

ALLEGAN COUNTY ROAD COMMISSION

TREATED TIMBER STRUCTURES

Sealed proposals will be received by the Allegan County Road Commission at their office at 1308 Lincoln Road (M-89), Allegan, Michigan until **11:00 A.M., Local Time, May 4, 2016**, and, at such time, be publicly opened and read aloud for the following:

Proposals are to be in sealed envelopes clearly marked on the outside as to the proposal number, time and date of bid opening. Proposals must be submitted on proposal blanks furnished by the Allegan County Road Commission.

GENERAL REQUIREMENTS

SCOPE OF WORK:

A. Intent of Specifications

The provisions contained in these specifications are intended for the purchase of pre-engineered treated timber structures. **Prices are to be firm through December 31, 2016. It is the intent of the Allegan County Road Commission to receive bids for treated timber structures with a one-year renewal option, if mutually agreed upon by both the awarded bidder and the Allegan County Road Commission.**

The following are the types of timber structures and components covered in the specifications:

1. Vehicular Bridges.
2. Pedestrian Bridges.
3. Box culverts.
4. Storage structures for salt and sand.
5. Bridge superstructure components.
6. Bridge substructure components.
7. Galvanized hardware for attaching components.
8. Geotextile products.

B. Engineering Requirement

The purpose of these specifications is to ensure that timber structures offered by the supplier are made of high quality, engineered components that have been designed by a professional engineer licensed to practice in the State of Michigan. It is understood by all parties to this contract that the bid prices, provided by the bidder, include the cost of all appropriate engineering on the part of the supplier. It is further understood that complete calculations, shop drawings, and/or construction plans are to be submitted to the Allegan County Road Commission for review and approval prior to order and shipment of any components or material purchased through these specifications.

All bridges are to be designed using the most current edition of the AASHTO Standard Specifications for Highway Bridges. All design loads are subject to approval by the Allegan County Road Commission. The required engineering effort for bridges shall include substructure design and design calculations for all of the connections necessary between substructure and superstructure. All timber design engineering shall be in accordance with:

1. American Wood Council, American Forest & Paper Association (AF&PA) - National Design Specification (NDS) for Wood Construction and NDS Supplement, 2005 edition.
2. American Wood Protection Association (APWA) – Book of Standards, 2008 edition.
3. American Institute of Timber Construction (AITC) – American National Standard, Structural Glued Laminated Timber, ANSI/AITC A190.1-2007 and Standard Specifications for Structural Glued Laminated Timber of Softwood Species, Design and Manufacturing Requirements, AITC 117-2004.
4. American Lumber Standards Committee (ALSC) – American Softwood Lumber Standard, NIST PS 20-05 and “*Accredited Agencies for Supervisory and Lot Inspection of Pressure Treated Wood Products*,” May 2008.
5. Western Wood Preserver’s Institute (WWPI) – Best Management Practices For the Use of Treated Wood in Aquatic and Sensitive Environments, 2006, as amended.

C. Coordination of Specifications

These Specifications act as and assume the role of, the Special Provisions for the contract between the Allegan County Road Commission and the Supplier.

D. Consideration of Proposals

Bid proposals submitted for consideration must include bid prices for all components and materials necessary for the complete construction of the structure. For bridges this includes all substructure components, superstructure components, vehicle railing systems, sidewalks, pedestrian railing systems, and any other appurtenances. Failure to include prices for necessary components, solely determined by the Allegan County Road Commission, will be sufficient grounds for rejection of bid proposals. Prices must include all freight costs for delivery to project site, anywhere within the confines of Allegan County, Michigan.

E. Supplier’s Responsibility

The supplier shall be, or secure a manufacturer that is regularly engaged in the business of design, fabrication, preservative treatment and production of pre-engineered, prefabricated pressure treated timber bridges, and culvert packages. The Allegan County

Road Commission may require the supplier to furnish independent records or references of competence for satisfaction of the requirement.

The supplier shall, as required by the Allegan County Road Commission, furnish such certifications and affidavits as to the species, stress grade and preservative treatment for any or all structure components and materials. These certifications are to ensure that the components and materials delivered to the project site are in accordance with the approved plans and calculations. The Allegan County Road Commission may also require that the supplier provide a capable field person to advise the installation crew, at the start of construction and when problems arise, so that the installation starts and concludes successfully.

F. Design Specifications

The design for vehicular bridges shall be AASHTO HS-20-44 or higher, in accordance with current AASHTO Standard Specifications for Highway Bridges. Other loading conditions as required by the Allegan County Road Commission may be used. Three sets of design drawings, sealed by a Professional Engineer, licensed to practice in the State of Michigan, shall be submitted by the manufacturer within 14 days of notice to proceed, unless directed otherwise. They shall be specific in detail and dimension. An itemized "Bill of Materials" showing in detail all materials used for the complete package (including all treated timber items, piles, nuts, bolts, cable, cable clamps, drive spikes, drift pins, etc.), as required will also be submitted.

G. Guarantee

The supplier shall guarantee that any components, materials, workmanship in the manufacturing, and fabrication which prove defective within 20 years after date of completion and acceptance. Defects in components, materials, workmanship in the manufacturing, and fabrication shall be replaced by the supplier or satisfactorily remedied without charge to the Allegan County Road Commission. This guarantee shall be in addition to the two million dollars (\$2,000,000) liability insurance provided by the manufacturer covering the design, components, and materials.

H. Handling and Shipping

The entire structure, including piling, shall be shipped directly to the job site or as directed by the Allegan County Road Commission, for storage in such a manner as not to cause damage to the members of any of the components. The Allegan County Road Commission will be notified 48 hours prior to delivery and a representative of the supplier shall be present for unloading at the storage site, if required by the Allegan County Road Commission. The supplier may also be called upon to furnish the necessary blocking to prevent any of the materials from being placed directly on the ground. All shipping and handling shall be included in the unit price for each item.

MATERIALS - TREATED TIMBER:

Treated timber for all structures shall be in accordance with the provisions of the Michigan Department of Transportation's 2003 Standard Specifications for Construction, except as specifically modified herein.

1. The only species of lumber, timber and piling allowed are Coastal Region Douglas Fir, Southern Yellow Pine and Ponderosa Pine.
2. All main structural members are to be pressure treated with Copper Naphthenate with a minimum retention of 0.75 pounds per cubic feet.

The specie and stress grade of all materials furnished under these specifications shall be clearly indicated on the construction plans. Calculations on which the selection of stress grade is based must be made available to the Allegan County Road Commission prior to shipment to project site. Certification of timber material as to specie and grade shall be given to the Allegan County Road Commission before delivery of the material.

GALVANIZED HARDWARE:

A. General

All galvanized hardware shall be in accordance with MDOT Specifications, except as specifically modified herein. All galvanized fasteners shall be ASTM A307 except those bolts resisting tensile loads in the PL-1 crash test bridge guide rail. Those bolts shall be ASTM A325.

B. Split Ring Connectors

Split rings of 2½ inch and four inch diameter shall be manufactured from hot-rolled carbon steel, conforming to SAE Grade 1010. Each ring shall form a closed true circle, with the principal axis of the cross section of the ring metal parallel to the geometric axis of the ring. The metal section shall be beveled from the central portion toward the edge to a thickness less than mid-section. One tongue and slot cut shall be provided in the circumference.

Structural timber and lumber specified in the plans to receive a split ring connector shall be match grooved in each member to a minimum depth equal to one half of the depth of the split ring, with a maximum over depth cut not exceeding 1/8 inch.

C. Washers

Unless a dome head bolt or approved equal is used, all bolt heads or tightening nuts in contact with structural timber and lumber shall have a washer of sufficient thickness and bearing area, to ensure a minimum deformation of the contacted surface when tightened, to develop not more than the maximum allowable tensile stress of the bolt.

Bolt heads or tightening nuts in contact with metal surfaces shall have a cut washer or approved equal placed between the bolt head or nut and the metal surface.

TREATED PILING:

All treated timber piling furnished shall be in accordance with MDOT Specifications, except as specifically modified herein. All piles shall be Southern Yellow Pine or Coastal Region Douglas Fir pressure treated with Copper Naphthenate with a minimum retention of 0.75 pounds per cubic feet..

PREFABRICATION:

FRAMING.

A. General.

All lumber and timber shall be accurately cut and framed to a close fit. All cutting, framing and boring, so far as practical, shall be done prior to treatment. All components requiring match marking to ensure close fit shall be match-marked with metal tags. Construction plans shall indicate the sequence of match-marking.

LONGITUDINAL DECK PANELS:

A. General.

The species, stress grade and thickness of all materials used in longitudinal deck panels shall be based on design calculations using accepted engineering practices following all applicable provisions of AASHTO Standard Specifications for Highway Bridges. All calculations shall be submitted to the Allegan County Road Commission for approval prior to any assembly of panels. All calculations shall be made based on the actual size of material used and not on nominal dimensions.

B. Manufacturing.

All timber planks used in longitudinal dowel laminated deck panels shall be smoothed on one surface (S1S) to ensure that not less than 90 percent of assembled surfaces are in contact with each other. Planks shall be pre-drilled prior to treatment for the installation of 3/8 inch diameter by 15 inch long hot-dipped galvanized ring shank dowels used to assemble the deck panels.

All deck panels shall be shop assembled with a hydraulic/mechanical press procedure so as to ensure that all 3/8 inch by 15 inch ring shank dowels are simultaneously driven with equal force and in order to also ensure that all heads finish flush with the surface of the timber plank. The current AASHTO Design Specification is based on the simultaneous installation of the dowels. Any deviation from this procedure must be supported by full scale research establishing the design distributing width. Design drawings shall show the center to center placement of the rink shank dowels as required by design standards. Certification of the entire pre-drilling and assembly process, as described herein shall be provided by the bridge manufacturer before final design is accepted, as required by the Allegan County Road Commission.

C. Panel Configuration.

Deck panels shall be panelized in panels approximately six feet in width and fitted with lifting lugs. The panels shall be sized suitable for lifting using a standard mobile crane capable of lifting seven tons at a distance of twenty feet from the center of each span to the most forward part of such a crane.

TRANSVERSE DECK PANELS:

All transverse timber deck panels shall be fabricated in accordance with Section 2.1 of this specification except as modified herein. The timber members for transverse timber decks which are not covered with a wearing surface shall have the timber members surfaced on one side and one edge (S1S1E).

TIMBER BOX CULVERTS:

All timber box culverts shall be fabricated in accordance with Section 2.1 of this specification except as modified herein. The calculations for timber box culverts must include shear calculations at every notch location as well as at all other locations of high shear stresses.

GEOTEXTILES:

All Geotextiles furnished shall be in accordance with MDOT Specifications depending on use, except as modified herein.

TREATED TIMBER STRUCTURES PROPOSAL

TIMBER STRUCTURES AND COMPONENTS, PRICE PER MBM: \$_____

Supplier's Name:	
By:	Title:
Signature:	
Address:	
Telephone:	Fax:
Email Address:	
Date:	

Remarks or exceptions, if any:

THE BOARD OF ALLEGAN COUNTY ROAD COMMISSIONERS RESERVES THE RIGHT TO REJECT ANY AND ALL PROPOSALS, OR TO WAIVE DEFECTS AND TO ACCEPT THE PROPOSALS IN PART OR ENTIRETY THAT IN THE OPINION OF THE BOARD ARE IN THE BEST INTEREST AND TO THE ADVANTAGE OF THE BOARD OF ALLEGAN COUNTY ROAD COMMISSIONERS AND THE COUNTY OF ALLEGAN, MICHIGAN.

**ALLEGAN COUNTY ROAD COMMISSION
AFFIDAVIT OF EQUAL OPPORTUNITY**

As a condition of obtaining and/or maintaining a contractual relationship with the Board of Allegan County Road Commissioners, State of Michigan, it is hereby certified that this contractor, supplier or contracting organization agrees to provide equal employment opportunity to all employees and applicants and will not discriminate against any employee or applicant for employment because of race, color, religion, national origin, ancestry, age, sex, height, weight, marital status, political affiliations or beliefs, or citizenship, as required by law. The Contractor covenants that applicants are and will be employed and that employees are and will be treated during employment without regard to their race, color, religion, national origin, ancestry, age, sex, height, weight, marital status, political affiliations or beliefs, or citizenship. Such action shall include, but not be limited to, the following: Employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rate of pay or other forms of compensation and selection for training, including apprenticeships. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this non-discrimination policy.

The Contractor, supplier or contracting organization shall comply with Title VI of the Civil Rights Act of 1964, as amended; Section 504 of the Federal Rehabilitation Act of 1973 (29 USC 794), the Michigan Elliott Larsens Civil Rights Act (MCL 37.2101, et seq.), the Michigan Handicappers Civil Rights Act (MCL 37.1101, et seq.), as amended, and the Americans With Disabilities Act of 1990.

On behalf of this organization I hereby certify that compliance with the above Equal Opportunity Policy is now, and will continue to be, maintained.

SUPPLIER: _____

BY: _____

TITLE: _____

DATE: _____