-1.596	
43	-19.793	2.538	-3.956	
44	-18.484	1.554	-6.330	
45	-16.675	0.825	-8.448	
46	-14.296	0.267	-9.966	
47	-11.539	-0.018	-10.741	
48	-8.663	-0.029	-10.966	
49	-5.775	0.012	-10.976	
50	-2.888	0.005	-10.959	

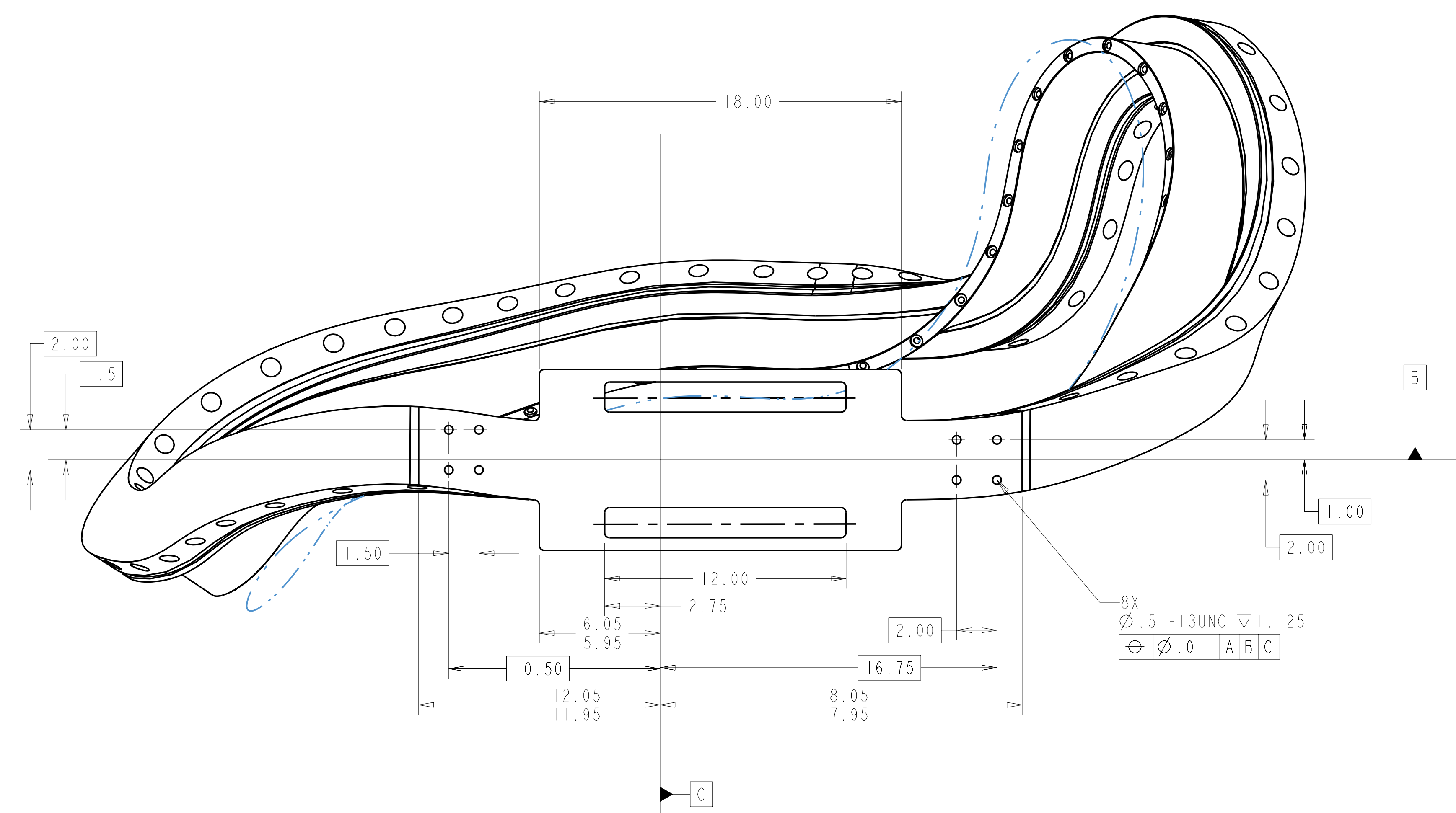
TABLE II
X VECTOR CURVE CO-ORDINATE DATA FILE
(FILE SE140-084-XV.TXT)

X-Vector Coordinates	No.	X	Y	Z
1	-0.005	0.002	-7.153	
2	2.880	0.000	-7.162	
3	5.768	-0.001	-7.171	
4	8.670	0.003	-7.181	
5	11.545	0.032	-7.194	
6	14.215	-0.081	-7.188	
7	16.558	-0.629	-7.118	
8	18.649	-1.817	-6.951	
9	20.438	-3.632	-6.678	
10	21.871	-5.873	-6.314	
11	22.921	-8.320	-5.874	
12	23.624	-10.820	-5.366	
13	23.986	-13.286	-4.781	
14	23.970	-15.592	-4.096	
15	23.555	-17.718	-3.238	
16	22.605	-19.612	-2.016	
17	20.776	-20.864	0.044	
18	18.847	-20.336	2.076	
19	17.351	-18.448	3.349	
20	16.503	-15.879	3.705	
21	16.113	-13.284	3.508	
22	15.645	-10.814	3.291	
23	14.531	-8.132	3.382	
24	12.549	-5.559	3.892	
25	9.886	-3.700	4.639	
26	6.878	-3.032	5.357	
27	4.013	-3.125	5.885	
28	1.441	-3.170	6.280	
29	-1.028	-2.869	6.672	
30	-3.598	-2.165	7.198	
31	-6.303	-1.199	7.943	
32	-9.031	-0.243	8.835	
33	-11.625	0.615	9.684	
34	-14.017	1.487	10.335	
35	-16.197	2.510	10.779	
36	-18.017	3.723	10.948	
37	-19.371	5.053	10.655	
38	-20.339	6.547	9.443	
39	-20.473	7.469	7.022	
40	-19.770	7.259	4.400	
41	-18.553	6.114	1.978	
42	-17.280	4.385	-0.222	
43	-16.198	2.810	-2.352	
44	-15.119	1.848	-4.219	
45	-13.938	1.312	-5.521	
46	-12.606	0.928	-6.368	
47	-10.923	0.558	-6.911	
48	-8.573	0.174	-7.148	
49	-5.802	-0.017	-7.146	
50	-2.902	-0.010	-7.142	

TABLE III
SPHERICAL SEAT LOCATION CO-ORDINATES
(FILE SE140-084-SS.TXT)

No.	Spherical Seat - Left			Spherical Seat - Right		
	X	Y	Z	X	Y	Z
1	0.000	-2.546	-14.830	0.000	2.534	-14.830
2	2.896	-2.540	-14.829	2.895	2.540	-14.820
3	5.782	-2.541	-14.823	5.784	2.539	-14.820
4	8.669	-2.535	-14.822	8.643	2.545	-14.820
5	11.561	-2.528	-14.821	11.554	2.552	-14.830
6	14.462	-2.578	-14.776	14.871	2.485	-14.720
7	17.351	-2.922	-14.525	18.699	1.961	-14.150
8	20.195	-3.682	-13.966	22.357	0.774	-12.830
9	23.112	-4.670	-13.071	25.377	-0.767	-10.740
10	26.112	-5.753	-11.576	27.514	-2.516	-7.921
11	28.713	-7.170	-9.326	28.632	-4.685	-4.896
12	30.448	-9.231	-6.815	29.044	-7.254	-2.351
13	31.399	-11.838	-4.449	29.111	-9.983	-0.310
14	31.647	-14.891	-2.240	28.880	-12.736	1.435
15	31.037	-18.108	0.011	28.160	-15.193	3.016
16	29.424	-20.916	2.476	26.980	-16.933	4.469
17	26.955	-22.421	5.332	26.145	-17.406	5.315
18	24.037	-21.668	8.381	25.203	-17.172	6.326
19	21.526	-18.866	10.470	24.275	-16.109	7.208
20	19.969	-15.302	11.182	23.531	-14.229	7.723
21	18.953	-12.144	11.153	22.786	-11.328	7.920
22	17.458	-10.028	11.134	21.046	-7.665	8.423
23	15.127	-9.340	11.128	17.946	-5.304	9.875
24	12.525	-9.556	10.663	14.531	-4.960	11.477
25	10.097	-9.730	10.103	11.349	-5.408	12.462
26	7.777	-9.738	10.156	8.384	-5.634	13.089
27	5.115	-9.828	10.634	5.417	-5.734	13.626
28	1.859	-9.869	11.128	2.420	-5.772	14.079
29	-1.606	-9.532	11.493	-0.540	-5.545	14.455
30	-4.817	-8.871	11.683	-3.351	-5.132	14.794
31	-7.660	-8.168	11.726	-6.089	-4.763	15.153
32	-10.363	-7.536	11.664	-8.940	-4.535	15.508
33	-13.194	-6.888	11.458	-12.076	-4.391	15.738
34	-16.213	-6.038	11.032	-15.482	-4.107	15.673
35	-19.299	-4.781	10.367	-18.951	-3.435	15.253
36	-22.242	-3.016	9.607	-22.436	-1.969	14.574
37	-24.450	-0.999	8.521	-25.831	0.672	13.116
38	-25.276	0.401	6.994	-28.026	3.567	9.861
39	-25.385	1.038	5.312	-28.315	5.164	5.756
40	-25.234	1.292	3.088	-27.455	5.728	1.995
41	-24.999	1.296	0.662	-26.021	5.873	-1.290
42	-24.547	0.926	-1.791	-24.417	5.439	-4.121
43	-23.594	-0.052	-4.542	-23.061	4.594	-6.524
44	-21.999	-1.158	-7.670	-21.524	3.693	-9.102
45	-19.520	-2.100	-10.651	-19.091	2.812	-11.870
46	-16.108	-2.845	-12.888	-15.739	2.104	-13.970
47	-12.195	-3.098	-14.146	-12.103	1.922	-14.910
48	-8.706	-2.772	-14.705	-8.802	2.300	-14.970
49	-5.736	-2.499	-14.875	-5.762	2.580	-14.830
50	-2.887	-2.520	-14.849	-2.861	2.560	-14.820

ALL POINT LOCATION IN TABLES ARE BASIC DIMENSIONS TO DATUMS A, B, AND C



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NATIONAL COMPACT STELLARATOR EXPERIMENT						
TWISTED RACETRACK WINDING FORM						
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0	X-10	5700	3	3	S	U
RELEASE LEVEL						
Fabrication		SE140-084				
						REV 1