



C7® Advanced Conductor - ACCS/TW/C7-TS

Shaped Wire, Aluminum Conductor, Composite Supported



Image not to scale. See Table 1 for dimensions.

CONSTRUCTION:

1. **Core:** Stranded continuous carbon fiber thermoset composite core with a protective capping layer
2. **Stranding:** Annealed aluminum (1350-O) trapezoidal shaped strands with 63% conductivity

APPLICATIONS AND FEATURES:

Southwire's C7-TS conductor is a high-temperature, low-sag (HTLS) advanced conductor designed for overhead transmission and distribution systems where increased capacity and reliability are critical. Its multi-strand carbon fiber composite core delivers near-zero thermal sag, exceptional tensile strength, and structural redundancy to eliminate single-point failures. C7-TS uses fully annealed 1350-O aluminum strands, with trapezoidal strands (TW) for reduced diameter and improved ampacity. Its crew-friendly design allows installation using conventional hardware and familiar techniques. Applications include long-span transmission corridors, thermal uprating of congested lines, and environments requiring superior corrosion resistance. Rated for a continuous operating temperature of 180°C and an emergency operating temperature of 200°C.

Download additional information here: [C7® Portfolio](#)

SPECIFICATIONS:

- ASTM B609 Standard Specification for Aluminum 1350 Round Wire, Annealed and Intermediate Tempers, for Electrical Purposes
- ASTM B987 Standard Specification for Carbon Fiber Thermoset Polymer Matrix Composite Core (CFC) for use in Overhead Electrical Conductors
- Made in America: Compliant with both Buy American and Buy America Act (BAA) requirements per 49 U.S.C. § 5323(j) and the Federal Transit Administration Buy America requirements per 49 C.F.R. part 661



Table 1 – Dimensions and Weight

Stock Number	Code Word	Cond Size	Type	Cross-Sectional Area		Layers of AL	Stranding		Diameter		Weight			RBS
		kcmil	num	AL	Total		AL	C7 Strands	C7 Core	Overall	AL	C7 Core	Total	
				in ²	in ²		num	num x in	in	in	lb/1000ft	lb/1000ft	lb/1000ft	
TBA	Fundy/TW	203.2	43	0.1596	0.228	1	8	7 x 0.1115	0.3346	0.585	194.2	48.2	242.4	22100
TBA	Shenandoah/TW	266.8	21	0.2095	0.2533	1	8	7 x 0.0892	0.2677	0.608	255	30.9	285.8	15000
TBA	Olympic/TW	325	17	0.2553	0.299	2	20	7 x 0.0892	0.2677	0.671	309.2	30.9	340.1	15400
TBA	Wrangell/TW	336.4	17	0.2642	0.308	2	20	7 x 0.0892	0.2677	0.681	320.1	30.9	351	15500
TBA	Badlands/TW	336.4	22	0.2642	0.3218	2	20	7 x 0.1024	0.3071	0.685	320.1	40.6	360.7	19700
TBA	Andes/TW	397.5	14	0.3122	0.356	2	18	7 x 0.0892	0.2677	0.71	378.1	30.9	408.9	15900
TBA	Joshua Tree/TW	397.5	16	0.3122	0.3627	2	18	7 x 0.0958	0.2874	0.718	373.5	35.6	409.1	17900
TBA	Sequoia/TW	397.5	22	0.3122	0.3806	2	18	7 x 0.1115	0.3346	0.738	378.1	48.2	426.3	23400
TBA	Rogers/TW	477	13	0.3746	0.4251	2	18	7 x 0.0958	0.2874	0.778	447.4	35.6	483.3	18400
TBA	Yosemite/TW	477	15	0.3746	0.4322	2	18	7 x 0.1024	0.3071	0.787	453.7	40.6	494.3	20600
TBA	Capitol Reef/TW	477	23	0.3746	0.4601	2	20	7 x 0.1247	0.374	0.82	450.4	60.2	510.6	29100
TBA	Pinnacles/TW	556.5	10	0.4371	0.4809	2	16	7 x 0.0892	0.2677	0.823	522.1	30.9	553	16900
TBA	White Sands/TW	556.5	13	0.4371	0.4947	2	18	7 x 0.1024	0.3071	0.832	522.4	40.6	563	21100
TBA	Indiana Dunes/TW	556.5	16	0.4371	0.5055	2	20	7 x 0.1115	0.3346	0.847	522.9	48.2	571.1	24400
TBA	New River Gorge/TW	556.5	23	0.4371	0.5395	2	20	7 x 0.1365	0.4094	0.888	525.4	72.2	597.6	34700
TBA	Tortugas/TW	636	10	0.4995	0.55	2	20	7 x 0.0958	0.2874	0.88	596.7	35.6	632.3	19400
TBA	Yellowstone/TW	636	12	0.4995	0.5571	2	16	7 x 0.1024	0.3071	0.887	605.4	40.6	646	21600
TBA	Glacier/TW	636	15	0.4995	0.5762	2	20	7 x 0.1181	0.3543	0.905	605.2	54.1	659.2	27400
TBA	Carlsbad/TW	636	22	0.4995	0.61	2	20	7 x 0.1417	0.4252	0.937	605.2	77.8	683	36900
TBA	Congaree/TW	641.7	11	0.504	0.5616	2	16	7 x 0.1024	0.3071	0.89	610.8	40.6	651.4	21600
TBA	Vinson/TW	714	10	0.5608	0.6184	2	16	7 x 0.1024	0.3071	0.933	669.9	40.6	710.5	22100
TBA	Kilimanjaro/TW	795	7	0.6244	0.6682	2	20	7 x 0.0892	0.2677	0.962	745.1	30.9	776	18400
TBA	Alps/TW	795	9	0.6244	0.682	2	20	7 x 0.1024	0.3071	0.974	756.5	40.6	797.1	22600
TBA	Wind Cave/TW	795	12	0.6244	0.7011	2	20	7 x 0.1181	0.3543	0.99	756.5	54.1	810.5	28400
TBA	Denali/TW	795	16	0.6244	0.7268	2	20	7 x 0.1365	0.4094	1.01	747	72.2	819.2	36200
TBA	Rocky/TW	795	22	0.6244	0.7607	2	24	7 x 0.1575	0.4724	1.044	756.3	96.1	852.4	45600
TBA	Gateway Arch/TW	900	7	0.7069	0.7573	3	32	7 x 0.0958	0.2874	1.031	847.7	35.6	883.3	21000
TBA	Rainier/TW	900	13	0.7069	0.7997	2	20	7 x 0.1299	0.3898	1.056	844.8	65.4	910.2	34000
TBA	Mauna Kea/TW	900	21	0.7069	0.8548	2	20	7 x 0.1640	0.4921	1.1	856.4	104.3	960.7	49700
TBA	Crater Lake/TW	954	7	0.7493	0.7997	3	34	7 x 0.0958	0.2874	1.058	898.6	35.6	934.1	21300
TBA	Grand Canyon/TW	954	10	0.7493	0.826	3	34	7 x 0.1181	0.3543	1.072	899.4	54.1	953.5	29300
TBA	Fuji/TW	954	12	0.7493	0.8421	2	20	7 x 0.1299	0.3898	1.077	907.8	65.4	973.2	34300
TBA	Jasper/TW	954	16	0.7493	0.868	2	22	7 x 0.1470	0.4409	1.104	896.4	83.7	980.1	41400
TBA	Arches/TW	954	20	0.7493	0.8972	2	20	7 x 0.1640	0.4921	1.126	907.8	104.3	1012	50100
TBA	Everglades/TW	973.1	14	0.7643	0.8747	2	20	7 x 0.1417	0.4252	1.108	925.9	77.8	1003.8	39000
TBA	Big Bend/TW	1033.5	5	0.8117	0.8555	3	34	7 x 0.0892	0.2677	1.093	972.5	30.9	1003.4	19800
TBA	Lassen/TW	1033.5	7	0.8117	0.8693	3	34	7 x 0.1024	0.3071	1.103	973.4	40.6	1014	24000
TBA	Tahoe/TW	1033.5	11	0.8117	0.8972	3	34	7 x 0.1247	0.374	1.118	980.9	60.2	1041.2	32500
TBA	Samoa/TW	1033.5	13	0.8117	0.9141	2	22	7 x 0.1365	0.4094	1.13	970.1	72.2	1042.3	37800
TBA	Ocala/TW	1033.5	16	0.8117	0.9391	2	20	7 x 0.1522	0.4567	1.15	971.1	89.8	1060.9	44500
TBA	Cook/TW	1113	5	0.8741	0.9179	3	30	7 x 0.0892	0.2677	1.125	1047.3	30.9	1078.2	20200



Stock Number	Code Word	Cond Size	Type	Cross-Sectional Area		Layers of AL	Stranding		Diameter		Weight			RBS
				AL	Total		AL	C7 Strands	C7 Core	Overall	AL	C7 Core	Total	
		kcmil	num	in ²	in ²	num	num	num x in	in	in	lb/1000ft	lb/1000ft	lb/1000ft	lb
TBA	Blanc/TW	1113	7	0.8741	0.9318	3	34	7 x 0.1024	0.3071	1.139	1048.3	40.6	1088.9	24500
TBA	Niagara/TW	1113	10	0.8741	0.9596	3	34	7 x 0.1247	0.374	1.155	1049.3	60.2	1109.6	32900
TBA	Gannett/TW	1113	13	0.8741	0.9846	3	38	7 x 0.1417	0.4252	1.181	1050.9	77.8	1128.7	39800
TBA	Washington/TW	1192.5	5	0.9366	0.9804	3	34	7 x 0.0892	0.2677	1.166	1122.1	30.9	1153	20700
TBA	Elbert/TW	1192.5	7	0.9366	1.005	3	34	7 x 0.1115	0.3346	1.184	1123.2	48.2	1171.4	28200
TBA	Kings Canyon/TW	1192.5	10	0.9366	1.0294	3	34	7 x 0.1299	0.3898	1.203	1124.3	65.4	1189.7	35700
TBA	Acadia/TW	1192.5	13	0.9366	1.0554	3	38	7 x 0.1470	0.4409	1.223	1125.9	83.7	1209.7	42700
TBA	Redwood/TW	1233.6	7	0.9689	1.0373	3	36	7 x 0.1115	0.3346	1.207	1161.9	48.2	1210.1	28500
TBA	Mesa Verde/TW	1233.6	10	0.9689	1.0617	3	38	7 x 0.1299	0.3898	1.221	1163	65.4	1228.5	35900
TBA	Biscayne/TW	1233.6	13	0.9689	1.0963	3	36	7 x 0.1522	0.4567	1.245	1164.7	89.8	1254.5	45600
TBA	Saguaro/TW	1272	5	0.999	1.0495	3	38	7 x 0.0958	0.2874	1.211	1196.9	35.6	1232.5	23300
TBA	Sierra Nevada/TW	1272	7	0.999	1.0674	3	38	7 x 0.1115	0.3346	1.224	1198.1	48.2	1246.3	28700
TBA	Eldorado/TW	1272	10	0.999	1.1014	3	38	7 x 0.1365	0.4094	1.244	1199.3	72.2	1271.4	39100
TBA	Voyageurs/TW	1272	13	0.999	1.1264	3	39	7 x 0.1522	0.4567	1.259	1201	89.8	1290.8	45800
TBA	Cascades/TW	1351.5	7	1.0615	1.1382	3	38	7 x 0.1181	0.3543	1.264	1273	54.1	1327	31800
TBA	Banff/TW	1351.5	10	1.0615	1.1639	3	42	7 x 0.1365	0.4094	1.278	1274.2	72.2	1346.4	39600
TBA	Elbrus/TW	1351.5	13	1.0615	1.1978	3	42	7 x 0.1575	0.4724	1.299	1276.1	96.1	1372.2	49000
TBA	Kings Peak/TW	1431	7	1.1239	1.2006	3	36	7 x 0.1181	0.3543	1.292	1347.8	54.1	1401.9	32300
TBA	Wheeler/TW	1431	10	1.1239	1.2343	3	36	7 x 0.1417	0.4252	1.309	1349.2	77.8	1427	41700
TBA	Granite/TW	1431	13	1.1239	1.2718	3	36	7 x 0.1640	0.4921	1.341	1351.1	104.3	1455.4	52900
TBA	Borah/TW	1510.5	7	1.1863	1.2718	3	36	7 x 0.1247	0.374	1.33	1422.7	60.2	1483	35400
TBA	Boundary/TW	1510.5	10	1.1863	1.3051	3	36	7 x 0.1470	0.4409	1.347	1424.1	83.7	1507.8	44700
TBA	Whitney/TW	1510.5	12	1.1863	1.3343	3	36	7 x 0.1640	0.4921	1.374	1434.2	104.3	1538.5	53400
TBA	Bryce Canyon/TW	1590	7	1.2488	1.3342	3	36	7 x 0.1247	0.374	1.357	1497.6	60.2	1557.8	35900
TBA	Adirondack/TW	1590	10	1.2488	1.3762	3	38	7 x 0.1522	0.4567	1.386	1499.1	89.8	1588.9	47800
TBA	Zion/TW	1590	12	1.2488	1.3967	3	42	7 x 0.1640	0.4921	1.405	1509.4	104.3	1613.7	53900
TBA	Teton/TW	1780	5	1.398	1.4747	3	38	7 x 0.1181	0.3543	1.422	1674.9	54.1	1729	34400
TBA	Everest/TW	1780	8	1.398	1.5084	3	38	7 x 0.1417	0.4252	1.441	1674.1	77.8	1751.9	43900
TBA	Katmai/TW	1780	10	1.398	1.5344	3	36	7 x 0.1575	0.4724	1.46	1678.2	96.1	1774.3	51600
TBA	Great Basin/TW	1949	7	1.5307	1.6332	3	36	7 x 0.1365	0.4094	1.5	1835.7	72.2	1907.9	43300

All dimensions are nominal and subject to normal manufacturing tolerances.
 The final design of a TW conductor is contingent upon several factors such as: layer diameter, wire width, and wire thickness. This may result in a slight variation in the number of wires, number of layers, and outside diameter from that shown in the table.



Table 2 – Electrical

Stock Number	Code Word	Conductor Size	DC Resistance	AC Resistance @ 60Hz			GMR	Reactance @ 1ft Spacing 60Hz		Ampacity [†]	
			@ 20°C	@ 25°C	@ 180°C	@ 200°C		Inductive X _a	Capacitive X' _a	@ 180°C	@ 200°C
		kcmil	Ω/mile	Ω/mile	Ω/mile	Ω/mile	ft	Ω/mile	MΩ-mile	amp	amp
TBA	Fundy/TW	203.2	0.4445	0.4539	0.7402	0.7771	0.0205	0.4719	0.1102	644	677
TBA	Shenandoah/TW	266.8	0.3387	0.3461	0.5642	0.5924	0.0204	0.4724	0.109	746	784
TBA	Olympic/TW	325	0.2769	0.2831	0.4614	0.4844	0.0231	0.4572	0.1061	851	894
TBA	WrangleII/TW	336.4	0.2675	0.2736	0.4458	0.468	0.0234	0.4558	0.1057	869	914
TBA	Badlands/TW	336.4	0.2675	0.2735	0.4456	0.4679	0.0239	0.453	0.1055	871	916
TBA	Andes/TW	397.5	0.2263	0.2317	0.3772	0.396	0.0238	0.4537	0.1044	957	1006
TBA	Joshua Tree/TW	397.5	0.2235	0.2288	0.3726	0.3912	0.0243	0.4513	0.1041	966	1016
TBA	Sequoia/TW	397.5	0.2262	0.2315	0.3771	0.3958	0.0254	0.4457	0.1033	969	1019
TBA	Rogers/TW	477	0.1861	0.1908	0.3104	0.3259	0.026	0.4429	0.1017	1085	1141
TBA	Yosemite/TW	477	0.1886	0.1933	0.3145	0.3301	0.0265	0.4406	0.1014	1082	1138
TBA	Capitol Reef/TW	477	0.1872	0.1917	0.312	0.3276	0.0287	0.4308	0.1002	1100	1157
TBA	Pinnacles/TW	556.5	0.1594	0.1639	0.2662	0.2795	0.0274	0.4366	0.1	1192	1255
TBA	White Sands/TW	556.5	0.1595	0.1638	0.2663	0.2795	0.0278	0.4348	0.0997	1196	1259
TBA	Indiana Dunes/TW	556.5	0.1597	0.1639	0.2664	0.2797	0.0291	0.4293	0.0992	1202	1265
TBA	New River Gorge/ TW	556.5	0.1604	0.1645	0.2676	0.2809	0.0311	0.421	0.0978	1217	1282
TBA	Tortugas/TW	636	0.1395	0.1437	0.2331	0.2447	0.0295	0.4276	0.0981	1300	1369
TBA	Yellowstone/TW	636	0.1415	0.1457	0.2364	0.2482	0.0297	0.4268	0.0978	1294	1363
TBA	Glacier/TW	636	0.1415	0.1455	0.2362	0.248	0.031	0.4214	0.0972	1303	1372
TBA	Carlsbad/TW	636	0.1415	0.1452	0.2361	0.2478	0.0328	0.4147	0.0962	1318	1388
TBA	Congaree/TW	641.7	0.1403	0.1444	0.2344	0.246	0.0298	0.4264	0.0977	1302	1371
TBA	Vinson/TW	714	0.1243	0.1283	0.2078	0.2181	0.0311	0.4213	0.0963	1403	1477
TBA	Kilimanjaro/TW	795	0.1115	0.1156	0.1868	0.1961	0.0316	0.4191	0.0954	1493	1574
TBA	Alps/TW	795	0.1132	0.1172	0.1895	0.1989	0.0325	0.4158	0.095	1489	1568
TBA	Wind Cave/TW	795	0.1132	0.117	0.1894	0.1988	0.0335	0.4119	0.0946	1497	1577
TBA	Denali/TW	795	0.1118	0.1153	0.1869	0.1961	0.0348	0.4075	0.094	1516	1598
TBA	Rocky/TW	795	0.1132	0.1165	0.1891	0.1984	0.0367	0.401	0.093	1523	1605
TBA	Gateway Arch/TW	900	0.099	0.1031	0.1661	0.1743	0.0337	0.4113	0.0934	1619	1706
TBA	Rainier/TW	900	0.0986	0.1023	0.1652	0.1734	0.0359	0.4036	0.0927	1635	1724
TBA	Mauna Kea/TW	900	0.1	0.1032	0.1672	0.1755	0.0384	0.3955	0.0914	1647	1736
TBA	Crater Lake/TW	954	0.0934	0.0975	0.1569	0.1646	0.0343	0.4091	0.0926	1679	1770
TBA	Grand Canyon/TW	954	0.0935	0.0973	0.1568	0.1645	0.0356	0.4047	0.0922	1686	1778
TBA	Fuji/TW	954	0.0943	0.098	0.1581	0.1659	0.0365	0.4015	0.0921	1682	1773
TBA	Jasper/TW	954	0.0931	0.0966	0.156	0.1637	0.0376	0.3983	0.0913	1706	1799
TBA	Arches/TW	954	0.0943	0.0976	0.1579	0.1657	0.0393	0.3928	0.0907	1707	1800
TBA	Everglades/TW	973.1	0.0925	0.096	0.155	0.1626	0.0379	0.3971	0.0912	1714	1808
TBA	Big Bend/TW	1033.5	0.0861	0.0904	0.145	0.1521	0.0351	0.4064	0.0916	1765	1861
TBA	Lassen/TW	1033.5	0.0862	0.0903	0.145	0.1521	0.0359	0.4037	0.0914	1770	1866
TBA	Tahoe/TW	1033.5	0.0869	0.0907	0.1459	0.153	0.0372	0.3995	0.091	1772	1869
TBA	Samoa/TW	1033.5	0.0859	0.0895	0.1442	0.1513	0.0378	0.3973	0.0906	1788	1886
TBA	Ocala/TW	1033.5	0.086	0.0894	0.1442	0.1513	0.0395	0.3921	0.0901	1798	1897



Stock Number	Code Word	Conductor Size	DC Resistance	AC Resistance @ 60Hz			GMR	Reactance @ 1ft Spacing 60Hz		Ampacity [†]	
			@ 20°C	@ 25°C	@ 180°C	@ 200°C		Inductive X _a	Capacitive X' _a	@ 180°C	@ 200°C
		kcmil	Ω/mile	Ω/mile	Ω/mile	Ω/mile	ft	Ω/mile	MΩ-mile	amp	amp
TBA	Cook/TW	1113	0.08	0.0844	0.1349	0.1415	0.0355	0.4051	0.0908	1846	1948
TBA	Blanc/TW	1113	0.08	0.0843	0.1349	0.1415	0.037	0.4002	0.0904	1854	1955
TBA	Niagara/TW	1113	0.0801	0.084	0.1348	0.1414	0.0383	0.396	0.09	1862	1965
TBA	Gannett/TW	1113	0.0802	0.0839	0.1348	0.1415	0.04	0.3907	0.0893	1875	1978
TBA	Washington/TW	1192.5	0.0746	0.0792	0.1262	0.1323	0.0372	0.3994	0.0897	1931	2037
TBA	Elbert/TW	1192.5	0.0747	0.0789	0.1261	0.1322	0.0386	0.3949	0.0893	1941	2048
TBA	Kings Canyon/TW	1192.5	0.0748	0.0787	0.126	0.1321	0.0398	0.391	0.0888	1951	2059
TBA	Acadia/TW	1192.5	0.0749	0.0786	0.126	0.1322	0.0414	0.3865	0.0883	1962	2070
TBA	Redwood/TW	1233.6	0.0722	0.0765	0.122	0.1279	0.0399	0.391	0.0887	1985	2095
TBA	Mesa Verde/TW	1233.6	0.0723	0.0763	0.1219	0.1279	0.0407	0.3886	0.0883	1993	2104
TBA	Biscayne/TW	1233.6	0.0724	0.076	0.1219	0.1278	0.0424	0.3834	0.0878	2006	2117
TBA	Saguaro/TW	1272	0.07	0.0745	0.1185	0.1242	0.039	0.3938	0.0886	2017	2129
TBA	Sierra Nevada/TW	1272	0.07	0.0744	0.1184	0.1242	0.04	0.3906	0.0883	2024	2136
TBA	Eldorado/TW	1272	0.0701	0.074	0.1183	0.124	0.0416	0.3859	0.0878	2036	2149
TBA	Voyageurs/TW	1272	0.0702	0.0739	0.1183	0.1241	0.0429	0.382	0.0874	2043	2157
TBA	Cascades/TW	1351.5	0.0659	0.0703	0.1116	0.117	0.0414	0.3863	0.0873	2106	2224
TBA	Banff/TW	1351.5	0.066	0.07	0.1116	0.117	0.0429	0.382	0.087	2114	2232
TBA	Elbrus/TW	1351.5	0.0661	0.0698	0.1115	0.1169	0.0443	0.3781	0.0865	2126	2244
TBA	Kings Peak/TW	1431	0.0623	0.0668	0.1057	0.1108	0.0426	0.3828	0.0867	2180	2302
TBA	Wheeler/TW	1431	0.0623	0.0664	0.1055	0.1106	0.044	0.379	0.0863	2191	2313
TBA	Granite/TW	1431	0.0624	0.0662	0.1055	0.1106	0.0457	0.3744	0.0856	2208	2332
TBA	Borah/TW	1510.5	0.059	0.0635	0.1003	0.1051	0.044	0.379	0.0858	2258	2386
TBA	Boundary/TW	1510.5	0.059	0.0632	0.1001	0.105	0.0453	0.3754	0.0854	2269	2397
TBA	Whitney/TW	1510.5	0.0594	0.0634	0.1007	0.1055	0.0467	0.3718	0.0848	2278	2406
TBA	Bryce Canyon/TW	1590	0.056	0.0607	0.0955	0.1001	0.0437	0.3799	0.0852	2329	2461
TBA	Adirondack/TW	1590	0.0561	0.0603	0.0953	0.0999	0.0463	0.3727	0.0846	2348	2480
TBA	Zion/TW	1590	0.0565	0.0605	0.0958	0.1004	0.0477	0.3692	0.0842	2352	2485
TBA	Teton/TW	1780	0.05	0.0552	0.0859	0.0899	0.046	0.3737	0.0838	2493	2636
TBA	Everest/TW	1780	0.05	0.0547	0.0856	0.0896	0.0475	0.3697	0.0834	2509	2652
TBA	Katmai/TW	1780	0.0501	0.0546	0.0856	0.0897	0.049	0.3659	0.083	2519	2663
TBA	Great Basin/TW	1949	0.0457	0.0509	0.0788	0.0825	0.0495	0.3648	0.0822	2648	2801

Resistance and ampacity based on an aluminum conductivity of 63% IACS at 20°C.

† Ampacity based on 25°C ambient temperature, 2 ft/s perpendicular wind, 0.5 emissivity, 0.5 absorptivity, 60 Hz, clear atmosphere, sea level, 30° N. latitude, N-S line azimuth, noon on June 10th.