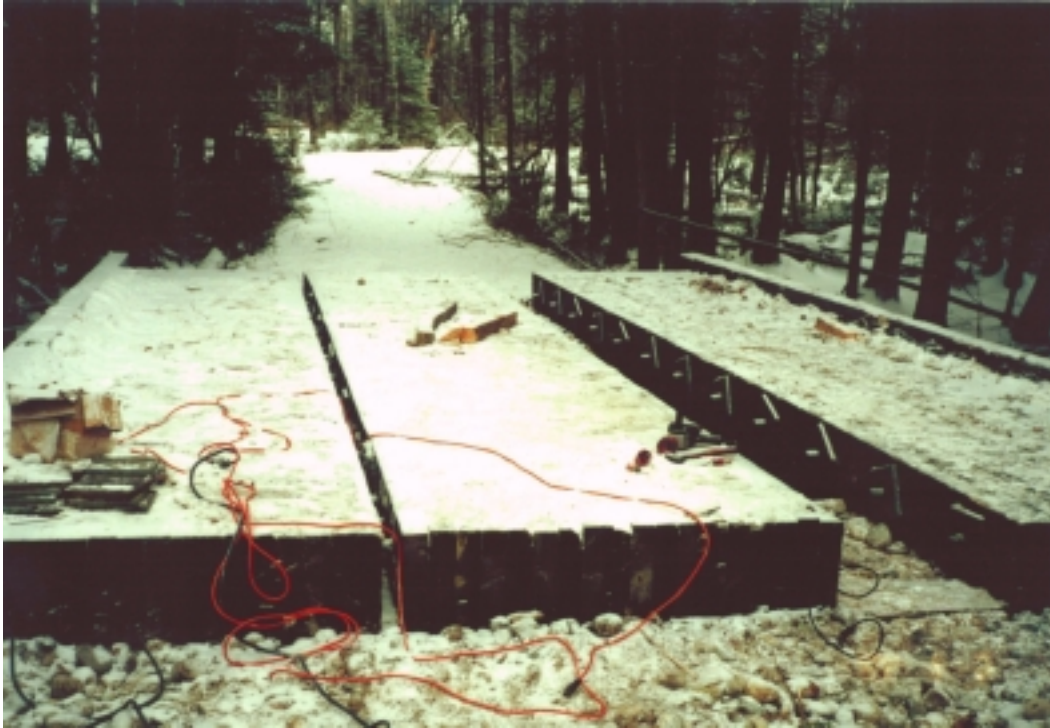


PORTABLE LOGGING BRIDGE, MICHIGAN



DESIGN TYPE: STRESS-LAMINATED SLAB DECK

YEAR BUILT: 1995

DESIGN ENGINEER: MICHIGAN DNR

INSTALLED BY: USERS

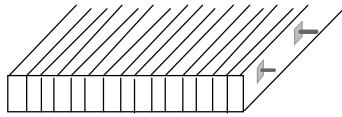
FABRICATED BY: MICHIGAN STATE INDUSTRIES

LOCATION: TO BE USED TO ACCESS VARIOUS TRACTS OF STATE LAND FOR TIMBER SALES OR FIRE ACCESS.



Portable Bridge

BRIDGE GEOMETRY



STRESS-LAMINATED SLAB

Spans:	1	Load Rating:	HS-20
Number of Lanes:	1	Abutment Material:	Timber Sill - 12" x 12"
Total Length (feet):	24	Deck Lumber Tally:	4 MBF
Out-to-Out Width (feet):	14	Deck Cost:	\$7,425
Curb-to-Curb Width:	13	Total Project Cost:	\$14,850
Chord Lamina Size:	2" x 12"		

BRIDGE MATERIALS

DECK

Species: Red Pine
Quantity: 4 MBF
Preservative: CCA
Stressing Rods: 5

SUBSTRUCTURE

Type: Squared Sill Plate
Species: Pine
Preservative: CCA

WEARING SURFACE:

None

RAILINGS: None, but has 6" x 6" curbs

LOCAL IMPACT

The portable bridge was intended to be installed and used by logging contractors for use on timber purchased from the Department of Natural Resources. The DNR has many stands of timber needing management which often contain a portion that is inaccessible due to a drainage-way, but there is not enough volume to warrant a permanent stream crossing. Also, there are many areas that land managers would prefer to leave inaccessible by vehicles once the timber has been harvested. Portable bridges could also be temporarily placed over existing inadequate bridges.

BRIDGE PERFORMANCE

The bridge was used by chip vans during a winter logging operation in Alcona County and performed very well.

FABRICATION & ERECTION

Inmates fabricated the un-treated planks into three equal panels, using stressing rods for each panel. The panels were treated whole with CCA. Holes had been drilled in each panel to accommodate the rod-ends of the adjoining panels. During installation by the logging contractor, it was found too difficult to line up the rods with the holes, so pine blocks were placed between the panels and then all three panels were stressed to 14 tons on each of the five rods. The site was high-banked. Locally obtained ten foot abutment poles were jammed into the stream bed by the feller-buncher, then logs were placed horizontal behind the poles, filter fabric placed, and back-filled with 3" rock. The 12" x 12" sill plates were embedded into the rock aggregate and the bridge placed on the sill plate. The entire process took less than two days.

FUNDING SOURCES

USDA Forest Service: 50%

Other Sources: 50%

LOCAL CONTACT

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COOPERATING AGENCIES



USDA FOREST SERVICE
NORTHEASTERN AREA
STATE & PRIVATE FORESTRY



MICHIGAN
DNR