CDF/DOC/TRACKING/CDFR/4507
Version 1.1
June 20, 2000

COT and XFT Channel Mapping

Jonathan Lewis, Avi Yagil
Fermilab

Kevin Pitts
University of Illinois

Brian Winer
Ohio State University

June 20, 2000

Abstract

This note describes the channel mapping from the COT chamber to the repeater boards; from the repeater boards to the TDCs; and from the TDCs to the XFT Finder boards. The current version reflects the final layout with 10 COT readout crates per side.

1 Introduction

This note describes the mapping from physical COT cells to the repeater cards to the TDCs. For channels that contribute to the XFT, the mapping is continued to the XFT Finders.

2 Overview

The COT has 30,240 channels; 16,128 in four axial superlayers and 14,112 in four stereo superlayers [1]. A 24 channel Amplifier/Shaper/Discriminator (ASDQ) board, which contains three 8 channel ASDQs per board is located on the chamber endplate. Drift cells have 12 wires. Each ASD board handles two drift cells. A total of 315 TDC modules are distributed across 24 VME crates which are mounted on the corners of the endwalls. One TDC board reads out eight cells. In Table 1 the number of cells, ASD boards and TDC modules is given for each superlayer.

3 Cell Zero

The coordinate system used here is the normal CDF coordinate system, where the x-axis points out of the ring and the z-axis points east (at B0). Cell zero for each superlayer is defined as the cell which the positive x-axis passes through the midpoint. (Due to the construction of the wire planes, the x-axis does not pass through the exact middle of the cells. The cells are offset vertically by about 100 mils.) Cells are then counted around ϕ within each superlayer.

Table 1: For each superlayer, the total number of TDC modules is given. Numbers in parentheses are the number of modules required for the "split-wire" upgrade.

Layer	# cells	ASD boards	TDC modules
1	168	84	21(42)
2	192	96	24(48)
3	240	120	30
4	288	144	36
5	336	168	42
6	384	192	48
7	432	216	54
8	480	240	60

4 COT channel mapping

There are 10 TDC crates per side (E/W) located on the endwalls of the detector. Each crate holds 16-17 96 channel TDC modules. The crates on the east endwall handle superlayers 1, 4, 5, and 8; the crates on the west endwall handle superlayers 2, 3, 6, and 7.

The mapping from each COT cell to TDC is given in Tables 3 and 4. Eight contiguous cells from a single superlayer are mapped into each 96 channel TDC. For all superlayers, cell 0 is defined to be the cell which crosses detector $\phi = 0$ at its midpoint. (Normal CDF coordinate system, $\phi = 0$ points north.) Cells are then counted around in increasing ϕ.

Within a cell the wires are mapped 0-11 from the inner radius outward. For example, East endwall crate 0 (see Table 3) will handle cells 0-7 in superlayer 1 as shown in the following table:

Table 2: Mapping from 8 contiguous COT cells to a single TDC. Wires 0-11 count from the inner to the outer radius of each cell. The cell numbers are in increasing ϕ.

cell	wires	TDC channels
0	0-11	0-11
1	0-11	12-23
2	0-11	24-35
3	0-11	36-47
4	0-11	48-59
5	0-11	60-71
6	0-11	72-83
7	0-11	84-95

Axial superlayers also require Ansley cables for information to be transmitted from the TDC mezzanine card to the XFT. Two Ansley cables are required for each 96 channel TDC. The slots with Ansleys are shown in Tables 3, and 4. The Ansley number listed is the first of the pair of Ansleys (*e.g.* "0" denotes cables 0 and 1) in the numbering scheme used for the XFT (see section 6.)

Slot	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Crate 08			CONWB-2																		
Layer	C	7	7	7	7	7	7	6	6	6	6	6	3	3	3	2	2	(1)	(1)	Z	T
Cell	P	368	360	352	344	336	328	312	304	296	288	280	200	192	184	148	140	136	128	Z	R
Cable	U	1092	1090	1088	1086	1084	1082	198	196	194	192	190				37	35			Z	C
Crate 09			CONWB-1																		
Layer	C	7	7	7	7	7	6	6	6	6	6	3	3	3	2	2	2	(1)	(1)	Z	T
Cell	P	408	400	392	384	376	352	344	336	328	320	224	216	208	172	164	156	152	144	Z	R
Cable	U	1102	1100	1098	1096	1094	208	206	204	202	200				43	41	39			Z	C
Crate 00			CONWT-3																		
Layer	C	7	7	7	6	6	6	6	6	6	3	3	3	2	2	2	(1)	(1)	Z	Z	T
Cell	P	0	424	416	16	8	0	376	368	360	8	0	232	4	188	180	0	160	Z	Z	R
Cable	U	1000	1106	1104	124	122	120	214	212	210				1	47	45			Z	Z	C
Crate 01			CONWT-2																		
Layer	C	7	7	7	7	7	7	7	6	6	6	6	3	3	3	2	2	(1)	(1)	Z	T
Cell	P	56	48	40	32	24	16	8	48	40	32	24	32	24	16	20	12	16	8	Z	R
Cable	U	1014	1012	1010	1008	1006	1004	1002	132	130	128	126				5	3			Z	C
Crate 02			CONWT-1																		
Layer	C	7	7	7	7	7	7	6	6	6	6	3	3	3	2	2	(1)	(1)	(1)	Z	T
Cell	P	104	96	88	80	72	64	80	72	64	56	56	48	40	36	28	40	32	24	Z	R
Cable	U	1026	1024	1022	1020	1018	1016	140	138	136	134				9	7				Z	C
Crate 03			COSWT-1																		
Layer	C	T	Z	Z	(1)	(1)	2	2	3	3	3	6	6	6	6	7	7	7	7	7	7
Cell	P	R	Z	Z	56	48	52	44	80	72	64	112	104	96	88	152	144	136	128	120	112
Cable	U	C	Z	Z			13	11				148	146	144	142	1038	1036	1034	1032	1030	1028
Crate 04			COSWT-2																		
Layer	C	T	Z	(1)	(1)	2	2	3	3	3	6	6	6	6	7	7	7	7	7	7	7
Cell	P	R	Z	72	64	68	60	104	96	88	144	136	128	120	208	200	192	184	176	168	160
Cable	U	C	Z			17	15				156	154	152	150	1052	1050	1048	1046	1044	1042	1040
Crate 05			COSWT-3																		
Layer	C	T	Z	Z	(1)	(1)	2	2	2	3	3	3	6	6	6	6	6	6	7	7	7
Cell	P	R	Z	Z	88	80	92	84	76	128	120	112	192	184	176	168	160	152	232	224	216
Cable	U	C	Z	Z			23	21	19				168	166	164	162	160	158	1058	1056	1054
Crate 06			COSWB-1																		
Layer	C	T	Z	(1)	(1)	2	2	2	3	3	3	6	6	6	6	6	7	7	7	7	7
Cell	P	R	Z	104	96	116	108	100	152	144	136	232	224	216	208	200	272	264	256	248	240
Cable	U	C	Z			29	27	25				178	176	174	172	170	1068	1066	1064	1062	1060
Crate 07			COSWB-2																		
Layer	C	T	Z	(1)	(1)	2	2	3	3	3	6	6	6	6	6	7	7	7	7	7	7
Cell	P	R	Z	120	112	132	124	176	168	160	272	264	256	248	240	320	312	304	296	288	280
Cable	U	C	Z			33	31				188	186	184	182	180	1080	1078	1076	1074	1072	1070

Table 3: **West endwall COT crates.** The map is given from each COT superlayer and range of eight contiguous cells to the TDC crate and slot (*e.g.* superlayer 7, cells 360-367 map to west endwall crate 08, slot 3.) Superlayer 1 (in parentheses) only applies in the case of the split wire upgrade. The row labelled "Cable" denotes the first number of each pair of Ansley cables numbered in the XFT numbering system.

Slot	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Crate 18			CONEB-2																		
Layer	C	(2)	(2)	8	8	8	8	8	8	5	5	5	5	5	4	4	4	4	1	1	T
Cell	P	148	140	396	388	380	372	364	356	288	280	272	264	256	236	228	220	212	136	128	R
Cable	U	937	935	315	313	311	309	307	305						107	105	103	101			C
Crate 19			CONEB-1																		
Layer	C	(2)	(2)	(2)	8	8	8	8	8	8	8	5	5	5	4	4	4	4	1	1	T
Cell	P	172	164	156	452	444	436	428	420	412	404	312	304	296	268	260	252	244	152	144	R
Cable	U	943	941	939	329	327	325	323	321	319	317				115	113	111	109			C
Crate 10			CONET-3																		
Layer	C	(2)	(2)	(2)	8	8	8	8	8	8	8	5	5	5	4	4	4	4	1	1	T
Cell	P	4	188	180	28	20	12	4	476	468	460	0	328	320	12	4	284	276	0	160	R
Cable	U	901	947	945	223	221	219	217	335	333	331				51	49	119	117			C
Crate 11			CONET-2																		
Layer	C	(2)	(2)	8	8	8	8	8	5	5	5	5	5	4	4	4	1	1	Z	Z	T
Cell	P	20	12	68	60	52	44	36	40	32	24	16	8	36	28	20	16	8	Z	Z	R
Cable	U	905	903	233	231	229	227	225						57	55	53			Z	Z	C
Crate 12			CONET-1																		
Layer	C	(2)	(2)	8	8	8	8	8	5	5	5	5	5	4	4	4	1	1	1	Z	T
Cell	P	36	28	108	100	92	84	76	80	72	64	56	48	60	52	44	40	32	24	Z	R
Cable	U	909	907	243	241	239	237	235						63	61	59				Z	C
Crate 13			COSET-1																		
Layer	C	T	Z	Z	1	1	4	4	4	5	5	5	5	5	8	8	8	8	8	(2)	(2)
Cell	P	R	Z	Z	56	48	84	76	68	120	112	104	96	88	148	140	132	124	116	52	44
Cable	U	C	Z	Z			69	67	65						253	251	249	247	245	913	911
Crate 14			COSET-2																		
Layer	C	T	Z	Z	1	1	4	4	4	5	5	5	5	5	8	8	8	8	8	(2)	(2)
Cell	P	R	Z	Z	72	64	108	100	92	160	152	144	136	128	188	180	172	164	156	68	60
Cable	U	C	Z	Z			75	73	71						263	261	259	257	255	917	915
Crate 15			COSET-3																		
Layer	C	T	1	1	4	4	4	4	5	5	5	8	8	8	8	8	8	8	(2)	(2)	(2)
Cell	P	R	88	80	140	132	124	116	184	176	168	244	236	228	220	212	204	196	92	84	76
Cable	U	C			83	81	79	77				277	275	273	271	269	267	265	923	921	919
Crate 16			COSEB-1																		
Layer	C	T	1	1	4	4	4	4	5	5	5	8	8	8	8	8	8	8	(2)	(2)	(2)
Cell	P	R	104	96	172	164	156	148	208	200	192	300	292	284	276	268	260	252	116	108	100
Cable	U	C			91	89	87	85				291	289	287	285	283	281	279	929	927	925
Crate 17			COSEB-2																		
Layer	C	T	1	1	4	4	4	4	5	5	5	5	5	8	8	8	8	8	8	(2)	(2)
Cell	P	R	120	112	204	196	188	180	248	240	232	224	216	348	340	332	324	316	308	132	124
Cable	U	C			99	97	95	93						303	301	299	297	295	293	933	931

Table 4: **East endwall COT crates.** The map is given from each COT superlayer and range of eight contiguous cells to the TDC crate and slot (*e.g.* superlayer 8, cells 388-395 map to east endwall crate 18, slot 5.) Superlayer 2 (in parentheses) only applies in the case of the split wire upgrade. The row labelled "Cable" denotes the first number of each pair of Ansley cables numbered in the XFT numbering system.

5 COT → Repeater → TDC Map

The following maps include the entire COT readout chain from the chamber to the repeater boards to the TDCs. The information contained in the previous section is actually a subset of the information presented in this section.

There are 20 maps, one per TDC crate. The columns in the map are defined as follows:

SL	superlayer (runs 1-8)
E/W	East/West
cell	1^{st} cell served by ASDQ+cable
cell+1	2^{nd} cell (of two) served by ASDQ+cable
cell ϕ	azimuthal angle of 1^{st} cell
slot	30° slot number
slot ϕ	azimuthal angle of 30° slot
repeater	repeater board number
repeater ϕ	azimuthal angle of repeater board
crate	TDC crate number (counting 0-19)
slot	TDC slot within TDC VME crate
conn	TDC input connector (0-3 count from bottom)
crate	TDC crate identification (corner + top/bottom + 1-3)

SL	E/W	cell	cell+1	cell ϕ	slot	slot ϕ	repeater	repeater ϕ	crate	slot	conn	crate
1	E	88	89	202	77	203	420	214	15	3	0	SET3
1	E	90	91	202	77	203	421	214	15	3	1	SET3
1	E	92	93	202	77	203	422	214	15	3	2	SET3
1	E	94	95	202	77	203	423	214	15	3	3	SET3
1	E	80	81	185	73	192	400	187	15	4	0	SET3
1	E	82	83	185	73	192	401	187	15	4	1	SET3
1	E	84	85	185	73	192	402	187	15	4	2	SET3
1	E	86	87	185	73	192	403	187	15	4	3	SET3
4	E	140	141	179	72	167	376	178	15	5	0	SET3
4	E	142	143	179	72	167	377	178	15	5	1	SET3
4	E	144	145	179	72	167	378	178	15	5	2	SET3
4	E	146	147	179	72	167	379	178	15	5	3	SET3
4	E	132	133	169	72	167	372	176	15	6	0	SET3
4	E	134	135	169	72	167	373	176	15	6	1	SET3
4	E	136	137	169	72	167	374	176	15	6	2	SET3
4	E	138	139	169	72	167	375	176	15	6	3	SET3
4	E	124	125	159	70	160	360	172	15	7	0	SET3
4	E	126	127	159	70	160	361	172	15	7	1	SET3
4	E	128	129	159	70	160	362	172	15	7	2	SET3
4	E	130	131	159	70	160	363	172	15	7	3	SET3
4	E	116	117	149	64	149	340	144	15	8	0	SET3
4	E	118	119	149	64	149	341	144	15	8	1	SET3
4	E	120	121	149	64	149	342	144	15	8	2	SET3
4	E	122	123	149	64	149	343	144	15	8	3	SET3
5	E	184	185	204	77	203	404	188	15	9	0	SET3
5	E	186	187	204	77	203	405	188	15	9	1	SET3
5	E	188	189	204	77	203	406	188	15	9	2	SET3
5	E	190	191	204	77	203	407	188	15	9	3	SET3
5	E	176	177	195	74	197	396	185	15	10	0	SET3
5	E	178	179	195	74	197	397	185	15	10	1	SET3
5	E	180	181	195	74	197	398	185	15	10	2	SET3
5	E	182	183	195	74	197	399	185	15	10	3	SET3
5	E	168	169	186	73	192	392	184	15	11	0	SET3
5	E	170	171	186	73	192	393	184	15	11	1	SET3
5	E	172	173	186	73	192	394	184	15	11	2	SET3
5	E	174	175	186	73	192	395	184	15	11	3	SET3
8	E	244	245	185	73	192	388	182	15	12	0	SET3
8	E	246	247	185	73	192	389	182	15	12	1	SET3
8	E	248	249	185	73	192	390	182	15	12	2	SET3
8	E	250	251	185	73	192	391	182	15	12	3	SET3
8	E	236	237	179	72	167	368	175	15	13	0	SET3
8	E	238	239	179	72	167	369	175	15	13	1	SET3
8	E	240	241	179	72	167	370	175	15	13	2	SET3
8	E	242	243	179	72	167	371	175	15	13	3	SET3
8	E	228	229	173	71	162	364	173	15	14	0	SET3
8	E	230	231	173	71	162	365	173	15	14	1	SET3
8	E	232	233	173	71	162	366	173	15	14	2	SET3
8	E	234	235	173	71	162	367	173	15	14	3	SET3
8	E	220	221	167	71	162	356	171	15	15	0	SET3
8	E	222	223	167	71	162	357	171	15	15	1	SET3
8	E	224	225	167	71	162	358	171	15	15	2	SET3
8	E	226	227	167	71	162	359	171	15	15	3	SET3
8	E	212	213	161	71	162	352	169	15	16	0	SET3
8	E	214	215	161	71	162	353	169	15	16	1	SET3
8	E	216	217	161	71	162	354	169	15	16	2	SET3
8	E	218	219	161	71	162	355	169	15	16	3	SET3
8	E	204	205	155	68	156	328	140	15	17	0	SET3
8	E	206	207	155	68	156	329	140	15	17	1	SET3
8	E	208	209	155	68	156	330	140	15	17	2	SET3
8	E	210	211	155	68	156	331	140	15	17	3	SET3
8	E	196	197	149	61	143	320	137	15	18	0	SET3
8	E	198	199	149	61	143	321	137	15	18	1	SET3
8	E	200	201	149	61	143	322	137	15	18	2	SET3
8	E	202	203	149	61	143	323	137	15	18	3	SET3

Table 5: **SouthEast Top 3 endwall COT map.**

SL	E/W	cell	cell+1	cell ϕ	slot	slot ϕ	repeater	repeater ϕ	crate	slot	conn	crate
1	E	72	73	168	70	160	348	168	14	5	0	SET2
1	E	74	75	168	70	160	349	168	14	5	1	SET2
1	E	76	77	168	70	160	350	168	14	5	2	SET2
1	E	78	79	168	70	160	351	168	14	5	3	SET2
1	E	64	65	151	64	149	324	139	14	6	0	SET2
1	E	66	67	151	64	149	325	139	14	6	1	SET2
1	E	68	69	151	64	149	326	139	14	6	2	SET2
1	E	70	71	151	64	149	327	139	14	6	3	SET2
4	E	108	109	139	58	137	316	136	14	7	0	SET2
4	E	110	111	139	58	137	317	136	14	7	1	SET2
4	E	112	113	139	58	137	318	136	14	7	2	SET2
4	E	114	115	139	58	137	319	136	14	7	3	SET2
4	E	100	101	129	57	132	308	133	14	8	0	SET2
4	E	102	103	129	57	132	309	133	14	8	1	SET2
4	E	104	105	129	57	132	310	133	14	8	2	SET2
4	E	106	107	129	57	132	311	133	14	8	3	SET2
4	E	92	93	119	50	119	300	130	14	9	0	SET2
4	E	94	95	119	50	119	301	130	14	9	1	SET2
4	E	96	97	119	50	119	302	130	14	9	2	SET2
4	E	98	99	119	50	119	303	130	14	9	3	SET2
5	E	160	161	178	70	160	344	166	14	10	0	SET2
5	E	162	163	178	70	160	345	166	14	10	1	SET2
5	E	164	165	178	70	160	346	166	14	10	2	SET2
5	E	166	167	178	70	160	347	166	14	10	3	SET2
5	E	152	153	169	68	156	336	143	14	11	0	SET2
5	E	154	155	169	68	156	337	143	14	11	1	SET2
5	E	156	157	169	68	156	338	143	14	11	2	SET2
5	E	158	159	169	68	156	339	143	14	11	3	SET2
5	E	144	145	161	68	156	332	141	14	12	0	SET2
5	E	146	147	161	68	156	333	141	14	12	1	SET2
5	E	148	149	161	68	156	334	141	14	12	2	SET2
5	E	150	151	161	68	156	335	141	14	12	3	SET2
5	E	136	137	152	64	149	312	134	14	13	0	SET2
5	E	138	139	152	64	149	313	134	14	13	1	SET2
5	E	140	141	152	64	149	314	134	14	13	2	SET2
5	E	142	143	152	64	149	315	134	14	13	3	SET2
5	E	128	129	144	61	143	304	131	14	14	0	SET2
5	E	130	131	144	61	143	305	131	14	14	1	SET2
5	E	132	133	144	61	143	306	131	14	14	2	SET2
5	E	134	135	144	61	143	307	131	14	14	3	SET2
8	E	188	189	143	61	143	296	128	14	15	0	SET2
8	E	190	191	143	61	143	297	128	14	15	1	SET2
8	E	192	193	143	61	143	298	128	14	15	2	SET2
8	E	194	195	143	61	143	299	128	14	15	3	SET2
8	E	180	181	137	58	137	292	127	14	16	0	SET2
8	E	182	183	137	58	137	293	127	14	16	1	SET2
8	E	184	185	137	58	137	294	127	14	16	2	SET2
8	E	186	187	137	58	137	295	127	14	16	3	SET2
8	E	172	173	131	57	132	288	125	14	17	0	SET2
8	E	174	175	131	57	132	289	125	14	17	1	SET2
8	E	176	177	131	57	132	290	125	14	17	2	SET2
8	E	178	179	131	57	132	291	125	14	17	3	SET2
8	E	164	165	125	54	126	276	121	14	18	0	SET2
8	E	166	167	125	54	126	277	121	14	18	1	SET2
8	E	168	169	125	54	126	278	121	14	18	2	SET2
8	E	170	171	125	54	126	279	121	14	18	3	SET2
8	E	156	157	119	47	113	272	119	14	19	0	SET2
8	E	158	159	119	47	113	273	119	14	19	1	SET2
8	E	160	161	119	47	113	274	119	14	19	2	SET2
8	E	162	163	119	47	113	275	119	14	19	3	SET2

Table 6: **SouthEast Top 2 endwall COT map.**

SL	E/W	cell	cell+1	cell ϕ	slot	slot ϕ	repeater	repeater ϕ	crate	slot	conn	crate
1	E	56	57	133	57	132	284	124	13	5	0	SET1
1	E	58	59	133	57	132	285	124	13	5	1	SET1
1	E	60	61	133	57	132	286	124	13	5	2	SET1
1	E	62	63	133	57	132	287	124	13	5	3	SET1
1	E	48	49	116	50	119	268	118	13	6	0	SET1
1	E	50	51	116	50	119	269	118	13	6	1	SET1
1	E	52	53	116	50	119	270	118	13	6	2	SET1
1	E	54	55	116	50	119	271	118	13	6	3	SET1
4	E	84	85	109	44	107	264	117	13	7	0	SET1
4	E	86	87	109	44	107	265	117	13	7	1	SET1
4	E	88	89	109	44	107	266	117	13	7	2	SET1
4	E	90	91	109	44	107	267	117	13	7	3	SET1
4	E	76	77	99	43	102	248	111	13	8	0	SET1
4	E	78	79	99	43	102	249	111	13	8	1	SET1
4	E	80	81	99	43	102	250	111	13	8	2	SET1
4	E	82	83	99	43	102	251	111	13	8	3	SET1
4	E	68	69	89	35	87	212	97	13	9	0	SET1
4	E	70	71	89	35	87	213	97	13	9	1	SET1
4	E	72	73	89	35	87	214	97	13	9	2	SET1
4	E	74	75	89	35	87	215	97	13	9	3	SET1
5	E	120	121	135	58	137	280	122	13	10	0	SET1
5	E	122	123	135	58	137	281	122	13	10	1	SET1
5	E	124	125	135	58	137	282	122	13	10	2	SET1
5	E	126	127	135	58	137	283	122	13	10	3	SET1
5	E	112	113	126	54	126	260	115	13	11	0	SET1
5	E	114	115	126	54	126	261	115	13	11	1	SET1
5	E	116	117	126	54	126	262	115	13	11	2	SET1
5	E	118	119	126	54	126	263	115	13	11	3	SET1
5	E	104	105	118	50	119	244	109	13	12	0	SET1
5	E	106	107	118	50	119	245	109	13	12	1	SET1
5	E	108	109	118	50	119	246	109	13	12	2	SET1
5	E	110	111	118	50	119	247	109	13	12	3	SET1
5	E	96	97	109	44	107	240	108	13	13	0	SET1
5	E	98	99	109	44	107	241	108	13	13	1	SET1
5	E	100	101	109	44	107	242	108	13	13	2	SET1
5	E	102	103	109	44	107	243	108	13	13	3	SET1
5	E	88	89	101	43	102	232	105	13	14	0	SET1
5	E	90	91	101	43	102	233	105	13	14	1	SET1
5	E	92	93	101	43	102	234	105	13	14	2	SET1
5	E	94	95	101	43	102	235	105	13	14	3	SET1
8	E	148	149	113	47	113	228	103	13	15	0	SET1
8	E	150	151	113	47	113	229	103	13	15	1	SET1
8	E	152	153	113	47	113	230	103	13	15	2	SET1
8	E	154	155	113	47	113	231	103	13	15	3	SET1
8	E	140	141	107	44	107	224	102	13	16	0	SET1
8	E	142	143	107	44	107	225	102	13	16	1	SET1
8	E	144	145	107	44	107	226	102	13	16	2	SET1
8	E	146	147	107	44	107	227	102	13	16	3	SET1
8	E	132	133	101	40	96	208	96	13	17	0	SET1
8	E	134	135	101	40	96	209	96	13	17	1	SET1
8	E	136	137	101	40	96	210	96	13	17	2	SET1
8	E	138	139	101	40	96	211	96	13	17	3	SET1
8	E	124	125	95	40	96	204	94	13	18	0	SET1
8	E	126	127	95	40	96	205	94	13	18	1	SET1
8	E	128	129	95	40	96	206	94	13	18	2	SET1
8	E	130	131	95	40	96	207	94	13	18	3	SET1
8	E	116	117	89	35	87	192	90	13	19	0	SET1
8	E	118	119	89	35	87	193	90	13	19	1	SET1
8	E	120	121	89	35	87	194	90	13	19	2	SET1
8	E	122	123	89	35	87	195	90	13	19	3	SET1

Table 7: **SouthEast Top 1 endwall COT map.**

SL	E/W	cell	cell+1	cell ϕ	slot	slot ϕ	repeater	repeater ϕ	crate	slot	conn	crate
1	E	120	121	271	110	272	568	269	17	3	0	SEB2
1	E	122	123	271	110	272	569	269	17	3	1	SEB2
1	E	124	125	271	110	272	570	269	17	3	2	SEB2
1	E	126	127	271	110	272	571	269	17	3	3	SEB2
1	E	112	113	253	101	252	544	260	17	4	0	SEB2
1	E	114	115	253	101	252	545	260	17	4	1	SEB2
1	E	116	117	253	101	252	546	260	17	4	2	SEB2
1	E	118	119	253	101	252	547	260	17	4	3	SEB2
4	E	204	205	259	102	257	564	267	17	5	0	SEB2
4	E	206	207	259	102	257	565	267	17	5	1	SEB2
4	E	208	209	259	102	257	566	267	17	5	2	SEB2
4	E	210	211	259	102	257	567	267	17	5	3	SEB2
4	E	196	197	249	101	252	540	258	17	6	0	SEB2
4	E	198	199	249	101	252	541	258	17	6	1	SEB2
4	E	200	201	249	101	252	542	258	17	6	2	SEB2
4	E	202	203	249	101	252	543	258	17	6	3	SEB2
4	E	188	189	239	96	242	524	252	17	7	0	SEB2
4	E	190	191	239	96	242	525	252	17	7	1	SEB2
4	E	192	193	239	96	242	526	252	17	7	2	SEB2
4	E	194	195	239	96	242	527	252	17	7	3	SEB2
4	E	180	181	229	88	227	480	236	17	8	0	SEB2
4	E	182	183	229	88	227	481	236	17	8	1	SEB2
4	E	184	185	229	88	227	482	236	17	8	2	SEB2
4	E	186	187	229	88	227	483	236	17	8	3	SEB2
5	E	248	249	272	110	272	560	266	17	9	0	SEB2
5	E	250	251	272	110	272	561	266	17	9	1	SEB2
5	E	252	253	272	110	272	562	266	17	9	2	SEB2
5	E	254	255	272	110	272	563	266	17	9	3	SEB2
5	E	240	241	264	105	263	536	257	17	10	0	SEB2
5	E	242	243	264	105	263	537	257	17	10	1	SEB2
5	E	244	245	264	105	263	538	257	17	10	2	SEB2
5	E	246	247	264	105	263	539	257	17	10	3	SEB2
5	E	232	233	255	102	257	532	255	17	11	0	SEB2
5	E	234	235	255	102	257	533	255	17	11	1	SEB2
5	E	236	237	255	102	257	534	255	17	11	2	SEB2
5	E	238	239	255	102	257	535	255	17	11	3	SEB2
5	E	224	225	246	98	246	520	251	17	12	0	SEB2
5	E	226	227	246	98	246	521	251	17	12	1	SEB2
5	E	228	229	246	98	246	522	251	17	12	2	SEB2
5	E	230	231	246	98	246	523	251	17	12	3	SEB2
5	E	216	217	238	96	242	516	249	17	13	0	SEB2
5	E	218	219	238	96	242	517	249	17	13	1	SEB2
5	E	220	221	238	96	242	518	249	17	13	2	SEB2
5	E	222	223	238	96	242	519	249	17	13	3	SEB2
8	E	348	349	263	105	263	512	248	17	14	0	SEB2
8	E	350	351	263	105	263	513	248	17	14	1	SEB2
8	E	352	353	263	105	263	514	248	17	14	2	SEB2
8	E	354	355	263	105	263	515	248	17	14	3	SEB2
8	E	340	341	257	102	257	508	247	17	15	0	SEB2
8	E	342	343	257	102	257	509	247	17	15	1	SEB2
8	E	344	345	257	102	257	510	247	17	15	2	SEB2
8	E	346	347	257	102	257	511	247	17	15	3	SEB2
8	E	332	333	251	101	252	504	245	17	16	0	SEB2
8	E	334	335	251	101	252	505	245	17	16	1	SEB2
8	E	336	337	251	101	252	506	245	17	16	2	SEB2
8	E	338	339	251	101	252	507	245	17	16	3	SEB2
8	E	324	325	245	98	246	500	244	17	17	0	SEB2
8	E	326	327	245	98	246	501	244	17	17	1	SEB2
8	E	328	329	245	98	246	502	244	17	17	2	SEB2
8	E	330	331	245	98	246	503	244	17	17	3	SEB2
8	E	316	317	239	96	242	496	242	17	18	0	SEB2
8	E	318	319	239	96	242	497	242	17	18	1	SEB2
8	E	320	321	239	96	242	498	242	17	18	2	SEB2
8	E	322	323	239	96	242	499	242	17	18	3	SEB2
8	E	308	309	233	91	233	476	235	17	19	0	SEB2
8	E	310	311	233	91	233	477	235	17	19	1	SEB2
8	E	312	313	233	91	233	478	235	17	19	2	SEB2
8	E	314	315	233	91	233	479	235	17	19	3	SEB2

Table 8: **SouthEast Bottom 2 endwall COT map.**

SL	E/W	cell	cell+1	cell ϕ	slot	slot ϕ	repeater	repeater ϕ	crate	slot	conn	crate
1	E	104	105	236	91	233	472	233	16	3	0	SEB1
1	E	106	107	236	91	233	473	233	16	3	1	SEB1
1	E	108	109	236	91	233	474	233	16	3	2	SEB1
1	E	110	111	236	91	233	475	233	16	3	3	SEB1
1	E	96	97	219	87	222	468	232	16	4	0	SEB1
1	E	98	99	219	87	222	469	232	16	4	1	SEB1
1	E	100	101	219	87	222	470	232	16	4	2	SEB1
1	E	102	103	219	87	222	471	232	16	4	3	SEB1
4	E	172	173	219	87	222	464	230	16	5	0	SEB1
4	E	174	175	219	87	222	465	230	16	5	1	SEB1
4	E	176	177	219	87	222	466	230	16	5	2	SEB1
4	E	178	179	219	87	222	467	230	16	5	3	SEB1
4	E	164	165	209	82	212	444	223	16	6	0	SEB1
4	E	166	167	209	82	212	445	223	16	6	1	SEB1
4	E	168	169	209	82	212	446	223	16	6	2	SEB1
4	E	170	171	209	82	212	447	223	16	6	3	SEB1
4	E	156	157	199	75	199	416	193	16	7	0	SEB1
4	E	158	159	199	75	199	417	193	16	7	1	SEB1
4	E	160	161	199	75	199	418	193	16	7	2	SEB1
4	E	162	163	199	75	199	419	193	16	7	3	SEB1
4	E	148	149	189	75	199	412	191	16	8	0	SEB1
4	E	150	151	189	75	199	413	191	16	8	1	SEB1
4	E	152	153	189	75	199	414	191	16	8	2	SEB1
4	E	154	155	189	75	199	415	191	16	8	3	SEB1
5	E	208	209	229	88	227	460	229	16	9	0	SEB1
5	E	210	211	229	88	227	461	229	16	9	1	SEB1
5	E	212	213	229	88	227	462	229	16	9	2	SEB1
5	E	214	215	229	88	227	463	229	16	9	3	SEB1
5	E	200	201	221	87	222	456	227	16	10	0	SEB1
5	E	202	203	221	87	222	457	227	16	10	1	SEB1
5	E	204	205	221	87	222	458	227	16	10	2	SEB1
5	E	206	207	221	87	222	459	227	16	10	3	SEB1
5	E	192	193	212	82	212	452	226	16	11	0	SEB1
5	E	194	195	212	82	212	453	226	16	11	1	SEB1
5	E	196	197	212	82	212	454	226	16	11	2	SEB1
5	E	198	199	212	82	212	455	226	16	11	3	SEB1
8	E	300	301	227	88	227	448	225	16	12	0	SEB1
8	E	302	303	227	88	227	449	225	16	12	1	SEB1
8	E	304	305	227	88	227	450	225	16	12	2	SEB1
8	E	306	307	227	88	227	451	225	16	12	3	SEB1
8	E	292	293	221	84	216	440	222	16	13	0	SEB1
8	E	294	295	221	84	216	441	222	16	13	1	SEB1
8	E	296	297	221	84	216	442	222	16	13	2	SEB1
8	E	298	299	221	84	216	443	222	16	13	3	SEB1
8	E	284	285	215	84	216	436	220	16	14	0	SEB1
8	E	286	287	215	84	216	437	220	16	14	1	SEB1
8	E	288	289	215	84	216	438	220	16	14	2	SEB1
8	E	290	291	215	84	216	439	220	16	14	3	SEB1
8	E	276	277	209	84	216	432	219	16	15	0	SEB1
8	E	278	279	209	84	216	433	219	16	15	1	SEB1
8	E	280	281	209	84	216	434	219	16	15	2	SEB1
8	E	282	283	209	84	216	435	219	16	15	3	SEB1
8	E	268	269	203	82	212	428	217	16	16	0	SEB1
8	E	270	271	203	82	212	429	217	16	16	1	SEB1
8	E	272	273	203	82	212	430	217	16	16	2	SEB1
8	E	274	275	203	82	212	431	217	16	16	3	SEB1
8	E	260	261	197	77	203	424	216	16	17	0	SEB1
8	E	262	263	197	77	203	425	216	16	17	1	SEB1
8	E	264	265	197	77	203	426	216	16	17	2	SEB1
8	E	266	267	197	77	203	427	216	16	17	3	SEB1
8	E	252	253	191	75	199	408	190	16	18	0	SEB1
8	E	254	255	191	75	199	409	190	16	18	1	SEB1
8	E	256	257	191	75	199	410	190	16	18	2	SEB1
8	E	258	259	191	75	199	411	190	16	18	3	SEB1

Table 9: **SouthEast Bottom 1 endwall COT map.**

SL	E/W	cell	cell+1	cell ϕ	slot	slot ϕ	repeater	repeater ϕ	crate	slot	conn	crate
8	E	28	29	23	5	23	36	13	10	5	0	NET3
8	E	30	31	23	5	23	37	13	10	5	1	NET3
8	E	32	33	23	5	23	38	13	10	5	2	NET3
8	E	34	35	23	5	23	39	13	10	5	3	NET3
8	E	20	21	17	3	19	32	11	10	6	0	NET3
8	E	22	23	17	3	19	33	11	10	6	1	NET3
8	E	24	25	17	3	19	34	11	10	6	2	NET3
8	E	26	27	17	3	19	35	11	10	6	3	NET3
8	E	12	13	11	2	17	28	10	10	7	0	NET3
8	E	14	15	11	2	17	29	10	10	7	1	NET3
8	E	16	17	11	2	17	30	10	10	7	2	NET3
8	E	18	19	11	2	17	31	10	10	7	3	NET3
8	E	4	5	5	2	17	20	7	10	8	0	NET3
8	E	6	7	5	2	17	21	7	10	8	1	NET3
8	E	8	9	5	2	17	22	7	10	8	2	NET3
8	E	10	11	5	2	17	23	7	10	8	3	NET3
8	E	476	477	359	143	342	732	349	10	9	0	NET3
8	E	478	479	359	143	342	733	349	10	9	1	NET3
8	E	0	1	359	143	342	734	349	10	9	2	NET3
8	E	2	3	359	143	342	735	349	10	9	3	NET3
8	E	468	469	353	143	342	744	353	10	10	0	NET3
8	E	470	471	353	143	342	745	353	10	10	1	NET3
8	E	472	473	353	143	342	746	353	10	10	2	NET3
8	E	474	475	353	143	342	747	353	10	10	3	NET3
8	E	460	461	347	140	336	720	324	10	11	0	NET3
8	E	462	463	347	140	336	721	324	10	11	1	NET3
8	E	464	465	347	140	336	722	324	10	11	2	NET3
8	E	466	467	347	140	336	723	324	10	11	3	NET3
5	E	0	1	6	2	17	16	5	10	12	0	NET3
5	E	2	3	6	2	17	17	5	10	12	1	NET3
5	E	4	5	6	2	17	18	5	10	12	2	NET3
5	E	6	7	6	2	17	19	5	10	12	3	NET3
5	E	328	329	358	1	12	12	4	10	13	0	NET3
5	E	330	331	358	1	12	13	4	10	13	1	NET3
5	E	332	333	358	1	12	14	4	10	13	2	NET3
5	E	334	335	358	1	12	15	4	10	13	3	NET3
5	E	320	321	349	143	342	752	356	10	14	0	NET3
5	E	322	323	349	143	342	753	356	10	14	1	NET3
5	E	324	325	349	143	342	754	356	10	14	2	NET3
5	E	326	327	349	143	342	755	356	10	14	3	NET3
4	E	12	13	19	3	19	24	8	10	15	0	NET3
4	E	14	15	19	3	19	25	8	10	15	1	NET3
4	E	16	17	19	3	19	26	8	10	15	2	NET3
4	E	18	19	19	3	19	27	8	10	15	3	NET3
4	E	4	5	9	1	12	4	1	10	16	0	NET3
4	E	6	7	9	1	12	5	1	10	16	1	NET3
4	E	8	9	9	1	12	6	1	10	16	2	NET3
4	E	10	11	9	1	12	7	1	10	16	3	NET3
4	E	284	285	359	144	347	756	358	10	17	0	NET3
4	E	286	287	359	144	347	757	358	10	17	1	NET3
4	E	0	1	359	144	347	758	358	10	17	2	NET3
4	E	2	3	359	144	347	759	358	10	17	3	NET3
4	E	276	277	349	144	347	748	355	10	18	0	NET3
4	E	278	279	349	144	347	749	355	10	18	1	NET3
4	E	280	281	349	144	347	750	355	10	18	2	NET3
4	E	282	283	349	144	347	751	355	10	18	3	NET3
1	E	0	1	13	1	12	8	2	10	19	0	NET3
1	E	2	3	13	1	12	9	2	10	19	1	NET3
1	E	4	5	13	1	12	10	2	10	19	2	NET3
1	E	6	7	13	1	12	11	2	10	19	3	NET3
1	E	160	161	356	144	347	740	352	10	20	0	NET3
1	E	162	163	356	144	347	741	352	10	20	1	NET3
1	E	164	165	356	144	347	742	352	10	20	2	NET3
1	E	166	167	356	144	347	743	352	10	20	3	NET3

Table 10: **NorthEast Top 3 endwall COT map.**

SL	E/W	cell	cell+1	cell ϕ	slot	slot ϕ	repeater	repeater ϕ	crate	slot	conn	crate
8	E	68	69	53	19	53	96	55	11	4	0	NET2
8	E	70	71	53	19	53	97	55	11	4	1	NET2
8	E	72	73	53	19	53	98	55	11	4	2	NET2
8	E	74	75	53	19	53	99	55	11	4	3	NET2
8	E	60	61	47	19	53	92	53	11	5	0	NET2
8	E	62	63	47	19	53	93	53	11	5	1	NET2
8	E	64	65	47	19	53	94	53	11	5	2	NET2
8	E	66	67	47	19	53	95	53	11	5	3	NET2
8	E	52	53	41	15	42	88	52	11	6	0	NET2
8	E	54	55	41	15	42	89	52	11	6	1	NET2
8	E	56	57	41	15	42	90	52	11	6	2	NET2
8	E	58	59	41	15	42	91	52	11	6	3	NET2
8	E	44	45	35	11	34	84	50	11	7	0	NET2
8	E	46	47	35	11	34	85	50	11	7	1	NET2
8	E	48	49	35	11	34	86	50	11	7	2	NET2
8	E	50	51	35	11	34	87	50	11	7	3	NET2
8	E	36	37	29	8	29	68	45	11	8	0	NET2
8	E	38	39	29	8	29	69	45	11	8	1	NET2
8	E	40	41	29	8	29	70	45	11	8	2	NET2
8	E	42	43	29	8	29	71	45	11	8	3	NET2
5	E	40	41	49	16	47	80	49	11	9	0	NET2
5	E	42	43	49	16	47	81	49	11	9	1	NET2
5	E	44	45	49	16	47	82	49	11	9	2	NET2
5	E	46	47	49	16	47	83	49	11	9	3	NET2
5	E	32	33	41	15	42	76	47	11	10	0	NET2
5	E	34	35	41	15	42	77	47	11	10	1	NET2
5	E	36	37	41	15	42	78	47	11	10	2	NET2
5	E	38	39	41	15	42	79	47	11	10	3	NET2
5	E	24	25	32	11	34	72	46	11	11	0	NET2
5	E	26	27	32	11	34	73	46	11	11	1	NET2
5	E	28	29	32	11	34	74	46	11	11	2	NET2
5	E	30	31	32	11	34	75	46	11	11	3	NET2
5	E	16	17	24	5	23	48	37	11	12	0	NET2
5	E	18	19	24	5	23	49	37	11	12	1	NET2
5	E	20	21	24	5	23	50	37	11	12	2	NET2
5	E	22	23	24	5	23	51	37	11	12	3	NET2
5	E	8	9	15	3	19	40	34	11	13	0	NET2
5	E	10	11	15	3	19	41	34	11	13	1	NET2
5	E	12	13	15	3	19	42	34	11	13	2	NET2
5	E	14	15	15	3	19	43	34	11	13	3	NET2
4	E	36	37	49	16	47	64	43	11	14	0	NET2
4	E	38	39	49	16	47	65	43	11	14	1	NET2
4	E	40	41	49	16	47	66	43	11	14	2	NET2
4	E	42	43	49	16	47	67	43	11	14	3	NET2
4	E	28	29	39	15	42	60	42	11	15	0	NET2
4	E	30	31	39	15	42	61	42	11	15	1	NET2
4	E	32	33	39	15	42	62	42	11	15	2	NET2
4	E	34	35	39	15	42	63	42	11	15	3	NET2
4	E	20	21	29	8	29	56	40	11	16	0	NET2
4	E	22	23	29	8	29	57	40	11	16	1	NET2
4	E	24	25	29	8	29	58	40	11	16	2	NET2
4	E	26	27	29	8	29	59	40	11	16	3	NET2
1	E	16	17	48	16	47	52	39	11	17	0	NET2
1	E	18	19	48	16	47	53	39	11	17	1	NET2
1	E	20	21	48	16	47	54	39	11	17	2	NET2
1	E	22	23	48	16	47	55	39	11	17	3	NET2
1	E	8	9	31	8	29	44	36	11	18	0	NET2
1	E	10	11	31	8	29	45	36	11	18	1	NET2
1	E	12	13	31	8	29	46	36	11	18	2	NET2
1	E	14	15	31	8	29	47	36	11	18	3	NET2

Table 11: **NorthEast Top 2 endwall COT map.**

SL	E/W	cell	cell+1	cell ϕ	slot	slot ϕ	repeater	repeater ϕ	crate	slot	conn	crate
8	E	108	109	83	33	83	180	86	12	4	0	NET1
8	E	110	111	83	33	83	181	86	12	4	1	NET1
8	E	112	113	83	33	83	182	86	12	4	2	NET1
8	E	114	115	83	33	83	183	86	12	4	3	NET1
8	E	100	101	77	30	77	176	84	12	5	0	NET1
8	E	102	103	77	30	77	177	84	12	5	1	NET1
8	E	104	105	77	30	77	178	84	12	5	2	NET1
8	E	106	107	77	30	77	179	84	12	5	3	NET1
8	E	92	93	71	29	72	172	83	12	6	0	NET1
8	E	94	95	71	29	72	173	83	12	6	1	NET1
8	E	96	97	71	29	72	174	83	12	6	2	NET1
8	E	98	99	71	29	72	175	83	12	6	3	NET1
8	E	84	85	65	29	72	160	78	12	7	0	NET1
8	E	86	87	65	29	72	161	78	12	7	1	NET1
8	E	88	89	65	29	72	162	78	12	7	2	NET1
8	E	90	91	65	29	72	163	78	12	7	3	NET1
8	E	76	77	59	22	59	152	75	12	8	0	NET1
8	E	78	79	59	22	59	153	75	12	8	1	NET1
8	E	80	81	59	22	59	154	75	12	8	2	NET1
8	E	82	83	59	22	59	155	75	12	8	3	NET1
5	E	80	81	92	40	96	168	81	12	9	0	NET1
5	E	82	83	92	40	96	169	81	12	9	1	NET1
5	E	84	85	92	40	96	170	81	12	9	2	NET1
5	E	86	87	92	40	96	171	81	12	9	3	NET1
5	E	72	73	84	33	83	156	77	12	10	0	NET1
5	E	74	75	84	33	83	157	77	12	10	1	NET1
5	E	76	77	84	33	83	158	77	12	10	2	NET1
5	E	78	79	84	33	83	159	77	12	10	3	NET1
5	E	64	65	75	30	77	148	74	12	11	0	NET1
5	E	66	67	75	30	77	149	74	12	11	1	NET1
5	E	68	69	75	30	77	150	74	12	11	2	NET1
5	E	70	71	75	30	77	151	74	12	11	3	NET1
5	E	56	57	66	26	66	132	68	12	12	0	NET1
5	E	58	59	66	26	66	133	68	12	12	1	NET1
5	E	60	61	66	26	66	134	68	12	12	2	NET1
5	E	62	63	66	26	66	135	68	12	12	3	NET1
5	E	48	49	58	22	59	120	64	12	13	0	NET1
5	E	50	51	58	22	59	121	64	12	13	1	NET1
5	E	52	53	58	22	59	122	64	12	13	2	NET1
5	E	54	55	58	22	59	123	64	12	13	3	NET1
4	E	60	61	79	30	77	128	67	12	14	0	NET1
4	E	62	63	79	30	77	129	67	12	14	1	NET1
4	E	64	65	79	30	77	130	67	12	14	2	NET1
4	E	66	67	79	30	77	131	67	12	14	3	NET1
4	E	52	53	69	26	66	116	62	12	15	0	NET1
4	E	54	55	69	26	66	117	62	12	15	1	NET1
4	E	56	57	69	26	66	118	62	12	15	2	NET1
4	E	58	59	69	26	66	119	62	12	15	3	NET1
4	E	44	45	59	22	59	108	59	12	16	0	NET1
4	E	46	47	59	22	59	109	59	12	16	1	NET1
4	E	48	49	59	22	59	110	59	12	16	2	NET1
4	E	50	51	59	22	59	111	59	12	16	3	NET1
1	E	40	41	99	43	102	188	89	12	17	0	NET1
1	E	42	43	99	43	102	189	89	12	17	1	NET1
1	E	44	45	99	43	102	190	89	12	17	2	NET1
1	E	46	47	99	43	102	191	89	12	17	3	NET1
1	E	32	33	82	33	83	144	72	12	18	0	NET1
1	E	34	35	82	33	83	145	72	12	18	1	NET1
1	E	36	37	82	33	83	146	72	12	18	2	NET1
1	E	38	39	82	33	83	147	72	12	18	3	NET1
1	E	24	25	65	26	66	104	58	12	19	0	NET1
1	E	26	27	65	26	66	105	58	12	19	1	NET1
1	E	28	29	65	26	66	106	58	12	19	2	NET1
1	E	30	31	65	26	66	107	58	12	19	3	NET1

Table 12: **NorthEast Top 1 endwall COT map.**

SL	E/W	cell	cell+1	cell ϕ	slot	slot ϕ	repeater	repeater ϕ	crate	slot	conn	crate
8	E	396	397	299	120	295	664	304	18	4	0	NEB2
8	E	398	399	299	120	295	665	304	18	4	1	NEB2
8	E	400	401	299	120	295	666	304	18	4	2	NEB2
8	E	402	403	299	120	295	667	304	18	4	3	NEB2
8	E	388	389	293	115	282	620	288	18	5	0	NEB2
8	E	390	391	293	115	282	621	288	18	5	1	NEB2
8	E	392	393	293	115	282	622	288	18	5	2	NEB2
8	E	394	395	293	115	282	623	288	18	5	3	NEB2
8	E	380	381	287	112	276	616	286	18	6	0	NEB2
8	E	382	383	287	112	276	617	286	18	6	1	NEB2
8	E	384	385	287	112	276	618	286	18	6	2	NEB2
8	E	386	387	287	112	276	619	286	18	6	3	NEB2
8	E	372	373	281	112	276	612	285	18	7	0	NEB2
8	E	374	375	281	112	276	613	285	18	7	1	NEB2
8	E	376	377	281	112	276	614	285	18	7	2	NEB2
8	E	378	379	281	112	276	615	285	18	7	3	NEB2
8	E	364	365	275	112	276	608	283	18	8	0	NEB2
8	E	366	367	275	112	276	609	283	18	8	1	NEB2
8	E	368	369	275	112	276	610	283	18	8	2	NEB2
8	E	370	371	275	112	276	611	283	18	8	3	NEB2
8	E	356	357	269	105	263	580	273	18	9	0	NEB2
8	E	358	359	269	105	263	581	273	18	9	1	NEB2
8	E	360	361	269	105	263	582	273	18	9	2	NEB2
8	E	362	363	269	105	263	583	273	18	9	3	NEB2
5	E	288	289	315	130	317	660	302	18	10	0	NEB2
5	E	290	291	315	130	317	661	302	18	10	1	NEB2
5	E	292	293	315	130	317	662	302	18	10	2	NEB2
5	E	294	295	315	130	317	663	302	18	10	3	NEB2
5	E	280	281	306	125	304	656	301	18	11	0	NEB2
5	E	282	283	306	125	304	657	301	18	11	1	NEB2
5	E	284	285	306	125	304	658	301	18	11	2	NEB2
5	E	286	287	306	125	304	659	301	18	11	3	NEB2
5	E	272	273	298	120	295	644	296	18	12	0	NEB2
5	E	274	275	298	120	295	645	296	18	12	1	NEB2
5	E	276	277	298	120	295	646	296	18	12	2	NEB2
5	E	278	279	298	120	295	647	296	18	12	3	NEB2
5	E	264	265	289	116	287	604	282	18	13	0	NEB2
5	E	266	267	289	116	287	605	282	18	13	1	NEB2
5	E	268	269	289	116	287	606	282	18	13	2	NEB2
5	E	270	271	289	116	287	607	282	18	13	3	NEB2
5	E	256	257	281	115	282	600	280	18	14	0	NEB2
5	E	258	259	281	115	282	601	280	18	14	1	NEB2
5	E	260	261	281	115	282	602	280	18	14	2	NEB2
5	E	262	263	281	115	282	603	280	18	14	3	NEB2
4	E	236	237	299	120	295	640	295	18	15	0	NEB2
4	E	238	239	299	120	295	641	295	18	15	1	NEB2
4	E	240	241	299	120	295	642	295	18	15	2	NEB2
4	E	242	243	299	120	295	643	295	18	15	3	NEB2
4	E	228	229	289	116	287	596	279	18	16	0	NEB2
4	E	230	231	289	116	287	597	279	18	16	1	NEB2
4	E	232	233	289	116	287	598	279	18	16	2	NEB2
4	E	234	235	289	116	287	599	279	18	16	3	NEB2
4	E	220	221	279	115	282	576	272	18	17	0	NEB2
4	E	222	223	279	115	282	577	272	18	17	1	NEB2
4	E	224	225	279	115	282	578	272	18	17	2	NEB2
4	E	226	227	279	115	282	579	272	18	17	3	NEB2
4	E	212	213	269	110	272	572	270	18	18	0	NEB2
4	E	214	215	269	110	272	573	270	18	18	1	NEB2
4	E	216	217	269	110	272	574	270	18	18	2	NEB2
4	E	218	219	269	110	272	575	270	18	18	3	NEB2
1	E	136	137	305	125	304	636	294	18	19	0	NEB2
1	E	138	139	305	125	304	637	294	18	19	1	NEB2
1	E	140	141	305	125	304	638	294	18	19	2	NEB2
1	E	142	143	305	125	304	639	294	18	19	3	NEB2
1	E	128	129	288	116	287	592	277	18	20	0	NEB2
1	E	130	131	288	116	287	593	277	18	20	1	NEB2
1	E	132	133	288	116	287	594	277	18	20	2	NEB2
1	E	134	135	288	116	287	595	277	18	20	3	NEB2

Table 13: **NorthEast Bottom 2 endwall COT map.**

SL	E/W	cell	cell+1	cell ϕ	slot	slot ϕ	repeater	repeater ϕ	crate	slot	conn	crate
8	E	452	453	341	140	336	716	323	19	5	0	NEB1
8	E	454	455	341	140	336	717	323	19	5	1	NEB1
8	E	456	457	341	140	336	718	323	19	5	2	NEB1
8	E	458	459	341	140	336	719	323	19	5	3	NEB1
8	E	444	445	335	135	327	708	320	19	6	0	NEB1
8	E	446	447	335	135	327	709	320	19	6	1	NEB1
8	E	448	449	335	135	327	710	320	19	6	2	NEB1
8	E	450	451	335	135	327	711	320	19	6	3	NEB1
8	E	436	437	329	135	327	704	319	19	7	0	NEB1
8	E	438	439	329	135	327	705	319	19	7	1	NEB1
8	E	440	441	329	135	327	706	319	19	7	2	NEB1
8	E	442	443	329	135	327	707	319	19	7	3	NEB1
8	E	428	429	323	133	323	700	317	19	8	0	NEB1
8	E	430	431	323	133	323	701	317	19	8	1	NEB1
8	E	432	433	323	133	323	702	317	19	8	2	NEB1
8	E	434	435	323	133	323	703	317	19	8	3	NEB1
8	E	420	421	317	130	317	692	314	19	9	0	NEB1
8	E	422	423	317	130	317	693	314	19	9	1	NEB1
8	E	424	425	317	130	317	694	314	19	9	2	NEB1
8	E	426	427	317	130	317	695	314	19	9	3	NEB1
8	E	412	413	311	129	312	684	311	19	10	0	NEB1
8	E	414	415	311	129	312	685	311	19	10	1	NEB1
8	E	416	417	311	129	312	686	311	19	10	2	NEB1
8	E	418	419	311	129	312	687	311	19	10	3	NEB1
8	E	404	405	305	125	304	680	310	19	11	0	NEB1
8	E	406	407	305	125	304	681	310	19	11	1	NEB1
8	E	408	409	305	125	304	682	310	19	11	2	NEB1
8	E	410	411	305	125	304	683	310	19	11	3	NEB1
5	E	312	313	341	142	340	736	350	19	12	0	NEB1
5	E	314	315	341	142	340	737	350	19	12	1	NEB1
5	E	316	317	341	142	340	738	350	19	12	2	NEB1
5	E	318	319	341	142	340	739	350	19	12	3	NEB1
5	E	304	305	332	140	336	712	321	19	13	0	NEB1
5	E	306	307	332	140	336	713	321	19	13	1	NEB1
5	E	308	309	332	140	336	714	321	19	13	2	NEB1
5	E	310	311	332	140	336	715	321	19	13	3	NEB1
5	E	296	297	324	133	323	676	308	19	14	0	NEB1
5	E	298	299	324	133	323	677	308	19	14	1	NEB1
5	E	300	301	324	133	323	678	308	19	14	2	NEB1
5	E	302	303	324	133	323	679	308	19	14	3	NEB1
4	E	268	269	339	142	340	728	348	19	15	0	NEB1
4	E	270	271	339	142	340	729	348	19	15	1	NEB1
4	E	272	273	339	142	340	730	348	19	15	2	NEB1
4	E	274	275	339	142	340	731	348	19	15	3	NEB1
4	E	260	261	329	135	327	696	316	19	16	0	NEB1
4	E	262	263	329	135	327	697	316	19	16	1	NEB1
4	E	264	265	329	135	327	698	316	19	16	2	NEB1
4	E	266	267	329	135	327	699	316	19	16	3	NEB1
4	E	252	253	319	130	317	672	307	19	17	0	NEB1
4	E	254	255	319	130	317	673	307	19	17	1	NEB1
4	E	256	257	319	130	317	674	307	19	17	2	NEB1
4	E	258	259	319	130	317	675	307	19	17	3	NEB1
4	E	244	245	309	129	312	668	305	19	18	0	NEB1
4	E	246	247	309	129	312	669	305	19	18	1	NEB1
4	E	248	249	309	129	312	670	305	19	18	2	NEB1
4	E	250	251	309	129	312	671	305	19	18	3	NEB1
1	E	152	153	339	142	340	724	346	19	19	0	NEB1
1	E	154	155	339	142	340	725	346	19	19	1	NEB1
1	E	156	157	339	142	340	726	346	19	19	2	NEB1
1	E	158	159	339	142	340	727	346	19	19	3	NEB1
1	E	144	145	322	133	323	688	313	19	20	0	NEB1
1	E	146	147	322	133	323	689	313	19	20	1	NEB1
1	E	148	149	322	133	323	690	313	19	20	2	NEB1
1	E	150	151	322	133	323	691	313	19	20	3	NEB1

Table 14: **NorthEast Bottom 1 endwall COT map.**

SL	E/W	cell	cell+1	cell ϕ	slot	slot ϕ	repeater	repeater ϕ	crate	slot	conn	crate
2	W	92	93	179	72	167	376	178	5	7	0	SWT3
2	W	94	95	179	72	167	377	178	5	7	1	SWT3
2	W	96	97	179	72	167	378	178	5	7	2	SWT3
2	W	98	99	179	72	167	379	178	5	7	3	SWT3
2	W	84	85	164	71	162	368	175	5	8	0	SWT3
2	W	86	87	164	71	162	369	175	5	8	1	SWT3
2	W	88	89	164	71	162	370	175	5	8	2	SWT3
2	W	90	91	164	71	162	371	175	5	8	3	SWT3
2	W	76	77	149	64	149	336	143	5	9	0	SWT3
2	W	78	79	149	64	149	337	143	5	9	1	SWT3
2	W	80	81	149	64	149	338	143	5	9	2	SWT3
2	W	82	83	149	64	149	339	143	5	9	3	SWT3
3	W	128	129	201	77	203	420	214	5	10	0	SWT3
3	W	130	131	201	77	203	421	214	5	10	1	SWT3
3	W	132	133	201	77	203	422	214	5	10	2	SWT3
3	W	134	135	201	77	203	423	214	5	10	3	SWT3
3	W	120	121	189	73	192	400	187	5	11	0	SWT3
3	W	122	123	189	73	192	401	187	5	11	1	SWT3
3	W	124	125	189	73	192	402	187	5	11	2	SWT3
3	W	126	127	189	73	192	403	187	5	11	3	SWT3
3	W	112	113	177	72	167	364	173	5	12	0	SWT3
3	W	114	115	177	72	167	365	173	5	12	1	SWT3
3	W	116	117	177	72	167	366	173	5	12	2	SWT3
3	W	118	119	177	72	167	367	173	5	12	3	SWT3
6	W	192	193	183	73	192	396	185	5	13	0	SWT3
6	W	194	195	183	73	192	397	185	5	13	1	SWT3
6	W	196	197	183	73	192	398	185	5	13	2	SWT3
6	W	198	199	183	73	192	399	185	5	13	3	SWT3
6	W	184	185	175	72	167	392	184	5	14	0	SWT3
6	W	186	187	175	72	167	393	184	5	14	1	SWT3
6	W	188	189	175	72	167	394	184	5	14	2	SWT3
6	W	190	191	175	72	167	395	184	5	14	3	SWT3
6	W	176	177	168	71	162	360	172	5	15	0	SWT3
6	W	178	179	168	71	162	361	172	5	15	1	SWT3
6	W	180	181	168	71	162	362	172	5	15	2	SWT3
6	W	182	183	168	71	162	363	172	5	15	3	SWT3
6	W	168	169	160	70	160	356	171	5	16	0	SWT3
6	W	170	171	160	70	160	357	171	5	16	1	SWT3
6	W	172	173	160	70	160	358	171	5	16	2	SWT3
6	W	174	175	160	70	160	359	171	5	16	3	SWT3
6	W	160	161	153	68	156	332	141	5	17	0	SWT3
6	W	162	163	153	68	156	333	141	5	17	1	SWT3
6	W	164	165	153	68	156	334	141	5	17	2	SWT3
6	W	166	167	153	68	156	335	141	5	17	3	SWT3
6	W	152	153	145	61	143	328	140	5	18	0	SWT3
6	W	154	155	145	61	143	329	140	5	18	1	SWT3
6	W	156	157	145	61	143	330	140	5	18	2	SWT3
6	W	158	159	145	61	143	331	140	5	18	3	SWT3
7	W	232	233	198	74	197	388	182	5	19	0	SWT3
7	W	234	235	198	74	197	389	182	5	19	1	SWT3
7	W	236	237	198	74	197	390	182	5	19	2	SWT3
7	W	238	239	198	74	197	391	182	5	19	3	SWT3
7	W	224	225	192	74	197	384	181	5	20	0	SWT3
7	W	226	227	192	74	197	385	181	5	20	1	SWT3
7	W	228	229	192	74	197	386	181	5	20	2	SWT3
7	W	230	231	192	74	197	387	181	5	20	3	SWT3
7	W	216	217	185	73	192	372	176	5	21	0	SWT3
7	W	218	219	185	73	192	373	176	5	21	1	SWT3
7	W	220	221	185	73	192	374	176	5	21	2	SWT3
7	W	222	223	185	73	192	375	176	5	21	3	SWT3

Table 15: **SouthWest Top 3 endwall COT map.**

SL	E/W	cell	cell+1	cell ϕ	slot	slot ϕ	repeater	repeater ϕ	crate	slot	conn	crate
2	W	68	69	134	57	132	324	139	4	6	0	SWT2
2	W	70	71	134	57	132	325	139	4	6	1	SWT2
2	W	72	73	134	57	132	326	139	4	6	2	SWT2
2	W	74	75	134	57	132	327	139	4	6	3	SWT2
2	W	60	61	119	50	119	308	133	4	7	0	SWT2
2	W	62	63	119	50	119	309	133	4	7	1	SWT2
2	W	64	65	119	50	119	310	133	4	7	2	SWT2
2	W	66	67	119	50	119	311	133	4	7	3	SWT2
3	W	104	105	165	70	160	348	168	4	8	0	SWT2
3	W	106	107	165	70	160	349	168	4	8	1	SWT2
3	W	108	109	165	70	160	350	168	4	8	2	SWT2
3	W	110	111	165	70	160	351	168	4	8	3	SWT2
3	W	96	97	153	68	156	340	144	4	9	0	SWT2
3	W	98	99	153	68	156	341	144	4	9	1	SWT2
3	W	100	101	153	68	156	342	144	4	9	2	SWT2
3	W	102	103	153	68	156	343	144	4	9	3	SWT2
3	W	88	89	141	61	143	316	136	4	10	0	SWT2
3	W	90	91	141	61	143	317	136	4	10	1	SWT2
3	W	92	93	141	61	143	318	136	4	10	2	SWT2
3	W	94	95	141	61	143	319	136	4	10	3	SWT2
6	W	144	145	138	58	137	304	131	4	11	0	SWT2
6	W	146	147	138	58	137	305	131	4	11	1	SWT2
6	W	148	149	138	58	137	306	131	4	11	2	SWT2
6	W	150	151	138	58	137	307	131	4	11	3	SWT2
6	W	136	137	130	57	132	300	130	4	12	0	SWT2
6	W	138	139	130	57	132	301	130	4	12	1	SWT2
6	W	140	141	130	57	132	302	130	4	12	2	SWT2
6	W	142	143	130	57	132	303	130	4	12	3	SWT2
6	W	128	129	123	54	126	292	127	4	13	0	SWT2
6	W	130	131	123	54	126	293	127	4	13	1	SWT2
6	W	132	133	123	54	126	294	127	4	13	2	SWT2
6	W	134	135	123	54	126	295	127	4	13	3	SWT2
6	W	120	121	115	47	113	288	125	4	14	0	SWT2
6	W	122	123	115	47	113	289	125	4	14	1	SWT2
6	W	124	125	115	47	113	290	125	4	14	2	SWT2
6	W	126	127	115	47	113	291	125	4	14	3	SWT2
7	W	208	209	178	70	160	352	169	4	15	0	SWT2
7	W	210	211	178	70	160	353	169	4	15	1	SWT2
7	W	212	213	178	70	160	354	169	4	15	2	SWT2
7	W	214	215	178	70	160	355	169	4	15	3	SWT2
7	W	200	201	172	68	156	344	166	4	16	0	SWT2
7	W	202	203	172	68	156	345	166	4	16	1	SWT2
7	W	204	205	172	68	156	346	166	4	16	2	SWT2
7	W	206	207	172	68	156	347	166	4	16	3	SWT2
7	W	192	193	165	64	149	320	137	4	17	0	SWT2
7	W	194	195	165	64	149	321	137	4	17	1	SWT2
7	W	196	197	165	64	149	322	137	4	17	2	SWT2
7	W	198	199	165	64	149	323	137	4	17	3	SWT2
7	W	184	185	158	64	149	312	134	4	18	0	SWT2
7	W	186	187	158	64	149	313	134	4	18	1	SWT2
7	W	188	189	158	64	149	314	134	4	18	2	SWT2
7	W	190	191	158	64	149	315	134	4	18	3	SWT2
7	W	176	177	152	61	143	296	128	4	19	0	SWT2
7	W	178	179	152	61	143	297	128	4	19	1	SWT2
7	W	180	181	152	61	143	298	128	4	19	2	SWT2
7	W	182	183	152	61	143	299	128	4	19	3	SWT2
7	W	168	169	145	58	137	280	122	4	20	0	SWT2
7	W	170	171	145	58	137	281	122	4	20	1	SWT2
7	W	172	173	145	58	137	282	122	4	20	2	SWT2
7	W	174	175	145	58	137	283	122	4	20	3	SWT2
7	W	160	161	138	58	137	276	121	4	21	0	SWT2
7	W	162	163	138	58	137	277	121	4	21	1	SWT2
7	W	164	165	138	58	137	278	121	4	21	2	SWT2
7	W	166	167	138	58	137	279	121	4	21	3	SWT2

Table 16: **SouthWest Top 2 endwall COT map.**

SL	E/W	cell	cell+1	cell ϕ	slot	slot ϕ	repeater	repeater ϕ	crate	slot	conn	crate
2	W	52	53	104	43	102	256	114	3	7	0	SWT1
2	W	54	55	104	43	102	257	114	3	7	1	SWT1
2	W	56	57	104	43	102	258	114	3	7	2	SWT1
2	W	58	59	104	43	102	259	114	3	7	3	SWT1
2	W	44	45	89	35	87	220	100	3	8	0	SWT1
2	W	46	47	89	35	87	221	100	3	8	1	SWT1
2	W	48	49	89	35	87	222	100	3	8	2	SWT1
2	W	50	51	89	35	87	223	100	3	8	3	SWT1
3	W	80	81	129	57	132	284	124	3	9	0	SWT1
3	W	82	83	129	57	132	285	124	3	9	1	SWT1
3	W	84	85	129	57	132	286	124	3	9	2	SWT1
3	W	86	87	129	57	132	287	124	3	9	3	SWT1
3	W	72	73	117	50	119	272	119	3	10	0	SWT1
3	W	74	75	117	50	119	273	119	3	10	1	SWT1
3	W	76	77	117	50	119	274	119	3	10	2	SWT1
3	W	78	79	117	50	119	275	119	3	10	3	SWT1
3	W	64	65	105	44	107	252	112	3	11	0	SWT1
3	W	66	67	105	44	107	253	112	3	11	1	SWT1
3	W	68	69	105	44	107	254	112	3	11	2	SWT1
3	W	70	71	105	44	107	255	112	3	11	3	SWT1
6	W	112	113	108	44	107	268	118	3	12	0	SWT1
6	W	114	115	108	44	107	269	118	3	12	1	SWT1
6	W	116	117	108	44	107	270	118	3	12	2	SWT1
6	W	118	119	108	44	107	271	118	3	12	3	SWT1
6	W	104	105	100	43	102	240	108	3	13	0	SWT1
6	W	106	107	100	43	102	241	108	3	13	1	SWT1
6	W	108	109	100	43	102	242	108	3	13	2	SWT1
6	W	110	111	100	43	102	243	108	3	13	3	SWT1
6	W	96	97	93	40	96	236	106	3	14	0	SWT1
6	W	98	99	93	40	96	237	106	3	14	1	SWT1
6	W	100	101	93	40	96	238	106	3	14	2	SWT1
6	W	102	103	93	40	96	239	106	3	14	3	SWT1
6	W	88	89	85	35	87	204	94	3	15	0	SWT1
6	W	90	91	85	35	87	205	94	3	15	1	SWT1
6	W	92	93	85	35	87	206	94	3	15	2	SWT1
6	W	94	95	85	35	87	207	94	3	15	3	SWT1
7	W	152	153	132	54	126	264	117	3	16	0	SWT1
7	W	154	155	132	54	126	265	117	3	16	1	SWT1
7	W	156	157	132	54	126	266	117	3	16	2	SWT1
7	W	158	159	132	54	126	267	117	3	16	3	SWT1
7	W	144	145	125	54	126	248	111	3	17	0	SWT1
7	W	146	147	125	54	126	249	111	3	17	1	SWT1
7	W	148	149	125	54	126	250	111	3	17	2	SWT1
7	W	150	151	125	54	126	251	111	3	17	3	SWT1
7	W	136	137	118	50	119	232	105	3	18	0	SWT1
7	W	138	139	118	50	119	233	105	3	18	1	SWT1
7	W	140	141	118	50	119	234	105	3	18	2	SWT1
7	W	142	143	118	50	119	235	105	3	18	3	SWT1
7	W	128	129	112	47	113	216	99	3	19	0	SWT1
7	W	130	131	112	47	113	217	99	3	19	1	SWT1
7	W	132	133	112	47	113	218	99	3	19	2	SWT1
7	W	134	135	112	47	113	219	99	3	19	3	SWT1
7	W	120	121	105	44	107	200	93	3	20	0	SWT1
7	W	122	123	105	44	107	201	93	3	20	1	SWT1
7	W	124	125	105	44	107	202	93	3	20	2	SWT1
7	W	126	127	105	44	107	203	93	3	20	3	SWT1
7	W	112	113	98	40	96	196	92	3	21	0	SWT1
7	W	114	115	98	40	96	197	92	3	21	1	SWT1
7	W	116	117	98	40	96	198	92	3	21	2	SWT1
7	W	118	119	98	40	96	199	92	3	21	3	SWT1

Table 17: **SouthWest Top 1 endwall COT map.**

SL	E/W	cell	cell+1	cell ϕ	slot	slot ϕ	repeater	repeater ϕ	crate	slot	conn	crate
2	W	132	133	254	101	252	560	266	7	6	0	SWB2
2	W	134	135	254	101	252	561	266	7	6	1	SWB2
2	W	136	137	254	101	252	562	266	7	6	2	SWB2
2	W	138	139	254	101	252	563	266	7	6	3	SWB2
2	W	124	125	239	96	242	528	254	7	7	0	SWB2
2	W	126	127	239	96	242	529	254	7	7	1	SWB2
2	W	128	129	239	96	242	530	254	7	7	2	SWB2
2	W	130	131	239	96	242	531	254	7	7	3	SWB2
3	W	176	177	273	110	272	568	269	7	8	0	SWB2
3	W	178	179	273	110	272	569	269	7	8	1	SWB2
3	W	180	181	273	110	272	570	269	7	8	2	SWB2
3	W	182	183	273	110	272	571	269	7	8	3	SWB2
3	W	168	169	261	105	263	556	264	7	9	0	SWB2
3	W	170	171	261	105	263	557	264	7	9	1	SWB2
3	W	172	173	261	105	263	558	264	7	9	2	SWB2
3	W	174	175	261	105	263	559	264	7	9	3	SWB2
3	W	160	161	249	101	252	540	258	7	10	0	SWB2
3	W	162	163	249	101	252	541	258	7	10	1	SWB2
3	W	164	165	249	101	252	542	258	7	10	2	SWB2
3	W	166	167	249	101	252	543	258	7	10	3	SWB2
6	W	272	273	258	102	257	536	257	7	11	0	SWB2
6	W	274	275	258	102	257	537	257	7	11	1	SWB2
6	W	276	277	258	102	257	538	257	7	11	2	SWB2
6	W	278	279	258	102	257	539	257	7	11	3	SWB2
6	W	264	265	250	101	252	524	252	7	12	0	SWB2
6	W	266	267	250	101	252	525	252	7	12	1	SWB2
6	W	268	269	250	101	252	526	252	7	12	2	SWB2
6	W	270	271	250	101	252	527	252	7	12	3	SWB2
6	W	256	257	243	96	242	516	249	7	13	0	SWB2
6	W	258	259	243	96	242	517	249	7	13	1	SWB2
6	W	260	261	243	96	242	518	249	7	13	2	SWB2
6	W	262	263	243	96	242	519	249	7	13	3	SWB2
6	W	248	249	235	91	233	504	245	7	14	0	SWB2
6	W	250	251	235	91	233	505	245	7	14	1	SWB2
6	W	252	253	235	91	233	506	245	7	14	2	SWB2
6	W	254	255	235	91	233	507	245	7	14	3	SWB2
6	W	240	241	228	88	227	500	244	7	15	0	SWB2
6	W	242	243	228	88	227	501	244	7	15	1	SWB2
6	W	244	245	228	88	227	502	244	7	15	2	SWB2
6	W	246	247	228	88	227	503	244	7	15	3	SWB2
7	W	320	321	272	112	276	552	263	7	16	0	SWB2
7	W	322	323	272	112	276	553	263	7	16	1	SWB2
7	W	324	325	272	112	276	554	263	7	16	2	SWB2
7	W	326	327	272	112	276	555	263	7	16	3	SWB2
7	W	312	313	265	105	263	512	248	7	17	0	SWB2
7	W	314	315	265	105	263	513	248	7	17	1	SWB2
7	W	316	317	265	105	263	514	248	7	17	2	SWB2
7	W	318	319	265	105	263	515	248	7	17	3	SWB2
7	W	304	305	258	102	257	496	242	7	18	0	SWB2
7	W	306	307	258	102	257	497	242	7	18	1	SWB2
7	W	308	309	258	102	257	498	242	7	18	2	SWB2
7	W	310	311	258	102	257	499	242	7	18	3	SWB2
7	W	296	297	252	98	246	492	241	7	19	0	SWB2
7	W	298	299	252	98	246	493	241	7	19	1	SWB2
7	W	300	301	252	98	246	494	241	7	19	2	SWB2
7	W	302	303	252	98	246	495	241	7	19	3	SWB2
7	W	288	289	245	98	246	488	239	7	20	0	SWB2
7	W	290	291	245	98	246	489	239	7	20	1	SWB2
7	W	292	293	245	98	246	490	239	7	20	2	SWB2
7	W	294	295	245	98	246	491	239	7	20	3	SWB2
7	W	280	281	238	96	242	484	238	7	21	0	SWB2
7	W	282	283	238	96	242	485	238	7	21	1	SWB2
7	W	284	285	238	96	242	486	238	7	21	2	SWB2
7	W	286	287	238	96	242	487	238	7	21	3	SWB2

Table 18: **SouthWest Bottom 2 endwall COT map.**

SL	E/W	cell	cell+1	cell ϕ	slot	slot ϕ	repeater	repeater ϕ	crate	slot	conn	crate
2	W	116	117	224	87	222	468	232	6	6	0	SWB1
2	W	118	119	224	87	222	469	232	6	6	1	SWB1
2	W	120	121	224	87	222	470	232	6	6	2	SWB1
2	W	122	123	224	87	222	471	232	6	6	3	SWB1
2	W	108	109	209	82	212	452	226	6	7	0	SWB1
2	W	110	111	209	82	212	453	226	6	7	1	SWB1
2	W	112	113	209	82	212	454	226	6	7	2	SWB1
2	W	114	115	209	82	212	455	226	6	7	3	SWB1
2	W	100	101	194	75	199	416	193	6	8	0	SWB1
2	W	102	103	194	75	199	417	193	6	8	1	SWB1
2	W	104	105	194	75	199	418	193	6	8	2	SWB1
2	W	106	107	194	75	199	419	193	6	8	3	SWB1
3	W	152	153	237	91	233	464	230	6	9	0	SWB1
3	W	154	155	237	91	233	465	230	6	9	1	SWB1
3	W	156	157	237	91	233	466	230	6	9	2	SWB1
3	W	158	159	237	91	233	467	230	6	9	3	SWB1
3	W	144	145	225	88	227	460	229	6	10	0	SWB1
3	W	146	147	225	88	227	461	229	6	10	1	SWB1
3	W	148	149	225	88	227	462	229	6	10	2	SWB1
3	W	150	151	225	88	227	463	229	6	10	3	SWB1
3	W	136	137	213	82	212	436	220	6	11	0	SWB1
3	W	138	139	213	82	212	437	220	6	11	1	SWB1
3	W	140	141	213	82	212	438	220	6	11	2	SWB1
3	W	142	143	213	82	212	439	220	6	11	3	SWB1
6	W	232	233	220	87	222	456	227	6	12	0	SWB1
6	W	234	235	220	87	222	457	227	6	12	1	SWB1
6	W	236	237	220	87	222	458	227	6	12	2	SWB1
6	W	238	239	220	87	222	459	227	6	12	3	SWB1
6	W	224	225	213	82	212	448	225	6	13	0	SWB1
6	W	226	227	213	82	212	449	225	6	13	1	SWB1
6	W	228	229	213	82	212	450	225	6	13	2	SWB1
6	W	230	231	213	82	212	451	225	6	13	3	SWB1
6	W	216	217	205	77	203	440	222	6	14	0	SWB1
6	W	218	219	205	77	203	441	222	6	14	1	SWB1
6	W	220	221	205	77	203	442	222	6	14	2	SWB1
6	W	222	223	205	77	203	443	222	6	14	3	SWB1
6	W	208	209	198	75	199	412	191	6	15	0	SWB1
6	W	210	211	198	75	199	413	191	6	15	1	SWB1
6	W	212	213	198	75	199	414	191	6	15	2	SWB1
6	W	214	215	198	75	199	415	191	6	15	3	SWB1
6	W	200	201	190	75	199	408	190	6	16	0	SWB1
6	W	202	203	190	75	199	409	190	6	16	1	SWB1
6	W	204	205	190	75	199	410	190	6	16	2	SWB1
6	W	206	207	190	75	199	411	190	6	16	3	SWB1
7	W	272	273	232	91	233	444	223	6	17	0	SWB1
7	W	274	275	232	91	233	445	223	6	17	1	SWB1
7	W	276	277	232	91	233	446	223	6	17	2	SWB1
7	W	278	279	232	91	233	447	223	6	17	3	SWB1
7	W	264	265	225	88	227	432	219	6	18	0	SWB1
7	W	266	267	225	88	227	433	219	6	18	1	SWB1
7	W	268	269	225	88	227	434	219	6	18	2	SWB1
7	W	270	271	225	88	227	435	219	6	18	3	SWB1
7	W	256	257	218	84	216	428	217	6	19	0	SWB1
7	W	258	259	218	84	216	429	217	6	19	1	SWB1
7	W	260	261	218	84	216	430	217	6	19	2	SWB1
7	W	262	263	218	84	216	431	217	6	19	3	SWB1
7	W	248	249	212	84	216	424	216	6	20	0	SWB1
7	W	250	251	212	84	216	425	216	6	20	1	SWB1
7	W	252	253	212	84	216	426	216	6	20	2	SWB1
7	W	254	255	212	84	216	427	216	6	20	3	SWB1
7	W	240	241	205	77	203	404	188	6	21	0	SWB1
7	W	242	243	205	77	203	405	188	6	21	1	SWB1
7	W	244	245	205	77	203	406	188	6	21	2	SWB1
7	W	246	247	205	77	203	407	188	6	21	3	SWB1

Table 19: **SouthWest Bottom 1 endwall COT map.**

SL	E/W	cell	cell+1	cell ϕ	slot	slot ϕ	repeater	repeater ϕ	crate	slot	conn	crate
7	W	0	1	5	2	17	24	8	0	2	0	NWT3
7	W	2	3	5	2	17	25	8	0	2	1	NWT3
7	W	4	5	5	2	17	26	8	0	2	2	NWT3
7	W	6	7	5	2	17	27	8	0	2	3	NWT3
7	W	424	425	358	143	342	744	353	0	3	0	NWT3
7	W	426	427	358	143	342	745	353	0	3	1	NWT3
7	W	428	429	358	143	342	746	353	0	3	2	NWT3
7	W	430	431	358	143	342	747	353	0	3	3	NWT3
7	W	416	417	352	142	340	740	352	0	4	0	NWT3
7	W	418	419	352	142	340	741	352	0	4	1	NWT3
7	W	420	421	352	142	340	742	352	0	4	2	NWT3
7	W	422	423	352	142	340	743	352	0	4	3	NWT3
6	W	16	17	18	2	17	20	7	0	5	0	NWT3
6	W	18	19	18	2	17	21	7	0	5	1	NWT3
6	W	20	21	18	2	17	22	7	0	5	2	NWT3
6	W	22	23	18	2	17	23	7	0	5	3	NWT3
6	W	8	9	10	2	17	16	5	0	6	0	NWT3
6	W	10	11	10	2	17	17	5	0	6	1	NWT3
6	W	12	13	10	2	17	18	5	0	6	2	NWT3
6	W	14	15	10	2	17	19	5	0	6	3	NWT3
6	W	0	1	3	1	12	8	2	0	7	0	NWT3
6	W	2	3	3	1	12	9	2	0	7	1	NWT3
6	W	4	5	3	1	12	10	2	0	7	2	NWT3
6	W	6	7	3	1	12	11	2	0	7	3	NWT3
6	W	376	377	355	144	347	760	359	0	8	0	NWT3
6	W	378	379	355	144	347	761	359	0	8	1	NWT3
6	W	380	381	355	144	347	762	359	0	8	2	NWT3
6	W	382	383	355	144	347	763	359	0	8	3	NWT3
6	W	368	369	348	143	342	752	356	0	9	0	NWT3
6	W	370	371	348	143	342	753	356	0	9	1	NWT3
6	W	372	373	348	143	342	754	356	0	9	2	NWT3
6	W	374	375	348	143	342	755	356	0	9	3	NWT3
6	W	360	361	340	142	340	748	355	0	10	0	NWT3
6	W	362	363	340	142	340	749	355	0	10	1	NWT3
6	W	364	365	340	142	340	750	355	0	10	2	NWT3
6	W	366	367	340	142	340	751	355	0	10	3	NWT3
3	W	8	9	21	5	23	36	13	0	11	0	NWT3
3	W	10	11	21	5	23	37	13	0	11	1	NWT3
3	W	12	13	21	5	23	38	13	0	11	2	NWT3
3	W	14	15	21	5	23	39	13	0	11	3	NWT3
3	W	0	1	9	1	12	12	4	0	12	0	NWT3
3	W	2	3	9	1	12	13	4	0	12	1	NWT3
3	W	4	5	9	1	12	14	4	0	12	2	NWT3
3	W	6	7	9	1	12	15	4	0	12	3	NWT3
3	W	232	233	357	144	347	736	350	0	13	0	NWT3
3	W	234	235	357	144	347	737	350	0	13	1	NWT3
3	W	236	237	357	144	347	738	350	0	13	2	NWT3
3	W	238	239	357	144	347	739	350	0	13	3	NWT3
2	W	4	5	14	1	12	756	358	0	14	0	NWT3
2	W	6	7	14	1	12	757	358	0	14	1	NWT3
2	W	8	9	14	1	12	758	358	0	14	2	NWT3
2	W	10	11	14	1	12	759	358	0	14	3	NWT3
2	W	188	189	359	144	347	732	349	0	15	0	NWT3
2	W	190	191	359	144	347	733	349	0	15	1	NWT3
2	W	0	1	359	144	347	734	349	0	15	2	NWT3
2	W	2	3	359	144	347	735	349	0	15	3	NWT3
2	W	180	181	344	143	342	728	348	0	16	0	NWT3
2	W	182	183	344	143	342	729	348	0	16	1	NWT3
2	W	184	185	344	143	342	730	348	0	16	2	NWT3
2	W	186	187	344	143	342	731	348	0	16	3	NWT3

Table 20: **NorthWest Top 3 endwall COT map.**

SL	E/W	cell	cell+1	cell ϕ	slot	slot ϕ	repeater	repeater ϕ	crate	slot	conn	crate
7	W	56	57	52	19	53	92	53	1	2	0	NWT2
7	W	58	59	52	19	53	93	53	1	2	1	NWT2
7	W	60	61	52	19	53	94	53	1	2	2	NWT2
7	W	62	63	52	19	53	95	53	1	2	3	NWT2
7	W	48	49	45	16	47	88	52	1	3	0	NWT2
7	W	50	51	45	16	47	89	52	1	3	1	NWT2
7	W	52	53	45	16	47	90	52	1	3	2	NWT2
7	W	54	55	45	16	47	91	52	1	3	3	NWT2
7	W	40	41	38	15	42	80	49	1	4	0	NWT2
7	W	42	43	38	15	42	81	49	1	4	1	NWT2
7	W	44	45	38	15	42	82	49	1	4	2	NWT2
7	W	46	47	38	15	42	83	49	1	4	3	NWT2
7	W	32	33	32	11	34	76	47	1	5	0	NWT2
7	W	34	35	32	11	34	77	47	1	5	1	NWT2
7	W	36	37	32	11	34	78	47	1	5	2	NWT2
7	W	38	39	32	11	34	79	47	1	5	3	NWT2
7	W	24	25	25	5	23	52	39	1	6	0	NWT2
7	W	26	27	25	5	23	53	39	1	6	1	NWT2
7	W	28	29	25	5	23	54	39	1	6	2	NWT2
7	W	30	31	25	5	23	55	39	1	6	3	NWT2
7	W	16	17	18	3	19	32	11	1	7	0	NWT2
7	W	18	19	18	3	19	33	11	1	7	1	NWT2
7	W	20	21	18	3	19	34	11	1	7	2	NWT2
7	W	22	23	18	3	19	35	11	1	7	3	NWT2
7	W	8	9	12	3	19	28	10	1	8	0	NWT2
7	W	10	11	12	3	19	29	10	1	8	1	NWT2
7	W	12	13	12	3	19	30	10	1	8	2	NWT2
7	W	14	15	12	3	19	31	10	1	8	3	NWT2
6	W	48	49	48	16	47	72	46	1	9	0	NWT2
6	W	50	51	48	16	47	73	46	1	9	1	NWT2
6	W	52	53	48	16	47	74	46	1	9	2	NWT2
6	W	54	55	48	16	47	75	46	1	9	3	NWT2
6	W	40	41	40	15	42	68	45	1	10	0	NWT2
6	W	42	43	40	15	42	69	45	1	10	1	NWT2
6	W	44	45	40	15	42	70	45	1	10	2	NWT2
6	W	46	47	40	15	42	71	45	1	10	3	NWT2
6	W	32	33	33	11	34	64	43	1	11	0	NWT2
6	W	34	35	33	11	34	65	43	1	11	1	NWT2
6	W	36	37	33	11	34	66	43	1	11	2	NWT2
6	W	38	39	33	11	34	67	43	1	11	3	NWT2
6	W	24	25	25	5	23	60	42	1	12	0	NWT2
6	W	26	27	25	5	23	61	42	1	12	1	NWT2
6	W	28	29	25	5	23	62	42	1	12	2	NWT2
6	W	30	31	25	5	23	63	42	1	12	3	NWT2
3	W	32	33	57	22	59	84	50	1	13	0	NWT2
3	W	34	35	57	22	59	85	50	1	13	1	NWT2
3	W	36	37	57	22	59	86	50	1	13	2	NWT2
3	W	38	39	57	22	59	87	50	1	13	3	NWT2
3	W	24	25	45	16	47	56	40	1	14	0	NWT2
3	W	26	27	45	16	47	57	40	1	14	1	NWT2
3	W	28	29	45	16	47	58	40	1	14	2	NWT2
3	W	30	31	45	16	47	59	40	1	14	3	NWT2
3	W	16	17	33	11	34	48	37	1	15	0	NWT2
3	W	18	19	33	11	34	49	37	1	15	1	NWT2
3	W	20	21	33	11	34	50	37	1	15	2	NWT2
3	W	22	23	33	11	34	51	37	1	15	3	NWT2
2	W	20	21	44	15	42	44	36	1	16	0	NWT2
2	W	22	23	44	15	42	45	36	1	16	1	NWT2
2	W	24	25	44	15	42	46	36	1	16	2	NWT2
2	W	26	27	44	15	42	47	36	1	16	3	NWT2
2	W	12	13	29	8	29	40	34	1	17	0	NWT2
2	W	14	15	29	8	29	41	34	1	17	1	NWT2
2	W	16	17	29	8	29	42	34	1	17	2	NWT2
2	W	18	19	29	8	29	43	34	1	17	3	NWT2

Table 21: **NorthWest Top 2 endwall COT map.**

SL	E/W	cell	cell+1	cell ϕ	slot	slot ϕ	repeater	repeater ϕ	crate	slot	conn	crate
7	W	104	105	92	33	83	184	87	2	2	0	NWT1
7	W	106	107	92	33	83	185	87	2	2	1	NWT1
7	W	108	109	92	33	83	186	87	2	2	2	NWT1
7	W	110	111	92	33	83	187	87	2	2	3	NWT1
7	W	96	97	85	35	87	180	86	2	3	0	NWT1
7	W	98	99	85	35	87	181	86	2	3	1	NWT1
7	W	100	101	85	35	87	182	86	2	3	2	NWT1
7	W	102	103	85	35	87	183	86	2	3	3	NWT1
7	W	88	89	78	30	77	164	80	2	4	0	NWT1
7	W	90	91	78	30	77	165	80	2	4	1	NWT1
7	W	92	93	78	30	77	166	80	2	4	2	NWT1
7	W	94	95	78	30	77	167	80	2	4	3	NWT1
7	W	80	81	72	26	66	160	78	2	5	0	NWT1
7	W	82	83	72	26	66	161	78	2	5	1	NWT1
7	W	84	85	72	26	66	162	78	2	5	2	NWT1
7	W	86	87	72	26	66	163	78	2	5	3	NWT1
7	W	72	73	65	26	66	144	72	2	6	0	NWT1
7	W	74	75	65	26	66	145	72	2	6	1	NWT1
7	W	76	77	65	26	66	146	72	2	6	2	NWT1
7	W	78	79	65	26	66	147	72	2	6	3	NWT1
7	W	64	65	58	22	59	140	71	2	7	0	NWT1
7	W	66	67	58	22	59	141	71	2	7	1	NWT1
7	W	68	69	58	22	59	142	71	2	7	2	NWT1
7	W	70	71	58	22	59	143	71	2	7	3	NWT1
6	W	80	81	78	30	77	136	69	2	8	0	NWT1
6	W	82	83	78	30	77	137	69	2	8	1	NWT1
6	W	84	85	78	30	77	138	69	2	8	2	NWT1
6	W	86	87	78	30	77	139	69	2	8	3	NWT1
6	W	72	73	70	29	72	132	68	2	9	0	NWT1
6	W	74	75	70	29	72	133	68	2	9	1	NWT1
6	W	76	77	70	29	72	134	68	2	9	2	NWT1
6	W	78	79	70	29	72	135	68	2	9	3	NWT1
6	W	64	65	63	26	66	128	67	2	10	0	NWT1
6	W	66	67	63	26	66	129	67	2	10	1	NWT1
6	W	68	69	63	26	66	130	67	2	10	2	NWT1
6	W	70	71	63	26	66	131	67	2	10	3	NWT1
6	W	56	57	55	19	53	112	61	2	11	0	NWT1
6	W	58	59	55	19	53	113	61	2	11	1	NWT1
6	W	60	61	55	19	53	114	61	2	11	2	NWT1
6	W	62	63	55	19	53	115	61	2	11	3	NWT1
3	W	56	57	93	40	96	192	90	2	12	0	NWT1
3	W	58	59	93	40	96	193	90	2	12	1	NWT1
3	W	60	61	93	40	96	194	90	2	12	2	NWT1
3	W	62	63	93	40	96	195	90	2	12	3	NWT1
3	W	48	49	81	33	83	156	77	2	13	0	NWT1
3	W	50	51	81	33	83	157	77	2	13	1	NWT1
3	W	52	53	81	33	83	158	77	2	13	2	NWT1
3	W	54	55	81	33	83	159	77	2	13	3	NWT1
3	W	40	41	69	29	72	124	65	2	14	0	NWT1
3	W	42	43	69	29	72	125	65	2	14	1	NWT1
3	W	44	45	69	29	72	126	65	2	14	2	NWT1
3	W	46	47	69	29	72	127	65	2	14	3	NWT1
2	W	36	37	74	29	72	108	59	2	15	0	NWT1
2	W	38	39	74	29	72	109	59	2	15	1	NWT1
2	W	40	41	74	29	72	110	59	2	15	2	NWT1
2	W	42	43	74	29	72	111	59	2	15	3	NWT1
2	W	28	29	59	22	59	104	58	2	16	0	NWT1
2	W	30	31	59	22	59	105	58	2	16	1	NWT1
2	W	32	33	59	22	59	106	58	2	16	2	NWT1
2	W	34	35	59	22	59	107	58	2	16	3	NWT1

Table 22: **NorthWest Top 1 endwall COT map.**

SL	E/W	cell	cell+1	cell ϕ	slot	slot ϕ	repeater	repeater ϕ	crate	slot	conn	crate
7	W	368	369	312	130	317	656	301	8	2	0	NWB2
7	W	370	371	312	130	317	657	301	8	2	1	NWB2
7	W	372	373	312	130	317	658	301	8	2	2	NWB2
7	W	374	375	312	130	317	659	301	8	2	3	NWB2
7	W	360	361	305	125	304	652	299	8	3	0	NWB2
7	W	362	363	305	125	304	653	299	8	3	1	NWB2
7	W	364	365	305	125	304	654	299	8	3	2	NWB2
7	W	366	367	305	125	304	655	299	8	3	3	NWB2
7	W	352	353	298	125	304	648	298	8	4	0	NWB2
7	W	354	355	298	125	304	649	298	8	4	1	NWB2
7	W	356	357	298	125	304	650	298	8	4	2	NWB2
7	W	358	359	298	125	304	651	298	8	4	3	NWB2
7	W	344	345	292	116	287	632	292	8	5	0	NWB2
7	W	346	347	292	116	287	633	292	8	5	1	NWB2
7	W	348	349	292	116	287	634	292	8	5	2	NWB2
7	W	350	351	292	116	287	635	292	8	5	3	NWB2
7	W	336	337	285	115	282	628	291	8	6	0	NWB2
7	W	338	339	285	115	282	629	291	8	6	1	NWB2
7	W	340	341	285	115	282	630	291	8	6	2	NWB2
7	W	342	343	285	115	282	631	291	8	6	3	NWB2
7	W	328	329	278	112	276	624	289	8	7	0	NWB2
7	W	330	331	278	112	276	625	289	8	7	1	NWB2
7	W	332	333	278	112	276	626	289	8	7	2	NWB2
7	W	334	335	278	112	276	627	289	8	7	3	NWB2
6	W	312	313	295	120	295	616	286	8	8	0	NWB2
6	W	314	315	295	120	295	617	286	8	8	1	NWB2
6	W	316	317	295	120	295	618	286	8	8	2	NWB2
6	W	318	319	295	120	295	619	286	8	8	3	NWB2
6	W	304	305	288	116	287	612	285	8	9	0	NWB2
6	W	306	307	288	116	287	613	285	8	9	1	NWB2
6	W	308	309	288	116	287	614	285	8	9	2	NWB2
6	W	310	311	288	116	287	615	285	8	9	3	NWB2
6	W	296	297	280	115	282	604	282	8	10	0	NWB2
6	W	298	299	280	115	282	605	282	8	10	1	NWB2
6	W	300	301	280	115	282	606	282	8	10	2	NWB2
6	W	302	303	280	115	282	607	282	8	10	3	NWB2
6	W	288	289	273	110	272	584	274	8	11	0	NWB2
6	W	290	291	273	110	272	585	274	8	11	1	NWB2
6	W	292	293	273	110	272	586	274	8	11	2	NWB2
6	W	294	295	273	110	272	587	274	8	11	3	NWB2
6	W	280	281	265	105	263	580	273	8	12	0	NWB2
6	W	282	283	265	105	263	581	273	8	12	1	NWB2
6	W	284	285	265	105	263	582	273	8	12	2	NWB2
6	W	286	287	265	105	263	583	273	8	12	3	NWB2
3	W	200	201	309	129	312	664	304	8	13	0	NWB2
3	W	202	203	309	129	312	665	304	8	13	1	NWB2
3	W	204	205	309	129	312	666	304	8	13	2	NWB2
3	W	206	207	309	129	312	667	304	8	13	3	NWB2
3	W	192	193	297	120	295	620	288	8	14	0	NWB2
3	W	194	195	297	120	295	621	288	8	14	1	NWB2
3	W	196	197	297	120	295	622	288	8	14	2	NWB2
3	W	198	199	297	120	295	623	288	8	14	3	NWB2
3	W	184	185	285	116	287	600	280	8	15	0	NWB2
3	W	186	187	285	116	287	601	280	8	15	1	NWB2
3	W	188	189	285	116	287	602	280	8	15	2	NWB2
3	W	190	191	285	116	287	603	280	8	15	3	NWB2
2	W	148	149	284	115	282	576	272	8	16	0	NWB2
2	W	150	151	284	115	282	577	272	8	16	1	NWB2
2	W	152	153	284	115	282	578	272	8	16	2	NWB2
2	W	154	155	284	115	282	579	272	8	16	3	NWB2
2	W	140	141	269	110	272	572	270	8	17	0	NWB2
2	W	142	143	269	110	272	573	270	8	17	1	NWB2
2	W	144	145	269	110	272	574	270	8	17	2	NWB2
2	W	146	147	269	110	272	575	270	8	17	3	NWB2

Table 23: **NorthWest Bottom 2 endwall COT map.**

SL	E/W	cell	cell+1	cell ϕ	slot	slot ϕ	repeater	repeater ϕ	crate	slot	conn	crate
7	W	408	409	345	140	336	716	323	9	2	0	NWB1
7	W	410	411	345	140	336	717	323	9	2	1	NWB1
7	W	412	413	345	140	336	718	323	9	2	2	NWB1
7	W	414	415	345	140	336	719	323	9	2	3	NWB1
7	W	400	401	338	135	327	712	321	9	3	0	NWB1
7	W	402	403	338	135	327	713	321	9	3	1	NWB1
7	W	404	405	338	135	327	714	321	9	3	2	NWB1
7	W	406	407	338	135	327	715	321	9	3	3	NWB1
7	W	392	393	332	133	323	708	320	9	4	0	NWB1
7	W	394	395	332	133	323	709	320	9	4	1	NWB1
7	W	396	397	332	133	323	710	320	9	4	2	NWB1
7	W	398	399	332	133	323	711	320	9	4	3	NWB1
7	W	384	385	325	133	323	700	317	9	5	0	NWB1
7	W	386	387	325	133	323	701	317	9	5	1	NWB1
7	W	388	389	325	133	323	702	317	9	5	2	NWB1
7	W	390	391	325	133	323	703	317	9	5	3	NWB1
7	W	376	377	318	130	317	692	314	9	6	0	NWB1
7	W	378	379	318	130	317	693	314	9	6	1	NWB1
7	W	380	381	318	130	317	694	314	9	6	2	NWB1
7	W	382	383	318	130	317	695	314	9	6	3	NWB1
6	W	352	353	333	140	336	704	319	9	7	0	NWB1
6	W	354	355	333	140	336	705	319	9	7	1	NWB1
6	W	356	357	333	140	336	706	319	9	7	2	NWB1
6	W	358	359	333	140	336	707	319	9	7	3	NWB1
6	W	344	345	325	135	327	684	311	9	8	0	NWB1
6	W	346	347	325	135	327	685	311	9	8	1	NWB1
6	W	348	349	325	135	327	686	311	9	8	2	NWB1
6	W	350	351	325	135	327	687	311	9	8	3	NWB1
6	W	336	337	318	130	317	680	310	9	9	0	NWB1
6	W	338	339	318	130	317	681	310	9	9	1	NWB1
6	W	340	341	318	130	317	682	310	9	9	2	NWB1
6	W	342	343	318	130	317	683	310	9	9	3	NWB1
6	W	328	329	310	129	312	676	308	9	10	0	NWB1
6	W	330	331	310	129	312	677	308	9	10	1	NWB1
6	W	332	333	310	129	312	678	308	9	10	2	NWB1
6	W	334	335	310	129	312	679	308	9	10	3	NWB1
6	W	320	321	303	125	304	672	307	9	11	0	NWB1
6	W	322	323	303	125	304	673	307	9	11	1	NWB1
6	W	324	325	303	125	304	674	307	9	11	2	NWB1
6	W	326	327	303	125	304	675	307	9	11	3	NWB1
3	W	224	225	345	142	340	724	346	9	12	0	NWB1
3	W	226	227	345	142	340	725	346	9	12	1	NWB1
3	W	228	229	345	142	340	726	346	9	12	2	NWB1
3	W	230	231	345	142	340	727	346	9	12	3	NWB1
3	W	216	217	333	140	336	720	324	9	13	0	NWB1
3	W	218	219	333	140	336	721	324	9	13	1	NWB1
3	W	220	221	333	140	336	722	324	9	13	2	NWB1
3	W	222	223	333	140	336	723	324	9	13	3	NWB1
3	W	208	209	321	133	323	696	316	9	14	0	NWB1
3	W	210	211	321	133	323	697	316	9	14	1	NWB1
3	W	212	213	321	133	323	698	316	9	14	2	NWB1
3	W	214	215	321	133	323	699	316	9	14	3	NWB1
2	W	172	173	329	135	327	688	313	9	15	0	NWB1
2	W	174	175	329	135	327	689	313	9	15	1	NWB1
2	W	176	177	329	135	327	690	313	9	15	2	NWB1
2	W	178	179	329	135	327	691	313	9	15	3	NWB1
2	W	164	165	314	129	312	668	305	9	16	0	NWB1
2	W	166	167	314	129	312	669	305	9	16	1	NWB1
2	W	168	169	314	129	312	670	305	9	16	2	NWB1
2	W	170	171	314	129	312	671	305	9	16	3	NWB1
2	W	156	157	299	120	295	660	302	9	17	0	NWB1
2	W	158	159	299	120	295	661	302	9	17	1	NWB1
2	W	160	161	299	120	295	662	302	9	17	2	NWB1
2	W	162	163	299	120	295	663	302	9	17	3	NWB1

Table 24: **NorthWest Bottom 1 endwall COT map.**

6 TDC to XFT Map

The XFT requires that the ANSLEY cables are mapped in the following way. This is essential for the sharing of hit information along the backplane of the FINDER crate.

The following specifications are required of the Ansley cables from the TDC crates on the endwall to the XFT Finder boards in the first floor counting room:

1. The ANSLEY cables report information from four adjacent COT cell from the same COT layer.

2. The ANSLEY cables must be arranged such that the first cell at $\phi = 0$ (in each layer) is the first cell of the first ANSLEY cable for that layer. NOTE: The information from ALL the wires in the first cell should be on the first cable...even the wires below $\phi = 0$. The next three cells on that first cable are the cells toward increasing ϕ (*see below).

3. The next cable should contain the information for the next four cells in increasing ϕ. This continues around each layer. The number of cells in each layer is divisible by four so there are an integer number of cables required for each layer.

4. The arrangement of signals on an ANSLEY cable is given in a design note by Terri Shaw [2]. This is a copy of the table from the note. The signals are broken down into conductor pairs (differential signal):

Table 25: Signal assignment on each Ansley cable. The cables are sending new data every 22ns. The six lines below represent the 6 22ns time slices within a 132ns clock tick. PR=PROMPT; DL=DELAYED

Pairs 1,2	Pair3	Pair 4	Pair 5	Pair 6	Pair 7	Pairs 8-23	Pairs 24,25
GND	STROBE	GND	BEAM_0	GND	LOGIC H	Chan 0-15 PR	GND
GND	STROBE	GND	BEAM_0	GND	LOGIC L	Chan 16-31 PR	GND
GND	STROBE	GND	BEAM_0	GND	LOGIC L	Chan 32-47 PR	GND
GND	STROBE	GND	BEAM_0	GND	LOGIC L	Chan 0-15 DL	GND
GND	STROBE	GND	BEAM_0	GND	LOGIC L	Chan 16-31 DL	GND
GND	STROBE	GND	BEAM_0	GND	LOGIC L	Chan 32-47 DL	GND

5. The ANSLEY cables enter the XFT racks in four bundles, one for each superlayer. The bundles for SL1 and SL2 should be arrange near the back of the rack with SL1 on the left (as view from the front of the rack) and SL2 on the right. The bundle for SL3 should be in front (closer to the front of the rack) of the SL1 bundle and the SL4 bundle should be in front of the SL2 bundle. The cables for a given layer should be arranged in increasing ϕ when moving from left to right as viewed from the front of the rack.

   The 8 SL1-3 FINDER cards are arranged in increasing ϕ in slots 4-11. In slots 13-20 are 8 FINDER cards for SL2-4 with increasing ϕ running from 13 to 20. Redriven neighbor cables are required for slots 3,12,21. The cable requirements for each slot in the crate are as follows:

   (a) Cable Numbers 0-47 (Are cables from the 1st Axial Layer)

(b) Cable Numbers 48-119 (Are cables from the 2nd Axial Layer)

(c) Cable Numbers 120-215 (Are cables from the 3rd Axial Layer)

(d) Cable Numbers 216-335 (Are cables from the 4th Axial Layer)

- Cables are numbered in increasing ϕ. We have 24 cables which are have copies. In these cases, the two cables go to different XFT Finder Crates (Different Racks). These cables are labeled with "C" (*e.g.*150C).
- Also shown is the cabling in the case of split wires in the first axial superlayer. Cables labeled with an "S" represent the new cable which would be need if the wires were split.

Notes for Tables 6-8:

- In all crates there are cables from all 4 SL in SLOT 12.
- The cables within a bundle should enter into the rack from left to right (as view from the FRONT of the crate) in the order given above. This is essential for plugging into the FINDER transition cards.
- We have assumed that crate #1 is closest to the windows in the first floor counting room and crate #3 is the furthest. We have also assumed that the front of the crates is facing west.
- Increasing ϕ is assumed to be counter clockwise as view from the end of the COT chamber where the cells are tilted counter clockwise. Care must be taken if the ANSLEY cables come off the opposite end of the chamber!

7 Stereo Ansley Cable Specification

This section outlines the Ansley cable mapping for the potential XFT upgrade to include information from Superlayer 7.

Specifications:

1. All the stereo cables come from a single superlayer (superlayer 7).
2. As with the axial layers, each cable will carry the hit information for 4 adjacent COT cells.
3. The first cable should contain all the hit information for the first cell that sits at $\phi = 0$. In addition, it should contain all the information for the three cells in increasing ϕ.
4. The next cable should contain the information for the next four COT cell. This pattern should continue for the the full 2π of that layer.
5. Labeling scheme:

   Stereo Cables labeled ST000 - ST107 (Note: There are a total of 110 cables, 108 of which are unique and two which are copies. The two cables copies are of cables 0 and 107. These are denoted as ST0C and ST107C in the table below.)

Table 26: Ansley cable mapping to XFT Finder Crate 1.

Crate Number 1								
	Left Front Bundle				Left Back Bundle			
SLOT 3:				213C		46C		46SC
SLOT 4:	214	215	120	121	47	0	47S	0S
SLOT 5:	122	123	124	125	1	2	1S	2S
SLOT 6:	126	127	128	129	3	4	3S	4S
SLOT 7:	130	131	132	133	5	6	5S	6S
SLOT 8:	134	135	136	137	7	8	7S	8S
SLOT 9:	138	139	140	141	9	10	9S	10S
SLOT10:	142	143	144	145	11	12	11S	12S
SLOT11:	146	147	148	149	13	14	13S	14S
SLOT12:	150C			334C	15C		15SC	118C
	Right Front Bundle				Right Back Bundle			
SLOT13:	335	216	217	218	219	119	48	49
SLOT14:	220	221	222	223	224	50	51	52
SLOT15:	225	226	227	228	229	53	54	55
SLOT16:	230	231	232	233	234	56	57	58
SLOT17:	235	236	237	238	239	59	60	61
SLOT18:	240	241	242	243	244	62	63	64
SLOT19:	245	246	247	248	249	65	66	67
SLOT20:	250	251	252	253	254	68	69	70
SLOT21:	255C					71C		

Table 27: Ansley cable mapping to XFT Finder Crate 2.

Crate Number 2								
	Left Front Bundle				Left Back Bundle			
SLOT 3:				149C		14C		16SC
SLOT 4:	150	151	152	153	15	16	15S	16S
SLOT 5:	154	155	156	157	17	18	17S	18S
SLOT 6:	158	159	160	161	19	20	19S	20S
SLOT 7:	162	163	164	165	21	22	21S	22S
SLOT 8:	166	167	168	169	23	24	23S	24S
SLOT 9:	170	171	172	173	25	26	25S	26S
SLOT10:	174	175	176	177	27	28	27S	28S
SLOT11:	178	179	180	181	29	30	29S	30S
SLOT12:	182C			254C	31C		31SC	70C
	Right Front Bundle				Right Back Bundle			
SLOT13:	255	256	257	258	259	71	72	73
SLOT14:	260	261	262	263	264	74	75	76
SLOT15:	265	266	267	268	269	77	78	79
SLOT16:	270	271	272	273	274	80	81	82
SLOT17:	275	276	277	278	279	83	84	85
SLOT18:	280	281	282	283	284	86	87	88
SLOT19:	285	286	287	288	289	89	90	91
SLOT20:	290	291	292	293	294	92	93	94
SLOT21:	295C					95C		

Table 28: Ansley cable mapping to XFT Finder Crate 3.

Crate Number 3								
	Left Front Bundle				Left Back Bundle			
SLOT 3:				181C		30C		30SC
SLOT 4:	182	183	184	185	31	32	31S	32S
SLOT 5:	186	187	188	189	33	34	33S	34S
SLOT 6:	190	191	192	193	35	36	35S	36S
SLOT 7:	194	195	196	197	37	38	37S	38S
SLOT 8:	198	199	200	201	39	40	39S	40S
SLOT 9:	202	203	204	205	41	42	41S	42S
SLOT10:	206	207	208	209	43	44	43S	44S
SLOT11:	210	211	212	213	45	46	45S	46S
SLOT12:	214C			294C	47C		47SC	94C
	Right Front Bundle				Right Back Bundle			
SLOT13:	295	296	297	298	299	95	96	97
SLOT14:	300	301	302	303	304	98	99	100
SLOT15:	305	306	307	308	309	101	102	103
SLOT16:	310	311	312	313	314	104	105	106
SLOT17:	315	316	317	318	319	107	108	109
SLOT18:	320	321	322	323	324	110	111	112
SLOT19:	325	326	327	328	329	113	114	115
SLOT20:	330	331	332	333	334	116	117	118
SLOT21:	335C					119C		

6. The cables should come into a rack that contains a crate with Stereo finder cards. These cables need to come into the crate in ϕ order starting with ST107C, ST000, ST001, ST002,..., ST107, ST000C. Below we are assuming the transition card is similar to the SL2-4 transition card with four cables plugging in the row of connectors nearest the backplane and two cables plugged in the row of connector furthest from the backplane.

Table 9 shows the mapping of the Ansleys from Superlayer 7 TDC crates.

Table 29: Ansley specification for XFT Stereo Crate.

Stereo Rack						
	Front Bundle				Back Bundle	
SLOT 2:						ST107C
SLOT 3:	ST000	ST001	ST002	ST003	ST004	ST005
SLOT 4:	ST006	ST007	ST008	ST009	ST010	ST011
SLOT 5:	ST012	ST013	ST014	ST015	ST016	ST017
SLOT 6:	ST018	ST019	ST020	ST021	ST022	ST023
SLOT 7:	ST024	ST025	ST026	ST027	ST028	ST029
SLOT 8:	ST030	ST031	ST032	ST033	ST034	ST035
SLOT 9:	ST036	ST037	ST038	ST039	ST040	ST041
SLOT10:	ST042	ST043	ST044	ST045	ST046	ST047
SLOT11:	ST048	ST049	ST050	ST051	ST052	ST053
SLOT12:	ST054	ST055	ST056	ST057	ST058	ST059
SLOT13:	ST060	ST061	ST062	ST063	ST064	ST065
SLOT14:	ST066	ST067	ST068	ST069	ST070	ST071
SLOT15:	ST072	ST073	ST074	ST075	ST076	ST077
SLOT16:	ST078	ST079	ST080	ST081	ST082	ST083
SLOT17:	ST084	ST085	ST086	ST087	ST088	ST089
SLOT18:	ST090	ST091	ST092	ST093	ST094	ST095
SLOT19:	ST096	ST097	ST098	ST099	ST100	ST101
SLOT20:	ST102	ST103	ST104	ST105	ST106	ST107
SLOT21:	ST00C					

References

[1] The CDF-II Collaboration, FERMILAB-Pub-96/390-E (1996).

[2] Terri Shaw, *et al.,*"XFT Finder Specification".