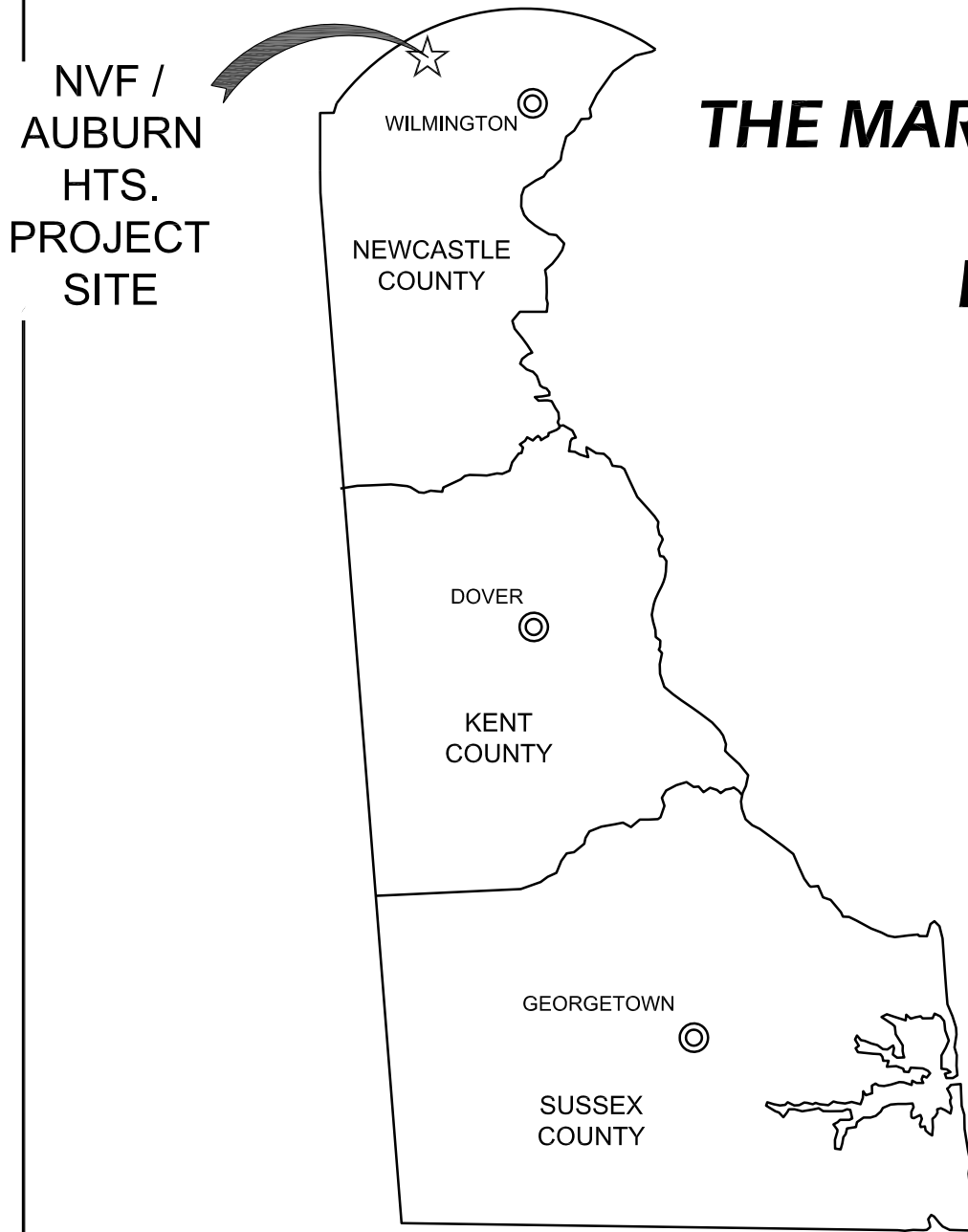


**NSRGA/WORKIN' BRIDGES & DNREC**

**TRAIL PLAN FOR THE USE OF  
HISTORIC TRUSS BRIDGE RESTORATION  
THE MARTIN ROAD IRON BRIDGE (SNUFF MILL ROAD BRIDGE)  
NVF / AUBURN HEIGHTS PRESERVE  
RESTORATION & REDEVELOPMENT PROJECT  
YORKLYN, NEW CASTLE COUNTY, DELAWARE**



**VICINITY MAP**

THESE PROJECT PLANS & SPECIFICATIONS WERE PREPARED FOR:  
FOR THE STATE OF DELAWARE DNREC BY NSRGA / WORKIN' BRIDGES  
FOR THE RESTORATION / WIDENING & REVISION OF THE MARTIN ROAD IRON BRIDGE  
FOR RECREATIONAL USE

FUNDING PROVIDED BY:  
DNREC, STATE OF DELAWARE

PLANS & SPECIFICATIONS PREPARED BY  
THE SCHIFFER GROUP, INC. UNDER THE  
SUPERVISION OF:  
  
JAMES B. SCHIFFER, P.E., MICHIGAN # 45737

**INDEX OF DRAWINGS**

SHEET NO.	DESCRIPTION
CS	COVER SHEET
S1.0	PROJECT NOTES
S2.0	EXISTING BRIDGE PLAN & PROFILE
S3.0	EXISTING & PROPOSED SECTIONS
S4.0	FRAMING & RAIL DETAILS
S5.0	BEARINGS & LAYOUT
S6.0	DECK FASTENER LAYOUT / MATERIAL LIST

**THE SCHIFFER GROUP, INC. III**  
**ENGINEERING**  
THE WOLVERINE BUILDING, 1011 E. EIGHTH STREET  
TRAVERSE CITY, MI 49686  
231.360.6190

NO.	REVISIONS	BY	DATE
1	PRELIMINARY DWG. SET	CPW	02/05/2016
2	PRECONSTRUCTION REVIEW SET	CPW	02/22/2016
3	RESPONSE TO OWNER REVIEW COMMENTS	ABS	05/04/2017
REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS			

**2015 BRIDGE RESTORATION OF IRON BRIDGES  
AT THE NVF / AUBURN HEIGHTS PRESERVE  
RESTORATION & REDEVELOPMENT PROJECT**

PROJECT 1308001-011-03  
**CS**  
SHEET NO.

P:\1308001\_Workin Bridges\011 - DE - Delaware DNR Park Multiples\03 - Martin Rd Pentia\Martin Road rv04 - Owner Review.dwg  
May 16, 2017 - 10:34am

**GENERAL NOTES:**

- CONSTRUCTION METHODS, PROCEDURES AND SEQUENCES, ARE THE CONTRACTOR'S RESPONSIBILITY AND THE CONTRACTOR SHALL TAKE THE NECESSARY MEANS TO MAINTAIN AND PROTECT THE STRUCTURAL INTEGRITY OF ALL CONSTRUCTION AT ALL STAGES.
- COORDINATE WITH THE ENGINEER DRAWINGS AND VERIFY THE LOCATIONS AND SIZES OF ALL MEMBERS, PINS, PLATES, AND OTHER PROJECTS REQUIREMENTS.
- ENGINEER WILL REQUIRE PROPER NOTICE AND THE OPPORTUNITY TO VIEW THE MEMBERS AND CONNECTION POINTS AFTER DISASSEMBLY AND BLASTING OPERATIONS PRIOR TO PAINTING IN ORDER TO DETERMINE WHAT AND WHERE STRUCTURAL STRENGTHENING ADDITIONS ARE REQUIRED.
- ALL STRUCTURAL MEMBERS, AS SHOWN, HAVE BEEN DESIGNED TO CARRY IN PLACE DESIGN LOADS ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SUPPORT OF ANY ADDITIONAL LOADS AND FORCES IMPOSED DURING MANUFACTURING, TRUCKING, ERECTING AND HANDLING.
- ALL THE CONTRACTOR'S PROPOSED SUBSTITUTIONS SHALL BE REVIEWED & APPROVED BY THE ENGINEER PRIOR TO ANY PERTINENT WORK.
- IT IS UNDERSTOOD THAT THIS WORK IS CONSIDERED ONE PART OF AN OVERALL PARK RESTORATION PROJECT; THIS PHASE IS INTENDED TO BE PART OF THE ABUTMENTS, PATHWAYS, APPROACHES AND ROADWAYS BY OTHERS.
- THE TRUSSES ARE TO BE REASSEMBLED ON SHORE AND HOISTED INTO PLACE (NO TEMPORARY STRUCTURES ARE PERMITTED IN THE RIVER).

**DESIGN CRITERIA:**

**A. BUILDING CODES AND STANDARDS:**

- AASHTO LRFD GUIDE SPECIFICATIONS FOR THE DESIGN OF PEDESTRIAN AND ROADWAY BRIDGES.
- AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, CUSTOMARY U.S. UNITS, 4TH EDITION WITH 2008 AND 2009 U.S. EDITION INTERIMS (FOR LOADING ONLY)
- INTERNATIONAL BUILDING CODE, I.B.C. (2009 EDITION)
- CONCRETE ACI 318-11
- STEEL AISC, 14TH ED. (360-10) - ASD
- LUMBER NDS 2012
- AMERICAN INSTITUTE OF STEEL CONSTRUCTION, A.I.S.C.
- AMERICAN WELDING SOCIETY, A.W.S.
- ASCE 7-10

**B. GRAVITY DESIGN CRITERIA:**

- 85 PSF PEDSTRIAN LOADS (NO REDUCTION)
- H-10 MAINTENANCE VEHICLE (W/O IMPACT LOADING)
- HS-25 TRUCK LOADING

**C. LATERAL DESIGN CRITERIA:**

- WIND (PER ASCE 7-10)

**D. BASIC WIND SPEED = 115 MPH**

**E. WIND IMPORTANCE FACTOR (IW) = 1.0**

**F. EXPOSURE CATEGORY = B**

- EARTHQUAKE

**G. SEISMIC IMPORTANCE FACTOR (IG) = 1.0**

**H. SEISMIC USE GROUP = I**

**I. SITE CLASS = D**

- DESIGN SPEED = 15 MPH

**J. EXISTING BRIDGE LIFTING WEIGHT (WITHOUT DECKING) IS ESTIMATED TO BE 45,000 LBS.**

**SITE AND FOUNDATION (BY OWNER):**

- STRIP CONSTRUCTION ACTIVITY SITES OF ALL TOPSOIL, ORGANIC MATERIAL, EXISTING PAVEMENT, STRUCTURES, OR ANY OTHER DELETERIOUS MATERIALS.
- EXCAVATE, WHERE REQUIRED NO DEEPER THAN STRUCTURE SUBGRADE.
- PROOF-ROLL THE AREA UNDER THE SOUTH APPROACH SLAB WITH A LOADED DUMP TRUCK TO LOCATE AND REMEDY ANY SOFT AREAS.
- ON-SITE MATERIALS ARE ACCEPTABLE FOR USE.

**IRON WORK & STRUCTURAL STEEL:**

- ALL STRUCTURAL STEEL WIDE FLANGE SHALL CONFORM TO ASTM A36 (MIN., U.N.O.).
- ALL STRUCTURAL STEEL PLATES AND ANGLES SHALL CONFORM TO ASTM A36.
- ALL STRUCTURAL STEEL TUBING SHALL CONFORM TO ASTM A500. GRADE B.
- FABRICATION AND ERECTION SHALL CONFORM TO AISC CODE OF STANDARD PRACTICE.
- ALL WELDING SHALL CONFORM TO A.W.S. STANDARDS.
- MISSING RIVETS ARE TO BE REPLACED IN KIND.
- EXISTING IRON MEMBERS SCHEDULED TO REMAIN ARE TO BE HEAT STRAIGHTENED TO BRING BRIDGE AND INDIVIDUAL MEMBERS INTO ORIGINAL ALIGNMENT.
- ALL (NON-RIVET) HARDWARE IS TO BE GALVANIZED OR STAINLESS AS DETAILED.
- NEW STEEL INDICATED IN PLANS TO BE PAINTED PER ACCEPTED PAINT SCHEDULE AFTER FABRICATION.
- THREAD ON ALL BOLTS TO BE UPSET AFTER INSTALLATION IS COMPLETE.
- BOLT PROJECTIONS GREATER THAN 1" ARE TO BE CUT OFF WITH ENDS PRIMED & PAINTED WITH APPROVED PAINTS OR ZINC-RICH PRIMER IF GALVANIZED.
- HOLES DRILLED FOR BOLTS ARE TO BE  $\frac{1}{16}$ " GREATER THAN BOLT DIAMETER.
- ANY NUT OR MACHINE BOLT HEAD IN DIRECT CONTACT WITH TIMBER MATERIALS WILL HAVE WASHER PLACED FIRST.
- STEEL BOLTED CONNECTIONS ARE TO BE COMPLETE PER AISC STDS. FOR FASTENERS.

**CONCRETE:**

**A. CONCRETE SCHEDULES**

ITEM	28 DAY COMPRESSIVE STRENGTH
1. ABUTMENTS / WALLS	4000 PSI NW (AIR ENTRAINED, AE > 5%)
2. ALL OTHER CONCRETE	3500 PSI NW (AIR ENTRAINED, AE > 5%)

**B. CONCRETE COVER OVER REINFORCING (U.N.O.)**

- UNFORMED SURFACE IN CONTACT WITH EARTH: 3 IN.
- UNFORMED SURFACE OVER VAPOR BARRIER: 2 IN.
- FORMED SURFACES EXPOSED TO EARTH OR WEATHER:
  - #6 AND LARGER 2 IN.
  - #5 AND SMALLER 1 1/2 IN.

- ALL CONCRETE WILL BE NORMAL WEIGHT WITH AIR ENTRAINMENT AGENT APPLIED AT DISPATCH.
- WATER REDUCERS OR PLASTICIZERS MAY BE USED PER APPROVED MIX DESIGNS SUBMITTED TO AND APPROVED BY THE ENGINEER.
- TRANSPORTING CONCRETE WITHIN FORMS VIA VIBRATORS MUST TO LIMITED TO NO MORE THAN 18".
- WINTER PROTECTION (BLANKETS, HEATERS, ETC.) SHALL BE INCLUDED IN THE COST OF THE WORK.
- GAPS/CRACKS IN EXISTING CONCRETE THAT ARE TO REMAIN ARE TO BE FILLED WITH SUPER-POR-ROK NON-SHRINK GROUT PER MFG. SPECIFICATIONS.
- CONSTRUCTION JOINTS ARE TO BE SEALED WITH BITUMINOUS MEMBRANE AND HOT TAR PRIOR TO BACKFILL.

**REINFORCING:**

- ALL REINFORCING SHALL CONFORM TO THE LATEST REVISION OF ASTM SPECIFICATION A615, GRADE 60.
- ALL REINFORCING SHALL BE DETAILED IN ACCORDANCE WITH ACI STANDARD 315, OF LATEST REVISION.
- WHERE SPLICES ARE NECESSARY, REINFORCING SHALL BE LAPPED WITH CLASS "B" TENSION SPLICES, UNLESS SHOWN OTHERWISE ON DRAWINGS. MASONRY REINFORCING SHALL BE LAPPED 48 BAR DIAMETERS.
- NO REINFORCING BAR SHALL BE WELDED IN ANY MANNER, UNLESS SPECIFICALLY SHOWN OR NOTED ON THE DRAWINGS.

- ANCHORAGE OF REINFORCEMENT BARS INTO EXISTING VERTICAL CONCRETE FACES WILL BE PERFORMED USING HILTI HIT-HY-200A INJECTABLE MORTAR PER MFG SPECS
- HILTI HIT-HY-220A OR SUPER-POR-ROK MAY BE USED FOR SETTING ANCHOR BOLTS AT THE BEARING SEATS. IF SUPER-POR-ROK IS USED, NON-FREEZING TEMPERATURES OF THE BOLTS AND CONCRETE MUST BE MAINTAINED THROUGHOUT CURE PERIOD (5-DAYS MIN.).
- WALL VERTICAL AND HORIZONTAL REINFORCING SHALL BE LAPPED WITH "B" TENSION SPLICES AT SPLICE POINTS. PROVIDE CORNER BARS FOR WALLS CORNERS.
- PROVIDE FULL EMBEDMENT FOR ALL DOWELS. IF NOT OTHERWISE SPECIFIED, DOWEL SIZE AND SPACING SHALL BE THE SAME AS MAIN REINFORCING.
- ALL WELDED WIRE FABRIC SHALL CONFORM TO ASTM A185 AND SHALL BE 6X6-W1.4XW1.4 UNLESS NOTED OTHERWISE ON THE DRAWINGS. WELDED WIRE FABRIC SHALL BE LAPPED A MINIMUM OF 1'-0" AND BE FURNISHED IN SHEETS ONLY (NO ROLLS).

**TIMBER:**

- ALL TIMBER IS TO BE ROUGH HEWN DRIED IPE, UNLESS NOTED OTHERWISE (U.N.O.).
- BUTT SPLICES (IF ANY) ARE TO BE STAGGERED.
- HOLES DRILLED FOR  $\frac{1}{2}$ " CARRIAGE BOLTS ARE TO BE  $\frac{3}{16}$ " DIAMETER.

**SHOP DRAWINGS:**

- ALL SHOP DRAWINGS ARE TO BE NEWLY PREPARED. REPRODUCTIONS OF CONTRACT STRUCTURAL DRAWINGS FOR USE AS ERECTION DRAWINGS WILL NOT BE PERMITTED.
- CONTRACTOR TO REVIEW ALL SHOP DRAWING SUBMITTALS AND STAMP WITH APPROVAL PRIOR TO SUBMISSION TO ENGINEER. SHOP DRAWINGS RECEIVED BY ENGINEER THAT HAVE NOT BEEN CHECKED AND COORDINATED BY THE CONTRACTOR WILL BE RETURNED WITHOUT REVIEW.

**STRUCTURAL OBSERVATION PROGRAM:**

- OWNER SHALL ENGAGE THE SERVICES OF AN INDEPENDENT INSPECTOR PER THE REQUIREMENTS OF THE OWNERS' AND AUTHORIZED PUBLIC AGENCY REQUIREMENTS. INSPECTOR WILL VERIFY THAT CONNECTIONS MATCH THE CONNECTIONS APPROVED ON THE SHOP DRAWINGS. THIS COVERS STRUCTURAL STEEL, AND WOODEN DECK.

**COORDINATION:**

- COORDINATE CONSTRUCTION TO ASSURE EFFICIENT AND ORDERLY INSTALLATION OF EACH PART OF THE WORK. COORDINATE OPERATIONS THAT DEPEND ON EACH OTHER FOR PROPER AND TIMELY INSTALLATION, CONNECTION AND OPERATION.
- THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE REQUIREMENTS OF ALL TRADES INTO THEIR WORK.
- NO CHANGE IN SIZE OR DIMENSION OF STRUCTURAL MEMBERS SHOULD BE MADE WITHOUT WRITTEN APPROVAL FROM THE ENGINEER/ARCHITECT.
- KEEP ENTIRE CONSTRUCTION SITE FREE OF DEBRIS AND RUBBISH ACCUMULATION. COOPERATION IN THIS REGARD BETWEEN CONTRACTORS IS MANDATORY. ALL CONTRACTORS SHALL EFFECT DAILY CLEANUP OF WORK AREAS EXPOSED AND DISPOSE OFFSITE OF TRASH AND WASTE MATERIALS.

**CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS:**

- STORAGE FACILITIES. OWNER SHALL PROVIDE AREA FOR MATERIALS, TOOLS, AND EQUIPMENT REQUIRING PROTECTION. ALL STORAGE OF MATERIALS AND PARKING OF TRAILERS SHALL BE LOCATED WITHIN THE CONTRACTORS APPROVED STAGING AREA. TRAILERS, STORAGE STRUCTURES, OFFICE, ETC. TO BE PROVIDED BY CONTRACTOR.
- TEMPORARY LIGHT AND POWER. THE OWNER SHALL PROVIDE ACCESS TO TEMPORARY POWER AS NEEDED FOR THE CONTRACTOR'S OPERATIONS WHERE POSSIBLE, OTHERWISE CONTRACTORS IS TO SUPPLY GENERATORS AS NEEDED.
- SANITARY. COMPLY WITH REGULATIONS AND HEALTH CODES FOR THE TYPE, NUMBER AND LOCATION AND MAINTENANCE OF FIXTURES AND FACILITIES.
- TEMPORARY HEATING AND COLD WEATHER PROTECTION. COLD WEATHER PROTECTION. CONTRACTOR IS RESPONSIBLE FOR PROTECTING WORK UNDER HIS CONTRACT AGAINST DAMAGE BY WEATHER AND FREEZING PRIOR TO COMPLETION. CONTRACTOR SHALL PROVIDE ALL HEATING APPARATUS AND FUEL REQUIRED FOR COLD WEATHER WORK.

**NOTE:**

MEASUREMENTS WERE OBTAINED IN THE FIELD AT THE BRIDGES CURRENT LOCATION OVER THE SHIAWASSEE RIVER BY OWNER, FABRICATOR, AND ENGINEER.

**PRECONSTRUCTION SET**

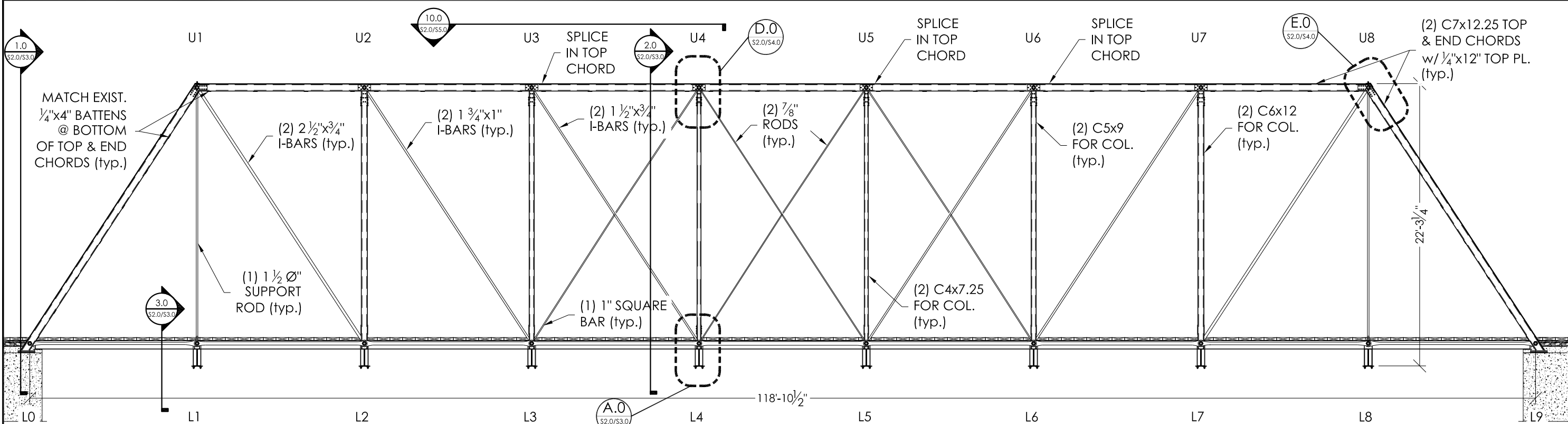
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1	PRELIMINARY REVIEW SET	02/05/2016	CPW	02/05/2016
2	RECONSTRUCTION REVIEW SET	02/22/2016	CPW	02/22/2016
3	RESPONSE TO OWNER REVIEW COMMENTS	05/04/2017	JBS	05/04/2017

NSRGA / DNREC  
NVF / AUBURN HEIGHTS R & R PROJECT  
SNUFF MILL BRIDGE

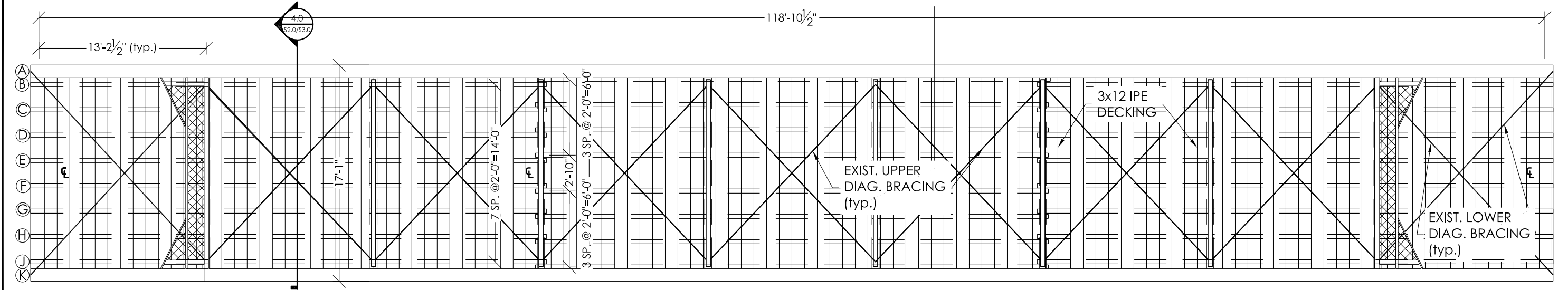
PROJECT NOTES

CLIENT	NSRGA / WB / DNREC
PROJECT	1308001-011-03
PROJECT MGR.	JBS
ENGINEER	JBS
CAD FILE	011-03 MARTIN
EDIT	JBS05042017
DRAWING SCALE	VARIABLES
PLOT SCALE	11x17, 1:1
SHEET NO.	S1.0

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 May 16, 2017 - 10:14am



**BRIDGE ELEVATION (EX. & REVISED)**  
 SCALE: 1/8"=1'-0"  
 0 1' 2' 4' 8' 16'



**BRIDGE PLAN (EX. & REVISED)**  
 SCALE: 1/8"=1'-0"  
 0 1' 2' 4' 8' 16'

**NOTE:**  
 MEASUREMENTS WERE OBTAINED IN THE FIELD AT THE BRIDGES CURRENT LOCATION OVER THE SHIAWASSEE RIVER BY OWNER FABRICATOR, AND ENGINEER.

**PRE CONSTRUCTION  
 REVIEW SET**

**THE SCHIFFER GROUP, INC.**  
**ENGINEERING**  
 THE WOLVERINE BUILDING 1011 EIGHTH STREET  
 TRAVERSE CITY, MI 49686  
 231.360.6190

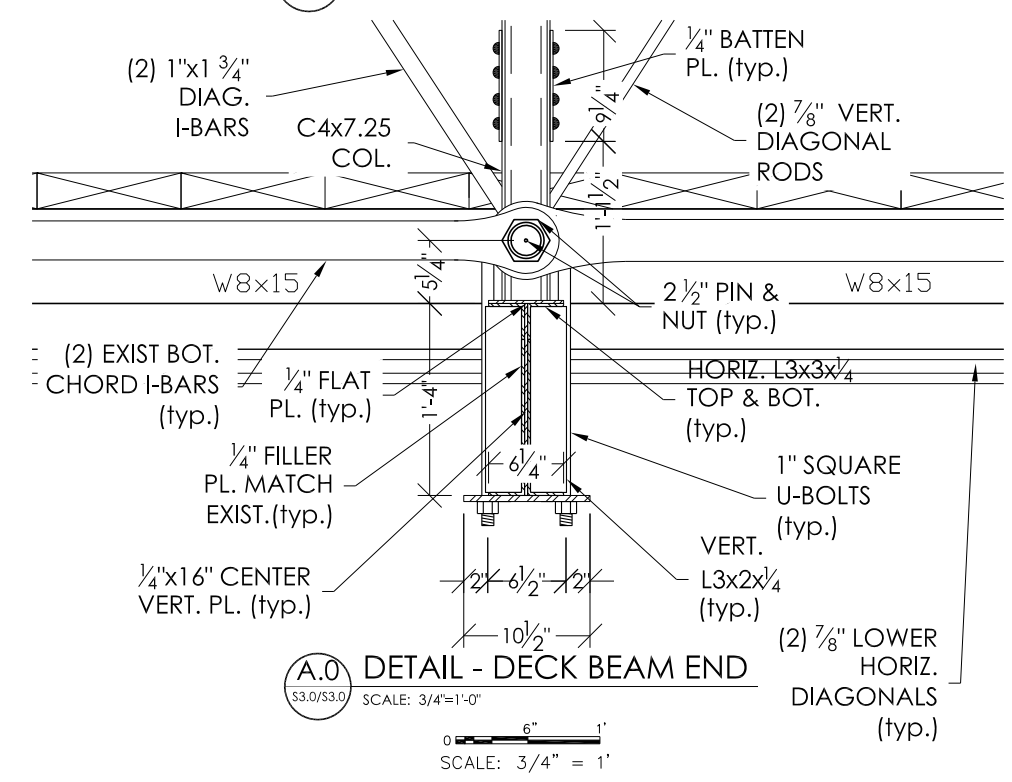
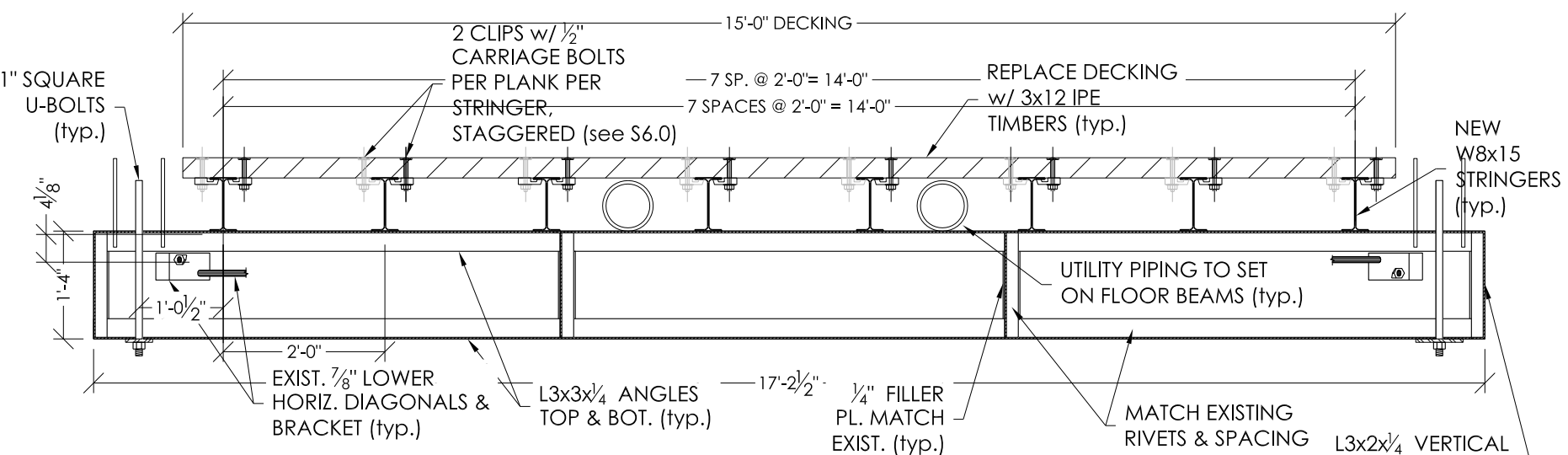
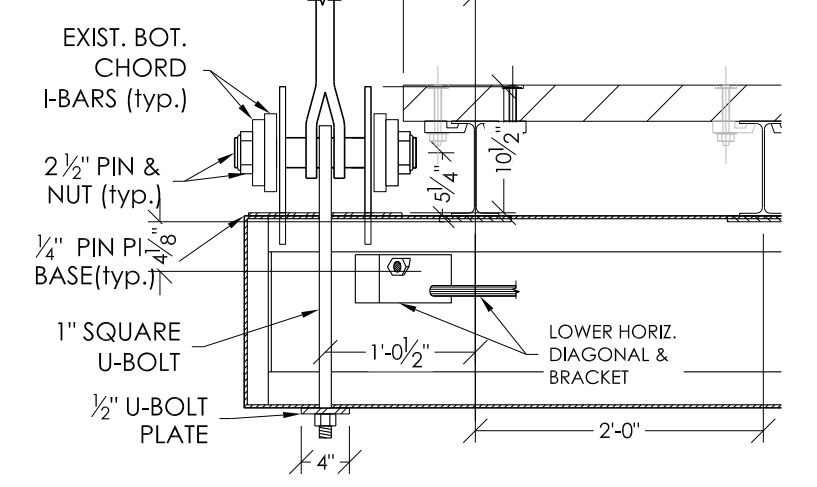
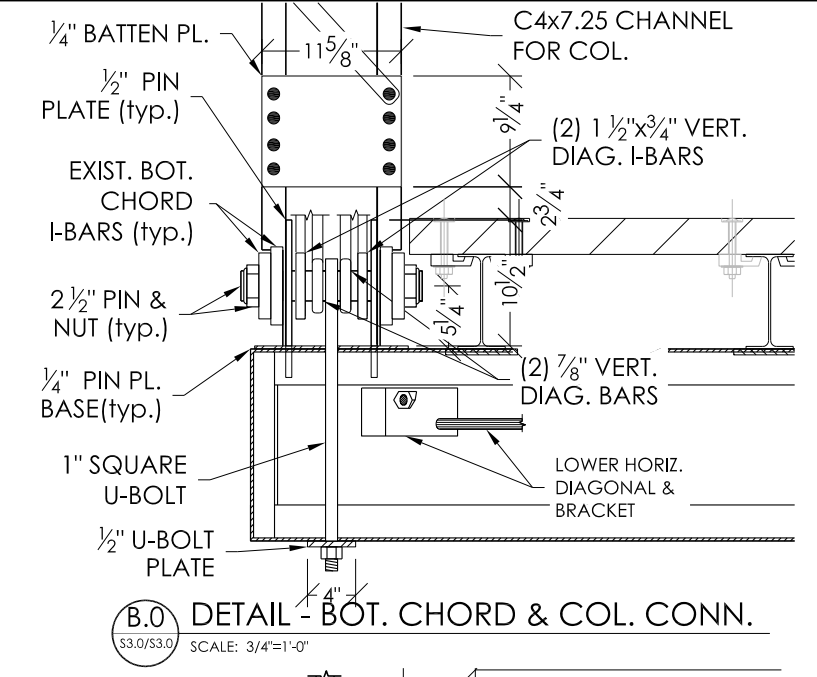
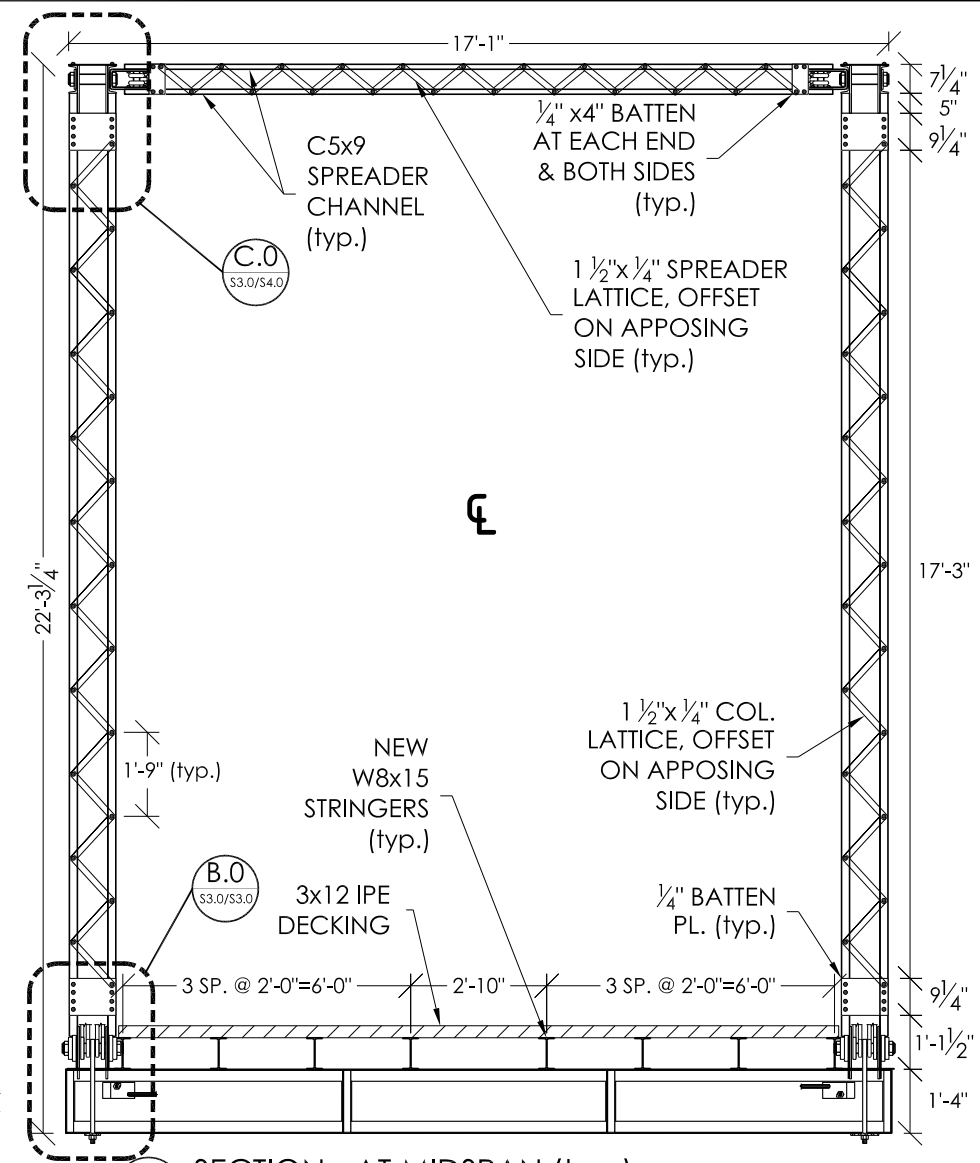
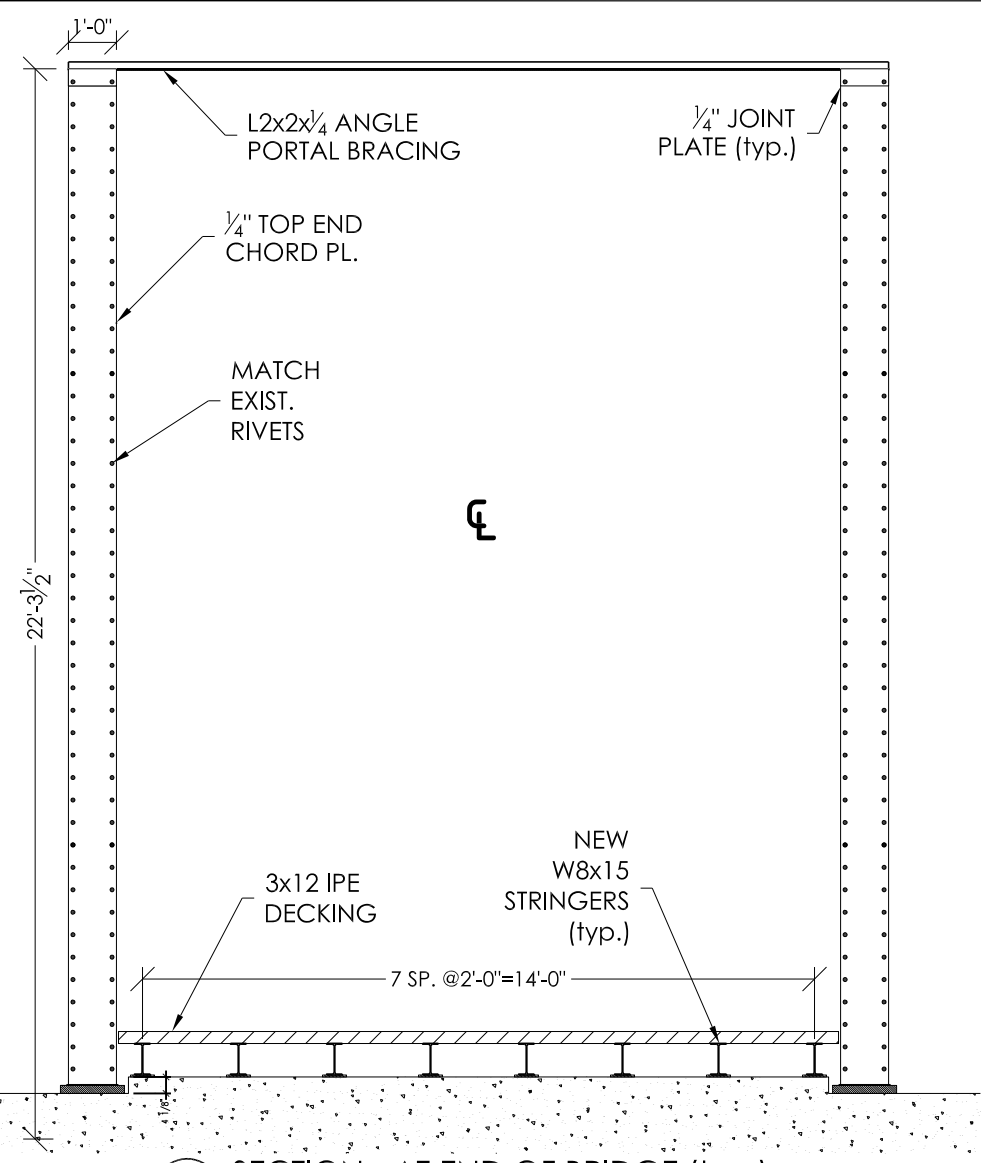
NO.	REVISIONS	BY	DATE
1	PRELIMINARY REVIEW SET	CPW	02/02/2016
2	PRECONSTRUCTION REVIEW SET	CPW	02/22/2016

REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS

**NSRGA / DNREC**  
 NVF / AUBURN HEIGHTS R & R PROJECT  
**SNUFF MILL BRIDGE**  
 PLAN & PROFILE

CLIENT	NSRGA / WB / DNREC
PROJECT	1308001-011-03
PROJECT MGR.	JBS
ENGINEER	JBS
CAD FILE	011-03 MARTIN
EDIT	CPW02052016
DRAWING SCALE	VARIES
PLOT SCALE	11x17, 1:1
SHEET NO.	<b>S2.0</b>

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 May 16, 2017 - 10:12am



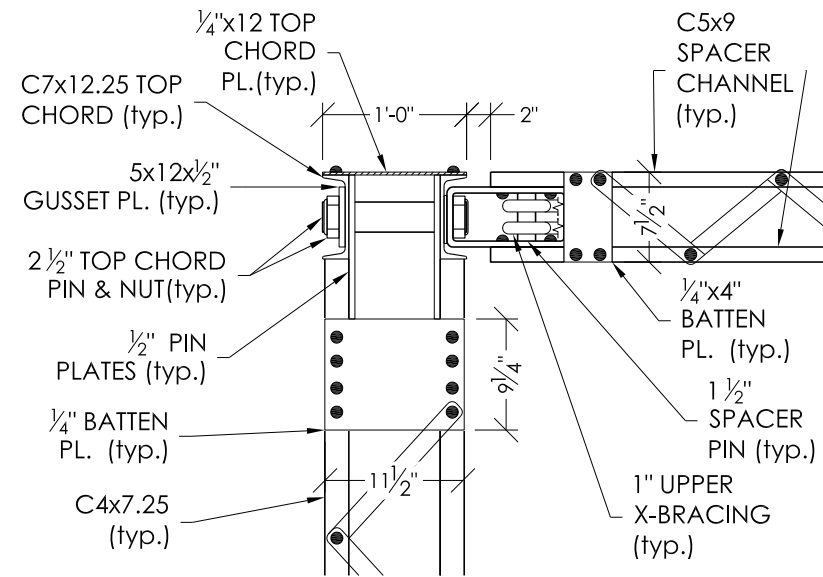
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NOTE: MEASUREMENTS WERE OBTAINED IN THE FIELD AT THE BRIDGES CURRENT LOCATION OVER THE SHIAWASSEE RIVER BY OWNER FABRICATOR, AND ENGINEER.

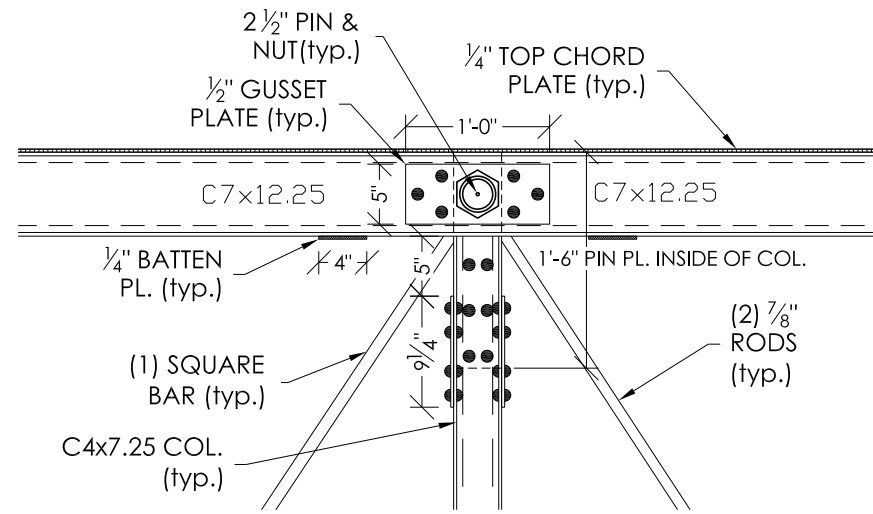
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1	PRELIMINARY REVIEW SET	02/05/2016	CPW	02/05/2016	CPW
2	PRECONSTRUCTION REVIEW SET	02/22/2016	CPW	02/22/2016	CPW

NSRGA / DNREC  
 NVF / AUBURN HEIGHTS R & R PROJECT  
 SNUFF MILL BRIDGE  
 SECTIONS & DETAILS

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 May 16, 2017 - 10:11am

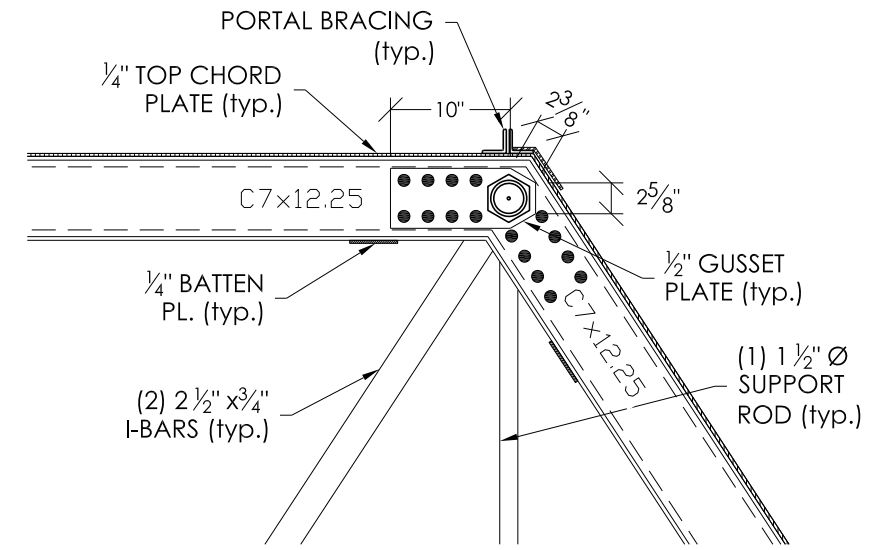


**C.0** DETAIL - TOP CHORD TO COL. CONN. (typ.)  
 S3.0/S3.0 SCALE: 3/4"=1'-0"



**D.0** DETAIL - OUTSIDE TOP CHORD TO COL. CONN. (typ.)  
 S2.0/S4.0 SCALE: 3/4"=1'-0"

0 6" 1'  
 SCALE: 3/4" = 1'



**D.0** DETAIL - OUTSIDE TOP CHORD TO COL. CONN. (typ.)  
 S2.0/S4.0 SCALE: 3/4"=1'-0"

**NOTE:**  
 MEASUREMENTS WERE OBTAINED IN THE FIELD AT THE BRIDGES CURRENT LOCATION OVER THE SHIAWASSEE RIVER BY OWNER, FABRICATOR, AND ENGINEER.

# PRECONSTRUCTION REVIEW SET

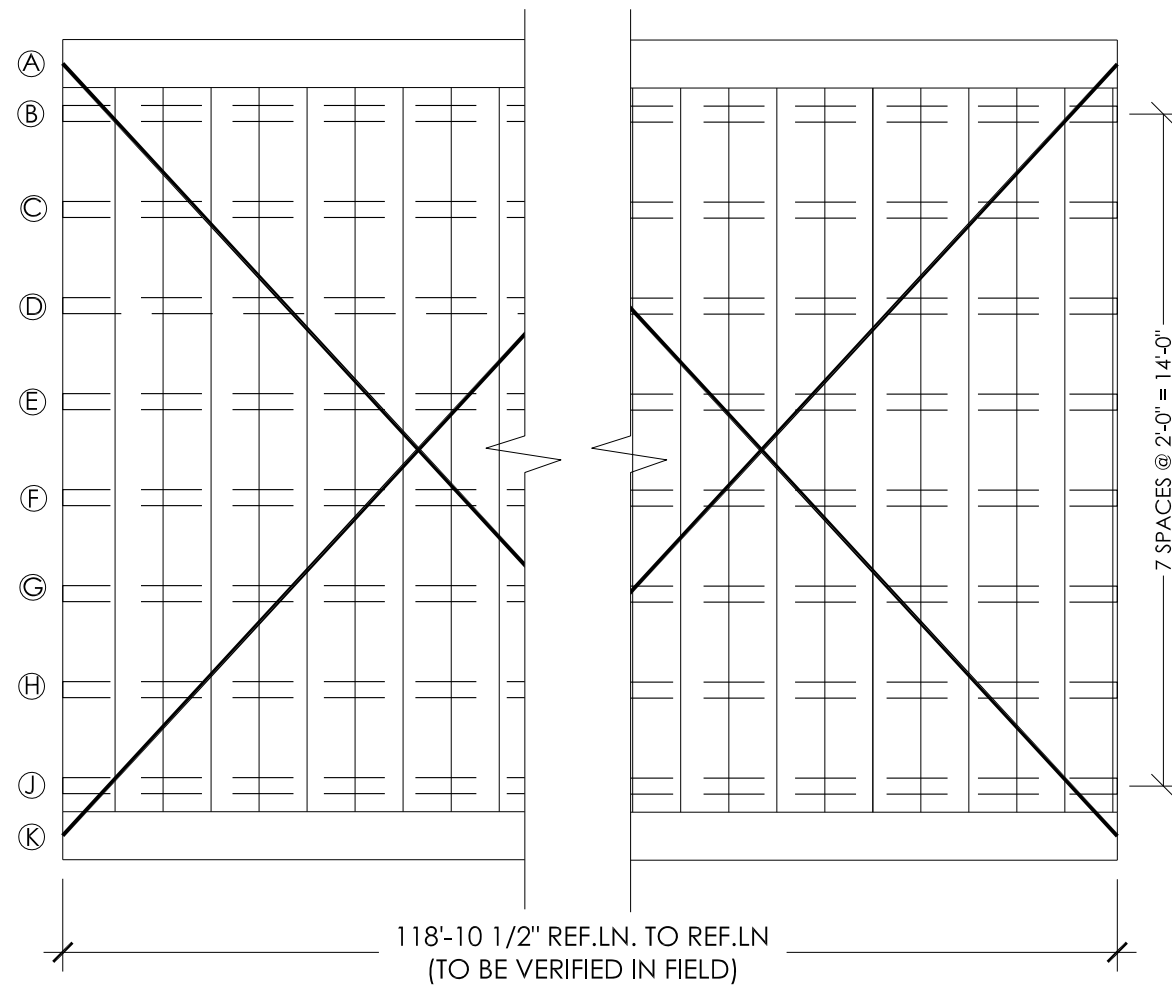
**THE SCHIFFER GROUP, INC.**  
 ENGINEERING  
 THE WOLVERINE BUILDING 1011 E EIGHTH STREET  
 TRAVERSE CITY, MI 49666  
 231.960.6190

NO.	REVISIONS	BY	DATE
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2	PRECONSTRUCTION REVIEW SET	CPW	02/22/2016
3	RESPONSE TO OWNER REVIEW COMMENTS	JBS	05/04/2017

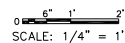
REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS

NSRGA / DNREC  
 NVF / AUBURN HEIGHTS R & R PROJECT  
 SNUFF MILL BRIDGE  
 SECTIONS & DETAILS

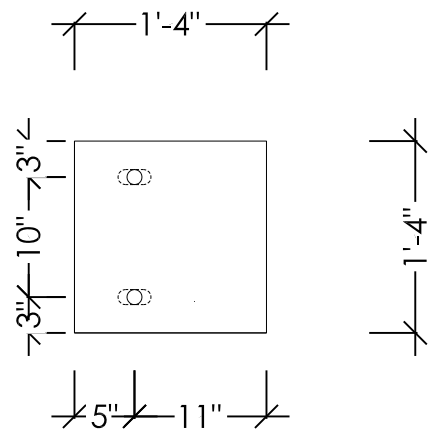
CLIENT	NSRGA / WB / DNREC
PROJECT	1308001-011-03
PROJECT MGR.	JBS
ENGINEER	JBS
CAD FILE	011-03 MARTIN
IDT	JBS05042017
DRAWING SCALE	VARIES
PLOT SCALE	11x17, 1:1
SHEET NO.	<b>S4.0</b>



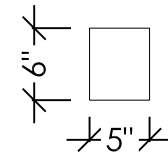
1.0 BEARING LAYOUT PLAN  
SCALE: 1/4"=1'-0"



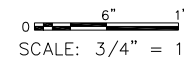
2" ELASTOMERIC BEARING PADS



1/2" ELASTOMERIC BEARING PADS



2.0 BEARING PADS & PLATES  
SCALE: 3/4"=1'-0"



BEAM LINE A, K  
(2 FIXED, 2 EXP.)\*\*\*

1 1/2" HOLES IN FIXED BEARINGS,  
1 1/2" x 3" SLOTS IN EXP. BEARINGS  
FOR 1 1/4"x12" ANCHOR BOLTS

\*\*\*NOTE: CONTRACTOR HAS THE  
DISCRETION TO SELECT WHICH END  
OF THE BRIDGE WILL BE FIXED.

BEAM LINE LINE B THRU J  
(8 FIXED, 8 EXP.)

NO HOLES OR SLOTS  
REQUIRED ON 5"x6" PADS

**ABUTMENT LOADING (UNFACTORED):**

TRUSSES / BEAMS / DIAG.	-	40,000 LBS
STRINGERS / FASCIAS	-	14,000 LBS
IPE DECKING	-	32,000 LBS
MISC. MATERIAL	-	5,000 LBS
UTILITY PIPING (FULL)	-	8,000 LBS
		<b>99,000 LBS</b>

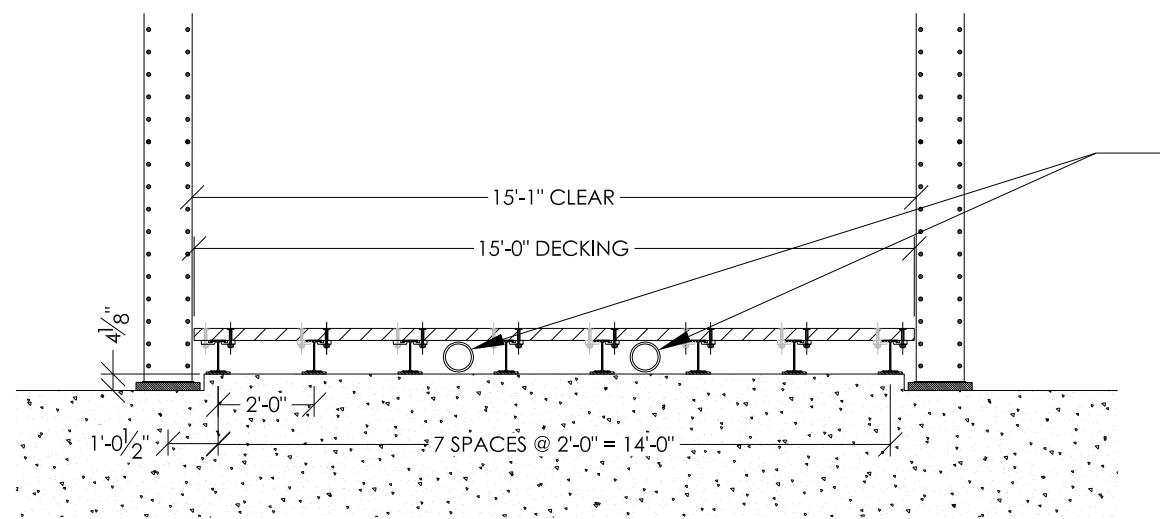
DEAD LOAD AT EACH ABUT. - 50,000 LBS

LIVE LOAD AT EACH ABUT. - 20,000 LBS

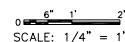
Bridge is designed for loading as shown on the Spicer Engineering drawing dated 05 / 13 / 2011 for the Paper Mill site and Stanley Steamer loadings provided by client, Specifically:

150 people at 200 lbs / each, 20 horse and riders at 2,000 lbs / each, 4 - ton vehicles with H-truck distribution (max. 5 on bridge simultaneous).

**PRECONSTRUCTION  
REVIEW SET**



1.0 BEAM SPACING @ ABUTMENTS  
SCALE: 1/4"=1'-0"



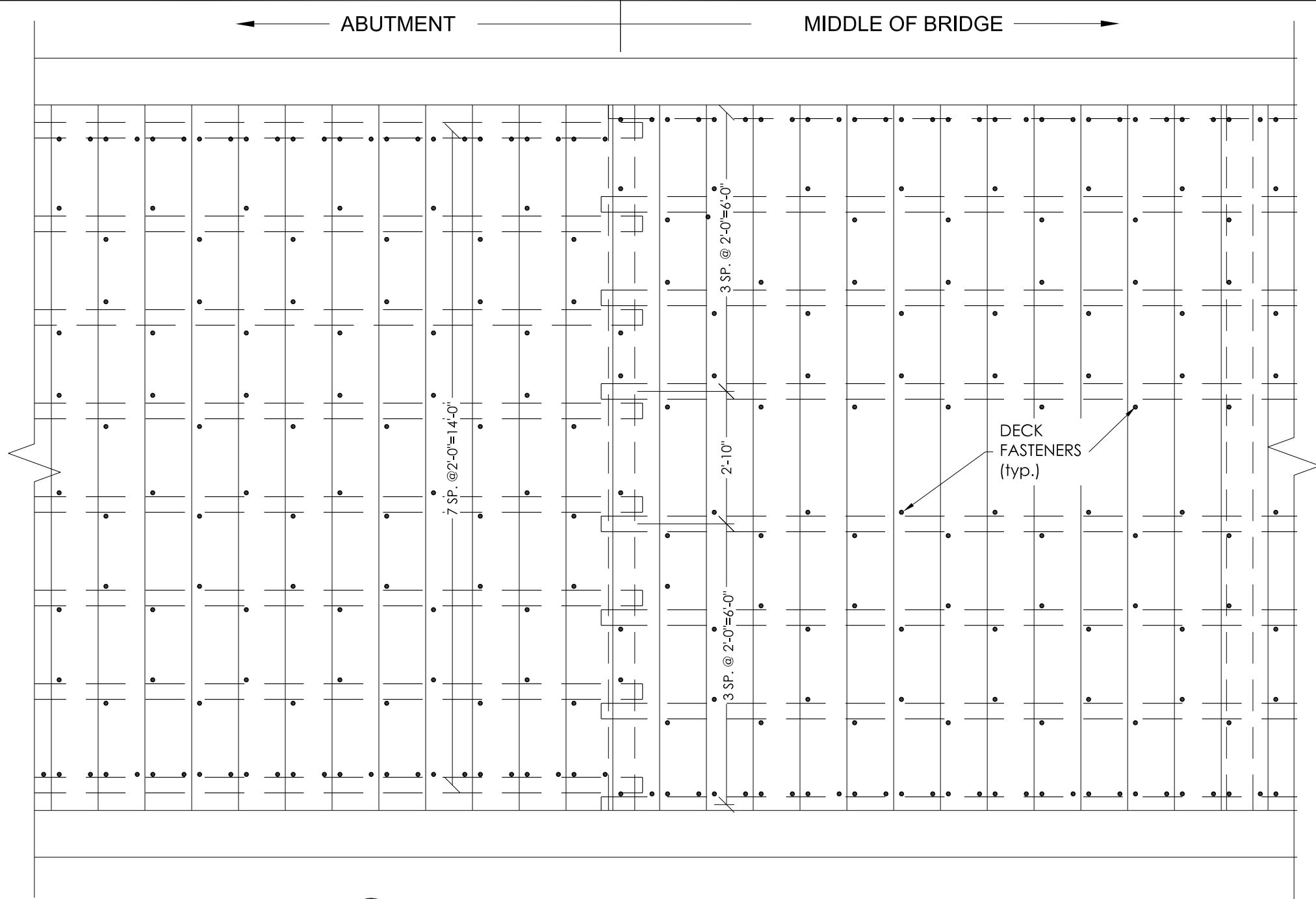
NOTE:  
MEASUREMENTS WERE OBTAINED IN THE FIELD AT THE  
BRIDGES CURRENT LOCATION OVER THE SHIAWASSEE RIVER  
BY OWNER, FABRICATOR, AND ENGINEER.

NO.	REVISIONS	DATE	BY	CPW
1	PRELIMINARY REVIEW SET	02/02/2016	CPW	CPW
2	PRECONSTRUCTION REVIEW SET	02/22/2016	CPW	CPW

NSRGA / DNREC  
NVF / AUBURN HEIGHTS R & R PROJECT  
SNUFF MILL BRIDGE  
BEARINGS & LAYOUT

CLIENT	NSRGA / WB / DNREC
PROJECT	1308001-011-03
PROJECT MGR.	JBS
ENGINEER	JBS
CAD FILE	011-03 MARTIN
EDIT	CPW02052016
DRAWING SCALE	VARIES
PLOT SCALE	11x17, 1:1
SHEET NO.	S5.0

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 May 16, 2017 - 10:08am



**NOTE:**  
 DECK FASTENERS ARE TO BE STAGGERED SO THAT EACH DECK BOARD HAS AN ALTERNATING CONNECTION ON EACH SIDE OF THE DECK STRINGER TO PREVENT TWISTING / CUPPING AND TO PREVENT LATERAL MOVEMENT OF BOTH STRINGERS AND DECK BOARDS.

**10.0** PLAN - DECK FASTENER LAYOUT (typ.)  
 S3.0/S5.0 SCALE: 3/8"=1'-0"  
 0 6" 1' 2'  
 SCALE: 3/8" = 1'

**MATERIALS LIST**

BEAM	DESCRIPTION	LENGTH	QUANTITY
W8x15	ABUTMENT STRINGERS	40' - 9"	16
W8x15	MIDDLE STRINGERS	40' - 6"	8

**NOTE:**  
 MEASUREMENTS WERE OBTAINED IN THE FIELD AT THE BRIDGES CURRENT LOCATION OVER THE SHIAWASSEE RIVER BY OWNER, FABRICATOR, AND ENGINEER.

**PRECONSTRUCTION REVIEW SET**

NO.	REVISIONS	BY	DATE
1	PRELIMINARY REVIEW SET	CPW	02/02/2016
2	PRECONSTRUCTION REVIEW SET	CPW	02/22/2016

REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS	
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**NSRGA / DNREC**  
**NVF / AUBURN HEIGHTS R & R PROJECT**  
**SNUFF MILL BRIDGE**  
 DECK FASTENER LAYOUT & MATERIALS LIST

CLIENT	NSRGA / WB / DNREC
PROJECT	1308001-011-03
PROJECT MGR.	JBS
ENGINEER	JBS
CAD FILE	011-03 MARTIN
EDIT	CPW02052016
DRAWING SCALE	VARIABLES
PLOT SCALE	11x17, 1:1
SHEET NO.	<b>S6.0</b>