



Barnard Bridge Scour

Bridge Crew 2520

BCI Contracting

09/12/2019 - 10/01/2019



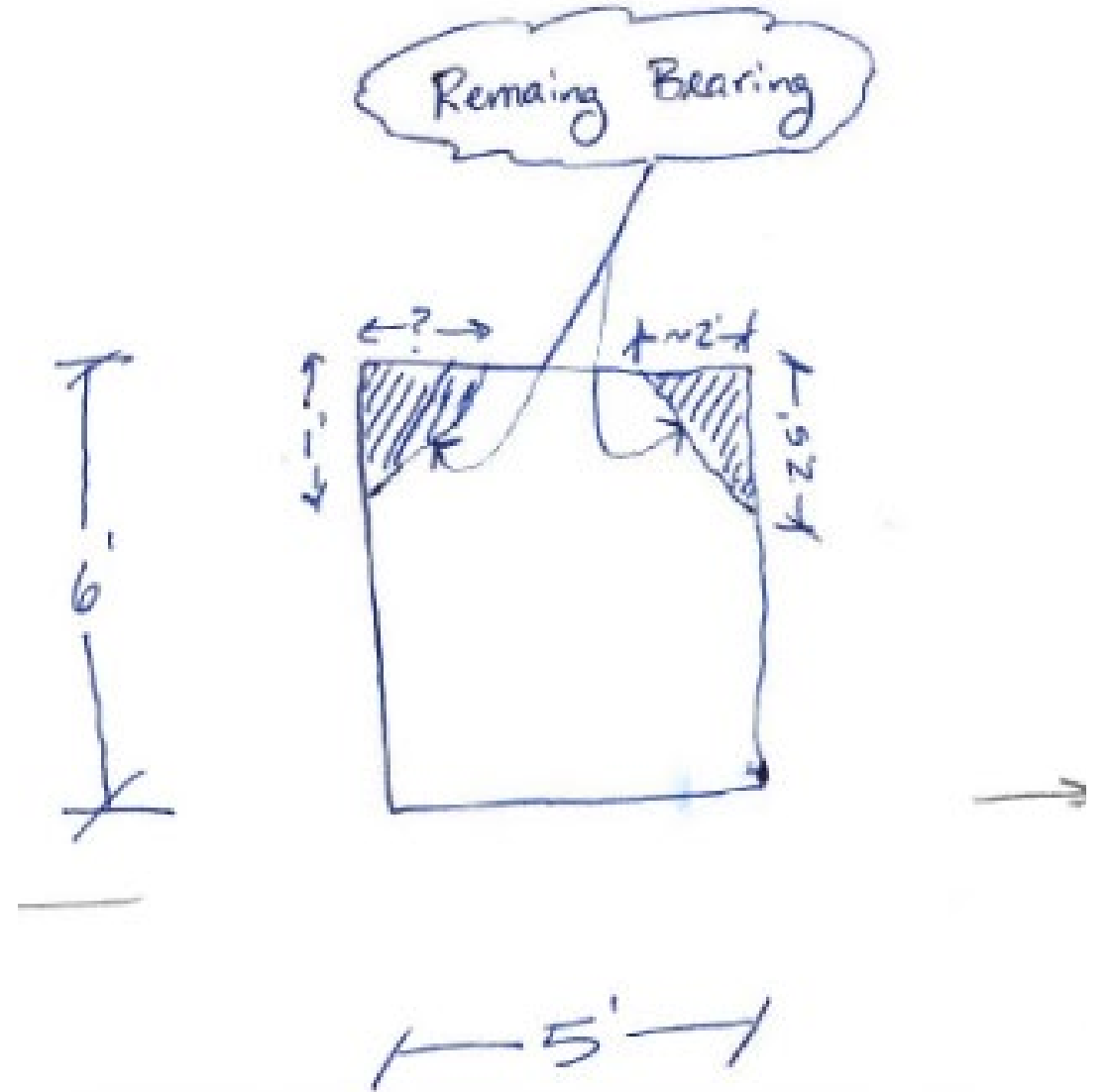


Drift Pile Up During Storm Event



Project Timeline

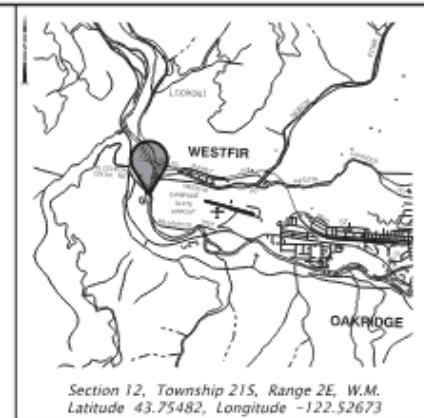




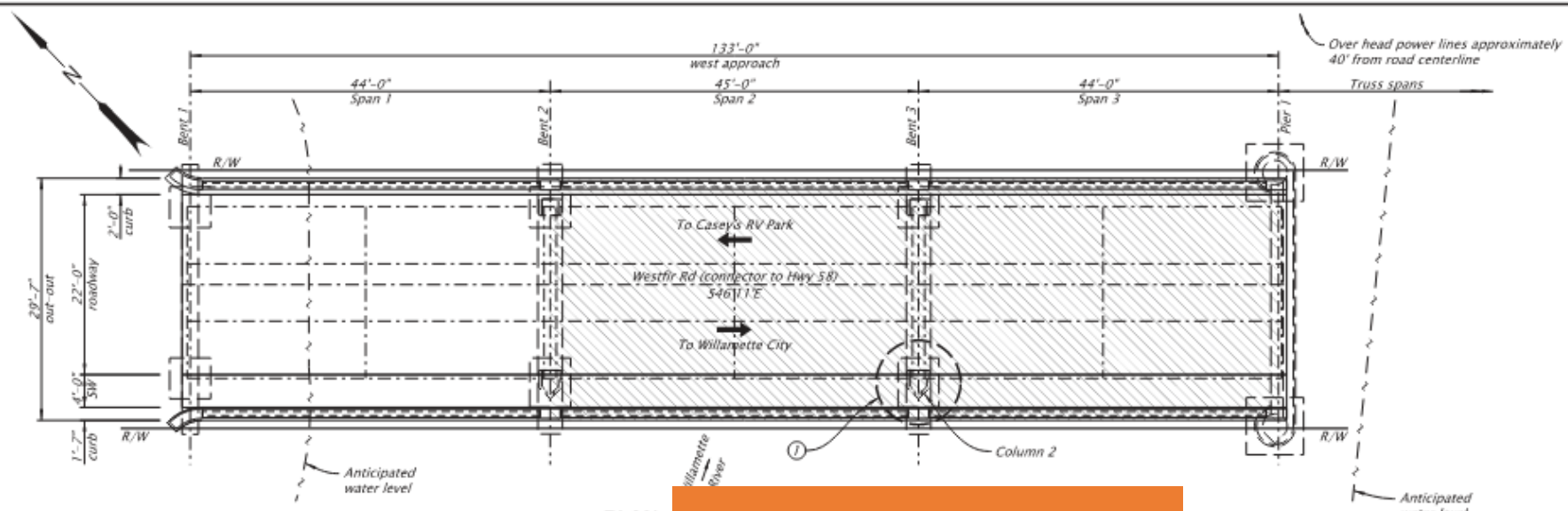


Two Column Bents



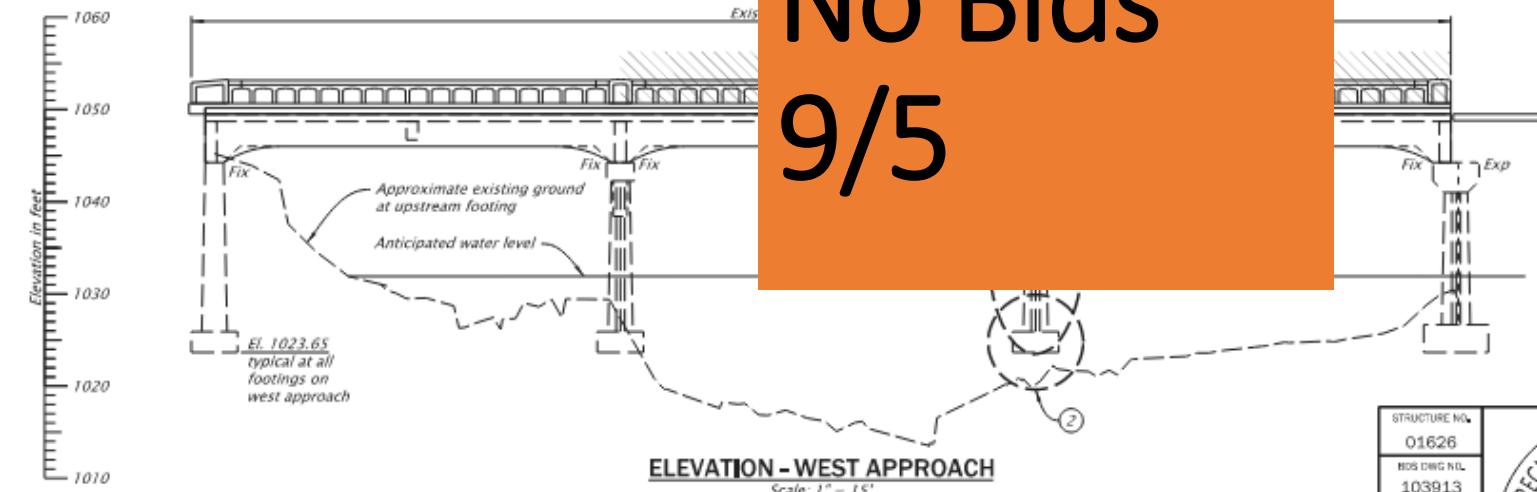


LOCATION MAP
No Scale



PLAN -

No Bids
9/5



ELEVATION - WEST APPROACH
Scale: 1" = 15'

General Notes:
Bearing repair is intended to restore support to the original bearing area of Bent 3 Column 2. The design is not intended to meet the requirements of the 2018 AASHTO LRFD Bridge Design Specifications.

Provide all material and perform all work in accordance with the 2018 Oregon Standard Specifications for Construction.

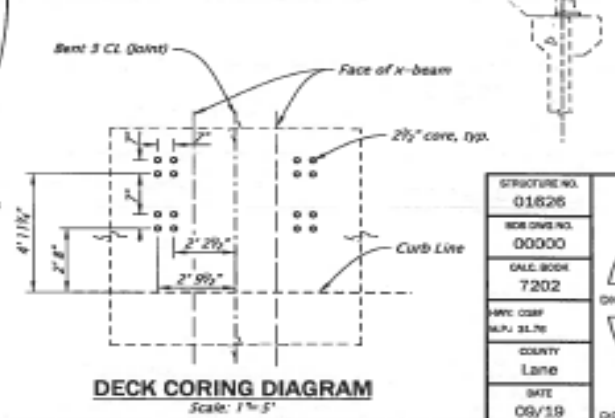
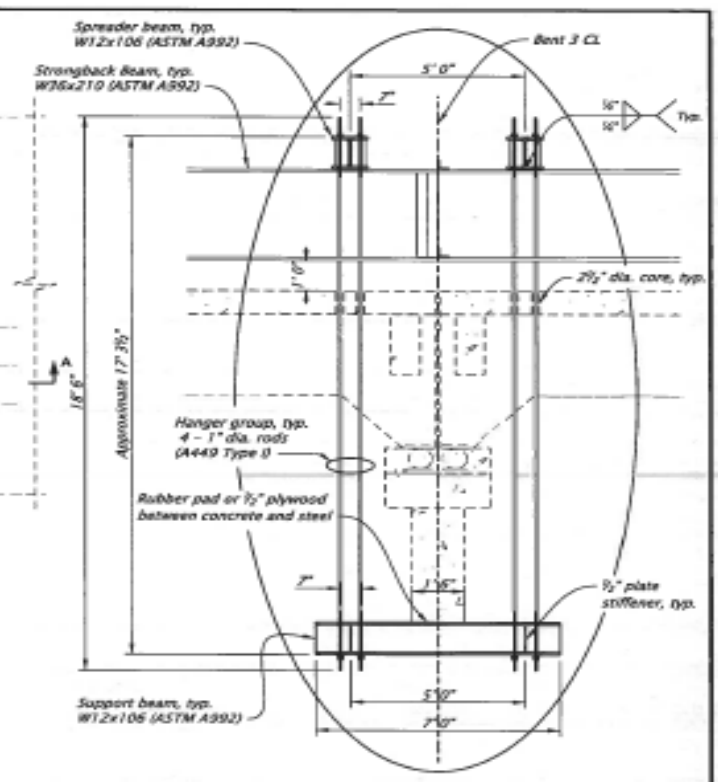
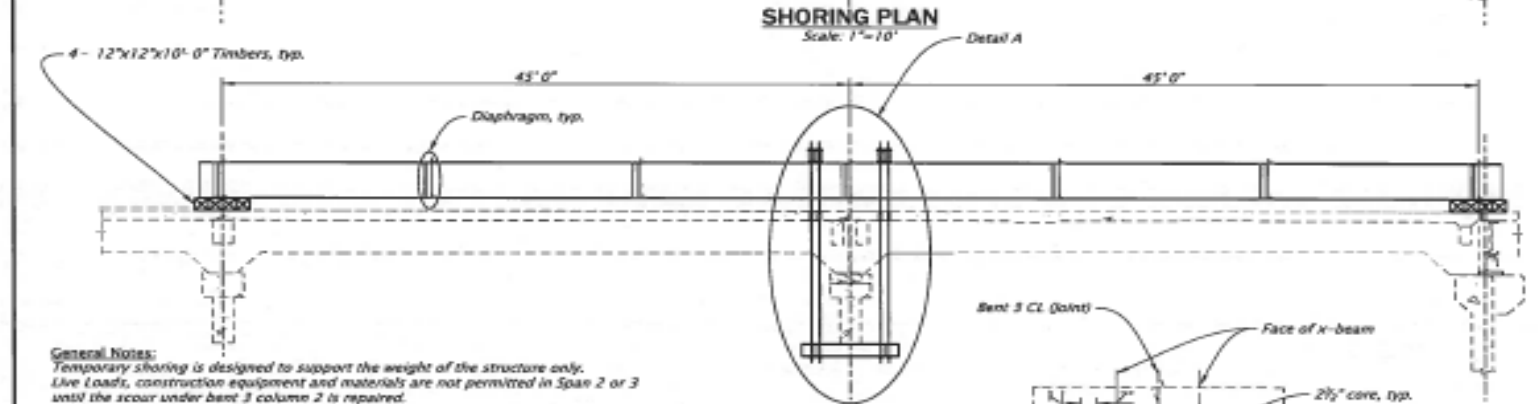
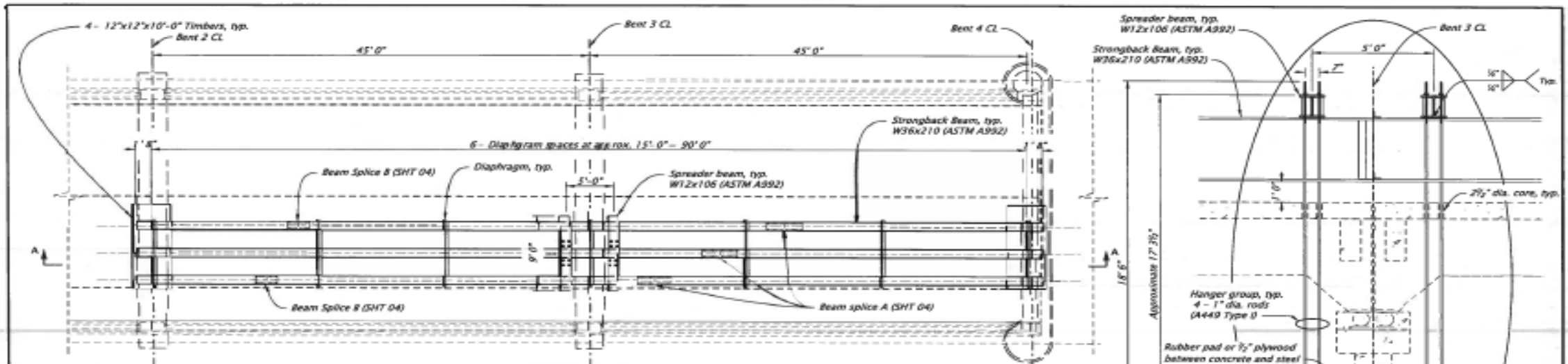
Provide concrete for bearing repair according to section 00513 of the special provisions.

Work Items:

- ① Install temporary shoring at Bent 3 Column 2, see sheets J03a and J03b.
- ② Restore bearing at Bent 3 Column 2, see sheet J04.

NOTE:
Elevations shown are converted to North American Vertical Datum 1988 (NAVD88) from assumed National Geodetic Vertical Datum 1929 (NGVD29) on existing plans.
Conversion: NGVD29 + 3.65' = NAVD88

<p>STRUCTURE NO. 01626</p> <p>BOS DWG N/L 103913</p> <p>ACCOMPANIED BY DWGS J02 through J04</p> <p>NOT FOR CONSTRUCTION 39507 - 39514, BR500</p> <p>SCALE WARNING SCALE LINE DOES NOT WEIGH IN OR OUT, THIN, OR DRAG IS NOT TO SCALE</p>	<p>CALC. BOOK 7202</p> <p>DATE CLEAR MAY 2 2019</p> <p>COUNTY Lane</p> <p>DATE August 2019</p>	<p>REGISTERED PROFESSIONAL ENGINEER 80529PE Aug 30 2019 9:24 AM OREGON JUNE 7, 2012 TRAVIS JOHN KINNEY</p>	<p>OREGON DEPARTMENT OF TRANSPORTATION</p> <p>Willamette River Hwy 18 (Conn 018AF) (Barnard)</p> <p>Major Bridge Maintenance Barnard Bridge Scour Repair Westfir Road Lane County</p> <p>Design: Travis Kinney Reviewed: Robert Grubbs Drawn: [unclear] Checked: [unclear] Dye</p> <p>PLAN AND ELEVATION WEST APPROACH</p> <p>SHEET NO. J01</p>
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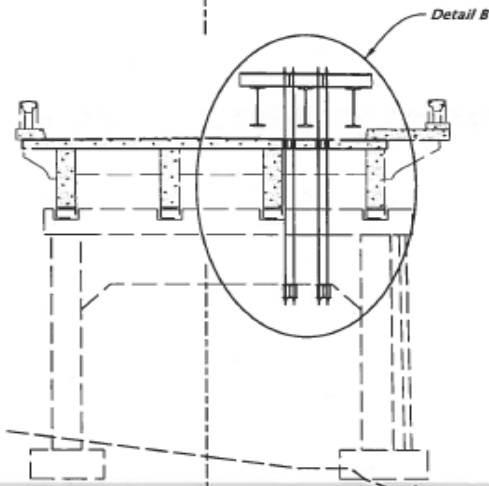


General Notes:
 Temporary shoring is designed to support the weight of the structure only. Live Loads, construction equipment and materials are not permitted in Span 2 or 3 until the scour under bent 3 column 2 is repaired.
 Shoring is designed to provide stability in the event that the remaining bearing under bent 3 column 2 is lost during scour repairs.
 Provide structural steel according to contract plans. When not listed provide ASTM A36.
 Produce all welds according to AWS D1.5.

- SHORING PRELOADING PROCEDURE:**
1. Install a string line that spans from bent 2 to bent 4 along upstream sidewalk/walk.
 2. Monitor the distance from string line to deck/sidewalk throughout project as increases in distance indicates that bearing at bent 3 column 2 is reduced.
 3. Install all shoring components as shown on SHT 01-04 (including diaphragms).
 4. Bring all hanger rods to snug tight.
 5. Ensure support beams are level and have uniform bearing on crossbeam.
 6. Mark threads on hanger rods to monitor all rods are uniformly tensioned.
 7. Measure and record the distance on each strongback from the bottom of the flange to the deck at bent 3.
 8. Torque bolts on hanger groups until 1/8" deflection is measured in strongbacks. (40N Service DU)
 - Tensioning shall be uniform.
 - Limit torquing sequence to two turns of the nut. Don't proceed until all hangers are evenly torqued.
 - 800-ft is estimated torque required to achieve desired loading.

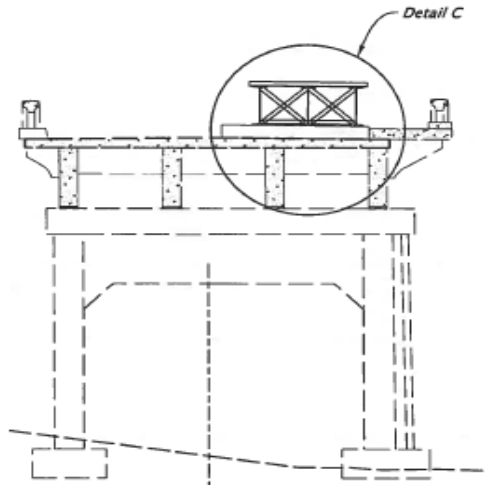
STRUCTURE NO. 01626 BOX DIMS NO. 00000 GALE BOOK 7202 MWFC CORR. N/A, 3L, 70 COUNTY Linn DATE 08/19		OREGON DEPARTMENT OF TRANSPORTATION Willamette River Hwy 18 Frig Rd (Barnard) Barnard Bridge Scour Repair Temporary Shoring Major Bridge Maintenance Westport Road Linn County		SHEET NO. 01
		Designer: Travis Karney Checker: Tamara Probst TEMPORARY SHORING PLAN		

RENEWAL: 6-30-2021
 P&L ELECTRONIC DOCUMENT AVAILABLE UPON REQUEST
 Rotation: 0° Scale: 1"=10'



BENT 3 SECTION
Scale: 1"=10'

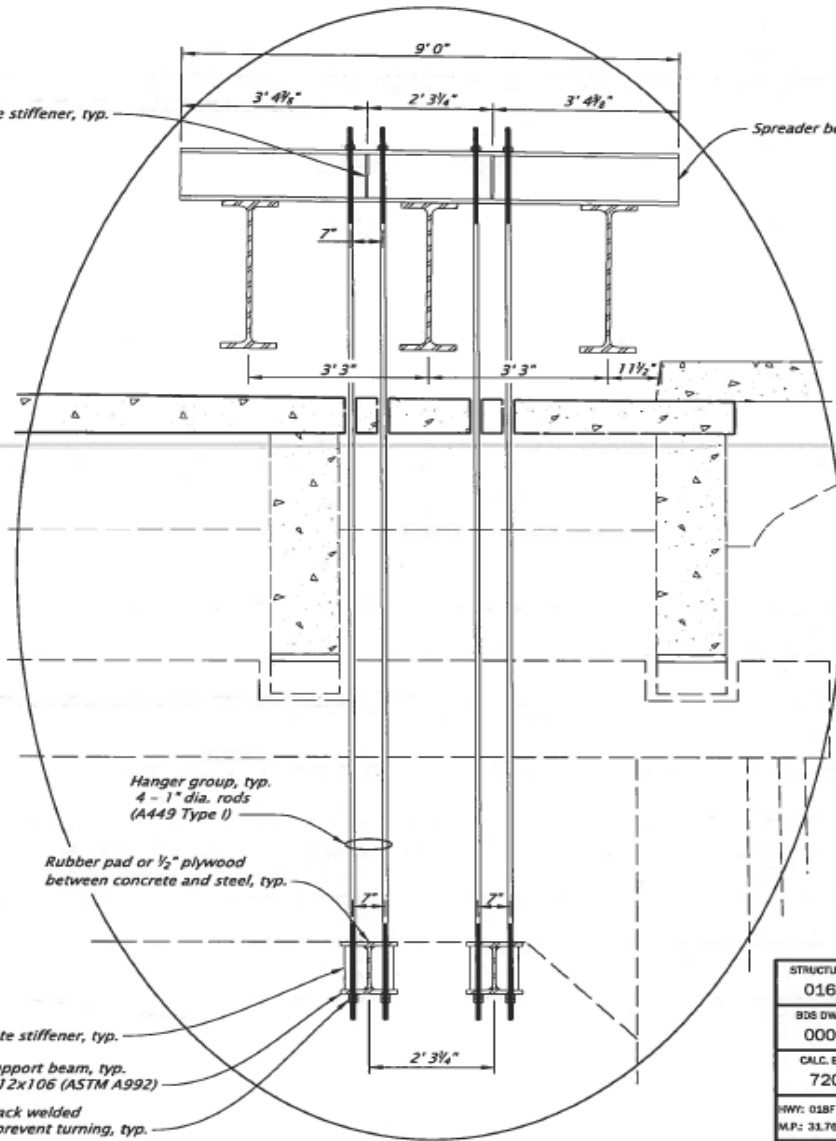
Scoured footing
(Bent 3 Column 2)



BENT 2 SECTION
Scale: 1"=10'

1/2" plate stiffener, typ.
Support beam, typ.
W12x106 (ASTM A992)

Double nut tack welded
to flange to prevent turning, typ.



DETAIL B
Scale: 3/8"=1'

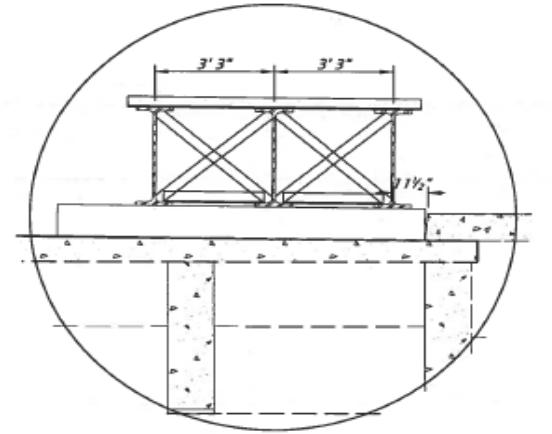
1/2" plate stiffener, typ.

Spreader beam W12x106 (A992)

Hanger group, typ.
4 - 1" dia. rods
(A449 Type I)

Rubber pad or 1/2" plywood
between concrete and steel, typ.

1/2" plate stiffener, typ.



DETAIL C
Scale: 1/4"=1'

L4"x4"x1/2"

4x4 timber crossbracing, typ.
Cut tight and hammer into place

Typ. 1/4" 1/4"

L4"x4"x1/2"

DIAPHRAGM DETAIL
Scale: 3/8"=1'

STRUCTURE NO.	01626
BDS DWG NO.	00000
CALC. BOOK	7202
HWY:	018F
M.P.:	33.76
COUNTY	Lane
DATE	09/19

REGISTERED PROFESSIONAL
ENGINEER
60529PE
DIGITALLY SIGNED Sep 12 2019 11:42 AM
OREGON
JUNE 7, 2012
TRAVIS JOHN KINNEY
RENEWS: 6-30-2021
FINAL ELECTRONIC DOCUMENT
AVAILABLE UPON REQUEST

OREGON DEPARTMENT
OF TRANSPORTATION

Willamette River Hwy 18 Frig Rd (Barnard)
Barnard Bridge Scour Repair
Temporary Shoring
Major Bridge Maintenance
Westfir Road
Lane County

Designer: Travis Kinney
Reviewer: NA
Draftsman: Travis Kinney
Checker: Tamarat Postak

TEMPORARY SHORING PLAN

SHEET NO.
02



Temp Shoring Timeline





**210 lbs per foot
10 Tons Total**



OVERSIZE LOAD

NESS CAMPBELL
CRANE + RIGGING

AT201
NESS CAMPBELL
CRANE + RIGGING
USDOT 078066

8536436

5001 078066



**332 Holes in Girder
1128 Holes in Splice Plates**













A116717
12/16/19





Anchor Rods
Waiting for
Saddle Beam



Saddle Beams
Weight = 750 lbs



Slinging the
beam into
place









**Transfer the Load to the Shoring
Torque the Nuts until 1 ¾"
Deflection in the Beams.**

















Swanson
Group



Project Costs

Bridge Crew = \$155,000

Contractor = \$985,000

Engineers = \$80,000

Total Cost = \$1,400,000

Contact Information:

Travis Kinney, PE

Senior Bridge Engineer

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Phone: 541-914-7219