



Field Metalizing of a Steel Beam Bridge

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Bridge Information

- Project: Hardwick BF 037-3(8) State Bridge Program
- Route: VT 16
- Bridge: Br. 1
- Built: 1950
- Span: 82 ft.
- 6 – 36WF280 Rolled Beams
- 15 - MC 18 x42.7 Channel Diaphragms
- Total Weight of Structural Steel: 142,000 lbs. (71 Tons)
- Total Surface Area Coated: 5300 Sq. ft.

Construction Duration

Total Construction	April 2021 – July 2021	3 Months
Metalizing Operations	May 18 to June 7	3 weeks

Total Project Cost

	Estimated	Actual
Preliminary Engineering	\$125,000	\$47,624
Right of Way	\$0	\$0
Construction	\$615,000	\$464,840
Constr. Engr.	\$92,250	\$132,073
Contingency Items	\$80,000	\$0
Total	\$912,250	\$644,537

Cost Comparison to Painting

Major Items	Cost	Cost/Ton
• Removal and Disposal of Paint	\$212,192	\$2,990
• Field Applied Metalizing	\$115,000	\$1,620
• Field Painting (est.)	\$120,700	\$1,700



Installation of Staging



Application of Metalizing



Repairing Staging Hanger Locations

Construction Issues

- Using a larger zinc wire 3/16" vs 1/8" would increase production.
- Humidity is a major factor during metalizing and can be difficult to control in the field.
- Clear sealer coating over metalizing left streaks in final appearance.
- All adhesion tests, bend tests and coating thicknesses met specifications.



Streaks in Metalized Coating



Finished Product