Southwire®

C7® OVERHEAD CONDUCTOR BROCHURE

SOUTHWIRE.COM

INNOVATION STARTS AT THE CORE

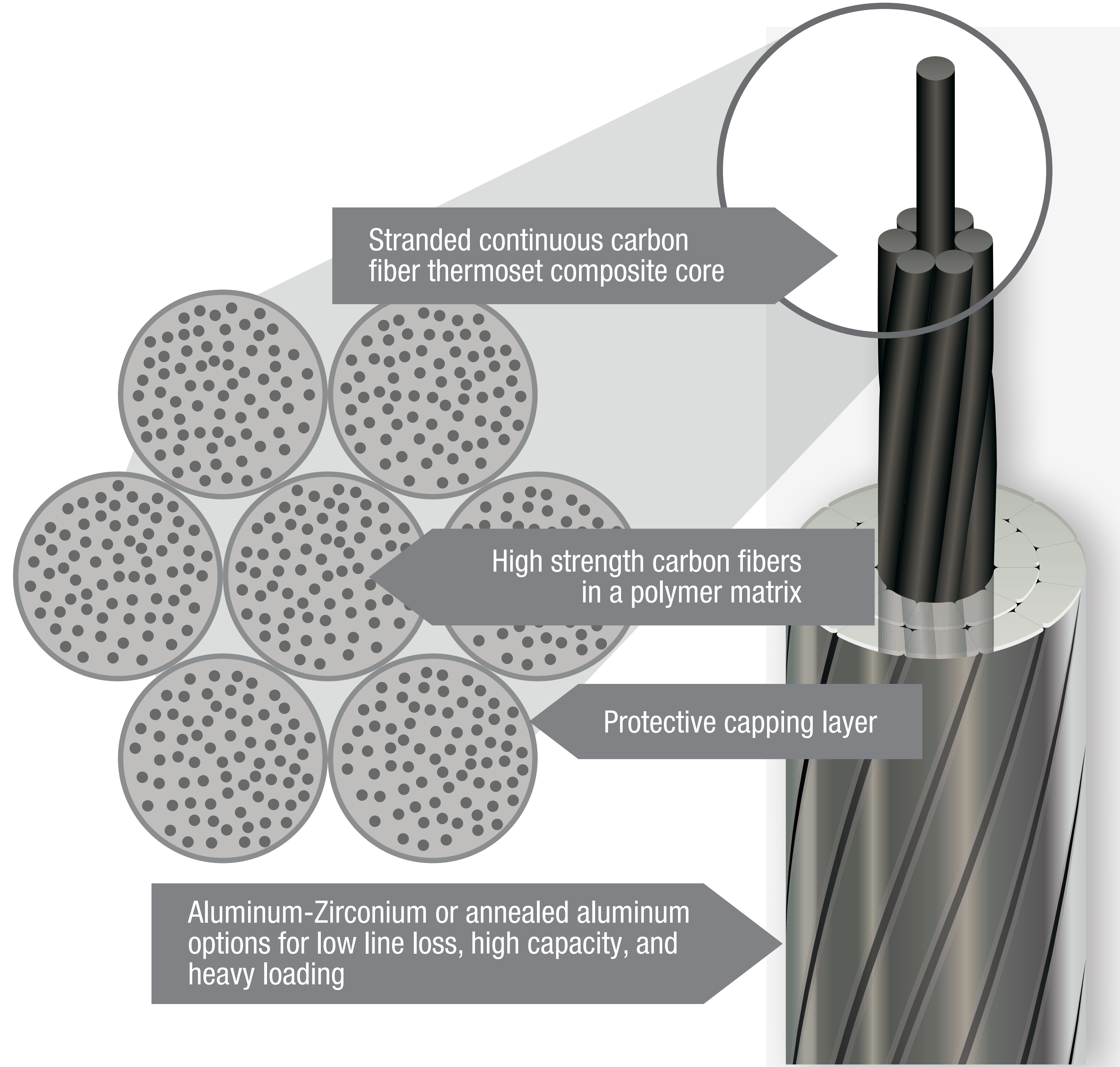
Lighter, Stronger, Tougher.
Southwire is revolutionizing the industry with its innovative C7® Overhead Conductor. With its unique stranded construction, Southwire's C7® Overhead Conductor is the most durable, rugged, and reliable composite core conductor on the market - and the only composite core conductor developed by a conductor manufacturer with full knowledge of utility needs and practices.

INTRODUCING C7®
OVERHEAD CONDUCTOR

- **Minimal Thermal Expansion** – minimal sag increase at high power transfer
- **Stranded Core** – no single point of failure
- **Flexible** – robust, installs like traditional conductor
- **Less Sag** – for lines with clearance or structure limitations
- **Easy Installation** – uses traditional methods and familiar hardware
- **Designs For All Loading Conditions** – light loading to heavy ice loading
- **Trapezoidal Wire (TW) or Round Wire Available**
- **Aluminum-Zirconium (Al-Zr) or Annealed Aluminum (1350-0 Temper)**

New Lines:
Reduce new line costs by saving on structures and foundations. Cross challenging terrain or reduce the visual profile in sensitive areas. Build for the future with high capacity, low sag lines.

Reconductoring:
Double the capacity of existing ACSR lines. Light conductor weight and low sag allow use of existing structures and ROW, even for lines previously designed with all-aluminum or aluminum alloy (AAC, AAAC, ACAR) conductors.



PERFORMANCE ADVANTAGES

Proven Robust Materials

- Matrix materials have been used in demanding environments for over 50 years
- Resists harsh chemicals, high temperatures, and corrosion
- Resistant to abrasion and high-tension fatigue

Low Sag

- Minimal sag increase at high temperature
- For lines with clearance or structure limitations
- Reduce land requirements, structure size and height, and foundation costs
- Overcome objections to high-visual-profile lines
- Capacity for future system rating increases without sag increase consideration

Stranded Core

- Multi-strand, NO single-point of failure like single-rod designs
- More flexible than single-rod core designs
- Increased tolerance for bending

Suitable for Extreme Weather Loading

- Al-Zr option bolsters carbon fiber to carry heavy ice and wind loads with low sag

Increase Capacity

- Double the capacity of same-diameter ACSR round-wire conductor
- 180°C continuous, 200°C emergency ratings are material property based
- No losses due to core magnetization

Conventional Installation & Inspection

- Uses standard work practices and traditional hardware
- Same stringing blocks and installation equipment as ACSS

CASE STUDY:
RECONDUCTORING

C7® Overhead Conductor Solves Erosion Issue:
A utility in the U.S. was planning to reconductor an existing 138 kV transmission line in a residential area to address encroaching erosion at a nearby river. To prevent issues related to river bank erosion near a structure, the utility was planning to move the structure further inland. The move would increase the river crossing span by approximately 550 feet, to 1,840 feet. The existing conductor was 795.0 kcmil 26/7 ACSR "Drake". The conductor solution was required to maintain existing clearances (design considerations limited sag to 40 feet) while also maintaining existing ampacity and tensions. The design considered NESC "Heavy" loading with an additional Extreme Ice/Wind load.

C7® Overhead Conductor was pinpointed early on for its high-temperature, low-sag properties and its corrosion resistance. The proposed solution utilized a 7-strand carbon fiber thermoset core with trapezoidal-shaped annealed aluminum strands. Due to its high conductivity and high temperature rating, the C7® overhead conductor solution, 477.0 kcmil Type 23 Capitol Reef/ACCS/TW/C7-TS, required 40% less aluminum to maintain the existing rating. The high strength of the carbon fiber composite core also allowed for a 16% smaller core to be used.

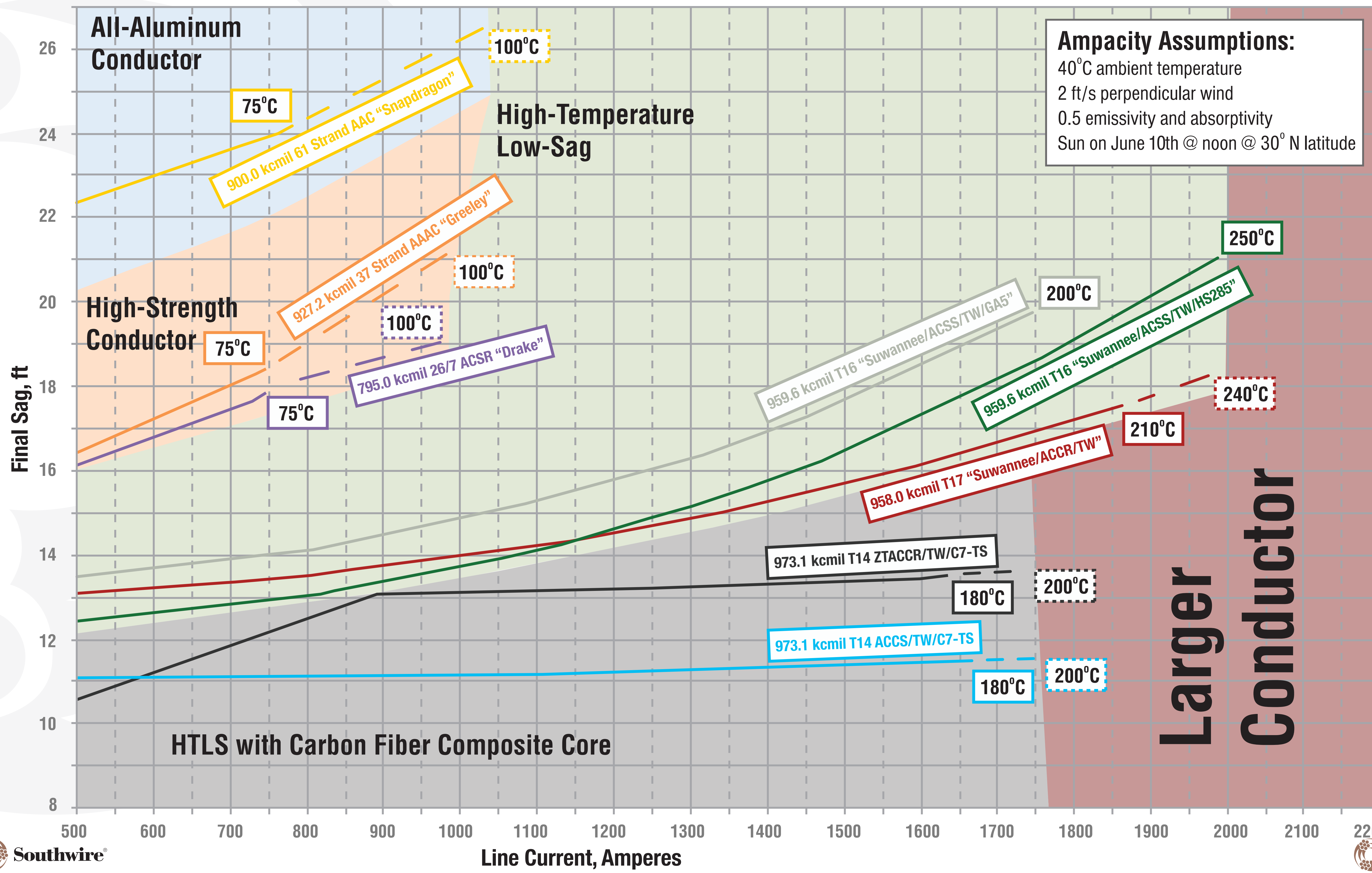
Showing Up and Showing Out:
Using the C7® overhead conductor solution, the sag in the 1,840-ft span decreased by 66% compared to the existing Drake. Conductor weight also decreased by 53%.

Conductor Type	Size kcmil	Stranding/ Type No.	Outside Diameter in	Weight lb/ft	RBS lb	Evaluation Results					
						Max Tension		Loaded Weight lb/ft	Cond. Temp. °C	Current A	Final Sag ft
						lb	%RBS				
ACSR*	795.0	26/7	1.108	1.093	31,500	12,480	40%	2.963	100	994	98.01
ACCS/TW/C7-TS	477.0	23	0.818	0.511	29,100	12,027	41%	2.128	180	1049	33.59

*Sag-tension results assume movement of the structure and use of existing Drake

COMPARING THE
ALTERNATIVES

Conductor Performance Map, 1.108" OD, 800-ft RS, NESC "Medium", NESC Limits



Shaped Wire Concentric-Lay-Stranded Compact Thermal-Resistant Aluminum Conductor, Composite Reinforced (ZTACCR/TW/C7®-TS)

Code Word	Conductor Size, kcmil	Type No.	Cross-Sectional Area, in²		Layers of Al-Zr	Stranding		Diameter		Weight/1000 feet		
			Al-Zr	Total		No. of Al-Zr Strands	C7 Strands, in	C7 Core, in	Complete Conductor, in	Al-Zr, lb	C7, lb	Total, lb
Shenandoah/TW	266.8	21	0.2095	0.2533	2	14	7 x 0.0892	0.2677	0.608	250.3	30.9	281.1
Olympic/TW	325.0	17	0.2553	0.2990	2	20	7 x 0.0892	0.2677	0.671	304.0	30.9	334.9
Wrangell/TW	336.4	17	0.2642	0.3080	2	20	7 x 0.0892	0.2677	0.681	314.7	30.9	345.5
Badlands/TW	336.4	22	0.2642	0.3218	2	16	7 x 0.1024	0.3071	0.685	315.8	40.6	356.4
Andes/TW	397.5	14	0.3122	0.3560	2	18	7 x 0.0892	0.2677	0.710	371.3	30.9	402.2
Joshua Tree/TW	397.5	16	0.3122	0.3627	2	18	7 x 0.0958	0.2874	0.718	371.6	35.6	407.1
Sequoia/TW	397.5	22	0.3122	0.3806	2	18	7 x 0.1115	0.3346	0.738	373.1	48.2	421.4
Rogers/TW	477.0	13	0.3746	0.4251	2	18	7 x 0.0958	0.2874	0.778	445.5	35.6	481.0
Yosemite/TW	477.0	15	0.3746	0.4322	2	18	7 x 0.1024	0.3071	0.787	445.8	40.6	486.4
Capitol Reef/TW	477.0	23	0.3746	0.4601	2	20	7 x 0.1247	0.3740	0.820	448.1	60.2	508.3
Tortugas/TW	636.0	10	0.4995	0.5500	2	20	7 x 0.0958	0.2874	0.880	593.6	35.6	629.2
Yellowstone/TW	636.0	12	0.4995	0.5571	2	16	7 x 0.1024	0.3071	0.887	593.8	40.6	634.4
Glacier/TW	636.0	15	0.4995	0.5762	2	20	7 x 0.1181	0.3543	0.905	594.3	54.1	648.4
Carlsbad/TW	636.0	22	0.4995	0.6100	2	22	7 x 0.1417	0.4252	0.948	597.0	77.8	674.9
Congaree/TW	641.7	11	0.5040	0.5616	2	16	7 x 0.1024	0.3071	0.890	599.1	40.6	639.7
Vinson/TW	714.0	10	0.5608	0.6184	2	16	7 x 0.1024	0.3071	0.933	666.4	40.6	707.0
Kilimanjaro/TW	795.0	7	0.6244	0.6682	2	20	7 x 0.0892	0.2677	0.962	741.3	30.9	772.2
Alps/TW	795.0	9	0.6244	0.6820	2	20	7 x 0.1024	0.3071	0.974	741.8	40.6	782.4
Wind Cave/TW	795.0	12	0.6244	0.7011	2	20	7 x 0.1181	0.3543	0.990	742.3	54.1	796.3
Denali/TW	795.0	16	0.6244	0.7268	2	20	7 x 0.1365	0.4094	1.010	743.1	72.2	815.3
Rocky/TW	795.0	22	0.6244	0.7607	2	24	7 x 0.1575	0.4724	1.044	746.3	96.1	842.4
Crater Lake/TW	954.0	7	0.7493	0.7997	3	34	7 x 0.0958	0.2874	1.058	894.0	35.6	929.5
Fuji/TW	954.0	12	0.7493	0.8421	2	20	7 x 0.1299	0.3898	1.077	890.7	65.4	956.1
Jasper/TW	954.0	16	0.7493	0.8680	2	22	7 x 0.1470	0.4409	1.104	891.8	83.7	975.5
Arches/TW	954.0	20	0.7493	0.8972	2	20	7 x 0.1640	0.4921	1.126	894.3	104.3	998.6
Everglades/TW	973.1	14	0.7643	0.8747	2	20	7 x 0.1417	0.4252	1.108	909.0	77.8	986.8
Big Bend/TW	1033.5	5	0.8117	0.8555	3	34	7 x 0.0892	0.2677	1.093	967.5	30.9	998.4
Lassen/TW	1033.5	7	0.8117	0.8693	3	34	7 x 0.1024	0.3071	1.103	968.5	40.6	1009.1
Samoa/TW	1033.5	13	0.8117	0.9141	2	22	7 x 0.1365	0.4094	1.130	965.1	72.2	1037.3
Cook/TW	1113.0	5	0.8741	0.9179	3	30	7 x 0.0892	0.2677	1.125	1041.9	30.9	1072.8
Blanc/TW	1113.0	7	0.8741	0.9318	3	34	7 x 0.1024	0.3071	1.139	1042.9	40.6	1083.5
Gannett/TW	1113.0	13	0.8741	0.9846	3	38	7 x 0.1417	0.4252	1.181	1045.5	77.8	1123.3
Washington/TW	1192.5	5	0.9366	0.9804	3	34	7 x 0.0892	0.2677	1.166	1116.4	30.9	1147.2
Elbert/TW	1192.5	7	0.9366	1.0050	3	34	7 x 0.1115	0.3346	1.184	1117.4	48.2	1165.7
Acadia/TW	1192.5	13	0.9366	1.0554	3	38	7 x 0.1470	0.4409	1.223	1120.2	83.7	1203.9
Redwood/TW	1233.6	7	0.9689	1.0373	3	38	7 x 0.1115	0.3346	1.206	1156.0	48.2	1204.2
Biscayne/TW	1233.6	13	0.9689	1.0963	3	36	7 x 0.1522	0.4567	1.245	1158.8	89.8	1248.6
Saguaro/TW	1272.0	5	0.9990	1.0495	3	38	7 x 0.0958	0.2874	1.211	1190.8	35.6	1226.3
Sierra Nevada/TW	1272.0	7	0.9990	1.0674	3	38	7 x 0.1115	0.3346	1.224	1191.9	48.2	1240.2
Voyageurs/TW	1272.0	13	0.9990	1.1264	3	39	7 x 0.1522	0.4567	1.259	1194.8	89.8	1284.6
Cascades/TW	1351.5	7	1.0615	1.1382	3	38	7 x 0.1181	0.3543	1.264	1266.4	54.1	1320.5
Banff/TW	1351.5	10	1.0615	1.1639	3	42	7 x 0.1365	0.4094	1.278	1267.7	72.2	1339.8
Elbrus/TW	1351.5	13	1.0615	1.1978	3	42	7 x 0.1575	0.4724	1.299	1269.5	96.1	1365.6
Bryce Canyon/TW	1590.0	7	1.2488	1.3342	3	36	7 x 0.1247	0.3740	1.357	1489.9	60.2	1550.2
Zion/TW	1590.0	12	1.2488	1.3967	3	42	7 x 0.1640	0.4921	1.405	1492.8	104.3	1597.1
Teton/TW	1780.0	5	1.3980	1.4747	3	38	7 x 0.1181	0.3543	1.422	1666.3	54.1	1720.4
Everest/TW	1780.0	8	1.3980	1.5084	3	38	7 x 0.1417	0.4252	1.441	1668.5	77.8	1746.3

Notes: (1) 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.
(2) Resistance and ampacity based on an aluminum-zirconium alloy conductivity of 60% IACS at 20°C.

RBS, lb	Resistance				GMR, ft	Reactance @ 1 ft Spacing 60 Hz		Ampacity		Type No.	Conductor Size, kcmil	Code Word
	dc @ 20°C, Ω/mile	ac–60 Hz @ 25°C, Ω/mile	ac–60 Hz @ 180°C, Ω/mile	ac–60 Hz @ 200°C, Ω/mile		Inductive Xa, Ω/mile	Capacitive X'a, MΩ-mile	@ 180°C, A	@ 200°C, A			
18,000	0.3508	0.3582	0.5770	0.6053	0.0203	0.4726	0.1090	738	776	21	266.8	Shenandoah/TW
19,200	0.2872	0.2934	0.4725	0.4957	0.0231	0.4572	0.1061	840	884	17	325.0	Olympic/TW
19,200	0.2774	0.2835	0.4566	0.4789	0.0234	0.4558	0.1057	859	903	17	336.4	Wrangell/TW
23,400	0.2784	0.2844	0.4580	0.4805	0.0236	0.4548	0.1055	859	904	22	336.4	Badlands/TW
20,300	0.2345	0.2399	0.3860	0.4049	0.0238	0.4537	0.1044	946	995	14	397.5	Andes/TW
22,300	0.2346	0.2400	0.3862	0.4051	0.0243	0.4513	0.1041	949	998	16	397.5	Joshua Tree/TW
27,800	0.2356	0.2408	0.3877	0.4067	0.0254	0.4457	0.1033	955	1005	22	397.5	Sequoia/TW
23,600	0.1953	0.2001	0.3218	0.3375	0.0260	0.4429	0.1017	1066	1122	13	477.0	Rogers/TW
25,700	0.1955	0.2002	0.3219	0.3376	0.0265	0.4406	0.1014	1069	1125	15	477.0	Yosemite/TW
34,200	0.1965	0.2010	0.3234	0.3392	0.0287	0.4308	0.1002	1080	1137	23	477.0	Capitol Reef/TW
26,300	0.1464	0.1506	0.2416	0.2534	0.0295	0.4276	0.0981	1277	1346	10	636.0	Tortugas/TW
28,200	0.1465	0.1506	0.2416	0.2534	0.0297	0.4268	0.0978	1280	1349	12	636.0	Yellowstone/TW
34,300	0.1466	0.1506	0.2417	0.2535	0.0310	0.4214	0.0972	1288	1357	15	636.0	Glacier/TW
41,300	0.1472	0.1510	0.2426	0.2545	0.0329	0.4144	0.0959	1305	1375	22	636.0	Carlsbad/TW
28,300	0.1452	0.1493	0.2395	0.2511	0.0298	0.4264	0.0977	1288	1356	11	641.7	Congaree/TW
29,500	0.1304	0.1344	0.2154	0.2258	0.0311	0.4213	0.0963	1378	1452	10	714.0	Vinson/TW
26,700	0.1170	0.1211	0.1936	0.2030	0.0316	0.4191	0.0954	1467	1546	7	795.0	Kilimanjaro/TW
30,900	0.1171	0.1211	0.1936	0.2030	0.0325	0.4158	0.0950	1473	1552	9	795.0	Alps/TW
36,700	0.1172	0.1209	0.1936	0.2030	0.0335	0.4119	0.0946	1480	1561	12	795.0	Wind Cave/TW
44,500	0.1173	0.1209	0.1937	0.2031	0.0348	0.4075	0.0940	1490	1571	16	795.0	Denali/TW
51,200	0.1178	0.1212	0.1943	0.2038	0.0367	0.4010	0.0930	1502	1584	22	795.0	Rocky/TW
31,400	0.0980	0.1021	0.1625	0.1704	0.0344	0.4091	0.0926	1650	1740	7	954.0	Crater Lake/TW
44,300	0.0977	0.1013	0.1616	0.1694	0.0365	0.4015	0.0921	1664	1755	12	954.0	Fuji/TW
48,700	0.0978	0.1012	0.1617	0.1695	0.0376	0.3983	0.0913	1676	1768	16	954.0	Jasper/TW
56,800	0.0980	0.1013	0.1620	0.1699	0.0394	0.3923	0.0907	1686	1779	20	954.0	Arches/TW
46,800	0.0958	0.0993	0.1585	0.1662	0.0379	0.3971	0.0912	1695	1788	14	973.1	Everglades/TW
30,700	0.0904	0.0946	0.1502	0.1574	0.0351	0.4064	0.0916	1734	1829	5	1033.5	Big Bend/TW
34,900	0.0905	0.0945	0.1502	0.1574	0.0359	0.4037	0.0914	1739	1834	7	1033.5	Lassen/TW
48,600	0.0902	0.0937	0.1494	0.1566	0.0378	0.3973	0.0906	1757	1854	13	1033.5	Samoa/TW
31,600	0.0839	0.0883	0.1397	0.1464	0.0355	0.4051	0.0908	1814	1914	5	1113.0	Cook/TW
36,200	0.0840	0.0881	0.1397	0.1464	0.0370	0.4002	0.0904	1821	1922	7	1113.0	Blanc/TW
49,100	0.0842	0.0878	0.1397	0.1464	0.0400	0.3907	0.0893	1842	1945	13	1113.0	Gannett/TW
32,900	0.0783	0.0828	0.1306	0.1369	0.0372	0.3994	0.0897	1897	2003	5	1192.5	Washington/TW
40,400	0.0784	0.0825	0.1306	0.1368	0.0386	0.3949	0.0893	1907	2013	7	1192.5	Elbert/TW
52,800	0.0786	0.0822	0.1305	0.1368	0.0414	0.3865	0.0883	1927	2035	13	1192.5	Acadia/TW
41,600	0.0758	0.0800	0.1263	0.1324	0.0395	0.3922	0.0887	1950	2059	7	1233.6	Redwood/TW
55,800	0.0760	0.0796	0.1262	0.1323	0.0423	0.3839	0.0877	1971	2081	13	1233.6	Biscayne/TW
36,700	0.0734	0.0779	0.1227	0.1285	0.0390	0.3938	0.0886	1982	2093	5	1272.0	Saguaro/TW
42,200	0.0735	0.0777	0.1226	0.1285	0.0400	0.3906	0.0883	1989	2100	7	1272.0	Sierra Nevada/TW
56,500	0.0737	0.0773	0.1225	0.1284	0.0429	0.3820	0.0874	2008	2120	13	1272.0	Voyageurs/TW
45,600	0.0692	0.0734	0.1156	0.1211	0.0414	0.3863	0.0873	2070	2186	7	1351.5	Cascades/TW
53,900	0.0693	0.0732	0.1155	0.1210	0.0429	0.3820	0.0870	2078	2194	10	1351.5	Banff/TW
60,300	0.0694	0.0730	0.1155	0.1210	0.0443	0.3781	0.0865	2089	2206	13	1351.5	Elbrus/TW
52,200	0.0588	0.0634	0.0989	0.1035	0.0437	0.3799	0.0852	2289	2420	7	1590.0	Bryce Canyon/TW
66,900	0.0589	0.0629	0.0986	0.1033	0.0476	0.3694	0.0842	2316	2448	12	1590.0	Zion/TW
52,600	0.0525	0.0575	0.0889	0.0930	0.0460	0.3737	0.0838	2451	2593	5	1780.0	Teton/TW
59,700	0.0525	0.0572	0.0887	0.0928	0.0475	0.3697	0.0834	2464	2606	8	1780.0	Everest/TW

Notes: (3) 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.

Shaped Wire Concentric-Lay-Stranded Compact Aluminum Conductor, Composite Supported (ACCS/TW/C7®-TS)

Code Word	Conductor Size, kcmil	Type No.	Cross-Sectional Area, in²		Layers of Al	Stranding		Diameter		Weight/1000 feet		
			Al	Total		No. of Al Strands	C7 Strands, in	C7 Core, in	Complete Conductor, in	Al, lb	C7, lb	Total, lb
Shenandoah/TW	266.8	21	0.2095	0.2533	2	14	7 x 0.0892	0.2677	0.608	251.6	30.9	282.4
Olympic/TW	325.0	17	0.2553	0.2990	2	20	7 x 0.0892	0.2677	0.671	305.6	30.9	336.4
Wrangell/TW	336.4	17	0.2642	0.3080	2	20	7 x 0.0892	0.2677	0.681	316.3	30.9	347.2
Badlands/TW	336.4	22	0.2642	0.3218	2	16	7 x 0.1024	0.3071	0.685	317.4	40.6	358.0
Andes/TW	397.5	14	0.3122	0.3560	2	18	7 x 0.0892	0.2677	0.710	373.2	30.9	404.1
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
Sequoia/TW	397.5	22	0.3122	0.3806	2	18	7 x 0.1115	0.3346	0.738	375.1	48.2	423.3
Rogers/TW	477.0	13	0.3746	0.4251	2	18	7 x 0.0958	0.2874	0.778	447.4	35.6	483.3
Yosemite/TW	477.0	15	0.3746	0.4322	2	18	7 x 0.1024	0.3071	0.787	448.1	40.6	488.7
Capitol Reef/TW	477.0	23	0.3746	0.4601	2	20	7 x 0.1247	0.3740	0.820	450.4	60.2	510.6
Tortugas/TW	636.0	10	0.4995	0.5500	2	20	7 x 0.0958	0.2874	0.880	596.7	35.6	632.3
Yellowstone/TW	636.0	12	0.4995	0.5571	2	16	7 x 0.1024	0.3071	0.887	596.9	40.6	637.5
Glacier/TW	636.0	15	0.4995	0.5762	2	20	7 x 0.1181	0.3543	0.905	597.4	54.1	651.5
Carlsbad/TW	636.0	22	0.4995	0.6100	2	22	7 x 0.1417	0.4252	0.948	600.1	77.8	677.9
Congaree/TW	641.7	11	0.5040	0.5616	2	16	7 x 0.1024	0.3071	0.890	602.2	40.6	642.8
Vinson/TW	714.0	10	0.5608	0.6184	2	16	7 x 0.1024	0.3071	0.933	669.9	40.6	710.5
Kilimanjaro/TW	795.0	7	0.6244	0.6682	2	20	7 x 0.0892	0.2677	0.962	745.1	30.9	776.0
Alps/TW	795.0	9	0.6244	0.6820	2	20	7 x 0.1024	0.3071	0.974	745.7	40.6	786.3
Wind Cave/TW	795.0	12	0.6244	0.7011	2	20	7 x 0.1181	0.3543	0.990	746.1	54.1	800.2
Denali/TW	795.0	16	0.6244	0.7268	2	20	7 x 0.1365	0.4094	1.010	747.0	72.2	819.2
Rocky/TW	795.0	22	0.6244	0.7607	2	24	7 x 0.1575	0.4724	1.044	750.1	96.1	846.2
Crater Lake/TW	954.0	7	0.7493	0.7997	3	34	7 x 0.0958	0.2874	1.058	898.6	35.6	934.1
Fuji/TW	954.0	12	0.7493	0.8421	2	20	7 x 0.1299	0.3898	1.077	895.3	65.4	960.7
Jasper/TW	954.0	16	0.7493	0.8680	2	22	7 x 0.1470	0.4409	1.104	896.4	83.7	980.1
Arches/TW	954.0	20	0.7493	0.8972	2	20	7 x 0.1640	0.4921	1.126	898.9	104.3	1003.2
Everglades/TW	973.1	14	0.7643	0.8747	2	20	7 x 0.1417	0.4252	1.108	913.7	77.8	991.5
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
Lassen/TW	1033.5	7	0.8117	0.8693	3	34	7 x 0.1024	0.3071	1.103	973.4	40.6	1014.0
Samoa/TW	1033.5	13	0.8117	0.9141	2	22	7 x 0.1365	0.4094	1.130	970.1	72.2	1042.3
Cook/TW	1113.0	5	0.8741	0.9179	3	30	7 x 0.0892	0.2677	1.125	1047.3	30.9	1078.2
Blanc/TW	1113.0	7	0.8741	0.9318	3	34	7 x 0.1024	0.3071	1.139	1048.3	40.6	1088.9
Gannett/TW	1113.0	13	0.8741	0.9846	3	38	7 x 0.1417	0.4252	1.181	1050.9	77.8	1128.7
Washington/TW	1192.5	5	0.9366	0.9804	3	34	7 x 0.0892	0.2677	1.166	1122.1	30.9	1153.0
Elbert/TW	1192.5	7	0.9366	1.0050	3	34	7 x 0.1115	0.3346	1.184	1123.2	48.2	1171.4
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
Redwood/TW	1233.6	7	0.9689	1.0373	3	38	7 x 0.1115	0.3346	1.206	1161.9	48.2	1210.1
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
Saguaro/TW	1272.0	5	0.9990	1.0495	3	38	7 x 0.0958	0.2874	1.211	1196.9	35.6	1232.5
Sierra Nevada/TW	1272.0	7	0.9990	1.0674	3	38	7 x 0.1115	0.3346	1.224	1198.1	48.2	1246.3
Voyageurs/TW	1272.0	13	0.9990	1.1264	3	39	7 x 0.1522	0.4567	1.259	1201.0	89.8	1290.8
Cascades/TW	1351.5	7	1.0615	1.1382	3	38	7 x 0.1181	0.3543	1.264	1273.0	54.1	1327.0
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
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
Bryce Canyon/TW	1590.0	7	1.2488	1.3342	3	36	7 x 0.1247	0.3740	1.357	1497.6	60.2	1557.8
Zion/TW	1590.0	12	1.2488	1.3967	3	42	7 x 0.1640	0.4921	1.405	1500.5	104.3	1604.8
Teton/TW	1780.0	5	1.3980	1.4747	3	38	7 x 0.1181	0.3543	1.422	1674.9	54.1	1729.0
Everest/TW	1780.0	8	1.3980	1.5084	3	38	7 x 0.1417	0.4252	1.441	1677.1	77.8	1754.9

Notes: (1) 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.
(2) Resistance and ampacity based on an aluminum conductivity of 63% IACS at 20°C.

RBS, lb	Resistance				GMR, ft	Reactance @ 1 ft Spacing 60 Hz		Ampacity		Type No.	Conductor Size, kcmil	Code Word
	dc @ 20°C, Ω/mile	ac–60 Hz @ 25°C, Ω/mile	ac–60 Hz @ 180°C, Ω/mile	ac–60 Hz @ 200°C, Ω/mile		Inductive Xa, Ω/mile	Capacitive X'a, MΩ-mile	@ 180°C, A	@ 200°C, A			
15,000	0.3342	0.3415	0.5567	0.5845	0.0203	0.4726	0.1090	752	790	21	266.8	Shenandoah/TW
15,400	0.2736	0.2798	0.4559	0.4786	0.0231	0.4572	0.1061	856	900	17	325.0	Olympic/TW
15,500	0.2643	0.2704	0.4405	0.4624	0.0234	0.4558	0.1057	874	919	17	336.4	Wrangell/TW
19,700	0.2652	0.2712	0.4419	0.4639	0.0236	0.4548	0.1055	875	919	22	336.4	Badlands/TW
15,900	0.2234	0.2287	0.3724	0.3910	0.0238	0.4537	0.1044	963	1013	14	397.5	Andes/TW
17,900	0.2235	0.2288	0.3726	0.3912	0.0243	0.4513	0.1041	966	1016	16	397.5	Joshua Tree/TW
23,400	0.2244	0.2296	0.3741	0.3927	0.0254	0.4457	0.1033	972	1023	22	397.5	Sequoia/TW
18,400	0.1861	0.1908	0.3104	0.3259	0.0260	0.4429	0.1017	1085	1141	13	477.0	Rogers/TW
20,600	0.1862	0.1909	0.3106	0.3261	0.0265	0.4406	0.1014	1088	1145	15	477.0	Yosemite/TW
29,100	0.1872	0.1917	0.3120	0.3276	0.0287	0.4308	0.1002	1100	1157	23	477.0	Capitol Reef/TW
19,400	0.1395	0.1437	0.2331	0.2447	0.0295	0.4276	0.0981	1300	1369	10	636.0	Tortugas/TW
21,600	0.1396	0.1437	0.2332	0.2447	0.0297	0.4268	0.0978	1304	1373	12	636.0	Yellowstone/TW
27,400	0.1397	0.1436	0.2332	0.2448	0.0310	0.4214	0.0972	1311	1381	15	636.0	Glacier/TW
36,900	0.1403	0.1440	0.2341	0.2458	0.0329	0.4144	0.0959	1328	1399	22	636.0	Carlsbad/TW
21,600	0.1383	0.1424	0.2311	0.2425	0.0298	0.4264	0.0977	1311	1380	11	641.7	Congaree/TW
22,100	0.1243	0.1283	0.2078	0.2181	0.0311	0.4213	0.0963	1403	1477	10	714.0	Vinson/TW
18,400	0.1115	0.1156	0.1868	0.1961	0.0316	0.4191	0.0954	1493	1574	7	795.0	Kilimanjaro/TW
22,600	0.1116	0.1155	0.1868	0.1961	0.0325	0.4158	0.0950	1499	1580	9	795.0	Alps/TW
28,400	0.1116	0.1154	0.1868	0.1961	0.0335	0.4119	0.0946	1507	1588	12	795.0	Wind Cave/TW
36,200	0.1118	0.1153	0.1869	0.1961	0.0348	0.4075	0.0940	1516	1598	16	795.0	Denali/TW
45,600	0.1122	0.1156	0.1875	0.1968	0.0367	0.4010	0.0930	1529	1612	22	795.0	Rocky/TW
21,300	0.0934	0.0975	0.1569	0.1646	0.0344	0.4091	0.0926	1679	1770	7	954.0	Crater Lake/TW
34,300	0.0930	0.0967	0.1560	0.1637	0.0365	0.4015	0.0921	1693	1785	12	954.0	Fuji/TW
41,400	0.0931	0.0966	0.1560	0.1637	0.0376	0.3983	0.0913	1706	1799	16	954.0	Jasper/TW
50,100	0.0934	0.0967	0.1563	0.1641	0.0394	0.3923	0.0907	1716	1810	20	954.0	Arches/TW
39,000	0.0912	0.0948	0.1530	0.1605	0.0379	0.3971	0.0912	1725	1819	14	973.1	Everglades/TW
19,800	0.0861	0.0904	0.1450	0.1521	0.0351	0.4064	0.0916	1765	1861	5	1033.5	Big Bend/TW
24,000	0.0862	0.0903	0.1450	0.1521	0.0359	0.4037	0.0914	1770	1866	7	1033.5	Lassen/TW
37,800	0.0859	0.0895	0.1442	0.1513	0.0378	0.3973	0.0906	1788	1886	13	1033.5	Samoa/TW
20,200	0.0800	0.0844	0.1349	0.1415	0.0355	0.4051	0.0908	1846	1948	5	1113.0	Cook/TW
24,500	0.0800	0.0843	0.1349	0.1415	0.0370	0.4002	0.0904	1853	1955	7	1113.0	Blanc/TW
39,800	0.0802	0.0839	0.1348	0.1415	0.0400	0.3907	0.0893	1875	1978	13	1113.0	Gannett/TW
20,700	0.0746	0.0792	0.1262	0.1323	0.0372	0.3994	0.0897	1931	2037	5	1192.5	Washington/TW
28,200	0.0747	0.0789	0.1261	0.1322	0.0386	0.3949	0.0893	1941	2048	7	1192.5	Elbert/TW
42,700	0.0749	0.0786	0.1260	0.1322	0.0414	0.3865	0.0883	1961	2070	13	1192.5	Acadia/TW
28,500	0.0722	0.0765	0.1220	0.1279	0.0395	0.3922	0.0887	1985	2095	7	1233.6	Redwood/TW
45,600	0.0724	0.0760	0.1219	0.1278	0.0423	0.3839	0.0877	2006	2117	13	1233.6	Biscayne/TW
23,300	0.0700	0.0745	0.1185	0.1242	0.0390	0.3938	0.0886	2016	2128	5	1272.0	Saguaro/TW
28,700	0.0700	0.0744	0.1184	0.1242	0.0400	0.3906	0.0883	2024	2136	7	1272.0	Sierra Nevada/TW
45,800	0.0702	0.0739	0.1183	0.1241	0.0429	0.3820	0.0874	2043	2157	13	1272.0	Voyageurs/TW
31,800	0.0659	0.0703	0.1116	0.1170	0.0414	0.3863	0.0873	2106	2223	7	1351.5	Cascades/TW
39,600	0.0660	0.0700	0.1116	0.1170	0.0429	0.3820	0.0870	2114	2232	10	1351.5	Banff/TW
49,000	0.0661	0.0698	0.1115	0.1169	0.0443	0.3781	0.0865	2126	2244	13	1351.5	Elbrus/TW
35,900	0.0560	0.0607	0.0955	0.1001	0.0437	0.3799	0.0852	2329	2461	7	1590.0	Bryce Canyon/TW
53,900	0.0561	0.0602	0.0953	0.0999	0.0476	0.3694	0.0842	2356	2490	12	1590.0	Zion/TW
34,400	0.0500	0.0552	0.0859	0.0899	0.0460	0.3737	0.0838	2493	2636	5	1780.0	Teton/TW
43,900	0.0501	0.0548	0.0857	0.0898	0.0475	0.3697	0.0834	2506	2650	8	1780.0	Everest/TW

Notes: (3) 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.

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