SCITUATE PLANNING BOARD MINUTES May 23, 2019

Members Present: Ann Burbine, Chairman; Stephen Pritchard, Vice Chairman; Patricia Lambert, Clerk, William Limbacher and Benjamin Bornstein, alternate Rebecca Lewis.

Others Present: Karen Joseph, Town Planner; Shari Young, Planning Administrative Assistant.

Members absent:

See Sign-in List for names of others present at this meeting.

Location of meeting: Selectmen's Hearing Room, Town Hall, 600 C J Cushing Highway, Scituate

Chairman Burbine called the meeting to order at 7:00 P.M. The meeting was being recorded for airing on local cable television.

Documents

5/23/19 Planning Board Agenda

ACCEPTANCE OF AGENDA: Chairman Burbine indicated there was a posted agenda. Ms. Lewis seconded the motion for the posted agenda and the vote was unanimously in favor.

Board Re-organization

Documents

- Excel PB LIASION 2019
- Doc signature page

Mr. Limbacher moved to keep the officer as they currently are. Mr. Pritchard seconded the motion; the vote was unanimously in favor.

The Board discussed and assigned new liaisons to other Town Boards and Committees. Ms. Burbine and Ms. Lambert remain as signatures for bills.

Continued Public Hearing – Stormwater Permit – 27 Hood Road Assessor's Map/Block/Lot 28-23-4-F and 4FA, 28-22-12-F Applicant/Owner: St. Mary & St. George Coptic Orthodox Church

Documents

Email from Hazem Dani to Shari Young dated 5.17.19

Motion:

Ms. Lambert moved to accept the applicant's request to continue the public hearing for the Stormwater Permit for 27 Hood Road until July 11, 2019 at7:00 pm in the Selectmen's Hearing Room at Town Hall, 600 C J Cushing Hwy and continue the time for filing a decision with the Town Clerk until July 26, 2019.

Mr. Pritchard seconded the motion; the vote was unanimously in favor.

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Minutes

Documents

• Meeting minutes 5.9.19

Ms. Lambert moved to approve the meeting minutes for May 9, 2019.

Mr. Bornstein seconded the motion; the vote was four in favor, Mr. Limbacher voted no.

Accounting

Documents

PO #1910636 (\$180.54), PO #1910635 (\$108.54), PO #1910864 (\$4, 585.87), PO #1910896 (\$9,667.00), PO #1911010 (\$600.00)

Ms. Lambert moved to approve the requisition of \$108.54 to Gatehouse Media for legal ad for 60 Marion Road, for \$108.54 to Gatehouse Media for legal ad for 25 Mann Hill Road, for \$4,585.87 to Merrill Corporation for peer view of 247 Driftway/Drew Company, for \$9,667.00 to Horsley Witten for peer review for Seaside at Scituate, for \$600.00 to Merrill Corporation for peer review inspections at 92 Neal Gate Street.

Ms. Lewis seconded the motion; the vote was unanimously in favor.

Liaison Reports:

BOS - reported by Ms. Lambert:

- Resident requested connection to Town Sewer on Ann Vinal via Bittersweet Road to Longmeadow Road.
 - o Service one house one house on Longmeadow
 - Abutters on Bittersweet opposed; concerned resident on Longmeadow would make a pass-through to Fieldstone
 - o No capacity, currently at 98% capacity for the sewer
- Cedar Point residents asking for additional study regarding the MassWorks Grant for \$2.2M.
 - o Residents concerned about new system and losing power
 - o 40% of I&I issues come from Cedar Point
 - 40,000 gallons/day from Cedar Point of salt water flowing into Wastewater Treatment plant

Water Resources Committee presentation to BOS:

- Proposal to the Water Commissioners for multi-unit buildings
 - o Each unit would have a single meter for water
 - Town would benefit greatly from tie in fees
 - Encourages more conscious water use, makes residents of multi-units accountable
 - O Discussion is to be continued, BOS had some concerns
 - \$14K untenable for affordable housing
 - Would make it too hard to build here

EDC – reported by Ms. Burbine:

- Shellfish advisory Committee John Tedeschi and Jamie Davenport
 - o Presented aquafarm near Bassings Beach; Oysters

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o Mr. Bornstein volunteered to be liaison

Form A-ANR – 28 Longmeadow Road Assessor's Map/Block/Lot 27-6-20A and 20B

Applicant: Harvey & Susan Gates

Owner: Carol Craig & Michael Bonomi

Documents

■ PDF 28 Longmeadow Plan

PDF Application

Doc Transmittal 28 Longmeadow Road – ANR dated 5.6.19

Attendees: Jeff Hassett, Morse Engineering Co, Inc.

Mr. Hassett reviewed the plan.

• Creating parcel A, 7,000 sq. ft.

- o Labeled as Not a Buildable Lot
- o Does not affect frontage
- 28 Longmeadow encroaching onto 31 Longmeadow
 - Existing shed is on 31 Longmeadow
 - o 28 Longmeadow is purchasing land from 31 Longmeadow

Ms. Joseph indicated it is an internal change in lot lines; it does not affect access or frontage and she recommends endorsement.

Motion:

Ms. Lambert moved to endorse as Approval Not Required a Plan of Land Showing A Division of Land Off Of Longmeadow Road in Scituate, MA Parcels Included: 27-6-20A & 27-6-20B stamped by Douglas L. Aaberg, P.L.S. of Morse Engineering Co., Inc. for applicant Harvey E. & Susan B. Gates and owners Harvey E. & Susan B. Gates and Carol A. Craig & Michael D. Bonomi TRS of the Revocable Trust Agreement of Carol A. Craig and Michael D. Bonomi dated 5-2-19 as the division of the tract of land shown on the accompanying plan is not a subdivision because it shows a proposed conveyance or change in lot line which does not alter the existing frontage as required under the Scituate Zoning Bylaw.

Mr. Limbacher seconded the motion; the vote was unanimously in favor.

Planning and Development – reported by Ms. Joseph:

- Senior Center Site Plan Administrative Review at the end of June
- Toll Brothers working to get site stabilized and to get binder down in Phase I
 - o Receiving weekly SWPPP reports
 - o Daily observation by Horsley Witten, will re-evaluate at the end of May
- 90 Ann Vinal
 - o Building permits for 2 buildings
 - O Septic tank in, but have not seen any other work that relates to the system
 - o SWPPP Reports weekly
- Drew Project
 - Working on draft conditions

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o New submittal information to come

Parking Discussion – 60 Country Way

Document

- PDF 19-020 Site Plan Set Rev 4-3-19
- PDF Parking Letter to the Board

Attendees: Charles F. Fagan

Mr. Fagan spoke about the use of the building; indicating that he would like to use some of the warehouse space for retail space. It is an allowed use in the district. He said there is no change to the plan.

Ms. Joseph said the plan was approved for a mixed use special permit with warehouse space. Proposal is that the 2,700 sq. ft. building may have some retail. Currently there are 14 parking spaces; a change of the space to retail from warehouse would result in 14 parking spaces required for the site as three additional spaces were initially proposed for the warehouse development. If the Board agrees that 14 spaces, 1 space/200 sq. ft. is a reasonable estimate, the applicant will be coming back to modify the site plan review for the adjacent microbrewery site. Ultimately there would be 40 available parking spaces and a connection from the microbrewery site for the two properties. There could also be some future roadway improvements in the area.

Mr. Pritchard asked what kind of retail use there would be and if there is anything that would need to be addressed looking at it as retail space versus warehouse space; Mr. Fagan indicated the microbrewery may use it for potential overflow. It meets all the requirements, parking, and sidewalk circulation. Ms. Joseph agreed it meets all the requirements.

Mr. Limbacher said he does not see a downside to it; traffic will be controlled to a single outlet and there is parking.

Mr. Bornstein opined that as long as parking and everything works he likes it better that there is retail versus all warehouse.

The Board is in agreement with proposed change.

Public Meeting - Preliminary Subdivision Plan - Buckeye Lane & Stockbridge - 261, 253, 251, 255

Assessor's Map/Block/Lot 53-2-1, 1B, 4, 6, 7, 9

Applicant/Owner: First Buckeye Corp., Richard W. & William E. Hoffman, Trs., Richard W. & William E. Hoffman, JT, and Wilson H. & John R. Brown

Document

- PDF 4027-pre sub plan 3-19-19
- PDF Hoffman Authorization
- PDF Letter from Mr. De Lisi dated March 1, 2019
- PDF TC filed application dated 3-29-19
- Doc Transmittal Buckeye Lane and Stockbridge PSP dated 3.29.19

Attendees: Jeff De Lisi, Attorney; Paul Mirabito, Ross Engineering

Mr. De Lisi explained the reasoning behind the four preliminary plans; his office has advised several clients that have properties with development potential in the Greenbush area to file preliminary plans as a way to freeze the current zoning as the zoning amendments approved at Town meeting are still pending. This provides an option when it comes to developing the properties; under MGL 48 section 6, land development, allows for future development seeking permits to use the zoning in existence at the time the preliminary plan was filed instead of the new zoning. Definitive Plans will need to be filed within 7 months for a zoning freeze for 8 years. He said his clients will never install the subdivisions on the plans as they are today.

Mr. Pritchard said the community has chosen how these projects should be reviewed with the acceptance of the new bylaws and this process is not consistent with that.

Mr. Mirabito reviewed the plan for the Scituate Concrete Property.

- Frontage along the Driftway
- Homes along Stockbridge Road
- Lots in yellow would be in question for subdivision plan
- 2 buildable lots off the cul-de-sac
- Asking for waivers
- Plan will never be built as is

Ms. Joseph indicated the state law allows preliminary plans as a mechanism to freeze the existing zoning when a zoning change is proposed; this is a place holder for the applicant to allow them to decide which zoning to go with in the future. They do need to come back within 7 months with a Definitive Plan which would freeze the zoning for 8 years. She indicated that the items included on the motion are items the Board should ask for with the Definitive Plan and that Town Counsel concurs with the format and content of the DRAFT decision.

Mr. Pritchard felt the plans being reviewed tonight are subverting the new zoning. Ms. Joseph indicated they are giving an option to use either zoning if conditions are met.

There was discussion about the scope of which these projects affect the Greenbush area.

Mr. Limbacher indicated this has been done before; it protects the landowners.

Ms. Lambert agrees with Mr. Pritchard.

Mr. Bornstein agrees with Ms. Lambert and Mr. Pritchard; there was a lot of work that went into the new zoning and he would like to see people use that if the land is developed.

There was discussion about waivers during this process and if they would then carry forward into a Definitive Plan. Mr. De Lisi said other Towns have conditioned if the plan is recorded the applicant needs to come back to the Board with a modification and would need to comply with all of the regulations of the subdivision control law. He said when the plan does not get recorded the decision effectively runs out with a certain time frame. He also said the Board can condition approval and if the plan is recorded the applicant must come back to the Board. The freeze would, however still be in effect.

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There was discussion that if in 7 months a definitive plan is not filed this is a moot point and cannot get the benefit of the freeze. Mr. De Lisi opined the 7 months gives time to analyze the new zoning; applicants may opt to waive the freeze.

Mr. Pritchard asked what the effect is if the Board does not approve the preliminary plan. Ms. Joseph indicated that if the applicant files within 7 months they would still have the benefit of the zoning freeze; the Attorney General Decision on the new bylaw is expected mid-July.

These plans are just placeholders.

Public Comments:

Ms. Nancy Samm, resident at 226 Stockbridge Road, wanted to know what they are going to with the property and if she will be notified. She was told the applicant does not yet know what they are going to do with the property. Ms. Burbine indicated this is just a placeholder; the applicant has 7 months to file a Definitive Plan. Ms. Joseph said that a Definitive Subdivision Plan or a Special Permit requires abutter notification.

There was further discussion about how the developer gets to choose what they want to do with the zoning. It was noted that the bylaw does encourages a Preliminary Plan be filed prior to a Definitive Plan.

Mr. Pritchard opined the applicant has already accomplished what they have already tried to do; they have put a placeholder for the freeze. He was inclined to not approve the plans and have the applicant file the Definitive Plan within 7 months. There was uncertainty on what happens if the Preliminary Plans are denied.

Ms. Burbine agreed with Mr. Pritchard, but does think there may be a downside to denial of the plans.

Mr. Pritchard expressed concern that preliminary plans would not be used in the future. Ms. Joseph provided some examples of Preliminary Plans from 2008 and 2009 that the Board had approved with very specific recommendations.

There was discussion about what kind of conditions could be placed in the decision; the Preliminary Plan would never be recorded or if the plan is recorded it would need to come back and would have to comply with all conditions/regulations of subdivision.

Mr. De Lisi indicated that he would be filing Definitive Plans within the next 5 months, the 7 month clock started when they filed the Preliminary Plan. He does not know the effect of a denial on the status of the potential freeze.

Mr. Pritchard opined his hope and desire would be the applicants would look at the new zoning bylaw and develop something in line with that since the community approved it.

Ms. Joseph indicated there were no comments from Board of Health. The Sewer Division had minor comments if the plan becomes real they would have to abide by.

Motion:

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Ms. Lambert moved to approve the Preliminary Subdivision Plan of Land at Buckeye Lane and Stockbridge Road, Scituate, Massachusetts by Ross Engineering Company, Inc. dated March 19, 2019 for 1 Buckeye Lane and #261, 253, 251 and 225 Stockbridge Road with direction to guide the development of the subsequent Definitive Subdivision Plan as described below:

• Existing and proposed utilities including stormwater-drainage, sewer and water with comments from the sewer division specifically addressed;

Added language: Direction with respect to... sewer and water available system wide capacities...

• List of waivers;

Change language: Subdivision that minimizes waivers

Observation pits;

• Traffic information;

• As the approval is issued with the understanding that the project is not intended to be constructed and the submission is for the purposes of a zoning freeze, the Planning Board's approval is based on the assertion that the submitted site plans were designed without regard to soil testing and which will be needed if the applicant plans to construct a subdivision and this information shall be included in the Definitive Plan documents which shall be submitted in accordance with provisions in M.G.L. Chapter 41 Sections 81 K to 81 GG and to M.G.L. Chapter 40 A Section 6.

Added language: ...without regard to a number of preliminary plan subdivision requirements including...

Ms. Lewis seconded the motion as amended; the vote was unanimously in favor.

Public Meeting – Preliminary Subdivision Plan – 14 -16 Old Country Way Assessor's Map/Block/Lot: 48-2-56 & 48-2-57 Applicant/Owner: Robert Proctor

Document

- PDF Letter from Mr. De Lisi dated March 1, 2019
- PDF 3711 PRELIMINARY SUB PLANS 3-26-19
- PDF TC stamped appln 4-1-19
- Doc Transmittal Proctor 14-16 OCW PSP dated 4.1.19
- Email to Karen Joseph from Will Branton dated 4.24.19

Attendees: Jeff De Lisi, Attorney; Paul Mirabito, Ross Engineering, Inc.

Mr. Mirabito reviewed the plan.

- Existing site contains 2 single family dwellings
 - o 29,249 sq. ft.
- Preliminary plan shows 2 proposed lots
 - o Cul-de-sac
 - Lots meet current zoning bylaw

Mr. Bornstein indicated this site has been to the ZBA. Mr. De Lisi said it has been twice to ZBA. Last year it was approved for an 8 garage bay scenario. The issue with ZBA was setbacks and impervious pavement issues. The project has been re-conceived based on neighborhood concerns.

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The permit granting authority with the new concept would be the Planning Board. The project has been designed under the old bylaws.

There was discussion about why this legal process is being applied to this particular property; since there is a design concept and ZBA permits have been approved. Mr. De Lisi said the plan shown today will never be built. The reason for doing this is to allow for time to analyze the new bylaw; the new bylaw may allow for better use of the property than what was conceived weeks ago. The applicant may choose to file under the old bylaw or the new bylaw that has not been determined yet. He said this plan will never be built.

No public comments.

Motion:

Ms. Lambert moved to approve the Preliminary Subdivision Plan of Land at 14 - 16 Old Country Way, Scituate, Massachusetts by Ross Engineering Company, Inc. dated March 26, 2019 for 14 - 16 Old Country Way with direction to guide the development of the subsequent Definitive Subdivision Plan as described below:

- Existing and proposed utilities including stormwater-drainage, sewer and water with comments from the sewer division specifically addressed;
- List of waivers;
- Observation pits;
- Traffic information;
- As the approval is issued with the understanding that the project is not intended to be constructed and the submission is for the purposes of a zoning freeze, the Planning Board's approval is based on the assertion that the submitted site plans were designed without regard to soil testing and which will be needed if the applicant plans to construct a subdivision and this information shall be included in the Definitive Plan documents which shall be submitted in accordance with provisions in M.G.L. Chapter 41 Sections 81 K to 81 GG and to M.G.L. Chapter 40 A Section 6.

Language modified same as Buckeye Lane and Stockbridge

Mr. Limbacher seconded the motion as amended; the vote was unanimously in favor.

Public Meeting – Preliminary Subdivision Plan – Pond View Estates 42-46 Country Way Assessor's Map/Block/Lot 53-5-6 & 53-5-4 Applicant/Owner: Charles F. Reynolds, Trustee, Greenbush Trust

Document

- PDF Letter from Mr. De Lisi dated March 1, 2019
- PDF 4016 Preliminary Sub Plan
- PDF Reynolds Authorization
- PDF TC filed appln 3-29-19
- Doc Transmittal Pond View Estates PSP dated 3.29.19
- Email to Karen Joseph from Will Branton dated 4.24.19

Attendees: Jeff De Lisi, Attorney; Paul Mirabito, Ross Engineering, Inc.

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Mr. Mirabito reviewed the plans.

- Existing conditions plan
 - Off Old Country Way Reynolds Package Store
 - o Car repair shop
 - Existing single family home to the rear access off Drew Place
- Proposed condition plan
 - o 2 buildable lots
 - Existing house on one lot
 - Proposed new house on second lot
 - o Proposed cul-de-sac off of Old Country Way
 - 2 existing structures would be razed
 - Likely to result in less impervious are

Mr. De Lisi reiterated that this plan would never be built.

Motion:

Ms. Lambert moved to approve the Preliminary Subdivision Plan of Land for Pond View Estates, Scituate, Massachusetts by Ross Engineering Company, Inc. dated March 21, 2019 for 42 – 46 Country Way with direction to guide the development of the subsequent Definitive Subdivision Plan as described below:

- Existing and proposed utilities including stormwater-drainage, sewer and water with comments from the sewer division specifically addressed;
- List of waivers;
- Observation pits;
- Traffic information;
- As the approval is issued with the understanding that the project is not intended to be constructed and the submission is for the purposes of a zoning freeze, the Planning Board's approval is based on the assertion that the submitted site plans were designed without regard to soil testing and which will be needed if the applicant plans to construct a subdivision and this information shall be included in the Definitive Plan documents which shall be submitted in accordance with provisions in M.G.L. Chapter 41 Sections 81 K to 81 GG and to M.G.L. Chapter 40 A Section 6.

Language modified same as Buckeye Lane and Stockbridge

Ms. Lewis seconded the motion; the vote was unanimously approved.

Public Meeting – Preliminary Subdivision Plan – 7 MacDonald Terrace Assessor's Map/Block/Lot 53-5-19 & 20A Applicant/Owner: Saoirse, LLC

Document

- PDF Letter from Mr. De Lisi dated March 1, 2019
- PDF Aerial Image Figure
- PDF application_for_preliminary_plan_approval2
- PDF NHESP Figure
- PDF Preliminary Subdivision

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Doc Transmittal 7 MacDonald Terrace PSP dated 3.29.19

Attendees: Jeff De Lisi, Attorney; Jeff Hassett, Morse Engineering

Mr. Hassett reviewed the plan.

- Existing conditions plan
 - o Frontage on New Driftway and 7 MacDonald Terrace
 - o 2 Parcels, total a little over an acre
 - 7 MacDonald Terrace parcel
 - Undeveloped parcel frontage on New Driftway
- Proposed plan
 - o Create 3 parcels
 - o Cul-de-sac frontage on New Driftway

The Board opined this would be an important parcel as the Gateway into the area.

Public comments:

Ms. Marylou Consilvio resident at 22 Ford Place asked if the division into 3 parcels would affect MacDonald Terrace or if it would still remain a dead end street. Mr. Hassett indicated there is no intention to build this project as it appears today.

Motion:

Ms. Lambert moved to approve the Preliminary Subdivision Plan of Land in Scituate, Massachusetts Showing a Division of Parcels 53-5-19 & 53-5-20A located at #7 MacDonald Terrace by Morse Engineering Company, Inc. dated March 26, 2019 for 7 MacDonald Terrace with direction to guide the development of the subsequent Definitive Subdivision Plan as described below:

- Existing and proposed utilities including stormwater-drainage, sewer and water with comments from the sewer division specifically addressed;
- List of waivers;
- Observation pits;
- Traffic information;
- As the approval is issued with the understanding that the project is not intended to be constructed and the submission is for the purposes of a zoning freeze, the Planning Board's approval is based on the assertion that the submitted site plans were designed without regard to soil testing and which will be needed if the applicant plans to construct a subdivision and this information shall be included in the Definitive Plan documents which shall be submitted in accordance with provisions in M.G.L. Chapter 41 Sections 81 K to 81 GG and to M.G.L. Chapter 40 A Section 6.

Language modified same as Buckeye Lane and Stockbridge Added language for preservation of the cul-de-sac at MacDonald Terrace

Ms. Lewis seconded the motion; the vote was unanimously in favor.

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Continued - Public Meeting - Site Plan Administrative Review - Municipal Water Treatment Plant Well 17A 90 & 96 Tack Factory Pond Drive

Assessor's Map/Block/Lot 42-4-8

Applicant/Owner: Town of Scituate - Water Division

Document

PDF FullSetStamped_R

- PDF Response to Well 17A WTP Abutters Final 5_17_19
- Email to Karen Joseph from Greg Morse dated 5.22.19
- Presentation materials provided at meeting

Attendees: Tighe & Bond Team - Mike Schrader, Client Service Manager; Alex Bouthillette, Site Designer; Ryan Pavlica, Construction Phase Services

The Board expressed displeasure that there was not a representative from DPW or the Water Department at the meeting. Ms. Joseph indicated there have been several discussions internally with DPW regarding the project and several meetings have taken place between DPW, Tighe & Bond and the Abutters to the project. It is not anticipated the meeting would close tonight.

Mr. Schrader presented the proposed plan for the Water Filtration Plant Well 17A.

- Major features of the site
 - o Water treatment building 50'x 60'
 - o Small water storage tank
 - o Emergency generator
 - o Stormwater treatment pond
- Design review process
 - O Design as originally proposed meets all Town regulations
 - o 2 meetings with residents in the area
 - Goal to push buildings further away from residences and stay out of wetland area
- Water in Well 17A has high level of manganese and iron
 - Water used to be pumped directly into the system
 - Well 17A taken off line due to water quality and complaints
 - Water still needed cross country raw main was constructed
 - Goes through Old Oaken Bucket, can only be used when Old Oaken Bucket online.
 - Old Oaken Bucket taken off line over the winter for emergency repairs
 - O Scituate needs all water sources to sustain the town
- Goal of project
 - o Filter captures solid material and clean water is the result
 - Clean water then goes back into the system
 - Adds redundancy for treatment; multiple pumps
 - Chemical feed systems are mechanically redundant
 - Chemical storage is in a fiberglass or poly tank
 - Then in a sealed tub, designed to capture 110% of the tank in case of spill
 - Alarms system so tanks can't be over filled

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Mr. Schrader explained the process of how the water is filtered. There was discussion regarding the chemicals that are used and stored on site, chlorine, fluoride, potassium hydroxide, and permanganate. He indicated these are standard water treatment chemicals, most are required. He said there are multiple levels of design with the State to meet all sanitary and water treatment codes. He said this is nothing new it is already happening in the town at other facilities.

Mr. Schrader reviewed some of the Site Elements and standards of review. He spoke to the location of the building in relation to the abutters, wetlands and river. The proposed landscape screening will be changed to deer resistant plantings; better plantings to make it look more natural not just the standard arborvitaes. He said the intent is to screen the building from view.

Mr. Schrader spoke to the Site traffic.

- One trip a month for chemicals, one trip a day for Water Department
 - o May vary based on how quickly chemicals are used
 - O Chemicals are pumped into the tanks
 - o WB50 tractor trailer would be making some deliveries
 - o Road will be paved, 16' wide

There was discussion on the number of truck trips being made to the site per month. The Board thought a minimum of 4 trips with potential for 8 trips for deliveries. Mr. Bouthillette indicated it would be more like a minimum of 2 trips per month; some chemicals would be in liquid form and could be delivered on the same truck and some would be in powder form delivered on palettes.

Ms. Lambert asked the applicant to comment on the decent from the road; she opined it is quite steep. Mr. Schrader indicated that the entire site is on fill, it has been designed to minimize additional cut and fill and agreed that it is steep. The maximum grade on the driveway is 8% and is manageable for the vehicles that will be on the site. There was discussion on the winter weather and how it will be managed; the Town will treat for snow and ice.

Ms. Burbine opined the road is very wide, almost the same as required in a subdivision and there will not be two-way traffic. The applicant indicated it was needed for the width at the bottom of the hill for the tractor trailer to maneuver. Ms. Burbine asked if there was any other way to access the facility; the applicant indicated it is the only nearby access road. Ms. Lambert and Ms. Burbine indicated that there used to be a right-of-way from Old Oaken Bucket, but Conservation land would have to be crossed.

There was discussion about the driveway and if it could be more perpendicular; the applicant indicated the reason it is not is to allow the vehicle to come straight in rather than having to make a tight turn. There is really one way in and one way out. Mr. Pritchard asked it the road will be marked as such; the applicant said the vehicles physically will not be able to make a turn. The driveway will be gated at the road.

Ms. Lambert asked how long it takes to unload the trucks; approximately one hour to unload the truck and pumps would be running. Mr. Schrader also said that deliveries are scheduled during the day so there will be no headlights so glare is not an issue and the driveway does accommodate emergency vehicles. Mr. Pritchard asked if the Fire Department has signed off on the turnaround radius. Ms. Joseph indicated she has not received any comments, except from Water Resources Committee, but she will discuss with Fire.

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Mr. Schrader indicated there is no sewage; there is no bathroom on site. The waste generated is residual particulate collected in the tank and pumped to the exiting sewer system; liquid backwash. The applicant indicated it has been analyzed and shown it will not adversely affect the sewer system or any processes at the waste water treatment plant.

Mr. Pritchard asked how often they backwash and how much flow there is on a daily basis. The applicant indicated the design flows are 360 gallons/minute through the filters and backwash can operate once per day. Mr. Pritchard wanted to understand how much additional demand would be placed on the sewer system. The applicant indicated the backwash tank is 31,000 gallons, sized for approximately 3-4 backwashes and this has been coordinated with the Sewer Division.

Mr. Schrader indicated there is a hydrant on site and the stormwater management system has been designed with all regulations in mind. Additionally, he noted the facility has to be by a water source and they need to protect the source by design. He provided further details on the stormwater system.

Ms. Burbine asked how deep the basin for the stormwater will be; currently in the plan it is 3' above ground water and about $2\frac{1}{2}$ ' deep. The Board was concerned the basin was not being fenced with the rest of the site. The applicant said the basin works as an adjacent wetland and only when there is rain will there be water in it; calculations show that within 50 hours the entire basin will infiltrate.

Ms. Joseph indicated the project has not been peer reviewed yet, because it is subject to Conservation Commission; there is a Notice of Intent. The Planning Board will rely on the peer review done for Conservation for the stormwater management.

Mr. Limbacher asked Mr. Shawn Harris, member of the Board of Selectmen and owner of local businesses, his opinion on the design of the 8% slope for the trucks. Mr. Harris asked how many gallons would be needed; the applicant said there are two 475 gallons tanks. There was discussion on the size of the truck being used to make the deliveries and why such a large truck was needed. The applicant suggested that the truck would be making multiple deliveries to different facilities around town. Mr. Harris indicated he had spoken with Mr. Kevin Cafferty about having deliveries made at the main plant and then put into a smaller one ton truck to get to this facility if they are not dangerous chemicals. Mr. Harris opined that there should be another way to deliver these chemicals.

Public Comments:

Ms. Terry Stutzman resident at 110 Tack Factory Pond Drive expressed her concern over that angle of the road; she said the kids in the neighborhood don't use the sidewalks. She said it is not really car traffic they are concerned about it is pedestrian. If the angle of the road was changed the drivers could see pedestrians better. Mr. Schrader said if angle of the road is changed it makes it more difficult to turn, and would require more fill. He indicated that the vehicle being used was discussed with the Town at the first meeting and the Town confirmed this is the vehicle needed; it would be used for other deliveries, maintenance, etc. He said they will discuss again with the Town.

Mr. Steve Delgrosso resident at 77 Tack Factory Pond Drive opined that if some of the design criteria for using a WB50' trailer truck was reduced there could be a smaller vehicle, i.e. the one Mr. Harris uses for deliveries and there could be better access to the road. Mr. Schrader said that DPW did not say it had to be designed around the WB50' trailer, but that is the design standard used for all water filtration plants.

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Ms. Burbine said this is a problem with an access road that is inadequate. She said this issue will need to be discussed later.

Mr. Paul Stutzman resident at 110 Tack Factory Pond Drive commented that in July of 2018 Scituate filed with the Executive Office of Energy and Environmental Affairs for a water transmission line to go from Well 17A to the reservoir/pond. He said this current plan was an alternative to that project and asked what happened to the water transmission line and if it is still an alternative. Mr. Schrader indicated he did look into that plan; it was designed with the idea that some of the iron and manganese would come out before it reached Old Oaken Bucket. Ms. Burbine said further information is needed and would be addressed at a later date.

Mr. Pritchard asked about what kind of noise could be expected. The applicant indicated with the doors closed there would be limited noise from the plant. The building is insulated for temperature, there are no blowers, pumps are not noisy, and the loudest thing would be the generator which would only be on during a power outage or for a scheduled test. There will be HVAC, but it should be in a place that does not affect the residents. The applicant needs to check on the location.

Ms. Burbine asked about the elevation of the storage tank and the building; the tank is 25', the building is roughly 22' tall, the building is designed as a metal building.

Ms. Joseph indicated a comment from Water Resource Committee was received late today with a few questions to be addressed.

- What is the increase in impervious surface?
- Will the concentrations of manganese in the backwash qualify as hazardous material?
- Plans don't reference the 150' non-disturbance buffer zone from the high water mark off Tack Factory Pond Reservoir and from the edge of all tributaries a zoning requirement in the Water Resource Protection District.

Mr. Schrader indicated all this has been addressed in the information they provided in the presentation for tonight.

Motion:

Ms. Lambert moved to accept the applicant's request to continue the public meeting for the Site Plan Administrative Review for the Municipal Water Treatment Plant Well 17A 90 & 96 Tack Factory Pond Drive until June 27, 2019 at 8:30 pm. and to continue the time for action for filing with the Town Clerk until July 12, 2019.

Mr. Bornstein seconded the motion; the motion was unanimously in favor.

Old Business, New Business, Correspondence, Administrative Items, Update

4 Union Street - Garage Door Discussion

Document

- PDF 3784 SITE AS-BUILT 5-7-19
- PDF 16252 PB As-Built Plan Review, 5-21-19

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■ PDF TC filed revised SPAR decision 4 Union 7-3-17

Attendees: John Hallin, Property Owner

Ms. Joseph indicated at the last meeting the Board informally accepted the proposal that the property owner be allowed to replace the garage doors on the existing building at 1 per month. At a recent site visit with Ms. Burbine there were some additional modifications made to the approved plan.

- Snow removal area is crushed stone serving as more parking; planned as grass
- No cape cod berm per the detail
 - Elimination of the berm was discussed with the Town Consulting Engineer at the time of installation and it was determined it was not needed because the pavement is pervious
- No dumpster; trash being handled internally
- Color of clapboard siding and pedestrian door does not match existing color
 - o Mr. Hallin assured the Board the color is the same

Mr. Hallin indicated the decision was made to use gravel in the snow storage area because the plows go over the area and it becomes a mess; there was no intention of having more parking and he is willing to put up "no parking" signs.

Ms. Joseph said the Board should give direction about what the board would like regarding the crushed stone and put a time frame on replacing the existing garage doors.

Mr. Hallin said the doors are more for aesthetics, not for functionality, but he agreed to do it so he will. He would just like to have some time.

The Board agreed to allow 6 months for door replacement; until December 1st. The Board asked Mr. Hallin to put up some "no parking" signs in the crushed stone area. The Board was ok with the change to the berm.

50 Country Way

Document

- PDF 50 CW MUSP TC filed decision 5-21-15
- PDF Declaration of Public Walkway Easement RE 50 Country Way RECORDED 5 15 19(2)
- PDF Declaration of Restrictive Covenant re 50 Country Way RECORDED 5 15 19 (2)

Attendees: Peter Genta, Property Owner; Michael Hoffman, Property Manager

Ms. Joseph indicated the Owner is eager to get a temporary Certificate of Occupancy for Building A. An update on the status of the project was given.

- Landscaping will be done by May 27th, some landscaping has been done
- Grasscrete paving is blocking emergency egress as of today 5/23/19
 - o Mr. Hoffman indicated it has been cleared
- Fire Department concerned that the re-used granite curbing is not angled
 - o Supposed to angled to accommodate the fire truck wheels for turning

Planning Board Meeting Minutes 5-23-19 - Page 16 of 17

- o Parking space near the emergency egress is to be a "compact car" space
 - Mr. Genta indicated they will make a motorcycle spot
- Recorded easements have been provided
 - o Façade of Building A
 - o Access easement
- Some outstanding conditions with regard to traffic monitoring and trash monitoring
- As-Built plan received today is not adequate

Ms. Joseph opined the Board should provide a time frame of when everything needs to be wrapped up, but it is reasonable to grant a temporary Certificate of Occupaquey (CO). She indicated it could be month to two months before everything is wrapped up.

Ms. Burbine opined she would grant a temporary CO, but it is up to the Board; in order to get a permanent CO the project has to be finished.

Mr. Genta indicated that construction is done; he opined these are just paperwork items. Ms. Joseph indicated a couple of other matters to be addressed:

- No Dumpster enclosures; plans show a fence
- Unclear if the drainage system has been cleaned
- Stripping for walkways incomplete
- Public Access
- Bond for \$587K

Mr. Hoffman discussed the dumpster enclosure between Buildings A and B will be an issue in the winter and snow removal and proposed that the size of the fence be reduced to only enclose what is necessary for the dumpster not the entire size of the concrete pad. The Board opined the dumpsters need to be enclosed with vinyl coated chain link fence with fence fabric, green, for privacy per the spec in the plan. The Board agreed to the smaller enclosure so long as the dumpsters handle the amount of trash.

Ms. Lambert does not want to grant occupancy until the fire lane is complete; until the grasscrete is in place.

The Board opined the Fire Department needs to be satisfied with the egress.

The Board would like everything done by July 1st.

Mr. Hoffman asked about the traffic study. The study is take place 6 months from completion of the project to see if traffic is in line with the original traffic study; the applicant to follow up with the company who did the original study.

There was discussion about the trash removal monitoring for 6 months to 2 years after completion; the study should address if there are adequate receptacles over a period of overtime as well as truck traffic.

Mr. Hoffman reviewed some images with the Board for the Public Access Path Sign with wayfinding. This will set a precedent for the rest of the area. There will be a sign at each end with arrow heads providing direction to the Driftway, public access path, and bike path.

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Ms. Joseph asked when the Board would like the performance bond released. It was to cover parking, landscaping, walks and other amenities. The Board agreed to potentially release the Bond on July 1.

The Board authorized Ms. Joseph to sign for temporary occupancy.

Documents

- Email to the Board from Shari Young dated 5.17.19 with agenda for 5.23.19
- Email to the Board from Shari Young dated 5.17.19 with meeting materials for Buckeye & Stockbridge Road
- Email to the Board from Shari Young dated 5.17.19 with meeting materials for Pondview Estates and 28 Longmeadow Road
- Email to the Board from Shari Young dated 5.17.19 with meeting materials for Well 17A, 60 Country Way and Liaison List
- Email to the Board from Shari Young dated 5.21.19 with meeting materials for 7 MacDonald Terrace
- Email to the Board from Shari Young dated 5.21.19 with meeting materials for Well 17A
- Email to the Board from Shari Young dated 5.21.19 with meeting minutes from 5.9.19
- Email to the Board from Shari Young dated 5.22.19 with meeting materials for Well 17A
- Email to the Board from Karen Joseph dated 5.22.19 with meeting materials for 28
 Longmeadow Road, PSP 42-46 Country Way, PSP Buckeye, PSP 7 MacDonald Terrace, and PSP for 14-16 Old Country Way
- Email to the Board from Karen Joseph dated 5.22.19 with meeting materials for 4 Union Street
- Email to the Board from Karen Joseph dated 5.2.19 with meeting materials for 50 Country Way

These items were distributed to the Board electronically.

Ms. Lewis moved to adjourn the meeting at 10:01 p.m. Mr. Limbacher seconded the motion; the vote was unanimously in favor.

Respectfully submitted,

Shari Young

Planning Board Administrative Assistant

Patricia A. Lambert, Clerk

Date Approved: June 13, 2019

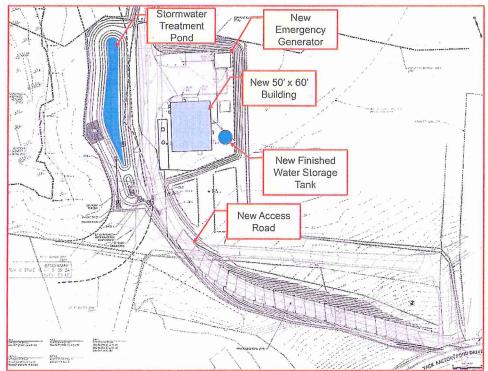


WELL 17A FILTRATION PLANT

Town of Scituate DPW

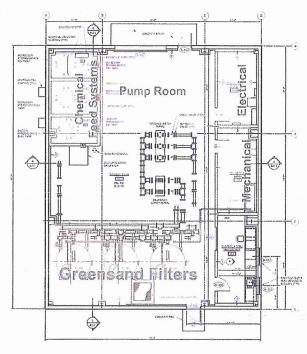
Tighe&Bond

SITE ELEMENTS

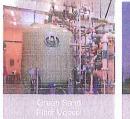


Tighe&Bond

WELL 17A FILTRATION PLANT







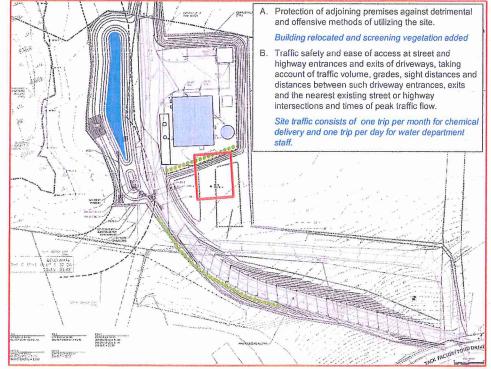


Equipment Summary

- 3 Steel pressure filters
- Finished water pump
 - Chemical feed systems*
- Electrical, mechanical and SCADA systems
- Same chemicals as used previously on site and at all other wells

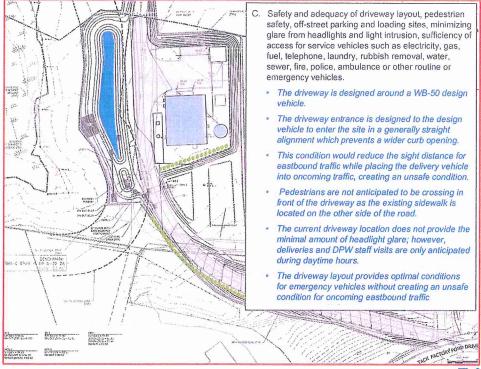
Tighe&Bond

Site Elements - Standard of Review



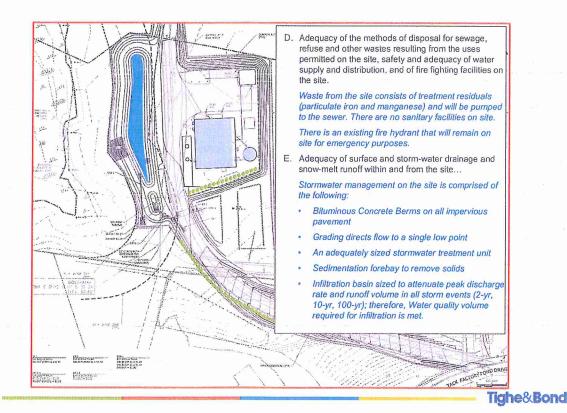
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Site Elements - Standard of Review

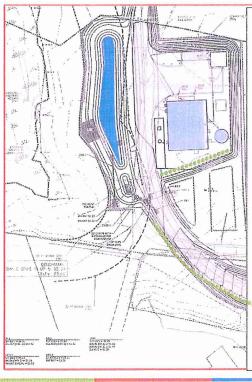


Tighe&Bond

Site Elements - Standard of Review



Site Elements - Standard of Review



If the subject site is located within the Water Resources Protection District, the adequacy of provisions made to protect against toxic or hazardous materials or oil discharge or loss resulting from corrosion, accidental damage, spillage or vandalism through measures such as: spill control provisions in the vicinity of chemical or fuel delivery points, secured storage areas for toxic or hazardous materials or oil, and indoor storage provisions for corrodible or dissolvable materials.

All runoff from the paved driveway runs through a single pipe to the proposed stormwater treatment unit. The pipe is equipped with an isolation valve which can be closed in the event of a spill.

G. Minimizing the volume of cut and fill, the number of trees of 6" caliper or greater removed, the length of stone walls removed, soil erosion, and destruction of other natural features.

Site grading has been minimized by:

- limiting the embankment height along the access road, and
- Using lowest possible finished floor elevation
- This is a densely wooded area that requires tree clearing in all instances.

Approximately 170' of existing stone wall is anticipated to be removed as part of the project.

 Erosion control blankets used on 2:1 slopes for bank stabilization.

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Site Elements - Standard of Review



 H. Minimize obstruction of scenic views from publicly accessible locations.

Screening has been provided to obstruct the view of the building from abutters. The site has also been shifted north as far as permitting allows as a result of two meeting held with the abutters.

Parking areas shall be adequately buffered and shaded using native vegetation. Parking lots with ten or more spaces shall be planted with at least one shade tree per ten spaces, of a caliper of at least 2 1/2 inches dbh, with each tree providing shade to the parking area. Parking areas and visually degrading elements such as dumpsters and loading docks shall be designed to minimize visual intrusion from public ways and residentially owned or zoned areas. In addition, suitable screening of such areas by wood fences and dense, native evergreen hedges of five feet or more at time of planting shall be utilized. The use of chain link fences shall be avoided except in industrial areas. Outdoor lighting, including lighting on the exterior of a building or lighting in parking areas, shall be arranged to minimize glare and light spillover to neighboring properties. No outdoor light shall be located more than twenty feet above the around

The parking area contains only three stalls to allow for DPW staff to access the building. Outdoor lighting is only present directly above the southern building entrance, northern building entrance, and the northern garage bay. The lighting is solely intended to light the threshold and will cast light downward with minimal spillover. No lighting is located higher than 16' off the ground.

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Site Elements - Stormwater Calculations

Required Recharge Volume (Standard 3):

For Class A Soils: F = Target depth factor = 0.60 inch Impervious Area = 0.183 acres

$$Rv_0 = F * Impervious Area = 0.60" * $\frac{1 \ ft}{12"} * 0.183 \ acres * \frac{43560 \ ft^2}{acre} = 399 ft^3$$$

For Class B Soils: F = Target depth factor = 0.35 inch Impervious Area = 0.183 acres

Rv₁ = F * Impervious Area = 0.35"
$$*\frac{1 \ ft}{12"}$$
 * 0.183 $acres$ * $\frac{43560 \ ft^2}{acre}$ = 233ft ³

 $Rv_0 + Rv_1 = 399 + 233 = 632 \text{ ft}^3$

No capture area adjustment is required as all proposed impervious is infiltrated through the proposed BMP's.



Tighe&Bond

Site Elements - Stormwater Calculations

Required Recharge Volume (Standard 3):

For Class A Soils: F = Target depth factor = 0.60 inch Impervious Area = 0.183 acres

Rv₀ = F * Impervious Area = 0.60" *
$$\frac{1 \text{ ft}}{12"}$$
 * 0.183 $acres$ * $\frac{43560 \text{ ft}^2}{acre}$ = 399ft³

For Class B Soils: F = Target depth factor = 0.35 inch Impervious Area = 0.183 acres

Rv₁ = F * Impervious Area = 0.35" *
$$\frac{1 \text{ ft}}{12"}$$
 * 0.183 $acres * \frac{43560 \text{ ft}^2}{acre}$ = 233ft³

 $RV_0 + RV_1 = 399 + 233 = 632 \text{ ft}^3$

No capture area adjustment is required as all proposed impervious is infiltrated through the proposed BMP's.

Recharge Time and Drawdown

Since infiltration occurs in basin, the following Equation from the Massachusetts Stormwater Handbook was calculated using the basin volume:

$$Time_{drawdown} = \frac{V_s}{(K)(Bottom Area)}$$

Vs = Storage Volume = 7,941 ft3

K = 0.085 ft/hr (1.02 in/hr Rawls Rate for Loamy Sand)

Bottom Area = 1,881 ft2

$$Time_{drawdown} = \frac{7.941 \ ft^3}{(0.085 \ f_{kr})(1.881 \ ft^2)} = 49.67 \ hr$$

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Site Elements - Stormwater Calculations

Required Water Quality Volume (Standard 4):

This Site is located within a Zone I Wellhead Protection Area which requires a Water Quality Depth = $D_{WQI} = 1''$.

$$V_{WQ} = D_{WQ} * Impervious Area = 1.0"* \frac{1 ft}{12"} * 0.366 acre * \frac{43560 ft^2}{acre} = 1,329 ft^3$$

Total VwQ = 1,329 cubic feet

Target Volume:

Target Volume is defined as the larger of Required Recharge Volume and Required Water Quality Volume. Therefore, Target Volume = 1,329 ft³ (Required Water Quality Volume). The actual volume to be infiltrated is based on the Town requirements for pre and post development volume. The 100-year storm is almost entirely contained within the proposed infiltration basin. Catch basin, water quality units, and infiltration basin area volumes provided and required are summarized in the following table.

Area, Structure Reference	Recharge Volume (cf)	Water Quality Volume (cf)
Infiltration Basin	7,941	7,941
Catch Basins*	N/A	100
Water Quality Units	N/A	0
Total Volume Provided	7,941	8,041

632

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Site Elements - Stormwater Calculations

Mounding Analysis (Standard 4):

The Stormwater Handbook requires that the 72-hr mound after a 10-yr 24-hr storm does not affect wetland resources or dewatering the basin. The Hantush Method, recommended by the Stormwater Handbook was used with the following inputs:

Rectangular Basin Geometry: $L \times W = 43.37' \times 43.37'$ (the rectangular area is equal to actual basin bottom area and length: width ratio equal to actual basin average length: width ratio.)

Time: T= 72 hours, from Stormwater handbook

Initial Saturated Thickness: $h_i=3'$. The difference between the seasonal high ground water level (3' below grade).

Percolation Rate: $w_{10} = 0.0178$ ft/hr (10-yr, 24-hr storm) and $w_{100} = 0.0274$ ft/hr (100-yr, 24-hr storm). Sample calculation:

$$w_{10} = \left(\frac{P}{t}\right) = \left(\frac{5.14"}{24hr}\right) * \left(\frac{1'}{12"}\right) = 0.0178 \, f_{hr}$$

P = Total Precipitation in inches (10-yr, 24-hr storm)

t = duration of precipitation

Site Elements - Stormwater Calculations

 $\label{eq:hydraulic Conductivity: K = 1.02 ln/hr and K = 0.085 ft/hr (Rawls Rate, given in Stormwater Handbook for Loamy Sand).}$

Specific Yield: $S_{V}=20$. The specific yield was estimated to be 20, since the specific yield for silt is 18 and fine sand is 23 and it is likely that the amount of water drained by gravity for a loamy sand will be between silt and fine sand. (Johnson, A.I. 1967. Specific yield — compilation of specific yields for various materials. U.S. Geological Survey Water Supply Paper 1662-D. 74 p.)

The calculation was performed using the Hantush Method Calculator at http://www.groundwatersoftware.com/calculator-9-hantush-mounding.htm. The Hantush method is referenced to: Hantush, M.S.(1967). Growth and Decay of Groundwater-Mounds in Response to Uniform Percolation, Water Resources Research vol. 3, no.1, pp 227-234. Web pages are attached.

Mounding Analysis Results:

Storm Event	W	Mounding (increase in hydraulic head)	Effect on Wetlands or Downstream?
10-yr, 24-hr	$W_{10} = 0.0178 \text{ ft/hr}$	0.0206 ft	None
100-yr, 24-hr	$W_{100} = 0.0274 \text{ ft/hr}$	0.0329 ft	None



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FIGURE 1 (ORIGINAL)

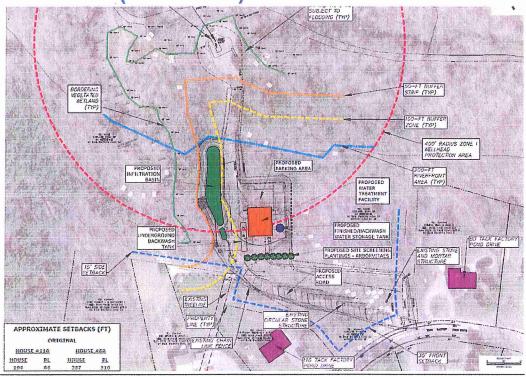
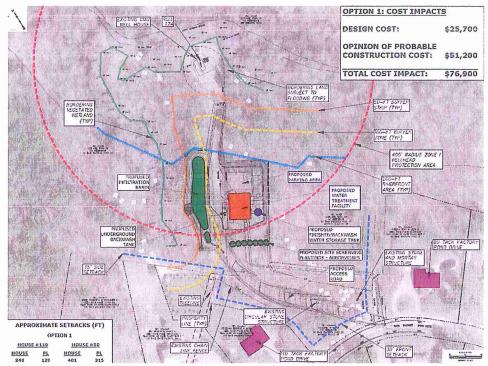
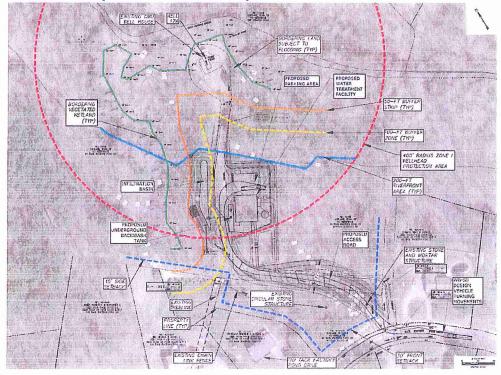


FIGURE 2 (ALTERNATE)



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FIGURE 3 (ALTERNATE)



Recidat meeting 5/23/19

Tighe & Bond, Inc. 1/10/2019

SCITUATE WTP STORMWATER CALCULATIONS

Required Recharge Volume (Standard 3):

For Class A Soils: F = Target depth factor = 0.60 inch Impervious Area = 0.183 acres

Rv₀ = F * Impervious Area =
$$0.60$$
" * $\frac{1 \text{ } ft}{12}$ " * $0.183 \text{ } acres * \frac{43560 \text{ } ft^2}{acre}$ = 399 ft^3

For Class B Soils: F = Target depth factor = 0.35 inch Impervious Area = 0.183 acres

$$Rv_1 = F * Impervious Area = 0.35" * $\frac{1 ft}{12"} * 0.183 \ acres * \frac{43560 \ ft^2}{acre} = 233 \ ft^3$
 $Rv_0 + Rv_1 = 399 + 233 = 632 \ ft^3$$$

No capture area adjustment is required as all proposed impervious is infiltrated through the proposed BMP's.

Recharge Time and Drawdown

Since infiltration occurs in basin, the following Equation from the Massachusetts Stormwater Handbook was calculated using the basin volume:

$$Time_{drawdown} = \frac{V_s}{(K)(Bottom\ Area)}$$
 $V_s = Storage\ Volume = 7,941\ ft^3$

K = 0.085 ft/hr (1.02 in/hr Rawls Rate for Loamy Sand) Bottom Area = 1,881 ft²

$$Time_{drawdown} = \frac{7,941 \text{ ft}^3}{(0.085 \text{ ft/hr})(1,881 \text{ ft}^2)} = 49.67 \text{ hr}$$

Required Water Quality Volume (Standard 4):

This Site is located within a Zone I Wellhead Protection Area which requires a Water Quality Depth = $D_{WQ1} = 1$ ".

$$V_{WQ} = D_{WQ} * Impervious Area = 1.0"* \frac{1 \ ft}{12"} * 0.366 acre * \frac{43560 \ ft^2}{acre} = 1,329 \ ft^3$$

Total $V_{WQ} = 1,329$ cubic feet

Target Volume:

Target Volume is defined as the larger of Required Recharge Volume and Required Water Quality Volume. Therefore, Target Volume = $1,329 \, \mathrm{ft^3}$ (Required Water Quality Volume). The actual volume to be infiltrated is based on the Town requirements for pre and post development volume. The 100-year storm is almost entirely contained within the proposed infiltration basin. Catch basin, water quality units, and infiltration basin area volumes provided and required are summarized in the following table.

Convert Water Quality Volume to Flowrate for SWTU Sizing:

The following calculations are derived from the Massachusetts Department of Environmental Protection Wetlands Program "Standard Method to Convert Required Water Quality Volume to a Discharge Rate for Sizing Flow Based Manufactured Proprietary Stormwater Treatment Practices"

$$Q_1 = qu * A * WQV = 835 csm / inch * 0.0006 mi^2 * 1 inch = 0.501 cfs$$

 Q_1 = Peak flow rate associated with first 1-inch of runoff qu = the unit peak discharge, in csm/in.

A= impervious surface drainage area (in square miles)

WQV= water quality volume watershed inches (1-inches in this case)

Recharge and Water Quality Volume Summary Table

Area, Structure Reference	Recharge Volume (cf)	Water Quality Volume (cf)
Infiltration Basin	7,941	7,941
Catch Basins*	N/A	100
Water Quality Units	N/A	0
Total Volume Provided	7,941	8,041
Volume Required	632	1,329

All volumes calculated are below the elevation of the outlet.

Mounding Analysis (Standard 4):

The Stormwater Handbook requires that the 72-hr mound after a 10-yr 24-hr storm does not affect wetland resources or dewatering the basin. The Hantush Method, recommended by the Stormwater Handbook was used with the following inputs:

Rectangular Basin Geometry: $L \times W = 43.37' \times 43.37'$ (the rectangular area is equal to actual basin bottom area and length: width ratio equal to actual basin average length: width ratio.)

Time: T= 72 hours, from Stormwater handbook

Initial Saturated Thickness: $h_i = 3'$. The difference between the seasonal high ground water level (3' below grade).

Percolation Rate: $w_{10} = 0.0178$ ft/hr (10-yr, 24-hr storm) and $w_{100} = 0.0274$ ft/hr (100-yr, 24-hr storm). Sample calculation:

$$w_{10} = \left(\frac{P}{t}\right) = \left(\frac{5.14"}{24hr}\right) * \left(\frac{1'}{12"}\right) = 0.0178 f_{/hr}$$

P = Total Precipitation in inches (10-yr, 24-hr storm)

t = duration of precipitation

^{*}All catch basins include a 4-foot deep sump, and a 4-feet in diameter. The project plans indicate 2 catch basins are proposed, each having a water quality volume of 50 cf.

Hydraulic Conductivity: K = 1.02 in/hr and K = 0.085 ft/hr (Rawls Rate, given in Stormwater Handbook for Loamy Sand).

Specific Yield: $S_y = 20$. The specific yield was estimated to be 20, since the specific yield for silt is 18 and fine sand is 23 and it is likely that the amount of water drained by gravity for a loamy sand will be between silt and fine sand. (Johnson, A.I. 1967. Specific yield — compilation of specific yields for various materials. U.S. Geological Survey Water Supply Paper 1662-D. 74 p.)

The calculation was performed using the Hantush Method Calculator at http://www.groundwatersoftware.com/calculator-9-hantush-mounding.htm. The Hantush method is referenced to: Hantush, M.S.(1967). *Growth and Decay of Groundwater-Mounds in Response to Uniform Percolation*, Water Resources Research vol. 3, no.1, pp 227-234. Web pages are attached.

Mounding Analysis Results:

Tiedilaling Alle	aryoro recounter		
Storm Event	W	Mounding (increase in	Effect on Wetlands or
		hydraulic head)	Downstream?
10-yr, 24-hr	$W_{10} = 0.0178 \text{ ft/hr}$	0.0206 ft	None
100-yr, 24-hr	$W_{100} = 0.0274 \text{ ft/hr}$	0.0329 ft	None