

**INVITATION TO BID**  
**FOR**  
**DESIGN AND FABRICATION SERVICES**  
**FOR**  
**AIRLINE TRAIL NORTH RESURFACING - PEDESTRIAN BRIDGE**

*September 6, 2016*

**Key Dates:**

**Bids Due – September 20, 2016**

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## **I. Introduction**

**Title:** Design and Fabrication Services for Airline Trail North Resurfacing – Pedestrian Bridge

**Issuing Agency, Address and Contact:**

Department of Energy and Environmental Protection (DEEP)  
Bureau of Central Services  
Engineering & Field Support Services Division  
Engineering Unit  
163 Great Hill Road  
Portland, Connecticut 06480  
Attention: David Cooley, Supervising Civil Engineer  
Phone: (860) 342-2215/ Fax: (860) 344-2560

**Location:**

Airline Trail, Thompson, CT  
Latitude – 41°, 57', 21.18" North; Longitude – 71°, 52', 49.07" West

**Purpose:**

The purpose of this Invitation to Bid (ITB) is to solicit a bid for design and fabrication services from a manufacturer with experience in the design and fabrication of pedestrian bridge structures. The manufacturer shall possess no less than 10 years of experience and be regularly engaged in the design, fabrication and installation of prefabricated pedestrian bridge systems in northeastern states.

**Background:**

The prefabricated pedestrian bridge is to be installed on existing masonry abutments where there is currently no bridge in place. The Airline Trail is a former rail bed and part of the East Coast Greenway. The existing abutments will be renovated and prepared to receive the prefabricated pedestrian bridge that is the subject of this Invitation to Bid by others.

Please see **Section II – Project Scope** for more specific information.

**Attachments:**

Airline Trail North Resurfacing – Pedestrian Bridge Plan Set

## **II. Project Scope**

**Design:**

Preliminary and Final submittals will be delivered for written approval by the DEEP Engineering Unit prior to fabrication. Final submittals shall be sealed and signed by a Professional Engineer registered in the State of Connecticut; two (2) sets shall be delivered, additionally the Final submittals shall be supplied in electronic format using AutoCAD (compatible with the DEEP Engineering Unit standards). In addition, the Manufacturer shall plan to participate in two conference calls with representatives from the DEEP; one upon completion of a review of the project submittals and a second, as necessary, following

alterations and corrections and prior to finalizing submittal acceptance and approval by DEEP representatives.

The following includes all materials, parts, hardware and related supplies for the complete fabrication of the pedestrian bridge as per the following specifications.

## **PREFABRICATED STEEL PEDESTRIAN BRIDGE**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Design and construction of Prefabricated Steel Pedestrian Bridge superstructure

#### **1.02 SUBMITTALS**

- A. Certifications, Shop Drawings, catalog cuts, manufacturer's literature, and technical data for all products and materials appurtenant to the construction specified herein.
- B. Calculations and working drawings for the design, fabrication, and erection of the prefabricated bridge superstructure. Include dimensions, sections, material designations, support reactions of the bridge and its components, location and details of all connections, and field splices (if necessary), bearing details (including anchor bolt locations and details), decking and railing details, erection details with lifting points and crane sizes and positions.
- C. Calculate the elevation of the bridge seat and provide a detail based on the details of the bridge and bearing devices.
- D. Working drawings and design computations shall signed and sealed by a civil or structural Professional Engineer licensed in the State of Connecticut. The Professional Engineer shall be available for consultation in interpreting his computations and drawings and in the resolution of any problems which may occur during the performance of the work.
- E. Quality control inspection report by Certified Weld inspector.
- F. Erection plan.

#### **1.03 QUALITY ASSURANCE**

- A. The bridge manufacturer shall have been in the business of design and fabrication of bridges for a minimum of 5 years and shall submit a list of at least ten successful bridge projects of similar construction to the proposed bridge each of which has been in service for a minimum of three years.
- B. The bridge shall be designed and fabricated by the same manufacturer.

#### 1.04 EXTENDED WARRANTY FOR PREFABRICATED STEEL PEDESTRIAN BRIDGE

- A. The bridge manufacturer shall provide a warranty against defects in material and workmanship for a period of ten (10) years.

### **PART 2 PRODUCTS**

#### 2.01 DIMENSIONS

- A. Width: Clear inside width shall be 12'-0"
- B. Overall bridge length shall be 27'-0". Field verify prior to submission of shop drawings.
- C. Shape: The top chord shall be a minimum of 72 inches (equestrian) above the deck. Provide vertical end truss chords.
- D. Camber: The bottom chord of the bridge shall be cambered to offset dead loads and appear flat or slightly cambered upward after the application of all dead loads.

#### 2.02 DESIGN

- A. The bridge superstructure shall be designed in accordance with the AASHTO Guide Specifications for the Design of Pedestrian Bridges. The bearings shall be designed in accordance with the AASHTO Standard Specifications for Highway Bridges.
- B. Uniform live load: The bridge shall be designed for an evenly distributed live load of 100 pounds per square foot.
- C. Vehicle load: The bridge shall be designed for a two axle AASHTO H-configuration vehicle with a gross vehicle weight of 14,000 pounds. The design vehicle is to mimic a Type 1 ambulance.
- D. Wind load: Bridge shall be designed for a minimum wind load of 50 pounds per square foot (approximately 110 mph). The load shall be calculated on the entire vertical surface of the bridge as if fully enclosed.
- E. Seismic: Bridge shall be designed for seismic loads in accordance with the AASHTO Standard Specifications for Highway Bridges.
- F. Structural Steel Allowable Stresses:
  - 1. Structural steel design shall be in accordance with those sections of the American Institute of Steel Construction "Manual of Steel Construction: Allowable Stress Design" related to design requirements and allowable stresses.
- G. Temperature: Bridge shall be designed to accommodate a temperature differential of 120 degrees Fahrenheit. A ½ inch clearance shall be provided between the bridge and the concrete abutments.

- H. Deflection: The vertical deflection of the bridge due to design pedestrian live load shall not exceed 1/400<sup>th</sup> of the span length. The horizontal deflection due to wind loading shall not exceed 1/500<sup>th</sup> of the span length.

## 2.03 MATERIALS

- A. All structural members shall have a minimum thickness of material of at least 3/16 inch.
- B. All structural and secondary steel members shall be weathering steel fabricated from ASTM 242 or ASTM A588 for plates and structural shapes and ASTM A606 or ASTM A847 for tubular sections. Minimum yield ( $F_y$ ) shall be a minimum of 50,000 psi.
- C. Wood Decking - Pressure treated Southern Yellow Pine no. 1 or better kiln (or air) dried, pressure treated Douglas Fir-Larch no 1 or better kiln (or air) dried, or naturally durable species such as Western Red Cedar (*Thuja Plicata*), Ipe (*Tabebuia Spp*) Lapacho group or Cumaru (*Dipteryx Odorta*). Only one species of wood shall be used for the decking unless otherwise approved.
  - 1. Decking Fasteners - Type 304 stainless steel screws or bolts, nuts, and washers, sized appropriately for the material thicknesses to be fastened.
- D. Welding Materials shall be in strict accordance with the American Welding Society (AWS) Structural Welding Code, D1.1. Filler metal shall be in accordance with the applicable AWS Filler Metal Specification (i.e. AWS A 5.28 for the GMAW Process). For exposed, bare, unpainted applications of corrosion resistant steels (i.e. ASTM A588 and A847), the filler metal shall be in accordance with AWS D1.1, Section 3.7.3.
- E. Welders shall be certified in accordance with AWS D1.1.

## 2.04 FABRICATION AND QUALITY CONTROL

- A. Bridge fabricator shall be certified by the American Institute of Steel Construction to have the personnel, organization, experience, capability, and commitment to produce fabricated structural steel for Conventional Steel Structures.
- B. The bridge supplier shall be the designer and fabricator of the bridge and shall not assign, sublet, or subcontract any part of the bridge fabrication.
- C. Workmanship, fabrication, and shop connections shall be in accordance with the AASHTO Construction Specifications.
- D. Welders shall be properly accredited operators, each of whom shall submit certification of satisfactorily passing AWS standard qualification tests for all positions with unlimited thickness of base metal, have a minimum of 6 months experience in welding tubular structures and have demonstrated the ability to make uniform sound welds of the type required.

- E. Bridge shall be inspected by a Certified Weld Inspector, qualified under the AWS QC-1 program. This inspection shall include as a minimum requirement the following: review of shop drawings, weld procedures, welder qualifications and weld testing reports, visual inspections of welds, and verification of overall dimensions and geometry of bridge. A report shall be produced indicating the above items were reviewed and submitted.
- F. All structural elements used in the bridge shall be identified by the heat number of the steel member used. Specific mill test reports and individual welder certificates shall be tracked and kept on file to be submitted at the request of the Owner or Engineer.
- G. All welding shall utilize E70 or E80 series electrodes. The weld process used shall be Flux Core Arc Welding (FCAW) or Gas Metal Arc Welding (GMAW) or Shielded Manual Arc Welding (SMAW) per ANSI/AASHTO/AWS D1.5 "Bridge Welding Code."
- H. The connection of bridge end post to top chord shall be a mitered joint with the exposed welds ground smooth.
- I. The connection of the floor beam to a pony truss system shall not be solely into the side of a tubular bottom chord without the use of additional stiffeners.
- J. When the collection of water inside a structural tube is a possibility, either during construction or during service, the tube shall be provided with a drain hole at its lowest point to let water out.

## 2.05 RAILINGS AND ACCESSORIES

- A. All railings shall have a smooth inside surface with no protrusions or depressions. All ends of angles and tubes shall be closed and ground smooth.
- B. Safety rails shall be located on the inside of the trusses. Railings shall be a minimum of 54 inches above the deck. The rails shall have vertical pickets with a maximum clear opening of 4 inches.
- C. Toe plate: Provide a 5" steel channel located nominally ¼ inch above the floor deck.
- D. Railing shall conform to the State of Connecticut Building code

## 2.06 FINISHING

- A. Blast Cleaning of enhanced corrosion resistant steels:
  - 1. All Blast Cleaning shall be done in a dedicated OSHA approved indoor facility owned and operated by the bridge fabricator. Blast operations shall use Best Management Practices and exercise environmentally friendly blast media recovery systems.
  - 2. To aid in providing a uniformly "weathered" appearance, all exposed surfaces of steel shall be blast cleaned in accordance with Steel Structures Painting Council

Surface Preparation Specifications No. 7 Brush-Off Blast Cleaning, SSPC-SP7 latest edition.

3. Exposed surfaces of steel shall be defined as those surfaces seen from the deck and from outside of the structure. Stringers, floor beams, lower brace diagonals and the inside face of the truss below deck and bottom face of the bottom chord do not require blasting.

### **PART 3 EXECUTION**

#### **3.01 DELIVERY AND ERECTION**

- A. Deliver bridge to the project site.
- B. Manufacturer shall advise the Contractor of the actual lifting weights, attachment points, and all necessary information to install the bridge. Unloading, splicing, bolting, and proper lifting equipment is the responsibility of the Contractor.

### **III. Bid Requirements**

#### **Project Approach:**

The Manufacturer shall clearly outline the firm's understanding of the project including planning, design, and other stages as required.

#### **Experience and References:**

The Manufacturer shall demonstrate experience with projects similar in scope and adhering to all the quality assurance and qualification requirements of this ITB. Include specific references with contact information.

#### **Time and Cost:**

Provide detailed cost and time breakdown based on **Section II Project Scope**. Provide a timeline/schedule for the work items in the **Section II Project Scope**. Include three (3) weeks review time for submittals. The objective for the installation of the bridge is December 19, 2016.

### **IV. Bid and Selection Process**

All submissions to the ITB for Design and Fabrication Services for Airline Trail North Resurfacing – Pedestrian Bridge must be in the possession of the DEEP Engineering Unit no later than **2:00pm on Tuesday, September 20, 2016**. Bidders must submit two (2) copies of their bid submittal.

No submissions will be accepted after this date and time.

**Method of Evaluation:**

An evaluation panel composed of DEEP representatives will review the bid submittals. The criteria requested under **Section III Bid Requirements** will be used to evaluate the submittals.

Interviews, if required, will be held on a mutually agreed upon date. Candidates must be represented in interviews by managers and senior staff that will be responsible for the project, if applicable.

Upon selection of a Manufacturer, a Purchase Order and Project Agreement outlining roles and responsibilities and financial terms and other conditions shall be negotiated between the selected Manufacturer and the DEEP.

The following represents the timeline for the ITB and the final selection of the Manufacturer for this work:

ITB and Selection Timeline:

ITB Formally Announced Bids Due at 163 Great Hill Road, Portland, Connecticut	September 6, 2016 September 20, 2016 no later than 2:00PM local time
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**V. General Conditions**

All bidders shall be willing to adhere to the following conditions and shall positively state this in the bid:

1. All bids in response to this Invitation to Bid are to be the property of the DEEP. All materials associated with this procurement process are subject to the terms of state laws defining freedom of information and privacy and all rules, regulations and interpretations resulting from those laws.
2. Any product, whether acceptable or unacceptable, developed under a contract awarded as a result of the ITB is to be the sole property of the DEEP.
3. Timing and sequence of events resulting from this ITB will ultimately be determined by the DEEP.
4. The bidder agrees that the bid will remain valid for a period of 90 days after the closing date for the submission and may be extended beyond that time by mutual agreement.
5. The DEEP may amend or cancel this ITB, prior to the due date and time, if the DEEP deems it to be necessary, appropriate or otherwise in the best interests of the DEEP. Failure to acknowledge receipt of amendments, in accordance with the instructions contained in the amendments, may result in a firm’s bid not being considered.
6. The bidder must certify that the personnel identified in its response to this ITB will be the persons actually assigned to the project. Any additions, deletions or changes in personnel from the bid during the course of the project must be approved by the DEEP, with the exception of personnel who have terminated employment. Replacements for personnel who have terminated employment are subject to approval by the DEEP. At its discretion, DEEP may require the removal and replacement of

any of the bidder's personnel who do not perform adequately, regardless of whether they were previously approved by the DEEP.

7. Any costs and expenses incurred by bidders in preparing or submitting bids are the sole responsibility of the bidder.
8. A bidder, if requested, must be prepared to present evidence of experience, ability, service facilities, and financial standing necessary to satisfactorily meet the requirements set forth or implied in the bid.
9. No additions or changes to the original bid will be allowed after submittal. While changes are not permitted, clarification of bids may be required by the DEEP at the bidder's sole cost and expense.
10. In some cases, bidders may have to give presentations or further explanation to the ITB screening committee.
11. The bidder represents and warrants that the bid is not made in connection with any other bidder and is in all respects fair and without collusion or fraud. The bidder further represents and warrants that they did not participate in any part of the ITB development process, had no knowledge of the specific contents of the ITB prior to its issuance, and that no agent, representative or employee of the DEEP participated directly in the bidder's submittal preparation.
12. All Responses to the ITB must conform to instruction. Failure to answer all questions or to follow the requested format may be considered appropriate cause for rejection of the response.
13. The DEEP shall assume no liability for payment of services under the terms of the contract until the successful bidder is notified that the contract has been accepted and approved by the DEEP. The contract may be amended only by means of a written instrument signed by the DEEP and the bidder.