



Project No. LYNF-0100

July 1, 2019

Lynnfield Planning Board and Lynnfield Conservation Commission
c/o Ms. Emilie Cademartori, Director of Planning and Conservation
Lynnfield Town Hall
55 Summer Street
Lynnfield, MA 01940

Subject: Response to June 6, 2019 peer review comments
from Linden Engineering Partners, LLC
333, 339, & 349 Summer Street, Lynnfield, MA

Dear Members of the Planning Board and Conservation Commission,

The purpose of this letter is to address the peer review comments from Linden Engineering Partners, LLC (LEP) dated May 29, 2019 and updated June 6, 2019 regarding the definitive subdivision at Summer Street. The numbered responses that follow correspond to the numbered comments in LEP's peer review letter.

1. *If the LPB does not grant the dead end length waiver then the Applicant should revise the DSP to show a 500 foot total roadway length or to provide a roadway connection to Cranberry Lane.*

Waiver is granted.

Landscaped Island Waiver:

2. *If the LPB is in favor of the landscaped island then the Applicant's Engineer provide a Vehicle Swept Path Analysis for fire vehicles and large moving vans. This analysis should be reviewed with the Town of Lynnfield Fire Chief and Department of Public Works to obtain their written approval before submitting any revised or updated plan to the LPB.*

Waiver is granted.

Reed Way Realty Trust Property Connection:

3. *To construct the roadway connection as proposed, we believe that additional waivers need to be requested or the roadway design needs to be brought up to the requirements of the Rules and Regulations. As drawn, waivers need to be requested for the roadway pavement width (20 feet shown vs 26 feet required), curbing on roundings (bit. conc. berm shown vs sloped granite curb required) and sidewalks (none shown). A cross-section and profile also needs to be shown for the roadway, the sidewalks on Road A need to be adjusted to show wheel chair ramps where the sidewalk crosses this roadway and complete geometry for the easement rounding's needs to be shown. If the LPB is in favor of granting the waiver for the*

landscaped island then we recommend that the traffic pattern around the island be a one way route and that appropriate signage be installed at the island nose on Road A and where the roadway easement intersects the island. We also question how the grading and drainage at the end of this roadway stub at the Reed Way property line works. The grade of the road appears to be 83.5 (gutter) to 83.7 (c.l.) while the grade at the property line 1.5 feet away is only slightly above 82.0. It also appears that one of the catch basins at the end of the road will require work on the abutting land to install. If this roadway is to be built a temporary curb should be placed along the end of the road pavement to direct the drainage to the catch basins.

The Planning Board motioned they will not require a stub roadway be provided to the Reed Way Realty Trust property.

Sheet 1 of 11 (Cover Sheet)

4. The title should be changed to *DEFINITIVE SUBDIVISION PLA COVER SHEET* and the sheet designation in the lower right corner shall contain the word "Definitive".

Cover sheet is updated accordingly.

Sheet 2 of 11 (Lotting Plan)

5. Cranberry Lane should be labeled public or private with a width (this also applies to several plans). The geometry for the sideline of Cranberry Land on the curve closest to the subdivision should be shown on the plan.

According to the Lynnfield Town Clerks office, Cranberry Lane was accepted in 1993 as a public way. The roadway status and width are added. Additional annotation is added at the rounding easement and perpetual right of way connecting to Cranberry Lane.

6. The 400 scale locus map in the lower left corner of the sheet should show the exterior lines of all proposed streets in the subdivision. We also recommend that the existing lot lines be eliminated in this locus map and that the proposed lot lines be shown on the locus map.

Locus map is updated accordingly.

7. The plan does show a symbol for what we interpret to be an iron pipe to be set at all proposed lot corners, angle points, etc. Some of these should be labeled as "TYPICAL", or the symbol added to the legend and/or a note regarding the setting of these iron pipes should be added to the notes.

The symbols (or dots) demark terminal ends of lines and not iron pipes to be set.

8. The plan shows a detail for a street light easement but the location of these easements are not shown on the plan view.

Street light easements are added.

9. *No easements for electrical and telephone gear located outside of the right of way are shown.*

Utility easements are added.

10. *The Rules and Regulations require that at least two existing permanent benchmarks, being permanent stone bounds outside the construction area be shown on the plan. Three benchmarks are shown on the plan, however, only BM#1 is on a stone bound. Two more benchmarks on stone bounds should be added to the plan or a waiver should be requested from the requirements of Section 6.4.A(6) of the Rules and Regulations (note that this comment applies to several of the sheets in the plan set).*

A sheet waiver is added.

11. *Why is there no 20' Wide Temp. Slope & Tree Planting Easement provided for the future roadway easement to the Reed Way property? Also, complete geometry for the easement rounding's at the Road A cul-de-sac needs to be shown on the plan.*

The Planning Board motioned they will not require a stub roadway be provided to the Reed Way Realty Trust property.

12. *It appears that the dimension shown where the 20 foot water easement intersects the northwestern property line (shown as 5.0 feet) should be 10.04 feet.*

Dimension is updated accordingly.

Sheet 3 of 11 (Existing Conditions and Demolition Plan)

13. *The Proposed Silt Fence/Limit of Work Line label near the isolated vegetated wetland on the northwestern side of the property needs to point to the Silt Fence/Limit of Work Line (this comment applies to several of the sheets in the plan set).*

Label is updated accordingly.

14. *Section 6.4.B(4) of the Rules and Regulations requires that steep slopes (15% or greater) be highlighted on this plan.*

Slopes greater than 15% are hatched and labeled.

15. *Section 6.4.B(6) of the Rules and Regulations requires that the location, caliper and species of all existing trees within the Town's right-of-way be shown. The location and calipers are shown but the tree species is not shown. Either the species should be shown or a waiver from this requirement should be requested.*

A sheet waiver is added.

16. *Spot elevations at all test pits should be added to the plan.*

A table is added listing the test pit elevations.

Sheet 4 of 11 (Definitive Plan and Profile)

Section 6.4.C(2)(K) - Waive the requirement to show the current, approved, and nonappealed wetlands boundary, as detailed herein, including one-hundred-, -fifty-, and twenty-five-foot buffer zones as they are shown on sheets 2, 3, 5, 7 AND 8. We do not see any reason for granting this waiver and do not recommend that it be granted. The wetland information can be shown and labeled without unduly increasing the complexity of the plan.

Wetlands boundary and buffer zones are added.

17. *We note that the sidewalk design on the northern side of the proposed roadway is not a typical standard. Please explain why this design is proposed as we believe that walkers will simply traverse over the grassed area around the curve to the sidewalk on Road A.*

Change is made to address comments from the town of Lynnfield and project proponent arborist.

18. *A note referencing the gutter line profiles for the roundings at Summer Street and the gutter line profile for the cul-de-sac being shown on Detail Sheet 3 of 3 (Sheet 11 of the plan set) should be placed on this sheet. We also believe that a detailed grading plan should be provided for the roadway at Summer Street (to Station 0+25) and around the cul-de-sac with the cross slope on the pavement around the cul-de-sac specified. The same information should be provided for the roundings at the proposed roadway access to the Reed Property if this is to be constructed.*

Note is added.

19. *Section 6.4.C(2) of the Rules and Regulations requires that the edge of roadway (curb) radius be shown on the plan.*

Curb radii are added.

20. *It appears that the centerline grade at the sideline of Summer Street drops 0.6 feet in about 18 feet (3.33%). Could the design be modified to lower the centerline grade at station 0+00 so that the maximum grade in this intersection is 2%?*

Centerline grade is revised to 2%.

21. *No electric or telephone or gas utility lines are shown for the proposed roadway access to the Reed Way Property and no street lights or conduit are shown.*

The Planning Board motioned they will not require a stub roadway be provided to the Reed Way Realty Trust property.

22. Section 6.4.C(2)(f) of the Rules and Regulations requires that the plan view show the size and location of existing and proposed storm drains/culverts, other utilities and their appurtenances thereto within and adjacent to the subdivision. All existing and proposed structures shall show the rim elevations, sump elevations, and all pipe invert elevations. We understand that much of this information is shown in the profile view. Either the required information should be shown or a waiver should be requested from the requirement.

A sheet waiver is added.

23. The catch basin curb inlets and transition curbs should be shown on the plan view.

Curb inlets are added to plan view and curb inlet detail is revised to show transition curb.

24. A profile should be provided for all of the drainage piping not running along the roadway (from DMH#8 to the outlet).

DMH#8 is removed and drainage piping is revised.

25. We recommend that the drainage system configuration at DMH#8 be reconfigured by adding another manhole or relocating the CDS Unit so that no pipes enter the manhole at an adverse angle (less than 90 degrees) to the downstream flow.

DMH#8 is removed and drainage piping is revised.

26. We recommend that the Strength Class of the drain pipe from DMH#6 to DMH#8 and part of the way from DMH#12 to DMH#8 (where there is less than 3 feet of cover) be increased to Class V.

The strength of pipe from DMH#6 to the CDS unit is increased to class V.

27. Understanding that the water is provided by a private water company, have the revised water design and the water system details received approval from the Water Company and the Town of Lynnfield Department of Public Works? Also, a note should be placed on the plan for the water connection to Cranberry Lane referring to the continuation of that connection on sheet 5 of 11.

Note is added.

28. The existing gas main in Summer Street is not shown nor is the connection of the new gas main in Road A to the gas main in Summer Street shown.

Existing gas main in Summer Street is added and connection of new gas main in Tuttle Lane to existing gas is added.

29. *No test pits appear to have been excavated for the roof drain infiltration systems. Were any test pits done for these systems? We believe that the note regarding the roof drain infiltration systems for the individual homes needs to be modified to state that, "PRIOR TO THE ISSUANCE OF A BUILDING PERMIT FOR ANY PARTICULAR HOME ON A LOT, THE LOT OWNER WILL RETAIN THE SERVICES OF A MASSACHUSETTS LICENSED SOIL EVALUATOR TO PERFORM SOIL TEST PITS IN THE LOCATIONS OF THE PROPOSED ROOF DRAINAGE SYSTEM(S) TO DETERMINE THE SOIL TYPES AND ESTIMATED SEASONAL HIGH GROUNDWATER ELEVATIONS AND RETAIN THE SERVICES OF A MASSACHUSETTS REGISTERED PROFESSIONAL CIVIL ENGINEER TO DESIGN THE ROOF DRAINAGE INFILTRATION SYSTEMS TO COLLECT AND FULLY INFILTRATE THE TOTAL RUNOFF VOLUME FROM THE ROOF OF THE HOME AND GARAGE AS WELL AS ANY ACCESSORY STRUCTURES INTO THE GROUND FOR A 100 YEAR STORM AS DETERMINED BY THE TOWN ENGINEER AND THE DESIGN SHALL BE PERFORMED SET FORTH IN THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION STORMWATER HANDBOOK. THE BOTTOM OF THE SYSTEMS SHALL BE A MINIMUM OF 5 FEET ABOVE THE ESTIMATED SEASONAL HIGH GROUNDWATER TABLE (IF THE STATIC DESIGN METHOD IS USED OR 4 FEET IF ANY OF THE DYNAMIC DESIGN METHODS ARE USED), A MONITORING WELL SHALL BE PROVIDED FOR EACH SYSTEM AND THE COMPLETED DESIGN SHALL BE REVIEWED AND APPROVED BY THE TOWN ENGINEER PRIOR TO THE ISSUANCE OF A BUILDING PERMIT AND THE INSTALLATION SHALL BE INSPECTED BY THE TOWN ENGINEER WHEN EXCAVATED TO SUBGRADE, WHEN THE INSTALLATION IS COMPLETE (PRIOR TO BACKFILL) AND WHEN THE BACKFILL AND PIPING IS COMPLETE. (Note that this is the same approach as approved by the LPB for Parsons Avenue Extension, Violet Circle and Zepaj Lane).*

Note is added and language modified.

30. *A note should be added to this plan regarding substitutions for the CDS Stormwater Treatment Unit. The note should state, "IF THE APPLICANT WISHES TO SUBSTITUTE ANOTHER STORMWATER TREATMENT UNIT FOR THE CDS UNIT SPECIFIED ON THE PLANS THEN HE MUST SUBMIT A REQUEST FOR THIS SUBSTITUTION TO THE LYNNFIELD TOWN ENGINEER IN WRITING, INCLUDING ALL NECESSARY CALCULATIONS FOR THE SIZING OF THE UNIT, MASSSTEP OR NJCAT DATA FOR THE UNIT AND A STATEMENT BY A MASSACHUSETTS REGISTERED PROFESSIONAL ENGINEER THAT THE UNIT IS EQUIVALENT TO THE CDS UNIT SHOWN ON THE PLANS. THE PROPOSED ALTERNATIVE MUST HAVE THE SAME (OR MORE) HYDROCARBON STORAGE, SEDIMENT STORAGE, STORMWATER TREATMENT FLOW AND TREATMENT EFFICIENCY AS THE CDS UNIT SHOWN. THE TOWN ENGINEER SHALL ACT ON THE REQUEST AND THE REQUEST MUST BE APPROVED PRIOR TO THE SHIPMENT OF THE ALTERNATIVE TREATMENT UNIT TO THE SITE".*

Note is added and language modified.

31. *The PLAN and PROFILE views should be labeled.*

Views are labeled.

32. Section 6.4.C(2)(f) of the Rules and Regulations requires that the plan view show the proposed location and size of all street signs and regulatory signage. A sign is shown on the south side of the roadway near Summer Street. We understand from the Engineer that this is a combination STOP and Street Sign. This should be labeled on the plan (and also on sheet 5 of 11).

A label is added.

Sheets 5 and 6 of 11 (Definitive Topographic Plan)

33. Has the Lynnfield Tree Warden reviewed the species, number and proposed locations of the street trees? Also, the proposed trees should be added to the legend or they should be labeled on the plan.

A note is added stating street trees to be approved by tree warden and tree symbols are added to legend.

34. A tree protection detail should be added to the plans.

A note is added to sheets 3, 5 and 6 stating orange construction fencing will be used to cordon off existing trees to remain.

35. The plan needs to show the elevations at the top and bottom of features such as retaining walls (new and existing walls to remain) or a waiver of this requirement needs to be requested.

A sheet waiver is added.

36. Section 6.4.D(1) of the Rules and Regulations requires that the edge of roadway (curb) radius be shown on the plan.

Curb radii are added.

37. Section 6.4.D(5) of the Rules and Regulations requires that the plan show the location, DBH (diameter at breast height) and species of any hardwood tree with a DBH greater than 24 inches and softwood tree with a DBH greater than 36 inches within the proposed right-of-way, easement areas, or on neighboring properties within 10 feet of the proposed right-of-way or easement areas. If any of these trees have been designated by the Planning Board as significant trees during the preliminary plan stage, they shall be noted as such. If the Planning Board designates one of these trees as a significant tree during its review, it shall be noted as such on the final approved definitive plan. It appears that there are trees that may be in the easement area to Cranberry Lane that are not shown on the plan. If any of these trees will be removed as a result of the installation of the water main connection they should be indicated on the plans. Also, the species for the trees are not shown (they are shown as deciduous or coniferous). Either the species should be shown or a waiver from this requirement should be requested.

A waiver is added in reference to species, location and caliper are provided.

38. *Underground utilities should be removed from the plan as these are not required. The storm water management system should be shown with all pipe elevations (Section 6.4.D(11)).*

Underground utilities are removed.

A waiver is added stating pipe elevations are provided on sheet 4.

39. *Comments listed elsewhere regarding the trees (Section 6.4.4.5), benchmarks (Section 6.4.4.65), and the note regarding wetlands (Section 6.4.4.13) should be added to this plan.*

Notes are added.

40. *No test pit information appears to be shown for the roof drain infiltration systems. Were any test pits done for these systems? If so, they should be shown.*

Test pits will be performed at a later date.

41. *More detailed grading needs to be shown in the area of the proposed swale. Does the grading of this swale affect any existing utility structures along this portion of the property?*

No known utilities exist in the area of the proposed swale.

A swale detail is added.

42. *The ground treatment between the plantings in the proposed cul-de-sac island needs to be labeled (mulch?, lawn? Mix of mulch & lawn?).*

The proposed cul-de-sac island will be a mix of grass and mulch at the plantings. A label is added.

Sheet 7 of 11 (Street Lighting Plan)

43. *Easements for the street lights are not shown.*

Street light easements are added.

44. *Where is the street light control box located?*

Street light control box is located at utility pole #5-35 on the south side of Tuttle Lane.

45. *Has the spacing and position of the street lights been approved by the Town of Lynnfield Department of Public Works?*

Street light locations are added as requested by DPW at our meeting on 6/20/2019.

46. *Why is there no street light and conduits on the roadway to the Reed Way Property?*

The Planning Board motioned they will not require a stub roadway be provided to the Reed Way Realty Trust property.

47. *The street lighting fixture shown on this page is different from the latest Town standard (for which a waiver was requested). The fixture detail should be changed to match the latest Town standard and the waiver request.*

Waiver is granted.

Sheet 8 of 11 (Erosion & Sediment Control Plan)

48. *Section 6.4.F(2) of the Rules and Regulations requires that on-site drainage patterns and erosion and siltation controls both during and after construction phases be shown on this plan. Section 6.4.F(5) of the Rules and Regulations requires that the plan show drainage patterns and slopes anticipated after major grading activities are completed. (All slopes should indicate grading ratio and flow direction.). Perhaps some variation of a construction phasing plan would assist in conveying this information. If the information is not shown then a waiver of these requirements should be requested.*

Surface drainage flow arrows are added to sheet 5.

49. *The plan needs to clarify where siltation control fencing is used and where siltation control fencing with a mulch or compost sock is being used.*

Labels depicting the start and end of the silt fence with mulch sock are added.

50. *A note regarding the use of diversion swales with stone check dams during construction to divert runoff away from abutting properties. Details for the construction of these should also be provided.*

Siltfence with mulch sock will be provided during construction.

51. *A note should be added to the plan that if the stormwater management area is used as a temporary settling basin during construction then it shall not be excavated to full depth until the majority of the site has been stabilized at which time the excavation shall be completed and all accumulated silt removed prior to final surfacing.*

Note is added.

Sheets 9, 10 & 11 of 11 (Detail Sheets)

52. *The specific model numbers for the catch basin frames and grates and the drain manhole frames and covers that are the present Town of Lynnfield Department of Public Works Standard should be listed on these details.*

Model numbers are added.

53. *The note regarding substitutions for the CDS Stormwater Treatment Unit should be shown on the CDS Unit Detail.*

Note is added.

54. *The details shown for the siltation control fencing and the siltation control fencing with mulch sock appear to be the same detail (the mulch sock is not shown or specified). The mulch sock should be 12" diameter and the staking interval for the sock at the siltation control fencing should be 6 feet. The mulch sock should be placed in a shallow trench.*

Detail is revised.

55. *Section 8.2 B(8) of the Rules and Regulations requires that all stone bounds be set in bank gravel or a waiver should be requested.*

Detail is revised.

56. *Why are all of the details for the roof drainage chambers included as part of the subdivision when the actual design of these systems is not being provided as part of the subdivision submittal? It seems that the detailing of these systems is more appropriate when the actual design for the systems has been determined.*

Details are provided for general information purposes and to be consistent with hydraulic analysis.

57. *The details for the Cape Cod Berm and the sloped granite curbing need to be revised to match the Town Standard (see Appendix to Rules and Regulations).*

Detail are revised.

58. *The tree planting detail needs to be revised to match the Town Standard (see Appendix to Rules and Regulations).*

Detail is revised.

59. *The detail for the stormwater management system does not show the outlet pipe inlet end invert elevation and the pipe length and slope.*

Pipe invert, pipe length and slope are added.

60. *A cross-section of the stormwater management/infiltration basin should be provided detailing the surfacing of the basin sides (6" loam and seed) and the basin bottom (which we believe to be some depth of crushed stone but we could not locate a label for the materials on the plans).*

Labels are added to the Infiltration Basin Earth Berm Construction detail. There is also a reference to washed gravel listed within the label for SWMA1P on the Infiltration Basin Detail, see sheet 11.

OTHER

61. *No DRAFT of the proposed Homeowner's Association Agreement has been provided to our firm for review. This agreement should adequately addresses easement rights and the maintenance of the stormwater management system and that the Association maintains a sufficient amount of capital to replace the infiltration system after a reasonable operating period. Reports on the system function and inspections should be filed with the Lynnfield Department of Public Works and the Lynnfield Conservation Commission on an annual basis. This Agreement should also address the requirement for the design, approval and construction of individual roof infiltration systems and the responsibility for the future maintenance of these systems.*

A draft of the Homeowners' Association Trust was shared with town officials on the 6/20/2019 meeting.

The Homeowners' Association Trust is added to the Stormwater Report, see Appendix P.

NOTICE OF INTENT REVIEW:

62. *The NOI for Lot 5 is for a Lot that presently does not exist. We see no issues with this except that care must be taken in issuing the Order of Conditions (OOC) for Lot 5 to include a plan and legal description in the OOC (as was done for the LIFE property at Market Street in Lynnfield) so that it is clear which portion of the larger parcels the OOC is encumbering. The Applicant's Engineers and Attorney should provide an 8.5" x 11" plan and legal description for inclusion in the OOC to be issued for Lot 5.*

A sketch plan and legal description is provided, see Attachment A.

63. *Copies of the Certificates of Mailing for the abutters notices (or the Certified Mail Green Cards received or the Certified Mail White Slips for notices for which a Green Card was not received if the notices were sent by Certified Mail) for the abutter's notice mailing need to be provided to the LCC (if they have not already been provided).*

Emilie Cademartori confirmed receipt of green cards at the 6/20/2019 meeting.

64. *NOI Item A 1 g, page 1 of 9, General Information on both NOI Forms: Based on our research the Assessor's Lot Number for one of the parcels is incorrectly listed. The forms list the parcel as Lot 2056, however, our research of the Assessor's records indicate that the correct Lot Number is 2055. Corrected NOI Forms should be submitted to the LCC. This inaccuracy does not affect the Notice to Abutters or the legal notices (which were all based on the street addresses and not the map and lot numbers).*

NOI forms are updated, see Attachment A.

65. *NOI Item D-4, page 8 of 9, Additional Information: This section needs to be updated to include all of the latest plans and documents for the property.*

NOI forms are updated, see Attachment A.

66. *An invasive species management plan was provided subsequent to the filing of the NOI. This plan should be incorporated into a revised project narrative and the implementation of this plan should be part of any OOC issued for the project.*

The project narrative is updated to reference the invasive species management plan, see Attachment A.

GENERAL COMMENTS:

67. *Now that we know that the Planning Board has voted to grant the waiver for the landscaped island in the cul-de-sac, the plantings in this island should be reviewed by the Applicant. One of the plant species is listed on the invasive species list for Massachusetts and is not permitted to be imported to or planted in Massachusetts. The other plants proposed are not native plantings. We suggest that the plants to be installed in the landscaped island in Road A be replaced with salt and drought tolerant native species.*

The planting list is revised to include native species that are salt and drought tolerant.

68. *Now that we know that the Planning Board has voted not to require the roadway connection to the Reed Way Property and has requested that this connection be removed from the plan, we suggest that the Applicant consider shifting the infiltration basin to the east so as to pull the basin further away from Reedy Meadow and avoid cutting some of the trees that are shown to be removed on the present plan.*

The infiltration basin is shifted easterly and allows for saving an additional 6 trees.

69. *The location of the siltation controls shown on the revised plan for Lot 5 should be changed to agree with the revised location of the siltation controls shown on 5 of 11 of the latest subdivision plans which is further away from the wetland resource area.*

The plan for Lot 5 is updated accordingly.

STORMWATER REPORT & CHECKLIST, CALCULATIONS & BMP DESIGN

70. *All of the riprap aprons should be labeled on the plans (we could not locate a label for the riprap at the inlet of the 15" outlet pipe from the infiltration basin).*

All rip rap aprons are labeled.

71. *The HydroCAD model calculations for the infiltration basin indicate that the 100 year storm flood elevation is 79.61 which is 0.11 feet over the emergency spillway (which has a crest elevation of 79.50). The 100 year flood elevation should be a minimum of 0.25 feet below the emergency spillway and no flow should be going over the emergency spillway. The infiltration basin needs to be reconfigured so that there is no flow over the emergency spillway during a 100 year storm.*

The infiltration basin is reconfigured and the 15" outlet pipe is lowered to elevation 77.25 thereby lowering the 100 year storm flood elevation to 79.32, 0.18 feet below the emergency spillway elevation of 79.50.

72. *The Stormwater Report needs to show inlet capture analysis for all of the catch basins for the 10 year storm (which should indicate 100% capture with no bypass). A separate analysis should be done showing the same information for the 100 year storm and how much runoff will wind up at the bottom of the cul-de-sac (when factoring in the bypass from the uphill catch basins). How will this runoff/flooding be handled? If the flow will top the curb and run down the slope to the infiltration basin, will the slope be capable of handling this flow without erosion?*

See Appendix O Grate Inlet Capacities.

Although the calculations for the grate inlet capacities during the 10 year storm do not support 100% capture, the calculations do support 100% capture (flow contained within street) at the double grate catch basin (DGCB7) in the cul-de-sac during the 100 year storm including upstream bypass flow. Furthermore, the hydraulic model is updated to reflect catch basin bypass flow.

73. *Neither the plan nor the profile show the pipe information for the pipe from DMH#8 to the CDS Unit and no slopes are shown for the pipes from the catch basins to the DMHs. Also, we could not locate the labeling for the length of the level spreader at the 15" outlet pipe from the infiltration basin.*

DMH8 is removed and all pipe slopes are labeled.

The length of the level spreader is labeled on the level spreader detail on sheet 9.

74. No monitoring well is shown for the infiltration basin as required (see Vol. 2, Ch. 2, Page 91 of the MADEP 2008 SWH).

A monitoring well is added and labeled on sheet 11.

75. The stormwater design for the property relies on the roof drainage from the individual homes being infiltrated into infiltration systems on each lot. As of the moment no test pits appear to have been excavated for these roof drain infiltration systems and they are not actually designed. Any OOC issued for the project should contain the following condition, "PRIOR TO THE ISSUANCE OF A BUILDING PERMIT FOR ANY PARTICULAR HOME ON A LOT, THE LOT OWNER WILL RETAIN THE SERVICES OF A MASSACHUSETTS LICENSED SOIL EVALUATOR TO PERFORM SOIL TEST PITS IN THE LOCATIONS OF THE PROPOSED ROOF DRAINAGE SYSTEM(S) TO DETERMINE THE SOIL TYPES AND ESTIMATED SEASONAL HIGH GROUNDWATER ELEVATIONS AND RETAIN THE SERVICES OF A MASSACHUSETTS REGISTERED PROFESSIONAL CIVIL ENGINEER TO DESIGN THE ROOF DRAINAGE INFILTRATION SYSTEMS TO COLLECT AND FULLY INFILTRATE THE TOTAL RUNOFF VOLUME FROM THE ROOF OF THE HOME AND GARAGE AS WELL AS ANY ACCESSORY STRUCTURES INTO THE GROUND FOR A 100 YEAR STORM AND THE DESIGN SHALL BE PERPARED AS SET FORTH IN THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION STORMWATER HANDBOOK. THE BOTTOM OF THE SYSTEMS SHALL BE A MINIMUM OF 2 FEET ABOVE THE ESTIMATED SEASONAL HIGH GROUNDWATER TABLE (IF THE STATIC DESIGN METHOD IS USED OR 4 FEET IF ANY OF THE DYNAMIC DESIGN METHODS ARE USED), A MONITORING WELL SHALL BE PROVIDED FOR EACH SYSTEM AND THE COMPLETED DESIGN SHALL BE REVIEWED AND APPROVED BY THE LYNNFIELD CONSERVATION COMMISSION PRIOR TO THE ISSUANCE OF A BUILDING PERMIT AND THE INSTALLATION SHALL BE INSPECTED BY THE LYNNFIELD CONSERVATION COMMISSION WHEN EXCAVATED TO SUBGRADE, WHEN THE INSTALLATION IS COplete (PRIOR TO BACKFILL) AND WHEN THE BACKFILL AND PIPING IS COMPLETE".

We are in general agreement with this condition provided the language is modified as given below:

"PRIOR TO THE ISSUANCE OF A BUILDING PERMIT FOR ANY PARTICULAR HOME ON A LOT, THE LOT OWNER WILL RETAIN THE SERVICES OF A MASSACHUSETTS LICENSED SOIL EVALUATOR TO PERFORM SOIL TEST PITS IN THE LOCATIONS OF THE PROPOSED ROOF DRAINAGE SYSTEM(S) TO DETERMINE THE SOIL TYPES AND ESTIMATED SEASONAL HIGH GROUNDWATER ELEVATIONS AND RETAIN THE SERVICES OF A MASSACHUSETTS REGISTERED PROFESSIONAL CIVIL ENGINEER TO DESIGN THE ROOF DRAINAGE INFILTRATION SYSTEMS TO COLLECT AND FULLY INFILTRATE THE TOTAL RUNOFF VOLUME FROM THE ROOF OF THE HOME AND GARAGE AS WELL AS ANY ACCESSORY STRUCTURES INTO THE GROUND FOR A 100 YEAR STORM AND THE DESIGN SHALL BE PERPARED AS SET FORTH IN THE MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION STORMWATER HANDBOOK. THE BOTTOM OF THE SYSTEMS SHALL BE A MINIMUM OF 2 FEET ABOVE THE ESTIMATED SEASONAL HIGH GROUNDWATER, A MONITORING WELL SHALL BE

PROVIDED FOR EACH SYSTEM AND THE COMPLETED DESIGN SHALL BE REVIEWED AND APPROVED BY THE LYNNFIELD TOWN ENGINEER PRIOR TO THE ISSUANCE OF A BUILDING PERMIT AND THE INSTALLATION SHALL BE INSPECTED BY THE LYNNFIELD TOWN ENGINEER WHEN EXCAVATED TO SUBGRADE, WHEN THE INSTALLATION IS COMPLETE (PRIOR TO BACKFILL) AND WHEN THE BACKFILL AND PIPING IS COMPLETE”.

76. Any OOC issued for the project should contain the following condition regarding substitutions for the CDS Stormwater Treatment Unit, **“IF THE APPLICANT WISHES TO SUBSTITUTE ANOTHER STORMWATER TREATMENT UNIT FOR THE CDS UNIT SPECIFIED ON THE PLANS THEN HE MUST SUBMIT A REQUEST FOR THIS SUBSTITUTION TO THE LYNNFIELD CONSERVATION COMMISSION IN WRITING, INCLUDING ALL NECESSARY CALCULATIONS FOR THE SIZING OF THE UNIT, MASSSTEP OR NJCAT DATA FOR THE UNIT AND A STATEMENT BY A MASSACHUSETTS REGISTERED PROFESSIONAL ENGINEER THAT THE UNIT IS EQUIVALENT TO THE CDS UNIT SHOWN ON THE PLANS. THE PROPOSED ALTERNATIVE MUST HAVE THE SAME (OR MORE) HYDROCARBON STORAGE, SEDIMENT STORAGE, STORMWATER TREATMENT FLOW AND TREATMENT EFFICIENCY AS THE CDS UNIT SHOWN. THE LYNNFIELD CONSERVATION COMMISSION SHALL ACT ON THE REQUEST AND THE REQUEST MUST BE APPROVED PRIOR TO THE SHIPMENT OF THE ALTERNATIVE TREATMENT UNIT TO THE SITE”.**

We are in general agreement with this condition provided the language is modified as given below:

“IF THE APPLICANT WISHES TO SUBSTITUTE ANOTHER STORMWATER TREATMENT UNIT FOR THE CDS UNIT SPECIFIED ON THE PLANS THEN HE MUST SUBMIT A REQUEST FOR THIS SUBSTITUTION TO THE LYNNFIELD TOWN ENGINEER IN WRITING, INCLUDING ALL NECESSARY CALCULATIONS FOR THE SIZING OF THE UNIT OR NJCAT DATA FOR THE UNIT AND A STATEMENT BY A MASSACHUSETTS REGISTERED PROFESSIONAL ENGINEER THAT THE UNIT IS EQUIVALENT TO THE CDS UNIT SHOWN ON THE PLANS. THE PROPOSED ALTERNATIVE MUST HAVE THE SAME (OR MORE) HYDROCARBON STORAGE, SEDIMENT STORAGE, STORMWATER TREATMENT FLOW AND TREATMENT EFFICIENCY AS THE CDS UNIT SHOWN. THE LYNNFIELD TOWN ENGINEER SHALL ACT ON THE REQUEST AND THE REQUEST MUST BE APPROVED PRIOR TO THE SHIPMENT OF THE ALTERNATIVE TREATMENT UNIT TO THE SITE”.

77. *The O&M Plan needs to address all of the items and contain all of the information listed under Standard 9 on page 8 of the Checklist for Stormwater Report, specifically the name of the stormwater management system owners, the party responsible for operation and maintenance and the estimated operation and maintenance budget; and a copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs.*

The stormwater management system owners, the party responsible for operation and maintenance and the estimated operation and maintenance budget are provided in Section 4 of the Stormwater Report.

The Homeowners' Association Trust is added to the Stormwater Report.

78. *A simple plan showing the locations of all Stormwater BMP's needs to be attached to the O&M Plan along with the estimated O & M budget as required by the MADEP 2008 SWH.*

An Operation and Maintenance Plan is provided in Appendix B - Site Maps of the Stormwater Report.

An estimated operation and maintenance budget is provided in Section 4 of the Stormwater Report.

79. *The O&M plan should contain a discussion of the use of road salt on the property due to its proximity to a critical area. We suggest that the LCC consider including the following condition in any OOC issued for the project. "THE USE OF DE-ICING CHEMICALS (SUCH AS SODIUM CHLORIDE, POTASSIUM CHLORIDE, CALCIUM CHLORIDE OR ANY OTHER CHEMICALS) ARE TO BE LIMITED TO THE AMOUNT NECESSARY TO MAINTAIN PUBLIC SAFETY. THE APPLICANT SHALL PLACE SIGNS AT THE ENTRY TO THE SITE AS TRAFFIC ENTERS FROM ANY ROADWAY INDICATING THAT THE SITE IS A LOW SALT USE AREA".*

No response needed.



We look forward to seeing the Planning Board again on July 31, 2019 and the Conservation Commission on July 16, 2019. In the meantime, please feel free to reach out to us if you or any of your staff have any questions, comments, or concerns.

Very truly yours,

Matt Moore, P.E.
Project Engineer

Enclosures

cc: Charles Richter, Town Engineer
William Jones, Linden Engineering Partners, LLC
Regnante Sterio, LLP
HPI, LLC