ABC with Bridge Kits

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33rd Annual North Central Local Roads Conference
Rapid City, SD - October 17-18, 2018
Panel-Lam Bridge Kits
Overview

• Panel-Lam System
• New Construction
• Repair/Renovation
• Owner or Contractor Built
Longitudinal Timber Deck Panels

Crash-Tested Rail System
- Glued-laminated rail
- High strength hardware
- Solid-sawn posts, curb, scupper blocks, and rail blocks

Wear Surface
- Asphalt (shown)
- Treated timber
- Protects panels from abrasion

Solid-Sawn Spreader Beam
- Provides load distribution

Ship-lapped Panel Connection
- Provides load distribution
- Important for asphalt wear-surface performance

Dowel-laminated deck panel
- 3/8"x15-1/2" Ring shank dowels
- Penetrate 4 laminates
- Simultaneously driven in mechanical press for quality assurance
Pre-manufactured Kits

- Shop Fabricated
- Shipped as Components
- Complete Material Package
- No Formwork
Proven System

- Durable Treatment
- Typical Details
- Standard Equipment
- No Specialty Labor
Single Span
Multiple Span
Foundations
Installation
Wood County, WI - Young Road
Removal of Old Structure
Pile Driven by Contractor
H-Pile Cut Off
Pile Caps Placed
Pile-Stays Behind Backing Plank
Filter Fabric
Rip-Rap Placed
Deck Panels Installed
Crash-Tested Railing
Asphalt Overlay
Juneau County, WI - CTH M
JUNEAU COUNTY, WISCONSIN
COUNTY HIGHWAY "M" BRIDGE
SINGLE SPAN PANEL–LAM BRIDGE

SPECIFICATIONS:

GENERAL:
- ALL DOUGLAS FIR–LARCH TO BE GRADED PER WBC STANDARD GRADE RULES.

MATERIALS & TREATMENT:
- ALL MATERIALS ARE TO BE IN ACCORDANCE WITH CURRENT DEPARTMENT OF HIGHWAY SPECIFICATIONS. ALL TIMBER SHALL BE COATED WITH A TREATMENT TREATED UNLESS NOTED OTHERWISE.
- ALL PILING IS TO BE IN ACCORDANCE WITH CURRENT DEPARTMENT SPECIFICATIONS.
- DECK IS TO BE 12" DOUGLAS FIR–LARCH, NO. 1 S/5.
- BRIDGE RAILING TO BE DOUGLAS FIR–LARCH, DENSE SELECT STRUCTURAL.
- 1-1/2" LAM PLATE TO BE DOUGLAS FIR, CONE. SYMBOL: 24x–1/2, 24x.
- ABUTMENT & SPREADER BEAMS TO BE DOUGLAS FIR–LARCH, NO. 1.
- CUPRUS & SCOURERS TO BE DOUGLAS FIR–LARCH, NO. 1.
- BALANCE OF TIMBER TO BE DOUGLAS FIR–LARCH, IN ACCORDANCE WITH DESIGN SPECIFICATIONS.
- ALL TIMBER IS TO BE TREATED UNLESS NOTED OTHERWISE.

CONSTRUCTION:
- RAILING TO BE CUT TO EXACT LENGTH, DRESSED TO SIZE, AND ATTACHED TO THE FRAME AS PERMITTED.
- ALL DECK PLANKS SHALL BE PRELIMINARIES PRIOR TO INSTALLATION.
- ALL PANELS FOR DECK PLANKS SHALL BE PRECISION AND TRIMMED TO LENGTH WITH 1/8" UNDERWIDTH AND NO IRREGULARITIES OR CHIPPING PERMITTED.
- DECK PANELS SHALL BE ASSEMBLED WITH 5/8" DIAMETER RING SHANK NAILS. ALL NAILS ARE TO BE SIMULTANEOUSLY DRIVEN WITH EQUAL FORCE USING A MECHANICAL PRESS TO THE FULL LENGTH OF THE DECK, ENSURING ALL HEADS ARE FLUSH WITH THE SURFACE OF THE PANEL. MULTIPLE IMPACT TOOLS ARE NOT TO BE USED TO DRIVE NAILS BECAUSE OF POTENTIAL FOR WOOD FIBER RUPTURE.
- DECK PANELS WILL BE DELIVERED TO JOBSITE AFTER BEING FULLY ASSEMBLED AT THE FABRICATION PLANT.
- ALL HARDWARE TO MEET ASTM A307–87 GALVANIZED TO A153. ALL HIGH STRENGTH HARDWARE TO MEET ASTM A499 GALVANIZED TO ASTM A416. ALL STRUCTURAL STEEL TO MEET ASTM A572 GALVANIZED TO 50 KSI. ALL 1/8" GALVANIZED CABLE TO BE ASTM A479.

CONSTRUCTION NOTES:
- FIELDS PLACEMENT OF THE PANELS ON THE CARPET, AT AT, ET. CT. FOR SPAN 1.
- LAMINATED DECK PANELS 5/4" IS PLACED FIRST IN ITS FINAL POSITION ON THE CARPET. NEXT, THE 13/16" DOUGLAS FIR COUNTY HIGHWAY "M" BRIDGE IS PLACED ON THE LOCATION SHOWN AND FASTENED THE 3/4" DIA. COMBINATION SPIKE. NEXT, PLACE PANEL 27 TO COMPLETE THE UPPER SPICE BLOCK. NEXT, PLACE PANEL 28 TO COMPLETE THE LOWER SPICE BLOCK. THEN, PLACE PANEL 29, 30, 31, 32, 33, 34, 35, 36, 37, 38 IN THEIR CORRECT LOCATION. THEN, DRILL THE 9/16" HOLE THROUGH THE LOWER SPICE BLOCK AND DRIVE THE PLATE. NEXT, PLACE PANEL 39 AND PANEL 38 TO COMPLETE THE DECK. THEN, PLACE PANELS 40 TO COMPLETE THE DECK. NEXT, PLACE PANELS 41 TO COMPLETE THE DECK.
- SET THREADS ON ALL BOLTS AT WUT WITH A CENTER PUNCH AFTER TIGHTENING.
- ABUTMENTS TO BE BACKFILLED WITH A CLEAR GRANULAR FILL.
- ALL TIMBER CUT OR DRILLED IN THE FIELD SHALL BE TREATED WITH AN APPROPRIATE PRESERVATIVE.
- CONSTRUCTION REQUIREMENTS SHALL CONFORM TO STATE SPECIFICATIONS.

PLAN SHEET INDEX

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BRIDGE SPAN RATINGS
- BRIDGE IS DESIGNED TO MEET HS–20 LOADING
- RATINGS BASED ON FLEXURE

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REVIEW
- DRAIN LENGTH CHANGE: 7/15

COVER SHEET & SPECIFICATIONS

22" TREATED TIMBER SPAN
28"–1" CLEAR ROADWAY
COUNTY HIGHWAY "M" BRIDGE
JUNEAU COUNTY, WISCONSIN
PL–1 RAIL SYSTEM/30° R.H.F. SKY
County built except Pile Driving
Juneau County, WI - CTH M
Concrete Footing w/ Timber Sleeper
Panel on Timber Sleeper

- Panel spiked to sleeper
- Panel handled once
- Rail posts & curbs attached prior to setting
Final Grading

- Approach fill placed directly against superstructure
- No allowance for thermal expansion required
Superstructure Replacement

Poured Concrete Seat w/ Timber Sleeper
Existing Concrete Abutments
Railing Attachment
Five Panels
Dane County, WI - CTH Z
Dodge County, MN
Deck Replaced in 5 Days
Deck Replacement on Steel Truss
Guthrie County, IA
More Information/Resources

- Wheelerbridge.com
- List books, articles, electronic sources
- List consulting services, other sources