TS-SSC 90-089

Nov. 21, 1990

Memo to: I. Gonzy

From: W. Koska

Subject: DS0314 Collaring Shims

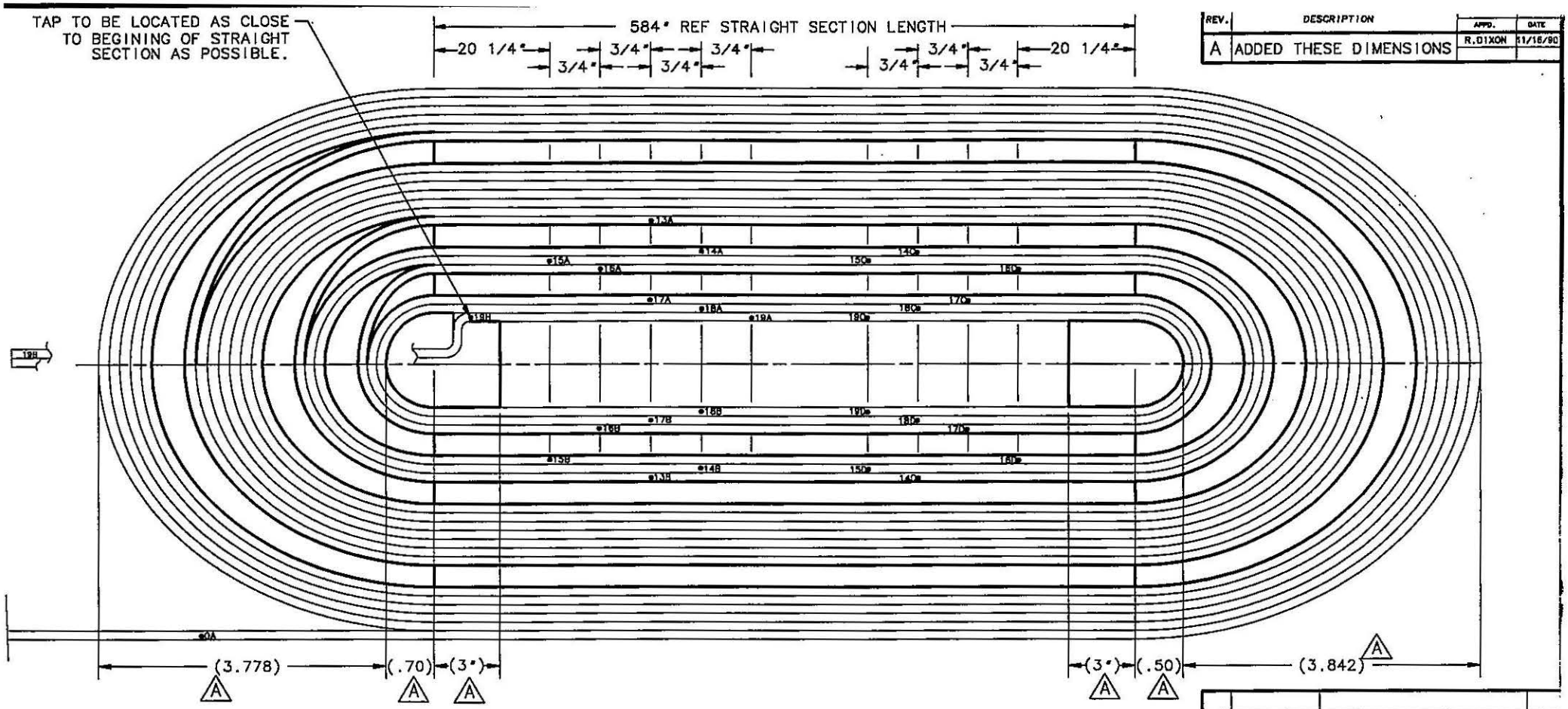
The Kapton pole shims for DS0314 should be 17 mils in the inner coil and no additional shim in the outer coil. These thicknesses include the adhesive and represent the thickness that would be measured with a flat anvil micrometer. The thickness, with and without adhesive, of each of the layers used to make the shim packages should be measured and recorded in the traveller.

The inner and outer coils in DS0314 are, on average, 0.5 mils smaller and 5 mils larger than those used in DS0313, respectively. The shims used in DS0313 were 17 mils on the inner and 6 mils on the outer. The pre-yoking prestress of DS0313 was about 9.8 KPSI and 13.6 KPSI on the inner and outer coils[1], lower than the predicted prestress range of between 10 and 14 KPSI for the inner and higher than the predicted range of 8 to 12 KPSI for the outer coils. Adjustment of the collar cavity "error" in the shim selection program for the outer coils to -1 gave an expected prestress of 11.6 and 14.1 KPSI for the inner and outer coils for a Kapton modulus of 300 KPSI. When these adjustments were made to the program and the coils were input for DS0314, with the above mentioned pole shims, predicted prestresses of 12.2 KPSI were obtained for both the inner and outer coils. This does not seem unreasonable given the results from DS0313. A lower outer coil prestress would be preferable, however we are limited by the actual coil size in this case.

Reference

[1] S. Delchamps, TS-SSC note to be written.

cc: Rodger Bossert
Steve Delchamps
Steve Gourlay
Jim Strait
Masayoshi Wake



REV.	DESCRIPTION	APPD.	DATE
A	ADDED THESE DIMENSIONS	R.DIXON	11/18/90

NOTE:

1. VOLTAGE TAP WIRES FOR TAPS 0A, 19B, AND THE HALF COIL TAP ARE #22 AWG TEFLON INSULATED.
2. THE REMAINING VOLTAGE TAP WIRES ARE #32 AWG TEFLON INSULATED.
3. TAP WIRES WITH THE SAME NUMBER AT EACH END SHOULD FORM A TWISTED PAIR (A-B AND C-D).
4. VOLTAGE TAP WIRE SHOULD FOLLOW THE CABLE TO WHICH THEY ARE SOLDERED UNTIL THEY MEET AND ARE TWISTED WITH THEIR "MATE".
5. COIL AS VIEWED FROM INSIDE.

ITEM	PART NO.	DESCRIPTION OR SIZE	QTY.

PARTS LIST

UNLESS OTHERWISE SPECIFIED			ORIGINATOR	STRAIT/KOSKA	
.XX	.XXX	ANGLES	DRAWN	R.DIXON	10/10/90
±	±	±	CHECKED		
1. BREAK ALL SHARP EDGES .02 MAX.			APPROVED		
2. DO NOT SCALE DRAWING.			USED ON		
3. DIMENSIONS BASED UPON ANSI Y14.5M-1982					
4. MAX. ALL MACH. SURFACES			MATERIAL		

FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

DCA3XX VOLTAGE TAPS INNER COIL

SCALE	FILMED	DRAWING NUMBER	REV.
NONE		0102-MB-263909	A

CREATED WITH I-DEAS 4.1 | USER NAME: SPUD

INCHES 0 1 2 3 4 5 6 METRIC 0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150