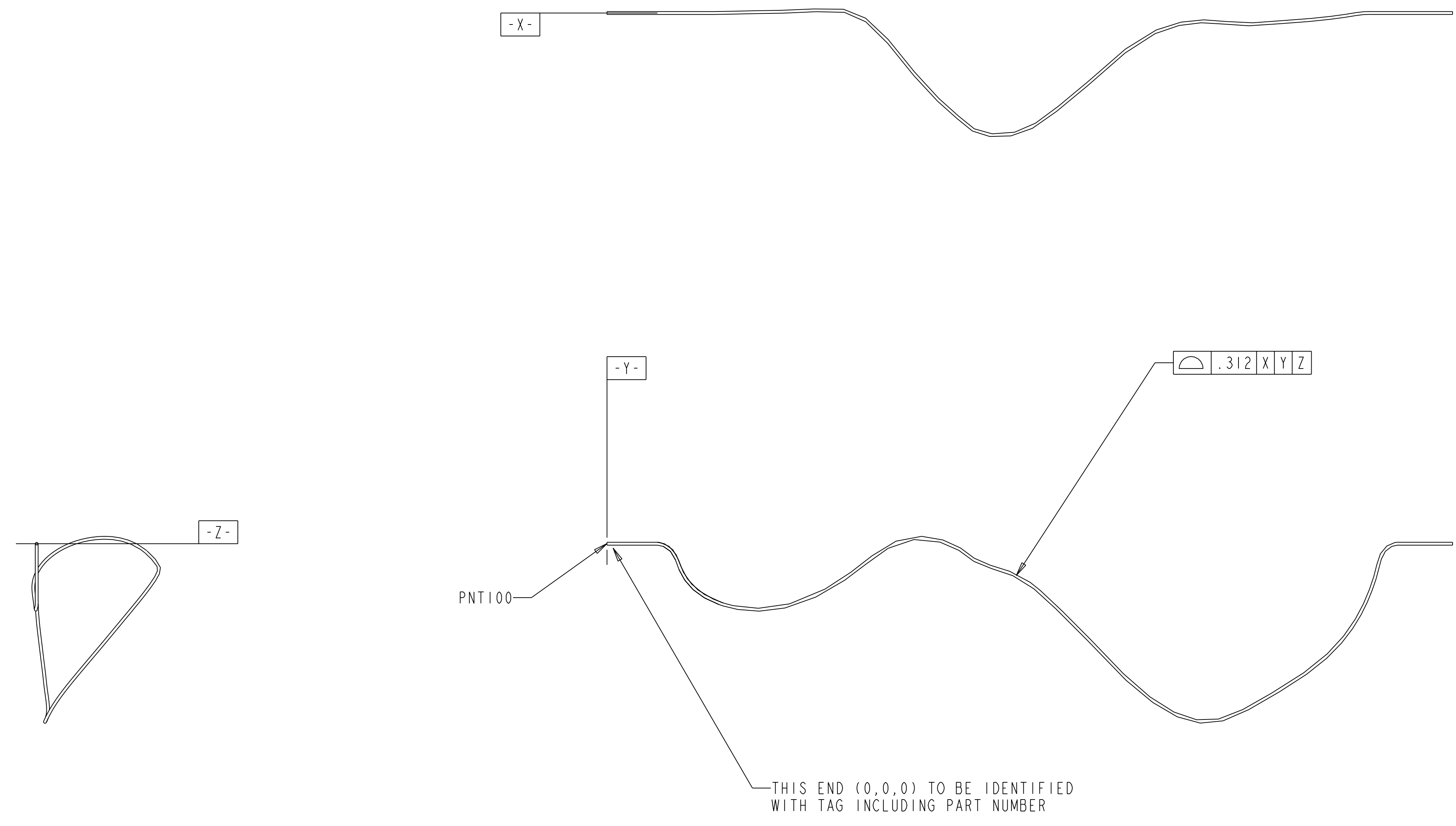


- NOTES
1. INTERPRET DIMENSIONS AND TOLERANCES PER ANSI Y14.5M.
 2. DIMENSIONS ARE IN INCHES.
 3. FABRICATION AND MATERIALS PER NCSX-CSPEC-123-01
 4. PROFILE TOLERANCE OF TUBE SURFACE IS BILATERAL, I.E. 0.156" ANY DIRECTION OFF REFERENCE SURFACE.
 5. ALL TUBE BEND RADII ARE 5/8" TO CENTERLINE OF TUBE.
 6. DATUM POINTS ON CHART ARE THEORETICAL INTERCEPTS OF THE TUBE CENTERLINE. BEND RADII ARE OMITTED. PROFILE TOLERANCE INCLUDES ALLOWANCES FOR THE RADII ERRORS.

Point Name	X	Y	Z
PNT100	0.000	0.000	0.000
PNT101	5.485	0.000	0.000
PNT102	6.340	-0.218	0.000
PNT103	7.140	-0.871	0.000
PNT104	7.624	-1.782	0.000
PNT105	8.079	-2.990	-0.000
PNT106	8.558	-3.831	0.000
PNT107	9.092	-4.505	0.000
PNT108	9.803	-5.162	0.000
PNT109	10.603	-5.708	0.000
PNT110	11.462	-6.154	0.000
PNT111	12.362	-6.513	0.000
PNT112	13.394	-6.820	0.000
PNT113	14.485	-7.034	-0.098
PNT114	15.804	-7.166	-0.089
PNT115	17.129	-7.156	-0.098
PNT116	18.446	-7.009	-0.124
PNT117	19.743	-6.735	-0.155
PNT118	20.816	-6.412	-0.191
PNT119	21.957	-5.973	-0.252
PNT120	23.155	-5.411	-0.324
PNT121	24.229	-4.825	-0.364
PNT122	25.183	-4.237	-0.328
PNT123	26.100	-3.610	-0.175
PNT124	26.972	-2.965	0.110
PNT125	27.648	-2.441	0.441
PNT126	28.220	-1.991	0.810
PNT127	28.834	-1.513	1.296
PNT128	29.359	-1.120	1.781
PNT129	29.871	-0.762	2.306
PNT130	30.310	-0.481	2.794
PNT131	30.807	-0.198	3.376
PNT132	31.300	0.042	3.980
PNT133	31.855	0.263	4.676
PNT134	32.354	0.418	5.303
PNT135	32.860	0.534	5.932
PNT136	33.377	0.609	6.559
PNT137	34.039	0.647	7.333
PNT138	34.721	0.620	8.092
PNT139	35.704	0.470	9.115
PNT140	36.644	0.210	10.013
PNT141	37.447	-0.105	10.730
PNT142	38.518	-0.691	11.650
PNT143	39.340	-1.287	12.332
PNT144	40.384	-2.009	12.978
PNT145	41.486	-2.451	13.256
PNT146	42.466	-2.724	13.318
PNT147	43.441	-3.017	13.273
PNT148	44.730	-3.573	13.028
PNT149	45.876	-4.286	12.569
PNT150	47.111	-5.263	11.846
PNT151	48.113	-6.170	11.129
PNT152	49.006	-7.031	10.423
PNT153	50.008	-8.023	9.600
PNT154	51.006	-9.017	8.776
PNT155	51.874	-9.890	8.052
PNT156	52.854	-10.892	7.217
PNT157	53.640	-11.710	6.530
PNT158	54.599	-12.718	5.678
PNT159	55.380	-13.536	4.985
PNT160	56.240	-14.410	4.254
PNT161	57.141	-15.267	3.552
PNT162	58.172	-16.156	2.855
PNT163	59.361	-17.060	2.199
PNT164	60.649	-17.903	1.659
PNT165	62.041	-18.647	1.248
PNT166	63.455	-19.163	0.992
PNT167	64.758	-19.376	0.901
PNT168	65.877	-19.336	0.925
PNT169	67.068	-19.082	1.034
PNT170	68.397	-18.588	1.190
PNT171	69.937	-17.796	1.249
PNT172	71.086	-17.140	1.176
PNT173	72.406	-16.374	1.059
PNT174	73.717	-15.591	0.966
PNT175	74.750	-14.939	0.899
PNT176	75.596	-14.373	0.832
PNT177	76.831	-13.477	0.721
PNT178	78.237	-12.307	0.578
PNT179	79.254	-11.311	0.458
PNT180	79.930	-10.553	0.366
PNT181	80.499	-9.839	0.279
PNT182	81.030	-9.095	0.189
PNT183	81.594	-8.206	0.000
PNT184	82.065	-7.360	-0.000
PNT185	82.446	-6.588	-0.000
PNT186	82.835	-5.700	-0.000
PNT187	83.146	-4.897	0.000
PNT188	83.427	-4.083	0.000
PNT189	83.791	-2.843	0.000
PNT190	84.047	-1.798	-0.000
PNT191	84.370	-1.009	0.000
PNT192	85.056	-0.294	0.000
PNT193	85.997	-0.000	-0.000
PNT194	92.000	0.000	0.000



RELEASED FOR FABRICATION / INSTALLATION
PPPL Drafting:

APPROX TUBE LENGTH = 121.4 IN

SE123-130	AR	-1	COOLANT TUBE 14-1	316L SS 5/16"-.032 WALL	SEE NOTE 4	I
	CAGE CODE	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	FIND NO
	NEXT ASSEMBLY			PARTS LIST		

-1 COOLANT TUBE 14-1
SCALE .125

NO REPRESENTATION OR WARRANTY, EXPRESSED OR IMPLIED, IS MADE AS TO THE ACCURACY, COMPLETENESS OR USEFULNESS OF THE INFORMATION OR STATEMENTS CONTAINED IN THESE DRAWINGS, OR THAT THE USE OR DISCLOSURE OF ANY INFORMATION, APPARATUS, METHOD OR PROCESS DISCLOSED IN THESE DRAWINGS MAY NOT INFRINGE PRIVATE RIGHTS OF OTHERS. NO LIABILITY IS ASSUMED WITH RESPECT TO THE USE OF, OR FOR DAMAGES RESULTING FROM THE USE OF, ANY INFORMATION, APPARATUS, METHOD OR PROCESS DISCLOSED IN THESE DRAWINGS. DRAWINGS MADE AVAILABLE FOR INFORMATION TO BIDDER ARE NOT TO BE USED FOR OTHER PURPOSES, AND ARE TO BE RETURNED UPON REQUEST OF THE FORWARDING CONTRACTOR.

P THIS DRAWING PRODUCED ON PRO-ENGINEER

SCALE NOTED		DES: P GORANSON	4-22-05	Oak Ridge National Laboratory managed for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725 UT-BATTELLE, LLC, Oak Ridge, Tennessee				
TOLERANCES UNLESS OTHERWISE SPECIFIED		DRW: G MCGINNIS	4-22-05	PROJECT NAME: UT-BATTELLE				
		CHK: G. H. JONES	05-04-05	NATIONAL COMPACT STELLARATOR EXPERIMENT				
FRACTIONS : DEPT :		SECT :		VACUUM VESSEL HEATING/COOLING				
XX DECIMALS ±.01 PE :		CR :		COOLANT TUBE 14-1				
XXX DECIMALS ±.005 CR :		PJ :		DETAIL				
ANGLES ±0°15' REO :		PPPL DRFT :		VERSION NO. 0	PLANT ORNL	BLDG 5700	FL 3	
BREAK SHARP EDGES OR MAX FINISH .125 UNLESS OTHERWISE SPECIFIED		PPPL DRFT :		RELEASE LEVEL	Fabrication			
REV		DESCRIPTION	BY	DATE	CHK	DEPT	PE	
		PER ECN NO. 5003	MJC	6/24/05	PLG			
		REVISION OR ISSUE PURPOSE	REVISION APPROVAL					

SE123-131