

SPRUHAN ENGINEERING, P.C.
80 JEWET STREET,
Newton, MA
Phone: 617-816-07-22/617-782-1533

July 29, 2020

From: Edmond Spruhan, P.E.

To: Richard C. Alves, Jr. PE,

Town Engineer/Assistant DPW Director/RCA

6 Park Row,
Mansfield, Massachusetts.
02048

Thank you for the enclosed comments on this project. Received on July 28, 2020.

500 School Street, Mansfield, MA

Prepared by: Edmond Spruhan, P.E.

Dated: February 17, 2020, Revised: July 14, 2020.

General:

- 1 Plymouth and School Street currently have moratoriums in place.
Working in these Rights-of-Ways will require Select Board approval.
Spruhan Engineering: Agrees. However, we are utilizing the existing sleeve under School Street for the proposed Sewer Line, which will allow construction work of the sewer line without affecting moratorium.
- 2 Please revise the plan set to show the original date and any subsequent revision dates.
Spruhan Engineering: Original date and revision dates has been added to all plans.
- 3 Please provide a plan set that is stamped and signed by a Massachusetts Registered Professional Engineer.
Spruhan Engineering: Plan sent is stamped by a Massachusetts Registered Professional Engineer.

Stormwater Report

- 4 Provide the proper documentation showing DEP Stormwater Management Policy compliance.
Spruhan Engineering: Stormwater report has been updated showing compliance of the DEP Management Policy.

Plan Sheet 1 of 7:

- 5 Note 6 states "First floor elevations are taken at threshold", however no such elevations are shown on the plan.
Spruhan Engineering: Existing first floor elevation are not relevant to proposed development, therefore note has been removed from the plan.
- 6 Please correct all references to "City" of Mansfield to "Town" of Mansfield.
Spruhan Engineering: All notes has been changed.
Plan Sheet 2 of 7:
- 7 Note 12 shall be revised to state the repaired pavement section shall match existing thickness, or a minimum 3" binder and 2" top, whichever of the two is greater. Revise throughout the plan set.
Spruhan Engineering: Note has been updated.
- 8 Note 14 shall be revised to add the following to the end of the note, "...with no flow entering School Street."
Spruhan Engineering: Note has been updated.
- 9 Is there a Zone of Influence pertaining to the adjacent MBTA property? If so, please show on the plan and address potential implications to the design. Is there a permit required through the MBTA due to the potential encroachment to the property line?
Spruhan Engineering: The development is in the MBTA Zone of Influence, License to be obtained by others. Zone of Influence has been added to the plan.
- 10 Structural calculations stamped by a Massachusetts Registered Structural Engineer shall be provided for any retaining walls exceeding four feet in height.
Spruhan Engineering: No retaining walls exceeding 4' are shown on the plan.
- 11 Please provide the proposed slab elevation.
Spruhan Engineering: Proposed slab elevation has been added to the plan.
- 12 Please provide sight distances relative to the proposed site entrance.
Spruhan Engineering: Sight distances provided by others on the traffic study.
- 13 Please provide the truck turn movements for the largest truck anticipated to utilize the proposed site.
Spruhan Engineering: Turning analysis plan has been attached to the set of plans.
- 14 Please provide proposed spot elevations at the proposed site entrance to ensure no runoff will enter School Street.
Spruhan Engineering: Spot elevations has been added to the plans. Also a catch basin on the driveway entrance has been added to prevent runoff leaving the site.

15 Our records indicate there is an existing sleeve under School Street. Will the proposed sewer connection utilize this sleeve?

Spruhan Engineering: Yes, existing sleeve will be used, refer to response on comment #1.

16 Please provide invert elevations at all utility crossings (sewer, drain, water).

Spruhan Engineering: Inverts of utility crossings has been added to plan.

17 Note that all trenches within the Right-of-Way will require Flow Fill as the backfill material.

Spruhan Engineering: Note added to the plan. (General notes #15).

18 Please provide two (2) benchmarks and note their location and elevation on the plan.

Spruhan Engineering: Benchmarks has been added to the plan.

Plan Sheet 3 of 7:

19 Revise the location of the proposed roof leader piping on the south side of the proposed building to be outside of the "25-ft No Disturb" zone.

Spruhan Engineering: Pipe has been relocated.

20 Provide buoyancy and pump calculations for both sewer and drainage.

Spruhan Engineering: Buoyancy calcs has been added to the plan and pump calculations on documents attached.

21 Will there be proposed backup generator and drainage pumps as part of this proposed design?

Spruhan Engineering: Proposed backup generator incorporated in the design and shown on Sheet #2 at the North of the property. The proposed pump system requires a total of 10 pumps to achieve the flow rate for a 100 year storm event, it is in our opinion that back up pumps to meet this 100 year event would be an overkill and an unfair expense to the developer. All pumps should be fitted with alarms signaling malfunction and all pumps will be inspected regularly as will be highlighted on the O&M plan.

22 The triangular-shaped drainage system needs to provide perforated pipe to evenly distribute stormwater runoff through the system.

Spruhan Engineering: Proposed perforated pipe has been added to the system.

23 Drainage system numbers (#1 & #2) should match the provided drainage calculations and must be labeled accordingly. Please also provide dimensions of these drainage fields on the plans.

Spruhan Engineering: Label has ben updated and dimension added to the plan.

24 The proposed trench drain as shown in not acceptable as they frequently silt up and fail.

Spruhan Engineering: Trench drain has been replaced by catch basins.

- 25 It appears that the proposed drainage structures will not be able to be constructed due to rim to invert elevations being show shallow.

Spruhan Engineering: Invert and rim of drainage structures has been updated.

Plan Sheet 4 of 7:

- 26 Label the drainage systems as previously mentioned and show the aforementioned perforated pipes.

Spruhan Engineering: Drainage systems has been labeled accordingly and perforated pipes added.

- 27 The 4" PVC pipe entering the system is not acceptable; we recommend a minimum diameter of 6".

Spruhan Engineering: Proposed forced inlet pipe is 4" per pump specifications, we are satisfied with this pipe size from the calculations and specifications.

Plan Sheet 5 of 7:

- 28 Please provide a Construction Entrance Detail.

Spruhan Engineering: Detail has been added to the plan

- 29 In the Typical Downspout Detail, we recommend a 6" minimum blue brute pipe due to lack of cover.

Spruhan Engineering: Detail has been updated and a note has been added to the plan.

Plan Sheet 6 of 7:

- 30 Provide an Erosion Control Barrier Sequence Plan (or notes thereto). We note there are several material piles currently on site. As they are to be removed the erosion control barrier shall, for a period of time, be within the "25-ft No Disturb" zone. An additional erosion control barrier should then be placed at the "25-ft No Disturb" line.

Spruhan Engineering: Additional control barrier and note has been added to the plan.

- 31 Revise the "Fiber Rolls" detail to show stakes set on alternating sides, and not to penetrate the fiber roll.

Spruhan Engineering: Detail has been updated.

Plan Sheet 7 of 7:

- 32 Provide 24-hr sewer storage within the pump chamber.

Spruhan Engineering: Pump Chamber storage has been added to the plan, showing 50% higher than required.

- 33 Sewer laterals from building to pump stations shall be a minimum of 6" diameter and a minimum 2% slope, please verify.

Spruhan Engineering: Has verified that all sizes and slopes are in compliance.

34. The proposed sewer force main entering private property (the Mansfield Fire Station) is not acceptable.

Spruhan Engineering: Point of connection has been changed to a proposed manhole on Plymouth Street.

Our office has reviewed the revised Site Plan for 500 School Street prepared by Spruhan Engineering, P.C. (undated); and Stormwater Management Report dated July 14, 2020.

The additional comments are as follows and should be addressed:

Plan Sheet 1 of 8:

36. Elevations are based on NAD 88 and NAD 83 not Town of Mansfield datum.

Spruhan Engineering: Spruhan Engineering: Surveyors Notes has been updated.

Plan Sheet 2 of 8:

37. *Handicap spaces are required.*

Spruhan Engineering: Proposed location of Handicap parking has been added to the plan.

38. *Sewer Lines on site must label size, type and slope.*

Spruhan Engineering: A note has been added to all Sewer lines showing the requested information.

39. *The plans are confusing; they mention both Chain Link and Wooden fencing.*

Spruhan Engineering: Wood Fence has been added again to the plans as per Police chief request, Property will have Chain Link fencing on the sides and rear and Wooden fencing along the front.

Plan Sheet 3 of 8:

40. *Number all catch basins for clarification.*

Spruhan Engineering: All catch basins has been numbered.

41. *System 1 emergency overflow doesn't appear to be connected to the pipe network.*

Spruhan Engineering: All Drainage lines has been revised to comply with comment #44, System 1 Emergency Overflow is now shown being connected to the pipe network.

42. *Pipe size must be designed for 25 yr storm.*

Spruhan Engineering: All pipes were designed for a 25 Yr Storm event as requested, please see attached calculations.

43. *Drain lines - label size, length, and slope.*

Spruhan Engineering: A note has been added to all drain lines showing the requested information.

44. *Catch basin to catch basin not allowed.*

Spruhan Engineering: All Drainage pipe network has been redesigned to avoid connections from catch basin to catch basin.

45. *The Drain Force main to a manhole /manifold must be provided to the system to prevent washout in the leaching facility.*

Spruhan Engineering: Drain manholes has been added between the connection from the Forced lines and Drainage system to prevent washout.

46. *The proposed drain lines appear to have angles between structures. This is not allowed.*

Spruhan Engineering: Proposed cleanouts has been added to the largest bends.

47. *The proposed tight tank location and drainage system appears to be in conflict of one another, verify and relocate as necessary.*

Spruhan Engineering: Tight tank has been relocated.

48. *There appears to be elevation deltas between the pump calculations and the details for the pump off and bottom of tank, verify.*

Spruhan Engineering: The typo on the pump calculations has been revised, please see attached calculations.

49. *Is the drainage system under the parking lot designed for H2O loading?*

Spruhan Engineering: Yes, according to manufacturer the proposed perforated pipes comply with H2O Loading requirements.

Plan Sheet 4 of 8:

50. *Revise the section detail for #1 and #2 Drainage System - DMH/manifold then to system to prevent washout.*

Spruhan Engineering: Details has been revised.

51. *Drainage System #1 and #2 - entire system shall be encased in filter fabric except bottom.*

Spruhan Engineering: Filter fabric has been added to top of the system to work in harmony with the impermeable barrier on the sides of the system.

Plan Sheet 5 of 8:

52. Downspout with overflow detail shows 6" BB versus the plan showing 12" PVC SDR 35
Spruhan Engineering: Detail has been revised.

Plan 8 of 8:

53. There appears to be approximate 5' cover over the access to pumps. This will make maintenance very difficult and recommend revising.

Spruhan Engineering: Elevation of pumping chamber has been revised to minimize cover.

54. Zoning table has not been provided

Spruhan Engineering: Zoning table has been added to Sheet #2.

I hope that this information is helpful to you. Please do not hesitate to call with any questions.

Respectfully submitted,

Edmond Spruhan

Edmond T. Spruhan