COUNTY OF ALBANY

BID FORM-1

BID IDENTIFICATION:

Title: **Truss Bridge for the Albany County Rail Trail over SR 85**
Bid Number: **2023-112**

THIS BID IS SUBMITTED TO:

Pamela O Neill, Purchasing Agent
Albany County Department of General Services
Purchasing Division
112 State Street, Room 1000
Albany, NY 12207

1. The undersigned BIDDER proposes and agrees, if this Bid is accepted, to enter into a Contract with the owner in the form included in the Contract Documents to complete all Work as specified or indicated in the Contract Documents for the Contract Price and within the Contract Time indicated in this Bid and in accordance with the Contract Documents.

2. BIDDER accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the Disposition of Bid Security. This Bid may remain open for ninety (90) days after the day of Bid opening. BIDDER will sign the Contract and submit the Contract Security and other documents required by the Contract Documents within fifteen days after the date of OWNER'S Notice of Award.

3. In submitting this Bid, BIDDER represents, as more fully set forth in this Contract, that:

   (a) BIDDER has examined copies of all the Contract Documents and of the following addenda: (If none, so state)

Date	Number
9/19/2023	2023-112, Add #1 & Add #2

   (receipt of all of which is hereby acknowledged) and also copies of the Notice to Bidders and the Instructions to Bidders;

   (b) BIDDER has examined the site and locality where the Work is to be performed, the legal requirements (federal, state and local laws, ordinances, rules and regulations) and the conditions affecting cost, progress or performance of the Work and has made such independent investigations as BIDDER deems necessary;

(c) This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; BIDDER has not directly or indirectly induced or solicited any other BIDDER to submit a false or sham Bid; BIDDER has not solicited or induced any person, firm or a corporation to refrain from bidding; and BIDDER has not sought by collusion to obtain for himself any advantage over any other Bidder or over the owner.

4. BIDDER will complete the Work for the following prices(s): (Attach Bid Proposal)

5. BIDDER agrees to commence the Work within the number of calendar days or by the specific date indicated in the Contract. BIDDER agrees that the Work will be completed within the number of Calendar days or by the specific date indicated in the contract.

6. The following documents are attached to and made a condition of this Bid:

(a) Non-Collusive Bidding Certificate (Attachment "A")

(b) Acknowledgment by Bidder (Attachment "B")

(c) Vendor Responsibility Questionnaire (Attachment "C")

(d) Iranian Energy Divestment Certification (Attachment "D")

(e) MS-4-1 Certification Statement RE: Stormwter Discharges (Attachment "E")

(f) Bidder Qualification Questionnaire (Attachment "F")

(g) Non Interruption of Work Agreement (Attachment "G")

(h) Required Apprenticeship Training Program Documentation (refer to RFB Section 27)

7. Communication concerning this Bid shall be addressed to:

Aaron Gentilucci

Phone: 540-266-8473

8. Terms used in this Bid have the meanings assigned to them in the Contract and General Provisions.

COUNTY OF ALBANY

BID FORM-1
Structure Type I – GALVANIZED PANEL TRUSS PEDESTRIAN BRIDGE

BID IDENTIFICATION:

Title: **Truss Bridge for the Albany County Rail Trail over SR 85**
Bid Number: **2023-112**

(A) Total Design and Manufacturing and Freight (LS)	$0
(B) 5% Contingency Allowance	$0
(C) Grand Total Lump Sum	$0

Add Alternate 1 Installation	$0
Add Alternate 2 Bi-Annual Inspection Service	$0
Add Alternate 3 Traffic Control	$0

COUNTY OF ALBANY

BID FORM-1
Structure Type I – GALVANIZED PANEL TRUSS PEDESTRIAN BRIDGE

BID IDENTIFICATION:

Title: **Truss Bridge for the Albany County Rail Trail over SR 85**
Bid Number: **2023-112**

COMPANY:	Bridge Brothers Inc
ADDRESS:	225 pumpkintown hwy, pickens, sc 29671
CITY, STATE, ZIP:	
TEL. NO.:	540-266-8473
FAX NO.:	
FEDERAL TAX ID NO.:	47-4234845
REPRESENTATIVE:	Aaron Gentilucci
E-MAIL:	aaron@bridgebrothers.com
SIGNATURE AND TITLE	VP of Business Development

DATE 9/19/2023

COUNTY OF ALBANY

BID FORM-2

BID IDENTIFICATION:

Title: **Truss Bridge for the Albany County Rail Trail over SR 85**
Bid Number: **2023-112**

THIS BID IS SUBMITTED TO:

Pamela O Neill, Purchasing Agent
Albany County Department of General Services
Purchasing Division
112 State Street, Room 1000
Albany, NY 12207

1. The undersigned BIDDER proposes and agrees, if this Bid is accepted, to enter into a Contract with the owner in the form included in the Contract Documents to complete all Work as specified or indicated in the Contract Documents for the Contract Price and within the Contract Time indicated in this Bid and in accordance with the Contract Documents.

2. BIDDER accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the Disposition of Bid Security. This Bid may remain open for ninety (90) days after the day of Bid opening. BIDDER will sign the Contract and submit the Contract Security and other documents required by the Contract Documents within fifteen days after the date of OWNER'S Notice of Award.

3. In submitting this Bid, BIDDER represents, as more fully set forth in this Contract, that:

   (a) BIDDER has examined copies of all the Contract Documents and of the following addenda: (If none, so state)

Date	Number
9/19/2023	2023-112, Add #1 & Add #2

   (receipt of all of which is hereby acknowledged) and also copies of the Notice to Bidders and the Instructions to Bidders;

   (b) BIDDER has examined the site and locality where the Work is to be performed, the legal requirements (federal, state and local laws, ordinances, rules and regulations) and the conditions affecting cost, progress or performance of the Work and has made such independent investigations as BIDDER deems necessary;

(c) This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; BIDDER has not directly or indirectly induced or solicited any other BIDDER to submit a false or sham Bid; BIDDER has not solicited or induced any person, firm or a corporation to refrain from bidding; and BIDDER has not sought by collusion to obtain for himself any advantage over any other Bidder or over the owner.

4. BIDDER will complete the Work for the following prices(s): (Attach Bid Proposal)

5. BIDDER agrees to commence the Work within the number of calendar days or by the specific date indicated in the Contract. BIDDER agrees that the Work will be completed within the number of Calendar days or by the specific date indicated in the contract.

6. The following documents are attached to and made a condition of this Bid:

(a) Non-Collusive Bidding Certificate (Attachment "A")

(b) Acknowledgment by Bidder (Attachment "B")

(c) Vendor Responsibility Questionnaire (Attachment "C")

(d) Iranian Energy Divestment Certification (Attachment "D")

(e) MS-4-1 Certification Statement RE: Stormwter Discharges (Attachment "E")

(f) Bidder Qualification Questionnaire (Attachment "F")

(g) Non Interruption of Work Agreement (Attachment "G")

(h) Required Apprenticeship Training Program Documentation (refer to RFB Section 27)

7. Communication concerning this Bid shall be addressed to:

Aaron Gentilucci

Phone: 540-266-8473

8. Terms used in this Bid have the meanings assigned to them in the Contract and General Provisions.

COUNTY OF ALBANY

BID FORM 2

Structure Type II– GALVANIZED WELDED STEEL PRATT TRUSS PEDESTRIAN BRIDGE

BID IDENTIFICATION:

Title: **Truss Bridge for the Albany County Rail Trail over SR 85**
Bid Number: **2023-112**

(A) Total Design and Manufacturing and Freight (LS)	$ $370,930
(B) 5% Contingency Allowance	$ 18546
(C) Grand Total Lump Sum	$ 389,476
Add Alternate 1 Installation	$ 105,197
Add Alternate 2 Bi-Annual Inspection Service	$ $11,967
Add Alternate 3 Traffic Control	$ $49,800
Add Alternate 4 Painted Steel	$ Subtract $5,000 to GTLS
Add Alternate 5 Weathering Steel	$ Subtract $70,000 from GTLS

Add on Panels: $157,362

- Bolted steel mountains and valleys on sides of bridge with city logo in center on both sides
- Weatheirng steel only, paintedfor galvanized to be at an additional cost
- Panels to be 42" tall on ⅛" - 3/16"A588 metal at discretion of fabricator
- May be shipped loose for preservation of sign integrity

COUNTY OF ALBANY

BID FORM 2

Structure Type II – GALVANIZED WELDED STEEL PRATT TRUSS PEDESTRIAN BRIDGE

BID IDENTIFICATION:

Title: **Truss Bridge for the Albany County Rail Trail over SR 85**
Bid Number: **2023-112**

COMPANY: Bridge Brothers Inc

ADDRESS: 225 pumpkintown hwy, pickens, sc 29671

CITY, STATE, ZIP:

TEL. NO.: 540-266-8473

FAX NO.:

FEDERAL TAX ID NO.: 47-4234845

REPRESENTATIVE: Aaron Gentilucci

E-MAIL: aaron@bridgebrothers.com

SIGNATURE AND TITLE VP of Business Development

DATE 9/19/2023

COUNTY OF ALBANY

BID FORM-3

BID IDENTIFICATION:

Title: **Truss Bridge for the Albany County Rail Trail over SR 85**
Bid Number: **2023-112**

THIS BID IS SUBMITTED TO:

Pamela O Neill, Purchasing Agent
Albany County Department of General Services
Purchasing Division
112 State Street, Room 1000
Albany, NY 12207

1. The undersigned BIDDER proposes and agrees, if this Bid is accepted, to enter into a Contract with the owner in the form included in the Contract Documents to complete all Work as specified or indicated in the Contract Documents for the Contract Price and within the Contract Time indicated in this Bid and in accordance with the Contract Documents.

2. BIDDER accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the Disposition of Bid Security. This Bid may remain open for ninety (90) days after the day of Bid opening. BIDDER will sign the Contract and submit the Contract Security and other documents required by the Contract Documents within fifteen days after the date of OWNER'S Notice of Award.

3. In submitting this Bid, BIDDER represents, as more fully set forth in this Contract, that:

   (a) BIDDER has examined copies of all the Contract Documents and of the following addenda: (If none, so state)

Date	Number
9/19/2023	2023-112, Add #1 & Add #2

   (receipt of all of which is hereby acknowledged) and also copies of the Notice to Bidders and the Instructions to Bidders;

   (b) BIDDER has examined the site and locality where the Work is to be performed, the legal requirements (federal, state and local laws, ordinances, rules and regulations) and the conditions affecting cost, progress or performance of the Work and has made such independent investigations as BIDDER deems necessary;

(c) This Bid is genuine and not made in the interest of or on behalf of any undisclosed person, firm or corporation and is not submitted in conformity with any agreement or rules of any group, association, organization or corporation; BIDDER has not directly or indirectly induced or solicited any other BIDDER to submit a false or sham Bid; BIDDER has not solicited or induced any person, firm or a corporation to refrain from bidding; and BIDDER has not sought by collusion to obtain for himself any advantage over any other Bidder or over the owner.

4. BIDDER will complete the Work for the following prices(s): (Attach Bid Proposal)

5. BIDDER agrees to commence the Work within the number of calendar days or by the specific date indicated in the Contract. BIDDER agrees that the Work will be completed within the number of Calendar days or by the specific date indicated in the contract.

6. The following documents are attached to and made a condition of this Bid:

(a) Non-Collusive Bidding Certificate (Attachment "A")

(b) Acknowledgment by Bidder (Attachment "B")

(c) Vendor Responsibility Questionnaire (Attachment "C")

(d) Iranian Energy Divestment Certification (Attachment "D")

(e) MS-4-1 Certification Statement RE: Stormwter Discharges (Attachment "E")

(f) Bidder Qualification Questionnaire (Attachment "F")

(g) Non Interruption of Work Agreement (Attachment "G")

(h) Required Apprenticeship Training Program Documentation (refer to RFB Section 27)

7. Communication concerning this Bid shall be addressed to:

Aaron Gentilucci

Phone: 540-266-8473

8. Terms used in this Bid have the meanings assigned to them in the Contract and General Provisions.

COUNTY OF ALBANY

BID FORM 3
Structure Type III – GALVANIZED WELDED STEEL MODIFIED BOWSTRING TRUSS PEDESTRIAN BRIDGE

BID IDENTIFICATION:

Title: **Truss Bridge for the Albany County Rail Trail over SR 85**
Bid Number: **2023-112**

(A) Total Design and Manufacturing and Freight (LS)	$ 383,930
(B) 5% Contingency Allowance	$ 19,196
(C) Grand Total Lump Sum	$ 403,126

Add Alternate 1 Installation	$ 105,197
Add Alternate 2 Bi-Annual Inspection Service	$ 11,967
Add Alternate 3 Traffic Control	$ 49,500
Add Alternate 4 Painted Steel	$ Subtract $5,000 to GTLS
Add Alternate 5 Weathering Steel	$ Subtract $70,000 from GTLS

Add on Panels: $157,362

- Bolted steel mountains and valleys on sides of bridge with city logo in center on both sides
- Weatheirng steel only, painted fr galvanized to be at an additional cost
- Panels to be 42" tall on ⅛" - 3/16"A588 metal at discretion of fabricator
- May be shipped loose for preservation of sign integrity

COUNTY OF ALBANY

BID FORM 3
Structure Type III– GALVANIZED WELDED STEEL MODIFIED BOWSTRING TRUSS PEDESTRIAN BRIDGE

BID IDENTIFICATION:

Title: **Truss Bridge for the Albany County Rail Trail over SR 85**
Bid Number: **2023-112**

COMPANY: Bridge Brothers Inc

ADDRESS: 225 pumpkintown hwy, pickens, sc 29671

CITY, STATE, ZIP: _____

TEL. NO.: _____

FAX NO.: _____

FEDERAL TAX ID NO.: 47-4234845

REPRESENTATIVE: Aaron Gentilucci

E-MAIL: aaron@bridgebrothers.com

SIGNATURE AND TITLE _____ VP of Business Development

DATE 9/19/2023

ATTACHMENT "A"
NON-COLLUSIVE BIDDING CERTIFICATE PURSUANT TO SECTION 103-D OF THE NEW YORK STATE GENERAL MUNICIPAL LAW

A. By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid, each party thereto certifies as to its own organizations, under penalty of perjury, that to the best of knowledge and belief:

(1) The prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor.

(2) Unless otherwise required by law, the prices which have been quoted in this bid have not knowingly been disclosed by the bidder and will not knowingly be disclosed by the bidder, directly or indirectly, prior to opening, to any bidder or to any competitor.

(3) No attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

A bid shall not be considered for award nor shall any award be made where (1), (2), and (3) above have not been complied with; provided, however, that in any case the bidder cannot make the foregoing certification, the bidder shall so state and shall furnish with the bid a signed statement which sets forth in detail the reasons thereof. Where (1), (2), and (3) above have not been complied with, the bid shall not be considered for any award nor shall any award be made unless the head of the Purchasing Unit to the political subdivision, public department , agency or official thereof to which the bid is made, or his designee, determines that such disclosure was not made for the purpose of restricting competition.

The fact that a bidder (a) has published price lists, rates, or tariffs covering items being procured, (b) has informed prospective customer of proposed or pending publication of new or revised price lists for such items, or (c) has sold the same items to other customers at the same prices being bid, does not constitute, without more, a disclosure within the meaning of paragraph "A" above.

B. Any bid hereafter made to any political subdivision of the state or any public department, agency or official thereof by a corporate bidder for work or services performed or to be performed or goods sold or to be sold, where competitive bidding is required by statute, rule, regulation, local law, and where such bid contains the certification referred to in paragraph "A" of this section, shall be deemed to have been authorized by the Board of Directors of the bidder, and such authorization shall be deemed to include the submission of the bid and the inclusion therein of the certificate as to non-collusion as the act and deed of the corporation

Signature

VP of Business Development

Title

9/19/2023

Date

Bridge Brothers Inc

Company Name

ATTACHMENT "B"
ACKNOWLEDGMENT BY BIDDER

If Individual or Individuals:

STATE OF _____)
COUNTY OF _____) **SS.:**

On this _____day of _____, 200__, before me personally appeared _____ to me known and known to me to be the same person(s) described in and who executed the within instrument, and he (or they severally) acknowledged to me that he (or they) executed the same.

_____

Notary Public, State of _____

Qualified in _____

Commission Expires _____

If Corporation:

STATE OF South Carolina)
COUNTY OF Pickens) **SS.:**

On this 19 day of september, 2023, before me personally appeared Aaron Gentilucci to me known, who, being by me sworn, did say that he resides at (give address) 4365 Berkford circle ne, atlanta ga 30319; that he is the (give title) VP of Business Development of the (name of corporation) Bridge Brothers Inc, the corporation described in and which executed the above instrument; that he knows the seal of the corporation, and that the seal affixed to the instrument is such corporate seal; that it was so affixed by order of the board of directors of the corporation, and that he signed his name thereto by like order.

NANCY DENISE HAWKINS NOTARY PUBLIC Commission Expires 4-18-2033 SOUTH CAROLINA

Nancy Denise Hawkins

Notary Public, State of South Carolina

Qualified in _____

Commission Expires 04-18-2033

If Partnership:

STATE OF _____)
COUNTY OF _____) **SS.:**

On the_____day of_____, 200___, before me personally came_____ _____, to me known to be the individual who executed the foregoing, and who, being duly sworn, did depose and say that he / she is a partner of the firm of_____ and that he / she has the authority to sign the same, and acknowledged that he / she executed the same as the act and deed of said partnership.

_____

Notary Public, State of _____

Qualified in _____

Commission Expires _____

ATTACHMENT "C"
ALBANY COUNTY
VENDOR RESPONSIBILITY QUESTIONNAIRE

1. VENDOR IS:

☐ PRIME CONTRACTOR

2. VENDOR'S LEGAL BUSINESS NAME	3. IDENTIFICATION NUMBERS
Bridge Brothers Inc	a) FEIN # 47-4264845 b) DUNS #
4. D/B/A – Doing Business As (if applicable) & COUNTY FIELD:	5. WEBSITE ADDRESS (if applicable) www.bridgebrothers.com

6. ADDRESS OF PRIMARY PLACE OF BUSINESS/EXECUTIVE OFFICE	7. TELEPHONE NUMBER	8. FAX NUMBER
225 pumpkintown hwy, pickens, sc 29671	866-258-3401	
9. ADDRESS OF PRIMARY PLACE OF BUSINESS/EXECCUTIVE OFFICE *IN NEW YORK STATE, if different from above*	10. TELEPHONE NUMBER	11. FAX NUMBER

12. AUTHORIZED CONTACT FOR THIE QUESTIONNAIRE

Name Aaron Gentilucci

Title VP of Business Development

Telephone Number 540-266-8473

Fax Number

e-mail aaron@bridgebrothers.com

13. LIST ALL OF THE VENDOR'S PRINCIPAL OWNERS.

a) NAME Elias Angell	TITLE Owner	b) NAME	TITLE
c) NAME	TITLE	d) NAME	TITLE

A DETAILED EXPLANATION IS REQUIRED FOR EACH QUESTION ANSWERED WITH A "YES," AND MUST BE PROVIDED AS AN ATTACHMENT TO THE COMPLETED QUESTIONNAIRE. YOU MUST PROVIDE ADEQUATE DETAILS OR DOCUMENTS TO AID THE COUNTY IN MAKING A DETERMINATION OF VENDOR RESPONSIBILITY. PLEASE NUMBER EACH RESPONSE TO MATCH THE QUESTION NUMBER.

14. DOES THE VENDOR USE, OR HAS IT USED IN THE PAST FIVE (5) YEARS, ANY OTHER BUSINESS NAME, FEIN, or D/B/A OTHER THAN THOSE LISTED IN ITEMS 2-4 ABOVE? List all other business name(s), Federal Employer Identification Number(s) or any D/B/A names and the dates that these names or numbers were/are in use. Explain the relationship to the vendor. ☐ Yes ☑ No

15. ARE THERE ANY INDIVIDUALS NOW SERVING IN A MANAGERIAL OR CONSULTING CAPACITY TO THE VENDOR, INCLUDING PRICIPAL OWNERS AND OFFICERS, WHO NOW SERVE OR IN THE PAST ONE (1) YEARS HAVE SERVED AS:

a) An elected or appointed public official or officer? ☐ Yes ☑ No
List each individual's name, business title, the name of the organization and position elected or appointed to, and dates of service

b) An officer of any political party organization in Albany County, whether paid or unpaid? ☐ Yes ☑ No
List each individuals name, business title or consulting capacity and the official political position held with applicable service dates.

16. WITHIN THE PAST (5) YEARS, HAS THE VENDOR, ANY INDIVIDUALS SERVING IN MANAGERIAL OR CONSULTING CAPACITY, PRINCIPAL OWNERS, OFFICERS, MAJOR STOCKHOLDER(S) (10% OR MORE OF THE VOTING SHARES FOR PUBLICLY TRADED COMPANIES, 25% OR MORE OF THE SHARES FOR ALL OTHER COMPANIES), AFFLITIATE OR ANY PERSON INVOLVED IN THE BIDDING OR CONTRACTING PROCESS:

a) 1. been suspended, debarred or terminated by a local, state or federal authority in connection with a contract or contracting process; ☐ Yes ☑ No

2. been disqualified for cause as a bidder on any permit, license, concession franchise or lease;

3. entered into an agreement to a voluntary exclusion from bidding/contracting;

4. had a bid rejected on an Albany County contract for failure to comply with the MacBride Fair Employment Principles;

5. had a low bid rejected on a local, state or federal contract for failure to meet statutory affirmative action or M/WBE requirements on a previously held contract;

6. had status as a Women's Business Enterprise, Minority Business Enterprise or Disadvantaged Business Enterprise, de-certified, revoked or forfeited;

7. been subject to an administrative proceeding or civil action seeking specific performance or restitution in connection with any local, state or federal government contract;

8. been denied an award of a local, state or federal government contract, had a contract suspended or had a contract terminated for non-responsibility; or

9. had a local, state or federal government contract suspended or terminated for cause prior to the completion of the term of the contract.

b) been indicted, convicted, received a judgment against them or a grant of immunity for any business-related conduct constituting a crime under local, state or federal law including but not limited to, fraud extortion, bribery, racketeering, price-fixing, bid collusion or any crime related to truthfulness and/or business conduct? ☐ Yes ☑ No

c) been issued a citation, notice, violation order, or are pending an administrative hearing or proceeding or determination of violations of: ☐ Yes ☑ No

1. federal, state or local health laws, rules or regulations.

17. IN THE PAST THREE (3) YEARS, HAS THE VENDOR OR ITS AFFILIATES HAD ANY CLAIMS, JUDGMENTS, INJUNCTIONS, LIENS, FINES OR PENALTIES SECURED BY ANY GOVERNMENTAL AGENCY? ☐ Yes ☑ No
Indicate if this is applicable to the submitting vendor or affiliate. State whether the situation(s) was a claim, judgment, injunction, lien or other with an explanation. Provide the name(s) and address(es) of the agency, the amount of the original obligation and outstanding balance. If any of these items are open, unsatisfied, indicate the status of each item as "open" or "unsatisfied."

18. DURING THE PAST THREE (3) YEARS, HAS THE VENDOR FAILED TO:

a) file returns or pay any applicable federal, state or city taxes? ☐ Yes ☑ No
Identify the taxing jurisdiction, type of tax, liability year(s), and tax liability amount the vendor failed to file/pay and the current status of the liability.

b) file returns or pay New York State unemployment insurance? ☐ Yes ☑ No
Indicate the years the vendor failed to file/pay the insurance and the current status of the liability.

c) Property Tax ☐ Yes ☐ No
Indicate the years the vendor failed to file.

19. HAVE ANY BANKRUPTCY PROCEEDINGS BEEN INITIATED BY OR AGAINST THE VENDOR OR ITS AFFILIATES WITHIN THE PAST SEVEN (7) YEARS (WHETHER OR NOT CLOSED) OR IS ANY BANKRUPTCY PROCEEDING PENDING BY OR AGAINST THE VENDOR OR ITS AFFILIATES REGARDLESS OR THE DATE OF FILING? ☐ Yes ☑ No
Indicate if this is applicable to the submitting vendor or affiliate. If it is an affiliate, include the affiliate's name and FEIN. Provide the court name, address and docket number. Indicate if the proceedings have been initiated, remain pending or have been closed. If closed, provide the date closed.

20. IS THE VENDOR CURRENTLY INSOLVENT, OR DOES VENDOR CURRENTLY HAVE REASON TO BELIEVE THAT AN INVOLUNTARY BANKRUPTCY PROCEEDING MAY BE BROUGHT AGAINST IT? Provide financial information to support the vendor's current position, for example, Current Ration, Debt Ration, Age of Accounts Payable, Cash Flow and any documents that will provide the agency with an understanding of the vendor's situation. ☐ Yes ☑ No

21.	IN THE PAST FIVE (5) YEARS, HAS THE VENDOR OR ANY AFFILIATES[1]:	☐ Yes ☑ No
	a) defaulted or been terminated on, or had its surety called upon to complete, any contract (public or private) awarded;	
	Indicate if this is applicable to the submitting vendor or affiliate. Detail the situation(s) that gave rise to the negative action, any corrective action taken by the vendor and the name of the contracting agency.	

1 "Affiliate" meaning: (a) any entity in which the vendor owns more than 50% of the voting stock; (b) any individual, entity or group of principal owners or officers who own more than 50% of the voting stock of the vendor; or (c) any entity whose voting stock is more than 50% owned by the same individual, entity or group described in clause (b). In addition, if a vendor owns less than 50% of the voting stock of another entity, but directs or has the right to direct such entity's daily operations, that entity will be an "affiliate" for purposes of this questionnaire.

ALBANY COUNTY
VENDOR RESPONSIBILITY QUESTIONNAIRE

FEIN # 47-4234845

State of: South Carolina
) ss:
County of: pickens)

CERTIFICATION:

The undersigned: recognizes that this questionnaire is submitted for the express purpose of assisting the County of Albany in making a determination regarding an award of contract or approval of a subcontract; acknowledges that the County may in its discretion, by means which it may choose, verify the truth and accuracy of all statements made herein; acknowledges that intentional submission of false or misleading information may constitute a felony under Penal Law Section 210.40 or a misdemeanor under Penal Law Section 210.35 or Section 210.45, and may also be punishable by a fine and/or imprisonment of up to five years under 18 USC Section 1001 and may result in contract termination; and states that the information submitted in this questionnaire and any attached pages is true, accurate and complete.

The undersigned certifies that he/she:

- Has not altered the content of the questions in the questionnaire in any manner;
- Has read and understands all of the items contained in the questionnaire and any pages attached by the submitting vendor;
- Has supplied full and complete responses to each item therein to the best of his/her knowledge, information ad belief;
- Is knowledgeable about the submitting vendor's business and operations;
- Understands that Albany County will rely on the information supplied in the questionnaire when entering into a contract with the vendor;
- Is under duty to notify the Albany County Purchasing Division of any material changes to the vendor's responses.

Name of Business Bridge Brothers Inc Signature of Owner

Address 225 pumpkintown hwy, pickens, sc 29671 Printed Name of Signatory Elias Angell

City, State, Zip Title Owner

Sworn before me this 19 day of september, 2023.

Nancy Denise Hawkins
Notary Public

NANCY DENISE HAWKINS
NOTARY PUBLIC
Commission Expires 4-18-2033
SOUTH CAROLINA

NANCY DENISE HAWKINS
Printed Name

Nancy Denise Hawkins
Signature

9/19/2023
Date

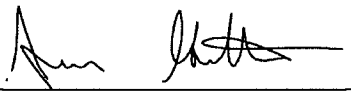
Attachment "D"
Certification Pursuant to Section 103-g
Of the New York State
General Municipal Law

A. By submission of this bid/proposal, each bidder/proposer and each person signing on behalf of any bidder/proposer certifies, and in the case of a joint bid, each party thereto certifies as to its own organization, under penalty of perjury, that to the best of its knowledge and belief that each bidder is not on the list created pursuant to paragraph (b) of subdivision 3 of Section 165-a of the New York State Finance Law.

B. A Bid/Proposal shall not be considered for award, nor shall any award be made where the condition set forth in Paragraph A above has not been complied with; provided, however, that in any case the bidder/proposer cannot make the foregoing certification set forth in Paragraph A above, the bidder/proposer shall so state and shall furnish with the bid a signed statement which sets forth in detail the reasons therefor. Where Paragraph A above cannot be complied with, the Purchasing Unit to the political subdivision, public department, agency or official thereof to which the bid/proposal is made, or his designee, may award a bid/proposal, on a case by case business under the following circumstances:

1. The investment activities in Iran were made before April 12, 2012, the investment activities in Iran have not been expanded or renewed after April 12, 2012, and the Bidder/Proposer has adopted, publicized and is implementing a formal plan to cease the investment activities in Iran and to refrain from engaging in any new investments in Iran; or

2. The political subdivision makes a determination that the goods or services are necessary for the political subdivision to perform its functions and that, absent such an exemption, the political subdivision would be unable to obtain the goods or services for which the contract is offered. Such determination shall be made in writing and shall be a public document.



Signature

VP of Business Development

Title

9/19/2023

Date

Bridge Brothers Inc

Company Name

ATTACHMENT "E"

Sheet MS4-1: Bidder/Proposer Certification Statement (to be used with Section 34 Part A – General Contracts)

As a bidder seeking to provide services on behalf of Albany County, I certify under penalty of law that I understand and agree to comply with the terms and conditions of the New York State Pollutant Discharge Elimination System ("SPDES") General Permit for Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4 Permit) and Albany County Local Law 7 of 2007, and agree to implement any Best Management Practices or corrective actions identified by Albany County or an authorized representative thereof as necessary to maintain compliance. I understand that Albany County must comply with the terms and conditions of the aforementioned MS4 Permit, and that it is unlawful for any person to directly or indirectly cause or contribute to a violation of water quality standards. I am also aware that County Local Law 7 of 2007 prohibits any activities that cause or contribute to a violation of the County's SPDES permit. Further, I understand that any non-compliance by Albany County will not diminish, eliminate or lessen my own liability.

Name of Third Party Entity: not applicable - manufacturer is out of state

Address: _____

_____

Phone Number(s): _____

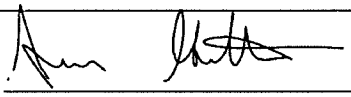
Description of activities to be performed by your firm or organization within Albany County are related to the Albany County Storm Water Management Program (SWMP) (include any activities that have the potential to generate or prevent pollution and/or affect water quality):

none

_____

Description of where the work is to be performed within Albany County facilities:

None



Signature

Aaron Gentilucci

Printed Name

VP of Business Development

Title

9/19/2023

Date

ATTACHMENT "F"
BIDDER QUALIFICATION QUESTIONNAIRE

The undersigned guarantees the accuracy of all statements and answers herein contained. (Please print in ink or type in the spaces provided). Attach additional sheets if necessary. This statement of Bidder's qualifications is required of all Bidders. Additional data on Bidder's qualifications may be requested from selected Bidders after the Bid opening.

1. How many years has your firm been in business? 7 years

2. List up to three (3) projects of this nature that you have completed in the last three (3) years, and give the name, address and telephone number of a reference from each. Also give the completion date, the original contract bid price and the completed cost of each project listed.

1. Bridge supply - Legacy Trail $3,800,000, Fivebridges, 10 abutments and 5 installations

Kyle Skaltsas - 904-222-5027

2. Saranac Bridges $700,000 - supply of two bridges

walter tupper - 518-859-3522

3. Spectrum supply and installation of onen bridge $1,700,000

Scotty Mckinley - DPR - 858-583-9415

ATTACHMENT "F"
BIDDER QUALIFICATION QUESTIONNAIRE

3. List projects presently under contract by your firm, the dollar volume of the contract and the percentage completion of the contract.

If awarded we can provide this information we currently have $15,000,000 on backlog over 6 mont

4. Has your firm ever failed to complete work awarded to it, if so, state where and why.

no

5. Is your firm presently or has your firm ever been a party defendant in a lawsuit commenced against your firm alleging failure to properly complete work in accordance with the contract for same; if so, give details.

no

ATTACHMENT "F"
BIDDER QUALIFICATION QUESTIONNAIRE

6. Has your firm received two (2) final determinations within any consecutive six-year period, the second final determination occurring within the past five (5) years, that your firm willfully failed to pay the prevailing rate of wages or to provide supplements with Article 8 of the Labor Law, if so, give details.

no

7. Do you plan to sublet any part of this work? If so, give details.

if awarded installation and traffic control that will be supplied by local companies in Albany County, NY.

8. Give the name, address and telephone number of an individual who represents each of the following and whom the Owner may contact to investigate your financial responsibility: a surety, and a bank.

Jim Marley -Financials - jmarley@bridgebrothers.com

Michael Dawson - Surety - MDawson@yatesins.com

ATTACHMENT "F"
BIDDER QUALIFICATION QUESTIONNAIRE

9. Give a summary of your financial statement. (List assets and liabilities, use an insert sheet, if needed).

Our financials are not publically shared. We are in great financial position and can present more information if awarded the project

10. State the true, exact, correct and complete name of the partnership, corporation or trade name under which you do business, and the address of the place of business. (If a corporation, state the name and title of all officers. If a partnership, state the name of all partners. If a trade name, state the names of the individuals who do business under the trade name.) It is absolutely necessary that information be furnished.

Bridge Brothers Inc
Correct Name of Bidder

(a) The business is a: Corporation

(b) The address of principal place of business is: 225 pumpkintown hwy, pickens, sc 29671

(c) The names of the corporate officers, or partners, or individuals doing business under a trade name, are as follows:

Elias Angell

ATTACHMENT "F"
BIDDER QUALIFICATION QUESTIONNAIRE

11. Is your firm qualified to do business in the State of New York? Yes ✓ No ____.
If No, signing this qualification statement constitutes agreement to obtain such qualification prior to award of contract immediately upon owner's request.

Bridge Brothers Inc
Firm

Dated: 9/19/2023

By _____

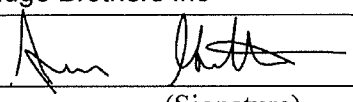
Aaron Gentilucci
(Typed)

ATTACHMENT "G"
NON-INTERRUPTION OF WORK AGREEMENT

By submission of the bid for:

The bidder agrees that if this bid is accepted, he/she will not intentionally engage in any course of conduct or activity, or employ for the purposes of performing the public work, any subcontractors, employees, labor or materials which will or may result in the interruption of the performance of the public work due to labor strife or unrest by workmen employed by the bidder or by any of the trades working in or about the public works and/or premises where the work is being performed.

Firm: Bridge Brothers Inc

By: 
(Signature)

(Typed)

Title: VP of Business Development

Date: 9/19/2023

BRIDGE BROTHERS

e: sales@bridgebrothers.com
t: 866.258.3401
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Date:September 19, 2023

Project: Albany 2023-112

Scope: Bridge Design, Bridge Manufacturing

Contact: Aaron Gentilucci 540-266-8473

Our Estimate below defies our full scope of work for the bridges on the above-referenced project. The price on this proposal is only valid for thirty (30) days.

Bridge Brother's scope will include all structural engineering, manufacturing, installation, and delivery of structures. Any associated designs will be in adherence to the engineering standards set forth in the proposal. Any additional work outside of the proposed scope below will be priced in the form of a Change Order.

Structural Engineering: Included

- Single PE Stamped Design & Calculation Package by one PE
    - Design Included anchor design, bearing design, and concrete deck design

Pratt Bridge design, manufacturing and delivery No Tax: $370,930

5% Contingency $18,546

GTLS $389,476

- Qty (1) 12' x 140' Pedetrian Bridge
- Bridge Design and Member Size is Based on Bridge Brothers Stamped Design
- Finish (Weathering, or Galvanized, or painted 2 - Coat)
    - painted subtract $5,000 from GTLS
    - Weathering subtract $70,000 from GTLS
- Truss Configuration (Pratt)
- Decking (SIP Galvanized Pan for concrete)
    - Shipped Loose (Deck may be shipped loose per bridge design at the discretion of the manufacturer
- Vehicle Loading if Applicable (H-10)
- Railing (Vertical Picket 42")
- Splices (Multiple three length splices per side and loose floor beams, floor beams to be loose, decking shipped loose

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- Additional Options (Anchor Bolt Design, Bearing Plate Design/Supply, Expansion Plate Supply (3/16 diamond plate)
- Sales Tax is EXCLUDED
- Freight to Project Site (FOB)
    - The bridge will be shipped in see above pieces (Length and or floor splice) with a current estimated value of freight of ($60,000)
    - Estimated total bridge weight is (60,000#)

Bowstring design, manufacturing and delivery no tax: $383,930

5% contingency $19,196

GTLS $403,126

- Qty (1) 12' x 140' Pedetrian Bridge
- Bridge Design and Member Size is Based on Bridge Brothers Stamped Design
- Finish (Galvanized)
    - Painted 2 - Coat Subtract $5,000 from GTLS
    - Weathering subtract $70,000 from GTLS
- Truss Configuration (Modified Bowstring)
- Decking (SIP Galvanized Pan for concrete)
    - Shipped Loose (Deck may be shipped loose per bridge design at the discretion of the manufacturer
- Vehicle Loading if Applicable (H-10)
- Railing (Vertical Picket 42")
- Splices (Multiple three length splices per side and loose floor beams, floor beams to be loose, decking shipped loose
- Additional Options (Anchor Bolt Design, Bearing Plate Design/Supply, Expansion Plate Supply (3/16 diamond plate)
- Sales Tax is EXCLUDED
- Freight to Project Site (FOB)
    - The bridge will be shipped in see above pieces (Length and or floor splice) with a current estimated value of freight of ($60,000)
    - Estimated total bridge weight is (60,000#)

Bridge Erection: $105,197

- Install above detailed bridge on customer supplied foundations
    - Bridge Foundations and/or supports must be surveyed and verify locations/elevations and be provided to Bridge Brothers prior to mobilization

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- Bridge Brothers means and methods of installation is at their discretion
- Site must have clear accessible graded access for crane and/or heavy equipment to travel to abutment locations
- Site contractor is to provide clear crane access within a 10' radius of abutments backwall.
    - If the radius is more than 10' a Change Order may be issued for the difference in crane value.
    - If the site does not meet those conditions Bridge Brothers may perform the work at T&M rates at the customer approval to grant feasible access to complete the installation
- Crane Pads, if required are to be provided by the customer as the discretion of the crane companies pre-site visit
- Unload and splice/fit-up bridge sections
- Lift plans can be provided at an additional expense
- Lane Closures and Traffic Control is by others
- Skidmore and or torque test requirements are excluded from this proposal and are available as a Change Order
- Utilities and overhead powerlines are to be covered, protected or relocated at the owner expense prior to Bridge Brothers mobilization
- Erect bridge and install bridge anchors per project plans

Bi Annual bridge inspection and preventative maintenance package: $11,967

- Inspect the associated bridge
- Inspect splice for turn of nut procedure and confirm all nuts/bolts are tight
- Visually inspect anchor bolt tightness
- Visually inspect for any visual damage and coating issues
- Visually inspect bridge decking for missing hardware and replace as needed
- Any issues that arise needed more inspection will be T&M plus 20%

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Estimated traffic control **$49,500**

Add on Panels: **$157,362**

- Bolted steel mountains and valleys on sides of bridge with city logo in center on both sides
- Weatheirng steel only, painted for galvanized to be at an additional cost
- Panels to be 42" tall on ⅛" - 3/16"A588 metal at discretion of fabricator
- May be shipped loose for preservation of sign integrity

Bridge Sitework Proposals are available upon request

Bridge Brothers Terms and Conditions are to be signed

Estimated Project Schedule

- **Structural Design Package**
  - 8 weeks
- **Bridge Manufacturing and Freight**
  - 16 - 20 Weeks from the Date of Approved Drawings Depending on Scope
    - Delivery may vary due to mill lead times
- **Bridge Erection**
  - 1-3 Weeks Depending on Scope

Qualifications:

- Bridge Brothers Terms and Conditions are required to be signed, in the circumstance where they are not, please allow a minimum of ten (10) working days for contract review.
- Any language listed within this proposal shall be fully incorporated into the final contract.
- Bridge Brothers will require a payment to serve as a deposit to begin engineering services.
- Bridge Brothers will require a payment following the approval of engineering submittals.
- Bridge Brothers will require a payment following the completion of fabrication.
- Bridge Brothers will require the payment of Change Orders prior to shipment.
- Bridge Brothers will require a payment that serves as an erection deposit before any Bridge Brothers mobilization.
- Bridge Brothers will not accept any retention holdbacks thirty (30) days after the completion of our scope of work.
- The Customer must provide sufficient space for delivery trucks to safely park and be unloaded, any time delays at delivery which result in additional freight charges will be billed to the customer.
- Means and methods of installation are Bridge Brothers and any measure requested and/or required outside of this will be charged at a Time and Material from our standard rate sheet.
- Pricing may be subject to change based on the Geotechnical Report, Site Survey, and Site Constraint.
- Utilities, overhead power lines, or anything in relation are to be covered, protected, or relocated at the Customers' expense prior to Bridge Brother's mobilization.
- Site must have sufficient site access for erection equipment on both sides of the project, the following will apply:
  - Site must be cut/excavated to grade for installation methods, where the site is not to grade - any work required by Bridge Brothers to make the site to grade will be charged as a Change Order.
  - Bridge Brothers must have access within 10' of each abutment.
  - Bridge Brothers must have a 16' path to each abutment (will vary depending on bridge width);
  - Crane Pads/Mats will be supplied by Others.

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  - Bridge Brothers is not responsible for the following:
    - Tree removal.
    - Brush removal.
    - Excess dirt removal.
    - Excess grubbing.
- Any equipment or tools used on site that are owned/rented by the Customer is at the expense of the Customer; Bridge Brothers will not be responsible for any cost associated with such unless discussed prior to mobilization.
- The following requirements must be satisfied in relation to Unloading and Splice Fit Up Bridges:
  - 80% Safety Factor to be used on all cranes, if a lower safety percentage is required/requested and a larger crane is required, any cost associated with such will be billed in the form of a Change Order.
- Lane Closures and traffic control will be completed by Others at no cost to Bridge Brothers.
- If Bridge Brothers is to be pouring the concrete deck the following applies:
  - The cost associated with the concrete test/heating is on the Customer.
  - The cost associated with the sealing of concrete is on the Customer.
  - The cost associated with any epoxy-coated rebar is on the Customer.
  - Concrete is poured in conformance to structural requirements, not architectural requirements.
  - Where Bridge Brothers performs any of the above-mentioned work or work in relation to the above-mentioned this will be billed in the form of a Change Order at our T&M standard rates.
- Where the project includes cable railing, Bridge Brothers will tension cables to the design specifications:
  - Bridge Brothers will leave a tension tool upon written request from the Customer.
  - Bridge Brothers will remobilize to tension cables following the final walkthrough, where the Customer requests any re-tensioning of cable railing; this will be billed in the form of a Change Order and will be completed at the discretion of the Bridge Brothers installation schedule.
- Where the project is painted or galvanized the following will apply:
  - Any additional touch-up galv or paint will be completed by Bridge Brothers while on site, anything requested following the final walkthrough will be billed in the form of a Change Order.
  - Bridge Brothers will leave additional paint with the customer following the final walkthrough.
- Bridge Brothers will require a final walk-through with a customer representative following such a project completion and the acceptance form will be signed while Bridge Brothers personnel is onsite.
- Bridge Brothers is a nondiscriminatory employer.

Exclusions:

- Any item not listed in this proposal is not included in Bridge Brothers' Scope of Work.
- Any proposed scope of work additions will be billed in the form of a Change Order.
- Sales Tax is not included here and shall be paid by the Customer to Bridge Brothers.
- Where Bridge Brothers is required to obtain higher insurance limits to match Customer requirements, the cost of such will be billed in the form of a Change Order.
- Bridge Brothers reserves the right to adjust pricing for material, freight, onsite equipment and labor escalation.
- Any additional inspection beyond visual is the responsibility of the customer.
- Any additional compliance requirements are excluded from this proposal.
- Any design revision after Rev1 submittals will be billed in the form of a Change Order at our standard hourly rates.
- Any cost associated with union labor is not included in this proposal.
- Any cost associated with prevailing wage is not included in this proposal.
- Any cost associated with dewatering is not included in this proposal.
- Any cost associated with soil compaction, dirt removal, bull rock, erosion control, silt fencing, or anything in relation is not included in this proposal.
- Bridge Brothers does not perform site elevation references, centerline work, site layout, surveys, or control points.
  - Bridge foundations and/or supports must be surveyed and verify locations/elevations and be provided to Bridge Brothers prior to mobilization.
- Due to the nature of this business, engineering, and market delays shall not result in any consequential or liquidated damages for which Bridge Brothers may be held liable.
- Bridge Brothers reserves the right to make schedule adjustments for installation due to site conditions.

BRIDGE BROTHERS

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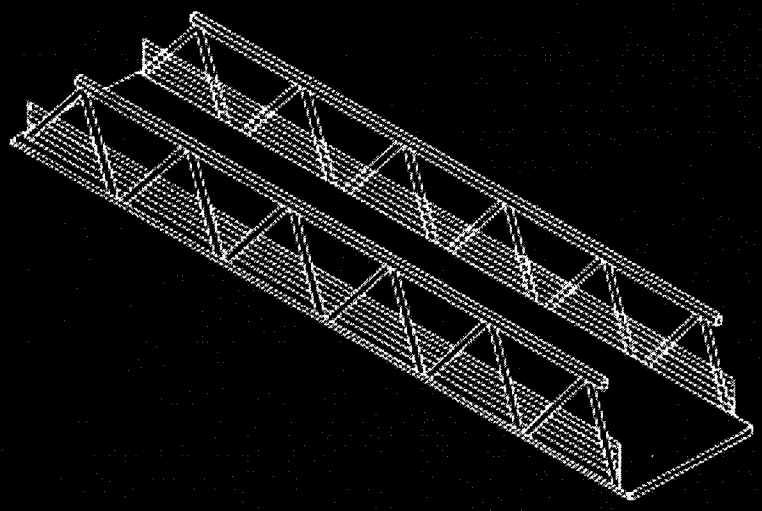
If you have any follow-up questions in relation to this proposal or require additional information, please feel free to contact us at the following:

Aaron Gentilucci - Sales - 540.266.8473 - aaron@bridgebrothers.com

BRIDGE BROTHERS

TURN KEY PREFABRICATED BRIDGES



QUALIFICATIONS PACKAGE

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BRIDGE BROTHERS

BRIDGE BROTHERS PROVIDES TURN KEY DELIVERY THROUGH ENGINEERING, FABRICATING, AND INSTALLING CUSTOM BRIDGES AND STRUCTURES

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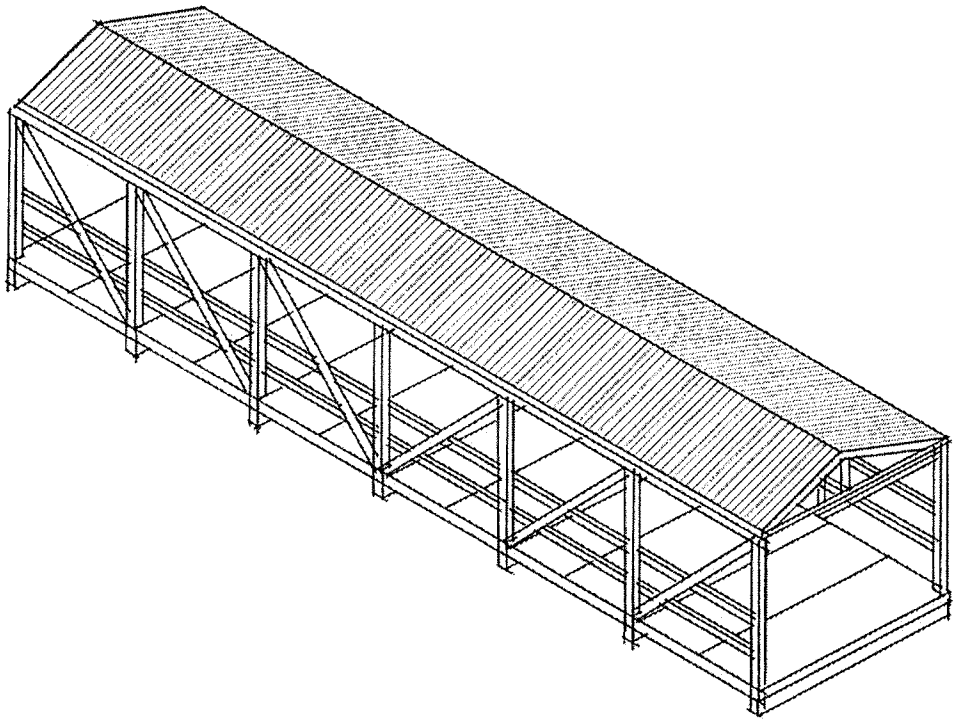


BRIDGE BROTHERS PROCESS

Bridge Brothers provides a variety of services before the project starts to make sure that our clients receive the best value and that the project budget and timeline are within their expectations. These include:

GRANT APPLICATIONS

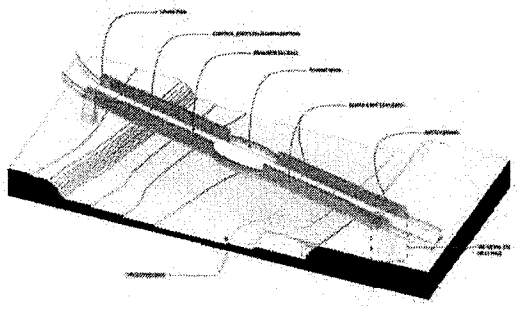
Our team will help determine if a project is eligible for any grants and assist in the application process.

FEASIBILITY STUDY

Before we design, our engineers will analyze each project and make necessary recommendations to improve the bridge.

The City has been very pleased to work with Bridge Brothers in our efforts to put a new bridge in our Lake Park. Their service and quality of the bridge has exceeded our expectations. The bridge was built as ordered, delivered on time and in excellent condition. I would recommend them without hesitation for your bridge needs.

-Joe, City Manager



CONCEPT

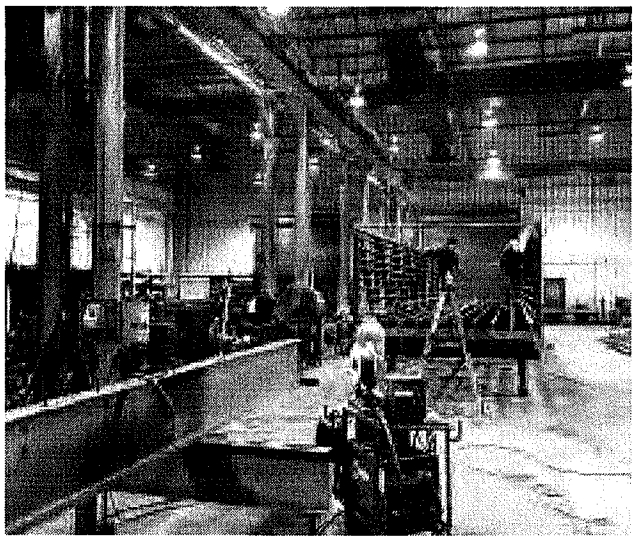
Because Bridge Brothers is a fully integrated engineering, design, manufacturing, and construction firm, we work with our clients to make sure each bridge is well engineered and aesthetically pleasing. Our engineers and architects work hand-in-hand with our clients to bring their vision to life. The Bridge Brothers team takes into consideration how and where a bridge will be used to advise on materials and configurations that would be appropriate. From the project specifications and from conversations with the client team, a unique bridge emerges.

PRECONSTRUCTION • CONCEPT • DESIGN • ENGINEERING • MANUFACTURING • INSTALLATION

PREFABRICATION

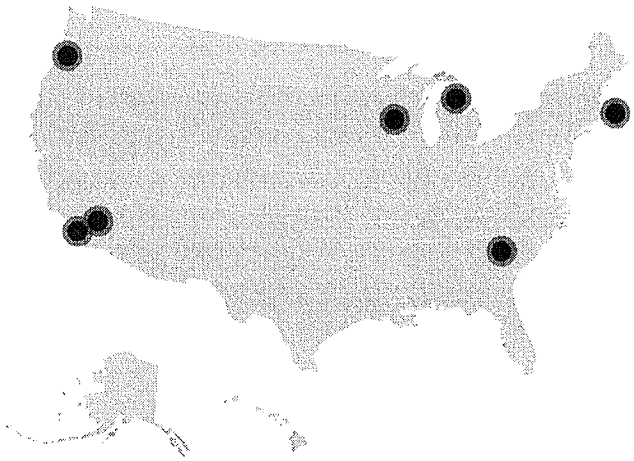
Prefabrication does not mean off-the-shelf. Each bridge is custom manufactured. The prefabrication process means that the bridge is assembled in sections in a controlled environment then these pieces are transported and assembled on site.

There are many benefits to using prefabrication in your bridge project. Building your bridge in dedicated sections helps reduce the need for a large construction project, which in turn will cut down on overall project costs. Bridge Brothers saves you money on your project by hiring a smaller crew and only using the equipment needed for installation. A quick installation process helps clients avoid lengthy shutdowns to a business, industrial factory, or recreational area during construction.



Projects using the prefabrication process tend to be completed faster than bridge projects that are built piece by piece on site. In a controlled environment, the manufacturing team is able to work on multiple aspects of a bridge simultaneously. On a traditional bridge building construction site, workers often need to wait for one part to be completed before moving on to the next. A delay in one area creates a ripple effect and can threaten a deadline and increase costs.

Finally, prefabrication is safer for workers and the environment. With quick construction and a focus on installation, work crews will be spending less time on the job site which means less disruption for you. Prefabrication has a positive impact on the environment by limiting pollution and possible contamination caused by larger construction projects.



OUR SHOPS ARE NATION-WIDE

MANUFACTURING

Once a project has gone through several iterations of design and engineering, the custom components of the bridge are manufactured. Bridge Brothers uses prefabrication to keep timelines short and costs low. From the concept phase through manufacturing, we ensure that our clients receive quality materials at competitive prices.

Our manufacturing teams are highly skilled in sourcing and working with high-quality materials and fabricating well-built structures. Bridge Brothers has shops nation-wide which allows us to start work on a project quickly and in any location. Big or small, we provide top of the line manufacturing services for each project.

PREFABRICATION MEANS HIGHER QUALITY + BETTER DESIGN

BRIDGE BROTHERS

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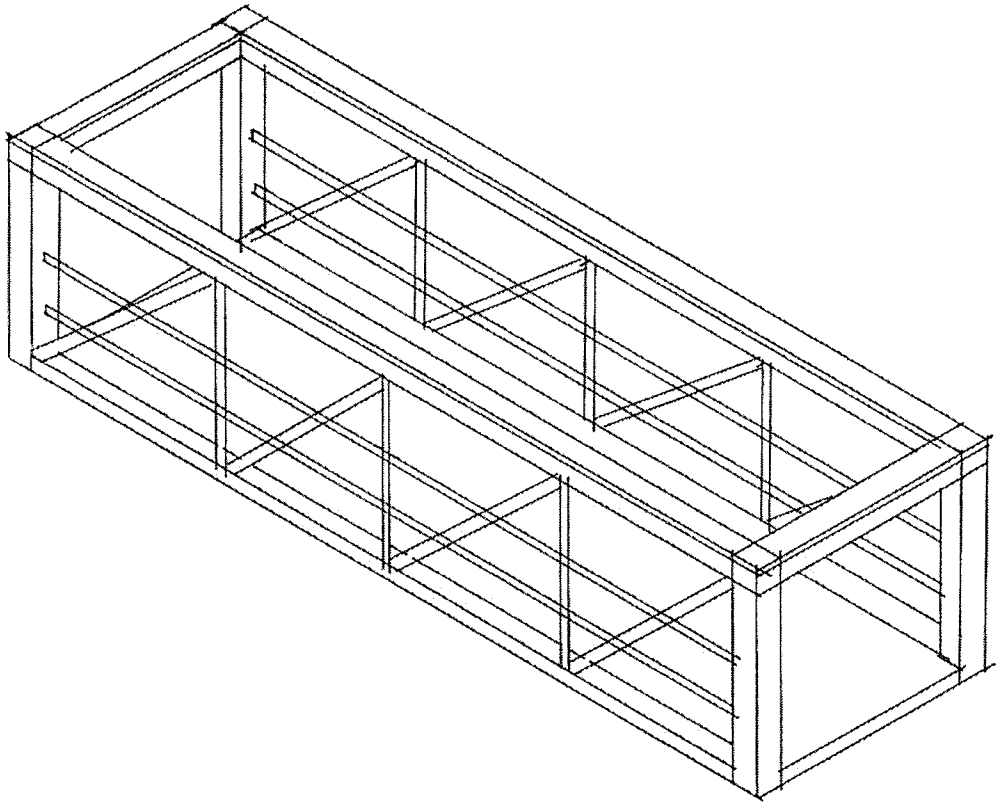
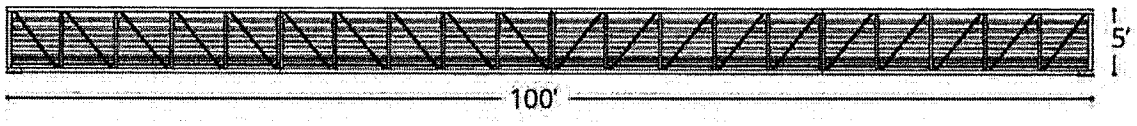


PROJECT BRIEFS

TRAIL BRIDGE • PRATT TRUSS • WEATHERED STEEL FINISH • PT PINE DECKING • HORIZONTAL RAILING



CONCEPT

These two signature bridges are an icon in the Boulder Civic Area Park in Colorado. The bridge is a custom design that Bridge Brothers fully prefabricated so that it could be installed within one day.

DESIGN

Bridge Brothers worked in close collaboration with the architect throughout the project. In order to avoid future problems, the bridge design incorporated engineering guidance and manufacturing abilities. Working as an in-house team allowed Bridge Brothers to avoid and prevent potential problems.

ENGINEERING

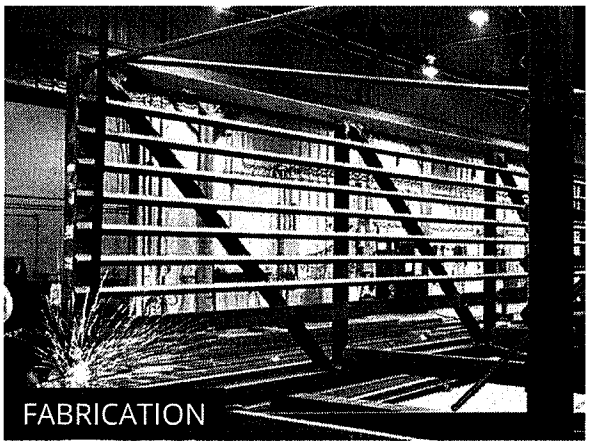
Another engineering challenge Bridge Brothers solved was determining a way to manufacture the bridge so that it would appear as one solid piece with zero indication of welds and plates meeting up.

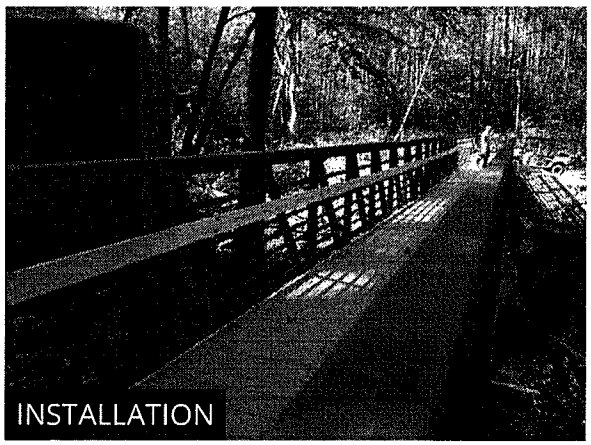
FABRICATION

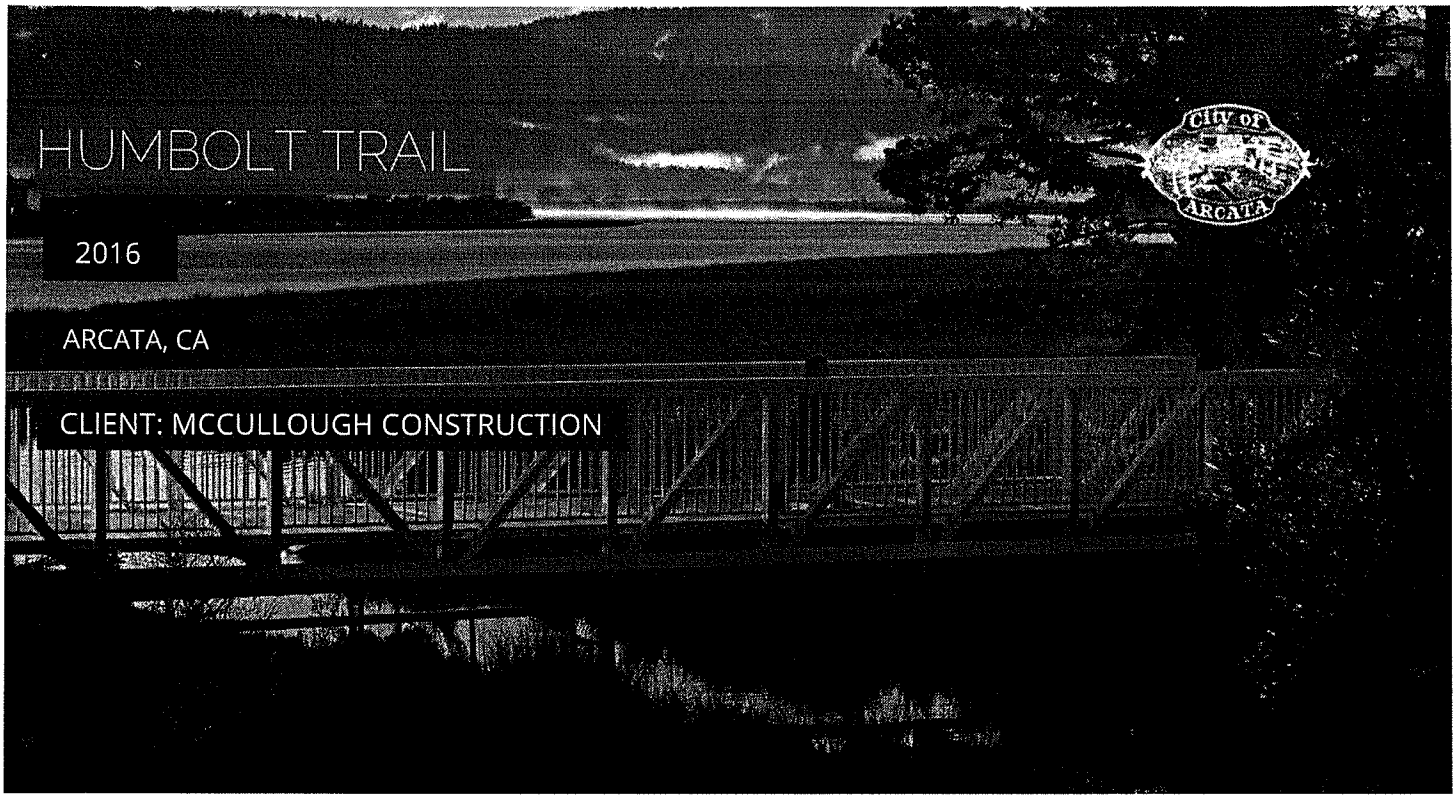
The bridge design used Corten Plate steel with a custom CNC design that created a moray pattern throughout the length of the bridge.

INSTALLATION

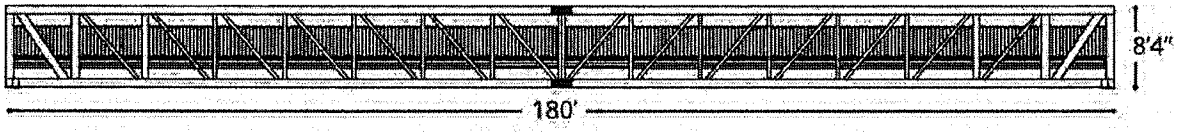
Because installing the bridge would be very disruptive to this active park, the bridge needed to be designed so that it could be installed in less than one day.







TRAIL BRIDGES • BOARDWALK • PRATT TRUSS • MILL FINISH ALUMINUM• ALUMINUM DECKING • VERTICAL PICKET



CONCEPT

Bridge Brothers designed and fabricated two single-span aluminum bridges at 50' and 60', a galvanized steel 180' bridge, and 1,280 linear feet of boardwalk in a sensitive marsh area in northern California.

DESIGN

The boardwalks and bridges were designed to have a low impact on environmentally sensitive areas. Aluminum was used for the entire structure including the decking, railing, and structural elements because it is lightweight and resistant to the corrosion that can occur in the wet marsh environment. Due to the span, the 180' bridge was galvanized steel with a concrete decking.

ENGINEERING

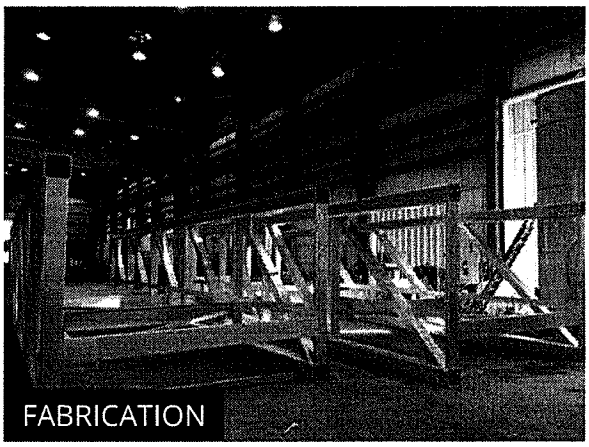
Bridge Brothers designed the boardwalks and aluminum bridges in a way where piles were installed every 20' as opposed to every 12'. This change reduced cost and environmental impact to the marsh.

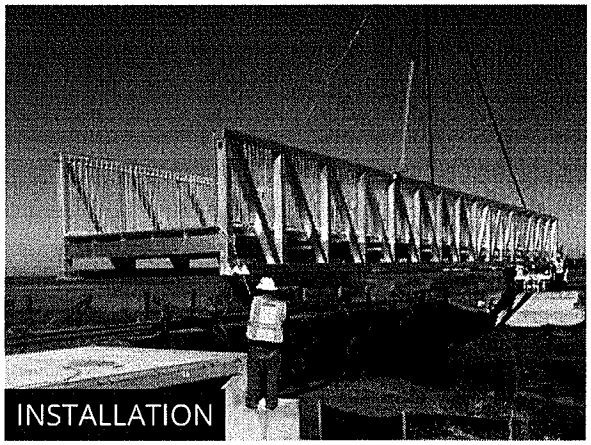
FABRICATION

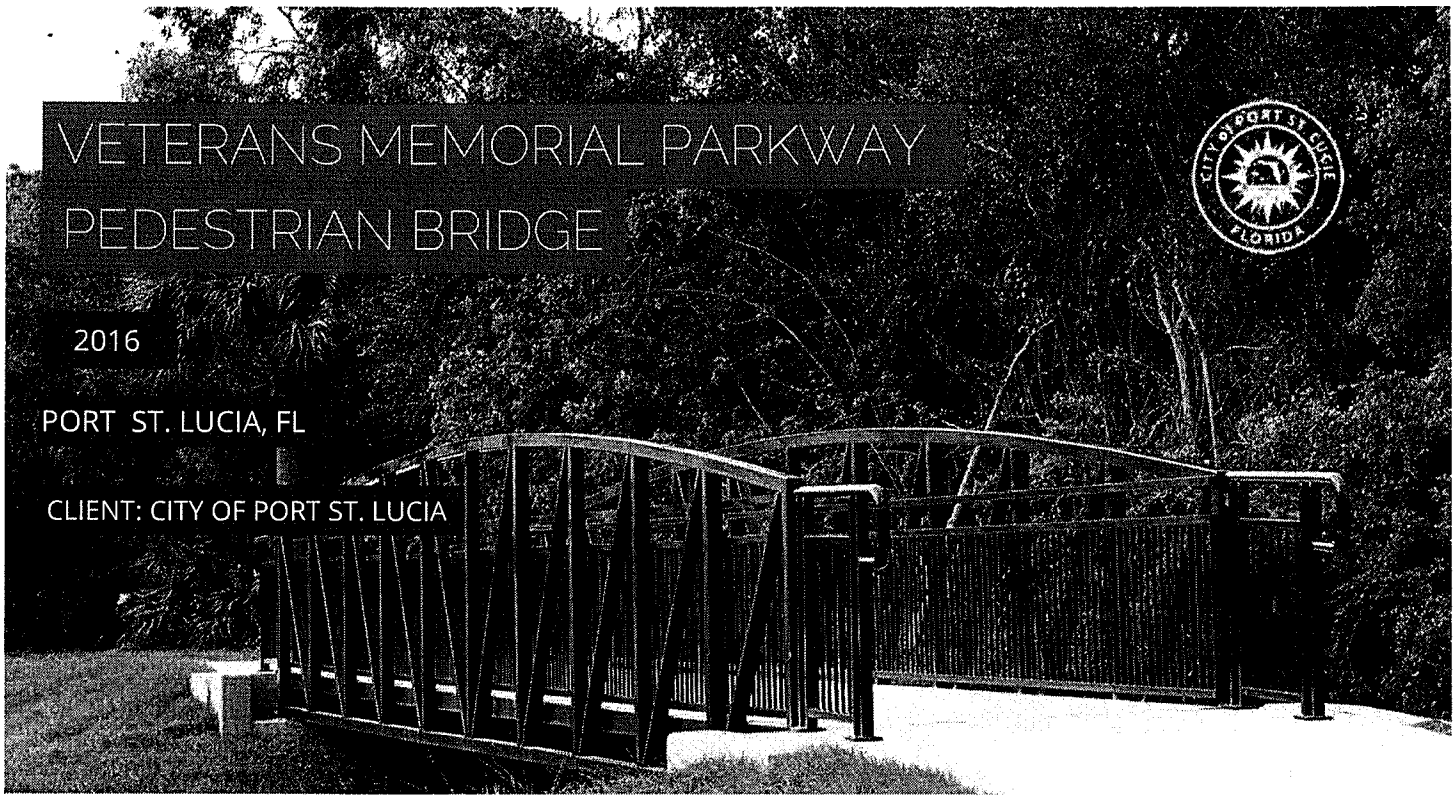
The bridges and boardwalks were all prefabricated off-site in a controlled workshop. Because these elements were prefabricated, as opposed to built on site, there was less stress on the sensitive marsh land.

INSTALLATION

We had a limited installation window, but because the bridges and boardwalks were all prefabricated, we were able to install everything in under two months. We used a hybrid crane/excavator. The lighter aluminum boardwalks could be installed with smaller equipment.


FABRICATION


INSTALLATION



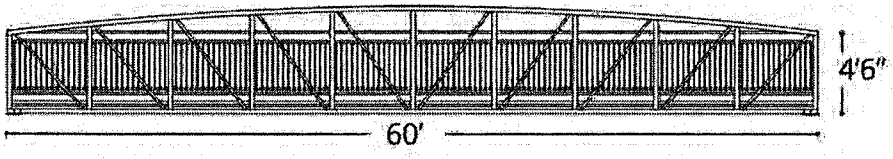
VETERANS MEMORIAL PARKWAY PEDESTRIAN BRIDGE

2016

PORT ST. LUCIA, FL

CLIENT: CITY OF PORT ST. LUCIA

PEDESTRIAN BRIDGE • CUSTOM TRUSS • PAINTED FINISH • CONCRETE DECKING • CUSTOM RAILING



CONCEPT

Bridge Brothers designed two bridges alongside the Veterans Memorial Parkway in Port St. Lucia, Fla. The bridge was designed to blend into the natural surroundings.

DESIGN

We integrated vertical picket to emulate those in the existing park design. A 6-inch concrete decking made the bridges easy to use for pedestrians, bikes and wheelchairs.

ENGINEERING

Our engineers coordinated closely with the Florida DOT to make sure we met state engineering and design codes. Bridge Brothers also designed the bridge abutments.

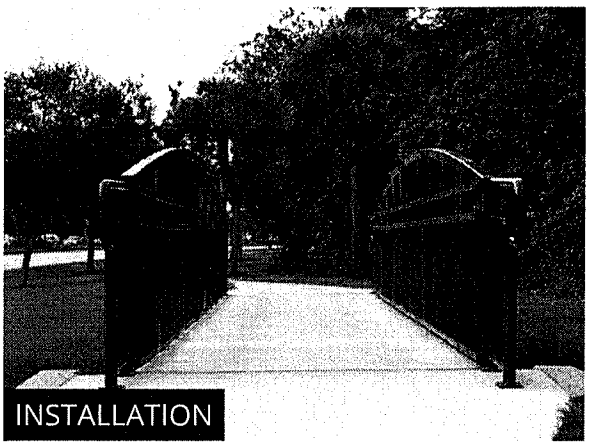
FABRICATION

Because of the caustic salt air of the coastal environment, we used a high-performance industrial marine environment system that utilizes a zinc primer, epoxy midcoat, and a polyurethane UV protectant top coat. It has an expected lifespan of 20 years. The bridges were prefabricated, sandblasted, and painted in the controlled environment of a workshop.

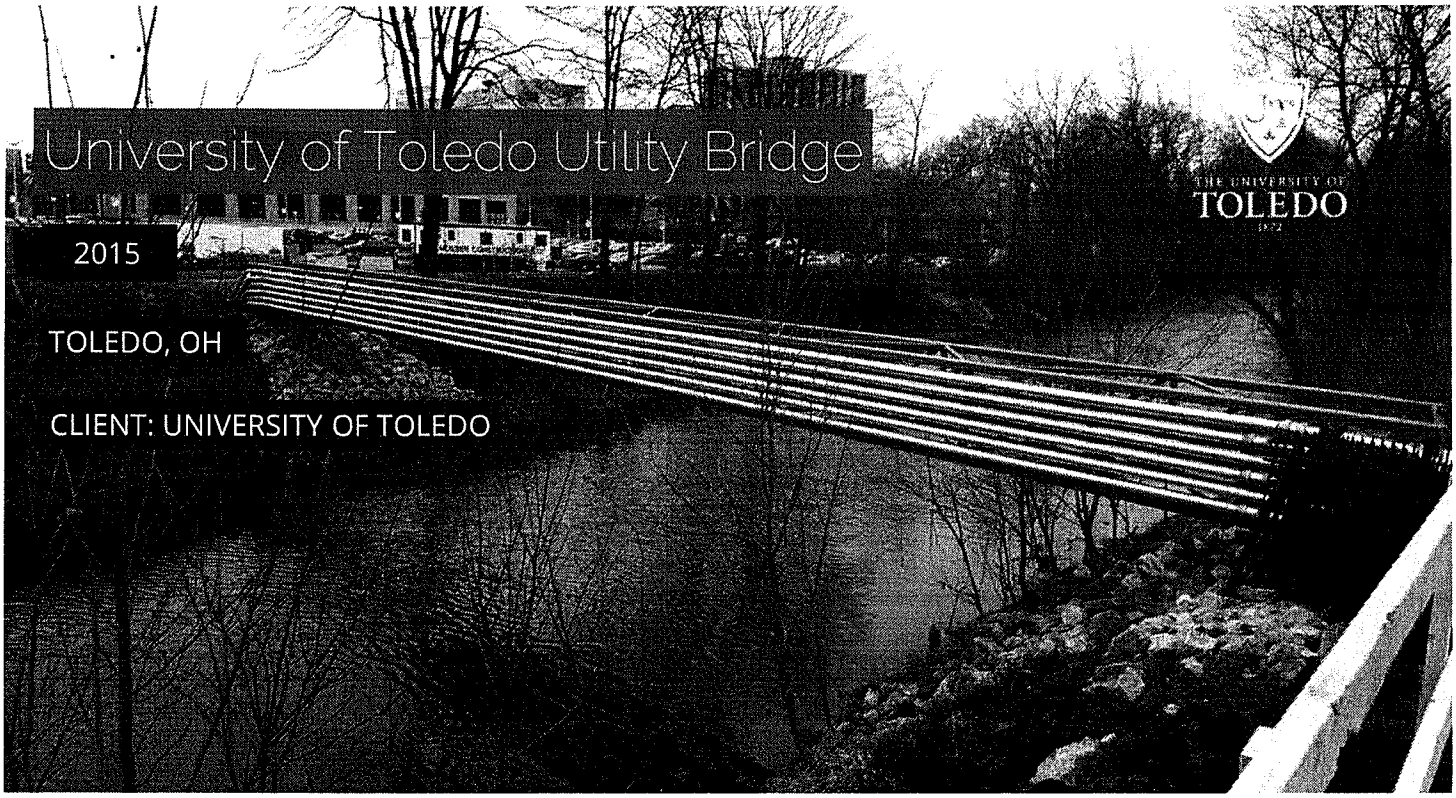
INSTALLATION

Both bridges were sent to the site on one truck each. They were picked up and set directly off the truck using a crane. The installation was completed in one day, with the concrete decking poured on the next day.

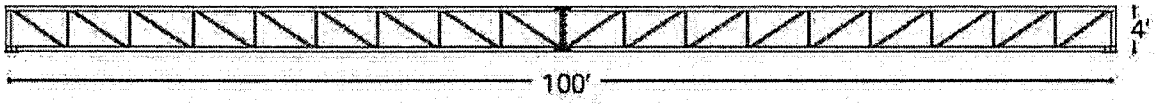
SHIPPING



INSTALLATION



UTILITY BRIDGE • PRATT TRUSS • PAINTED FINISH • PREPPED FOR PIPE



CONCEPT

A utility bridge for the University of Toledo had a limited budget. In addition, the bridge needed to be completed in six weeks. Bridge Brothers delivered on both counts.

DESIGN

This utility bridge was designed to have primary utilities run down the center of the bridge. It was also engineered for scalability. In the future, the client can attach pipes to the sides if needed.

ENGINEERING

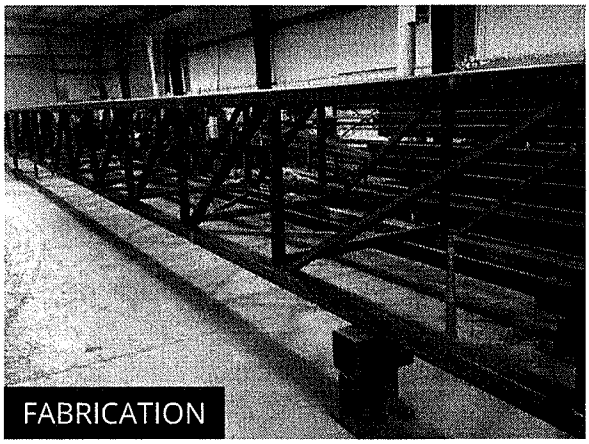
Along with engineering the bridge, Bridge Brothers designed and engineered the abutments.

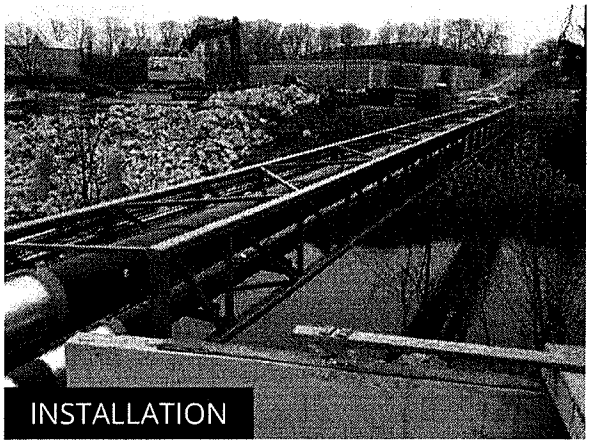
FABRICATION

This bridge was fabricated in a controlled shop. The saddles were welded to the frame in the shop as well. Then, everything was sandblasted and painted. Because the bridge was going to run over water, we used a high-performance industrial marine environment system that utilizes a zinc primer, epoxy midcoat, and a polyurethane UV protectant top coat. .

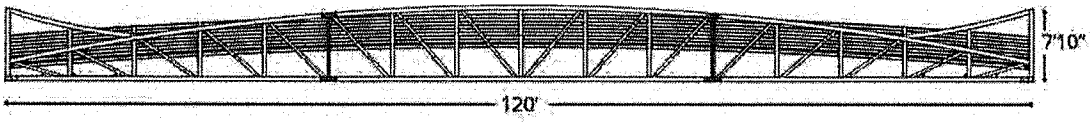
INSTALLATION

The bridge was mechanically bolted up on site. There was no hot work such as on site welding and no disruption of the painted coated system.


FABRICATION


INSTALLATION

PEDESTRIAN BRIDGE • CUSTOM TRUSS • PAINTED FINISH • CONCRETE DECKING • HORIZONTAL RAILING



CONCEPT

This bridge was designed to evoke the wings of a monarch butterfly. It's fitting because this bridge connects stretches of the Monarch Trail. We worked with the City of Spartanburg to finesse the design and to bring the project within its budget.

DESIGN

Bridge Brothers worked closely with the city's landscape architects to design and engineer this bridge. It was designed so that the camber of the decking would match the camber of the bridge.

ENGINEERING

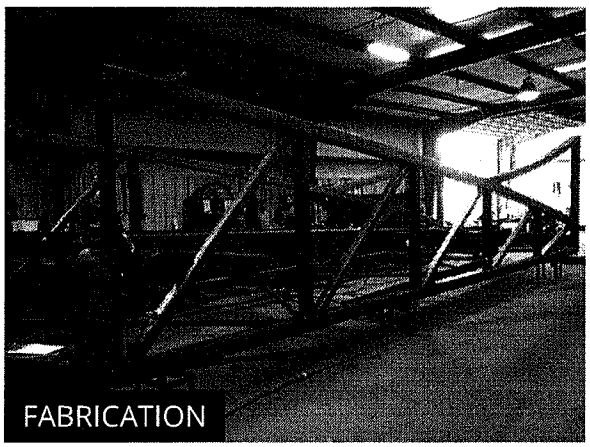
The soil conditions were poor in this area. Bridge Brother was able to design and engineer the site, piers, and abutments to support the bridge.

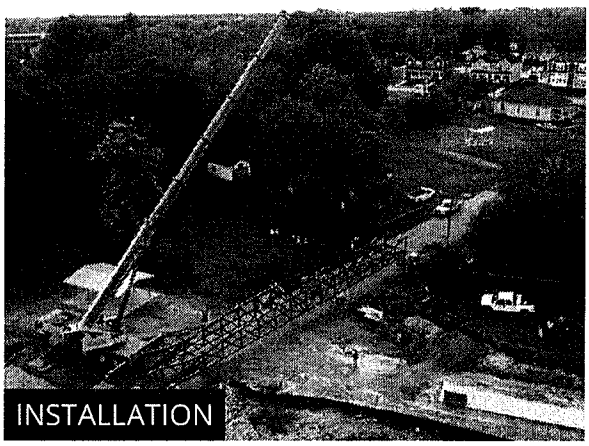
FABRICATION

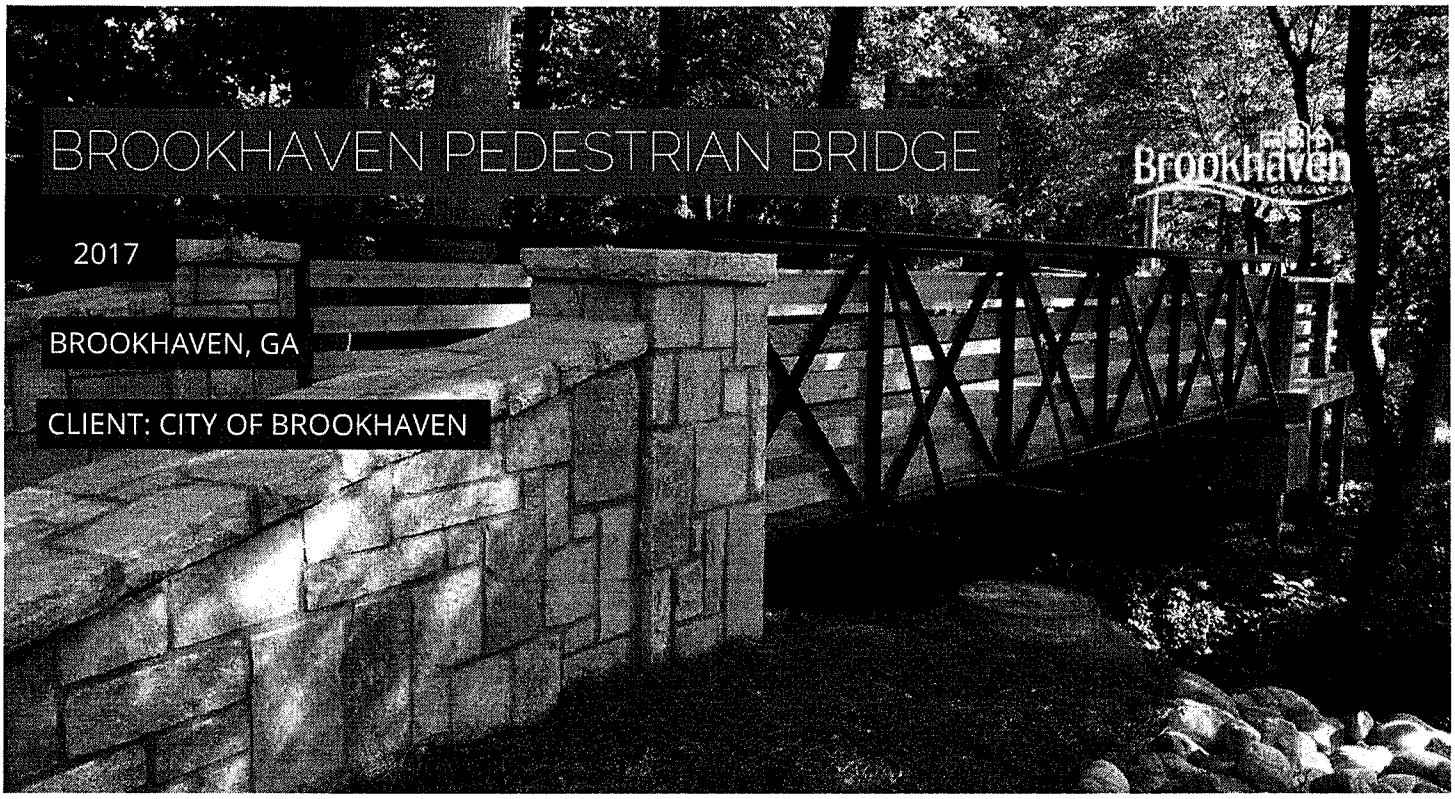
This bridge was prefabricated in a controlled shop off-site. The camber of the bridge decking matched the profile of the top chord.

INSTALLATION

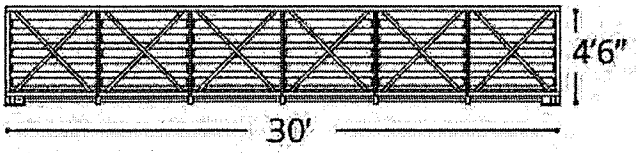
Bridge Brothers did the site construction including pouring the concrete abutments and driving piles. The bridge was delivered and installed within a day. Then, the concrete decking was poured. The bridge was painted blue after the installation at the request of the owner.


FABRICATION


INSTALLATION



TRAIL BRIDGE • LONG TRUSS • PAINT FINISH • PT PINE DECKING • WOOD RAILING



CONCEPT

The City of Brookhaven, Ga., wanted a custom bridge with a traditional style. They specifically requested this unique truss design. The bridge was designed to emulate other bridges that Bridge Brothers designed especially for the City of Brookhaven to create one cohesive brand for their parks and trails.

DESIGN

Bridge Brothers worked with the city's landscape architect on the bridge design. The design integrated timber in the decking and railing to bring the language of the existing boardwalk into the bridge. The goal was to have the trail feel like one cohesive unit.

ENGINEERING

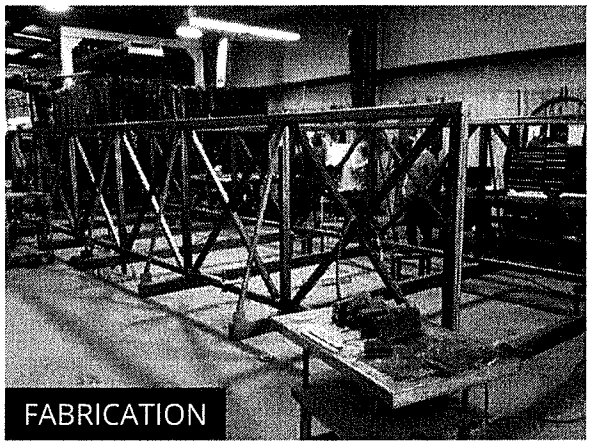
This project had a very quick 7-week timeline, and Bridge Brothers' streamlined engineering process made it possible to deliver a bridge within this timeframe. Bridge Brothers also designed the piers and abutments.

FABRICATION

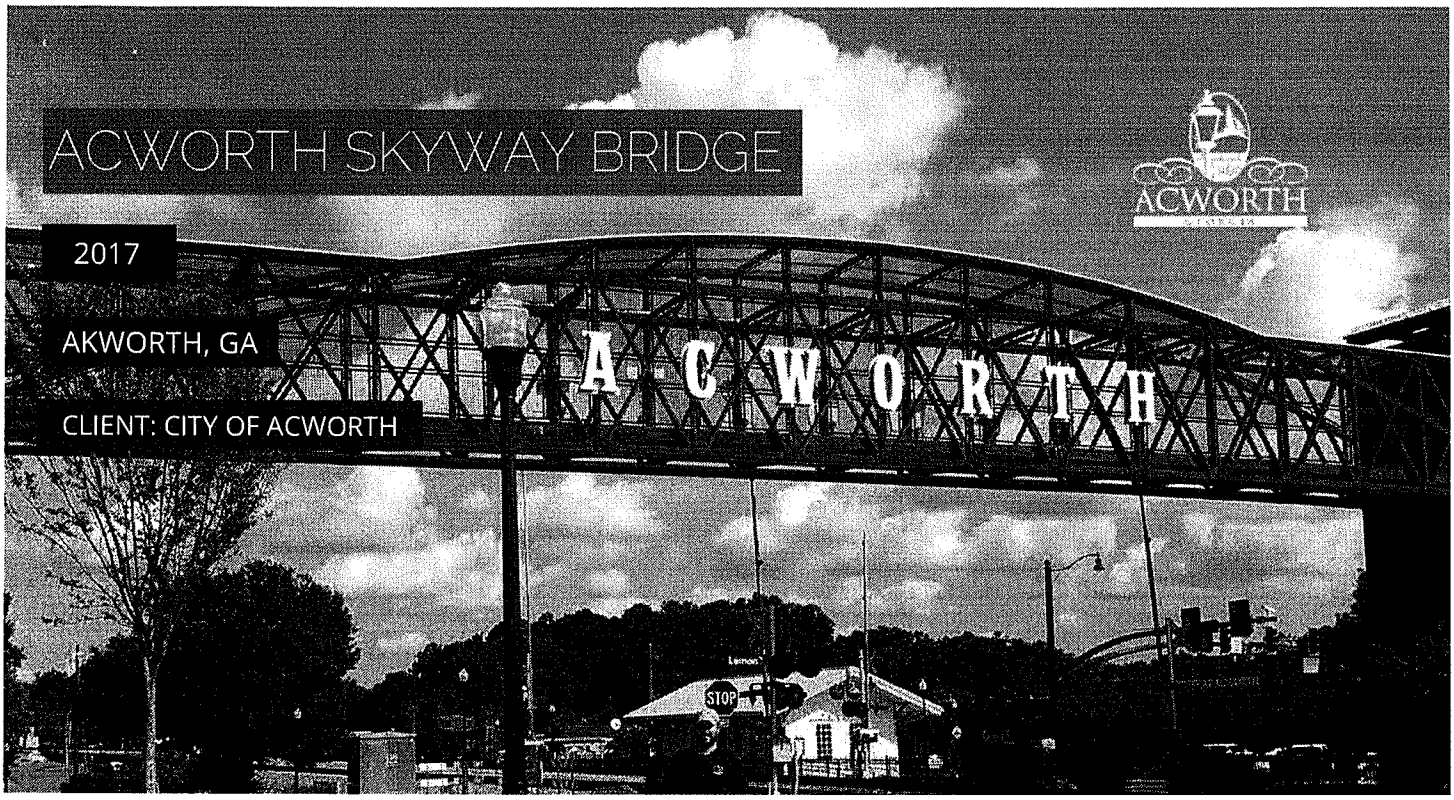
This bridge was prefabricated in a closed environment.

INSTALLATION

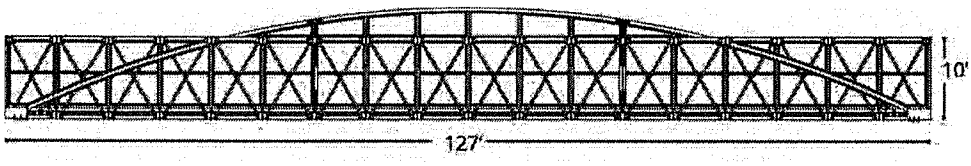
This bridge was installed in a day.


FABRICATION


SHIPPING



SKYWAY BRIDGE • BOWSTRING TRUSS • WEATHERED STEEL FINISH • CONCRETE DECKING • MESH RAILING



CONCEPT

Located in historic downtown Acworth, Ga., this skyway bridge took pedestrians safely over an active freight rail right-of-way that split the downtown.

DESIGN

The city tasked us with maintaining the historic character and architectural quality of the area. We used weathered steel and faux rivet-bolted connections for a historic railway infrastructure impression. Due to the location over an active rail, we used a mesh enclosure to protect users. This mesh had to meet the CSX specifications.

ENGINEERING

We worked closely with CSX representatives to ensure that we met their requirements and codes. We also worked closely with the architects of the stair and elevator tower that our bridge would connect to.

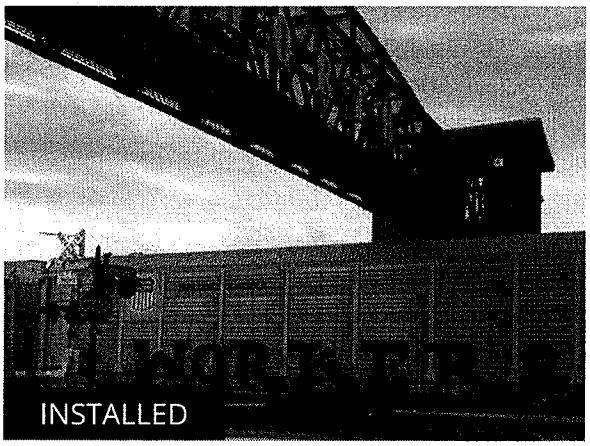
FABRICATION

The bridge was prefabricated off site and sandblasted for a cohesive finish. The mesh enclosure was also prefabricated and attached in the shop.

INSTALLATION

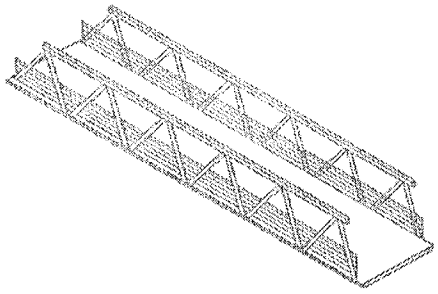
Because the bridge was prefabricated, we limited the amount of dangerous track exposure for workers and the amount of actual work that took place above the track. The bridge was mechanically spliced in three sections. It was bolted up and erected in one day..


SHIPPING


INSTALLED

PROJECT REFERENCES

At Bridge Brothers, we have a new integrated approach to bridge projects. Through integrated design that lets us design and build turn key, prefabricated bridges, we've been able to bring our client's visions to life and create inspiring bridges that stand the testament of time.



Along the way, we've completely redesigned the way a building company brings value to clients. Our integrated, full-services approach enables us to provide real estate services—from financing to leasing—and a truly collaborative design and construction process that fast-tracks our clients' most riskiest, complex and iconic projects.

It's the intersection of creativity, design, execution, with an eye on the practical considerations of timing and budgets. When this is all owned by a single integrated team that operates without functional silos, the results are projects that fully meet the dreams, desires and expectations of clients.

EAST RICHARDSON & SOUTH GUM ST. PEDESTRIAN BRIDGE

Owner : Town of Summerville, SC

Location : Summerville, SC

Contact : Russell Cornette 843.851.4226

Size : 6' x 60'

QUESTA UTILITY BRIDGE

Owner : Entacta

Location : Questa, NM

Contact : Michael Cincirpini 412.417.84608

Size : 9' x 126'

BRISTOL TRAIL BRIDGE

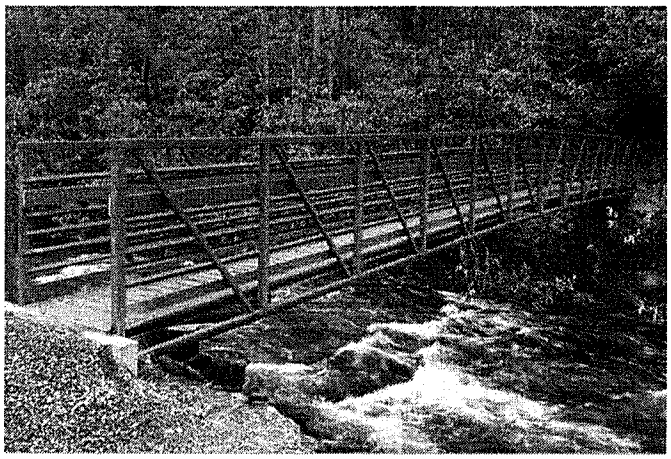
Owner : Town of Summerville, SC

Location : Summerville, SC

Contact : Russell Cornette

843.851.4226

Size : 4' x 100'



ASH WOODS PEDESTRIAN BRIDGE

Owner : City of McKinney, TX

Location : McKInney, TX

Contact : Don Simms 682.552.1792

Size : 8' x 70'

CATAWBA TRAIL BRIDGE PEDESTRIAN BRIDGE

Owner :US Forestry Service

Location : Old Fort, NC

Contact : Don Cable 828.226.1640

Size : 6' x 100'

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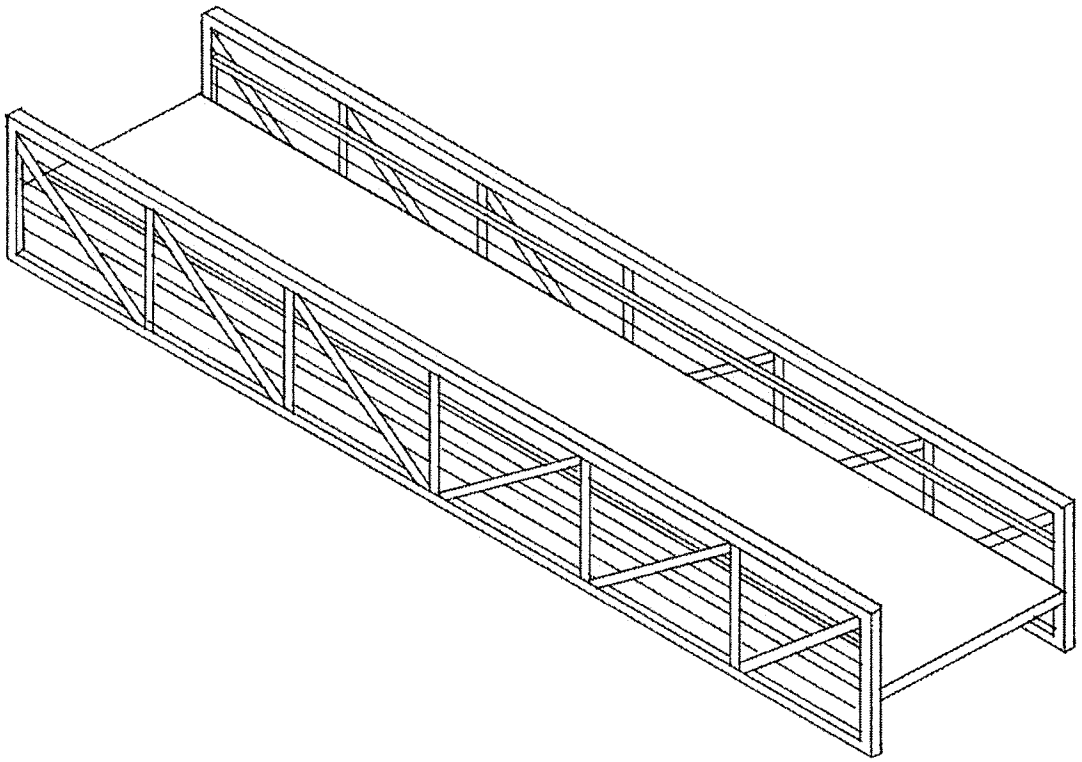

RESUMES

FAVORITE FOOTBALL TEAM:

Georgia Bulldogs

BUCKET LIST

Kiss my grandchildren

Visit the Memorials at Pearl Harbor

Spend a night in Hôtel de Glacel

JACOB BARNES

ENGINEERING MANAGER

T: (404) 664-9691 E: jbarnes@bridgebrothers.com

PROFILE

Engineering Manager with over 15 years of experience in the construction and engineering communities. Comprehensive knowledge of aluminum and steel structural design standards and codes.

- Executive Management
- Project Management
- Cost Analysis Management
- Product Development
- Structural Design Engineering
- 3D Solid Modeling
- Research and Development
- Finite Element Analysis
- Mechanical Design Engineering

EDUCATION

Georgia Southern University, Statesboro, GA

Bachelor of Science, Mechanical Engineering Technology

EXPERIENCE

Engineering Manager | Bridge Brothers | January 2015 - Present
Design Engineer | Crane Materials International |June 2006- 2014

SKILLS

- Expert knowledge in programs such as AutoCAD, ANSYS, Visual C++, Pro-Engineer, RISA
- Quality System experience with ISO 9001
- Proficient knowledge of many design codes and manuals published by Aluminum Association, AASHTO, AISC, ASCE, IBC, ADA, ASTM
- Proficient experience using SolidWorks 3D design and analysis software as well as PDM management

"WHATEVER YOUR LIFE'S WORK IS, DO IT WELL. A MAN SHOULD DO HIS JOB SO WELL THAT THE LIVING, THE DEAD, AND THE UNBORN COULD DO IT NO BETTER."

—MARTIN LUTHER KING, JR

BUCKET LIST

Travel the World

JARROD SOLOMON

PLANT MANAGER

T: (404) 664-9691 E: jsolomon@bridgebrothers.com

PROFILE

Exceptional leader and Production Manager with fifteen years of experience. Past work experience as a helper, Lead man/Foreman, Manager, QC, Production Supervisor and Director of Manufacturing. Outstanding relationship building, training, and presentation skills. Intelligent and driven to succeed. Consistently meeting and exceeding goals

SKILLS

- Able to train employee on required skill.
- Capable to manage money and services for production.
- Good knowledge of raw materials, production processes, quality control, costs, and other techniques.
- Strong experience as production supervisor.
- Excellent knowledge of machines and tools. Ability to solve mathematical problem.

EXPERIENCE

Production Manager |Bridge Brothers |Nov 2018- Present

Responsible for planning, organizing and managing the daily operations of the shop; Supervises, trains and develops staff; Provides advice to management and staff; Creates employee work schedules, trains subordinates, and oversees work product to verify effective performance. Verifies equipment works properly, makes repairs as needed, and ensures both the environment and the employee practices focus on a safe, clean, and professional workplace.

Production Manager | Conecraft Incorporated | Apr 2017- Nov 2018

Bridge Brothers
Certification of Warranty

Bridge Brothers Inc. warrants their steel structure(s) to be free of design, material and workmanship defects for a period of one - ten years from date of delivery per project specifics.

This warranty does not cover defects in the structure(s) caused by improper use, overloading, intentional damage or casualty, improper maintenance, alteration or any other cause not the result of defective design, material or workmanship by Bridge Brothers Inc. This warranty excludes all damage resulting from, or relating to, the use of any kind of de-icing material on the structure(s).

This warranty shall be null and void unless the customer provides records that verify compliance with minimum guidelines specified in the structure(s) inspection and maintenance procedures.

Any claim under this warranty shall be made promptly and directly to Bridge Brothers Inc. who shall have the option, at its sole discretion, to repair, replace or adjust any covered defect without charge to the original purchaser. This warranty is only applicable where customer has paid all amounts due and payable for the structure(s).

THE FOREGOING WARRANTIES ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, ANY WARRANTY OF MERCHANTABILITY OR ANY WARRANTY FOR A PARTICULAR FITNESS OR USE. UNDER NO CIRCUMSTANCES SHALL BRIDGE BROTHERS INC. BE LIABLE FOR INCIDENTAL, SPECIAL, PUNITIVE OR CONSEQUENTIAL DAMAGES OR FOR LOST PROFITS OR GOODWILL, ARISING FROM OR RELATING TO ANY BREACH OF THIS AGREEMENT REGARDLESS OF ANY NOTICE OF THE POSSIBILITY OF SUCH DAMAGES.

FAILURE TO GIVE NOTICE OF ANY CLAIM WITHIN THIRTY (30) DAYS AFTER THE DATE THE DEFECT IS RECOGNIZED, OR SHOULD HAVE BEEN RECOGNIZED, SHALL RENDER THIS LIMITED WARRANTY NULL AND VOID.

Check for any settlement of the abutments which may be warping or twisting the bridge.

6. Check anchor bolts for damage and see that they are secure. Examine all bearings to ascertain that they are functioning properly. Expansion bearings and the expansion joints at the ends of the bridge must be checked to see that they are moving freely and are clear of all foreign material. Check for creeping of teflon pads, if present.

7. Spliced Bridges:

a. Check the bolted splices for any excessive corrosion or cracking of the steel fasteners.

b. Make sure all weep holes are open and clear of debris to allow for complete drainage of any moisture which may collect on the interior tube surfaces. See the original shop drawings for locations of weep holes.

8. If problems are seen during the inspection procedure, cleaning and repair or replacement of weathering steel bridge components may be necessary; painted bridges may require cleaning and repainting or replacement of some or all members. Contact BRIDGE BROTHERS INC. or the foundation

MAINTENANCE FOR PAINTED BRIDGES

Painted bridges, like any painted structure, require periodic inspections and painting. The following steps will help increase the life span of your bridge:

A. After inspections, or any time loss or damage of the paint coat is noticeable, problem areas should be repaired as follows:

1. Select a maintenance coating system based on the following:
   a. Inspection report findings
   b. Environment (identify any corrosives)
   c. Degree of surface preparation attainable
   d. Current paint compatibility

   NOTES:

- Generic type compatibility is a major factor in the selection of a system (some coating systems are not recommended over a particular type of existing material.)
- Depending upon the surface performance, an upgrade in the coating system may be necessary.

2. Clean all applicable surfaces as dictated by the repair system chosen (i.e. pressure wash, brush off, blast clean, etc.)
3. Apply repair coats per the coating manufacturer's recommendations.
4. Caulk all unwelded seams which are in need of repair with a good quality clear silicone caulk suitable for exterior use.

B. The entire bridge structure will require periodic repainting dependent upon varying factors such as the existing paint system, bridge usage, atmospheric environment, etc. Repainting will typically be required every 2-20 years. The frequency of painting will need to be determined by the inspector. The following steps should be followed when repainting the bridge structures:

1. Remove wood decking or grating, fencing, wood rubrails, and any other non-painted items which will not be receiving new paint. Obviously, concrete and asphalt decked bridges will be painted with the deck in place, unless these decks have deteriorated to the point of replacement. If this is the case, remove the deck prior to painting, if not, special care should be exercised to ensure problem areas below deck are cleaned and painted properly.

2. Select a coating system based on parameters similar to those outlined in the repair painting section (A, above), paying attention to the following items:

- Environment, specifically any corrosives identified during inspections
- Substrate condition
- Surface preparation limitations

II. GRATING DECKS

A. Repair or replace any grating which shows damage, corrosion, or deterioration.

B. If galvanized, wire brushing any deteriorated areas is recommended prior to the use of either sprayed zinc metalizing or organic zinc rich paint for repair.

C. For weathering steel grating, if excessive corrosion is encountered, it may be wise to blast clean and paint the grating.

III. CONCRETE AND ASPHALT

For asphalt decks, a steel form deck is the main load carrying member. For concrete decks, this steel form may or may not be integral to the deck design (as in a composite deck). Check with the design engineer.

During inspection, the asphalt or concrete covering should be checked for excessive cracking and deterioration. At the same time, the steel form decks should be checked for excessive rusting and/or damage. If the coverings are deemed to require replacement, the steel forms may be reused if they are not damaged or do not show excessive corrosion. Structural form decks may require replacement if deteriorated regardless of the deck surface condition.

Concrete and asphalt decks are usually not designed to accept the added dead weight of an overlay. Therefore, the only remedy is repair of the cracking or replacement of the concrete or asphalt covering.

See the shop drawings for recommended concrete strength, reinforcing size, slab and asphalt thickness, control joint and surface finish information. If there are any questions, please contact the BRIDGE BROTHERS INC. Engineering Department: (866) 258-3401 or engineering@bridgebrothersinc.com

MAINTENANCE FOR DECKING

I. SOIL CLEARANCE

Soil or dirt must not be left in contact with bare weathering or painted steel surfaces. In addition, adequate clearance for ventilation must be maintained between the ground and weathering steel surfaces to allow the steel to dry after wetting, forming its protective rust "patina" coating.

If the initial construction of abutments and back slopes did not allow for adequate ventilation (approximately 18"-24"), enough soil, debris, and/or vegetation should be removed and kept cut back to allow for adequate airflow. If this is not possible, a coating designed for "ground contact" protection of steel may be applied to the members in the affected area.

I. SNOW REMOVAL

Because of possible accumulation of chlorides at truss joints, in the gaps between planks on structures with timber decks, on below deck members, and/or along the edges of decks where runoff occurs, the use of de-icing salts should be avoided on these structures, especially on weathering steel bridges (see Item A in the "Maintenance for Weathering Bridges" section). The best and safest way to remove snow from these bridges, as far as the issue of steel corrosion is concerned, is by shoveling or plowing snow from the bridge deck. Non-corrosive traction aids such as sand may be used on the deck surfaces; however, any sand or dirt accumulation should be removed immediately after the snow season. If corrosive de-icing agents are used on the structure; accelerated corrosion of members which are exposed to the agent will take place, voiding the bridge warranty and necessitating repair or replacement of affected members.

Remember: Maintenance of the bridge decking, including keeping it free from slip or trip hazards, is the owner's responsibility. Most pedestrian bridge liability claims are statistically slips and falls.

De-icing salts have been used on structures where more aggressive measures were taken to protect the steel, such as galvanizing the steel members or utilizing a concrete deck with curbs to channel water away from steel surfaces. In the later case, care must still be taken to protect, or maintain by cleaning or rinsing, areas where water drains or salt gets thrown onto non-galvanized steel surfaces by wheel traffic, spreading, etc. If not, the warranty shall again be voided and replacement of some members or possibly the entire structure may be required.

For further information, any questions, or to report any safety concerns call the BRIDGE BROTHERS INC. Engineering department.

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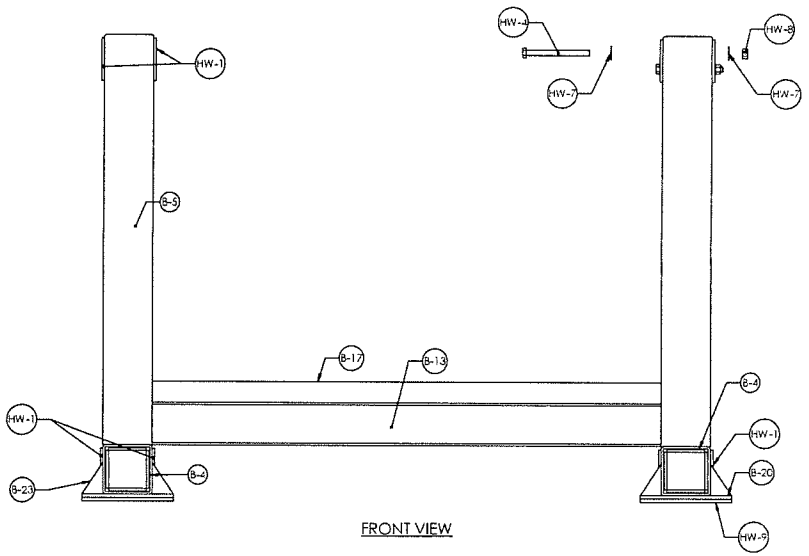
240' PEDESTRIAN BRIDGE	DRAWN BY: CLL CHECKED BY: JAB	S-1
CUSTOMER:	TITLE SHEET	
PROJECT # 12XXX PO #	SCALE: N/A	

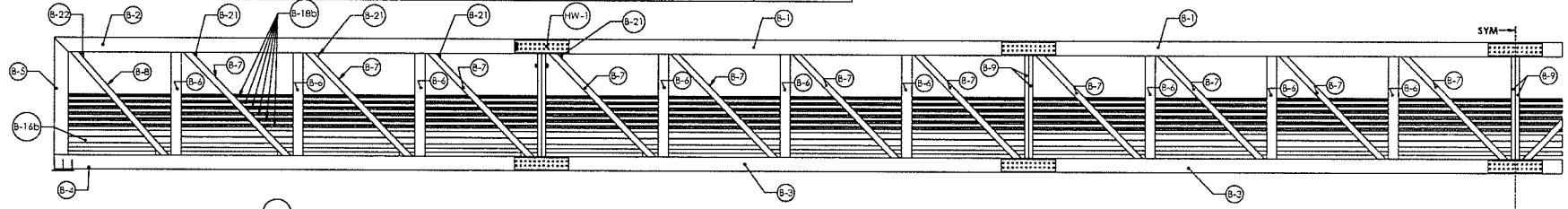
SAMPLE

DRAWING PACKAGE

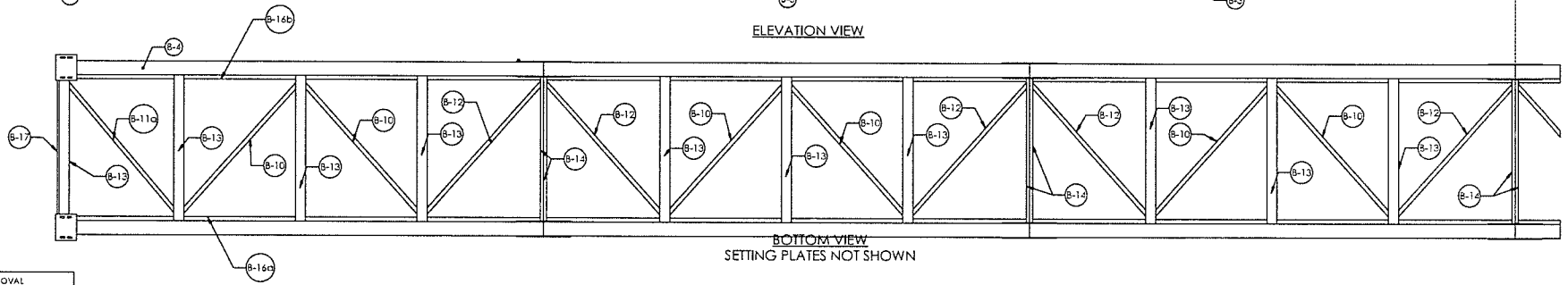
ITEM#	PIECE MARK	QTY.	MATERIAL TYPE	DESCRIP	LENGTH	MILL MARK	GRADE
ZDOT-B-1	TRUSS TOP CHORD	8	HSS	14X14X3/4	40'-0"		A847
ZDOT-B-2	TRUSS END TOP CHORD	4	HSS	14X14X3/4	40'-0"		A847
ZDOT-B-3	TRUSS BOTTOM CHORD	8	HSS	14X14X3/4	40'-0"		A847
ZDOT-B-4	TRUSS END BOTTOM CHORD	4	HSS	14X14X3/4	40'-0"		A847
ZDOT-B-5	TRUSS END POST	4	HSS	14X14X3/4	9'-8"		A847
ZDOT-B-6	TRUSS VERTICAL	36	HSS	10X10X1/2	8'-6"		A847
ZDOT-B-7	TRUSS DIAGONAL	44	HSS	10X6X3/8	12'-3		A847
ZDOT-B-8	TRUSS END DIAGONAL	4	HSS	10X6X3/8	11'-8 5/8"		A847
ZDOT-B-9	TRUSS SPLICE VERTICAL	20	HSS	10X4X1/4	8'-6"		A847
ZDOT-B-10	FLOOR BRACING	12	HSS	4X4X1/4	15'-4 1/8"		A847
ZDOT-B-11A	FLOOR END BRACING 1	1	HSS	4X4X1/4	14'-11 5/8"		A847
ZDOT-B-11B	FLOOR END BRACING 2	1	HSS	4X4X1/4	14'-11 1/2"		A847
ZDOT-B-12	FLOOR SPLICE BRACING	10	HSS	4X4X1/4	15'-3 7/8"		A847
ZDOT-B-13	FLOOR BEAM	20	W	12X58	12'-4"		A588
ZDOT-B-14	FLOOR SPLICE BEAM	10	C	12X30	12'-4"		A588
ZDOT-B-15	SIDE DECK FORM	8	L	6X4X5/16	40'-0"		A588
ZDOT-B-16A	SIDE DECK FORM END 1	2	L	6X4X5/16	40'-0"		A588
ZDOT-B-16B	SIDE DECK FORM END 2	2	L	6X4X5/16	40'-0"		A588
ZDOT-B-17	END DECK FORM	2	L	6X4X5/16	12'-0"		A588
ZDOT-B-18A	HORIZONTAL RAIL	48	L	2X2X1/8	40'-0"		A588
ZDOT-B-18B	END HORIZONTAL RAIL	24	L	2X2X1/8	38'-10"		A588
ZDOT-B-19A	TOE RAIL	8	BAR	6X1/4	40'-0"		A588
ZDOT-B-19B	END TOE RAIL	4	BAR	6X1/4	38'-10"		A588
ZDOT-B-20	BEARING PLATE	4	P	1" X 1'-4"	2'-0"		A588
ZDOT-B-21	DIAGONAL GUSSET	16	P	1/4" X 5"	5 1/4"		A588
ZDOT-B-22	END DIAGONAL GUSSET	4	P	1/4" X 5"	5 3/4"		A588
ZDOT-B-23	BEARING GUSSET.	24	P	1/4" X 6"	9"		A588
ZDOT-HW-1	EXTERNAL SPLICE PLATE.	40	P	3/4" X 12"	4'-5 1/4'		A588
ZDOT-HW-2	INTERNAL SPLICE PLATE	40	P	3/4" X 11"	4'-5 1/4"		A588
ZDOT-HW-3	INTERNAL PLATE	40	P	3/4" X 11"	4'-5 1/4'		A588
ZDOT-HW-4	1 1/2" X 1'-6" HEAVY HEX BOLT	480	BLT	1 1/2"	1'-6"		A325-TYPE3
ZDOT-HW-5	1 1/2" X 10 1/2" HEAVY HEX BOLT	50	BLT	1 1/2"	10 1/2"		A325-TYPE3
ZDOT-HW-6	1 1/2" X 3 1/2" HEAVY HEX BOLT	25	BLT	1 1/2"	3 1/2"		A325-TYPE3
ZDOT-HW-7	1 1/2" WASHER	1110	WSH	1/2"			F436 TYPE3
ZDOT-HW-8	1 1/2" HEAVY HEX NUT	555	NUT	1 1/2"			A563-TYPE3
ZDOT-HW-9	SETTING PLATE	4	P	1" X 1'-10"	2'-0"		UHMW



FRONT VIEW



ELEVATION VIEW



BOTTOM VIEW
SETTING PLATES NOT SHOWN

APPROVAL INITIALS:

BRIDGE BROTHERS

AISC CERTIFIED FABRICATOR

ICWF

(866) 258-3401
WWW.BRIDGEBROTHERS.COM

240' PEDESTRIAN BRIDGE

CUSTOMER:

PROJECT # ZDOT

FC #

TOLERANCES UNLESS SPECIFIED OTHERWISE
XXX = ±1/4" ; FRACTIONS = ±1/8" ; ANGULAR = ±1°

DRAWN BY: CLL

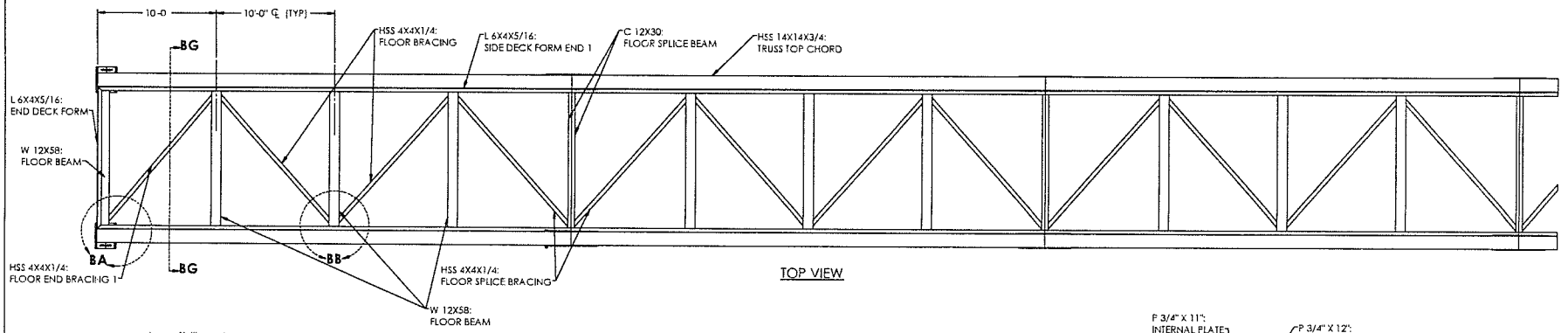
CHECKED BY: JAB

SCHEDULE OF MEMBERS

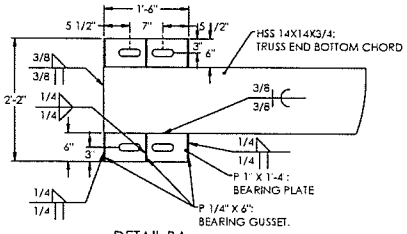
SCALE: N/A

S-2

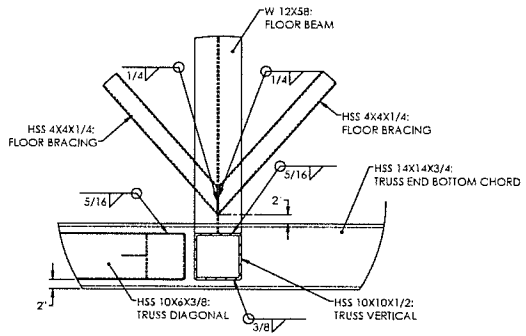
REV	DATE	DESCRIPTION



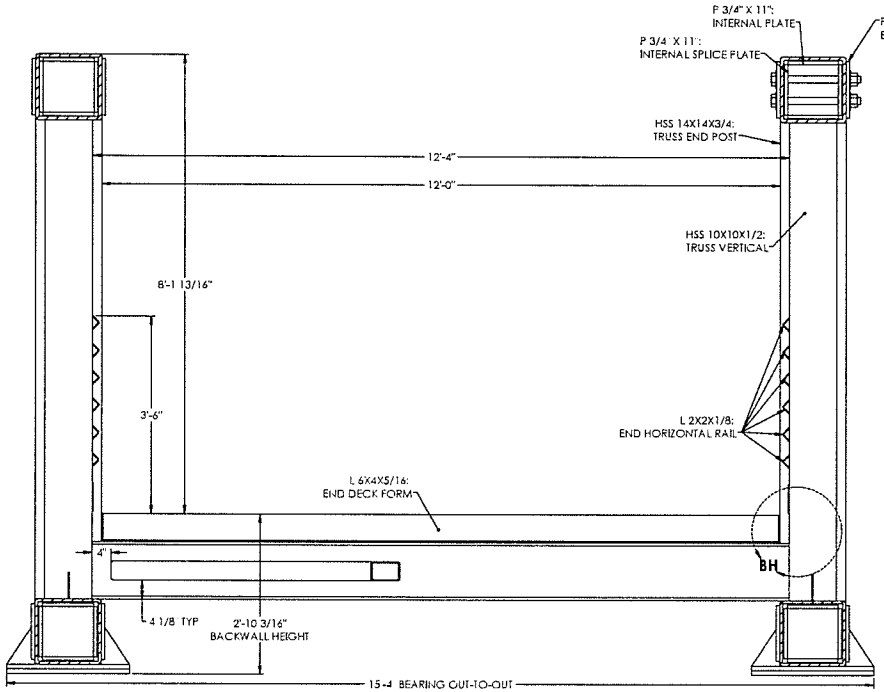
TOP VIEW



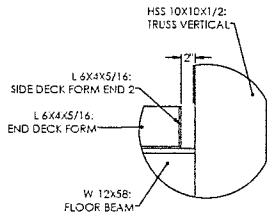
DETAIL BA
ONLY BEARING PLATE, GUSSETS, & BOTTOM CHORD SHOWN



DETAIL BB
RAILING & DECK FORMS NOT SHOWN



SECTION BG-BG
TYP SECTION; END POSTS & DIAGONALS NOT SHOWN



DETAIL BH
END POST NOT SHOWN

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AWS CWF

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240' PEDESTRIAN BRIDGE

CUSTOMER:

PROJECT # 20CT

PO #

TOLERANCES UNLESS SPECIFIED OTHERWISE
XXX = ±1/2 ; FRACTIONS = ±1/8"; ANGULAR = ±1°

DRAWN BY: CLL

CHECKED BY: JAB

S-4

PLAN SECTION VIEW W/ DETAIL

SCALE: N/A

REV	DATE	DESCRIPTION

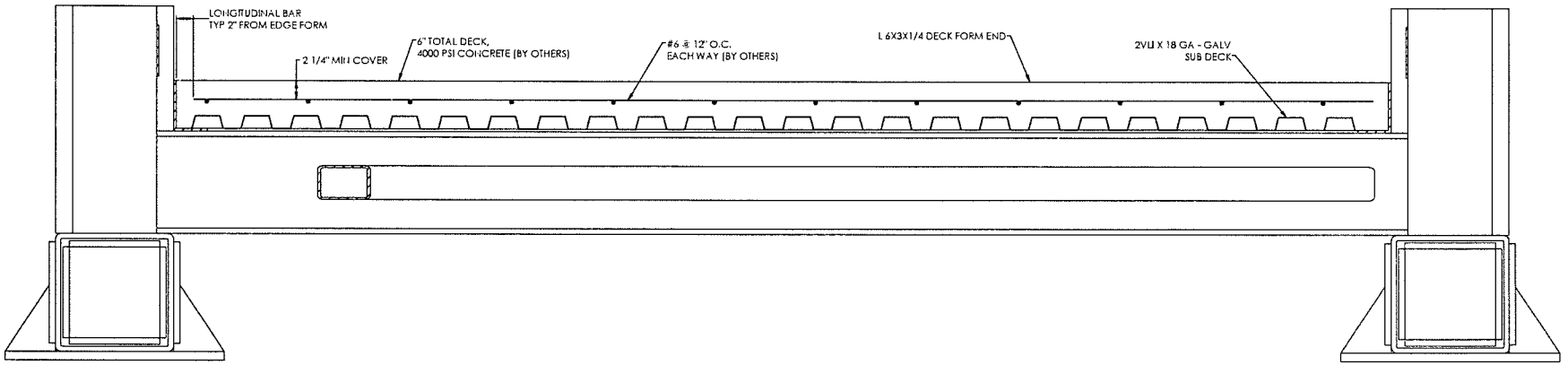
GENERAL NOTES

DECK PAN NOTES:

1. COMPOSITE DECK PAN ENDS SHALL NOT BE OVERLAPPED: TRIM TO EACH FLOOR BEAM CENTER
2. DECK PAN ATTACHMENT SHALL BE AS FOLLOWS:
   a. SIMPSON STRONGTIE PDPAW-7.5 @ 12" O.C. TO EACH FLOOR BEAM. ALTERNATE TO DRILL & INSTALL USING #14 TEK SCREW OR PLUG WELD
   b. MINIMUM #10x3/4 SELF DRILLING SCREW @ 12" O.C. AT SIDE OVERLAP CONNECTIONS

CONCRETE:

1. ALL PHASES OF WORK PERTAINING TO THE CONCRETE CONSTRUCTION SHALL CONFORM TO THE "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE" (ACI 318 LATEST APPROVED EDITION) WITH MODIFICATIONS AS NOTED IN THE DRAWINGS AND SPECIFICATIONS.
2. REINFORCED CONCRETE DESIGN IS BY THE "ULTIMATE STRENGTH DESIGN METHOD". ACI 318-(LATEST EDITION)
3. ALL STRUCTURAL CONCRETE SHALL HAVE A MINIMUM 28-DAY STRENGTH OF 4 000 PSI.
4. CONCRETE MIX DESIGN SHALL MEET THE FOLLOWING REQUIREMENTS:
   a. COMPRESSIVE STRENGTH AT AGE 28 DAYS AS SPECIFIED ABOVE.
   b. LARGE AGGREGATE-HARDROCK, 3/4" MAXIMUM SIZE CONFORMING TO ASTM C-33
   c. CEMENT-ASTM C-150, TYPE I OF II PORTLAND CEMENT
   d. MAXIMUM SLUMP 5-INCHES, MAX WATER CEMENT RATIO: 0.50
5. CONCRETE MIXING OPERATIONS, ETC. SHALL CONFORM TO ASTM C-94
6. PLACEMENT OF CONCRETE SHALL CONFORM TO ACI STANDARD 614 AND PROJECT SPECIFICATIONS.
7. LAP SPLICING AND PLACEMENT OF REINFORCEMENT BARS SHALL BE WELL SECURED IN POSITION PRIOR TO PLACING CONCRETE PER CRSI MANUAL OF STANDARD PRACTICE AND ACI 315.
8. REINFORCING BARS SHALL CONFORM TO ASTM A615 GRADE 60.
9. FINISHED CONCRETE DECK SHALL BE GIVEN A SKID RESISTANT TEXTURE BY EITHER BURLAP OR CARPET DRAGGING, BROOMING, TINING, OR A COMBINATION OF THESE METHODS AS APPROVED BY THE OWNER AND AS SPECIFIED BY AASHTO. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF THE BRIDGE COMPONENTS FROM CONCRETE SPLATTER AND REQUIRED CLEANING OF THE STRUCTURE RESULTING FROM SPILLS.



APPROVAL INITIALS:

BRIDGE BROTHERS

(866) 258-3401
WWW.BRIDGEBROTHERS.COM

CUSTOMER:

PROJECT # ZDOT

PO #

240' PEDESTRIAN BRIDGE

TOLERANCES UNLESS SPECIFIED OTHERWISE:
XX = ± 1/2 - FRACTIONS = ± 1/8" - ANGULAR = ± 1°

DRAWN BY: CLL

CHECKED BY: JAB

CONCRETE DECK

S-6

SCALE: N/A

REV	DATE	DESCRIPTION

Table of Contents:

12x240 PEDESTRIAN BRIDGE

Geometry

Outside Truss Width (ft)	14.3
Clear Width (ft)	12.0
Bridge Span (ft)	240.0
Truss Height (ft)	11.17
Max Unsupported Deck Length (in)	120.0
Max Unsupported Stringer Length (in)	0.0
# of Stringers	0
# of Panels	24
Panel Spacing (in) CL-CL	120.0

LOADINGS:

Dead Loads (DL)

4000psi-145pcf Concrete 6 in.	63.4	psf
Total Deck Load	182,592	lbs
2x2x1/8 Angle	1.66	plf
Horizontal Rail Quantity per side	6	
6"x1/4" Flat Bar	5.11	plf
Total Rail Load	7,234	lbs

Point Load (PL)

Point Load per 4 sq in (lbs)	1000	*(AASHTO Pedestrian, 3.3)*
	Design	
Mmax - Floor Beam (in-lb)	18,000	*simple beam; fixed ends

Vehicle Loads (VL)

Total Vehicle Load (lbs)	20000	
Wheel Spacing (ft)	14.0	*(AASHTO LRFD, 3.6.1.2.2)*
Front Axle Load - 20% (lbs)	4000	
Rear Axle Load - 80% (lbs)	16000	
Max Wheel Load (lbs)	8000	*10"x20" wheel print (AASHTO LRFD, 3.6.1.2.5)
	Design	
Mmax - Floor Beam (in-lb)	192,000	*simple beam; fixed ends

Pedestrian Rail Loads (RL)	**Uniform (lb/ft)**	**Point (lb)**
Horizontal Pedestrian Live Load	50	200
Vertical Pedestrian Live Load	50	
Total Pedestrian Live Load	70.7	
Horizontal Rail Height from Deck (in)	42	
	Design	
Mmax - Vertical posts (lb-in)	29,400	*simple beam; fixed cantilever
Mmax - Horizontal Rail (lb-in)	1,500	*simple beam; fixed ends

Snow Loads (SL)

Ground Snow Load (psf)	0.0	
Total Snow Load (lbs)	0	***per AASHTO 3.9.6, SL neglible*

Pedestrian Live Load (LL)

Pedestrian Load (psf)	90	*(AASHTO Pedestrian, 3.1)*
Total Live Load (lbs)	259200	

Wind Loads (WL)

Ultimate Wind Speed, V (mph)	170	*(AASHTO Signs, Figure 3.8.3b)*
Wind Importance Factor, I_r	1.15	*(AASHTO Pedestrian, 3.4)*
Wind Directionality Factor, K_d	0.85	*(AASHTO Signs, 3.8.5)** Round = 0.95
Gust Effect Factor, G	1.14	*(AASHTO Signs, 3.8.6)*
Bridge Height Above Ground, z (ft)	15.0	*midpoint of truss section
Height and Exposure Factor, K_z	0.85	*Based on 3-s Gust Wind Speeds & Exposure C *(AASHTO Signs, 3.8.4)*
Wind Drag Coefficient, C_d	2.00	*Two trusses *(AASHTO Signs, Table 3.8.7-1)*
Wind Pressure, P_z (psf)	140.0	*(AASHTO Signs, 3.8.1)*
Fatigue Importance Factor, I_f	1.00	*Category I, Natural Wind Gusts *(AASHTO Signs, Table 11.6-1)*
Fatigue Wind Pressure, P_{NW} (psf)	10.4	*(AASHTO Signs, 11.7.1.2);* Truck-Induced Gust Loading shall be excluded unless required by Owner *(AASHTO Signs, 11.7.1.3)*

Summary:

Axial Compressive Resistance

Load Condition	Design Assumptions	ASTM A588 Compressive Yield (psi)	Resistance Factor	Factor	Maximum Resistance (psi)	Maximum Induced Stress (psi)	Status	Notes
Top Chord	Member to member connections considered Rigid Negligable fatigue effects	45,501	0.95	100%	**43,226**	**38,030**	OK	---
End Post	Member to member connections considered Rigid Negligable fatigue effects	49,261	0.95	100%	**46,798**	**5,880**	OK	---
Vertical	Member to member connections considered Rigid Negligable fatigue effects	48,596	0.95	100%	**46,166**	**12,060**	OK	---
Floor Bracing	Member to member connections considered Rigid Negligable fatigue effects	28,249	0.95	100%	**26,837**	**24,579**	OK	---

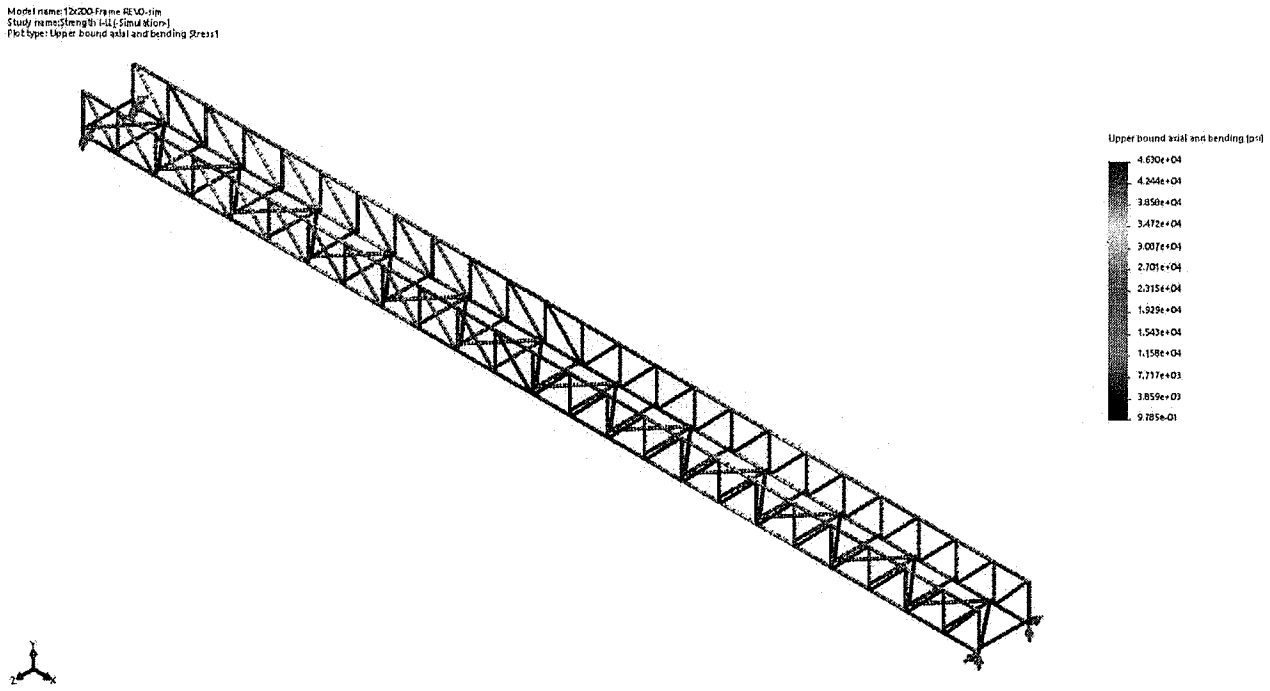
Combined Bending & Axial Resistance

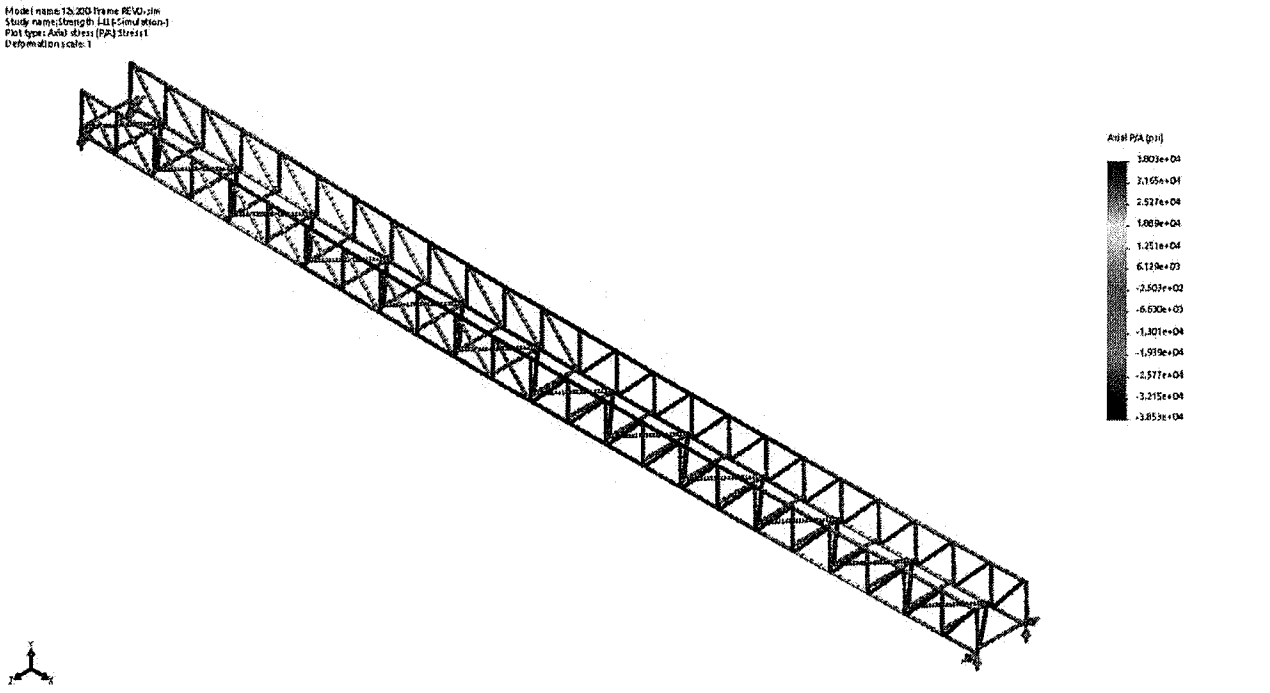
Load Condition	Design Assumptions	ASTM A588 Tensile Yield (psi)	Resistance Factor	Factor	Maximum Resistance (psi)	Maximum Induced Stress (psi)	Status	Notes
Strength I-LL	Support conditions considered Pinned-Sliding Negligable fatigue effects	50,000	0.95	100%	**47,500**	**46,300**	OK	---
Strength I-VL	Support conditions considered Pinned-Sliding Negligable fatigue effects	50,000	0.95	100%	**47,500**	**27,470**	OK	---
Strength III	Support conditions considered Pinned-Sliding Negligable fatigue effects	50,000	0.95	100%	**47,500**	**35,900**	OK	---
Service I	Support conditions considered Pinned-Sliding Negligable fatigue effects	50,000	0.95	100%	**47,500**	**39,650**	OK	---
Fatigue I	Support conditions considered Pinned-Sliding Fatigue Considered - Infinite cycles - D type	7,000	1	100%	**7,000**	**2,873**	OK	---

Other Components Resistance

Load Condition	Design Assumptions	Unsupported Length* (in)	Member Category	Member	Maximum Resistance (in-lb)	Factored Induced Moment* (in-lb)	Status	Notes
Rail Load	Member to member connections considered Rigid	**42.0**	Vertical Posts	**10x10x1/2**	**2,402,400**	**51,450**	OK	---
Rail Load	Member to member connections considered Rigid	**120.0**	Horizontal Rail	**2x2x1/8 Angle**	**5,029**	**2,625**	OK	---
Wheel/Point Load	Member to member connections considered Rigid Weld Affected	**144.0**	Floor Beam	**W12x58**	**2,563,682**	**336,000**	OK	---

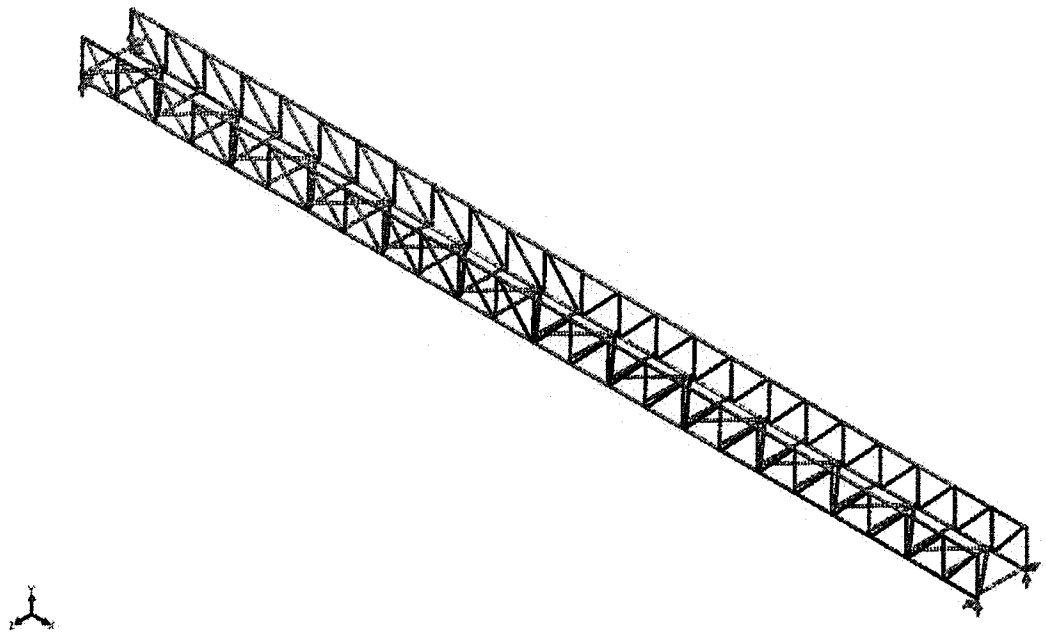
Induced Stresses:





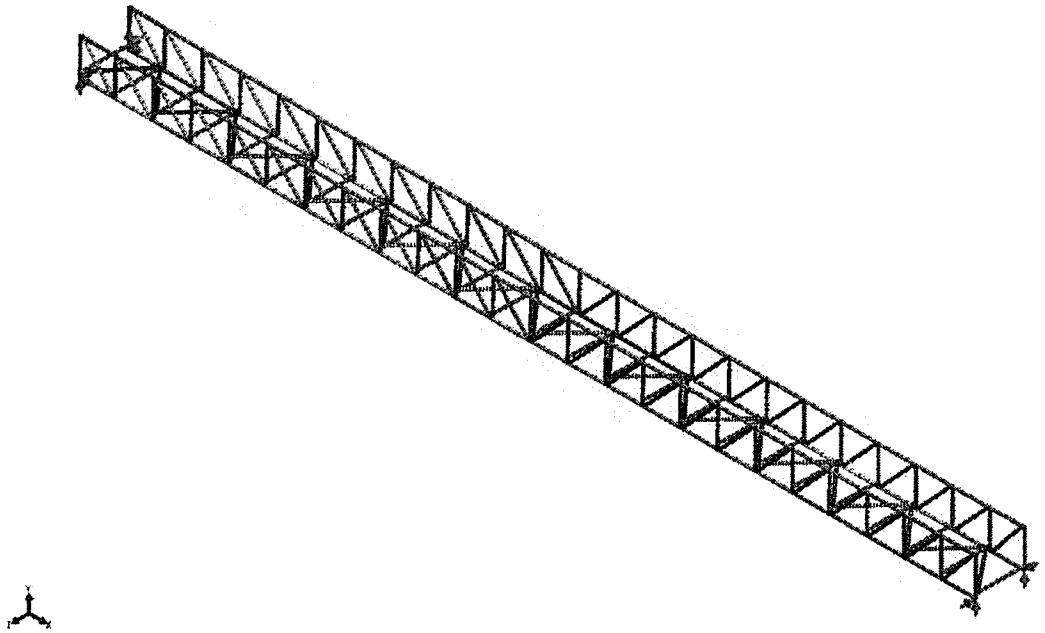
12x240 PEDESTRIAN BRIDGE

Model name:12x200-Frame REVO-sim
Study name:Strength III(-Simulation1)
Plot type: Upper bound axial and bending Stress1
Deformation scale:1



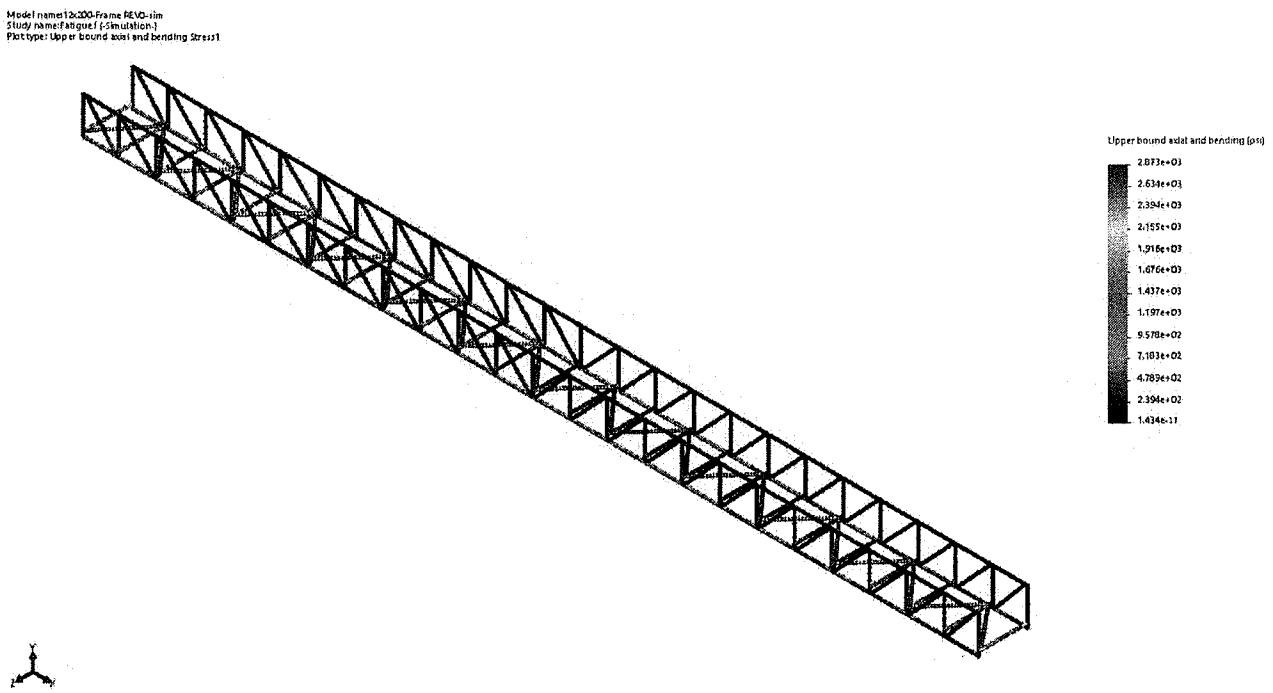
Upper bound axial and bending (psi)
3.590e+04
3.291e+04
2.992e+04
2.693e+04
2.394e+04
2.094e+04
1.795e+04
1.496e+04
1.197e+04
8.976e+03
5.984e+03
2.992e+03
4.676e-01

Model name:12x200-Frame REVO-sim
Study name:Strength III(-Simulation1)
Plot type: Axial stress (PA) Stress2
Deformation scale:1



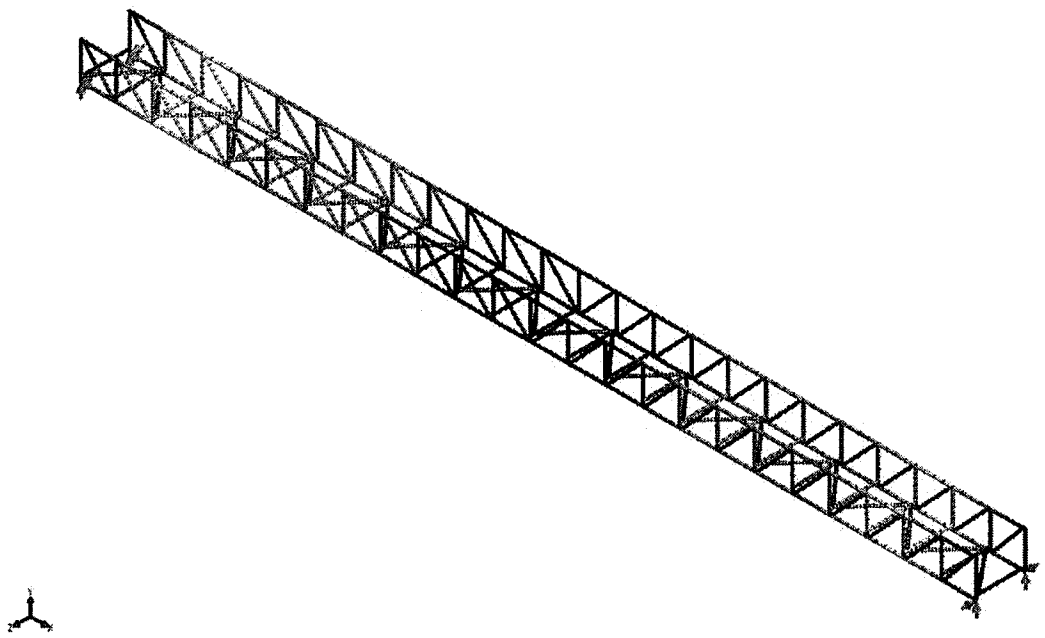
Axial PSA (psi)
3.031e+04
2.672e+04
2.143e+04
1.613e+04
1.084e+04
5.544e+03
2.501e+02
-5.044e+03
-1.034e+04
-1.563e+04
-2.093e+04
-2.622e+04
-3.151e+04

12x240 PEDESTRIAN BRIDGE

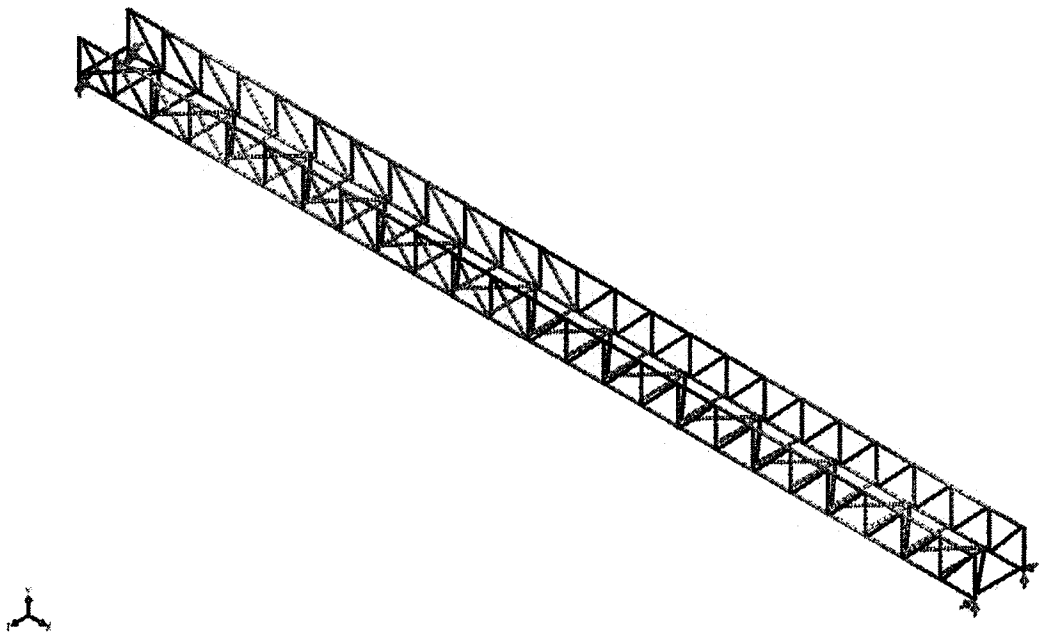


12x240 PEDESTRIAN BRIDGE

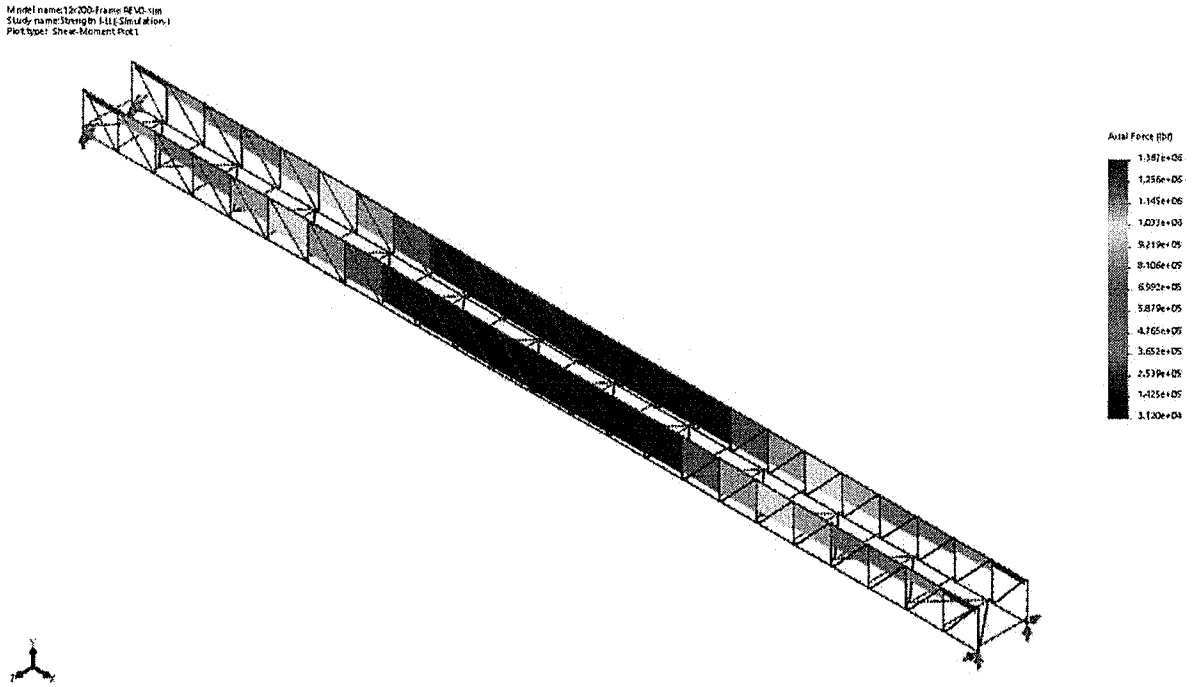
Model name:12x200-Frame REVO-sim
Study name:Displacement_VM-Simulation-1
Plot type: Static displacement Displacement1



Model name:12x200-Frame REVO-sim
Study name:Displacement_VM-Simulation-1
Plot type: Static displacement Displacement2



12x240 PEDESTRIAN BRIDGE



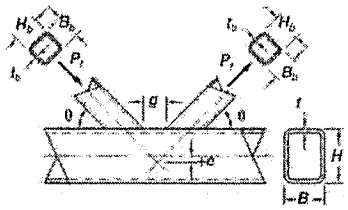
HSS to HSS Connection Analysis – Top Chord:

Mechanical Properties

Steel ASTM:	A847
E (ksi)	29000
F_{yc} (ksi)	70.0
F_{yb} (ksi)	50.0
F_{uc} (ksi)	50.0
F_{ub} (ksi)	42.0
F_{ye} (ksi)	30.0

Induced Loads

Top Chord - Axial Load (kips)	409.7	*at joint which creates most critical connection
Top Chord - Moment (in-kips)	447.3	*at joint which creates most critical connection



Truss Diagonal: HSS-to-HSS Connection Analysis

Geometry, *AISC Specifications Table K2.2*

eccentricity, e	9.7	
Branch Angle, θ (must be >=30°)	50.1	*OK
Chord Thickness, t (in)	0.6975	
Chord Width, B (in)	14	
Chord Height, H (in)	14	
Chord Slenderness Ratio, γ: B/2t	10.0	
Branch Thickness, t_b (in)	0.349	
Branch Width, B_b (in)	10	
Branch Height, H_b (in)	6	
Length of chord contact with branch, l_a (in)	7.8	
Load Length Parameter, η	0.6	
Q_f, Strength Ratio	0.27	*modify Z for rect chords
Q_f (chord connecting surface)	1.00	
Chord Connecting Surface	C	*(T or C)
Gap Spacing, g (in)	2.0	

Limits of Applicability, *AISC Specifications Table K2.2A*

Joint eccentricity: -0.55 <= e/H <= 0.25	0.69	*NOT OK for K Connection Analysis; Treat as separate Y connection
Chord Wall Slenderness: B/t <= 35	20	*OK
Chord Wall Slenderness: H/t <= 35	20	*OK
Branch Wall Slenderness: B_b/t <= 35	29	*OK
Branch Wall Slenderness: H_b/t <= 35	17	*OK
Width Ratio, β: B_b/B >= 0.25	0.71	*OK
Width Ratio: H_b/B >= 0.25	0.43	*OK
Branch Aspect Ratio: 0.5 <= H_b/B_b <= 2.0	0.60	*OK
Chord Aspect Ratio: 0.5 <= H/B <= 2.0	1.00	*OK
Material Strength: Fy <= 52ksi	50	*OK
Ductility: Fy/Fu <= 0.8	0.71	*OK

T, Y- and Cross-Connections

Chord Wall Plastification, when β <= 0.85

Check β <= 0.85	YES
ϕ	1.00
P_n*sinθ *(AISC Specifications K2-7)*	377.2
P_n	361.56

Shear Yielding (Punching), when 0.85 < β <= 1 - 1/γ or B/t < 10

Check 0.85 < β <= 1 - 1/γ or B/t < 10	N/A
ϕ	0.95
β_{min} = 5*B/γ <= β	0.4
P_n*sinθ *(AISC Specifications K2-8)*	---
P_n	---

Local Yielding of Chord Sidewalls, when β = 1.0

Check β = 1.0	N/A
ϕ	1.00
l_b (H_b/sinθ)	7.83
k *(AISC Specifications J10-2)*	0.90
P_n*sinθ *(AISC Specifications K2-9)*	---
P_n	---

*chord outside corner radius

Local Crippling of Chord Sidewalls, when β = 1.0 and Branch in Compression

Check β = 1.0 and Branch in Compression	N/A
ϕ	0.75
P_n*sinθ *(AISC Specifications K2-10)*	---
P_n	---

Local Yielding of Branch Due to Uneven Load Distribution, when β > 0.85

Check β > 0.85	N/A
ϕ	0.95
b_{eff} *(AISC Specifications K2-13)* (<=B_b)	9.96
P_n *(AISC Specifications K2-12)*	---
P_n	---

Capacity Check

Connection demand, P_u (kips)	273.1	
Controlling P_n	361.56	
Unity Check <= 1.0	0.76	*OK

Truss Vertical: HSS-to-HSS Connection Analysis

Geometry, *AISC Specifications Table K2.2*

eccentricity, e	9.7	
Branch Angle, θ (must be >=30°)	90.0	*OK
Chord Thickness, t (in)	0.6975	
Chord Width, B (in)	14	
Chord Height, H (in)	14	
Chord Slenderness Ratio, γ: B/2t	10.0	
Branch Thickness, t_b (in)	0.465	
Branch Width, B_b (in)	10	
Branch Height, H_b (in)	10	
Length of chord contact with branch, l_a (in)	10.0	
Load Length Parameter, η	0.7	
Q_f, Strength Ratio	0.27	*modify Z for rect chords
Q_f (chord connecting surface)	1.00	
Chord Connecting Surface	C	*(T or C)
Gap Spacing, g (in)	2.0	

Limits of Applicability, *AISC Specifications Table K2.2A*

Joint eccentricity: -0.55 <= e/H <= 0.25	0.69	*NOT OK for K Connection Analysis; Treat as separate T connection
Chord Wall Slenderness: B/t <= 35	20	*OK
Chord Wall Slenderness: H/t <= 35	20	*OK
Branch Wall Slenderness: B_b/t <= 35	22	*OK
Branch Wall Slenderness: H_b/t <= 35	22	*OK
Width Ratio, β: B_b/B >= 0.25	0.71	*OK
Width Ratio: H_b/B >= 0.25	0.71	*OK
Branch Aspect Ratio: 0.5 <= H_b/B_b <= 2.0	1.00	*OK
Chord Aspect Ratio: 0.5 <= H/B <= 2.0	1.00	*OK
Material Strength: Fy <= 52ksi	50	*OK
Ductility: Fy/Fu <= 0.8	0.71	*OK

T, Y- and Cross-Connections

Chord Wall Plastification, when β <= 0.85

Check β <= 0.85	YES
ϕ	1.00
P_n*sinθ *(AISC Specifications K2-7)*	303.7
P_n	303.66

Shear Yielding (Punching), when 0.85 < β <= 1 - 1/γ or B/t < 10

Check 0.85 < β <= 1 - 1/γ or B/t < 10	N/A
ϕ	0.95
β_{min} = 5*B/γ <= β	0.4
P_n*sinθ *(AISC Specifications K2-8)*	---
P_n	---

Local Yielding of Chord Sidewalls, when β = 1.0

Check β = 1.0	N/A
ϕ	1.00
l_b (H_b/sinθ)	10.00
k *(AISC Specifications J10-2)*	0.90
P_n*sinθ *(AISC Specifications K2-9)*	---
P_n	---

*chord outside corner radius

Local Crippling of Chord Sidewalls, when β = 1.0 and Branch in Compression

Check β = 1.0 and Branch in Compression	N/A
ϕ	0.75
P_n*sinθ *(AISC Specifications K2-10)*	---
P_n	---

Local Yielding of Branch Due to Uneven Load Distribution, when β > 0.85

Check β > 0.85	N/A
ϕ	0.95
b_{eff} *(AISC Specifications K2-13)* (<=B_b)	7.47
P_n *(AISC Specifications K2-12)*	---
P_n	---

Capacity Check

Connection demand, P_u (kips)	205.7	
Controlling P_n	303.66	
Unity Check <= 1.0	0.68	*OK

Member Design:

14x14x3/4	Truss Top Chord
Depth (in)	14.00
Width (in)	14.00
Thickness (in)	0.698
Area (in^2), Gross & Net Sections	38.30
I_x (in^4)	1100.00
I_y (in^4)	1100.00
S_x (in^3)	157.14
Z (in^3)	188.00
r_x	5.359
r_y	5.359
Unbraced Length L_b (in)	120.0

Mechanical Properties	
Steel ASTM:	A847
E (ksi)	29000
F_{tu} (ksi)	70.0
F_{ty} (ksi)	50.0
F_{cy} (ksi)	50.0
F_{su} (ksi)	40.4
F_{sy} (ksi)	28.9

Strength Summary	
Axial Tensile (kips)	1819.250
Axial Compressive (kips)	1655.556
Bending (in-kips)	7857.143
Shear (kips)	479.517

Axial-Tension (Gross)	
U (LRFD 2017 6.8.2.1)	1.0
L_b/r <= 200 Prim., 240 Sec. (LRFD 2017 6.8.4)	22.4
Fty*A (kips) (LRFD 2017 6.8.2.1)	1915.000
Ftu/kt*A (kips) (LRFD 2017 6.8.2.1)	2681.000
ϕy (LRFD 2017 6.5.4.2)	0.95
ϕu (LRFD 2017 6.5.4.2)	0.80
Resistance (ksi)	**47.500**

Axial-Compression (Gross)	
K (LRFD 2017 4.6.2.5)	1.60
KL/r <=120 Prim., 140 Sec. (LRFD 2017 6.9.3)	35.9
P_e (ksi) (LRFD 2017 6.9.4.1.2)	221.954
Q (LRFD 2017 6.9.4.1.1)	1.0
P_o (ksi) (LRFD 2017 6.9.4.1)	50.000
ϕ (LRFD 2017 6.5.4.2)	0.95
Resistance (ksi)	**43.226**

Shear Resistance	
k (LRFD 2017 6.10.9.2)	5.0
C (LRFD 2017 6.10.9.2)	1.0
V_n (kips) (LRFD 2017 6.10.9.2)	479.517
ϕ (LRFD 2017 6.5.4.2)	1.00
Resistance (kips)	**479.517**

Flexure-Yielding	
$M_n = M_p$ (kip-in) (LRFD 2017 6.12.2.2.2)	9400.0
ϕ (LRFD 2017 6.5.4.2)	1.00
Resistance (ksi)	**50.000**

Flexure-Flange Local Buckling	
λ_f (LRFD 2017 6.12.2.2.2)	17.1
λ_{pf} (LRFD 2017 6.12.2.2.2)	27.0
λ_{rf} (LRFD 2017 6.12.2.2.2)	33.7
M_n (kip-in) (LRFD 2017 6.12.2.2.2)	11667.0
ϕ (LRFD 2017 6.5.4.2)	1.00
Resistance (ksi)	**74.245**

Flexure-Web Local Buckling	
λ_w (LRFD 2017 6.12.2.2.2)	17.1
λ_{pw} (LRFD 2017 6.12.2.2.2)	58.3
M_n (kip-in) (LRFD 2017 6.12.2.2.2)	10205.058
ϕ (LRFD 2017 6.5.4.2)	1.00
Resistance (ksi)	**64.941**

12x240 PEDESTRIAN BRIDGE

14x14x3/4	Truss End Post
Depth (in)	14.00
Width (in)	14.00
Thickness (in)	0.698
Area (in^2), Gross & Net Sections	38.30
I_x (in^4)	1100.00
I_y (in^4)	1100.00
S_x (in^3)	157.14
Z (in^3)	188.00
r_x	5.359
r_y	5.359
Unbraced Length L_b (in)	102.0

Mechanical Properties

Steel ASTM:	A847
E (ksi)	29000
F_{tu} (ksi)	70.0
F_{ty} (ksi)	50.0
F_{cy} (ksi)	50.0
F_{su} (ksi)	40.4
F_{sy} (ksi)	28.9

Strength Summary

Axial Tensile (kips)	1819.250
Axial Compressive (kips)	1792.346
Bending (in-kips)	7857.143
Shear (kips)	479.517

Axial-Tension (Gross)

U (LRFD 2017 6.8.2.1)	1.0
L_b/r <= 200 Prim., 240 Sec. (LRFD 2017 6.8.4)	19.0
Fty*A (kips) (LRFD 2017 6.8.2.1)	1915.000
Ftu/kt*A (kips) (LRFD 2017 6.8.2.1)	2681.000
ϕy (LRFD 2017 6.5.4.2)	0.95
ϕu (LRFD 2017 6.5.4.2)	0.80
Resistance (ksi)	**47.500**

Axial-Compression (Gross)

K (LRFD 2017 4.6.2.5)	0.75
KL/r <=120 Prim., 140 Sec. (LRFD 2017 6.9.3)	14.3
P_e (ksi) (LRFD 2017 6.9.4.1.2)	1404.652
Q (LRFD 2017 6.9.4.1.1)	1.0
P_o (ksi) (LRFD 2017 6.9.4.1)	50.000
ϕ (LRFD 2017 6.5.4.2)	0.95
Resistance (ksi)	**46.798**

Shear Resistance

k (LRFD 2017 6.10.9.2)	5.0
C (LRFD 2017 6.10.9.2)	1.0
V_n (kips) (LRFD 2017 6.10.9.2)	479.517
ϕ (LRFD 2017 6.5.4.2)	1.00
Resistance (kips)	**479.517**

Flexure-Yielding

$M_n = M_p$ (kip-in) (LRFD 2017 6.12.2.2.2)	9400.0
ϕ (LRFD 2017 6.5.4.2)	1.00
Resistance (ksi)	**50.000**

Flexure-Flange Local Buckling

λ_f (LRFD 2017 6.12.2.2.2)	17.1
λ_{pf} (LRFD 2017 6.12.2.2.2)	27.0
λ_{rf} (LRFD 2017 6.12.2.2.2)	33.7
M_n (kip-in) (LRFD 2017 6.12.2.2.2)	11667.0
ϕ (LRFD 2017 6.5.4.2)	1.00
Resistance (ksi)	**74.245**

Flexure-Web Local Buckling

λ_w (LRFD 2017 6.12.2.2.2)	17.1
λ_{pw} (LRFD 2017 6.12.2.2.2)	58.3
M_n (kip-in) (LRFD 2017 6.12.2.2.2)	10205.058
ϕ (LRFD 2017 6.5.4.2)	1.00
Resistance (ksi)	**64.941**

12x240 PEDESTRIAN BRIDGE

10x4x1/4	Truss Splice Post
Depth (in)	10.00
Width (in)	4.00
Thickness (in)	0.233
Area (in^2), Gross & Net Sections	6.17
I_x (in^4)	74.70
I_y (in^4)	17.70
S_x (in^3)	14.94
Z (in^3)	19.00
r_x	3.480
r_y	1.694
Unbraced Length L_b (in)	101.0

Axial-Tension (Gross)

U (LRFD 2017 6.8.2.1)	1.0
L_b/r <= 200 Prim., 240 Sec. (LRFD 2017 6.8.4)	59.6
Fty*A (kips) (LRFD 2017 6.8.2.1)	308.500
Ftu/kt*A (kips) (LRFD 2017 6.8.2.1)	431.900
ϕy (LRFD 2017 6.5.4.2)	0.95
ϕu (LRFD 2017 6.5.4.2)	0.80
Resistance (ksi)	**47.500**

Axial-Compression (Gross)

K (LRFD 2017 4.6.2.5)	0.75
KL/r <=120 Prim., 140 Sec. (LRFD 2017 6.9.3)	44.7
P_e (ksi) (LRFD 2017 6.9.4.1.2)	143.094
Q (LRFD 2017 6.9.4.1.1)	1.0
P_o (ksi) (LRFD 2017 6.9.4.1)	50.000
ϕ (LRFD 2017 6.5.4.2)	0.95
Resistance (ksi)	**41.037**

Shear Resistance

k (LRFD 2017 6.10.9.2)	5.0
C (LRFD 2017 6.10.9.2)	1.0
V_n (kips) (LRFD 2017 6.10.9.2)	125.119
ϕ (LRFD 2017 6.5.4.2)	1.00
Resistance (kips)	**125.119**

Mechanical Properties

Steel ASTM:	A847
E (ksi)	29000
F_{tu} (ksi)	70.0
F_{ty} (ksi)	50.0
F_{cy} (ksi)	50.0
F_{su} (ksi)	40.4
F_{sy} (ksi)	28.9

Flexure-Yielding

$M_n = M_p$ (kip-in) (LRFD 2017 6.12.2.2.2)	950.0
ϕ (LRFD 2017 6.5.4.2)	1.00
Resistance (ksi)	**50.000**

Flexure-Flange Local Buckling

λ_f (LRFD 2017 6.12.2.2.2)	14.2
λ_{pf} (LRFD 2017 6.12.2.2.2)	27.0
λ_{rf} (LRFD 2017 6.12.2.2.2)	33.7
M_n (kip-in) (LRFD 2017 6.12.2.2.2)	1335.7
ϕ (LRFD 2017 6.5.4.2)	1.00
Resistance (ksi)	**89.403**

Flexure-Web Local Buckling

λ_w (LRFD 2017 6.12.2.2.2)	39.9
λ_{pw} (LRFD 2017 6.12.2.2.2)	58.3
M_n (kip-in) (LRFD 2017 6.12.2.2.2)	997.188
ϕ (LRFD 2017 6.5.4.2)	1.00
Resistance (ksi)	**66.746**

Strength Summary

Axial Tensile (kips)	293.075
Axial Compressive (kips)	253.200
Bending (in-kips)	747.000
Shear (kips)	125.119

12x240 PEDESTRIAN BRIDGE

W12x58	Floor Beams
Depth (in)	12.20
Width (in)	10.00
Web Thickness (in)	0.360
Flange Thickness (in)	0.640
Area (in^2), Gross & Net Sections	17.00
I_x (in^4)	475.00
I_y (in^4)	107.00
S_x (in^3)	77.87
S_y (in^3)	21.40
Z_x (in^3)	32.50
J (in^4)	2.10
G (ksi)	11165
C_w (in^6)	3570.00
r_x	5.286
r_y	2.509
Unbraced Length L_b (in)	148.0

Mechanical Properties

Steel ASTM:	A588
E (ksi)	29000
F_{tu} (ksi)	70.0
F_{ty} (ksi)	50.0
F_{cy} (ksi)	50.0
F_{su} (ksi)	40.4
F_{sy} (ksi)	28.9

Strength Summary

Axial Tensile (kips)	807.500
Axial Compressive (kips)	781.880
Bending (in-kips)	2563.682
Shear (kips)	115.562

Axial-Tension (Gross)

U (LRFD 2017 6.8.2.1)	1.0
L_b/r <= 200 Prim., 240 Sec. (LRFD 2017 6.8.4)	28.0
Fty*A (kips) (LRFD 2017 6.8.2.1)	850.000
Ftu/kt*A (kips) (LRFD 2017 6.8.2.1)	1190.000
ϕy (LRFD 2017 6.5.4.2)	0.95
ϕu (LRFD 2017 6.5.4.2)	0.80
Resistance (ksi)	**47.500**

Axial-Compression (Gross)

K (LRFD 2017 4.6.2.5)	0.75
KL/r <=120 Prim., 140 Sec. (LRFD 2017 6.9.3)	21.0
P_n (ksi) (LRFD 2017 6.9.4.1.2)	649.077
Q (LRFD 2017 6.9.4.1.1)	1.0
P_o (ksi) (LRFD 2017 6.9.4.1)	50.000
ϕ (LRFD 2017 6.5.4.2)	0.95
Resistance (ksi)	**45.993**

Shear Resistance

k (LRFD 2017 6.10.9.2)	5.0
C (LRFD 2017 6.10.9.2)	1.0
V_n (kips) (LRFD 2017 6.10.9.2)	115.562
ϕ (LRFD 2017 6.5.4.2)	1.00
Resistance (kips)	**115.562**

Flexure-Yielding

λ_r (LRFD 2017 6.12.2.2.1)	7.8
λ_{pf} (LRFD 2017 6.12.2.2.1)	9.2
λ_{rf} (LRFD 2017 6.12.2.2.1)	20.0
$M_n = M_p$ (kip-in) (LRFD 2017 6.12.2.2.1)	1070.0
ϕ (LRFD 2017 6.5.4.2)	1.00
Resistance (ksi)	**32.923**

Web Bend-Buckling Resistance

k (LRFD 2017 6.10.1.9.1)	12.7
β (LRFD 2017 6.10.1.10.1)	0.6
ρ (LRFD 2017 6.10.1.10.1)	1.0
R_h (LRFD 2017 6.10.1.10.1)	12.1
F_{crw} = (ksi) (LRFD 2017 6.10.1.9.1)	71.4
ϕ (LRFD 2017 6.5.4.2)	1.00
Resistance (ksi)	**71.429**

Web-Crippling

N (LRFD 2017 7.11.2.1)	N/A
ϕ_w (LRFD 2017 6.5.4.2)	0.80
R_u (kips) (LRFD 2017 D6.5.3)	N/A

12x240 PEDESTRIAN BRIDGE

4x4x1/4	Floor Bracing
Depth (in)	4.00
Width (in)	4.00
Thickness (in)	0.233
Area (in^2), Gross & Net Sections	3.37
I_x (in^4)	7.80
I_y (in^4)	7.80
S_x (in^3)	3.90
Z (in^3)	4.69
r_x	1.521
r_y	1.521
Unbraced Length L_b (in)	179.3

Mechanical Properties

Steel ASTM:	A847
E (ksi)	29000
F_{tu} (ksi)	70.0
F_{ty} (ksi)	50.0
F_{cy} (ksi)	50.0
F_{su} (ksi)	40.4
F_{sy} (ksi)	28.9

Strength Summary

Axial Tensile (kips)	160.075
Axial Compressive (kips)	90.441
Bending (in-kips)	195.000
Shear (kips)	44.406

Axial-Tension (Gross)

U (LRFD 2017 6.8.2.1)	1.0
L_b/r <= 200 Prim., 240 Sec. (LRFD 2017 6.8.4)	117.8
Fty*A (kips) (LRFD 2017 6.8.2.1)	168.500
Ftu/kt*A (kips) (LRFD 2017 6.8.2.1)	235.900
ϕy (LRFD 2017 6.5.4.2)	0.95
ϕu (LRFD 2017 6.5.4.2)	0.80
Resistance (ksi)	**47.500**

Axial-Compression (Gross)

K (LRFD 2017 4.6.2.5)	0.75
KL/r <=120 Prim., 140 Sec. (LRFD 2017 6.9.3)	88.4
P_e (ksi) (LRFD 2017 6.9.4.1.2)	36.654
Q (LRFD 2017 6.9.4.1.1)	1.0
P_n (ksi) (LRFD 2017 6.9.4.1)	50.000
ϕ (LRFD 2017 6.5.4.2)	0.95
Resistance (ksi)	**26.837**

Shear Resistance

k (LRFD 2017 6.10.9.2)	5.0
C (LRFD 2017 6.10.9.2)	1.0
V_n (kips) (LRFD 2017 6.10.9.2)	44.406
ϕ (LRFD 2017 6.5.4.2)	1.00
Resistance (kips)	**44.406**

Flexure-Yielding

$M_n = M_p$ (kip-in) (LRFD 2017 6.12.2.2.2)	234.5
ϕ (LRFD 2017 6.5.4.2)	1.00
Resistance (ksi)	**50.000**

Flexure-Flange Local Buckling

λ_f (LRFD 2017 6.12.2.2.2)	14.2
λ_{pf} (LRFD 2017 6.12.2.2.2)	27.0
λ_r (LRFD 2017 6.12.2.2.2)	33.7
M_n (kip-in) (LRFD 2017 6.12.2.2.2)	309.5
ϕ (LRFD 2017 6.5.4.2)	1.00
Resistance (ksi)	**79.371**

Flexure-Web Local Buckling

λ_w (LRFD 2017 6.12.2.2.2)	14.2
λ_{pw} (LRFD 2017 6.12.2.2.2)	58.3
M_n (kip-in) (LRFD 2017 6.12.2.2.2)	256.564
ϕ (LRFD 2017 6.5.4.2)	1.00
Resistance (ksi)	**65.786**

Bearing Plate Analysis:

Steel Base Plate

# of Bolts	4	
Hole/Slot Diameter (in)	1 3/4	
Base Plate Length (in)	16	
Reaction (R_z)	**50,562**	*factored from Reactions
Slot Length (in)	1.500	(Does not include slot end radii)
Edge Distance (in)	2.250	*Direction of slot (Includes slot end radius)
Edge Distance (in)	2.500	*Normal to direction of slot (To center of slot)
D between Slots	8.500	(Distance of Material between Slots; does not include slot end radii)

Bearing Failure (AASHTO LRFD 6.13.2.9) $\phi_u = 0.80$

Plate Thickness (in)	Ultimate Tensile (psi)	Bearing Resistance (lbs) (bolts in slots)	
1	70,000	140,000	OK

Single Bolt Tear Out - Block Shear (AASHTO LRFD 6.13.4)

(For a single bolt with e >= 2D, only Bearing needs to be checked since Bearing Strength is less than Tear Out Strength.)

Multiple Bolt Tear Out - Block Shear (AASHTO LRFD 6.13.4)

(For multiple bolts with e = 2D) $\phi_u = 0.80$

Plate Thickness (in)	Ultimate Tensile (psi)	Yield Tensile (psi)	Allowable Tear Out Load (lbs)	
1	70,000	36,000	680,184	OK

Minimum Support Length Requirements (AASHTO Seismic, 4.12)

Bridge Length, L (ft)	Support Skew, S (°)	Abutment Height, H (ft)	Support Length, N (in)	
240.0	0	2.0	13	OK

Reactions for Abutment Design

Anchor Locations (Qty)	4
Total Height (ft)	11.17
Outside Truss Width (ft)	14.33
Total Length (ft)	240.00
Coefficient of Expansion (1/F)	6.50E-06
Design Temperature Range	120

	Unfactored Loads (lbf)	
Dead Load (DL)	397,367	*Includes Weight of Concrete Deck
Vehicle Load (VL)	20,000	
Snow Load (SL)	0	
Live Load (LL)	259,200	
Wind Load (WL)	202,246	
Overturning Wind (OW)	68,800	
Seismic Load (E)	334,185	

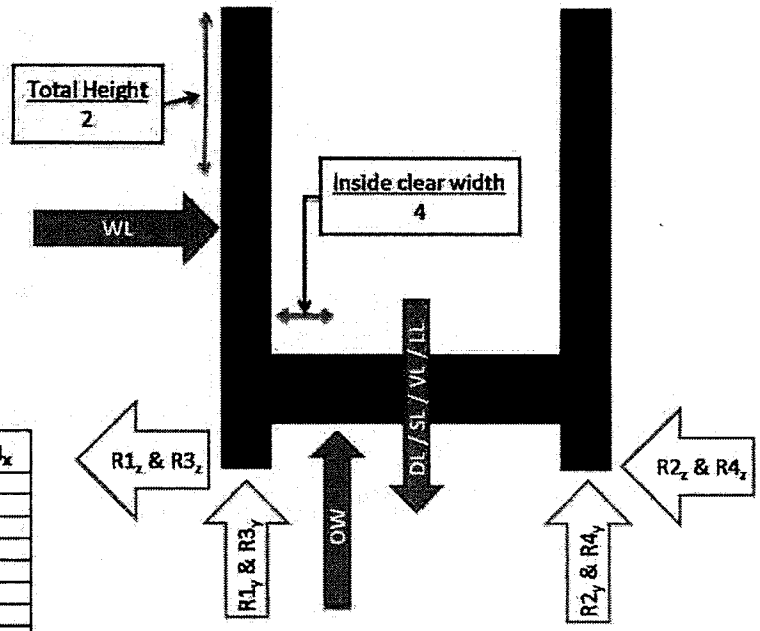
Minimum Expansion Range (in)	2.25

	$R1_zR3_z$	$R1_yR3_y$	$R1_xR3_x$	$R2_zR4_z$	$R2_yR4_y$	$R2_xR4_x$
DL	—	-99,342	—	—	-99,342	—
VL *	—	-10,000	—	—	-10,000	—
LL	—	-64,800	—	—	-64,800	—
WL	50,562	39,391	—	50,562	-39,391	—
OW	—	25,800	—	—	8,600	—
E	83,546	65,088	—	83,546	-65,088	—
1.2*DL + 1.6*LL (ACI 318-14, 5.3.1b)	—	-222,890	—	—	-222,890	—
1.2*DL + 1.0*WL + 1.0*LL (ACI 318-14, 5.3.1d)	50,562	-184,639	—	50,562	-223,401	—
1.2*DL + 1.0*E + 1.0*LL (ACI 318-14, 5.3.1e)	83,546	-118,922	83,546	83,546	-249,098	83,546
0.9*DL + 1.0*WL (ACI 318-14, 5.3.1f)	50,562	-50,017	—	50,562	-128,799	—
0.9*DL + 1.0*E (ACI 318-14, 5.3.1g)	83,546	-24,319	83,546	83,546	-154,496	83,546
Expansion/Contraction	—	—	19,868	—	—	19,868

Positive Y values represent uplift

Assume even distribution across all anchor locations

*Assumes vehicle load acting on 2 anchor locations



Effective Wheel Load Area, Concentrated Loads:

(SDI C-2017 Standard, 2.4.B.11)

$b_e = b_m + 2*(1-x/L)*x$ = **88** *Effective Width of Concentrated Load (in)

$W = L/2 + b_3$ = **70** *Effective Length of Concentrated Load (in)

$b_m = b_2 + 2*t_c + 2*t_t$ = 28

L (in) = 120	*deck span length
x (in) = 60	*midspan distance (center of concentrated load)
b_2 (in) = 20	*per AASHTO LRFD, 3.6.1.2.5
b_3 (in) = 10	*per AASHTO LRFD, 3.6.1.2.5
t_c (in) = 4	*thickness of concrete above steel deck
t_t (in) = 0	*thickness of rigid topping above concrete

Induced Loads:

Total Vehicle Load (lbs)	20000
Wheel Spacing (ft)	14.0
Front Axle Load - 20% (lbs)	4000
Rear Axle Load - 80% (lbs)	16000
Max Wheel Load (lbs)	8000
Effective Wheel Load Area (ft^2)	42.8
Induced Wheel Load (psf)	187.0

Concrete Strength Design

Calculated Loads:

Wheel Live Load	187.0	psf
Factored Uniform Load (Ped.)	220.1	psf
Factored Uniform Load (Vehicle)	375.3	psf

Max Moments and Shear Forces

Pedestrian		
Max Moment	2.45	kip*ft
Max Shear	1.27	kips
Vehicle		
Max+ Moment	3.80	kip*ft
Max- Moment	1.88	kip*ft
Max Shear	2.06	kips

Vehicle Load Controls

A_s	0.38	in

CONCRETE SLAB (ACI 318)

DESCRIPTION: 4in. Reinforced Slab above 2in. Composite-Deck

FLEXURE & SHEAR INPUT:

f'c =	4	ksi
fy =	60	ksi
b =	12	"
d =	2.5	"
Mu =	3.80	kip-ft
Vu =	2.06	kip

Lt wt conc factor (λ)

(NW=1, LW=.75) = 1.00

CRACK CONTROL INPUT:

Ma =	2.54	kip-ft
Clr cover =	2.25	in

TORSION & DEFLECTION INPUT:

Tu =	0	kip-ft
h =	4	"

NEGLECT TORSION

Dist to CL Tie = 0 "

BENDING

As =	0.38 in2	p=	0.01269
As(min) =	0.10 in2	p=	0.00333
As(max) =	0.62 in2	p max=	0.02064

SHEAR

ϕVc =	2.85 k	Av/s =	0.00 in2
Vs(req'd)=	0.00 k	Av/s(min)=	0.01 in2

TORSION

Tcr =	1.14 'k	
At/s =	0.00 in2	
Av+2At/s =	0.00 in2	
Av+2At(m)=	0.01 in2	
Al/4 =	0.00 in2	(Torsion steel all 4 faces)
Total As =	0.38 in2	(As plus Al/4)

BEAM REINFORCING

FLEXURAL REINFORCING

# of bars	As	
2 #4	0.39 in2	
2 #5	0.61 in2	
1 #6	0.44 in2	
1 #7	0.60 in2	
1 #8	0.79 in2	**
1 #9	1.00 in2	**
1 #10	1.27 in2	**
1 #11	1.56 in2	**

Max Rebar Spacing for crack control = 11.03 in

STIRRUPS

Size	2 legs	4 legs
#3 @	1.2 in	1.2 in
#4 @	1.2 in	1.2 in
#5 @	1.2 in	1.2 in
#6 @	1.2 in	1.2 in

**TOO MUCH STEEL - tensile strain exceeds 0.004.
ADD COMPRESSION STEEL OR INCREASE DEPTH.

LONGITUDINAL TORSION

SLAB REINFORCING

Spacing	As
#3 @ 3.5	0.38 in2
#4 @ 6.2	0.38 in2
#5 @ 9.7	0.38 in2
#6 @ 13.9	0.38 in2
#7 @ 18.9	0.38 in2
#8 @ 24.7	0.38 in2

Max Rebar Spacing for crack control = 11.03 in

ϕVc = 2.85 k

SHEAR : OK

DEFLECTION COEFFICIENTS

Actual As =	0.38 in2		
Conc wt =	150 pcf	**Ec =**	**3834 ksi**
Ma =	2.5 'k	**Ie =**	**17 in4**
Mcr =	1.3 'k		
Ig =	64.0 in4		
Icr =	10.3 in4		

American Welding Society

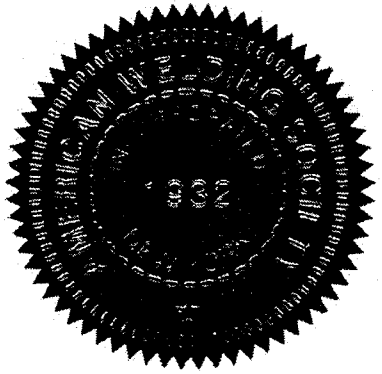
Certifies that

Bridge Brothers Inc.

has complied with the requirements of the AWS B5.17 and QC17 Standards for the Qualification and Certification of AWS Welding Fabricators.

191104F
Certificate Number

November 1, 2022
Expiration Date



AWS President

Chair, Certification Programs

AWS CWF
CERTIFIED WELDING FABRICATOR®