

LWS

LAMINATED WOOD SYSTEMS

E-LAM®

TECHNICAL DATA

- INSTALLATION RECOMMENDATIONS
- PRESERVATIVE TREATMENT
- HARDWARE OPTIONS
- RAKED POLE STANDARD SIZES
- TANGENT POLE STANDARD SIZES
- FOUNDATION SYSTEMS
- UNGLUED EDGE JOINT
- SPECIFICATIONS

View the E-LAM®
installation video online
at: www.lwsinc.com



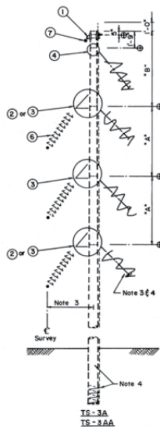
RAKED STRUCTURE DESIGN CRITERIA WORKSHEET

Scan and email to: engineering@lwsinc.com or submit online at www.lwsinc.com

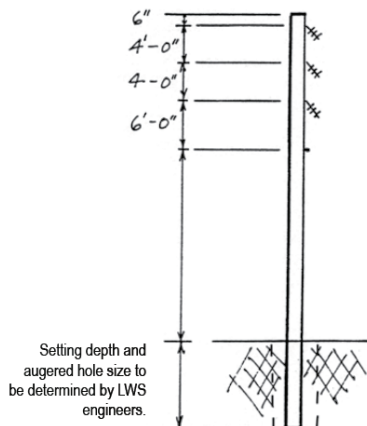
By providing our engineering department with pertinent design details and criteria, we can specify the raked poles suited to meet your pole and loading requirements

NOTE: Use this form for Joint Use Structure information as well.

PLEASE ATTACH YOUR DRAWING(S) SUCH AS:



AND/OR A SKETCH SUCH AS:



Customer Name _____

Contact Name _____

Project Name _____

Project Address _____

City _____ State _____

Phone _____ Fax _____

Email _____

City _____ State _____ Zip _____

Construction Type _____

Line Voltage(s) _____

Number of Conductors _____ Conductor Size _____

Number of Neutral/Shield Wires _____ Neut/SW Size _____

Conductor Maximum Design Tension (lbs.) _____

60 Degree Farenheit Tension - Conductor (lbs.) _____

Neutral/Shield Wire Maximum Design Tension (lbs.) _____

60 Degree Farenheit Tension - Neutral/Shield (lbs.) _____

Maximum Span (feet) _____

Line Angle (degrees) _____

Pole Height (above ground) _____

Typical Soil Type _____

Loading Conditions _____

(Example - NESC Heavy Loading, Grade B Construction)

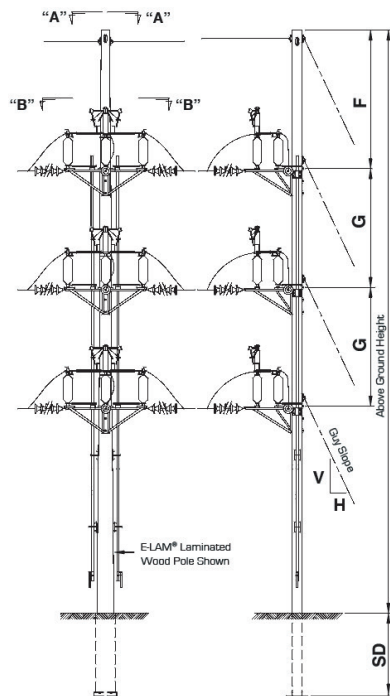
Additional Comments _____

(Example - cable TV, telephone, etc.)

SWITCH STRUCTURE INFORMATION WORKSHEET

Scan and email to: engineering@lwsinc.com or submit online at www.lwsinc.com

Use this form to provide LWS engineers information regarding your switch structure requirements. BE SURE TO FILL OUT ALL FIELDS SHADED IN BLUE. All of this information is required to accurately specify the correct E-LAM® pole for your application.



FOUNDATION DETAIL



Foundation Diameter
(Based on a Class social type)

Switch Manufacturer

Model Serial/Order No.

Pole Length	Setting Depth (SD)	Above Ground Height	F	G	V	H

Span

Wire

MDT

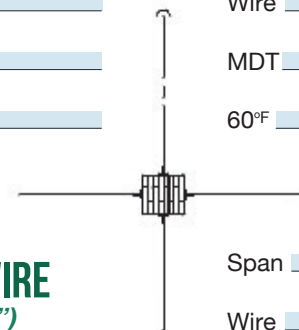
60°F

Span

Wire

MDT

60°F



SHIELD WIRE (view "A-A")

MDT = Maximum Design Tension

60°F = Tension at 60°F

Span

Wire

MDT

60°F

Span

Wire

MDT

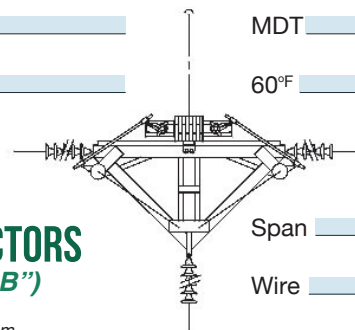
60°F

Span

Wire

MDT

60°F



CONDUCTORS (view "B-B")

MDT = Maximum Design Tension

60°F = Tension at 60°F

Span

Wire

MDT

60°F

SUBSTATION DEAD END STRUCTURE WORKSHEET

Use this form to provide LWS engineers the necessary information regarding your substation dead end structure requirements. BE SURE TO FILL OUT ALL FIELDS. All of this information is required to accurately specify the correct E-LAM® structure for your application.

STRUCTURE INFORMATION

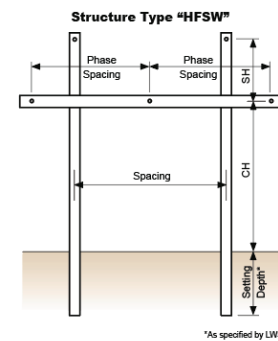
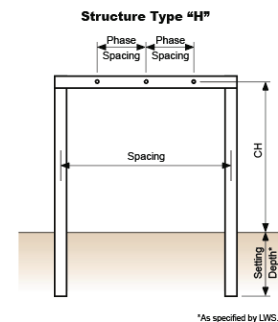
Structure Type _____ “H” _____ “HSW” _____ “HFSW” _____ Other: _____

Soil Type _____ Loading) _____
(Example - NESC Heavy Grade “B”)

Line Voltage _____ Line Angle _____

Spacing (feet) _____ Phase Spacing (feet) _____

“CH” (feet) _____ “SH” (feet) _____



SHIELD WIRE INFORMATION

Shield Wire _____ Wind Span (feet) _____

Max. Design Tension (lbs.) _____ Weight Span (feet) _____

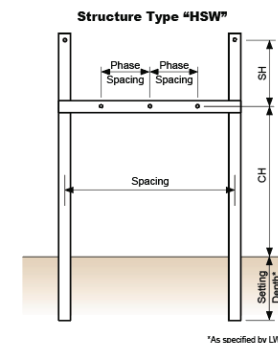
60° Tension (lbs.) _____ No. of Shield Wires _____

SHIELD WIRE INFORMATION

Shield Wire _____ Wind Span (feet) _____

Max. Design Tension (lbs.) _____ Weight Span (feet) _____

60° Tension (lbs.) _____ No. of Shield Wires _____



JOINT USE & TELECOM STRUCTURE WORKSHEET

NOTE: This form to be used for antenna loading information on Joint Use & Telecom structures. Use the Raked Structure form on page 2 to submit Joint-Use utility structure loading information.

Customer Name _____ Site Name _____
 Site Address _____ City _____ State _____
 Contact _____ Phone _____ Fax _____
 Pole Height (above ground) _____ feet Design Wind Speed _____ M.P.H. Radial Ice _____ inches
 Soils Report Available _____ Yes _____ No If "no" please describe soil type _____
 Picture of Proposed Site Available _____ Yes _____ No If "no" please describe surrounding area _____

STRUCTURE INFORMATION

Mfg/Model No.	Quantity	RAD Center	Azimuth
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

Sectorized antenna arms? _____ Yes _____ No Centerline elevation _____ feet
 Horizontal separation per antenna _____ feet
 Sectorized antenna arms? _____ Yes _____ No Centerline elevation _____ feet
 Horizontal separation per antenna _____ feet "Close mount" brackets? _____ Yes _____ No
 Twist/sway deflection requirements _____ degrees (at 50 M.P.H. operational wind speed)

MICROWAVE ANTENNAS

Mfg/Model No.	Quantity	RAD Center	Azimuth
_____	_____	_____	_____

Twist/sway deflection requirements _____ degrees (at 50 M.P.H., operational wind speed.)

OPTIONS

Cable Covers - Metal 8" x 9" _____ Metal 3" x 911 _____ or Laminated Wood _____ (holds 12 - 1 1/2" cables)
 Bracket Paint Color _____ Brown or _____ Green _____ Pole Steps _____ removable or _____ non-removable
 Internal Raceway (5" x 7 1/4") _____ Chamfered Pole Corners (4" bevel) _____ Safety Cable Assembly _____
 Pole Drawings _____ /Calculations _____ Other Requests _____

INSTALLING E-LAM® FIELD RAKED LAMINATED WOOD STRUCTURES

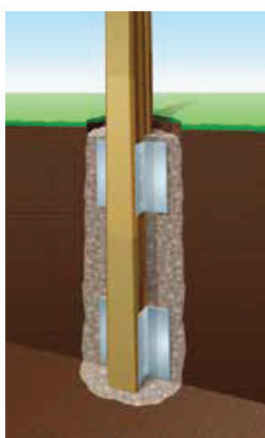
IDENTIFICATION OF POLES

Each E-LAM® laminated wood pole is tagged with the class and length on the face and the butt. If a variety of poles are required on a project, make sure the appropriate pole is spotted at the correct structure location. Additionally, poles of the same class may be drilled for different structures, and verification of structure types should also be confirmed.

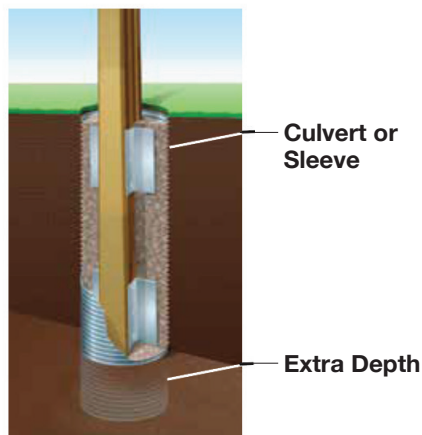
VERIFY AND ASSEMBLE APPROPRIATE FOUNDATION REINFORCEMENT SYSTEM

Field raked poles are drilled for and furnished with a foundation reinforcement system. The foundation systems, consisting of fabricated galvanized angles and assembly bolts, are shipped separate from the poles and need to be located and assembled prior to setting. The assemblies are application specific and require verification as to which system is used per structure location. Our staff will assist the user in determining which foundation system is appropriate for each installation based on loading and soil conditions provided by the owner. A “standard” foundation system for each pole class can be found with the Ultimate Groundline Moment information in the catalog. The actual foundation system that is supplied could vary from the “standard” because of site conditions. Where poor soil conditions exist, steel or concrete sleeves (culverts) may be required.

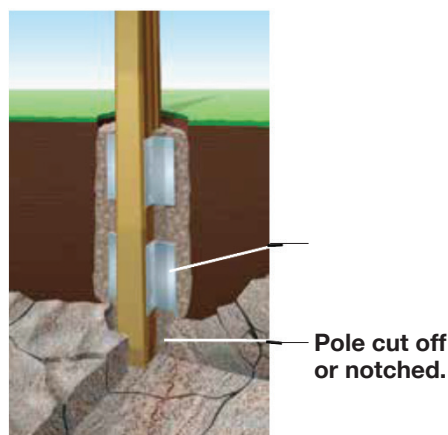
NOTE: It is always the ultimate decision of the owner to accept final responsibility for the foundation and setting requirements.



STANDARD FOUNDATION FOR
TYPICAL SOIL TYPE CLASS 5



STANDARD FOUNDATION FOR
SOFT SOIL INSTALLATIONS

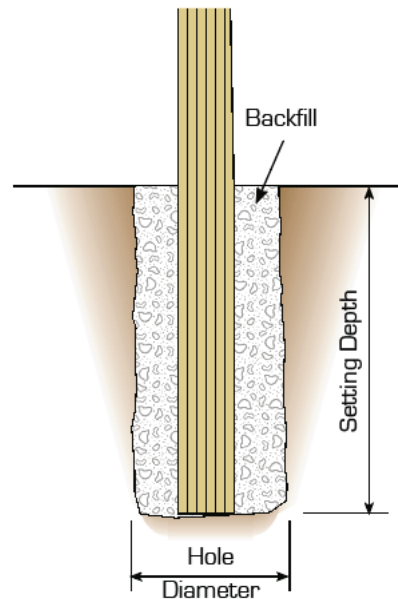


AUGER SIZE

The size of the hole is unique to the type of soil and loading for each individual installation. Laminated Wood Systems will develop specific information or tables based on the design information supplied by the utility at time of order placement.

SETTING DEPTH

The setting depth of each installation has been identified prior to manufacturing (typically 10% of the nominal length plus 4 feet). Individual soil types should be confirmed to verify the setting depth.



LIFTING

All poles are identified with “BP” on the face of the width (constant dimension) to identify the approximate balance point before any framing materials are added. The approximate weight of the treated pole will also be located at this point. The poles should be lifted with a steel choker or gut line rather than a flat nylon strap. The choker will slightly indent the edges on the radiused corners insuring a firm hold without slipping.



HANDLING

Poles can be handled just like any other wood pole. If rotation is required to bisect the angle, a regular cant hook for round poles can be used. Any field drilling and preservative treatment application should be consistent with the practice for other wood products acceptable to the individual utility.



Adjust and align structure using a cant hook or similar tool.

These are general recommendations and in no way should be given precedence when they come in conflict with an individual utility's accepted and established working practice.

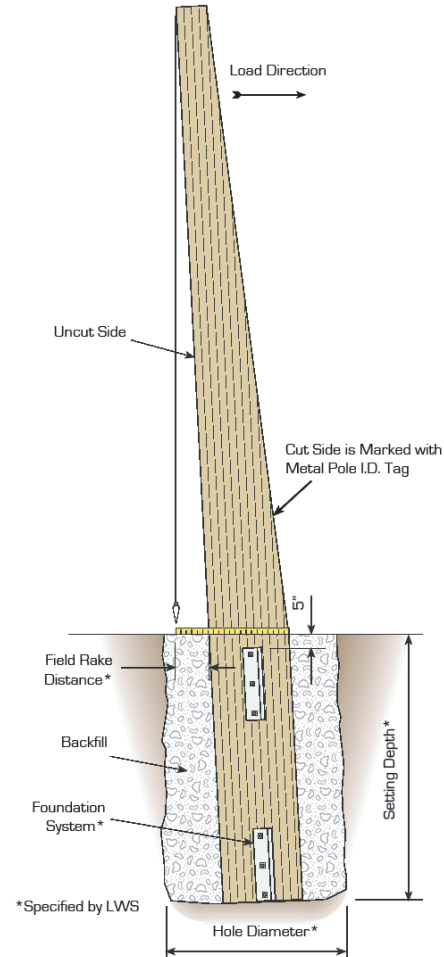
SETTING RECOMMENDATIONS

Follow general installation and handling recommendations as described on previous page. Install appropriate foundation system and auger hole to diameter and depth as recommended by LWS.

Raking: The field rake amount is typically designed to resist the 60°F load which is induced by the line angle or dead-end. The field rake amount will be calculated by the LWS engineering staff. A maximum field rake of 3% of the above-ground height is recommended on any installation.

Angle: In most cases, the pole needs to be oriented so the face of the pole bisects the line angle equally.

Plumbing: The back face of each pole has a straight edge which can be used for plumbing and raking the pole. A field raking detail is included within the drawings for each field raked pole.

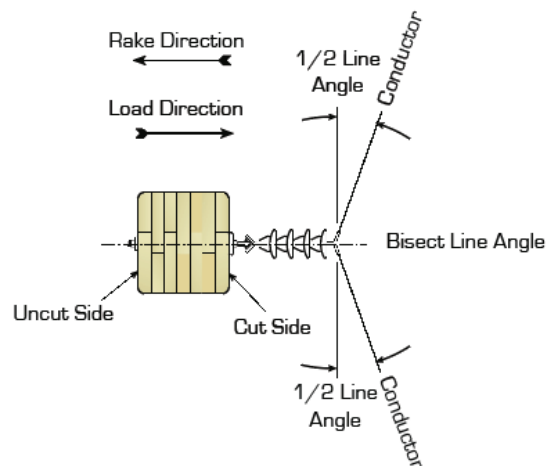


BACKFILL

Compacted aggregate tamped in 6" lifts, slurry, or concrete should be used. Native soil shall not be used.

TENSIONING

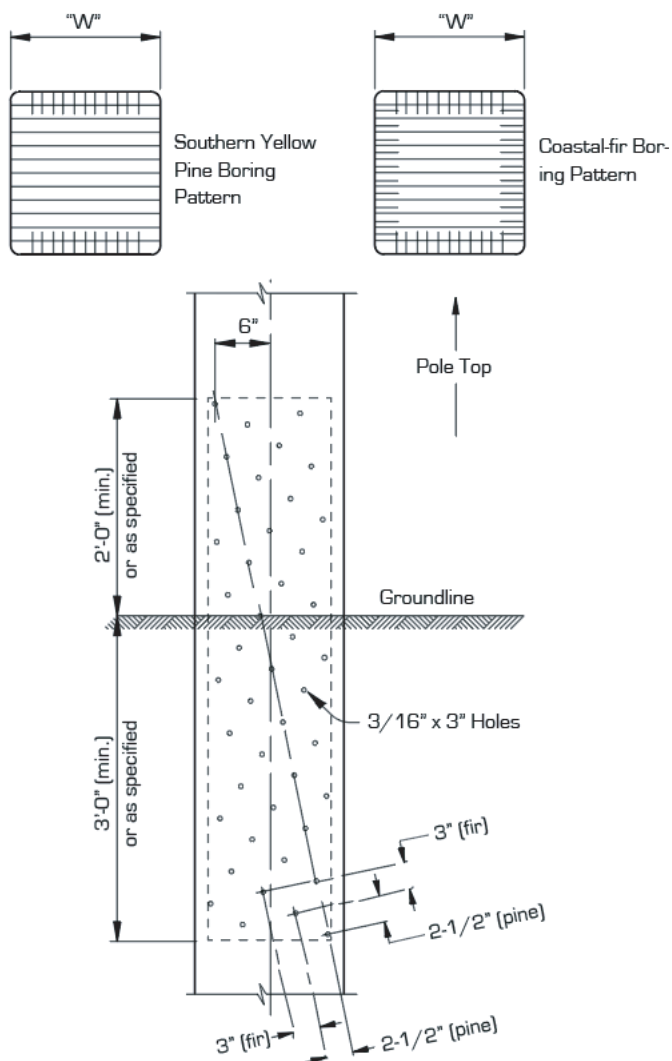
After pulling the conductor and/or shield wires to "every day" design tensions, allow the poles to set for a minimum of 30 minutes to reach a point of equilibrium. Verify tensions or bring back to design loads prior to clipping.



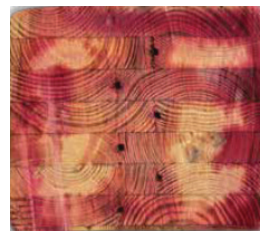
PRESERVATIVE TREATMENT

All poles are treated in accordance with AWP specification M2, and especially U1 Commodity Specification D, and T1 Section D, use category 4C. The most common treatment is penta & oil, and DCOI. CCA and copper naphthenate can also be used upon request.

STANDARD GROUNDLINE DEEP BORING FOR SOUTHERN PINE & COASTAL FIR E-LAM POLES (PRIOR TO TREATMENT)



PentaTrate® Patented edge joint grooves allow for full-length penetration of preservative in the inner zone of multiple-layup poles.



Typical treatment penetration throughout entire length of the pole.

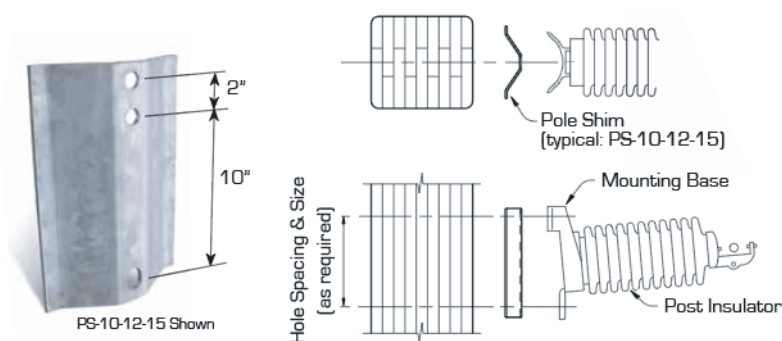


Groundline deep boring.

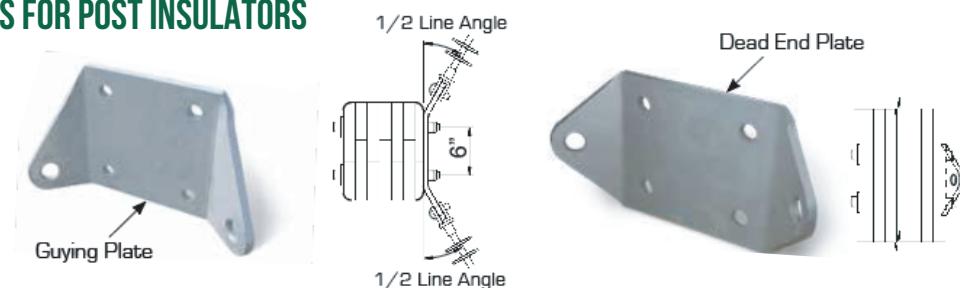
HARDWARE OPTIONS

All E-LAM® structures come with premium packaged hardware kits that include all foundation angles, mounting hardware, material list and engineering drawings. Crates are clearly marked with structure numbers & customer information.

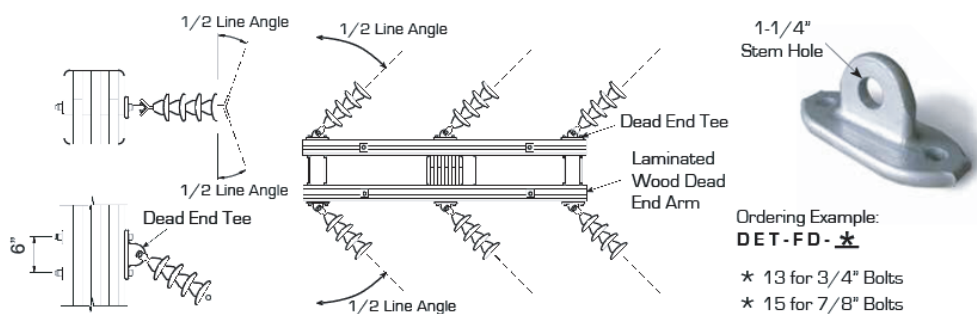
POLE SHIMS FOR POST INSULATORS



POLE SHIMS FOR POST INSULATORS



POLE SHIMS FOR POST INSULATORS





RAKED POLE STANDARD SIZES

SOUTHERN YELLOW PINE

32FT - 107FT

LARGER SIZES AVAILABLE AS REQUIRED

*View the E-LAM® installation
video online at: www.lwsinc.com*

E-LAM® SOUTHERN YELLOW PINE RAKED POLES

32 FT.	SOUTHERN YELLOW PINE					Approx. Treated Weight (lbs.)	Ultimate Groundline Moment (ft.-kips)
Pole Class	W (in.)	T (in.)	B (in.)	L (ft.)	C (ft.)		
PELR-4-32	6 ¾	6 ½	9 ⅝	32	7.5	582	66
PELR-3-32	6 ¾	6 ½	11	32	7.5	640	86
PELR-2-32	6 ¾	6 ½	12 ⅝	32	7.5	699	109
PELR-1-32	6 ¾	7 ½	13 ⅜	32	7.5	784	135
PELR-H1-32	6 ¾	7 ½	15 ⅞	32	7.5	842	163
PELR-H2-32	6 ¾	7 ½	16 ½	32	7.5	901	193
PELR-H3-32	6 ¾	8	17 ⅞	32	7.5	973	225
PELR-H4-32	6 ¾	9	19 ¼	32	7.5	1,058	259
PELR-H5-32	6 ¾	10	20 ⅝	32	7.5	1,142	295
PELR-H6-32	6 ¾	11	22	32	7.5	1,227	334
PELR-H7-32	6 ¾	12	23 ⅜	32	7.5	1,312	375
PELR-H8-32	6 ¾	12	24 ¾	32	7.5	1,371	418
PELR-H9-32	8 ½	13	24 ¾	32	7.5	1,760	526
PELR-H10-32	8 ½	13	26 ⅞	32	7.5	1,833	583
PELR-H11-32	8 ½	14	27 ½	32	7.5	1,940	643
PELR-H12-32	8 ½	14	28 ⅞	32	7.5	2,014	705
PELR-H13-32	8 ½	15	30 ¼	32	7.5	2,121	770
PELR-H14-32	8 ½	15	31 ⅝	32	7.5	2,195	838
PELR-H15-32	8 ½	16	33	32	7.5	2,302	909
PELR-H16-32	8 ½	16	34 ⅝	32	7.5	2,376	982

37 FT.	YELLOW SOUTHERN PINE					Approx. Treated Weight (lbs.)	Ultimate Groundline Moment (ft.-kips)
Pole Class	W (in.)	T (in.)	B (in.)	L (ft.)	C (ft.)		
PELR-4-37	6 ¾	6 ½	9 ⅝	37	8	670	66
PELR-3-37	6 ¾	6 ½	11	37	8	737	86
PELR-2-37	6 ¾	6 ½	12 ⅝	37	8	804	109
PELR-1-37	6 ¾	7 ½	13 ⅜	37	8	902	135
PELR-H1-37	6 ¾	7 ½	15 ⅞	37	8	968	163
PELR-H2-37	6 ¾	7 ½	16 ½	37	8	1,035	193
PELR-H3-37	6 ¾	8	17 ⅞	37	8	1,117	225
PELR-H4-37	6 ¾	9	19 ¼	37	8	1,215	259
PELR-H5-37	6 ¾	10	20 ⅝	37	8	1,313	295
PELR-H6-37	6 ¾	11	22	37	8	1,411	334
PELR-H7-37	6 ¾	12	23 ⅜	37	8	1,509	375
PELR-H8-37	6 ¾	12	24 ¾	37	8	1,576	418
PELR-H9-37	8 ½	13	24 ¾	37	8	2,024	526
PELR-H10-37	8 ½	13	26 ⅞	37	8	2,108	583
PELR-H11-37	8 ½	14	27 ½	37	8	2,231	643
PELR-H12-37	8 ½	14	28 ⅞	37	8	2,315	705
PELR-H13-37	8 ½	15	30 ¼	37	8	2,439	770
PELR-H14-37	8 ½	15	31 ⅝	37	8	2,523	838
PELR-H15-37	8 ½	16	33	37	8	2,646	909
PELR-H16-37	8 ½	16	34 ⅝	37	8	2,730	982

42 FT.	SOUTHERN YELLOW PINE					Approx. Treated Weight (lbs.)	Ultimate Groundline Moment (ft.-kips)
Pole Class	W (in.)	T (in.)	B (in.)	L (ft.)	C (ft.)		
PELR-4-42	6 ¾	6 ½	11	42	8	831	86
PELR-3-42	6 ¾	6 ½	12 ⅝	42	8	905	109
PELR-2-42	6 ¾	6 ½	13 ⅜	42	8	979	135
PELR-1-42	6 ¾	7 ½	15 ⅞	42	8	1,090	163
PELR-H1-42	6 ¾	7 ½	16 ½	42	8	1,164	193
PELR-H2-42	6 ¾	7 ½	17 ⅞	42	8	1,238	225
PELR-H3-42	6 ¾	8	19 ¼	42	8	1,331	259
PELR-H4-42	6 ¾	9	20 ⅝	42	8	1,442	295
PELR-H5-42	6 ¾	10	22	42	8	1,553	334
PELR-H6-42	6 ¾	11	23 ⅜	42	8	1,663	375
PELR-H7-42	6 ¾	12	24 ¾	42	8	1,774	418
PELR-H8-42	6 ¾	12	24 ¾	42	8	2,234	526
PELR-H9-42	8 ½	13	26 ⅞	42	8	2,373	583
PELR-H10-42	8 ½	13	27 ½	42	8	2,467	643
PELR-H11-42	8 ½	14	28 ⅞	42	8	2,606	705
PELR-H12-42	8 ½	14	30 ¼	42	8	2,700	770
PELR-H13-42	8 ½	15	31 ⅝	42	8	2,839	838
PELR-H14-42	8 ½	15	33	42	8	2,933	909
PELR-H15-42	8 ½	16	34 ⅝	42	8	3,072	982
PELR-H16-42	8 ½	16	35 ⅝	42	8	3,165	1,058

47 FT.	SOUTHERN YELLOW PINE					Approx. Treated Weight (lbs.)	Ultimate Groundline Moment (ft.-kips)
Pole Class	W (in.)	T (in.)	B (in.)	L (ft.)	C (ft.)		
PELR-4-47	8 ½	6 ½	11	47	8.5	1,169	109
PELR-3-47	8 ½	6 ½	12 ⅝	47	8.5	1,272	137
PELR-2-47	8 ½	6 ½	13 ⅜	47	8.5	1,428	170
PELR-1-47	8 ½	7 ½	15 ⅞	47	8.5	1,532	205
PELR-H1-47	8 ½	7 ½	16 ½	47	8.5	1,635	244
PELR-H2-47	8 ½	7 ½	17 ⅞	47	8.5	1,739	284
PELR-H3-47	8 ½	8	19 ¼	47	8.5	1,869	326
PELR-H4-47	8 ½	9	20 ⅝	47	8.5	2,024	372
PELR-H5-47	8 ½	10	22	47	8.5	2,180	421
PELR-H6-47	8 ½	11	23 ⅜	47	8.5	2,336	472
PELR-H7-47	8 ½	12	24 ¾	47	8.5	2,492	526
PELR-H8-47	10 ¼	12	24 ¾	47	8.5	3,005	634
PELR-H9-47	10 ¼	13	26 ⅞	47	8.5	3,193	703
PELR-H10-47	10 ¼	13	27 ½	47	8.5	3,318	775
PELR-H11-47	10 ¼	14	28 ⅞	47	8.5	3,506	850
PELR-H12-47	10 ¼	14	30 ¼	47	8.5	3,631	929
PELR-H13-47	10 ¼	15	31 ⅝	47	8.5	3,819	1,011
PELR-H14-47	10 ¼	15	33	47	8.5	3,944	1,096
PELR-H15-47	10 ¼	16	34 ⅝	47	8.5	4,132	1,184
PELR-H16-47	10 ¼	16	35 ⅝	47	8.5	4,257	1,276

E-LAM® SOUTHERN YELLOW PINE RAKED POLES

52 FT.	SOUTHERN YELLOW PINE					Approx. Treated Weight (lbs.)	Ultimate Groudbline Moment (ft.-kips)
Pole Class	W (in.)	T (in.)	B (in.)	L (ft.)	C (ft.)		
PELR-3-52	8 ½	6 ½	12 ¾	52	15	1,404	137
PELR-2-52	8 ½	6 ½	13 ¾	52	15	1,577	170
PELR-1-52	8 ½	6 ½	15 ½	52	15	1,690	205
PELR-H1-52	8 ½	7 ½	16 ½	52	15	1,804	244
PELR-H2-52	8 ½	7 ½	17 ¾	52	15	1,918	284
PELR-H3-52	8 ½	8	19 ¼	52	15	2,061	326
PELR-H4-52	8 ½	9	20 ¾	52	15	2,233	372
PELR-H5-52	8 ½	10	22	52	15	2,406	421
PELR-H6-52	8 ½	11	23 ¾	52	15	2,578	472
PELR-H7-52	8 ½	12	24 ¾	52	15	2,750	526
PELR-H8-52	10 ¼	12	24 ¾	52	15	3,316	634
PELR-H9-52	10 ¼	13	26 ½	52	15	3,524	703
PELR-H10-52	10 ¼	13	27 ½	52	15	3,661	775
PELR-H11-52	10 ¼	14	28 ¾	52	15	3,869	850
PELR-H12-52	10 ¼	14	30 ¼	52	15	4,007	929
PELR-H13-52	10 ¼	15	31 ¾	52	15	4,214	1,011
PELR-H14-52	10 ¼	15	33	52	15	4,352	1,096
PELR-H15-52	10 ¼	16	34 ¾	52	15	2,559	1,184
PELR-H16-52	10 ¼	16	35 ¾	52	15	4,697	1,276

62 FT.	SOUTHERN YELLOW PINE					Approx. Treated Weight (lbs.)	Ultimate Groudbline Moment (ft.-kips)
Pole Class	W (in.)	T (in.)	B (in.)	L (ft.)	C (ft.)		
PELR-1-62	10 ¼	7 ½	16 ½	62	10	2,583	294
PELR-H1-62	10 ¼	7 ½	17 ¾	62	10	2,746	342
PELR-H2-62	10 ¼	7 ½	19 ¼	62	10	2,908	394
PELR-H3-62	10 ¼	8	20 ¾	62	10	3,112	449
PELR-H4-62	10 ¼	9	22	62	10	3,359	507
PELR-H5-62	10 ¼	10	23 ¾	62	10	3,607	569
PELR-H6-62	10 ¼	11	24 ¾	62	10	3,854	634
PELR-H7-62	10 ¼	12	26 ½	62	10	4,101	703
PELR-H8-62	10 ¼	12	27 ½	62	10	4,263	775
PELR-H9-62	10 ¼	13	28 ¾	62	10	4,510	850
PELR-H10-62	10 ¼	13	30 ¼	62	10	4,672	929
PELR-H11-62	10 ¼	14	31 ¾	62	10	4,920	1,011
PELR-H12-62	10 ¼	14	33	62	10	5,082	1,096
PELR-H13-62	10 ¼	15	34 ¾	62	10	5,329	1,184
PELR-H14-62	10 ¼	15	35 ¾	62	10	5,491	1,276
PELR-H15-62	10 ¼	16	37 ½	62	10	5,738	1,371
PELR-H16-62	10 ¼	16	38 ½	62	10	5,900	1,469

57 FT.	SOUTHERN YELLOW PINE					Approx. Treated Weight (lbs.)	Ultimate Groudbline Moment (ft.-kips)
Pole Class	W (in.)	T (in.)	B (in.)	L (ft.)	C (ft.)		
PELR-2-57	8 ½	7 ½	15 ½	57	9.5	1,849	205
PELR-1-57	8 ½	7 ½	16 ½	57	9.5	1,973	244
PELR-H1-57	8 ½	7 ½	17 ¾	57	9.5	2,097	284
PELR-H2-57	8 ½	7 ½	19 ¼	57	9.5	2,222	326
PELR-H3-57	8 ½	8	20 ¾	57	9.5	2,378	372
PELR-H4-57	8 ½	9	22	57	9.5	2,567	421
PELR-H5-57	8 ½	10	23 ¾	57	9.5	2,755	472
PELR-H6-57	8 ½	11	24 ¾	57	9.5	2,944	526
PELR-H7-57	10 ¼	12	24 ¾	57	9.5	3,628	634
PELR-H8-57	10 ¼	12	26 ½	57	9.5	3,777	703
PELR-H9-57	10 ¼	13	27 ½	57	9.5	4,005	775
PELR-H10-57	10 ¼	13	28 ¾	57	9.5	4,155	850
PELR-H11-57	10 ¼	14	30 ¼	57	9.5	4,382	929
PELR-H12-57	10 ¼	14	31 ¾	57	9.5	4,532	1,011
PELR-H13-57	10 ¼	15	33	57	9.5	4,759	1,096
PELR-H14-57	10 ¼	15	34 ¾	57	9.5	4,909	1,184
PELR-H15-57	10 ¼	16	35 ¾	57	9.5	5,136	1,276
PELR-H16-57	10 ¼	16	37 ½	57	9.5	5,286	1,371

67 FT.	SOUTHERN YELLOW PINE					Approx. Treated Weight (lbs.)	Ultimate Groudbline Moment (ft.-kips)
Pole Class	W (in.)	T (in.)	B (in.)	L (ft.)	C (ft.)		
PELR-1-67	10 ¼	7 ½	16 ½	67	10.5	2,787	294
PELR-H1-67	10 ¼	7 ½	17 ¾	67	10.5	2,962	342
PELR-H2-67	10 ¼	7 ½	19 ¼	67	10.5	3,136	394
PELR-H3-67	10 ¼	8	20 ¾	67	10.5	3,357	449
PELR-H4-67	10 ¼	9	22	67	10.5	3,624	507
PELR-H5-67	10 ¼	10	23 ¾	67	10.5	3,891	569
PELR-H6-67	10 ¼	11	24 ¾	67	10.5	4,158	634
PELR-H7-67	12 ¼	12	24 ¾	67	10.5	5,080	758
PELR-H8-67	12 ¼	12	26 ½	67	10.5	5,288	840
PELR-H9-67	12 ¼	13	27 ½	67	10.5	5,607	926
PELR-H10-67	12 ¼	13	28 ¾	67	10.5	5,816	1,016
PELR-H11-67	12 ¼	14	30 ¼	67	10.5	6,135	1,110
PELR-H12-67	12 ¼	14	31 ¾	67	10.5	6,343	1,208
PELR-H13-67	12 ¼	15	33	67	10.5	6,662	1,310
PELR-H14-67	12 ¼	15	34 ¾	67	10.5	6,871	1,415
PELR-H15-67	12 ¼	16	35 ¾	67	10.5	7,190	1,525
PELR-H16-67	12 ¼	16	37 ½	67	10.5	7,398	1,638

E-LAM® SOUTHERN YELLOW PINE RAKED POLES

72 FT.	SOUTHERN YELLOW PINE						Approx. Treated Weight (lbs.)	Ultimate Groundline Moment (ft.-kips)
Pole Class	W (in.)	T (in.)	B (in.)	L (ft.)	C (ft.)			
PELR-1-72	10 ¼	7 ½	16 ½	72	11		2,991	294
PELR-H1-72	10 ¼	7 ½	17 ⅞	72	11		3,178	342
PELR-H2-72	10 ¼	7 ½	19 ¼	72	11		3,365	394
PELR-H3-72	10 ¼	8	20 ⅝	72	11		3,602	449
PELR-H4-72	10 ¼	9	22	72	11		3,888	507
PELR-H5-72	10 ¼	10	23 ⅜	72	11		4,175	569
PELR-H6-72	10 ¼	11	24 ¾	72	11		4,462	634
PELR-H7-72	12 ¼	12	24 ¾	72	11		5,452	758
PELR-H8-72	12 ¼	12	26 ⅞	72	11		5,675	840
PELR-H9-72	12 ¼	13	27 ½	72	11		6,018	926
PELR-H10-72	12 ¼	13	28 ⅞	72	11		6,241	1,016
PELR-H11-72	12 ¼	14	30 ¼	72	11		6,583	1,110
PELR-H12-72	12 ¼	14	31 ⅝	72	11		6,807	1,208
PELR-H13-72	12 ¼	15	33	72	11		7,149	1,310
PELR-H14-72	12 ¼	15	34 ⅜	72	11		7,373	1,415
PELR-H15-72	12 ¼	16	35 ¾	72	11		7,715	1,525
PELR-H16-72	12 ¼	16	37 ⅞	72	11		7,939	1,638

77 FT.	SOUTHERN YELLOW PINE					Approx. Treated Weight (lbs.)	Ultimate Groudlne Moment (ft.-kips)
Pole Class	W (in.)	T (in.)	B (in.)	L (ft.)	C (ft.)		
PELR-1-77	10 ¼	7 ½	17 ⅞	77	11.5	3,394	342
PELR-H1-77	10 ¼	7 ½	19 ¼	77	11.5	3,593	394
PELR-H2-77	10 ¼	7 ½	20 ⅞	77	11.5	3,793	449
PELR-H3-77	10 ¼	8	22	77	11.5	4,045	507
PELR-H4-77	10 ¼	9	23 ⅞	77	11.5	4,352	569
PELR-H5-77	10 ¼	10	24 ¾	77	11.5	4,658	634
PELR-H6-77	12 ¼	11	24 ¾	77	11.5	5,695	758
PELR-H7-77	12 ¼	12	26 ⅞	77	11.5	6,062	840
PELR-H8-77	12 ¼	12	27 ½	77	11.5	6,300	926
PELR-H9-77	12 ¼	13	28 ⅞	77	11.5	6,666	1,016
PELR-H10-77	12 ¼	13	30 ¼	77	11.5	6,904	1,110
PELR-H11-77	12 ¼	14	31 ⅞	77	11.5	7,270	1,208
PELR-H12-77	12 ¼	14	33	77	11.5	7,508	1,310
PELR-H13-77	12 ¼	15	34 ⅞	77	11.5	7,875	1,415
PELR-H14-77	12 ¼	15	35 ¾	77	11.5	8,113	1,525
PELR-H15-77	12 ¼	16	37 ⅞	77	11.5	8,479	1,638
PELR-H16-77	12 ¼	16	38 ½	77	11.5	8,717	1,756

82 FT.	SOUTHERN YELLOW PINE					Approx. Treated Weight (lbs.)	Ultimate Groundline Moment (ft.-kips)
Pole Class	W (in.)	T (in.)	B (in.)	L (ft.)	C (ft.)		
PELR-1-82	10 ¼	7 ½	19 ¼	82	12	3,822	394
PELR-H1-82	10 ¼	7 ½	20 ⅝	82	12	4,034	449
PELR-H2-82	10 ¼	7 ½	22	82	12	4,245	507
PELR-H3-82	10 ¼	8	23 ⅝	82	12	4,514	569
PELR-H4-82	10 ¼	9	24 ¾	82	12	4,840	634
PELR-H5-82	12 ¼	10	24 ¾	82	12	5,922	758
PELR-H6-82	12 ¼	11	26 ⅞	82	12	6,311	840
PELR-H7-82	12 ¼	12	27 ½	82	12	6,701	926
PELR-H8-82	12 ¼	12	28 ⅞	82	12	6,954	1,016
PELR-H9-82	12 ¼	13	30 ¼	82	12	7,344	1,110
PELR-H10-82	12 ¼	13	31 ⅝	82	12	7,597	1,208
PELR-H11-82	12 ¼	14	33	82	12	7,987	1,310
PELR-H12-82	12 ¼	14	34 ⅝	82	12	8,240	1,415
PELR-H13-82	12 ¼	15	35 ¾	82	12	8,630	1,525
PELR-H14-82	12 ¼	15	37 ⅞	82	12	8,882	1,638
PELR-H15-82	12 ¼	16	38 ½	82	12	9,272	1,756
PELR-H16-82	12 ¼	16	39 ⅞	82	12	9,525	1,877

87 FT.	SOUTHERN YELLOW PINE					Approx. Treated Weight (lbs.)	Ultimate Groundline Moment (ft.-kips)
Pole Class	W (in.)	T (in.)	B (in.)	L (ft.)	C (ft.)		
PELR-1-87	10 ¼	7 ½	20 ⅝	87	12.5	4,275	449
PELR-H1-87	10 ¼	7 ½	22	87	12.5	4,498	507
PELR-H2-87	10 ¼	7 ½	23 ⅝	87	12.5	4,722	569
PELR-H3-87	10 ¼	8	24 ¾	87	12.5	5,007	634
PELR-H4-87	12 ¼	9	24 ¾	87	12.5	6,130	758
PELR-H5-87	12 ¼	10	26 ⅞	87	12.5	6,544	840
PELR-H6-87	12 ¼	11	27 ½	87	12.5	6,957	926
PELR-H7-87	12 ¼	12	28 ⅞	87	12.5	7,371	1,016
PELR-H8-87	12 ¼	12	30 ¼	87	12.5	7,638	1,110
PELR-H9-87	12 ¼	13	31 ⅝	87	12.5	8,052	1,208
PELR-H10-87	12 ¼	13	33	87	12.5	8,319	1,310
PELR-H11-87	12 ¼	14	34 ⅝	87	12.5	8,733	1,415
PELR-H12-87	12 ¼	14	35 ¾	87	12.5	9,001	1,525
PELR-H13-87	12 ¼	15	37 ⅞	87	12.5	9,414	1,638
PELR-H14-87	12 ¼	15	38 ½	87	12.5	9,682	1,756
PELR-H15-87	12 ¼	16	39 ⅞	87	12.5	10,095	1,877
PELR-H16-87	12 ¼	16	41 ¼	87	12.5	10,363	2,001

E-LAM® SOUTHERN YELLOW PINE RAKED POLES

92 FT.	SOUTHERN YELLOW PINE						Approx. Treated Weight (lbs.)	Ultimate Groundline Moment (ft.-kips)
Pole Class	W (in.)	T (in.)	B (in.)	L (ft.)	C (ft.)			
PELR-1-92	12 ¼	7 ½	20 ¾	92	13		5,397	536
PELR-H1-92	12 ¼	7 ½	22	92	13		5,679	606
PELR-H2-92	12 ¼	7 ½	23 ¾	92	13		5,962	680
PELR-H3-92	12 ¼	8	24 ¾	92	13		6,321	758
PELR-H4-92	12 ¼	9	26 ¾	92	13		6,758	840
PELR-H5-92	12 ¼	10	27 ½	92	13		7,195	926
PELR-H6-92	12 ¼	11	28 ¾	92	13		7,632	1,016
PELR-H7-92	12 ¼	12	30 ¼	92	13		8,069	1,110
PELR-H8-92	12 ¼	12	31 ¾	92	13		8,352	1,208
PELR-H9-92	12 ¼	13	33	92	13		8,789	1,310
PELR-H10-92	12 ¼	13	34 ¾	92	13		9,072	1,415
PELR-H11-92	12 ¼	14	35 ¾	92	13		9,509	1,525
PELR-H12-92	12 ¼	14	37 ¾	92	13		9,791	1,638
PELR-H13-92	12 ¼	15	38 ½	92	13		10,228	1,756
PELR-H14-92	12 ¼	15	39 ¾	92	13		10,511	1,877
PELR-H15-92	12 ¼	16	41 ¼	92	13		10,948	2,001
PELR-H16-92	12 ¼	16	42 ¾	92	13		11,230	2,130

97 FT.	SOUTHERN YELLOW PINE					Approx. Treated Weight (lbs.)	Ultimate Groudlne Moment (ft.-kips)
Pole Class	W (in.)	T (in.)	B (in.)	L (ft.)	C (ft.)		
PELR-1-97	12 ¼	7 ½	22	97	13.5	5,982	606
PELR-H1-97	12 ¼	7 ½	23 ⅝	97	13.5	6,279	680
PELR-H2-97	12 ¼	7 ½	24 ¾	97	13.5	6,576	758
PELR-H3-97	12 ¼	8	26 ⅝	97	13.5	6,955	840
PELR-H4-97	12 ¼	9	27 ½	97	13.5	7,416	926
PELR-H5-97	12 ¼	10	28 ⅝	97	13.5	7,877	1,016
PELR-H6-97	12 ¼	11	30 ¼	97	13.5	8,337	1,110
PELR-H7-97	12 ¼	12	31 ⅝	97	13.5	8,798	1,208
PELR-H8-97	12 ¼	12	33	97	13.5	9,095	1,310
PELR-H9-97	12 ¼	13	34 ⅝	97	13.5	9,556	1,415
PELR-H10-97	12 ¼	13	35 ¾	97	13.5	9,853	1,525
PELR-H11-97	12 ¼	14	37 ⅝	97	13.5	10,314	1,638
PELR-H12-97	12 ¼	14	38 ½	97	13.5	10,611	1,756
PELR-H13-97	12 ¼	15	39 ⅝	97	13.5	11,072	1,877
PELR-H14-97	12 ¼	15	41 ¼	97	13.5	11,369	2,001
PELR-H15-97	12 ¼	16	42 ⅝	97	13.5	11,830	2,130
PELR-H16-97	12 ¼	16	44	97	13.5	12,127	2,263

102 FT.	SOUTHERN YELLOW PINE					Approx. Treated Weight (lbs.)	Ultimate Groundline Moment (ft.-kips)
Pole Class	W (in.)	T (in.)	B (in.)	L (ft.)	C (ft.)		
PELR-1-102	12 ¼	7 ½	23 ⅞	102	14	6,597	680
PELR-H1-102	12 ¼	7 ½	24 ⅞	102	14	6,909	758
PELR-H2-102	12 ¼	7 ½	26 ⅞	102	14	7,221	840
PELR-H3-102	12 ¼	8	27 ½	102	14	7,619	926
PELR-H4-102	12 ¼	9	28 ⅞	102	14	8,103	1,016
PELR-H5-102	12 ¼	10	30 ¼	102	14	8,588	1,110
PELR-H6-102	12 ¼	11	31 ⅞	102	14	9,072	1,208
PELR-H7-102	12 ¼	12	33	102	14	9,556	1,310
PELR-H8-102	12 ¼	12	34 ⅞	102	14	9,868	1,415
PELR-H9-102	12 ¼	13	35 ⅞	102	14	10,352	1,525
PELR-H10-102	12 ¼	13	37 ⅞	102	14	10,664	1,638
PELR-H11-102	12 ¼	14	38 ½	102	14	11,149	1,756
PELR-H12-102	12 ¼	14	39 ⅞	102	14	11,461	1,877
PELR-H13-102	12 ¼	15	41 ¼	102	14	11,945	2,001
PELR-H14-102	12 ¼	15	42 ⅞	102	14	12,257	2,130
PELR-H15-102	12 ¼	16	44	102	14	12,741	2,263
PELR-H16-102	12 ¼	16	45 ⅞	102	14	13,053	2,399

107 FT.	SOUTHERN YELLOW PINE					Approx. Treated Weight (lbs.)	Ultimate Groundline Moment (ft.-kips)
Pole Class	W (in.)	T (in.)	B (in.)	L (ft.)	C (ft.)		
PELR-1-107	12 ¼	7 ½	24 ¾	107	14.5	7,241	758
PELR-H1-107	12 ¼	7 ½	26 ⅞	107	14.5	7,568	840
PELR-H2-107	12 ¼	7 ½	27 ½	107	14.5	7,895	926
PELR-H3-107	12 ¼	8	28 ⅞	107	14.5	8,312	1,016
PELR-H4-107	12 ¼	9	30 ¼	107	14.5	8,820	1,110
PELR-H5-107	12 ¼	10	31 ⅝	107	14.5	9,328	1,208
PELR-H6-107	12 ¼	11	33	107	14.5	9,836	1,310
PELR-H7-107	12 ¼	12	34 ⅞	107	14.5	10,344	1,415
PELR-H8-107	12 ¼	12	35 ¾	107	14.5	10,671	1,525
PELR-H9-107	12 ¼	13	37 ⅞	107	14.5	11,178	1,638
PELR-H10-107	12 ¼	13	38 ½	107	14.5	11,505	1,756
PELR-H11-107	12 ¼	14	39 ⅞	107	14.5	12,013	1,877
PELR-H12-107	12 ¼	14	41 ¼	107	14.5	12,340	2,001
PELR-H13-107	12 ¼	15	42 ⅞	107	14.5	12,848	2,130
PELR-H14-107	12 ¼	15	44	107	14.5	13,175	2,263
PELR-H15-107	12 ¼	16	45 ⅞	107	14.5	13,683	2,399
PELR-H16-107	12 ¼	16	46 ¾	107	14.5	14,009	2,539



RAKED POLE STANDARD SIZES

COASTAL DOUGLAS FIR

32FT - 107FT

LARGER SIZES AVAILABLE AS REQUIRED

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E-LAM® COASTAL DOUGLAS FIR RAKED POLES

32 FT.	COASTAL DOUGLAS FIR					Approx. Treated Weight (lbs.)	Ultimate Groundline Moment (ft.-kips)
Pole Class	W (in.)	T (in.)	B (in.)	L (ft.)	C (ft.)		
ELR-4-32	6 ¾	6 ½	10 ½	32	7.5	549	65
ELR-3-32	6 ¾	6 ½	12	32	7.5	606	85
ELR-2-32	6 ¾	6 ½	13 ½	32	7.5	662	108
ELR-1-32	6 ¾	7 ½	15	32	7.5	742	133
ELR-H1-32	6 ¾	7 ½	16 ½	32	7.5	799	161
ELR-H2-32	6 ¾	7 ½	18	32	7.5	856	191
ELR-H3-32	8 ¾	8	18	32	7.5	1,124	248
ELR-H4-32	8 ¾	9	19 ½	32	7.5	1,228	291
ELR-H5-32	8 ¾	10	21	32	7.5	1,332	338
ELR-H6-32	8 ¾	11	22 ½	32	7.5	1,436	388
ELR-H7-32	8 ¾	12	24	32	7.5	1,540	441
ELR-H8-32	10 ¼	12	22 ½	32	7.5	1,717	454
ELR-H9-32	10 ¼	13	24	32	7.5	1,839	517
ELR-H10-32	10 ¼	13	25 ½	32	7.5	1,925	583
ELR-H11-32	10 ¼	14	27	32	7.5	2,047	654
ELR-H12-32	10 ¼	14	28 ½	32	7.5	2,133	728
ELR-H13-32	10 ¼	15	30	32	7.5	2,254	807
ELR-H14-32	10 ¼	15	31 ½	32	7.5	2,340	890
ELR-H15-32	12 ¼	16	30	32	7.5	2,737	965
ELR-H16-32	12 ¼	16	31 ½	32	7.5	2,840	1,064

37 FT.	COASTAL DOUGLAS FIR					Approx. Treated Weight (lbs.)	Ultimate Groundline Moment (ft.-kips)
Pole Class	W (in.)	T (in.)	B (in.)	L (ft.)	C (ft.)		
ELR-4-37	6 ¾	6 ½	10 ½	37	8	632	65
ELR-3-37	6 ¾	6 ½	12	37	8	697	85
ELR-2-37	6 ¾	6 ½	13 ½	37	8	761	108
ELR-1-37	6 ¾	7 ½	15	37	8	853	133
ELR-H1-37	6 ¾	7 ½	16 ½	37	8	918	161
ELR-H2-37	6 ¾	7 ½	18	37	8	983	191
ELR-H3-37	6 ¾	8	18	37	8	1,292	248
ELR-H4-37	6 ¾	9	19 ½	37	8	1,411	291
ELR-H5-37	6 ¾	10	21	37	8	1,531	338
ELR-H6-37	6 ¾	11	22 ½	37	8	1,651	388
ELR-H7-37	6 ¾	12	24	37	8	1,770	441
ELR-H8-37	6 ¾	12	22 ½	37	8	1,976	454
ELR-H9-37	8 ½	13	24	37	8	2,116	517
ELR-H10-37	8 ½	13	25 ½	37	8	2,214	583
ELR-H11-37	8 ½	14	27	37	8	2,354	654
ELR-H12-37	8 ½	14	28 ½	37	8	2,452	728
ELR-H13-37	8 ½	15	30	37	8	2,592	807
ELR-H14-37	8 ½	15	31 ½	37	8	2,690	890
ELR-H15-37	8 ½	16	30	37	8	3,148	965
ELR-H16-37	8 ½	16	31 ½	37	8	3,265	1,064

42 FT.	COASTAL DOUGLAS FIR					Approx. Treated Weight (lbs.)	Ultimate Groundline Moment (ft.-kips)
Pole Class	W (in.)	T (in.)	B (in.)	L (ft.)	C (ft.)		
ELR-4-42	6 ¾	6 ½	12	42	8	785	85
ELR-3-42	6 ¾	6 ½	13 ½	42	8	857	108
ELR-2-42	6 ¾	6 ½	15	42	8	929	133
ELR-1-42	6 ¾	7 ½	16 ½	42	8	1,033	161
ELR-H1-42	6 ¾	7 ½	18	42	8	1,104	191
ELR-H2-42	8 ¾	7 ½	18	42	8	1,432	248
ELR-H3-42	8 ¾	8	19 ½	42	8	1,546	291
ELR-H4-42	8 ¾	9	21	42	8	1,681	338
ELR-H5-42	8 ¾	10	22 ½	42	8	1,816	388
ELR-H6-42	8 ¾	11	24	42	8	1,951	441
ELR-H7-42	10 ¼	12	22 ½	42	8	2,226	454
ELR-H8-42	10 ¼	12	24	42	8	2,335	517
ELR-H9-42	10 ¼	13	25 ½	42	8	2,493	583
ELR-H10-42	10 ¼	13	27	42	8	2,602	654
ELR-H11-42	10 ¼	14	28 ½	42	8	2,760	728
ELR-H12-42	10 ¼	14	30	42	8	2,869	807
ELR-H13-42	10 ¼	15	31 ½	42	8	3,028	890
ELR-H14-42	12 ¼	15	30	42	8	3,488	965
ELR-H15-42	12 ¼	16	31 ½	42	8	3,677	1,064
ELR-H16-42	12 ¼	16	33	42	8	3,808	1,167

47 FT.	COASTAL DOUGLAS FIR					Approx. Treated Weight (lbs.)	Ultimate Groundline Moment (ft.-kips)
Pole Class	W (in.)	T (in.)	B (in.)	L (ft.)	C (ft.)		
ELR-4-47	8 ¾	6 ½	12	47	8.5	1,136	110
ELR-3-47	8 ¾	6 ½	13 ½	47	8.5	1,239	140
ELR-2-47	8 ¾	7 ½	15	47	8.5	1,390	172
ELR-1-47	8 ¾	7 ½	16 ½	47	8.5	1,493	208
ELR-H1-47	8 ¾	7 ½	18	47	8.5	1,596	248
ELR-H2-47	8 ¾	7 ½	19 ½	47	8.5	1,699	291
ELR-H3-47	8 ¾	8	21	47	8.5	1,827	338
ELR-H4-47	8 ¾	9	22 ½	47	8.5	1,977	388
ELR-H5-47	8 ¾	10	24	47	8.5	2,128	441
ELR-H6-47	10 ¼	11	22 ½	47	8.5	2,428	454
ELR-H7-47	10 ¼	12	24	47	8.5	2,605	517
ELR-H8-47	12 ¼	12	25 ½	47	8.5	2,969	543
ELR-H9-47	12 ¼	13	27	47	8.5	3,180	617
ELR-H10-47	12 ¼	13	28 ½	47	8.5	3,325	697
ELR-H11-47	12 ¼	14	30	47	8.5	3,536	781
ELR-H12-47	12 ¼	14	31 ½	47	8.5	3,680	871
ELR-H13-47	12 ¼	15	30	47	8.5	3,892	965
ELR-H14-47	12 ¼	15	31 ½	47	8.5	4,036	1,064
ELR-H15-47	12 ¼	16	33	47	8.5	4,247	1,167
ELR-H16-47	12 ¼	16	34 ½	47	8.5	4,392	1,276

E-LAM® COASTAL DOUGLAS FIR RAKED POLES

52 FT.	COASTAL DOUGLAS FIR					Approx. Treated Weight (lbs.)	Ultimate Groudlne Moment (ft.-kips)
Pole Class	W (in.)	T (in.)	B (in.)	L (ft.)	C (ft.)		
ELR-3-52	8 ¾	6 ½	13 ½	52	9	1,367	140
ELR-2-52	8 ¾	7 ½	15	52	9	1,534	172
ELR-1-52	8 ¾	7 ½	16 ½	52	9	1,647	208
ELR-H1-52	10 ¼	7 ½	16 ½	52	9	1,930	244
ELR-H2-52	10 ¼	7 ½	18	52	9	2,063	291
ELR-H3-52	10 ¼	8	19 ½	52	9	2,227	341
ELR-H4-52	10 ¼	9	21	52	9	2,422	396
ELR-H5-52	10 ¼	10	22 ½	52	9	2,617	454
ELR-H6-52	10 ¼	11	24	52	9	2,813	517
ELR-H7-52	12 ¼	12	22 ½	52	9	3,277	543
ELR-H8-52	12 ¼	12	24	52	9	3,436	617
ELR-H9-52	12 ¼	13	25 ½	52	9	3,670	697
ELR-H10-52	12 ¼	13	27	52	9	3,828	781
ELR-H11-52	12 ¼	14	28 ½	52	9	4,062	871
ELR-H12-52	12 ¼	14	30	52	9	4,221	965
ELR-H13-52	12 ¼	15	31 ½	52	9	4,454	1,064
ELR-H14-52	12 ¼	15	33	52	9	4,613	1,167
ELR-H15-52	12 ¼	16	34 ½	52	9	4,846	1,276
ELR-H16-52	12 ¼	16	36	52	9	5,005	1,389

57 FT.	COASTAL DOUGLAS FIR					Approx. Treated Weight (lbs.)	Ultimate Groudlne Moment (ft.-kips)
Pole Class	W (in.)	T (in.)	B (in.)	L (ft.)	C (ft.)		
ELR-2-57	10 ¼	7 ½	15	57	9.5	1,966	202
ELR-1-57	10 ¼	7 ½	16 ½	57	9.5	2,111	244
ELR-H1-57	10 ¼	7 ½	18	57	9.5	2,255	291
ELR-H2-57	10 ¼	7 ½	19 ½	57	9.5	2,400	341
ELR-H3-57	10 ¼	8	21	57	9.5	2,580	396
ELR-H4-57	10 ¼	9	22 ½	57	9.5	2,793	454
ELR-H5-57	10 ¼	10	24	57	9.5	3,007	517
ELR-H6-57	12 ¼	11	22 ½	57	9.5	3,503	543
ELR-H7-57	12 ¼	12	24	57	9.5	3,759	617
ELR-H8-57	12 ¼	12	25 ½	57	9.5	3,932	697
ELR-H9-57	12 ¼	13	27	57	9.5	4,188	781
ELR-H10-57	12 ¼	13	28 ½	57	9.5	4,361	871
ELR-H11-57	12 ¼	14	30	57	9.5	4,616	965
ELR-H12-57	12 ¼	14	31 ½	57	9.5	4,789	1,064
ELR-H13-57	12 ¼	15	33	57	9.5	5,045	1,167
ELR-H14-57	12 ¼	15	34 ½	57	9.5	5,218	1,276
ELR-H15-57	12 ¼	16	36	57	9.5	5,474	1,389
ELR-H16-57	12 ¼	16	37 ½	57	9.5	5,647	1,507

62 FT.	COASTAL DOUGLAS FIR					Approx. Treated Weight (lbs.)	Ultimate Groudlne Moment (ft.-kips)
Pole Class	W (in.)	T (in.)	B (in.)	L (ft.)	C (ft.)		
ELR-1-62	12 ¼	7 ½	15	62	10	2,551	241
ELR-H1-62	12 ¼	7 ½	16 ½	62	10	2,738	292
ELR-H2-62	12 ¼	7 ½	18	62	10	2,926	347
ELR-H3-62	12 ¼	8	19 ½	62	10	3,158	408
ELR-H4-62	12 ¼	9	21	62	10	3,436	473
ELR-H5-62	12 ¼	10	22 ½	62	10	3,714	543
ELR-H6-62	12 ¼	11	24	62	10	3,991	617
ELR-H7-62	12 ¼	12	25 ½	62	10	4,269	697
ELR-H8-62	12 ¼	12	27	62	10	4,457	781
ELR-H9-62	12 ¼	13	28 ½	62	10	4,734	871
ELR-H10-62	12 ¼	13	30	62	10	4,922	965
ELR-H11-62	12 ¼	14	31 ½	62	10	5,199	1,064
ELR-H12-62	12 ¼	14	33	62	10	5,387	1,167
ELR-H13-62	12 ¼	15	34 ½	62	10	5,664	1,276
ELR-H14-62	12 ¼	15	36	62	10	5,852	1,389
ELR-H15-62	12 ¼	16	37 ½	62	10	6,129	1,507
ELR-H16-62	12 ¼	16	39	62	10	6,317	1,630

67 FT.	COASTAL DOUGLAS FIR					Approx. Treated Weight (lbs.)	Ultimate Groudlne Moment (ft.-kips)
Pole Class	W (in.)	T (in.)	B (in.)	L (ft.)	C (ft.)		
ELR-1-67	12 ¼	7 ½	16 ½	67	10.5	2,955	292
ELR-H1-67	12 ¼	7 ½	18	67	10.5	3,156	347
ELR-H2-67	12 ¼	7 ½	19 ½	67	10.5	3,358	408
ELR-H3-67	12 ¼	8	21	67	10.5	3,609	473
ELR-H4-67	12 ¼	9	22 ½	67	10.5	3,909	543
ELR-H5-67	12 ¼	10	24	67	10.5	4,208	617
ELR-H6-67	12 ¼	11	25 ½	67	10.5	4,508	697
ELR-H7-67	12 ¼	12	27	67	10.5	4,808	781
ELR-H8-67	12 ¼	12	28 ½	67	10.5	5,010	871
ELR-H9-67	12 ¼	13	30	67	10.5	5,310	965
ELR-H10-67	12 ¼	13	31 ½	67	10.5	5,511	1,064
ELR-H11-67	12 ¼	14	33	67	10.5	5,811	1,167
ELR-H12-67	12 ¼	14	34 ½	67	10.5	6,013	1,276
ELR-H13-67	12 ¼	15	36	67	10.5	6,313	1,389
ELR-H14-67	12 ¼	15	37 ½	67	10.5	6,514	1,507
ELR-H15-67	12 ¼	16	39	67	10.5	6,814	1,630
ELR-H16-67	12 ¼	16	40 ½	67	10.5	7,016	1,758

E-LAM® COASTAL DOUGLAS FIR RAKED POLES

72 FT.	COASTAL DOUGLS FIR						Approx. Treated Weight (lbs.)	Ultimate Groudline Moment (ft.-kips)
Pole Class	W (in.)	T (in.)	B (in.)	L (ft.)	C (ft.)			
ELR-1-72	12 ¼	7 ½	16 ½	72	11		3,171	292
ELR-H1-72	12 ¼	7 ½	18	72	11		3,387	347
ELR-H2-72	12 ¼	7 ½	19 ½	72	11		3,603	408
ELR-H3-72	12 ¼	8	21	72	11		3,872	473
ELR-H4-72	12 ¼	9	22 ½	72	11		4,194	543
ELR-H5-72	12 ¼	10	24	72	11		4,516	617
ELR-H6-72	12 ¼	11	25 ½	72	11		4,837	697
ELR-H7-72	12 ¼	12	27	72	11		5,159	781
ELR-H8-72	12 ¼	12	28 ½	72	11		5,375	871
ELR-H9-72	12 ¼	13	30	72	11		5,697	965
ELR-H10-72	12 ¼	13	31 ½	72	11		5,913	1,064
ELR-H11-72	12 ¼	14	33	72	11		6,235	1,167
ELR-H12-72	12 ¼	14	34 ½	72	11		6,451	1,276
ELR-H13-72	12 ¼	15	36	72	11		6,773	1,389
ELR-H14-72	12 ¼	15	37 ½	72	11		6,989	1,507
ELR-H15-72	12 ¼	16	39	72	11		7,311	1,630
ELR-H16-72	12 ¼	16	40 ½	72	11		7,527	1,758

77 FT.	COASTAL DOUGLS FIR					Approx. Treated Weight (lbs.)	Ultimate Grouddline Moment (ft.-kips)
Pole Class	W (in.)	T (in.)	B (in.)	L (ft.)	C (ft.)		
ELR-1-77	12 ¼	7 ½	18	77	11.5	3,617	347
ELR-H1-77	12 ¼	7 ½	19 ½	77	11.5	3,847	408
ELR-H2-77	12 ¼	7 ½	21	77	11.5	4,078	473
ELR-H3-77	12 ¼	8	22 ½	77	11.5	4,365	543
ELR-H4-77	12 ¼	9	24	77	11.5	4,709	617
ELR-H5-77	12 ¼	10	25 ½	77	11.5	5,053	697
ELR-H6-77	12 ¼	11	27	77	11.5	5,397	781
ELR-H7-77	12 ¼	12	28 ½	77	11.5	5,741	871
ELR-H8-77	12 ¼	12	30	77	11.5	5,972	965
ELR-H9-77	12 ¼	13	31 ½	77	11.5	6,316	1,064
ELR-H10-77	12 ¼	13	33	77	11.5	6,546	1,167
ELR-H11-77	12 ¼	14	34 ½	77	11.5	6,890	1,276
ELR-H12-77	12 ¼	14	36	77	11.5	7,120	1,389
ELR-H13-77	12 ¼	15	37 ½	77	11.5	7,464	1,507
ELR-H14-77	12 ¼	15	39	77	11.5	7,695	1,630
ELR-H15-77	12 ¼	16	40 ½	77	11.5	8,039	1,758
ELR-H16-77	12 ¼	16	42	77	11.5	8,269	1,891

82 FT.	COASTAL DOUGLS FIR						Approx. Treated Weight (lbs.)	Ultimate Grouddline Moment (ft.-kips)
Pole Class	W (in.)	T (in.)	B (in.)	L (ft.)	C (ft.)			
ELR-1-82	12 ¼	7 ½	19 ½	82	12		4,092	408
ELR-H1-82	12 ¼	7 ½	21	82	12		4,337	473
ELR-H2-82	12 ¼	7 ½	22 ½	82	12		4,582	543
ELR-H3-82	12 ¼	8	24	82	12		4,887	617
ELR-H4-82	12 ¼	9	25 ½	82	12		5,253	697
ELR-H5-82	12 ¼	10	27	82	12		5,619	781
ELR-H6-82	12 ¼	11	28 ½	82	12		5,985	871
ELR-H7-82	12 ¼	12	30	82	12		6,352	965
ELR-H8-82	12 ¼	12	31 ½	82	12		6,596	1,064
ELR-H9-82	12 ¼	13	33	82	12		6,962	1,167
ELR-H10-82	12 ¼	13	34 ½	82	12		7,207	1,276
ELR-H11-82	12 ¼	14	36	82	12		7,573	1,389
ELR-H12-82	12 ¼	14	37 ½	82	12		7,818	1,507
ELR-H13-82	12 ¼	15	39	82	12		8,184	1,630
ELR-H14-82	12 ¼	15	40 ½	82	12		8,429	1,758
ELR-H15-82	12 ¼	16	42	82	12		8,795	1,891
ELR-H16-82	12 ¼	16	43 ½	82	12		9,040	2,028

87 FT.	COASTAL DOUGLS FIR					Approx. Treated Weight (lbs.)	Ultimate Grouddline Moment (ft.-kips)
Pole Class	W (in.)	T (in.)	B (in.)	L (ft.)	C (ft.)		
ELR-1-87	12 ¼	7 ½	21	87	12.5	4,596	473
ELR-H1-87	12 ¼	7 ½	22 ½	87	12.5	4,855	543
ELR-H2-87	12 ¼	7 ½	24	87	12.5	5,114	617
ELR-H3-87	12 ¼	8	25 ½	87	12.5	5,437	697
ELR-H4-87	12 ¼	9	27	87	12.5	5,826	781
ELR-H5-87	12 ¼	10	28 ½	87	12.5	6,214	871
ELR-H6-87	12 ¼	11	30	87	12.5	6,602	965
ELR-H7-87	12 ¼	12	31 ½	87	12.5	6,991	1,064
ELR-H8-87	12 ¼	12	33	87	12.5	7,250	1,167
ELR-H9-87	12 ¼	13	34 ½	87	12.5	7,638	1,276
ELR-H10-87	12 ¼	13	36	87	12.5	7,897	1,389
ELR-H11-87	12 ¼	14	37 ½	87	12.5	8,285	1,507
ELR-H12-87	12 ¼	14	39	87	12.5	8,544	1,630
ELR-H13-87	12 ¼	15	40 ½	87	12.5	8,933	1,758
ELR-H14-87	12 ¼	15	42	87	12.5	9,192	1,891
ELR-H15-87	12 ¼	16	43 ½	87	12.5	9,580	2,028
ELR-H16-87	12 ¼	16	45	87	12.5	9,839	2,171

E-LAM® COASTAL DOUGLAS FIR RAKED POLES

92 FT.	COASTAL DOUGLAS FIR					Approx. Treated Weight (lbs.)	Ultimate Grouddline Moment (ft.-kips)
Pole Class	W (in.)	T (in.)	B (in.)	L (ft.)	C (ft.)		
ELR-1-92	12 ¼	7 ½	22 ½	92	13	5,128	543
ELR-H1-92	12 ¼	7 ½	24	92	13	5,401	617
ELR-H2-92	12 ¼	7 ½	25 ½	92	13	5,675	697
ELR-H3-92	12 ¼	8	27	92	13	6,017	781
ELR-H4-92	12 ¼	9	28 ½	92	13	6,427	871
ELR-H5-92	12 ¼	10	30	92	13	6,838	965
ELR-H6-92	12 ¼	11	31 ½	92	13	7,248	1,064
ELR-H7-92	12 ¼	12	33	92	13	7,658	1,167
ELR-H8-92	12 ¼	12	34 ½	92	13	7,932	1,276
ELR-H9-92	12 ¼	13	36	92	13	8,342	1,389
ELR-H10-92	12 ¼	13	37 ½	92	13	8,615	1,507
ELR-H11-92	12 ¼	14	39	92	13	9,026	1,630
ELR-H12-92	12 ¼	14	40 ½	92	13	9,299	1,758
ELR-H13-92	12 ¼	15	42	92	13	9,710	1,891
ELR-H14-92	12 ¼	15	43 ½	92	13	9,983	2,028
ELR-H15-92	12 ¼	16	45	92	13	10,393	2,171
ELR-H16-92	12 ¼	16	46 ½	92	13	10,667	2,318

97 FT.	COASTAL DOUGLAS FIR					Approx. Treated Weight (lbs.)	Ultimate Grouddline Moment (ft.-kips)
Pole Class	W (in.)	T (in.)	B (in.)	L (ft.)	C (ft.)		
ELR-1-97	12 ¼	7 ½	24	97	13.5	5,689	617
ELR-H1-97	12 ¼	7 ½	25 ½	97	13.5	5,977	697
ELR-H2-97	12 ¼	7 ½	27	97	13.5	6,264	781
ELR-H3-97	12 ¼	8	28 ½	97	13.5	6,625	871
ELR-H4-97	12 ¼	9	30	97	13.5	7,057	965
ELR-H5-97	12 ¼	10	31 ½	97	13.5	7,490	1,064
ELR-H6-97	12 ¼	11	33	97	13.5	7,922	1,167
ELR-H7-97	12 ¼	12	34 ½	97	13.5	8,355	1,276
ELR-H8-97	12 ¼	12	36	97	13.5	8,642	1,389
ELR-H9-97	12 ¼	13	37 ½	97	13.5	9,075	1,507
ELR-H10-97	12 ¼	13	39	97	13.5	9,363	1,630
ELR-H11-97	12 ¼	14	40 ½	97	13.5	9,795	1,758
ELR-H12-97	12 ¼	14	42	97	13.5	10,083	1,891
ELR-H13-97	12 ¼	15	43 ½	97	13.5	10,515	2,028
ELR-H14-97	12 ¼	15	45	97	13.5	10,803	2,171
ELR-H15-97	12 ¼	16	46 ½	97	13.5	11,236	2,318
ELR-H16-97	12 ¼	16	48	97	13.5	11,523	2,470

102 FT.	COASTAL DOUGLAS FIR					Approx. Treated Weight (lbs.)	Ultimate Grouddline Moment (ft.-kips)
Pole Class	W (in.)	T (in.)	B (in.)	L (ft.)	C (ft.)		
ELR-1-102	12 ¼	7 ½	25 ½	102	14	6,279	697
ELR-H1-102	12 ¼	7 ½	27	102	14	6,581	781
ELR-H2-102	12 ¼	7 ½	28 ½	102	14	6,883	871
ELR-H3-102	12 ¼	8	30	102	14	7,261	965
ELR-H4-102	12 ¼	9	31 ½	102	14	7,716	1,064
ELR-H5-102	12 ¼	10	33	102	14	8,170	1,167
ELR-H6-102	12 ¼	11	34 ½	102	14	8,625	1,276
ELR-H7-102	12 ¼	12	36	102	14	9,080	1,389
ELR-H8-102	12 ¼	12	37 ½	102	14	9,382	1,507
ELR-H9-102	12 ¼	13	39	102	14	9,836	1,630
ELR-H10-102	12 ¼	13	40 ½	102	14	10,138	1,758
ELR-H11-102	12 ¼	14	42	102	14	10,593	1,891
ELR-H12-102	12 ¼	14	43 ½	102	14	10,895	2,028
ELR-H13-102	12 ¼	15	45	102	14	11,350	2,171
ELR-H14-102	12 ¼	15	46 ½	102	14	11,652	2,318
ELR-H15-102	12 ¼	16	48	102	14	12,106	2,470
ELR-H16-102	12 ¼	16	49 ½	102	14	12,408	2,626

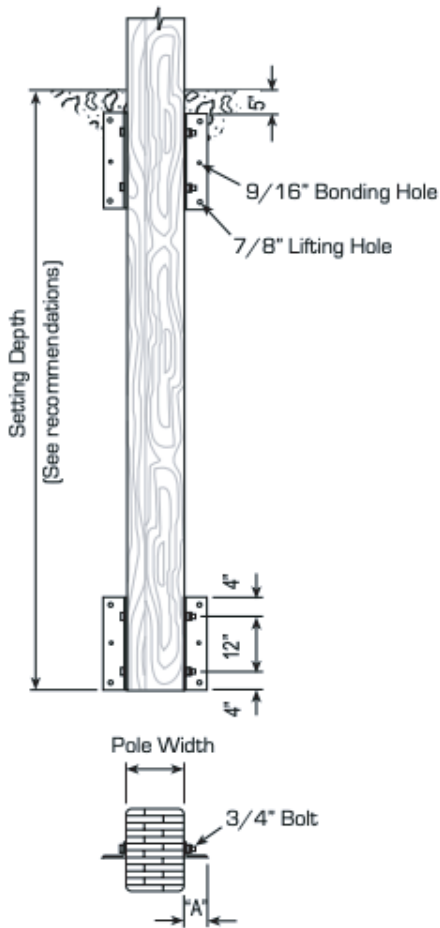
107 FT.	COASTAL DOUGLAS FIR					Approx. Treated Weight (lbs.)	Ultimate Grouddline Moment (ft.-kips)
Pole Class	W (in.)	T (in.)	B (in.)	L (ft.)	C (ft.)		
ELR-1-107	12 ¼	7 ½	27	107	14.5	5,689	781
ELR-H1-107	12 ¼	7 ½	28 ½	107	14.5	5,977	871
ELR-H2-107	12 ¼	7 ½	30	107	14.5	6,264	965
ELR-H3-107	12 ¼	8	31 ½	107	14.5	6,625	1,064
ELR-H4-107	12 ¼	9	33	107	14.5	7,057	1,167
ELR-H5-107	12 ¼	10	34 ½	107	14.5	7,490	1,276
ELR-H6-107	12 ¼	11	36	107	14.5	7,922	1,389
ELR-H7-107	12 ¼	12	37 ½	107	14.5	8,355	1,507
ELR-H8-107	12 ¼	12	39	107	14.5	8,642	1,630
ELR-H9-107	12 ¼	13	40 ½	107	14.5	9,075	1,758
ELR-H10-107	12 ¼	13	42	107	14.5	9,363	1,891
ELR-H11-107	12 ¼	14	43 ½	107	14.5	9,795	2,028
ELR-H12-107	12 ¼	14	45	107	14.5	10,083	2,171
ELR-H13-107	12 ¼	15	46 ½	107	14.5	10,515	2,318
ELR-H14-107	12 ¼	15	48	107	14.5	10,803	2,470
ELR-H15-107	12 ¼	16	49 ½	107	14.5	11,236	2,626
ELR-H16-107	12 ¼	16	51	107	14.5	11,523	2,788

FOUNDATION REINFORCEMENT SYSTEMS

DISTRIBUTION - “ED”

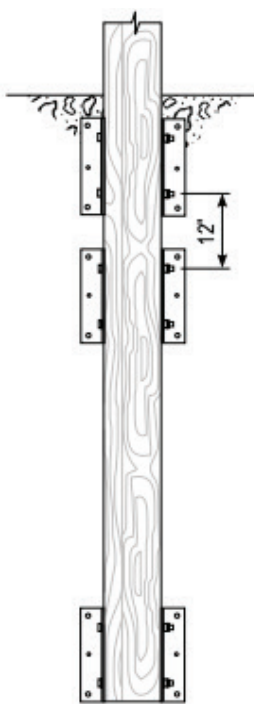
SINGLE SYSTEM

Ordering Example: 1-EDA-5



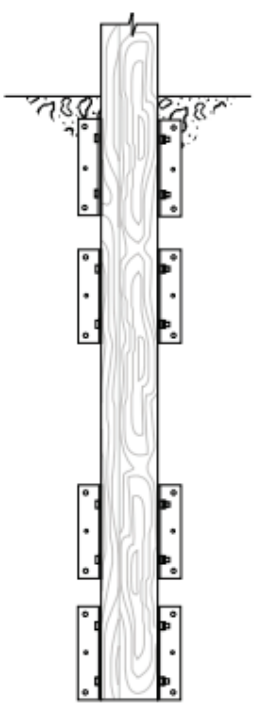
1-1/2 SYSTEMS

Ordering Example: 1 1/2-EDA-5



DOUBLE SYSTEM

Ordering Example: 2-EDA-5



BACKFILL

Reference page 8 for backfill recommendations. At a minimum, backfill should consist of compacted aggregate tamped in 6” lifts.

NOTE: For slumping soil or ground water conditions the customer may consider installing a concrete or steel culvert to contain the select backfill.

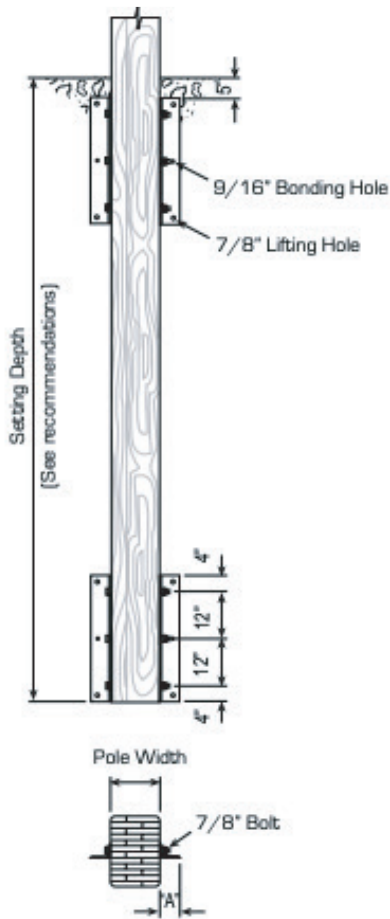
Assembly Number	“A”	Angle Number	Angle Size	Bolt Length	Weight Lbs.
6 3/4" Pole Width					
EDA-5	5"	ELFRDB	5" x 3" x 1/4"	10"	52
EDA-8	8"	ELFRDE	8" x 3" x 3/8"	10"	100
8 1/2" or 8 3/4" Pole Width					
EDB-5	5"	ELFRDB	5" x 3" x 1/4"	12"	53
EDB-8	8"	ELFRDE	8" x 3" x 3/8"	12"	101
10 1/4" Pole Width					
EDC-5	5"	ELFRDB	5" x 3" x 1/4"	14"	54
EDC-8	8"	ELFRDE	8" x 3" x 3/8"	14"	102
12 1/4" Pole Width					
EDD-5	5"	ELFRDB	5" x 3" x 1/4"	15"	55
EDD-8	8"	ELFRDE	8" x 3" x 3/8"	15"	103

Each Single System Assembly Includes:
Four (4) Angles, 20" Long; Four (4) Bolts & Nuts (Field Assembly Required)

TRANSMISSION - “ET”

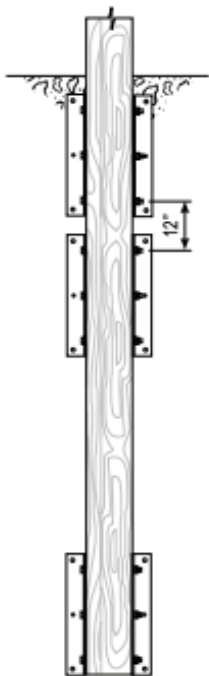
SINGLE SYSTEM

Ordering Example: 1-ETA-5



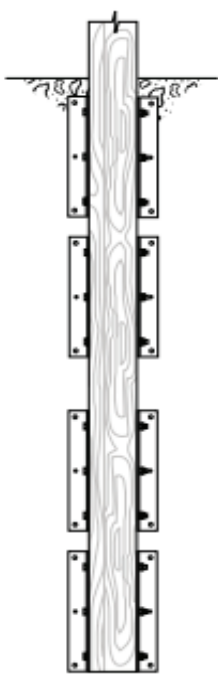
1-1/2 SYSTEMS

Ordering Example: 1 1/2-ETA-5



DOUBLE SYSTEM

Ordering Example: 2-ETA-5



BACKFILL

Reference page 8 for backfill recommendations. At a minimum, backfill should consist of compacted aggregate tamped in 6” lifts.

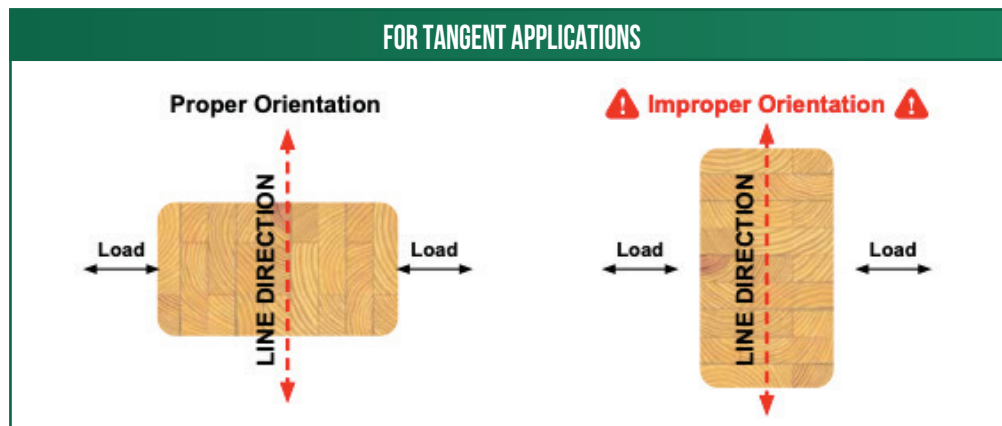
NOTE: For slumping soil or ground water conditions the customer may consider installing a concrete or steel culvert to contain the select backfill.

Assembly Number	“A”	Angle Number	Angle Size	Bolt Length	Weight Lbs.
10 1/4" Pole Width					
ETA-5	5"	ELFRTB	5" x 3' x 1/4"	14"	90
ETA-8	8"	ELFRTE	8" x 3' x 3/8"	14"	170
ETA-12	12"	ELFRTF	12" x 3' x 3/8"	14"	222
12 1/4" Pole Width					
ETB-5	5"	ELFRTB	5" x 3' x 1/4"	16"	92
ETB-8	8"	ELFRTE	8" x 3' x 3/8"	16"	172
ETB-12	12"	ELFRTF	12" x 3' x 3/8"	16"	224
14 1/4" Pole Width					
ETC-5	5"	ELFRTB	5" x 3' x 1/4"	18"	94
ETC-8	8"	ELFRTE	8" x 3' x 3/8"	18"	174
ETC-12	12"	ELFRTF	12" x 3' x 3/8"	18"	226
16 1/4" Pole Width					
ETD-5	5"	ELFRTB	5" x 3' x 1/4"	20"	96
ETD-8	8"	ELFRTE	8" x 3' x 3/8"	20"	176
ETD-12	12"	ELFRTF	12" x 3' x 3/8"	20"	228

Each Single System Assembly Includes:
Four (4) Angles, 32" Long; Six (6) Bolts & Nuts (Field Assembly Required)

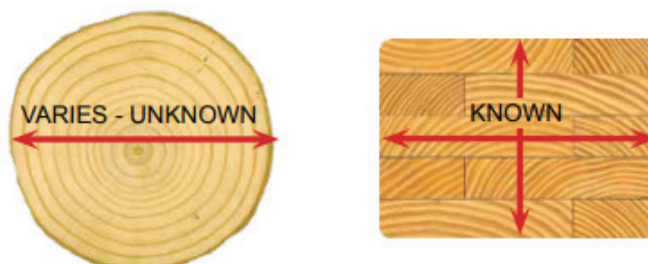
WHEN CAN E-LAM® POLES BE SUBSTITUTED FOR ROUND WOOD?

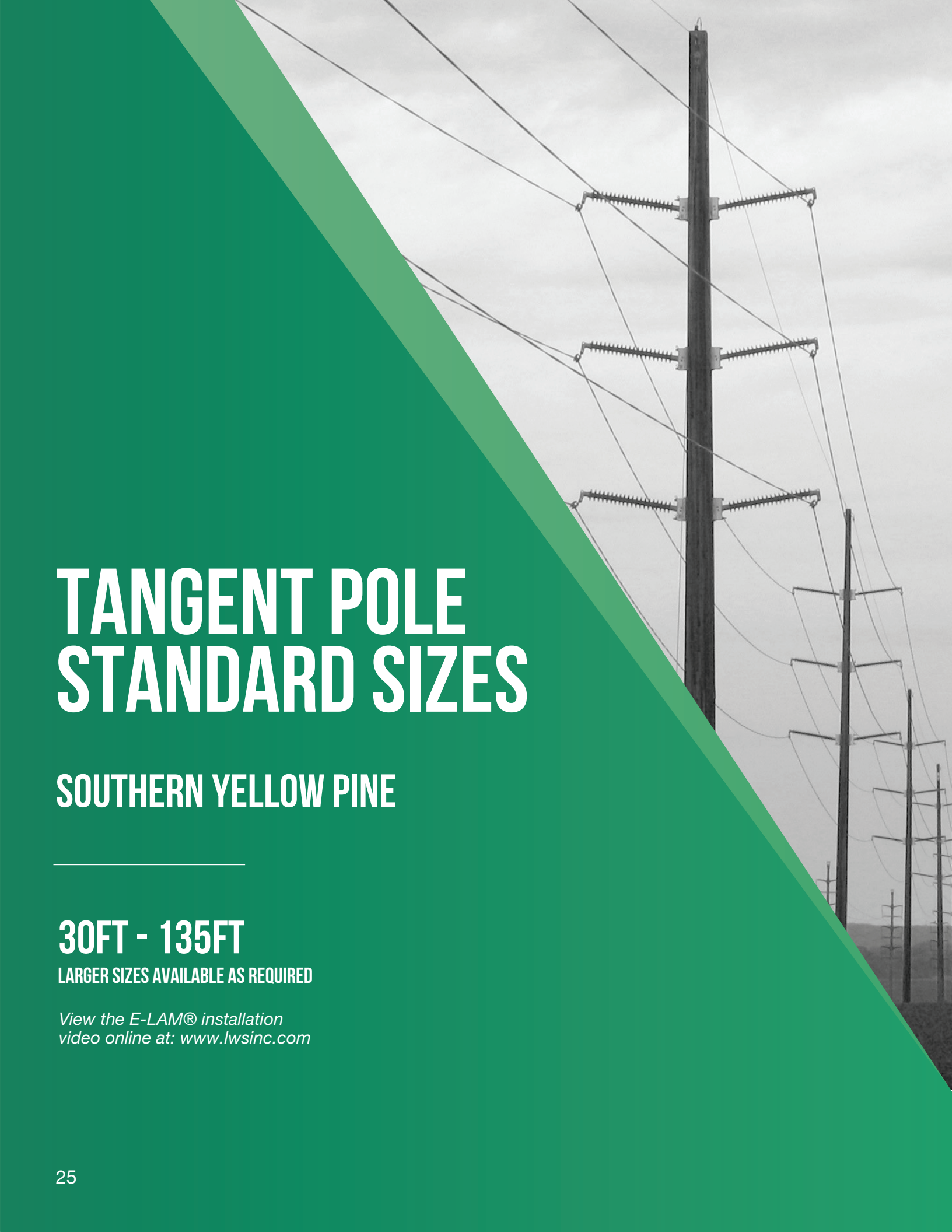
E-LAM® poles can be substituted for round wood class equivalent poles when used properly. The primary difference between a laminated wood pole and a round wood pole is the fact that a round wood pole has the same strength rating in all (360°) directions, while a rectangular laminated pole is strongest in the transverse direction. As long as laminated poles are oriented in a straight line, tangent direction, they can be substituted for the same round wood class equivalent size pole, provided they meet the extreme wind requirements of NESC Rule 261.A. LWS makes no claims that the rectangular poles can be used in every application that a symmetrically round pole is used. We recommend LWS engineers review the applications to confirm the fitness of use for any non-tangent application.



TAKE ADVANTAGE OF THE ATTRIBUTES OF E-LAM® POLES COMBINED WITH THE ENGINEERING EXPERTISE OF LWS

Unlike round wood poles, E-LAM® poles are consistent in strength and dimension, insuring that all bolts and attachment hardware will fit. There's no need to buy extra hardware because of varying pole diameters. LWS supplies certain special hardware items and adapter plates that can accommodate virtually every hardware attachment application. However, there are some incompatibilities with certain standard round wood pole line hardware items such as pole bands and guying attachments.





TANGENT POLE STANDARD SIZES

SOUTHERN YELLOW PINE

30FT - 135FT

LARGER SIZES AVAILABLE AS REQUIRED

*View the E-LAM® installation
video online at: www.lwsinc.com*

E-LAM® SOUTHERN YELLOW PINE TANGENT POLES

Pole Length	Pole Class	Long. Width		Top Depth		Butt Depth	Ultimate Longitudinal Groundline Moment (Ft.-Kips)	Ultimate Transverse Groundline Moment (Ft.-Kips)	Approximate Treated Weight (Lbs.)
30 FT.	PEL-5-30	6 ¾"	x	5 ½"	-	9 ⅝"	44.9	56.0	490
	PEL-4-30	6 ¾"	x	6"	-	10 ½"	48.9	66.6	535
	PEL-3-30	6 ¾"	x	6 ½"	-	11 ⅜"	53.0	78.2	580
	PEL-2-30	6 ¾"	x	7"	-	12 ¼"	57.1	90.7	625
	PEL-1-30	6 ¾"	x	7 ½"	-	13 ⅞"	61.2	104.2	670
35 FT.	PEL-5-35	6 ¾"	x	5 ½"	-	9 ⅝"	45.1	56.6	570
	PEL-4-35	6 ¾"	x	6"	-	11 ⅞"	55.0	84.1	675
	PEL-3-35	6 ¾"	x	6 ½"	-	12 ¾"	59.1	97.1	725
	PEL-2-35	6 ¾"	x	7"	-	13 ⅝"	63.2	111.1	775
	PEL-1-35	6 ¾"	x	7 ½"	-	14 ½"	67.3	126.0	830
40 FT.	PEL-5-40	6 ¾"	x	5 ½"	-	11"	51.5	73.7	710
	PEL-4-40	6 ¾"	x	6"	-	11 ⅞"	55.6	86.1	770
	PEL-3-40	6 ¾"	x	6 ½"	-	14 ⅞"	65.7	120.0	890
	PEL-2-40	6 ¾"	x	7"	-	15	69.8	135.6	950
	PEL-1-40	6 ¾"	x	7 ½"	-	15 ⅞"	74.0	152.2	1,010
45 FT.	PEL-5-45	8 ½"	x	5"	-	11 ½"	84.7	100.0	1,010
	PEL-4-45	8 ½"	x	5"	-	11 ½"	84.7	100.0	1,010
	PEL-3-45	8 ½"	x	5 ½"	-	13 ¾"	100.8	141.5	1,170
	PEL-2-45	8 ½"	x	6 ¼"	-	14 ⅝"	105.9	156.3	1,260
	PEL-1-45	8 ½"	x	7"	-	15"	111.1	171.9	1,340
	PEL-H1-45	8 ½"	x	7 ½"	-	17 ¼"	127.1	225.1	1,510
	PEL-H2-45	8 ½"	x	8"	-	18 ⅞"	133.7	248.1	1,595
50 FT.	PEL-5-50	8 ½"	x	5"	-	11 ½"	85.0	100.6	1,120
	PEL-4-50	8 ½"	x	5"	-	12 ⅞"	94.5	124.3	1,210
	PEL-3-50	8 ½"	x	5 ½"	-	13 ¾"	101.1	142.3	1,305
	PEL-2-50	8 ½"	x	6 ¼"	-	15 ¾"	115.7	186.5	1,490
	PEL-1-50	8 ½"	x	7"	-	16 ⅜"	120.9	203.5	1,585
	PEL-H1-50	8 ½"	x	7 ½"	-	18 ⅝"	137.0	259.6	1,770
	PEL-H2-50	8 ½"	x	8"	-	19 ½"	143.6	284.0	1,870
55 FT.	PEL-5-55	8 ½"	x	5"	-	12 ⅞"	94.7	124.9	1,335
	PEL-4-55	8 ½"	x	5"	-	14 ¼"	104.2	151.3	1,440
	PEL-3-55	8 ½"	x	5 ½"	-	15 ⅞"	110.8	171.1	1,540
	PEL-2-55	8 ½"	x	6 ¼"	-	15 ¾"	116.0	187.4	1,645
	PEL-1-55	8 ½"	x	7"	-	17 ¾"	130.7	237.5	1,850
	PEL-H1-55	8 ½"	x	7 ½"	-	18 ⅞"	137.3	260.8	1,950
	PEL-H2-55	8 ½"	x	8"	-	20 ⅞"	153.4	322.1	2,160
60 FT.	PEL-3-60	8 ½"	x	6"	-	16"	117.7	193.0	1,795
	PEL-2-60	8 ½"	x	6 ¼"	-	17 ⅞"	125.8	220.4	1,905
	PEL-1-60	10 ¼"	x	6 ¼"	-	17 ⅞"	182.9	265.8	2,300
	PEL-H1-60	10 ¼"	x	7"	-	17 ¾"	190.4	287.4	2,430
	PEL-H2-60	10 ¼"	x	7 ⅝"	-	19 ⅞"	212.9	355.3	2,700
	PEL-H3-60	10 ¼"	x	8 ½"	-	21 ¾"	233.2	422.5	2,970
	PEL-H4-60	10 ¼"	x	9 ¼"	-	22 ⅝"	240.7	448.7	3,110
	PEL-H5-60	10 ¼"	x	10"	-	24 ⅝"	262.1	527.5	3,380
	PEL-H6-60	10 ¼"	x	11"	-	26 ⅞"	281.4	603.5	3,650

E-LAM® SOUTHERN YELLOW PINE TANGENT POLES

Pole Length	Pole Class	Long. Width		Top Depth		Butt Depth	Ultimate Longitudinal Groundline Moment (Ft.-Kips)	Ultimate Transverse Groundline Moment (Ft.-Kips)	Approximate Treated Weight (Lbs.)
65 FT.	PEL-3-65	8 ½"	x	6"	-	16"	117.9	193.6	1,940
	PEL-2-65	10 ¼"	x	6"	-	16"	171.5	233.5	2,340
	PEL-1-65	10 ¼"	x	6 ¼"	-	17 ⅞"	183.3	266.7	2,490
	PEL-H1-65	10 ¼"	x	7"	-	19 ⅞"	204.7	329.8	2,780
	PEL-H2-65	10 ¼"	x	7 ⅝"	-	19 ⅞"	213.3	356.5	2,925
	PEL-H3-65	10 ¼"	x	8 ½"	-	21 ¾"	233.6	423.9	3,220
	PEL-H4-65	10 ¼"	x	9 ¼"	-	23 ¾"	255.1	500.8	3,510
	PEL-H5-65	10 ¼"	x	10"	-	25 ¾"	276.5	583.8	3,800
70 FT.	PEL-H6-65	10 ¼"	x	11"	-	27 ½"	295.8	663.6	4,100
	PEL-3-70	8 ½"	x	6"	-	16"	118.1	194.2	2,090
	PEL-2-70	10 ¼"	x	6"	-	16"	171.7	234.2	2,520
	PEL-1-70	10 ¼"	x	6 ¼"	-	18 ½"	197.5	308.1	2,835
	PEL-H1-70	10 ¼"	x	7"	-	19 ⅞"	205.0	330.7	3,000
	PEL-H2-70	10 ¼"	x	7 ⅝"	-	21 ¼"	227.6	403.2	3,310
	PEL-H3-70	10 ¼"	x	8 ½"	-	23 ⅞"	248.0	474.6	3,625
	PEL-H4-70	10 ¼"	x	9 ¼"	-	25 ⅞"	269.4	555.7	3,940
75 FT.	PEL-H5-70	10 ¼"	x	10"	-	27 ⅞"	290.9	642.9	4,255
	PEL-H6-70	10 ¼"	x	11"	-	28 ⅞"	310.2	726.3	4,570
	PEL-3-75	10 ¼"	x	6"	-	16"	172.0	234.8	2,700
	PEL-2-75	10 ¼"	x	6"	-	17 ⅜"	186.0	274.7	2,870
	PEL-1-75	10 ¼"	x	6 ¼"	-	18 ½"	197.8	309.0	3,040
	PEL-H1-75	10 ¼"	x	7"	-	20 ½"	219.3	375.9	3,380
	PEL-H2-75	10 ¼"	x	7 ⅝"	-	22 ⅝"	241.9	452.8	3,710
	PEL-H3-75	10 ¼"	x	8 ½"	-	24 ½"	262.3	528.1	4,055
80 FT.	PEL-H4-75	10 ¼"	x	9 ¼"	-	26 ½"	283.8	613.4	4,390
	PEL-H5-75	10 ¼"	x	10"	-	27 ⅞"	291.3	644.5	4,555
	PEL-H6-75	10 ¼"	x	11"	-	28 ⅞"	310.6	728.1	4,895
	PEL-3-80	10 ¼"	x	6"	-	16"	172.1	235.3	2,880
	PEL-2-80	10 ¼"	x	6"	-	17 ⅜"	186.2	275.3	3,060
	PEL-1-80	10 ¼"	x	6 ¼"	-	19 ⅞"	212.1	352.7	3,420
	PEL-H1-80	10 ¼"	x	7"	-	21 ⅞"	233.6	423.8	3,780
	PEL-H2-80	10 ¼"	x	7 ⅝"	-	22 ⅝"	242.2	453.8	3,960
85 FT.	PEL-H3-80	10 ¼"	x	8 ½"	-	24 ½"	262.6	529.3	4,330
	PEL-H4-80	10 ¼"	x	9 ¼"	-	26 ½"	284.1	614.8	4,690
	PEL-H5-80	10 ¼"	x	10"	-	28 ½"	305.7	706.3	5,050
	PEL-H6-80	12 ¼"	x	10"	-	28 ½"	436.6	844.1	6,020
	PEL-3-85	10 ¼"	x	6"	-	17 ⅜"	186.4	275.9	3,250
	PEL-2-85	10 ¼"	x	6"	-	18 ¾"	200.4	316.9	3,450
	PEL-1-85	10 ¼"	x	6 ¼"	-	19 ⅞"	212.3	353.5	3,640
	PEL-H1-85	10 ¼"	x	7"	-	21 ⅞"	233.9	424.7	4,020
	PEL-H2-85	10 ¼"	x	7 ⅝"	-	24"	256.5	506.2	4,400
	PEL-H3-85	10 ¼"	x	8 ½"	-	25 ⅞"	277.0	585.6	4,780
	PEL-H4-85	10 ¼"	x	9 ¼"	-	27 ⅞"	298.5	675.2	5,160
	PEL-H5-85	12 ¼"	x	9 ⅞"	-	26 ⅝"	407.8	741.6	5,950
	PEL-H6-85	12 ¼"	x	10"	-	28 ½"	437.0	845.7	6,400

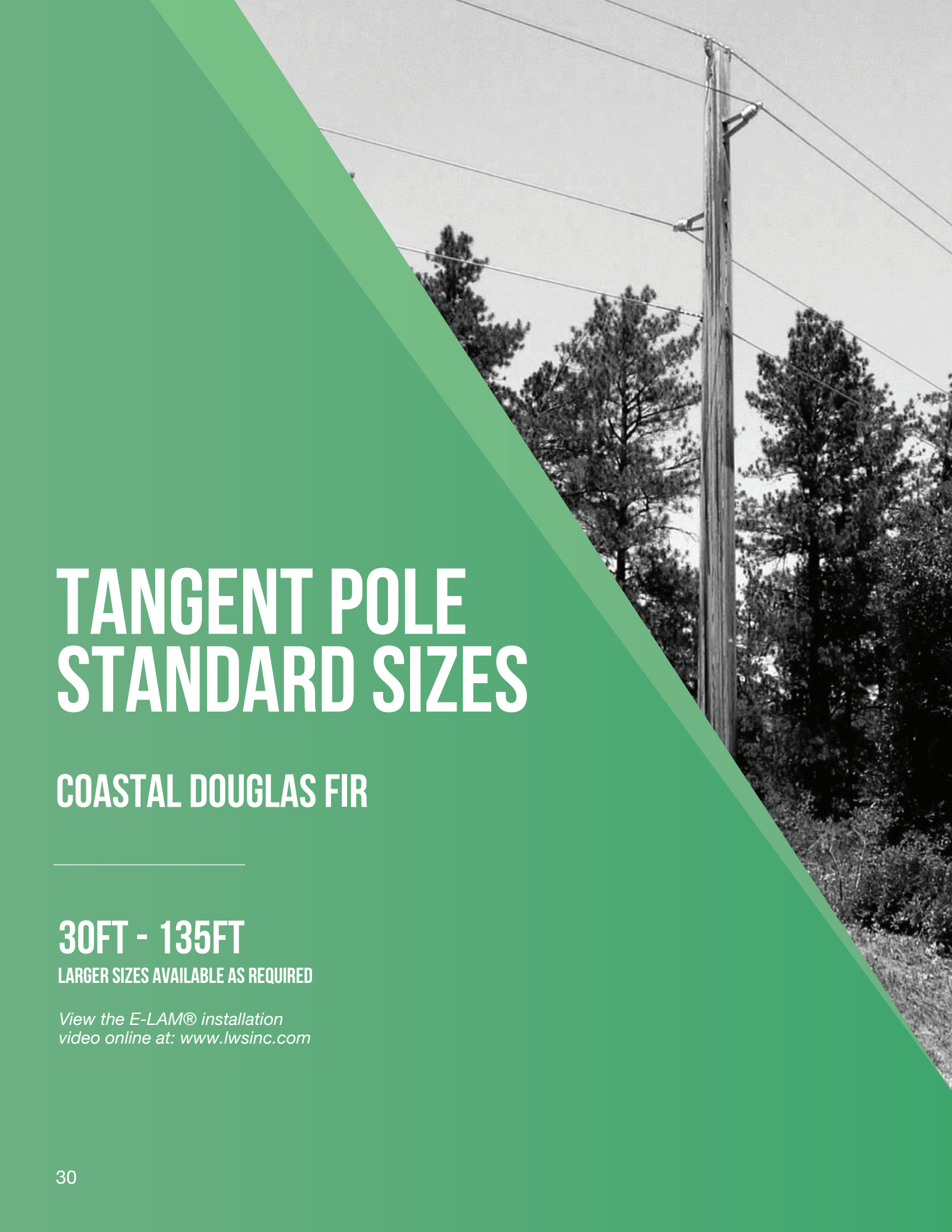
E-LAM® SOUTHERN YELLOW PINE TANGENT POLES

Pole Length	Pole Class	Long. Width		Top Depth	Butt Depth	Ultimate Longitudinal Groundline Moment (Ft.-Kips)	Ultimate Transverse Groundline Moment (Ft.-Kips)	Approximate Treated Weight (Lbs.)
90 FT.	PEL-3-90	10 ¼"	x	6"	- 17 ¾"	186.6	276.4	3,450
	PEL-2-90	12 ¼"	x	6"	- 17 ¾"	266.5	330.3	4,120
	PEL-1-90	12 ¼"	x	6	- 20 ⅛"	306.7	431.6	4,600
	PEL-H1-90	12 ¼"	x	6 ½"	- 21"	320.6	469.3	4,840
	PEL-H2-90	12 ¼"	x	7"	- 23 ¼"	354.5	568.2	5,320
	PEL-H3-90	12 ¼"	x	7 ¾"	- 23 ⅝"	365.2	601.2	5,570
	PEL-H4-90	12 ¼"	x	8 ½"	- 25 ⅞"	396.0	701.1	6,050
	PEL-H5-90	12 ¼"	x	9 ⅛"	- 28"	423.4	814.1	6,540
	PEL-H6-90	12 ¼"	x	10"	- 29 ⅞"	457.6	922.8	7,020
95 FT.	PEL-2-95	12 ¼"	x	6"	- 18 ¾"	288.0	382.8	4,600
	PEL-1-95	12 ¼"	x	6"	- 20 ⅛"	308.2	435.7	4,860
	PEL-H1-95	12 ¼"	x	6 ½"	- 22 ⅜"	342.4	531.9	5,360
	PEL-H2-95	12 ¼"	x	7"	- 23 ¼"	356.2	573.5	5,620
	PEL-H3-95	12 ¼"	x	7 ¾"	- 25 ¼"	387.2	671.8	6,130
	PEL-H4-95	12 ¼"	x	8 ½"	- 27 ¼"	418.1	777.5	6,640
	PEL-H5-95	12 ¼"	x	9 ⅛"	- 29 ⅜"	450.6	896.4	7,150
	PEL-H6-95	12 ¼"	x	10"	- 31 ¼"	480.0	1,010.5	7,670
100 FT.	PEL-2-105	12 ¼"	x	6"	- 18 ¾"	289.2	386.0	4,840
	PEL-1-105	12 ¼"	x	6	- 20 ⅛"	309.6	439.3	5,110
	PEL-H1-105	12 ¼"	x	6 ½"	- 22 ⅜"	343.9	536.4	5,650
	PEL-H2-105	12 ¼"	x	7"	- 24 ⅝"	378.2	642.6	6,180
	PEL-H3-105	12 ¼"	x	7 ¾"	- 26 ⅝"	409.3	746.6	6,720
	PEL-H4-105	12 ¼"	x	8 ½"	- 27 ¼"	419.9	783.9	7,000
	PEL-H5-105	12 ¼"	x	9 ⅛"	- 29 ⅜"	452.6	903.8	7,530
	PEL-H6-105	12 ¼"	x	10"	- 31 ¼"	482.0	1,018.8	8,100
105 FT.	PEL-2-105	12 ¼"	x	6"	- 20 ⅛"	308.6	436.6	5,370
	PEL-1-105	12 ¼"	x	6	- 21 ½"	328.9	492.8	5,650
	PEL-H1-105	12 ¼"	x	6 ½"	- 22 ⅜"	342.8	533.0	5,930
	PEL-H2-105	12 ¼"	x	7"	- 24 ⅝"	377.0	638.6	6,500
	PEL-H3-105	12 ¼"	x	7 ¾"	- 26 ⅝"	407.9	741.9	7,060
	PEL-H4-105	12 ¼"	x	8 ½"	- 28 ⅝"	438.9	852.5	7,630
	PEL-H5-105	12 ¼"	x	9 ⅛"	- 30 ¾"	471.5	976.7	8,190
	PEL-H6-105	12 ¼"	x	10"	- 32 ⅝"	500.8	1,095.5	8,750
110 FT.	PEL-2-110	12 ¼"	x	6"	- 20 ⅛"	309.8	439.9	5,630
	PEL-1-110	12 ¼"	x	6	- 21 ½"	330.2	496.6	5,920
	PEL-H1-110	12 ¼"	x	6 ½"	- 23 ¾"	364.6	599.3	6,510
	PEL-H2-110	12 ¼"	x	7"	- 26"	398.9	711.0	7,100
	PEL-H3-110	12 ¼"	x	7 ¾"	- 28"	430.0	820.0	7,690
	PEL-H4-110	12 ¼"	x	8 ½"	- 30"	461.1	936.2	8,280
	PEL-H5-110	12 ¼"	x	9 ⅛"	- 30 ¾"	473.3	984.1	8,580
	PEL-H6-110	12 ¼"	x	10"	- 34	532.2	1,190.4	9,470

E-LAM® SOUTHERN YELLOW PINE TANGENT POLES

Pole Length	Pole Class	Long. Width	Top Depth	Butt Depth	Ultimate Longitudinal Groundline Moment (Ft.-Kips)	Ultimate Transverse Groundline Moment (Ft.-Kips)	Approximate Treated Weight (Lbs.)
115 FT.	PEL-2-115	12 ¼" x	6"	21 ½"	331.5	500.1	6,200
	PEL-1-115	12 ¼" x	6"	22 ⅞"	352.0	560.6	6,500
	PEL-H1-115	12 ¼" x	6 ½"	23 ¾"	365.9	603.6	6,800
	PEL-H2-115	12 ¼" x	7"	26"	400.4	716.1	7,450
	PEL-H3-115	12 ¼" x	7 ¾"	28"	431.6	825.8	8,050
	PEL-H4-115	12 ¼" x	8 ½"	30"	462.8	942.8	8,660
	PEL-H5-115	12 ¼" x	9 ⅞"	32 ⅞"	495.6	1,073.8	9,280
120 FT.	PEL-H6-115	12 ¼" x	10"	34"	525.1	1,198.6	9,900
	PEL-2-120	12 ¼" x	6"	21 ½"	332.6	503.4	6,500
	PEL-1-120	12 ¼" x	6"	22 ⅞"	353.2	564.3	6,800
	PEL-H1-120	12 ¼" x	6 ½"	25 ⅞"	387.8	674.0	7,425
	PEL-H2-120	12 ¼" x	7"	27 ⅞"	422.4	792.8	8,070
	PEL-H3-120	12 ¼" x	7 ¾"	29 ⅞"	453.7	908.0	8,710
	PEL-H4-120	12 ¼" x	8 ½"	31 ⅞"	484.9	1,030.5	9,360
125 FT.	PEL-H5-120	12 ¼" x	9 ⅞"	33 ½"	517.9	1,167.5	10,000
	PEL-H6-120	12 ¼" x	10"	35 ⅞"	547.5	1,297.5	10,650
	PEL-2-125	12 ¼" x	6"	21 ½"	333.6	506.3	6,730
	PEL-1-125	12 ¼" x	6"	24 ¼"	375.1	632.5	7,400
	PEL-H1-125	12 ¼" x	6 ½"	25 ⅞"	389.1	678.1	7,740
	PEL-H2-125	12 ¼" x	7"	27 ⅞"	423.8	797.6	8,410
	PEL-H3-125	12 ¼" x	7 ¾"	29 ⅞"	455.1	913.5	9,080
130 FT.	PEL-H4-125	12 ¼" x	8 ½"	31 ⅞"	486.5	1,036.7	9,760
	PEL-H5-125	12 ¼" x	9 ⅞"	33 ½"	519.5	1,174.5	10,430
	PEL-H6-125	12 ¼" x	10"	35 ⅞"	549.2	1,305.2	11,100
	PEL-2-130	14 ¼" x	6"	21 ½"	422.5	572.4	8,140
	PEL-1-130	14 ¼" x	6"	22 ⅞"	448.6	641.3	8,550
	PEL-H1-130	14 ¼" x	6 ½"	25 ⅞"	492.5	765.8	9,360
	PEL-H2-130	14 ¼" x	7"	27 ⅞"	536.4	900.7	10,180
135 FT.	PEL-H3-130	14 ¼" x	7 ¾"	29 ⅞"	576.2	1,031.9	10,990
	PEL-H4-130	14 ¼" x	8 ½"	31 ⅞"	615.9	1,171.4	11,800
	PEL-H5-130	14 ¼" x	9 ⅞"	33 ½"	657.8	1,327.2	12,620
	PEL-H6-130	14 ¼" x	10"	35 ⅞"	695.5	1,475.5	13,430
	PEL-2-135	14 ¼" x	6"	22 ⅞"	448.8	641.9	8,880
	PEL-1-135	14 ¼" x	6"	24 ¼"	474.9	714.6	9,300
	PEL-H1-135	14 ¼" x	6 ½"	26 ½"	518.8	845.4	10,150
135 FT.	PEL-H2-135	14 ¼" x	7"	27 ⅞"	536.6	901.5	10,570
	PEL-H3-135	14 ¼" x	7 ¾"	29 ⅞"	576.4	1,032.8	11,410
	PEL-H4-135	14 ¼" x	8 ½"	31 ⅞"	616.2	1,172.4	12,260
	PEL-H5-135	14 ¼" x	9 ⅞"	34 ⅞"	674.7	1,392.7	13,370
	PEL-H6-135	14 ¼" x	10"	35 ⅞"	695.8	1,476.8	13,950

NOTE: Many other sizes are available to meet special height or loading conditions.



TANGENT POLE STANDARD SIZES

COASTAL DOUGLAS FIR

30FT - 135FT

LARGER SIZES AVAILABLE AS REQUIRED

*View the E-LAM® installation
video online at: www.lwsinc.com*

E-LAM® COASTAL DOUGLAS FIR TANGENT POLES

Pole Length	Pole Class	Long. Width	Top Depth	Butt Depth	Ultimate Longitudinal Groundline Moment (Ft.-Kips)	Ultimate Transverse Groundline Moment (Ft.-Kips)	Approximate Treated Weight (Lbs.)
30 FT.	EL-5-30	6 ¾" x	5 ½"	9 ½"	35.0	45.3	430
	EL-4-30	6 ¾" x	6"	10 ½"	38.5	55.2	475
	EL-3-30	6 ¾" x	6 ½"	13"	47.0	82.3	560
	EL-2-30	6 ¾" x	7"	14"	50.7	95.5	605
	EL-1-30	6 ¾" x	7 ½"	15"	54.3	109.6	650
35 FT.	EL-5-35	6 ¾" x	5 ½"	11"	40.0	59.7	555
	EL-4-35	6 ¾" x	6"	12"	43.7	71.1	605
	EL-3-35	6 ¾" x	6 ½"	13"	47.3	83.4	655
	EL-2-35	6 ¾" x	7"	15 ½"	56.0	116.4	755
	EL-1-35	6 ¾" x	7 ½"	16 ½"	59.6	132.1	805
40 FT.	EL-5-40	6 ¾" x	5 ½"	12 ½"	45.6	77.4	690
	EL-4-40	6 ¾" x	6"	13 ½"	49.3	90.4	750
	EL-3-40	6 ¾" x	6 ½"	14 ½"	53.0	104.4	805
	EL-2-40	6 ¾" x	7"	15 ½"	56.7	119.5	865
	EL-1-40	6 ¾" x	7 ½"	18"	65.4	159.3	980
45 FT.	EL-5-45	8 ¾" x	5 ½"	11"	868.3	79.7	925
	EL-4-45	8 ¾" x	6"	12"	74.5	94.9	1,005
	EL-3-45	8 ¾" x	6 ½"	13"	80.8	111.3	1,090
	EL-2-45	8 ¾" x	7"	15 ½"	95.6	155.9	1,260
	EL-1-45	8 ¾" x	7"	17"	104.2	185.2	1,340
	EL-H1-45	8 ¾" x	7 ¼"	18 ¼"	111.6	212.5	1,425
	EL-H2-45	8 ¾" x	7 ¾"	19 ¼"	117.8	236.8	1,510
50 FT.	EL-5-50	8 ¾" x	5 ½"	12 ½"	77.1	101.6	1,120
	EL-4-50	8 ¾" x	6"	13 ½"	83.4	118.6	1,210
	EL-3-50	8 ¾" x	6 ½"	14 ½"	89.6	137.0	1,310
	EL-2-50	8 ¾" x	7"	15 ½"	95.8	156.7	1,400
	EL-1-50	8 ¾" x	7"	17"	104.5	186.3	1,490
	EL-H1-50	8 ¾" x	7 ¼"	19 ¾"	120.5	248.0	1,680
	EL-H2-50	8 ¾" x	7 ¾"	20 ¾"	126.8	274.3	1,770
55 FT.	EL-5-55	8 ¾" x	5 ½"	12 ½"	77.3	102.0	1,230
	EL-4-55	8 ¾" x	6"	13 ½"	83.5	119.1	1,330
	EL-3-55	8 ¾" x	6 ½"	16"	98.5	165.5	1,540
	EL-2-55	8 ¾" x	7 ¼"	18 ¼"	112.2	214.8	1,740
	EL-1-55	8 ¾" x	7 ¼"	19 ¾"	120.8	249.3	1,850
	EL-H1-55	8 ¾" x	7 ¼"	21 ¼"	129.5	286.4	1,950
	EL-H2-55	8 ¾" x	7 ¾"	22 ¼"	135.8	214.6	2,050
60 FT.	EL-3-60	8 ¾" x	6 ½"	16"	98.7	166.2	1,680
	EL-2-60	10 ¼" x	7 ¼"	16 ¾"	142.3	215.0	2,095
	EL-1-60	10 ¼" x	7 ¼"	18 ¼"	154.2	252.6	2,225
	EL-H1-60	10 ¼" x	7 ¼"	19 ¾"	166.2	293.2	2,355
	EL-H2-60	10 ¼" x	7 ¾"	22 ¼"	186.7	370.2	2,620
	EL-H3-60	10 ¼" x	8 ½"	23"	193.6	398.0	2,750
	EL-H4-60	10 ¼" x	9 ¼"	25 ¼"	212.5	479.2	3,010
	EL-H5-60	10 ¼" x	10"	26"	219.4	510.8	3,140
	EL-H6-60	10 ¼" x	11"	28"	236.5	593.9	3,400

E-LAM® COASTAL DOUGLAS FIR TANGENT POLES

Pole Length	Pole Class	Long. Width		Top Depth	Butt Depth	Ultimate Longitudinal Groundline Moment (Ft.-Kips)	Ultimate Transverse Groundline Moment (Ft.-Kips)	Approximate Treated Weight (Lbs.)
65 FT.	EL-3-65	8 ¾"	x	6 ½"	- 17 ½"	107.6	197.5	1,940
	EL-2-65	10 ¼"	x	7 ¼"	- 16 ¾"	142.5	215.6	2,270
	EL-1-65	10 ¼"	x	7 ¼"	- 19 ¾"	166.5	294.3	2,550
	EL-H1-65	10 ¼"	x	7 ¼"	- 21 ¼"	178.5	338.2	2,695
	EL-H2-65	10 ¼"	x	7 ¾"	- 22 ¼"	187.1	371.5	2,835
	EL-H3-65	10 ¼"	x	8 ½"	- 24 ½"	206.0	450.3	3,120
	EL-H4-65	10 ¼"	x	9 ¼"	- 25 ¼"	212.8	480.9	3,260
	EL-H5-65	10 ¼"	x	10"	- 27 ½"	231.7	570.0	3,545
	EL-H6-65	10 ¼"	x	11"	- 29"	244.9	636.8	3,780
70 FT.	EL-3-70	8 ¾"	x	6 ½"	- 17 ½"	107.7	198.1	2,085
	EL-2-70	10 ¼"	x	7 ¼"	- 18 ¼"	154.7	254.2	2,595
	EL-1-70	10 ¼"	x	7 ¼"	- 19 ¾"	166.7	295.2	2,750
	EL-H1-70	10 ¼"	x	7 ¼"	- 21 ¼"	178.8	339.2	2,900
	EL-H2-70	10 ¼"	x	7 ¾"	- 23 ¾"	199.4	422.0	3,205
	EL-H3-70	10 ¼"	x	8 ½"	- 24 ¼"	206.3	451.7	3,360
	EL-H4-70	10 ¼"	x	9 ¼"	- 26 ¾"	225.2	538.3	3,665
	EL-H5-70	10 ¼"	x	10"	- 29"	244.1	632.5	3,970
	EL-H6-70	10 ¼"	x	11"	- 31"	261.3	724.8	4,275
75 FT.	EL-3-75	10 ¼"	x	6 ½"	- 17 ½"	148.0	232.6	2,620
	EL-2-75	10 ¼"	x	7 ¼"	- 18 ¼"	154.9	254.8	2,780
	EL-1-75	10 ¼"	x	7 ¼"	- 21 ¼"	179.0	340.2	3,110
	EL-H1-75	10 ¼"	x	7 ¼"	- 22 ¾"	191.0	387.5	3,270
	EL-H2-75	10 ¼"	x	7 ¾"	- 23 ¾"	199.7	423.3	3,435
	EL-H3-75	10 ¼"	x	8 ½"	- 26"	218.6	507.3	3,760
	EL-H4-75	10 ¼"	x	9 ¼"	- 28 ¼"	237.6	599.0	4,090
	EL-H5-75	10 ¼"	x	10"	- 30 ½"	256.5	698.3	4,415
	EL-H6-75	10 ¼"	x	11"	- 32 ½"	273.7	795.2	4,740
80 FT.	EL-3-80	10 ¼"	x	6 ½"	- 17 ½"	148.2	233.2	2,790
	EL-2-80	10 ¼"	x	7 ¼"	- 19 ¾"	167.1	296.6	3,140
	EL-1-80	10 ¼"	x	7 ¼"	- 21 ¼"	179.2	341.0	3,315
	EL-H1-80	10 ¼"	x	7 ¼"	- 22 ¾"	191.3	388.4	3,490
	EL-H2-80	10 ¼"	x	7 ¾"	- 25 ¼"	212.0	477.0	3,835
	EL-H3-80	10 ¼"	x	8 ½"	- 27 ½"	230.9	566.1	4,185
	EL-H4-80	10 ¼"	x	9 ¼"	- 28 ¼"	237.8	600.4	4,360
	EL-H5-80	10 ¼"	x	10"	- 30 ½"	256.8	700.0	4,710
	EL-H6-80	12 ¼"	x	11"	- 29 ½"	357.0	792.2	5,625
85 FT.	EL-3-85	10 ¼"	x	6 ½"	- 19"	160.4	273.2	3,150
	EL-2-85	10 ¼"	x	7 ¼"	- 19 ¾"	167.3	297.2	3,335
	EL-1-85	10 ¼"	x	7 ¼"	- 22 ¾"	191.5	389.3	3,705
	EL-H1-85	10 ¼"	x	7 ¼"	- 24 ¼"	203.6	440.0	3,890
	EL-H2-85	10 ¼"	x	7 ¾"	- 25 ¼"	212.2	478.1	4,075
	EL-H3-85	10 ¼"	x	8 ½"	- 27 ½"	231.2	567.4	4,445
	EL-H4-85	10 ¼"	x	9 ¼"	- 29 ¾"	250.2	664.4	4,820
	EL-H5-85	12 ¼"	x	10"	- 29"	350.0	761.4	5,755
	EL-H6-85	12 ¼"	x	11"	- 31"	374.6	872.4	6,200

E-LAM® COASTAL DOUGLAS FIR TANGENT POLES

Pole Length	Pole Class	Long. Width		Top Depth	Butt Depth	Ultimate Longitudinal Groundline Moment (Ft.-Kips)	Ultimate Transverse Groundline Moment (Ft.-Kips)	Approximate Treated Weight (Lbs.)
90 FT.	EL-3-90	10 ¼"	x	6 ½"	- 19"	160.6	273.7	3,335
	EL-2-90	12 ¼"	x	7 ¼"	- 19 ¾"	239.2	355.9	4,220
	EL-1-90	12 ¼"	x	7 ¼"	- 21 ¼"	256.5	409.2	4,455
	EL-H1-90	12 ¼"	x	7 ¼"	- 22 ¾"	273.8	466.2	4,690
	EL-H2-90	12 ¼"	x	7 ¾"	- 25 ¼"	303.4	572.5	5,160
	EL-H3-90	12 ¼"	x	8 ½"	- 26"	313.3	610.2	5,395
	EL-H4-90	12 ¼"	x	9 ¼"	- 28 ¼"	340.4	720.5	5,860
	EL-H5-90	12 ¼"	x	10"	- 30 ½"	367.5	840.0	6,330
95 FT.	EL-H6-90	12 ¼"	x	11"	- 32 ½"	392.2	956.4	6,800
	EL-2-95	12 ¼"	x	7 ¼"	- 19 ¾"	240.3	359.0	4,455
	EL-1-95	12 ¼"	x	7 ¼"	- 21 ¼"	257.7	413.0	4,705
	EL-H1-95	12 ¼"	x	7 ¼"	- 24 ¼"	292.5	532.1	5,195
	EL-H2-95	12 ¼"	x	7 ¾"	- 25 ¼"	304.9	578.1	5,445
	EL-H3-95	12 ¼"	x	8 ½"	- 27 ½"	332.2	686.1	5,940
	EL-H4-95	12 ¼"	x	9 ¼"	- 29 ¾"	359.4	803.3	6,435
	EL-H5-95	12 ¼"	x	10"	- 30 ½"	369.3	847.9	6,680
100 FT.	EL-H6-95	12 ¼"	x	11"	- 32 ½"	394.0	965.3	7,175
	EL-2-105	12 ¼"	x	7 ¼"	- 21 ¼"	258.8	416.4	4,950
	EL-1-105	12 ¼"	x	7 ¼"	- 22 ¾"	276.3	474.7	5,210
	EL-H1-105	12 ¼"	x	7 ¼"	- 24 ¼"	293.8	536.8	5,470
	EL-H2-105	12 ¼"	x	7 ¾"	- 26 ¾"	323.7	651.8	5,990
	EL-H3-105	12 ¼"	x	8 ½"	- 27 ½"	333.6	692.0	6,255
	EL-H4-105	12 ¼"	x	9 ¼"	- 29 ¾"	361.0	810.3	6,770
	EL-H5-105	12 ¼"	x	10"	- 32"	388.4	937.8	7,295
105 FT.	EL-H6-105	12 ¼"	x	11"	- 34"	413.2	1,061.5	7,815
	EL-2-105	12 ¼"	x	7 ¼"	- 21 ¼"	258.0	413.8	5,195
	EL-1-105	12 ¼"	x	7 ¼"	- 22 ¾"	275.4	471.7	5,470
	EL-H1-105	12 ¼"	x	7 ¼"	- 24 ¼"	292.9	533.3	5,745
	EL-H2-105	12 ¼"	x	7 ¾"	- 26 ¾"	322.7	647.5	6,290
	EL-H3-105	12 ¼"	x	8 ½"	- 29"	350.0	761.6	6,835
	EL-H4-105	12 ¼"	x	9 ¼"	- 31 ¼"	377.3	885.0	7,385
	EL-H5-105	12 ¼"	x	10"	- 33 ½"	404.6	1,017.7	7,930
110 FT.	EL-H6-105	12 ¼"	x	11"	- 35 ½"	429.3	1,146.1	8,475
	EL-2-110	12 ¼"	x	7 ¼"	- 22 ¾"	276.5	475.3	5,730
	EL-1-110	12 ¼"	x	7 ¼"	- 24 ¼"	294.0	537.6	6,015
	EL-H1-110	12 ¼"	x	7 ¼"	- 25 ¾"	311.6	603.6	6,305
	EL-H2-110	12 ¼"	x	7 ¾"	- 28 ¼"	341.5	725.3	6,875
	EL-H3-110	12 ¼"	x	8 ½"	- 29"	351.4	767.7	7,165
	EL-H4-110	12 ¼"	x	9 ¼"	- 31 ¼"	378.8	862.1	7,735
	EL-H5-110	12 ¼"	x	10"	- 35"	423.7	1,116.3	8,595
110 FT.	EL-H6-110	12 ¼"	x	11"	- 37"	448.5	1,251.0	9,165

E-LAM® COASTAL DOUGLAS FIR TANGENT POLES

Pole Length	Pole Class	Long. Width	Top Depth	Butt Depth	Ultimate Longitudinal Groundline Moment (Ft.-Kips)	Ultimate Transverse Groundline Moment (Ft.-Kips)	Approximate Treated Weight (Lbs.)
115 FT.	EL-2-115	12 ¼" x	7 ¼"	24 ¼"	295.1	541.4	6,290
	EL-1-115	12 ¼" x	7 ¼"	25 ¾"	312.7	608.1	6,590
	EL-H1-115	12 ¼" x	7 ¼"	27 ¼"	330.4	678.6	6,890
	EL-H2-115	12 ¼" x	7 ¾"	29 ¾"	360.4	807.9	7,490
	EL-H3-115	12 ¼" x	8 ½"	30 ½"	370.3	852.6	7,785
	EL-H4-115	12 ¼" x	9 ¼"	32 ¾"	397.8	983.9	8,385
	EL-H5-115	12 ¼" x	10"	35"	425.3	1,124.6	8,985
120 FT.	EL-H6-115	12 ¼" x	11"	37"	450.2	1,260.0	9,585
	EL-2-120	12 ¼" x	7 ¼"	24 ¼"	296.0	545.0	6,565
	EL-1-120	12 ¼" x	7 ¼"	25 ¾"	313.8	612.2	6,875
	EL-H1-120	12 ¼" x	7 ¼"	28 ¾"	349.2	758.4	7,500
	EL-H2-120	12 ¼" x	7 ¾"	29 ¾"	361.7	813.5	7,815
	EL-H3-120	12 ¼" x	8 ½"	32"	389.3	942.3	8,440
	EL-H4-120	12 ¼" x	9 ¼"	34 ¼"	416.8	1,080.5	9,065
125 FT.	EL-H5-120	12 ¼" x	10"	36 ½"	444.4	1,228.1	9,690
	EL-H6-120	12 ¼" x	11"	38 ½"	469.4	1,369.9	10,310
	EL-2-125	12 ¼" x	7 ¼"	24 ¼"	296.9	548.3	6,835
	EL-1-125	12 ¼" x	7 ¼"	25 ¾"	314.7	616.0	7,165
	EL-H1-125	12 ¼" x	7 ¼"	28 ¾"	350.4	763.3	7,810
	EL-H2-125	12 ¼" x	7 ¾"	29 ¾"	362.9	818.7	8,140
	EL-H3-125	12 ¼" x	8 ½"	32"	390.5	948.2	8,790
130 FT.	EL-H4-125	12 ¼" x	9 ¼"	34 ¼"	418.2	1,087.3	9,440
	EL-H5-125	12 ¼" x	10"	36 ½"	445.8	1,235.8	10,090
	EL-H6-125	12 ¼" x	11"	38 ½"	470.8	1,378.3	10,740
	PEL-2-130	14 ¼" x	7 ¼"	24 ¼"	396.0	609.6	8,270
	PEL-1-130	14 ¼" x	7 ¼"	25 ¾"	419.6	680.4	8,670
	PEL-H1-130	14 ¼" x	7 ¼"	28 ¾"	443.2	754.9	9,060
	PEL-H2-130	14 ¼" x	7 ¾"	29 ¾"	483.5	890.7	9,850
135 FT.	PEL-H3-130	14 ¼" x	8 ½"	32"	520.4	1,024.3	10,630
	PEL-H4-130	14 ¼" x	9 ¼"	34 ¼"	557.3	1,166.7	11,420
	PEL-H5-130	14 ¼" x	10"	36 ½"	594.2	1,317.8	12,210
	PEL-H6-130	14 ¼" x	11"	38 ½"	627.7	1,462.5	13,000
	PEL-2-135	14 ¼" x	7 ¼"	22 ⅞"	448.8	641.9	8,880
	PEL-1-135	14 ¼" x	7 ¼"	24 ¼"	474.9	714.6	9,300
	PEL-H1-135	14 ¼" x	7 ¼"	26 ½"	518.8	845.4	10,150
	PEL-H2-135	14 ¼" x	7 ¾"	27 ⅞"	536.6	901.5	10,570
	PEL-H3-135	14 ¼" x	8 ½"	29 ⅞"	576.4	1,032.8	11,410
	PEL-H4-135	14 ¼" x	9 ¼"	31 ⅞"	616.2	1,172.4	12,260
	PEL-H5-135	14 ¼" x	10"	34 ⅞"	674.7	1,392.7	13,370
	PEL-H6-135	14 ¼" x	11"	35 ⅞"	695.8	1,476.8	13,950

NOTE: Many other sizes are available to meet special height or loading conditions.

INSTALLING E-LAM® TANGENT, GUYED ANGLE AND GUYED DEAD END LAMINATED WOOD STRUCTURES

IDENTIFICATION OF POLES

Each E-LAM® laminated wood pole is tagged with the class and length on the face and the butt. If a variety of poles are required on a project, make sure the appropriate pole is spotted at the correct structure location. Additionally, poles of the same class may be drilled for different structures, and verification of structure types should also be confirmed.

LIFTING

All poles are identified with “BP” on the face of the width (constant dimension) to identify the approximate balance point before any framing materials are added. The approximate weight of the treated pole will also be located at this point. The poles should be lifted with a steel choker or gut line rather than a flat nylon strap. The choker will slightly indent the edges on the rounded corners insuring a firm hold.

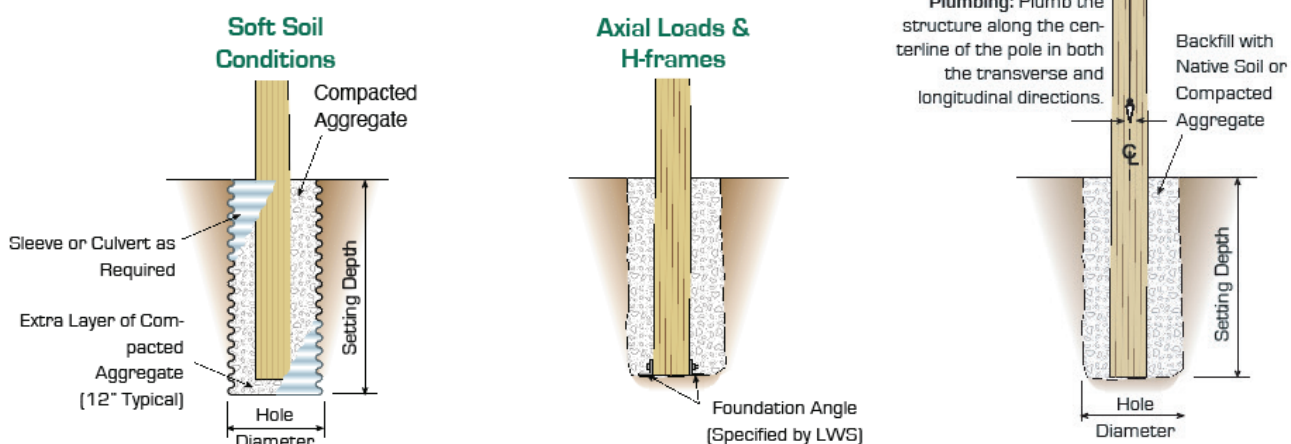


HANDLING

Poles can be handled just like any other wood pole. If rotation is required to bisect the angle, a regular cant hook for round poles can be used. Any field drilling and preservative treatment application should be consistent with the user's accepted practices for wood products. *These are general recommendations and in no way should be given precedence when they come in conflict with an individual company's accepted and established working practices.*

SETTING RECOMMENDATIONS

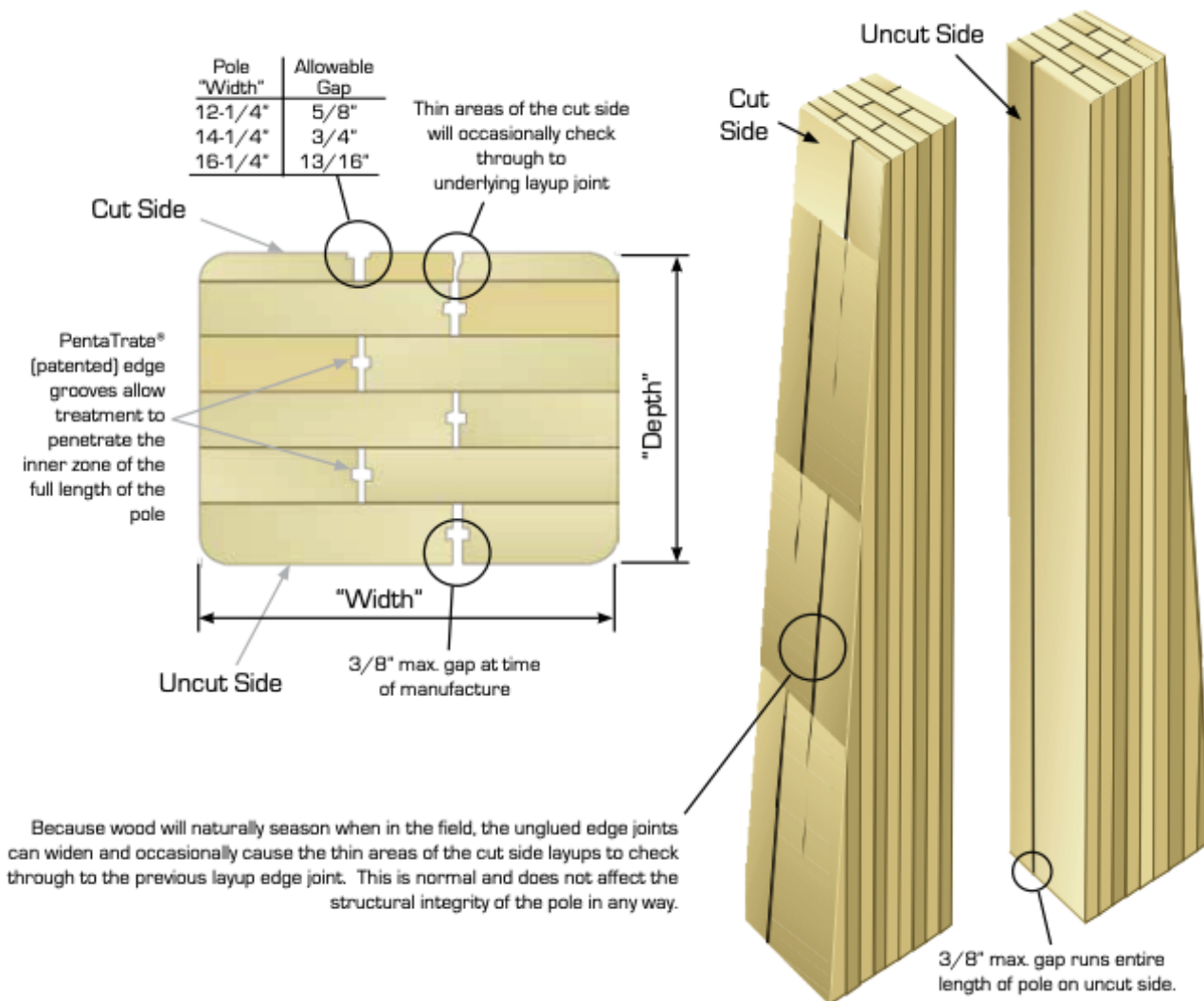
Auger hole to diameter and depth as recommended by LWS. Generally, E-LAM® tangent poles should be set to a depth of 10% + 2 ft. (unless soil type and / or load conditions require additional depth - contact LWS for recommended setting depth, hole size and any other options such as foundation systems).



UNGLUED EDGE JOINT SPECIFICATIONS FOR E-LAM® LAMINATED WOOD POLES

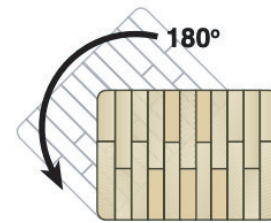
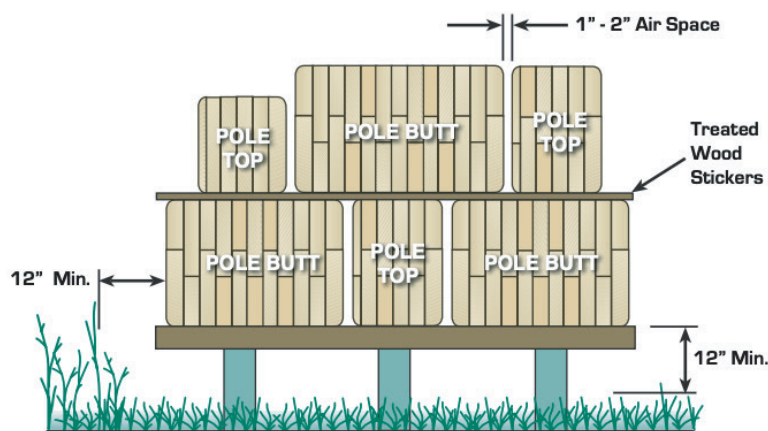
All E-LAM® Southern Pine and Coastal Douglas-fir poles are manufactured in accordance to ANSI 05.2-(latest version) standards for the manufacture of laminated wood structural members. The following is a portion of the manufacturing standard that applies to unglued edge joints.

Edge Joints - Edge joints bonding shall not be required unless specified by the designer as a response to structural requirements. Edge spacing in top and bottom laminations may be up to 1/4 in. for the full length with occasional 3/8 in. gap permitted. Edge spacing in interior laminations shall not exceed 3/8 in. for nominal widths of 10 in. and less, 1/2 in. for 12 in. nominal widths and 5/8 in. for 14 in. nominal widths. For nominal widths wider than 14 in., the allowable opening shall be proportional to the opening allowed for a nominal width of 14 in.



PROPER LONG TERM STORAGE OF ENGINEERED LAMINATED WOOD POLES

When it becomes necessary to store E-LAM® Southern Pine or Coastal Douglas-fir poles for extended periods of time (three months or longer) it is recommended the poles be stored in accordance with the following AWP and/or REA standards. In addition to these storage practices, laminated wood poles should also be rotated 180° and re-stacked at least once a year to minimize uneven migration of preservative treatment. This migration helps recharge the pole's internal groundline zone once the pole is installed.

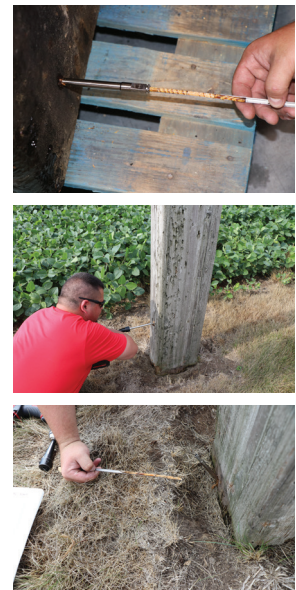


Rotate Poles 180° At Least Once Per Year To Minimize Uneven Migration of Preservative Treatment

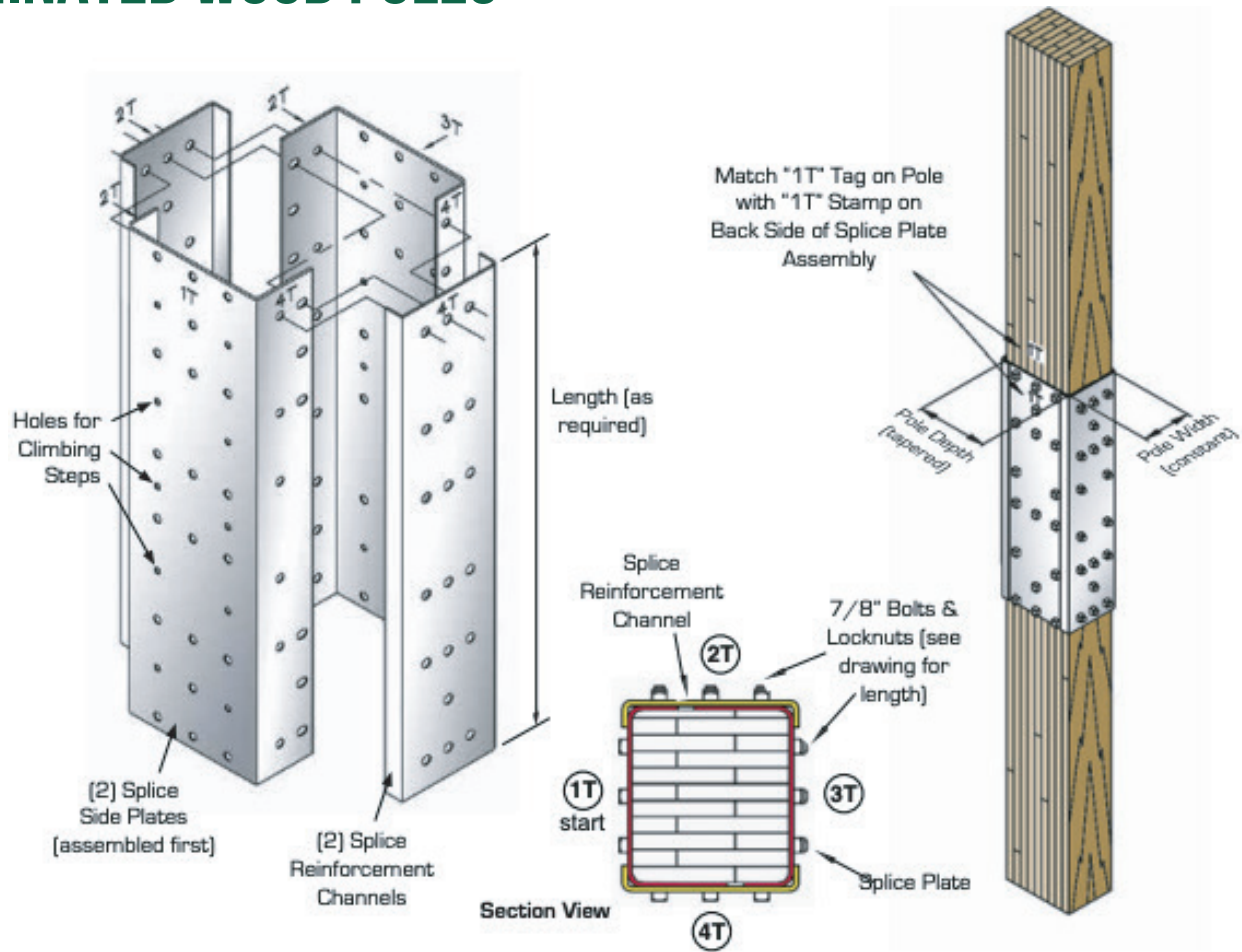
NOTE: Preservative migration helps recharge the pole's internal groundline zone once the pole is installed.

GUIDELINE FOR THE PHYSICAL INSPECTION OF ENGINEERED LAMINATED WOOD POLES

It is recommended that laminated wood poles be included with the utility's normal round wood pole inspection cycle using typical methods such as sounding with a hammer. Suspect areas should be further examined by a small diameter drill or core boring tool. After inspection, these holes should be flooded with preservative and closed by inserting treated plugs. If decay is detected, poles with enclosed pockets should be flooded internally and treated externally with a preservative. All holes should be flooded with preservative and closed by inserting treated plugs. If a defect is identified, the individual structure should be evaluated by the owner and the supplier (LWS) to determine if it meets the owner's structural loading requirements.



SPLICE ASSEMBLIES FOR E-LAM® LAMINATED WOOD POLES





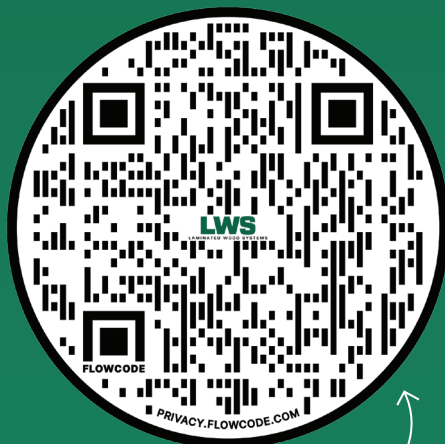
LAMINATED WOOD SYSTEMS

Founded in 1992, Laminated Wood Systems is a leader in supplying innovative products for the worldwide electric utility infrastructure. LWS reintroduced glue laminated utility structures to the industry and soon after developed its' family of steel products.

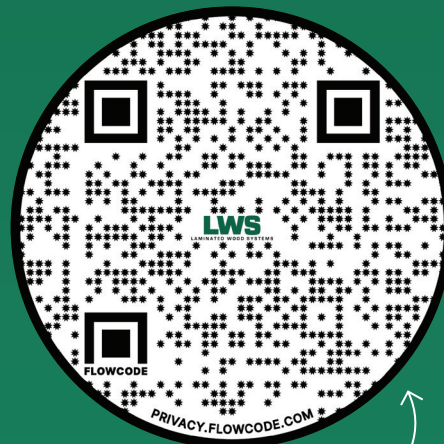
Utilizing a network of manufacturing and treating facilities located throughout the US, LWS can maintain some of the quickest delivery lead times available in the industry. Typical delivery can be expected 6 to 8 weeks after drawing approval.

The LWS sales and engineering offices are located in Seward, Nebraska. LWS partners with nationwide independent sales agencies to move our quality products to market.

Visit www.lwsinc.com for more information on all LWS Products and to locate a sales representative in your area.



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