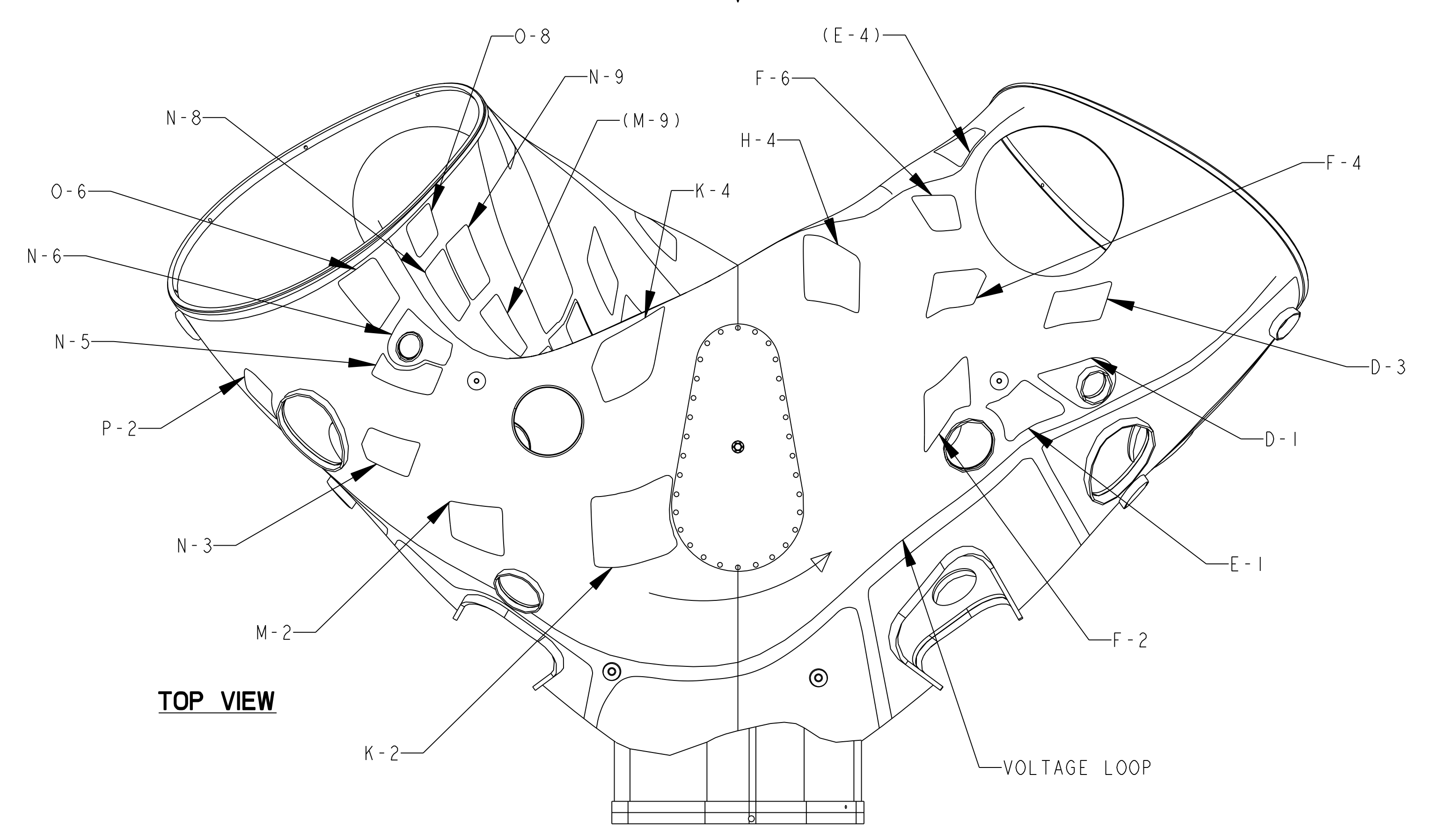


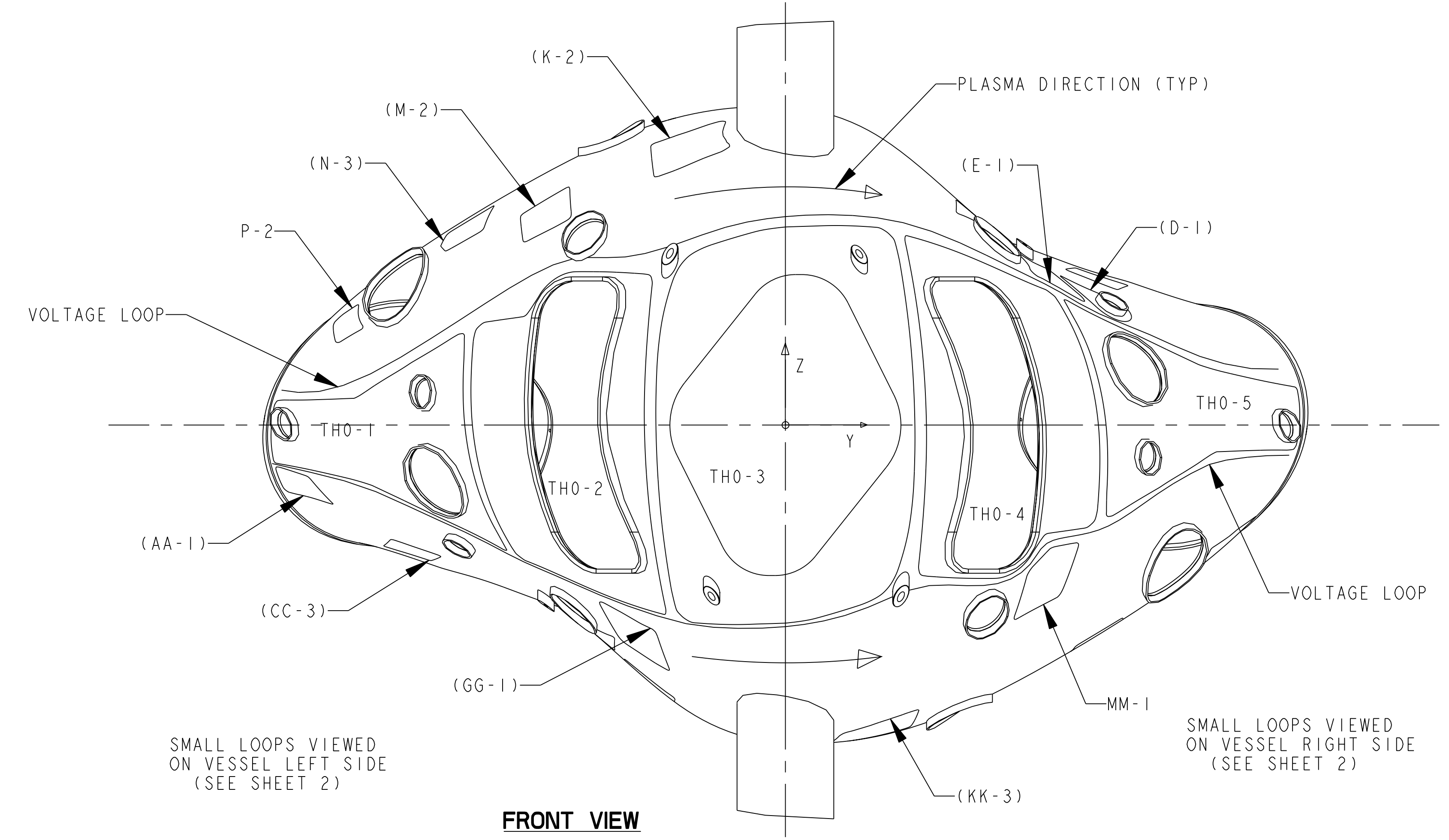
NO.	REVISION	BY	CH	SUP	APPROVED	DATE

NOTES:

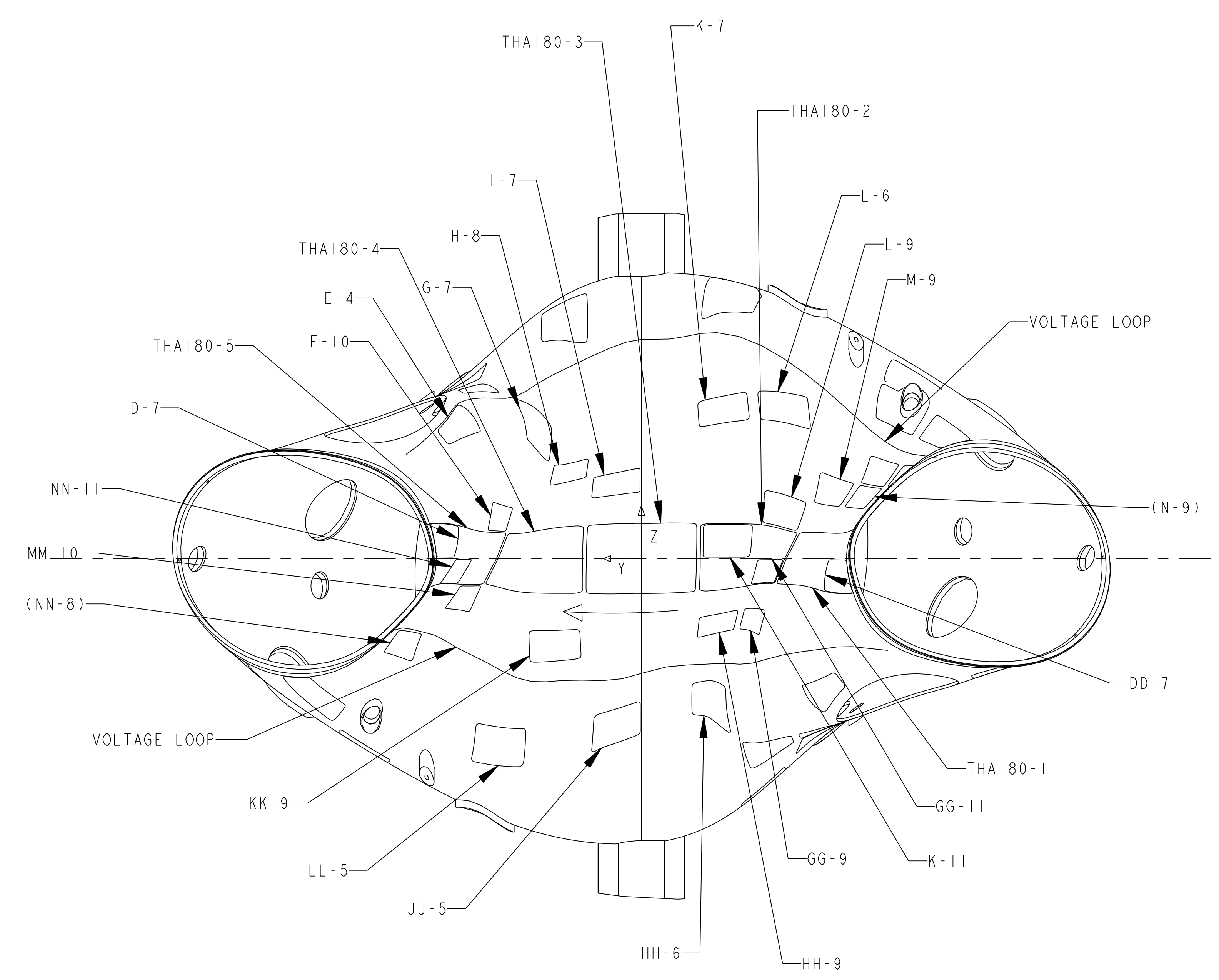
1. DIMENSIONS ARE IN INCHES
2. FABRICATION, INSPECTION AND TESTING SHALL BE PERFORMED IN ACCORDANCE WITH SPECIFICATION NCSX-CSPEC-31-01-00
3. SHEET 3 AND 4 CONTAIN IMPORTED FIGURES WHICH WILL NOT TRANSFER TO AN ADOBE PDF FILE. THESE SHEETS MUST BE PRINTED IN PROE AND HAND STAMPED.
4. GENERAL WIRE CODE IS SHOWN ON SHEET 4



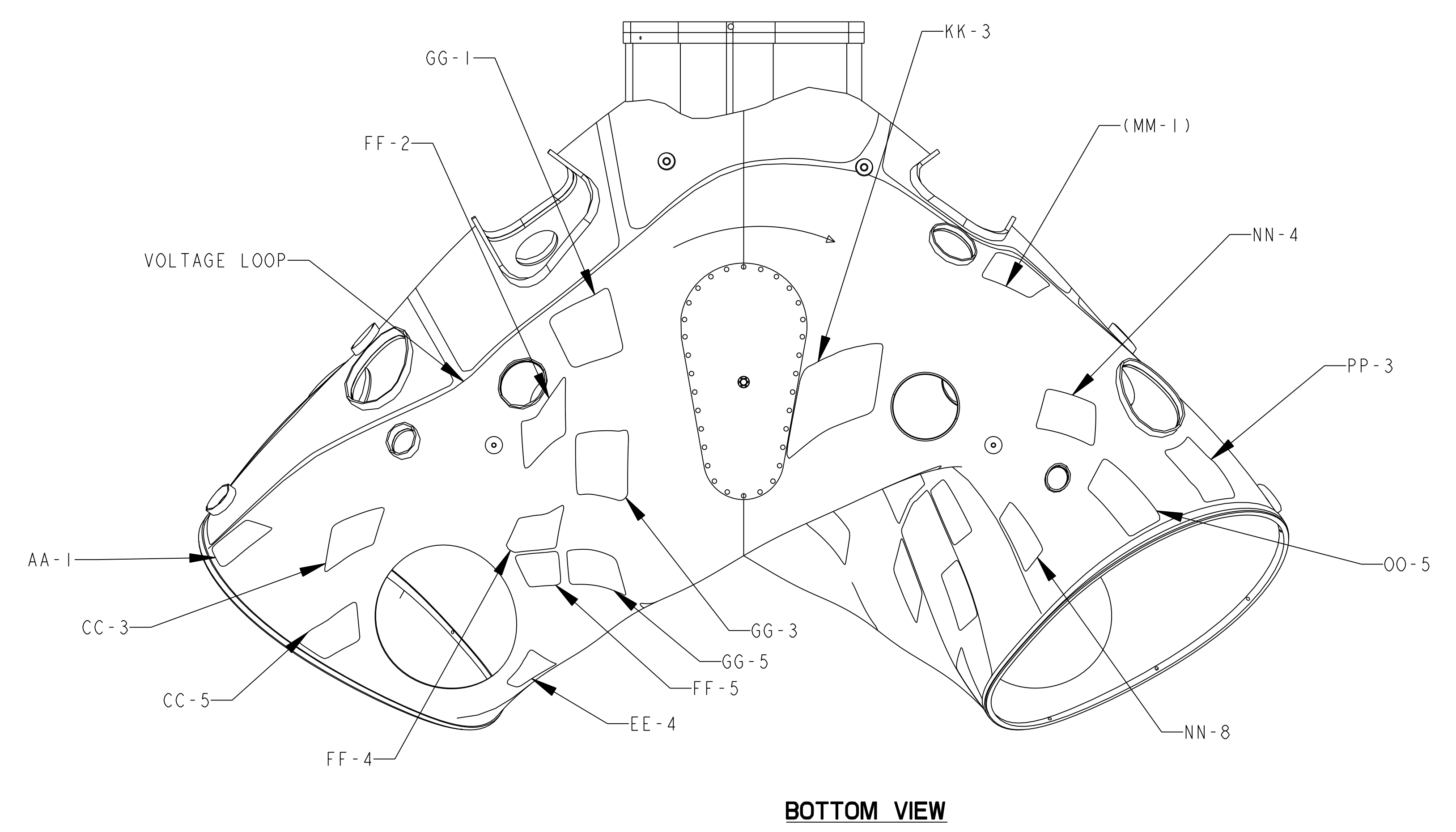
TOP VIEW



FRONT VIEW



BACK VIEW



BOTTOM VIEW

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

RELEASE LEVEL: Fabrication
DWG VERSION NO: 8

WEIGHT	
MODEL NAME	SE310-030-1
WELDING ENGINEER	

COMPUTER GENERATED DRAWING MANUAL CHANGES NOT PERMITTED Pro E	CENTRAL FILES: UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES MACHINE SURFACES BREAK SHARP EDGES .005/.020	PRINCETON PLASMA PHYSICS LABORATORY PRINCETON UNIVERSITY NATIONAL COMPACT STELLARATOR EXPERIMENT	
DO NOT VERIFY INFORMATION BY SCALING DRAWING	TOLERANCES NON-CUMULATIVE DECIMAL-INCH FRACTIONS .XX +/- .000 .XXX +/- .005 ANGULAR +/- .015	DSN: T. BROWN CHK: M. COLE ENGR: G. LABIK SUPV: J. SIEGEL	6-21-06 6-21-06 6-21-06 6-21-06
NEXT ASSEMBLY		VVSAI MAGNETIC LOOP ARRANGEMENT DRAWING DRAWING NO: SE310-030-1 SHEET 1 OF 4 REV 0	

NCSX-SE310-030-1

NO.	REVISION	BY	CH	SUP	APPROVED	DATE
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SMALL LOOPS - LEFT SIDE

SMALL LOOPS - LEFT SIDE (CON)

SMALL LOOPS - RIGHT SIDE

ID	Pt#	X	Y	Z
CC5	1	26.769	-46.822	-15.203
	2	26.601	-50.293	-14.572
	3	30.163	-48.533	-15.116
	4	30.324	-44.896	-16.143
CC3	1	37.588	-46.119	-15.523
	2	39.303	-48.255	-14.214
	3	42.552	-44.860	-14.876
	4	41.519	-42.352	-16.234
AA1	1	38.719	-57.636	-8.808
	2	37.637	-61.559	6.335
	3	40.310	-59.955	-5.585
	4	41.394	-56.234	8.224
GG1	1	60.454	-17.184	-28.015
	2	62.724	-21.569	-23.531
	3	67.376	-18.933	-23.325
	4	65.596	-14.900	-27.519
GG3	1	44.599	-16.202	-31.097
	2	47.861	-19.547	-28.517
	3	52.266	-16.701	-30.702
	4	48.807	-13.489	-33.572
GG5	1	34.091	-16.444	-24.871
	2	36.120	-20.445	-24.397
	3	38.385	-17.589	-26.958
	4	35.292	-14.269	-27.093
L6	1	48.859	-19.805	18.310
	2	48.258	-22.675	19.973
	3	47.342	-18.907	22.520
	4	47.717	-15.950	20.470
L9	1	49.319	-19.251	4.199
	2	47.393	-21.828	5.896
	3	50.100	-19.524	8.584
	4	51.474	-16.537	6.772
N9	1	36.042	-29.046	6.810
	2	34.430	-31.529	8.309
	3	38.678	-31.224	9.620
	4	40.509	-28.432	8.247
N5	1	51.407	-37.511	25.012
	2	48.517	-40.124	22.215
	3	49.373	-36.322	23.785
	4	50.396	-33.291	25.713
N6	1	44.188	-34.930	17.456
	2	45.264	-38.429	19.608
	3	48.952	-36.580	23.302
	4	47.675	-31.971	21.502
P2	1	50.660	-53.010	13.940
	2	50.414	-54.872	11.257
	3	53.586	-52.690	10.948
	4	52.981	-51.886	13.651
HH9	1	47.400	-10.396	-7.526
	2	43.208	-12.869	-8.030
	3	43.579	-10.081	-10.139
	4	47.494	-7.704	-9.267
HH6	1	35.174	-9.330	-16.543
	2	31.722	-11.499	-19.952
	3	32.676	-9.552	-21.808
	4	35.996	-6.830	-18.734
GG11	1	47.532	-17.825	-0.158
	2	43.036	-18.529	-1.818
	3	45.069	-16.461	-3.289
	4	49.441	-15.340	-1.812
GG9	1	40.866	-15.361	-6.771
	2	35.898	-16.547	-7.984
	3	36.594	-14.615	-9.746
	4	41.671	-13.647	-8.119
FF4	1	38.350	-24.252	-23.308
	2	40.336	-26.987	-22.312
	3	42.577	-23.135	-24.517
	4	40.946	-21.454	-25.240
FF5	1	34.206	-23.381	-23.261
	2	35.612	-25.767	-22.637
	3	38.037	-23.988	-23.385
	4	36.193	-21.406	-24.083
F2	1	50.318	-22.875	-25.601
	2	50.668	-25.768	-23.167
	3	55.512	-23.067	-24.760
	4	55.100	-20.765	-26.794
D7	1	23.518	-26.636	-0.202
	2	20.009	-28.036	-2.419
	3	22.040	-26.381	-4.653
	4	25.576	-24.875	-2.364
K2	1	62.910	-12.212	35.501
	2	68.106	-16.195	31.978
	3	70.952	-11.310	31.818
	4	65.548	-7.593	35.353
KK4	1	44.398	-11.747	33.350
	2	49.584	-16.135	35.786
	3	51.510	-11.549	37.723
	4	44.758	-8.568	36.329
KK7	1	48.019	-10.776	18.292
	2	47.541	-14.484	20.306
	3	45.690	-11.739	22.120
	4	46.251	-7.726	19.273

ID	Pt#	X	Y	Z
KK11	1	53.590	-11.256	0.185
	2	52.130	-14.887	2.023
	3	53.124	-12.539	4.607
	4	54.528	-8.378	2.104
M2	1	64.429	-29.175	27.333
	2	66.189	-32.050	23.717
	3	69.289	-28.887	23.604
	4	67.767	-26.118	27.108
M9	1	44.257	-25.009	7.240
	2	41.779	-27.675	8.279
	3	45.894	-26.540	10.850
	4	47.409	-23.787	9.329
N3	1	56.906	-37.824	25.206
	2	57.406	-41.774	21.947
	3	60.501	-38.812	22.468
	4	59.126	-35.896	25.692
N8	1	38.643	-31.540	9.866
	2	37.327	-34.030	11.413
	3	41.453	-33.142	13.220
	4	42.949	-30.349	11.766
O08	1	32.404	-33.900	9.900
	2	32.256	-35.872	11.582
	3	35.339	-36.273	12.570
	4	35.592	-34.323	11.013
O6	1	39.080	-39.018	15.550
	2	37.906	-42.108	15.485
	3	41.710	-43.052	17.376
	4	43.420	-38.931	18.150
EE4	1	23.604	-24.370	-16.247
	2	22.528	-26.756	-16.188
	3	24.706	-26.123	-19.042

ID	Pt#	X	Y	Z
D3	1	40.136	38.780	17.875
	2	41.495	41.078	16.736
	3	44.151	37.114	17.662
	4	42.473	34.669	19.030
D7	1	23.518	26.636	0.202
	2	20.009	28.036	2.419
	3	22.040	26.381	4.653
	4	25.576	24.875	2.364
F4	1	38.350	24.252	23.308
	2	40.336	26.987	22.312
	3	42.577	23.135	24.517
	4	40.946	21.454	25.240
F6	1	29.949	21.473	22.586
	2	31.915	24.553	22.660
	3	33.868	23.347	23.233
	4	31.669	20.188	23.243
F10	1	36.832	19.540	3.727
	2	31.762	20.490	5.344
	3	33.214	18.530	7.129
	4	37.686	17.828	5.507
H4	1	35.416	11.073	29.565
	2	39.052	13.551	30.994
	3	42.116	10.808	34.602
	4	36.833	7.286	32.901
H8	1	43.348	9.937	10.381
	2	38.907	12.191	10.901
	3	39.362	9.615	12.903
	4	43.510	7.347	12.145
KK3	1	52.000	9.109	-38.158
	2	57.934	15.656	-35.935
	3	61.703	11.775	-35.995
	4	54.948	5.932	-38.295
KK9	1	52.360	11.396	-9.734
	2	51.361	15.202	-11.527
	3	50.740	12.496	-13.962
	4	51.725	8.265	-11.397
MM1	1	68.954	30.847	-22.051
	2	68.774	34.854	-16.941
	3	70.759	34.005	-14.531
	4	72.165	28.820	-20.155
MM10	1	42.441	22.892	-3.722
	2	39.540	25.318	-4.976
	3	43.874	24.962	-6.930
	4	45.945	22.411	-5.239
O05	1	42.467	42.920	-17.805
	2	40.924	46.752	-16.112
	3	45.419	46.078	-18.713
	4	47.330	40.961	-21.175
I7	1	51.088	3.166	8.624
	2	48.306	6.647	9.300
	3	48.035	2.528	11.791
	4	50.548	0.190	10.443
JJ5	1	43.026	3.146	-20.295
	2	42.691	6.567	-23.710
	3	39.940	2.283	-24.578
	4	40.367	0.166	-21.060
G7	1	32.148	13.782	14.242
	2	28.915	15.793	18.317
	3	30.256	14.864	20.664
	4	32.554	12.210	16.016
F2	1	50.318	22.875	25.601
	2	50.668	25.768	23.167
	3	55.512	23.067	24.760
	4	55.100	20.765	26.794
E1	1	51.589	30.624	19.507
	2	51.698	33.784	17.438
	3	55.613	32.762	16.945
	4	55.444	29.474	19.493
D1	1	53.275	40.191	12.806
	2	49.643	41.954	13.462
	3	48.716	37.282	16.311
	4	52.204	36.089	15.836
LL5	1	47.393	19.590	-22.784
	2	47.883	22.749	-25.695
	3	46.700	18.946	-28.094
	4	45.737	15.733	-25.108
NN8	1	38.643	31.540	-9.866
	2	37.327	34.030	-11.413
	3	41.453	33.142	-13.220
	4	42.949	30.349	-11.766
NN4	1	51.991	36.900	-25.585
	2	52.671	40.968	-23.603
	3	56.416	38.310	-25.007
	4	54.613	34.565	-27.526
NN11	1	31.962	24.217	-0.134
	2	30.115	26.509	-2.339
	3	34.070	26.211	-3.327
	4	36.318	23.807	-1.599
PP3	1	46.822	51.580	-16.115
	2	44.222	55.231	-12.863
	3	48.457	54.934	-12.663
	4	50.682	50.909	-16.315
E4	1	23.604	24.370	16.247
	2	22.528	26.756	16.188
	3	24.706	26.123	19.042
	4	25.534	22.708	19.128

THETA-180 MAGNETIC LOOP POINTS

ID	Pt#	X	Y	Z
I 1	1	34.922	-25.962	3.412
I 2	2	26.527	-28.358	3.763
I 3	3	43.661	-22.220	3.508
I 4	4	43.122	-19.357	-0.676
I 5	5	21.126	-27.833	0.065
I 6	6	28.648	-22.819	-3.892
I 7	7	36.746	-19.736	-3.509
I 8	8	21.567	-26.704	-4.753
2 1	1	51.926	-15.557	4.619
2 2	2	53.632	-10.732	4.724
2 3	3	48.025	-20.099	3.693
2 4	4	44.307	-19.440	0.079
2 5	5	54.593	-7.959	-0.039
2 6	6	48.372	-14.247	-3.728
2 7	7	51.771	-10.148	-4.304
2 8	8	43.214	-17.216	-3.379
3 1	1	54.593	0.000	4.742
3 2	2	53.711	5.318	4.608
3 3	3	54.524	-5.476	4.796
3 4	4	54.733	-7.454	0.213
3 5	5	54.739	7.456	-0.302
3 6	6	54.593	0.000	-4.742
3 7	7	53.630	-5.620	

NO.	REVISION	BY	CH	SUP	APPROVED	DATE

FOR NOTES SEE SHEET 1

THETA-180 LOOP FLAT PATTERNS

IMPORTED DATA USED IN DRAWING.
MUST PRINT AND HAND STAMP
POR/E DRAWING FILE.

THETA-0 LOOP FLAP PATTERNS

FINAL THETA-PHI PLOT

RELEASE LEVEL: Fabrication
DWG VERSION NO: 8

WEIGHT
MODEL NAME
SE310-030-1
WELDING
ENGINEER

COMPUTER GENERATED DRAWING MANUAL CHANGES NOT PERMITTED Pro E	CENTRAL FILES: UNLESS OTHERWISE SPECIFIED	PRINCETON PLASMA PHYSICS LABORATORY PRINCETON UNIVERSITY NATIONAL COMPACT STELLARATOR EXPERIMENT			
DO NOT VERIFY INFORMATION BY SCALING DRAWING	DIMENSIONS ARE IN INCHES MACHINE SURFACES BREAK SHARP EDGES .005/.020	MANGNETIC LOOP ARRANGEMENT DRAWING			
NEXT ASSEMBLY	TOLERANCES NON-CUMULATIVE DECIMAL-INCH FRACTIONS .X +/- .000 0°-12° +/- .010 .XX +/- .030 12°-72° +/- .010 .XXX +/- .005 72°-120° +/- .010 ANGULAR +/- .0°-15° OVER 120° +/- .1°	DSN: T BROWN	6-21-06	DRAWING NO: SE310-030-1	
		CHK: M. COLE	6-21-06	SHEET 3 OF 4	
		ENGR: G. LABIK	6-21-06	REV 0	
		SUPV: J. SIEGEL	6-21-06		

NCSX-SE310-030-1

NO.	REVISION	BY	CH	SUP	APPROVED	DATE

FOR NOTES SEE SHEET 1

ID	Color Code
AA1	Black-Brown
CC3	Black-Red
CC5	Black-Orange
D1	Black-Yellow
D3	Black-Green
D7	Black-Blue
DD7	Black-Violet
E1	Black-Grey
E4	Black-White
EE4	Brown-Black
F2	Brown-Brown
F4	Brown-Red
F6	Brown-Orange
F10	Brown-Yellow
FF2	Brown-Green
FF4	Brown-Blue
FF5	Brown-Violet
G7	Brown-Grey
GG1	Brown-White
GG3	Red-Black
GG5	Red-Brown
GG9	Red-Red
GG11	Red-Orange
H4	Red-Yellow
H8	Red-Green
HH6	Red-Blue
HH9	Red-Violet
I7	Red-Grey
JJ5	Red-White
K2	Orange-Black
K4	Orange-Brown
K7	Orange-Red
K11	Orange-Orange
KK3	Orange-Yellow
KK9	Orange-Green
L6	Orange-Blue
L9	Orange-Violet
LL5	Orange-Grey
M2	Orange-White
M9	Yellow-Black
MM1	Yellow-Brown
MM10	Yellow-Red
N3	Yellow-Orange
N5	Yellow-Yellow
N6	Yellow-Green
N8	Yellow-Blue
N9	Yellow-Violet
NN4	Yellow-Grey
NN8	Yellow-White
NN11	Green-Black
O6	Green-Brown
O8	Green-Red
OO5	Green-Orange
P2	Green-Yellow
PP3	Green-Green
TH0-1	Green-Blue
TH0-2	Green-Violet
TH0-3	Green-Grey
TH0-4	Green-White
TH0-5	Blue-Black
TH180-1	Blue-Brown
TH180-2	Blue-Red
TH180-3	Blue-Orange
TH180-4	Blue-Yellow
TH180-5	Blue-Green

IMPORTED DATA USED IN
DRAWING. MUST PRINT AND
HAND STAMP POR/E DRAWING

EXTERNAL FLUX LOOPS TWISTED LEAD ROUTING

RELEASE LEVEL: Fabrication
DWG VERSION NO: 8

COMPUTER GENERATED DRAWING MANUAL CHANGES NOT PERMITTED Pro E	CENTRAL FILES:	PRINCETON PLASMA PHYSICS LABORATORY			
	UNLESS OTHERWISE SPECIFIED	NATIONAL COMPACT STELLARATOR EXPERIMENT			
DO NOT VERIFY INFORMATION BY SCALING DRAWING	DIMENSIONS ARE IN INCHES MACHINE SURFACES UNLESS OTHERWISE SPECIFIED	MAGNETIC LOOP ARRANGEMENT DRAWING			
NEXT ASSEMBLY	TOLERANCES NON-CUMULATIVE	DSN: T. BROWN	6-21-06	DRAWING NO:	
	DECIMAL-INCH FRACTIONS	CHK: M. COLE	6-21-06	SE310-030-1	
	.X .XX .XXX ANGULAR .X .XX .XXX	ENGR: G. LABIK	6-21-06	SHEET 4 OF 4	
		SUPV: J. SIEVEL	6-21-06	REV 0	

NCSX-SE310-030-1