

TOWN OF ACTON
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Engineering Department

INTERDEPARTMENTAL COMMUNICATION

To: Planning Department

Date: March 28, 2005

From: Engineering Department *CY*

Subject: Senior Residence Special Permit entitled "Ellsworth Village"

We have the following comments regarding the above mentioned plan dated March 1, 2005.

1. The engineer has proposed a new turnaround for the extension of Brabrook Road. We reviewed the layout of the proposed turnaround with the Highway Department and found it to be adequate for snowplows since the turnaround leg will be elevated entirely on fill.
2. The engineer should change the curb reveal for the slope granite edging on the Pavement & Slope Granite Edging Detail (sheet 6 of 10) from 4-inches to 6-inches.
3. The Typical Roadway Cross Section Station -1+24.65 to 0+52 shows the 5 foot sidewalk width to include the steel beam rail and spacer block of the proposed guardrail. The engineer should label the sidewalk width to be a minimum of 4-foot wide free of obstructions.
4. The engineer needs to include some notes or a detail showing how the guardrail will be attached to the precast modular retaining wall in order to prevent vehicles from driving into the wetlands. If the alternate block retaining wall is used, the engineer will need to propose a concrete cap or some other acceptable alternative so that the guardrail can be mounted to the retaining wall.

We do not foresee a need for the stop sign and double yellow centerline on Ellsworth Village Road at the intersection with the end of Brabrook Road extension.

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5. Stop signs must be installed in conformance with section 2B.05 of the MUTCD. The Acton Engineering Department will not recommend the installation of signs that do not conform to this section. The applicants traffic engineer needs to clearly state that in his/her engineering judgment the stop signs proposed meet one or more of the listed criteria in this Section. Since the MUTCD requires "engineering judgment" this requires the applicant's traffic engineer to be a Registered Professional Engineer in the Commonwealth of Massachusetts.
 6. The engineer should add a typical cross section of the emergency access adjacent to the detention basin. The applicant will need to obtain an easement for the emergency access

as it is shown on the abutting property (129-133 Great Road). The engineer also needs to show an easement for Ellsworth Village Road and the emergency access road granting the Town the rights to use this secondary access. It is not clear whether pedestrians will be allowed to use the emergency access to walk to the shopping plaza on Great Road. The Fire Chief will need to review and approve any access roads. As part of the maintenance agreement, the condo association should be required to maintain the access such as snow plowing and clearing any obstructions.

7. The engineer should add a typical cross section of the pathway between units 20 & 21. We recommend a stone dust material for the top surface of the path over the gravel base.
8. The contractor will need to coordinate his work schedule with the Highway Department regarding any work within a Town way.
9. The applicant will need to apply for a Permit to Construct within a Public Way for the work shown in the layouts of Pope Road and Brabrook Road such as the water and gas main installation and the sidewalk. Any work within the Town roads such as backfill and compacting the trenches and pavement patches will need to comply with the Town's "Specifications For Regulating Construction Within Public Ways". The applicant will also need to keep abutters informed of his ongoing work schedule so that residents on Brabrook Road can prepare and make the necessary arrangements for vehicular access.
10. We want to ensure that the standard language for private ways is written into the decision and the maintenance agreements so the future residents clearly understand the Town will not be responsible for snow plowing or any other related maintenance and that the road will not become a public way.
11. We recommend that an as-built plan showing the buildings, pavement, drainage and utilities be required at the conclusion of construction along with a letter from a professional engineer certifying that the project was constructed according to the approved plans.

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Engineering Department

INTERDEPARTMENTAL COMMUNICATION

To: Planning Department

Date: January 21, 2005

From: Engineering Department *C. J.*

Subject: Senior Residence Special Permit entitled "Ellsworth Village"

We have the following comments regarding the above mentioned plan dated November 19, 2004.

1. The Natural Features and Existing Conditions Plan (sheet 3 of 10) shows the proposed layout of Ellsworth Village in the wrong location on the plans.
2. Section 9B.13 of the Zoning Bylaw states that **generally** all streets and ways, drainage facilities, and utilities shall be designed and constructed in compliance with the Acton Subdivision Rules and Regulations. In order to comply with the rules and regulations, the applicant will need to request waivers from the following design standards:
 - The minimum centerline radius for a low intensity street is 80 feet. The proposed centerline radius between Station -1+08.19 and -0+87.95 is only 35 feet.
 - The minimum tangent between reverse curves is 50 feet for center line radiuses less than 1,450 feet. There are 2 tangents located between Stations 3+55.74 and 3+88.70 and Stations 4+78.48 and 5+05.39 that are only 32.95 feet and 26.91 feet, respectively.
 - Sloped granite curbing is required at the intersection roundings at Brabrook Road and surrounding the turnaround island. The engineer has labeled a bituminous concrete cape cod berm along the entire road, including the intersection roundings and the turnaround island.
 - The design for a loop turnaround should be offset in relation to the street to form a "q" shape with a minimum centerline diameter of 100-feet. The proposed turnaround design is shaped like a tear-drop with a 90-foot center line diameter. Based on our turning templates, an emergency SU-30 vehicle such as a fire truck can maneuver around the turnaround. Also, the requirements only allow for 2 driveways to access the turnaround.
3. The engineer should label the minimum 6-inch curb reveal and a 1-foot wide grass strip between the back of the proposed sidewalk and the 2:1 side slope on the Typical

Roadway Cross Section on the Plan and Profile sheet:

4. The engineer should add a detail of the proposed precast modular retaining walls for Ellsworth Village Road wetland crossing on the Construction Detail sheet.

5. The engineer should show a guardrail along the top of the retaining wall in order to prevent vehicles and pedestrians from accidentally going over the wall and into the wetlands.

The engineer should show a short section of double yellow centerline on Ellsworth Village Road at the intersection with Brabrook Road to help delineate the lanes for visitors and residences entering and exiting the site.

6. The engineer needs to clarify the type of asphalt curbing that will be installed on the road. Cape cod berms are labeled on the plans and there is a typical detail of a cape cod berm shown on Construction Detail Sheet 1. However, the Typical Roadway Cross Section shown on the Plan and Profile sheet and the Typical Bituminous Concrete Sidewalk and Bit. Conc. Curbing Type-3 Detail shown on the Construction Details Sheet 2 and the Brabrook Road Improvements sheet label another style of curb. The engineer should change the labels and details so that the information is consistent on the plans. We would prefer the Type-3 "D"-style curbing for the sidewalk along Brabrook Road instead of the cape cod berm.
7. A note should be added to the plans stating that the binder course of pavement shall be exposed to one winter season (November 15 – April 30) prior to the application of the wearing course.
8. A note should be added to the plans to restrict paving from taking place after November 15th of any year.
9. The engineer should add the following construction note about paving the road on the Plan and Profile:
 - Prior to the installation of the wearing course, the binder shall be swept clean, dried if necessary, and treated with an asphalt emulsion or tack coat to ensure a satisfactory bond between pavement courses. The wearing course will not be applied until all construction of the units served by Ellsworth Village Road is in the opinion of the Board completed or substantially completed.
10. Stop signs must be installed in conformance with section 2B.05 of the MUTCD. The Acton Engineering Department will not recommend the installation of signs that do not conform to this section. The applicants traffic engineer needs to clearly state that in his/her engineering judgment the stop signs proposed meet one or more of the listed criteria in this Section. Since the MUTCD requires "engineering judgment" this requires the applicant's traffic engineer to be a Registered Professional Engineer in the Commonwealth of Massachusetts.
11. The engineer should show a proposed street name sign for Ellsworth Village Road at the intersection with Brabrook Road. This sign should be of the same type now existing in Town and shall meet the specifications of the Acton Highway Department. The street name sign should have a sign affixed to it designating the street a private road.

12. Any traffic related street sign post should be seated in concrete.
13. If the applicant intends to have a sign identifying the development, the engineer should show the location of this sign on the plans.

The temporary benchmark shown on 18-inch pine tree between unit #31 & #32 should be transferred to another fixed object that will remain during construction.

11. The engineer should show the locations of the existing stone bounds demarcating the side line of Brabrook Road adjacent to the proposed sidewalk. A note should be added to the plans stating that if any of these stone bounds are disturbed or buried during construction, a registered land surveyor will be required to reset and certify the new bound locations.
12. We would like a copy of the documentation for the 20-foot wide drainage easement on the property numbered 129-133 Great Road when it is recorded at the Registry of Deeds.
14. The length of Brabrook Road is approximately 900 feet. By adding Ellsworth Village Road, the total length of the single access road becomes approximately 2000 feet. Due to the overall length of the road, we recommend a secondary gated access for emergency vehicles and pedestrians should be shown on the plans. The Fire Chief will need to review and approve any access roads. As part of the maintenance agreement, the condo association should be required to maintain the access such as snow plowing and clearing any obstructions.
15. The engineer should add a typical cross section of the pathway to Brookside Shops to the plans. We recommend a stone dust material for the top surface of the path over the gravel base. If this path is used as an emergency access, the engineer should show a minimum 12-inch depth of gravel underneath the stone dust layer in order to handle emergency vehicles. The Fire Chief will need to determine whether or not the 10-foot wide access by the turnaround is adequate for a fire truck. Based on our turning templates, a fire truck would drive over the curbing in the handicap sidewalk ramps and a small portion of the lawn. If the Town owned property behind Brookside Shops is utilized in the future, the proposed access as it is shown on these plans might need to be relocated. A possible alternative to the access behind Brookside Shops could be to construct an emergency access adjacent to the extended detention basin and extend it toward Great Road within the drainage easement on the property shown as 129-133 Great Road.
16. If a gate is proposed for an emergency access, the engineer will need to add a typical detail to the plans.
17. The Town plans to repave Pope Road this spring from Bayberry Road to Stoneymeade Way. Any work proposed in Pope Road such as the water main installation and crosswalks should be coordinated with the Highway Department's schedule. Preferably, the Highway Department would like the applicant to make the water main connection in early spring so that the work and the trench are completed prior to repaving the road.
18. The applicant will need to apply for a Permit to Construct within a Public Way for the work shown in the layouts of Pope Road and Brabrook Road such as the water and gas main installation, Ellsworth Village driveway apron at Brabrook Road and the sidewalk.

Any work within the Town roads such as backfill and compacting the trenches and pavement patches will need to comply with the Town's "Specifications For Regulating Construction Within Public Ways". The applicant will also need to keep abutters informed of his ongoing work schedule so that residents on Brabrook Road can prepare and make the necessary arrangements for vehicular access.

19. The catch basin at the end of Brabrook Road is shown on the plans to be redirected into the private drainage system for Ellsworth Village. If this drainage connection is done, the applicant or future owners of the property should be held solely responsible for the future maintenance and upkeep of the private drainage system and the Stormceptor located at the low point in the proposed road.
20. The engineer should analyze the existing drainage system by Great Road to ensure there is sufficient capacity to handle the flows from the outlet pipe of the detention basin for Ellsworth Village.
21. The engineer should label the groundwater elevation underneath the extended detention basin. If there will be standing in the detention basin, the engineer should account for this loss of storage volume in the drainage calculations.
22. The labels for the outlet pipe from drain manhole #10 should be changed from a 12-inch diameter to an 18-inch diameter pipe on the Plan and Profile sheet.
23. The labels for the cross culvert that outlet into drain manhole #10 should be changed from a 12-inch diameter to a 15-inch diameter pipe on the Plan and Profile sheets.
24. The labels for the outlet pipe from the Stormceptor should be changed from a 15-inch to an 18- inch pipe on the Plan and Profile sheet.
25. The engineer should label what will be done to the existing drainage structure located at the end of Brabrook Road.
26. The engineer can remove the note on the precast catch basin detail requiring the LeBaron Snout (gas/oil hood) to be installed prior to the outlet pipe. This gas/oil hood is designed to attach directly to the sidewall of the drainage structure so that it can be installed after the outlet pipe is connected and mortared to the structure.
27. The Board of Selectmen approved site plan special permit #11/7/2003-393 for 107-115 Great Road with a condition that the applicant constructs an interior sidewalk from Brabrook Road to Great Road as shown on the revised plan dated February 6, 2004. The engineer could design a trail connection between the walk at 107-115 Great Road and the proposed sidewalk on Ellsworth Village Road, but there will be an issue with crossing the wetlands.
-  28. The engineer should show a painted crosswalk on Pope Road at the end of the Brabrook Road sidewalk. The engineer will need to show a proposed sidewalk ramp for the existing sidewalk on the opposite side of Pope Road. The engineer will also need to install crosswalk warning signs at this location as required by the Manual on Uniform Traffic Control Devices.
-  29. The applicant's traffic engineer should review the placement of the proposed stop line on Brabrook Road at Pope Road. The stop line is shown to be about ten feet from the

edge of Pope Road. According to the Manual on Uniform Traffic Control Devices, the stop line could be located a minimum of 4 feet from the edge of Pope Road. If the stop line is relocated closer to Pope Road, the traffic engineer should reanalyze the need for the tree removals and the proposed shoulder work as it is shown on the plans.

30. The engineer should label the 3/16 inch per foot sidewalk cross slope on the typical details as the **maximum allowable** cross slope.
31. The engineer should add a note on the plans stating that the contractor will mark the curb line on Brabrook Road prior to the installation of the new curb. The note should also require the site contractor to obtain approval of the curb line from the Acton Engineering Department before installation.
32. The labels for the binder and wearing courses of pavement on the Pavement and Cape Cod Berm detail, the Driveway Apron detail and the Driveway detail point to the wrong pavement layers.
33. The engineer should show a street number for the proposed village house located in the turnaround island.
34. The engineer should contact the Fire Chief to determine the need and locations for fire alarm call boxes on Ellsworth Village Road.
35. The engineer should describe the locations of the mailboxes on the plans.
36. We want to ensure that the standard language for private ways is written into the decision and the maintenance agreements so the future residents clearly understand the Town will not be responsible for snow plowing or any other related maintenance and that the road will not become a public way.
37. We recommend that an as-built plan showing the buildings, pavement, drainage and utilities be required at the conclusion of construction along with a letter from a professional engineer certifying that the project was constructed according to the approved plans.