



## Route 23 Bridge over Otego Creek

### Description

#### Meta Fields

**Abc Construction Equipment** : Conventional

**Miscellaneous Prefabricated** : CIP reinforced closure joints, UHPC closure joints, standard concrete overlay

**Prefabricated Bridge Elements** : Full-depth precast deck panel w/o PT (with UHPC closure joints)

**Project Delivery** : Design-bid-build

**Longitude** : -75.1083298

**Latitude** : 42.4700012

**Nbi #** : 1017580

**State Id #** : 1017580

**Construction Equipment** : Conventional

**Total Bridge Length Ft** : 131.2

**Max Span Length Ft** : 131.2

**Beam Material** : Steel

**Spans** : One-span

**Location** : Rural

**Owner** : State

**State** : NY

**Year Abc Built** : 2009

**Contract Plans** : 1

**Funding Source** : Federal and State

**Costs** : The engineer's estimate for the project was \$1.78m. The low bid was \$1.46m.

**Contacts** : Richard Marchione, P.E. Director, Office of Structures New York State Department of Transportation Richard.Marchione@dot.ny.gov 518-457-6827 **Submitter**: Mary Lou Ralls P.E. Principal Ralls Newman, LLC ralls-newman@sbcglobal.net 512-422-9080 **Contractor**: Tioga Construction Company, Inc.

**High Performance Material** : UHPC, galvanized bars

**Stakeholder Feedback** : The use of UHPC eliminated the need to post-tension the deck panels, which decreased the duration of construction. Also, NYSDOT anticipates that the cost will be reduced for future projects using UHPC joint fill as contractors become more familiar with the UHPC material and processes.

**Construction Method** : The 5,436 sq ft of precast deck panels were fabricated with projecting

galvanized bars that were spliced with the bars projecting from adjacent panels. After the beams and panels were erected, joint formwork was placed and the joints were filled with UHPC. The closure joints were then covered and cured. After curing, a 2-inch-thick concrete overlay was placed to provide a smooth riding surface.

**Replacement Or New Bridge :** The two-lane steel stringer integral abutment replacement bridge is New York State's second use of ultra-high-performance concrete (UHPC) deck closure joints. The bridge consists of five 56-inch-deep steel plate girders spaced at 9.18 ft. The 8-inch-thick precast deck panels were installed on the beams, and UHPC was used to connect the panels in a six-inch-wide closure joint between panels.

**Existing Bridge Description :**

The existing two-lane bridge, consisting of steel through girders on concrete deck, was deteriorated and required replacement.

**Traffic Management :**

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**Average Daily Traffic At Time Of Construction :** 6903

**Dimensions :** 131.2-ft long and 42.7-ft wide single-span steel plate girder bridge

**Primary Drivers :** reduced traffic impacts, improved material quality and product durability, improved site constructability

**Impact Category :** Tier 5 (within 3 months)

**Project Location :**

NYS Route 23 in Otsego County near the village of Oneonta

**Project Summary :**

New York State's second use of ultra-high performance concrete (UHPC) deck closure joints