

Modular Steel Bridges



BUILD IN VALUE WITH BIG R ENGINEERED INFRASTRUCTURE SOLUTIONS.

bigrbridge.com

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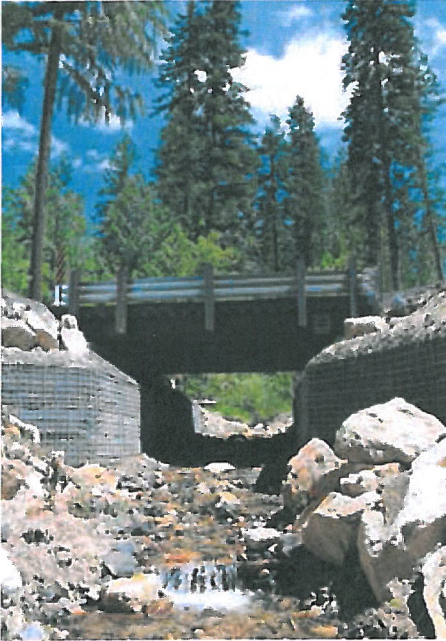


Modular Steel Bridges

Custom designed modular bridge systems that ship and install quickly.

RECOMMENDED FOR

- ▶ Logging Roads
- ▶ Fish Passage
- ▶ Detour Bridges
- ▶ Oil and Gas Exploration Roads
- ▶ Stream Crossings



With production facilities in the East and West, Big R Bridge provides complete bridging solutions for the Forestry and Public Works sectors nationwide. Our strong yet light-weight modular bridges can be packaged with several in-house abutment systems including precast concrete sills and steel back walls, Vist-A-Wall™ MSE retaining walls or Bolt-A-Bin® abutments.

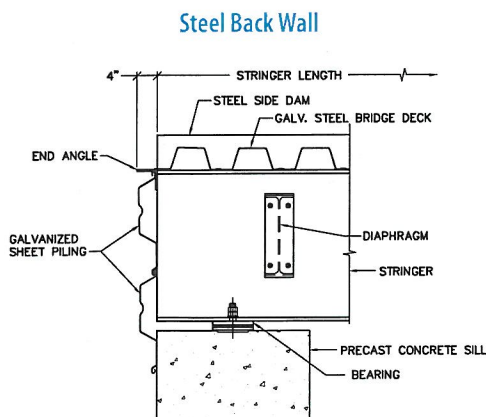


Standard Features

- ▶ Heavy duty loadings (U-80 off-highway trucks and greater)
- ▶ Single lane bridges are 14' or 16' wide
- ▶ Low-maintenance weathering steel structural members
- ▶ Galvanized steel structural decking
- ▶ Bearing plates and pads
- ▶ Curb or railing systems

Optional Features

- ▶ Painted or hot-dip galvanized steel structural members
- ▶ Available in any width
- ▶ Steel back wall systems
- ▶ Precast concrete sills
- ▶ Timber running planks



MODULAR
COMPONENTS FOR
REMOTE LOCATIONS



Big R Bridge has been adding value to
Forestry and Public Works projects for over 40 years.

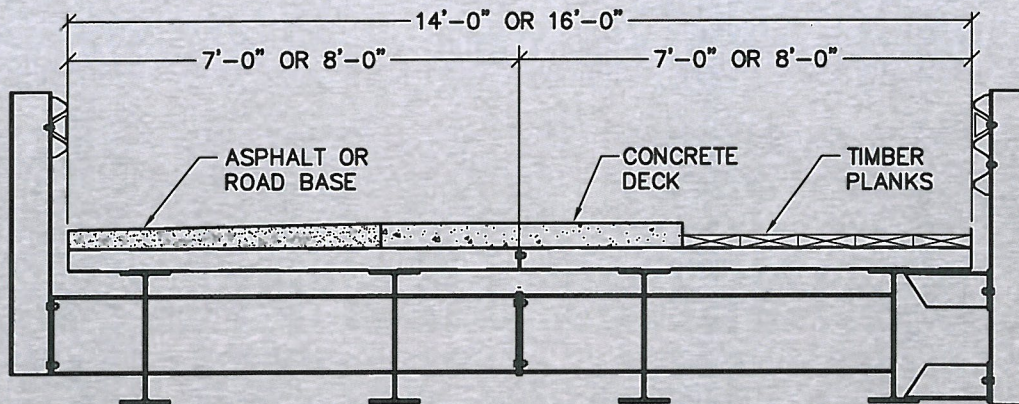


Working with us is easy.

- ▶ Provide the desired bridge length and width
- ▶ Specify the design vehicle loading
- ▶ Choose weathering steel, painted or galvanized steel structural members
- ▶ Select a foundation system
- ▶ Contact Big R for pricing and delivery

½ Bridge Weight (lbs.)*		
Length	14' Wide	16' Wide
30'	7,900	8,400
40'	11,300	11,800
50'	15,600	16,300
60'	22,000	22,800
70'	28,200	29,100
80'	36,100	37,100

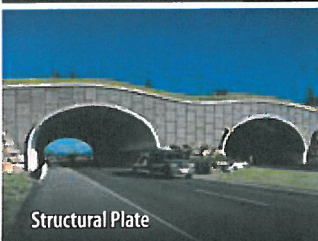
* Bridge weights are approximate. Weight will vary based on the design vehicle, railing system and decking options.



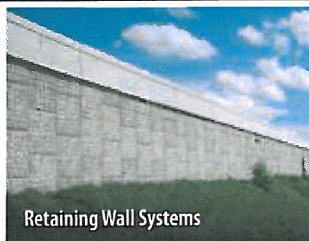
The information, suggested applications and tables in this brochure are accurate and correct to the best of our knowledge, and are intended for general information purposes only. These general guidelines are not intended to be relied upon as final specifications, and we do not guarantee specific results for any particular purpose. We strongly recommend consultation with a Big R Bridge sales professional before making any design and purchasing decisions.

BIGR072014

Big R Bridge is a national leader in developing engineered infrastructure solutions.



Structural Plate



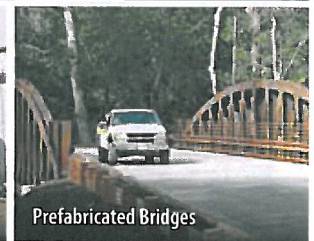
Retaining Wall Systems



Sound Wall Systems



Pipe Systems



Prefabricated Bridges

Call toll free in North America 1-800-234-0734 or visit bigrbridge.com for more information.



THE AIL GROUP OF COMPANIES



Atlantic Industries Limited



INTERNATIONAL



Big R Bridge
United States Headquarters
Greeley, Colorado
800-234-0734

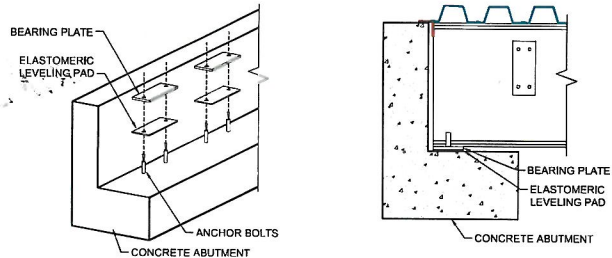
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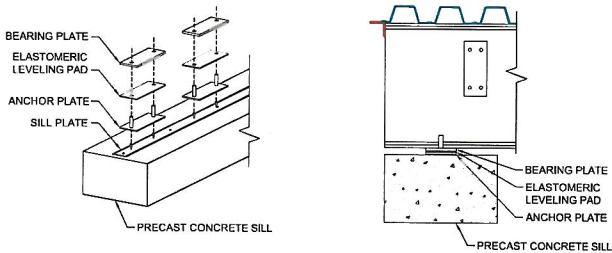


BEARING PREPARATION

- ALL BEARING PLATES, ELASTOMERIC LEVELING PADS AND ANCHOR PLATES (IF REQUIRED) WILL BE DELIVERED LOOSE ALONG WITH THE BRIDGE. THE BEARING PLATES WILL HAVE HOLES FOR THE FIXED END AND SLOTS FOR THE EXPANSION END OF THE BRIDGE WHICH MUST BE CENTERED ON THE ANCHOR BOLTS TO ALLOW FOR PROPER EXPANSION.
- FOR ABUTMENT APPLICATIONS PLACE THE ELASTOMERIC LEVELING PAD ALONG WITH A BEARING PLATE DIRECTLY ON THE ABUTMENT SEAT AT EACH BEARING LOCATION. FOR PRECAST SILL APPLICATIONS, AN ANCHOR PLATE MUST BE POSITIONED ON THE EMBEDDED SILL PLATE AND WELDED IN PLACE PRIOR TO PLACING THE ELASTOMERIC PAD AND BEARING PLATE.
- ASSURE THAT ALL BEARING PLATES ARE AT THE CORRECT ELEVATION, AND THAT THERE IS GOOD BEARING BETWEEN THE ABUTMENT AND THE LEVELING PAD. IF NECESSARY, SHIM THE PLATE OR USE NON-SHRINK GROUT UNDER THE ENTIRE BEARING PAD IN ORDER TO ASSURE 100% BEARING AND PROPER FINAL ELEVATION.
- REFER TO THE SHOP DRAWINGS FOR ANY SPECIAL INSTRUCTIONS RELATED TO BEARINGS.



TYPICAL ABUTMENT DETAIL



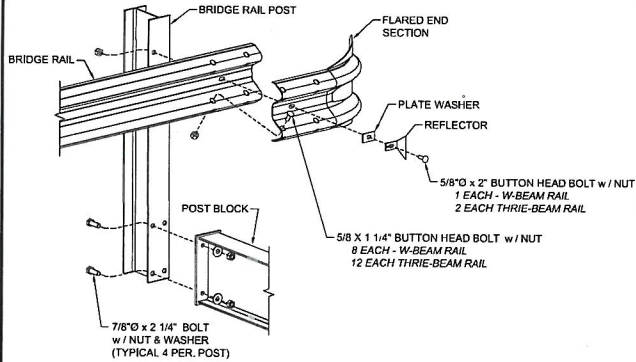
TYPICAL PRECAST SILL DETAIL

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RAIL ASSEMBLY INSTRUCTIONS (WHEN REQUIRED)

THE BRIDGE RAIL AND POSTS WILL BE DELIVERED LOOSE ALONG WITH THE BRIDGE SECTIONS AND MAY BE INSTALLED PRIOR TO, OR AFTER SETTING THE BRIDGE SECTIONS. THE JOB SITE WILL DETERMINE WHICH METHOD IS PREFERABLE.

- EACH BRIDGE RAIL POST SHALL BE FASTENED TO A BRIDGE SECTION POST BLOCK WITH HEX HEAD BOLTS. EACH OF THE FOUR HOLE LOCATIONS ON THE LOWER END OF THE POST WILL RECEIVE ONE BOLT, ONE WASHER, AND ONE NUT.
- THE BRIDGE RAIL IS ATTACHED TO THE POSTS WITH EITHER ONE BUTTON HEAD BOLT FOR W-BEAM RAIL OR TWO BUTTON HEAD BOLTS FOR THRIE-BEAM RAIL. EACH HOLE LOCATION WILL RECEIVE ONE BUTTON HEAD OVAL SHOULDERED BOLT, ONE REFLECTOR, ONE PLATE WASHER, AND ONE RECESSED NUT.
- THE OVERLAPPING RAIL SPLICE AND FLARED END SECTIONS SHALL BE FASTENED TOGETHER WITH BUTTON HEAD BOLTS. EACH HOLE LOCATION, EIGHT EACH FOR W-BEAM AND TWELVE EACH FOR THRIE-BEAM, SHALL RECEIVE ONE BUTTON HEAD OVAL SHOULDERED BOLT AND ONE RECESSED NUT.
- REFER TO THE SHOP DRAWINGS FOR ANY SPECIAL INSTRUCTIONS RELATED TO BRIDGE RAIL.

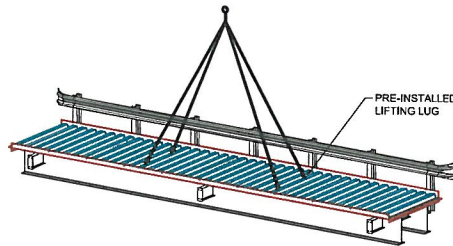


TYPICAL BRIDGE RAIL ASSEMBLY

LIFTING INSTRUCTIONS

IT IS RECOMMENDED THAT EACH BRIDGE SECTION BE LIFTED FROM THE PRE-INSTALLED LIFTING LUGS. EACH LIFTING LUG HAS A CAPACITY OF 24,000 POUNDS AT A 45-DEGREE LIFT ANGLE. LIFTING MAY ALSO BE DONE AT THE ENDS OF THE BRIDGE AT THE BEARING PLATE LOCATIONS.

- ALTERNATIVELY, BRIDGES WITHOUT PRE-INSTALLED DECK PANELS MAY BE LIFTED FROM A MINIMUM OF (4) POINTS THAT ARE AT LEAST 1/4 TO 1/3 OF THE BRIDGE SPAN FROM THE END OF THE BRIDGE.
- IF BRIDGE HAS MORE THAN 2 SECTIONS, SECTIONS ARE TO BE SET IN NUMERICAL ORDER AS SHOWN ON THE SHOP DRAWINGS STRUCTURAL DETAIL.



SETTING INSTRUCTIONS

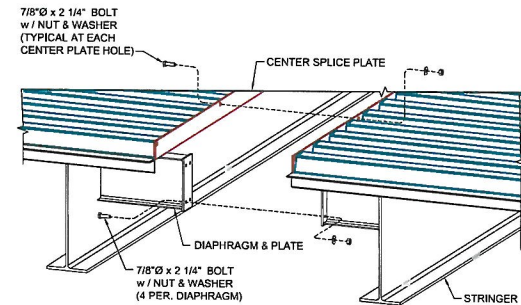
- AFTER PLACING THE BRIDGE, ADJUST STRUCTURE ON THE FOUNDATIONS SO THAT SPACING IS EQUAL AT BOTH ENDS OR AS DIRECTED IN NOTES ON THE SHOP DRAWINGS. IF AN EXPANSION END GAP IS DESIGNATED IN THE SHOP DRAWINGS IT MUST MAINTAINED FOR PROPER EXPANSION. IF THE BRIDGE HAS AN ELEVATION DIFFERENCE, BE SURE TO SET THE HIGH END OF THE BRIDGE ON THE HIGHER FOUNDATION. REFER TO THE SHOP DRAWINGS FOR CORRECT ALIGNMENT.
- DIAPHRAGM SPLICE PLATES AND CENTER SPLICE PLATES SHALL BE CONNECTED WITH HEX HEAD BOLTS. EACH OF THE HOLE LOCATION ON THE SPLICE PLATES WILL RECEIVE ONE BOLT, ONE WASHER, AND ONE NUT.
- FIELD WELD ALL BEARING PLATES TO THE BRIDGE STRINGERS AS DIRECTED IN THE SHOP DRAWINGS.
- EACH ANCHOR BOLT WILL RECEIVE (1) WASHER AND (2) NUTS. ONE END OF THE BRIDGE IS DESIGNED TO BE FIXED AND THE NUTS ARE TO BE INSTALLED TIGHT. THE EXPANSION END WILL HAVE THE FIRST NUT TIGHTENED FINGER TIGHT TO THE WASHER PLACED ON THE BEARING PLATE. THE SECOND NUT WILL BE INSTALLED TIGHT TO THE FIRST.
- WHEN INSTALLING PAINTED BRIDGES CARE MUST BE TAKEN TO MINIMIZE DAMAGE TO THE FINISH DURING INSTALLATION. IT WILL BE THE RESPONSIBILITY OF THE ONSITE CONTRACTOR TO PERFORM ALL TOUCH-UP PAINTING AS NECESSARY. A NOMINAL AMOUNT OF TOUCH-UP PAINT WILL BE SUPPLIED.
- TIGHTENING OF THE BOLTS SHALL BE IN ACCORDANCE WITH THE 'SPECIFICATION FOR STRUCTURAL JOINTS USING ASTM A325 OR A490 BOLTS' BY RCSC. WE RECOMMEND USING THE TURN-OF-NUT PROCEDURE DESCRIBED BELOW:

BRING ALL BOLTS TO A 'SNUG TIGHT' CONDITION TO INSURE THAT THE PARTS OF THE JOINT ARE BROUGHT INTO GOOD CONTACT WITH EACH OTHER. SNUG TIGHT IS DEFINED AS THE TIGHTNESS ATTAINED BY A FEW IMPACTS OF AN IMPACT WRENCH OR THE FULL EFFORT OF A MAN USING AN ORDINARY SPUD WRENCH. FOLLOWING THIS INITIAL OPERATION ALL BOLTS SHALL THEN BE TIGHTENED ADDITIONALLY BY THE APPLICABLE AMOUNT OF NUT ROTATION AS SPECIFIED IN THE TABLE BELOW, WITH THE TIGHTENING PROGRESSING SYSTEMATICALLY FROM THE MOST RIGID PART OF THE JOINT TO ITS FREE EDGES. DURING THIS OPERATION, THERE SHALL BE NO ROTATION OF THE PART NOT TURNED BY THE WRENCH.

NUT ROTATION FROM SNUG TIGHT CONDITION	
BOLT LENGTH (AS MEASURED FROM UNDERSIDE OF HEAD TO EXTREME END OF POINT)	DISPOSITION OF OUTER FACES OF BOLTED PARTS BOTH FACES NORMAL TO BOLT AXIS
NOT MORE THAN 4 DIAMETERS	1/3 TURN
MORE THAN 4 DIAMETERS BUT NOT MORE THAN 8 DIAMETERS	1/2 TURN
MORE THAN 8 DIAMETERS BUT NOT MORE THAN 12 DIAMETERS	2/3 TURN

NUT ROTATION IS RELATIVE TO BOLT, REGARDLESS OF THE ELEMENT (NUT OR BOLT) BEING TURNED. FOR BOLTS INSTALLED BY 1/2 TURN AND LESS, THE TOLERANCE SHOULD BE PLUS OR MINUS 30°; FOR BOLTS INSTALLED BY 2/3 TURN AND MORE, THE TOLERANCE SHOULD BE PLUS OR MINUS 45°.

- IF ANY NUTS CANNOT BE TIGHTENED, GRIT MAY HAVE BECOME LODGED IN THE THREADS. REMOVE THE GRIT AND RETIGHTEN.



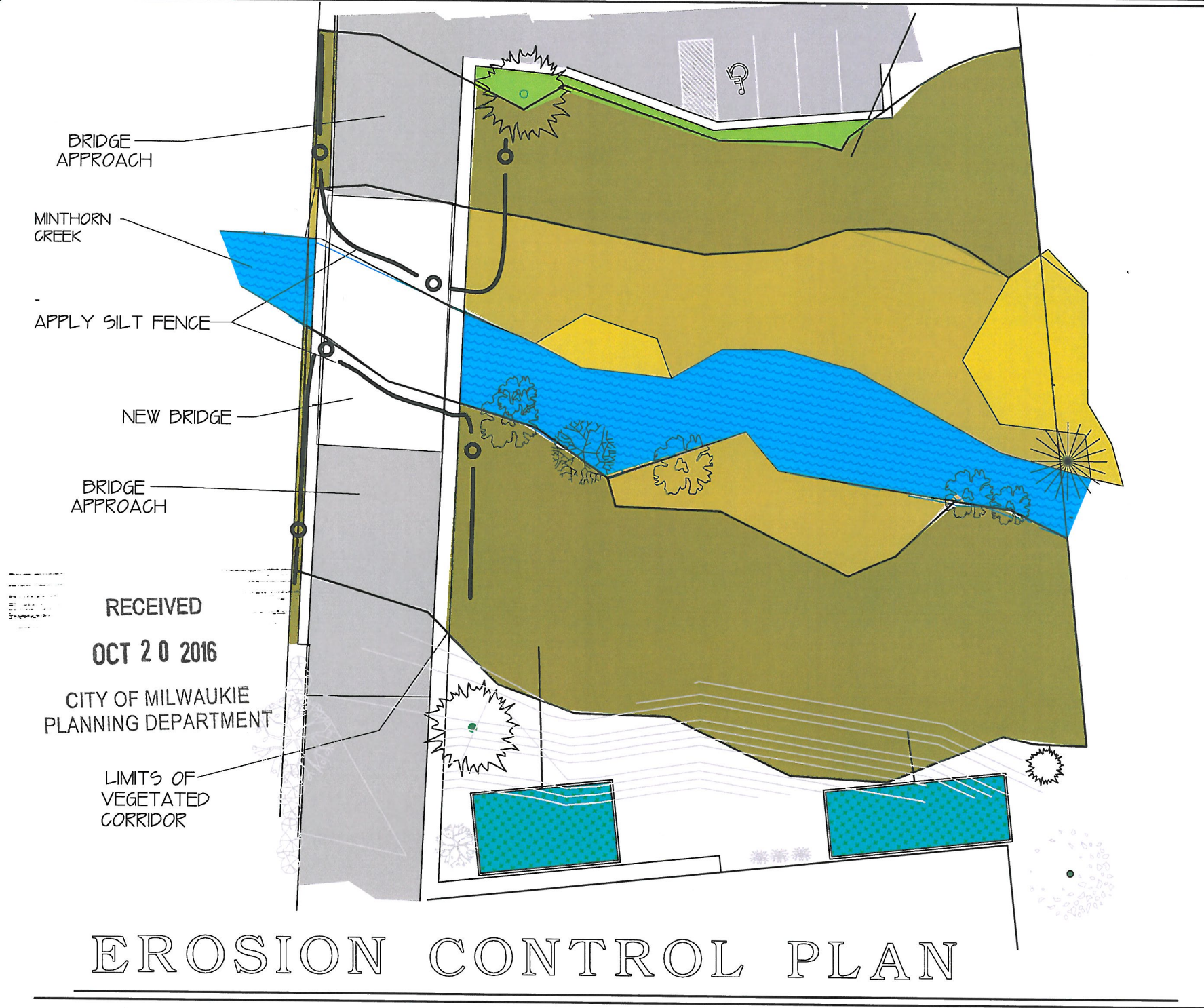
TYPICAL DIAPHRAGM SPLICE



P.O. BOX 1290 • GREELEY, COLORADO 80632-1290
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MODULAR BRIDGE WITH 4 1/4' STEEL DECK INSTALLATION GUIDE

BIG-R BRIDGE
 GREELEY, CO



BRIDGE APPROACH

MINTHORN CREEK

APPLY SILT FENCE

NEW BRIDGE

BRIDGE APPROACH

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LIMITS OF VEGETATED CORRIDOR

EROSION CONTROL PLAN

REVISIONS	DATE

Creations Northwest, LLC
 CREATION
 2800 Warrenton Falls Drive
 West Linn, Oregon
 Office: 503-998-0563

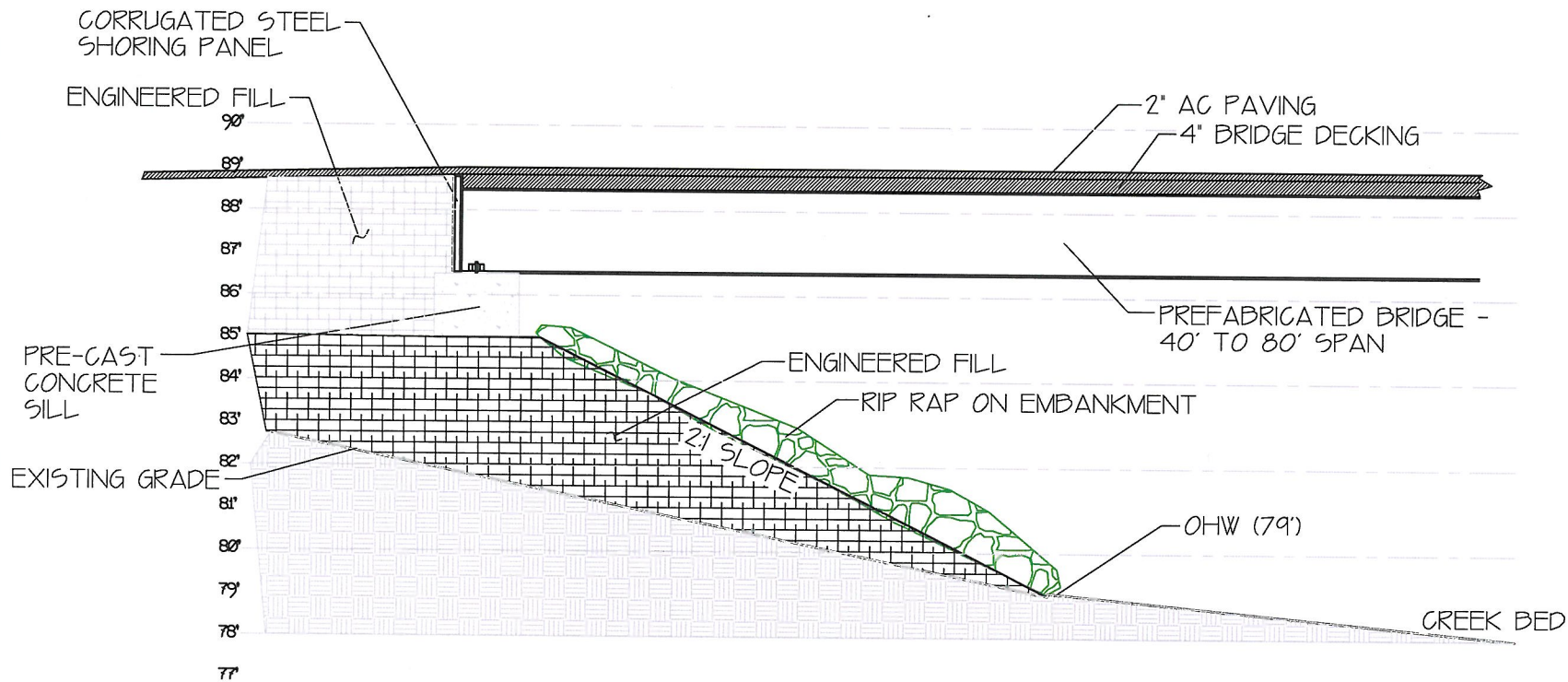
HARMONY ROAD SELF STORAGE
 5965 SE Harmony Rd
 Milwaukie, Oregon

COMMERCIAL STORAGE BUILDINGS
BRIDGE CONSTRUCTION EROSION CONTROL

CADD NAME: HARMONY EC
 DATE: 10-20-16
 SCALE: AS SHOWN
 DRAWN BY: RLH
 PROJECT #HARMONY

SHEET No. **B.2**
 of

1" = 30'



BRIDGE EMBANKMENT DETAIL

1/4" = 1'-0"

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REVISIONS	DATE

Creations Northwest, LLC
 2500 Wilamette Falls Drive, Office: 503-908-0553
 West Linn, Oregon

**HARMONY ROAD
SELF STORAGE**
 5965 SE Harmony Rd
 Milwaukie, Oregon

COMMERCIAL STORAGE BUILDINGS
**ON SITE BRIDGE
EMBANKMENT
DETAIL**

CADD NAME: HARMONY BE
 DATE: 10-20-16
 SCALE: AS SHOWN
 DRAWN BY: RLH
 PROJECT # HARMONY

SHEET No.
B.1
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