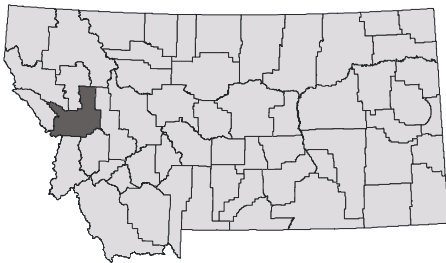
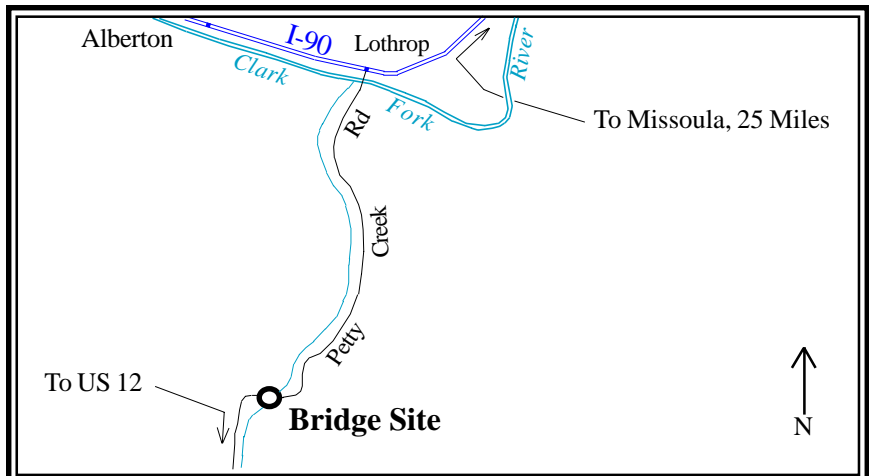


PETTY CREEK BRIDGE, Missoula County, Montana



Type: Stressed TrusJoist Microlam™ T-beam
County: Missoula
Owner: Missoula County
Built in: 1990
Engineer: Merv Eriksson, USDA Forest Service; Fred Crisp, Missoula County; Chris Meyer, TrusJoist, Int.
Spans over: Petty Creek
Bridge length: 38'-6"
Roadway width: 28'-0"

Directions: From Lothrop (Exit 77 on I-90), take Petty Creek Road approximately 6 miles to the bridge site.



USDA Forest Service

The National Wood In
Transportation Program



GEOMETRY

Number of Spans: 1	Design load: AASHTO HS-20	Total project cost: \$133,862
Out-to-out length: 38'-6"	Deadload: Approx. 150 lbs/ft/beam	Total project material cost: \$51,228
Center-of-bearing length: 37'-0"	Superstructure design by: Trus Joist International, Chris Meyer	Total superstructure cost: \$66,813
Skew: 30 degrees, left ahead	Abutment material: Wood	Total superstructure cost/sq. ft.: \$62.80
Number of lanes: 2	Abutment type: Treated timber, Tensar Geogrid™ tieback retaining wall	Total superstructure material cost: \$35,644
Out-to-out width: 28'-0"	Abutment height (bottom of footing to top of deck): 11'-2"	Total superstructure material cost/sq. ft.: \$33.06
Rail-to-rail width: 27'-7 1/2"	Abutment design by: Merv Eriksson, USDA Forest Service	
Number of beams and spacing: 14 @ 2'-0"		
Superstructure square footage: 1078		

MATERIAL

DECK/BEAMS/STRINGERS

Material: Wood (Stressed Microlam™ laminated veneer lumber t-beams)
 Species: Coast Douglas-fir
 Allowable bending stress: 3,080 psi
 Preservative treatment: Pentachlorophenol, Type A solvent
 Retention: 0.6 pcf

ABUTMENTS

Lumber greater than 8" in the least dimension: Coast Douglas-fir glulam
 Remaining lumber: Ponderosa pine, No. 2 grade
 Hardware: A36 black steel, A307 bolts and nuts (uncoated)
 Tie backs: High density polyethylene geogrid, tensile strength 1,000 lbs/ft or greater

GUIDERAIL POSTS

Bridge material: Wood (Microlam™)
 Approach material: Western white wood, No. 1 Grade timber

GUIDERAIL CURB (none)

GUIDERAIL

Bridge material: 12 gauge steel w-beam and steel tube (2" x 12" x 1/4")
 Approach material: Steel w-beam

STRESSING STEEL

Manufacturer: Dwidag Systems Int.
 Bar Diameter: 5/8" galvanized
 Prestressing rods: 5/8" diameter Dwidag bars
 Bearing plates: 1/2" x 5" x 6"

LOCAL IMPACT: This bridge carries County Road L0001 over Petty Creek in Missoula County.

BRIDGE PERFORMANCE: This two-lane, stressed laminated veneer lumber bridge replaced a deteriorated single lane timber bridge. The new Petty Creek Bridge is the first "t-beam" laminated veneer lumber bridge installed by Trus Joist International (now Trus Joist Macmillan), and the first bridge designed using an adjustable tension geogrid tieback system.

FUNDING SOURCES: USDA Forest Service: \$30,000; Balance of funding from Missoula County, Montana.

LOCAL CONTACT: Fred Crisp, County Engineer
 Missoula County Highway Department
 Missoula County Courthouse
 Missoula, MT 59807
 Phone: 406-721-5700 ext. 3280

Information provided by Merv Eriksson, USDA Forest Service

WIT Program Proposal Number: R01-001-89-VEH

Federal Grant Identifier: R01-001-89-VEH

