

SCOPE OF WORK

Engineering Design Services

Castleton Route 4A West Sidewalk Project – STP BP 13(10)

Purpose of Contract:

The Town of Castleton will retain the services of a qualified consulting firm to provide engineering services for preparing contract plans, specifications and a construction cost estimate, as detailed below, for the project outlined in the project description section. Also, all bid documents are required to conform to the VAOT bid document standards and regulations as well as the Municipal Assistance Bureau (MAB) project development process.

Project Description:

The Castleton Route 4A West Sidewalk Project will entail the development of an approximately 2,750 foot long new ADA-compliant concrete sidewalk along the north side of VT Route 4A. The project will begin at the Route 4A intersection with Drake Road, near Castleton Corners, and head westward towards the Hydeville section of Castleton. The intent of this project is to create a safe route for pedestrians, along Route 4A, between Castleton Corners and Hydeville. Currently, the area does see considerable pedestrian activity, due to the concentration of residences, retail business and service businesses in the area. However, to get back and forth, walkers must travel along a path that has been worn in the grassy area within the highway right-of-way. Those in wheelchairs have to travel within the highway's paved shoulder.

This project will constitute Phase Two of a Town plan to create a network of sidewalks that will provide for and encourage safe pedestrian passage within and between the village areas of Castleton. Phase One, currently under development, will result in a new sidewalk that will connect Castleton University to Castleton Village and create a network of sidewalks that tie together residences and businesses in the Castleton Corners area. This proposed Phase Two will connect to Phase One at the intersection of Route 4A and Drake Road and proceed westward, towards Hydeville, from there.

Development of the Project:

This contract will be developed according to the VTrans MAB Development Process and as described below. The selected Consultant will provide services during the following project phases as outlined in the *2014 VTrans Municipal Assistance Bureau Local Projects Guidebook for Locally Managed Projects*:

- Phase A – Project Definition
- Phase B – Project Design
- Phase C – Construction

The *2014 VTrans Municipal Assistance Bureau Local Projects Guidebook for Locally Managed Projects* may be found at the VTrans website via the following link:

http://vtransengineering.vermont.gov/sites/aot_program_development/files/documents/ltf/Municipal%20Assistance%20Bureau%20-%202014%20Local%20Projects%20GuideBook.pdf

Related appendices for the *2014 MAB Guidebook* may be found via the following link at the VTrans MAB website:

http://vtransengineering.vermont.gov/sites/aot_program_development/files/documents/ltf/Municipal%20Assistance%20Bureau%20-%202014%20Local%20Projects%20Guide%20Appendix.pdf

The Consultant shall maintain continuous contact with the Local Project Manager (LPM), Pat Travers. The Consultant shall also have an active role in the processes of public participation and coordination. The Consultant may be required to attend additional meetings with the LPM, town officials and property owners, as circumstances require.

It will be the responsibility of the Consultant to provide weekly, bi-weekly, or monthly updates to the LPM, the VTrans MAB Project Manager, the Town and the design team. All meetings and discussions will be documented and minutes provided to the project team. The Consultant will be responsible for investigating all applicable State and Federal Land Use laws and regulations that have any bearing on the proposed project.

Phase A- PROJECT DEFINITION

Task 1: Project Kick-off

The consultant will convene a project kick-off meeting to discuss the goals and objectives of the municipality and define the project development process. The meeting will include the LPM and Castleton Town Manager. The VTrans Project Supervisor will also be a participant in this meeting and will provide an overview of the typical project development schedule for MAB projects. The Consultant will discuss the project schedule and arrange to collect all information relevant to the project, including all existing project files, underground utility information, tax maps of the affected properties, etc. The consultant will coordinate and schedule this meeting and take notes to document the discussions and decisions made and to distribute to parties of interest.

Task 2: Topographic Survey and Base Mapping

2.1: Right-of-Way and Deed Information

The consultant is to develop a base map that shows the approximate limits of the existing Right-of-Way. The municipality will provide available roadway plans, land records, property deeds and tax maps on file for the properties within the project limits. The purpose will be to document the property lines and owners within the project limits for subsequent Right-of-Way use. This right of way and property information will be compiled and presented on the plans.

2.2: Utility Location

The consultant shall identify all existing overhead and underground utilities that may be affected by project construction and depict their location on project plans.

2.3: Ground Survey

The consultant will perform the topographic survey for this project in general accordance with VTrans survey guidelines and requirements. The survey will include enough information to design, permit, acquire Rights-of-Way and construct the project.

Task 3: Conceptual Plans

The consultant will prepare Conceptual Plans and a conceptual construction cost estimate for the improvements. The Conceptual Plans will indicate the existing topography and other base information, and illustrate the proposed work. The design will be in accordance with the Vermont Pedestrian and Bicycle Facility Planning and Design Manual, 2011 VTrans Standard Specifications for Construction, the current editions of the Vermont State Standards, the Accessible Design Guidance issued by the US Access Board, and the most recent edition of the Manual on Uniform Traffic Control Devices. Identified rights-of-ways, utilities, natural and cultural resources, and other features affecting the design will be indicated on the plans. The basis for project pay items will be the VTrans Standard Specifications for Construction. Note that if the project falls primarily within the right of way of a state highway, the plans shall be developed using MicroStation software and shall generally follow the 2008 VTrans CADD Standards and Procedure - <http://www.aot.state.vt.us/CADDhelp/Default.htm>.

The Conceptual Plans are anticipated to consist of:

- Title Page
- Layout Sheets showing existing and proposed features
- Preliminary profiles
- Approximate right of way lines and construction limits
- Identification of all abutting property owners, approximate square footage of any permanent takings and indication of the purpose for each easement required for the project. (This is due to known historic resources in the project area).
- Typical Sections for the proposed improvements
- Cross Sections

Together, these drawings illustrate the information necessary to define the project and will include information such as:

- Roadway, sidewalk and/or path design (cross slope, material type and thickness)
- New or modified subsurface drainage
- Limits of Construction
- Pavement markings and signs

The consultant will submit two full size copies of the Conceptual Plans and construction cost estimate to the municipality, along with one set of the plans and estimate for VTrans in .pdf format. VTrans distributes plans electronically for review and they must be in .pdf format for this purpose. The conceptual cost estimate will be prepared in the standard Trans*Port Estimator format and will be submitted as both an Estimator file (.est) and in .pdf format. The consultant will develop the construction cost estimate utilizing individual items and unit prices.

Task 4: Resource Constraints and CE Documentation

The consultant is expected to identify natural and cultural resources on the project plans to support the municipality in satisfying the NEPA process which is expected to be at the level of Categorical Exclusion (CE).

4.1: Natural Resource Identification

The consultant will confirm the presence or absence of any known natural resources in the project vicinity and will identify these resources on plans of the project area.

4.2: Historical/Archaeological

The consultant will determine any historical or archaeological impacts and VTrans staff will provide concurrence as part of completing the CE.

4.3: Other Permitting and Investigations

The Consultant will determine the need for other environmental permits and will assist the municipality in acquiring all necessary federal, state, and local environmental permits necessary to complete the project. The municipality is generally responsible for any permit fees, although these are waived for some permits.

4.4: Preparation of the Categorical Exclusion Document

Because federal funding is involved with this project, the National Environmental Policy Act (NEPA) process and requirements must be followed. To meet the requirements of this act, a Categorical Exclusion (CE) Document must be completed. The consultant will prepare the VTrans environmental analysis sheet and supporting documentation will be submitted to VTrans for review and concurrence. VTrans will complete the process with the FHWA.

Phase B- PROJECT DESIGN

Task 5: Preliminary Plans

Once the NEPA process has concluded, the consultant will develop preliminary plans for the project.

The preliminary plans will include all the information from the conceptual plans and will add further detail, including any stormwater drainage and required erosion prevention and sediment control measures. The preliminary plans will contain:

- Title Sheet
- Typical Sections
- Base Plan with a project centerline and existing ROW information
- Profiles
- Cross Sections
- Driveway treatments
- Drainage details
- Erosion Prevention measures and details
- Signs and pavement markings

- Lighting
- Traffic control plans for motor vehicles and pedestrians

In addition to the preliminary plans, the consultant will develop a revised Engineer's Estimate.

A submittal to VTrans is expected at this stage for VTrans review. The plans and estimate will be submitted to VTrans in a .pdf format. All comments and changes resulting from the review will be addressed by the consultant in the following set of plans.

Task 6: Right-of-Way Plans and Acquisition Process

Using the project construction limits and any anticipated need for temporary rights during construction, the need for additional right of way will be confirmed by the Consultant. They will determine if any additional right-of-way (ROW), including all permanent and temporary easements, beyond the existing ROW is required to construct the project. If the project is in a state highway ROW, it will require a section 1111 permit and the consultant will obtain this permit from VTrans.

6.1: Right of Way Plans

Existing ROW, and all areas of additional ROW, whether temporary or permanent, will be clearly indicated on ROW plans prepared by the Consultant in accordance with standard survey practices. Draft ROW plans and draft easements will be submitted to VTrans for review and approval prior to negotiating with property owners. Easement language must be consistent with guidance provided by the VTrans ROW section. ROW plans must include all of the elements of preliminary plans with the addition of the following:

- Right-of-Way detail sheet
- Property Acquisition Table

In the event that Right-of-Way acquisition is simple and/or does not involve many parcels, it is acceptable to include Right-of-Way information on the project plan sheets.

6.2: Right of Way Coordination

The municipality will be responsible for appraisals, negotiations and completing the acquisitions. The Consultant will provide assistance and work closely with the municipality throughout the ROW phase, including any Necessity and Condemnation procedures. ROW acquisition must conform to Public Law 91-646 and 100-17, which together are referred to as the "Uniform Act."

Task 7: Final Design/Bidding

The consultant will prepare the final construction design of the project. Final Design will include final plans, an updated construction cost estimate, and draft special provisions. These provisions will supplement the VTrans Standard Specifications for Construction (2011) which will serve as the basis for the construction of the project. Final plans will be submitted to VTrans for review and comments. All comments and changes resulting from the review will be addressed by the consultant in the following set of plans. The contract plans will include all information necessary to put the project out to bid.

7.1: Final (85%) Plans

The Consultant will submit Final Plans along with an updated listing of items and quantities, and an associated cost estimate for review and concurrence by the municipality and VTrans. These plans will incorporate all comments and conditions received from permitting agencies. Final utility relocations will be shown. ROW plans (if necessary) showing acquisition lines and any agreements made with property owners will be included. The Consultant will certify through the signature of an engineer registered in the State of Vermont to practice "structural or civil" engineering that these plans and subsequent 100% plans meet all applicable standards, codes and requirements for design and public safety. The Consultant will also provide a "Utility Clearance" that indicates that all necessary utility coordination has been completed.

7.2: Special Provisions

The Consultant will develop any project special provisions to cover items not contained in the VTrans 2011 Standard Specifications for Construction or those items that vary from the standard specifications.

7.3 Final Estimate

The consultant will develop a final engineer's estimate.

Task 8: Contract Plans, Construction Bidding and Award

The consultant will take all the necessary steps to provide the municipality with a complete package which can put out to bid. The municipality is responsible for the bid advertising process.

8.1: Contract Plans

The consultant will submit Contract (100%) Plans along with an updated list of items, quantities and an associated cost estimate for municipal and VTrans review and concurrence. These plans will incorporate any final changes since the review and acceptance of 85% Plans. These plans will be signed and stamped by the Consultant's licensed PE.

8.2: Construction Bid Package

Once the Contract Plans are approved, the Consultant will be responsible for assembling the Construction Bid Package. The complete Construction Bid Package will include all of the following items:

- Complete Contract (100%) Plans.
- Construction cost estimate.
- Final utility relocations, clearances, and special provisions.
- Right-of-way clearances and special agreements.
- Construction special provisions.
- All necessary permits acquired and conditions noted.
- Construction Contract Specifications.

- Bid Documents including instructions to bidders, bid form and all required federal documents **(Note: VTrans has developed a bid document template that may be used as a starting point.)**

8.3: Bid Process:

The Consultant will be available during the bidding process to answer any technical questions about the project design. Once bids are opened, the consultant will confirm that all required components of the bids have been submitted. The consultant will conduct an analysis of the bids and will provide a recommendation to the municipality on award of the contract after review of the bids. The bid analysis will generally follow FHWA's Guidelines on preparing Engineer's Estimate, Bid Reviews and Evaluation dated January 20, 2004. This can be found at www.fhwa.dot.gov/programadmin/contracts/ta508046.cfm

Phase C- CONSTRUCTION

Task 9: Construction Services

The Consultant will provide limited assistance during the construction phase, primarily to answer any design questions that come up. The consultant will also review any required shop drawing submittals. It is anticipated that several visits to the project site during construction will be required.

The consultant will also participate in the pre-construction conference, to be moderated by the Town's Resident Engineer, just prior to the start of construction.