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(7) Bulletin 50–32 (D–4), RUS Specifications for Steel Crossarm Mounted Pins with 1″ Diameter Lead Threads (10–50).

(8) Bulletin 50–33 (D–5), RUS Specifications for Single and Double Upset Spool Bolts (2–51).

(9) Bulletin 50–34 (D–6), RUS Specifications for Secondary Swinging Clevises (12–70).

(10) Bulletin 50–35 (D–7), RUS Specifications for Service Swinging Clevises (9–52).

(11) Bulletin 50–36 (D–8), RUS Specifications for Service Deadend Clevises (9–52).

(12) Bulletin 50–40 (D–14), RUS Specifications for Pole Top Brackets for Channel Type Pins (9–51).

(13) Bulletin 50–41 (D–15), RUS Specifications for Service Wireholders (11–51).

(14) Bulletin 50–55 (T–2), RUS Specifications for Overhead Ground Wire Support Brackets (5–53).

(15) Bulletin 50–56 (T–3), RUS Specifications for Steel Plate Anchors for Transmission Lines (12–53).

(16) Bulletin 50–60 (T–9), RUS Specification—Single Pole Steel Structures, Complete with Arms (12–71).

(17) Bulletin 50–72 (U–4), RUS Specification for Electrical Equipment Enclosures (5–35 kV) (10–79).

(18) Bulletin 50–73 (U–5), RUS Specifications for Pad-Mounted Transformers (Single and Three-Phase) (1–77).

(19) Bulletin 50–74 (U–6), RUS Specification for Secondary Pedestals (600 Volts and Below) (10–79).

(20) Bulletin 50–91 (S–3), RUS Specifications for Step-Down Distribution Substation Transformers (34.4–138 kV) (1–78).

(21) Bulletin 1728F–700, RUS Specification for Wood Poles, Stubs and Anchor Logs (3–2011).

(22) Bulletin 1728F–803, Specifications and Drawings for 24.9/14.4 kV Line Construction (10–98).

(23) Bulletin 1728F–804 (D–804), Specification and Drawings for 12.47/7.2 kV Line Construction, October 2005.

(24) Bulletin 1728F–806 (D–806), Specifications and Drawings for Underground Electric Distribution, June 2000.

(25) Bulletin 1728F–810, Electric Transmission Specifications and Drawings, 34.5 kV to 69 kV (3–98).

(26) Bulletin 1728F–811, Electric Transmission Specifications and Drawings, 115 kV to 230 kV (3–98).

(b) The terms ''RUS form'', ''RUS standard form'', ''RUS specification'', and ''RUS bulletin'' have the same meanings as the terms ''REA form'', ''REA standard form'', ''REA specification'', and ''REA bulletin'', respectively unless otherwise indicated.

[76 FR 36964, June 24, 2011]

§ 1728.201 Bulletin 1728H–701, Specification for Wood Crossarms (Solid and Laminated), Transmission Timbers and Pole Keys.

(a) *General Provisions.* (1) This section implements contractual provisions between Rural Utilities Service (RUS) and borrowers receiving financial assistance. The contractual agreement between RUS and its borrowers requires the borrower's system to be constructed in accordance with agency accepted plans and specifications. Each electric borrower must purchase only wood crossarms produced in accordance with the specification in this section.

(2) Each electric borrower shall require each contractor to agree in writing to furnish only materials produced in accordance with the specifications in this section.

(3) This specification describes the minimum acceptable quality of wood distribution crossarms and transmission crossarms (hereinafter called crossarms) that are purchased by or for borrowers. Where there is conflict between this specification and any other specification referred to in this section, this specification shall govern.

(4) Various requirements relating to quality control and inspection are contained in §1728.202 of this part, Specification for Quality Control and Inspection of Timber Products. Section 1728.201 of this part, ANSI O5.2, (incorporated by reference in §1728.97), and ANSI O5.3, (incorporated by reference in §1728.97) shall be followed exactly and shall not be interpreted or subjected to judgment by the quality control person or an independent inspector.

(5) The purchaser shall purchase from producers only material that meets the requirements of this specification. Each purchaser shall use a written purchase order to purchase material for use in financed systems in order to ensure compliance with the standards and specifications of this part. The written purchase order shall contain a provision that specifically requires the producer to comply with the provisions of this part. The purchase order shall contain a provision that specifically requires the producer to make the treating plant and storage areas available, during normal business hours, in order for representatives of either the purchaser or this agency to inspect such to determine compliance with the standards and specifications of this part.

(6) The producer shall provide the inspectors with full information (drawings, etc.) relating to the requirements contained in the purchase order which is supplementary to this specification.

(7) The producer shall maintain, or have access to, adequate laboratory facilities at or very near the treating plant, and all chemical tests, assays or analyses associated with the treatment shall be independently performed in this laboratory by both the quality control designee and the borrower's inspector. The producer may use a central laboratory as accepted on a case-by-case basis.

(8) Inspection and treatment of all timber products produced under this specification shall be performed after receipt of the order from the purchaser, except as provided for reserve treated stock.

(9) The testing and inspection of the lamination process shall be in accordance with AITC 200 (incorporated by reference in §1728.97).

(10) With the exception of reserve treated stock, if requested by the borrower invoices for treated timber products shall be accompanied, in duplicate, by a copy of the producer's Certificate of Compliance and a copy of either the Independent Inspection Report or a Quality Assurance Plan Certificate. For reserve treated stock, inspection reports shall be available from the inspection agency. When shipped from reserve stock, the invoice shall bear an endorsement and a further certification by the producer that the material meets the requirements of this specification and any supplementary requirements cited in the purchase order under which it is purchased.

(11) Crossarms shall be warranted to conform to this specification. If any crossarm is determined to be defective or does not conform to this specification within 1 year after delivery to the borrower, it shall be replaced as promptly as possible by the producer. In the event of failure to do so, the purchaser may make such replacement and the cost of the crossarm, at destination, shall be recoverable from the producer.

(12) Crossarm producers shall take out and maintain liability insurance for not less than $1 million. Upon request, evidence of compliance shall be provided. The evidence shall be in the form of a certificate of insurance signed by a representative of the insurance company and include a provision that no changes in, or cancellation of, will be made without the prior written notice to the Director, Electric Staff Division, Rural Utilities Service.

(b) *Definitions.*

Agency refers to Rural Utilities Service (RUS), United States Department of Agriculture.

Arm refers to structural wood member used to support electrical conductors and equipment. Arm is used interchangeably with crossarm.

Certificate of compliance is a written certification by an authorized employee of the producer that the material shipped meets the requirements of this specification and any supplementary requirements specified in a purchase order from a borrower or the borrower's contractor.

Crossarm refers to a structural wood member used to support electrical conductors and equipment and is a term used interchangeably with arm.

Independent inspection relates to examination of material by an independent inspector employed by a commercial inspection agency.

Inspection means an examination of material in sufficient detail to ensure conformity to all phases of the specification under which it was purchased.

Lot is a quantity of crossarms of like size, conditioning, and fabrication, usually making up one treating charge.

Producer is used to describe the party who manufactures and/or treats crossarms.

Purchaser refers to either the borrower or contractors acting as the borrower's agent, except where a part of the specification specifically refers to only the borrower or the contractor.

Quality control designee refers to an individual designated by the producer to oversee proper operation of the manufacturer's internal quality control system.

Reserve treated stock consists of timber products treated in accordance with this specification, prior to and in anticipation of the receipt of specific orders, and held in storage ready for immediate shipment.

Supplier is a term used interchangeably with producer, or in some cases, may be the distributor selling crossarms to the borrower.

Treating plant is the organization that applies the preservative treatment to the crossarms.

(c) *Independent Inspection Plan.* This plan or a Quality Assurance Plan, as described in paragraph (e) of this section, is acceptable for supplying crossarms. All crossarms purchased under the Independent Inspection Plan, for use on an agency financed system shall be inspected by a qualified independent inspector in accordance with §1728.202 of this part.

(1) The borrower has the prerogative to contract directly with the inspection agency for service. The borrower should, where practical, select the inspection agency so that continual employment is dependent only on performance acceptable to the borrower and in accordance with this specification. The selected inspection agency shall not be allowed to subcontract the service to any other inspection agency.

(2) The producer shall not be permitted to be a party to the selection of the inspection agency by the borrower and shall not interfere with the work of the inspector, except to provide notification of the readiness of material for inspection. To obtain inspection services for reserve stock, the producer may deal directly with the inspection agency. The producer shall not be permitted to treat material before it has been properly inspected and hammered with the appropriate inspection/quality assurance mark.

(3) The methods of inspection described in this section and in §1728.202 of this part shall be used no matter which plan crossarms are produced under, i.e., Independent Inspection Plan, or Quality Assurance Plans, as described in this section

(d) *Quality Assurance Plans.* The producer shall furnish crossarms conforming to this specification as monitored by an acceptable Quality Assurance Plan. Borrower groups or agents for borrower groups endeavoring to operate Quality Assurance Plans shall submit their plan for assuring quality control to the Chairman, Technical Standards Committee ''A'', Electric Staff Division, Rural Utilities Service, Stop 1569, Washington, DC 20250–1569.

(e) *Material Requirements.* (1) *Material and Grade.* All crossarms furnished under this specification shall be free of brashy wood, decay, and insect holes larger than 3/32 of an inch and shall meet additional requirements as shown on specific drawings. Crossarms shall be made of one of the following:

(i) Douglas-fir which conforms to the applicable crossarm provisions of paragraphs 170 and 170a, or the applicable transmission arm provisions of paragraphs 169 and 169a of the Standard No. 17 Grading Rules for West Coast Lumber (incorporated by reference in §1728.97). Only coastal origin Douglas-fir shall be used for Douglas-fir crossarms manufactured under this specification;

(ii) Southern Yellow Pine which conforms to the provisions of Dense Industrial Crossarm 65, as described in paragraph 31.2 in the 2001 Southern Pine Inspection Bureau's Special Product Rules for Structural, Industrial, and Railroad-Freight Car Lumber, (incorporated by reference at §1728.97); or

(iii) Laminated wood crossarms shall conform to ANSI O5.2 (incorporated by reference at §1728.97) and have at least the same load carrying capacity as the solid sawn arm it replaces. The load carrying capacity of the laminated arms shall be determined by one of the procedures outlined in ANSI O5.2.

(2) Borrowers may use alternative crossarms that are listed in Informational Publication 202–1, List of Materials Acceptable for Use on Systems of USDA Rural Utilities Service Borrowers. For information on the availability of this material, call RUS at (202) 720–1900, or go to: *http://www.rurdev.usda.gov/UEP__Engineering__LOM.html*.

(3) *Knots.* Sound, firm, and tight knots, if well spaced, are allowed.

(i) Slightly decayed knots are permitted, except on the top face, provided the decay extends no more than ¾ of an inch into the knot and provided the cavities will drain water when the arm is installed. For knots to be considered well spaced, the sum of the sizes of all knots in any 6 inches of length of a piece shall not exceed twice the size of the largest knot permitted. More than one knot of maximum permissible size shall not be in the same 6 inches of length. Slightly decayed, firm, or sound ''pin knots'' (⅜ of an inch or less) are not considered in size, spacing, or zone considerations.

(ii) Knots are subject to limits on size and location as detailed in Tables I and II.

TABLE I—KNOT LIMITS FOR DISTRIBUTION ARMS (SEE FIGURE 1, APPENDIX A)

[All dimensions in inches]

Class of knot and location	Maximum Knot Diameter	
	Close grain	Dense grain
Round Knots		
Single Knot: Maximum Diameter Center Section*		
Upper Half	¾	1
Lower Half	1	1¼
Elsewhere	1¼	1½
Sum of Diameters in a 6-Inch Length: Maximum:		
Center Section		
Upper Half	1½	2
Lower Half	2	2½
Elsewhere	2½	3

*No knot shall be closer than its diameter to the pole mounting hole.

TABLE II—KNOT LIMITS FOR TRANSMISSION ARMS (SEE FIGURE 2, APPENDIX A)

[All dimensions in inches]

Pole mounting hole zone*	Maximum diameter for Single Knot
UPPER HALF (inner zone)	¾.
UPPER HALF (outer zone)	1 for close grain. 1¼ dense grain.

Other locations transmission arm size**	Narrow face	Wide face (two sides)	
		Edge	Along centerline
4⅝ × 5⅝ or less	1	1¼	1¼
5⅝ × 7⅜	1¼	1⅜	1⅞
3⅝ × 9⅜	¾	1¾	2¼

*No knot shall be closer than its diameter to the pole mounting hole.
**For cross sections not shown, refer to grading rules.

(iii) Knot clusters shall be prohibited unless the entire cluster, measured on the worst face, is equal to or less than the round knot allowed at the specific location.

(iv) Spike knots shall be prohibited in deadend arms. Any spike knot across the top face shall be limited to the equivalent displacement of a knot ⅜ of an inch deep on one face and the maximum round knot for its particular location on the worst face, with a maximum width of 1 inch measured at the midpoint of the spiked section. Elsewhere across the bottom or side faces, spike knots shall not exceed ½ the equivalent displacement of a round

knot permitted at that location, provided that the depth of the knot on the worst face shall not exceed the maximum round knot allowed at that location.

(v) Loose knots and knot holes shall be such that they can drain water when the arm is installed in its normal position. In the center section, upper half, loose knots shall not be greater than ½ the dimensions of round knots. Elsewhere, loose knots shall not be greater than the round knot dimension. Loose knots shall be prohibited in deadend arms.

(vi) All knots except those ''spike'' knots intersecting a corner shall be measured on the least diameter of the knot.

(vii) A knot shall be considered to occupy a specific zone or section if the center of the knot (i.e., pith of knot) is within the zone or on the zone's boundary.

(viii) If a round or oval knot appears on two faces and is in two zones, each face shall be judged independently. When this does not occur, average the least dimension showing on both faces. Knots which occur on only one face of a free of heart center (FOHC) arm shall be permitted to be 25 percent larger than the stated size.

(ix) Two or more knots opposite each other on any face shall be limited by a sum not to exceed the size of a maximum single knot permitted for the location. On all four faces, all knots shall be well spaced.

(x) Knots which have a maximum of ⅝ inch diameter may intersect pin holes in the center section. One inch diameter knots may intersect insulator pin holes elsewhere.

(4) *Miscellaneous characteristics, features, and requirements.* (i) The top face of distribution crossarms shall not have more than four medium pitch and bark pockets in 8-foot arms, and not more than five pitch and bark pockets in 10-foot arms. Elsewhere a maximum of six medium pockets in 8-foot arms and eight in 10-foot arms shall be permitted. Equivalent smaller pockets shall be permissible. An occasional large pocket is permissible.

(ii) Shakes shall be prohibited.

(iii) Prior to treatment on properly seasoned arms, single face checks shall not exceed an average penetration of ¼ the depth from any face and shall be limited to 10 inches long on the top face, and ⅓ the arm length on the other faces. Checks shall not be repeated in the same line of grain in adjacent pin holes. The sum of the average depths of checks occurring in the same plane on opposite faces shall be limited to ¼ the face depth.

(iv) Compression wood shall be prohibited on any face. Compression wood is permitted if wholly enclosed in the arm, more than six annual rings from the surface, and not over ⅜ of an inch in width.

(v) Insect holes 3⁄32 of an inch and larger shall be prohibited. Insect pin holes (i.e. holes not over 1⁄16 of an inch diameter) shall be allowed if scattered and not exceeding 10 percent of the arm girth.

(vi) Wane shall be allowed on one edge, limited to approximately 1 inch measured across the corner. Outside of the top center section, an aggregate length not to exceed 2 feet may have wane up to 1½ inches on an occasional piece on one or both edges. Bark shall be removed.

(vii) Prior to and after preservative treatment, crook, bow, or twist shall not exceed ½ of an inch in 8 foot arms and ⅝ of an inch in 10 foot arms.

(f) *Manufacturing.* (1) All dimensions and tolerances shall conform to those shown on the drawings in this section or drawings supplied with the purchase order. Drawings supplied shall meet or exceed minimum dimensions and tolerances shown on the drawings in this section. Cross-sectional dimensions shall be measured and judged at about ¼ the arm length, except when the defects of ''skip dressing'' or ''machine bite or offset'' are involved.

(2) Lamination techniques shall comply with ANSI O5.2 (incorporated by reference at § 1728.97).

(3) Pin and bolt holes shall be smoothly bored without undue splintering where drill bits break through the surface. The center of any hole shall be within ⅛ of an inch of the center-line locations on the face in which it appears. Holes shall be perpendicular to the starting and finishing faces.

(4) *Shape.* The shape of the arms at any cross section, except for permissible wane, shall be as shown on the respective drawings in this section or supplied with the order. The two top edges may be either chamfered or rounded ⅜ of an inch radius. The two bottom edges shall be slightly eased ⅛ of an inch radius for the entire length.

(5) *Incising.* The lengthwise surfaces of Douglas-fir crossarms shall be incised approximately ¼ of an inch deep. The incision shall be reasonably clean cut with a spacing pattern that ensures uniform penetration of preservative.

(6) *Quality of work.* All crossarms shall be of the highest quality production. Crossarms shall be dressed on four sides, although ''hit and miss skips'' may occur on two adjacent faces on occasional pieces.

(g) *Conditioning prior to treatment.* (1) All solid sawn crossarms shall be made of lumber which has been kiln-dried. Douglas-fir arms shall have an average moisture content of 19 percent or less, with a maximum not to exceed 22 percent in a single arm. Southern Yellow Pine arms shall have an average moisture content of 22 percent or less, with a maximum not to exceed 30 percent in a single arm.

(2) Moisture content levels shall be measured at about ¼ the length and at a depth of about ⅕ the crossarm's thickness. Additionally, the moisture content gradient between the shell (i.e. ¼ of an inch deep) and the core (i.e. about 1 inch deep) shall not exceed 5 percentage points.

(3) A minimum of at least 20 solid sawn crossarms per treating charge shall be measured to verify moisture content and shall be duly recorded by the quality control designee.

(4) The moisture content of lumber used in laminating shall, at the time of gluing, be within the range of 8 to 12 percent, inclusive.

(h) *Preservatives.* (1) The preservatives shall be:

(i) Creosote which conforms to the requirements of AWPA P1/13–06 (incorporated by reference at §1728.97), when analyzed in accordance with the methods in AWPA A1–06 (incorporated by reference at §1728.97), sections 2, 3, 4, either 5 or 9, and 6;

(ii) Pentachlorophenol which contains not less than 95 percent chlorinated phenols and conforms to AWPA P8–08 (incorporated by reference at §1728.97) when analyzed in accordance with AWPA A5–05 (incorporated by reference at §1728.97) or AWPA A9–01 (incorporated by reference at §1728.97). The hydrocarbon solvents for introducing the preservative into the wood shall meet the requirements of AWPA P9–06 (incorporated by reference at §1728.97) Type A;

(2) Waterborne Preservatives shall be any of the following:

(i) Ammoniacal Copper Arsenates (ACA) and Ammoniacal Copper Zinc Arsenate (ACZA) which shall meet the requirements of AWPA P5–08 (incorporated by reference at §1728.97), when analyzed in accordance with methods in AWPA A2–08 (incorporated by reference at §1728.97) or AWPA A9–01 (incorporated by reference at §1728.97); and

(ii) Chromated Copper Arsenates (CCA) which shall meet the requirements of one of the formulations given in AWPA P5–08 (incorporated by reference at §1728.97) sections 4, 5 or 6, and 10. Tests to establish conformity shall be made in accordance with AWPA A2–08 (incorporated by reference at §1728.97) or A9–01 (incorporated by reference at §1728.97).

(A) The pH of treating solutions of the waterborne preservatives shown in AWPA P5–08 (incorporated by reference at §1728.97) section 10, shall be determined in accordance with AWPA A2–08, (incorporated by reference at §1728.97) section 8.

(B) The oxide formulations of waterborne preservatives shall be supplied.

(C) Douglas-fir crossarms shall not be treated with CCA preservatives.

(D) Materials treated with waterborne preservatives shall be free of visible surface deposits.

(iii) Copper Naphthenate (CuN) concentrate used to prepare wood preserving solutions shall contain not less than 6 percent nor more than 8 percent copper in the form of CuN and shall conform to AWPA P8–08 (incorporated by reference at §1728.97) when analyzed in accordance with AWPA A5–05 (incorporated by reference at §1728.97). The hydrocarbon solvents for introducing

the preservative into the wood shall meet the requirements of AWPA P9–06 (incorporated by reference at §1728.97) Type A.

(i) *Preservative treatment.* (1) All timber products treated under this specification shall be treated by either a pressure or a thermal (non-pressure) process.

(2) These materials may be further conditioned by steaming, or by heating in hot oil (Douglas-fir), within the following limits:

	Time hours (max.)	Temperature
Steam	3	220 °F
Heating in Preservation	3	210 °F

(3) A final steam or hot oil bath may be used only to meet cleanliness requirements of paragraph (k) of this section. Total duration of the final steam bath shall not exceed 2 hours and the temperature shall not exceed 240 degrees Fahrenheit.

(j) *Results of treatments.* (1) The quality control designee shall test or supervise the testing of each treated charge for penetration and retention.

(2) *Method of sampling.* When testing penetration and retention, a borer core shall be taken from not less than 20 crossarms in each treating charge. The borings shall be taken from any face except the top face at a point as close to the end as possible, being at least 3 inches from the end of the arm and no closer than 3 inches from the edge of the holes. The bored holes shall be plugged with preservative-treated plugs driven into the arm. Borings from laminated arms shall not be taken from the same laminate unless there is an end joint separation.

(3) As determined in accordance with AWPA A3–08 (incorporated by reference at §1728.97) all sapwood present in Douglas-fir or Southern Yellow Pine crossarms shall be completely penetrated with preservative. In the heartwood of Douglas-fir crossarms, the penetration shall be not less than 3 inches longitudinally from the edge of holes and ends, and at least 3/16 inch from the surface of any face.

(4) Retention of preservative in the outer 6/10 of an inch for Douglas-fir and one inch for Southern Yellow Pine assay zones at the treating plant shall be not less than:

Preservation	Retention (pcf)	AWPA analysis method**
Creosote	8	A6.
Pentachlorophenol	*0.4	A5.
ACA, ACZA, or CCA	0.4	A2, A7, or A9.
Copper Naphthenate	0.04	A5, or A9.

*The pentachlorophenol retention is for the lime ignition method. The copper pyridine method, retention 0.36 pcf is required when timbers may have been in contact with salt water, and for all species native to the Pacific coast region. It is not required when it specifically states on the rough sawn material invoice that this material has not been in contact with salt water or is shown by analysis to have no additional chlorides present in the wood before treating.

**All the AWPA Analysis Methods are incorporated by reference at §1728.97.

(5) Cleanliness of lengthwise surfaces of all crossarms shall be free from tarry, greasy, or sticky material, and from oil exudation and pentachlorophenol crystallization (blooming).

(6) Re-treatment of materials which do not meet the penetration and retention requirements of this specification may be done only twice. Initial treatment steaming time plus re-treatment steaming time, combined, shall not exceed time allowed in paragraph (i) of this section.

(k) *Marks and brands.* (1) All crossarms shall be legibly branded (hot brand) or die-stamped and to a depth of approximately 1/16 of an inch before treatment.

(2) The letters and figures shall be not less than 1/2 of an inch in height. The top of the brand shall be oriented to the top of the arm.

(3) The brand or die-stamp shall include:

(i) The manufacturer's identification symbol;

(ii) Month and year of manufacture;

(iii) Species of timber such as DF for Douglas-fir and SP for Southern Yellow Pine; and

(iv) The preservative notated with a C for creosote, P for penta, S for waterbornes, or N for Copper Naphthenate.

(4) An example is:

M–6–06 Manufacturer—Month—Year

DF–P Douglas-fir—penta treated

(5) The brand or stamp shall be placed on either of the wide surfaces of the arms, oriented with letters right side up towards the top of the arm and preferably about 1 foot from the midpoint of the arm.

(6) Each producer should mark each type of arm in approximately the same location on the arm.

(7) Brands, inspection marks, or quality assurance marks shall be removed from arms that do not meet these specifications.

(l) *Storage.* (1) Producers may treat crossarms for reserve stock under any of the agency approved plans.

(2) Crossarms treated with oil-borne preservatives which have been held in storage for more than 1 year before shipment to the borrower, shall be reassayed before shipment and shall be re-treated if found nonconforming for retention on orders placed in accordance with this section.

(3) Crossarms shall meet the assay after re-treatment in accordance with paragraph (k) of this section.

(4) Crossarms which are held in storage after final acceptance shall be stacked in piles or on skids in such a manner as to assure good ventilation. The stacks shall be covered or stored indoors for protection from the sun and weather to reduce checking, bending, and loss of preservative.

(m) *Drawings.* (1) The drawings of Appendix B of this section, Crossarm Drilling Guide, have a type number and show in detail the hole size, shape, and pattern desired for crossarms ordered under this specification.

(2) Purchase orders shall indicate the type crossarm required.

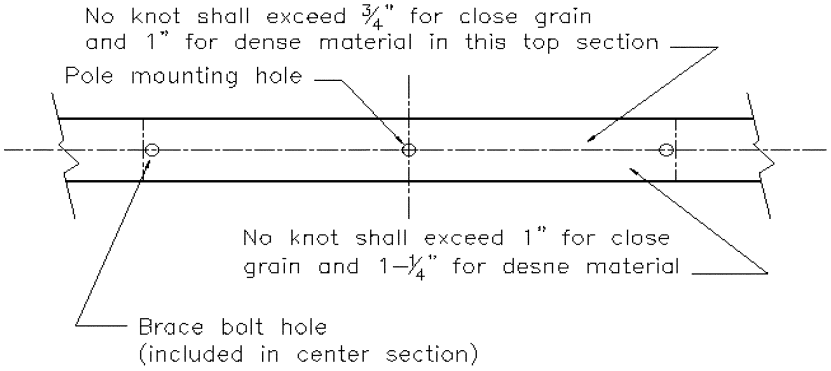
(3) Crossarms shall be furnished in accordance with the details of these drawings or in accordance with drawings attached to the purchase order.

(4) Appropriate drawings for transmission arms are to be specified and included with purchase orders. Technical drawings for transmission crossarms are published in Bulletin 1728F–811, ''Electric Transmission Specifications and Drawings, 115kV through 230kV'' (incorporated by reference at §1728.97), and Bulletin 1728F–810, ''Electric Transmission Specification and Drawings, 34.5kV through 69kV'' (incorporated by reference at §1728.97).

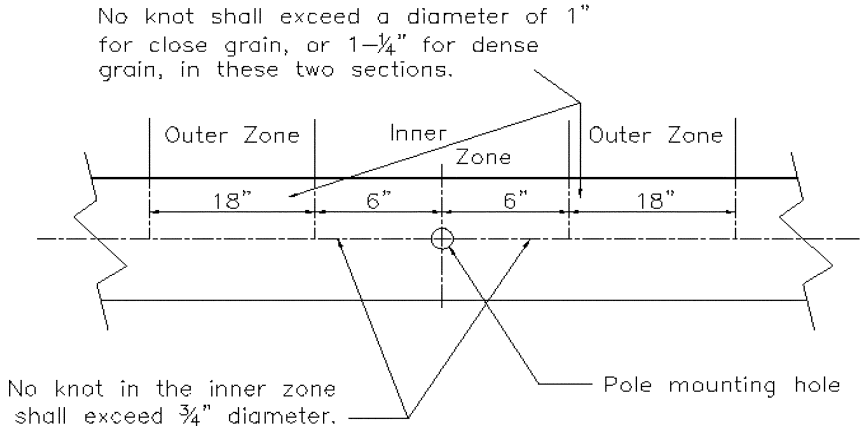
(n) *Destination inspection.* All crossarms shall meet or exceed their minimum dimensions for at least 1 year after date of delivery to the borrower.

APPENDIX A to §1728.201 – DISTRIBUTION AND TRANSMISSION ARMS

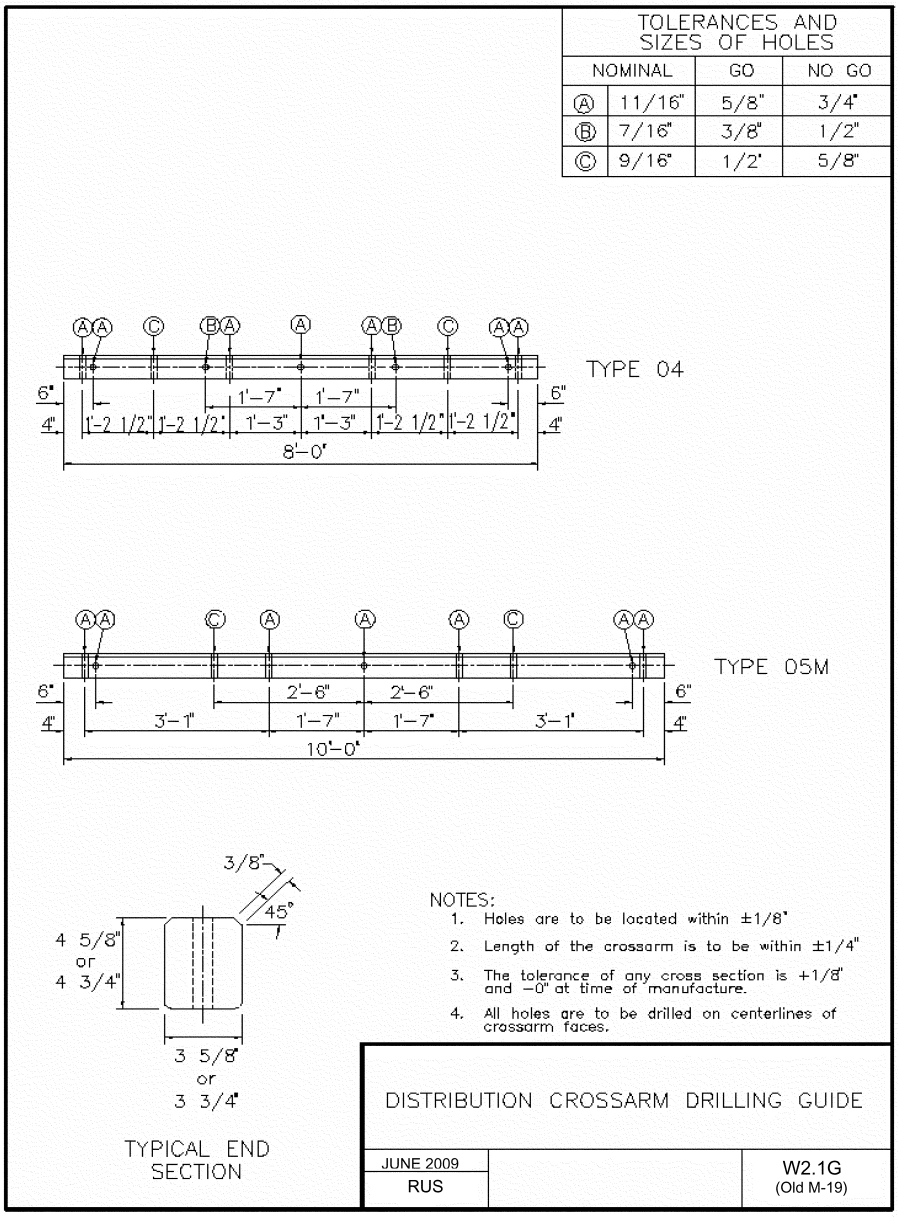
DISTRIBUTION ARMS
Figure 1



TRANSMISSION ARMS
POLE MOUNTING HOLE ZONE
Figure 2



APPENDIX B to §1728.201 – CROSSARM DRILLING GUIDE



APPENDIX C TO § 1728.201—METRIC CONVERSION FACTORS

To convert from	To	Multiply by
Foot (ft)	Meter (m)	0.3048
Inch (in)	Centimeter	2.54

APPENDIX C TO § 1728.201—METRIC CONVERSION FACTORS—Continued

To convert from	To	Multiply by
Pound per cubic foot (pcf) (lb/ft^3)	Kilogram per cubic meter (kg/m^3)	16.01846
Pound per square inch (psi) (lb/in^2)	Kilogram per square meter (kg/m^2)	703.0696
Degrees Fahrenheit (°F)	Degrees Celsius (°C)	5/9(F° − 32)

§ 1728.202 Bulletin 1728H–702, Specification for Quality Control and Inspection of Timber Products.

(a) *Scope.* This specification describes in more detail the responsibilities and procedures pertaining to quality control for crossarms, as specified in section 1728.201 of this part, and poles, covered in Bulletin 1728F–700, ''Specification for Wood Poles, Stubs and Anchor Logs,'' incorporated by reference in § 1728.97 of this part and in § 1755.97 of 7 CFR part 1755.

(b) *General stipulations.* (1) Conformance of poles and crossarms to agency specifications for the most part is the responsibility of the producer's management.

A member of the producer's staff shall be designated quality control designee and charged with the responsibility for the exercise of proper quality control procedures.

(2) The requirements of AWPA M3–05 (incorporated by reference at § 1728.97), covering records, adequate laboratory, plant gauges, and other plant facilities including proper storage, shall be followed.

(3) The methods of inspection described in this section shall be used no matter which plan timber products are purchased under, i.e., Insured Warranty Plan, Independent Inspection Plan, or Quality Assurance Plans, as described in § 1728.201 of this part or Bulletin 1728F–700 (incorporated by reference at § 1728.97). The number of poles and crossarms actually inspected by monitors for quality control under a Quality Assurance Plan or the Insured Warranty Plan may vary from the number of poles and crossarms inspected under the Independent Inspection Plan. Under the Independent Inspection Plan, each pole and a sample number of crossarms shall be inspected.

(4) Under the Independent Inspection Plan, the borrower should designate in the purchase order which inspection agency it has selected. Unless the borrower contracts for inspection as a separate transaction, the treating company shall obtain the services of the borrower's designated inspection agency. For reserve treated stock for purchase under the Independent Inspection Plan, the treating company shall obtain the services of an inspection agency.

(5) Individual inspectors in the employ of Independent Inspection Agencies shall be experienced and competent. The inspector shall perform all phases of the inspection personally and in the proper sequence. The primary responsibility of the inspector is to determine, for the borrower, by careful inspection and verification, that the timber products, preservative, and treatment meet the requirements of Bulletins 1728F–700 (incorporated by reference at § 1728.97) and § 1728.201 of this part (Bulletin 1728H–701) and that the methods, storage facilities, and production equipment conform to applicable specifications. For details of the inspector's qualifications see Appendix A of this section.

(6) Independent inspection agencies and inspectors shall maintain their impartiality. To do so, inspection agencies, inspectors, producers and brokers must maintain the greatest degree of separation and eliminate even the appearance of a conflict of interest. Inspection agencies shall not receive gratuities from or enter into financial agreements, other than for inspection services, with suppliers for which they perform inspection. Inspection agencies shall not provide gratuities or free services to suppliers. Inspection agencies shall not offer product warranties on inspected material.

(7) Failure of an individual inspector to follow proper procedures or failure of an inspection agency to properly train and supervise inspectors or follow the appropriate RUS specifications