

Pinnacle Road North Culvert Replacement

A Cooperative Effort Leads to a Successful Result

Situation and Task

The Pinnacle Road Culvert over Honeoye Creek Tributary, S.I.N. 16-092-055, was a stone masonry culvert with a widened concrete portion on one side. Pinnacle Road is a two lane county road with a traffic volume of approximately 1,030 vehicles per day. The existing structure was built circa 1900 and consisted of 2 spans, measuring 4' wide by 4' high.

The existing historical stone masonry culvert was beginning to fail. Careful consideration was made to preserve the look and feel of the original culvert. After determining that a new structure would better suit the life cycle, the design team looked at the unique approach of recycling and reusing what was once the stone masonry culvert. The 2 span culvert was methodically disassembled to be utilized in the proposed project.

The project was constructed primarily by a team of Town of Wheatland and Monroe County maintenance forces, supplemented by a general contractor. CP Ward was awarded a contract to furnish and install the precast concrete culvert units.

Analysis

CP Ward arrived on the scene equipped with 10 precast box units to be set, joined, and waterproofed. Lakelands Concrete Products mobilized a crane to hoist the units that they were responsible for fabricating. All 10 units were installed, including grout, in 1 day. The installation was finalized the following day, when the waterproofing was applied. Once the proposed culvert was complete the backfilling and construction of wingwalls could begin.



The client and the design team liked the rustic look of the existing culvert but after the determination was made that rehabilitation was not an option, thinking outside of the box ensued. What if we could preserve the look and feel of the stone culvert? The recycle/reuse concept came to be and the construction team was asked to dismantle the culvert. When the deconstruction process began, it appeared that this novel idea might not be practical.

The crew separated the most practical stones, helping to guarantee that the placement went smoothly. The salvaged stones were strategically dry-laid by the maintenance forces. Care was taken to stagger and stack the large stones. The re-use of the salvaged stones helped to maintain the aesthetics of the structure while reducing the cost of construction. This ingenious foresight helped circumvent the initial concerns that the irregular shapes would be cumbersome to place.

Result

Pinnacle Road was reopened for traffic. The innovative teaming approach used for this project maximized utilization of available municipal resources. Considerable construction cost savings were made possible with the “in-house” contractor. Lastly, the management of the project by the owner, the

Monroe County Department of Transportation, eliminated the need for a consultant construction inspector.

The design of the culvert by Ravi Engineering & Land Surveying went very well, and was completed on schedule. CP Ward was able to meet the schedule, since the shop drawing review was expedited by the County and Ravi Engineering reviewing the drawings concurrently. The completion of the project, including the unique recycling of construction materials, was run smoothly and on budget.



To ensure good relationships and to assist in moving the project forward, RE&LS staff served as a liaison with the local community, stakeholders and regulatory agencies as necessary.

An additional culvert replacement was completed south along Pinnacle Road immediately following the completion of this culvert, which contributed to some coordination issues, which were solved quickly by field meetings with the contractor, designer and County personnel. The entire corridor, including both culverts, was completed without any safety issues or concerns.