NOTES:

1) EACH 1 WATT AMPLIFIER HAS A 15V/1.5A REGULATOR (DWG. 8000-EC-266083). ITS BUS (A 10C/22 AWG CABLE) HAS ON/OFF CONTROL, ON/OFF STATUS, HIGH/LOW VOLTAGE STATUS, AND HIGH/LOW CURRENT STATUS.

2) EACH TWT HAS A 6.3V FILAMENT REGULATOR (DWG. 8000-EC-216702). ITS BUS TO THEIR POWER SUPPLY CONSISTS OF SIX 16 AWG/10KV WIRES AND SIX 20 AWG/300V WIRES COVERED IN SHIELDED ZIPPER TUBING.

3) POWER SENSORS ARE FERMI-MADE. DRAWING #8000-EC-288140. REQUIRED +15V IS FROM TWTPM.

4) EACH TWT AND TWT REGULATOR ARE MOUNTED ON A WATER COOLED COPPER CHILL PLATE (DWG. 2214-MC-187479).

5) TANK FLOW SWITCHES ARE VORTEX TYPE BY UNIVERSAL FLOW MONITORS. INC. COOLPOINT MODEL CP-1/4.

6) TWTPM (TRAVELLING WAVE TUBE PROTECTION MONITOR), DWG. 8000-ED-170660, CABLING TO TWT POWER SUPPLY CONSISTS OF THREE RG58 COAX FOR HELIX VOLTAGE MONITOR, HELIX MODULATION, AND FAULT INTERLOCK, TWO 10C/22 AWG CABLES TY-RAPPED TOGETHER INTO ONE CONNECTOR FOR REMOTE CONTROL/STATUS. THERE ARE ALSO FOUR RG-174 COAX FROM DIODE DETECTORS FOR FORWARD/REVERSE POWER PROTECTION AND TWO RG-108 (TWINAX) FOR CHILL PLATE (OVERTEMP) FAULTS (SEE NOTE 9 ALSO).

7) WATER TURBINE IS ON CEILING IN THE ACCUMULATOR WATER RETURN LINE IN A20/A30 TUNNEL SECTION. IT IS A THERMAL DISPERSION TYPE BY FLUID COMPONENTS INTL , MODEL 12-64B-00A3.

8) EXTERNAL DATA BUS IS A 50C RIBBON CABLE DAISY-CHAINED THRU ALL THE TWTPM's TO TPM.

9) CHILL FAULT COMES FROM A N.O. TEMPERATURE SWITCH BY ELMWOOD SENSORS, INC. (#3100-56-87L194) SET TO CLOSE AT 194 DEGREES FAHRENHEIT, +/-9 DEGREES IF TWT OVERTEMP OCCURS. TWTS ALSO HAVE AN INTERNAL TEMP. SWITCH BY MFG. (TELEDYNE).

10) KICKER ASSEMBLIES CONSISTS OF A TELEDYNE SPDT RF SWITCH (CS32N6E) FOR FANBACK AND A FERMILAB MADE DIRECTIONAL COUPLER/SPLITTER MOUNTED DIRECTLY ON TANK FLANGE. DELTA KICKER ASSEMBLIES (#2, #3, #14, & #16) CONSIST OF A 30DB COUPLER (CA-1386) BY TRIANGLE MICROWAVE, A FERMI-MADE 180 DEGREE HYBRID, AND THE TELEDYNE (CS32N6E) SPDT RF SWITCH. HYBRID IS MOUNTED DIRECTLY TO TANK FLANGE. RF SWITCH TERMINATIONS ARE 50 OHM, 2 WATT.

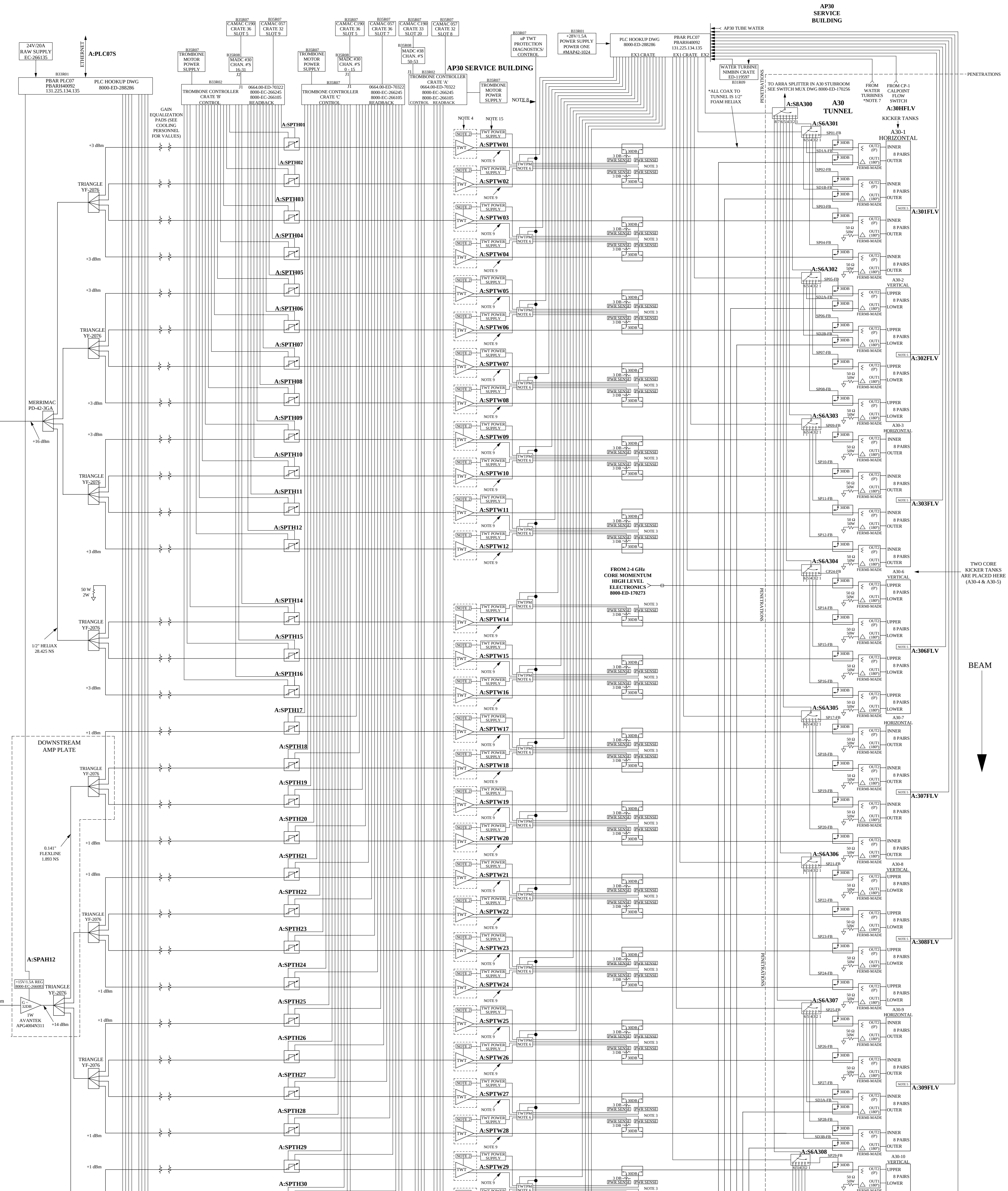
11) ALL COAX FROM SPLITTER ASSEMBLY TO TROMBONES ARE 1/2" HELIAX EXCEPT THE LONGEST FOUR (#13-16) WHICH ARE 7/8".

12) FANBACK SPLITTER ASSEMBLY MOUNTED ON ALUMINUM PLATE UPSIDE-DOWN UNDER CABLE TRAY ABOVE TANK A30-10. ALL SPLITTERS ARE BY TRIANGLE MICROWAVE.

13) SEE HIGH LEVEL SAFETY SYSTEM DWG. 8000-ED-266095 FOR MORE INFO.

14) SEE COOLING PERSONNEL OR COOLING BOOK IN AP10 CONTROL ROOM FOR CURRENT HYBRID ORIENTATION.

15) TWT POWER SUPPLIES ARE EITHER BY VARIAN, MODEL 01009560-00 OR BY LOGIMETRICS, MODEL A610/LS-417



3/30/06

REV.	DESCRIPTION	DRAWN / APPD.	DATE
B	TOTAL SYSTEM REDESIGN REVISED AND REDRAWN	WJM	4/30/92
C	TROMBONES AND SWITCHES ADDED ON DELTA KICKERS	WJM	6/22/95
D	DELTA KICKER CHANGES, FERMI-MADE HYBRIDS & COUPLERS INSTALLED	WJM	8/4/92
E	DELTA KICKER CORRECTIONS	WJM	8/12/92
F	DELTA HYBIRD CHANGE	WJM	9/11/92
G	ADDITION OF DELTA KICKER COMPONENTS TO KICKER #1	WJM	6/13/94
H	CONVERTED TO MINI-CAD	WJM	11/10/95
J	CHANGED TO 2-4GHZ SYSTEM COMPLETELY REDRAWN	WJM	10/27/97
K	REMOVED STDP #13, REPLACED WITH 2-4 GHZ CORE MOMENTUM SIGNAL	WJM	5/9/02
L	AMP A:SPAH11 PUT ON RE-MADE MEDIUM LEVEL PLATE AS A:SPAM08	WJM	3/30/06
M			

ITEM NO.	PART NO.	DESCRIPTION OR SIZE	QTY. REQ.

PARTS LIST

UNLESS OTHERWISE SPECIFIED				
FRACTIONS	DECIMALS	ANGLES	ORIGINATOR	RALPH PASQUINELLI
+/-	+/-	+/-	DRAWN	WES MUELLER 4/16/98
			CHECKED	
			APPROVED	
			USED ON	

1. BREAK ALL SHARP EDGES 1/64 MAX.
2. DO NOT SCALE DRAWING
3. DIMENSIONING IN ACCORD WITH ANSI Y14.5 STDS

MAX. ALL MACHINED SURFACES

MATERIAL-

FERMI NATIONAL ACCELERATOR LABORATORY
UNITED STATES DEPARTMENT OF ENERGY

ANTI-PROTON SOURCE
STACKTAIL MOMENTUM
HIGH LEVEL ELECTRONICS

SCALE | FILMED | DRAWING NUMBER 8000-EE-170266 | REV. L