

# Eastern Land Survey Associates, Inc.

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January 15, 2014

Town of Acton Zoning Board of Appeals  
472 Main Street  
Acton, MA 01720

Professional Land Surveyors & Civil Engineers  
ESSEX SURVEY SERVICE 1958 - 1986  
OSBORN PALMER 1911 - 1970  
BRADFORD & WEED 1885 - 1972

RE: F 16387  
6 POST OFFICE SQUARE  
ACTON, MA  
MAP E-4, PARCEL 59-1

Dear Board Members:

The following responses are offered to comments provided by the Acton Engineering Department in a memorandum dated December 3, 2013.

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## Drainage

1. The runoff from the lot is increased towards Post Office Square in the post-development condition from the existing conditions for all storm events. In particular, the runoff rate for the 10-year storm increases from 1.41 cfs to 3.08 cfs.

The applicant is making the argument that since the post-development rates for the new development (NEW RATE) is less than the post-development rates provided in the original subdivision (OLD RATE), no runoff attenuation is required. The drainage system on Post Office Drive is privately owned and regardless of whether the existing detention basin is property sized to handle the increased runoff, the adjacent owners are under no obligation to accept a higher runoff rate to their system, nor would it be proper for the Town to approve an increased runoff rate to private property.

1. We agree with the observation as to increased runoff from a portion of the site towards the existing drainage system in Post Office Square. The Post Office Square drainage system is privately owned and since the subject parcel was a part of the Definitive Subdivision which created Post Office Square in 1984, it is the position of the applicant that the parcel has the same rights to use drainage infrastructure as do the other lots in the subdivision. The original approved design for the subdivision contemplated a significantly greater runoff volume from the site of Post Office Crossing than is anticipated under the current design.
2. The applicant should provide plans showing the watershed areas of the original subdivision design, the existing pre-development condition and the post-development condition. The narrative makes reference to a watershed map and a soil map but the report does not provide either.
2. A copy of the watershed map for the original subdivision accompanies this letter. A watershed map for predevelopment and post development conditions for the current project, as well as the NCRS soils map is also provided.

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3. There are a number of assumptions and design criteria in the OLD RATE that don't allow a direct comparison to the NEW RATE. For example:
  - The OLD RATE assumes a Type II storm distribution, the NEW RATE assumes Type III.
  - The OLD RATE calculated a rate for an assumed site development of 75% impervious cover, which may be more impervious area than what the NEW RATE is proposing, but isn't what exists.
  - The OLD RATE assumes a runoff co-efficient of 0.8 for impervious and 0.2 for pervious (composite rate of 0.65) while the NEW RATE assumes 0.95 for impervious, 0.20 for wooded areas and 0.25 for lawns (composite rate of 0.59).

In the project narrative, the applicant calculated runoff rates for the OLD RATE using assumptions in the original analysis and we assume the applicant adjusted their calculations for the differences listed above however, these calculations were not provided in the report.

3. The old rate has been recalculated using a Type III storm distribution. We agree, but are using the old rate record criteria as a base for the impact of the proposed project on the drainage infrastructure.

The coefficients for the old rate were as determined by the original subdivision designer. We are providing calculations using our adjusted coefficients for the old rate.

4. We request the applicant add the drainage system to the grading plan with the rim and invert elevations labeled on all structures as well as the length, slope and pipe material labeled on all pipes.

4. The requested information has been added to the revised Site Utility Plan (Sheet 5).

5. On the construction detail sheet, the catch basin detail does not show the required 1" minimum butyl-rubber gas tight sealant or equivalent caulking material

5. The catch basin detail has been modified to specify the required caulking material.

6. The applicant should use drop manholes at STA 1+95, 3+25, 4+00 and anywhere else the difference between inverts is greater than 2 to 3 feet.

6. Drop manholes have been added at Stations 1+95, 3+25 and 4+00 and are shown on Sheet 7 of the revised Plan.

7. All drain manholes should have shaped inverts

7. The drain manhole detail on Sheet 9 has been modified to require a shaped invert.

8. The plans do not show the limits of the Groundwater Protection Zones. The property is located in Zones 2 and 4.

8. The groundwater protection zone line has been added to Sheets 2,3,4,5 and 7 of the revised plan.

9. The plans do not comply with the regulations of the Groundwater Protection District. Specifically:
- The applicant hasn't stated whether the plans meet the requirements for Zone 2 which require 70% open space, 40% undisturbed open space and 30% maximum impervious area
  - There are no water balance calculations provided
  - The first inch of every storm event must be collected by gas trap catch basins and be directed to clay-lined retention ponds exposed to the sun.
  - The plans don't provide any pollution safeguards laid out in section 4.3.6.4 of the bylaws
  - Runoff from Zone 4 on the property directed to Zone 2 must meet the same water quality standards of Zone 2.
9. - The characteristics for the Zone 2 portion of the site have been added to Sheet 7 of the revised Plan. Since the area of the proposed infiltration bed is and will continue to be an open field, it is not considered to be a permanent disturbance.
- Applicant's counsel will seek a waiver of this requirement from the Zoning Board of Appeals
  - The catch basins will collect runoff from tributary impervious surfaces and direct that runoff to a stormceptor on Parcel A. A total suspended solids removal worksheet accompanies this letter. A waiver from the requirement for a clay-lined retention pond will be requested from the Zoning Board of Appeals by applicant's counsel.
  - A slide gate is now proposed for the drain manhole down gradient of the Stormceptor on parcel A and a note added to Sheet 4 as to the containment dike for heating oil.
  - See response to first inch of runoff comment (4.3.6.3) above

### **Miscellaneous**

10. The Fire Department should comment on the accessibility of a fire truck. Based on our templates, the common driveway is adequate for an SU-30 vehicle.
10. We agree with the Engineering Department's conclusion as to the type of vehicle for which the roadway is adequate.
11. The existing conditions plan labels the property as "Lot 2" with no reference to what the other lot or lots are. Lot 2 refers to the original subdivision of which this property was the second lot of four. We suggest providing a locus map of the four lots or renaming the property.
11. Lot 2 is the originally assigned lot number on the subdivision plan for Post Office Square. The plan recording data has been noted on Sheet 2 of the revised Plan.
12. The applicant has not provided the earth removal calculations.
12. Earthwork volume calculations accompany this letter.

13. The applicant has not provided a proposed name for the new road or stated whether the road will be public or private. The proposed name will need to be approved by the Fire and Police Departments. Considering Post Office Square is a private way, we recommend the roadway remaining private.

13. The proposed road name is Danielle Circle. It is to be a private way since Post Office Square is a private way. The Fire and Police Department have been notified as to the proposed names (see letter copies, attached).

14. The applicant should add the location of an MUTCD compliant street name sign and make a note of it being a private way.

14. The proposed sign location has been added to Sheet 5 of the revised plan.

15. The applicant should label the street numbers for the proposed units. We suggest avoiding using the number 4 as that number has given developers trouble marketing units. We recommend the following street numbers and parcel IDs:

<b>Unit #</b>	<b>Street #</b>	<b>Parcel ID (Map/Lot)</b>
Unit #1	2	E4 / 59-1-1
Unit #2	6	E4 / 59-1-2
Unit #3	8	E4 / 59-1-3
Unit #4	10	E4 / 59-1-4
Unit #5	12	E4 / 59-1-5
Unit #6	16	E4 / 59-1-6
Unit #7	18	E4 / 59-1-7
"Parcel A"	20	E4 / 59-1-8
Unit #8	1	E4 / 59-1-9
Unit #9	3	E4 / 59-1-10
Unit #10	5	E4 / 59-1-11
Unit #11	7	E4 / 59-1-12
Unit #12	9	E4 / 59-1-13

The street numbers will need to be reviewed and approved by the Police and Fire Departments.

15. Recommended street numbers have been added to Sheets 3, 4, and 6 of the revised Plan.

16. It is assumed that Parcel A, intended for the shared septic and drainage systems, will remain its own separate lot under common ownership and not intended to be part of one of the other 12 proposed lots. The distinction is needed in order to assign street, map and parcel numbers to the parcel.

16. The assumption stated is correct. Parcel A will be held in common ownership by the Homeowners Association.

17. The following items are missing from the Recordable Plan Sheet (3.14.3):

- Abutting ownership information
- Groundwater Protection Zone Lines
- Bearing on the north arrow
- House numbers
- Location of the house units
- Planning Board endorsement
- Comprehensive Permit statement

17. The following data has been added to Sheet 3 of the revised Plan.

- Abutting ownership deed and/or plan references
- Groundwater Protection Zone lines and designations
- The Plan source for the north arrow
- House numbers
- It is proposed that Sheet 4 also be recorded for the purpose of showing proposed house locations
- We have asked applicant's counsel to review the requirement for Planning Board Endorsement
- The Comprehensive Permit Statement has been added to the Plan

18. The Existing Conditions Plan should show the locations of the test pits with the maximum groundwater elevations indicated. The locations are shown on the site development plans.

18. The location of test pits and estimated seasonal high groundwater elevation have been added to Sheet 2 of the revised Plan.

19. The following items are missing from the Site Development Sheet (3.14.5):

- Lot and House numbers
- Groundwater Protection Zone Lines
- All notes indicated in section 3.14.5.27

19. The required information has been added to Sheet 4 of the revised plan.

20. The following items are missing from the Plan/Profile Sheet (3.14.6):

- There are no existing grades on the sideline of the road
- There is no mention of whether the road will be public or private and if the roadway complies with subdivision rules and regulations

20. The required items have been added to Sheets 5 and 6 of the revised Plan.

21. There is no landscaping plan provided

21. The landscape plan will be provided by the Developer under separate cover.

22. Erosion control details have been provided with no plan

22. Erosion control practices have been added to Sheet 4 of the revised Plan as have references to the various details.

23. There are a few typos on sheet 6 including "1½" wearing" and "planting strip"

23. The typographic errors have been corrected.

24. The applicant will need to show two temporary benchmarks that will not be disturbed during construction

24. Temporary benchmarks have been noted on Sheets 2 and 5 of the revised Plan.

25. The centerline of the street should be monumented at all points of curvature and tangency using magnetized masonry nails in the final course of pavement. The engineer should add a note that no permanent monuments shall be installed until all construction is completed.

25. A note has been added to Sheet 5 of the revised Plan indicating the requirements.

26. The applicant will be responsible for providing an as-built plan that will be certified by a PE/PLS.

26. A note has been added to Sheets 3 and 5 of the revised Plans stating the requirements.

Please feel free to direct any questions relative to the above responses, revised plans and calculations, which accompany this letter, to the undersigned.

Sincerely,



Christopher R. Mello, PLS  
President

CRM:lc

cc: Mr. Philip Singleton

Enclosures