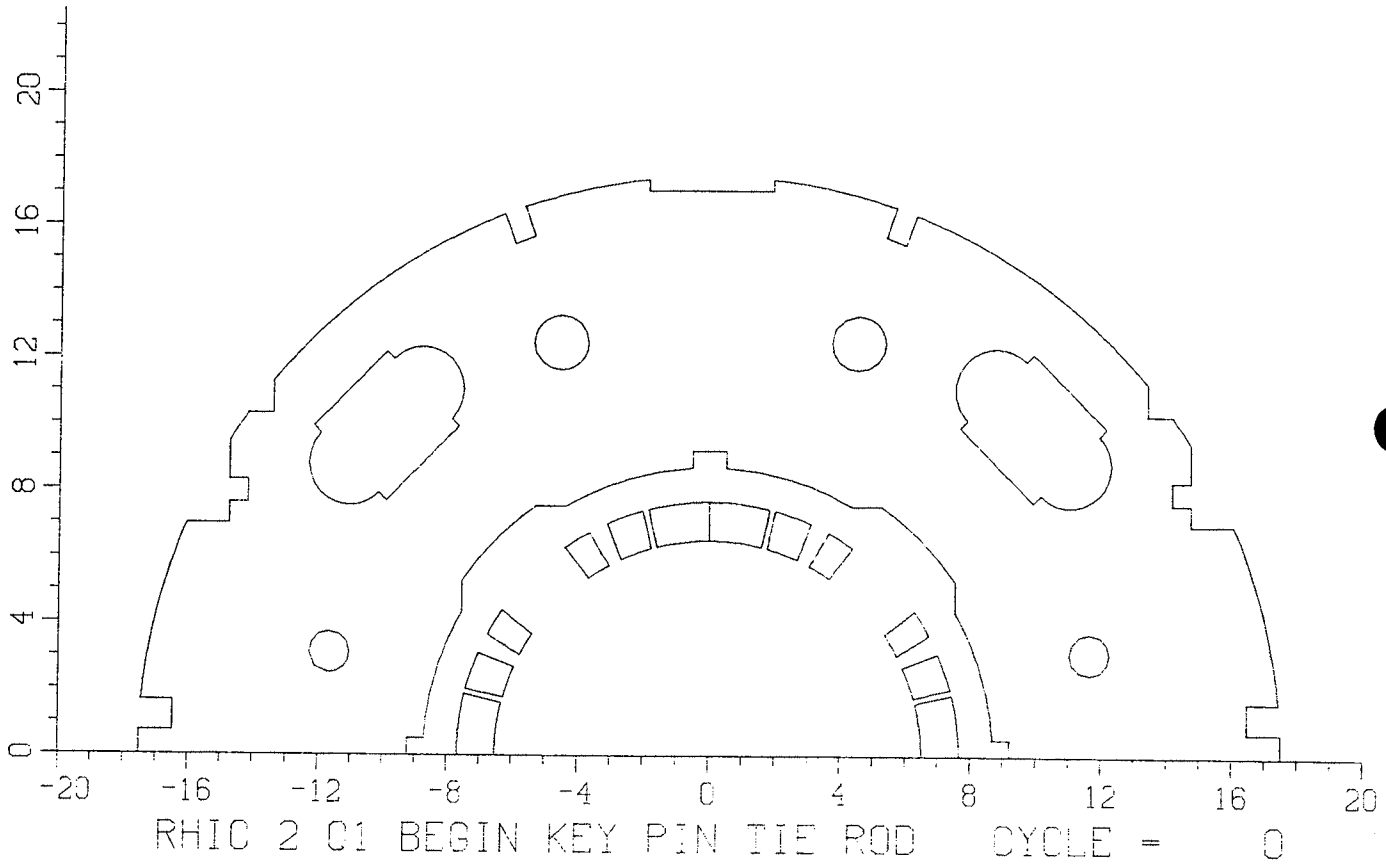

Figure 3: POISSON model of the coil and iron cross section for the present design *(QRI D86F)* of the 130 mm aperture RHIC insertion quadrupoles. The model is made for the case when the two side by side Q1 quadrupoles are at the minimum distance and the two magnets are excited at the same current.

QRI_D86f 8,45,208 mils (midplane,2wedges) 26-FEB-93 11:30:25
file = BNLAD9$DKB300:[GUPTA.Q1]QRI_D86F.D07;1 Run 26-FEB-93 11:30:25
CHISQ= 0.3473 dB/Ellipse= 0.0000 Peak Enhanc= 0.000
TRANSFER FUNCTION= 0.98124 POLE ANGLE= 34.89196 Rfe= 8.700 Rref= 4.000

PARAMETERS	ORIGINAL	FINAL	DIFFERENCE	Face Angles	
1	13.	13.	0.	-0.221	-1.259
2	1.16590	1.16590	0.00000		-0.028
3	8.	8.	0.	-2.469	-3.071
4	3.87720	3.87720	0.00000		10.425
5	6.	6.	0.	2.826	2.404
6	3.07480	3.01435	-0.06045		
7	-3.16613	-2.85087	0.31526		

Allowed primed Harmonics

n	bn-cal	bn-des	n	bn-cal	bn-des
1	10000.000	0.000	21	0.000	0.000
5	-31.375	-30.800	25	0.000	0.000
9	0.823	0.720	29	0.000	0.000
13	-0.002	0.000	33	0.000	0.000
17	-0.081	0.000	37	0.000	0.000

POLE CORNERS

In/out Cal	DESIGN
34.675	0.000
35.076	0.000
0.000	0.000
0.000	0.000
0.000	0.000

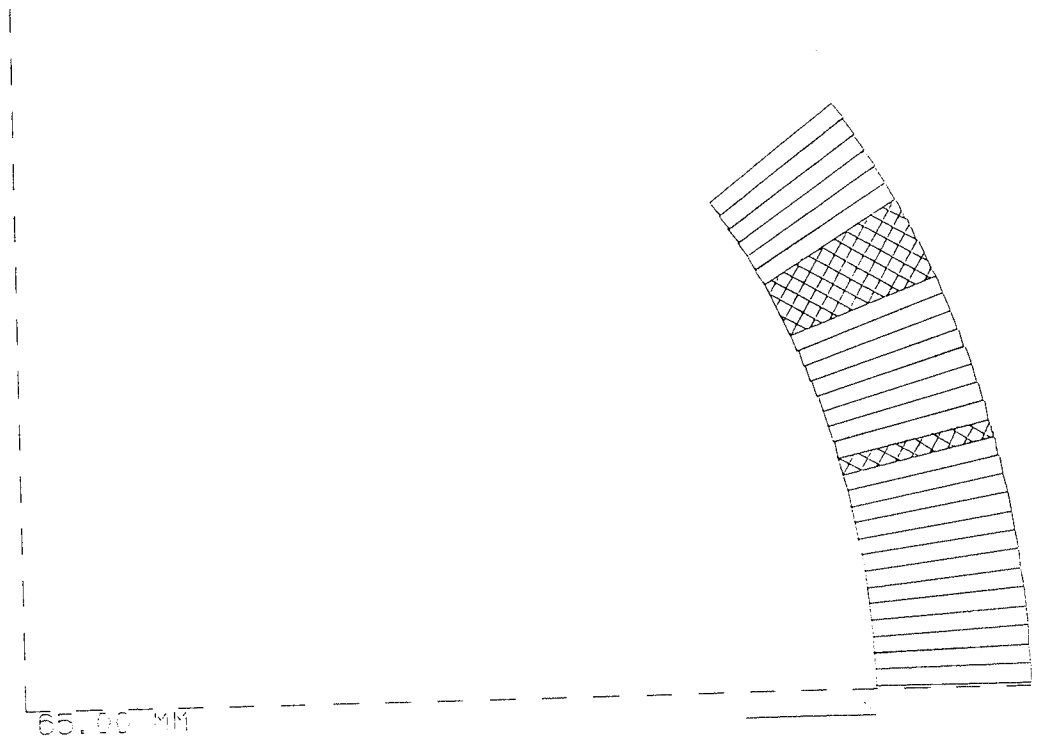

Figure 2: Computer model of the coil cross section for the present design *(QRI D86F)* of the 130 mm aperture RHIC insertion quadrupoles.

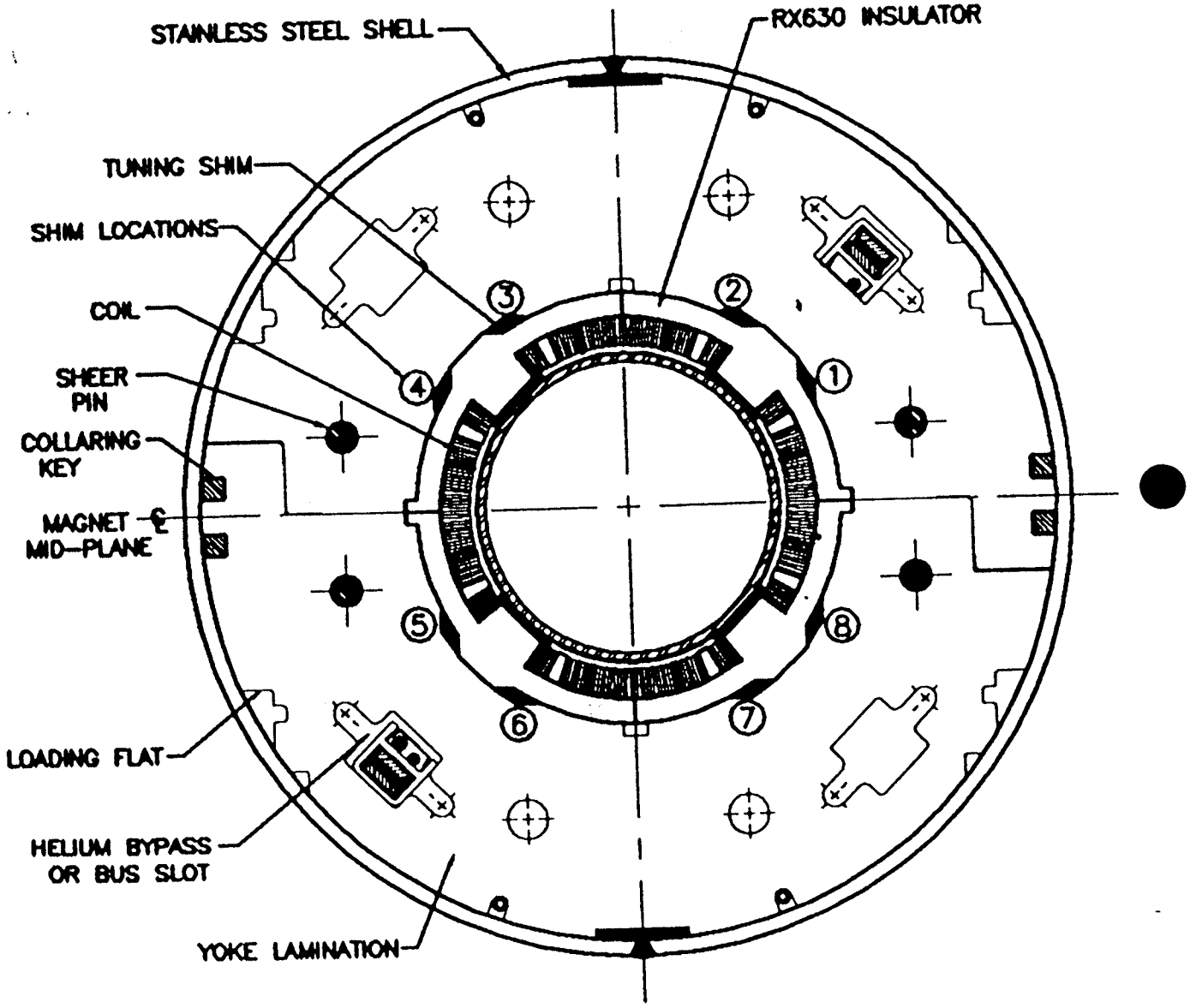

Figure 1: Present cross section *(QRI D86F)* for the 130 mm aperture RHIC insertion quadrupoles.