



## MEMORANDUM

**To:** Town of Bourne Zoning Board of Appeals

**From:** Brian Kuchar, RLA, P.E.  
Horsley Witten Group, Inc.

**Date:** September 14, 2021

**Re:** Cape View Way Civil Engineering/Site Design Peer Review Response

**cc:** Thomas C. Houston, P.E. AICP, Professional Consulting Services Corporation  
Peter Freeman, Freeman Law Group LLC  
Cory Fellows, Preservation of Affordable Housing

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On behalf of the applicant, the Preservation of Affordable Housing (POAH), the Horsley Witten Group, Inc. (HW) is pleased to submit the following response to the comments received from the Town's peer review consultant, Professional Consulting Services Corporation, PC (PCS) on August 11, 2021.

We are also submitting the following documents:

1. Exhibit A – Recorded Subdivision Plan
2. Exhibit B - June 30, 1987 Subdivision Decision
3. Letter from Assistant Fire Chief Pelonzi
4. Revised Emergency Vehicle Turning Radius Plans and
5. Hydrant Flow Test Results, memo from ResilientCE
6. Revised Permitting Plans (Civil) dated September 2021 (23 sheets)
7. Revised Stormwater Analysis and Drainage Report revised September 2021, including the revised Stormwater Management Maintenance Plan revised September 2021
8. Revised Subdivision Regulations and Zoning Bylaw Waivers

## RESPONSE TO COMMENTS

### SUBDIVISION

*The Applicants intend to modify the layout of Cape View Way created by the 1987 subdivision entitled "Meetinghouse Place" while combining the original subdivision lots into a single parcel.*

*The status of the "Meetinghouse Place" subdivision should be researched to determine if the approved subdivision is valid and was recorded in the registry of deeds. The 1987 Planning Board Decision should be reviewed to determine if there are sunset provisions. If the subdivision has expired there may be the requirement to upgrade the subdivision to comply with the current Planning Board Rules and Regulations. It should be noted that the northwesterly segment of the*

*subdivision roadway has a new alignment, and the cul-de-sac has a revised layout and is in a different location.*

1. *Determine if the "Meetinghouse Place" subdivision was recorded in the registry of deeds.*

**RESPONSE:** The "Meetinghouse Place" subdivision plan as endorsed by the Planning Board was duly recorded on August 12, 1987 in the Barnstable Registry of Deeds at Book 437, Page 50. A copy of the recorded subdivision plan is attached hereto as Exhibit A.

2. *Determine if the 1987 Planning Board "Decision" contains sunset provisions which after a specified period either voids an unconstructed subdivision or requires upgrades to comply with the current Planning Board Rules and Regulations as a condition of extending the unconstructed subdivision.*

**RESPONSE:** The 1987 Subdivision Decision does not contain an automatic sunset provision and the 1987 Subdivision approval is still in force and effect. A copy of the June 30, 1987 Subdivision Decision is attached hereto as Exhibit B.

The June 30, 1987 Subdivision Decision has a condition that construction of the Meetinghouse Place Subdivision shall be completed within a two year period; however, the Town Clerk's Office provided us with the subdivision regulations that were in effect when the 1987 Subdivision was approved and the regulations, at that time, did not provide for automatic rescission of the approval of a subdivision due to lack of compliance with the construction schedule contained in the decision; and, instead, the regulations provided that, if the construction schedule imposed by the Planning Board was not satisfied "within seven years of the approval of the Definitive Plan," then that would simply "constitute reason for the Planning Board to consider rescission of such approval within the requirements and procedures of Section 81W, Ch.41. G.L." There is no evidence that the Planning Board took any steps to rescind the 1987 subdivision approval.

The subdivision regulations in effect when the 1987 Subdivision was approved did provide that a subdivision approval would be automatically rescinded if the endorsed subdivision plan was not recorded within six months of Planning Board approval; however, the 1987 Subdivision Plan was recorded on August 12, 1987, well within six months of the June 30, 1987 subdivision approval decision.

#### Subdivision Modification

The Applicants note that the Zoning Board of Appeals, acting under MGL c.40B, §§ 20-23, may modify, amend, or rescind the 1987 Subdivision Decision and the 1987 Subdivision Plan without regard to the statutory restrictions that would apply when a planning board acts to modify or amend or rescind a subdivision under MGL c.41, §81W. The Appeals Court has expressly concluded that MGL c.41, §81W "has no effect on a zoning board of appeals and in no way limits that board's authority under G.L. c.40B." *Blue View Construction, Inc. v. Town of Franklin, et al.*, 70 Mass. App. Ct. 345, 353, review denied 450 Mass. 1105 (2007).

However, to avoid confusion and to provide full clarity for the record, the Applicants request that, when the Zoning Board of Appeals approves the proposed plan, that it do so using the following or similar language:

- The plan approved under this decision (the “40B Plan”) shall supersede the 1987 Subdivision Plan recorded at Barnstable Registry of Deeds Plan Book 437, Page 50 (the “1987 Plan”) as follows:
    - The Lots 6-10 and Open Space Lot on the 1987 Plan shall be reconfigured as shown on the 40B Plan into one parcel (the “40B Parcel”).
    - The Way on the 1987 Plan shall be reconfigured as shown on the 40B Plan.
    - The Way on the 1987 Subdivision, as reconfigured and approved under the 40B Plan, shall provide access only to the 40B Parcel and to the former 1987 Subdivision Lot 5 (said Lot 5 having been combined and merged with Lots 3 and 4 on the 1987 Plan (the site of the Bourne Fire Station at 51 Meetinghouse Road).
  - The Board determines that the Way shown on the 40B Plan approved hereunder provides sufficient access for the 40B Project and for the rear parking lot of the Bourne Fire Station at 51 Meetinghouse Road and that all frontage requirements that are necessary to support the Project and the Fire Station either are satisfied or are hereby waived.
  - The June 30, 1987 Subdivision Decision is hereby modified to remove “Condition d” which provided that Lot 5 (i.e., now the rear parking area for the Fire Station) was restricted and “shall become a residential and not a business lot.”
3. *Either apply to the Zoning Board of Appeals (acting as Planning Board) for a new definitive subdivision approval or for modifications to an approved subdivision if the subdivision remains valid. In either case the subdivision road is eligible to apply for approval, the issue is to identify the appropriate procedure.*

**RESPONSE:** See answer to comment 2 above.

4. *In the drop off area at the main building entrance, revise the cul-de-sac island to accommodate fire apparatus and any large vehicles expected to use the site requires a new subdivision approval or modification.*

**RESPONSE:** The Applicant has included the emergency vehicle turning radius template with this memo to show that a fire truck is able to use the turnaround as well as a letter from Assistant Fire Chief Pelonzi regarding fire access at the proposed site.

5. *As the subdivision roadway is unconstructed it cannot currently provide vital access. Therefore, procedurally the Applicants must petition to merge the subdivision lots under the subdivision process (with the ZBA acting as Planning Board). Given the incomplete construction of the subdivision road (no vital access), lots cannot be combined through the ANR or 81P process.*

**RESPONSE:** See response to comment 2 above.

6. *Provide a subdivision plan complying with all requirements for recording in the registry of deeds.*
  - a. *Provide a signature block for the ZBA (serving as Planning Board) to endorse the plan.*
  - b. *Show metes and bounds for the Cape View Way layout. The general requirement of the registry of deeds is that sufficient geometric data must be provided to allow all points on the layout to be field located.*
  - c. *Show bounds to define the layout.*
  - d. *Record the approved plan in the Registry of Deeds.*

**RESPONSE:** The Applicant will provide a subdivision plan with all requirements for recording in the registry of deeds when the Site Plan Review is complete.

## ZONING

*The Applicants request waiver of certain provisions of the Town of Bourne Zoning Bylaws as follows: "Inspector of Buildings, Zoning Enforcement" (ZBL §1210), "Certification" (ZBL §1220), "Site Plan Special Permit Approval" (ZBL §1230), "Maximum Lot Coverage" (ZBL §2454), "Maximum Building Height" (ZBL §2455), "Enforcement.(ZBL §2460), "Subdivision Control Law Compliance" (ZBL §2498), "Rate of Development Scheduling" (ZBL §2640), "Exemptions.(ZBL §2650), "Table of" (Parking) Requirements" (ZBL §3320), "Number of Plants" (ZBL §3512(II)), "Parking Area Plantings" (ZBL §3513(IV)), "Natural Cover Removal" (ZBL §3570), "Earth Removal" (ZBL §4400)*

*In addition to requested waivers, additional waivers of strict compliance may be required.*

7. *Determine compliance or request waiver of strict compliance with the provisions of "Lot Shape" (ZBL §2480).*

**RESPONSE:** The perimeter of the lot is approximately 2,581 feet and the total area of the lot is 157,598 square feet. Therefore, the proposed project does not comply with the Lot Shape requirement (ZBL §2480). The Applicant will submit to ZBA a waiver from this requirement.

*The Project Site is located in the R-40 Zoning District. The Town of Bourne Zoning Bylaw (ZBL) provides for single family residential and two-family use in the R-40 District (ZBL §2200). As a mid-rise multifamily residential use, the Proposed Project does not comply with the use and certain dimensional requirements of the R-40 District. The Applicants have requested waiver of certain provisions of the R-40 District. These waivers are necessary in order to allow the*

*Proposed Project to be constructed as submitted. The Applicants zoning analysis and the waiver requests presume Cape View Way has the status of a way. See Comments 1 through 5.*

*The proposed project complies with the requirements of the R-40 District with respect to minimum lot area of 40,000 square feet (100,000+ square feet provided), the minimum frontage of 125 feet (125+ feet provided), the minimum side yard of 15 feet (15+ feet provided), and minimum usable open space of 20 percent (64% provided) (ZBL §2500).*

8. *The submittal states the usable open space provided is 64% of the lot area. Explain the apparent inconsistency of 47% total impervious materials coverage versus 68% total open space per the "Tabulation of Ground Area Coverages" in the Application.*

**RESPONSE:** The Applicant has reviewed this information and corrected it below and on the site plans. The areas have changed from the original submission due to the changes in the proposed subdivision plan.

#### **TABULATION OF GROUND AREA COVERAGES**

COVERAGE TYPE	AREA (SQUARE FEET)	AREA (PERCENTAGE)
<b>Impervious</b>		
Building Area Coverage	20,700	13%
Pavement and Parking Area	40,419	26%
<u>Total Impervious Coverage</u>	61,119	39%
<b>Open Space</b>		
Play Area and Patio	5,460	3%
Remaining Open Space	91,019	58%
<u>Total Open Space</u>	96,479	61%
<b>Total</b>	<b>157,598</b>	<b>100%</b>

*The applicants request waiver of strict compliance with the certain dimensional requirements of the R-40 District with respect to minimum front yard setback of 30 feet (10 feet provided), minimum rear yard of 15 feet (7.8 feet provided), maximum lot coverage of 20% (32% provided), and maximum building height of 35 feet (38.9 feet provided) (ZBL §2500).*

#### **STORMWATER**

*The site is provided with a stormwater management system that collects, treats, and infiltrates stormwater on site. Based upon on site wetlands, the Proposed Project is subject to the Massachusetts Wetlands Protection Act (MGL c. 131, § 40) and the stormwater management system must comply with the DEP Stormwater Standards and with the guidance of the Massachusetts Stormwater Handbook. The stormwater management system must also comply with Town of Bourne stormwater management requirements (unless waived) as set forth in the zoning bylaw and the Subdivision Rules and Regulations of the Planning Board.*

Compliance with the Massachusetts Stormwater Standards

*We evaluated the discussion of compliance the Massachusetts Stormwater Standards provided in the Stormwater Analysis and Drainage Report, and we conclude as follows:*

*Standard 1: No New Untreated Discharges or Erosion to Wetlands. There is no proposed discharge to wetlands.*

**RESPONSE:** No response required.

*Standard 2: Peak Rate Attenuation. Stormwater management system shall be designed so that post development peak discharge rates do not exceed pre-development peak discharge rates. The submitted Stormwater Analysis and Drainage Report tentatively demonstrates compliance. However, supplemental soils testing is required for final confirmation of compliance. See Comment 11.*

**RESPONSE:** See response to Comment 11 below.

*Standard 3: Stormwater Recharge. Loss of the annual recharge to groundwater shall be eliminated or minimized through the use of infiltration measures, including environmentally sensitive site design, low impact development techniques, stormwater management best practices, and good operation and maintenance. As a minimum, the annual recharge from the post development site shall approximate the annual recharge from the pre-development site based on soil type. The standard is met when the stormwater management system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts Stormwater Handbook. The stormwater management system. The submitted Stormwater Analysis and Drainage Report tentatively demonstrates compliance. However, supplemental soils testing is required for final confirmation of compliance. See Comment 11.*

**RESPONSE:** See response to Comment 11 below.

*Standard 4: Water Quality. Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). This Standard is met when: 1) suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan, and thereafter are implemented and maintained; 2) structural stormwater best management practices are sized to capture the required water quality volume determined in accordance with the Massachusetts Stormwater Handbook; and 3) pretreatment is provided in accordance with the Massachusetts Stormwater Handbook. The submitted Stormwater Analysis and Drainage Report tentatively demonstrates compliance; however, additional pretreatment must be provided for the CB 100 infiltration system.*

**RESPONSE:** A Flexstrom® Pure Permanent Inlet Protection has been added to all catchbasins to provide additional pre-treatment.

*Standard 5: Land Uses with Higher Potential Pollutant Loads (LUHPPLs). This standard is not applicable for the Project Site.*

**RESPONSE:** No response required.



*Standard 6: Critical Areas. The Project Site does not fall within a Critical Area as defined by the SWH and compliance with this standard is not required.*

**RESPONSE:** No response required.

*Standard 7: Redevelopment Project. This standard is not applicable for the Project Site.*

**RESPONSE:** No response required.

*Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Controls: The Applicant has provided sufficient information to demonstrate compliance.*

**RESPONSE:** No response required.

*Standard 9: Operation and Maintenance Plan. The Applicant has provided sufficient information to demonstrate compliance.*

**RESPONSE:** No response required.

*Standard 10: Prohibition of Illicit Discharges. An Illicit Discharge Compliance Statement has not been submitted.*

9. *Submit or state the timing for submittal of an Illicit Discharge Prohibition Statement.*

**RESPONSE:** The Applicant has updated the Stormwater Report to include this statement.

### Soils

*The natural Resource Conservation Service mapping provided in the Stormwater Report classifies most of the on-site soils as "Carver Loamy Sand, 3 to 8 percent slopes (259B)" and a portion in the south portion of the site as Hinkley Loamy Sand, 3 to 8 percent slopes (245B). Both of these soil groups are well drained and are classified as Hydrologic Soils Group A (HSG A).*

*Numerous test pits have been excavated on the site and show a reasonably consistent soil profile. With some exceptions, the test pits show surface layers of Sandy Loam underlain by Sand. Test Pits E and F located in the northwest portion of the site are an exception. They show upper layers of Sandy Loam underlain by Gley Silt Loam, which is underlain by Fine Sandy Loam and sand or sand.*

*The Stormwater Handbook specifically requires soil testing at the location of the infiltration Best Management Practice (BMP). The on-site stormwater management system includes 6 subsurface structures including 4 URC systems with "Stormtech MC-3500" units and 2 precast concrete Recharge Basin (RB) systems. For the Storm Tech MC 3500 units, the Stormwater Handbook bases test pit requirements on the requirements for infiltration trenches. For URC-1 five test pits are required and for URC-2, URC-3 and URC-4, two test pits are required for each. There are no test pits located at any of the six on site infiltration BMP's which is not in compliance with the Stormwater Handbook. Due uniformity of the sites soil profile, it may be possible to defer additional testing until the construction phase. We recommend that the Sandy Loam layers be removed down to the sand layers and the excavation backfilled with Title 5 sand in order to*

*ensure long term operation of the infiltration BMP's. We recommend that removal of the Sandy Loam be verified on-site by the engineer of record. The requirement for on-site observation of removal of the Sandy Loam layers can be combined with on-site verification of the textural classification of sand layers at lower levels. The Applicants assume some risk that the subsurface structures may have to be redesigned; however, there is room on-site for expansion of these BMPs if required.*

- 10. Revise the drawings to require on-site observation of removal of the sandy loam layers and backfilling with Title 5 sand at each of the 6 subsurface structures during construction.*

**RESPONSE:** The Applicant has added the following note "A registered Massachusetts soil evaluator must assess soil at every subsurface infiltration structure prior to installation to ensure consistency with the design."

- 11. Revise the drawings to require on-site soil texture classification by a Massachusetts Soil Evaluator at each of the 6 subsurface structures during Construction and to require design revisions if location specific soil data is not consistent with the submitted design.*

**RESPONSE:** The Applicant has added the following note on sheet C-8: "On-site soil texture classification by a Massachusetts Soil Evaluator at each of the 6 subsurface structures will be conducted during Construction and to require design revisions if location specific soil data is not consistent with the submitted design."

### Calculations

*Revise the HydroCAD calculations as follows:*

- 12. Limit sheet flow length to 50 feet in determining the time of concentration.*

**RESPONSE:** The Applicant has revised the HydroCAD calculations to limit sheet flow to 50 feet.

- 13. Revise the first flush calculations using 1.7 inches per the subdivision regulations.*

**RESPONSE:** The Applicant has requested a waiver from this requirement. The Massachusetts Stormwater Management Handbook requires 1 inch for calculating the water quality volume.

- 14. Add flow path to the watershed maps.*

**RESPONSE:** The flows paths have been made more prominent, so they are visible on the drainage maps. The updated drainage maps are included in the revised Stormwater Report.

### Infiltration Structures

*Subsurface structure peak water elevations are shown on sheet 15. However, the data is not labeled to show the URC system for which the peak elevations are determined. The top row of the chart which appears to show elevations for URC-1 the elevations do not match the HydroCAD*



*Reports. The “Underground Chambers, Design Storm Elevations” table on sheet 15 should be deleted and replaced with a new table on sheet C-8 or C-9.*

15. *Revise the “Underground Chambers, Design Storm Elevations” table on sheet 15 to include labels for the rows as URC-1, URC-2, URC-3, URC-4. Revise the WQv (for 1.7 inch) peak elevation and add the 2-yr. peak elevation. The elevations in the top row do not appear to match the HydroCAD calculations.*

**RESPONSE:** The Applicant has requested a waiver from the 1.7-inch WQv requirement. The Massachusetts Stormwater Management Handbook requires 1 inch for calculating the water quality volume.

16. *Supplement the URC “Specifications” table on Sheet 17 providing the elevations for the bottom of stone elevation, bottom of structure elevation, top of structure elevation, top of stone elevation. Alternatively, this information could be labeled for each structure on Sheets C-8 and C-9.*

**RESPONSE:** The Applicant has provided this information on Sheet C-19 in the revised plan set.

17. *Due to the maintenance burden, revise structure URC-1 to provide a single isolator row.*

**RESPONSE:** The Applicant has revised URC-1 to provide a single isolator row.

18. *A double-ring infiltrometer test was performed at TP-F which resulted in an infiltration rate of 7.0 inches/hour. This infiltration rate was used to design URC-3. Although contiguous to URC-3, subsurface structure URC-2 is designed with an infiltration rate of 8.27 inches per hour. Revise the design of URC-3 using an infiltration rate of 7.00 inches per hour or provide two test pits substantiating the design infiltration rate of 8.27 inches per hour.*

**RESPONSE:** The Applicant has revised the HydroCAD calculations to use an 8.27 inches per hour infiltration rate for the design of URC-3, which is consistent with the soils observed in this area.

19. *Provide time to drain calculations for URC-1, URC-2, URC-3, URC-4.*

**RESPONSE:** The Applicant has added the time to drain calculations in the revised Stormwater Report.

20. *Revise the design of Bioretention Area 2 in order to accommodate the revised island geometry at the building entrance. See Comment 4*

**RESPONSE:** The Applicant has revised the HydroCAD calculations to include the revised island geometry (i.e., drop off zone). Bioretention Area 2 was oversized and revising the area is not required. Due to minor changes in the drainage areas for the roof and the turnaround area, URC-4 has been changed from 15 to 12 chambers.

21. *Provide requirements for bulkheading subsurface structures until the site is fully stabilized.*

**RESPONSE:** The Applicant has added an additional note on sheet C-2 of the revised plan set.

#### Treatment BMPs

22. *The Water Quality Volume used in the sizing of the Bioretention Areas and the Tree Trenches is based on the 1-inch rainfall, not the 1.7-inch rainfall required by the Planning Board Rules and Regulations (PBRR §352 D 1).*

**RESPONSE:** The Massachusetts Stormwater Management Handbook requires 1 inch for calculating the water quality volume. The Applicant has requested a waiver from this requirement.

23. *Label the Sidewalk Inlet Grate on sheets C-8 and C-9 and reference the detail on Sheet 16.*

**RESPONSE:** Labels have been added to the Sidewalk Inlet Grate on sheets C-6 and C-8 of the revised plan set.

#### Collection System

24. *Label pipe diameters, materials, and slopes.*

**RESPONSE:** The Applicant has provided labels on the revised plan set.

25. *Relocate DMH 200 and eliminate the acute reverse flow angle.*

**RESPONSE:** DMH 200 has been adjusted to reduce the reverse angle.

26. *The CB 100 – RB 101 – RB 102 system provides 25% TSS removal prior to discharge to the infiltration BMP whereas 44% TSS removal is required.*

**RESPONSE:** Flexstorm® Pure Permanent Inlet Protection inserts have been added to all catch basins to provide additional 25% TSS removal. The manufacturer information has been added to the appendices of the Stormwater Analysis and Drainage Report.

#### Stormwater Waivers

*The proposed stormwater management system does not comply with the planning board rules and regulations. Revise the submittal to comply or request waiver of strict compliance with the following.*

27. *Water Quality Depth shall be 1.7 inches.*

**RESPONSE:** The Applicant had requested a waiver from this requirement. The Massachusetts Stormwater Management Handbook requires 1 inch for calculating the water quality volume.

28. *Request waiver of requirements for RCP pipe (PBRR §352 A 7).*

**RESPONSE:** The Applicant requested this waiver in a supplemental submission submitted to ZBA on May 13, 2021.

*29. Request waiver of prohibition for subsurface structures (PBRR §352 D 3.b).*

**RESPONSE:** The Applicant requested this waiver in a supplemental submission submitted to ZBA on May 13, 2021.

**SITE PLAN**

*30. The building domestic water service and the building water protection line, and the proposed fire hydrant are located in proximity (hereinafter the “three connections”). To improve reliability and safety, add two 8-inch diameter gate valves, one of each site of the “three connections” to enable the domestic water service, the building water protection line, and the hydrant to be fed from either direction. Adjust the waterline location slightly in order to enable locating the valve boxes for both recommended gate valves within the pavement.*

**RESPONSE:** The Applicant agrees with the comment and has updated the Utility Plans accordingly.

*31. Coordinate with the Fire Department and determine the following:*

*a. Is a second on-site fire hydrant required.*

**RESPONSE:** A second fire hydrant has been added to the plans at approximately 470-feet from the intersection with Meetinghouse Lane to comply with the maximum separation distance of 500-feet.

*b. Is a PIV valve required where the fire service enters the building?*

**RESPONSE:** Based on communication with Assistance Fire Chief Pelonzi, a PIV is not required.

*32. Research availability of record data or provide a fire flow test.*

**RESPONSE:** The NSWDC conducted a fire flow test on July 22, 2021, at two hydrants closest to the proposed site. A letter summarizing the fire flow test results, from ResilientCE to the North Sagamore Water District, dated July 27, 2021, is attached to this memo.

*33. Specify bituminous coated cement lined ductile iron pipe.*

**RESPONSE:** The NSWDC allows the use of PVC pipe for water mains. The plans have been updated to note watermain as PVC.

*34. Show the limits of the waterline to be abandoned and identify the point of connection for the watermain extension.*

**RESPONSE:** Based on discussion with the NSWDC, the existing tapping sleeve and gate will remain in Meetinghouse Lane. A new gate valve will be installed in close proximity to the existing gate valve. The new watermain will be brought into the site after the new gate valve. The plans have been updated with additional detail.

35. *Coordinate with the Water District and determine if a three-valve connection is required or if a tapping sleeve and valve is permitted on Homestead Road.*

**RESPONSE:** Based on discussion with the NSWDC, the connection on Homestead Road will be a cut-in connection. A new gate valve will be installed on the northwest portion of the existing Homestead Road water main. A second gate valve and hydrant will be installed on the new connection from the site.

36. *Show a supply line if natural gas service is available.*

**RESPONSE:** Natural gas service is not available. Electric heat is proposed.

37. *If natural gas service is not available show the location and spill protection provisions for the heating oil storage tank. The oil storage tank must comply with Fire Department requirements.*

**RESPONSE:** Electric heat will be provided, therefore a heating oil storage tank is not required.

38. *Show an emergency generator if proposed and provide visual and acoustical screening. The generator should be gas fired if natural gas service is available. The generator should be located to minimize noise impacts on residents and abutters. If not desired to power the entire building, an emergency generator may be required in order to operate the elevator and maintain handicapped accessibility to the second and third floors of the building.*

**RESPONSE:** The Applicant has added a location for a diesel or propane powered emergency generator (diesel) pad in between the proposed building and the upper parking lot.

39. *Specify the material for vertical faced curbing. Although more expensive than precast concrete curb, vertical faced granite curb is recommended in the turnaround area due to restricted vehicle maneuvering and tight geometry for snow plowing.*

**RESPONSE:** The Applicant currently is proposing granite curb where sidewalks are located and in the parking lots. Asphalt berm is proposed for the island at the turn around and along the southern side of the access road. A similar application has been used at other POAH developments successfully.

40. *Specify a 4" thick superpave pavement section with a 1½-inch thick surface course and a 2½-inch thick intermediate course. Increasing the surface course from 1¼-inch thick specified in the subdivision regulations allows for increased aggregate size and increased strength.*

**RESPONSE:** As the driveway will not be a public road and the parking lots are on private property; the Applicant does not believe a 4" pavement section is required and the typical 3" pavement thickness is sufficient. The Applicant will submit to ZBA a waiver from this requirement (Subdivision 326.e).

41. *The Zoning Bylaw which proscribes requirements for site lighting, limits the max./min. ratio to 4.0 whereas the max./min. ratio provided on the "speclines" photometric plan for Driveway is 14.0, for Parking A is 25.5, and for Parking B is 24.5 (ZBL §3453 c)). However, illumination levels provided are similar to illumination levels provided in comparable developments.*

**RESPONSE:** The Illuminating Engineering Society recommends a uniformity ratio maximum of 15:1 for parking lots. The Applicant reviewed other possible configurations to reduce the max./min. ratio. Due to the maximum coverage requirement of the proposed leachfield, lighting cannot be sited within the parking lot. As mentioned in the comment, the proposed lighting is similar to what is used in comparable developments. The Applicant will request a waiver from this requirement.

### SEPTIC SYSTEM

*The septic system information provided is a preliminary design and will require additional design prior to final septic system approval.*

**RESPONSE:** The plans have been updated and suitable for Title 5 Permitting.

42. *The conventional Title 5 system location is shown as an outline of dashed lines overlapping the Presby beds. The Presby's state approval letter requires that the site to support a conventional system (primary and reserve). It's not clear that the area must be in a different location on the property, but the rectangular space provided is not supported with design calculations to prove that the space shown represents the conventional system's primary and reserve.*

**RESPONSE:** Based on further review of the design requirements for the Presby Innovative/Alternative leaching field previously proposed, HW has redesigned the leaching area to a pressure dosed Title 5 leaching trench system. This comment is no longer applicable.

43. *The site evaluation data excludes percolation tests. Granted sandy soil percolation rates are predictable but this test data will be required for final approval.*

**RESPONSE:** Percolation tests were conducted in Test Pits (TP)-B and TP-5. Results are shown in the soil test pit logs located on sheet C-11.

44. *Redoximorphic features (mottles) was recorded in the soil profiles but in a different area not representing the soils underneath the soil absorption system.*

**RESPONSE:** Soils in the area of the soil absorption system were found to be sandy in nature with no redoximorphic features encountered. The redoximorphic features were isolated to the western portion of the site, TP-E and TP-F.

45. *The plan does not provide a 100% reserve area.*

**RESPONSE:** The revised leaching trench system design will provide 100% reserve area.

46. *The plan does not provide deep observation holes and percolation tests verifying a suitable location for the reserve area.*

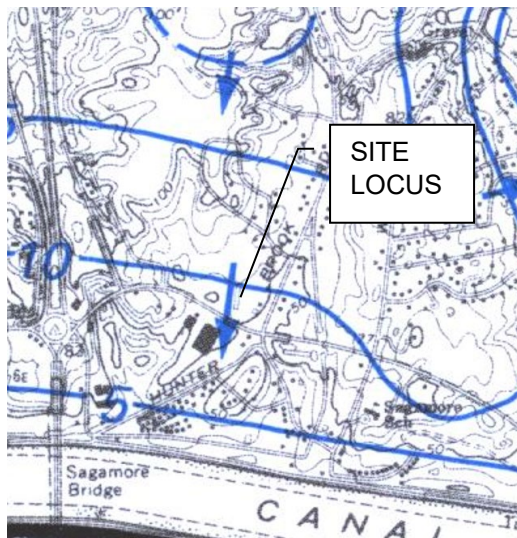
**RESPONSE:** Additional soil testing acceptable to the Bourne Health Department will be provided for the revised leaching system trench design if necessary.

47. *The mound height is stated but calculations are not provided for groundwater mounding as required for systems over 2,000 gpd.*

**RESPONSE:** Groundwater mounding calculations are included on sheet C-14 the revised leaching system trench design. Depth to groundwater is estimated at elevation 10, over 40-feet below grade. HW does not believe mounding will affect the leaching trench system design.

48. *No information provided for the high groundwater elevations provided.*

**RESPONSE:** Regional groundwater contour data indicates a groundwater elevation of 10-ft, which is approximately 40-feet below grade at the site. No standing water was observed during soil testing. See image below from plan titled "Altitude of Water Table in Plymouth-Carver Area, Southeastern Massachusetts, November 30 – December 2, 1984 prepared by Bruce Hansen and Wayne Lapham, 1992".





49. *Bed #1 and Bed #2 will receive an unequal volume of effluent. The beds are two different sizes, one will receive more effluent than the other not providing equal distribution for the entire soil absorption system when dosed.*

**RESPONSE:** This comment is not applicable as the Presby leaching field is no longer proposed.

50. *Details are missing for the vent manifolds exiting the double offset adapters.*

**RESPONSE:** This comment is not applicable as the Presby leaching field is no longer proposed.

51. *Bed #1 vent manifold has no details.*

**RESPONSE:** This comment is not applicable as the Presby leaching field is no longer proposed.

52. *Bed #2 vent manifold is not clear or presented.*

**RESPONSE:** This comment is not applicable as the Presby leaching field is no longer proposed.

53. *The site plan offers a location for vent pipes north of the beds. No details provided how to get the pipes to the specified location. The manifold vent pipes for Bed #2 are located on the southern end of the bed and Bed #1 is located on the northern end.*

**RESPONSE:** This comment is not applicable as the Presby leaching field is no longer proposed.

54. *No calculations provided for the pump chamber daily dose (6 doses daily minimum), emergency storage volume, and pressure line backflow volume.*

**RESPONSE:** The revised design includes detailed pressure dose calculations for the leaching trenches including head loss, required pump rate, float elevations and dosing volumes.

55. *No pump specifications, inside dimensions for the pump chamber, actual dynamic head, pump performance curve (total dynamic head versus flow rate) and manufactured stated flow rate for the actual dynamic head calculated.*

**RESPONSE:** The revised design includes detailed pressure dose calculations for the leaching trenches including head loss, required pump rate, float elevations and dosing volumes.

56. *Sheet 14 of 21. Sheet provides specifications for sewer manhole and wye connector that are unrelated to the current design. Should be omitted. Space used for current design details which would benefit the design.*

**RESPONSE:** The sewer wye connection and sewer manhole detail have been removed from the drawings.

57. *Final grade cover over Bed #1 and #2 exceed state's maximum 3 feet of cover.*

**RESPONSE:** This comment is not applicable as the Presby leaching field is no longer proposed.

58. *Pump chamber outlet elevation is the same for the inlet elevation for the main distribution box. Using the same elevation (no negative grade) will prevent the fluids in the pressure line to return to the pump chamber after each dose by gravity.*

**RESPONSE:** This comment is not applicable as the Presby leaching field is no longer proposed.

59. *No weep hole provided in the pressure line for backflow return to pump chamber.*

**RESPONSE:** The revised design includes a weep hole to allow backflow from the multizone valve to the pump chamber. HW is not proposing to drain the entire forcemain back to the pump chamber.

60. *Final grade provided above the pressure line length does not provide proper cover to provide protection from freezing. If buried deep the line will have a bow preventing backflow to pump chamber due to both ends of the pressure line are at the same elevation.*

**RESPONSE:** HW will ensure that the forcemain is buried a minimum 4-feet below grade to protect from freezing. The dosing calculations for the revised pressure dosed leaching trenches incorporate the volume of the forcemain to ensure that the required dose volume is provided to the leaching trenches. HW is not aware of a requirement for the entire forcemain to drain back to the pump chamber with each pump dose. Distribution laterals in the proposed leaching trenches will be sloped to drain.

61. *Distribution box specifications lack 6" stone base or equivalent to provide a stable base, and the outlet distribution lines to be level for a minimum of the first 2' of the pipe lengths.*

**RESPONSE:** This comment is not applicable as the Presby leaching field is no longer proposed.

62. *The Presby's state approval letter states the system shall be installed with differential venting for aeration and inspection access at end of each serial bed whenever the system is installed under impervious surfaces.*

**RESPONSE:** This comment is not applicable as the Presby leaching field is no longer proposed.

COMMENTS FROM THE TIA PEER REVIEW

Our review of the TIA for Cape View Way, gave rise to recommended site plan modifications. We restate these issues to ensure they are addressed in revised site plans. Revised site plans should address the following:

- Any sidewalk obstructions (signs, hydrants, etc.) to be placed to reserve a 48-inch-wide accessible path.

**RESPONSE:** The Applicant has placed all obstructions outside the sidewalks, which are 60 inches wide.

- *For walkways at the head of perpendicular parking space, widen the sidewalk to 7½ ft., provide parking bumper blocks, or providing a loam strip to maintain a minimum accessible route.*

**RESPONSE:** Handicapped parking spaces are not provided in this parking lot and to keep impervious cover to a minimum we believe the 5' dimensions is sufficient for this sidewalk and consistent with standard parking lot design.

- *Provide an outdoor bicycle rack be provided for visitors.*

**RESPONSE:** The Applicant has added a bicycle rack near the drop off area that will fit up to eight bicycles.

- *For the 4 compact perpendicular parking spaces that are accessed from the pavement within the turnaround at the building entrance, provide an overall width of this parking bay (aisle plus parking space) of 42 ft. to ensure proper vehicle maneuvering.*

**RESPONSE:** The Applicant has updated the parking spaces to 60-degree angled parking. The width of the aisle behind these spaces is 17 feet, which exceeds the Bourne parking regulations requirement of 16 feet clear behind a 60-degree angled parking space.

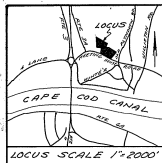
- *The turnaround with center island at the end of Cape View Way that has been adapted to serve as a drop-off at the building entrance. Modify the inner radius of the turnaround to accommodate a fire truck or the largest vehicle expected to regularly access the site.*

**RESPONSE:** The emergency vehicle turning radius template has been submitted along with a letter from Assistant Fire Chief Pelonzi to demonstrate the Bourne fire truck dimensions provided is able to use the turnaround.

- *Provide signs prohibiting parking along Cape View Way.*

**RESPONSE:** Based upon property management experience at other POAH facilities and to avoid sign clutter, the applicant prefers to not add the signs at this time. We suggest a condition be added to the approval that signs will be installed if illegal parking along the access drive becomes an issue.

## EXHIBIT A



AUG 12 10 24 AM '87

DANIEL S. SIMSKI

OPEN SPACE  
11,457 \$

22,989 \$

23,619 \$

TOWN PAINT & SUPPLY COMPANY, INC.  
ZONED R-20  
ZONED B-2HOMESTEAD  
(NO WIDE)ROAD  
(10' WIDE)APPROVAL UNDER SUBDIVISION  
COMPTROL LAW BY THE  
BOURNE PLANNING BOARD

Sally H. Ruddy

I CERTIFY THAT THIS PLAN HAS  
BEEN APPROVED & CONFIRMED  
WITH THE RULES AND REGULATIONS  
OF THE REGISTRARS OF DEEDS OF THE  
COMMONWEALTH OF MASSACHUSETTS

REGISTERED LAND SURVEYOR

I CERTIFY THAT THIS PLAN WAS MADE  
WITH LAND COURTESY OF THE  
ACCURACY AND THAT THE PERMANENT  
POINTS SHOWN ON THE PLAN EXIST  
ON THE GROUND.

REGISTERED LAND SURVEYOR

DATE: July 23, 1987

JOHN FRANCIS  
CARAFOLI

HASREAL COMPANY INC.

U.S. POSTAL SERVICE

CLERK OF THE  
TOWN OF BOURNE, MASS. CERTIFY  
THAT THE NOTICE OF APPROVAL OF THIS  
PLAN BY THE BOURNE PLANNING  
BOARD WAS RECEIVED AND RECORDED  
AT THIS OFFICE AND NO NOTICE OF APPEAL  
WAS RECEIVED OVER THE TWENTY (20) DAY  
NEXT AFTER SUCH RECEIPT AND RECORD.

DATE: July 16, 1987

TOWN CLERK: [Signature]

NOTE: BRUSH MARK AT TOP OF HYDRANT AT SW CORNER  
OF LOT 1 ELEVATION = 46.30 M.S.L.

ASSESSORS MAP	7
PARCEL	A-2
TOTAL TRACT AREA	.749 ACRES
TOTAL LOT AREA	6.82 ACRES
TOTAL OPEN SPACE AREA	0.85 ACRES
TOTAL ROADWAY AREA	1.01 ACRES
TOTAL LENGTH OF ROADWAY	.955 MI

"MEETINGHOUSE PLACE"  
DEFINITIVE  
SUBDIVISION PLAN OF LANDIN  
BOURNE, MASS.

FOR

EQUITY ASSOCIATES TRUST  
436 MAIN STREET  
HYANNIS, MASS.

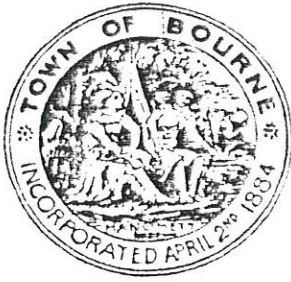
SCALE 1"=40'

NOVEMBER 12, 1986

RECORDED 6/15/87

DOYLE ENGINEERING ASSOCIATES, INC.  
47 MORRIS AVENUE FALMOUTH, MASS.

EXHIBIT B



TOWN OF BOURNE, MASSACHUSETTS

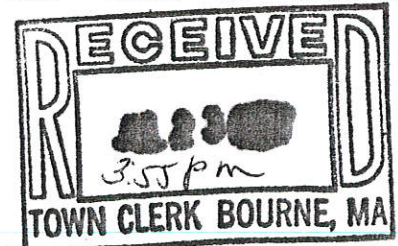
FORM D-1

CERTIFICATE OF APPROVAL OF A DEFINITIVE SUBDIVISION PLAN

June 30<sup>87</sup>  
....., 19.....

TO: Town Clerk

The Bourne Planning Board hereby certifies that at a meeting of said Board on June 25<sup>87</sup>....., 19....., at which a majority and quorum were present, following a public hearing by the Board on June 4<sup>87</sup> June 25..... 19.87, pursuant to notice published in the ...Bourne Courier..... on May 20....., 19.87 and on May 27....., 19.87, it was (unanimously) VOTED: That a Subdivision Plan and Plan and Profile of a Subdivision Meetinghouse Place November 12, 1986 and revised called ....., dated June 25,....., 19.87 and designed by Doyle Engineering....., registered as an Engineer or Land Surveyor in Massachusetts, submitted for the Board's approval by Equity Associates Inc:...., applicant, be and hereby are approved on condition that prior to the Board's endorsement of its approval thereon the subdivider shall furnish guarantees to the Planning Board as provided in Section 266 of the Subdivision Regulations that except as otherwise expressly provided in Section 81-U of Chapter 41, G.L., no lot included in such plan shall be built upon or conveyed until the work on the ground necessary to serve such lot has been completed in the manner specified by the Subdivision Regulations of the Town of Bourne with the following specific qualifications:



- a. All such installation and construction shall be completed within 24 months of this date;
- b. All streets or ways shall be surfaced with at least a 2" binder course prior to application for occupancy permits for any structures served by such streets or ways:
- c. The driveway servicing lots 2 and 3 shall only be from Capeview Way
- d. Lot 5 shall become a residential and not a business lot
- e. There shall be a connection to the abutting Meadowood subdivision for adequate water pressure
- f. The Conservation Commission shall be notified of the wet area behind Lot 10
- g. The buffer zone between applicant and Mr. Tonello's land should be marked as open space on both the covenant and the deed and the 6"
- h. Picnic area must be adequately screened.

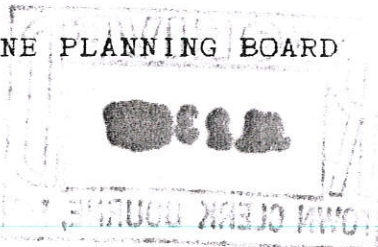
or a performance bond or other security in lieu of completion has been accepted by the Planning Board.

Respectfully submitted,

By: 

Chairman, Planning Board

BOURNE PLANNING BOARD







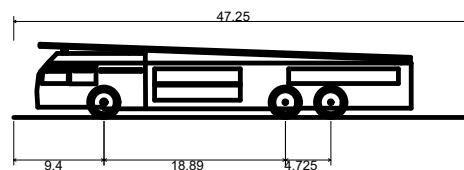
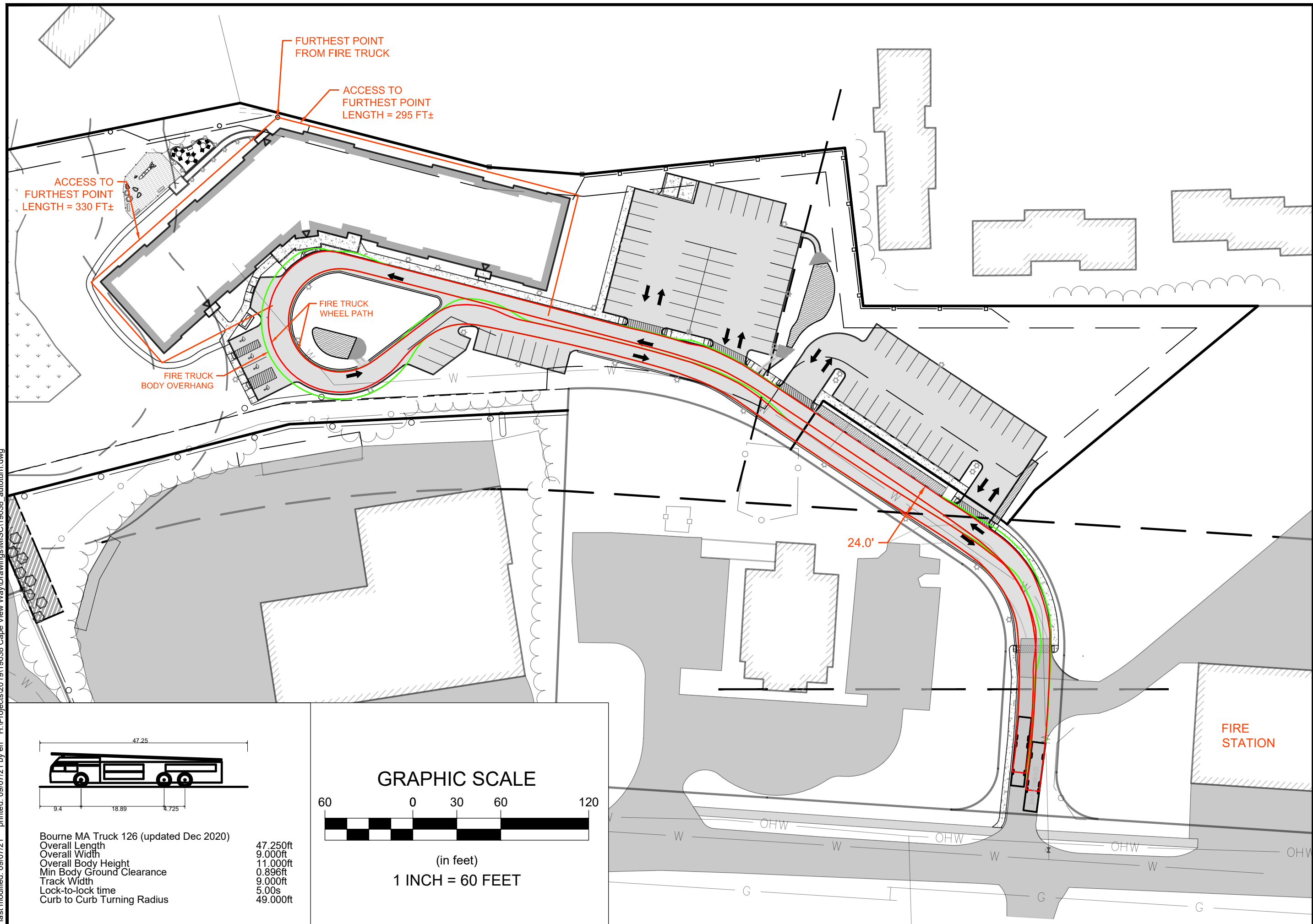
**Town of Bourne**  
Fire/Rescue & Emergency  
Services  
51 Meetinghouse Lane  
Sagamore Beach, MA 02562  
508-759-4412



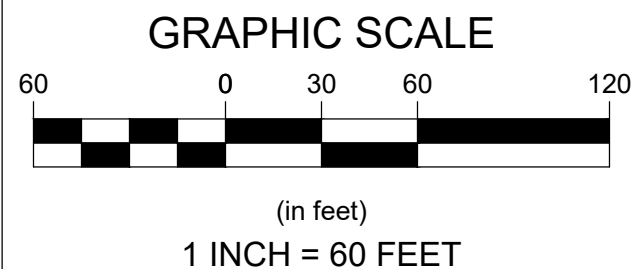
To: Cassie Hammond  
From: David S. Pelonzi, Assistant Chief  
Date: 09/10/2021  
Subject: Cape View Way


Based on updated information I have received on the project above, I have the following comments to add to previous fire department comment:

- The new fire flow test report confirmed the previous test results. The water supply for structure will be sufficient.
- Even with site modifications, the updated emergency vehicle access plan still provides sufficient emergency access for fire department vehicles.
- This department does not require a post-indicator valve for the fire sprinkler system. NFPA 24-10 addresses valves controlling water supply for fire suppression. It will be up to the registered design professional to determine the appropriate valves for the system.



Bourne MA Truck 126 (updated Dec 2020)	
Overall Length	47.250ft
Overall Width	9.000ft
Overall Body Height	11.000ft
Min Body Ground Clearance	0.896ft
Track Width	9.000ft
Lock-to-lock time	5.00s
Curb to Curb Turning Radius	49.000ft



Survey & Preliminary Layout Provided By: <b>Horsley Witten Group, Inc.</b> 90 Route 6A Sandwich, MA 02563 Phone: (508) 833-6600 Fax: (508) 833-3150		Prepared For: <b>PRESERVATION OF AFFORDABLE HOUSING</b> 2 OLIVER STREET, SUITE 500 BOSTON, MA 02109 Phone: (617) 261-9898 Fax: ---		Plan Set: <b>CAPE VIEW WAY PERMITTING PLANS BOURNE, MASSACHUSETTS</b>  Plan Title:				<b>Horsley Witten Group, Inc.</b> <i>Sustainable Environmental Solutions</i> www.horsleywitten.com 90 Route 6A Sandwich, MA 02563 508-833-6600 voice 508-833-3150 fax		Revisions											
Project Number: <b>19038</b>		Sheet Number: <b>1 of 1</b>		Date: September 2021		Design By: EWH		Drawn By: EWH		Checked By: BRK		Rev.		Date		By		Apr.		Description	

July 27, 2021

Matthew Sawicki, Superintendent  
North Sagamore Water District  
14 Squanto Road  
Sagamore Beach, MA 02562

RE: Flow Test for Cape View Drive 40B Development

Dear Mr. Sawicki:

The North Sagamore Water District (District) retained Resilient Civil Engineering, P.C. (ResilientCE) to conduct a flow test along Meetinghouse Lane near the proposed location of the Cape View Drive development.

Two hydrants were used to complete this test, one to monitor system pressure and the other to measure flow. The flowing hydrant was located at the hydrant between the Post Office and Ace Hardware along Meetinghouse Lane. The residual hydrant was located at the Fire Station at 51 Meetinghouse Lane. The attached Fire Flow Test sheet provides the pressures and flow measured during the test. A map identifying the hydrant locations is also provided.

The flow was similar to the flow test conducted by Horsley Witten Group, Inc. on September 5, 2019. However, the residual pressure during the recent test was about 9 psi greater than the prior test. The improved residual pressure is a direct result of the District identifying and opening a valve that had unknowingly been closed during the prior flow test. This valve is located along the 8-inch diameter water main at the intersection of Meetinghouse Lane and Route 3A. The closed valve was discovered and opened on February 17, 2021. It is not known how long the valve was closed. Based on the results of this flow test, the valve was closed during the prior flow test.

Note that the results of the flow tests validate the hydraulic model simulations that were run with the 8-inch diameter water main that crosses Route 3A both open and closed to compare impacts with and without a water main break at this location.

When using the results of this flow test, please keep in mind the need to maintain pressures at the high points of the water system along the Scenic Highway. It is customary to extrapolate the available flow at the flow test location at residual pressure of 20 psi. However, decreasing the system pressure to 20 psi at the flowing hydrant location will decrease the pressures along the Scenic Highway far below 20 psi and the

minimum pressure requirement for water distribution systems has been established in the Massachusetts Department of Environmental Protection (MassDEP) "Guidelines and Policies for Public Water Systems", as 20 psi for emergency conditions. This minimum pressure requirement is established to protect public health.

Please contact me with any questions at 508-726-2458 or [kberger@resilientce.com](mailto:kberger@resilientce.com).

Sincerely,  
Resilient Civil Engineering, P.C.

A handwritten signature in blue ink, appearing to read "Kristen M. Berger".

Kristen M. Berger, P.E.  
President

encl.

### FIRE FLOW TEST

WATER SYSTEM: North Sagamore Water District

TEST PERFORMED BY: Resilient Civil Engineering, PC

DATE: 7/22/2021

START OF TEST: 9:18 AM 9:28 AM

END OF TEST: 9:22 AM 9:35 AM

TEST DURATION: 4 minutes 7 minutes

#### WATER STORAGE TANK LEVEL

AT START OF TEST: Bournedale 28.46', Clark 92.32', Norris 41.01'

AT END OF TEST: Bournedale 27.89', Clark 90.10', Norris 41.14'

STATUS OF PUMPS: Off

#### HYDRANT LOCATIONS

FLOWING HYDRANT: Between Post Office and Ace Hardware Meetinghouse Lane

RESIDUAL HYDRANT: Fire Station at 51 Meetinghouse Lane

HYDRANT COEFFICIENT: 0.9

	TEST #1	TEST#2
FLOWING HYDRANT		
Flow Opening (Inches)	2.375	2.5
No. of Butts Flowing	1	1
Static Pressure (psi)	48	48
Pitot Reading (psi)	40	30
Flow, $Q_f$ (gpm)	956	960
RESIDUAL HYDRANT		
Static Pressure, $H_s$ (psi)	56	56
Residual Pressure, $H_r$ (psi)	49	49

#### COMMENTS:

Test completed twice using different flow nozzles/pitots to verify results.

FLOW TEST HYDRANT LOCATIONS

