Village of Ellenville and Town of Lloyd Utilize Stimulus Funds For Infrastructure Projects

By Jeremy Bourdeau, P.E., Barton & Loguidice, P.C.

The Village of Ellenville and Town of Lloyd, both located in Ulster County, recently secured 100% federal stimulus funds for projects utilizing precast concrete bridge structures. Each of the projects outlined below were “shovel-ready” prior to the September 2009 deadline and, with the assistance of the Ulster County Transportation Council and NYSDOT Region 8, were awarded 100% federal stimulus construction funds under the American Recovery and Reinvestment Act. Each of the projects was bid during the fall of 2009 and was constructed in the 2010 construction season.

Hudson Valley Rail Trail – Phase 2, Town of Lloyd, Ulster County, NY

The 1.25 mile-long section of trail that was completed in 2010 as Phase 2 connects the existing trail in the Hamlet of Highland to the Walkway over the Hudson. With the future completion of Phase 3, the HVRT will ultimately provide users a fully off-highway, multi-use trail that connects the Town of New Paltz, Town of Lloyd and the City of Poughkeepsie.

One of the most significant engineering challenges of the HVRT Phase 2 project was at the location where Mile Hill Road bisects the former railroad corridor. An old concrete arch bridge once carried Mile Hill Road over the railroad; however this arch was demolished and filled in when the railroad was abandoned, creating a roadway embankment that was approxi-
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mately 25 feet high and 180 feet wide at its base. One of the main objectives during the design of the Phase 2 segment of the HVRT was to re-establish this underpass so that trail users could pass underneath Mile Hill Road and remain traveling through the pristine countryside while avoiding an at grade road crossing.

The new structure utilized a combination of precast and cast-in-place concrete construction. The main structure consists of nine precast concrete ConSpan arch units each with a span of 28 feet and an 11-foot rise. These units are founded on cast-in-place concrete stem walls and footings. Cast-in-place concrete wingwalls were utilized to tie the structure into the steep rock outcrops that line the project site. The precast headwalls and end arch units were constructed with concrete form-liner, stained to emulate natural limestone and included a “keystone” to give the structure the appearance of a stone arch.

Project credits include: Owner – Town of Lloyd; Engineer – Barton & Loguidice, P.C.; Contractor – Merritt Construction, Inc.

Beckley Drive over the Fantine Kill, Village of Ellenville, Ulster County, NY

The structure carrying Beckley Drive over the Fantine Kill provides the only means of public access to a small residential neighborhood in the Village of Ellenville. The design and construction of the bridge replacement needed to maintain vehicular access through the project site at all times via a temporary on-site detour and temporary bridge structure. Additionally, the project design and construction needed to maintain public sewer and private overhead utility (electric, telephone and cable) service through the project site for the duration of construction.

The former structure was a three-span, steel-pipe structure exhibiting significant scour and structural deterioration. Hydraulic limitations resulted in channel migration at the inlet and deposition bar creation upstream of the bridge. The bridge was replaced with a single-span, three-sided precast rigid-frame structure founded on cast-in-place concrete footings and driven steel piles. The main structure consists of four precast concrete rigid frames each with a span of 24 feet and an 8-foot rise. The new single span structure provides for a significant increase in hydraulic capacity and will yield improved performance over its lifetime.

Project credits include: Owner – Village of Ellenville; Engineer – Barton & Loguidice, P.C.; Contractor – Hudson Valley Bridge Construction, Inc.; Precast Supplier – The Fort Miller Company, Inc.
Little Valley Bridge with a Big Curve

The Town of Little Valley in Cattaraugus Co. recently replaced Bridge #15 with twin cell 16'-0" span by 8'-6" rise precast box culverts (17 pieces, 32 tons each). In addition to the box culverts, there were eight 28-ton cantilever wing walls, and all the precast was set in 2 days. The project layout drawing shows how the tapered sections laid out to form the required curve. Stop Logs were pre-installed into bottoms of Box culvert to retain natural stream bed when in service.

Our thanks to Mike Kistner for sharing this work.
Professional Member In Top Rankings

Congratulations to CDM, Cambridge and locally in Syracuse, for making ENR’s Top 200 International Design Firms July listing, as well as The Top 50 Program Management Firms June listing.

Membership Appreciation to Lancaster Development

As a gesture of our gratitude, we award Dom Izzo, Lancaster Development, Inc. of Richmondville, NY, Professional Member status. He generously agreed to set up the test pieces (deck panels and girders) and cast the ultra-high strength concrete connections, so that the new FHWA/NYSDOT bridge detail could be tested at the FHWA Testing Facility in Virginia. And the tests worked out exceedingly well!