

March 29, 2018

Streambed Restoration Plan

Stream Crossing #1

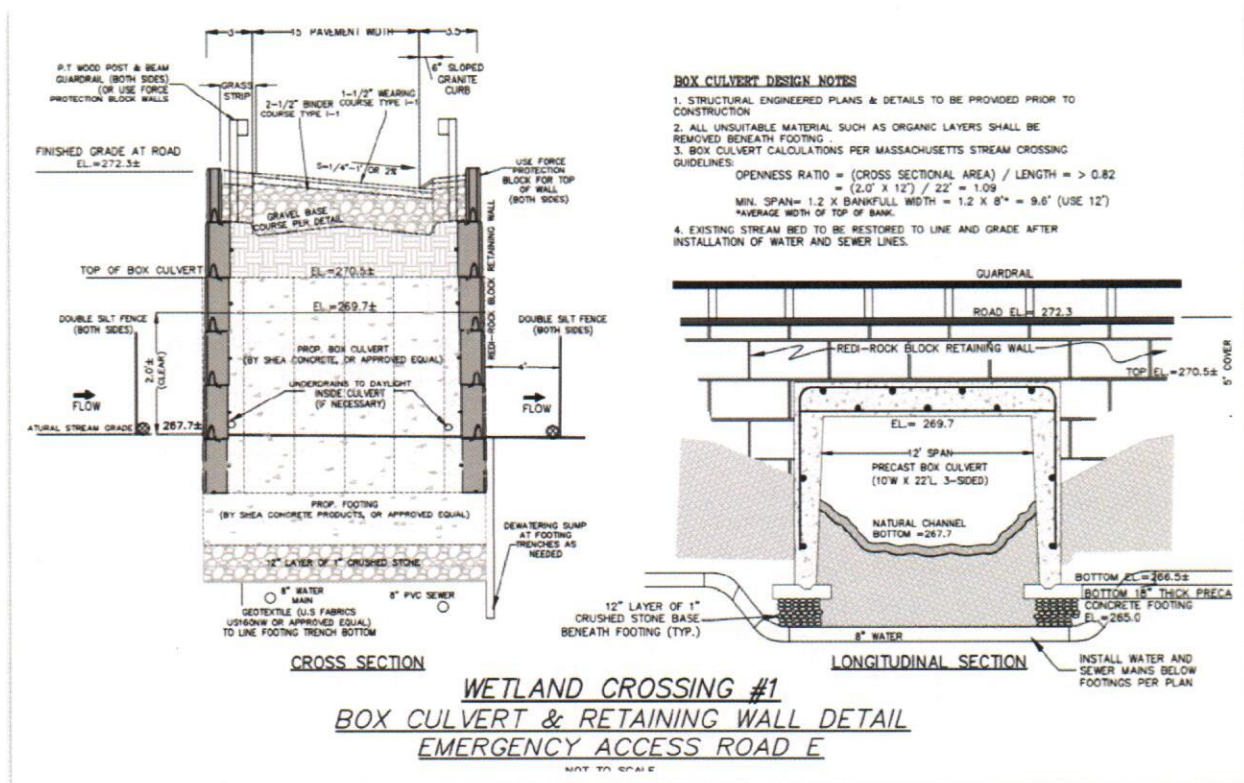
Timber Crest Estates Development
Medway, MA

Submitted to:
Medway Conservation Commission

Prepared for:
Timber Crest Estates LLC

Introduction

On behalf of the applicant, Timber Crest Estates LLC, Goddard Consulting, LLC is pleased to submit this Streambed Restoration Plan for the construction of "Wetland Crossing #1" of the Timber Crest Estates development in Medway, MA. This crossing is located within the 13 Ohlson Circle property, to the east of the existing residence. The crossing will consist of a three-sided box culvert over an intermittent stream for construction of a 15-foot wide emergency access roadway (see detail below). 70 linear feet of Bank will be altered by the crossing.



Existing habitat at the crossing location consists of a narrow intermittent stream, with no Bordering Vegetated Wetland present beyond the Banks. Shrub species present along the banks include glossy buckthorn, multiflora rose and northern arrow-wood. Grape vines and poison ivy also are present in some areas, and goldenrod grows in the dry stream channel. In some portions of the crossing area, the stream is as little as one foot wide. The stream appears to flood to approximately 6-8 inches deep.

Streambed Restoration Procedure

1. Supervision: All work shall be supervised by a qualified wetland scientist with a minimum of five years' experience. The supervisor shall submit monitoring reports to

the Conservation Commission as described below. Reports shall contain details of all work performed and photographs of completed conditions.

2. Timing: Work within the stream shall take place during low- to no-flow conditions, which is typically between July 1 and September 30.
 - a. If flow is encountered, provide a temporary sand bag dam or pump system upstream to divert stream around construction area.
 - b. Provide dewatering basin if pumping is required.
3. Survey: Field stake limit of work as shown on the project site plans.
4. Photograph Pre-Construction Conditions: Supervising Scientist shall take detailed photographic and/or video documentation of pre-existing streambed conditions. This will aid in the restoration of pre-existing streambed conditions within the culvert after installation.
5. Erosion Control Barrier (ECB): Place ECB (staked siltation fence and mulch sock, or similar invasive-free barrier) upstream and downstream of crossing location, as shown in the project site plans. This will remain in place and be maintained until the areas are completely stabilized.
6. Remove any potential wildlife habitat features: This includes rocks, stones (at least 6-inches long +/-) or large woody debris. These features should be stockpiled nearby for later replacement within the culvert.
7. Excavate stream bed material: First excavate top 1-3 inches of organic, sandy or cobbly substrate. Stockpile material carefully in a designated location nearby for replacement in culvert. Then remove remainder of stream bed soils to desired grade.
8. Install Culvert: Perform the culvert installation in accordance with approved structural engineered plans and details.
9. Restore Streambed: Following culvert installation, restore historic stream channel and substrate.
 - a. Grade stream channel in accordance with the proposed grading. Final micro-topography of the channel should be a sinuous configuration to match the profiles of the existing stream above where the stream is in its natural state.
 - b. If the topsoil has been stripped, replace with stockpiled material.
 - c. Place rocks or stones (6-inch +/-) in the stream bed (try to use those existing on site if none were stockpiled) in a natural/random formation to approximate the existing historic stream bed.
10. Complete roadway: Following installation of utilities, culvert and completion of streambed restoration, complete the roadway with final grading, curbing, and paving.

11. Restoration Monitoring: Annual monitoring reports shall be prepared for the restoration area by a qualified wetland scientist for a period of 2 additional years after installation. This monitoring program will consist of a once-annual inspection, during spring or other time of year when the stream is flowing **and** vegetation is growing. Monitoring reports shall be submitted to the Commission by November 30th of each year. Monitoring reports shall describe, using narrative and color photographs, the physical characteristics of the streambed restoration area with respect to flow characteristics, wildlife habitat features, soil characteristics, and survival of vegetation from the seed mix.