

STATE OF MICHIGAN
DEPARTMENT OF TRANSPORTATION

CHANGE NOTICE NO. 1
to
CONTRACT NO. **591B6600141**
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF CONTRACTOR	PRIMARY CONTACT	EMAIL
Burt Forest Products PO Box 7339 Ann Arbor, MI 48107-7388	Wellington Burt	wburt@burtforest.com
	PHONE	CONTRACTOR'S TAX ID NO. (LAST FOUR DIGITS ONLY)
	734-663-8585	0258

STATE CONTACTS	AGENCY	NAME	PHONE	EMAIL
PROGRAM MANAGER / CCI	MDOT	Gene Pline	517 930-7821	Plineg2@michigan.gov
CONTRACT ADMINISTRATOR	MDOT	Laura Dotson	517 373-2134	Dotsonl2@michigan.gov

CONTRACT SUMMARY

DESCRIPTION: Treated Wood Sign Posts-Michigan Department of Transportation			
INITIAL EFFECTIVE DATE	INITIAL EXPIRATION DATE	INITIAL AVAILABLE OPTIONS	EXPIRATION DATE BEFORE CHANGE(S) NOTED BELOW
3/16/2016	3/15/2019	2, 1 year	
PAYMENT TERMS		DELIVERY TIMEFRAME	
NET 30 Days			
ALTERNATE PAYMENT OPTIONS			EXTENDED PURCHASING
<input type="checkbox"/> P-card <input type="checkbox"/> Direct Voucher (DV) <input type="checkbox"/> Other			<input type="checkbox"/> Yes <input type="checkbox"/> No
MINIMUM DELIVERY REQUIREMENTS			

DESCRIPTION OF CHANGE NOTICE

EXERCISE OPTION?	LENGTH OF OPTION	EXERCISE EXTENSION?	LENGTH OF EXTENSION	REVISED EXP. DATE
<input type="checkbox"/>		<input type="checkbox"/>		
CURRENT VALUE	VALUE OF CHANGE NOTICE	ESTIMATED AGGREGATE CONTRACT VALUE		
\$1,100,250.30	0.00	\$1,100,250.30		
DESCRIPTION: Effective March 16, 2016, this contract is hereby changed to reflect Payment Terms of Net 30 Days.				
All other terms, conditions, specifications, and pricing remain the same. Per Contractor and Agency agreement.				

FOR THE CONTRACTOR:

Burt Forest Products Company, Inc.

Company Name

Wellington Burt

Authorized Agent Signature

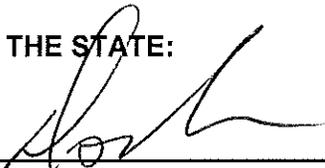
Wellington Burt

Authorized Agent (Print or Type)

March 15, 2016

Date

FOR THE STATE:


Signature

Demetrius A. Parker
P.E. Administrator
Michigan Department of Transportation

Agency

3-18-16

Date

STATE OF MICHIGAN
DEPARTMENT OF TRANSPORTATION
Purchasing Unit
425 W. Ottawa
Lansing, Michigan 48933

CONTRACT NO. 591B6600141
Between

THE DEPARTMENT OF TRANSPORTATION

And

NAME & ADDRESS OF VENDOR Burt Forest Products PO Box 7339 Ann Arbor, MI 48107-7388 Email: wburt@burforest.com	TELEPHONE (734) 663-8585 Contact: Wellington Burt
Treated Wood Sign Posts-Michigan Department of Transportation	
CONTRACT PERIOD: From: 3/16/2016 To: 3/15/2019	
TERMS <div style="display: flex; justify-content: space-around;"> <u>Net 45 dats</u> <u>2, 1 Year Options</u> </div>	
MISCELLANEOUS INFORMATION: <p>The terms and conditions of this Contract, including any applicable information from the vendor's proposal to RFP-059116B0006841 dated 1/22/2016 are attached. In the event of any conflicts between the specifications, terms and conditions indicated by the State and those indicated by the vendor, those of the State take precedence.</p> <p>Est. Contract Value: \$1,100,250.30</p>	

FOR THE VENDOR:

Burt Forest Products

 Firm Name

 Authorized Agent Signature

 Authorized Agent (Print or Type)

 Date

FOR THE STATE:

 Signature
Demetrius A. Parker, P.E.

 Name
 Administrator, Michigan Department of
 Transportation

 Title

 Date

STATE OF MICHIGAN

Contract No. 591B6600141
Treated Wood Sign Posts

EXHIBIT A STATEMENT OF WORK CONTRACT ACTIVITIES

BACKGROUND

This Contract is for various sizes of wood posts for the State of Michigan, Department of Transportation (MDOT). Exact quantities to be purchased are unknown, however the Contractor will be required to furnish all such materials and services as may be ordered during this contact period. Quantities specified, if any, are estimates based on prior purchases and the State is not obligated to purchase in these or any other quantities.

SCOPE

Contractor will provide various sizes of wood posts to the drop locations listed in Attachment A, Price Proposal per Attachment B, Specifications.

REQUIREMENTS

1. General Requirements

1.1. Product Specifications

All commodities to be furnished hereunder shall conform to the specifications as noted in Attachment A, Price Proposal per Attachment B, Specifications.

1.2. Warranties

There are no minimum warranty requirements

1.3. Recall Requirements and Procedures

The Contractor agrees to correct any product deficiencies.

1.4. Quality Assurance Program

All Wood Posts are in accordance with MDOT Specifications. During manufacture, the wood quality, incising, drilling, and pressure treatment of this material is monitored closely. As a MDOT Certified Supplier of this material, Burt Forest Products provides Certificate of Treatment forms on all MDOT shipments for the purpose of Quality Assurance.

1.5. Reserved

2. Service Levels

2.1. Time Frames

All Contract Activities must be delivered within 30 calendar days from receipt of order. The receipt of order date is pursuant to Section 2, Notices, of the Standard Contract Terms.

2.2. Delivery

Delivery will be expected within 7 calendar days upon date of order. Delivery will be made to the drop point locations listed in Attachment A, Price Proposal.

2.3. Reserved

2.4. Reserved

2.5. Reserved

2.6. Reserved

2.7. Reserved

2.8. Meetings

The State may request meetings as it deems appropriate.

3. Staffing

3.1. Contractor Representative

The Contractor must appoint a [Product Representative] individuals, specifically assigned to State of Michigan accounts, that will respond to State inquiries regarding the Contract Activities, answering questions related to ordering and delivery, etc. (the "Contractor Representative").

The Contractor must notify the Contract Administrator at least 14] calendar days before removing or assigning a new Contractor Representative.

The Contractor's Product Representatives are:

Mike Cranston (73)-663-8585

And

Wellington Burt, (734) 663-8585

3.2. Reserved

3.3. Reserved

3.4. Reserved

3.5. Reserved

3.6. Reserved

3.7. Reserved

3.8. Reserved

4. Pricing

4.1. Price Term

Pricing is firm for a 365 day period ("Pricing Period"). The first pricing period begins on the Effective Date. Adjustments may be requested, in writing, by either party and will take effect no earlier than the next Pricing Period.

4.2. Price Changes

Adjustments will be based on changes in actual Contractor costs. Any request must be supported by written evidence documenting the change in costs. The State may consider sources, such as the Consumer Price Index; Producer Price Index; other pricing indices as needed; economic and industry data; manufacturer or supplier letters noting the increase in pricing; and any other data the State deems relevant.

Following the presentation of supporting documentation, both parties will have 30 days to review the information and prepare a written response. If the review reveals no need for modifications, pricing will remain unchanged unless mutually agreed to by the parties. If the review reveals that changes are needed, both parties will negotiate such changes, for no longer than 30 days, unless extended by mutual agreement.

The Contractor remains responsible for Contract Activities at the current price for all orders received before the mutual execution of a Change Notice indicating the start date of the new Pricing Period.

5. Ordering

5.1. Authorizing Document

The appropriate authorizing document for the Contract will be a State Issued Purchase Order which must be approved by the Program Manager to order any deliverables under the Contract.

After receipt of such an order, the Contractor will verify correct pricing, size and other details. Then, the Contractor will contact MDOT to advise of intended shipment date.

5.2 Order Verification

The Contractor must have internal controls, approved by MDOT to verify abnormal orders and to ensure that only authorized individuals place orders.

The Contractor will verify correctness and then contact MDOT. Any abnormalities are correct at this point.

6. Delivery

6.1. Delivery Programs

Delivery is made by flatbed truck, with 4" x 6" material in bundles of 24 pieces, and 6" x 8" material in bundles of 12 pieces. 4" thick stickers are used between bundles to allow for ease of forklift unloading.

6.2. Packaging and Palletizing

Posts to be shipped on truck with removable side racks and on minimum 4" stickers for unloading with a forklift. Shipment shall be banded. The posts will be steel banded in bundles of 100 each for the 7' posts and bundles of 50 each for the 11', 12', 13', 14', 16', 18', and 20' posts.

4" x 6" posts are in bundles of 24, 6" x 8" posts are in bundles of 12 pieces. The bundles are banded, with 4" stickers.

The Contractor shall provide packaging that most closely meets these packaging sizes. Packaging and containers, etc., shall be in accordance with supplier's commercial practice and shall meet the requirements of Department of Transportation (D.O.T.) and rail and motor carrier freight classifications in effect at time of shipment, which will permit application of the lowest freight rate."

7. Acceptance

7.1. Acceptance, Inspection and Testing

The State will accept orders after verifying the quantity, type, and condition of the packaging.

7.2. Reserved

8. Invoice and Payment

8.1. Invoice Requirements

All invoices submitted to the State must include: (a) date; (b) purchase order; (c) quantity; (d) description of the Contract Activities; (e) unit price; (f) shipping cost (if any); and (g) total price.

Invoices must be submitted to:

Mike Fiero
Michigan Department of Transportation
7575 Crowner Dr.
Lansing, MI 48909

8.2. Payment Methods

The State will make payment for Contract Activities via Electronic Funds Transfer (EFT).

8.3. Procedure

As required by MCL 18.1283, the Contractor must electronically register with the State at www.michigan.gov/cpexpress to receive EFT payments.

9. Reserved

10. Reserved

11. Reserved

12. Additional Requirements

12.1. Environmental and Energy Efficient Products

Untreated wood is a 100% renewable and recyclable resource. Treated wood can be recycled for other end uses. The steel and plastic banding used in packaging can be 100% recycled. 2" x 4" x 4' and 4" x 4" x 4' wood bundle stickers can be recycled for reuse 100%

12.2. Hazardous Chemical Identification

In accordance with the federal Emergency Planning and Community Right-to-Know Act, 42 USC 11001, *et seq.*, as amended, the Contractor must provide a Material Safety Data Sheet listing any hazardous chemicals, as defined in 40 CFR §370.2, to be delivered. Each hazardous chemical must be properly identified, including any applicable identification number, such as a National Stock Number or Special Item Number.

12.3. Mercury Content

Pursuant to MCL 18.1261d, mercury-free products must be procured when possible. The Contractor must explain if it intends to provide products containing mercury, the amount or concentration of mercury, and whether cost competitive alternatives exist. If a cost competitive alternative does exist, the Contractor must provide justification as to why the particular product is essential. All products containing mercury must be labeled as containing mercury.

The Burt Forest Products are mercury free,

Bidder Response:

These products are mercury free.

12.4. Brominated Flame Retardants

The State prefers to purchase products that do not contain brominated flame retardants (BFRs) whenever possible. The Contractor must disclose whether the products contain BFRs.

The Burt Forest products do not contain BFRs.



STATE OF MICHIGAN

STANDARD CONTRACT TERMS

This STANDARD CONTRACT ("Contract") is agreed to between the State of Michigan (the "State") and Burt Forest Products Company, Inc. ("Contractor"), a Michigan Corporation. This Contract is effective on March 16, 2016 ("Effective Date"), and unless terminated, expires on March 15, 2019.

This Contract may be renewed for up to two (2) additional one (1) year period(s). Renewal must be by written agreement of the parties and will automatically extend the Term of this Contract.]

The parties agree as follows:

- Duties of Contractor.** Contractor must perform the services and provide the deliverables described in **Exhibit A – Statement of Work** (the "Contract Activities"). An obligation to provide delivery of any commodity is considered a service and is a Contract Activity.

Contractor must furnish all labor, equipment, materials, and supplies necessary for the performance of the Contract Activities, and meet operational standards, unless otherwise specified in Exhibit A.

Contractor must: (a) perform the Contract Activities in a timely, professional, safe, and workmanlike manner consistent with standards in the trade, profession, or industry; (b) meet or exceed the performance and operational standards, and specifications of the Contract; (c) provide all Contract Activities in good quality, with no material defects; (d) not interfere with the State's operations; (e) obtain and maintain all necessary licenses, permits or other authorizations necessary for the performance of the Contract; (f) cooperate with the State, including the State's quality assurance personnel, and any third party to achieve the objectives of the Contract; (g) return to the State any State-furnished equipment or other resources in the same condition as when provided when no longer required for the Contract; (h) not make any media releases without prior written authorization from the State; (i) assign to the State any claims resulting from state or federal antitrust violations to the extent that those violations concern materials or services supplied by third parties toward fulfillment of the Contract; (j) comply with all State physical and IT security policies and standards which will be made available upon request; and (k) provide the State priority in performance of the Contract except as mandated by federal disaster response requirements. Any breach under this paragraph is considered a material breach.

Contractor must also be clearly identifiable while on State property by wearing identification issued by the State, and clearly identify themselves whenever making contact with the State.

- Notices.** All notices and other communications required or permitted under this Contract must be in writing and will be considered given and received: (a) when verified by written receipt if sent by courier; (b) when actually received if sent by mail without verification of receipt; or (c) when verified by automated receipt or electronic logs if sent by facsimile or email.

<p>If to State: Laura Dotson MDOT Purchasing 425 W. Ottawa Lansing, MI 48933 Dotsonl2@michigan.gov (517) 373-2134</p>	<p>If to Contractor: Wellington Burt 227 Felch Street, P.O. Box 7389 Ann Arbor, MI 48107-7389 wburt@burtforest.com 734-663-8585</p>
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3. **Contract Administrator.** The Contract Administrator for each party is the only person authorized to modify any terms of this Contract, and approve and execute any change under this Contract (each a "Contract Administrator"):

State:	Contractor:
Laura Dotson MDOT Purchasing 425 W. Ottawa Lansing, MI 48933 Dotsonl2@michigan.gov (517) 373-2134	Wellington Burt 227 Felch Street, P.O. Box 7389 Ann Arbor, MI 48107-7389 wburt@burtforest.com 734-663-8585

4. **Program Manager.** The Program Manager for each party will monitor and coordinate the day-to-day activities of the Contract (each a "Program Manager"):

State:	Contractor:
Gene Pline 7575 Crowner Dr. Lansing, MI 48909 PlineG2@michigan.gov 517- 930-7821	Mike Cranston 227 Felch Street, P.O. Box 7389 Ann Arbor, MI 48107-7389 mike@burtforest.com 734-663-8585

5. **Performance Guarantee.** Contractor must at all times have financial resources sufficient, in the opinion of the State, to ensure performance of the Contract and must provide proof upon request. The State may require a performance bond (as specified in Exhibit A) if, in the opinion of the State, it will ensure performance of the Contract.
6. **Insurance Requirements.** Contractor must maintain the insurances identified below and is responsible for all deductibles. All required insurance must: (a) protect the State from claims that may arise out of, are alleged to arise out of, or result from Contractor's or a subcontractor's performance; (b) be primary and non-contributing to any comparable liability insurance (including self-insurance) carried by the State; and (c) be provided by a company with an A.M. Best rating of "A" or better, and a financial size of VII or better.

Required Limits	Additional Requirements
Commercial General Liability Insurance	
<u>Minimal Limits:</u> \$1,000,000 Each Occurrence Limit \$1,000,000 Personal & Advertising Injury Limit \$2,000,000 General Aggregate Limit \$2,000,000 Products/Completed Operations <u>Deductible Maximum:</u> \$50,000 Each Occurrence	Contractor must have their policy endorsed to add "the State of Michigan, its departments, divisions, agencies, offices, commissions, officers, employees, and agents" as additional insureds using endorsement CG 20 10 11 85, or both CG 2010 07 04 and CG 2037 07 0.
Automobile Liability Insurance	
<u>Minimal Limits:</u> \$1,000,000 Per Occurrence	Contractor must have their policy: (1) endorsed to add "the State of Michigan, its departments, divisions, agencies, offices, commissions, officers, employees, and agents" as additional insureds; and (2) include Hired and Non-Owned Automobile coverage.
Employers Liability Insurance	
<u>Minimal Limits:</u> \$500,000 Each Accident \$500,000 Each Employee by Disease \$500,000 Aggregate Disease.	

If any of the required policies provide **claims-made** coverage, the Contractor must: (a) provide coverage with a retroactive date before the effective date of the contract or the beginning of Contract Activities; (b) maintain coverage and provide evidence of coverage for at least three (3) years after completion of the Contract Activities; and (c) if coverage is canceled or not renewed, and not replaced with another claims-made policy form with a retroactive date prior to the contract effective date, Contractor must purchase extended reporting coverage for a minimum of three (3) years after completion of work.

Contractor must: (a) provide insurance certificates to the Contract Administrator, containing the agreement or purchase order number, at Contract formation and within 20 calendar days of the expiration date of the applicable policies; (b) require that subcontractors maintain the required insurances contained in this Section; (c) notify the Contract Administrator within 5 business days if any insurance is cancelled; and (d) waive all rights against the State for damages covered by insurance. Failure to maintain the required insurance does not limit this waiver.

This Section is not intended to and is not be construed in any manner as waiving, restricting or limiting the liability of either party for any obligations under this Contract (including any provisions hereof requiring Contractor to indemnify, defend and hold harmless the State).

7. **Reserved.**

8. **Reserved.**

9. **Independent Contractor.** Contractor is an independent contractor and assumes all rights, obligations and liabilities set forth in this Contract. Contractor, its employees, and agents will not be considered employees of the State. No partnership or joint venture relationship is created by virtue of this Contract. Contractor, and not the State, is responsible for the payment of wages, benefits and taxes of Contractor's employees and any subcontractors. Prior performance does not modify Contractor's status as an independent contractor. Contractor hereby acknowledges that the State is and will be the sole and exclusive owner of all right, title, and interest in the Contract Activities and all associated intellectual property rights, if any. Such Contract Activities are works made for hire as defined in Section 101 of the Copyright Act of 1976. To the extent any Contract Activities and related intellectual property do not qualify as works made for hire under the Copyright Act, Contractor will, and hereby does, immediately on its creation, assign, transfer and otherwise convey to the State, irrevocably and in perpetuity, throughout the universe, all right, title and interest in and to the Contract Activities, including all intellectual property rights therein.

10. **Subcontracting.** Contractor may not delegate any of its obligations under the Contract without the prior written approval of the State. Contractor must notify the State at least 90 calendar days before the proposed delegation, and provide the State any information it requests to determine whether the delegation is in its best interest. If approved, Contractor must: (a) be the sole point of contact regarding all contractual matters, including payment and charges for all Contract Activities; (b) make all payments to the subcontractor; and (c) incorporate the terms and conditions contained in this Contract in any subcontract with a subcontractor. Contractor remains responsible for the completion of the Contract Activities, compliance with the terms of this Contract, and the acts and omissions of the subcontractor. The State, in its sole discretion, may require the replacement of any subcontractor.

11. **Staffing.** The State's Contract Administrator may require Contractor to remove or reassign personnel by providing a notice to Contractor.

12. **Background Checks.** Upon request, Contractor must perform background checks on all employees and subcontractors and its employees prior to their assignment. The scope is at the discretion of the State and documentation must be provided as requested. Contractor is responsible for all costs associated with the requested background checks. The State, in its sole discretion, may also perform background checks.

13. **Assignment.** Contractor may not assign this Contract to any other party without the prior approval of the State. Upon notice to Contractor, the State, in its sole discretion, may assign in whole or in part, its rights or responsibilities under this Contract to any other party. If the State determines that a novation of the Contract to a third party is necessary, Contractor will agree to the novation and provide all necessary documentation and signatures.

14. **Change of Control.** Contractor will notify, at least 90 calendar days before the effective date, the State of a change in Contractor's organizational structure or ownership. For purposes of this Contract, a change in control means any of the following: (a) a sale of more than 50% of Contractor's stock; (b) a sale of substantially all of Contractor's assets; (c) a change in a majority of Contractor's board members; (d) consummation of a merger or consolidation of Contractor with any other entity; (e) a change in ownership through a transaction or series of transactions; (f) or the board (or the stockholders) approves a plan of complete liquidation. A change of control does not include any consolidation or merger effected exclusively to change the domicile of Contractor, or any transaction or series of transactions principally for bona fide equity financing purposes.

In the event of a change of control, Contractor must require the successor to assume this Contract and all of its obligations under this Contract.

15. **Ordering.** Contractor is not authorized to begin performance until receipt of authorization as identified in Exhibit A.
16. **Acceptance.** Contract Activities are subject to inspection and testing by the State within 30 calendar days of the State's receipt of them ("**State Review Period**"), unless otherwise provided in Exhibit A. If the Contract Activities are not fully accepted by the State, the State will notify Contractor by the end of the State Review Period that either: (a) the Contract Activities are accepted, but noted deficiencies must be corrected; or (b) the Contract Activities are rejected. If the State finds material deficiencies, it may: (i) reject the Contract Activities without performing any further inspections; (ii) demand performance at no additional cost; or (iii) terminate this Contract in accordance with Section 23, Termination for Cause.

Within 10 business days from the date of Contractor's receipt of notification of acceptance with deficiencies or rejection of any Contract Activities, Contractor must cure, at no additional cost, the deficiency and deliver unequivocally acceptable Contract Activities to the State. If acceptance with deficiencies or rejection of the Contract Activities impacts the content or delivery of other non-completed Contract Activities, the parties' respective Program Managers must determine an agreed to number of days for re-submission that minimizes the overall impact to the Contract. However, nothing herein affects, alters, or relieves Contractor of its obligations to correct deficiencies in accordance with the time response standards set forth in this Contract.

If Contractor is unable or refuses to correct the deficiency within the time response standards set forth in this Contract, the State may cancel the order in whole or in part. The State, or a third party identified by the State, may perform the Contract Activities and recover the difference between the cost to cure and the Contract price plus an additional 10% administrative fee.
17. **Delivery.** Contractor must deliver all Contract Activities F.O.B. destination, within the State premises with transportation and handling charges paid by Contractor, unless otherwise specified in Exhibit A. All containers and packaging becomes the State's exclusive property upon acceptance.
18. **Risk of Loss and Title.** Until final acceptance, title and risk of loss or damage to Contract Activities remains with Contractor. Contractor is responsible for filing, processing, and collecting all damage claims. The State will record and report to Contractor any evidence of visible damage. If the State rejects the Contract Activities, Contractor must remove them from the premises within 10 calendar days after notification of rejection. The risk of loss of rejected or non-conforming Contract Activities remains with Contractor. Rejected Contract Activities not removed by Contractor within 10 calendar days will be deemed abandoned by Contractor, and the State will have the right to dispose of it as its own property. Contractor must reimburse the State for costs and expenses incurred in storing or effecting removal or disposition of rejected Contract Activities.
19. **Warranty Period.** The warranty period, if applicable, for Contract Activities is a fixed period commencing on the date specified in Exhibit A. If the Contract Activities do not function as warranted during the warranty period the State may return such non-conforming Contract Activities to the Contractor for a full refund.
20. **Terms of Payment.** Invoices must conform to the requirements communicated from time-to-time by the State. All undisputed amounts are payable within 45 days of the State's receipt. Contractor may only charge for Contract Activities performed as specified in Exhibit A. Invoices must include an itemized statement of all charges. The State is exempt from State sales tax for direct purchases and may be exempt from federal excise tax, if Services purchased under this Agreement are for the State's exclusive use. Notwithstanding the foregoing, all prices are inclusive of taxes, and Contractor is responsible for all sales, use and excise taxes, and any other similar taxes, duties and charges of any kind imposed by any federal, state, or local governmental entity on any amounts payable by the State under this Contract.

The State has the right to withhold payment of any disputed amounts until the parties agree as to the validity of the disputed amount. The State will notify Contractor of any dispute within a reasonable time.

Payment by the State will not constitute a waiver of any rights as to Contractor's continuing obligations, including claims for deficiencies or substandard Contract Activities. Contractor's acceptance of final payment by the State constitutes a waiver of all claims by Contractor against the State for payment under this Contract, other than those claims previously filed in writing on a timely basis and still disputed.

The State will only disburse payments under this Contract through Electronic Funds Transfer (EFT). Contractor must register with the State at <http://www.michigan.gov/cpexpress> to receive electronic fund transfer payments. If Contractor does not register, the State is not liable for failure to provide payment. Without prejudice to any other right or remedy it may have, the State reserves the right to set off at any time any amount then due and owing to it by Contractor against any amount payable by the State to Contractor under this Contract.

21. **Liquidated Damages.** Liquidated damages, if applicable, will be assessed as described in Exhibit A.
22. **Stop Work Order.** The State may suspend any or all activities under the Contract at any time. The State will provide Contractor a written stop work order detailing the suspension. Contractor must comply with the stop work order upon receipt. Within 90 calendar days, or any longer period agreed to by Contractor, the State will either: (a) issue a notice authorizing Contractor to resume work, or (b) terminate the Contract or purchase order. The State will not pay for Contract Activities, Contractor's lost profits, or any additional compensation during a stop work period.
23. **Termination for Cause.** The State may terminate this Contract for cause, in whole or in part, if Contractor, as determined by the State: (a) endangers the value, integrity, or security of any location, data, or personnel; (b) becomes insolvent, petitions for bankruptcy court proceedings, or has an involuntary bankruptcy proceeding filed against it by any creditor; (c) engages in any conduct that may expose the State to liability; (d) breaches any of its material duties or obligations; or (e) fails to cure a breach within the time stated in a notice of breach. Any reference to specific breaches being material breaches within this Contract will not be construed to mean that other breaches are not material.

If the State terminates this Contract under this Section, the State will issue a termination notice specifying whether Contractor must: (a) cease performance immediately, or (b) continue to perform for a specified period. If it is later determined that Contractor was not in breach of the Contract, the termination will be deemed to have been a Termination for Convenience, effective as of the same date, and the rights and obligations of the parties will be limited to those provided in Section 24, Termination for Convenience.

The State will only pay for amounts due to Contractor for Contract Activities accepted by the State on or before the date of termination, subject to the State's right to set off any amounts owed by the Contractor for the State's reasonable costs in terminating this Contract. The Contractor must pay all reasonable costs incurred by the State in terminating this Contract for cause, including administrative costs, attorneys' fees, court costs, transition costs, and any costs the State incurs to procure the Contract Activities from other sources.

24. **Termination for Convenience.** The State may immediately terminate this Contract in whole or in part without penalty and for any reason, including but not limited to, appropriation or budget shortfalls. The termination notice will specify whether Contractor must: (a) cease performance of the Contract Activities immediately, or (b) continue to perform the Contract Activities in accordance with Section 25, Transition Responsibilities. If the State terminates this Contract for convenience, the State will pay all reasonable costs, as determined by the State, for State approved Transition Responsibilities.
25. **Transition Responsibilities.** Upon termination or expiration of this Contract for any reason, Contractor must, for a period of time specified by the State (not to exceed 90 calendar days), provide all reasonable transition assistance requested by the State, to allow for the expired or terminated portion of the Contract Activities to continue without interruption or adverse effect, and to facilitate the orderly transfer of such Contract Activities to the State or its designees. Such transition assistance may include, but is not limited to: (a) continuing to perform the Contract Activities at the established Contract rates; (b) taking all reasonable and necessary measures to transition performance of the work, including

all applicable Contract Activities, training, equipment, software, leases, reports and other documentation, to the State or the State's designee; (c) taking all necessary and appropriate steps, or such other action as the State may direct, to preserve, maintain, protect, or return to the State all materials, data, property, and confidential information provided directly or indirectly to Contractor by any entity, agent, vendor, or employee of the State; (d) transferring title in and delivering to the State, at the State's discretion, all completed or partially completed deliverables prepared under this Contract as of the Contract termination date; and (e) preparing an accurate accounting from which the State and Contractor may reconcile all outstanding accounts (collectively, "Transition Responsibilities"). This Contract will automatically be extended through the end of the transition period.

- 26. General Indemnification.** Contractor must defend, indemnify and hold the State, its departments, divisions, agencies, offices, commissions, officers, and employees harmless, without limitation, from and against any and all actions, claims, losses, liabilities, damages, costs, attorney fees, and expenses (including those required to establish the right to indemnification), arising out of or relating to: (a) any breach by Contractor (or any of Contractor's employees, agents, subcontractors, or by anyone else for whose acts any of them may be liable) of any of the promises, agreements, representations, warranties, or insurance requirements contained in this Contract; (b) any infringement, misappropriation, or other violation of any intellectual property right or other right of any third party; (c) any bodily injury, death, or damage to real or tangible personal property occurring wholly or in part due to action or inaction by Contractor (or any of Contractor's employees, agents, subcontractors, or by anyone else for whose acts any of them may be liable); and (d) any acts or omissions of Contractor (or any of Contractor's employees, agents, subcontractors, or by anyone else for whose acts any of them may be liable).

The State will notify Contractor in writing if indemnification is sought; however, failure to do so will not relieve Contractor, except to the extent that Contractor is materially prejudiced. Contractor must, to the satisfaction of the State, demonstrate its financial ability to carry out these obligations.

The State is entitled to: (i) regular updates on proceeding status; (ii) participate in the defense of the proceeding; (iii) employ its own counsel; and to (iv) retain control of the defense if the State deems necessary. Contractor will not, without the State's written consent (not to be unreasonably withheld), settle, compromise, or consent to the entry of any judgment in or otherwise seek to terminate any claim, action, or proceeding. To the extent that any State employee, official, or law may be involved or challenged, the State may, at its own expense, control the defense of that portion of the claim.

Any litigation activity on behalf of the State, or any of its subdivisions under this Section, must be coordinated with the Department of Attorney General. An attorney designated to represent the State may not do so until approved by the Michigan Attorney General and appointed as a Special Assistant Attorney General.

- 27. Infringement Remedies.** If, in either party's opinion, any piece of equipment, software, commodity, or service supplied by Contractor or its subcontractors, or its operation, use or reproduction, is likely to become the subject of a copyright, patent, trademark, or trade secret infringement claim, Contractor must, at its expense: (a) procure for the State the right to continue using the equipment, software, commodity, or service, or if this option is not reasonably available to Contractor, (b) replace or modify the same so that it becomes non-infringing; or (c) accept its return by the State with appropriate credits to the State against Contractor's charges and reimburse the State for any losses or costs incurred as a consequence of the State ceasing its use and returning it.
- 28. Limitation of Liability.** The State is not liable for consequential, incidental, indirect, or special damages, regardless of the nature of the action.
- 29. Disclosure of Litigation, or Other Proceeding.** Contractor must notify the State within 14 calendar days of receiving notice of any litigation, investigation, arbitration, or other proceeding (collectively, "Proceeding") involving Contractor, a subcontractor, or an officer or director of Contractor or subcontractor, that arises during the term of the Contract, including: (a) a criminal Proceeding; (b) a parole or probation Proceeding; (c) a Proceeding under the Sarbanes-Oxley Act; (d) a civil Proceeding involving: (1) a claim that might reasonably be expected to adversely affect Contractor's viability or financial stability; or (2) a governmental or public entity's claim or written allegation of fraud; or (e) a

Proceeding involving any license that Contractor is required to possess in order to perform under this Contract.

30. **Reserved.**

31. **Reserved**

32. **Non-Disclosure of Confidential Information.** The parties acknowledge that each party may be exposed to or acquire communication or data of the other party that is confidential, privileged communication not intended to be disclosed to third parties. The provisions of this Section survive the termination of this Contract.

- a. Meaning of Confidential Information. For the purposes of this Contract, the term "**Confidential Information**" means all information and documentation of a party that: (a) has been marked "confidential" or with words of similar meaning, at the time of disclosure by such party; (b) if disclosed orally or not marked "confidential" or with words of similar meaning, was subsequently summarized in writing by the disclosing party and marked "confidential" or with words of similar meaning; and, (c) should reasonably be recognized as confidential information of the disclosing party. The term "Confidential Information" does not include any information or documentation that was: (a) subject to disclosure under the Michigan Freedom of Information Act (FOIA); (b) already in the possession of the receiving party without an obligation of confidentiality; (c) developed independently by the receiving party, as demonstrated by the receiving party, without violating the disclosing party's proprietary rights; (d) obtained from a source other than the disclosing party without an obligation of confidentiality; or, (e) publicly available when received, or thereafter became publicly available (other than through any unauthorized disclosure by, through, or on behalf of, the receiving party). For purposes of this Contract, in all cases and for all matters, State Data is deemed to be Confidential Information.
- b. Obligation of Confidentiality. The parties agree to hold all Confidential Information in strict confidence and not to copy, reproduce, sell, transfer, or otherwise dispose of, give or disclose such Confidential Information to third parties other than employees, agents, or subcontractors of a party who have a need to know in connection with this Contract or to use such Confidential Information for any purposes whatsoever other than the performance of this Contract. The parties agree to advise and require their respective employees, agents, and subcontractors of their obligations to keep all Confidential Information confidential. Disclosure to a subcontractor is permissible where: (a) use of a subcontractor is authorized under this Contract; (b) the disclosure is necessary or otherwise naturally occurs in connection with work that is within the subcontractor's responsibilities; and (c) Contractor obligates the subcontractor in a written contract to maintain the State's Confidential Information in confidence. At the State's request, any employee of Contractor or any subcontractor may be required to execute a separate agreement to be bound by the provisions of this Section.
- c. Cooperation to Prevent Disclosure of Confidential Information. Each party must use its best efforts to assist the other party in identifying and preventing any unauthorized use or disclosure of any Confidential Information. Without limiting the foregoing, each party must advise the other party immediately in the event either party learns or has reason to believe that any person who has had access to Confidential Information has violated or intends to violate the terms of this Contract and each party will cooperate with the other party in seeking injunctive or other equitable relief against any such person.
- d. Remedies for Breach of Obligation of Confidentiality. Each party acknowledges that breach of its obligation of confidentiality may give rise to irreparable injury to the other party, which damage may be inadequately compensable in the form of monetary damages. Accordingly, a party may seek and obtain injunctive relief against the breach or threatened breach of the foregoing undertakings, in addition to any other legal remedies which may be available, to include, in the case of the State, at the sole election of the State, the immediate termination, without liability to the State, of this Contract or any Statement of Work corresponding to the breach or threatened breach.

- e. Surrender of Confidential Information upon Termination. Upon termination of this Contract or a Statement of Work, in whole or in part, each party must, within 5 calendar days from the date of termination, return to the other party any and all Confidential Information received from the other party, or created or received by a party on behalf of the other party, which are in such party's possession, custody, or control; provided, however, that Contractor must return State Data to the State following the timeframe and procedure described further in this Contract. Should Contractor or the State determine that the return of any Confidential Information is not feasible, such party must destroy the Confidential Information and must certify the same in writing within 5 calendar days from the date of termination to the other party.

33. Reserved

34. Reserved

35. Reserved

36. **Records Maintenance, Inspection, Examination, and Audit.** The State or its designee may audit Contractor to verify compliance with this Contract. Contractor must retain, and provide to the State or its designee and the auditor general upon request, all financial and accounting records related to the Contract through the term of the Contract and for 4 years after the latter of termination, expiration, or final payment under this Contract or any extension ("Audit Period"). If an audit, litigation, or other action involving the records is initiated before the end of the Audit Period, Contractor must retain the records until all issues are resolved.

Within 10 calendar days of providing notice, the State and its authorized representatives or designees have the right to enter and inspect Contractor's premises or any other places where Contract Activities are being performed, and examine, copy, and audit all records related to this Contract. Contractor must cooperate and provide reasonable assistance. If any financial errors are revealed, the amount in error must be reflected as a credit or debit on subsequent invoices until the amount is paid or refunded. Any remaining balance at the end of the Contract must be paid or refunded within 45 calendar days.

This Section applies to Contractor, any parent, affiliate, or subsidiary organization of Contractor, and any subcontractor that performs Contract Activities in connection with this Contract.

37. **Warranties and Representations.** Contractor represents and warrants: (a) Contractor is the owner or licensee of any Contract Activities that it licenses, sells, or develops and Contractor has the rights necessary to convey title, ownership rights, or licensed use; (b) all Contract Activities are delivered free from any security interest, lien, or encumbrance and will continue in that respect; (c) the Contract Activities will not infringe the patent, trademark, copyright, trade secret, or other proprietary rights of any third party; (d) Contractor must assign or otherwise transfer to the State or its designee any manufacturer's warranty for the Contract Activities; (e) the Contract Activities are merchantable and fit for the specific purposes identified in the Contract; (f) the Contract signatory has the authority to enter into this Contract; (g) all information furnished by Contractor in connection with the Contract fairly and accurately represents Contractor's business, properties, finances, and operations as of the dates covered by the information, and Contractor will inform the State of any material adverse changes; and (h) all information furnished and representations made in connection with the award of this Contract is true, accurate, and complete, and contains no false statements or omits any fact that would make the information misleading. A breach of this Section is considered a material breach of this Contract, which entitles the State to terminate this Contract under Section 23, Termination for Cause.
38. **Conflicts and Ethics.** Contractor will uphold high ethical standards and is prohibited from: (a) holding or acquiring an interest that would conflict with this Contract; (b) doing anything that creates an appearance of impropriety with respect to the award or performance of the Contract; (c) attempting to influence or appearing to influence any State employee by the direct or indirect offer of anything of value; or (d) paying or agreeing to pay any person, other than employees and consultants working for Contractor, any consideration contingent upon the award of the Contract. Contractor must immediately notify the State of any violation or potential violation of these standards. This Section applies to

Contractor, any parent, affiliate, or subsidiary organization of Contractor, and any subcontractor that performs Contract Activities in connection with this Contract.

39. **Compliance with Laws.** Contractor must comply with all federal, state and local laws, rules and regulations.
40. **Reserved.**
41. **Reserved.**
42. **Nondiscrimination.** Under the Elliott-Larsen Civil Rights Act, 1976 PA 453, MCL 37.2101, *et seq.*, and the Persons with Disabilities Civil Rights Act, 1976 PA 220, MCL 37.1101, *et seq.*, Contractor and its subcontractors agree not to discriminate against an employee or applicant for employment with respect to hire, tenure, terms, conditions, or privileges of employment, or a matter directly or indirectly related to employment, because of race, color, religion, national origin, age, sex, height, weight, marital status, or mental or physical disability. Breach of this covenant is a material breach of this Contract.
43. **Unfair Labor Practice.** Under MCL 423.324, the State may void any Contract with a Contractor or subcontractor who appears on the Unfair Labor Practice register compiled under MCL 423.322.
44. **Governing Law.** This Contract is governed, construed, and enforced in accordance with Michigan law, excluding choice-of-law principles, and all claims relating to or arising out of this Contract are governed by Michigan law, excluding choice-of-law principles. Any dispute arising from this Contract must be resolved in Michigan Court of Claims. Contractor consents to venue in Ingham County, and waives any objections, such as lack of personal jurisdiction or *forum non conveniens*. Contractor must appoint agents in Michigan to receive service of process.
45. **Non-Exclusivity.** Nothing contained in this Contract is intended nor will be construed as creating any requirements contract with Contractor. This Contract does not restrict the State or its agencies from acquiring similar, equal, or like Contract Activities from other sources.
46. **Force Majeure.** Neither party will be in breach of this Contract because of any failure arising from any disaster or acts of god that are beyond their control and without their fault or negligence. Each party will use commercially reasonable efforts to resume performance. Contractor will not be relieved of a breach or delay caused by its subcontractors. If immediate performance is necessary to ensure public health and safety, the State may immediately contract with a third party.
47. **Dispute Resolution.** The parties will endeavor to resolve any Contract dispute in accordance with this provision. The dispute will be referred to the parties' respective Contract Administrators or Program Managers. Such referral must include a description of the issues and all supporting documentation. The parties must submit the dispute to a senior executive if unable to resolve the dispute within 15 business days. The parties will continue performing while a dispute is being resolved, unless the dispute precludes performance. A dispute involving payment does not preclude performance.

Litigation to resolve the dispute will not be instituted until after the dispute has been elevated to the parties' senior executive and either concludes that resolution is unlikely, or fails to respond within 15 business days. The parties are not prohibited from instituting formal proceedings: (a) to avoid the expiration of statute of limitations period; (b) to preserve a superior position with respect to creditors; or (c) where a party makes a determination that a temporary restraining order or other injunctive relief is the only adequate remedy. This Section does not limit the State's right to terminate the Contract.
48. **Media Releases.** News releases (including promotional literature and commercial advertisements) pertaining to the Contract or project to which it relates must not be made without prior written State approval, and then only in accordance with the explicit written instructions of the State.
49. **Website Incorporation.** The State is not bound by any content on Contractor's website unless expressly incorporated directly into this Contract.

50. **Order of Precedence.** In the event of a conflict between the terms and conditions of the Contract, the exhibits, a purchase order, or an amendment, the order of precedence is: (a) the purchase order; (b) the amendment; (c) Exhibit A; (d) any other exhibits; and (e) the Contract.
51. **Severability.** If any part of this Contract is held invalid or unenforceable, by any court of competent jurisdiction, that part will be deemed deleted from this Contract and the severed part will be replaced by agreed upon language that achieves the same or similar objectives. The remaining Contract will continue in full force and effect.
52. **Waiver.** Failure to enforce any provision of this Contract will not constitute a waiver.
53. **Survival.** The provisions of this Contract that impose continuing obligations, including warranties and representations, termination, transition, insurance coverage, indemnification, and confidentiality, will survive the expiration or termination of this Contract.
54. **Entire Contract and Modification.** This Contract is the entire agreement and replaces all previous agreements between the parties for the Contract Activities. This Contract may not be amended except by signed agreement between the parties (a "**Contract Change Notice**").

Attachment A, Price Proposal

Unit price quoted should reflect F.O.B. Delivered cost per post. Estimated quantities are for the three year contract term.									
Ship to Location	Bill to Location	Post, Wood Treated 4"x6"x16' with holes	Post, Wood Treated 4"x6"x20' with holes	Post, Wood Treated 4"x6"x22' with holes	Post, Wood Treated 4"x6"x24' with holes	Post, Wood Treated 6"x8"x20' with holes	Post, Wood Treated 6"x8"x22' with holes	Post, Wood Treated 6"x8"x24' with holes	Total Price
59359 Cadillac Special Crews 725 Seneca Cadillac, MI	Same	600	450	150	300			300	
	Unit Price	\$34.14ea	\$44.40ea	\$117.60ea	\$141.20ea			\$100,464.00	
59392 Kalamazoo Sign Shop 6345 American Ave. Portage, MI	Same	900	900		100		450	300	
	Unit Price	\$34.14ea	\$44.40ea	\$69.79ea	\$129.40ea			\$178,255.00	
59412 Grand Rapids Sign Shop 1420 Front NW Grand Rapids, MI	Same	600	600		450	450			
	Unit Price	\$34.14ea	\$44.40ea	\$117.60ea	\$129.40ea			\$158,274.00	
59732 Saginaw Sign Shop 3510 E. Washington Saginaw, MI	Same	450	450		450	450		300	
	Unit Price	\$34.14ea	\$44.40ea	\$117.60ea	\$129.40ea			\$188,853.00	
59601 Atlanta Maint. Garage 13490 M-32/M-33 Atlanta, MI	Same	900	300				36		
	Unit Price	\$34.14ea	\$44.40ea		\$129.40ea			\$48,704.40	

Attachment A, Price Proposal (Continued)

Unit price quoted should reflect F.O.B. Delivered cost per post . Estimated quantities are for the three year contract term.									
Ship to Location	Bill to Location	Post, Wood Treated 4"x6"x16' with holes	Post, Wood Treated 4"x6"x20' with holes	Post, Wood Treated 4"x6"x22' with holes	Post, Wood Treated 4"x6"x24' with holes	Post, Wood Treated 6"x8"x20' with holes	Post, Wood Treated 6"x8"x22' with holes	Post, Wood Treated 6"x8"x24' with holes	Total Price
59071 L'Anse Maint. Garage 301 Winter St. L'Anse, MI	Same	1350	900					450	\$159,331.50
	Unit Price	\$36.89ea	\$48.40ea					\$146.60ea	
59001 UP Sign Shop 816 Clark Drive. Gladstone, MI	1818 Third Ave North, Escanaba, MI 49829	750	450						
	Unit Price	\$36.89ea	\$48.40ea						\$49,447.50
59086 Central Warehouse 7575 Crownner Ave. Lansing, MI	Same	2500	650	50	50	400	300	72	
	Unit Price	\$34.14ea	\$44.40ea	\$63.90ea	\$69.79ea	\$117.60ea	\$129.40ea	\$141.20ea	\$216,920.90
Estimated Total Quantity for 3 Year Contract Term		5950	4450	50	150	1200	1386	1350	
Grand Total Bid Amount:		\$280,602.00	\$214,080.00	\$3,195.00	\$10,468.50	\$170,520.00	\$218,168.40	\$203,216.40	\$1,100,250.30

**Contract Number 591B6600141
Treated Wood Sign Posts
Attachment B, Specifications**

912.02

Section 912. TIMBER AND LUMBER

912.01. General Requirements. Timber and lumber, timber piles, posts and blocks for guardrails, sign posts, mailbox posts, guard posts, guide posts, fence posts, and timber for rustic construction must meet the requirements of this section.

In case of a conflict between the AWWA and ASTM Standards, the AWWA Standards take precedence.

Machine or manufacture material, including bored holes, saw cuts, routs, and kerfs, to the required shape before applying preservative treatment.

Manufacture material from the wood species specified. The commercial and common names for domestic hardwood and softwood timber and lumber referenced in this section are as specified in ASTM D 1165.

912.02. Quality Control.

A. General. The supplier is responsible for quality control and inspection of material. Material must be graded before shipment in accordance with the grading rules of ASTM D 245 and marked with the approved grading agency stamp showing the mill origin, species, and grade. The required grading agency stamp or marking must be legible on a wide face at the trimmed end before and after treating.

B. Inspection Prior to Preservative Treatment. Before treating timber and lumber, inspect material for quality, size, and straightness. This inspection does not waive the Department's right to inspection and rejection of material in accordance with subsection 105.05.

C. Inspection of Preservative Treatment. Inspect chemical preservatives, treatment processes, and treated material in accordance with AWWA M 2, "Standard for Inspection of Treated Timber Products," and M 3, "Standard Quality Control Procedures for Wood Preserving Plants," and other relevant AWWA Standards. The treater must determine if the preservatives used conform to the requirements.

For single treatment charges, analyze the preservative at least once per charge. For consecutive treatments from the same working tank, analyze the first charge and at least one of every five additional charges, selected at random.

Collect preservative samples that are representative of the solution used in the actual treatment process.

912.02

D. Results of Treatment. Ensure the treatment results, including preservative analysis and penetration and retention determinations, meet AWPA Standards.

E. Inspection Records. Provide a signed inspection certificate for each material shipment. Provide copies of treatment records, analysis records and other records ensuring that the treatment conforms to specification requirements to Department personnel or their designated representatives upon request. Retain the records at the treatment plant for at least 5 years from the date the material is shipped to the project. Refer to AWPA M 2 for required information.

F. Painting Treated Wood. Air-season wood for at least 30 days and remove preservative dust from the wood before painting.

912.03. Field Treatment of Preservative Treated Material.

A. General. Field-treat saw cuts, routs, kerfs, holes, and other injuries to preservative-treated material occurring after pressure treatment by brushing, dipping, soaking, or coating. Do not spray. Saturate injuries with the field-treating solution. Fill bored holes with preservative.

The Contractor may fill horizontal holes by temporarily plugging one end of a hole and using a bent funnel to pour preservative into the other end of the hole.

B. Preservative. Use a 2.0 percent solution of copper naphthenate, based on copper as metal, meeting the requirements for AWPA Standard M4 for field treatment. Ensure a State of Michigan Certified Commercial Pesticide Applicator applies the copper naphthenate.

912.04. Terminology Used in Timber and Lumber Specifications. Refer to ASTM D 9, Standard Terminology Relating to Wood, and AWPA M 5, Glossary of Terms Used in Wood Preservation for additional wood and wood preservation terms.

Annual Ring. The growth layer produced by the tree in a single growth year, including earlywood and latewood.

Bark. The layer of a tree, outside the cambium, comprising the inner bark, or thin, inner living part (phloem), and the outer bark, or corky layer, composed of dry, dead tissue.

Bird Peck. A small hole or patch of distorted grain resulting from birds pecking through the growing cells in the tree. Bird peck usually resembles a carpet tack with the point toward the bark, and it is usually accompanied by discoloration extending for a

considerable distance along the grain and to a much lesser extent across the grain. The discoloration produced by bird peck causes what is commonly known as mineral streak.

Boxed Heart. The term used when the pith falls entirely within the four faces of a piece of wood anywhere in its length. Also called boxed pith.

Check. A lengthwise separation of the wood that usually extends across the rings of annual growth and commonly results from stresses set up in wood during seasoning. Checks are measured as an average of the penetration perpendicular to the wide face. Where two or more checks appear on the same face, only the deepest one is measured. Where two checks are directly opposite each other, the sum of their depths is used.

Contiguous Checks. Individual checks that are adjoining though not in contact with adjacent checks.

Cruck or Sweep. A distortion of a piece of lumber or post in which there is a deviation in a direction perpendicular to the edge from a straight line from end to end of the piece.

Decay. The decomposition of wood substance caused by action of wood destroying fungi, resulting in softening, loss of strength and weight and often in change of texture and color.

Advanced (or typical) Decay. The older stage of decay in which the destruction is readily recognized because the wood has become punky, soft and spongy, stringy, ring-shaked, pitted, or crumbly. Decided discoloration or bleaching of the rotted wood is often apparent.

Incipient Decay. The early stage of decay that has not proceeded far enough to soften or otherwise perceptibly impair the hardness of the wood. It is usually accompanied by a slight discoloration or bleaching of the wood.

Defect. Any irregularity or imperfection occurring in or on the wood that may lower its durability or strength.

Grain. The direction, size, arrangement, appearance, or quality of the fibers in wood or lumber.

Heartwood. The wood extending from the pith to the sapwood, the cells of which no longer participate in the life processes of the tree. Heartwood may be infiltrated with gums, resins, and other

912.04

materials that usually make it darker and more decay resistant than sapwood.

Knot. That portion of a branch or limb that has been surrounded by subsequent growth of the wood of the trunk or other portion of the tree. As a knot appears on the sawed surface it is merely a section of the entire knot, its shape depending upon the direction of the cut. Knot diameter is measured as shown. The least dimension is used to determine size of the knot.

Knot Cluster. Three or more knots in a compact, roughly circular group, with the grain between them highly contorted. Two or more knots laterally arranged and without contortion of the fibers between them do not constitute a knot cluster.

Loose Knot. A knot that is not held firmly in place by growth or position and that cannot be relied upon to remain in place.

Sound Knot. A knot that is solid across its face, at least as hard as the surrounding wood, and shows no indication of decay.

Unsound Knot. A knot that, due to decay, is softer than the surrounding wood.

Mineral Streak. An olive to greenish-black or brown discoloration of undetermined cause in hardwoods, particularly hard maples; commonly associated with bird pecks and other injuries; occurs in streaks usually containing accumulations of mineral matter.

Peeling (clean). The removal of all outer bark and at least 80 percent of the inner bark distributed over the surface of the post, pile, or block.

Pith. The small, soft core occurring in the structural center of a tree trunk, branch, twig, or log.

Plugged Hole. Any opening, or defect, which has been filled, or repaired, through the use of wooden plugs, plastic wood, or other methods. Holes resulting from the taking of test cores by an increment borer to check penetration or retention of preservative and filled with tight-fitting pressure treated plugs are not considered as plugged holes for rejection purposes.

Sapwood. The living wood of pale color near the outside of the log. Under most conditions the sapwood is more susceptible to decay than heartwood.

Shake. A separation along the grain, the greater part of which occurs between the rings of annual growth. Shakes are

measured at the ends of pieces between lines parallel with the two faces that give the least dimension.

Slope of Grain. Slope of grain is the deviation of the wood fiber from a line parallel to the edges of a piece. The deviation is expressed as a ratio such as a slope of grain of one in eight. Generally, slope of grain is measured over sufficient length and area to be representative of the general slope of the fibers, disregarding local variations.

Split. A lengthwise separation of the wood extending through the piece from one surface to an opposite or to an adjoining surface, due to the tearing apart of wood cells. Splits are measured as the penetration of a split from the end of the piece and parallel to edges of the piece.

Twist. A distortion caused by the turning or winding of the edges of a board so the four corners of any face are no longer in the same plane.

Unightly Gaps. The term as used in these specifications is interpreted as being any gap, or opening that is more than $\frac{1}{8}$ inch at its maximum width and more than 12 inches long.

Wane. Bark, or lack of wood from any cause, on edge or corner of piece.

912.05. Structural Timber and Lumber.

A. **Grade.** Provide structural timber and lumber of the grade required, as determined by the grading and dressing requirements of ASTM D 245.

B. **Species.** Use species specifically included in AWPA U1, Section 5, Table UCS-U1, for UCS listing UC4C.

C. **Preservative Treatment.** Condition and treat structural timber and lumber in accordance with AWPA U1, Section 6, Commodity Specification A. Refer to Use Category 4A (UC4A) for above ground requirements and Use Category 4C (UC4C) for ground contact requirements.

D. **Preservatives.** Provide preservatives for treatment meeting the requirements of AWPA U1, Section 4, "Preservatives for Pressure Treatment Processes," and the relevant P Standards.

912.06

912.06. Timber Piles.

A. Physical Characteristics and Species. Provide timber piles of southern pine, red pine, jack pine, ponderosa pine, Douglas fir, western larch, lodgepole pine, or red oak. Before applying preservative treatment, ensure timber piles meet the requirements of ASTM D 25, "Standard Specifications for Round Timber Piles," except as modified by this subsection.

B. Dimensions. Ensure the pile circumference measured under the bark meets the requirements of Table 912-1, except 10 percent of the piles in a shipment lot may have circumferences 2 inches less than the minimum values. Ensure piles do not exceed the 1:2 maximum to minimum diameter ratio measured at the butt of the pile.

Table 912-1 Circumferences and Diameters of Timber Piles						
Length, (ft)	3 ft from Butt				At Tip	
	Minimum		Maximum		Minimum	
	Circum- ference, (in)	Diameter, (in)	Circum- ference, (in)	Diameter, (in)	Circum- ference, (in)	Diameter, (in)
Douglas Fir, Larch, Pine, or Tamarack						
<40	38	12	63	20	25	8
40-50	38	12	63	20	22	7
≥50-70	41	13	63	20	22	7
≥70-90	41	13	63	20	19	6
>90	Dimensions must be as specified in the proposal or on the plans					
Oak and Cypress						
<30	38	12	57	18	25	8
30-40	41	13	63	20	22	7
>40	41	13	63	20	19	6

C. Sapwood. Provide piles with a sapwood thickness of at least 1 inch at the butt end.

D. Straightness. Use straight piles, as determined by drawing a line from the center of the butt to the center of the tip, and ensuring the line lies within the pile body. Only use piles with a uniform taper from butt to top and without short crooks.

E. Knots. Provide piles free of unsound and loose knots. Piles may contain sound knots no greater than 4 inches in diameter or one-third of the shortest pile dimension at the knot location, except for piles used as structural members in exposed work. Ensure piles used as structural members in exposed work do not contain sound knots with diameters greater than one-quarter of the shortest pile dimension at the knot location.

F. **Checks.** Do not use piles with checks wider than ¼ inch or deeper than 2 inches.

G. **Peeling (Shaving).** Piles must meet the requirements for clean-peeled posts as specified by subsection 912.07.1.

H. **Preservative Treatment.** Perform preservative treatment of timber piling in accordance with the AWWPA Use Category UC4C for foundation, land, and fresh water exposure. Submit certification from the treatment plant stating type, pressure process used, net amount of preservative retained, and compliance with relevant standards to the Engineer. Preservative penetration and retention must meet the requirements of AWWPA U1 Table 3.0, Use Category 4 (UC4C).

I. **Preservatives.** Provide preservatives for treatment meeting the requirements of AWWPA Standard U1 Section 4, "Preservatives for Pressure Treatment Processes," and the applicable P Standards.

912.07. Timber Posts.

A. **General.** Use posts cut from live timber without bird pecks or insect holes. Saw post ends square.

B. **Species and Grades.** Provide fence posts, guide posts, guard posts, and mailbox posts manufactured from the species specified in Table 912-2.

Table 912-2 Species and Grading Requirements for Posts		
Species	Round Posts Grade	Grading Rules Agency (a)
Hardwoods		
Red Oak (Northern Red, Black, Pin Laurel, Cherry-Bark, Scarlet, Water, and Willow Oaks) (b)	ASTM D 245	MDOT
Hard Maple (Black & Sugar) and Red Maple		
White Ash		
White-Heartwood Beech		
Yellow Birch		
Softwoods		
Northern White Cedar, Red Pine, and Eastern White Pine (Northern White Pine)	No. 1 or better	NHPMA
Douglas-fir	No. 2 or better	WCLIB, WWPA
Southern Pine Species	No. 2 or better	SPIB
a. NHPMA (Northern Hardwood and Pine Manufacturers Assoc.); WWPA (Western Wood Products Assoc.); WCLIB (West Coast Lumber Inspection Bureau); and SPIB (Southern Pine Inspection Bureau)		
b. Southern Red Oak is not permitted.		

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C. **Marking.** Ensure posts show the grading agency stamp indicating the mill origin, species, and grade.

D. **Dimensions.** Provide 7 foot long line posts with a nominal 4 inch square cross section or a round cross section with a diameter of at least 4½ inches.

Provide 8 foot long end, corner, gate, intersection, and intermediate braced posts with a nominal 6 inch square cross section or a round cross section with a diameter of at least 8 inches.

Provide mailbox posts at least 6 feet long with a nominal 4 inch square cross section or a round cross section with a diameter of at least 4 inches.

E. **Dimensional Tolerances.** Provide round posts within +¾ inch and -¼ inch of the required diameter. Ensure posts are equal to the required nominal length ±2 inches. Use the average top diameter to determine the sizes of posts that are not perfectly round. Provide square posts within -¼ inch of the required cross section.

F. **Decay.** Do not provide posts with butt rot in greater than 5 percent of the butt area. Ensure post tops are sound, except the Engineer may allow one pipe rot no greater than ¾ inch in diameter in posts with a nominal top size of at least 6 inches.

G. **Knots.** Posts may contain sound knots trimmed flush with the post surface that do not affect the post strength.

H. **Crook or Bow.** Do not provide posts with short crooks, one-way sweep greater than 2 inches, and unsightly and exaggerated winding twists.

I. **Surface.** Provide fence posts that are peeled or shaved to remove the outer bark from the entire length. The Engineer will not require shaving to remove the inner bark.

For round posts for mailbox posts, guard posts, and guide posts, ensure the inner and outer bark is completely removed.

J. **Preservative Treatment.** Condition and treat round posts, except northern white cedar, in accordance with AWPAC U1, Section 6, Commodity Specification B, Use Category 4B (UC4B). Treat sawn posts as specified in subsection 912.05.C.

K. **Conditioning.** If air seasoned, stack posts in a Department-approved manner until the average moisture content is no greater than 19 percent.

L. **Preservatives.** Provide treatment preservatives meeting the requirements of AWPA U1, Section 4, "Preservatives for Pressure Treatment Processes," and the relevant P Standards.

M. **Results of Treatment.** Refer to Table 912-3 for the minimum preservative penetration and retention, as determined in accordance with AWPA Standards.

Preservative	Minimum Retention 0.0 – 0.6 in zone	AWPA Standard
Oil Type	AWPA Commodity Specification B	A 6
Waterborne Type	Table 3.1.2, Use category 4B	A 11
Minimum Penetration		
Species	Heartwood	Sapwood
Hardwoods & Douglas-fir	≥0.3 in	0.6 in or 90%, whichever is greater
Softwoods	—	2.0 in or 90%, whichever is greater

912.08. Sawn Timber Posts and Blocks for Beam Guardrail and Highway Signs.

A. **Species and Grades.** Provide wood posts for guardrail in accordance with Table 912-4; for wood blocks in accordance with Table 912-5; and for sign posts in accordance with Table 912-6. Ensure the grading agency stamp is applied to the middle one-third of each sign post on the wider face.

Species	Posts & Timber Grade	Grading Rules Agency
Hardwoods		
Red Oak (Northern Red, Black, Pin, Laurel, Cherry-Bark, Scarlet, Water, and Willow Oaks) (a)	Grade GRP	MDOT
Hard Maple (Black & Sugar) and Red Maple		
White Ash		
White-Heartwood Beech		
Yellow Birch		
Hickory (Mockernut, Pignut, Shagbark, and Shellbark Hickories)		
Softwoods		
Douglas-fir, Douglas-fir/Larch	No. 1 or better	WWPA or WCLIB
Southern Pine	No. 1 or better	SPIB
Jack Pine 8 in x 8 in	No. 1 or better	NHPMA

a. Southern Red Oak is not permitted.

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Table 912-5 Species and Grading Requirements for Sawn Timber Guardrail Blocks		
Species	Blocks Grade	Grading Rules Agency
Hardwoods		
Red Oak (Northern Red, Black, Pin, Laurel, Cherry-Bark, Scarlet, Water, and Willow Oaks) (a)	Grade GRB	MDOT
Hard Maple (Black & Sugar) and Red Maple		
White Ash		
White-Heartwood Beech		
Yellow Birch		
Hickory (Mockernut, Pignut, Shagback, and Shellbark Hickories)		
Softwoods		
Douglas-fir and Douglas-fir/Larch	No. 2 or better	WCLIB, WWPA
Southern Pine Species	No. 2 or better	SPIB
Jack Pine, Red Pine, and Eastern White Pine (Northern White Pine)	No. 1 or better	NHPMA
a. Southern Red Oak is not permitted.		

Table 912-6 Species and Grading Requirements for Sawn Sign Posts		
Species	Grade	Grading Rules Agency
4 in x 6 in (nominal) Posts		
Balsam Fir	No. 1 (Joists-Planks)	NELMA
Douglas Fir	No. 1 (Joists-Planks)	WCLIB
Eastern Hemlock	No. 1 (Joists-Planks)	NHPMA
Tamarack (Eastern Larch)	No. 1 (Joists-Planks)	NHPMA
Eastern White Pine	Select Structural (Joists-Planks)	NELMA
Southern Pine	No. 1 (Joists-Planks)	SPIB
6 in x 8 in (nominal) Posts		
Douglas Fir	No. 1 Dense (Posts-Timbers)	WWPA
Southern Pine	No. 1 SR (Stress Rated Timbers)	SPIB
Eastern Hemlock	Select Structural (Posts-Timbers)	NELMA
Tamarack (Eastern Larch)	Select Structural (Posts-Timbers)	NELMA

For guardrails, provide wood posts and blocks with a nominal 6 inch by 8 inch cross section, except for jack pine provide at least No. 1 Grade posts with a nominal 8 inch by 8 inch cross section. For sawed wood posts for signs, provide nominal 4 inch by 6 inch or 6 inch by 8 inch cross section.

1. **MDOT Grade GRP.** Provide MDOT Grade GRP guard rail posts meeting the requirements of this subsection.
 - a. **Splits.** Ensure splits are no greater than 3 inches on the bolt hole plane and no greater than 6 inches in other locations.

- b. **Checks.** Ensure single checks are no deeper than 3 inches. Ensure checks opposite each other do not have a total depth greater than 3 inches as measured with a probe no greater than $\frac{1}{16}$ inch thick and $\frac{1}{16}$ inch in diameter.
 Ensure single checks at least $\frac{3}{4}$ inch wide, as measured at the widest point, do not extend along more than one-third of the post length.
 Ensure single checks, as measured at the widest point, are no greater than $\frac{3}{4}$ inch wide.
 - c. **Shakes.** Ensure shakes are no greater than 2 inches in the smallest dimension.
 - d. **Splits, Checks, and Shakes.** Ensure splits, checks, or shakes do not appear in combinations that may cause posts to separate into pieces.
 - e. **Stains.** Ensure pieces do not contain more than 25 percent stained heartwood, and staining is not caused by decay.
 - f. **Slope of Grain.** Ensure slope of grain is no greater than 1:10.
 - g. **Wane.** Ensure wane occurs on less than one-quarter of any face.
 - h. **Knots.** Ensure knots are sound and tight. Ensure the sum of the least knot dimensions in 6 inch lengths of posts is less than 5 inches. Ensure grain distortion caused by knot clusters is no greater than $2\frac{1}{2}$ inches. Ensure knots do not exceed $2\frac{1}{2}$ inches in the least dimension.
2. **MDOT Grade GRB.** Provide MDOT Grade GRB guardrail blocks meeting the requirements of this subsection.
- a. **Splits.** Ensure splits are no greater than 3 inches on the bolt hole plane and no greater than 5 inches in other locations.
 - b. **Checks.** Ensure single checks are no greater than 3 inches deep. Ensure checks opposite each other do not have a total depth greater than 3 inches as measured with a probe no greater than $\frac{1}{16}$ inch thick and $\frac{1}{16}$ inch in diameter.
 Ensure single checks at least $\frac{3}{4}$ inch wide as measured at the widest point do not extend along more than one-third of the post length.
 Ensure single checks, as measured at the widest point, are no greater than $\frac{3}{4}$ inch wide.

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- c. **Shakes.** Ensure shakes are no greater than 3 inches in the smallest dimension and do not extend more than one-half of the standard grading length.
- d. **Splits, Checks, and Shakes.** Ensure splits, checks, and shakes do not appear in combinations that may cause blocks to separate into pieces.
- e. **Stains.** Ensure pieces do not contain more than 25 percent stained heartwood, and staining is not caused by decay.
- f. **Wane.** Ensure wane occurs on less than one-third of any face.
- g. **Knots.** Ensure grain distortion caused by knot clusters is no greater than 4 inches. Ensure knots do not exceed 4 inches in the least dimension.

B. General Requirements.

- 1. **Decay.** Provide posts and blocks free from decay before treatment.
- 2. **Crook or Bow.** Ensure crooks or bows are no greater than 1 inch per 10 feet of length.
- 3. **Dimensional Tolerances.** Provide posts and blocks with the following dimensional tolerances:
 - a. Cross-section no less than minus ½ inch from the required dimension;
 - b. Block length no less than minus ½ inch from the required length; and
 - c. Post length no less than minus 2 inches from the required length.

C. Incising. Incise posts before treatment; the Department does not require blocks to be incised. Ensure the incisor has teeth a nominal ¼ inch long to make cuts spaced 2½ inches apart lengthwise in rows ¼ inch apart. Ensure alternate rows are staggered by 1¼ inches to provide 60 diamond patterns of incisions per square foot. Ensure the diamonds are 2½ inches long and 1½ inches wide from center to center. The Contractor may incise southern pine with ¼ inch teeth.

As an alternative, the Contractor may incise posts in accordance with the *AREMA Manual for Railway Engineering*, Article 3.6.2.

D. Inspection Before Treatment. Inspect air dried or kiln dried material for moisture content as specified in subsection 912.09.E and in accordance with AWP A M2. Test representative pieces. Test at least 5 percent or 50 pieces out of a charge, whichever is less.

E. Test for Moisture Content. Test moisture content using an electrical resistance type moisture meter with insulated needles 1½ inches long. Correct readings for species and temperature readings in accordance with meter instructions. Take readings on one surface at mid-length. Drive needles to their full length during readings. The Engineer will accept lots with average moisture content no greater than 19 percent. Remove individual pieces with moisture contents greater than 23 percent.

F. Preservative Treatment. Treat wood for guardrail posts and sign posts in accordance with AWPA U1, Section 6, Commodity Specification A, Use Category 4B. Treat wood for guardrail blocks in accordance with AWPA U1, Section 6, Commodity Specification A, Use Category 4A.

G. Preservatives. Provide preservatives for treatment meeting the requirements of AWPA U1, Section 4, "Preservatives for Pressure Treatment Processes," and the relevant P Standards.

H. Sorting and Spacing. Provide charges of the same species or species within any one group specified in Table 912-7. Provide material with a similar moisture content and similar form and size.

The Contractor may treat blocks and posts in the same charge after meeting the retention requirements specified in subsection 912.09.K. Use horizontal spacers to separate pieces in the charge to ensure preservative and steam contacts all horizontal surfaces.

Group	Species
A	Southern Pine
B	Douglas-Fir, Balsam Fir, Eastern Hemlock, Tamarack
C	Jack Pine, Red Pine and Eastern White Pine
D	Hardwoods

I. Conditioning. Use air seasoning, kiln drying, Boulton drying, vapor drying, steaming, or heating in preservative.

Ensure average moisture content no greater than 19 percent for air seasoned or kiln dried material before treatment.

If steam conditioning, do not exceed the maximum temperature specified in Table 912-8 in less than 1 hour. If applying a vacuum after steaming, ensure the vacuum pressure is at least 22 inches of mercury. If using Chromated Copper Arsenate (CCA), Ammoniacal Copper Arsenate (ACA), or Ammoniacal Copper Zinc Arsenate (ACZA), remove the material from the cylinder and allow it to cool to no greater than 120 °F

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after steaming and before applying the preservative. When treating douglas fir with pentachlorophenol, do not steam. If treating southern pine, jack pine, and red pine with CCA, ACA or ACZA, use steam only to thaw frozen or ice coated material.

If conditioning material by heating in preservative, ensure the solution covers the material. Refer to Table 912-8 for maximum temperatures. Do not condition by heating in water-borne preservatives, including CCA, ACA, and ACZA.

Species	Conditioning Methods Allowed	Steaming		Heating in Preservative	
		Maximum Temp. (°F)	Maximum Duration (h)	Maximum Temp. (°F)	Maximum Duration (h)
Hard Maple	Air drying only, no steaming	—	—	—	—
Other Hardwoods (a)	(d)	—	—	220	No limit
Southern Pine	(d)	245	17	220	No limit
Eastern White Pine	(d)	240	4½	210	6 (c)
Other Softwoods (b)	(d)	240	6	210	6 (c)

a. Red Oak, White Ash, White-Heartwood Beech, Yellow Birch, Hickory, and Red Maple.
 b. Jack Pine, Douglas Fir, and Red Pine, Balsam Fir, Eastern Hemlock, Tamarack.
 c. If using seasoned material, otherwise no limit.
 d. See Subsection 912.08.J, "Conditioning."

J. **Treatment.** Ensure treatment meets the retentions and penetrations specified in subsection 912.08.K and subsection 912.08.L.

Apply pressure in accordance with Table 912-9. Maintain pressure until the required volume of preservative enters the wood.

For pentachlorophenol in Type A hydrocarbon solvent, do not exceed 210 °F during the pressure period. For ACA, do not exceed 150 °F during the pressure period. For CCA, do not exceed 120 °F during the pressure period. For ACZA do not exceed 150 °F during the pressure period.

If treating with pentachlorophenol, the Contractor may apply an expansion bath or a final steaming after completion of the pressure phase of the treatment, as specified in Table 912-9.

Species	Pressure		Where Preservative is Penetachlorophenol in Type A Hydrocarbon Solvent		
	Minimum (psi)	Maximum (psi)	Expansion Bath Maximum Temp. (°F)	Final Steaming (a)	
				Maximum Temp. (°F)	Maximum Duration (h)
Red Oak	125	250	Not Permitted	240	1
Other Hardwoods	125	200	Not Permitted	240	1
Jack Pine, Red Pine	75	175	220	240	2
Southern Pine	75	200	220	240	2
Douglas Fir	50	150	220	240	2
Balsam Fir					
Eastern Hemlock					
Tamarack					
Eastern White Pine	50	135	220	240	1

a. If using seasoned material, the Contractor may post-steam at 225 °F for no greater than 15 h.

K. **Retention.** Use chemical assay with samples taken after treatment as specified in subsection 912.09.M, and refer to Table 912-10 to determine the minimum retention for the outer 0.6 inch of guardrail posts, blocks, and sign posts using the AWPA Standards specified. If treating blocks with posts, determine charge retention by assay of borings from posts.

Preservative	Minimum Retention, (pcf)			AWPA Standard
	Guardrail Posts	Sign Posts	Blocks	
Oil Type	AWPA Commodity Specification A, Table 3.0, Use Category 4 (UC4C)	AWPA Commodity Specification B, Table 3.1.2, Use Category 4B	AWPA Commodity Specification A, Table 3.0, Use Category 4 (UC4A)	A6
Waterborne Type				A11

L. **Penetration.** Refer to Table 912-11 for heartwood and sapwood penetration requirements. Take samples to determine penetration after treatment as specified in subsection 912.09.M.

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Table 912-11 Penetration Requirements-Posts and Blocks		
All Species Allowed (a)	Minimum Penetration	
	Heartwood	Sapwood
Guardrail Posts and Blocks	0.3 in	0.6 in or 90%, whichever is greater
Sign Posts	0.5 in	0.6 in or 90%, whichever is greater
a. For Red Oak, penetrate 65 percent of the total annual rings. If red oak cannot be penetrated as required, the Contractor may properly condition wood to refusal.		

M. **Inspection After Treatment.** After treatment, examine the charge for cleanliness, mechanical damage, treatment damage such as severe checking, splitting, or honeycombing, and for untreated areas resulting from air pockets, floating material, or insufficient preservative height. Remove defective material before shipment.

The Department will sample material in accordance with MTM 713, and test for preservative retention and penetration.

N. **Branding.** Permanently and clearly burn brand posts and blocks on one wide face. On guardrail posts, ensure the brand is within 1 foot of the post top. On sign posts, ensure the brand is within the middle one-third of the post. Ensure the brand shows the following information in accordance with AWPA M 6:

1. Treater ID,
2. Plant designation,
3. Year of treatment (the month may be included),
4. Species or group (code designation specified in Table 912-12),
5. Preservative type, and
6. Retention type.

Table 912-12 Group Coding as an Alternate to Species Coding	
Group	Code (a)
Hardwoods	MH
Jack Pine	J
Other Softwoods	MS
Southern Pine	SP
Douglas Fir	DF
a. Species designated in Table 912-4, Table 912-5, and Table 912-6.	

O. **Conformance.** Ensure the treatment plant supplying the material provides a certificate indicating the species, grade, preservative type, retention, year, and name of treater.

P. **Degradation After Treatment.** The Engineer will reject guardrail posts or blocks that develop at least one of the following before installation:

1. Single checks at least 3 inches deep or checks opposite each other with a total depth greater than 3 inches as measured with a probe no greater than $\frac{1}{16}$ inch thick;
2. Single checks at least $\frac{1}{4}$ inch wide as measured at the widest point, and extending along more than one-third of the length of the post or block;
3. Single checks greater than $\frac{3}{8}$ inch wide as measured at the widest point;
4. Splits in the bolt hole plane greater than 3 inches long;
5. Crooks or bows greater than 1 inch per 10 foot length;
6. Twists; or
7. A combination of checks, splits, or shakes that may cause the post or block to separate into pieces.

Q. **Guardrail Offset Blocks.** The Contractor may select alternate materials for guardrail offset blocks from the Qualified Products List.

912.09. Timber for Rustic Construction.

A. **Species and Grade.** Provide sound unfinished eastern or northern white pine, red pine, ponderosa pine, douglas-fir, northern white cedar, or southern pine for logs, posts, timbers, lumber and split rails for rustic construction.

Provide material free of decay, with the bark removed. The Contractor may use salvaged rails from existing rail fences. Ensure salvaged rails are sound and uniform in straightness and size.

B. **Shape and Dimensions.** Provide uniformly straight materials as required, except where curved or angular logs are shown on the plans. Provide logs and posts with an average diameter, at the small end, of no less than the required diameter minus $\frac{1}{4}$ inch.

C. **Preservative Treatment.** Condition and pressure treat wood for rustic construction in accordance with AWWA U1, Section 6, Commodity Specification B, Use Category 4A (UC4A) for above ground or Use Category 4B (UC4B) for ground contact.

D. **Preservatives.** Provide preservatives, meeting the requirements of AWWA U1 Section 4, "Preservatives for Pressure Treatment Processes," and the relevant P Standards.

912.10. Timber and Lumber for Human Conveyances.

A. **Preservative Treatment.** Provide preservative treatment for timber and lumber on areas where frequent human contact may occur, including deck surfaces, walkways, handrails, steps, railing and fence posts, tables, and benches, with Ammoniacal Copper Quat (ACQ) or Copper

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Azole (CA), in accordance with AWPA U1-04. Ensure the ACQ preservative meets requirements of AWPA P5. Do not use Chromium Copper Arsenate (CCA) or other arsenic based preservatives.

Ensure the lumber and timber meets the preservative retention and penetration requirements of AWPA U1-04, Table 3.0 and Table 4.0, for UC4A, for above ground and UC4B, for ground contact.

For UC4A, ensure a retention of at least 0.40. For UC4B, ensure a retention of at least 0.60. Do not use wood species cited in Table 3.0 as "NR (Not Recommended) for ACQ preservative."

B. Results of Treatment. Evaluate treatment results, including preservative analysis and penetration and retention, by testing chemical assay, in accordance with AWPA A11. Process and treat wood in accordance with AWPA T1-04. Ensure the preservative temperature during the pressure period does not exceed 150 °F.

C. Fasteners. For wood treated with ACQ preservative, use stainless steel fasteners or hot dipped galvanized fasteners in accordance with ASTM A653, batch or post-dipped process, with a coating thickness of at least 1.85 ounces of zinc per square foot of surface area (G185). Do not mix fastener types. Ensure aluminum does not directly contact ACQ treated wood. Use non-metallic spacers if contact with aluminum may occur. Do not use aluminum fasteners.