

**TOWN OF HARWICH  
ENGINEERING REVIEW OF DEFINITIVE SUBDIVISION PLAN  
FOR CONFORMANCE WITH THE  
TOWN OF HARWICH COMPREHENSIVE STORMWATER AND ILLICIT DISCHARGE  
REGULATIONS**

**Plan Title:** Division Plan, 0 Orleans Road (Route 39), Map 63, Parcel C3  
**Location:** 0 Orleans Road (Route 39), Harwich MA  
**Applicant:** Eastward Companies Business Trust, 155 Crowell Road, Chatham, MA 02633  
**Applicant's Engineer:** David A. Clark, PE., 156 Crowell Road, Chatham, MA, 02633  
**Plan Date:** April 8, 2022 **Review Date:** May 16, 2022  
**VHB No.:** 15657.02

The plans were reviewed for conformance to the Town of Harwich Comprehensive Stormwater and Illicit Discharge Regulations (adopted 10/09/2018). The Applicant has submitted the following information for review:

- Two (2) completed applications – Form B-1
- Deed for property
- Six (6) full size copies of the definitive open space subdivision plan set containing:
  - Plan sheet entitled “Subdivision East Harwich,” Prepared for Eastward Companies Business Trust, Scale: 1”=40’, Date April 8, 2022, by David A. Clark, P.E., Chatham, MA
  - Plan sheets entitled “Definitive Subdivision Plan”, “Topography Plan”, “Road Plan View”
  - Plan sheets entitled “Plan & Profile of Road”, “Drainage & Paving Details”, “Water Main Details”, Scale: See Plan, Date April 8, 2022, by David A. Clark, P.E., Chatham, MA
  - Plan sheet entitled “Erosion Control Plan,” Prepared for Eastward Companies Business Trust, Scale: 1”=30’, Date April 8, 2022, by David A. Clark, P.E., Chatham, MA
  - Plan sheets entitled “Erosion Control Details” and “Erosion Control Detention Area Plan,” Prepared for Eastward Companies Business Trust, Scale: See Plan, Date April 8, 2022, by David A. Clark, P.E., Chatham, MA
- Eleven (11) reduced copies of the definitive open space subdivision plan set
- Two (2) copies of drainage calculation documents dated
- Copy of Planning Board approval memo for Pb2021-24 Eastward MBT, LLC Tr., Preliminary Subdivision dated December 3, 2021
- Copy of Conservation Commission’s RDA Determination
- A requested waiver from Subdivision Rules and Regulations

The following comments note non-conformance with specific sections of the Town of Harwich Comprehensive Stormwater and Illicit Discharge Regulations and questions/comments on the proposed design and VHB's recommendations/ suggestions.

### **Comprehensive Stormwater and Illicit Discharge Regulations**

1. The Stormwater Report Appendix 1 Typical Lot Development summary (page 15) recommends lot developers be required to install a minimum of 4- 6x6 leaching catch basins to control runoff from dwellings. We suggest perforated pipe and stone be an alternative due to potential lower cost and the ability to infiltrate over a larger surface area.
2. Under Standard 4 (page 6) of the Stormwater Report it notes that the deep sump catch basins and the leaching catch basins provide a TSS removal of 85%. Section 8.D.1.b.ii of the Town of Harwich Comprehensive Stormwater and Illicit Discharge Regulations (the Stormwater Regulations) require 90% TSS removal from new development projects.
3. Removal of Total Phosphorus is not mentioned in the Stormwater Report. Section 8.D.1.b.ii of the Stormwater Regulations requires 50% TP removal from new development sites.
4. Appendix 1 does not include HydroCAD model outputs, only a summary of results. HydroCAD outputs are needed to confirm calculations are correct. The Predevelopment drainage calculations are also missing from Appendix 1.
5. There are no pre- or post- condition watershed plans as required by Section 7.3.d of the Stormwater Regulations.
6. No calculations are included to size drainage pipes as required by Section 7.4.d of the Stormwater Regulations.
7. There is not a MassDEP Checklist for stormwater Report stamped by a PE included as required by Section 7.6 of the Stormwater Regulations.

### **General Comments/Standard Engineering Practice**

8. Sheet 4: Plan & Profile of the Road does not include the stationing and inverts for all proposed catch basins. Only 9 catch basins are shown on sheet 4 but 15 catch basins are on the plan view on Sheet 3. The Plan & Profile of the Road should show locations and inverts of each drainage structure.
9. On Sheet 3: Road Plan View: Drainage structures and pipes are not labeled. All drainage structures and pipes should be labeled.
10. The Stormwater Report conclusion section states "Excess runoff from the 100 yr. storm event shall be contained within man-made detention areas along the shoulders of Turtle Run and within the cul de sac." It is not clear on the planset where these detention areas will be located. Sheet 9 of the planset shows the 100-year storm storage areas to be within the roadway. Please clarify storage of the 100-year storm.
11. Does the project include installation of septic leach fields? If this is proposed as part of the project the plans should include a detail for the leaching field design. If not, they should not be shown on the planset.
12. The term used for the type of BMP is inconsistent between locations. The BMP type should accurately reflect the proposed BMP type and be consistent throughout all documents.

### **Operation and Maintenance Plan**

13. The Operation and Maintenance Plan notes emergency overflow pipes from the subsurface infiltration systems but there are no overflow pipes included on the detail for the infiltration pit.

14. The Operation and Maintenance Plan notes describes maintenance for a grass detention area but none is proposed on the planset.

**Reviewed by:** Kelly Siry, E.I.T.  
Water Resource Specialist – Water Resources

**Date:** 5/13/22

**Checked by:** Rachel Luna, P. E.  
Water Resource Engineer – Water Resources

**Date:** 5/16/22