



TOWN OF STOUGHTON

-Engineering Department-

Town Hall
10 Pearl Street, 2nd Floor
Stoughton, MA 02072

October 24, 2022

Stoughton Planning Board
10 Pearl Street
Stoughton, MA 02072

RE: Technical Engineering Review – First Review
#400 Prospect Street – Proposed Fire Station

Dear Members of the Board,

The Engineering Department was tasked to perform a Technical Engineering Review of the proposed project. The following materials were submitted to our Department for review:

- a. Site Plan entitled "Planning Board Submission Stoughton Fire Station No. 1 Stoughton, Massachusetts", dated October 6, 2022 prepared by Dore + Whittier and Nitsch Engineering, Inc.
- b. "Stormwater Report" dated September 29, 2022 prepared by Nitsch Engineering, Inc.
- c. Developmental Impact Report prepared by Dore + Whittier dated October 20, 2022

At this time, the Engineering Department has completed its first review and offers the following comments:

Comments

1. Portions of the site are located within the 100-Year FEMA Flood Zone A (with no base flood elevation established). The shape of the Zone A Boundary for the site appears to be incorrect, considering the existing topography of the site and the position of the surrounding wetlands. The applicant should consider filing for a Letter of Map Amendment (LOMA) with FEMA to adjust the Zone A Boundary to more accurately reflect the existing site conditions. If a LOMA is not obtained, any work within the Zone A shall be performed in accordance with the Wetlands Protection Act and compensatory flood storage shall be provided for any filling of the Flood Zone. Compensatory flood storage calculations shall be provided for review, if necessary.
2. All soil test pits performed on the site shall be clearly shown on the plans and the soil log information shall be added to the plans. The ground elevation and estimated seasonal high groundwater table (ESHGWT) shall be indicated on the plan for each test pit. The infiltration rate used in the stormwater calculations (2.41 in/hr), may be excessive considering the site conditions.
3. The drainage report indicates that the sub-surface infiltration basin is designed with four feet of separation to the ESHGWT. A mounding analysis is required if the ESHGWT is found to be less than four feet from the bottom of the basin.
4. The Closed Drainage System Link Summary chart shall be revised to indicate the correct pipe sizes and lengths.
5. Catch basin inlet capacity calculations shall be provided.
6. The property owner name and address shall be listed on the Cover Sheet.
7. The assessor's Map and Lot for all parcels included in the project area shall be listed on the Cover Sheet.

8. Reference shall be added to the plans noting the date of the wetland delineation and the professional who performed the delineation on the site.
9. The existing contour elevations should be labeled more frequently.
10. The owners of abutting property and assessor's references shall be added to the plans.
11. The wetland resource areas, buffer zones (50', 75, 100') and erosion controls shall be shown on the plans according to the color-codes required by the Conservation Commission.
12. The temporary construction fence shall be terminated at the existing culvert crossing the driveway. Erosion controls shall continue around the limit of work, as required.
13. Inlet and outlet protection for the existing 36" RCP culvert and 15" RCP pipe shall be added to the Erosion and Sediment Control Plan.
14. A note shall be added to the Demolition Plan to abandon the existing septic system.
15. A tree line indicating the limits of the matures trees shall be shown on the plans. The limits of tree clearing shall be shown on the Demolition Plan.
16. A shrub line indicating the limits existing shrub growth shall be shown on the plans. The limits of shrub clearing shall be shown on the Demolition Plan.
17. The location of the existing piles of logs stored on the site shall be shown on the plans and a note to remove them from the site shall be added to the Demolition Plan.
18. An invasive species management plan shall be developed for the site.
19. The Demolition Plan indicates that removal of an oil tank is required. The tank has been removed from the site. The Demolition Plan shall remove the note to remove the tank.
20. A note shall be added to the Demolition Plan to remove sections of existing CLF along the property line abutting #410 Prospect Street. This fence is proposed to be replaced with a 6' high white vinyl PVC fence.
21. The proposed 6' high white vinyl PVC fence shall transition down to a 4' high fence at the intersection of the driveway and Prospect Street to allow for proper sight distance.
22. The proposed Fire Station Sign should be relocated to provide better visibility from Prospect Street.
23. Guard rail shall be provided along the driveway at the culvert crossing and in the vicinity of the proposed retaining wall.
24. Topographic information shall be removed from the Layout Plan and Utility Plan to improve clarity of relevant information.
25. Building dimensions and setback dimensions to property lines, resource areas and buffer zones shall be labeled on the plans.
26. The gross floor area of the building shall be labeled on the plans.
27. A Zoning Chart shall be added to plans.
28. The existing drainage pipe network is not completely shown on several sheets where the information is pertinent. The plans shall be revised to show the entire drainage network where required.
29. A Watershed Plan shall be included in the Existing Culvert Sizing calculations.
30. Structural analysis of the existing culvert under the driveway shall be provided to ensure that the culvert can withstand the proposed loads from fire apparatus. Additional reinforcing measures of the paving, such as geo-grid layers or thicker layers of paving or base materials may be necessary.
31. The conclusion statement at the end of the Existing Culvert Sizing Calculations indicates that the 100 Year Storm elevation for the site is 149.0 which appears to be off by about 100' in elevation.
32. The swale at the NE corner of the building shall be sloped to drain towards AD-300. The rim grade for AD-300 should be lowered based upon the sloped grading of the swale.
33. The engineer should consider raising the Finish Floor Elevation of the building by 0.5' - 0.75' to ensure the swale at the NE corner drains more efficiently and to ensure that the area behind the building can drain properly away from the building.
34. The inverts of the pipes exiting CB-200 and CB-201 are excessively deep. The inverts should be raised to be approximately 4 feet below grade.

35. The proposed rim elevation for DMH-104 is incorrect. Adjust accordingly.
36. There appears to be a conflict with the discharge pipe out of WQS-600 and the existing 36" culvert. Revise accordingly.
37. A Cross-Section of the access drive specific to the culvert area shall be added to the plans showing all utilities in the area with elevations to ensure that no conflicts exist.
38. Rip rap aprons and slope protection shall be provided for the discharge locations of the existing 36" culvert and 15" drain.
39. The existing culvert is labeled as a 48" RCP on sheet C3.00 and as a 36" RCP on C4.00. Revise accordingly.
40. The location of the proposed water service and sewer service along the access drive should be swapped to avoid crossing each other.
41. Label all bends on the proposed water service and provide thrust blocks where required.
42. Coordinate the connection of the fire protection and domestic service with the Water and Sewer Superintendent.
43. The slope of the sewer pipe between SMH #101 and SMH #100 shall be flattened to 0.5% provide more cover over the pipe at SMH #101.
44. The size, material, length and slope of all pipes in the sewer profile shall be labeled on the plan.
45. The sewer service may be reduced from an 8" diameter to a 6" diameter PVC.
46. A sewer clean out shall be provided 10 feet outside of the building foundation.
47. Any interior floor drains shall be collected and sent to a properly sized Oil/Water Separator prior to discharge to the municipal sewer.
48. All utilities within the access road shall be shown and labeled on the profile.
49. The proposed location of a natural gas service to the building shall be shown on the plans, if applicable.
50. The crown of the access drive should be removed and the pavement should be sloped to the south side of the driveway. Adjust drainage structures accordingly.
51. A three-foot wide bench shall be provided behind all curbs.
52. The proposed retaining wall near WQS-601 shall be set 3 feet behind the curb. A detail of the proposed wall shall be provided.
53. Guard rail shall be provided in front of the proposed retaining wall and along the south side of the access drive to approximately CB-201.
54. Guard rail shall be provided along the north side of the access drive from approximately CB-200 to the proposed 252 contour (at the culvert crossing).
55. The grading for the pavement south of the concrete apron at the truck bays should be revised to direct runoff to a curb break in the landscaped island currently shown as the "snow storage area". The landscaped island shall be graded to form a depression to promote infiltration of the runoff. An overflow with a dome grate should be provided to overflow the runoff to WQS-602. The Snow Storage area shall be moved to another location.
56. Detailed grading of the intersection of the access drive and Prospect Street shall be provided and a note shall be added to the grading plan to "Maintain gutter flow" at the intersection of the access road and Prospect Street. A larger scale blow-up of the intersection is recommended.
57. Spot grades shall be added at the SW corner of the building to define the proposed high point.
58. Proposed contours shall be added to the limit of work behind the proposed building (to the north) to ensure the area will drain properly.
59. The proposed contours at the NE corner of the building should be pulled further away from the building to the north.
60. The detail for the Stormtech Sub-Surface infiltration basin shall be revised to include site specific elevations.
61. The following construction details shall be added to the plans:
 - a. Guard Rail

- b. Retaining Wall
 - c. Double Catch Basin
 - d. 5' Diameter DMH
 - e. Rip Rap Apron
 - f. Pavement Saw-Cut and Patch
 - g. Concrete Walk
 - h. Fire Hydrant
 - i. Water Gate
 - j. Thrust Blocks
 - k. Sewer Clean Out
 - l. Rip Rap Apron
62. The Construction Details for Sloped Granite Edging and Asphalt Walkway shall be removed from the plans.
 63. The Handicapped Parking Sign Detail shall include the following language "Special Plate Required Unauthorized Vehicles May Be Removed at Owner's Expense".
 64. A truck turning diagram shall be submitted to ensure that fire apparatus can maneuver throughout the site and onto Park Street.
 65. Traffic control devices should be considered for use at the intersection of the access drive and Prospect Street to alert motorists of Fire Apparatus exiting the site.
 66. A blank sheet shall be incorporated into the plan set. Once Planning Board approval has been obtained, the Planning Board Decision shall be scanned onto this sheet for record set.

Recommended Special Conditions of Approval

1. The applicant shall record the Operation & Maintenance Plans. Proof of recording shall be submitted to Board and the Engineering Department prior to the issuance of a Building Permit.
2. A Sewer Connection Permit for the project is required to be issued by the Engineering Department prior to the issuance of a Building Permit.
3. The applicant shall clean the entire drainage system at the end of construction.
4. The applicant shall submit a set of the construction plans to the Engineering Department.
5. A Final As-built Plan shall be submitted for review by the Engineering Department prior to the Certificate of Occupancy.
6. Electronic copies of the approved site plans in PDF and AutoCAD format shall be submitted.

If required by the Board, the applicant should revise the plans and provide written responses to the above comments as part of the next submittal to provide for a more efficient follow-up review. This department is available to meet with the engineer in order to facilitate this process. If the Board or the engineer have any questions regarding these comments or would like clarification on any of these items, please contact me at your earliest convenience at 781.232.9264.

Respectfully,

Craig A. Horsfall, P.E.
Interim Town Engineer
Town of Stoughton