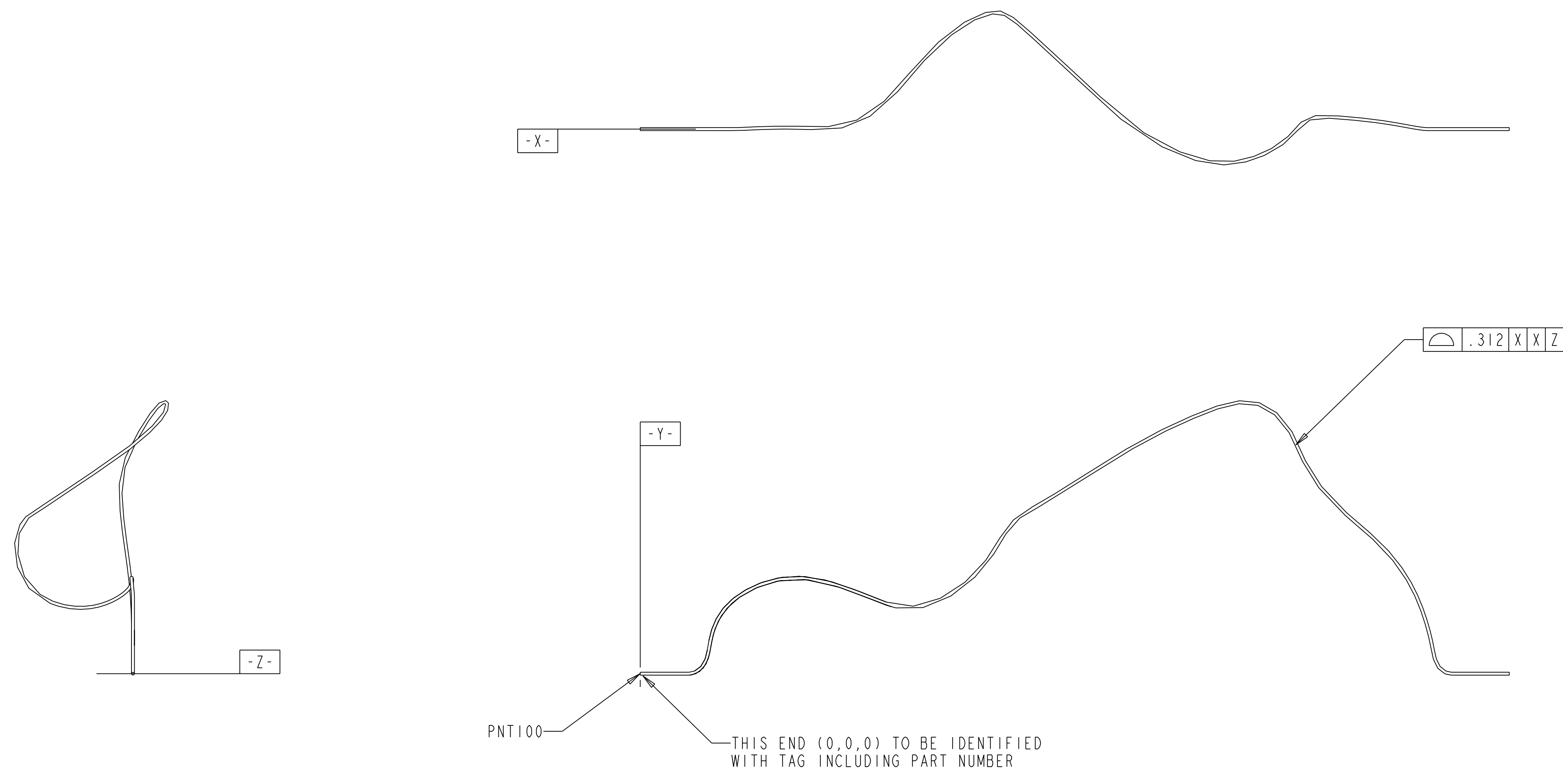


- NOTES
1. INTERPRET DIMENSIONS AND TOLERANCES PER ANSI Y14.5M.
 2. DIMENSIONS ARE IN INCHES.
 3. FABRICATION AND MATERIALS PER NCSX-CSPEC-123-01
 4. PROFILE TOLERANCE OF TUBE SURFACE IS BILATERAL, I.E. 0.156" ANY DIRECTION OFF REFERENCE SURFACE.
 5. ALL TUBE BEND RADII ARE 5/8" TO CENTERLINE OF TUBE.
 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	5.189	-0.000	0.000
PNT102	6.130	0.311	0.000
PNT103	6.973	1.400	0.000
PNT104	7.239	2.396	0.000
PNT105	7.564	4.129	0.000
PNT106	8.008	5.387	-0.000
PNT107	8.563	6.386	0.000
PNT108	9.188	7.168	-0.000
PNT109	9.997	7.907	0.000
PNT110	10.670	8.388	-0.010
PNT111	11.377	8.814	-0.050
PNT112	12.069	9.162	-0.080
PNT113	12.783	9.462	-0.105
PNT114	13.566	9.726	-0.129
PNT115	14.367	9.950	-0.149
PNT116	15.078	10.058	-0.160
PNT117	15.952	10.148	-0.161
PNT118	16.933	10.158	-0.141
PNT119	17.859	10.085	-0.110
PNT120	18.878	9.919	-0.085
PNT121	19.733	9.719	-0.095
PNT122	20.819	9.398	-0.188
PNT123	21.732	9.087	-0.369
PNT124	22.522	8.797	-0.618
PNT125	23.195	8.538	-0.903
PNT126	23.756	8.315	-1.197
PNT127	24.420	8.047	-1.610
PNT128	25.015	7.807	-2.044
PNT129	25.511	7.614	-2.454
PNT130	25.918	7.465	-2.821
PNT131	26.350	7.319	-3.241
PNT132	26.911	7.160	-3.827
PNT133	27.457	7.044	-4.436
PNT134	28.028	6.974	-5.100
PNT135	28.624	6.966	-5.813
PNT136	29.188	7.017	-6.484
PNT137	29.794	7.129	-7.181
PNT138	30.412	7.294	-7.856
PNT139	30.940	7.471	-8.395
PNT140	31.622	7.746	-9.045
PNT141	32.205	8.025	-9.560
PNT142	32.865	8.394	-10.100
PNT143	33.595	8.878	-10.648
PNT144	34.280	9.406	-11.111
PNT145	35.102	10.123	-11.582
PNT146	35.837	10.847	-11.917
PNT147	36.562	11.683	-12.170
PNT148	37.255	12.696	-12.342
PNT149	37.857	13.719	-12.379
PNT150	38.586	14.890	-12.190
PNT151	39.139	15.639	-11.881
PNT152	39.762	16.316	-11.415
PNT153	40.292	16.759	-10.962
PNT154	40.775	17.080	-10.530
PNT155	41.377	17.411	-9.983
PNT156	41.950	17.702	-9.463
PNT157	42.553	18.026	-8.913
PNT158	43.179	18.402	-8.337
PNT159	43.691	18.737	-7.861
PNT160	44.202	19.077	-7.387
PNT161	44.748	19.435	-6.881
PNT162	45.288	19.778	-6.384
PNT163	45.910	20.162	-5.811
PNT164	46.493	20.517	-5.273
PNT165	47.020	20.840	-4.782
PNT166	47.546	21.165	-4.291
PNT167	47.996	21.445	-3.869
PNT168	48.932	22.034	-2.995
PNT169	49.952	22.675	-2.064
PNT170	50.879	23.247	-1.259
PNT171	51.792	23.794	-0.519
PNT172	53.073	24.530	0.416
PNT173	54.068	25.070	1.050
PNT174	55.101	25.600	1.629
PNT175	56.120	26.094	2.134
PNT176	57.264	26.619	2.632
PNT177	58.391	27.114	3.042
PNT178	59.600	27.619	3.378
PNT179	60.743	28.058	3.578
PNT181	63.512	28.751	3.453
PNT182	64.655	28.729	3.158
PNT183	65.974	28.341	2.662
PNT184	67.232	27.542	1.999
PNT185	68.299	26.396	1.227
PNT186	69.116	25.063	0.449
PNT187	69.723	23.767	-0.218
PNT188	70.510	21.890	-0.989
PNT189	71.571	20.175	-1.383
PNT191	76.241	15.644	-0.998
PNT192	78.694	13.331	-0.726
PNT193	80.822	10.653	-0.402
PNT194	81.911	8.757	-0.168
PNT195	82.734	6.857	0.000
PNT196	83.206	5.411	0.000
PNT197	83.549	4.153	0.000
PNT198	83.816	2.988	0.000
PNT199	84.023	1.921	0.000
PNT200	84.277	1.119	-0.000
PNT201	84.941	0.299	0.000
PNT202	85.848	0.000	0.000
PNT203	92.000	0.000	0.000



-1 COOLANT TUBE 13-2
SCALE .125

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

APPROX TUBE LENGTH = 131.0 IN

AR	CAGE CODE	PART OR IDENTIFYING NO	NOMENCLATURE OR DESCRIPTION	MATERIAL	SPECIFICATION	FIND NO
SE123-125	-	-1	COOLANT TUBE 13-2	316L SS 5/16"-.032 WALL	SEE NOTE 4	1

← 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: NATIONAL COMPACT STELLARATOR EXPERIMENT	
XXX DECIMALS ±.005		DEPT: :		VACUUM VESSEL HEATING/COOLING	
ANGLES ±0°15'		PE: :		COOLANT TUBE 13-2	
BREAK SHARP EDGES OR MAX FINISH .125 UNLESS OTHERWISE SPECIFIED		CR: :		DETAIL	
PPPL DRFT		REO: :		VERSION NO. 0	PLANT ORNL
DRAWING APPROVALS		DATE		BLDG 5700	FL 3
REVISION OR ISSUE PURPOSE		BY DATE	CHK DEPT DATE	SHT 1	OF 1
REVISION APPROVAL		PE REG DATE	ORNL DOE DATE	TYPE I	CLASS S
				RELEASE LEVEL Fabrication	SE123-127
					REV 1