



MILLENNIUM ENGINEERING, INC.
Land Surveyors and Civil Engineers

March 14, 2022

Georgetown Planning Board
Town Hall
1 Liberty Street
Georgetown, MA. 01833

Graham Associates, Inc.
Two Central Street
Ipswich, MA 01938

Re: Site Plan, Storm Water Permit and Special Permits at 2 Norino Way, Georgetown, MA Response to Peer Review Comments provided by Graham Associates, Inc.

Members of the Board,

The following provides our response to peer review comments referenced above. We have included the peer review comments and our response to facilitate the Board's review.

<i>Comment / Response</i>	
Zoning	
<i>Comment 1:</i>	<i>Sheet 1 of the plan set provides a Zoning Table. The table shows "Required" dimensional figures for the IB District. The table should also provide the more restrictive Marijuana Business setbacks as found at Section 165-163.A.(1)(a), (b) and (c) of the Bylaw.</i>
<i>Response:</i>	A footnote to the table has been added showing the required setbacks for a Marijuana Business.
<i>Comment 2:</i>	<i>It appears that the proposed building lies approximately 180' from the nearest property line of a residential district where Section 165-161.H. requires that distance to be a minimum of 300'. It is our understanding however that at a meeting earlier in the year, the Board at full capacity voted by super majority to reduce that distance to that shown on the plans being 180'. See Section 165- 165-161.I. of the Bylaw.</i>
<i>Response:</i>	The undersigned confirms that the Board voted to grant a waiver from the 300' set back requirement and in lieu thereof permit a 180' set back. Such vote took place at a duly held and advertised meeting on August 25, 2021, accordingly, no response required.
<i>Comment 3:</i>	<i>It is our read of the Intensity and Use Schedule that the 40% minimum Landscaped</i>

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	<p><i>Open Space is required in the front yard. Based on a lot area of 209,652 S.F, the 40% requirement would calculate to 83,861 S.F. As so much of the 50' wide front yard(s) are being used for drainage mitigation purposes we question whether or not this requirement is met or whether relief from this requirement is needed? We have not received or reviewed any landscape plans.</i></p>
Response:	<p>Jill Mann, the Petitioner's Attorney, discussed the wording of the applicable provisions of the Zoning Bylaw with Mr. Graham and explained that the Open Space for the Property is calculated by using the entire "Front Yard" along both Norino Way and Long Hill Road. Mr. Graham questioned whether the "Front Yard" Requirement included the entirety of the space between the roadways and the building or only the 50' strip of open space.</p> <p>Based on the provisions set forth in the Bylaws, "Front Yard" includes the entire area between the street and the building.</p> <p>Table of Intensity of Use Schedule and Footnote 7 requires that the entire Open Space requirement (which is 40% of the lot area or 83,809.50 s.f. be located in the "Front Yard" of the Property.</p> <p>See, section 165-63A(1)(a) for properties being used as a "Marijuana Business" the "Front Yard must be 50' when the property abuts a residential use district.</p> <p>"Front Yard" is defined under Section 165-7 as "An open unoccupied space on the same lot with the building between the front line of the building and the front line of the Lot and extending to the side lines of the Lot.</p> <p>"Open Space" is defined under Section 165-7 as "An unoccupied space open to the sky on the same lot with a building, free of all structures, parking, pavement or other uses that preclude landscaping."</p> <p>Because the Property is a corner lot, the Front Yard for the Project is measured along the perimeter of the Property that extends along Norino Way and Long Hill Road.</p> <p>The "Open Space" within the "Front Yard" includes all area between the building and the street line, excluding the entrance drive, the emergency drive and</p> <p>As shown on the Plans, the Property contains and area of 209,523.50 s.f. and is required to provide 83,809 sf of Open Space. Petitioner is providing a Front Yard that is greater than 50' of which 88,596 s.f. (or 42.3%) is open and unoccupied by any materials that would preclude landscaping, including but not limited to the access drive, the parking areas, and the emergency egress.</p>
Comment:	<p><i>We understand the Applicant will revise and resubmit their Landscape Plan which will respect the multiple areas in the "front yard" proposed as part of the drainage system which in some cases cannot be landscaped or which can be landscaped as lawn grasses only. It is further understood that said plan will indicate and quantify</i></p>



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	<i>how the 40% landscaped front yard requirement of 83,861 S.F. is met.</i>
Response:	The Landscape Plan has been revised.
<i>Comment 4:</i>	<i>Section 165-61.H. of the Bylaw requires one (1) parking space per 1,000 S.F. of industrial, manufacture or wholesale facility. The proposed facility footprint is 27,760 S.F. With two floors, the facility area would be 55,520 S.F. requiring 56 parking spaces. As the plan shows only 28 parking spaces is relief from this requirement needed?</i>
Response:	As per Section 165-61.L any use not listed is subject to the building inspector's determination of required parking spaces. Attached is the communication between the Building Inspector and Attorney Mann confirming that the 28 parking spaces being proposed are sufficient for the cultivation and manufacturing facility,
Comment:	<i>The Applicant has offered some email communications between their attorney, Jill Mann and the Town Building Inspector suggesting that he is in agreement that the proposed 28 parking spaces are adequate. Does the Board concur with this finding?</i>
Response:	No response required.
<i>Comment 5:</i>	<p><i>As we read the Zoning Bylaw, Special Permits are required for the following:</i></p> <ul style="list-style-type: none"> • <i>Marijuana Business (Article XIX). (Planning Board)</i> • <i>Water Resource District (Article V). (Zoning Board of Appeals)</i> • <i>Major Development (Sect. 165-80.2). (Planning Board)</i> <p><i>Site Plan Approval is also required as outlined at Sect. 165-83. (Planning Board).</i></p>
Response:	Petitioner has applied for all of the required zoning and stormwater relief for its Marijuana Business, including but not limited to a (1) Special Permit and Site Plan Approval under §165-162 and §165-80.2 for the Development and Operation of a Marijuana Business Specializing in Cultivation and Manufacturing; (2) Special Permit under §165-83 – as Major Development authorizing the development of a property with a structure in excess of 30,000 square feet; and (3) Storm Water Permit under Chapter 57.
Sheet-By-Sheet Review Comments	
<u>Sheet 1 of 10 – Cover Sheet</u>	
<i>Comment 1.1:</i>	<i>Label the Water Resource District line.</i>
Response:	The Water Resource District line has been labeled.
<i>Comment 1.2:</i>	<i>Using the building dimensions on Sheet 3 of 10, the building area is 27,760 S.F.</i>
Response:	The building area label has been updated.
<i>Comment 1.3:</i>	<i>Dimensions from the proposed building to the <u>property lines</u> of the residential zoning district (Long Hill Road) and residential development (Norino Way) should be provided.</i>



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Response:	The dimensions to the property lines have been added.
Comment 1.4:	<i>The 'Project Location' sites the project as Map 15, Lot 058H. The sheet titles (all sheets) indicate the site as Map 15, Lot 50H?</i>
Response:	The project location has been revised to Map 15, Lot 50H.
Sheet 2 of 10 – Existing Conditions (Sheet 1 of 1)	
Comment 2.1:	<i>Label the Water Resource District line.</i>
Response:	The Water Resource District line has been labeled.
Comment 2.2:	<i>This sheet is labeled "PROGRESS PRINT"?</i>
Response:	The Progress Print label has been removed.
Sheet 3 of 10 – Site Plan	
Comment 3.1:	<i>Using the building dimensions on this sheet, the building area is 27,760 S.F</i>
Response:	The building area label has been revised.
Comment 3.2:	<i>Labeling of the BVW line is incomplete.</i>
Response:	The BVW label has been revised.
Comment 3.3:	<i>The 'Parking Space Calcs' indicate 30 parking spaces provided. The plan indicates and shows 28 spaces. The Zoning Bylaw requires 56 parking spaces?</i>
Response:	The Parking Space Calcs have been revised to reflect 28 spaces provided. As per Section 165-61.L. this use is not specifically identified in the bylaw and the number of required spaces is subject to the Building Inspector's determination. See Comment 4 above.
Comment 3.4:	<i>The plan does not indicate the width or depth of the proposed parking stalls.</i>
Response:	The parking stalls have been dimensioned.
Comment 3.5:	<i>The plan shows a number of 'W1' and 'W2' notations around the perimeter of the building. What do these notations indicate?</i>
Response:	The labels have been removed from the Site Plan. The labels were for the wall mounted lighting.
Comment 3.6:	<i>Dimensions of the handicapped spaces and the no-park area between them are not dimensioned.</i>
Response:	The spaces have been dimensioned.
Comment:	<i>Handicapped spaces are not dimensioned. The no-park area between the handicapped spaces is also not dimensioned. Are any of these handicapped spaces van accessible? If so, provide and label them accordingly with dimensions.</i>
Response:	Dimensions have been added and the label has been revised to call out both handicap spaces as van accessible.
Comment 3.7:	<i>The plan indicates a 20' wide, one-way (south to north) drive across the front of the site. We understand this to be an emergency only egress (or ingress) from/to the site. The plan proposes a gate at the Long Hill Road end of this drive. A gate at the end of this drive near the southerly end of the building should also be provided so routine traffic does not enter this drive. A detail of these gates should be provided. This drive should be signed at both ends for 'Emergency Use</i>



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	<i>Only'. The plan indicates what appears to be the one and only overhead loading door near the southwesterly building corner? Is this the only loading door planned or needed for the facility? Maneuvering a truck or vehicle up to this door in the proposed 20' wide drive could be challenging! The above discussed gate location should be coordinated with access to this doorway.</i>
Response:	A second gate has been added at the southwesterly portion of the building. A security fence has also been added around the building. It is not intended for trucks or vehicles to pull into the overhead door. A detail of the gate has been provided.
Comment:	<i>The plan has been revised to indicate a proposed security fence and gate at the southerly end of the T-intersection of the drive near the southwesterly building corner. We are still of the opinion that a gate (perhaps a second one and maybe a pipe-bar type) should be located near the southerly end of the one-way emergency access drive to stop anyone not familiar with the site or not briefed on the site exit plan, from inadvertently proceeding northerly on the one-way emergency access drive toward Long Hill Road. I recognize the proposed signage, but a gate would certainly be more effective.</i>
Response:	MEI has revised the plan to include an additional "Do Not Enter Emergency Access Only" sign directly across from the current proposed signage.
<i>Comment 3.8:</i>	<i>This plan labels some stretches of curb to be vertical granite curb (VGC). It is unclear as to where that curbing terminates if it does.</i>
Response:	All of the curbing proposed for the site is vertical granite curb.
Comment:	<i>The response letter states that all site curbing is to be vertical granite curbing. A note to that effect on the plans is recommended. Such a note might be most appropriate at the curb detail on Sheet 13 of the plans.</i>
Response:	A note has been added to the detail.
<i>Comment 3.9:</i>	<i>The curb radius at the southwesterly building corner is not provided. One of the curb radii at the southeasterly building corner is not provided.</i>
Response:	The curb radii have been labeled.
Comment:	<i>At the last Planning Board meeting the Board requested the Planner to reach out to the Fire Chief and request his response to these comments and any other comments he might have about the proposed project.</i>
Response:	No response required.
<i>Comment 3.10:</i>	<i>This building is required to be sprinklered. Access to the building by fire and other emergency vehicles is needed. We question adequacy of the drive width and curb radii at the southeasterly and southwesterly building corners for maneuvering fire trucks?</i>
Response:	This plan has been submitted to the Fire Department for comments.
Comment:	<i>At the last Planning Board meeting the Board requested the Planner to reach out to the Fire Chief and request his response to these comments and any other comments he might have about the proposed project.</i>
Response:	No response required.
<i>Comment 3.11:</i>	<i>As there is no turnaround provided at the northerly end of the 28-space parking area drive, fire vehicles must be able to turnaround in the southeasterly building</i>



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	<i>corner drive area. Does that area provide adequate turnaround maneuvering space?</i>
Response:	A turning analysis has been run on the turnaround and adequate space is provided to maneuver.
Comment:	<i>At the last Planning Board meeting the Board requested the Planner to reach out to the Fire Chief and request his response to these comments and any other comments he might have about the proposed project.</i>
Response:	No response required.
Comment 3.12:	<i>The Fire Department should be consulted in regard to the comments expressed in 3.9.-3.11. above.</i>
Response:	This plan has been submitted to the Fire Department for comments.
Comment:	<i>At the last Planning Board meeting the Board requested the Planner to reach out to the Fire Chief and request his response to these comments and any other comments he might have about the proposed project.</i>
Response:	No response required.
Comment 3.13:	<i>Although the 'Legend' on this sheet indicates 'Prop. Building Lights', none are depicted on the plan.</i>
Response:	The building light has been removed from the legend.
Comment 3.14:	<i>An errant 'Plan View – Scale – 1"=30 ft.' should be removed from this plan sheet.</i>
Response:	The reference has been removed from the plan.
Comment 3.15:	<i>The proposed width dimension of the access drive between Norino Way and the building should be provided.</i>
Response:	The width of the access drive has been added.
Comment 3.16:	<i>Bollard protection for the utilities pad shown at the southeasterly building corner should be considered.</i>
Response:	Bollards have been added to the plan. A detail for the bollards has been added to the detail sheet.
Comment 3.17:	<i>Both required handicapped spaces are shown near the northeasterly building corner. Should maybe one of those be considered near the southeasterly building corner?</i>
Response:	The only entrance door to the building for employees in the northeasterly corner.
Comment:	<i>The plans indicate a door near the southeasterly building corner?</i>
Response:	The door on the southeast corner of the building is an exit only door.
Comment 3.18:	<i>We find no dumpster pad locations shown on the plans?</i>
Response:	A dumpster pad has been added to the plan.
Comment 3.19:	<i>We find no snow storage areas noted on the plan?</i>
Response:	Snow storage areas have been added to the plans.
Comment 3.20:	<i>We find no signage proposed at either Norino Way or Long Hill Road or within the site (e.g. stop, do not enter, one-way, handicapped parking, other, signs).</i>
Response:	All proposed signage has been added to the plan.
Comment:	<i>The proposed handicapped parking sign leader arrow does not point to the signs.</i>



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Response:	The leader has been revised.
Sheet 4 of 10 – Grading and Drainage Plan	
<i>Comment 4.1:</i>	<i>Upon request, this sheet was revised 10/20/21 to provide I.D. labeling of proposed structures (catch basins, manholes, outlet control structures, etc.), which was a huge improvement from the 6/22/21 plan for purposes of review.</i>
Response:	No response required.
<i>Comment 4.2:</i>	<i>The building area shown should be 27,760 S.F.</i>
Response:	The building area label has been revised.
<i>Comment 4.3:</i>	<i>This plan would indicate that all roof drainage leaves the roof at the southwesterly corner thereof and is then piped to Outlet Control Structure 3? Is this the design intent? The design and drainage calculations show all roof drainage going to this line and then into 'Subsurface Infiltration Area 2'. The Site Plan must verify this design intent and must be coordinated with the architectural and building plans such that all roof drainage is captured and directed as such.</i>
Response:	The roof drywell has been expanded and a roof drain line with multiple connections has been added to the plan.
Comment:	<i>A roof drain (RD) has been shown along the westerly side of the proposed building, which will provide for multiple roof leaders from the 27,760 S.F. roof area. We recommend the roof leaders be shown, coordinated with the architectural plans and spaced as needed by calculations for the contributing roof area.</i>
Response:	The roof leaders have been added to the plan and labeled accordingly.
<i>Comment 4.4:</i>	<i>The 28-space parking area and drive on the easterly side of the building indicates a grade of 170 in the drive at both northerly and southerly building ends suggesting a high point mid-way between them (260' apart). Assuming a 6" step down from the building second floor of 171.0, this would give an elevation of 170.5 at the walk. Another 6" curb step to the parking spaces would have an elevation of 170.0. This leaves no pitch from a center (130') high point to the 170 contours shown at the drive ends? Similarly, the one-way north drive on the westerly side of the building indicates a grade of 156 at both the northerly and southerly building ends suggesting a high point midway between them (330'± apart). Assuming a 6" step down from the building first floor of 157.0, this would give an elevation of 156.5 at the door landings. Another 6" curb step to the drive would have an elevation of 156.0. This leaves no pitch from the center (165') high point to the 156 contours shown</i>
Response:	The grading has been revised and spot grades have been added to clarify the design intent.
Comment:	<i>Some spot grades have been shown on the plan in the 28-space parking area along the easterly side of the proposed building. The design intent is still unclear. Spot grades along the easterly curb line of the drive aisle should be shown. It appears that north/south grades are very flat (0.3%) which is an icing concern. Also it appears that runoff from the southerly half of the parking area must flow over this proposed flat</i>



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	<p><i>grade approximately 200' then turn westerly to run another 100' to CB 5.</i></p> <p><i>There appears to have been no attention given to our similar previously raised concern about the one-way emergency access drive.</i></p> <p><i>We recommend the design engineer revisit these concerns.</i></p>
Response:	<p>A low spot has been added in the parking area to increase the slope of the lot. Additional catch basins have been added. Additional spots grades and grading have been added in front of the building to ensure the runoff flows as designed.</p>
<i>Comment 4.5:</i>	<p><i>The grade of the driveway along the southerly end of the building is proposed as 10%. This coupled with the curb radii and drive widths mentioned in 3.9.-3.11. above heightens our concern for emergency vehicle access in this area.</i></p>
Response:	<p>This plan has been submitted to the Fire Department for comments.</p>
<i>Comment 4.6:</i>	<p><i>The plan would indicate that all the proposed foundation drains for the building come together near the southwesterly building corner then are to be piped across the drive to daylight at a rip-rap pad short of Norino Way. The footings for the first floor of the building will be over 10' into the ground (and groundwater) along the easterly side of the building. Given this condition and the size of the building, one would expect an active flow from the foundation drains during periods of high groundwater. The concern here is the proposed single outfall just above and at a crest in Norino Way leading potentially to water, and in Winter/early Spring icing along Norino Way. We recommend multiple outfalls further displaced from Norino Way and all going into a common infiltration trench/level spreader.</i></p>
Response:	<p>We have shown a foundation drain to encompass the entire footprint of the building and have added a second outlet for the foundation drain.</p>
<i>Comment 4.7:</i>	<p><i>Several drain pipe outfall inverts such as the ones into Infiltration Basins 1 and 2 are too small to read.</i></p>
Response:	<p>The text size of the inverts has been increased.</p>
<i>Comment 4.8:</i>	<p><i>Infiltration Basin 1 shows no emergency spillway or overflow pipe provision as required by the Stormwater Handbook. The detail on Sheet 8 does indicate an emergency spillway?</i></p>
Response:	<p>The grading has been revised to reflect an emergency overflow for basin 1.</p>
<i>Comment 4.9:</i>	<p><i>The proposed tree line appears to stop at two locations on the easterly property line. It is assumed that the proposed clearing limit is along the easterly property line?</i></p>
Response:	<p>The proposed treeline ties back into the existing treeline along Long Hill Road. The remainder of the northeast corner of the lot is proposed to be cleared to allow for access and grading. Some landscaping will be provided in this area after construction of the drive and basin.</p>
<i>Comment 4.10:</i>	<p><i>Infiltration Basin 1 grading shows no berm top width.</i></p>
Response:	<p>A 6' wide berm has been added to the basin.</p>
<i>Comment 4.11:</i>	<p><i>We have concerns relative of the design of the proposed retaining wall along the</i></p>



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	<p><i>easterly side of the access drive from Norino Way to the proposed building. As mentioned elsewhere in this report this wall as all others should be specifically detailed.</i></p> <p><i>This 300'± long wall is drawn to have what appears to be some sort of a stone intercept trench behind it which then appears to be captured and conveyed by piping south to north under the access drive and over/under (?) the piping between CB1/CB2 to DMH 1 to a rip-rap pad "upgradient" (?) of the access drive. This may be an error. If not, it definitely requires explanation. The stone intercept trench should be detailed.</i></p>
Response:	<p>The retaining wall will be separately designed and stamped by others. The intent of the trench behind the wall is to collect the overland flow and direct it from flowing over the wall. This trench is not intended as an infiltration trench simply a means to collect the runoff. The design has been revised to direct some runoff under the access drive and towards the front of the property. The remainder of the runoff is directed towards the western portion of the site.</p>
Comment:	<p><i>It was my understanding that the Planning Board at their 1/26/22 meeting decided that this wall and its drainage component along with all other proposed retaining walls over 4' exposed height be designed and detailed on the plans prior to their consideration for approval.</i></p> <p><i>The Millennium response letter suggests too that "..... the design has been revised to divert some runoff under the access drive and towards the front of the property". That design change is not detailed nor is there detail concerning the plan for the ".....remainder of the runoff directed towards the western portion of the site".</i></p> <p><i>This is a good-sized drainage area (P1D and P2D) for interception of overland flow and because of the depth of cut, is expected to have a considerable amount of "weep" drainage out of the hill. It is an area that cannot be ignored.</i></p>
Response:	<p>A final wall design has been completed by Shea Concrete. The trench behind the wall will be used to collect runoff and direct it towards the design points of the drainage analysis.</p>
Comment 4.12:	<p><i>The footing for the wall discussed above would appear to be as much as 20' below existing grade. Groundwater levels in this area are reported as 3' to 4' below grade (TP #20-1, -2, -3 and -4). Although difficult to quantify it will assuredly create a substantial flow of water and needs to be dealt with in a manner beyond that proposed.</i></p>
Response:	<p>A final wall design will be provided by others and we will incorporate any groundwater issues into the site design.</p>
Comment:	<p><i>See 4.11.</i></p>
Response:	<p>See response to 4.11</p>
Comment 4.13:	<p><i>The proximity of the proposed leach fields to the above referenced wall and associated drain intercepting groundwater is a concern. Title 5 requires a</i></p>



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	<i>minimum of 50' between the two where the plans are showing as little as 35'. Approximately half of the wall and stone intercept trench as well as the outfall of the drainage falls within the Water Resource District.</i>
Response:	The reserve septic system has been relocated to provided more than 50' separation to the trench and retaining wall.
Comment 4.14:	<i>Infiltration Basin 2 has less than the 4' separation to the water table. As such, a Mounding Analysis is required.</i>
Response:	A mounding analysis has been provided for Infiltration Basin 2.
Comment:	<i>A Mounding Analysis was not found in the resubmitted material.</i>
Response:	A mounding analysis has been added to the Stormwater Report.
Comment 4.15:	<i>Neither Proposed Infiltration Area 1 or Subsurface Infiltration Area 2 show soils test pits (or results) as required by Stormwater Management Standards.</i>
Response:	Additional testing will be performed for Subsurface infiltration Area 1. As discussed on our conference call, one test pit is within subsurface infiltration area 2 and several other test pits are located in close proximity. The bottom of the system is about 2' above existing grade. The test pit that has been conducted show ESHGW at 36" which is 5' below the bottom of the proposed system. The soils on-site were very consistent and it is our opinion that no additional testing is required in this area.
Comment:	<i>Agreed there is no need for additional soils testing for Subsurface Infiltration Area 2. We are waiting for results of additional testing for Subsurface Infiltration Area 1.</i>
Response:	Additional testing has been done and is shown on the plans and the logs are included in the Stormwater Report.
Sheet 5 of 10 – Utilities Plan	
Comment 5.1:	<i>Any approval action by the Planning Board should be subject to Board of Health approval of the subsurface sewage disposal system, which is shown schematically only. The Board of Health and MADEP must also approve the proposed industrial wastewater holding tank.</i>
Response:	No response required. Agreed, this should be a condition of approval.
Comment:	<i>Planning Board to consider as a Condition of Approval - Board of Health and MADEP Approvals.</i>
Response:	No response required.
Comment 5.2:	<i>Similarly any approval action by the Planning Board should be subject to approval by the Water Department for the domestic water line service and the Fire Department for the fire services line.</i>
Response:	No response required. Agreed, this should be a condition of approval.
Comment:	<i>Planning Board to consider as a Condition of Approval - Water and Fire Departments Approvals.</i>
Response:	No response required.
Comment 5.3:	<i>The Utility Plan does not indicate where the building will receive power from or how it gets through the site.</i>
Response:	The proposed electric service has been added to the Utility Plan.



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Comment:	<i>Planning Board to consider as a Condition of Approval - Electric Department Approvals.</i>
Response:	No response required.
Comment 5.4:	<i>If the building is to have an emergency generator, its location should be shown.</i>
Response:	A label has been added calling out the pad for the emergency generator location.
Comment 5.5:	<i>The plans indicate no fire hydrants. There is an existing hydrant on the easterly side of Norino Way approximately opposite the southerly end of the proposed building. Pulling hose from that hydrant to and around the proposed building would be difficult. It is about 350' from that hydrant to the center of the easterly side of the proposed building.</i>
Response:	The is an existing fire hydrant located on Long Hill Road near the northeast property corner.
<u>Sheet 6 of 10 – Erosion and Sedimentation Control Plan</u>	
Comment 6.1:	<i>Due to the steep slopes (both existing and proposed) a double row of erosion control barrier is recommended.</i>
Response:	The Erosion and Sedimentation Control Plan has been revised to specify a double row of erosion control barrier be installed.
Comment 6.2:	<i>Sedimentation basins (temporary – during construction) should be strategically located on the plan.</i>
Response:	Sediment basins have been added to the Erosion and Sedimentation Control Plan.
<u>Sheet 7 of 10 – Construction Details</u>	
Comment 7.1:	<i>The pavement thicknesses in the 'Pavement Detail' are quite light. 2½" of binder and 1½" of top are recommended minimums.</i>
Response:	The pavement detail has been revised accordingly.
Comment 7.2:	<i>Pavement Notes' 6.) references Newbury Planning Board Regulations?</i>
Response:	Note 6 has been revised.
Comment 7.3:	<i>To what does the Riser/Cleanout Detail refer?</i>
Response:	The detail refers to the underground detention system and the label for the detail has been revised.
Comment 7.4:	<i>As previously mentioned, the 'Segmental Block Retaining Wall' detail is of no value. Each of the four retaining walls should be specifically detailed. All retaining walls with over 4' of exposed height must be designed by and be signed and sealed by a registered structural engineer.</i>
Response:	The front two retaining walls are 4' in height and the detail remains valid for those walls. The remaining two walls will be specifically designed and stamped by a structural engineer. The walls have been labeled accordingly on the Grading and Drainage Plan.
Comment:	See 4.11.
Response:	See response to 4.11
Comment 7.5:	<i>The 'Backfill Detail' indicates elevations not relative to this site?</i>



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Response:	A table has been added to the backfill detail calling out the elevations for each detention area.
Sheet 8 of 10 – Construction Details	
<i>Comment 8.1:</i>	<i>Elevations of the top/bottom of the SC 740 infiltration chambers should be shown at the 'Stormtech SC 740 Infiltration Chamber' detail.</i>
Response:	A table showing the elevations has been provided.
Comment:	<i>The table (Sheet 14) shows Bottom of Stone El. 150.60 and should be El. 150.0.</i>
Response:	The table has been revised.
<i>Comment 8.2:</i>	<i>The Contech CDS detail should have a title below it?</i>
Response:	A title has been added to the Contech CDS detail.
Comment:	<i>The Contech CDS detail states that "multiple inlet pipes may be accommodated". The design plans suggest several different inlet/outlet configurations as opposed to the preferred "straight-through-flow" configuration. We request that the design engineer secure a memo from Contech confirming that all the configurations proposed by the design can be accommodated without loss of efficiency.</i>
Response:	The layout of the Contech units have slightly been revised based on our discussions with Contech. A memo has been provided from Contech regarding the angle of the pipes.
<i>Comment 8.3:</i>	<i>The 'Infiltration Basin Berm Detail' indicates a top width of 8' where Sheet 4 at IB2 scales 5' to 6'?</i>
Response:	The berm detail has been revised to depict a 6' berm width.
<i>Comment 8.4:</i>	<i>Infiltration Basin #1 and #2-Typ. Cross-Section' indicate flood elevations different than those found in the HydroCAD calcs.</i>
Response:	The cross-sections have been revised.
Comment:	<i>At Infiltration Basin #2, the elevations of the top of berm and emergency spillway should be raised to allow an emergency spillway elevation of 144.1 (1' freeboard above the 100-year flood elevation).</i>
Response:	The emergency spillway elevation has been revised to 142.35'. This change lowers the 100-year peak elevation to 142.99' allowing 1.01' freeboard to the top of berm at elevation 144'.
<i>Comment 8.5:</i>	<i>Infiltration Basin #1-Typ. Cross-Section' indicates groundwater separation of less than 2' which is not permitted by the Stormwater Handbook. Separation less than 4' requires a Mounding Analysis which was not found in the Drainage Report and the pertinent box under Standard 3: Recharge, of the Checklist for Stormwater Report, was not checked. "Infiltration Basin #2-Typ. Cross-Section shows a groundwater separation in the excess of 2' but less than 4' again requiring a Mounding Analysis.</i> <i>The potential mounding effect between Infiltration Basin 1 (2IP) and Subsurface Infiltration Area 2 (3P) should be assessed.</i>
Response:	The ESHGW elevation in the Infiltration Basin 1 cross-section is incorrect. The detail has been revised to show that groundwater elevation varies across the basin but is 44" on



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	the high side of the basin and 39" on the low side of the basin. The bottom of the basin matches the existing grade and has more than a 2' separation to groundwater. It is our opinion that since both systems are close in elevation and the groundwater and existing grade fall off under the subsurface infiltration area, that there is no concern over mounding effecting either basin. A groundwater mounding calculation has been provided for infiltration basin 1 and 2.
Comment:	<i>The Mounding Analysis was not found in the resubmitted material.</i>
Response:	A mounding analysis has been added to the Stormwater Report.
Comment 8.6:	<i>The Infiltration Basin #1-Typ. Cross Section shows an Emergency Spillway. Sheet 4 does not indicate its location, dimensions or extent.</i>
Response:	The grading has been revised to depict the emergency overflow.
Sheet 9 of 10 – Construction Details	
Comment 9.1:	<i>Outlet Control Structure 2 is mislabeled Outlet Control Structure 1.</i>
Response:	The labels have been revised.
Comment 9.2:	<i>Outlet Control Structure 2 shows pipes in/out at 180° where the plan indicates they are set at 90°. The OCS and location of the internal diversion wall should be redrawn.</i>
Response:	The detail has been revised..
Comment 9.3:	<i>Outlet Control Structure 3 operates to allow overflow from Subsurface Infiltration Area 2. This part of the drainage system is proposed to mitigate the entire roof area (0.64 acres). The top of the diversion wall is at El. 151.75. The wall is overtopped for all storm events by 3" to 8" with outflow discharges of 1.2 CFS to 4.1 CFS. The discharge pipe daylights just 35'± above Norino Way at a rip-rap apron. We suggest the designer look at increasing the storage/recharge capacity of Subsurface Infiltration Area 2 to decrease this outlet flow.</i>
Response:	The outlet control structure has been revised to release less water and the subsurface infiltration area has been expanded.
Comment:	<i>The table for Outlet Control Structure 3 on Sheet 15 of 17 shows a Top of Wall El. 152.50. The HydroCAD calcs show El. 152.60. Correction is warranted.</i>
Response:	The detail has been revised.
Comment 9.4:	<i>Outlet Control Structure 4 shows pipes in/out at 180° where the plan indicates they are set at 90°. This detail depicts an 8" orifice pipe in the diversion wall, which is not included in the HydroCAD calcs?</i>
Response:	The detail has been revised.
Comment:	<i>The Outlet Control Structure 4 detail on Sheet 15 of 17 shows 2" and 8" orifices in the diversion wall. The HydroCAD calcs do not include the 8" orifice?</i> <i>The detail also indicates a 15" vertical difference between top of the diversion wall and the rim elevation. A detail should be provided to show how this will be constructed.</i>
Response:	The 8" orifice has been removed from the detail.



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<i>Comment 9.5:</i>	<i>We found no detail of the proposed Diversion Manhole for Ponds 43P/45P on this or any other sheets?</i>
<i>Response:</i>	A diversion manhole detail has been provided.
<i>Comment:</i>	<i>The Diversion Manhole detail added shows a 9½" vertical difference between the top of diversion wall and the rim elevation? How can this be constructed?</i>
<i>Response:</i>	<i>The invert of the diversion wall has been revised to 127.50 which will provide a 1' separation from the top of the wall to the rim elevation.</i>
Sheet 10 of 10 – Construction Details	
<i>Comment 10.1:</i>	<i>'General Erosion Control Notes 8. references' Newbury Planning Board.</i>
<i>Response:</i>	Note 8 has been revised.
<i>Comment 10.2:</i>	<i>'General Erosion Control Notes 16. References' the constructed wetland'</i>
<i>Response:</i>	Note 16 has been removed.
<i>Comment 10.3:</i>	<i>'Construction Sequence' Note 3. references a phase line?</i>
<i>Response:</i>	Note 3 has been revised.
Drainage-Report and Calculations	
<i>Comment 1:</i>	<i>The Checklist for Stormwater Report at Standard 3: Recharge does not check the box indicating that separation to seasonal high groundwater is less than 4' AND as well does not provide the required Mounding Analysis.</i>
<i>Response:</i>	The Stormwater Checklist has been revised accordingly.
<i>Comment:</i>	<i>The Mounding Analysis was not found in the resubmitted material.</i>
<i>Response:</i>	<i>A mounding analysis has been provided in the Stormwater Report.</i>
<i>Comment 2:</i>	<p><i>The report states that on-site soils testing were ".... indicative of C soils being present throughout the site". The Soils Analysis section of the report includes NRCS mapping of site soils also as HSG C soils.</i></p> <p><i>The Stormwater Recharge Calculations of the report use an "F" factor of 0.25 inches (HSG C soils value) to calculate the Required Recharge Volume.</i></p> <p><i>The report then provides Drawdown Calculations using a Rawls rate "K" value of 1.02 in./hr., which is a HSG B value.</i></p> <p><i>Further, throughout the HydroCAD calculations, the report also uses the 1.02, HSG B soils value for the exfiltration rate for the proposed infiltration systems.</i></p> <p><i>All areas of the design and design calculations should use the appropriate HSG C soils values according to the Stormwater Management Standards.</i></p>
<i>Response:</i>	All of the soils on-site were sandy loams. The NRCS Soil report has these soils listed as sandy loams and HSG C. The Rawl's Table lists Sandy Loams as HSG B soils. We have



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	revised the hydrocad calculations to model all of the existing soils to be HSG B with an infiltration rate of 1.02.
Comment:	<i>The Stormwater Management Report at Section III. Hydrologic Analysis in the second paragraph under Existing Site Conditions still states ".... The test pits indicated sandy loam soils throughout the site, more indicative of C soils being present". In some of the required calculations, the report uses an infiltration rate of 1.02 inches/hour which is that of HSG B soils. In other required calculations, the report uses a Target Depth Factor of 0.25 inches which is that of HSG C Soils.</i> <i>We will yield to the designer's assertion, based on their numerous soils tests across the site, that the C layer soils are all sandy loam with an HSG B soils classification That said however, the report narrative should be amended and all required calculations should be consistently made using values consistent with HSG B sandy loam soils.</i>
Response:	The statement in the Stormwater Report has been revised to indicate B Soils and all relevant calculations have been revised to indicate B soils.
<i>Comment 3:</i>	<i>The report does not provide the required Captured Area Adjustment calculation for required recharge volume.</i>
Response:	The capture area adjustment has been calculated and included in the stormwater report.
<i>Comment 4:</i>	<i>The HydroCAD calculations list the total Pre-Development area 4.813 acres and the total Post-Development area s 4.561 acres. These areas should be equivalent unless otherwise explained.</i>
Response:	The Pre and Post Development areas have been revised to show the same total watershed area.
<i>Comment 5:</i>	<i>Notwithstanding 4. Above, both the Pre- and Post-Development areas and calculations should include the contributing drainage area upslope and easterly of the site.</i>
Response:	The Pre and Post Watershed maps as well as the HydroCAD calculations have been revised to include the upgradient areas.
<i>Comment 6:</i>	<i>Pre- and Post-Development Watershed Maps should indicate flow paths utilized for the time of concentration drainage inputs.</i>
Response:	The Time of Concentration flow paths have been added to the Pre and Post Watershed Maps.
<i>Comment 7:</i>	<i>Pond summaries 9P, 10P, 13P, 14P, 15P, 28P, 34P, 35P, 36P, 40P, 47P and 48P include outlet culvert invert elevations and lengths which do not always agree with those shown in the plans.</i>
Response:	The HydroCAD calculations have been revised.
<i>Comment 8:</i>	<i>In the HydroCAD analysis of flow between Ponds P34 and P35 it is unusual at best to see no warning messages given the significant discrepancy in culvert elevation?.</i>
Response:	The inverts have been revised for these two manholes.
<i>Comment 9:</i>	<i>Calculations for phosphorus removal were not found in the report? (See Georgetown Erosion and Stormwater Control Regulations Sect. IX).</i>



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Response:	Phosphorus calculations have been included in Stormwater Report.
Comment:	<i>The signed Illicit Discharge Statement was not found in the resubmitted material.</i>
Response:	The Illicit Discharge Statement has been signed.
Comment 10:	<p><i>The Stormwater Management Report includes some verbiage in reference to Stormwater Management Standards 8, 9 and 10. Comments regarding this area of the submission follow:</i></p> <ol style="list-style-type: none"> a. <i>Under the Post-Construction BMPs at the CDS System subheading Contech CDS 2015-4 unit's are mentioned. The plans reference the use of CDS 1515-3 units? The Stormwater Management Report also includes Contech solids load reduction spec sheets for the 1515-3 units?</i> b. <i>The Erosion and Sediment Control BMP's section of the report does not include a Construction Period Site Work Inspection and Maintenance Log Form. (Standard 8).</i> c. <i>The Post-Construction BMP's section of the report does not include a Post Construction Operation and Maintenance Log Form. (Standard 9).</i> d. <i>The initial page of Section VIII. of the report references a plan "filed" with the Town that was not found in the submittal?</i> e. <i>The initial page of Section VIII. of the report references an "included manual" and ".... A log for tracking inspections and maintenance." neither of which were found in the submittal?</i> f. <i>The initial page of Section VIII of the report states, "Preventive maintenance of the system will include a comprehensive source reduction program of regular vacuuming and litter removal," which was not found in the submittal?</i> g. <i>The initial page of Section VIII of the report includes an Illicit Discharge Compliance Statement (Standard 10) which is not signed, sealed or dated and which should be submitted as a stand alone submittal. This is an important certification as the facilities operation by-product must go to the proposed industrial wastewater holding tank and not be directed to the stormwater system.</i>



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	<p>h. <i>As mentioned elsewhere in this report we have recommended a double row of soil erosion control devices. This notation should also be included in the Erosion and Sediment Control BMP's section of the report under the subheading, "Establish Perimeter Controls and Sediment Barriers".</i></p> <p>i. <i>The Post-Construction BMPs section of the report under the subheading, "Infiltration Basin" states ".... The applicant of the project, through his contractor will incorporate this sediment control feature into the project during the construction activities. The basins shall be protected and shall not be used for sedimentation during construction.". Elsewhere in this report we have suggested strategic siting of construction period sedimentation basins. The referenced statement needs to be rewritten/clarified as it implies that the infiltration basins are "sediment control features" but then goes on to say they cannot be used as such which of course is correct?</i></p> <p>j. <i>A Scheduling and Construction Sequence was not found in the submission?</i></p> <p>k. <i>Neither the required NPDES or SWPPP reports/plans were found in the submission?</i></p>
Response:	<p>a. The section has been revised.</p> <p>b. An inspection log has been included in the Stormwater Report.</p> <p>c. An inspection log has been included in the Stormwater Report.</p> <p>d. The "plan" filed with the Town is in reference to the entire Section VIII.</p> <p>e. An inspection log has been included in the Stormwater Report.</p> <p>f. The reference to the vacuuming and litter removal is in regards to the following information within the LTOM Plan.</p> <p>g. The Illicit Discharge Statement has been signed and dated by the owner.</p> <p>h. The section has been revised to specify a double-row of sedimentation barrier.</p> <p>i. The section has been revised to specifically state the infiltration basins are not to be used as sedimentation basins.</p> <p>j. The construction sequence is included on sheet 16 of the plan set.</p> <p>A SWPPP will be provided and submitted 14 days prior to the start of construction as required. A site contractor has not been selected and no time frames have been assigned to the schedule. A majority of the SWPPP would remain blank as the information is not yet available.</p>
Additional Comments	



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Comment A.1:	<i>A General Note on Sheet 6 states that fencing will be installed along the limit of the project. Fencing has been added as shown on Sheets 3, 4 and 5 basically around the building. Is more fencing around "the project" anticipated.</i>
Response:	The note has been removed as the limit of fencing is shown on the plans.
Comment A.2:	<i>On Sheet 7, the leader arrow from the CDS S1515-3 label does not lead to DMH 1. Correction is warranted.</i>
Response:	The leader has been revised.
Comment A.3:	<i>On Sheet 7, the Contech proprietary unit in DMH 3 has apparently been changed from the S1515-3 to a Stormfilter? The labeled note is overwritten and should be clarified. On Sheet 6, the Contech unit called for remains as the S1515-3?</i>
Response:	The leader has been revised.
Comment A.4:	<i>On Sheet 7, an errant or mislabeled "INV.=137.0" is depicted?</i>
Response:	The leader has been revised.
Comment A.5:	<i>On Sheet 7, an additional DMH is shown just southerly of Outlet Control Structure 2? On Sheet 6, it is labeled as the Contech Stormfilter?</i>
Response:	The label has been revised to call that DMH out as a Contech Stormfilter. This has been added to the design in order to reach the required Phosphorus removal requirements.
Comment A.6:	<i>On Sheet 7, a DMH is shown about 100' off of Norino Way and off to the right of the wall/access drive. There is no proposed info for this structure?</i>
Response:	The rim and invert information has been added for this manhole.
Comment A.7:	<i>On Sheets 7 and 8, all pipe lengths, sizes and slopes between structures should be provided and cross-checked to match the HydroCAD inputs/values. All invert elevations at the outfalls should be provided again cross-checked with the HydroCAD values.</i>
Response:	All invert elevations and outfalls have been provided and cross checked with the hydrocad model.
Comment A.8:	<i>On Sheets 7 and 8, please label all the infiltration and detention area BMP's as they are referred to in the HydroCAD calcs (e.g. Proposed Subsurface Detention Area 2, Proposed Infiltration Basin 1, etc.).</i>
Response:	All infiltration and detention BMP's have been labeled.
Comment A.9:	<i>On Sheets 6 and 8, we note the rip-rap outfall pad of the overflow from Outlet Control Structure 5 is proposed at the location of an existing guy wire. This should be avoided.</i>
Response:	The rip-rap outfall pad has been relocated to avoid the existing guy wire.
Comment A.10:	<i>As we compared the plan to the HydroCAD calcs we noted numerous differences. The two should be 100% coordinated (e.g. the scaled distance from Outlet Control Structure 3 to the outfall pad is 70' where the HydroCAD length is 100', the scaled distance for Outlet Control Structure 1 to the outfall pad is 65' where the HydroCAD length is 25', etc.).</i>



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Response:	The hydrocad model has been revised to correctly depict the information on the plans.
Comment A.11:	<i>On Sheets 6, 7 and 8, the edge of the pavement, face of curb elevation near the northeasterly building corner is labeled 0.00, which we believe is intended to be 170.40. Also shows up on Sheet 1.</i>
Response:	The elevation has been revised to 170.40.
Comment A.12:	<i>On Sheet 9, General Notes 1. references Newbury Planning Board and Conservation Commission, General Notes 13. references Newburyport DPS.</i>
Response:	The general notes have been revised to read "Georgetown" in place of Newbury/Newburyport.
Comment A.13:	<i>On Sheet 17, the plans have added a detail for a Stormfilter. Like the CDS S1515-3 we would like to have Contech certify that it can be used with the configuration (inlets/outlets) proposed. Also we note that there is only a 1½" difference between inlet/outlet elevations. Contech should verify that as the correct configuration. Lastly, the detail shows a 6' typical dimension from invert out to the inside of the top of cover. The proposed difference between the rim (El. 155.5) and invert out (El. 151.12) is 4.4'?</i>
Response:	Contech has provided a memo certifying the proposed configuration. (see attached)
Comment A.14:	<i>The proposed Contech Stormfilter is not included in the Stormwater Management Report in the Long Term O&M section.</i>
Response:	The Contech Stormfilter has been added to the Long term O&M section of the stormwater management report.
Comment A.15:	<i>On Sheet 17 the 12" and 18" HDPE invert out leaders are pointing to the outside top of pipe rather than the invert out.</i>
Response:	The details have been revised to correctly depict the invert out.
Comment A.16:	<i>Sheet 3 indicates "Proposed Fence" and Sheet 17 provides a detail of the gate. The Planning Board is generally interested in the height, type and material for both? On Sheet 3 the fence and gate are proposed in the layout of Long Hill Road and should be on the Applicant's property.</i>
Response:	The proposed fence and gate have been adjusted to layout within the boundary of the property.
Comment A.17:	<i>On Sheets 6 and 8 there appears to be an errant east-west line across the northerly end of the building and the northerly end of the 28-space parking area? Maybe a subcatchment line that need not be shown on these sheets.</i>
Response:	The errant line on Sheets 6 and 8 have been corrected.
Comment A.18:	<i>On Sheets 15, all diversion walls are called out as 4" walls where in the HydroCAD calcs 6" weirs are shown.</i>
Response:	The outlet control structure details have been revised to call out 6" diversion walls.
Comment A.19:	<i>On Sheet 14, the typical Cross-Sections for both Infiltration Basins #1 and #2 indicates a naturally occurring underlying material of Loamy Sand when all soil logs (Sheet 16) indicate Sandy Loam full depth? On the same two cross-section details it should be made clear that the 24" of course sand is <u>proposed</u> to be placed.</i>



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Response:	The Cross-section have been revised. The 24" of coarse sand is proposed and the naturally occurring underlaying material has been corrected to sandy loam.
Comment A.20:	See Comment IV. 4.3. above. On Sheet 14 the Gutter Down Spout Detail proposes 4" roof drains which are generally specified for single-family residential use. For this commercial building with the large roof area, 6" downspouts and roof drains are needed.
Response:	The detail has been revised to depict 6" downspouts.
Comment A.21:	<p>The following additional comments pertain to the revised Stormwater Management Report.</p> <p style="margin-left: 40px;">a. In Section III. of the report pre and post Peak Runoff Rate tables are provided for the 'four' (not 'three' storm simulations). These revised tables now show increases in peak rates for both the 25- and 100-year events for Subcatchment E1/P1. These increases although relatively minor (3% to 6%) invalidate the statement made in the Introduction that"..... the post-development runoff rates will be less than or equal to the pre-development rates". The design engineer should revisit this issue.</p> <p style="margin-left: 40px;">b. In Section IV. of the report, we believe the Required Recharge Volume would be more accurately presented as:</p> <p style="margin-left: 80px;">0.35" x 62,901 = 1,835 C.F.</p> <p style="margin-left: 40px;">If the engineer is using the Saturated Hydraulic Conductivity of 1.02 in./hr. for HSG B soils then the Target Depth Factor for HSG B soils of 0.35" should be used versus 0.25" used in this calculation.</p> <p style="margin-left: 40px;">Use of these revised figures will yield a different Adjusted Required Recharge Volume, which is left to the design engineer to re-calculate.</p> <p style="margin-left: 40px;">c. In the Drawdown Calculation for Infiltration Basin 1, the Bottom Area figure we believe should be 996 S.F. as read in the HydroCAD data versus the 1555 S.F. used. This will change the Drawdown Time from 22.2 hours to 34.6 hours still well below the 72-hour requirement.</p> <p style="margin-left: 40px;">d. In Section V. - TSS Removal Calculations, the design engineer may consider TSS removal credit for the Contech</p>



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	<p>units prior to the infiltration BMP's.</p> <p>The TSS Removal Calculation should be completed for each of the post- construction subcatchment drainage areas. It appears that the calculation for Subcatchment Area P2D has been omitted? If necessary and justified, the designer might be able to use the Weighted Average TSS Removal calculation to show that the required removal rate is achieved on a site-wide basis.</p> <p>e. We have been unable to validate the S.F. areas used in the Phosphorus Removal Calculation. We have also been unable to verify the source allowing the 75% Phosphorus Removal Credit used for Subsurface Detention Area 2. We request the design engineer supply these figures from the HydroCAD data or other source?</p>
Response:	<p>a. The text has been revised to reference four storm events. The tables have been revised to show the post rates are less than or equal to the pre-development rates.</p> <p>b. The required recharge volume has been updated accordingly.</p> <p>c. The drawdown calculations have been revised accordingly.</p> <p>d. The TSS removal calculations have been revised to include the Contech TSS removal. There is no proposed impervious areas within subcatchment P2D so no TSS removal is required.</p> <p>e. The 75% removal of phosphorus is based on the use of the Contech Stormfilter. The areas show are the total driveway and parking areas draining to each of the basins listed.</p>

We trust this response letter provides the necessary information for the Board's consideration of the request for completeness. If you have any questions or comments, please feel free to contact our office at your convenience.

Sincerely,

Millennium Engineering, Inc.


James Melvin, P.E.
Project Manager

w/ Attachments

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