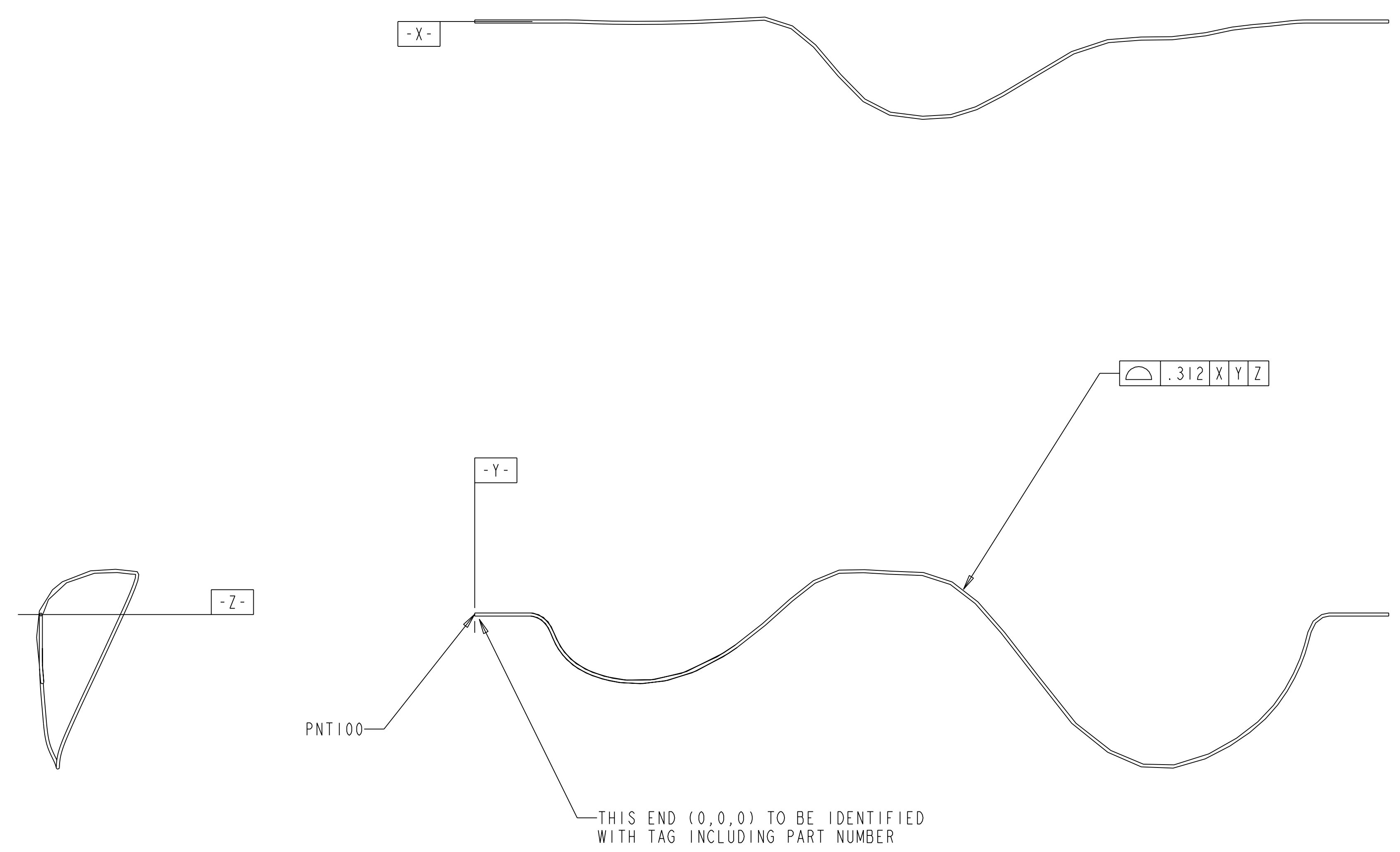


- NOTES
1. INTERPRET DIMENSIONS AND TOLERANCES PER ANSI Y14.5M.
 2. DIMENSIONS ARE IN INCHES.
 - 3 FABRICATION AND MATERIALS PER NCSX-CSPEC-123-01
 4. PROFILE TOLERANCE OF TUBE SURFACE IS BILATERAL, I.E. 0.156" ANY DIRECTION OFF REFERENCE SURFACE.
 5. ALL TUBE BEND RADII ARE 5/8" TO CENTERLINE OF TUBE.
 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	5.651	-0.000	0.000
PNT102	6.475	-0.199	-0.000
PNT103	7.256	-0.807	0.000
PNT104	7.745	-1.669	0.000
PNT105	8.155	-2.683	-0.000
PNT106	8.712	-3.643	0.000
PNT107	9.285	-4.340	0.000
PNT108	9.954	-4.945	-0.000
PNT109	10.526	-5.341	0.006
PNT110	11.131	-5.673	0.038
PNT111	11.579	-5.878	0.057
PNT112	12.222	-6.127	0.080
PNT113	12.881	-6.333	0.099
PNT114	13.551	-6.501	0.113
PNT115	14.229	-6.631	0.124
PNT116	14.913	-6.724	0.131
PNT117	15.601	-6.781	0.136
PNT118	16.192	-6.802	0.138
PNT119	16.587	-6.802	0.138
PNT120	17.277	-6.773	0.137
PNT121	17.964	-6.711	0.134
PNT122	18.551	-6.630	0.129
PNT123	19.230	-6.506	0.120
PNT124	19.711	-6.388	0.113
PNT125	20.188	-6.273	0.104
PNT126	20.755	-6.102	0.091
PNT127	21.129	-5.977	0.081
PNT128	21.499	-5.841	0.070
PNT129	21.867	-5.688	0.058
PNT130	22.411	-5.466	0.039
PNT131	22.859	-5.260	0.022
PNT132	23.301	-5.042	0.005
PNT133	23.738	-4.813	-0.014
PNT134	24.254	-4.525	-0.037
PNT135	24.762	-4.223	-0.062
PNT136	25.263	-3.908	-0.089
PNT137	25.756	-3.582	-0.121
PNT138	26.161	-3.302	-0.152
PNT139	26.721	-2.901	-0.199
PNT140	27.195	-2.549	-0.241
PNT141	27.741	-2.128	-0.285
PNT142	28.202	-1.759	-0.311
PNT143	28.659	-1.382	-0.317
PNT144	29.257	-0.869	-0.282
PNT145	29.918	-0.284	-0.180
PNT146	30.565	0.298	-0.009
PNT147	31.130	0.808	0.200
PNT148	31.617	1.243	0.425
PNT149	32.096	1.663	0.691
PNT150	32.633	2.120	1.044
PNT151	33.158	2.545	1.452
PNT152	33.734	2.977	1.972
PNT153	34.414	3.427	2.687
PNT154	35.078	3.785	3.466
PNT155	35.623	4.015	4.128
PNT156	36.242	4.210	4.871
PNT157	36.883	4.344	5.608
PNT158	37.547	4.415	6.335
PNT159	38.158	4.423	6.978
PNT160	38.796	4.389	7.595
PNT161	39.401	4.339	8.098
PNT162	40.056	4.289	8.536
PNT163	41.119	4.230	9.050
PNT164	42.157	4.205	9.362
PNT165	43.129	4.201	9.526
PNT166	44.209	4.170	9.633
PNT167	45.285	4.054	9.687
PNT168	46.247	3.839	9.699
PNT169	47.447	3.403	9.595
PNT170	48.311	2.955	9.440
PNT171	49.339	2.242	9.161
PNT172	50.130	1.558	8.871
PNT173	51.309	0.346	8.332
PNT174	52.106	-0.568	7.914
PNT175	53.296	-1.997	7.255
PNT176	54.230	-3.152	6.721
PNT177	55.313	-4.539	6.076
PNT178	56.201	-5.721	5.521
PNT179	57.073	-6.910	4.959
PNT180	58.115	-8.318	4.293
PNT181	59.324	-9.842	3.582
PNT182	60.789	-11.423	2.874
PNT183	62.455	-12.847	2.295
PNT184	64.341	-14.033	1.882
PNT185	66.043	-14.792	1.703
PNT186	68.037	-15.339	1.711
PNT187	70.393	-15.315	1.730
PNT188	72.194	-14.847	1.529
PNT189	74.084	-14.083	1.167
PNT190	75.796	-13.177	0.796
PNT191	77.825	-11.819	0.458
PNT192	79.941	-9.905	0.329
PNT193	81.281	-8.204	0.208
PNT194	82.379	-6.340	0.060
PNT195	83.102	-4.734	-0.000
PNT196	83.690	-3.027	-0.000
PNT197	84.026	-1.768	-0.000
PNT198	84.359	-0.987	0.000
PNT199	85.053	-0.286	-0.000
PNT200	85.992	0.000	0.000
PNT201	92.000	0.000	0.000



RELEASED FOR FABRICATION / INSTALLATION
PPPL Drafting:

APPROX TUBE LENGTH = 118.6 IN

-1 COOLANT TUBE 15-2
SCALE .125

AR	-1	COOLANT TUBE 15-2	316L SS 5/16"-.032 WALL	SEE NOTE 4	I
SE123-135					
CAGE CODE		PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION
					FIND NO
NEXT ASSEMBLY			PARTS LIST		

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P THIS DRAWING PRODUCED ON PRO-ENGINEER

SCALE NOTED		DES P GORANSON	4-22-05	Oak Ridge National Laboratory	
TOLERANCES UNLESS OTHERWISE SPECIFIED		DRW G MCGINNIS	4-22-05	managed for the DEPARTMENT OF ENERGY under U.S. GOVERNMENT contract DE-AC05-00OR22725	
FRACTIONS : :		CHK G. H. JONES	05-04-05	UT-BATTELLE, LLC. Oak Ridge, Tennessee	
XX DECIMALS ±.01		SECT : :		PROJECT NAME	
XXX DECIMALS ±.005		DEPT : :		NATIONAL COMPACT STELLARATOR EXPERIMENT	
ANGLES ±0°15'		PE : :		VACUUM VESSEL HEATING/COOLING	
BREAK SHARP EDGES OR MAX FINISH .125 UNLESS OTHERWISE SPECIFIED		CR : :		COOLANT TUBE 15-2	
		PJ : :		DETAIL	
		RD : :		VERSION NO.	
		PPPL DRFT : :		0	
		PLANT ORNL	5700	BLDG	FL
		RELEASE LEVEL		SHT	OF
		Fabrication		3	1
		DRAWING APPROVALS	DATE	TYPE	CLASS
				I	S
				U	REV
					1

SE123-137