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|---|---|-----------------------|---------------------------------------|------------------------------|
| Response Due Date 9/7/2016 | | Time 1:00 PM | Location 800 Lincoln Way, Ames, IA | |
| Proposal Number 17180 | Description Wood Sign Posts FY Fall 2016 | | | |
| Contract Begin Date | Contract Completion Date | Bid Bond NA | Performance Bond (Y/N) N | Liquidated Damages \$0.00 |
| Purchasing Agent Assigned Laura Linduski | E-Mail Address laura.linduski@dot.iowa.gov | Phone 515-239-1429 | Fax 515-239-1538 | |

| RESPONDER INFORMATION | | | | |
|---|----------------|-------|---|----------|
| Company Name | | | Federal Tax ID | |
| Street Address | | City | State | Zip Code |
| Contact Name | E-Mail Address | Phone | Fax | |
| Responder agrees to sell goods/services or both at the same prices, terms and condition to any other Iowa state agency, Regent or Political Subdivision upon request. Please check Yes or No. <input type="checkbox"/> YES <input type="checkbox"/> NO | | | Responder is an Iowa Targeted Small Business? <input type="checkbox"/> YES <input type="checkbox"/> NO | |

GENERAL INFORMATION

The entire contents of this solicitation; Addendums, Schedule of Prices, Specifications, Plans and Drawings, Supplemental Terms and Conditions, Standard Terms and Conditions shall become part of the contract or purchase order. **Faxed or email responses will be accepted.**

Acceptance/Rejection: The Iowa DOT reserves the right to accept or reject any or all responses and to waive irregularities or technicalities, provided such waiver does not substantially change the offer or provide a competitive advantage to a supplier or service provider. The Iowa DOT reserves the right to accept the response which is deemed to be in the best interest of the state. Any unauthorized changes, additions, or conditional responses including any ties to other solicitations or any reservations about accepting an award or entering into a contract, may result in rejection of the response. Responses must remain available for award for (30) days from the due date indicated above.

Method of Award: Award shall be made to the lowest responsible, responsive responder whose response meets the requirements of the solicitation unless otherwise specified. An Iowa responder will be given preference over an out-of-state responder when responses are equal in all aspects and are tied in price. By virtue of statutory authority preference will be given to products and provisions grown and coal produced within the State of Iowa.

Contracts: Successful contractor(s) may be sent either a formal contract or a purchase order. The contractor may not assign the contract to another party without written authorization from the Iowa DOT Purchasing Section.

Pricing and Discount: Unit prices shown in the response shall be quoted as the price per unit (e.g., gal., case, each, etc.) as stated in the solicitation. If there is a discrepancy between the unit prices, extended price, or total amount of response, the unit price shall prevail. Unless otherwise indicated, prices shall be firm for the duration of the contract or purchase order. Discounts for early payment are allowed, but not considered in award of the contract.

We certify that all materials, equipment, goods and/or services offered meet or exceed the specifications and requirements and will be supplied in accordance with the entire contents of this solicitation including delivery schedules.

Signed: _____

Date: _____



Schedule Of Prices

| | |
|---------------|--------------------|
| Number | 17180 |
| Date Required | 09/07/2016 1:00 PM |

Title Wood Sign Posts FY Fall 2016
Delivery Location AMES, IA 50010
Shipping Terms FOB Destination/Freight Prepaid

Vendor
 PA Name Laura J Linduski
 Phone 515-239-1429
 E-Mail laura.linduski@dot.iowa.gov

Description

Product Availability Days: _____

| Item | Qty | Unit | Description | Part # | Unit Price | Total Price |
|-----------|-------|------|--|-----------------|------------|-------------|
| 1 | 1,470 | EACH | POST WOOD SIGN 14FT Stock #: 016-275000 | 4 X 4 IN X 14FT | | |
| Comments: | | | | | | |
| 2 | 224 | EACH | POST WOOD SIGN 18FT Stock #: 016-276750 | 4 X 6 IN X 18FT | | |
| Comments: | | | | | | |
| 3 | 140 | EACH | POST WOOD SIGN 20FT Stock #: 016-277000 | 4 X 6 IN X 20FT | | |
| Comments: | | | | | | |
| 4 | 56 | EACH | POST WOOD SIGN 24FT Stock #: 016-277900 | 4 X 6 IN X 24FT | | |
| Comments: | | | | | | |

I HEREBY CERTIFY THAT THIS PROPOSAL MEETS OR EXCEEDS THE MINIMUM REQUIREMENT INCLUDING SPECIFICATIONS AND ADDENDUMS.

Signature: _____ Date: _____



Iowa Department of Transportation Standard Terms and Conditions

For

Submission of Quotations, Bids or Proposals

-FORMAL-

Formal is the procurement process required by Iowa law when the estimated, aggregate amount of the purchase equals or exceeds \$50,000.

The entire contents of this solicitation shall become a part of a contract or purchase order. In case of a discrepancy between the contents of the solicitation documents, the following items listed by descending order shall prevail:

- Addendums to the solicitation
- Solicitation
 - Schedule of Prices
 - Specifications
 - Plans and Drawings
- Supplemental Terms and Conditions
- Standard Terms and Conditions

(Example - if a statement in the specifications contradicts a statement in the Standard Terms and Conditions, the statement in the specifications shall apply)

Preparation of Solicitation or Bid Response: All responses must clearly address all aspects of the solicitation. Responses must be typed or completed in ink and submitted on the forms supplied by the Iowa DOT.

Responses must be signed and received prior to the opening date and time indicated on the Solicitation Response page or other specified areas throughout the solicitation document. The Responder's signed Response shall become the official Response to be considered for award.

No email, fax or web link bid Responses will be accepted. Responses must be signed, sealed and delivered in person or by a mail courier that ensures timely delivery.

A. Solicitation

1. **Opening:** The openings of responses are made public and conducted at the Iowa DOT, Ames complex unless otherwise specified. Responses received after the time of the opening will be returned unopened and considered non-compliant.
2. **Communications:** Questions concerning this solicitation should be directed to the purchasing agent listed on the Solicitation Response page. Inquiries can be written, phoned, or faxed. In all cases, written communication will take precedence over verbal communication.
3. **Bid Bond:** If required, the Solicitation Response page will indicate the fixed percent of the bid security based on the amount of the Bidder's bid. A Bid Bond can be supplied in one of the following ways: **(1)** Certified check or credit union certified share draft, cashier's check, or bank draft, drawn on a solvent bank or credit union. Certified checks and certified share drafts shall be drawn and endorsed in the amount indicated. Checks or drafts shall be made payable either to the Iowa Department of Transportation (Iowa DOT) or to the bidder. If payable to the bidder, the check or draft shall be endorsed without qualifications to the Iowa DOT by the bidder or an authorized agent. **(2)** An insurance or surety company may be retained to provide a bond in fulfillment of the Bid Bond requirement. A properly completed and signed copy of the Bid Bond (*Form 131084*) must accompany the bid. **The Iowa DOT's Bid Bond form must be used; no other forms or formats will be accepted.**

4. **Pricing and Discount:** Unit prices shown in the response shall be quoted as the price per unit (e.g., gal., case, each, etc.) as requested in the solicitation. If there is a discrepancy between the unit bid prices, extended price, or total amount of response, the unit prices shall prevail. Unless otherwise indicated, prices shall be firm for the duration of the contract or purchase order. Discounts for early payment are allowed, but not considered in award of the contract.
5. **Acceptance/Rejection:** The Iowa DOT reserves the right to accept or reject any or all responses and to waive irregularities or technicalities, provided such waiver does not substantially change the offer or provide a competitive advantage to any supplier(s) or provider. The Iowa DOT also reserves the right to accept that response which is deemed to be in the best interests of the state. Any unauthorized changes, additions, or conditional response including any ties to another response or any reservations about accepting an award or entering into a contract, may result in rejection of the response. Responses must remain available for award for thirty (30) days from opening date and time.
6. **Results & Disclosure:** Tabulation results will be posted on the Iowa DOT website at www.iowadot.gov/purchasing under the *Bid Award* link referencing the proposal number with an award recommendation indicated. At the conclusion of the selection process, the contents of all received responses will be placed in the public domain and be open to inspection by interested parties, according to state law. Trade secrets or proprietary information that are recognized as such and are protected by law may be withheld if clearly identified as such in the response.
7. **Quality of Goods:** All material shall be new and of first quality. Items which are used, demonstrators, refurbished, obsolete, seconds, or which have been discontinued are unacceptable without prior written approval by the Iowa DOT.
8. **Recycled Content:** The Iowa Code encourages purchase of products and materials with recycled content, including but not limited to paper products, oils, plastic products, compost materials, aggregate, solvents, and rubber products. Recycled items or alternatives must be noted in the Solicitation Response, if known.
9. **Shipping Terms:** Deliveries shall be F.O.B. Destination unless otherwise specified. All deliveries shall be accompanied by a packing slip indicating the Supplier, quantities shipped, and the purchase order number(s). All delivery charges shall be included in the response price and paid by the Supplier. No collect C.O.D. deliveries shall be accepted. When entering into a contract, the Supplier shall notify the freight company that all freight and delivery charges are to be prepaid by the Supplier. Goods delivered to the Iowa DOT Distribution Center at 800 Lincoln Way, Ames, IA shall be received between the hours of 7:00 a.m. and 3:00 p.m. on any day except Saturday, Sunday, or a holiday. For deliveries to other Iowa DOT locations, the Supplier may contact the destination location for available times to deliver as not all Iowa DOT locations have the same business hours. The Iowa DOT will not be liable for any freight claims or unpaid freight bills arising from contract or purchase order issues.

B. Award

The binding agreement (award) may be issued in the form a purchase order or contract or both depending on the requirements and complexity of the agreement.

1. **Method of Award:** Award shall be made to the responsible, responsive Responder whose Quotation, Bid or Proposal meets the requirements of the solicitation and is the most advantageous to the Iowa DOT. An Iowa company or individual will be given preference over an out-of-state company or individual when responses are equal in all aspects and are tied in price. By virtue of statutory authority preference will be given to products and provisions grown and coal produced within the State of Iowa.
2. **Award Protests:** Protests of award recommendations are to be addressed to the Director of Purchasing, and shall be made in accordance with paragraph 761--20.4(6)"e" of the Iowa Administrative Code.
3. **Contracts:** Successful Contractor(s) may be sent either a formal Contract, Notification of Award or Purchase Order as confirmation of acceptance and award. Any of these binding agreements shall be for the term stated in the solicitation or on a purchase order and may be renewed for additional period(s) under the same terms and conditions upon mutual agreement as defined. The successful Contractor may not assign a contract to another party without written authorization from the Iowa DOT Purchasing Section. The Iowa DOT may offer a contract extension to the Contractor when a scheduled target date cannot be met.

4. **Consumer Price Index (CPI-U):** A CPI may be allowed as specified in the terms of the solicitation and at the discretion of the Iowa DOT based on currently posted CPI-U, US City Average, All Items – non seasonally adjusted unless otherwise specified. This applies each of any subsequent renewals, extensions, amendments issued under the contract for the duration of the contract.
5. **Payment Terms:** The Iowa DOT typically pays properly submitted invoices within thirty (30) days of receipt, providing goods and/or services have been successfully delivered, installed or inspected (if required), and accepted. Invoices presented for payment must be only for quantities received by the Iowa DOT and must reference the purchase order number or contract number to be submitted for processing.
6. **Default (Supplier):** Failure of the Supplier to adhere to specified delivery schedules or to promptly replace rejected materials shall render the Supplier liable for all costs in excess of the bid price when alternate procurement is necessary. This shall not be the exclusive remedy and the Iowa DOT reserves the right to pursue other remedies available to it by law or under the terms of the binding agreement.
7. **Default (Contractor):** Failure of a Contractor other than a Supplier to meet any specified project completion deadline shall render the Contractor liable for all costs incurred by the Iowa DOT that were: a) necessary to meet said deadline; or b) necessary to complete said project after said deadline. This shall not be the exclusive remedy and the Iowa DOT reserves the right to pursue other remedies available to it by law or under the terms of the agreement.

C. General

1. **Administrative Rules:** For additional details on the rules governing the actions of the Iowa DOT Purchasing Section, refer to 761 IAC, Chapter 20, Iowa Administrative Code, entitled “Procurement of Equipment, Materials, Supplies and Services”.
2. **Affirmative Action:** The Contractor (and also subcontractor, vendor, service provider or supplier) is prohibited from engaging in discriminatory employment practices forbidden by federal and state law, executive orders and rules of the Iowa Department of Management, pertaining to equal employment opportunity and affirmative action. Contractor may be required to have on file a copy of their affirmative action program, containing goal and time specifications. Contractors doing business with Iowa in excess of \$5,000 annually and employing 50 or more full time employees may be required to file with the Iowa Department of Management a copy of their affirmative action plan. Failure to fulfill these non-discrimination requirements may cause the contract to be canceled and the contractor declared ineligible for future state contracts or subject to other sanctions as provided by law or rule.
3. **Applicable Law:** The contract shall be governed under the laws of the State of Iowa. The contractor shall at all times comply with and observe all federal and state laws, local laws, ordinances, and regulations which are in effect during the period of a contract and which in any manner affect the work or its conduct. Any legal action relating to a contract shall only be commenced in the Story County, Iowa, District Court or the United States District Court for the Southern District of Iowa.
4. **Conflict of Interest:** No state or county official or employee, elective or appointive shall be directly or indirectly interested in any contract issued by the Iowa DOT, see Code of Iowa 314.2.
5. **Debarment and Vendor Suspension:** By submitting a response, the contractor is certifying that it and its principals and/or subcontractors are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by the State of Iowa or any Federal department or agency.
6. **Equal Opportunity:** Responders to the solicitation must be an “Equal Opportunity Employer” as defined in the Civil Rights Act of 1964 and in Iowa Executive Order Number Thirty-four.
7. **Indemnification-Goods:** To the extent the goods are not manufactured in accordance with Iowa DOT’s designs, Supplier shall defend, indemnify and hold harmless Iowa DOT, its assignees, and other users of the goods from and against any claim of infringement of any letters patent, trade names, trademarks, copyright or trade secrets by reason of sale or use of any articles purchased. Iowa DOT shall promptly notify Supplier of any such claim.
8. **Infringement:** Goods shall be delivered free of the rightful claim of any third party by way of infringement. Contractor shall indemnify and save harmless the State of Iowa and the Iowa DOT against all claims for infringement of, and/or royalties claimed under, patents or copyrights on materials and equipment furnished under this bid.

9. **Iowa Open Records Law:** All Solicitation Responses are subject to terms and provisions of Iowa Code Chapter 22 Examination of Public Records (Open Records), specifically 22.7- Confidential Records.
10. **Records Audit:** The contractor agrees that the Auditor of the State of Iowa or any authorized representative of the state, and where federal funds are involved, the Comptroller General of the U.S. Government, shall have access to and the right to examine, audit, excerpt, and transcribe any directly pertinent books, documents, papers, and records of the contractor relating to orders, invoices, or payments of a contract or purchase order.
11. **Targeted Small Businesses:** The Iowa DOT seeks to provide opportunities for women and/or minority small business enterprises. To apply for certification as an Iowa Targeted Small Business, contact the Iowa Department of Inspection and Appeals (515-281-5796). Contractors shall take documented steps to encourage participation from Targeted Small Businesses for the purpose of subcontracting and supplying of goods or services or both.
12. **Taxes:** Prices quoted shall not include state or federal taxes from which the state is exempt. Exemption certificates will be furnished upon request.
13. **Termination:**
 - **Termination Due to Lack of Funds or Change in Law**

The Iowa DOT shall have the right to terminate this Contract without penalty by giving thirty (30) days written notice to the vendor as a result of any of the following:

 - Adequate funds are not appropriated or granted to allow the Iowa DOT to operate as required and to fulfill its obligations under contract.
 - Funds are de-appropriated or not allocated or if funds needed by the Iowa DOT, at the Iowa DOT's sole discretion, are insufficient for any reason.
 - The Iowa DOT's authorization to operate is withdrawn or there is a material alteration in the programs administered by the Iowa DOT.
 - The Iowa DOT's duties are substantially modified.

Following a 30 day written notice, the Iowa DOT may terminate a binding agreement in whole or in part without the payment of any penalty or incurring any further obligation to the Responder. Following termination upon notice, the Responder shall be entitled to compensation upon submission of invoices and proper proof of claim for goods and services under contract up to and including the date of termination.

**Iowa Department of Transportation
SUPPLEMENTAL TERMS AND CONDITIONS
for
Wood Sign Posts
RFP: 171080
Letting Date: September 7, 2016**

Approved Suppliers

Any supplier desiring to supply wood sign posts to the Iowa Department of Transportation must be listed on the approved suppliers list under materials IM462.

Contract Quantities

The Iowa DOT will make a one-time purchase of the entire quantity listed on this proposal.

Purchase Orders

One purchase order will be issued. No materials or supplies are to be produced or shipped until a purchase order is issued.

Specifications Applicable

Standard Specifications of the Iowa Department of Transportation, Series 2001 for Wood Sign Posts, sections 4161, 4163, 4164, and IM462.

Wood Sign Posts shall be securely banded with 1" minimum steel strips near each end; 4" x 4" posts shall be 49 posts to bundle (bundle to be 7' wide and 7' high). 4" x 6" posts shall be 28 per bundle (bundle 7' wide and 4' high). All posts in bundle shall be of the same length. Each bundle shall have runners between other bundles for easy unloading.

Any loads delivered with plastic banding will be rejected.

Section 4164. Treated Wood Posts

4164.01 GENERAL REQUIREMENTS.

- A. Ensure posts when dried, whether kiln dried or air dried, are free from bends in more than one plane and free from short or reverse bends. Ensure a straight line from the centers of the ends of a post does not deviate from the longitudinal axis of the post at any point by more than 0.5% of the length of the post.
- B. Furnish posts that meet the requirements for one of the classes listed below, as specified in the contract documents:
 - Round Wood Posts
 - Sawed Wood Posts
 - Wood Sign Posts
- C. Arrange inspection according to Materials I.M. 462. Include the cost of inspection in the unit price bid for the material specified.

4164.02 ROUND WOOD POSTS.

A. General.

1. Furnish posts that are cut from live sound, solid trees and contain no unsound knots. Sound knots will be permitted provided the width of the knot does not exceed 30% of the diameter of the piece at the point where it occurs, or a maximum of 2 1/2 inches (65 mm). Ensure posts are free from decayed wood, rot, red heart, ring shake, season checks more than 1/4 inch (6 mm) wide, and splits in the end.
2. Ensure that when measured over the outer 2 inches (50 mm) of a radial line from the pith:
 - Douglas Fir posts show at least five annual rings per inch (25 mm).
 - Pine posts show at least three annual rings per inch (25 mm) and at least 30% summerwood.
3. Ensure posts show no spiral grain exceeding one quarter turn in 10 feet (3 m). Groups of knots, or any combination of defects which impair the strength more than maximum size knots, will not be permitted.

B. Species.

1. Use what is called for in the contract documents.
2. Unless specified otherwise, use:
 - Pine for fence posts.
 - Either Douglas Fir (coast region) or Southern Pine for other posts.

C. Size.

1. The size of posts will be specified by nominal 1 inch (25 mm) increments of diameter at the tip.
2. Posts will be accepted only when the tip diameter equals the specified dimension or exceeds it by no more than 1 inch (25 mm). The diameter is determined by dividing the circumference, after peeling, by pi (3.14).

D. Length.

Furnish round wood posts in the length specified, \pm 2%.

E. Straightness.

1. Ensure posts are free from short or reverse bends and bends in more than one plane.
2. Ensure a straight line from center of tip to center of butt does not deviate from the center of the post by more than 2% of the length of the post.

F. Quality of Work.

1. Ensure posts are peeled for their full length, and bark and inner skin is removed.
2. Ensure the portion of the post which will remain out of the ground is shaved clean and free from glazed surface left by dried sap.
3. Shave knots or projections smooth and flush with the surface of surrounding wood.

4164.03 SAWED WOOD POSTS.

A. Furnish posts that:

- Conform to the shape and nominal dimensions for rough stock, and
- Meet the applicable requirements of Section 4162.

B. Ensure 5 inch by 5 inch (125 mm by 125 mm) and larger treated, sawed wood guardrail posts are a minimum Grade No. 1 or better Douglas Fir (coast region) or No. 1 or better Southern Pine, according to the minimum strength requirements of AASHTO M 168.

4164.04 WOOD SIGN POSTS.

A. Furnish either Douglas Fir (coast region) or Southern Pine posts graded as provided in ASTM D 245 according to rules approved by the Board of Review of the American Lumber Standards Committee.

1. Use Douglas Fir posts free of heart centers and of the following nominal sizes and grades:

- 4 inch by 4 inch (100 mm x 100 mm) - "No. 2" - Structural Light Framing.
 - 4 inch by 6 inch (100 mm x 150 mm) - "Dense No. 2" - Structural Joist and Plank.
2. Use Southern Pine posts of the following nominal sizes and grades:
- 4 inch by 4 inch (100 mm x 100 mm) - No. 2 Dense.
 - 4 inch by 6 inch (100 mm x 150 mm) - No. 1 Dense.
- B.** Nominal 4 inch by 4 inch (100 mm by 100 mm) sign posts in lengths up to 14 feet (4.3 m) may be furnished in species Northern Pine (Norway, Red Pine), Grade No. 1, according to the Northeastern Lumber Manufacturer's Association Rules.
- C.** Furnish posts in the size and length specified complying with the following for the size designated:
1. **Nominal 4 inch by 4 inch (100 mm by 100 mm) Posts.**
- S4S posts sawn square at both ends.
 - 10 holes 7/16 inch (11 mm) in diameter bored at 6 inch (150 mm) spacing (center to center) with the first hole being 3 inches (75 mm) from one end of the post.
 - Spacing and alignment of holes within 1/16 inch (2 mm) of true center line and distance.
2. **Nominal 4 inch by 6 inch (100 mm by 150 mm) Posts.**
- S4S posts sawn square at both ends.
 - 15 holes 7/16 inch (11 mm) in diameter bored through the 6 inch (150 mm) thickness at 6 inch (150 mm) spacing (center to center) with the first hole being 3 inches (75 mm) from one end of the post.
 - Spacing and alignment of holes within 1/16 inch (2 mm) of true center line and distance.

4164.05 PRESERVATIVE TREATMENT.

Complete boring and framing before treatment. Unless provided otherwise, apply Section 4161.

4164.06 INSPECTION.

- A.** Inspect posts before treatment. Follow Materials I.M. 462 for inspection and acceptance. Inspect for quality and straightness before accepting for treatment. Do not allow posts not meeting the quality and straightness requirements to be treated.
- B.** The treating process will be inspected at the treating plant. Posts will be inspected after treatment for straightness. Posts not meeting the requirements will be rejected. Posts rejected after treatment may be subjected to steam treatment in the treating chamber while loaded in such manner as to remove or minimize the bends and bows. They will be inspected for straightness again. Posts so steamed will be accepted if they comply with the requirements for straightness.

WOOD TREATMENT PLANT REQUIREMENTS

INSPECTION OF TREATED WOOD PRODUCTS BY THE TREATER

A charge is defined as the entirety of all wood products treated in a cylinder container at one time. The treater shall record the test results for each charge of material tested on the quality control records. A shipment is defined as the entirety of all wood products in each delivery to a supplier's stock or to the project site. The treatment plant shall be considered the source for treated wood material. The Iowa DOT reserves the right to conduct acceptance inspection and/or monitor testing of wood products at the project site or from an approved supplier's stored stock (warehouse stock) destined for Iowa DOT Projects.

Each treatment plant shall have a Treatment Quality Control (QC) Program and qualified personnel to perform the treatment service. The Treatment Quality Control Program shall include testing of wood products and preservatives through the use of x-ray fluorescence spectroscopy. Quality control reports shall be maintained for a minimum of two years by the treater. Quality control reports shall be made available to the Iowa DOT upon request. Each supplier shall have a Material Handling Quality Control Program to maintain record of approved stock of treated wood material.

Inspection of treated wood products shall be conducted before and after treatment. The treater's quality control (QC) personnel shall be responsible for conducting before-and-after treatment inspection at a minimum rate of once per charge.

The treater shall be responsible for maintaining all records of quality control and verifying data, and types of treatments, and meeting the requirements of the appropriate American Wood Preservers Association (AWPA) Specifications as well as those of the Iowa DOT. The treater shall furnish treatment test results for each charge of inspected and accepted material. The treatment test results shall contain the information as prescribed in the Documentation Section and Appendix C of this IM.

When timber is processed at a lumber mill and shipped to another location for preservative treatment, the inspection prior to, and after treatment shall be performed at the preservative treatment plant and by the treater's personnel.

Before Treatment Inspection:

The treater's QC personnel shall conduct the *before-treatment inspection* in accordance with AWPA M2 Part A, Section 2. The inspection prior to treatment (i.e., untreated wood inspection) shall be made after the products are completely processed and ready for treatment. The inspection prior to treatment shall ensure that all wood products are free of incipient decay and conform to the species, grade, quality, nominal dimensions, straightness, and other requirements under which it was specified. The treater shall have the responsibility to verify that all sawn wood material contains a visible quality grade mark prior to treatment.

The treatment plant's QC personnel shall perform the following prior to treatment:

1. Quality of Material: The plant's QC personnel shall inspect the material for evidence of decay, damage, and processing defects. Wood posts shall be inspected for species, size, length, quality and straightness prior to treatment according to Section 4164.
2. Seasoning of Material: When sawed material is to be treated with waterborne preservatives, the moisture content prior to treatment, as determined by resistant type moisture meter, shall not be more than 20% if kiln-dried, or more than 23% if air-dried. The moisture content shall be measured from a depth equivalent to the required penetration up to a maximum of 1.5 inches (38 mm). Moisture reading data shall be incorporated into the QC records.
3. Quality Grade Mark: Treated wood products that require a grade shall have a legible and visible quality grade mark from an American Lumber Standards Committee accredited agency. Refer to the Wood Product Markings Section of this IM. In addition, the QC personnel shall verify that the grade of lumber is appropriate for the intended use of the product as described in Table 1.

TABLE 1: Grades for Treated Timber & Lumber

| Material | Species | Nominal Size | Grade | Moisture Content Prior to Treatment | Notes |
|------------------|----------------|------------------------|------------------|--|--------------|
| Sawed Wood Posts | Southern Pine | Per contract documents | No. 1 or better | See Section 4161 | 1, 3 |
| | Douglas Fir | Per contract documents | No. 1 or better | See Section 4161 | 1, 2, 3 |
| Wood Sign Posts | Southern Pine | 4"x4" | No. 2 Dense | See Section 4161 | |
| | | 4"x 6" | No. 1 Dense | See Section 4161 | |
| | Douglas Fir | 4"x 4" | No. 2 | See Section 4161 | 2 |
| | | 4"x 6" | Dense No. 2 | See Section 4161 | 2 |
| All other | Douglas Fir | Per contract documents | See Section 4162 | See Section 4161 | 1, 2 |
| | Southern Pine | Per contract documents | See Section 4162 | See Section 4161 | 1 |

(1) Material less than 3 ft. in length does not require a grade mark; however, a certification of grade must be provided. Round material does not require a grade.

- (2) Douglas Fir (Coastal Region) shall be incised.
- (3) Terminal posts that are 45 inches in length used for guardrails shall be stamped **MFG No. 1** to indicate that the terminal posts were cut from an original piece graded as a No. 1. Wane requirements shall be waived.

Any wood products not conforming to the Iowa DOT requirements shall not be accepted for treatment.

After-Treatment Inspection:

Inspection after treatment shall be conducted by the treater's quality control personnel in accordance with AWPA M2 Part A, Section 4. Penetration test results of preservatives shall be in conformance with the appropriate AWPA standard for the commodity and species being considered.

Retention shall be determined by x-ray fluorescence spectroscopy in accordance with AWPA A9 for waterborne preservatives and pentachlorophenol. For creosote, retention shall be determined in accordance with AWPA A6. Retention levels of preservatives shall be in conformance with the minimum preservative retention requirements table in Section 4161.03 of the Standard Specifications for the species and preservative being treated.

The treater shall perform the following after-treatment inspection:

1. Quality of Material: Material shall be inspected for any evidence of decay, processing requirements and defects, in addition to any damage to the material due to the treatment process. Wood posts shall be inspected after treatment for straightness. (Section 4164.)
2. Moisture Content: Lumber 2 inches (50 mm) or less in nominal thickness that is treated with a waterborne preservative shall be dried after treatment to a moisture content of not more than 20% if kiln-dried, or not more than 23% if air-dried unless otherwise specified.
3. Penetration & Retention Tests: Core samples shall be obtained to perform penetration and retention tests in accordance with the applicable Iowa DOT and AWPA Specifications.
4. Treatment Plant Identification Stamp: The treater shall ensure that all treated wood products bear a legible brand/stamp/tag as prescribed in the Wood Products Markings Section of this IM.
5. It is the treater's responsibility to verify that all required product markings are on the material at the end of the inspection. Refer to the Wood Product Markings Section of this IM.
6. The treater shall furnish a treatment test report according to the guidelines as described in the Documentation Section and Appendix C of this IM.

QUALITY CONTROL OF TREATMENT PROCESS

The treater shall be responsible for conducting and documenting all quality control procedures. Quality control shall be conducted before, during, and after treatment in accordance with AWPA Standard M3 Part A, and M2 Part A. The treater shall ensure that all quality control data has been properly documented and shall make quality control reports available for review.

TREATMENT INSPECTION REPORT GUIDELINES

The following information is the minimum requirements for the inspection report prepared by the approved treatment plant inspection agencies as listed in Appendix A. The treatment plant inspection agency shall furnish an inspection report for each charge of material inspected. The inspection report shall include a certification statement in which the treatment plant inspection agency certifies that the material has been inspected according to the appropriate AWPA Standards. In addition, the certification statement from the treatment inspection agency shall clearly express that the material has been inspected and it complies with the applicable Iowa DOT Specifications.

MINIMUM REQUIRED INFORMATION

General Information:

1. Name of Treatment Plant
 2. Name or Identification Number of QC Personnel Performing the Inspection
 3. Location of Treatment Plant
 4. Applicable Product Specification or Standard (**NOTE:** The material shall be inspected according to Iowa DOT Specifications and it shall be stated in the inspection report.)
 5. Charge Number(s) Inspected: If the material is inspected in lots, the inspection report shall identify the charge numbers inspected in each lot.
 6. Date of Treatment
 7. Type of Material
 8. Number of Pieces By Size
 9. Species
 10. Degree of Seasoning: Provide moisture content readings prior to treatment.
 11. Processing (incised, rough surfaced, etc.)
-

WOOD SAMPLING INSTRUCTIONS

PHYSICAL INSPECTION

Examine the charge for cleanliness, mechanical damage to individual pieces, and treatment damage such as severe checking, splitting or honeycombing. Inspect the shipment to ensure all required marks and stamps are on the material, as well as ensure all proper documentation is in order.

TREATED WOOD SAMPLING

A sample shall consist of a minimum of twenty cores per charge/treatment type.

1. Boring Instructions:

- A. Boring shall be done with a sharp increment borer which extracts a core approximately 0.20 inch in diameter. The bit shall be kept free of rust, pitch or preservative. See the Calibrating the Increment Borer Section.
 - B. Lubricate the bit with Beeswax. Penetration and removal of the borer bit will be easier if beeswax is liberally applied to the threads and shank before boring.
 - C. Borings shall be taken at the following locations on each piece of bored wood unless otherwise specified:
 - Pressure treated material, approximately midway between ends.
 - Select the edge that contains the largest amount of sapwood, with at least 0.5 inch of treated sapwood. (See the Sapwood vs. Heartwood Section).
 - Red Oak over 9 feet in length - 4 feet from either end.
 - D. In round material (poles, piling, and posts), boring shall be toward the center of the piece. In sawn material, borings shall be taken perpendicular to the face being sampled
 - E. Borings shall be taken on a random basis from pieces which represent an equal proportion of the different sizes, seasoning and location of pieces in the bundles for the charge being sampled.
 - F. Sampling should be on a random basis so that all pieces available for sampling within a charge have an equal chance of being represented in the sample.
 - G. Knots, grain deviation around knots, pitch pockets, shakes, splits, irregular slope of grain and reaction wood (compression or tension) shall be avoided in selecting the exact location for the boring.
 - H. For incised material, borings shall be taken at a point midway on a line diagonally between adjacent incisions. When it is apparent from visual inspection that the depth and density of
-

incisions is not uniform on all faces of sawn material, borings shall be taken from the face that has less dense or shallower incising.

- I. The core shall be discarded if a borer passes through an internal defect, or if the core is crushed, or smeared with treating solution so the penetration cannot be determined.
- J. Clean borer bit with WD-40. Spray WD-40 on the outside as well as the inside of the bit and on the extractor at the end of sample collection. Wipe clean. Replace cap on borer bit to protect the threads.
- K. If the increment borer becomes dull or nicked, return the bit to the central lab for sharpening. A borer is dull if it does not easily engage the wood and if it will not cut a clean edged hole when rotated on a sheet of paper.

2. Core Handling:

The following procedure shall be used in handling increment borer cores.

- A. As the increment borer penetrates the material, ensure that it is perpendicular to the surface being bored or is directed toward the center as required by the type of material.
- B. Remove the core from the increment borer carefully to avoid breaking or damaging the core.
- C. For material treated with CCA, ACZA, and Copper Naphthenate skip to Step F. For material treated with Pentachlorophenol and Creosote, follow Steps D and E.
- D. Measure the penetration of treatment to the nearest tenth of an inch of Pentachlorophenol and Creosote immediately after sampling. The depth of penetration shall be the distance from the outer end of the core. Using a ruler, measure the depth of penetration on each core to the nearest annual ring of untreated wood. Record these measurements on the Penetration of Penta & Creosote Worksheet as shown in this Appendix.
- E. After measuring penetration, cut the treated edge of the core to prevent the preservative from migrating into the untreated part of the core. For Douglas Fir, cut the assay zone of 0.6 in. For Southern Pine, the assay zone is 1.0 in. Do not discard the remaining portion of the core. Keep both pieces of the cores together.
- F. Place the cores on the sample holding tray or in individual protective plastic containers. Do not allow cores treated with Pentachlorophenol, Copper Naphthenate or Creosote to come in contact with paper or any other absorbent material as it may extract some of the oil and preservative resulting in unreliable readings.

CALIBRATING THE INCREMENT BORER

The borer shall be calibrated at least once a month, and after sharpening.

Method 1: Calibrating New Increment Borer Bit

This method shall be used on new or unworn bits. A Starrett Taper Gage (Cat. No. 269A), or equivalent, shall be used, reading to the nearest 0.001 inch. The bit diameter shall be considered as the average of two readings. Complete the New Bit Calibration Worksheet as shown in this Appendix.

Method 2: Calibrating by Increment Borer Cores

At least 20 borings shall be measured. Preferably this shall be done immediately after extracting each core from wood at normal temperatures. If measurements cannot be made immediately, the cores shall be placed in a clean, tightly sealed container (bottle, individual containers, etc.) and they shall be measured immediately on return to the laboratory.

Only well-cut cores shall be used and care should be taken to measure at a point within the assay sampling zone (0.6 in for Douglas Fir, 1.0 in for Southern Pine), free from knots and resin accumulations.

Use a machinist's micrometer, calipers or equivalent to read the measurement to the nearest 0.001 inch. Fill out a Used Bit Calibration Worksheet.

- A. Measure the diameter of each core across the grain. Record your measurement.
- B. Measure the diameter of each core along the grain. Record your measurement.
- C. Calculate the average of the two diameters from measurements A. and B. for each core.
- D. Calculate the calibrated diameter of the borer by dividing the total sum of the average diameters by the number of cores.

SAPWOOD VS. HEARTWOOD

The heartwood in a tree is the area of growth near the heart of the tree trunk and it is very dense and very resistant to decay. The heartwood does not accept treatment and it will not absorb chemicals when treated. The sapwood is newer growth of the wood, and it is less dense and susceptible to decay. It does accept chemical treatment to prevent decay.

When a core sample of wood is tested for penetration, the amount of treatment penetration is measured in inches from the outer face of the core or as a percentage of sapwood penetration. A wood post that contains a little sapwood and more heartwood will retain less treatment but the heartwood itself will prevent decay. A post that contains more sapwood needs to have a greater amount of treatment retention and penetration, since sapwood will decay considerably without treatment.

When sampling treated sawn wood products, the core must be taken from the edge that contains the largest amount of sapwood and towards the heart of the lumber. Figures A and B show the correct way to take a core from the sawn wood product. Before drilling a core in the wood, the inspector should look at the end of the post to decide which side will contain the least amount of heartwood. The test results for these cores will give a better indication of the amount of treatment retained by the wood product.

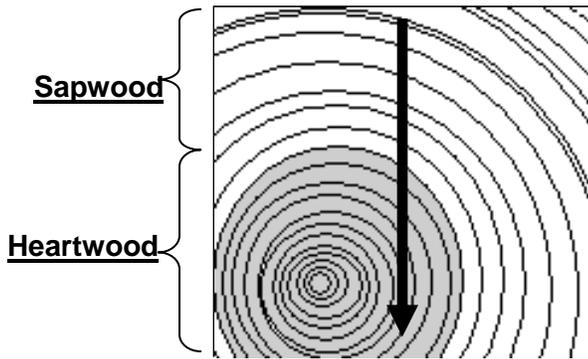


Figure A: Correct

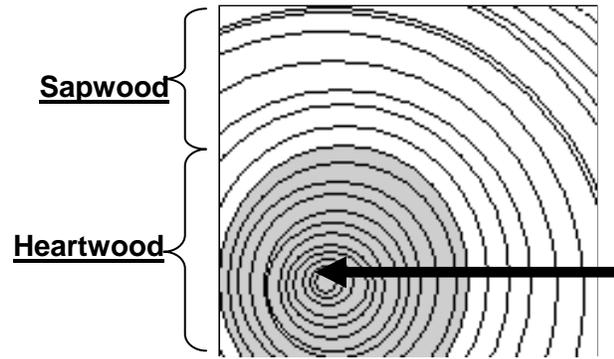


Figure B: Correct

Figures C and D show the incorrect way to drill a core from a sawn wood post. In this case, the core would be almost all heartwood and the test would result in very little preservative retained, giving a misleading result.

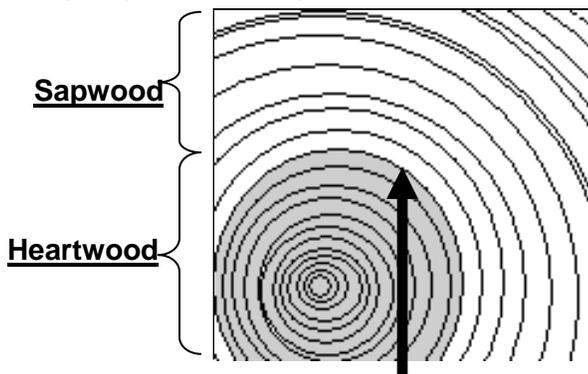


Figure C: Incorrect

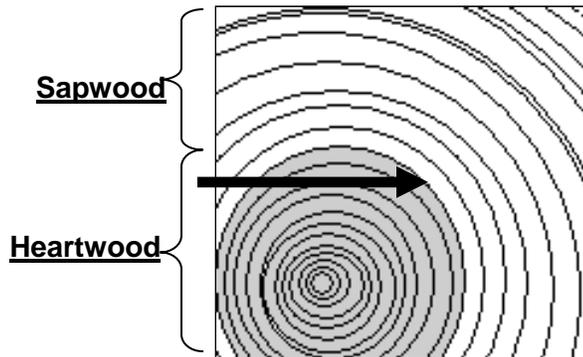


Figure D: Incorrect

For material that is round, the core should be taken perpendicular to the surface and towards the center of the post, as shown in Figure E.

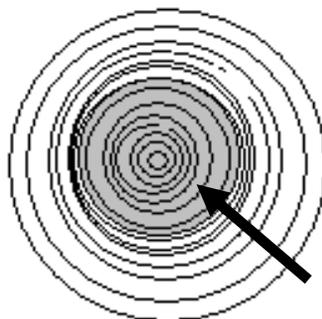


Figure E: Correct

PLUGGING TEST HOLES

All increment borer holes should be promptly plugged with treated, tight-fitting wooden plugs or other material not susceptible to insect attack and decay. Wooden plugs shall be treated with a preservative similar in performance to that of the product treatment. It may not be practical to use wooden plugs for sawn material of a thickness less than two inches nominal or in plywood due to the risk of damage. Care should be used in selecting the proper diameter plugs, and in driving to avoid breaking the plug or splitting the piece.

SAMPLE IDENTIFICATION

Whether the samples are placed in individual protective containers or in sample holding trays, the direction of the outer edge (bark side) of the core(s) shall be clearly indicated.

For each sample, fill out an Identification of Wood Boring Sample.

IDENTIFICATION OF TREATED WOOD SAMPLE FOR TEST

Senders No. _____ Intended Use _____
 Date Sampled _____ Sampled By _____
 (Name) (Address)
 Project No. _____ County _____
 Supplier _____ Address _____
 Treatment Plant _____ Address _____
 Grade Stamp Yes No Bit Calibration Diameter** _____
 Identification Stamp Yes No Date of Last Calibration _____

Dist. #1 Dist. #2 Dist. #3 Dist. #4 Dist. #5 Dist. #6

Report to District(s) [Check Appropriate Box (es)]

Report to Residency (Write Appropriate Residency) _____

Report to Other(s): _____

Species: Southern Yellow Pine (SYP) Pine (PN) (Other than SYP, round wood fence posts only)
 Douglas Fir (DF) Other, specify: _____

Type of Treatment CCA Creosote
 ACZA Copper Naph
 Penta

PLEASE FILL OUT TABLE BELOW COMPLETELY.

| Qty. | Size | Charge Number* | Amount of Treatment* | Lumber Grade* | Miscellaneous Information |
|------|------|----------------|----------------------|---------------|---------------------------|
| | | | | | |

"X" Sample Type

Monitor (MO)
 Proj. Information (PN)
 Warehouse Stock (WS)
 Research Project (RP)
 Dept. Information (DI)

Any Additional Information:

NOTES:

- Attach copy of inspection report from the treatment plant for treatment charge/lot/batch number sampled.
- Collect a minimum of twenty cores.
- Attach penetration worksheets for pentachlorophenol and creosote samples.

*Charge number, amount of treatment, and lumber grade information can be obtained from the identification brand/stamp/tag, grade stamps and/or from the inspection report.

**Attach copy of bit calibration worksheet.

LAB USE ONLY

LAB NUMBER: AHW - _____ Date Received: _____
 TEST RESULTS: Date Reported: _____
 Penetration: _____ Disposition: COMPLY DOES NOT COMPLY
 Retention: _____

NEW BIT CALIBRATION WORSHEET

Calibrate new bits prior to first use.

New Increment Borer Bit

Date: _____

Reading 1: _____ Reading 2: _____

$$\text{Calibrated Bit Diameter} = \frac{\text{Reading 1} + \text{Reading 2}}{2} = \boxed{}$$

USED BIT CALIBRATION WORKSHEET

Calibrate new bits prior to first use.

By Increment Borer Cores

Date: _____

Calibrated by: _____

| | A. Measurement across Grain | B. Measurement along Grain | Average $\frac{A+B}{2}$ |
|----|--|---------------------------------------|---|
| 1 | _____ | _____ | _____ |
| 2 | _____ | _____ | _____ |
| 3 | _____ | _____ | _____ |
| 4 | _____ | _____ | _____ |
| 5 | _____ | _____ | _____ |
| 6 | _____ | _____ | _____ |
| 7 | _____ | _____ | _____ |
| 8 | _____ | _____ | _____ |
| 9 | _____ | _____ | _____ |
| 10 | _____ | _____ | _____ |
| 11 | _____ | _____ | _____ |
| 12 | _____ | _____ | _____ |
| 13 | _____ | _____ | _____ |
| 14 | _____ | _____ | _____ |
| 15 | _____ | _____ | _____ |
| 16 | _____ | _____ | _____ |
| 17 | _____ | _____ | _____ |
| 18 | _____ | _____ | _____ |
| 19 | _____ | _____ | _____ |
| 20 | _____ | _____ | _____ |

Total Sum of Averages =

Calibrated Bit Diameter = $\frac{\text{Total Sum of Averages}}{20}$ =

PENETRATION WORKSHEET FOR PENTA & CREOSOTE

Sender's Sample No. _____ Date Sampled: _____

Preservative Type: Creosote Pentachlorophenol

Measure and record the penetration of preservative to the nearest 0.1 inch.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Cut the assay zone of each core to 1 inch for Southern Pine or 0.6 inch for Douglas Fir. Do not discard the remaining portion of the core. Keep both pieces of the core together and place them in the sample holder or in individual plastic protective containers. Be sure to indicate the outer edge of the core marked on the sample holder or on each container.