ST. TAMMANY PARISH

MICHAEL B. COOPER
PARISH PRESIDENT

March 17, 2026

Please find the following addendum to the below-mentioned BID.

Addendum No.: 2

Bid#: 26-11-2

Project Name: Tammany Trace Bridge #24

Bid Due Date: Tuesday, March 24, 2026

GENERAL INFORMATION:

1. The following manufacturer is approved for bidding. It is approved in name only, and approval does not waive any requirements of the plans and specifications.
    - Pioneer Bridges
2. Please remove Section 04 - Louisiana Uniform Public Work Bid Form - Unit Price Form and replace it with Section 04 - Louisiana Uniform Public Work Bid Form - Unit Price Form - Revised (attached).

QUESTIONS & ANSWERS:

Question 1. What is the engineers estimated budget for this project?

Answer 1. The estimate for this project is $746,291.94. This information can also be found on our website, linked below.

https://www.stpgov.org/departments/procurement/index.php#collapse1310b4

Question 2. Will the testing be the responsibility of the Contractor or Owner?

Answer 2. The Contractor will be responsible. If the Owner determines that additional testing is needed, the Owner will then assume responsibility.

Question 3. In regards to clearing and grubbing, will clearing outside of the Limits of Construction but inside the Right of Way be allowed?

Answer 3. Approval for clearing and grubbing outside the Limits of Construction but within the Right of Way will be determined on a case-by-case basis.

Question 4. Will any temporary crossings of the existing creek be allowed?

Answer 4. Contractor must follow the permit for crossings or work in the creek.

Question 5. Please provide a plan or detail for the concrete deck to be installed.

Answer 5. The means and methods for installing the concrete deck is dependent on the fabricator and bridge selected by the contractor. A quantity was included for Deck Concrete and Deck Rebar for bidding purposes.

Question 6. Will there be a pre-bid meeting for this solicitation?

Answer 6. There will not be a pre-bid meeting for this project.

Question 7. Will Clearing and Grubbing be allowed from right of way to right of way as shown in the plans?

Answer 7. It will be allowed inside the limits of construction.

Question 8. Will the contractor be allowed to build a temporary haul road for equipment access and delivery and erection of the new bridge?

Answer 8. The Contractor will have access to both sides of the Tarce and if there is room the Contractor may build a temporary haul road.

Question 9. Will the parish furnish and pay for testing lab for the project?

Answer 9. Contractor is responsible for the testing lab, the Parish may also get one if they feel it is necessary.

Question 10. Will pre-drilling or jetting be allowed for driving the piling?

Answer 10. If pre-boring or jetting is necessary for pile installation, preapproval from the geotechnical engineer is required prior to any pre-boring or jetting operation. All pre-boring or jetting shall be in accordance with DOTD specs as appropriate. Appropriate required nominal resistance will be required based on pile information in the plan set.

Question 11. Please confirm the quantity of item 815-02-00100 Seal Expansion Joint (End Dams, Neoprene Seal).

Answer 11. The total quantity should be 52'. 13'-11" for the approach slab to the back wall joint, and 12'-0" for the bridge to the back wall joint. This would equal 25'-11" for each end of the bridge. Therefore, the total with correct decimal precision as per DOTD specifications would be 52'. Please refer to General Information No. 2.

Question 11A. How will this be measured for payment?

Answer 11A. This line item shall be measured per linear foot.

Question 12. What kind of finish, if any is required on the aluminum hand rails?

Answer 12. Please refer to Section 811 of the standard specifications for more information.

Question 13. Is an office trailer required for the Owner/Engineer?

Answer 13. No.

Question 14. Is a building permit required?

Answer 14. No.

Question 15. Will the contractor be allowed to install and remove temporary false work to erect the bridge?

Answer 15. Contractor should follow erection guidance provided by the fabricator.

Question 16. Are the affidavits required to be submitted with the bid?

Answer 16. The awarded Contractor shall provide the affidavits within 10-days of the award.

Question 17. Please consider adding an item to the bid for the replacement of the existing trace pavement and pavement markings from the two access points. The existing trace

pavement and pavement markings in this area is already damaged and will need to be replaced at the end of construction.

Answer 17. Contractor should take steps to protect the trace outside the limits of construction.

Question 18. Please provide a detail and clarify where the plastic breakaway bollards are to be installed.

Answer 18. They will be on each end of the bridge; the location can be determined in the field. We don't have a detail.

Question 19. Please provide the list of approved bridge fabricators for this project.

Answer 19. Please refer to Addendum No. 1 and General Information No. 1 of Addendum No. 2.

Question 20. On plan sheet 101, there is a note about the bridge structure's final assembled weight of 82,800 lbs. Trace Bridge No. 14, which was bid earlier this year, had a bridge nearly identical in dimensions to this bridge No. 24, but the weights for that bridge were nowhere near 41.4 tons. Please clarify this weight.

Answer 20. The final assembled weight of the structure shown in the plans is the Dead Load of the structure after it is completely assembled. The preliminary total "Lifting" weight of the bridge is approximately 23,000 lbs., but this will be dependent on the fabricator used and should be pulled from the specifications provided by the fabricator.

ATTACHMENTS:

1. Pioneer Bridges.pdf
2. Section 04 - Louisiana Uniform Public Work Bid Form - Unit Price Form - Revised.pdf

End of Addendum # 2

PIONEER BRIDGES
A division of Bailey Bridges, Inc.

Pioneer Bridge Preapproval Package

Table of Contents

Pioneer Bridges - 119 40th St NE, Fort Payne, AL 35967 - (256) 845-7575 Ext 111

PIONEER BRIDGES

A PRODUCT OF BAILEY BRIDGES, INC.

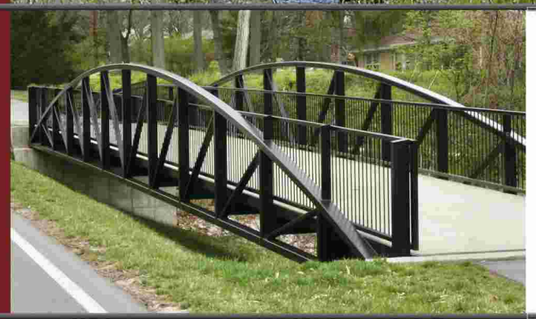
We DESIGN with purpose. We FABRICATE with precision. We DELIVER with pride.

Over 60 Years of Innovation in Prefabricated Steel Truss Bridges

We focus on product quality for YOU, our customer.

With a heritage dating back to the 1950s, Pioneer Bridges leads the way in prefabricated steel truss bridges.

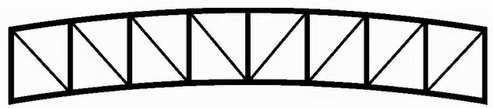
Our Quality Assurance Program guarantees you the very best in design and workmanship. Plus, all of our bridges carry a 10-year warranty. Pioneer bridges are available in several different truss styles and can be fabricated with multiple finish and floor options.



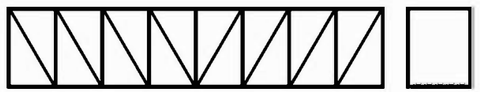
Crossbow Style

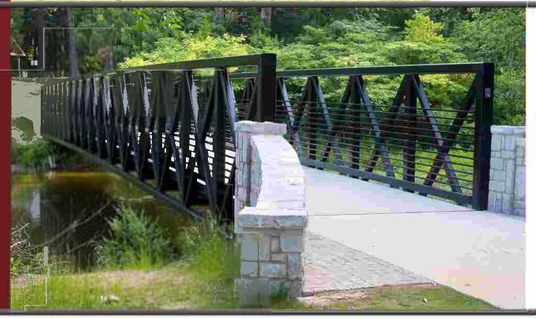
Cornerstone Style

Trailblazer Style

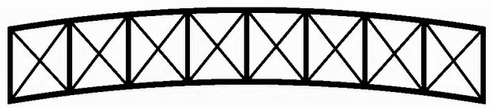


Guardian Style

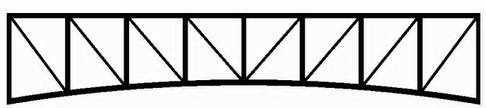




Expedition Style



Apex Style



Pioneer Bridges offers nationwide shipping of our prefabricated steel truss bridges. For more information, scan the code to visit our site.

Virtually all our bridges can be installed in one day. Larger bridges that have to be spliced for shipment can be easily bolted together (no field welding required) and erected in hours instead of days.

Our 100,000 square foot fabrication facility is dedicated to providing you with the service & quality you deserve.

PIONEER BRIDGES

A PRODUCT OF BAILEY BRIDGES, INC.

AISC CERTIFIED FABRICATOR

MADE IN THE USA

Robert G. Graham III PE, CWI (Gil)
6920 Portobello Rd. NW
Fort Payne, Al. 35967

Resume

Education: BSME Auburn University 1986
Tennessee State University - Various structural engineering courses '91-'95
Licensed Professional Engineer in 45 States (Civil & Structural) - PE since 1994
Certified Welding Inspector (CWI) – 2007-2016.

Experience:

7/06 – present Bailey Bridge Co. - Fort Payne, AL. President
Company provides temporary steel panel bridges and heavy duty gratings and bridge grid products Pedestrian bridges are manufactured under the trade-name Pioneer Bridges. Managed daily ops with profit and loss responsibility. Perform engineering and estimating for certain major projects.

7/03 – 7/06 Contech Bridge - Fort Payne, AL. VP Engineering
Contech is parent company of the former Steadfast Bridge and Continental Bridge Company. Duties include previous engineering duties at Steadfast Bridge, oversight of Continental Bridge Engineering department, and major project development.

3/96 - 7/03 Steadfast Bridge Company - Fort Payne, Al.; President & part owner
Initial position Chief Engineer. Project manager of large projects. Performed design and analysis of steel truss bridges and other structures. Promoted to VP of Engineering in 1997. President since August 2000. Bridge designs are for vehicular and pedestrian bridges for various entities. Typical projects are highway overpasses, bike trails, golf courses, and parks. Managed daily operations with profit and loss responsibility. Company sold to Contech.

6/93 - 3/96 Southern Machinery Co. - Nashville, TN.; Sales Engineer
Responsible for design and analysis of supports, platforms, footings, and conveyors for rock crushing material handling equipment. Prepared machinery arrangement drawings. Checked shop detail drawings. Performed calculations for conveyor structural and mechanical systems. Provided field supervision of machinery installations

10/90 - 6/93 IKG Fiberglass Systems - Nashville, TN.; Sales Engineer
Provided technical assistance to Sales Department for fiberglass grating and structures. Performed design and analysis of industrial platforms and supports.

5/90 - 9/90 Satellite Products, Inc. - Fort Payne, Al.; Engineer in Training.
Designed steel bridges and bleachers.

10/89 - 4/90 Precision Tubular Heater Corp. - Franklin, TN.; Designer
Designed tubular heating elements and wrote manufacturing process reports.

8/88 - 5/89 Nashville Bridge Co. - Nashville, TN.; Sales Engineer
Prepared estimates of hopper, deck, and tank barges for inland waterway use.

1/87 - 7/88: Steadfast Inc. - Fort Payne, Al.; Engineer in Training
Responsible for detailing and estimating structural steel for commercial and industrial buildings.

AMERICAN INSTITUTE OF STEEL CONSTRUCTION

CERTIFICATION PROGRAMS

PROUDLY RECOGNIZE THAT

Bailey Bridges, Inc. d.b.a. Pioneer Bridges

2018-8-31-4500F

MAINTAINS OPERATIONS LOCATED AT

119 40th Street NE
Fort Payne, AL 35967 United States

THAT SUCCESSFULLY MEET THE QUALITY CERTIFICATION REQUIREMENTS FOR

Bridge Fabricator - Intermediate
Fracture Control Endorsement
Complex Coating Endorsement 1 - Enclosed

CERTIFICATION NUMBER	C-00026324
ISSUED	February 17, 2025
VALID THROUGH	April 30, 2026

PRESIDENT

American Welding Society

Certifies that

Bailey Bridges, Inc. d.b.a Pioneer Bridges

119 40th Street NE
Fort Payne, AL 35967 United States

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

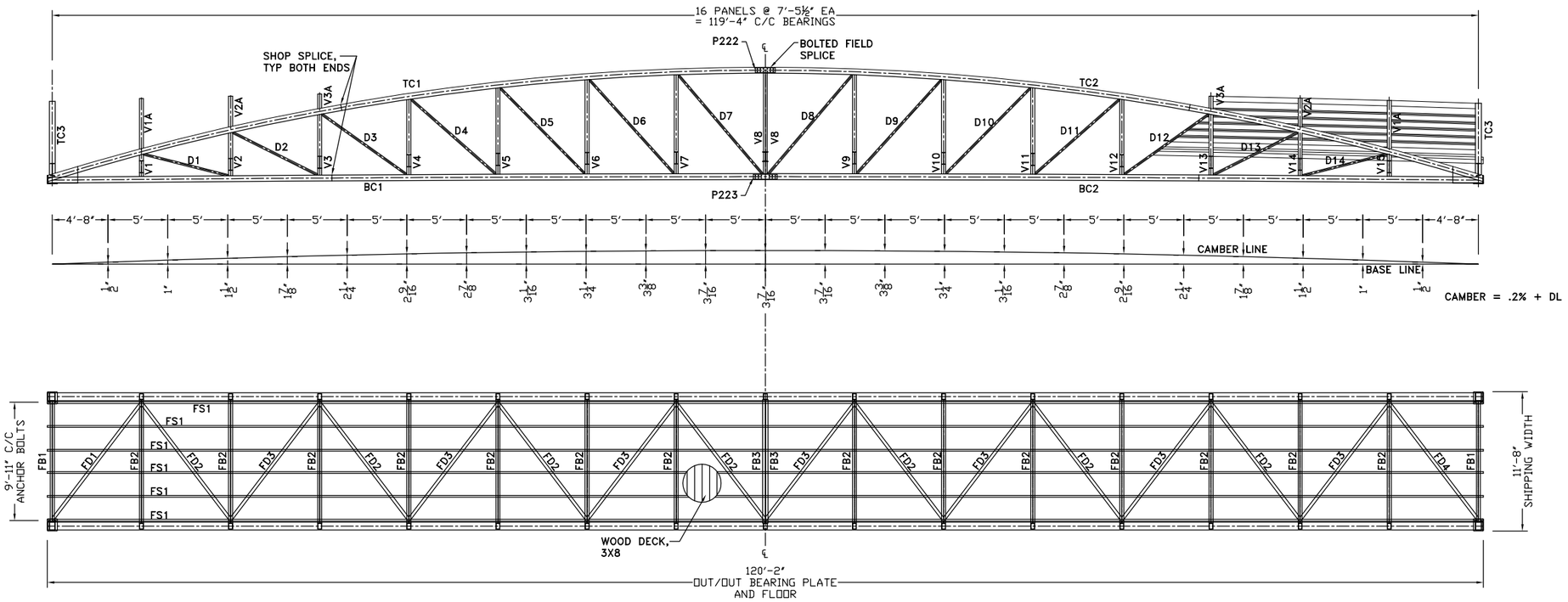
240411F
Certificate Number

April 1, 2026
Expiration Date

AWS President

Chair, Qualification and Certification Committee

AWS CWF CERTIFIED WELDING FABRICATOR



GENERAL NOTES:

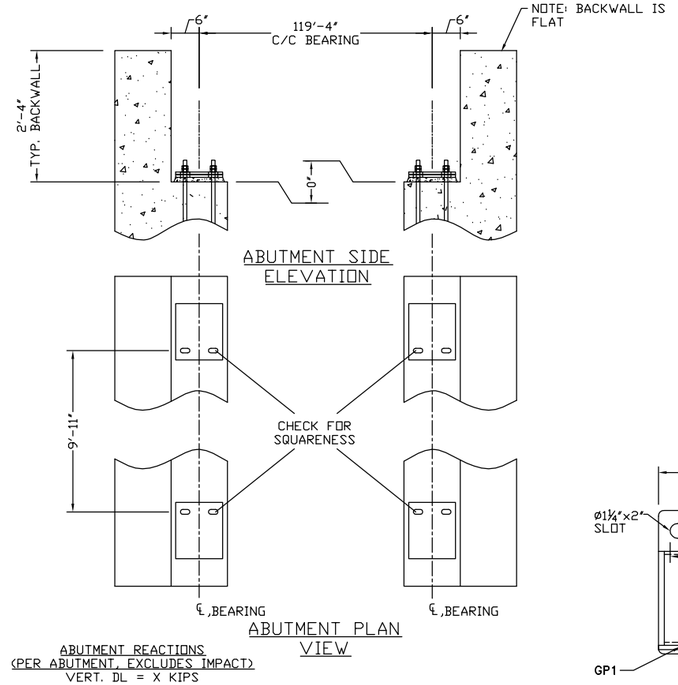
1. ALL DESIGN STRESSES ARE IN ACCORDANCE WITH THE SPECIFICATION OF THE AMERICAN ASSOCIATION OF STATE HIGHWAY TRANSPORTATION OFFICIALS, 17 EDITION.
2. WELDING TO CONFORM WITH THE AMERICAN WELDING SOCIETY D1.1 LATEST REVISION. WELDING TO BE PERFORMED BY EXPERIENCED WELDERS QUALIFIED IN ACCORDANCE WITH A.W.S. PROCEDURES. WELDING ELECTRODES TO BE A.W.S E81T-X SERIES. WELD PROCESS TO BE FCAW OR GMAW.
3. ALL STRUCTURAL STEEL TO HAVE A MINIMUM YIELD STRENGTH OF 50,000 PSI WEATHERING GRADE WITH A SAND BLAST FINISH.
4. STRUCTURAL WELDS WILL BE A MINIMUM OF 3⁄16" FILLET UNLESS SHOWN OTHERWISE. MINIMUM WELD DOES NOT APPLY TO SEAL WELDS.
5. ANCHOR BOLTS TO BE ASTM A307 OR THREADED A36 STEEL RODS. WHERE NOTED, "EXPANSION" NUTS AND ANCHOR BOLTS SHOULD BE LOOSELY "HAND TIGHTENED" SO AS TO ALLOW THE BEARING PLATES TO SLIDE ON THE SETTING PLATES OR TEFLON PADS. PLACE SETTING PLATE AND TEFLON PADS ON SHIMS, SET BRIDGE, AND THEN GROUT UNDER SETTING PLATES. IF REQUIRED, FIELD SPLICE CONNECTION BOLTS SHALL BE ASTM A325 TYPE 3 AND SHALL BE TIGHTENED BY THE TURN OF THE NUT METHOD TO OBTAIN PROPER TENSION.
6. ALL STEEL TO BE SAND BLASTED TO S.S.P.C. #6 "COMMERCIAL SAND BLAST FINISH."
7. ALL WOOD TO BE #1 SOUTHERN YELLOW PINE WITH A CCA OR ACQ PRESERVATIVE TREATMENT TO .4 POUNDS RETENTION (OR REFUSAL) OF PRESERVATIVE PER CUBIC FOOT.
8. HAND RAILS AND ALL OTHER ACCESSIBLE SURFACES TO BE GROUND SMOOTH WITH NO SHARP EDGES OR CORNERS.
9. LENGTH OF ANCHOR BOLTS AND FOUNDATION DETAILS ARE FOR GENERAL ARRANGEMENT PURPOSES ONLY. ACTUAL FOUNDATION AND SUBSTRUCTURE DESIGN, RAILING, CAMBER AND SLOPE REQUIREMENTS, ELECTRICAL GROUNDING, AND CLEARANCES (FLOOD PLAIN, ROADWAY, AND WATERWAY) ARE THE RESPONSIBILITY OF OTHERS.

DESIGN CRITERIA

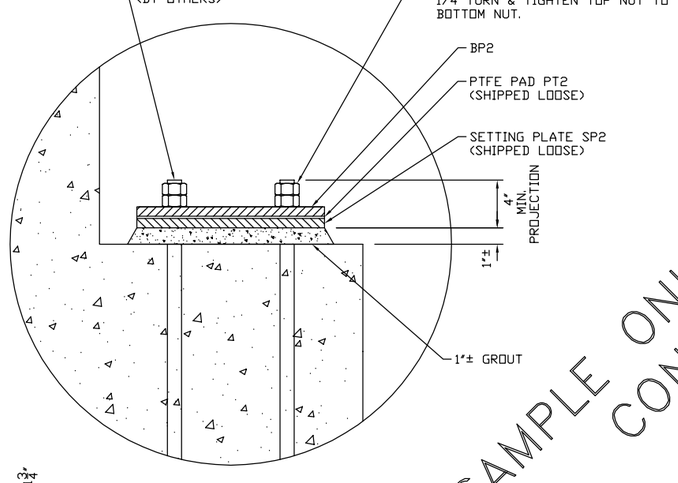
THIS BRIDGE IS DESIGNED BASED ON THE FOLLOWING CRITERIA:
1. DEAD LOAD OF 35 PSF PLUS EVENLY DISTRIBUTED LIVE LOAD OF 65 PSF.
2. DEAD LOAD PLUS CONCENTRATED LIVE LOAD OF 10000 POUNDS.
3. WIND LOAD OF 35 PSF CALCULATED ON THE ENTIRE PROJECTED VERTICAL SURFACE AS THOUGH FULLY ENCLOSED.

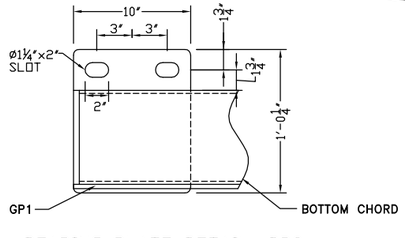
Material Schedule (A588, A847, A242) - 1 BRIDGE (10'x120')

Pc. Mk	Quantity	Description
TC1-TC2	4	HSS8x6x1/4
TC3	4	HSS8x6x1/4
BC1-BC2	4	HSS8x6x1/4
V1-V7, V9-V15	26	HSS6x4x1/4
V8	4	C6x8.2
V1A-V3A	12	HSS4x2x1/4
D1-D14	28	HSS4x2x1/4
FB1-FB2	16	W12x19
FB3	2	C10x15.3
FS1	6	C4x7.2
FD1-FD3	16	L3x3x1/4
P222	8	PL1/2x5
P223	8	PL1/2x5
BP2	4	BRG PL, PL1/2x10
SP2	4	SETT. PL, PL1/2x10
PT2	4	TEFLON PL1/8x10
SD1	2	SYP 2x6
R1	10	L1 1/2x1 1/2x3/16
TP1	2	C5x6.7
DT1	2	L1 1/4x1 1/4x1/8
GP1	4	PL3/8x17
EC1	4	PL1/2x7 7/8
WOOD FLR	200	SYP 3x8
DECK SCREWS	1600	3 1/2"x1/4 TORX HD SELF-TAP
DECK SCREWS	100	3 1/2"x1/4 TORX HD PAN
HARDWARE	120	D3/4" BOLTS(A325), NUTS & WASHERS

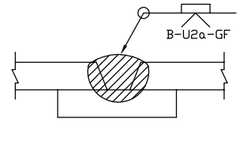


ABUTMENT REACTIONS
(PER ABUTMENT, EXCLUDES IMPACT)
VERT. DL = X KIPS
VERT. LL = X KIPS
HORIZ. (WIND) = X KIPS
UPLIFT (WIND) AT ONE BP = X KIPS





BEARING PLATE DETAIL, BP2
PL½" A588 OR A242



TYP. TOP & BOTT. CHORD
SHOP SPLICE WELD DETAIL

SAMPLE ONLY – NOT FOR CONSTRUCTION

REV	DESCRIPTION	BY/DATE	CHECKED BY
X	X	X	X
A	FOR APPROVAL	AF 3/11/09	RGG 3/11/09

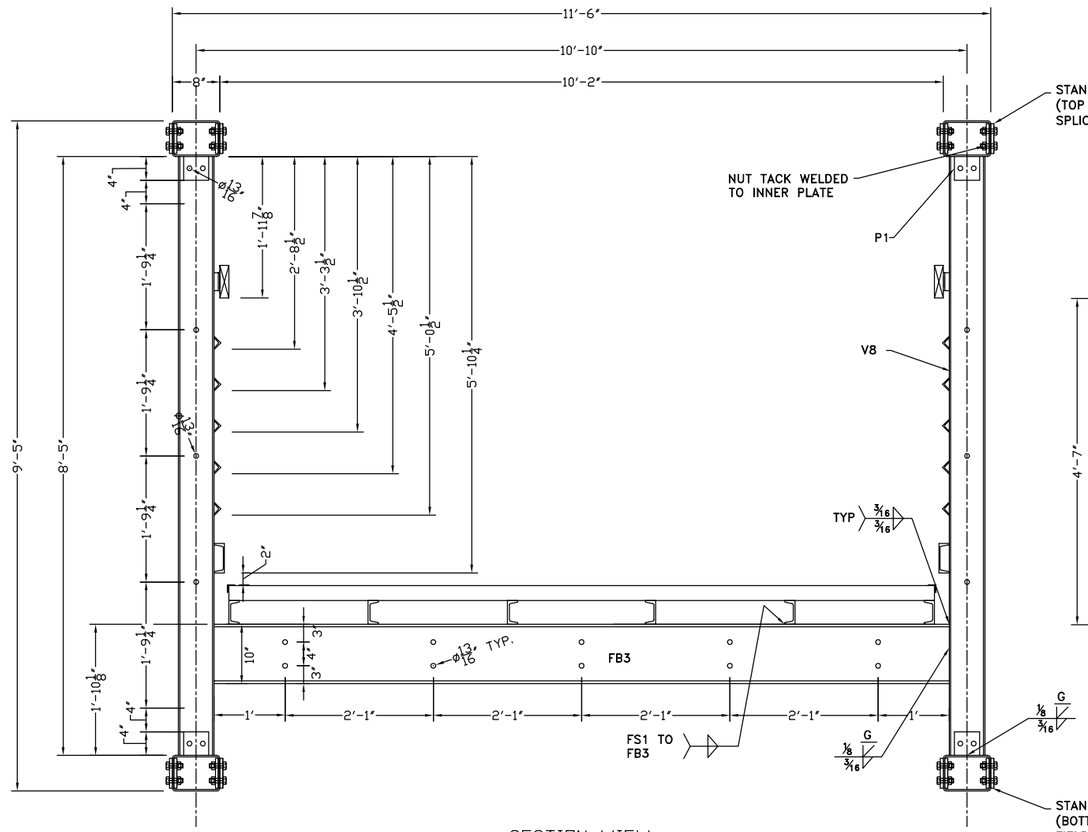
A DIVISION OF BAILEY BRIDGES, INC.
119 40th Street NE
Fort Payne, AL 35967
1-866-708-5778

PROJECT:
OWNER:
ADDRESS:
SAMPLE ONLY
NOT FOR CONSTRUCTION
CONTRACTOR:
DESCRIPTION: 10' x 120' CROSSBOW PEDESTRIAN BRIDGE

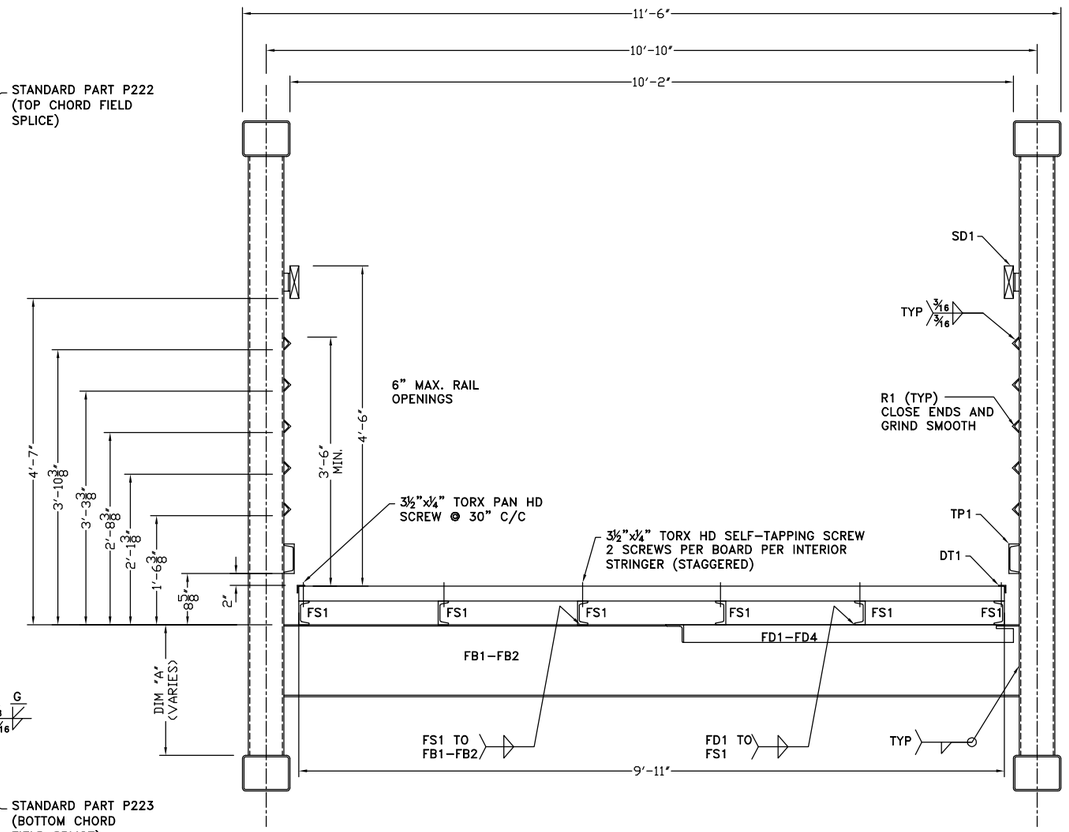
DRAWN BY: AF 3/9/2009
APPROVED BY: X
CHECKED BY: RGG 3/11/2009

JOB NO.: X
SHEET: 1 OF 2
REV.

C:\Pioneer Bridges\Sample Shop Drawings - 10x120 Crossbow.dwg

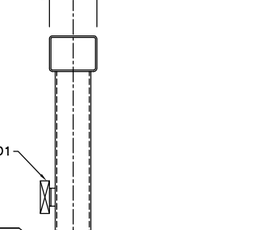


SECTION VIEW
FIELD SPLICE AT
CENTER OF BRIDGE

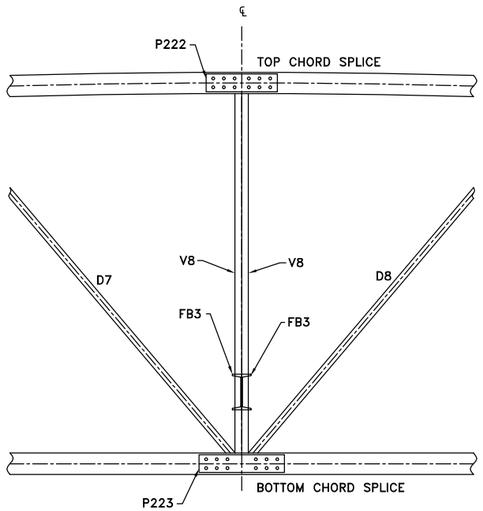


TYPICAL
SECTION VIEW

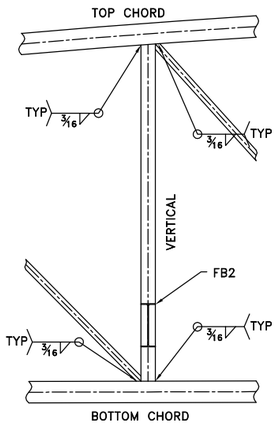
DIMENSION "A" – JOB 09070P	
VERTICAL MK	DIM "A"
TC3 (END POST)	
V1 & V15	
V2 & V14	
V3 & V13	
V4 & V12	
V5 & V11	
V6 & V10	
V7 & V9	
V8	



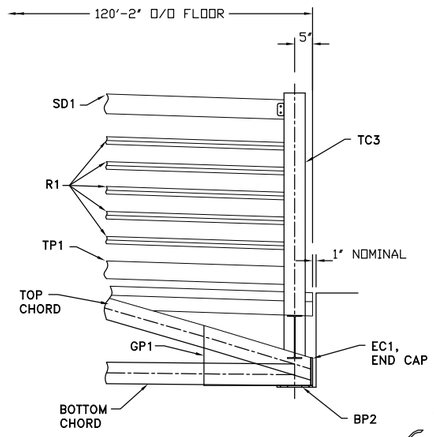
RAIL TERMINATION DETAIL



BOLTED FIELD
SPLICE DETAIL



TYPICAL TRUSS
DETAIL



END DETAIL
SEE RAIL TERMINATION DETAIL

REV	DESCRIPTION	BY/DATE	CHECKED BY
X	X	X	X
A	FOR APPROVAL	AF 3/11/09	RGG 3/11/09

PIONEER BRIDGES
A DIVISION OF
BAILEY BRIDGES, INC.
119 40th Street NE
Fort Payne, AL 35967
1-866-708-5778

PROJECT:
OWNER:
ADDRESS:
CONTRACTOR:
DESCRIPTION: 10′ × 120′ CROSSBOW PEDESTRIAN BRIDGE

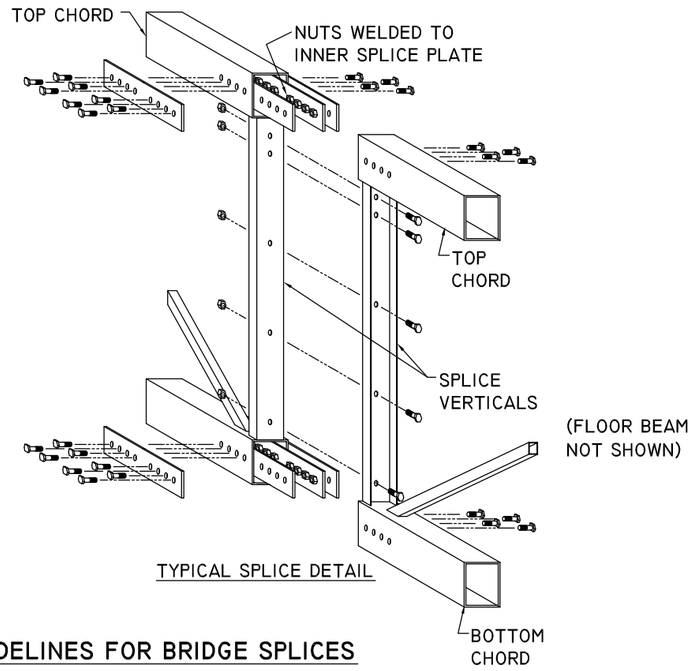
SAMPLE ONLY
NOT FOR CONSTRUCTION

DRAWN BY: AF 3/9/2009
APPROVED BY: X
CHECKED BY: RGG 3/11/2009

JOB NO: X
SHEET: 2 OF 2
REV.

PIONEER BRIDGE INSTALLATION GUIDELINES

NOTE: IT IS THE CONTRACTOR AND ERECTOR'S RESPONSIBILITY TO FOLLOW ALL SAFETY GUIDELINES FOR CRANE RIGGING AND OPERATION.



TYPICAL SPLICE DETAIL

GUIDELINES FOR BRIDGE SPLICES

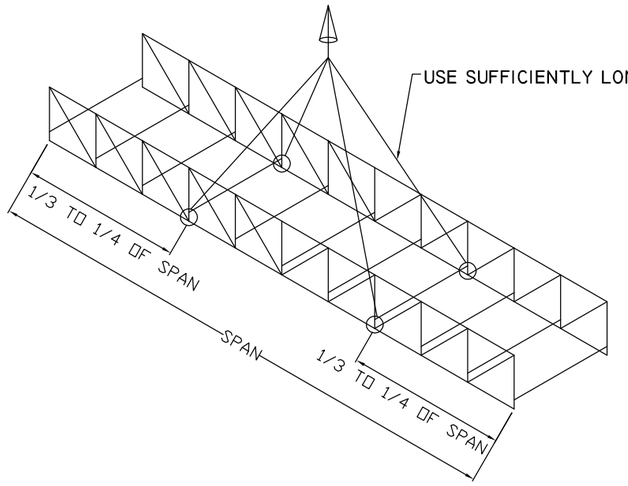
1. DO NOT REMOVE SPLICE PLATES IF THEY ARE ATTACHED TO THE BRIDGE AS EACH PLATE IS MATCHED TO ITS RESPECTIVE JOINT AND MAY NOT BE INTERCHANGEABLE.
2. LOOSEN ALL BOLTS IN EACH CHORD JOINT.
3. ONE BRIDGE SECTION SHOULD BE "FREE" TO MOVE UP/DOWN OR LEFT/RIGHT (AS IF HELD BY A CRANE) TO ALLOW THE SECTIONS TO COME TOGETHER EASILY.
4. USE CAUTION TO AVOID DAMAGING THE THREADS OF NUTS WITH A SPUD WRENCH . AFTER ALL BOLTS HAVE BEEN LOOSELY INSTALLED, TIGHTEN BOLTS AT THE CENTER OF THE PLATE FIRST AND WORK OUTWARD.
5. BOLT TIGHTENING: WE RECOMMEND TURN OF THE NUT METHOD IN ACCORDANCE WITH THE "SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS." THIS METHOD IS DESCRIBED BELOW.

TURN OF THE NUT METHOD
TIGHTENING MAY BE DONE BY IMPACT WRENCH OR HAND WRENCH. FIRST, ALL BOLTS ARE TIGHTENED TO A SNUG-TIGHT CONDITION. THIS IS ACHIEVED WHEN ALL CONTACT SURFACES OF THE JOINT ARE BROUGHT TOGETHER BY A FEW IMPACTS FROM AN IMPACT WRENCH OR THE FULL EFFORT OF A PERSON USING A SPUD WRENCH. A MATCH MARK IS PLACED ON THE BOLT HEAD (OR NUT) AND THE ADJACENT PLATE. ALL BOLTS ARE THEN TIGHTENED BY THE AMOUNT SPECIFIED IN THE TABLE BELOW.

NUMBER OF NUT OR BOLT TURNS FROM SNUG-TIGHT CONDITION FOR HIGH-STRENGTH BOLTS*	
BOLT LENGTH	BOTH FACES NORMAL TO BOLT AXIS
UP TO 4 DIAMETERS	1/3
OVER 4 DIAMETERS BUT NOT MORE THAN 8 DIAMETERS	1/2
OVER 8 DIAMETERS BUT NOT MORE THAN 12 DIAMETERS	2/3

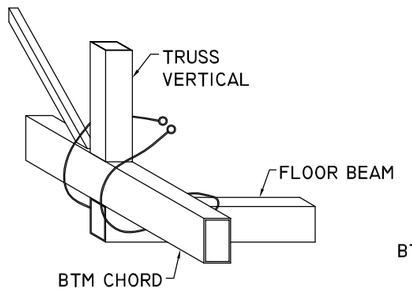
REQUIRED WRENCH SIZE FOR A325 BOLTS	
BOLT SIZE	WRENCH SIZE
5/8	1 1/16
3/4	1 1/4
7/8	1 7/16
1	1 5/8

* NUT ROTATION IS RELATIVE TO THE BOLT REGARDLESS OF WHETHER THE NUT OR BOLT IS TURNED. APPLICATION TOLERANCES ARE AS FOLLOWS:
⅓ TURN +/- 30 DEGREES
½ TURN +/- 30 DEGREES
⅔ TURN OR MORE +/- 45 DEGREES

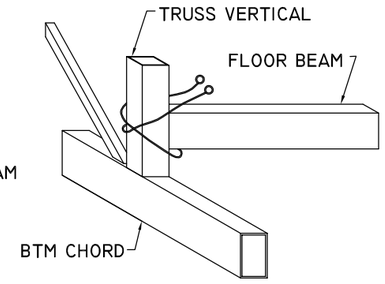


GUIDELINES FOR LIFTING A PIONEER BRIDGE

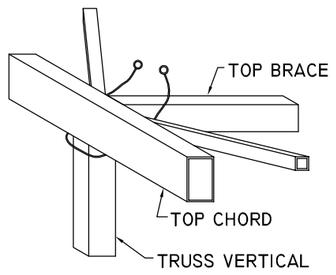
1. LIFT BRIDGE ONLY FROM BOTTOM CHORD, NOT FROM TOP CHORD.*
2. CONNECT AT PANEL POINTS ONLY (THE INTERSECTION OF TRUSS MEMBERS) AS INDICATED BELOW. PADDING IS RECOMMENDED TO PROTECT THE PAINT FROM SCRATCHES.
3. USE CARE NOT TO DAMAGE BRIDGE RAILINGS.
4. ALTERNATIVELY, A BRIDGE MAY BE LIFTED BY ITS TOP CHORD IF A SPREADER BEAM IS USED SO THAT THE TRUSSES ARE NOT PULLED INWARD BY THE SLINGS OR CHOKER.
5. DO NOT LIFT BRIDGE FROM CENTER WITHOUT FIRST CONSULTING WITH PIONEER BRIDGES AS SOME MEMBERS CAN BE OVERSTRESSED.



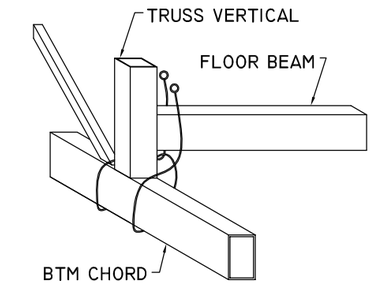
UNDERHUNG FLOORBEAM STYLE BRIDGES



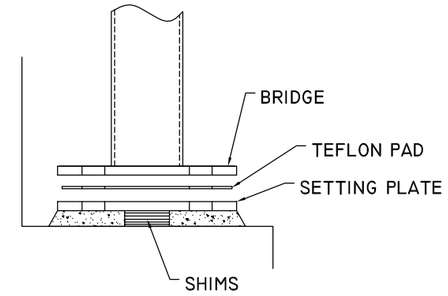
H-STYLE BRIDGES



TOP-BRACED BRIDGES
*THIS STYLE MAY BE LIFTED BY THE TOP CHORD



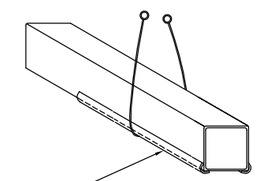
H-STYLE BRIDGES
ALTERNATIVELY, WRAP CHOKER UNDER BOTTOM CHORD



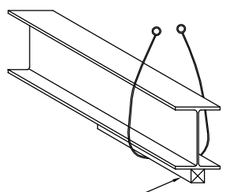
TYPICAL BEARING
(SEE SPECIFIC JOB DRAWINGS FOR ACTUAL BEARING DETAILS)

GUIDELINES FOR BEARINGS

1. SET THE SETTING PLATE ON APPROXIMATELY 1" OF SHIMS BEFORE SETTING THE BRIDGE.
2. SET TEFLON PAD ON SETTING PLATE.
3. SET BRIDGE ON TEFLON PAD.
4. ADJUST SHIMS TO MAKE FLOOR FLUSH WITH BACKWALL OR APPROACH SLAB.
5. GROUT SETTING PLATE AFTER BRIDGE IS SET. NEVER ATTEMPT TO GROUT SETTING PLATE BEFORE SETTING BRIDGE (DOING SO WILL VOID BRIDGE WARRANTY).



A SOFTENER (SUCH AS SPLIT PIPE) IS RECOMMENDED FOR THIN-WALL TUBES.



TIMBER SOFTENER MAY BE USED ON WIDE-FLANGE CHORDS. (DO NOT USE ON TUBE CHORDS!)

PIONEER BRIDGES

A DIVISION OF
BAILEY BRIDGES, INC.
119 40th Street NE
Fort Payne, AL 35967
1-866-708-5778

PROJECT: REFERENCE DRAWING	DRAWN BY: AF 1/14/09
OWNER: X	APPROVED BY: X
ADDRESS: X	CHECKED BY: RGG 1/15/09
CONTRACTOR: X	
DESCRIPTION: PIONEER BRIDGE INSTALLATION INSTRUCTIONS	

JOB NO.: X
SHEET: 1 OF 1
REV.

C:\Pioneer Bridges\Installation Instructions.dwg

INSPECTION AND MAINTENANCE OF PIONEER BRIDGES

INSPECTION

I. USER SAFETY (INSPECTION BY OTHERS)

A. Each bridge should be inspected at regular intervals (at least once per year) to ensure that all items of user safety are accounted for and performing properly. Those areas of special concern should be as follows:

1. All safety rails, handrails, rubrails, fencing or other types of safety features should be in place with complete structural integrity and capacity. There shall be no sharp edges or protrusions on any feature that could produce bodily harm or be a hazard to the user.
2. All deck surfaces should be without gaps, cracks or projections that could create a trip hazard or interfere with the user in any way. Special consideration should be given to any smooth deck surface that could also create a possible slip hazard.

II. STRUCTURAL INTEGRITY (INSPECTION BY OTHERS)

A. Each bridge should be inspected at regular intervals not to exceed one year. Pages 5-13 of the American Association of State Highway and Transportation Officials (AASHTO) Manual for Maintenance Inspection of Bridges provides an excellent guide for this inspection. We recommend its use, particularly in the case of bridges for vehicular use. This visual inspection should include, but not be limited to the following:

1. Check the decking to insure it is in satisfactory condition. Pay special attention to timber decks at their contact surfaces where they bear on stringers.
2. All steel surfaces should be inspected to insure that they are performing satisfactorily. Check for any excessive corrosion on weathering steel bridges or paint and caulk integrity on painted bridges, paying special attention to the following areas:

a. All steel below the deck, particularly the tops of stringers supporting wood decks.
b. Truss or floor system joints where debris or water may accumulate.
c. Anywhere vegetation or other material may have come in contact with the steel.

NOTE: Any weathering steel surface not "boldly exposed" to the atmosphere should be checked to insure it has formed its protected oxide layer.
3. Check all steel surfaces and welded and bolted connections for cracks. Pay special attention to the welded truss and floor beam joints in vehicular or material handling bridges subject to fatigue stresses.
4. Check the ends of the bridge for any damage which may have been caused by vehicular impact.
5. Check the integrity of concrete abutments and/or piers for scour due to water flow if applicable, etc., per AASHTO's Manual for Maintenance Inspection or the foundation engineer's recommendations.
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 can move freely and are clear of all foreign material.

7. SPLICED BRIDGES:
a. Check the bolted splices for any excessive corrosion or cracking of the steel or 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.

B. 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.

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 at this time.

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 2-10 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 insure 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, paying attention to the following items:

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

3. After selecting a system compatible with all existing surface conditions and site limitations, clean all surfaces and apply according to the manufacturer's recommendations.
4. After the coating system has properly cured, caulk all unwelded seams with a good quality clear silicon caulk suitable for exterior use and replace the decking, fencing, etc., which were removed prior to cleaning and repainting the structure. This is also an excellent time to replace the wood rubrail which may have shown excessive deterioration.

MAINTENANCE FOR WEATHERING STEEL BRIDGES

Weathering steel is not a maintenance free material. The following steps will help increase the life span of your bridge. Pioneer recommends rinsing the steel truss and beneath the bridge every 3 months if the bridge is within a five-mile radius of the ocean.

A. Do not use de-icing salts for snow removal. De-icing salts can severely damage the weathering steel.
B. Avoid retention of debris on the steel surfaces. Flush bridges at areas which accumulate debris (including salt) on a regular basis.
C. Prevent weathering steel from contact with vegetation, masonry or other materials so that the weathering process can proceed on a natural basis.
D. If excessive corrosion is encountered due to salts from adjacent roadways or roadways beneath an overpass structure, or for any other reason, it may be wise to blast clean and paint the truss joints, the steel beneath the deck or any area which exhibits excessive corrosion.

MAINTENANCE FOR DECKING

I. WOOD DECKS

Wood is a natural material which exhibits large volume changes with variations in moisture content and time, particularly in the width direction, which can cause gaps to form between the planks. Cupping and splits may also occur which need to be repaired.

Please note: It is the owner's responsibility to keep the wood deck free from cupping, splits, gaps and smooth surfaces.

A. Replace all planks that have deteriorated past a useful and safe life.
B. Eliminate gaps between the planks which might be large enough for a high-heeled shoe to become lodged. Eliminating the gaps should be done as follows:

1. Remove all deck bolts.
2. Remove plank hold-down angles. Be sure to mark their locations for ease of reinstallation.
3. Slide wood planks together.
4. Add new plank or planks to fill up the excess space.
5. Reinstall plank hold down angles.
6. Drill new holes in wood planks.

7. Install new deck bolts (see shop drawings for size and material).

C. Replacement planks may be purchased through Pioneer.
D. Over time with exposure to the environment, wood may become smooth, particularly when wet with rain, dew, snow, sleet, ice, etc. Periodically it may be necessary to "roughen" the surface of the decking with large grit sandpaper.

II. GRATING DECKS

A. Repair or replace any grating which shows damage or deterioration to the main bearing bars.
B. If galvanized, inspect to see if corrosion has occurred. Wire brush any spots exhibiting corrosion and repair. We recommend the use of either sprayed zinc metalizing or the use of organic zinc rich paint for repairing galvanized surfaces.
C. For weathering steel grating, if excessive corrosion is encountered due to salts from adjacent roadways or roadways beneath an overpass structure, or for any other reason, it may be wise to blast clean and paint the grating.

III. CONCRETE ASPHALT

For all concrete and asphalt decks, Pioneer supplies a steel corrugated form decking to aid in the placement of the concrete or asphalt. For asphalt decks, this steel form is the main load carry member. For concrete decks, this steel form may or may not be integral to the deck design (as in a composite deck). The contractor places the reinforcing and concrete, or the asphalt, after installation of the bridge.

During inspection, the asphalt or concrete covering should be checked for excessive cracking and deterioration. At the same time, the seal 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 (for asphalt decks and composite concrete decks) may require replacement even when the deck surface itself is sound.

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 drawing for recommended concrete strength, reinforcing size, slab and asphalt thickness, control joint location and surface finish.

Please note: Maintenance of the bridge decking, including keeping it free from slip or trip hazards, is the owner's responsibility.

Truss Diagonal connection calculations Job # SAMPLE

Member Data

Diagonal d	Fy	Fu	Vert v	Fy	Fu
HSS4X2X1/4	50	70	HSS6X4X1/4	50	70
4 height hd			6 height		
2 width bd			4 width		
0.23 thickness td			0.23 thickness		
2.44 Area			4.30 Area		

Bott Chord bc	Fy	Fu	Top Chord & End Post tc	Fy	Fu
HSS8X6X1/4	50	70	HSS8X6X1/4	50	70
6 height ho			6 height ho		
8 width bo			8 width bo		
0.23 thickness to			0.23 thickness to		
6.17 Area			6.17 Area		

Design Force **2.** Kips 70 ksi Filler Metal (min)

AASHTO Weld Size Required: 3/16" fillet 12 in 2.51 K/in = 30.1 kips OK

The calculations below are for overlapped "K" connections only. (Chapt. K2 - Om=1.58)

50 % overlap Ov factor (Ovf) = 1.0

Check Top Chord Conn. Capacity End Post

be = (10 / (bo/to)) * ((Fyo*to)/(Fyd/td) * bd) <= bd = 0.6

beov = (10 / (bv/tv)) * ((Fyv*tv)/(Fyd/td) * bd) <= bd = 0.6

N = Fyd * td * ((Ovf*(2*hd-4*td)) + be + beov) = 95.9 kips

/1.58 LRFD -- ASD = **60.7** kips **OK**

Check Top Chord Conn.

be = 0.6

beov = 1.2

N = Fyd * td * ((Ovf*(2*hd-4*td)) + be + beov) = 102.7 kips

/1.58 LRFD -- ASD = **65.0** kips **OK**

Check Bottom Chord Conn.

be = 0.6

beov = 1.2

N = Fyd * td * ((Ovf*(2*hd-4*td)) + be + beov) = 102.7 kips

/1.58 LRFD -- ASD = **65.0** kips **OK**

PIONEER BRIDGES

A Division of Bailey Bridges, Inc.

Project # : SAMPLE — Location: Anywhere, USA
printed: 3/31/2009 — Style: Crossbow
Finish: Weathering — Splice: 1 Panel Point Splice
Design: AASHTO with Guidespec specs
17th Edition

Geometry & Data

Span :	119.334	ft (c/c brg.)	Panel Points: 16 at 7.46' plus 7.46' Sloped ends		
Width :	10.00	ft inside clr.	10.17	ft inside trusses, 11.63' ship width, BP IN.	
Style :	Crossbow	w/ 1 diag.	3.0	in Wood floor	.
Truss ht.:	8.920	' □ cl (c/c chord)	2.13	' □ ends (c/c chord)	
Flr to TC :	6.530	' □ cl	0.49	' □ ends (top of flr to top of TC)	
Guardrails :	Horizontal		42	in. height Top Chord is not top rail	
Handrail:	None		2.31	' Abutment Backwall Ht.	
Fencing:	None		0.0%	LL Impact factor	
Fy=	50	ksi All primary Steel	1.40	in. Thermal Expansion (total) for 150 deg.temp diff.	
Fu=	70	ksi (U.N.O.)	.	. 0.2% Camber+DL = 3.46 in.	

Loads

Load Cases:

DL	35	Dead Load (psf)
LLa	0	HS veh. load 1 lane
LLb	65.0	Unif. LL - 85 w/ allowed reduction (psf)
LLc	0	Snow Load (psf) roof/adds to LL
LLd	20	Snow Load (psf) combines w/ LLg
	35	Wind Load (psf) on vert surface
LLh	0.0	psf Stream flow (0 fps)
LLe	35	psf - max of wind or stream
LLf	10	Veh. Load (K) min. check
LLg	5	Veh. Load (K) combines w/ snow d
		g Seismic Capacity
LLk	0	wind on live
LLm	2	K □ ctr. (Motorcycle / 4 wheeler)

Load Combinations:

LC1	DL + LLb
LC2	II: (DL + LLe) * .8
LC3	III: (DL + LLb + .3*LLe)*.8
LC4	I: DL + LLa
	. .
	. .
	. .
	. .
	. .
	. .

Reactions (□ each abutment)
w/out impact

DL	20.9	kips	
LL uniform	38.8	kips	Note: The uniform and vehicular loads do not combine
LL veh.	0.0	kips	
Wind (hor. transverse)	13.1	kips	. .
Wind (long.)	na	kips	1 " Anchor Bolt min.
Uplift	-3.8	K □ one brg. plate	1.39 g seismic capacity

Deflections

Vert DL=	1.31	in	L/D=	1094	fn=3.09Hz □ 3.00 min. OK
Vert LL=	2.43	in	L/D=	589	
Hor (wind)=	1.02	in	L/D=	1404	

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Truss Forces for the following load combination: (load which produces max. moment)
DL + LLb

SAMPLE

Truss Forces (kips) / Panel Point Loads (kips)

								P0	1.9
TC1	-102.0	BC1	98.1	V1	3.7	D1	0.5	P1	3.7
TC2	-101.4	BC2	98.1	V2	3.6	D2	0.4	P2	3.7
TC3	-101.0	BC3	98.5	V3	3.5	D3	0.4	P3	3.7
TC4	-100.6	BC4	98.9	V4	3.5	D4	0.3	P4	3.7
TC5	-100.3	BC5	99.2	V5	3.5	D5	0.2	P5	3.7
TC6	-100.1	BC6	99.5	V6	3.6	D6	0.2	P6	3.7
TC7	-99.9	BC7	99.6	V7	3.6	D7	0.1	P7	3.7
TC8	-99.8	BC8	99.7	CTR	3.6	D8	0.1	P8	3.7
TC9	-99.8	BC9	99.7	V9	3.6	D9	0.2	P9	3.7
TC10	-99.9	BC10	99.6	V10	3.6	D10	0.2	P10	3.7
TC11	-100.1	BC11	99.5	V11	3.5	D11	0.3	P11	3.7
TC12	-100.3	BC12	99.2	V12	3.5	D12	0.4	P12	3.7
TC13	-100.6	BC13	98.9	V13	3.5	D13	0.4	P13	3.7
TC14	-101.0	BC14	98.5	V14	3.6	D14	0.5	P14	3.7
TC15	-101.4	BC15	98.1	V15	3.7	.	.	P15	3.7
TC16	-102.0	BC16	98.1	V16	0.0	.	.	P16	1.9
.	.	.	.	.	.	.	.	P17	0.0
.	.	.	.	.	.	.	.	P18	0.0
.	.	.	.	.	.	.	.	P19	0.0
.	.	.	.	.	.	.	.	P20	0.0
.	.	.	.	.	.	.	.	P21	0.0
.	.	.	.	.	.	.	.	P22	0.0
.	.	.	.	.	.	.	.	P23	0.0
.	.	.	.	.	.	.	.	P24	0.0
.	.	.	.	.	.	.	.	P25	0.0
.	.	.	.	.	.	.	.	P26	0.0
.	.	.	.	.	.	.	.	P27	0.0
.	.	.	.	.	.	.	.	P28	0.0
.	.	.	.	.	.	.	.	P29	0.0
.	.	.	.	.	.	.	.	P30	0.0
.	.	.	.	.	.	.	.	P31	0.0
.	.	.	.	.	.	.	.	P32	0.0
.	.	.	.	.	.	.	.	P33	0.0
.	.	.	.	.	.	.	.	P34	0.0
.	.	.	.	.	.	.	.	P35	0.0
.	.	.	.	.	.	.	.	P36	0.0
.	.	.	.	.	.	.	.	P37	0.0
.	.	.	.	.	.	.	.	P38	0.0
.	.	.	.	.	.	.	.	P39	0.0
MAX □□	**-102.0**		**□□.7**		**3.7**		**0.5**		

.
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			out of truss plane data					in plane data					
TC	Member	A (in□2)	S (in□3)	I (in□4)	r (in)	Z (in□3)	W.(in)	S (in□3)	I (in□4)	r (in)	Z (in□	Ht.(in)	CW
.	HSS8X6X1/4	6.17	14.2	56.6	3.03	16.9	8	12.1	36.4	2.43	13.9	6	0.25
			K= 1.67			kl/r=	49.2	K= 0.8			kl/r=	29.5	

Unbraced Length (PPT spacing) L= 7.46 ft Fy=50 Fu=70 ksi

The top chord is braced by the U-Frame formed by the floor beam and truss verts. (Re: *Guide to Stability Design Criteria* , T.V. Galambos - chapt. 15) Using Holt's Equations for stability, determine the out of truss plane K factor, spring constant C req'd, & C furnished. (not applicable to top braced bridges)

Creq'd.= 1.68 Cfurn= 2.17 k/in C req'd < C furnished, OK!

check per AASHTO . .

Pa=Fa*A=21.1 * 6.17= 130.1 K . . .

Max TC force = 102.0 K 78.4% % stress OK 204 ' TCr

(from truss analysis) 125 ' min <data

TC1 OK act'l b/t=28.1, AASHTO max b/t=31.1 OK

BC	Member	A (in□2)	S (in□3)	I (in□4)	r (in)	Z (in□3)	Ht.(in)	S (in□3)	I (in□4)	r (in)	Z (in□	Ht.(in)
T	HSS8X6X1/4	6.17	14.2	56.6	3.03	16.9	8	12.1	36.4	2.43	13.9	6
.										Fy=50	Fu=70	ksi

.

Preq'd= 99.7 kips < Pn = Fy * .55 * Ag = 169.7 kips OK !

Vert	Member	A (in□2)	S (in□3)	I (in□4)	r (in)	Z (in□3)	Ht.(in)	S (in□3)	I (in□4)	r (in)	Z (in□	Ht.(in)	Cw
.	HSS6X4X1/4	4.3	6.96	20.9	2.2	8.53	6	5.56	11.1	1.61	6.45	4	0.3
										Fy=50	Fu=70	ksi	

The vertical truss member size is based on the maximum truss force and the maximum out of plane bending force (which normally controls). The out of plane bending is produced by the maximum force at the top chord from the following cases: (Not applicable to top braced bridges)

Axial Ld truss analysis: 3.7 kips

use 50% Axial LD for comb.: 1.9 kips

Max PPT Spacing: 7.46 ft Axial Load from veh.: 6.5 kips

Ht. Fb to TC: 7.33 ft (□ cl) Max. Moment: 7.3 K-FT (□ cl truss)

Ht. Fb to BC: 1.59 ft (□ cl) fb=M/S= 12.66 ksi Fb= 27.5 ksi

length □ cl: 8.92 ft fa=P/A= 1.5 ksi Fa= 13.827 ksi

K= 2.0 out of plane 0.8 in plane

Check Unity: fb/Fb + fa/Fa < 1.0 0.46 + 0.11 = 0.57 < 1.0 OK

.

At splice, use 2C6X8.2, Ix=26.2 in□4, Sx=8.7 in□3, & fb=10.1 ksi, OK

Diag	Member	A (in□2)	S (in□3)	I (in□4)	r (in)	Z (in□3)	Ht.(in)	S (in□3)	I (in□4)	r (in)	Z (in□	Ht.(in)
.	HSS4X2X1/4	2.44	2.25	4.49	1.36	2.94	4	1.48	1.48	0.779	1.79	2
										Fy=50	Fu=70	ksi

Max. truss analysis: 0.5 kips . . . .

Min. check for conc. Ld.. 2.9 kips . . .

Max (single diag) 2.9 kips use 2.9 kips < Pn = Fy * .55 * Ag = 67.1 kips OK !

.

.

weld size 3/16" connection OK

page 4

FB	Member	A (in□2)	S (in□3)	I (in□4)	r (in)	Z (in□3)	Ht.(in)	S (in□3)	I (in□4)	r (in)	Z (in□	Ht.(in)
.	W12X19	5.57	21.3	130	4.82	24.7	12.2	1.88	3.76	0.822	2.98	4.01
			- - - - data for U-Frame plane - - -							Fy=50	Fu=70	ksi

The floor beam size is determined by the moments from a combination of direct load application and end

moments from the truss verticals. Additionally, the floor beam size may be increased to provide additional stiffness (stability) to the Top Chord.

			Dir. Mom.	End Mom.
span:	10.83	ft		
Dead Load:	11.3	psf	1.2	1.8
Unif. LLb:	85.0	psf	9.3	3.3
Max Veh.:	10K Veh.	(LLf, HS, LLm)	12.1	0.9
snow LLg:	20	psf	6.0	0.4
veh. LLd:	5	K	2.2	1.0

Load comb.	Tot. Mom.	
DL + LLb :	15.7	.
DL + LLf :	16.0	<<controls
DL + HS :	3.0	.
DL + LLd + LLg :	12.7	.
DL + LLm :	7.4	.

fb= 9.0 ksi
Fb= 27.5 ksi fb/Fb= 0.33 OK

Maximum Design Mr= 16.0 k-ft
Mn= 48.8 k-ft OK

At splice, use 2C10X15.3, Ix=134.6 in□4, Sx=27 in□3, & fb=7.1 ksi, OK

Stringers

Member	A (in□2)	S (in□3)	I (in□4)	r (in)	Z (in□3)	Ht.(in)	S (in□3)	I (in□4)	r (in)	Z (in□	Ht.(in)
C4X7.2	2.13	2.29	4.58	1.47	2.8	4	0.337	0.425	0.447	0.7	1.72

. Fy=50 Fu=70 ksi

Re: AASHTO specs for wheel load distribution. Use Distr. Factor = 0.49 for 3 in. Wood

	0.18	k' M (DL)	1.3	Impact factor
	9.70	max LL	13.3	psf Dead Load
Mr=	3.87	k' max LL + (DL * continuity factor * DF)	0.8	Continuity Factor
Mn=	5.25	k' (.55*Fy*Sx/12)		

Mn = 5.25k' □ 3.87k' OK

Flr Diag

Member	A (in□2)	Sx(in□3	Ix(in□4)	rx (in)	Zx(in□3	Ht.(in)	Sy (in□3	Iy(in□4)	ry(in)	Zy(in□	w.(in)	rz
L3X3X1/4	1.44	0.569	1.23	0.926	1.0	3	0.569	1.23	0.926	1.02	3	0.59

Lu= 42.2 " k= 0.8 kl/r= 57.7 Fy=50 Fu=70 ksi

One FD per bay, designed as compression member, Welded to stringers Z

Max Axial Comp Force req'd= 23.56 kips Pa=Fa*A=20.1 * 1.44= 29.0 kips OK

.

. .

10.0' x 119.3' bridge Job # SAMPLE

Preliminary shop BOM

Material is Weathering		size	wt/ft	Length	weight
	TC	HSS8X6X1/4	21.0	242	5081
	BC	HSS8X6X1/4	21.0	239	5007
	Verts	HSS6X4X1/4	14.6	173	2523
	Diags ends	HSS4X2X1/4	8.3	276	2288

	Diags mid	0	0.0	0		0
	Diags ctr	0	0.0	0		0
	Deck trim L	L 1 1/4 x 1/8	1.0	241		231
	future	0	0.0	0		0
	future	0	0.0	0		0
	Flr Bm	W12X19	18.9	153		2888
6	Stringers	C4X7.2	7.2	722		5229
	Flr Diags	L3X3X1/4	4.9	211		1031
	Flr Diags ctr	0	0.0	0		0
	Top brcg	.	14.6	0		0
	Top diags	.	8.3	0		0
	splice FB	C10X15.3	15.3	20		311
	splice vert	C6X8.2	8.2	36		293
	conc. flr C (form)	na	0.0	259		0
	RAILS					
.	pickets	.	0	0		0
	pick. top	.	0	0		0
	pick. bottom	.	0	0		0
	ToePL	C5X6.7	6.7	238.7		1599
4 Lines/truss	HOR rail	L1.5x3/16	1.8	954.7		1718
	Hwy	.	0	0		0
.	Wood rail	.	0	0		0
	Mesh	0	0	0		0
	misc	0	0	0		0
	Hrail	.		0		0
	Hrail	.		0		0
	Weight excl flr	28945			sum	28198
	Total weight	38,890				

Floor	Wood	So. Yellow Pine #1	3x8 planks (201)□	10.00 ft

Total weight	38,890

JOBS DATA:	10.0' x 119.3' bridge			
Steel Weight	28945	lb.	$ 16,207	Steel Cost
Labor	508	mh		
Floor Weight	9945	ib.	$ 4,296	Floor Cost
			$ 0	misc
Bridge Weight	38890	lb. (shipped)	$ 7,754	Freight Cost

Note: Jobs Data excludes "add'l costs - price adjustment" and standard detailing & eng cost.

SPLICE Calculations Job # SAMPLE

These calculations are for a tension splice in a member. The member for this calculation is a HSS8X6X1/4
These calculations are per AASHTO. Use Standard Splice Plate # 223

Normal Maximum Truss Load	99.8 kips		Avg act'l & max=	134.7	kips
Max Member Capacity (Ag*Ft)	169.7 kips		75 percent capacity (10.18.1.1)	127.3	kips
Design Load for Splice	134.7 kips				

Bolt Size 0.75 in. Diameter

0 # of bolts in Single Shear	0 □	8.4	K / bolt =	0.0	kips
12 # of bolts in Double Shear	12 □	16.8	K / bolt =	201.5	kips
0 # of bolts in Tension	0 □	16.8	K / bolt =	0.0	kips
		Total capacity =		201.5	kips

3 in. Hole Spacing

150 % OK!

Chord Member Ag= 6.17 in□2 Chord Fy 50
0.25 wall thickness " Fu 70
2 # of rows of bolts

Check net area: An = 6.2 - (0.88 * 0.25 * 2 * 2) = 5.30 in□2
Omt= 2.00 of an HSS tube member, Flanges of a W, or web of a C

(D2-2) Pn = Fu * An / Omt = 185.3 kips 138 % OK!

Bolt Bearing Fp=.5LcFu/d<Fu = 70.00 ksi . .
12 Bolts
0.25 mtl thickness Bearing Capacity = 12 * 0.25 * 70 * 0.75 = 157.50 kips

117 % OK!

Fy= 50 ksi Fu= 70 ksi .

Outside Splice Plates: Ag= 5.00 in□2 . .
0.5 thickness . .
5 width An = 5.0-(0.88*0.50*2*2) = 3.25 in□2 . .
2 rows of holes . .
2 # of plates Pn= 113.8 kips . .
. .

Inside Splice Plates: Ag= 5.00 in□2 . .
0.5 thickness
5 width An = 5.0-(0.88*0.50*2*2) = 3.25 in□2
2 rows of holes
2 # of plates Pn= 113.8 kips

Total Capacity Pn= 227.5 kips 169 % OK!

Slip Critical Capacity (If applicable)

Fs*Ab= 6.63 kips/bolt

AASHTO Class A Surface Contact Area
6 Bolts Nb Ps=Fs*Ab*Nb*Ns= 159.0 kips
4 Slip Planes Ns
0.44 in□2 Ab 118 % OK!

Block Shear - chord member (If applicable) Lv = 39.75 in. net 48 in. gross
Shear = .6*Fu*Anv <= .6*Fy*Agv LT = 0 in. net 3 in. gross
Tension = 1*Fu*Ant

Rn/Om= 180.0 kips OK!

U-frame Stiffness Calculations - Vert & Flr beam re: "Galambos, Guide to Stability Design Criteria for Metal Structures"

					Job #	SAMPLE	
h=	87.96	in. Dist cl FB to cl TC	h/3Ic=	1.40	F.S.:	2.0	
b=	130.0	in. Dist. cl verts	b/2Ib=	0.50	E:	29,000	ksi
Ic=	20.9	in^4 vert	P veh:	51.6	PPT spacing L:	89.5	in
Ib=	130	in^4 flr bm	P unif.:	99.8			

For Vehicular Loads, For Unif. Loads, Pcu= 199.6 (Pu*FS)

Pc=	103.3	(Pc*FS)	CL/Pcu=	0.972	FB:	W12X19
Creq'd=	1.7	k/in (1.46Pc/L)	n=	14	VERT:	HSS6X4X1/4

From Holt's Eq. (15.6a) From Lookup below, 1/K= 0.6

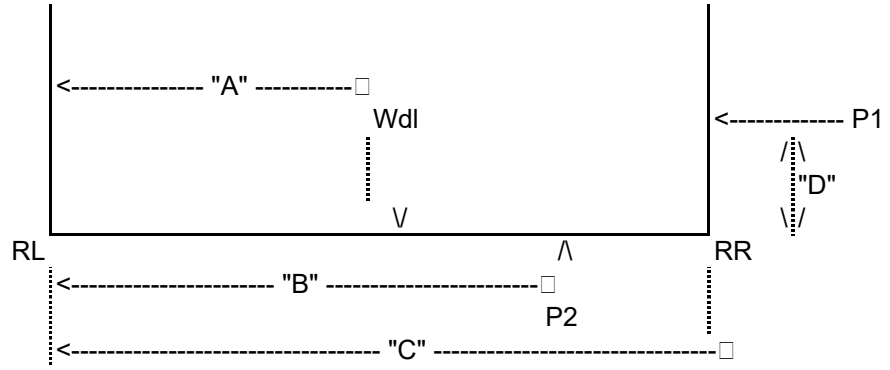
Cfurn.= 2.2 k/in

C req'd < C furnished, OK! K= 1.67 out of plane TC

TABLE 15.1 1/K for Various Values of Cl/P and n

	n (# of panel points)									
1/K	**4**	**6**	**8**	**10**	**12**	**14**	**16**	**LUTZ**	**1/k**	K
lookup □	0.35	0.4	0.45	0.5	0.55	0.6	0.65	0.6		
0.000								0.000	0.050	20.000
0.085							0.000	0.008	0.085	11.765
0.097						0.000	0.005	0.017	0.097	10.309
0.100						0.003	0.010	0.025	0.100	10.000
0.114					0.000	0.012	0.015	0.035	0.114	8.772
0.139				0.000	0.016	0.020	0.020	0.046	0.139	7.194
0.150				0.017	0.031	0.029	0.025	0.056	0.150	6.667
0.180			0.000	0.043	0.043	0.041	0.048	0.078	0.180	5.556
0.200			0.045	0.068	0.055	0.053	0.070	0.100	0.200	5.000
0.250			0.135	0.107	0.103	0.121	0.112	0.157	0.250	4.000
0.259		0.000	0.173	0.128	0.136	0.142	0.137	0.180	0.259	3.861
0.293	0.000	0.094	0.211	0.149	0.170	0.162	0.162	0.203	0.293	3.413
0.300	0.121	0.187	0.249	0.170	0.203	0.183	0.187	0.226	0.300	3.333
0.350	0.677	0.530	0.434	0.352	0.323	0.292	0.280	0.309	0.350	2.857
0.400	1.232	0.886	0.627	0.555	0.454	0.428	0.383	0.406	0.400	2.500
0.450	1.491	1.158	0.829	0.714	0.624	0.537	0.500	0.519	0.450	2.222
0.500	1.750	1.362	1.047	0.847	0.750	0.668	0.600	0.648	0.500	2.000
0.550	1.893	1.517	1.211	1.007	0.860	0.768	0.708	0.798	0.550	1.818
0.600	2.035	1.639	1.338	1.133	0.985	0.878	0.808	0.970	0.600	1.667
0.650	2.242	1.739	1.442	1.236	1.087	0.988	0.940	1.169	0.650	1.538
0.700	2.448	1.955	1.595	1.359	1.200	1.111	1.088	1.401	0.700	1.429
0.750	2.705	2.147	1.750	1.501	1.344	1.273	1.262	1.673	0.750	1.333
0.800	2.961	2.313	1.889	1.629	1.480	1.456	1.465	1.993	0.800	1.250
0.850	3.157	2.460	2.013	1.794	1.709	1.681	1.694	2.372	0.850	1.176
0.900	3.352	2.593	2.263	2.045	1.951	1.968	1.981	2.822	0.900	1.111
0.920	3.408	2.643	2.374	2.146	2.094	2.101	2.121	3.026	0.920	1.087
0.940	3.463	2.754	2.484	2.303	2.252	2.254	2.282	3.244	0.940	1.064
0.950	3.519	2.877	2.595	2.423	2.354	2.354	2.381	3.361	0.950	1.053
0.960	3.575	3.000	2.665	2.542	2.456	2.454	2.479	3.478	0.960	1.042
0.980	3.630	3.284	2.944	2.806	2.787	2.771	2.774	3.730	0.980	1.020
1.000	3.686	3.616	3.660	3.714	3.754	3.785	3.809	4.000	1.000	1.000
	100.000	100.000	100.000	100.000	100.000	100.000	100.000	100.000	1.000	1.000

UPLIFT CALCULATIONS - At one abutment Job SAMPLE



BRIDGE CROSS SECTION AT ABUTMENT

BRIDGE GEOMETRY

0.179	ft	Bridge Camber
5.58	ft	"A" Bridge Brg. Width / 2
8.38	ft	"B" Dist. To Quarter Point
11.17	ft	"C" Brg. To Brg. cl Width + 1/2 TC
3.92	ft	"D" Distance to P1 (1/2 Truss + 2/3Camber)

OVERTURNING LOADS

13.1	Kips	"P1" Horizontal Wind Force (or stream)	35 psf	
11.9	Kips	"P2" Uplift Force (20 psf per AASHTO 3.15.3)		
19.4	Kips	Dead Load (Wt of Steel)		
0.0	Kips	Weight of Surface Layer of Conc. Deck Mat'l (Field Applied)		
19.4	KIPS	Total Dead Load (Wdl) .	19.4	<<Wdl used

UPLIFT

Rr =[(Wdl*A) - (P1*D) - (P2*B)] / C

Rr = **-3.835** □□□□□ Positive Value Indicates NO NET UPLIFT at Bearing plate.

Net Uplift Negative value indicates NET UPLIFT at bearing plate!!

PIONEER BRIDGES

Wood Plank Floor Calculations per AASHTO Job # SAMPLE

	Fb	Fv	Fcp	Fc//	E (10□6)	pcf
So. Yellow Pine #1	1500	175	565	1650	1.7	40

Loads for design:

					wheel load	
85	psf	Uniform Live Load				
20	psf	Uniform Snow Load (added to veh. Load 2)				
10	kip	Vehicular Load 1 (minimum check)			4.00	kips
5	kip	Vehicular Load 2 (combine with snow)			2.00	kips
HS 0	ton	Vehicular Load	80	% on rear axle	0.00	kips
				Max	4.00	kips

23.5 in. stringer spacing 21.9 " span (clr+1/2 req'd bearing)

Wheel Footprint:

Area=0.0125*P=	50	in□2
W=	10.0	in
L=W/2=	5.0	in

Design Factors:

Cd=	1.25	
Cf=	1.00	
Cfu=	1.15	
Cm=	0.85	0.97 shr

Board Size:

3	" nom. thickness	2.5	actual thickness	Ix= 9.44	in□4
8	" nom. Width	7.25	actual width	Sx= 7.55	in□3

Dead Load:			Uniform Live Load:		
M=wl□2/8=	25.3	in-lb.	M=wl□2/8=	257.7	in-lb.
V=	4.6	lb.	V=	47.0	lb.

Wheel Load: For partially distributed uniform loads, when a=c, M=((wb/4)*(L-b/2))

max wheel load =	4.00	kips		0.8	continuity factor
width of load b=	10.0	in.	M=	13557.8	in-lb.
w=	400.0	#/in.			

Check Bending:

MDL + MLL =	13583.0	in-lb.	fb=	1798.6	
			Fb'=Fb*Cd*Cf*Cfu*Cm=	1832.8	OK

Check Shear:

VDL + VLL=	2480.9	lb.	fvh=1.5fv=	205.3	psi
			Fv'=Fv*Cd*Cm=	212.2	psi OK

Check Bearing:

Bearing Area =	12.5	in□2	fc//=	199.0	psi
			Fc//=	1650.0	psi OK

Truss Diagonal connection calculations - OVERLAP Pioneer Bridges Job # SAMPLE

.

Member Data

Diagonal i	Fyi	Fui	Vert j	Fyj	Fuj
HSS3X3X1/4	50	60	HSS4X4X1/4	50	60
3 height Hbi			4 height Hbj		
3 width Bbi			4 width Bbj		
0.23 thickness tbi			0.23 thickness tbj		
2.44 Area			3.37 Area		

Bott Chord	Fy	Fu	Top Chord & End Post	Fy	Fu
HSS4X4X1/4	50	60	HSS4X4X1/4	50	60
4 height H			4 height H		
4 width B			4 width B		
0.23 thickness t			0.23 thickness t		
3.37 Area			3.37 Area		

. .

Design Force 40.5 K (LRFD) 60 ksi Filler Metal (min)

25.1 Kips (ASD) . . .

AASHTO LRFD Rr=.6*Φe2Fexx= 28.8 ksi Φe2=0.8 (6.13.3.2.)

AASHTO	ASD Weld Req'd:	3/16"	fillet	12.0 in @	2.15	K/in =	25.8	kips OK
AASHTO LRFD	Weld size	3/16"		"	3.82	"	45.8	OK

The calculations below are for overlapped "K" connections only. (Chapt. K2 - Ωm=1.58)

50 % overlap Ov factor (Ovf) = 1.0

Check Top Chord Conn. Capacity @ End Post

beoi = (10 / (B/t)) * ((Fy*t)/(Fybi/tbi) * Bbi) ≤ Bbi = 1.7 (K2-20)

beov = (10 / (Bbj/tbj)) * ((Fybj*tbj)/(Fybi/tbi) * Bbi) ≤ Bbi = 1.7 (K2-21)

Pni = Fybi * tbi * ((Ovf*(2*Hbi-4*tbi)) + beoi + beov) = 99.8 kips OK (K2-17&18)

/1.625 LRFD --> ASD = 61.4 kips OK

Check Top Chord Conn.

beoi = 1.7

beov = 1.7

Pni = Fybi * tbi * ((Ovf*(2*Hbi-4*tbi)) + beoi + beov) = 99.8 kips OK (K2-17&18)

/1.625 LRFD --> ASD = 61.4 kips OK

Check Bottom Chord Conn.

be = 1.7

beov = 1.7

Pni = Fybi * tbi * ((Ovf*(2*Hbi-4*tbi)) + beoi + beov) = 99.8 kips OK (K2-17&18)

/1.625 LRFD --> ASD = 61.4 kips OK

weld Length: Θi = 47.0 ° Θj = 90 °

Le=2*[(1-Ov/100)*(Hbi/Sin(Θi) + Ov/100*(Hbi/Sin(Θi+Θj))] + beoi + beov = 12.00 in (K4-11)

NOTE: these formulas are found in the AISC design manual, HSS connections, table K2.2.

AASHTO Floor Beam connection design
LRFD Wide Flange - To HSS Connections

Member Data SAMPLE

Floor Beam			Vert		
W8X15	Fy=	50	HSS4X4X1/4	Fy=	50
8.11	in. height		4	in. height	
4.01	in. width Bp		4	in. width	
0.315	thickness of flange tf		0.23	in. thickness	
4.44	in^2 Area		3.37	in^2 Area	
0.245	in. thickness of Web		3.90	in^3 Sx	
0.69	N=(t+2*weld leg) (brg length of load "lb")				

0.1875 " Weld size used (leg size)

WELDS

ASD

	M			Flange Force (M/h)	
Design Moment (pos)	2.92	K-ft	from vert truss member	4.3	K
Design Moment (neg)	2.92	K-ft	from FEM of Veh load	4.3	K
	2.92			4.3	max

check weld: 1.01 k/in req'd

AASHTO Weld Size Req'd 3/16" fillet 4.26 in @ 2.15 K/in = 9.2 kips OK

AASHTO LRFD

	M (factored)			Flange Force (M/h)	
Design Moment (from RISA)	4.71	K-ft	from vert truss member	7.0	K
Design Moment (SS)	4.71	K-ft	from FEM of Veh load	7.0	K
				7.0	max

check weld: 1.64 k/in req'd

Weld Size Req'd 3/16" fillet 4.26 in @ 3.82 K/in = 16.3 kips OK

Check connection strength - given by the lesser of AISC equations K7 through K10 (applicable only to HSS verts)
Design Strength=ϕRn (LRFD) or Allowable strength = Rn/Ω (ASD) Φy=0.95 and Ω=1.58 u.n.

	Rn (K)	ϕRn (K)	Rn/Ω (K)	(AISC 14th ED) Table K1.2
Local Yld Strength of Flange Force Rn=(10*Fy*t/(B/t))Bp ≤ Fyp*tp*Bp =	27.1	25.8	17.2	(K1-7)
Shear Yielding (punching) Rn=.6*Fy*t*(2*tp + 2*Bep) =	37.0	35.1	23.4	(K1-8)
local yield sidewall Rn= 2*Fy*t*(5*k+N) ; [k=1.5t ; ϕ=1.0 ; Ω=1.5]	56.8	56.8	37.9	(K1-9)
local cripple sidewall Rn=1.6*t^2*[1+3N/(H-3t)]*(Efy)^.5*Qf;[ϕ=.75;Ω=2.0]	170.2	127.6	85.1	(K1-10)
Controlling strength		25.8	17.2	
Flange force Req'd		7.0	4.3	
		OK	OK	
flange @ weld		OK	OK	

Bp=4.00 Bep=10*Bp/(B/t) ≤ Bp = 2.3

vert stress factor Qf=1.0 (tens) or =(1.3-(.4U/β)) ≤ 1 USE Qf= 1.00 Comp (K1-18)

where U=Pr/(AgFc) + Mr/(SxFc) in truss vert (K1-16)

Pr= 15.0 k U= 0.089 + 0.1795 = 0.2685 (K1-6)

Mr= 2.9 k' β=Bp/B= 1.00 Qf= 1.00 T or= 1.00 C

effective weld length:

Le=2*[(10/(B/t))*(Fy*t)/(Fyp*tp))]*Bp<=2*Bp Le= 3.45 in. (K4-4)

plus weld across width of plate end tf 0.82 in

Le total= 4.26 in

Note - above Pr & Mr are worst cases for all truss verts and may not occur at the same vert simultaneously
Note - for concrete floors, upper flange reinforced by conc. form C, -> bottom flange is critical

QUALITY MANAGEMENT SYSTEM

PIONEER
BRIDGES
A Division of Bailey Bridges, Inc.

QUALITY MANUAL

Revision Chart

BAILEY BRIDGES d.b.a. PIONEER BRIDGE
119 40th Street NE
Fort Payne, AL 35967

The terms Pioneer Bridge and Bailey Bridges, Inc. may be used interchangeably in this manual. Pioneer Bridges is used only to distinguish a particular product and Bailey Bridges Inc. is the name of the corporation. There is only one facility, Bailey Bridges Inc. and one office staff which produces fabricated products under either name.

This Quality Manual has been approved by:
Gil Graham
The highest-ranking indiviual in the organization responsible for this facility.
Changes or revisions to the manual will be made by the Quality Assurance Manager and will be reviewed and authorized by the individual who approves the Quality Manual.

Revision No.	Date	Approved by	Description of change
0	11/8/23	Gil Graham	Initial Release, New Manual
1	11/9/23	Gil Graham	1.8.1.4 Verbage clarification
1	11/7/23	Gil Graham	1.8.1.5 Verbage clarification
1	11/2/23	Gil Graham	1.9.1 added electronic version
1	12/14/23	Gil Graham	1.7.7 Verbage clarification
1	4/3/24	Gil Graham	1.5.2 Updated the 207-20, to 207-23

1.1 Purpose

The purpose of this quality manual is to outline the criteria within Bailey Bridges d.b.a. Pioneer Bridges to meet the American Institute of Steel Construction (AISC) certification to ensure owners, the design community, the construction industry and to the public officials that Bailey Bridges d.b.a. Pioneer Bridge meets the requirements in this standard, and have the personnel, experience and the documented procedures, knowledge and the equipment to perform fabrication of product for our customers from receiving to shipping.

QUALITY ASSURANCE PROGRAM

At Bailey Bridges d.b.a. Pioneer Bridge, the Quality Assurance Program is endorsed and approved by the company executive management. All personnel are hereby charged with the responsibility to activate this plan and to ensure its enforcement at all levels of operations. The Quality Assurance Manager has the overall responsibility for coordination of the program. All activities of this company will be directed in a manner to ensure that our fabricated product meets the quality requirements specified in project contract documents. As a minimum our standard specifications will be required in the absence of quality assurance specifications required by the owner, also all work will follow the following documents:

1. The American Institute of Steel Construction (AISC) “Quality Control and Inspection Standards”.
2. (AISC “Code of Standard Practice”.
3. (AISC) “Specification for the Design, Fabrication and Erection of Structural Steel”.

To assure the above results are achieved the Quality Assurance Manager is hereby given the authority and responsibility to stop work whenever such work is not being performed in accordance with approved drawings, specifications, procedures, applicable codes and the Quality Assurance Program. Every Department Head, Supervisor, Foreman, and each individual employee is hereby charged with implementation of this policy. The Quality Assurance Manager is separate from the production supervisor and reports directly to the President. The Quality Assurance Manual will be reviewed annually by the President. Revisions will be numbered and dated. Copies are issued to authorized persons on a controlled basis. Department Managers are responsible for making this policy known to all the employees and for promoting pride of workmanship and product quality throughout our operation. This Quality Manual is approved by the Chief Executive Officer. Any and all changes to any documents contained in the manual are first approved by the Quality Assurance Manager and then submitted to the Chief Executive Officer for his approval and signature.

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1.2 SCOPE

This manual allows customers and outside functions a means to understand Bailey Bridges d.b.a. Pioneer Bridge Quality Management System for fabricated and supply of steel highway or railroad bridges, when such a system is required in full or in segmented approach as required by the customer and project.

1.3 References (QP-1.3.)

Bailey Bridges d.b.a. Pioneer Bridge makes every effort to have the applicable reference documents, standards, codes, or other applicable documents readily accessible to the individuals who need them. Bailey Bridges d.b.a. Pioneer Bridge has also made every effort to assure that these library references are both current and meet the requirements of customer contracts.

1.4 Definitions (QP-1.4.)

Bailey Bridges d.b.a. Pioneer Bridge has made every effort to emulate the definitions as outlined by AISC's Advance Bridge Certification Standard. As used in this standard, the words shall, must, or will denote a mandatory requirement. The word should denote a guideline or recommendation. The words may or can denote an opportunity to make a choice.

QMS- Quality Management System
QCP- Quality Control Procedures
AISC- American Institute of Steel Construction (ref.) AISC 207-23 latest standard.

1.5 MANAGEMENT RESPONSIBILTY (QP-1.5.)

Executive management directs and leads the development of our Quality Management Program for the purpose of meeting our commitment to quality. The President and department managers have the overall responsibility for the establishment and implementation of the Quality System; and shall retain the responsibility for obtaining the level of quality required to meet the requirements as set forth in this manual and procedures, the AISC Certification Standard requirements; and the requirements of the contract documents.

1.5.1. Policy for Quality and Quality GOALS (QP-1.5.1.)

At Bailey Bridges d.b.a. Pioneer Bridge, the Quality Assurance Program is approved by the company executive management. Executive Management will ensure all department managers are hereby charged with the responsibility to communicate, and activate this plan and to ensure its enforcement at all levels of operations. The Executive Management has the commitment, and the responsibility for the production of a product which satisfies the requirements of this standard, and the Contract Documents. The Quality Assurance Program shall be discussed in the monthly quality management meetings for establishing, and communicating of quality issues that is a direct reflection to the quality goals set forth. These goals will be measured and documented using evidence attained in the monthly quality

meetings. When these goals are achieved the executive management will set new goals showing the commitment of continuous improvement.

1.5.2. Quality Management System (QP-1.5.2.)

This Quality Assurance Manual meets all the requirements of this standard (ref) AISC 207- and the requirements of all contract documents with procedures and records, and separate documents incorporated by reference completing the manual. Documented procedures shall contain:

(a) The purpose of the procedure.
(b) Process definition that includes steps required for completion.
(c) Assignment of responsibility for performance.
(d) Assignment of responsibility for review, revision, and/or approval of the procedure.
(e) Identification of records that are generated.
(f) For inspection activities, frequency of observation or inspections and how those observations or inspections are documented.

1.5.3. Management Review (QP-1.5.3.)

Executive Management will review and generate records of the quality management system annually. These reviews may occur daily, weekly, or monthly management meetings at which time AISC bullet points may be discussed and recorded, these reviews are also verified during an annual review of the Quality Management System.

1.5.4. Responsible Quality Personnel (QP-1.5.4.)

Executive Management will designate the Quality Assurance Manager who will report directly to Executive Management. The designated quality Assurance Manager may perform other functions of work as long as it is not in conflict with quality responsibilities. Quality Assurance will also have the ability, responsibility, and authority to:

1. Ensure that all procedures needed for the quality manual are established, implemented and maintained in accordance of this Standard.
2. Reports directly to the Executive Management on the quality management system and any need for improvement.
3. Communicate with outside agency on matters relating to the quality management system.

1.5.5. Resource Management (QP-1.5.5.)

Executive Management provides the resources necessary to comply with the contract documents, and applicable to both personnel and non-personnel these resources are, but not limited to the following:

1. Qualifications 4. Documented training 7. Training
2. Certifications 5. Individual license
3. Resumes 6. Equipment

3.

Documented evidence in support of their qualifications and training is maintained and filed so it is retrievable as needed.

1.5.6. Internal Communication (QP-1.5.6.)

Executive Management has established internal communications procedures to ensure that all information regarding the quality management system's standards and processes reach individuals within the corporation whose job functions directly impact product quality. Such communications may take the form of written policies and procedures, postings in relevant areas of the shop floor, emails, and/or verbal instruction or commentary during department meetings.

1.5.7. Quality Manual (QP-1.5.7.)

The quality manual has established and implemented all necessary documentation to meet the requirements of the latest standard of AISC 207-23. The executive management will define any additional documented procedures, drawings or other documents that are required beyond the minimum requirements set by this standard to meet the needs of the organization and its customers.

This quality manual includes or incorporates by reference the following documents at a minimum:

(a) Documented statements of a quality policy and quality objectives as required by the AISC Standard.

(b) Documented procedures established for the quality management system (or references to them), along with their associated quality records.

(c) Documents needed by the organization to ensure the effective planning, operation, and control of its processes.

(d) Organization chart describing the interrelationship of functional positions that manage, perform, and verify work affecting quality.

(e) Job descriptions outlining responsibilities, authority, and qualification require for key positions

(f) Qualification evidence for individuals in *key positions/functions.*

(g) Equipment list.

(h) Facility plan.

The President of the company shall sign and date the review of the quality manual.

1.6. Construction Document Review and Communication

The sales manager and/or drafting manager shall review all construction documents and record the specific project requirements on the Project Review Checklist. A copy of the Project Review Checklist shall be retained in the engineering job file.

1.7 Detailing (ref: Detailing Manual)

1.7.1 Detailing Standards

The Pioneer Bridges Detailing Manual provides the Detailing Standards for Pioneer Bridges.

1.7.1.1 Digital Document Production

The Pioneer Bridges Detailing Manual provides instructions for accuracy verification of detailing software.

1.7.2 Checking

The Pioneer Bridges Detailing Manual includes a Drawing Checklist that is used for each project. If drawings are produced by a subcontractor, the drafting manager shall review and determine if the checklist applies to the drawings produced by the subcontractor.

1.7.3 Approval of Approval Documents and Release for Fabrication

Upon receipt of approval, the drafting manager shall place copies (electronic and/or hard) of the approved documents in the engineering folder. The approved drawings shall be released for fabrication based on the following requirements:

a) The drafting manager authorizes release of the approved drawings to the shop and any other departments necessary for material and inventory control.
b) When released, the job number, drawing description, date of release and quantity shall be recorded on the shop drawing log.
c) As drawings are received by the shop, they are distributed by the shop production manager or their designee.
d) Revised drawings are handled with special care to ensure that all obsolete drawings are removed from the shop floor.

1.7.4 Shop Drawings Supplied by Others

When shop drawings are received from others (owner or outside entity), a Pioneer Bridges job number shall be assigned, a Project Review Checklist (ref 1.6) should be completed and the drawings should be distributed per the Detailing Manual instructions.

1.7.5 Management of Detailing

The drafting manager is responsible for the following:

- Overseeing the production of shop and erection drawings

- Coordinating with the sales manager/engineer, owners' design representatives, detailers and checkers to ensure all design and construction requirements are clearly communicated and implemented
- Managing the detailing schedule
- Coordinating transmittals of approval submittals
- Coordinating training for detailers and checkers

Drafting manager qualifications are provided in QP-1.5.

1.7.6 Detailing Functions

Detailers in training shall work under the supervision of a trained detailer or checker. Qualification requirements for checkers are provided in the Pioneer Bridges Detailing Manual.

1.7.7 Subcontractor Services

Pioneer Bridges does not currently subcontract detailing services. However, in the event Pioneer Bridges subcontracts detailing work, Pioneer Bridges will award such work only to qualified vendors. The subcontractors' qualifications will be reviewed by Pioneer Bridges Sales or Detailing staff prior to awarding the detailing subcontracting services. The subcontractor shall be required to provide a list of personnel they plan to use on the project and their qualifications. Subcontracted work will be reviewed by qualified Pioneer Bridges personnel, and checked using the Drawing Checklist from the Pioneer Bridges Detailing Manual (as applicable).

Control of Management System Documents and Project Documents (QP-1.8.)

1.8.1. Management System Documents (QP-1.8.1.)

Where required by contract documents, records shall be prepared as work is performed to furnish evidence of the quality of items, and of activities affecting quality. Records shall be consistent with the requirements of the contract specifications and the appropriate standards and codes.

1.8.1.1. Quality Management System Documents (QP-1.8.1.1.)

This Quality Manual is maintained and updated by the Quality Assurance Manager for the control of quality and is available to all personnel as well as customers, upon request. Manual/Procedures

1.8.1.2. Review and Approval (QP-1.8.1.2.)

The manual has a revision chart that will be used to show the requirements for the updating of any changes made within this manual concerning procedures. The president shall have the responsibility for review and approval of these documents.

1.8.1.3. Revision Control (QP-1.8.1.3.)

The quality manager ensures that all implementing documents within the Quality Manual have a cover page which contains the documents date of origin, a current revision date, and an approval signature. The Quality Manager maintains a master list of all changes and revisions, in a hard copy format, to ensure that the most current revisions are utilized.

All current documents are readily accessible and maintained within the QA department of the shop to avoid the use of obsolete procedures in the production process. All current documents are readily accessible and maintained within the QA department of the shop. The manual has a revision document that will be reviewed, and approved by the highest-ranking individual in the organization responsible for this facility.

1.8.1.4. Access (QP-1.8.1.4.)

Quality management or designee ensures that the lastest revision to the Quality Manual and procedures are available either electronically (controlled copy) or hard copied (uncontrolled copy) to the appropiate personnel. Documents are required to be available and readily accessible to all personnel responsible for performing functions affecting the quality of the completed work.

1.8.1.5. Communications (QP-1.8.1.5.)

When revisions are made it is the responsibilty of the quality management to communicate these changes. Department managers are notified of the revisions and then communicated to all personnel who are responsible for performing functions affecting the quality of completed work.

1.8.2. Project Documents (QP-1.8.2.)

The sales manager receives all contract documents from the customer and performs a review of these documents before passing them on to the drafting/engineering manager. The contract drawing receipts (date/addendum) are recorded on the project review checklist. Permanent records of these documents are kept on the server and/or in the job file. Shop drawing submittals and releases are tracked using the drawing progress log.

1.8.2.1. Tracking (QP-1.8.2.1.)

The Manager of Drafting shall authorize release of the approved drawing to the shop and any other departments necessary for the material and inventory control. As prints are issued, the job order number, drawing number, date of release and quantity shall be recorded on the shop drawing log. As drawings are received at the shop, they are distributed by a person designated by the Shop foreman. Revised drawings are handled with special care to ensure that all obsolete drawings are removed from the shop floor. The revised drawings are stamped, and void all previous copies.

1.8.2.2. Revision Control (QP-1.8.2.2.)

For project documents that the fabricator, erector or manufacturer produces, revisions are clearly identifiable and there is a method for monitoring and identifying the latest revision. The document procedure includes provisions to prevent inadvertent use of obsolete documents.

These documents are legible and easily identifiable.

1.8.2.3. Access Project (QP-1.8.2.3.)

The Quality Manager ensures that the most current policies, procedures, and contract revisions are distributed to the appropriate personnel within each department. Department managers ensure that all documents relevant to specific areas of operation are accessible to applicable personnel within that area responsible for performing work affecting product quality.

1.8.2.4. Communication (QP-1.8.2.4.)

Executive Management has established internal communications procedures to ensure that any changes or revisions regarding the quality management system's standards and processes reach all individuals within the corporation whose job functions directly impact product quality. Such communication may take the form of written policies and procedures, postings in relevant areas of the shop floor, emails, and/or verbal instruction or commentary during department meetings.

1.9. Maintenance of Quality Records (QP-1.9.)

Where required by the contract documents, records shall be prepared as work is performed to furnish evidence of the quality of items, and of activities affecting quality. Records shall be consistent with the requirements of the contract specifications and the appropriate standards and codes. In such cases, quality assurance records are a part of the file. The Quality Assurance Manager is responsible for the maintenance of the records. These records are maintained in such a manner that they are readily accessible to the customer or his/her authorized representative. Records maintained: (These records can be found in Quality Assurance Office)

1.9.1. Retention (QP-1.9.1.)

The retention periods will be a minimum of 10 years recorded on the file box or electronic version. These quality records are maintained by the Quality Manager and will be transmitted to the owner in accordance with the contract.

1.9.2. Storage (QP-1.9.2.)

All quality records shall be stored at Bailey Bridges d.b.a. Pioneer Bridge in a way that prevents damage, deterioration or loss.

1.9.3. Retrieval (QP-1.9.3.)

The Quality records will be stored in a file box that will be labeled for easy identification and easily accessible in a reasonable timeframe whether in paper copy or electronic version.

1.10. Purchasing

Bailey Bridges d.b.a. Pioneer Bridge implements a system to ensure that purchased products, subcontractors, materials and services conform to project requirements. Purchase orders, records of the qualification of subcontractors and suppliers, and records of the periodic evaluation of suppliers are maintained within the Purchasing Department.

1.10.1. Purchasing Data

Bailey Bridges d.b.a. Pioneer Bridge clearly describes subcontractor work and the purchased products, materials and services ordered in purchasing documents. These purchasing documents may contain the following information, as applicable:

- Type of service, material, class, grade and other unique identification.
- Project specifications, drawings, process requirements and inspection instructions that apply.
- Delivery instructions and date.
- Certificate of Compliance/Conformance, mill test reports and/or NDT reports as required.
- Compliance with ASTM A6, as appropriate.
- Special instructions or any other information pertinent to the product ordered.

1.10.2. Selection of Subcontractors and Suppliers

Subcontractors and suppliers are evaluated annually by conducting an audit or through documented past experience of providing similar products or services.

The Purchasing Manager selects subcontractors and suppliers on the basis of their ability to meet the subcontract requirements, BAILEY BRIDGES quality management system, the requirements of the AISC Standard, project requirement and any specific inspection requirements. The subcontractor shall have the required level AISC Certification on projects that require such Certification. The use of non AISC certified subcontractor must be approved in writing from the Customer or Engineer of Record. At a minimum, subcontractors must deliver finished products of high quality in a timely and appropriate manner.

1.10.3. Verification of Purchased Product, Materials and Services

The Purchasing Manager ensures inspection of all product and material to ensure that it conforms to the purchase order, as well as to project requirements. When required by the project, test reports certificates of compliance and other evidence of quality control are kept on the server with multiple back-ups.

1.10.4. Control of Customer-Furnished Work and Material

If materials are supplied by the customer, the plant supervisor is responsible for ensuring that the material is stored and maintained properly so as to avoid loss, damage or misuse of the material. All customer supplied material is inspected to ensure that the material is appropriate for the intended project and meets the quality requirements.

Any material nonconformance or loss, damage or misuse of the material is recorded and reported to the customer.

1.10.5. Purchasing Records (Vendor Evaluation Form)

All material is inspected upon receipt for conformance to the requirements of the purchase order and for damage, also materials will meet the requirements of ASTM Standards for Structural Steel Fabrication A6/A 6M-16. Evaluation of subcontractors for procurement of all main material, bolts, services and fabricated or bought out item's rests with the purchasing agent. Performance and evaluation for suppliers and subcontractors will be evaluated annually in accordance of the following;
On time delivery, Product quality, Personnel availability to address product nonconformance.

1.11. Material Identification (QP-1.11.)

Bailey Bridges d.b.a. Pioneer Bridge implements a system for identification of material. The system adheres to the guidelines stated in the AISC Code of Standards Practice and contract documents. This system also provides a method for material traceability. At a minimum, material identification is maintained until the first fabrication operation when our project numbering system takes over. Purchasing documents for materials furnished to ASTM specifications include the information required in the order information.

Bailey Bridges d.b.a. Pioneer Bridge retains test reports, matching mill test reports, and certificates for conformance for base materials, bolts, welding consumables (with the appropriate AWS specification and classification) for at least 10 years. Our system provides the ability to provide a report by our supplier with our order using project numbers. This method provides a full specific traceability. The purchasing manager is responsible to invoke the appropriate level of control for each order and each contract.

Bailey Bridges d.b.a. Pioneer Bridge fasteners are supplied in sealed containers marked by the grade, manufacture's lot, size and control number, typical reports are supplied unless other reports are required by contract.

1.12. Process Control

The Quality Assurance Manager and Fabrication Manager shall identify and plan the fabrication process. The procedures for welding, bolting, coating, cambering and preventive maintenance, and install processes that directly affect quality and will ensure that these processes are carried out under controlled conditions. These procedures will be maintained on file in QA office. Controlled conditions may include, but not limited to the following:

- Inspection Sheets
- Hold Points

1.12.1. Welding (QP-1.12.1.)

Bailey Bridges d.b.a. Pioneer Bridges has developed procedures for the management of welding maintained in QA office. The procedure addresses the development and maintenance of:

(a) WPS's
(b) Preheat requirements
(c) PQR's
(d) Storage (including ovens), handling, and identification requirements for welding consumables.
(e) Welder, welding operator, and tack welder qualifications and qualification test records in accordance with appropriate AWS requirements.
(f) Welder, welding operator, and tack welder performance records—to provide objective evidence that the '' period of effectiveness'' has not been exceeded and satisfactory performance is consistently achieved.
(g) Traceability of welds to the welders who produce them, as applicable.

WPS's are within close proximity to and are being adhered to by the welders, welding operators, or tack welders.

1.12.2. Bolt Installation (QP-1.12.2.)

Bailey Bridge d.b.a. Pioneer Bridge has a procedure (QP-1.12.2) for bolting developed to meet the requirements of the latest version of the RCSC Specification for Structural Joints Using High Strength Bolts and the requirements of approved construction documents and referenced standards. This procedure includes the process for storage, pre-installation verification (PIV), and inspection of fasteners assemblies for snug-tightened, pretensioned, and slip-critical joint types. This procedure meets the requirements of the AISC certification standard.

NOTE: Most connections require proper torque in the field. Do not tighten bolts in the shop unless specifically called for on shop drawings. In the event tightening is required in the shop contact Quality Assurance.

1.12.3. Material Preparation for Application of Coatings (QP-1.12.3.)

Surface Preparation and Painting

This Procedure identifies the requirements for surface preparation and achievement for cleanliness and surface profile required by the coatings manufacturer recommendations, product data sheets, and contract requirements. All exposed surfaces shall be painted, unless otherwise noted on the drawings.

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Steel surfaces shall be cleaned by sand or metal shot blasting. Welds shall have loose slag and sharp projections removed by wire brush, chipping hammer, grinding or scraping. Weld spatter shall be removed from architecturally exposed areas subject to direct contact with the public, such as hand rails and rub rails.

Weathering Steel Structures

Blast cleaning shall be performed on only visually exposed surfaces of the erected structure, weathering steel shall be blast cleaned to a commercial blast finish as described in the Steel Structures Painting Council Surface preparation Specifications (SSPC) as SSP-6 or as otherwise called for on the shop drawing. Unexposed surfaces beneath the bridge or between surfaces such as back-to-back bracing angles need not be blasted. Piece marks shall be transferred to areas not visible after erection if at all possible. Identifiable tags shall be used if direct marking is not feasible.

Bridges to be Painted

Shall receive a thorough cleaning of all surfaces referencing the manufactures recommendation of the specification data sheet, or as otherwise called for on the shop drawings. The anchor pattern will be at a minimum of the recommendation of the surface preparations located on the data sheet and surface profile measurements will be recorded with paint documentations found in the job folder.

*Paint shall be applied evenly and thoroughly in a method compatible with the specifications and the manufacturer's recommendations.

*Erection marks shall not be covered or destroyed, or touched up after painting to maintain legibility.

*Machined surfaces shall be protected as required by contract specifications.

Storage, Loading, and Shipping

Sufficient care shall be used in handling and loading to minimize damage to the paint film and the members by crushing, kinking, or twisting. Components stored prior to shipment shall be set on blocking to minimize contact with the ground. The shop Superintendent issues shipping instructions containing all information pertinent to the shipment. The shipping documents shall be reviewed to ensure that pieces released for shipment have been loaded. The loaded material shall be checked for damage.

1.12.4. Coating Application (QP-1.12.4.)

APPLICATION OF PAINT

Paints specified are formulated ready for application and no thinning will be allowed unless otherwise provided for in the applicable materials specification of the paint being used.

On all surfaces inaccessible for painting by regular means the paint shall be applied by sheepskin daubers, bottle brushes or other means approved by Quality Assurance Manager. Spray methods which produce excessive paint build-up, runs, sags, or thin area in the paint film or skips and holidays, will be considered unsatisfactory and the Q.C. or engineering may require modification or require brushing instead. Mechanical mixers shall be used to mix paint. Prior to application paint shall be mixed a sufficient length of time to thoroughly mix the pigment and vehicle together, and shall be kept thoroughly mixed during its application. The dry film thickness of the paint will be measured in place with a calibrated magnetic film thickness gauge according to SSPC-2 A2. Bailey Bridges d.b.a. Pioneer Bridges will use only Type 2 gages which do not require Base Metal Reading (BMR). The thickness of each application shall be limited to that which will result in uniform drying throughout the paint film. Vinyl wash primers if used shall not be applied more than 12 hours before application of the succeeding coats of paint. The dry film thickness shall be between 3 and 5 mil unless specified otherwise. The painting of areas under joint connection shall be masked from paint and over spray so as to maintain clean blasted contact areas and splice plates. All bolted splices shall be considered 'slip critical' connections unless noted otherwise on the shop drawings. All this is done with following the manufacturing recommendations and also using the product data sheets along with contract documents.

APPLICATION OF ZINC-RICH PRIMERS

Zinc-rich primers which include organic and in-organic zinc primers shall be applied by spay methods. On inaccessible areas brushes or daubers may be used. Mechanical mixers shall be used in mixing the primer. After mixing zinc-rich primers shall be strained in accordance with the manufacture's recommendations (usually a 30-60 mesh screen or a double layer of cheese cloth immediately prior to or during pouring into the spray pot. An agitating spray pot will be used for application of zinc-rich primers. Cured zinc-rich primers shall be free of dust, dirt, or other foreign or loose deposits and thoroughly dry before applying a vinyl wash primer. Succeeding application of inorganic zinc paints shall be applied within 24 hours, but not less than 30 minutes after application of such paint. Paint shall be cured 48 hours at a relative humidity of 45 percent before the application of a vinyl wash primer or in accordance with the recommendations of the manufacturer.

1.12.5. Equipment Maintenance (QP-1.12.5.)

Process equipment used in painting operation will be inspected by the maintenance department while using Bailey Bridge's preventive maintenance program. The Blast cleaning equipment, airless spray equipment, lifting equipment involved in handling and transportation of steel will be inspected every 4 months these items are but not limited to:

- Blast Cleaning
- Compressors
- Line driers and oil separators

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- Airless spray equipment
- Lifting equipment

1.13. Inspection and Testing (QP-1.13.)

Bailey Bridges monitors and measures key characteristics of the product during the manufacturing process to verify all contract requirements and manufacturing standards have been met. The Quality Control Inspector is responsible for inspections at various intervals during production process, depending on the complexity of the project. When required the inspections may be subcontracted to an outside agency. The level of frequency of inspections will be as directed by the contract documents, but may be increased at any time if it is determined that the required level of quality is not being met. The inspection program includes incoming materials, in-process and final inspections of all product furnished to a project. Records of such inspections are compiled and maintained in the Quality Manager's office.

1.13.1. Assignment of QC Inspections and Monitoring (QP-1.13.1.)

Bailey Bridges defines qualification requirements for the QC inspectors shall meet the Qualification Standards and Certifications granted by recognized industry organizations related to the structural steel fabrication can be used to establish a basis for the assignment of Quality Control inspectors.

Production personnel may be assigned to QC inspection duties under the following conditions:

1. They shall be trained in both knowledge and practiced in proper inspection methods and acceptance criteria specified for the material/product and aware of the responsibilities and given the time to perform them. These inspectors only inspect others work.
2. Their inspections are monitored by qualified QC personnel.

1.13.2. Receipt Inspection (QP-1.13.2.)

Materials received are compared to the purchase order requirements. The person receiving the incoming product checks the material, required documentation, grade and quantity and looks for visible signs of shipping damage. Shapes and plates are also inspected for obvious deviations from the requirements of purchase order specifications.

1.13.3. In-Process Inspection (QP-1.13.3.)

In-Process inspections are conducted to ensure that project processes are compliant with specified requirements and inspection acceptance criteria. Materials are inspected for specifications and grade, workmanship and tolerances using appropriate codes, standards, or a documented plan before production begins. In-process inspection for welding, preheats and welder qualifications are monitored. When bolting is to be done in-process inspections of connections, placement of holes to be drilled will use the appropriate bolting procedure.

The in-process inspection for painted material will begin with the preparation of material to be coated. Then the coating application will be inspected to assure it meets the contract and the customers' requirements. Any nonconformity will be documented and processed with (NCR).

1.13.4. Final Inspection (QP-1.13.)

Quality Control inspectors perform the final inspection of products after the fitting, painting and welding, but prior to delivery of the finished product. These inspectors are specifically trained to perform these inspections. Any nonconformity discovered during the final inspection process is documented and processed according to the nonconformance procedure:

1.13.5. Inspection Records (QP-1.13.5)

All inspection records, whether incoming, in-process, or final, are maintained in a file in the Quality Control Manger's office. Inspections by production personnel are verifiable until the final inspection of the product.

1.14. Calibration of Inspection, Measuring and Test Equipment (QP-1.14.)

Bailey Bridges implements a program to calibrate and maintain inspection, measuring and test equipment used to determine the conformance of product to the specified requirements of the quality system. Such calibration is done by a subcontracted service and is done through the use of equipment certified to an internationally recognized standard. Where such standards do not exist, the basis used for calibration is documented. Calibration of inspection, measuring and test equipment is performed annually to ensure continuing conformance to the standards set within the Quality Management System. The Quality Manager is responsible for maintaining all calibration records. Such records will include a description of the equipment, manufacturer, serial number, date of calibration, date when next calibration is due and the inspector's name. Calibrated equipment is identified with a sticker which contains the date and when last calibration was performed. This prevents inadvertent use of equipment that is not calibrated, when such calibration is required. Any equipment that is out calibration, or damaged, or is not functioning properly is immediately removed from service pending an investigation to determine its potential impact on the product. The investigation, results and corrective action are documented on a Nonconformance Report which is also maintained in the Quality Manager's office. The malfunctioning equipment is tagged with an "Out of Service'' tag and segregated to prevent it accidental use.

1.15. Control of Nonconformances (QP-1.15.)

Bailey Bridges, written procedure which prevents product that does not conform to the specified requirements of the quality management system form being used in the production process. When such nonconforming product is identified, it is immediately segregated, documented and will be marked/tagged as nonconforming to prevent its accidental use in the production process. The product is then inspected to determine whether it should be reworked, repaired, or disposed of. In some cases, after further inspection and testing, the product can be used as is, depending on the nature of the nonconformance.

If the nonconformance directly impacts the customer, the customer is informed and they can then determine whether or not to approve the product for use. If the nonconformance product is approved for use by the customer, such approval is documented and a record retained in the NCR file. Detailed records are kept of all the nonconformance and stored in the Quality Control Manager's office. Such records include the nature of the nonconformance, what, if any, follow-up inspection and testing is conducted, and the resulting disposition of the product.

1.15.1. Nonconformance with Management Systems (QP-1.15.1.)

Bailey Bridges, procedure that explains the requirements and the responsibilities for identifying, reporting, control, disposition and corrective action of non-conforming items. This procedure applies to the Management Systems processes, of Bailey Bridge. Any non-conformances shall be brought to the attention of a Department head, who shall then contact the QA manager about the issue. Immediately upon discovery of the non-conform process a "HOLD" will be placed until the nature of the problem is determined. The Quality Assurance Manager will be notified and a non-conformance report will be documented and logged or filed. A determination will be made as to the corrective action required to bring the non-conforming process to conform to the procedures of this Quality Manual. The correction will be in accordance with the approved corrective action. The disposition for the NCR shall be approved by the President and QA Manger. The Quality Assurance Manager will notify the Department Manager with the approved procedure for the appropriate actions.

1.15.2. Nonconforming Work (QP-1.15.2.)

Immediately upon discovery of a non-conformance item that item shall be placed on ''HOLD'' and the nature of the problem shall be determined. The Quality Assurance Manager will be notified and will record the item on a non-conformance report. The non-conformance item shall be marked and determination made as to as the appropriate solution required to bring the non-conforming item to conform with the plans, contract documents, and specifications. Items involving non-conformance of material will be passed on to the Engineering Manager and the Purchasing Manager for the most appropriate solution. Where required by the contract documents the customer shall be notified of any non-conformity and the proposed repair or possible substitution. Repairs shall be re-inspected and proper documentation made of the entire non-conformance procedure. Rejected material shall be marked in a permanent manner so as to not be reused or mistaken for acceptable material in most cases will be scrapped. A review of the non-conformity shall be made by Quality Assurance Manager, Facility Manager, and the appropriate personnel to determine if problems can be prevented from occurring again.

1.16. Corrective Action (QP-1.16.)

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16.

A corrective action is defined as any action taken to eliminate the causes of nonconformance. The determination as to whether or not to issue a corrective action depends upon the degree to which a nonconformance jeopardizes the production of a quality product. A corrective action is issued after periodic reviews of records or internal and external quality audit reports determine critical nonconformity to quality standards. Once a corrective action report is generated, quality management personnel determine and implement a course of action to take to correct the noted nonconformity. Periodic reviews are then conducted to ensure the corrective action is being performed and is effective.

Corrective Action Reports (CARS) are documented and maintained in a Corrective Action Report File located in the Quality Manager's office.

1.17. Handling, Storage and Delivery of Materials, Fabricated Work, and Components (QP-1.17.)

Bailey Bridge d.b.a. Pioneer Bridges, has developed a means of handling, storing and delivering products and materials. Product/material is stored, handled and shipped in such a way as to avoid damage and deterioration as required by the Code of Standard Practice. Material and fabricated work is also labeled for easy identification on shipping documents and potential traceability. Any such material/product that is lost, damaged, or otherwise unsuitable for the use in which it was intended shall be recorded and reported as appropriate.

1.18. Training (QP-1.18.)

Bailey Bridge, has developed a means to ensure that personnel responsible for the quality of products and services receive initial and periodic training in their specific job functions. Periodic training may occur when there is a change in their specific duties or a procedural change in a particular job is implemented. This training ensures that the all individuals possess the understanding necessary to perform the functions of their job in an efficient and productive manner. Training results for these personnel are documented and reviewed on a periodic basis to ensure compliance to job qualification specification.

Personnel shall receive annual training, or when changes to the requirements of their assigned job functions occur. Such training is documented and maintained in the QA office.

1.19. Internal Audit (QP-1.19.)

Internal audits shall be conducted annually to verify compliance with the approved manual, procedures, instructions or forms to verify that it is accomplishing the intended purpose and is effective. Internal audits shall incorporate all elements of the Quality Management System implemented at our company. The audit will be conducted by an independent of the function being audited and shall produce a report of all findings.

Any other audits necessary by the Quality Assurance Management are conducted as required to verify compliance with drawings/parts list, or specifications. These Product/Special Audits shall be documented when performed.

Quality Assurance reviews the results of Internal Audits and Corrective Actions with the Executive Management. (207-23 IBR, FCE, SPE).

Appendix A
FORMS

Bailey Bridge d.b.a Pioneer Bridges
WELDING MACHINE CALIBRATION

Q.R. #1

Amperage Meters will be Calibrated Using Meter Serial Number 40440554ws
Calibration Date: next Calibration Date:
Volt Meters will be Calibrated Using Meter Serial Number 40440554ws
Calibration Date: next Calibratio Date:

Welding Machine S/N	**Amps +/- 10%**		**Volts +/- 7%**			
	OK	REJ	OK	REJ	Signature	Date
LINCOLN U1940800946						
LINCOLN U1940800989						
LINCOLN U1940800965						
LINCOLN U1940800971						
MILLER KG042943						
LINCOLN U1060613775						
LINCOLN U1061101910						
LINCOLN U1940801023						
ESAB MDJ213071						
LIINCOLN U1060605885						
LINCOLN J1920902628						
LINCOLN U1070514849						
LINCOLN RC1020600510						
LINCOLN RC1980700267						
LINCOLN RC1980500733						
Welding Machines are Calibrated.						
To +/- 3% of actual readings						
CAL. By:						

BAILEY BRIDGES, d.b.a. Pioneer Bridges
FORT PAYNE, AL

Q.R. #2

REPORT OF MAGNETIC PARTICLE EXAMINATION OF WELDS

Job No.

Quality requirements---Section no. Bailey Bridge Q.C. MT .1

WELD LOCATION AND IDENTIFICATION SKETCH

See Dwg for weld location ;
Magnetic Particle Tested 25 %

Date	Weld Identification	Area	Interpretation		Repairs		Remarks
			Accept	Reject	Accept	Reject	
	Welded by						

We, the undersigned certify that the statements in this record are correct and that the welds were prepared and tested in conformance with the requirements of AASHTO/AWS D1.1 & D1.5 YEAR 2020
Method of Inspection:

☐ Dry ☐ AC Wet ☐ DC ☐ ☐ Residual ☐ Half-Wave ☐ Continuous

Test Date _____

JOHN R. PHILLIPS / ASNT LEVEL III
Inspected by

Bailey Bridge d.b.a. Pioneer Bridges

Q.R. # 3

Fort. Payne, AL

NON CONFORMANCE REPORT

Job No.: _____ Date: _____

Rejection No.: _____ By: _____

DESCRIPTION: _____

AUTHORIZED REPAIR PROCEDURE: _____

Authoried By: _____

Repair Inspected By: _____

Corrective Action: _____

- - - - - - - - - - - - - - - - below for internal use only - - - - - - - - - - - - - - - - - -

CAR Log No.: _____ Product Line (G , P , L , B) _____ Cust. Complaint (Y , N) _____

Check Cause

customer:		purchasing:	
design:		packing/shipping:	
fabrication:		sales / communication:	
detailing:		Training:	
coating			
vendor:		other:	

Q.R.# 4 RFI Report

REQUEST FOR INFORMATION RECORD

Job NO. _____
Date of Request: _____
Request By:_____
Date of Response:_____
Response By:_____

Attached request and response to this form for records.

Description of Request:

_____
_____
_____
_____
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_____
_____
_____
_____

Bailey Bridges d.b.a. Pioneer Bridges
Fort Payne, AL

Q.R. # 5

Measuring Tape Calibration Records

Master Tape Serial Number: E0528137

Stock No.	End Hooks		Damage Legibilety		+/-1/16'' Intervals 1,5,10		Signature	Date
	ACC	REJ	ACC	REJ	ACC	REJ		

BAILEY BRIDGES d.b.a. Pioneer Bridges

FORT PAYNE, AL

Q.R. # 6

WELDER CONTINUITY

NAME ______________________________

EMPLOEE NO.		
TYPE WELDING QUALIFIED	GMAW	FCAW
POSITION QUALIFIED		
DATE QUALIFIED		

JOB. NO	DATE WELDED	GMAW	FCAW	INSPECTED BY:

Bailey Bridge d.b.a. Pioneer Bridges

Fort Payne, AL

Q.R. # 7		Corrective Action Report		
Company Name		**CAR#**		**Issued by:**
Reference:				
Description of Non-conformance report:				
Issued to for action			Date:	
Notes:				

Probable Root Cause of Condition (or sources of information for action to prevent reocurrence0) 1 2	
Action to Prevent Recurrence (determination of steps necessary to prevent reoccurrence) 1 2	
Respondent	**Scheduled Action Date:**

Evidence of actions taken:
Comments:

Follow up with periodic monitoring and verification to assure corrective action is implemented

Verification by:	**Date of follow up**	**Date Completed (verification assured)**

Bailey Bridge d.b.a. Pioneer Bridges

Fort Payne, AL

Paint Record

Q.R. # 8

Job # _____

Job Name _____

Coating Manufacturer _____

Color _____

Type of Primer/Gal Used:
Batch # Part A -
Batch # Part B -
Batch # Reducer -
Reducer Type/Amount Used-
Type of Middle Coat/Gal Used:
Batch # Part A -
Batch # Part B -
Batch # Reducer -
Reducer Type/Amount Used-
Type of Top Coat/Gal Used:
Batch # Part A -
Batch # Part B -
Batch # Reducer -
Reducer Type/Amount Used-

Equipment

Pump Type: Graco Airless
Gun Type: Graco Airless
Tip Size:
Pressure: 2800-300psi

Environmental			
	Primer	Mid Coat	Top Coat
Ambient Temp			
Surface Temp			
Material (paint) Temp			
Humidity			
Dew point			
SSPC requirement per drawings. SP#			
Surface Profile Obtained			
Inspect Surface for Cleanliness -(Sharp Edges, Mill Scale, Rust)			
Proper Screening & Mixing			
Inspect paint for Foreign Objects Prior to Painting			
Inspect mixed components prior to application			
Stripe Coat			
Shelf Life Expiration Date			
Pot Life/hrs			
Painters:			
Inspected by:			

Sweat In Time Primer	Date/Time Primed	Sweat In Time Mid Coat	Date/Time Mid Coat	Sweat In Time Top Coat	Date/Time Top Coat
Start	Start	Start	Start	Start	Start
Finish	Finish	Finish	Finish	Finish	Finish
Date	Date	Date	Date	Date	Date

Bailey Bridges d.b.a. Pioneer Bridges

Paint Inspection Report: ______

Job # ______

DFT Required: ______

Test Instrument: Type 2 Posi Test 6000

Paint Gage Verification

S/N 73189

Shim Used 3.98 **S/N** 541151

Reading Obtained 1 2

	Primer				Top Coat			
Spot Measurement:	**1**	**2**	**3**	**Adj Average**	**1**	**2**	**3**	**Adj Average**
1: FB								
2: FD								
3: Vert								
4: BC								
5: TC								
Average Dry Film Thickness					**Average Dry Film Thickness**			

Spot Measurement:	**1**	**2**	**3**	**Adj Average**	**1**	**2**	**3**	**Adj Average**
1: Truss Diag								
2: TC 1								
3: Vert								
4: BC								
5:FB								
Average Dry Film Thickness					**Average Dry Film Thickness**			

Spot Measurement:	**1**	**2**	**3**	**Adj Average**	**1**	**2**	**3**	**Adj Average**
1: FS								
2: EX 1								
3: TC								
4: TC 1								
5: FB								
Average Dry Film Thickness					**Average Dry Film Thickness**			

Spot Measurement:	**1**	**2**	**3**	**Adj Average**	**1**	**2**	**3**	**Adj Average**
1: FB								
2: Truss Diag								
3: Vert								
4: BC								
5: TC								
Average Dry Film Thickness					**Average Dry Film Thickness**			

Spot Measurement:	**1**	**2**	**3**	**Adj Average**	**1**	**2**	**3**	**Adj Average**
1: FB								
2: FD								
3: Vert								
4: BC								
5: TC								
Average Dry Film Thickness					**Average Dry Film Thickness**			

Inspected by: ______

Date: ______

Bailey Bridges

Inspection Report: ______________________ **Paint Gage Verification**

Job # ______________________ **S/N** 73189

DFT Required: ______________________ **Shim Used** 3.98 **S/N** 541151

Test Instrument: **Type 2 Posi Test 6000** **Reading Obtained** 1 2

	1	2	3	Adj Average
1				
2				
3				
4				
5				
Average Dry Film Thickness				

	1	2	3	Adj Average
1				
2				
3				
4				
5				
Average Dry Film Thickness				

	1	2	3	Adj Average
1				
2				
3				
4				
5				
Average Dry Film Thickness				

	1	2	3	Adj Average
1				
2				
3				
4				
5				
Average Dry Film Thickness				

	1	2	3	Adj Average
1				
2				
3				
4				
5				
Average Dry Film Thickness				

	1	2	3	Adj Average
1				
2				
3				
4				
5				
Average Dry Film Thickness				

	1	2	3	Adj Average
1				
2				
3				
4				
5				
Average Dry Film Thickness				

	1	2	3	Adj Average
1				
2				
3				
4				
5				
Average Dry Film Thickness				

	1	2	3	Adj Average
1				
2				
3				
4				
5				
Average Dry Film Thickness				

	1	2	3	Adj Average
1				
2				
3				
4				
5				
Average Dry Film Thickness				

Inspected by: ______________________

Date: ______________________

Pioneer Bridge, a Division of Bailey Bridges Inc.
Fort Payne, AL

Q.R. # 9

Final Inspection report

Job # _____ **Customer** _____

	Required	Actual	Accepted/Rejected
Material Test Reports			
Bearing Plate Squareness			
Width (Inside Truss)			
Width (C/C Anchor Bolts)			
Height (Truss Out to Out @ Center Of Bridge)			
Camber			
Backwall (Top Of BP to Top of FB)			
Length (C to C of Be			
Length (Out to Out Floor)			
Rails - per Drawings			
Ultra Sonic testing			
Mag Particle Testing			
Radiographic Testing			
Welding (Inspected & Certs of Welders)			
Blast #			
Painted/Galv.			
Bolts (Size & Type)			
Placard - per Drawings			
Floor Material Installation			
Loading for Shipment			
All Other Contract Requirements			
Welded By:			

Inspector:_____ DATE:_____

Bailey Bridge d.b.a. Pioneer Bridges
Fort Payne, AL

Q.R # 10

Paint Coating Equipment Preventive Maintenance

	Accept	Reject.
1. Blast Cleaning	_____	_____
2. Compressors	_____	_____
3. Line driers and oil separators	_____	_____
3. Airless spray equipment	_____	_____
4. Lifting equipment	_____	_____

Inspected and Maintained by _____
Date. _____

Bailey Bridges d.b.a. Pioneer Bridges

Fort Payne, AL

Q.R. # 11

Fillet Weld Gauge Calibrations

Each weld gauge must be within a tolerance not to exeed + or - .005 inch.
These gauges will be checked for accuracy using a set of gauges calibrated to a NIST Standard.

Gauge Manufacture Name:G.A.L. GAGE COMPANY Stock Number: F1886 A TO G

Gauge size
1/8''
3/16''
1/4''
5/16''
3/8''
7/16''
1/2''
5/8''
3/4''
1''

Bridge Bay 1	Accept	Reject

Bridge Bay 2	Accept	Reject

Calibration DATE:_____
Calibration By:_____

Bailey Bridge d.b.a. Pioneer Bridges

Fort Payne, AL

Q.R. # 12

Magnetic Particle Machine Calibration Report

Machine identification No _____ Date Calibrated:_____
Manufacturer:_____ Model No:_____ Mfg Serial No:_____
Type:_____
Calibration Frequency:_____ months

Standard Used: Type_____Serial No:_____
Type:_____Serial No:_____

Date of Current NIST Traceable Certificate for Standards:_____
Condition of Equipment_____Satisfactory _____Unsatisfactory

Calibration Procedure: Attachment II

Calibration Data: _____As Found _____As Adjusted

I PRODS COILS DIRECT CONTACTS _____Not Applicable

			Error	
Mode	Machine Reading	Standard Reading	Amps	%
AC				
AC				
AC				
DC				
DC				
DC				

II YOKES_____

Mode	Pole Spacing	Amount of Weight	Lifted (Yes/No
AC			
DC			

Machine Dispostion:_____ Acceptabl_____ Not Acceptable,For Use

Calibrated by:_____ Location:_____

Reviewed by:(Mgr/Supv)_____ Date:_____

Recalibration Due Date:_____

AMERICAN TESTING LABORATORY, INC.
P.O. Box 731
Bessemer, Alabama 35020

Job: Number: B-1851
Client Number:
Report Number: 16
Date: 7/13/23

Physical Test Report of Welder Performance Qualification Tests

Client: **Bailey Bridges, Inc. dba Pioneer Bridges**		
119 40th Street NE; Ft. Payne, AL 35967		
Welder: **Chris Thomas**	S.S. Number:	Stamp Number: **153**
Welding Process: **FCAW-G**		
Position: **3G Vertical UP**		

Note: For vertical welds, state whether upward or downward; for plates state whether flat, horizontal, vertical, or overhead; for pipe state the orientation of the axis of the pipe – vertical, horizontal- fixed, or horizontal – rolled.

Procedure Specification Number: **17 FCM**	
Material Specification Number: **ASTM A709 Gr. 50 W**	to : **ASTM A709 Gr. 50 W**
of P: **1**	to P: **1**
Diameter and Wall Thickness and/or Joint Thickness: **1"**	
Thickness range qualifies **1/8"**	Through **Unlimited**

Filler Metal

Specification Number: **AWS A5.29**
Description of Filler Metal: **E81T1-Ni1**
Type of Backing Strip used: **3/8" A709 Gr. 50**

Information purposes only

Filler Metal Diameter and Trade name: **0.045" E81T1-Ni1**
Flux used in SAW or Gas used in other welding processes: **75% Argon / 25% C02**
Above Information provided by: ☐ American Testing Laboratory ☒ Client ☐ Other:
Preparation of specimens witnessed by American Testing Laboratory, Inc. ☐ Yes ☒ No

Guided Bend Test Results

Type and Figure Number	Result	Type and Figure Number	Result
Side Bend	**Acceptable**	**Side Bend**	**Acceptable**
Side Bend	**Acceptable**	**Side Bend**	**Acceptable**
Radiographic Inspection	**Acceptable**	**Visual Inspection**	**Acceptable**

Test Witnessed by: **Customer Representative** Test Number: **230656-6**
Company Represented: **Bailey Bridges, Inc. dba Pioneer Bridges**

Results of test(s) ☒ do / ☐ do not meet the requirements set forth in **AWS D1.1-15 & D1.5 Fracture Critical**
General Remarks: TEST COUPON RADIOGRAPHED IN ADDITION TO MECHANICALLY TESTED.

Michael G. Dendy
CWI 08061581
QC1 EXP. 6/1/2026

Micheal W Dennis
CWI 12030191
QC1 EXP. 3/1/2024

Jerry W. Dennis
American Testing Laboratory, Inc.

do

AMERICAN TESTING LABORATORY, INC.
P.O. Box 731
Bessemer, Alabama 35020

Job: Number: **B-1851**
Client Number:
Report Number: **18**
Date: **7/13/23**

Physical Test Report of Welder Performance Qualification Tests

Client: **Bailey Bridges, Inc. dba Pioneer Bridges**		
119 40th Street NE; Ft. Payne, AL 35967		
Welder: **Reberto Rodriguez**	S.S. Number:	Stamp Number: **159**
Welding Process: **FCAW-G**		
Position: **3G Vertical UP**		

Note: For vertical welds, state whether upward or downward; for plates state whether flat, horizontal, vertical, or overhead; for pipe state the orientation of the axis of the pipe – vertical, horizontal- fixed, or horizontal – rolled.

Procedure Specification Number: **17 FCM**	
Material Specification Number: **ASTM A709 Gr. 50 W**	to : **ASTM A709 Gr. 50 W**
of P: **1**	to P: **1**
Diameter and Wall Thickness and/or Joint Thickness: **1"**	
Thickness range qualifies **1/8"**	Through **Unlimited**

Filler Metal

Specification Number: **AWS A5.29**
Description of Filler Metal: **E81T1-Ni1**
Type of Backing Strip used: **3/8" A709 Gr. 50**

Information purposes only

Filler Metal Diameter and Trade name: **0.045" E81T1-Ni1**
Flux used in SAW or Gas used in other welding processes: **75% Argon / 25% C02**
Above Information provided by: ☐ American Testing Laboratory ☒ Client ☐ Other:
Preparation of specimens witnessed by American Testing Laboratory, Inc. ☐ Yes ☒ No

Guided Bend Test Results

Type and Figure Number	Result	Type and Figure Number	Result
Side Bend	**Acceptable**	**Side Bend**	**Acceptable**
Side Bend	**Acceptable**	**Side Bend**	**Acceptable**
Radiographic Inspection	**Acceptable**	**Visual Inspection**	**Acceptable**

Test Witnessed by: **Customer Representative** Test Number: **230656-8**
Company Represented: **Bailey Bridges, Inc. dba Pioneer Bridges**

Results of test(s) ☒ do / ☐ do not meet the requirements set forth in **AWS D1.1-15 & D1.5 Fracture Critical**
General Remarks: TEST COUPON RADIOGRAPHED IN ADDITION TO MECHANICALLY TESTED.

Michael G. Dendy
CWI 08061581
QC1 EXP. 6/1/2026

Micheal W Dennis
CWI 12030191
QC1 EXP. 3/1/2024

Jerry W. Dennis
American Testing Laboratory, Inc.

do

AMERICAN TESTING LABORATORY, INC.
P.O. Box 731
Bessemer, Alabama 35020

Job: Number: **B-1851**
Client Number:
Report Number: **15**
Date: **7/13/23**

Physical Test Report of Welder Performance Qualification Tests

Client: **Bailey Bridges, Inc. dba Pioneer Bridges**		
119 40th Street NE; Ft. Payne, AL 35967		
Welder: **Mando Maldanado**	S.S. Number:	Stamp Number: **2**
Welding Process: **FCAW-G**		
Position: **3G Vertical UP**		

Note: For vertical welds, state whether upward or downward; for plates state whether flat, horizontal, vertical, or overhead; for pipe state the orientation of the axis of the pipe – vertical, horizontal- fixed, or horizontal – rolled.

Procedure Specification Number: **17 FCM**	
Material Specification Number: **ASTM A709 Gr. 50 W**	to : **ASTM A709 Gr. 50 W**
of P: **1**	to P: **1**
Diameter and Wall Thickness and/or Joint Thickness: **1"**	
Thickness range qualifies **1/8"**	Through **Unlimited**

Filler Metal

Specification Number: **AWS A5.29**
Description of Filler Metal: **E81T1-Ni1**
Type of Backing Strip used: **3/8" A709 Gr. 50**

Information purposes only

Filler Metal Diameter and Trade name: **0.045" E81T1-Ni1**
Flux used in SAW or Gas used in other welding processes: **75% Argon / 25% C02**
Above Information provided by: ☐ American Testing Laboratory ☒ Client ☐ Other:
Preparation of specimens witnessed by American Testing Laboratory, Inc. ☐ Yes ☒ No

Guided Bend Test Results

Type and Figure Number	Result	Type and Figure Number	Result
Side Bend	**Acceptable**	**Side Bend**	**Acceptable**
Side Bend	**Acceptable**	**Side Bend**	**Acceptable**
Radiographic Inspection	**Acceptable**	**Visual Inspection**	**Acceptable**

Test Witnessed by: **Customer Representative** Test Number: **230656-5**
Company Represented: **Bailey Bridges, Inc. dba Pioneer Bridges**

Results of test(s) ☒ do / ☐ do not meet the requirements set forth in **AWS D1.1-15 & D1.5 Fracture Critical**
General Remarks: TEST COUPON RADIOGRAPHED IN ADDITION TO MECHANICALLY TESTED.

Michael G. Dendy
CWI 08081581
QC1 EXP. 6/1/2026

Micheal W Dennis
CWI 12030191
QC1 EXP. 3/1/2024

Jerry W. Dennis
American Testing Laboratory, Inc.

do

AMERICAN TESTING LABORATORY, INC.
P.O. Box 731
Bessemer, Alabama 35020

Job: Number: **B-1851**
Client Number:
Report Number: **14**
Date: **7/13/23**

Physical Test Report of Welder Performance Qualification Tests

Client: **Bailey Bridges, Inc. dba Pioneer Bridges**		
119 40th Street NE; Ft. Payne, AL 35967		
Welder: **Jeremy Dalton**	S.S. Number:	Stamp Number: **2**
Welding Process: **FCAW-G**		
Position: **3G Vertical UP**		

Note: For vertical welds, state whether upward or downward; for plates state whether flat, horizontal, vertical, or overhead; for pipe state the orientation of the axis of the pipe – vertical, horizontal- fixed, or horizontal – rolled.

Procedure Specification Number: **17 FCM**	
Material Specification Number: **ASTM A709 Gr. 50 W**	to : **ASTM A709 Gr. 50 W**
of P: **1**	to P: **1**
Diameter and Wall Thickness and/or Joint Thickness: **1"**	
Thickness range qualifies **1/8"**	Through **Unlimited**

Filler Metal

Specification Number: **AWS A5.29**
Description of Filler Metal: **E81T1-Ni1**
Type of Backing Strip used: **3/8" A709 Gr. 50**

Information purposes only

Filler Metal Diameter and Trade name: **0.045" E81T1-Ni1**
Flux used in SAW or Gas used in other welding processes: **75% Argon / 25% C02**
Above Information provided by: ☐ American Testing Laboratory ☒ Client ☐ Other:
Preparation of specimens witnessed by American Testing Laboratory, Inc. ☐ Yes ☒ No

Guided Bend Test Results

Type and Figure Number	Result	Type and Figure Number	Result
Side Bend	**Acceptable**	**Side Bend**	**Acceptable**
Side Bend	**Acceptable**	**Side Bend**	**Acceptable**
Radiographic Inspection	**Acceptable**	**Visual Inspection**	**Acceptable**

Test Witnessed by: **Customer Representative** Test Number: **230656-4**
Company Represented: **Bailey Bridges, Inc. dba Pioneer Bridges**

Results of test(s) ☒ do / ☐ do not meet the requirements set forth in **AWS D1.1-15 & D1.5 Fracture Critical**
General Remarks: TEST COUPON RADIOGRAPHED IN ADDITION TO MECHANICALLY TESTED.

Michael G. Dendy
CWI 08061581
QC1 EXP. 6/1/2026

Micheal W Dennis
CWI 12030191
QC1 EXP. 3/1/2024

Jerry W. Dennis
American Testing Laboratory, Inc.

do

AMERICAN TESTING LABORATORY, INC.
P.O. Box 731
Bessemer, Alabama 35020

Job: Number: B-1851
Client Number:
Report Number: 19
Date: 7/13/23

Physical Test Report of Welder Performance Qualification Tests

Client: **Bailey Bridges, Inc. dba Pioneer Bridges**		
119 40th Street NE; Ft. Payne, AL 35967		
Welder: **Austin Bell**	S.S. Number:	Stamp Number: **90**
Welding Process: **FCAW-G**		
Position: **3G Vertical UP**		

Note: For vertical welds, state whether upward or downward; for plates state whether flat, horizontal, vertical, or overhead; for pipe state the orientation of the axis of the pipe – vertical, horizontal- fixed, or horizontal – rolled.

Procedure Specification Number: **17 FCM**	
Material Specification Number: **ASTM A709 Gr. 50 W**	to : **ASTM A709 Gr. 50 W**
of P: **1**	to P: **1**
Diameter and Wall Thickness and/or Joint Thickness: **1"**	
Thickness range qualifies **1/8"**	Through **Unlimited**

Filler Metal

Specification Number: **AWS A5.29**
Description of Filler Metal: **E81T1-Ni1**
Type of Backing Strip used: **3/8" A709 Gr. 50**

Information purposes only

Filler Metal Diameter and Trade name: **0.045" E81T1-Ni1**
Flux used in SAW or Gas used in other welding processes: **75% Argon / 25% C02**
Above Information provided by: ☐ American Testing Laboratory ☒ Client ☐ Other:
Preparation of specimens witnessed by American Testing Laboratory, Inc. ☐ Yes ☒ No

Guided Bend Test Results

Type and Figure Number	Result	Type and Figure Number	Result
Side Bend	**Acceptable**	**Side Bend**	**Acceptable**
Side Bend	**Acceptable**	**Side Bend**	**Acceptable**
Radiographic Inspection	**Acceptable**	**Visual Inspection**	**Acceptable**

Test Witnessed by: **Customer Representative** Test Number: **230656-9**
Company Represented: **Bailey Bridges, Inc. dba Pioneer Bridges**

Results of test(s) ☒ do / ☐ do not meet the requirements set forth in **AWS D1.1-15 & D1.5 Fracture Critical**
General Remarks: TEST COUPON RADIOGRAPHED IN ADDITION TO MECHANICALLY TESTED.

Michael G. Dendy
CWI 08061581
QC1 EXP. 6/1/2026

Micheal W Dennis
CWI 12030191
QC1 EXP. 3/1/2024

Jerry W. Dennis
American Testing Laboratory, Inc.

do

AMERICAN TESTING LABORATORY, INC.
P.O. Box 731
Bessemer, Alabama 35020

Job: Number: B-1851
Client Number:
Report Number: 22
Date: 7/26/23

Physical Test Report of Welder Performance Qualification Tests

Client: **Bailey Bridges, Inc. dba Pioneer Bridges**		
119 40th Street NE; Ft. Payne, AL 35967		
Welder: **Robert Fields**	S.S. Number:	Stamp Number: **256**
Welding Process: **FCAW-G**		
Position: **3G Vertical UP**		

Note: For vertical welds, state whether upward or downward; for plates state whether flat, horizontal, vertical, or overhead; for pipe state the orientation of the axis of the pipe – vertical, horizontal- fixed, or horizontal – rolled.

Procedure Specification Number: **17 FCM**	
Material Specification Number: **ASTM A709 Gr. 50 W**	to : **ASTM A709 Gr. 50 W**
of P: **1**	to P: **1**
Diameter and Wall Thickness and/or Joint Thickness: **1"**	
Thickness range qualifies **1/8"**	Through **Unlimited**

Filler Metal

Specification Number: **AWS A5.29**
Description of Filler Metal: **E81T1-Ni1**
Type of Backing Strip used: **3/8" A709 Gr. 50**

Information purposes only

Filler Metal Diameter and Trade name: **0.045" E81T1-Ni1**
Flux used in SAW or Gas used in other welding processes: **75% Argon / 25% C02**
Above Information provided by: ☐ American Testing Laboratory ☒ Client ☐ Other:
Preparation of specimens witnessed by American Testing Laboratory, Inc. ☐ Yes ☒ No

Guided Bend Test Results

Type and Figure Number	Result	Type and Figure Number	Result
Side Bend	**Acceptable**	**Side Bend**	**Acceptable**
Side Bend	**Acceptable**	**Side Bend**	**Acceptable**
Radiographic Inspection	**Acceptable**	**Visual Inspection**	**Acceptable**

Test Witnessed by: **Customer Representative** Test Number: **230693-2**
Company Represented: **Bailey Bridges, Inc. dba Pioneer Bridges**

Results of test(s) ☒ do / ☐ do not meet the requirements set forth in **AWS D1.1-15 & D1.5 Fracture Critical**
General Remarks: TEST COUPON RADIOGRAPHED IN ADDITION TO MECHANICALLY TESTED.

Michael G. Dendy
CWI 08061581
QC1 EXP. 6/1/2026

Micheal W Dennis
CWI 12030191
QC1 EXP. 3/1/2024

Jerry W. Dennis
American Testing Laboratory, Inc.

do

AMERICAN TESTING LABORATORY, INC.
P.O. Box 731
Bessemer, Alabama 35020

Job: Number: **B-1851**
Client Number:
Report Number: **12**
Date: **7/13/23**

Physical Test Report of Welder Performance Qualification Tests

Client: **Bailey Bridges, Inc. dba Pioneer Bridges**		
119 40th Street NE; Ft. Payne, AL 35967		
Welder: **Hilario Valazquez**	S.S. Number:	Stamp Number: **105**
Welding Process: **FCAW-G**		
Position: **3G Vertical UP**		

Note: For vertical welds, state whether upward or downward; for plates state whether flat, horizontal, vertical, or overhead; for pipe state the orientation of the axis of the pipe – vertical, horizontal- fixed, or horizontal – rolled.

Procedure Specification Number: **17 FCM**	
Material Specification Number: **ASTM A709 Gr. 50 W**	to : **ASTM A709 Gr. 50 W**
of P: **1**	to P: **1**
Diameter and Wall Thickness and/or Joint Thickness: **1"**	
Thickness range qualifies **1/8"**	Through **Unlimited**

Filler Metal

Specification Number: **AWS A5.29**
Description of Filler Metal: **E81T1-Ni1**
Type of Backing Strip used: **3/8" A709 Gr. 50**

Information purposes only

Filler Metal Diameter and Trade name: **0.045" E81T1-Ni1**
Flux used in SAW or Gas used in other welding processes: **75% Argon / 25% C02**
Above Information provided by: ☐ American Testing Laboratory ☒ Client ☐ Other:
Preparation of specimens witnessed by American Testing Laboratory, Inc. ☐ Yes ☒ No

Guided Bend Test Results

Type and Figure Number	Result	Type and Figure Number	Result
Side Bend	**Acceptable**	**Side Bend**	**Acceptable**
Side Bend	**Acceptable**	**Side Bend**	**Acceptable**
Radiographic Inspection	**Acceptable**	**Visual Inspection**	**Acceptable**

Test Witnessed by: **Customer Representative** Test Number: **230656-2**
Company Represented: **Bailey Bridges, Inc. dba Pioneer Bridges**

Results of test(s) ☒ do / ☐ do not meet the requirements set forth in **AWS D1.1-15 & D1.5 Fracture Critical**
General Remarks: TEST COUPON RADIOGRAPHED IN ADDITION TO MECHANICALLY TESTED.

do

AWS Michael G. Dendy CWI 08061581 QC1 EXP. 6/1/2026

AWS Micheal W Dennis CWI 12030191 QC1 EXP. 3/1/2024

Jerry W. Dennis
American Testing Laboratory, Inc.

AMERICAN TESTING LABORATORY, INC.
P.O. Box 731
Bessemer, Alabama 35020

Job: Number: B-1851
Client Number:
Report Number: 11
Date: 6/6/24

Physical Test Report of Welder Performance Qualification Tests

Client: **Bailey Bridges, Inc. dba Pioneer Bridges**		
119 40th Street NE; Ft. Payne, AL 35967		
Welder: **Jeremiah McCarver**	S.S. Number:	Stamp Number: **171**
Welding Process: **FCAW-G**		
Position: **3G Vertical UP**		

Note: For vertical welds, state whether upward or downward; for plates state whether flat, horizontal, vertical, or overhead; for pipe state the orientation of the axis of the pipe – vertical, horizontal- fixed, or horizontal – rolled.

Procedure Specification Number: **17 FCM**	
Material Specification Number: **ASTM A709 Gr. 50 W**	to : **ASTM A709 Gr. 50 W**
of P: **1**	to P: **1**
Diameter and Wall Thickness and/or Joint Thickness: **1"**	
Thickness range qualifies **1/8"**	Through **Unlimited**

Filler Metal

Specification Number: **AWS A5.29**
Description of Filler Metal: **E81T1-Ni1**
Type of Backing Strip used: **3/8" A709 Gr. 50**

Information purposes only

Filler Metal Diameter and Trade name: **0.045" E81T1-Ni1**
Flux used in SAW or Gas used in other welding processes: **75% Argon / 25% C02**
Above Information provided by: ☐ American Testing Laboratory ☒ Client ☐ Other:
Preparation of specimens witnessed by American Testing Laboratory, Inc. ☐ Yes ☒ No

Guided Bend Test Results

Type and Figure Number	Result	Type and Figure Number	Result
Side Bend	**Acceptable**	**Side Bend**	**Acceptable**
Side Bend	**Acceptable**	**Side Bend**	**Acceptable**
Radiographic Inspection	**Acceptable**	**Visual Inspection**	**Acceptable**

Test Witnessed by: **Customer Representative** Test Number: **240569-2**
Company Represented: **Bailey Bridges, Inc. dba Pioneer Bridges**

Results of test(s) ☒ do / ☐ do not meet the requirements set forth in **AWS D1.1-15 & D1.5 Fracture Critical**
General Remarks: TEST COUPON RADIOGRAPHED IN ADDITION TO MECHANICALLY TESTED.

Michael W Dennis
CWI 12030191
QC1 EXP. 3/1/2027

Jerry W. Dennis
American Testing Laboratory, Inc.

Erwin C. Hall
CWI 15030131
QC1 EXP. 3/1/2027

AMERICAN TESTING LABORATORY, INC.
P.O. Box 731
Bessemer, Alabama 35020

Job: Number: **B-1851**
Client Number:
Report Number: **12**
Date: **6/6/24**

Physical Test Report of Welder Performance Qualification Tests

Client: **Bailey Bridges, Inc. dba Pioneer Bridges**		
119 40th Street NE; Ft. Payne, AL 35967		
Welder: **Noah Hulgan**	S.S. Number:	Stamp Number: **265**
Welding Process: **FCAW-G**		
Position: **3G Vertical UP**		

Note: For vertical welds, state whether upward or downward; for plates state whether flat, horizontal, vertical, or overhead; for pipe state the orientation of the axis of the pipe – vertical, horizontal- fixed, or horizontal – rolled.

Procedure Specification Number: **17 FCM**	
Material Specification Number: **ASTM A709 Gr. 50 W**	to : **ASTM A709 Gr. 50 W**
of P: **1**	to P: **1**
Diameter and Wall Thickness and/or Joint Thickness: **1"**	
Thickness range qualifies **1/8"**	Through **Unlimited**

Filler Metal

Specification Number: **AWS A5.29**
Description of Filler Metal: **E81T1-Ni1**
Type of Backing Strip used: **3/8" A709 Gr. 50**

Information purposes only

Filler Metal Diameter and Trade name: **0.045" E81T1-Ni1**
Flux used in SAW or Gas used in other welding processes: **75% Argon / 25% C02**
Above Information provided by: ☐ American Testing Laboratory ☒ Client ☐ Other:
Preparation of specimens witnessed by American Testing Laboratory, Inc. ☐ Yes ☒ No

Guided Bend Test Results

Type and Figure Number	Result	Type and Figure Number	Result
Side Bend	**Acceptable**	**Side Bend**	**Acceptable**
Side Bend	**Acceptable**	**Side Bend**	**Acceptable**
Radiographic Inspection	**Acceptable**	**Visual Inspection**	**Acceptable**

Test Witnessed by: **Customer Representative** Test Number: **240569-3**
Company Represented: **Bailey Bridges, Inc. dba Pioneer Bridges**

Results of test(s) ☒ do / ☐ do not meet the requirements set forth in **AWS D1.1-15 & D1.5 Fracture Critical**
General Remarks: TEST COUPON RADIOGRAPHED IN ADDITION TO MECHANICALLY TESTED.

Joshua Kelly Smith
CWI 22120491
QC1 EXP. 12/1/2025

Michael W Dennis
CWI 12030191
QC1 EXP. 3/1/2027

Jerry W. Dennis
American Testing Laboratory, Inc.

do

American Welding Society®

Certifies that Welding Inspector

Justin L. Spears

has complied with the requirements of AWS QC1,
Standard for AWS Certification of Welding Inspectors

21021171
CERTIFICATE NUMBER

Feb/01/2027
EXPIRATION DATE

AWS PRESIDENT

AWS QUALIFICATION & CERTIFICATION
COMMITTEE CHAIR

American Welding Society®

Certifies that Welding Inspector

David K. Wilborn

has complied with the requirements of AWS QC1,
Standard for AWS Certification of Welding Inspectors

05040311
CERTIFICATE NUMBER

Apr/01/2026
EXPIRATION DATE

AMERICAN WELDING SOCIETY INCORPORATED 1932 NEW YORK

AWS PRESIDENT

AWS QUALIFICATION & CERTIFICATION COMMITTEE CHAIR

PIONEER BRIDGES
A division of Bailey Bridges, Inc.

List of Similar Projects

Project Name	Owner	City	State	Year		Contact	Contact #
Harrell Parkway Roadway Imp. PH A1	CRTD	Roundrock	TX	2025	14x100 Conc CS GE	Greg Ciaccio	512-218-7097
Mesquite Heritage Trail PH 2	City of Mesquite	Mesquite	TX	2025	12x80,80,80,25 Conc	Wes McClure	972-288-7711
Kiowa Parkway	Dallas Parks and Recreation	Dallas	TX	2024	6x80 Bow Conc	Mehul Pithadia	817-695-9275
Sims Bayou Pedestrian Bridge	Harris County - Purchasing	Harris Co.	TX	2024	14' x 782' 9 spans Conc KD GE		
Brays Bayou Pedestrian Bridge	Houston Parks Board	Houston - Brays Bayou	TX	2023	14x110 bow,58, 58 Conc GE(?)	John Brandt	832-602-8470
Springdale Road Sidewalk Improvement	Travis County	Austin	TX	2023	10x180 Conc GE	Lee Perry	512-854-9724
RD-029, SH 146 and Subdivision Access Sidewalks	City of Mont Belview	Mont Belvieu	TX	2023	6x90, 6x90 Conc	Daniel Scabora	281-576-2213
City Course Hole 1 Bridge Replacement	City of Bryan	Bryan	TX	2023	10x90 Conc GE	Paul Kaspar, P.E., C.F.M.	979-209-5900
Construction of Prefabricated Steel Truss Bridge	Harris County - Purchasing	Houston	TX	2023	8x107 Conc	Kenneth Jackson	713-274-4400
City Course Hole 9 Bridge Replacement	City of Bryan	Bryan	TX	2022	8x90 conc GE	Paul Kaspar, P.E., C.F.M.	979-209-5900
CBRT - Veloweb Hike and Bike PH 1 Pedestrian Bridges	DART	Dallas	TX	2021	(3) 16x116,125,(5)@100 conc,KD GE	Kevin Kokes	817-695-9275
Salado Creek (South Side Lions Park to Military Drive)	City of San Antonio PW	San Antonio	TX	2021	10x120,100, 12x31 Conc	Donna Hull	210-224-8841
Lake Withicha Prk to Marina Hike and Bike Trail	City of Witicha Fall PW	Wichita Falls	TX	2021	12x110, 8x120 Conc	Balne Boswell	940-761-7451
Cotton Belt Regional Trail/Silverline Trail Bridge	DART	Carrolton	TX	2024	16x110,110,100 Conc KD GE	Marvin Jackson	214-585-7308
Sims Bayou Greenway Segment A104/5	Houston Parks Board	Houston	TX	2021	14x130,100,100 BOW, conc GE	Danny Zarilli	713-942-8500
Prestwyk Park	City of McKinney1	McKinney (N Dallas)	TX	2020	8x126 BOW conc.	Jenny Baker	972-547-2644
MGR Bikeway PWD 2018011	City of Garland	Garland	TX	2020	12x120,100,45,45 conc	Sahfik Salamor, PE	972-205-2126
Pedestrian Sidewalks and Curb Ramps	TXDOT	Driftwood (SE Austin)	TX	2020	8x90 Conc	Jerome Boado	512-832-7000
Legacy Trail Greenbelt Pedestrian Bridges	City of Plano	Plano	TX	2020	12x90,80,70 Conc	Lance Knox	972-941-7819
(Dr. Marian G. Lacey) McClellan K-8 School Project	Little Rock School District	Little Rock	AR	2022	8x60,60 WD	Dr. Jermall Wright	501-447-1005
Spingdale Creek Trail	City of Springdale	Springdale	AR	2021	14x124, 64 BOW Conc	Tristan Hill	479-443-3026
Gentry Flint Creek Bridge and Trail Improvements	City of Gentry	Gentry	AR	2020	10x70 Conc	Jim Kooistra	479-736-2555

AISC Certified - TXDOT Certified Fabricator - AWS Certified Facility

Pioneer Bridges - 119 40th St NE, Fort Payne, AL 35967 - (256) 845-7575 Ext 111

Design and Fabrication Certification

Fabricator Information: Bailey Bridges, Inc. d.b.a. Pioneer Bridges
119 40th Street NE
Ft Payne, AL 35967

To whom it may concern,

Please be advised that the bridge designs proposed by Pioneer Bridges will be in accordance with the current project contract drawings and specifications provided to us.

Alex Flora, PE
Engineering Manager
256-845-7575 Ext 125

REVISED

LOUISIANA UNIFORM PUBLIC WORK BID FORM
UNIT PRICE FORM

TO:

St. Tammany Parish Government

21454 Koop Drive, Suite 2F

Mandeville, LA. 70471

(OWNER TO PROVIDE NAME AND ADDRESS OF OWNER)

BID FOR:

Tammany Trace Bridge #24

Bid No.: 26-11-2

(OWNER TO PROVIDE PROJECT NAME & OTHER IDENTIFYING INFO)

UNIT PRICES: This form shall be used for any & all work required by the Bidding Documents & described as unit prices. Amounts shall be stated in figures & only in figures.

Description:	☑ BASE BID OR	☐ ALT #	CLEARING AND GRUBBING (est. 0.80 ACRES)	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
201-01-00100	1	LUMP		
Description:	☑ BASE BID OR	☐ ALT #	REMOVAL OF ASPHALT PAVEMENT	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
202-02-02020	99.3	SQYD		
Description:	☑ BASE BID OR	☐ ALT #	REMOVAL OF BASE - SOIL CEMENT, ASPHALT, OR BCS	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
202-02-03000	99.3	SQYD		
Description:	☑ BASE BID OR	☐ ALT #	REMOVAL OF BRIDGE (STA. 106+68.31; 12' (CLR.) x 66' TTTRES)	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
202-02-04000	1	EACH		

Wording for "description" is to be provided by the Owner. All Quantities Estimated. The Contractor will be paid based upon actual quantities as verified by the Owner.

Version 2017 Q2

REVISED

UNIT PRICES: This form shall be used for any & all work required by the Bidding Documents & described as unit prices. Amounts shall be stated in figures & only in figures.

Description:	☑ BASE BID OR	☐ ALT #	DRAINAGE EXCAVATION	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
203-02-00100	119	CUYD		
Description:	☑ BASE BID OR	☐ ALT #	EXCAVATION AND EMBANKMENT	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
203-05-00100	1	LUMP		
Description:	☑ BASE BID OR	☐ ALT #	TEMPORARY SEDIMENT CHECK DAMS (HAY)	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
204-05-00100	4	EACH		
Description:	☑ BASE BID OR	☐ ALT #	TEMPORARY SILT FENCING	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
204-06-00100	337	LNFT		
Description:	☑ BASE BID OR	☐ ALT #	CLASS II BASE COURSE (CRUSHED STONE)	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
302-01-00300	68.4	CUYD		
Description:	☑ BASE BID OR	☐ ALT #	THIN ASPHALT CONCRETE (DENSE MIX)	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
501-01-00100	3.8	TON		

Wording for "description" is to be provided by the Owner. All Quantities Estimated. The Contractor will be paid based upon actual quantities as verified by the Owner.

REVISED

UNIT PRICES: This form shall be used for any & all work required by the Bidding Documents & described as unit prices. Amounts shall be stated in figures & only in figures.

Description:	☑ BASE BID OR	☐ ALT #	ASPHALT CONCRETE	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
502-01-00100	7.6	TON		
Description:	☑ BASE BID OR	☐ ALT #	RIPRAP (30 LB, 18" THICK)	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
711-01-03020	152	SQYD		
Description:	☑ BASE BID OR	☐ ALT #	GEOTEXTILE FABRIC	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
711-04-00100	152	SQYD		
Description:	☑ BASE BID OR	☐ ALT #	TEMPORARY SIGNS AND BARRICADES	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
713-01-00100	1	LUMP		
Description:	☑ BASE BID OR	☐ ALT #	MULCH (VEGETATIVE)	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
716-01-00100	0.1	TON		
Description:	☑ BASE BID OR	☐ ALT #	SEEDING	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
717-01-00100	2	LB		

Wording for "description" is to be provided by the Owner. All Quantities Estimated. The Contractor will be paid based upon actual quantities as verified by the Owner.

REVISED

UNIT PRICES: This form shall be used for any & all work required by the Bidding Documents & described as unit prices. Amounts shall be stated in figures & only in figures.

Description:	☑ BASE BID OR	☐ ALT #	FERTILIZER	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
718-01-00100	76	LB		
Description:	☑ BASE BID OR	☐ ALT #	MOBILIZATION	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
727-01-00100	1	LUMP		
Description:	☑ BASE BID OR	☐ ALT #	CONSTRUCTION LAYOUT	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
740-01-00100	1	LUMP		
Description:	☑ BASE BID OR	☐ ALT #	PRECAST CONCRETE PILES (14")	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
804-01-00200	800	LNFT		
Description:	☑ BASE BID OR	☐ ALT #	CONSTRUCTION SITE SURVEY	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
804-17-00100	1	LUMP		
Description:	☑ BASE BID OR	☐ ALT #	VIBRATION MONITORING	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
804-18-00100	8	DAY		

Wording for "description" is to be provided by the Owner. All Quantities Estimated. The Contractor will be paid based upon actual quantities as verified by the Owner.

REVISED

UNIT PRICES: This form shall be used for any & all work required by the Bidding Documents & described as unit prices. Amounts shall be stated in figures & only in figures.

Description:	☑ BASE BID OR	☐ ALT #	CLASS A1 CONCRETE (DECK)	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
805-01-00200	17.78	CUYD		
Description:	☑ BASE BID OR	☐ ALT #	CLASS A1 CONCRETE (BENT CAP)	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
805-01-00300	37.6	CUYD		
Description:	☑ BASE BID OR	☐ ALT #	CONCRETE FINISH (CLASS 2 RUBBED FINISH)	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
805-18-00100	194	SQFT		
Description:	☑ BASE BID OR	☐ ALT #	CONCRETE FINISH (CLASS 3 SPECIAL FINISH)	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
805-18-00200	194	SQFT		
Description:	☑ BASE BID OR	☐ ALT #	DEFORMED REINFORCING STEEL	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
806-01-00100	6348	LB		
Description:	☑ BASE BID OR	☐ ALT #	STRUCTURAL METALWORK (ANCHOR BOLTS)	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
807-02-00100	1	LUMP		

Wording for "description" is to be provided by the Owner. All Quantities Estimated. The Contractor will be paid based upon actual quantities as verified by the Owner.

REVISED

UNIT PRICES: This form shall be used for any & all work required by the Bidding Documents & described as unit prices. Amounts shall be stated in figures & only in figures.

Description:	☑ BASE BID OR	☐ ALT #	CONCRETE APPROACH SLABS (CAST-IN-PLACE)	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
813-01-00100	278	SQFT		
Description:	☑ BASE BID OR	☐ ALT #	SEALED EXPANSION JOINT (END DAMS AND PREFORMED NEOPRENE SEAL)	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
815-02-00100	**52**	LNFT		
Description:	☑ BASE BID OR	☐ ALT #	SAW CUTTING ASPHALT CONCRETE PAVEMENT	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
NS-500-00340	80	INLF		
Description:	☑ BASE BID OR	☐ ALT #	BOLLARD	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
NS-700-00011	2	EACH		
Description:	☑ BASE BID OR	☐ ALT #	PEDESTRIAN BRIDGE	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
TS-800-00100	1	LUMP		
Description:	☑ BASE BID OR	☐ ALT #	HAND RAILING	
REF NO.:	**QUANTITY**	**UNIT OF MEASURE**	**UNIT PRICE**	**UNIT PRICE EXTENSION (Quantity times unit price)**
TS-800-00300	36	LNFT		

Wording for "description" is to be provided by the Owner. All Quantities Estimated. The Contractor will be paid based upon actual quantities as verified by the Owner.