



SPARTAN
SPORTS LIGHTING



SPORTS POLE

TECHNICAL GUIDE



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Spartan Sports Lighting

Spartan Sports Lighting provides a complete turnkey solution for any application regardless of the field type, size, level of play, or existing site amenities. Manufactured in the United States and easy to install, Spartan Sports Lighting is the high-performance solution you will be proud to put on the field.

Comprised of four components – a pre-aimed, high-performance STRATOS Sports Light, a pre-wired cross arm, a direct embedded, lifetime warranted StressCrete pole, and fully customized controls – the Spartan Sports Lighting Assembly combines high performance and ease of installation with system longevity that is second to none.

After decades of providing pre-stressed concrete poles and steel cross-arms to the sports lighting market, the addition of Spartan Sports Lighting and the STRATOS Sports Light further extends StressCrete Group’s high level of customer service and superior quality products. Leveraging over 60 years of manufacturing and engineering experience, Spartan Sports Lighting removes the stress of upgrading or adding high-quality field lighting to provide the best possible experience for fans, players, coaches, and students.

StressCrete Group

With manufacturing facilities in five North American locations, StressCrete Group produces an extensive line of high-performance LED decorative outdoor lighting fixtures, decorative spun concrete and metal poles, complete sports lighting assemblies, plus arms, accessories, bollards, and site amenities. We manufacture a vast range of products for many industries, including municipalities, power distribution and transmission, electrical and communications, and sports lighting. We are a family business that operates by the core values of honesty, integrity, compassion, and respect to better the lives of our employees, their families, our customers, and the communities we represent.

Spun Concrete Poles

Our centrifugally cast reinforced concrete poles, commonly referred to as a ‘spun pole’ combines elegance with durability and surpasses most other materials in the market. It meets ASTM, AASHTO, and CSA standards for spun concrete poles, as well as our own more demanding specifications. The spinning process introduces qualities into the concrete which cannot be obtained by more conventional casting methods. It provides a higher density and stronger concrete, while at the same time forming a hollow raceway inside the pole, thereby providing a smooth conduit for electrical cables.

All poles are made to each order’s unique specifications and standards. Poles are available in a full range of lengths, strengths, colors, and finishes for a multitude of sports. Poles are direct buried for a quick, easy, and cost-effective installation.

- Cost-effective with a long service life
- Minimal vibration and deflection
- Low maintenance with a lifetime warranty
- Aesthetically pleasing with a wide variety of colors and textures
- Custom heights available
- Easy to install
- Environmentally friendly
- Contribute to LEED® Certification points





SPARTAN SPORTS LIGHTING

SPUN CONCRETE POLE

At the heart of the Spartan Sports Lighting Assembly is a prestressed, spun concrete pole, providing a clean look that is easy to install and requires zero maintenance.

Manufactured by StressCrete®, this highly durable, lifetime warrantied solution delivers superior quality for decades of athletes, spectators, and families to enjoy.



PRODUCT FEATURES

- Direct buried embedment for quick, easy, and cost-effective installation
- Raceway used to conceal wiring harnesses
- Mounting heights available up to 100 feet
- Zero maintenance
- Does not lose strength over time
- Resistant to:
 - Fatigue Cracking
 - Corrosion and Rot
 - Extreme Weather Events
- Adheres to CSA, ANSI, AASHTO, and ASTM Standards
- Lifetime Warranty



POLE CLASSIFICATIONS

For most applications of spun concrete, the theoretical load is applied near the pole tip and, therefore, most poles are selected by tip load computation.

In order to simplify classing, StressCrete has grouped our poles according to alphabetical classes, with a class being defined as the minimum ultimate transverse load applied two feet down from the pole tip. All poles that can sustain the same tip load have the same class.

The ground line moment capacity depends on the pole length since that moment is the product of the ultimate load and the distance between the point of application (2 ft. from the tip) and the ground line.

The table shown below summarizes the concrete classes:

Class Designation	Minimum Ultimate Transverse Load		Minimum Ultimate Torque	
	(lbs)	(KN)	(ft.-lbs)	(KN-M)
C	1200	5.3	2750	3.75
D	1500	6.7		
E	1900	8.5		
F	2400	10.7	5160	7.00
G	3000	13.3		
H	3700	16.5		
J	4500	20.0	8300	11.25
K	5400	24.0		
L	6400	28.5		
M	7500	33.4	12160	16.50
N	8700	38.7		



DIRECT BURIAL

Spun concrete poles are generally direct buried, eliminating the need for expensive anchor base footings. Under normal conditions, a concrete pole can be set “directly” into an augered hole, backfilled, and tamped every 4” (10 cm). In situations where poles have large loadings, heavy imbalanced loads, or where soil bearing strengths are in question, an engineered base design may be required.

If unforeseen site conditions arise, potential solutions considered include increasing the embedment depth, augering a larger hole, or changing the backfill material. Photometrically, a maximum increase in embedment depth up to 2 ft. is acceptable before designed layouts may need to be revised. All changes to the original site design should be consulted with Spartan Sports Lighting and/or a certified structural engineer. Spartan Sports Lighting nor StressCrete Group assumes any liability for changed made unbeknownst to either entity.

Saves Time On-Site

Installation takes time and time means money. The Spartan Sports Lighting System can be easily installed in a single day, depending on the size of the project, freeing up time, manpower, and equipment for your next project.

Saves Money

By eliminating the need for the rigging of steel sections and costly anchor base foundations, direct embedment installation ends up being significantly less cost. In some cases, the cost of the anchor base alone is equal to the total cost of a direct embedded concrete pole.

Visually Appealing

Direct embedment of concrete poles means no above grade base plates or exposed nuts. Whether pouring concrete or laying asphalt, sod, or existing site material around the base of the pole, our solution provides a simple, neat, and cost-effective aesthetic to any sports complex.

Five Easy Steps to Follow to Ensure Proper Pole Installation:

1. Use the fish wire provided to pre-wire the pole, then mount pre-aimed lights to cross arms and attach to the pole while still safely on the ground. If using a remote driver configuration, attach connection and driver enclosures as well.
2. Auger the setting hole - minimum auger size should be 8 to 10” greater in diameter than pole butt. See Contractor Installation Guide for specific installation details.
3. Select the backfill material.
4. Choke the pole with a properly rated nylon sling using the lift point determined in the Contractor Installation Guide. Attach the sling to hook and lift, allowing butt to rest on the ground until vertical. Lift the pole and position over the augered hole and lower until the butt rests on the bottom center of the hole.
5. While continuing to hold the pole, check for plumbness using a plumb bob or Spartan supplied tapered level. Add backfill, tamping every 4”, up to the below-grade aperture. After which, below-grade wiring lines can be run up to the pole connection enclosures for later connection. Remove sling and move to the next pole, while filling and tamping is continued to a point 2” above grade.



BURIAL DETAILS

Recommended Backfill for Typical Soil

Good Soil

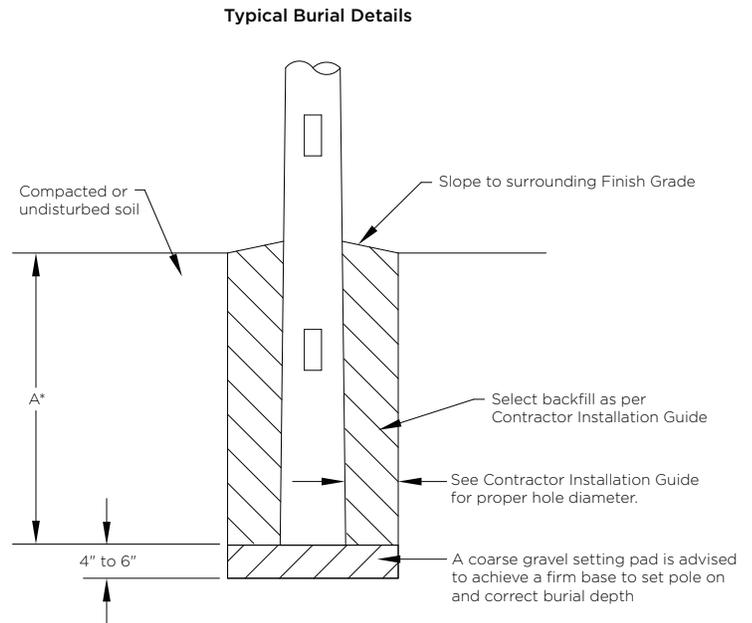
Compact, well-graded sand and gravel, hard clay, or well-graded fine and coarse sand (no standing water). Use as is for backfill.

Medium Soil

Compact fine sand and clay, compact sandy loam, loose coarse sand and gravel (no standing water). Requires select backfill - clean, washed sand or 1/2" minus well graded gravel.

Poor Soil

Soft clay, clay loam, poorly compacted sand, or clays containing large amounts of silts (standing water during wet season). Use cementitious earth backfill - concrete, limestone screenings, or urethane foam.



* Dimension A - Poles are generally buried 10% of the mounting height plus 2 ft. in good soil conditions. For medium to poor soil conditions, embedment depths are assumed at 10% of the mounting height plus 4 ft.; however, it is recommended that, in locations with high pole loadings/poor soil conditions, a structural engineer determines adequate bearing strength. Please contact Spartan Sports Lighting for additional information. Footings are dependent upon soil strengths and must be sized to withstand the applied pole loadings.

Direct Embedment of Sports Lighting Poles

Spun concrete poles are an obvious cost-effective solution, and direct embedment can save substantial time and money on a project.

Poles are generally buried 10% of the mounting height plus 2 ft. in good soil conditions. For medium to poor soil conditions, embedment depths are assumed at 10% of the mounting height plus 4 ft.; however, it is recommended that, in locations with high pole loadings/poor soil conditions, a structural engineer determines adequate bearing strength. Please contact Spartan Sports Lighting for additional information. Footings are dependent upon soil strengths and must be sized to withstand the applied pole loadings.

Regardless of pole material (concrete or another), if the overturning moments are identical and the sites are similar soils, the size of the base would be the same. The advantage of concrete poles, unlike most other types, is that they can be direct buried into the ground without fear of rust or rot, eliminating the need for anchor foundations and the rigging of steel sections. In most cases, this direct embedded portion is large enough to provide an adequate footing.

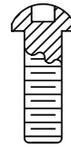
Our standard accessories are detailed below. Availability of non-standard sizes and positioning on poles may be governed by design limitations or physical constraints.

Handhole Frames, Cover Plate, and Fasteners

The standard sized handhole box on Spartan Sports Lighting Assemblies are 3-1/2" x 10-1/2" and located 3'6" above grade. All handholes are box type, composed of non-metallic, non-conductive injection molded material or a 50,000 PSI high-density cast zinc ASTM ingot Spec # B669-82 and will be supplied with a close-fitting inset cover of the same material. All fasteners will be stainless steel. The dimension, as well as location, can be adjusted to accommodate design specifications.

Fasteners

In the U.S.A., our standard fastener is a 1/4" - 20 x 3/4" Allen (Hex) pan head bolt - 3/4" long.



ALLEN HEAD
STAINLESS STEEL
1/4" - 20 x 3/4" LONG
C/W 5/32" ALLEN PAN HEAD

In Canada, our standard fastener is 1/4" - 20 x 3/4" #3 Black Robertson square pan head bolt - 3/4" long.



#3 BLACK ROBERTSON
STAINLESS STEEL
1/4" - 20 x 3/4" LONG
C/W SQUARE PAN HEAD

Tamperproof fasteners are available upon request. Our standard is a 1/4" - 20 x 3/4" Allen (Hex) pan head with a raised pin in the center as manufactured by the Tamperproof Screw Company.



TAMPERPROOF
STAINLESS STEEL
1/4" - 20 x 3/4" LONG
C/W RAISED PIN IN ALLEN (HEX) PAN HEAD

Wiring Apertures

Pole Top

Size, location, and quantity of wiring apertures will be determined on a per project basis depending on wattage and quantity of lights required to reach adequate light levels based on IES RP-6-15.

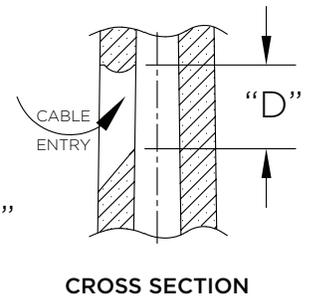
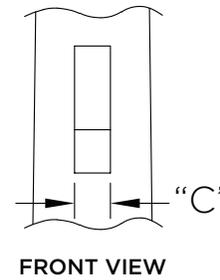
Above Grade: Driver & Connection Enclosures

Size, location, orientation, and quantity of driver and connection enclosures will be determined on a per project basis depending on wattage and quantity of lights and kWh per pole. Not applicable if integral driver assembly is utilized.

Below Grade

Location of the aperture is standard 18" below grade to the centerline of the aperture unless otherwise specified. A single 3" x 12" is standard on all poles less than 50' above grade and 4" x 10" on all poles 50' above grade and over. It will be located in-line with the handhole unless otherwise specified.

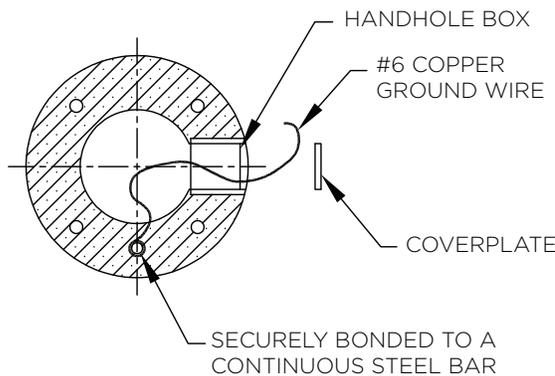
Wiring Apertures	C x D
Shaped Apertures	3" x 12"
	4" x 10"



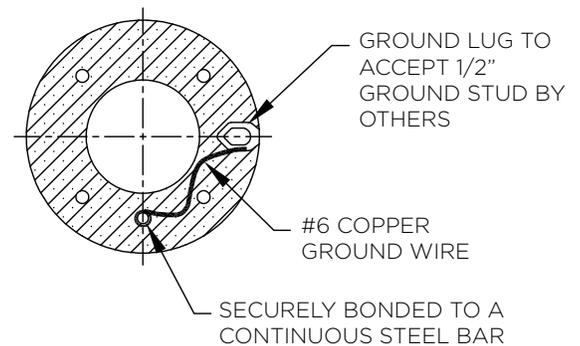
Other apertures are available upon request.

Electrical Grounding of Pole

Where electrical conductivity is concerned, a concrete pole is essentially a steel pole; thus, we strongly recommend that it be grounded. The last letter "G" in the pole catalog number indicates that the pole will be supplied with a provision for electrical grounding. Unless otherwise specified, standard grounding provisions are the use of #6 stranded copper ground wire cast into the wall of the pole.



STANDARD GROUND IN HANDHOLE



EXTERNAL GROUND

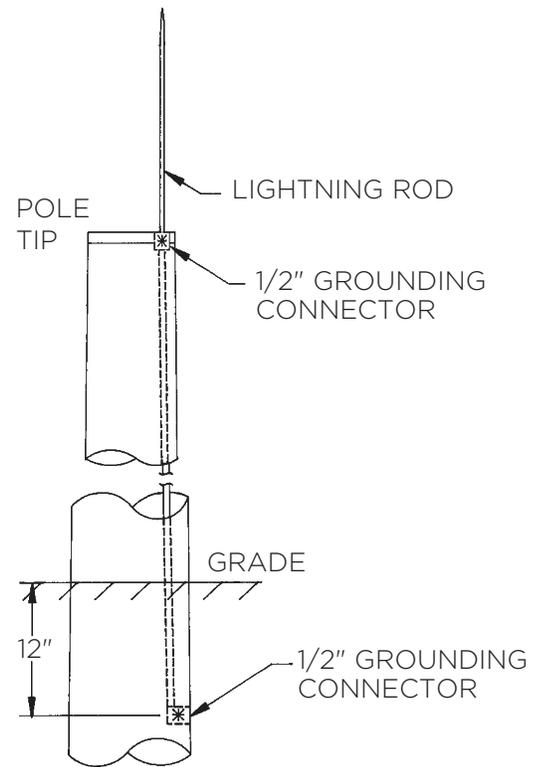
Lightning Protection

Lightning protection system requirements to be determined per project. Unless otherwise specified, the standard lightning protection system utilizes #6 stranded copper wire cast into the pole.

Depending on the location of the project, an alternative lightning protection system may be required. Other protection systems are available by specific project request.

The standard lightning protection system is shown here:

LIGHTNING PROTECTION SYSTEM



HOW TO ORDER

Footing	Strength	Cross Section	Finish	Spartan Cross Arm
E - Direct Embedment	C - Class C D - Class D E - Class E F - Class F G - Class G H - Class H J - Class J K - Class K L - Class L M - Class M N - Class N	R - Round	M00 - Mold Finish ** Other finish options available upon request	See Cross Arm Spec Sheet for details
E	-	P R	- G - M00	- C/W
	Pole Length*	Prestressed	Grounding	Complete With
	460 - 46' 790 - 79' 570 - 57' 810 - 81' 680 - 68' 900 - 90' 700 - 70' 920 - 92'	P - Prestressed Concrete Pole	G - Provision for Electrical Grounding	To be supplied by Spartan Sports Lighting
				Additional Options
				LS - Lightning Protection System PS - Pole Steps CC - Climbing Cables QS - Quick Stop

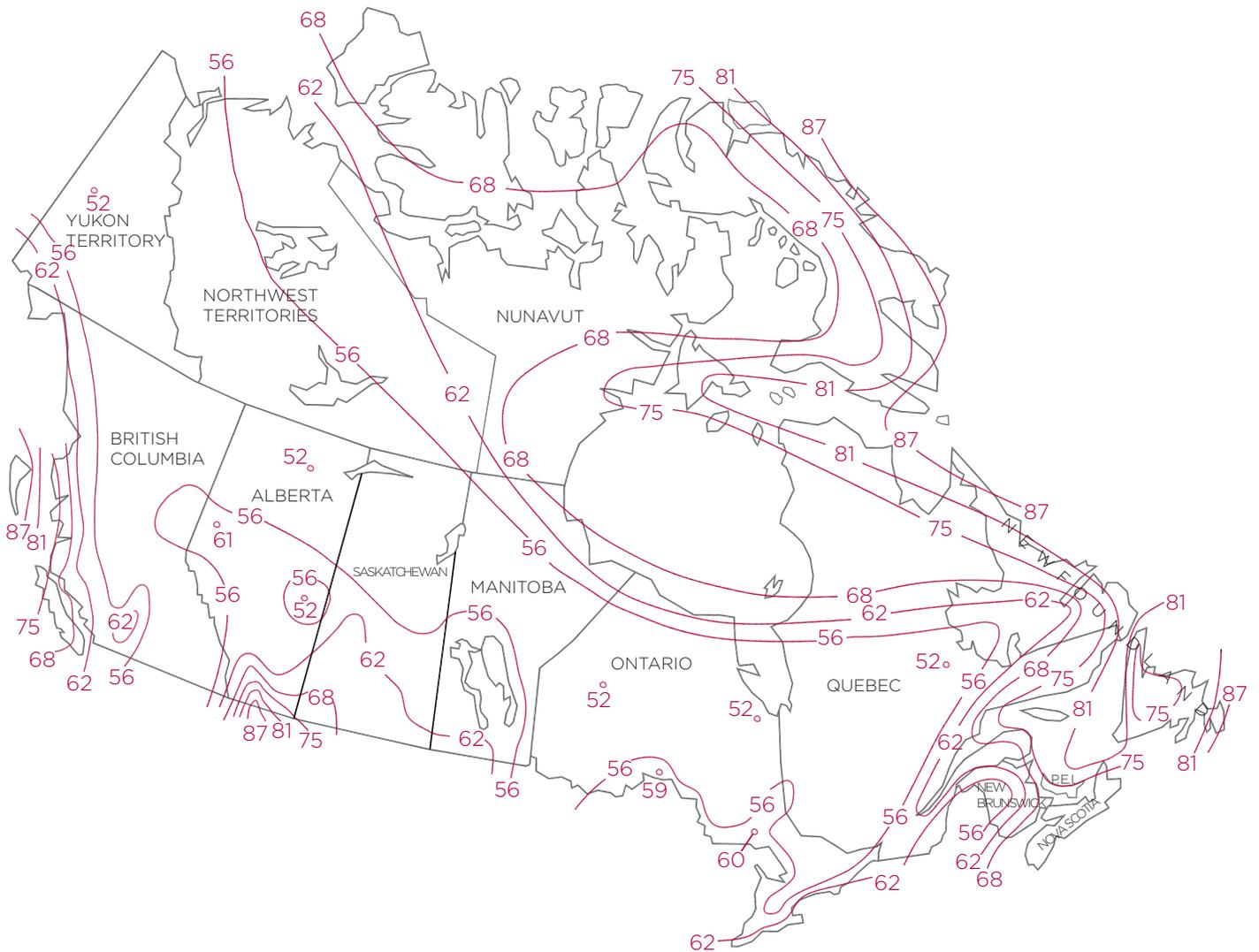
* Pole Length = Mounting Height + Burial Depth
** Other pole lengths available upon request



CANADIAN ISOTACH WIND MAP

StressCrete Maximum EPA charts have been computed using load factors, height factors, coefficients of drag, and three-second wind gusts as specified in AASHTO LTS-6 2013.

The values shown within the Canadian Isotach Wind Map below are hourly mean wind speeds in mph at 10 m (32.8') above ground for terrain roughness category B and are less than three second gusts; therefore, all wind speeds must be multiplied by a factor of 1.53 in order to utilize the StressCrete Maximum EPA. For example, where the map shows 62 mph, multiply 62 mph x 1.53, which is 94.86 mph.

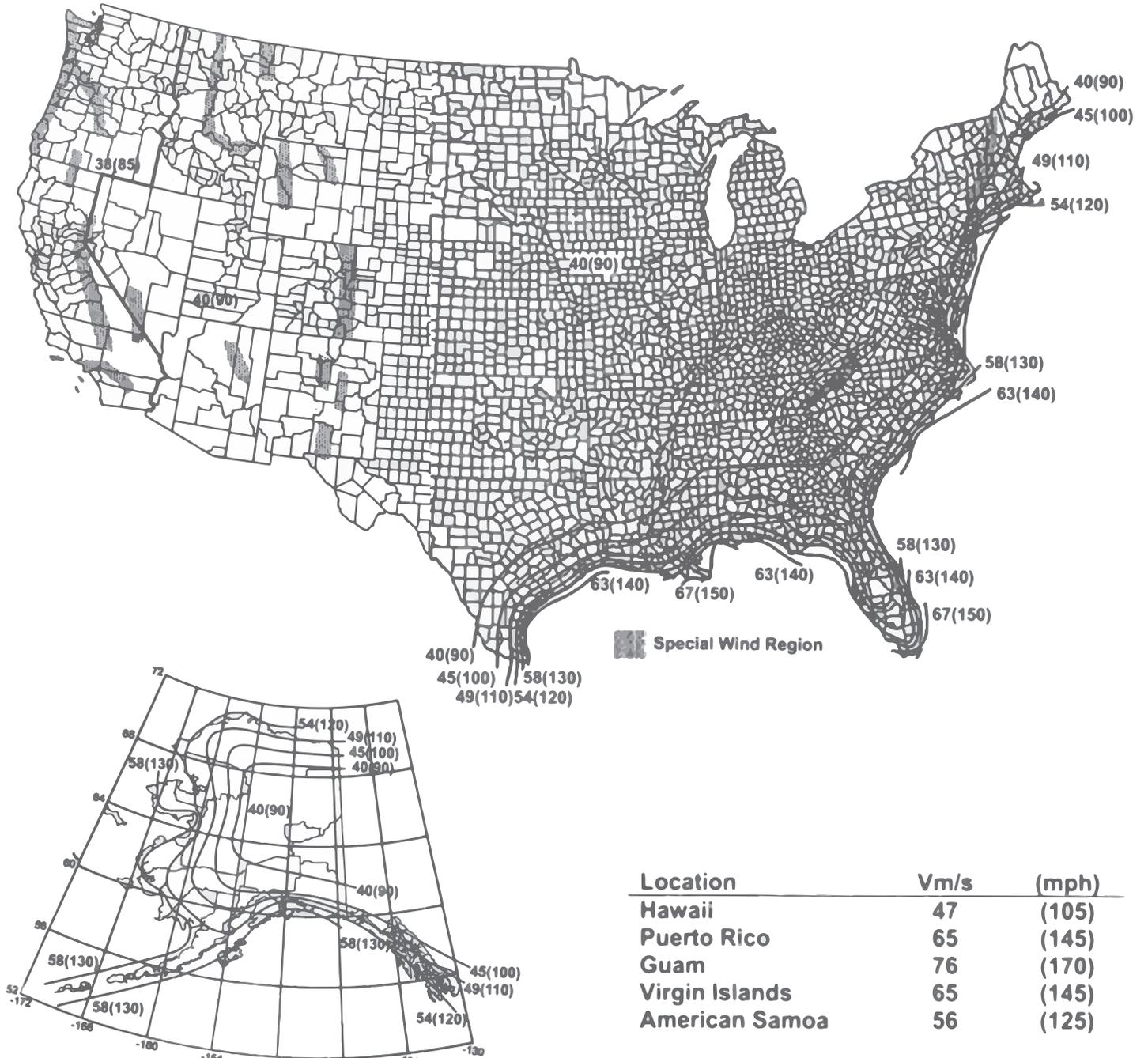


* This map is used with permission of the Canadian Standards Association. Material is reproduced from CSA Standard C22.3 No. 1-01, Overhead Systems, which is copyrighted by the Canadian Standards Association, 178 Rexdale Blvd., Toronto, Ontario, M9W 1R3. While the use of this material has been authorized, CSA shall not be responsible for the manner in which the information is presented, nor for any interpretations thereof.



AMERICAN ISOTACH WIND MAPS

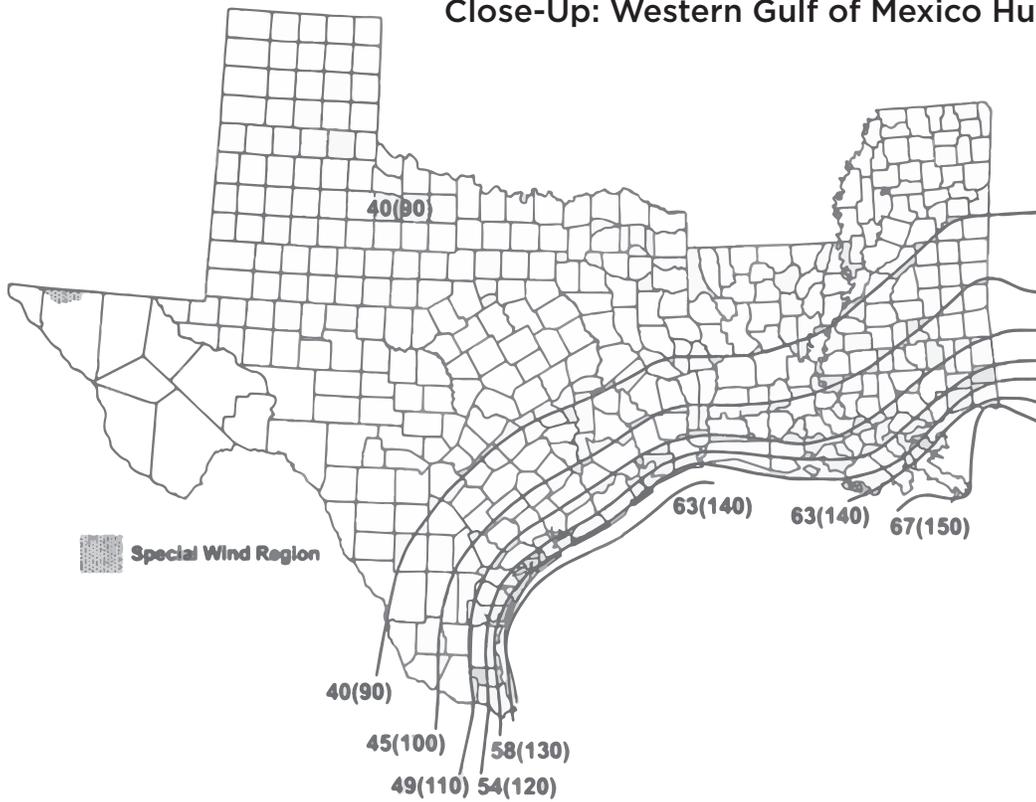
The values shown within the American Isotach Wind Map below are three second gust speeds in mph (m/s) at 33 ft. (10m) above ground for Exposure C category. Linear interpolation between contours is permitted. Islands and coastal areas outside the last contour shall use the last wind speed contour of the coastal area. Mountainous terrain, gorges, ocean promontories, and special wind regions shall be examined for unusual wind conditions. Wind speeds correspond to approximately a 2% probability of exceedance in 50 years (Annual Exceedance Probability = 0.02, MRI = 50 Years).



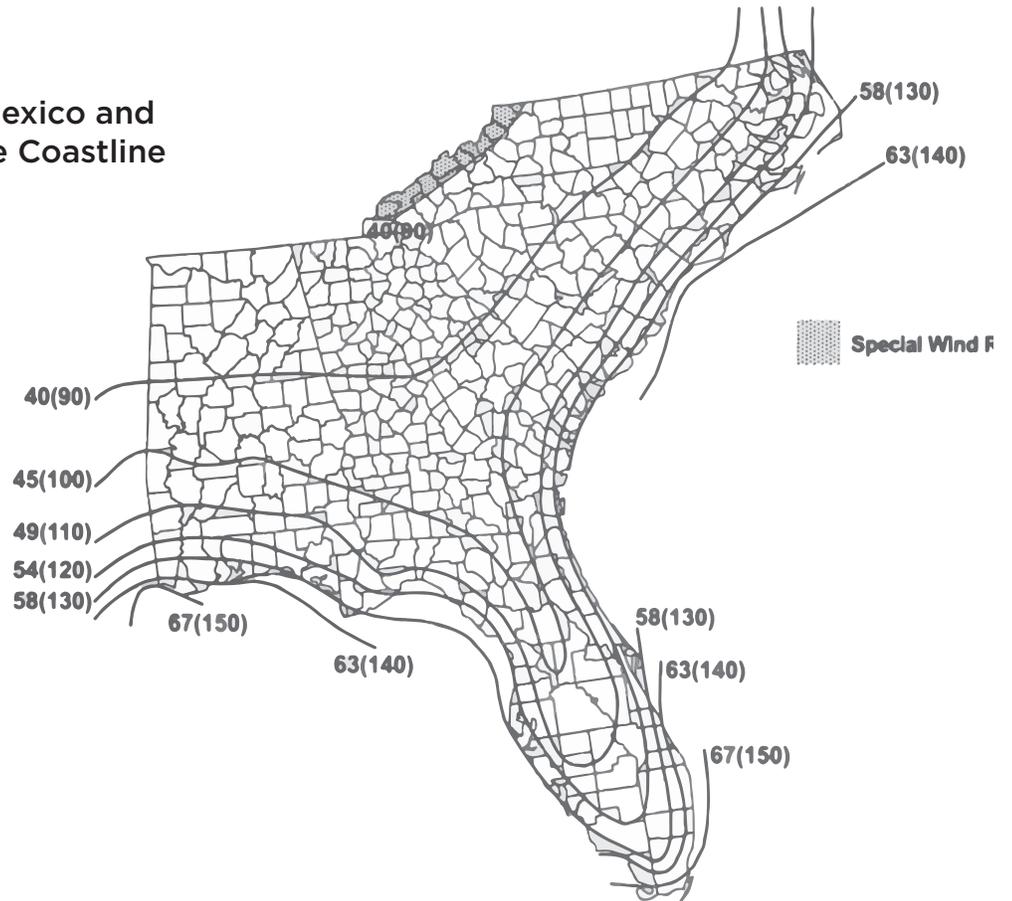
Location	Vm/s	(mph)
Hawaii	47	(105)
Puerto Rico	65	(145)
Guam	76	(170)
Virgin Islands	65	(145)
American Samoa	56	(125)



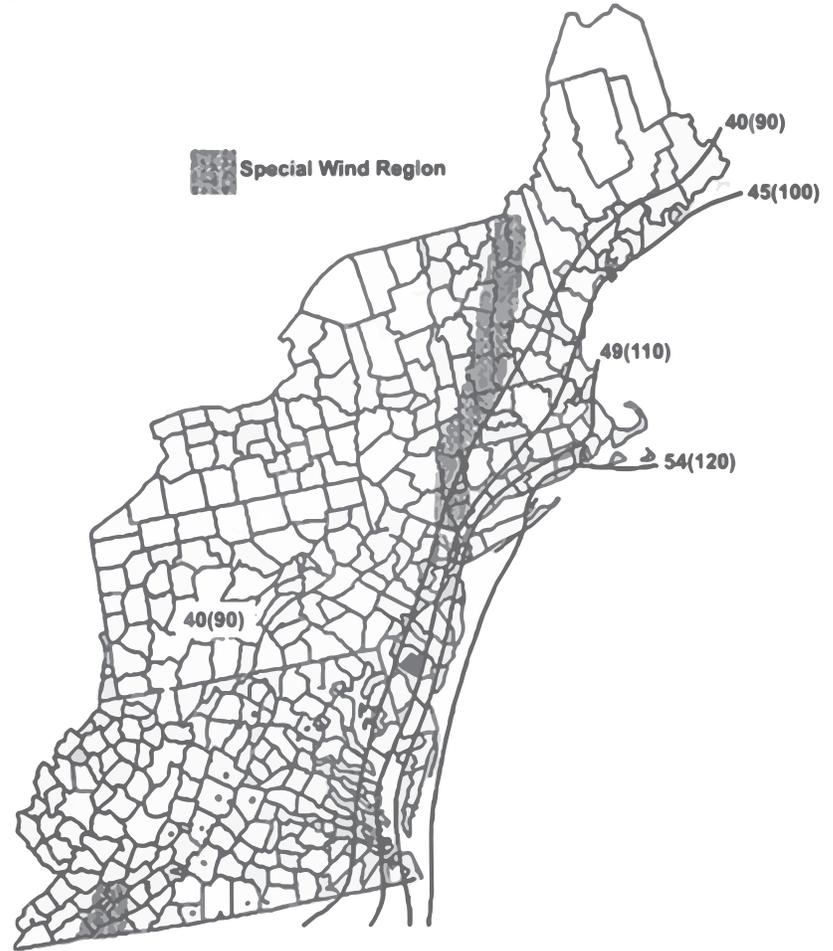
Close-Up: Western Gulf of Mexico Hurricane Coastline



Close-Up: Eastern Gulf of Mexico and Southeastern U.S. Hurricane Coastline



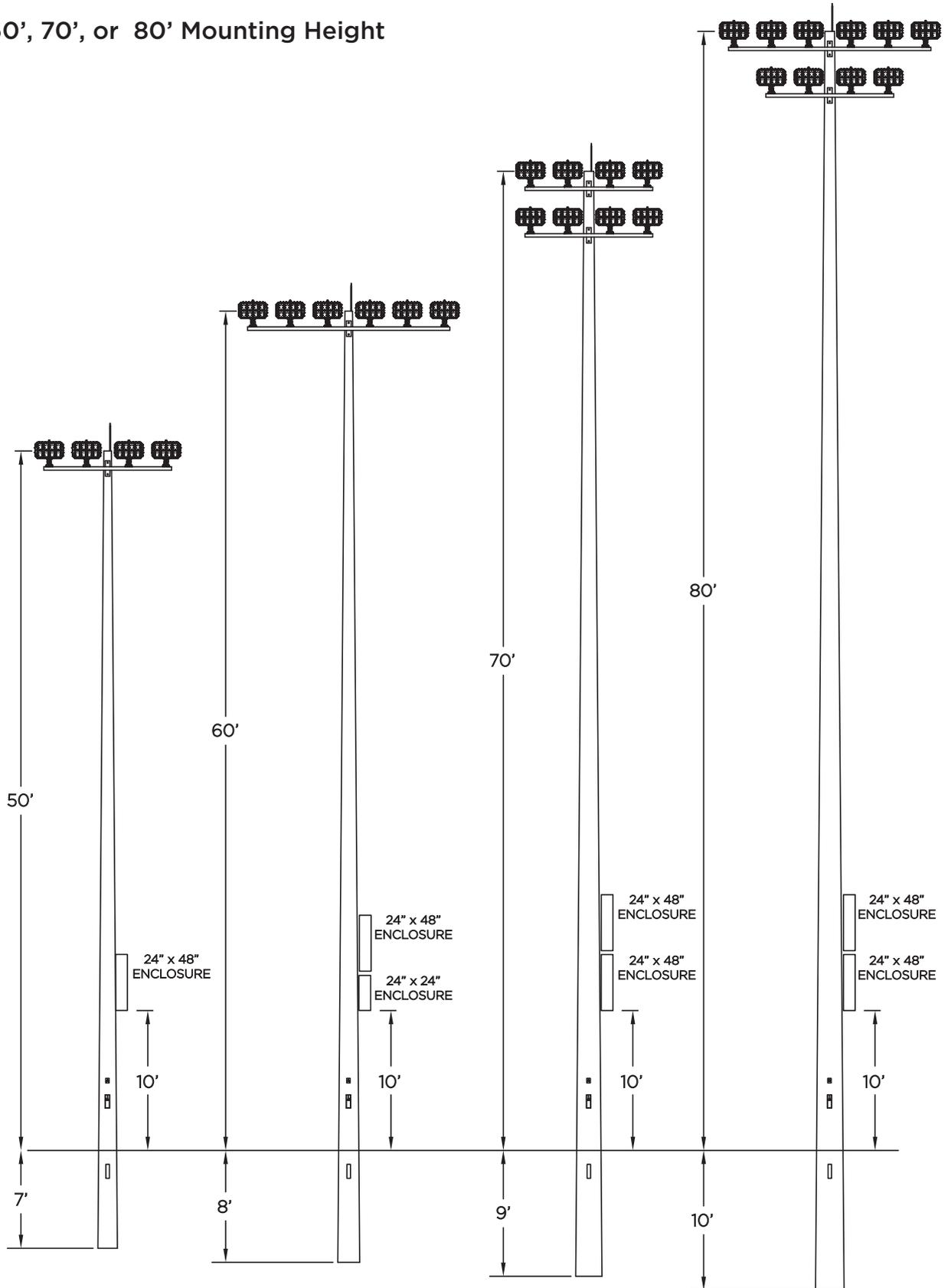
Close-Up: Northeastern U.S. Hurricane Coastline



RECOMMENDED CONFIGURATIONS

SPORTS LIGHTING POLES

50', 60', 70', or 80' Mounting Height



Note: Above information details represents our standard pole options.
Other heights and strengths are available at SpartanSL.com under "Resources" or by contacting Spartan Sports lighting.



www.SpartanSL.com

StressCrete
GROUP

TECHNICAL LOADING DATA

Note: The following charts represent a sampling only.
Other heights and strengths are available by contacting Spartan Sports Lighting.

Pole Catalog Number	Overall Pole Length (ft.) *	Pole Tip Diameter (Inches)	Pole Butt Diameter (Inches)	Nominal Pole Weight (lbs.)	Maximum EPA (sq. ft.)							Maximum Weight of Attachments (lbs.)
					90 mph	100 mph	110 mph	120 mph	130 mph	140 mph	150 mph	

35' MOUNTING HEIGHT

35' Mounting Height (Plus 10% + 2')												
E-410-CPR-G	41' 0"	6.5	13.88	3212	25	19	15	12	10	8	6	600
E-410-DPR-G	41' 0"	6.5	13.88	3212	33	26	21	17	13	11	9	600
E-410-EPR-G	41' 0"	6.5	13.88	3212	43	35	28	23	19	15	13	600
E-410-FPR-G	41' 0"	6.5	13.88	3272	57	45	37	30	25	21	17	600
35' Mounting Height (Plus 10% + 4')												
E-430-CPR-G	43' 0"	6.5	14.24	3449	25	19	15	12	10	8	6	600
E-430-DPR-G	43' 0"	6.5	14.24	3449	33	26	21	17	13	11	9	600
E-430-EPR-G	43' 0"	6.5	14.24	3449	43	35	28	23	19	15	13	600
E-430-FPR-G	43' 0"	6.5	14.24	3518	57	45	37	30	25	21	17	600

40' MOUNTING HEIGHT

40' Mounting Height (Plus 10% + 2')												
E-460-CPR-G	46' 0"	6.5	14.78	3819	23	18	14	11	8	6	5	600
E-460-DPR-G	46' 0"	6.5	14.78	3819	31	24	19	15	12	10	8	600
E-460-EPR-G	46' 0"	6.5	14.78	3848	41	33	26	21	17	14	11	600
E-460-FPR-G	46' 0"	6.5	14.78	3890	54	43	35	28	23	19	16	600
E-460-GPR-G	46' 0"	8.25	16.53	4975	71	56	45	37	30	25	21	600
40' Mounting Height (Plus 10% + 4')												
E-480-CPR-G	48' 0"	6.5	15.14	4074	23	18	14	11	8	6	5	600
E-480-DPR-G	48' 0"	6.5	15.14	4074	31	24	19	15	13	10	8	600
E-480-EPR-G	48' 0"	6.5	15.14	4112	41	33	26	21	17	14	11	600
E-480-FPR-G	48' 0"	6.5	15.14	4154	54	43	35	28	23	19	16	600
E-480-GPR-G	48' 0"	8.25	16.89	5289	71	56	45	37	30	25	21	600

* Poles are generally buried 10% of the mounting height plus 2 ft. in good soil conditions. For medium to poor soil conditions, embedment depths are assumed at 10% of the mounting height plus 4 ft.; however, it is recommended that, in locations with high pole loadings/poor soil conditions, a structural engineer determines adequate bearing strength. Please contact Spartan Sports Lighting for additional information. Footings are dependent upon soil strengths and must be sized to withstand the applied pole loadings.



Pole Catalog Number	Overall Pole Length (ft.) *	Pole Tip Diameter (Inches)	Pole Butt Diameter (Inches)	Nominal Pole Weight (lbs.)	Maximum EPA (sq. ft.)							Maximum Weight of Attachments (lbs.)
					90 mph	100 mph	110 mph	120 mph	130 mph	140 mph	150 mph	

45' MOUNTING HEIGHT

45' Mounting Height (Plus 10% + 2')												
E-520-DPR-G	52' 0"	6.5	15.86	4608	29	23	18	14	11	8	6	600
E-520-EPR-G	52' 0"	6.5	15.86	4652	39	31	24	20	16	13	10	600
E-520-FPR-G	52' 0"	6.5	15.86	4694	52	41	33	27	22	18	15	600
E-520-GPR-G	52' 0"	8.25	17.61	5940	68	54	43	35	28	23	19	600
E-520-HPR-G	52' 0"	8.25	17.61	5940	86	68	55	45	37	30	25	600
E-520-JPR-G	52' 0"	8.25	17.61	6020	106	85	69	56	47	39	33	600
45' Mounting Height (Plus 10% + 4')												
E-540-DPR-G	54' 0"	6.5	16.22	4887	29	22	18	14	11	8	6	600
E-540-EPR-G	54' 0"	6.5	16.22	4939	39	31	24	20	16	12	10	600
E-540-FPR-G	54' 0"	6.5	16.22	4980	52	41	33	27	22	18	14	600
E-540-GPR-G	54' 0"	8.25	17.97	6278	68	53	43	35	28	23	19	600
E-540-HPR-G	54' 0"	8.25	17.97	6322	86	68	55	45	37	30	25	600
E-540-JPR-G	54' 0"	8.25	17.97	6366	106	85	69	56	47	39	33	600

50' MOUNTING HEIGHT

50' Mounting Height (Plus 10% + 2')												
E-570-DPR-G	57' 0"	6.5	16.76	5318	27	21	16	12	9	7	5	600
E-570-EPR-G	57' 0"	6.5	16.76	5372	37	29	23	18	14	11	9	600
E-570-FPR-G	57' 0"	6.5	16.76	5414	50	39	31	25	20	16	13	600
E-570-GPR-G	57' 0"	8.25	18.51	6801	65	51	41	33	26	21	17	600
E-570-HPR-G	57' 0"	8.25	18.51	6847	83	65	52	42	35	29	24	600
E-570-JPR-G	57' 0"	8.25	18.51	6934	103	82	66	54	44	37	31	600
50' Mounting Height (Plus 10% + 4')												
E-590-DPR-G	59' 0"	6.5	17.12	5615	27	21	16	12	9	7	5	600
E-590-EPR-G	59' 0"	6.5	17.12	5677	37	29	23	18	14	11	9	600
E-590-FPR-G	59' 0"	6.5	17.12	5719	50	39	31	25	20	16	13	600
E-590-GPR-G	59' 0"	8.25	18.87	7159	65	51	41	33	26	21	17	600
E-590-HPR-G	59' 0"	8.25	18.87	7213	83	65	52	42	35	29	24	600
E-590-JPR-G	59' 0"	8.25	18.87	7309	103	82	66	54	44	37	31	600

* Poles are generally buried 10% of the mounting height plus 2 ft. in good soil conditions. For medium to poor soil conditions, embedment depths are assumed at 10% of the mounting height plus 4 ft.; however, it is recommended that, in locations with high pole loadings/poor soil conditions, a structural engineer determines adequate bearing strength. Please contact Spartan Sports Lighting for additional information. Footings are dependent upon soil strengths and must be sized to withstand the applied pole loadings.



SPARTAN
SPORTS LIGHTING

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Pole Catalog Number	Overall Pole Length (ft.) *	Pole Tip Diameter (Inches)	Pole Butt Diameter (Inches)	Nominal Pole Weight (lbs.)	Maximum EPA (sq. ft.)							Maximum Weight of Attachments (lbs.)
					90 mph	100 mph	110 mph	120 mph	130 mph	140 mph	150 mph	

55' MOUNTING HEIGHT

55' Mounting Height (Plus 10% + 2')												
E-630-DPR-G	63' 0"	6.5	17.84	6231	25	19	15	11	8	6	4	600
E-630-EPR-G	63' 0"	6.5	17.84	6300	35	27	21	16	13	10	7	600
E-630-FPR-G	63' 0"	6.5	17.84	6342	47	37	29	23	19	15	12	600
E-630-GPR-G	63' 0"	8.25	19.59	7900	62	49	38	31	24	19	16	600
E-630-HPR-G	63' 0"	8.25	19.59	7961	80	63	50	40	33	27	22	600
E-630-JPR-G	63' 0"	8.25	19.59	8065	100	79	63	51	42	35	29	600
55' Mounting Height (Plus 10% + 4')												
E-650-DPR-G	65' 0"	6.5	18.2	6551	25	19	14	11	8	6	4	600
E-650-EPR-G	65' 0"	6.5	18.2	6628	35	27	21	16	13	10	7	600
E-650-FPR-G	65' 0"	6.5	18.2	6669	47	37	29	23	19	15	12	600
E-650-GPR-G	65' 0"	8.25	19.95	8283	62	49	38	30	24	19	15	600
E-650-HPR-G	65' 0"	8.25	19.95	8352	80	63	50	40	33	27	22	600
E-650-JPR-G	65' 0"	8.25	19.95	8464	99	79	63	51	42	35	29	600

60' MOUNTING HEIGHT

60' Mounting Height (Plus 10% + 2')												
E-680-DPR-G	68' 0"	6.5	18.74	7044	23	17	13	9	6	4	2	1000
E-680-EPR-G	68' 0"	6.5	18.74	7123	33	25	19	15	11	8	6	1000
E-680-FPR-G	68' 0"	6.5	18.74	7164	44	34	27	21	17	13	10	1000
E-680-GPR-G	68' 0"	8.25	20.49	8873	59	46	36	28	22	17	14	1000
E-680-HPR-G	68' 0"	8.25	20.49	8943	76	60	47	38	30	24	20	1000
E-680-JPR-G	68' 0"	8.25	20.49	9060	96	75	60	49	40	32	27	1000
E-680-KPR-G	68' 0"	9.5	21.74	10236	117	92	74	60	49	40	33	1000
60' Mounting Height (Plus 10% + 4')												
E-700-DPR-G	70' 0"	6.5	19.1	7382	23	17	13	9	6	4	2	1000
E-700-EPR-G	70' 0"	6.5	19.1	7469	33	25	19	14	11	8	6	1000
E-700-FPR-G	70' 0"	6.5	19.1	7511	44	34	27	21	17	13	10	1000
E-700-GPR-G	70' 0"	8.25	20.85	9276	59	46	36	28	22	17	14	1000
E-700-HPR-G	70' 0"	8.25	20.85	9355	76	60	47	38	30	24	20	1000
E-700-JPR-G	70' 0"	8.25	20.85	9480	95	75	60	49	40	32	27	1000
E-700-KPR-G	70' 0"	9.5	22.1	10689	117	92	74	60	49	40	33	1000

* Poles are generally buried 10% of the mounting height plus 2 ft. in good soil conditions. For medium to poor soil conditions, embedment depths are assumed at 10% of the mounting height plus 4 ft.; however, it is recommended that, in locations with high pole loadings/poor soil conditions, a structural engineer determines adequate bearing strength. Please contact Spartan Sports Lighting for additional information. Footings are dependent upon soil strengths and must be sized to withstand the applied pole loadings.



Pole Catalog Number	Overall Pole Length (ft.) *	Pole Tip Diameter (Inches)	Pole Butt Diameter (Inches)	Nominal Pole Weight (lbs.)	Maximum EPA (sq. ft.)							Maximum Weight of Attachments (lbs.)
					90 mph	100 mph	110 mph	120 mph	130 mph	140 mph	150 mph	

65' MOUNTING HEIGHT

65' Mounting Height (Plus 10% + 2')												
E-740-GPR-G	74' 0"	8.25	21.57	10106	57	44	34	26	20	16	12	1000
E-740-HPR-G	74' 0"	8.25	21.57	10191	73	57	45	36	28	22	18	1000
E-740-JPR-G	74' 0"	8.25	21.57	10325	92	72	58	46	37	30	25	1000
E-740-KPR-G	74' 0"	9.5	22.82	11609	114	89	71	57	47	38	31	1000
E-740-LPR-G	74' 0"	9.5	22.82	11751	137	109	87	71	58	48	40	1000
E-740-MPR-G	74' 0"	11.25	24.57	13211	163	129	104	84	69	57	48	1000
65' Mounting Height (Plus 10% + 4')												
E-760-GPR-G	76' 0"	8.25	21.93	10533	57	44	34	26	20	16	12	1000
E-760-HPR-G	76' 0"	8.25	21.93	10629	73	57	45	36	28	22	18	1000
E-760-JPR-G	76' 0"	8.25	21.93	10769	92	72	58	46	37	30	25	1000
E-760-KPR-G	76' 0"	9.5	23.18	12087	113	89	71	57	47	38	31	1000
E-760-LPR-G	76' 0"	9.5	23.18	12237	137	108	87	71	58	48	40	1000
E-760-MPR-G	76' 0"	11.25	24.93	13686	163	129	103	84	69	57	48	1000

70' MOUNTING HEIGHT

70' Mounting Height (Plus 10% + 2')												
E-790-GPR-G	79' 0"	8.25	22.47	11190	54	41	32	24	18	14	10	1200
E-790-HPR-G	79' 0"	8.25	22.47	11288	70	54	42	33	26	20	16	1200
E-790-JPR-G	79' 0"	8.25	22.47	11429	89	69	55	44	35	28	23	1200
E-790-KPR-G	79' 0"	9.5	23.72	12811	110	86	68	55	44	36	29	1200
E-790-LPR-G	79' 0"	9.5	23.72	12961	133	105	84	68	55	45	37	1200
E-790-MPR-G	79' 0"	11.25	25.47	14579	159	126	101	82	68	56	47	1200
E-790-NPR-G	79' 0"	13	27.22	16124	186	147	118	95	78	65	54	1200
70' Mounting Height (Plus 10% + 4')												
E-810-GPR-G	81' 0"	8.25	22.83	11638	54	41	31	24	18	14	10	1200
E-810-HPR-G	81' 0"	8.25	22.83	11744	70	54	42	33	26	20	16	1200
E-810-JPR-G	81' 0"	8.25	22.83	11894	89	69	55	44	35	28	22	1200
E-810-KPR-G	81' 0"	9.5	24.08	13310	110	86	68	54	44	36	29	1200
E-810-LPR-G	81' 0"	9.5	24.08	13468	133	105	84	68	55	45	37	1200
E-810-MPR-G	81' 0"	11.25	25.83	15017	158	125	100	81	66	54	45	1200
E-810-NPR-G	81' 0"	13	27.58	16603	186	146	117	95	78	65	54	1200

* Poles are generally buried 10% of the mounting height plus 2 ft. in good soil conditions. For medium to poor soil conditions, embedment depths are assumed at 10% of the mounting height plus 4 ft.; however, it is recommended that, in locations with high pole loadings/poor soil conditions, a structural engineer determines adequate bearing strength. Please contact Spartan Sports Lighting for additional information. Footings are dependent upon soil strengths and must be sized to withstand the applied pole loadings.



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Pole Catalog Number	Overall Pole Length (ft.) *	Pole Tip Diameter (Inches)	Pole Butt Diameter (Inches)	Nominal Pole Weight (lbs.)	Maximum EPA (sq. ft.)						Maximum Weight of Attachments (lbs.)
					90 mph	100 mph	110 mph	120 mph	130 mph	140 mph	

75' MOUNTING HEIGHT

75' Mounting Height (Plus 10% + 2')												
E-850-GPR-G	85' 0"	8.25	23.55	12557	51	39	29	22	16	12	8	1200
E-850-HPR-G	85' 0"	8.25	23.55	12670	67	52	40	31	24	18	14	1200
E-850-JPR-G	85' 0"	8.25	23.55	12828	86	67	52	41	33	26	21	1200
E-850-KPR-G	85' 0"	9.5	24.8	14322	106	83	65	52	42	33	27	1200
E-850-LPR-G	85' 0"	9.5	24.8	14487	129	101	81	65	53	43	35	1200
E-850-MPR-G	85' 0"	11.25	26.55	16240	154	121	96	78	63	52	42	1200
E-850-NPR-G	85' 0"	13	28.3	17897	181	142	114	92	75	62	51	1200
75' Mounting Height (Plus 10% + 4')												
E-870-GPR-G	87' 0"	8.25	23.91	13029	51	39	29	22	16	12	8	1200
E-870-HPR-G	87' 0"	8.25	23.91	13150	67	52	40	31	24	18	14	1200
E-870-JPR-G	87' 0"	8.25	23.91	13317	86	67	52	41	33	26	20	1200
E-870-KPR-G	87' 0"	9.5	25.16	14846	106	83	65	52	41	33	27	1200
E-870-LPR-G	87' 0"	9.5	25.16	15019	129	101	80	65	52	43	35	1200
E-870-MPR-G	87' 0"	11.25	26.91	16686	154	121	96	78	63	52	42	1200
E-870-NPR-G	87' 0"	13	28.66	18387	181	142	114	92	75	61	51	1200

80' MOUNTING HEIGHT

80' Mounting Height (Plus 10% + 2')												
E-900-GPR-G	90' 0"	8.25	24.45	13753	49	37	27	20	14	10	6	1200
E-900-HPR-G	90' 0"	8.25	24.45	13876	65	49	38	29	22	17	12	1200
E-900-JPR-G	90' 0"	8.25	24.45	14044	83	64	50	39	31	24	19	1200
E-900-KPR-G	90' 0"	9.5	25.7	15637	103	80	62	49	39	31	25	1200
E-900-LPR-G	90' 0"	9.5	25.7	15811	125	98	78	62	50	40	33	1200
E-900-MPR-G	90' 0"	11.25	27.45	17677	150	117	93	75	60	49	40	1200
E-900-NPR-G	90' 0"	13	29.2	19430	176	138	110	88	72	59	48	1200
80' Mounting Height (Plus 10% + 4')												
E-920-GPR-G	92' 0"	8.25	24.81	14245	49	37	27	20	14	10	6	1200
E-920-HPR-G	92' 0"	8.25	24.81	14378	65	49	38	29	22	16	12	1200
E-920-JPR-G	92' 0"	8.25	24.81	14553	83	64	50	39	31	24	19	1200
E-920-KPR-G	92' 0"	9.5	26.06	16181	103	79	62	49	39	31	24	1200
E-920-LPR-G	92' 0"	9.5	26.06	16366	125	98	77	62	50	40	33	1200
E-920-MPR-G	92' 0"	11.25	27.81	18133	150	117	93	75	60	49	40	1200
E-920-NPR-G	92' 0"	13	29.56	19927	176	138	110	88	72	58	48	1200

* Poles are generally buried 10% of the mounting height plus 2 ft. in good soil conditions. For medium to poor soil conditions, embedment depths are assumed at 10% of the mounting height plus 4 ft.; however, it is recommended that, in locations with high pole loadings/poor soil conditions, a structural engineer determines adequate bearing strength. Please contact Spartan Sports Lighting for additional information. Footings are dependent upon soil strengths and must be sized to withstand the applied pole loadings.



Pole Catalog Number	Overall Pole Length (ft.) *	Pole Tip Diameter (Inches)	Pole Butt Diameter (Inches)	Nominal Pole Weight (lbs.)	Maximum EPA (sq. ft.)						Maximum Weight of Attachments (lbs.)
					90 mph	100 mph	110 mph	120 mph	130 mph	140 mph	

85' MOUNTING HEIGHT

85' Mounting Height (Plus 10% + 2')												
E-960-KPR-G	96' 0"	9.5	26.78	17287	99	77	60	47	37	29	22	1200
E-960-LPR-G	96' 0"	9.5	26.78	17478	122	95	75	59	47	38	30	1200
E-960-MPR-G	96' 0"	11.25	28.53	19325	146	113	90	71	57	46	37	1200
E-960-NPR-G	96' 0"	13	30.28	21341	171	134	106	85	69	55	45	1200
85' Mounting Height (Plus 10% + 4')												
E-980-KPR-G	98' 0"	9.5	27.14	17856	99	76	60	47	37	29	22	1200
E-980-LPR-G	98' 0"	9.5	27.14	18150	122	95	74	59	47	38	30	1200
E-980-MPR-G	98' 0"	11.25	28.89	19938	145	113	89	71	57	46	37	1200
E-980-NPR-G	98' 0"	13	30.64	21849	171	134	106	85	68	55	45	1200

90' MOUNTING HEIGHT

90' Mounting Height (Plus 10% + 2')												
E-1010-KPR-G	101' 0"	9.5	27.68	18716	96	74	57	44	34	26	20	1200
E-1010-LPR-G	101' 0"	9.5	27.68	19022	118	91	72	57	45	35	28	1200
E-1010-MPR-G	101' 0"	11.25	29.43	20864	141	110	86	68	55	44	35	1200
E-1010-NPR-G	101' 0"	13	31.18	22831	167	130	102	82	65	52	42	1200
90' Mounting Height (Plus 10% + 4')												
E-1030-KPR-G	103' 0"	9.5	28.04	19306	96	73	57	44	34	26	20	1200
E-1030-LPR-G	103' 0"	9.5	28.04	19631	118	91	71	56	45	35	28	1200
E-1030-MPR-G	103' 0"	11.25	29.79	21498	141	110	86	68	54	43	35	1200
E-1030-NPR-G	103' 0"	13	31.54	23506	167	130	102	81	65	52	42	1200

95' MOUNTING HEIGHT

95' Mounting Height (Plus 10% + 2')												
E-1070-KPR-G	107' 0"	9.5	29.3	21428	93	70	54	41	32	24	18	1200
E-1070-LPR-G	107' 0"	9.5	29.3	21797	114	88	68	54	42	33	25	1200
E-1070-MPR-G	107' 0"	11.25	31.05	23783	137	106	83	65	52	41	32	1200
95' Mounting Height (Plus 10% + 4')												
E-1090-KPR-G	109' 0"	9.5	29.84	22373	92	70	54	41	32	24	18	1200
E-1090-LPR-G	109' 0"	9.5	29.84	22769	114	88	68	53	42	33	25	1200
E-1090-MPR-G	109' 0"	11.25	31.59	24795	137	106	83	65	51	41	32	1200

* Poles are generally buried 10% of the mounting height plus 2 ft. in good soil conditions. For medium to poor soil conditions, embedment depths are assumed at 10% of the mounting height plus 4 ft.; however, it is recommended that, in locations with high pole loadings/poor soil conditions, a structural engineer determines adequate bearing strength. Please contact Spartan Sports Lighting for additional information. Footings are dependent upon soil strengths and must be sized to withstand the applied pole loadings.



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CERTIFICATION, DESIGN, MATERIALS & MANUFACTURING SPECIFICATIONS

ADDITIONAL POLE CONFIGURATIONS

Certifications

These specifications apply to the manufacture of centrifugally spun, prestressed, reinforced concrete poles by StressCrete. This method of manufacturing ensures a minimum compression of concrete, resulting in unsurpassed durability. The manufacturer shall have a minimum of 60 years experience in the design and production of spun concrete poles, and meet the following standards and specifications:

1. The manufacturing company shall be certified by Canadian Standards Association (CSA) to CSAA14 (latest revision).
2. Poles shall be designed to AASHTO-LTS (latest revision) to withstand a 3 second gust wind speed that is determined by geographical area utilizing the AASHTO wind map and by a licensed engineer.
3. Poles shall be designed/manufactured in accordance with:
 - a. CSA-A14: Concrete Poles (latest revision)
 - b. ASTM-C1089: Standard Specification for Spun Cast Prestressed Concrete Poles (latest revision)

Design

1. Poles shall be designed and constructed with all wiring and grounding concealed within the pole. Any apertures such as handholes, couplings, wiring apertures, etc. shall be cast into the pole during the manufacturing process.
2. All cable entry holes to follow approval drawings and be free from sharp edges for passage of electrical wiring.
 - a. 3" x 12" or 4" x 10" conduit opening centered below grade (or as specified).
 - b. A 3.5" x 10.5" high density, cast, zinc handhole frame with a flush zinc cover (location as specified).
 - c. Wiring aperture for a pre-wired cross arm to be suitable for the diameter of the pole and dependant on the driver location within the assembly design.
 - d. Poles to be grounded by #6 stranded copper wire.
3. All poles shall be provided with a fish wire to facilitate cable installation.

Materials

1. Concrete
 - a. 28-day compressive strength of 9,500 psi.
 - b. TYPE I or TYPE IO as per ASTM-C150.
 - c. Minimum $\frac{3}{4}$ " concrete coverage between reinforcing steel and pole surfaces.
 - d. Water reducers, retarders, or accelerating admixtures shall conform to ASTM-C494. Air entrainment and efflorescence control shall also be used.
2. Internal Caging
 - a. Deformed Reinforcing Steel- Grade 75 rebar as per ASTM-A615 and CSA G30.12.
 - b. Prestressing Steel- Uncoated to $\frac{1}{2}$ " 270 k.s.i.-7-wire, stress relieved strand as per ASTM-A416 and CSA G279.
 - c. Spiral Reinforcement- Conform to ASTM-B240 and not be less than either 0.128" or 0.148" diameter (depending on the class).

Manufacturing

1. Prestressing steel reinforcement to be stressed to a maximum of 70% ultimate capacity.
2. Molds to be spun 300-350 rpm for 6-15 minutes.
3. Poles manufactured to have a continuous taper of 0.18" per foot of length.
4. A concrete cylinder test shall be performed for each 100 cubic yards of concrete poured.

WARRANTY

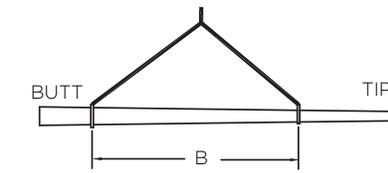
Spartan Sports Lighting provides a limited Lifetime Warranty for its spun concrete sports lighting poles to be free of defects in materials and workmanship. This warranty is not transferable and is applicable only to the original purchaser. For full warranty details, please see the Spartan Sports Lighting Pole Warranty document.



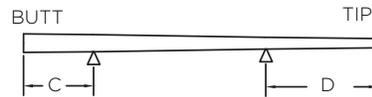
PLEASE READ BEFORE HANDLING THE POLES

1. Prior to unloading, inspect general condition of poles to be sure no obvious damage has occurred during shipping.
2. Use the sketches shown here as a guide for unloading the poles. Be sure that crane straps are in good condition. See Contractor Installation Guide for pole specific points.
3. When storing poles, it is crucial that the pole is blocked up in a level position, so it does not bend under its own weight (see right).
4. When installing, raise pole as smoothly as possible, referring to the sketches to the right.
5. See Contractor Installation Guide for details specific to your project. Please contact Spartan Sports Lighting for any additional questions or concerns.

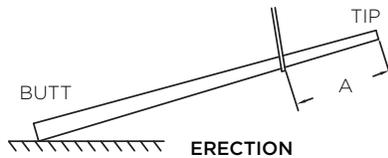
HANDLING INSTRUCTIONS FOR POLES SHORTER THAN 80'



HANDLING AND UNLOADING



POLE STORAGE



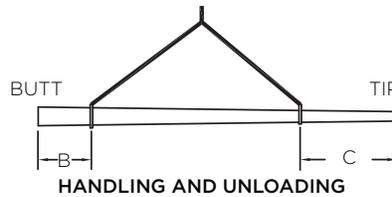
ERECTION

	POLE LENGTH UP TO 50'	POLE LENGTH BETWEEN 50' & 80'
* A	LOCATE ABOVE POINT OF BALANCE	20% OF DISTANCE FROM POLE TIP
** B	RECOMMENDED MINIMUM 10'	MIN 20% & UP TO 50% POLE LENGTH
** C	10% OF POLE LENGTH	15% OF POLE LENGTH
** D	25% OF POLE LENGTH	30% OF POLE LENGTH

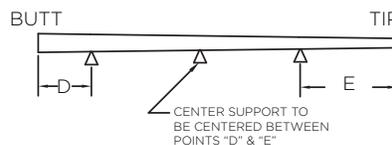
- * WHEN COMPLETE SPARTAN SPORTS LIGHTING ASSEMBLY IS BEING ERRECTED, SEE CONTRACTOR INSTALLATION GUIDE FOR LOCATION OF TOP PICK-UP POINT.
- ** WHEN STORING FOR ANY LENGTH OF TIME, POLES MUST BE SUPPORTED SO THAT THEY ARE NOT BENT UNDER THEIR OWN WEIGHT.
- *** IDEALLY, A SPREAD OF 50% OF POLE LENGTH IS BEST FOR UNLOADING POLES OVER 50' IN LENGTH.

USE WEDGES AT ENDS OF EACH ROW TO KEEP STORAGE BUNK SECURE.

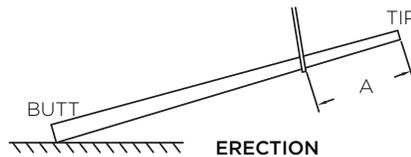
HANDLING INSTRUCTIONS FOR POLES 80' AND LONGER



HANDLING AND UNLOADING



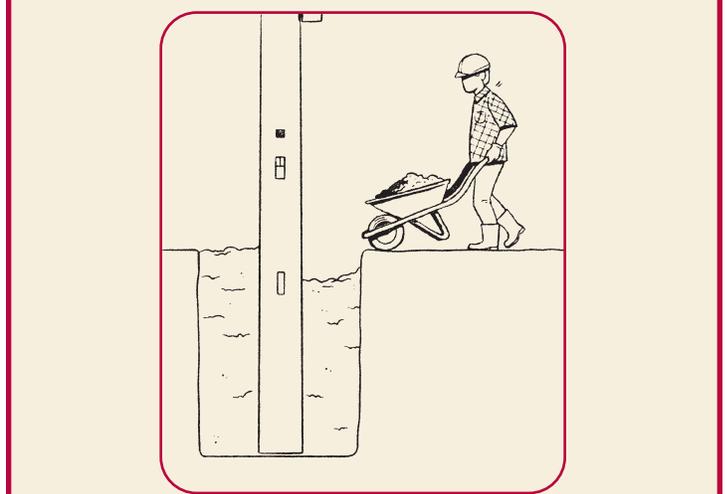
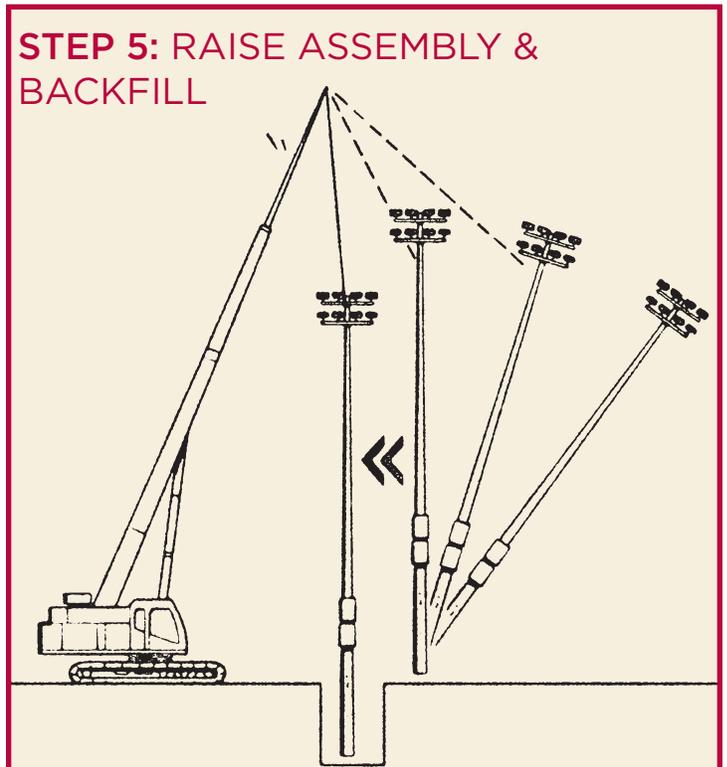
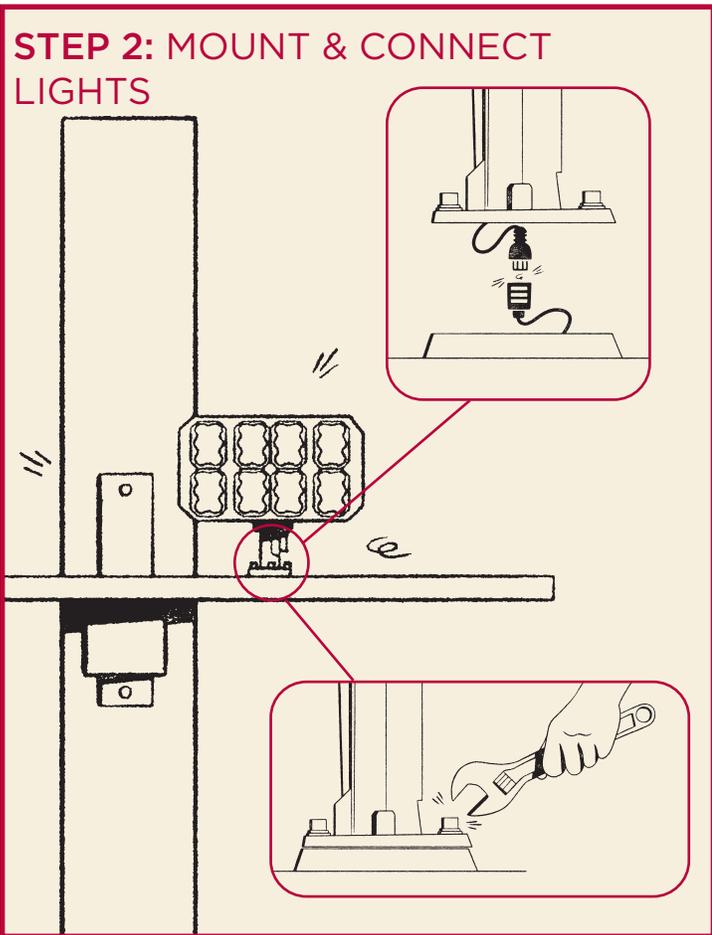
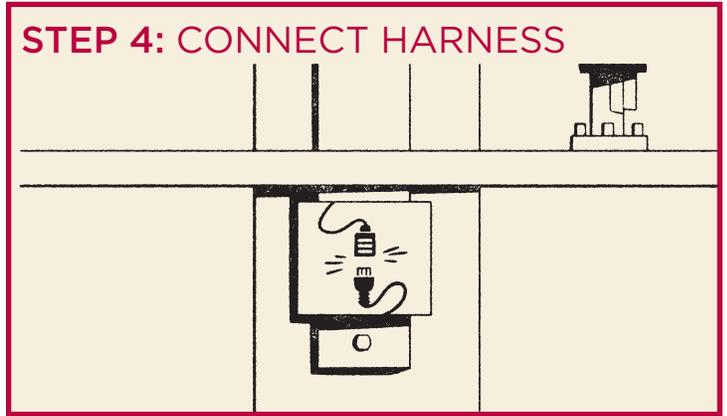
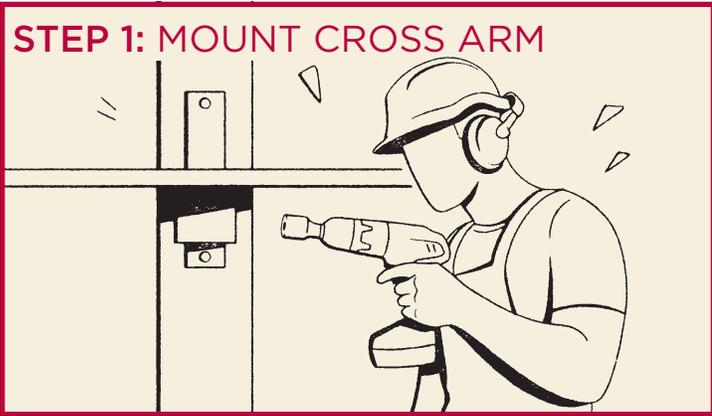
POLE STORAGE



ERECTION

	80'	85'	90'	95'	100'	105'	110'
* A	25'	25'	25'	30'	30'	30'	35'
B	15'	15'	20'	25'	25'	25'	25'
C	25'	25'	25'	30'	30'	30'	30'
** D	10'	10'	10'	10'	15'	15'	15'
** E	10'	15'	15'	15'	15'	15'	15'

- * WHEN COMPLETE SPARTAN SPORTS LIGHTING ASSEMBLY IS BEING ERRECTED, SEE CONTRACTOR INSTALLATION GUIDE FOR LOCATION OF TOP PICK-UP POINT.
- ** WHEN STORING FOR ANY LENGTH OF TIME, POLES MUST BE SUPPORTED SO THAT THEY ARE NOT BENT UNDER THEIR OWN WEIGHT.
- USE WEDGES AT ENDS OF EACH ROW TO KEEP STORAGE BUNK SECURE.



For Illustration Purposes Only. Not Drawn to Scale.



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