

From: [Mark Lepkowski](#)
To: [Jennifer Lindo](#)
Subject: Fwd: Upland Review Area
Date: Monday, July 13, 2020 7:49:57 PM

Hi Please see my comments sent to Gary Goeschel before the meeting. Thank you. Mark Lepkowski

Begin forwarded message:

From: Mark Lepkowski <markinel@aol.com>
Date: July 13, 2020 at 6:54:02 PM EDT
To: ggoeschel@eltownhall.com
Subject: Upland Review Area

Mark Lepkowski 13 Rose Lane East Lyme CT.

I am in full support of increasing the upland review area from 100 ft to 500 ft. The upland review area should be consistent with the neighboring shoreline towns i.e. Old Lyme, as a minimum. Thank you.

EXHIBIT BBB

From: [A Basu](#)
To: [Jennifer Lindo](#)
Subject: Wetlands review area
Date: Monday, July 13, 2020 7:54:15 PM

Ms. Lindo-

We are in support of the proposed amendment of enlarging the distance of the boundary for a regulated activity from 100' from an inland wetlands and/or watercourse to 500'.

Thank you,
Arun Basu
Vandana Basu
4 Wynn Circle
East Lyme, CT

EXHIBIT CCC

2018

PROTECTING DRINKING WATER in East Lyme

*COMMISSION for the
CONSERVATION of NATURAL RESOURCES*



Laura Ashburn

Harvey Beeman

Arthur Carlson, Chairman

Mark Christensen

Donald Danila

Penelope Howell Heller, Secretary

Ronald Nichols

A Review of Drinking Water in East Lyme: Sources, Protection Methods and Costs

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APPENDICES

- 1. New London Day, February 17, 2017, By Judy Benson: Tons of road salt dumped last week now finding its way into waterways.**
- 2. Town of Colchester: Fiscal Value of Land Use, 2013. By P. Stahl, LLA, AICP, funded by CT Department of Agriculture, 12p.**
- 3. LIQUID ASSETS: Five large cities invest in upstream conservation to improve water quality for their residents By Amy Crawford, The Nature Conservancy Magazine, Summer Issue, 2017.**
- 4. CTDEP (Connecticut Department of Environmental Protection), 1997. Protecting Connecticut’s Groundwater, A Guide for Local Officials, CTDEP Bulletin No. 26, Sections 1-3, 35p.**

SUMMARY

East Lyme residents get their drinking water from public or private wells that draw groundwater from sediment and rock, called an *aquifer*. Keeping the sources of this groundwater free of contamination must be a top priority of the Town government. An important goal is to locate development projects in places and ways that do not negatively impact the Town's water supply. Effective protection of an aquifer or well field requires knowledge of recharge areas and controlling potential pollution sources within them. The recharge area of a well field is well mapped and is termed the *Aquifer Protection Area (APA)*. East Lyme has seven town wells, each with an APA protected under a state statute that restricts some types of development to protect the water from contamination, an inevitable result when these areas are paved and built upon. Measures such as limiting wastewater discharges and other sources of contamination have been undertaken to protect the well recharge area and the drinking water it provides. Potential public water supply aquifers should also be strategically protected for future use. An important way to maintain a continued supply of clean water is to allow a larger area to remain in its natural state so that all wells can be fully recharged quickly and water needs are fully met, even in a drought.

An indicator of how contaminants can easily reach drinking water supplies is tracking road salts that keep roads usable when it snows. East Lyme's seven drinking water wells are monitored for sodium (salt) levels each year and between 2010 and 2017 those levels have risen. In addition, members of the East Lyme Commission for the Conservation of Natural Resources (CCNR), Niantic River Watershed Committee Monitoring Subcommittee (NRWC), and students from East Lyme High School for six years have sampled streams for aquatic invertebrates as indicators of water quality. Results of sampling indicate that streams at the north end of Town are healthier than those in the southern section. These results have been confirmed for northern streams by more in-depth water testing by NRWC and CT DEEP. Large tracts of undeveloped land in the northern part of Town have contributed to the good health of surface and groundwater resources there.

Stormwater runoff is a common but preventable source of groundwater contamination throughout Town. The negative effects of often unknown contaminant mixtures can be mitigated by pre-treating rainwater before it enters natural waterways. In recent years the Town has implemented several treatment methods (porous asphalt sidewalks, pervious pavers in parking areas, rain gardens and tree box filters) that have shown considerable environmental benefits.

Allowing development over the Town's drinking water supply can provide early tax revenues, but has often quickly been followed by budget-busting service expenses. A study performed by the Town of Colchester looked at the cost to provide town services based on land use. Results showed that costs in town services were on the order of six times greater for residential development than for agriculture or open space. In fact, open space carries virtually no maintenance costs while also providing recreational opportunities and clean water. The necessary capital to purchase land or development rights can be obtained through several outside sources with little or no risk to a town's fiscal wellbeing. By funding upstream conservation projects, towns have successfully protected their drinking water supply with the idea that it is cheaper to stop contamination before it gets to the aquifer and well head than to clean up contaminated drinking water.

RECOMMENDATIONS

- Protect upstream water supplies to maximize the quality and quantity of drinking water at the lowest cost by preventing contamination. Encumber funds to purchase undeveloped land, development rights or easements, in the Pattagansett, Bride Brook, and Four Mile River watersheds, particularly north of existing wells.
- Encourage new development in locations that avoid recharge areas for all Town wells. Such managed growth removes risk of contamination that can have devastating costs.
- Designate significantly larger “Aquifer Protection Zones” surrounding each narrowly defined State “Aquifer Protection Area” for each Town well.
- Encourage Low Impact Development strategies, such as water gardens and minimal impervious surfaces, to maximize stormwater runoff mitigation.
- Minimize the use of road salts and explore alternative methods of road treatment. as sodium levels continue to rise.
- Ensure that hazard mitigation plans are included in all roadway modifications carried out by the Town or CT Department of Transportation.
- Place high priority on keeping the northern section of Four Mile River Watershed undeveloped so its groundwater supply will be available as a future drinking water supply. Appropriate lands are listed in the CCNR’s Open Space Report, part of the Planning Commission Plan of Conservation and Development (POCD).

INTRODUCTION: WHY A REVIEW

Governor Dannel Malloy recently issued an executive order putting into effect a new Connecticut water management plan, calling the State’s water “a public trust...that should be protected for the public’s interest and safeguarded for future generations...” (Hartford Courant, June 15, 2018). The following review presents details of how the Town of East Lyme should best deliver the most important natural resource – drinkable water – to all of its residents. This issue was singled out by former First Selectman Paul Formica as “East Lyme’s big challenge” (New London Day, August 10, 2008). Formica stressed that seven town wells must supply not only nearly 7,000 customers, but also the ecological needs of Town streams and watercourses, which are protected by state law from drawdown if rainfall does not replace what human needs remove. An additional 11,000 Town residents draw their drinking water from private wells, and their water comes from the same sources. To address these needs, Formica highlighted the creation of the Commission for the Conservation of Natural Resources (CCNR) “to give voice to safeguarding open space and watersheds.” This document, in conjunction with the CCNR Open Space Report, (adopted as part of East Lyme Plan of Conservation and Development in 2011) provides accurate guidance for the Town to maintain the same quality and quantity of drinking water available today well into the future. In order for the public to rationally discuss which

actions are the best course for the Town, this document includes a detailed description of where the Town's drinking water comes from as well as definitions of terms used in Town and State regulations. Present constraints and potential threats to the system are also discussed.

WE ALL NEED CLEAN WATER

Recognizing that Nature provides services virtually free is critical to the balance between life sustaining clean water and economic growth. Human activity always places demands on the natural environment, consumes natural resources, and alters the landscape. Yet we all need to have homes, businesses, and schools. However, conservation and development need not be "either/or" activities. The goal is to locate human development in places and ways that we can still reap the freebies Nature so generously supplies to us.

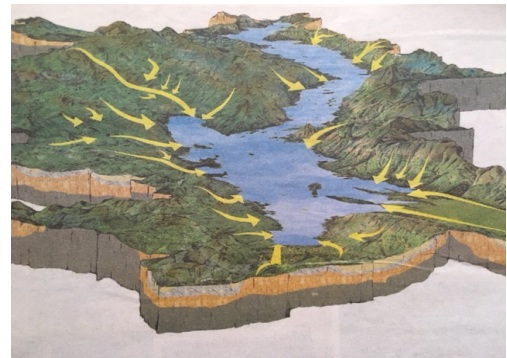
We in East Lyme can thank glaciers for our drinking water. When the glaciers of the last ice age melted back, they left the Town with a wide swath of the best kind of soils to hold a clean water supply. East Lyme residents depend upon this groundwater pumped from public or private wells. Although the Town is now tied into the New London surface reservoir water system, nearly all of our water comes from the Town's wells. And the Town is obligated to share clean groundwater with the New London system in winter when there is excess supply and lower demand in East Lyme.

WHERE DOES OUR DRINKING WATER COME FROM

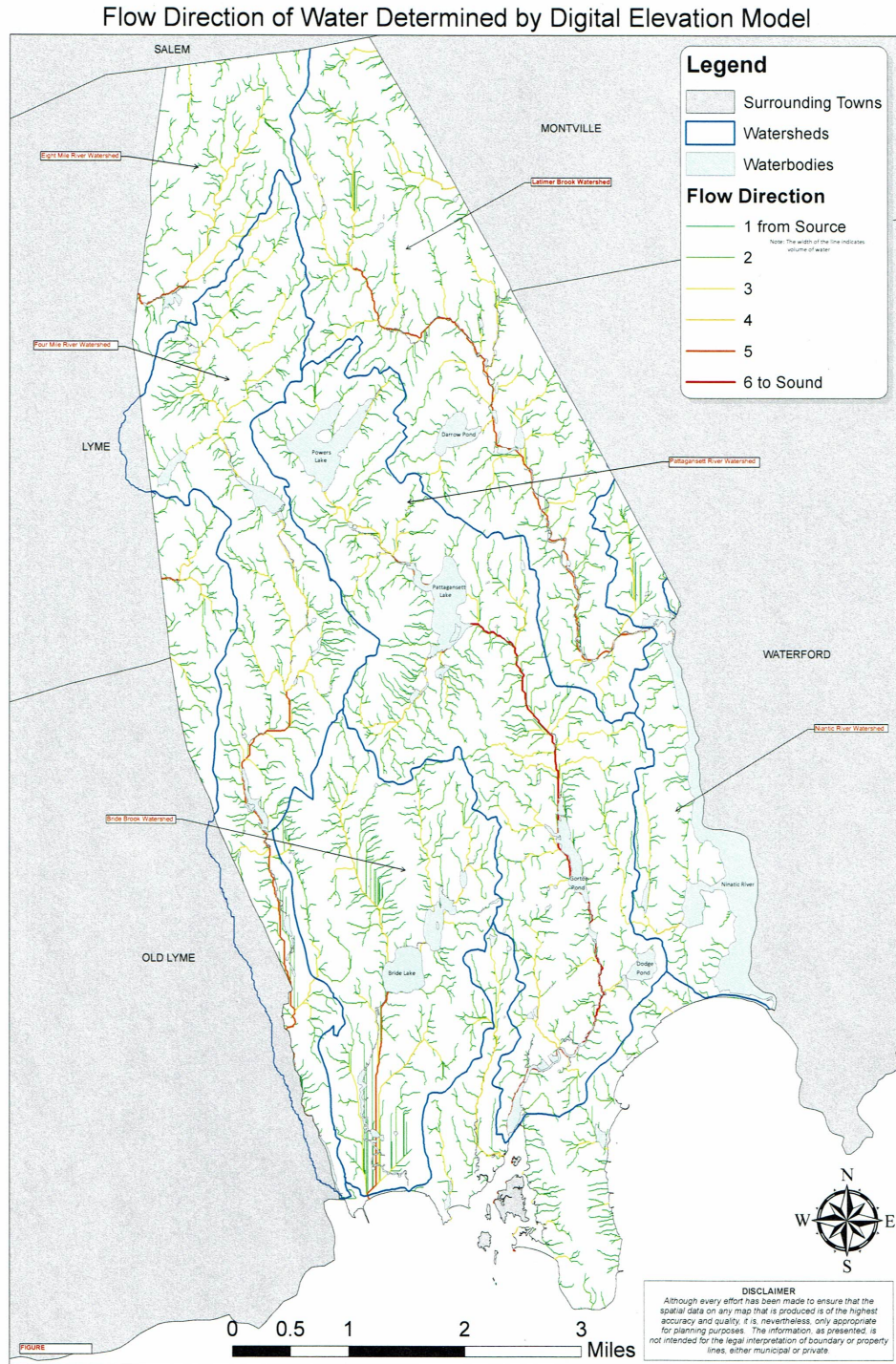


Our drinking water begins as rain or snow. Where it goes from there depends upon soil type, vegetation, and human-altered land usages. If it falls on steep slopes, roofs or pavement, water tends to flow quickly and much of it goes directly into stormwater collection systems. On flatter surfaces, particularly vegetated areas, much of the water slowly **infiltrates** into the soil. The water moves downward between the soil particles or bedrock fractures. This is how **groundwater** forms, a process called **recharge**. Groundwater occurs at varying depths depending upon the size and number of spaces in the sediments or rock, which is termed **porosity**. The connection between these spaces is called **permeability**. Soil near the surface, called the **unsaturated zone**, contains both water and air, whereas deeper layers, called the **saturated zone**, have all pores filled with water. The top of the saturated zone is termed the **water table**.

A natural area holding water, both on the surface and in the ground, is called a **drainage basin** or **watershed**. Think of a watershed as a bathtub, with its rim formed by relatively high land that divides it from adjacent watersheds. The tub's drain is the lowest point of the watershed, draining water downstream via gravity into another, larger watershed and eventually into Long Island Sound.



East Lyme's four watersheds are delineated by the dark blue lines; thinner lines show the various paths rainfall takes from its source to Long Island Sound. These line colors change to match the increase in the volume of rainwater runoff. Note that much of the Town's drinking water is collected from undeveloped lands in the northern section of East Lyme where it is less affected by sources of contamination.



Much like surface water, groundwater also flows downstream within a basin, such as from hills into valleys, and finally discharges directly into wetlands, rivers and streams, or lakes and ponds. In fact, where groundwater intercepts the ground's surface, a spring or stream is formed. Groundwater maintains water flow in small streams in the absence of rain, although drought conditions can cause small streams to dry up or be reduced to isolated pools.

A geological formation of sediments and rock yielding a usable quantity of drinking water within a watershed is called an **aquifer**. A particular watershed can contain more than one aquifer. The amount of usable water depends upon the physical geology, recharge characteristics, porosity, and permeability of the aquifer. For example, an aquifer made up mostly of clay can hold twice the water of a sand aquifer, but since its many pores are so small the water does not flow fast enough to support withdrawals by a well. Thus, the best aquifers are both porous and permeable. The rate at which water can be transmitted through an aquifer as well as the thickness and geographical extent of the aquifer determines how much water can be withdrawn without causing complications to a system. Since much of an aquifer usually has a low elevation gradient, groundwater flow tends to be slow, with water moving only an inch to several feet a day. A very productive type of an aquifer was created by glacial action occurring about 10 thousand years ago in Connecticut. When the glaciers receded they left large deposits, called **till**, ranging from fine clays to huge boulders. Due to processes occurring during glacial retreats and melting, particularly thick layers of similar-sized particles of sand and gravel were laid down, called **stratified drift**, that have high porosity and permeability. This is the most productive source of groundwater and can be tapped for millions of gallons of clean water a day. Some of East Lyme's public well fields withdraw from stratified drift aquifers. However, it is likely that many private wells in Town were dug into shallow till soils yielding only a few hundred gallons per day, whereas others draw water from much deeper, fractured bedrock layers.

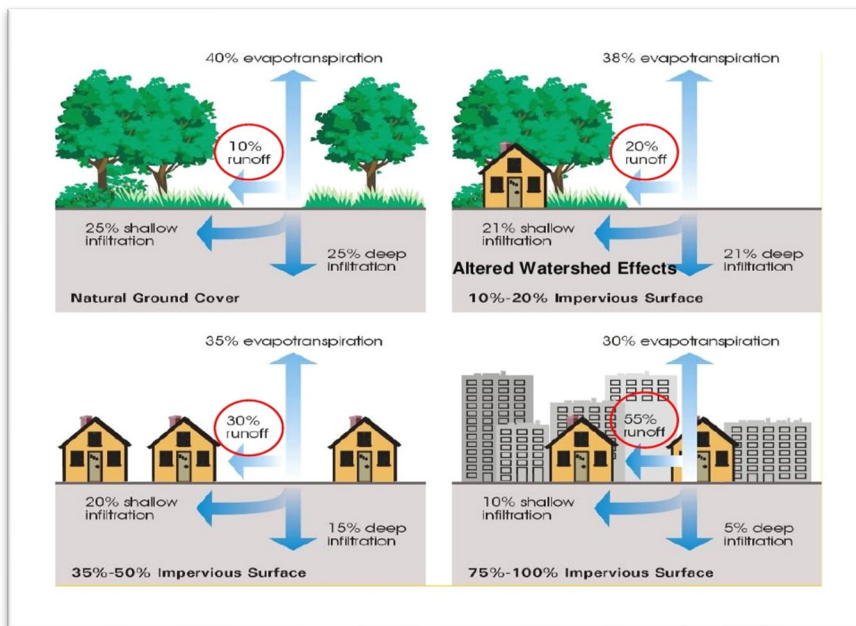
Unless under pressure, which moves water upward without further action (an **artesian well**), well water must be pumped to the surface for processing and distribution. Pumping actions cause the water table around the well to form a **cone of depression**. This action causes additional water to flow toward the well from all directions. The size of the cone of depression can vary considerably, from tens to thousands of feet, depending upon geology and pumping rates. The area that resupplies water into the cone of depression is called the **well recharge area**. In turn, the size of the well recharge area depends upon physical and hydrological characteristics of the aquifer and the rate of pumping.

Not all water drawn by a well was initially groundwater. As previously noted, groundwater also enters many surface water bodies. In turn, **induced infiltration** occurs when well pumping lowers the water table such that some surface water flows downward into the groundwater aquifer. Note that many of East Lyme's wells are located near the Town's lakes and streams, which likely help recharge the wells. However, mostly this process occurs at a distance from the well recharge area, and may be referred to as an **indirect recharge area**. The possibilities of any contamination of the well are less likely from an indirect recharge area than in the well recharge area.

Protecting Our Well Water Supplies

Only a portion of a watershed contributes groundwater directly to an aquifer. Thus, effective protection of an aquifer requires knowledge of recharge areas and controlling potential pollution sources within them. The recharge area of a well field is termed the **Aquifer Protection Area (APA)** and is delineated based on a formulation stipulated under state statute. The formula involves computation of average rainfall, water flow through the local geology and the size of its served population. This legal prescription ensures that each town well can supply an adequate minimum quantity of water under historically averaged conditions but does not protect the quality of drinking water or consider changing hydrological conditions.

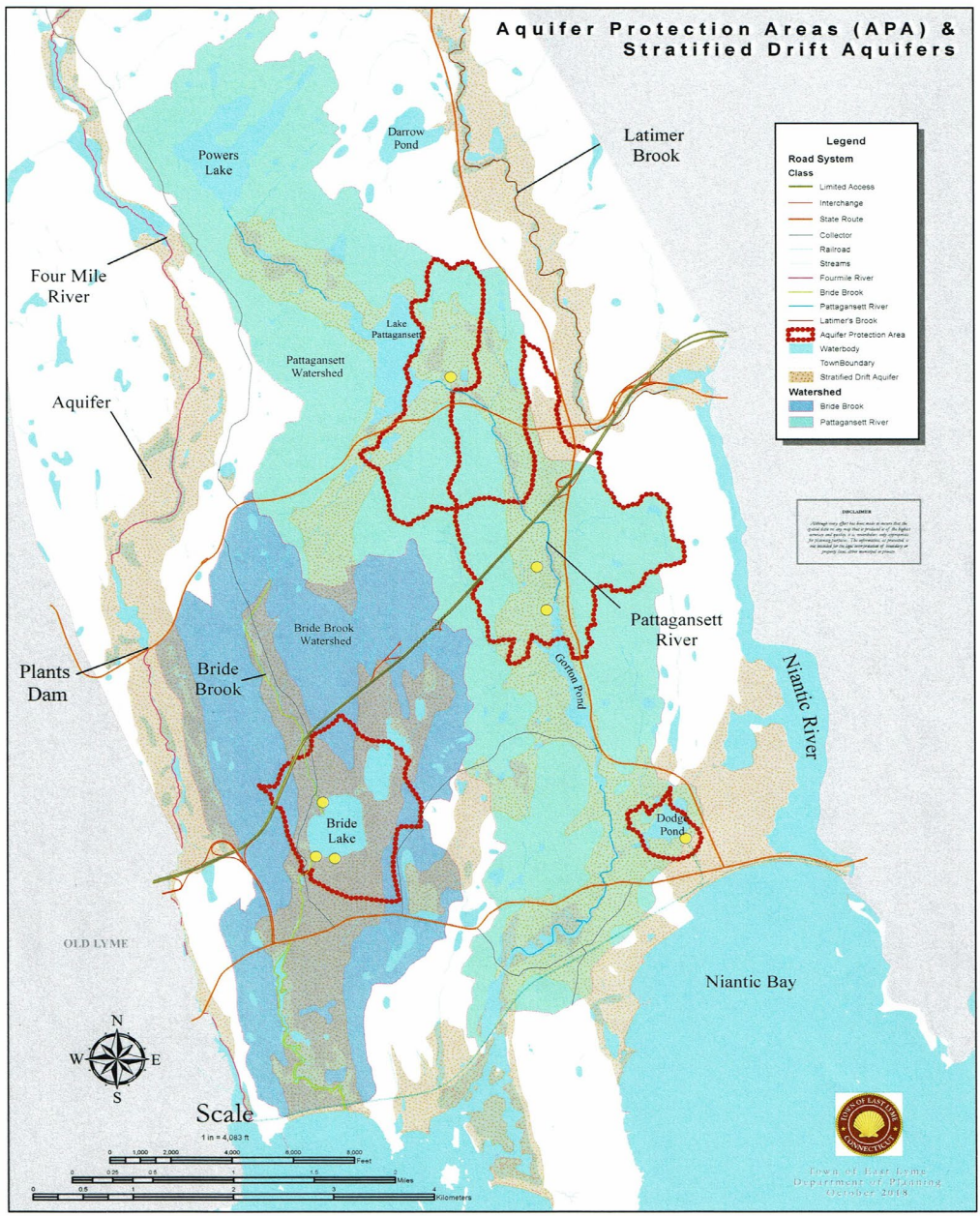
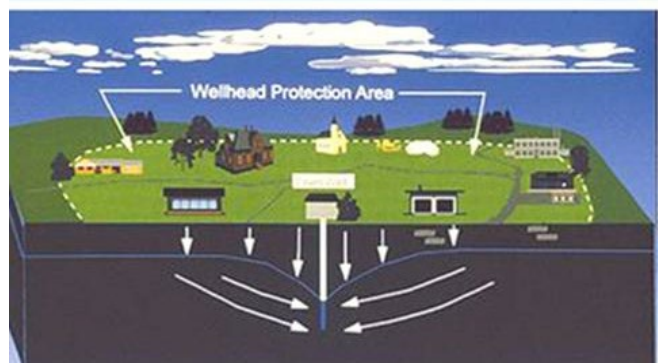
An important way to maintain a continued supply of high quality drinking water is to allow a larger area surrounding the Town's wells to remain undeveloped so that the risk of contamination remains low and water supplies can be replenished quickly even in a drought. Keeping forested areas adjacent to the Town's wells undeveloped should be a priority, which not only protects drinking water supplies but also allows for recreational activities at little additional cost. Development is somewhat restricted by present law in the area directly surrounding each of the Town's seven wells in order to minimize contamination, an inevitable result when these areas are paved and built on, as shown below.



The relationship between impervious surfaces (such as roads and roofs) and surface water runoff is direct: According to the US Inter-agency Stream Restoration Working Group, as little as a 10% increase in impervious cover can result in degraded water quality; likewise a 50% increase in impervious cover triples surface runoff and reduces water supplies retained in the soil by two-thirds compared to natural ground cover.

Of note, **potential public water supply aquifers** should be strategically protected for the needs of future development. Examples of need include future population growth or a potential loss of a currently operating well from pollution that cannot be mitigated. These potential aquifer areas can be accurately delineated with the current knowledge of area geology and hydrology within the Town to conserve water resources for coming generations.

State designated "Aquifer Protection Areas" in East Lyme are shown below. Note that only the groundwater adjacent to each well is protected from adverse development by the state statute. Groundwater supplies upstream of these areas are not included and therefore are protected from contamination only by Town laws or if designated as open space.



PROHIBITED USES IN WELLHEAD PROTECTION ZONES BY CT STATE STATUTE

These activities are prohibited within each Aquifer Protection Area but are not limited outside these narrowly defined areas.

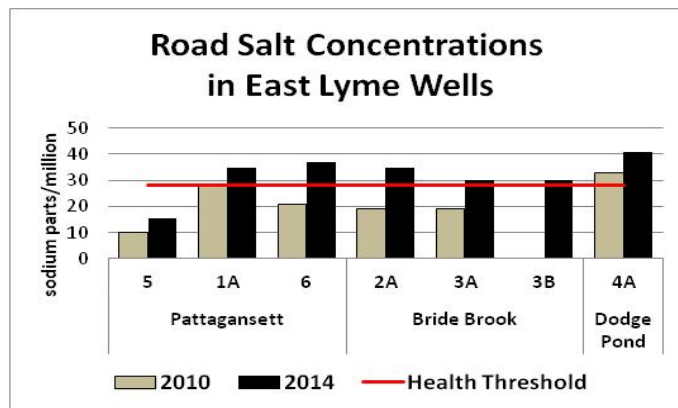
Oil or petroleum dispensing for the purpose of retail, wholesale or fleet use
Salvage operations of metal or vehicle parts
Wastewater discharges to ground water other than domestic sewage and stormwater
Production of or refining of chemicals
Clothes or cloth cleaning service (dry cleaning)
Generation of electrical power by means of fossil fuels
Production of electronic boards, electronic components, or other electrical equipment
Furniture stripping operations
Storage, treatment or disposal of hazardous waste under RCRA permit
Pest control services
Production or fabrication of metal products
Printing, plate making, lithography, photoengraving, or gravure
Accumulation or storage of waste oil, antifreeze, or spent lead-acid batteries under a General Permit
Production of rubber, resin cements, elastomers or plastic
Storage of de-icing chemicals
Accumulation, storage, handling, recycling, disposal, reduction, processing, burning, transfer or composting of solid waste under a permit
Dyeing, coating or printing of textiles, or tanning or finishing of leather
Production of wood veneer, plywood, reconstituted wood or pressure-treated wood
Pulp production processes



Source: CT DEP 'Protecting Connecticut's Groundwater'

THE CURRENT STATE OF OUR DRINKING WATER

For a clear indicator of how contaminants can easily reach drinking water supplies, you only have to track the use of road salts that keep our roads usable every time it snows. East Lyme's seven drinking water wells are monitored for sodium (salt) levels each year and those levels are rising. A threshold of 28 parts/million has been established as a warning level for people on a sodium-restricted diet so they can discuss their water consumption with their physician. When tested in 2010, all wells except Dodge Pond in the middle of Niantic village tested below this warning threshold for sodium. However by 2014, only one well (#5, the only well north of Interstate 95 and Route 1) tested below the warning threshold (see *Appendix 1 for more details*).



Sodium concentrations at seven town wells increased from 2010 to 2014 in three town watershed areas due to runoff from road salt. The heart-disease related health threshold of 28 parts/ million was also exceeded in all but one well. Testing through 2017 resulted in values ranging from 10-46 parts per million for all wells combined.

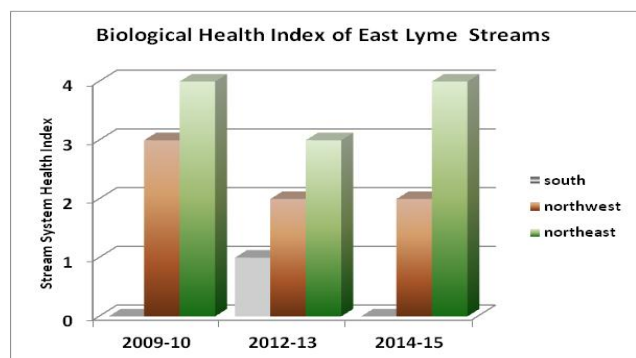
Well water testing has also shown that completely removing a contaminant source can result in it being slowly cleansed from the water supply. MTBE (Methyl-Tert-Butyl-Ether) is an effective octane booster, but a carcinogenic gasoline additive that mixes readily with water. It was in common use beginning in the 1990s. When its toxic properties were made known, it was banned by state regulation in 2004. Testing at Well #6 in the middle of Town found an unexpectedly high concentration of MTBE. Although below the EPA hazard level, it had probably seeped into our water supply from spills at surrounding gas stations through 2010. Later testing at this well showed a steady decline in MTBE concentration, which was down to below half the original level by 2015 and 2017. Swift elimination of contaminant sources can be effective but often involves years of expensive monitoring. With the aid of intact natural cleansing processes, these expenses can be reduced or even eliminated.

We all have a stake in keeping our drinking water clean and plentiful. And as stakeholders we have to understand that groundwater can be more vulnerable to damage than a surface reservoir because you can't see it. Contamination in groundwater is much harder to detect, collect, or contain the damage. **Keeping the water under our feet clean is one of the most important things all townspeople can do to keep taxes low, services high, and clean water flowing to all of us.**

Statewide Riffle Bio-Assessment for Volunteers (RBV) Program

According to the Isaac Walton League of America, whose scientists spent six months studying water quality monitoring programs in states across the country (WTNH, April 29, 2016), most states received a D or F as a grade. Connecticut received a C+. However, the report stated that Connecticut only monitors about 10% of its streams and rivers for pollution, citing just 30 permanent water quality monitoring stations across the state. To make up for inadequate State staff, CTDEEP has trained more than 300 volunteers to sample streams for sensitive aquatic insects around the state as a rapid method of locating the most pristine surface waters (see www.ct.gov/deep/rbv for details of local and statewide sampling results).

Members of CCNR, Niantic River Watershed Committee Monitoring Subcommittee (NRWC), and students from East Lyme High School have been among these volunteers for more than six years. Results of sampling the Town's streams have been mixed. Streams at the north end of Town (Latimer Brook, Cranberry Meadow Brook, the northern section of Four Mile River) are healthy. However, the middle section of Four Mile River and the southern section of Pattagansett River appear impaired. These results have been confirmed for northern streams by more in-depth water testing by NRWC and CT DEEP. Large tracts of undeveloped land in the northern part of town have contributed to the good health of surface and groundwater resources there. However, it appears that the health of streams in the south-central part of Town may be impacted by uncertain sources.



Stream sampling for sensitive aquatic insects at eight stream sites show that northeast stream sites are very healthy (index >3); northwest stream sites are slightly impaired (index 2-3), and the southern site is consistently impaired (index <1).

THE ECONOMICS OF CLEAN DRINKING WATER

Development over a town's aquifer flow is no small economic issue. East Lyme can learn from the problems faced by other towns that rushed to industrialize in earlier years. For example, groundwater in Southington, CT, was contaminated over many years in the 1980s (water typically flows through an aquifer from inches to a few feet per day). The town's residents have had to resort to other water sources for decades. The groundwater was finally clean enough by 2016 to be pumped to the town's treatment plant to be discharged into the Quinnipiac River (Hartford Courant, March 18, 2016). The clean-up process has cost the town and the affected industry millions of dollars, as well as lost good use of 57,000 gallons of water each day for over 30 years. Like all development that puts water supplies at risk, Southington's ground water will still have to be constantly monitored for contaminants, in this case at the town's expense since the responsible industry went bankrupt.

Fiscal Value of Land Use

A study performed by the Town of Colchester (see Appendix 2) looked at the cost to provide town services based on land use, estimated potential future development, and zoning regulations. Tax revenues were allocated across three categories of land use (Residential, Commercial /Industrial, Open Space/Farm/Vacant) and analyzed in reference to five categories of associated expenditures (General Government, Public Safety, Public Works, Community and Human Services, Capital Projects/Debt Payments, and Education). The results of this analysis for Colchester (year 2012-2013) indicate the dollar cost of services for every dollar paid in local taxes by land use category was as follows:

Residential= \$1.14 Commercial/Industrial=\$ 0.18 Open Space/Farm/Vacant=\$0.18

This analysis went on to estimate the maximum development possible in a community. Current land use was determined from the town's Grand List. Site limitations included rivers, streams, lakes, and associated buffers, wetland soils, and areas with steep slopes that were identified using the town's GIS database. While increased population would increase revenue, *the resulting increase in demand for services more than offset the income*, resulting in an estimated 3.6 mill rate increase needed to balance the budget. This report also showed that other towns had seen similar results:

“Findings in similar studies across the country have found that growth over time increased the cost of services greater than the accompanying revenue, requiring a mill rate increase to balance the budget.”

To offset the fiscal impact of growth, many towns have adopted an aggressive agricultural land and open space acquisition, either by outright purchase of land or the purchase of development rights. The funding source is usually through a partnership among one or more towns, local and regional land trusts, non-profits, or state and federal agencies.

For example, the Town of Pomfret, CT, purchased the development rights to the MacDaniel farm for \$600,000 in 2007. Over a 20 year time period, the net cost (price, interest and cost of services less the tax revenue generated) was projected to be \$706,471. However, if that land had been developed into single family residences, the 20-year net expense (taxes paid on above-median assessed homes less the cost of services to residents) was projected at \$2,495,909 over the same period. By purchasing the development rights to the farm, Pomfret saved \$1,789,438 over the 20-year period. As a bonus, the town was able to maintain a working farm that is “part of the local economy and the rural landscape that is enjoyed by all”.

Obtaining the initial capital required to purchase land or development rights can appear to be an insurmountable obstacle. However there are several avenues available to obtain the necessary funds with little or no risk to a town's fiscal well being. State and federal grants are available that can be paired with available town funds or grants from non-profit organizations (e.g. Trust for Public Land, The Nature Conservancy). Even if initial capital is obtained through a Town bond issue, the annual cost to each East Lyme tax payer would be less than a night out for pizza: the estimated cost of borrowing \$1,000,000 for 20 years at 3% annual interest divided by 9,000 tax paying units is \$7.39.

STORMWATER: A Preventable Source of Drinking Water Contamination

Stormwater almost always carries substances picked up from the surfaces on which it travels: paper and plastic litter, dirt, chemicals, road salts, animal waste, fertilizers, pesticides and herbicides, and dissolved metals. The negative effects of these often unknown mixtures can be mitigated by treating stormwater before it enters natural waterways. Newer treatment designs have removal efficiencies of 80 to 100% for sediment (aka TSS or Total Suspended Solids), hydrocarbons, nitrogen, and zinc. So called Low Impact Development (LID) treatment designs that have considerable environmental benefits include:

- porous asphalt or concrete paving,
- interlocking pervious concrete (or other material) pavers,
- small bioretention systems , such as rain gardens or tree box filters
- large bioretention systems, such as subsurface gravel wetlands or constructed wetlands

Which stormwater treatment method to use depends upon the specific situation in question: the type and size of development producing stormwater, estimated volume of water to be treated, the area available for treatment processes, and economic and aesthetic considerations. Pervious or porous paving options are used to decrease the amount of run-off that would occur from otherwise impervious surfaces. A large portion of stormwater is allowed to percolate into underlying soils and join groundwater rather than flowing as a sheet to be eventually collected within a stormwater sewer system and discharge into a natural water course. An advantage of these methodologies is that they perform as transportation surfaces as well as effectively reducing stormwater runoff without requiring additional space. In addition, these surfaces speed snow and ice melt, thereby reducing road salt needs in winter. For example, a porous pavement stormwater management system in New Hampshire was monitored for performance over a 5-year period and showed that peak stormwater flows were reduced by 90% in comparison to non-pervious surfaces. Despite subfreezing winter temperatures that resulted in frozen soils underlying the pavement, infiltration capacity was not reduced nor was there any frost-heaving. Measurements of petroleum, zinc, and TSS were nearly all below detectible limits, although little or no phosphorous, nitrogen, or chlorides were removed.

Rain gardens and tree box filters (aka “bioretention” methods) use plants as the removal mechanism. These two methods are limited to processing contaminants having relatively low concentrations so as not to harm the plants. The contaminants are removed by storing them within plant structures (roots, stems, leaves) by physiological conversion into less harmful substances, by conversion into vapors that are released into the atmosphere, or by adsorption onto root surfaces where microorganisms break down specific chemicals. The plants also slow down the movement of stormwater as they act like a pump withdrawing a volume of water. Hardy plant types that can perform the removal services (called “phytoremediation”) must be carefully selected and planted. Similarly, plants selected for a rain garden must be capable of removing contaminants and need to be continually maintained. Rain gardens are most successful in locations having relatively small volumes of stormwater and cannot effectively handle significantly large storm events. These gardens are constructed so that stormwater flows into a depression that holds it long enough to allow for infiltration into underlying or adjacent

soils. Rain garden soils need to be constructed with the correct proportions of sand and silt to function properly.

Tree box filters are small bioretention systems that are integrated within a stormwater catch basin system discharging the water elsewhere. The tree filter is composed of a concrete box installed in the ground, filled with a soil and stone or gravel mix, and planted with a species of tree or shrub that can perform phytoremediation. The plant roots and soil mix in the catch basin box remove stormwater pollutants through phytoremediation as well as by microbial actions. Tree box filters can be retrofitted into existing stormwater systems and so do not require additional space in the landscape. Like a rain garden, tree box filters are most effective in capturing lower volume flows. Tree box filters are capable of removing more than 83% of TSS, 43% of nitrogen, 60% of phosphorous, 33-95% of heavy metals, 57-85% of bacteria, and 85% of oils and grease.



Larger bioretention methods designed to treat stormwater approximate the look and function of natural wetlands and can have a variety of attributes and designs, ranging from a system used solely for treating stormwater to those that also provide for a reuse of the water, wildlife habitat, or various public uses. They provide cost-effective methods to treat relatively large volumes of stormwater employing removal processes similar to other bioretention methods. Constructed surface wetlands can consist of pond(s), marsh, or extended detention structures. Each type of constructed wetland or pond has specific components with respect to size and design.

All constructed wetlands and ponds use natural physical, geochemical, and biological processes to slow stormwater flows, capture TSS and debris, and treat contaminants. A constructed wetland is typically built in an upland area outside the floodplain of a natural water course, which avoids damaging natural wetlands and streams. Stormwater either flows through the wetland naturally or is pumped into it for treatment. Typically, these types of pollution controls have three components, including an impermeable liner or layer, such as clay, which prevents the infiltration of pollutants into underlying aquifers, a gravel layer that acts as a substrate for plant roots, and within which stormwater flows and bioremediation takes place, and an above-surface vegetated zone which should use native wetland plants appropriate for the area (suitable species are listed in CTDEP 2004). Another type of system is a subsurface gravel wetland, comprised of a dense plant root mat, crushed stones, and associated microbes to reduce stormwater pollutants and flow volume as a horizontal filtration system. The subsurface crushed stone is the primary flow path for stormwater and contains microbes and infiltrated plant roots to remove contaminants. An anaerobic (without oxygen) zone is required to be established within the crushed stone layer for proper microbial action. This system has great capacity to reduce peak runoff and improve water quality, particularly by removal of phosphorus and nitrogen. Some pollutants are filtered out and bound in place (e.g., heavy metals) and others are degraded (e.g., nitrogen species by denitrification). Heavily contaminated stormwater requires a large wetland to treat the pollutants by having larger sections and the corresponding materials to process pollutants and increase the retention time. The wetlands environment must be maintained to continue its functionality. Continued exposure to contaminants may decrease

biological functions. Natural events such as large storms, or invasive plants or animals causing damage may reduce the long-term effectiveness of a wetland.

Background References Used for this Section:

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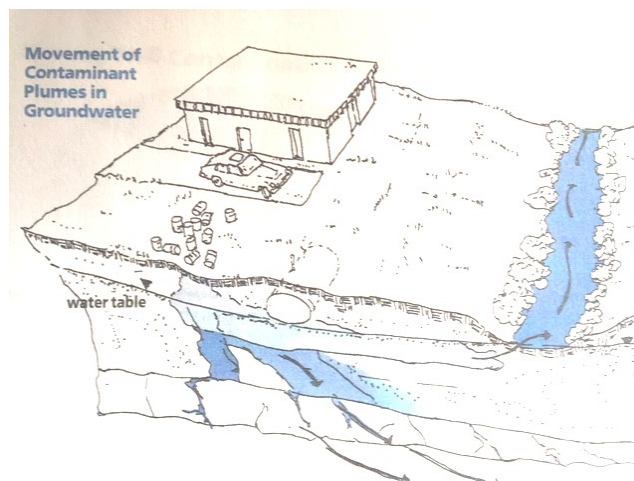
SECURING THE FUTURE OF DRINKING WATER RESOURCES

The major conclusion of this review is the urgent need to protect upstream water supplies from contamination in order to maximize the quality and quantity of drinking water acquired from present and future sources. Preventing damage to future water sources will remove from future generations the financial risk of mitigating contamination or the necessity of purchasing out-of-Town water supplies.

These problems have been successfully faced by several very different towns and cities (see Appendix 3 for full details). Human development always puts pressure on the quality and quantity of drinking water supplies, but by funding UPSTREAM conservation projects, cities and towns have successfully protected their drinking water supply. Upstream conservation starts with addressing deforestation, soil erosion, and agricultural runoff into headwaters, with the idea that it is cheaper to stop the problem before it gets to a population center. Preserving natural freshwater ecosystems are as integral to a sustainably priced drinking water system as are constructed reservoirs, treatment plants, and piping networks.

The successful programs outlined above have demonstrated the need for government agencies, utility companies, non-profit organizations, and the public to work together to design and invest in conservation efforts. An annual goal of just 2% of water usage fees from end users can adequately fund the necessary upstream projects. Almost all of the cost of providing high quality drinking water is not the water itself or initial construction but in maintaining the pipes and infrastructure. For a complete description of groundwater issues and guidance for municipalities, see "Protecting Connecticut's Groundwater" published by the CT Department of Environmental Protection (Appendix 4).

A high priority should be placed on keeping the Four Mile River Watershed undeveloped so its groundwater supply will be available as a future drinking water supply. The section north of Interstate 95 is particularly valuable because it would not be affected by accidental toxic spills on the highway (see map in the 2011 East Lyme Plan of Conservation and Development). The Connecticut Legislature passed the 'Community Investment Act' that collects money from all property sales and these funds can be used for land conservation. East Lyme can use the money it receives from this fund each year to fund projects like those discussed here to protect the Town's drinking water BEFORE expensive problems arise.



APPENDIX 1: New London Day, February 17, 2017, By Judy Benson Tons of road salt dumped last week now finding its way into waterways



A crew moves road salt stored in the area of Adm. Harold E. Shear State Pier in New London as it is unloaded from the Malta flagged bulk carrier Seaharmony at the pier Sept. 1, 2016. (Dana Jensen/The Day file)

With weekend temperatures heading into the high 40s, the lumpy masses of encrusted week-old snow from last Thursday's blizzard will be shrinking fast, melting into runoff that takes with it the last of the tons of salt dumped on roads during the storm that hasn't already made it into storm drains and waterways.

In this region, much of that salt came from DRVN Enterprises, a company located at State Pier in New London for the last three years that supplies rock salt mixed with calcium chloride and lignin, an organic tree extract, as well as pure rock salt imported from Egypt.

"Certainly since last week's storm, the pace here has been frenetic," Steve Croce, senior associate at DRVN, said Friday. Salt sheds emptied in the storm have needed refilling for customers including town highway departments, the University of Connecticut, Mohegan Sun and several condominium complexes, he said.

"We did have to restock after the storm," said Daniel Matheson, assistant director of public works for Waterford. The town, he said, used about 500 to 600 tons of treated salt from DRVN on its roads and parking lots for schools and municipal buildings during the blizzard, a "brutal" onslaught of heavy snow that became compacted on roadways.

In New London, Public Works Director Brian Sear said the city switched to the treated salt from DRVN about three years ago, when it and many other communities stopped using a sand-rock salt mixture that left catch basins and roadside streams clogged with sediment that often carried high amounts of oil, gas and other contaminants. For last week's storm, the city used about 400 tons of treated salt — about \$100,000 worth — on its 64 miles of roads, plus the parking lots of schools and town buildings.

"It's a very expensive part of our storm response, more than the labor or fuel costs," Sear said.

Because of the additives, he said, the material is less corrosive to cars and adheres to pavement better than plain salt, which bounces onto sidewalks and irritates the paw pads of animals who walk on it. Because of the organic coating, the treated salt doesn't cause the chemical burns dogs experience on regular salt, often shortening their morning walks.

Croce said the owner of DRVN, Steven Farrelly, often brings his dog to State Pier, and has noticed the difference with the treated product.

"His dog doesn't seem to be bothered by it at all," Croce said.

But many towns, as well as the state Department of Transportation, still primarily use plain rock salt. Since the blizzard, many customers have gone to PetSmart in New London looking for a remedy for their dog's smarting paws, said Christine Kocher, store leader.

How severely a dog is affected, she said, "depends on the breed, the thickness of their pads." The store sells sets of dog boots, but these fall off easily. Instead, she recommends applying paw wax, and using a "pet safe" de-icing product for sidewalks around the home.

"Nothing's 100 percent," she said. "But that (paw wax) product is very popular. I run out of it consistently."

But regardless of whether the roads are treated with a dog-friendly material or regular rock salt, the recurring battle for dry winter roads takes an environmental toll.

"There's no magic bullet out there. All these products have their issues," said Rob Hust, assistant director in the Water Planning and Management Division of the state Department of Energy and Environmental Protection. "But we know it's a necessity for public safety. It just needs to be used in a controlled way and in low volumes."

Runoff containing organic additives such as lignin, he said, adds nitrogen and phosphorous to waterways, causing algae blooms that deplete levels of dissolved oxygen and harm other aquatic life. Road salt, in addition, causes elevated levels of sodium in drinking water wells, lakes and streams.

In a 2015 report, the Connecticut Academy of Science and Engineering found that road salt runoff also contaminates soils, in some cases stripping them of nutrients needed for plant growth, and has been found in groundwater well above levels set by the Environmental Protection Agency for safe drinking water. The finding led the academy to recommend private well owners have their water tested yearly.

But, finding a lack of alternatives, the academy concluded that the use of road salt — with or without additives — is basically a necessary evil. It recommended users work to achieve "the maximum benefit for the least amount."

"There is no effective and cost-effective alternative deicing material that doesn't have some implications for the environment," said Kevin Nursick, spokesman for the state DOT. "We aim to strike the most appropriate balance of safety and environmental considerations in how much material we use. We try to apply it where we want it, strategically and tactically, carefully calibrating our application equipment."

During the blizzard, he said, the DOT spread 21,000 tons of salt on state roads.

"There are three major users of salt in the state," he said. "The DOT, towns and private contractors" who clear parking lots at stores, condominium complexes and office buildings.

"We use the least amount of all three," he added.

Gary Schneider, public works director of the Town of Groton, said municipal plows carefully are calibrated so road salt isn't being dumped indiscriminately. The town, which also uses the treated salt from DRVN, spread about 225 tons during last week's blizzard, he said.

"All our spreaders have calibration equipment so we are applying the right amount of salt," he said. "We have good speed control that puts the right amount of product out."

Hust said DOT is working to identify drinking water reservoirs and sensitive streams where it may recommend road crews make an effort to be especially frugal in application of road salt. In addition, it is considering instituting a voluntary program to offer "green" certification to private contractors to take steps to curtail overuse of road salt.

"You do see really heavy applications that are unreasonable," he said. "Some contractors tend to think more is better. We're trying to get some better management practices, because we are seeing concerning levels of salt in the environment and in peoples' wells."

TO: Gary Upton, Chairman, and Members of the East Lyme Wetlands Agency

FROM: Margaret Miner, Environmental Consultant,

RE: Public Hearing on Application of the Town of East Lyme Inland Wetland Agency for a text amendment to [the Regulations to enlarge] the distance of the boundary for a regulated activity from 100' from an inland wetlands and/or watercourse to 500'.

DATE: July `13, 2020

Thank you for the opportunity to comment in support of the proposed amendment to your IWA Regulations to expand the boundary of your regulated area from 100' to 500'. .

I am not a lawyer or soil scientist, but, as the former executive director of Rivers Alliance of Connecticut and a present member of the Water Planning Council Advisory Group, I've been involved in many wetlands-protection deliberations. I continue to work as a consultant to help with water policy and water protection in the field.

I know that you are an extremely hardworking commission, and thank you for your good stewardship. Policy makers are ever more aware these days that our high-quality water may be in shorter supply than we realize. I believe that every town should be considering the kind of expansion of the review area that are undertaking.

Even though wetlands-protection law in Connecticut addresses *actions* that may adversely affect wetlands, applicants and others tend to expect that anything being done outside a "regulated" or "review" area is okay. At the same time, the increasing efforts to develop difficult sites lead to difficult cases for wetlands commissioners. This is particularly common where there are steep, rocky, wooded slopes or shoreline cliffs. Science tells us that the hydrology and ecology of a site can be significantly altered by activities such as excavating, blasting, tree clearing, grading and so forth, even when done outside a regulated/review area. Recently, Rivers Alliance has asked Dr. Gary Robbins at UConn to help us with his expertise on the likely effects of rock blasting (for driveway construction) on the quality and quantity of water available for potable uses.

Blasting is the kind of activity that can have major adverse effects at a considerable distance from the action. This kind of problem is recognized in your all-important definition of "significant impact." : "*Significant impact*" means any *activity*, including, but not limited to, the following *activities* which may have a major effect: [emphasis added]

Thank you again for your good work.

Margaret Miner,

Roxbury, 203-788-5161, margaret.miner@charter.net

EXHIBIT FFF

Dear Mr. Chairman and members of the East Lyme Inland Wetlands Committee,

My name is Madison Anthony and I am a college student attending the University of Hartford. Like many of my friends, family members, peers, members of our community and people throughout the world, I am concerned about the health of our environment. There may be no greater cause in our lifetime to be focused and take action on. Given the unfortunate highly partisan nature of our federal government, the actions we can take at the local level may be the most important and relevant steps we can take to help protect our natural resources.

As such, I am writing this letter on behalf of the citizens of East Lyme in regards to a proposal to amend section 2.1 of the East Lyme Inland Wetland Regulations to increase the distance of regulated activity from 100 feet from an inland wetlands or watercourse to 500 feet. As I understand the proposed change, this amendment does not eliminate development activities within the proposed extended zone. Rather, it would provide the committee and the citizens of our town the opportunity to better understand and regulate development activities. Meaning, it creates a platform to have the discussion and drive greater transparency; a key component to successful wetland management, and should not be interpreted as a pre-established denial of responsible development.

I recently distributed a petition to obtain the attitudes of the people of this town in regards to this proposal. Within days of publishing the petition, it became clear that the protection of our environment and steps like this are considered important to the citizens of our town. As of July 12, 2020, we have 173 signatures from East Lyme citizens.

While I understand the committee is primarily looking at the opinions of those who live in this town, this petition gathered a total of 819 signatures from people in surrounding towns, our state and beyond. This is not just a concern for East Lyme residents but an issue for all that have a common dependency on our wetlands and waterways.

I believe that the acceptance of this proposal is a critically important step for this town to protect our own wetlands.

The appendix of this letter contains the signatures of the 173 citizens that feel strongly this amendment should be adopted. On behalf of them, the greater citizenry of East Lyme and myself, I implore the committee to vote in favor of the 500 foot extension.

Appendix

Name	City	State	Postal Code	Country	Signed On
John Anthony	Niantic	CT	6357	US	5/26/2020
Adam Benway	Niantic	CT	6357	US	5/27/2020
Morgan Crandall	East Lyme	CT	6333	US	5/27/2020
Lauren Real	Niantic	CT	6357	US	5/27/2020
Jennifer Anthony	East Lyme	CT	6333	US	5/27/2020
Maria Real	Niantic	CT	6357	US	5/27/2020
Aoife Samuelson	Niantic	CT	6357	US	5/28/2020
Caitlin Sheldon	East Lyme	CT	6333	US	5/28/2020
Dawn Griswold	East Lyme	CT	6357	US	5/28/2020
June Carver	Niantic	CT	6357	US	5/28/2020
Kerry Orshal	Niantic	CT	6357	US	5/28/2020
Jacqueline Curry	Niantic	CT	6357	US	5/28/2020
Fred Lunau	EL	CT	6333	US	5/28/2020
June Hoyer	East Lyme	CT	6333	US	5/28/2020
Maurizio Mazzi	Niantic	CT	6357	US	5/28/2020
Gerard Zabik	Niantic	CT	6357	US	5/28/2020
Patrice Scavone	Niantic	CT	6357	US	5/28/2020
Robin Beckwith	Niantic	CT	6357	US	5/28/2020
Rebecca McCue	Niantic	CT	6357	US	5/28/2020
Tim Wood	East Lyme	CT	6333	US	5/28/2020
Patti Murphy	Niantic	CT	6357	US	5/28/2020
Emily Casey	Niantic	CT	6357	US	5/28/2020
Joyce Beauvais	East Lyme	CT	6333	US	5/28/2020
Peter Cooney	Niantic	CT	6357	US	5/28/2020
Ryan Rubino	Niantic	CT	6357	US	5/28/2020
Kim Bates	East Lyme	CT	6333	US	5/28/2020

Kahlub Kenyon	Niantic	CT	6357	US	5/28/2020
doreen arnpld	Niantic	CT	6357	US	5/29/2020
Diane Lepkowski	East Lyme	CT	6333	US	5/29/2020
Nancy Barwikowski	East Lyme	CT	6333	US	5/29/2020
Laura Higgins	East Lyme	CT	6333	US	5/29/2020
Arun Basu	East Lyme	CT	6333	US	5/29/2020
Carrie Northcott	East Lyme	CT	6333	US	5/29/2020
Jennifer Banever	Niantic	CT	6357	US	5/29/2020
David Higgins	East Lyme	CT	6333	US	5/29/2020
Allyson Geida	Niantic	CT	6357	US	5/29/2020
Marjorie Meekhoff	East Lyme	CT	6333	US	5/29/2020
Debbie Lento	East Lyme	CT	6333	US	5/29/2020
Sage Dubreuil	East Lyme	CT	6357	US	5/29/2020
Kristen Chantrell	East Lyme	CT	6333	US	5/29/2020
Thomas Chantrell	East Lyme	CT	6333	US	5/29/2020
Carmen Brosseau	Niantic	CT	6357	US	5/29/2020
Kevin Gallagher	East Lyme	CT	6333	US	5/29/2020
Matthew Dowd	Niantic	CT	6357	US	5/29/2020
Susan Beeman	East Lyme	CT	6333	US	5/29/2020
Abigail Atkinson	Niantic	CT	6357	US	5/29/2020
Matthew Anderson	Niantic	CT	6357	US	5/29/2020
Barbara Cane	Niantic	CT	6357	US	5/29/2020
Cindy Groff	Niantic	CT	6357	US	5/30/2020
Maria Eldredge	East Lyme	CT	6357	US	5/30/2020
Rebecca Haynes	East Lyme	CT	6333	US	5/30/2020
Elizabeth Chantrell	Niantic	CT	6357	US	5/30/2020
Kelly Streich	East Lyme	CT	6357	US	5/31/2020
William Chantrell	Niantic	CT	6357	US	5/31/2020
Steven McFarland	Niantic	CT	6357	US	6/1/2020

Alan Barrows	Niantic	CT	6357	US	6/1/2020
Ellen Maloney	East lyme	CT	6333	US	6/1/2020
Thomas Stuckey	East Lyme	CT	6357	US	6/1/2020
Damian Keany	Niantic	CT	6357	US	6/1/2020
Kerry Marks	east lyme	CT	6333	US	6/1/2020
James Chambers	East Lyme	CT	6333	US	6/1/2020
Dorothy Munoz	Niantic	CT	6357	US	6/1/2020
Carter Chambers	East Lyme	CT	6333	US	6/1/2020
William Schmoegner	East Lyme	CT	6333	US	6/1/2020
Amber Glidden	East Lyme	CT	6333	US	6/1/2020
Judith Vlcek	Niantic	CT	6357	US	6/1/2020
Julie Resnisky	East lyme	CT	6357	US	6/1/2020
Mike Shugrue	East Lyme	CT	6333	US	6/1/2020
Jessica Tjardes	East Lyme	CT	6333	US	6/1/2020
Barbara Nidzgorski	Niantic	CT	6357	US	6/1/2020
Amy Miner	Niantic	CT	6357	US	6/1/2020
Charles Contant	Niantic	CT	6357	US	6/1/2020
Deborah Light	Niantic	CT	6357	US	6/1/2020
Marybeth Colella	East Lyme	CT	6357	US	6/1/2020
Sam Schaperow	East Lyme	CT	6333	US	6/1/2020
Joyce Kundrat	Niantic	CT	6357	US	6/1/2020
Michelle Ghislandi	Niantic	CT	6357	US	6/1/2020
David Fiore	East Lyme	CT	6333	US	6/1/2020
Helen Reeder	East Lyme	CT	6357	US	6/1/2020
Stephen Thomas	Niantic	CT	6357	US	6/1/2020
Chris Toth	East Lyme	CT	6333	US	6/1/2020
Penelope Howell Heller	Niantic	CT	6357	US	6/1/2020
Paulette Baker	Niantic	CT	6357	US	6/1/2020
Wendy Updegrave	East Lyme	CT	6333	US	6/1/2020

Carol Saikowski	Niantic	CT	6357	US	6/1/2020
Michelle Illinger	Niantic	CT	6357	US	6/1/2020
Cecilia Brown	Niantic	CT	6357	US	6/1/2020
Amy Denucci	East Lyme	CT	6333	US	6/1/2020
Robert Cassidy Jr.	Niantic	CT	6357	US	6/1/2020
Carla Cirone	East Lyme	CT	6333	US	6/1/2020
Monica Thakur	East Lyme	CT	6333	US	6/1/2020
Keva Fothergill	Niantic	CT	6357	US	6/1/2020
Karen Horan-Silva	Niantic	CT	6357	US	6/2/2020
Anna Anderson	Niantic	CT	6357	US	6/2/2020
Janice Orsini	East Lyme	CT	6333	US	6/2/2020
Thomas Flanagan	Niantic	CT	6357	US	6/2/2020
Thomas Kraft	Niantic	CT	6357	US	6/2/2020
Michelle Maitland	Niantic	CT	6357	US	6/2/2020
James Lathrop	Niantic	CT	6357	US	6/2/2020
Leah Killeen	Niantic	CT	6357	US	6/2/2020
Cheryl Gervais	Niantic	CT	6357	US	6/2/2020
William Salen	Niantic	CT	6357	US	6/2/2020
Teresa Willett	East Lyme	CT	6333	US	6/2/2020
Susan Paquette	East Lyme	CT	6357	US	6/2/2020
John Hotte	East Lyme	CT	6357	US	6/2/2020
Stefanie Schoenwolff	Niantic	CT	6357	US	6/2/2020
Shelley Arenson	East Lyme	CT	63333	US	6/2/2020
Jacki Foxx	Niantic	CT	6357	US	6/2/2020
Kostas Anastasiou	Niantic	CT	6357	US	6/2/2020
Tim Lawrence	Niantic	CT	6357	US	6/3/2020
Sabah Sajid	East Lyme		6333	US	6/3/2020
Maddie Dow	Niantic	CT	6357	US	6/3/2020
Robby Bevacqua	Niantic	CT	6357	US	6/3/2020

Barry Sheckley	Niantic	CT	6357	US	6/3/2020
Emily Peck	Niantic	CT	6357	US	6/3/2020
Joel Hazan	Niantic	CT	6357	US	6/3/2020
Dana Aalberg	Niantic	CT	6357	US	6/3/2020
Ashley Hanson	East Lyme	CT	6333	US	6/3/2020
Jim Miller	Niantic	CT	6357	US	6/3/2020
Kyla Coale	East Lyme	CT	6333	US	6/3/2020
Kathleen WILTS	Niantic	CT	6357	US	6/3/2020
Cheryle Webb	Niantic	CT	6357	US	6/3/2020
Henry Vincent Vento	Niantic	CT	6357	US	6/3/2020
Amelia Mastrangelo	Niantic	CT	6357	US	6/3/2020
Anu Varghese	Niantic	CT	6357	US	6/3/2020
Debbie Jett-Harris	East Lyme	CT	6333	US	6/3/2020
Yaprak Onat	East Lyme	CT	6333	US	6/3/2020
Alison Czuba	Niantic	CT	6357	US	6/3/2020
Candy Shapiro	Niantic	CT	06357-3025	US	6/3/2020
John Drabik	East Lyme	CT	6333	US	6/3/2020
Mary Hunter	Niantic	CT	6357	US	6/4/2020
Emilia Patino	East Lyme	CT	6333	US	6/4/2020
Camille Alberti	East Lyme	CT	6333	US	6/4/2020
Jane (Jaye) Storms	Niantic	CT	6357	US	6/4/2020
Jeannette Woodworth	Niantic	CT	6357	US	6/5/2020
Denise Dinsmore	Oakdale	CT	6333	US	6/5/2020
Cheryl Lozanov	East Lyme	CT	6333	US	6/5/2020
Jesse Baldwin	Niantic	CT	6357	US	6/5/2020
Carol Migdalski	East Lyme	CT	6333	US	6/5/2020
Carolyn Leveston	Niantic	CT	6357	US	6/5/2020
Calena Garoppolo	East Lyme		6333	US	6/5/2020
peter torres	East Lyme	CT	6333	US	6/6/2020

Sarah Jolly-Ballantine	Niantic	CT	6357	US	6/6/2020
Denise Tortora	East Lyme	CT	6333	US	6/7/2020
Roseanna Woods	Niantic	CT	6357	US	6/7/2020
Cynthia Paige-DeSantis	East Lyme	CT	6333	US	6/8/2020
Fiona Samuelson	Niantic	CT	6357	US	6/9/2020
Rick Jacobsen	Niantic	CT	6357	US	6/9/2020
Patricia Tellekamp	Niantic	CT	6357	US	6/13/2020
Gail Schatz	Niantic	CT	6357	US	6/13/2020
Joseph Spalluto	Niantic	CT	6357	US	6/14/2020
Jerilyn Duefrene	East Lyme	CT	6333	US	6/15/2020
Caryl Glock	Niantic	CT	6357	US	6/15/2020
Kathleen Gilbride	East Lyme	CT	6333	US	6/15/2020
Caroline Stewart	Niantic	CT	6357	US	6/15/2020
Peter Annulli	East Lyme	CT	6333	US	6/15/2020
Margaret Herzberg	Niantic	CT	6357	US	6/15/2020
Brittany Eckert	Niantic	CT	6357	US	6/15/2020
Elaine Wiatr	Niantic	CT	6357	US	6/15/2020
Ellen Hazan	East Lyme	CT	6333	US	6/15/2020
Gabrielle Antoniadis	Niantic	CT	6357	US	6/15/2020
Aleta Gleason	Niantic	CT	6357	US	6/15/2020
Lisa Smigel	East Lyme	CT	6357	US	6/16/2020
Bonnie Legg	Niantic	CT	6357	US	6/16/2020
Alex Frederick	East Lyme	CT	6333	US	6/16/2020
Janice Ginsberg	E. Lyme	CT	6333	US	6/16/2020
Melissa Corbett	Niantic	CT	6357	US	6/20/2020
Jamie Sabilia	Niantic	CT	6357	US	6/21/2020
Lucille Caskey	Niantic	CT	6357	US	6/22/2020
Suzanne Guida	East Lyme	CT	6333	US	6/24/2020
Katherine Pasutto	East Lyme	CT	6333	US	6/25/2020

James Noble	East Lyme	CT	6333	US	7/3/2020
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**EAST LYME INLAND WETLANDS AGENCY
SPECIAL MEETING MINUTES
May 18, 2020
Remote Participation by ZOOM due to Covid 19
7:00 p.m.**

Present: Gary Upton, Phyllis Berger, Rosemary Ostfeld, Theodore Koch, Don Phimister, Kristin Chantrell, David Schmitt, Sandy Gignac, Alt., Doreen Rhein, Alt.

Absent: Jason Deeble, Alt.

Also Present: Gary Goeschel, Director of Planning/Inland Wetlands Agent, Jennifer Lindo, Administrative Assistant

Call to Order:

G. Upton called the meeting to order at 7:05. He explained the rules for participation in the remote ZOOM meeting. The materials for the applications are on the town's website.

I. ADDITIONS TO THE AGENDA-none

FILED

II. PUBLIC HEARINGS-none

May 22, 2020 AT 8:28 AM/D
Bruce Honan ATC
EAST LYME TOWN CLERK

III. PUBLIC DELEGATIONS: none

IV. ACCEPTANCE OF MINUTES:

Meeting Minutes of February 24, 2020 Regular Meeting

MOTION (Ostfeld/Chantrell) To approve the minutes of February 24, 2020 Regular Meeting as presented. Vote: Approved Unanimously.

V. EX-OFFICIO REPORT-none

VI. PENDING APPLICATIONS:

A. Application of Harry Heller, Attorney/Agent for Pazz & Construction, LLC, Owner to conduct regulated activities in the upland review area in association with a proposed multi-family residential community on property identified in the application as N Bride Brook Rd, East Lyme Assessor's Map 09.0, Lot 37-2.

(D. Reich is seated; T. Koch is muted and video disabled)

G. Goeschel gave background on the application, he read his memo dated March 30, 2020.

G. Goeschel stated the application is complete with no significant impacts to the regulated areas.

The Agency asked if there could be an independent expert to assess the impacts on the application site. They noted there was no hydrology report with the application. G.

Goeschel informed the agency that the public hearing has been closed so no new information can be added to the record.

G. Upton stated he had concerns about the detention basin and the testimony of a resident concerning flooding that occurs on the site. He noted there are toxins such as, antifreeze, herbicides, oil, etc. that will be running off the site and onto adjacent properties. R.

Ostfeld noted that the detention basin is over an aquifer protection zone.

G. Goeschel stated the abutting property owners had all been notified for the public hearing and if there were concerns they had the opportunity to present those concerns during the public hearing. He stated the detention basin is significant as to the volume of runoff from the site and designed for a hundred-year storm. G. Goeschel did not see evidence of flood plain areas.

K. Chantrell voiced concern about the thermal pollution runoff from the roofs of proposed buildings I, J and M. She stated that it will have significant impact to the wetlands that are already degraded. She informed the Agency and public that she has an environmental engineering degree.

K. Chantrell stated she believes there is a prudent and feasible alternative for proposed buildings I, J and M which run parallel to the wetlands and are in or partially in, the upland review area.

G. Goeschel stated there were no other feasible and prudent alternatives for the site due to the boundaries of the water and sewer boundary maps. There was no application by the applicant to move the water and sewer boundary but the applicant did apply for the water and sewer capacity for the proposed site.

G. Upton read section 1 (one) of the East Lyme Wetlands Regulations stating the purpose and role of the Agency.

G. Goeschel reminded the Agency of their authority. He stated that the application as presented meets the 2004 state water quality manual standards. He stated that according to the project engineer's calculations the runoff from the three buildings into the liters, pre-development is the same as post-development.

K. Chantrell reminded the Agency, the applicant stated during the public hearing process that there was going to be an impact from the runoff of buildings I, J and M and it was up to the Agency to determine if it was significant.

MOTION: (Upton/Chantrell) to deny the application without prejudice because the application is incomplete due to several of the buildings need to be relocated or eliminated and the additional information as to water quality leaving the detention pond at the southern end of the site and the lack of a hydrology report.

K. Chantrell stated the the buildings should be removed due to the runoff from the roofs of I, J and M and the runoff should not be going into the watercourse.

Vote: Approved Unanimously.

B. Application of Toby and Glenn Knowles, Owner; for the proposed construction of a patio, correction of water runoff and wetlands restoration at property identified as 21 Brightwater Road, Niantic, East Lyme Assessor's Map 5.19, lot 58.

(T. Koch returns at 8:42)

G. Goeschel informed the Agency that he issued a permit to G. Knowles for work in the upland review area.

G. Knowles updated the Agency on work he is proposing on the site. He stated the large tree in the upland review area has been cut down and the stump has been ground down. Brandon Hyde (contractor) stated there is approximately 20-30 yards of fill proposed which will utilize on site materials. The fill will be used to create a soft gradient for runoff and top dressing. There will be crushed stone under the proposed patio. The water will be absorbed by the turf and then from there any other water will be absorbed into the wetlands. He stated the gradient slopes toward the wetlands.

MOTION: (Chantrell/Ostfeld) to approve the application. Vote: Approved Unanimously.

VII. NEW BUSINESS:

A. East Lyme Inland Wetlands Agency Regulations

The Agency discussed some of the changes to the regulations as well as the process for accepting the changes.

G. Goeschel stated that many of the changes are minor edits for clarification and spelling/grammar. The main changes are the increase of the upland review area and splitting the permit process into three categories; minor, intermediate and significant. G. Goeschel stated the agency may want to consider changing the sub-division and resub-division approvals. Typically, the applicant has to come to the Agency in the proposal phase and then again for each individual lot development. He suggested letting the agent approve each individual lot as the agency has already approved the overall site plan. It was the consensus of the members that they do not want to change the current approval process for sub-divisions and re sub-divisions.

Discussion about what agencies/towns/boards should be notified and given the opportunity to submit comment on the regulation changes. G. Upton informed the agency members that the changes should go to the state. A public hearing is required for proposed regulation changes.

The agency discussed changing the upland review area from 100 ft. to 500 ft.

MOTION: (Ostfeld/Upton) to extend the regulated area to 500 ft.

The members decided to focus on the change in the regulated area. Other areas of concern were signage. The Agency set the Public Hearing for June 8, 2020.

Vote: Approved Unanimously.

G. Upton read Section 15.2 of the regulations.

MOTION: (Upton/) to put a moratorium on any pending and new applications until the 400 ft. increase to the upland review area is enacted.

The legality of a moratorium was discussed.

The MOTION failed due to lack of a second to the motion.

B. Nottingham Hills Re-subdivision; Request of Kristen T. Clarke, P.E. Agent for Owner English Harbor Asset Management, LLC for a Determination of Permitted/Non-Regulated Activity at Upper Kensington Drive, as part of a 4-lot re-subdivision. East Lyme Assessor's Map 40.0, Lot 23 and 22.

Paul Gerahty, representing the applicant gave background on the proposed site. He stated the site is part of a previously approved 16 lot application. The current proposal is Phase III. The agency previously approved this site for 2 lots but the owner has decided to do an additional split into 4 lots. Lot 4 will be donated to the East Lyme Land Trust. There is no proposed activity in any of the regulated areas of the new proposal. P. Gerahty informed the agency that the plan combines 2 driveways into one therefore, reducing the amount of impervious surface.

G. Goeschel noted that the plan shown is different than the one the town engineer had commented on. J. Lindo stated the plan was submitted on Friday and revised April 23, 2020. G. Goeschel stated that according to the new plans there is no regulated activity shown.

P. Gerahty stated that although lot 4 will be donated to the land trust, regulations require that all lots have to show they are a building lot able to have a house and septic system. There will be no house or septic due to the lot being donated to the land trust.

P. Gerahty stated the closest any activity comes to a regulated activity is approximately 30 ft.

The agency scheduled a site walk on June 6, 2020 at 9:00 AM before making a determination.

- C. 21 Marshfield Rd, Your Brothers Keeper LLC, Agent for Owner Brandy and Derek Moore, for Determination of a Permitted/Non-Regulated Activity at 21 Marshfield Road, for the clean out of a culvert entrance and exit to maintain the natural flow of water. East Lyme Assessor's Map 04.7, Lot 19.**

(This application was combined with item D)

- D. Creek Road, Giants Neck Heights Club House, your Brothers Keeper LLC, Agent for Owner Giants Neck Heights Association, for Determination of a Permitted/Non-Regulated Activity at 21 Marshfield Road, for the clean out of a culvert entrance and exit to maintain the natural flow of water. East Lyme Assessor's Map 04.7, Lot 18.**

Brian Kennedy stated the road was originally constructed in 1954 with the understanding the town would adopt the road but failed to do so. The association has been maintaining the road. He believes the culvert was filled in during hurricane Sandy. The phragmites on one end of the culvert are slowing the drainage to the creek.

G. Goeschel suggested the Agency combine item C and D as they are technically the same project. He confirmed both applicants agree the work needs to be done and the landowners have given permission. He stated he originally thought the work is exempt, except for the language in section 4.1 (F) that mentions hydrophilic vegetation which would require a permit. He also noted that the town's public works dept. applies for a permit every five years to conduct drainage clearing.

Alisa Lecour representing the property owner of 21 Marshfield Rd. is in favor of the proposed work.

B. Kennedy stated he would need to use a backhoe to accomplish the clearing of the culvert.

The Agency decided to do a site walk on June 6, 2020 before a determination was made.

VIII. OLD BUSINESS-none

The members discussed who would be getting notice of the Public Hearing on the regulation changes and want to see as many as possible be made aware of the Public Hearing.

IX. REPORTS

- A. Chairman's Report-none**

- B. Inland Wetlands Agent Report-no report.**

- C. Enforcement**

Notice of Violation; 297 Boston Post Road; Al Smith Owner, Jason Pazzaglia, Other; Outside storage of equipment, construction materials, and the stockpiling of earthen materials including but not limited to yard debris within 100 feet of a watercourse without or in violation of an Inland Wetlands Permit.

G. Goeschel stated the site has been cleaned up to his satisfaction and many of the old vehicles have been removed. The members can go to the site between 8:00 AM and 4:00 PM with notification to inspect for themselves. The Agency requested the item stay on the agenda

D. Correspondence-none

X. ADJOURNMENT

MOTION: (Schmitt/Chantrell) to adjourn at 10:50. Vote: Approved Unanimously.

Respectfully Submitted

**Sue Spang
Recording Secretary**

Town of

P.O. Drawer 519

Department of Planning &
Inland Wetlands Agency

*Gary A. Goeschel II, Director of Planning /
Inland Wetlands Agent*



East Lyme

108 Pennsylvania Ave
Niantic, Connecticut 06357

Phone: (860) 691-4114

Fax: (860) 860-691-0351

MEMORANDUM

To: East Lyme Inland Wetlands Agency

From: Gary A. Goeschel II, Director of Planning/ Inland Wetlands Agent

Date: March 30, 2020

Re: **Re: Inland Wetlands Application – North Bride Brook Multi-Family Development:** Application of Pazz & Construction, LLC; Jason Pazzaglia, Applicant; Pazz & Construction, LLC, Owner; to conduct regulated activities in the upland review area in association with a proposed multi-family residential community on property identified in the application as N Bride Brook Rd, East Lyme Assessor's Map 09.0, Lot 37-2.

Upon review of the above referenced application and the proposed plans entitled "North Bride Brook Multi-Family Development, prepared for Pazz & Construction, LLC, Sheets 1 through 7, dated 9/25/2019 and revised through 1/15/2020," by Brandon J. Hanfield, P.E. of Yantic River Consultants, LLC of 191 Norwich Avenue, Lebanon, CT and several meetings with the Applicant's engineer, Town staff, and four (2) evenings of public hearing, I offer the following:

FINDINGS:

Whereas: In accordance with Section 7, Application Requirements, of the Inland Wetlands Regulations the applicant has provided the all the information required by Section 7.5 and the necessary additional information required by Section 7.6, including but not limited to proposed alternatives, engineering reports and analyses, a description of ecological communities and the functions of the wetlands and watercourse and the effects of the proposed activity on these communities and wetland functions, an alternative which would cause less or no environmental impact to wetlands or watercourses, as well as an operations and maintenance plan for stormwater structures, stormwater management plan, erosion and sedimentation control plan, and site development plans. As such, the application appears to be complete.

Whereas: In accordance with Section 7.6, the Agency required information to be submitted including but not limited to site plans which show the land which will be affected thereby which shows existing and proposed conditions, wetland and watercourse boundaries, contours, and other pertinent features of the land and the proposed activity.

Whereas: The Agency may find this application to be in conformance with the Inland Wetlands Regulations of the Town of East Lyme and more specifically based on the following findings:

Whereas: The Agency received an Inland Wetlands Application from Jason Pazzaglia of Pazz & Construction, LLC November 22, 2019 and the Agency commenced review of the Application at a regular meeting on December 9, 2019.

Whereas: The Agency at their December 9, 2019 meeting, scheduled a Public Hearing to commence on January 27, 2020 and published notice of said hearing in the January 15, 2020 and January 23, 2020 editions of The Day Newspaper.

Whereas: The Agency's commenced a public hearing on January 27, 2020, which was continued to the Agency's meeting of February 24, 2020 and closed that same evening.

Whereas: Town staff provided the Agency with comment concerning this application's compliance with local requirements and regulations as well as received testimony from the Applicant's professionals, and the general public.

Whereas: The Application submitted includes all the information required pursuant to Section 7.5 of the East Lyme Inland Wetlands and Watercourses Regulations and includes site plans, engineering reports, and wetlands delineation by a soil scientist depicted on the site plans. As such, the Application submitted in accordance with Section 7.1 of the East Lyme Inland Wetlands Regulations is complete.

Whereas: There is no direct impact on the wetlands or the watercourse as the all construction activities will be conducted within the 100-foot upland review area from an inland wetland and watercourses. Therefore, there are no irreversible and irretrievable loss of wetlands or watercourse which would be caused by the proposed regulated activity.

Whereas: The project has been designed to protect the wetlands and watercourses as the building structures, driveways, and drainage structures are designed to be situated outside of the wetlands and located in the upland review area as well as the public utilities (sewer, water, electric, etc..) which are being installed within existing upland areas.

Whereas: Mitigation measures to minimize and mitigate potential impacts from the creation of new impervious surfaces on the site and to protect the wetlands and watercourses, such as stormwater management structures (catch basins) and the retention pond, will pre-treat and control runoff, and promote groundwater recharge.

Whereas: Potential impacts are mitigated by the implementation of temporary erosion and sedimentation controls as well as stormwater controls throughout all phases of construction.

Whereas: The upland review process does not forbid activity based solely on proximity to wetlands. Rather, the upland review process merely provides a basis for determining whether activities will have an adverse impact on the adjacent wetland or watercourse, and if necessary, regulating them.

Whereas: Pursuant to Section 10.5 of the East Lyme Inland Wetlands and Watercourses Regulations, for the purpose of those Sections (1) "wetlands and watercourses" includes aquatic, plant or animal life and habitats in wetlands or watercourses, and (2) "habitats" means areas or environments in which an organism or biological population normally lives or occurs.

Whereas: Pursuant to Section 10.5 of the East Lyme Inland Wetlands and Watercourses Regulations, a municipal inland wetlands agency shall not deny or condition an application for a regulated activity in an area outside wetlands or watercourses on the basis of an impact or effect on aquatic, plant, or animal life unless such activity will likely impact or affect the physical characteristics of such wetlands or watercourses.

Whereas: Demonstrated by Exhibit "L", Memorandum from V. Benni, P.E. Town Engineer to G. Goeschel II, Wetlands Officer, dated January 27, 2020 Re: North Bride Brook Multi-Family Development, the Stormwater Management Report prepared in accordance with the 2004 Connecticut Stormwater Quality Manual, verifies that the proposed detention pond attenuates peak flow rates and volumes as compared to the pre-development conditions, resulting in a net zero (0) increase in run off from the development for the 2 through 100-year storm events.

Whereas: The proposed detention pond will enhance stormwater runoff quality and recharge the groundwater as stormwater from the closed drainage system will enter a sediment forebay which, is separated from the detention basin by a "Detention Filter Berm" before passing through the semi-pervious filter berm into the detention basin itself.

Whereas: The E&S Narrative and Construction Details provide construction notes and a long-term maintenance plan for the stormwater detention basin. Moreover, the Erosion and Sediment Control Plan was prepared according to the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control (CT DEEP), and includes a narrative, construction sequence and vegetative turf establishment procedures.

Whereas: Demonstrated by Exhibit "H", plan review comments from B. Kargl, Town Utilities Engineer, dated 12/12/19, found the conceptual layout of the water and sewer utilities to be acceptable.

Whereas: The record before the Agency, which includes Exhibit "B", Wetlands report from James Sipperly, Soil Scientist dated October 3, 2019, states: "The proposed development in the upland review area will not be disturbing any wetlands and/or watercourses on the site. For that reason, the inland wetlands will continue to perform their functions as they currently do." As such, the proposed activity will avoid any direct impacts to the wetlands or watercourses and the design has been prepared to minimize the potential for secondary and indirect impacts through implementation of the Erosion and Sedimentation Control Plan.

Whereas: Demonstrated by Exhibit "L", memorandum from V. Benni, Town Engineer and Exhibit "A" Application and project narrative, and Exhibit "B" the Soils Report by James Sipperly, the project will not significantly change to the hydrology of the wetlands and watercourse in question as the drainage design provides recharge to the on-site wetlands and watercourse by discharging the roof runoff from Building I, J, & M at the westerly corner of each building to a rip-rap splash pad which it then flows overland to the wetland in order to replicate the existing flows which currently reach and contribute to the recharge of the wetlands system.

Whereas: Although the proposed construction would pose an intrusion into the upland area, introducing a new and more intensive use than the present condition (forested land) and risks to the wetlands, there is no substantial evidence in the record to support a likely adverse impact on the wetlands and watercourse from the proposed upland intrusion.

Whereas: The record before the Agency of the current application contains no specific evidence that the impacts on the wetland and watercourse are significant, adverse, and would likely impact or affect the physical characteristics of such wetlands or watercourse.

Whereas: As demonstrated by Exhibit "A" the application and supporting documentation including the proposed plans entitled "North Bride Brook Multi-Family Development, prepared for Pazz & Construction, LLC, Sheets 1 through 7, dated 9/25/2019 and revised through 1/15/2020," by Brandon J. Hanfield, P.E. of Yantic River Consultants, LLC of 191 Norwich Avenue, Lebanon, C ", there are no other prudent and feasible alternatives yielding a 100-unit multi-family development that would eliminate or further reduce the potential for wetlands impacts. As the proposed activity is of limited duration with no direct or likely adverse impacts to the wetlands or watercourse, it is the preferred alternative.

SUGGESTED RESOLUTION

Based on the Findings in the memorandum from Gary A. Goeschel II, Director of Planning/Inland Wetlands Agent to the Inland Wetlands Agency dated March 30, 2020, and the record before the Agency, I move the Agency APPROVE the Application known as the Application of Pazz & Construction, LLC; Jason Pazzaglia, Applicant; Pazz & Construction, LLC, Owner; Application to conduct regulated activities in the upland review area in association with a proposed 100-unit multi-family residential community on property identified in the Inland Wetlands and Watercourses Agency Application as North Bride Brook Rd, East Lyme Assessor's Map 09.0, Lot 37-2 and the plans entitled "North Bride Brook Multi-Family Development, prepared for Pazz & Construction, LLC, Sheets 1 through 7, dated 9/25/2019 and revised through 1/15/2020," by Brandon J. Hanfield, P.E. of Yantic River Consultants, LLC of 191 Norwich Avenue, Lebanon, CT, which are further subject to the following administrative requirements and required modifications to the site plan and other materials submitted in support of this application:

1. The Erosion and Sedimentation Control Plan and recommended Construction Sequence shall be followed.
2. Pursuant to the Erosion and Sedimentation Control Plan and construction sequence, notify conservation officer at least 2 days prior to construction to inspect erosion controls.
3. Silt fence and other erosion controls including temporary sediment traps and diversion swales to be installed shall be inspected by the Inland Wetlands Agent and the Town Engineer prior to any site construction, land clearing or other associated construction activities.
4. In areas proposed to be loamed and seeded, a low maintenance lawn such as fescue, which requires minimal application of fertilizers and pesticides, shall be planted.
5. Forested cover within the upland review areas shall be maintained to the extent practicable. The proposed Limits of Disturbance (LOD) shall be strictly adhered to through out all phases of lot build out and construction.
6. As indicated in Exhibit "L", memorandum from Victor Benni P.E., Town Engineer dated January 27, 2020, an Erosion and Sedimentation Control Bond (aka financial guarantee)

in the amount of \$30,000.00 dollars in a form satisfactory to the Town of East Lyme and the Inland Wetlands Agency, its Agent, and Town Engineer shall be posted with the Town of East Lyme.

7. A copy of each weekly inspection reports for the Stormwater Management Basin shall be furnished to the East Lyme Inland Wetlands Agent within 7-days of conducting said inspection.
8. Failure of the development to adhere to the stormwater management system components of the long-term operations and maintenance plan shall be consider a violation of this permit and the East Lyme Inland Wetlands and Watercourses Regulations.
9. Any proposed Additional work beyond this permit in the wetlands or watercourse or its 100-foot regulated area will require approval from the Inland Wetlands Agency or its certified agent.
10. Any changes to the site plan listed on this permit require notification to the Inland Wetlands Agent and may require commission approval; a new plan shall be given to the Inland Wetlands Agent for review and approval before such work begins.
11. Inland Wetlands Conservation Tags provided by the Wetlands Agency, available in the Land Use Office, Department of Planning & Inland Wetlands, shall be posted along the inland wetlands boundary at 40-50-foot intervals satisfactory to the Inland Wetlands Agent.
12. A 200-foot wide conservation easement, beginning at the limits of clearing and extending north, south and westward along the existing stream corridor, in a form satisfactory to the Inland Wetlands Agency and the Town of East Lyme, shall be filed on the land records in the office of the East Lyme Town Clerk prior to any construction.
13. No site work shall commence until all applicable conditions are satisfied.
14. Notify Inland Wetlands Agent upon completion of all regulated activities for a final inspection and to request the release of any financial guarantees.

This approval is specific to the site development plan submitted as the application of Jason Pazzaglia, Applicant; Pazz & Construction, LLC, Owner; Application to conduct regulated activities in the upland review area in association with a proposed 100-unit multi-family residential community on property identified in the Inland Wetlands and Watercourses Agency Application as North Bride Brook Rd, East Lyme Assessor's Map 09.0, Lot 37-2 and the plans entitled "North Bride Brook Multi-Family Development, prepared for Pazz & Construction, LLC, Sheets 1 thought 7, dated 9/25/2019 and revised through 1/15/2020," by Brandon J. Hanfield, P.E. of Yantic River Consultants, LLC of 191 Norwich Avenue, Lebanon, CT".

Any change or modification in the plan or development plan layout other than those identified herein shall constitute a new application unless prior approval from the Agency or its Agent is granted. The applicant/owner shall be bound by the provisions of this Application and Approval.



APPLICATION FOR PERMIT EAST LYME INLAND WETLANDS AGENCY

CHECK # 38510, 38512		Office Use Only
Fee Paid \$ 1,210.00	Date Submitted 11/22/2019	Application # _____
Date of Receipt _____	Date Approved _____	Permit Number _____
Major Impact: YES NO Public Hearing: <input checked="" type="radio"/> YES <input type="radio"/> NO Agent Approved: YES NO		

Note: In accordance with the Inland Wetland and Watercourses Regulations, Eleven (11) copies of all application materials must be submitted.

1. SITE LOCATION (Street) and Description: Westerly side North Bride Brook Road (no assigned street number)
Assessor's Map 9 Lot # 37-2

Note: It is the applicant's responsibility to provide the correct site address, map/lot number for the legal notice. Provide a description of the land in sufficient detail to allow identification of the inland wetlands and watercourses, the area(s) (in acres or square feet) of wetlands and watercourses to be disturbed, soil type(s), and wetland vegetation.

2. APPLICANT: Pazz & Construction, LLC ; Jason Pazzaglia

Address: <u>21 Darrows Ridge Road</u>	Phone: <u>(860) 961-2364</u>
<u>East Lyme, Connecticut 06333</u>	Fax: <u>n/a</u>
Business: <u>21 Darrows Ridge Road</u>	Cell: <u>(860) 961-2364</u>
<u>East Lyme, Connecticut 06333</u>	Email: <u>jpazz17@gmail.com</u>

Applicant's interest in the land: Owner

**If the applicant is a Limited Liability Corporation or a Corporation provide the managing member's or responsible corporate officer's name, address, and telephone number.

3. OWNER: Pazz & Construction, LLC

Address: <u>21 Darrows Ridge Road</u>	Phone: <u>(860) 961-2364</u>
<u>East Lyme, Connecticut 06333</u>	Fax: <u>n/a</u>
Email: <u>jpazz17@gmail.com</u>	Cell: <u>(860) 961-2364</u>

**As the legal owner of the property listed on this application, I hereby consent to the proposed activities. And I hereby authorize the members and agents of the Agency to inspect the subject land, at reasonable times, during the pendency of the application and for the life of the permit.

Owners Printed Name: Pazz & Construction, LLC

Owners Signature: [Signature] Date: November 21, 2019

Jason Pazzaglia, its Member

EX "A"

4. Area of wetland to be disturbed: 0 sq. ft. or ac 0
 Area of watercourse to be disturbed: 0 sq. ft. or ac 0
 Upland review area to be disturbed: 62,530 sq. ft. or ac 1.44

Will fill be needed on site? Yes No

If yes, how much fill is needed? n/a Cubic yards

5. The property contains (circle one or more)

WATERCOURSE

WATERBODY WOODED-WETLAND

SWAMP

FLOODPLAIN

OTHER: _____

Description of soil types on site: Upland soils are Haven Silt Loam (703A), Charlton-Chatfield Complex (73E) and Charlton-Chatfield Complex (73C); Wetland soils associated with the Bride Brook riparian corridor are Ridgebury Leicester Whitman soils.

Description of wetland vegetation: Forested wetland (general classification). The vegetative overstory includes Maple, Ash, Black Cherry, Oak and Poplar. Shrub species include Winterbury, Spice Bush, Silky Dog Wood and Mountain Laurel. The herbaceous layer includes sensitive fern, poison ivy, wildy grape and skunk cabbage.

Name of Soil Scientist(s) and date of survey: James Sipperly. Date of Survey: June 29, 2019.

6. Provide a written narrative of the purpose and a description of the proposed activity and proposed erosion and sedimentation controls and other best management practices and mitigation measures which may be considered as a condition of issuing a permit for the proposed regulated activity including, but not limited to, measures to (1) prevent or minimize pollution or other environmental damage, (2) maintain or enhance existing environmental quality, or (3) in the following order of priority: restore, enhance and create productive wetland or watercourse resources. Depending on the complexity of the project, include the following: construction schedule, sequence of operations, drainage computations with pre and post construction runoff quantities and runoff rates, plans clearly showing the drainage areas corresponding to the drainage computation, existing wetland inventory and functional assessment, soils report, construction plans signed by a certified soils scientist, licensed surveyor, and licensed professional engineer. **See Project Narrative submitted with this application.**

7. Provide information of all alternatives considered. List all alternatives which would cause less or no environmental impact to wetlands or watercourses and state why the alternative as set forth in the application was chosen. All such alternatives shall be diagramed on a site plan or drawing. (Attach plans showing all alternates considered). Activities proposed are upland review area activities only, none of which are anticipated to have any adverse impact on the inland wetland/watercourse system which bisects the property in a northwesterly to southeasterly direction. Therefore, the considerations of alternatives is not required.

8. Attach a site plan showing the proposed activity and existing and proposed conditions in relation to wetlands and watercourses and identifying any further activities associated with, or reasonably related to, the proposed regulated activity which are made inevitable by the proposed regulated activity and which may have an impact on wetlands and watercourses. See site development plan entitled "North Bride Brook Multi-Family Development Prepared For Pazz & Construction, LLC Overall Layout Plan N. Bride Brook (Assessor's Map 9, Lot 37-2) East Lyme, CT" dated September 25, 2019 prepared by Yantic River Consultants, LLC consisting of 7 sheets submitted with this application.

9. Provide the name and mailing addresses of adjacent landowners (including across a street). Attach additional sheets if necessary.

Name/Address: SEE ATTACHED SHEET

Name/Address: _____

Name/Address: _____

WETLANDS APPLICATION OF PAZZ & CONSTRUCTION, LLC

LIST OF ABUTTING PROPERTY OWNERS

Name and Mailing Address	Property Address	Parcel Number
Ms. Geraldine J. Dzwilewski 90 North Bride Brook Road East Lyme, CT 06333	90 North Bride Brook Road	09.0/37
Ms. Margaret Berry Balon 86 North Bride Brook Road Niantic, CT 06357	86 North Bride Brook Road	09.0/37-1
State of Connecticut NCI & JB Gates Prison 199 West Main Street Niantic, CT 06357	199 West Main Street	10.0/2
Ms. Alice T. Welsh 102 North Bride Brook Road Niantic, CT 06357	102 North Bride Brook Road	14.0/66
Ms. Alice T. Welsh 102 North Bride Brook Road Niantic, CT 06357	North Bride Brook Road	14.0/67
Niantic Sportsmens Club Inc. P.O. Box 122 Niantic, CT 06357	Plants Dam Road	19.0/58
Mr. Frank Maric Mr. Rajko Maric 26 Johnson Place Ardsley, NY 10502	Spring Rock Road	14.0/45

10. Attach a completed DEP reporting form.

*The Agency shall revise or correct the information provided by the applicant and submit the form to the Commissioner of Environmental Protection in accordance with section 22a-30-14 of the Regulations of Connecticut State Agencies.
DEEP Statewide Reporting Form submitted with this application.*

11. Name of Erosion Control Agent (Person Responsible for Compliance):

Jason Pazzaglia

Address: 21 Darrows Ridge Road
East Lyme, Connecticut 06333

Phone: (860) 961-2364

Fax: n/a

Email: jpazz17@gmail.com

Cell: (860) 961-2364

12. Are you aware of any wetland violations (past or present) on this property? Yes No

If yes, please explain: _____

13. Are there any vernal pools located on or adjacent (within 500') to the property? Yes No

14. For projects that do not fall under the ACOE Category I general permit – Have you contacted the Army Corps of Engineers? Yes No N/A

15. Is this project within a public water supply aquifer protection area or a watershed area? Yes No

16. If so, have you notified the Commissioner of the Connecticut Department of Public Health and the East Lyme Water and Sewer Department? Yes No (Proof of notification must be submitted with your application). N/A

17. Attach the appropriate filing fee based on the fee schedule established in Section 19 of the Regulations.
Fee: \$1,010.00 (Make checks payable to "Town of East Lyme").

18. PUBLIC HEARINGS ONLY: The applicant must provide proof of mailing notices to the abutters prior to the hearing date.

The undersigned Applicant hereby consents to necessary and proper inspection of the above mentioned property by the East Lyme Inland Wetlands Agency and/or its agents at reasonable times both before and after the permit in question has been granted.

The Applicant affirms that the information supplied in this application is accurate to the best of his/her knowledge and belief. As the applicant I hereby certify that I am familiar with the information provided in this application and I am aware of the penalties for obtaining a permit through deception or through inaccurate or misleading information.

Printed Name: Pazz & Construction, LLC Date: November 21, 2019

Signature: By:  _____
Jason Pazzaglia, its Member

Please note:

Above notice to be published in legal section of newspaper having general circulation in the Town of East Lyme. Applicant to pay cost of publication. You or a representative must attend the Inland Wetlands Agency meeting to present your application.

NORTH BRIDE BROOK MULTI-FAMILY DEVELOPMENT

CHECKLIST FOR A COMPLETE APPLICATION

- completed application form including Department of Environmental Protection reporting form (green copy)
- A narrative of the purpose and description and methodology of all propose activities;
- n/a Alternatives considered by the applicant, reasons for leaving less than a 10' buffer between clearing and the wetlands. Such alternatives to be diagrammed on a site plan or drawing and submitted to the commission as part of the application;
- Names and mailing addresses of abutting property owners;
- Three copies of approximately 1"=40' scale plans
- Locations of existing and proposed land uses
- Locations of existing and proposed buildings
- n/a Locations of existing and proposed subsurface sewage disposal systems, and test hole descriptions
- Existing and proposed topographical and man-made features including roads and driveways, on and adjacent to the site
- Location and diagrams of proposed erosion control structures
- Assessor map and lot number
- Key or inset map
- North arrow
- Flood zone classification and delineation
- n/a Use of wetland and watercourse markers where appropriate.
- Soil types classification and boundary delineation (flagged and numbered boundary), Soil Scientist's original signature and certification on plans
- Soil Scientist's (or other wetland scientist) report on the function of the wetlands
- Watercourse channel location and flow direction, where appropriate
- 100 ft. regulated area depicted on plans
- n/a Conservation easements where appropriate
- A detailed erosion and sediment control plan which meets requirements set forth in the most recent revision of the *Connecticut Guidelines for Soil Erosion and Sediment Control*, published by the Connecticut Council on Soil and Water Conservation, including:
 - Location of areas to be stripped of vegetation and other unprotected areas
 - Schedule of operations including starting and completion dates for major development phases
 - Seeding, sodding, or re-vegetation plans for all unprotected or un-vegetated areas
 - Location and design of structural sediment control measures
 - Timing of planned sediment control measures
- n/a Use of wetland and watercourse markers
- Proper certification on the application documents and plans

In the case of filling in wetlands, watercourses, or regulated upland areas, the following items are necessary:

- n/a Area to be filled
- n/a Volume of requested fill
 - Finished slopes of filled areas
 - Containment and stabilization measures
 - Proposed finished contours
- n/a Evaluation of the effect of filling the wetlands with respect to storage volume and its impact downstream showing before and after development flows, and the evaluation of storm water detention including the existing need for flood control downstream

Other required items:

- n/a Proof of adjoining Town notification, where required;
 - All application fees required by Section 16 of these regulations;
 - A written narrative detailing how the effects of the applicant's proposed activities upon wetlands and watercourses shall be mitigated.
- n/a A written description of any and all future plans which may be linked to the activities proposed in the current application.
- n/a Address the potential to enhance the current buffer area.
 - Review drainage information with Town Engineering
 - Mailing requirements for abutters (public hearing only)

Appendix D - ORDINANCE ESTABLISHING SCHEDULE OF FEES FOR CONSERVATION, PLANNING AND ZONING COMMISSIONS

- 1.1 Application Fee **
 - 1.1.1 Residential Uses.....\$150.00 Plus *\$50.00/LOT
Plus Fee from Schedule A
 - 1.1.2 Commercial Uses\$400.00
Plus Fee from Schedule A
 - 1.1.3 All Other Uses\$200.00
Plus Fee from Schedule A

*Each lot with regulated activities
 **\$60 fee required by C.G.S 22a-27j will be added to the base fees.

- 1.2 Approval by Duly Authorized Agent ** \$100.00
- 1.3 Appeal of Duly Authorized Agent Decision.....\$300.00
- 1.4 Significant Activity Fee \$300.00
- 1.5 Public Hearing Fee
 - 1.5.1 Single Residential \$200.00
 - 1.5.2 Commercial/Industrial/Multi-Family \$450.00

1.6 Complex Application Fee Actual Cost
 The Inland Wetlands Agency may charge an additional fee sufficient to cover the cost of reviewing and acting on complex applications. Such fee may include, but not be limited to, the cost of retaining experts, to advise, analyze, review, and report on issues requiring such experts. The Agency or the duly authorized agent shall estimate the complex application fee, which shall be paid pursuant to section 19.1 of these regulations within 10 days of the applicant's receipt or notice of such estimate. Any portion of the complex application fee in excess of the actual cost shall be refunded to the applicant no later than 30 days after publication of the agency's decision.

- 1.7 Permitted and Nonregulated Uses :
 - 1.7.1 Permitted Uses as of Right\$0.00
 - 1.7.2 Nonregulated\$0.00
- 1.8 Regulation Amendment Petitions\$500.00
 (Does not include Notices or Regulation Advisories from DEP)
 - 1.8.1 Map Amendment Petitions\$500.00
Plus Fee from Schedule B

- 1.9 Modification of Previous Approval:\$100.00
- 1.10 Renewal of Previous Approval\$100.00
- 1.11 Monitoring Compliance Fee\$100.00

1.12 SCHEDULE A. For the purpose of calculating the permit application fee, the area in schedule A is the total area of wetlands and watercourses and the upland review area upon which a regulated activity is proposed.

SQUARE FEET of AREA

- 1.12.1. Less than 1,000.\$0.00
- 1.12.2. 1,000 to 5,000\$250.00
- 1.12.3. More than 5,000\$750.00

+ 60.
\$ 1,210.00

1.13 SCHEDULE B. For the purpose of calculating the map amendment petition fee, linear feet in schedule B is the total length of wetlands and watercourses boundary subject to the proposed boundary change.

LINEAR FEET

- 1.13.1. Less than 500\$0.00
- 1.13.2 500 to 1,000\$250.00
- 1.13.3 More than 1,000.....\$750.00

JAMES SIPPERLY
CERTIFIED SOIL SCIENTIST
21 CASE STREET
NORWICH, CT 06360
860-334-7073
james.sipperly.js@gmail.com

Brandon Handfield, Professional Engineer
Yantic River Consultants
191 Norwich Avenue
Lebanon, CT 06249

October 3, 2019

RE: INLAND WETLAND SOILS AND WATERCOURSES INVESTIGATION,
AND DELINEATION, NORTH BRIDE BROOK MULTI-FAMILY
DEVELOPMENT, NORTH BRIDE BOOK ROAD, EAST LYME, CT

Dear Mr. Handfield:

On Saturday, June 29, 2019 I visited the site referenced above to inspect the inland wetlands and watercourses delineation that was originally performed by Michael Schaefer, Soil Scientist quite some time ago. Remarkably, most of his blue flagging was still identifiable in the field on either side of the watercourse that flows through the center of a narrow wetland corridor that bisects the property.

I sampled the soil throughout the site using a soil auger to a depth of two to three feet. Based on my field observations and using the guidelines established by the National Cooperative Soil Survey and as defined by the Connecticut General Statutes I delineated the inland wetland soils and watercourse on the property. I delineated the inland wetlands and watercourses using blue flagging numbered 1-44 and 45-78 respectively.

At many, if not all of Michael Schaefer's flag locations, I conducted a soil transect using my soil auger and in every instance I agreed with his placement of his wetland flags.

The inland wetland soils associated with Bride Brook are classified as a poorly drained and very poorly drained Leicester, Ridgebury Whitman fine sandy loam. These soils are often found in depressions and drainageways on glacial till uplands and are mapped together as a complex due to their similar physical characteristics, use and management.

Bride Brook flows in a southerly direction under Route 95 via a culvert onto the subject property and bisects the property and continues onto the State of Connecticut property to the south. The width of the actual flow is variable from 1 foot to 3 feet and tends to branch out and form mini meanders at times due to the presence of rocks and boulders and the nature of the topography.

Ex "B"

The inland wetlands and watercourses locations are shown correctly on a site plan entitled "North Bride Brook Multi-Family Development, prepared for Pazza Construction, LLC, Overall Layout Plan, sheet 1 of 7, dated 9/25/19, scale 1"= 60'" prepared by Yantic River Consultants, LLC".

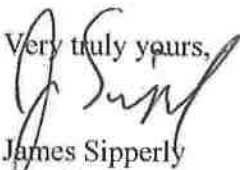
All of the wetland areas are classified as a forested wetland general classification. Its functions include: groundwater recharge and discharge, sediment stabilization, nutrient removal and transformation, product export, and wildlife diversity. The vegetative over-story includes maples, ash, black cherry, oak and poplar. Shrub species include winterberry, spice bush, silky dogwood and mountain laurel. The herbaceous layer includes sensitive fern, poison ivy, wildly grape and skunk cabbage. No evidence of invasive species was observed.

The proposed development in the upland review area will not be disturbing any wetlands and/or watercourses on the site. For that reason, the inland wetlands will continue to perform their functions as they currently do.

With any proposed project a comprehensive erosion and sedimentation control plan well designed and properly installed and maintained is the key to a successful project. Regular inspections should occur, especially after storm events of more than 0.1 inches of rain.

After reviewing the erosion and sedimentation control plans and the storm water design features it is my professional opinion that the proposed construction activities will not have a significant adverse effect on the adjacent inland wetlands and/or watercourse on or off the site.

If you have any questions or require additional information, please contact me at the telephone number referenced above.

Very truly yours,


James Sipperly
Certified Soil Scientist, Society of Soil Scientists of Southern New England
Connecticut Wetland Scientist, Connecticut Association of Wetland Scientists

AUTHORIZATION

Pazz & Construction, LLC hereby authorizes the law firm of Heller, Heller & McCoy to submit an application on its behalf to the Town of East Lyme Inlands Wetlands Agency for permits to conduct regulated activities in conjunction with the development of a proposed 108 unit multi-family development on real property located on the westerly side of North Bride Brook Road in the Town of East Lyme, Connecticut as depicted on a plan entitled "North Bride Brook Multi-Family Development Prepared For Pazz & Construction, LLC N. Bride Brook Road (Assessor's Map 9, Lot 37-2) East Lyme, CT Scale: 1" = 40' Sheets 1 of 7 to 7 of 7 Date 9/25/19 Yantic River Consultants, LLC 191 Norwich Avenue Lebanon, Conn 06249 Phone (860) 367-7264 E-mail: yanticriver@gmail.com Web: www.yanticriverconsultants.com".

Pazz & Construction, LLC hereby further authorizes the law firm of Heller, Heller & McCoy, the consulting civil engineering firm of Yantic River Consultants, LLC and James Sipperly, Soil Scientist, to represent its interests in all proceedings before the Town of East Lyme Inland Wetlands Agency with respect to said application for permits to conduct activities in upland review areas adjacent to wetlands and watercourses on the hereinbefore described property.

Dated at Montville, Connecticut this 21st day of November, 2019.

PAZZ & CONSTRUCTION, LLC

By:  _____ (L.S.)
Jason Pazzaglia, its Member

Ex "C"

APPLICATION OF PAZZ & CONSTRUCTION, LLC ("APPLICANT")
TO
TOWN OF EAST LYME INLAND WETLANDS AND WATERCOURSES
COMMISSION

NORTH BRIDE BROOK MULTI-FAMILY RESIDENTIAL DEVELOPMENT
NORTH BRIDE BROOK ROAD, EAST LYME, CONNECTICUT

APPLICATION NARRATIVE
DATE: NOVEMBER 22, 2019

PROJECT OVERVIEW

The Applicant is the owner of a 20.24 acre, more or less, tract of land, located on the westerly side of North Bride Brook Road in the Town of East Lyme, Connecticut (the "Property"). The Property enjoys road frontage both to the north and south of a single family dwelling and appurtenant facilities located at 90 North Bride Brook Road, which parcel is owned of record by Geraldine J. Dzwilewski as shown on the hereinafter referenced plan. The Applicant proposes to develop the easterly portion of the Property for one hundred eight (108) multi-family residential units formulated in an application to be submitted to the East Lyme Zoning Commission pursuant to the provisions of Section 8-30g of the Connecticut General Statutes.

As depicted on the Overall Layout Plan for the project entitled "North Bride Brook Multi-Family Development Prepared For Pazz & Construction, LLC Overall Layout Plan N, Bride Brook Road (Assessor's Map 9, Lot 37-2) East Lyme, CT Scale: 1" = 40' Sheet 1 of 7 Date 9/25/19 Yantic River Consultants, LLC 191 Norwich Avenue Lebanon, Conn 06249 Phone (860) 367-7264 E-mail: yanticriver@gmail.com Web: www.yanticriverconsultants.com" (the "Overall Layout Plan"), the project parcel is bifurcated by a wetland system associated with Bride Brook which flows through the project site in a northwesterly to southeasterly orientation. In conjunction with the instant development initiative, the Applicant is proposing only to develop that portion of the project site which is located easterly of the wetland system. As depicted on the Overall Layout Plan, the project site accommodates 48,970 square feet (1.12 acres) of regulated inland wetland and/or watercourse area, all comprised of the riparian system which incorporates and is adjacent to Bride Brook.

All proposed dwelling units to be constructed in the North Bride Brook Multi-Family Development will interconnect with the municipal sewer system administered by the Town of East Lyme Water and Sewer Commission and will obtain a potable water supply from the East Lyme municipal water system. The East Lyme Water and Sewer Commission has allocated 35,400 gallons of sewer capacity to provide sanitary sewer service to the 108 proposed residential apartment units to be constructed in the North Bride Brook Multi-Family Development.

The project will obtain vehicular and pedestrian access by virtue of a private access road which will intersect North Bride Brook Road adjacent northerly to the Dzwilewski property as depicted on the Overall Layout Plan. All roads interior to the multi-family development will be

privately owned and maintained by the Applicant/developer. The roadways within the multi-family development will be curbed and will accommodate a closed drainage system which will collect stormwater runoff from impervious and semi-pervious areas within the project development and transmit the same to a stormwater quality/detention basin located in the southeasterly corner of the project site. A swale to be constructed along the northeasterly periphery of the project site will direct stormwater runoff from semi-pervious areas of the project site to Catch Basin #309 which will pick up any overland flow emanating from semi-pervious areas of the project site and introduce the same to the stormwater system incorporated into the project design. Stormwater from the closed drainage system will discharge to a sediment forebay in the detention basin area in the southeasterly corner of the project site. The sediment forebay shall be separated from the detention basin by a filter berm constructed in accordance with the "Detention Filter Berm" detail delineated on Sheet 7 of 7 of the site development plan. The design of the sediment forebay and detention basin has been formulated in order to attain residency time in the sediment forebay for suspended solids in the stormwater stream to filter out and settle before the stormwater passes through the semi-pervious filter berm to the detention basin itself. Stormwater from the detention basin will be released at a controlled rate based upon the orifice sizes in the outlet structure to be located in the northeast corner of the detention basin. Water outletting the detention basin will be introduced to a cross-culvert under North Bride Brook Road and thereafter discharged to the environment. The stormwater design has been formulated in order to attenuate any increase in peak runoff for all design storm events from the 2 year storm to the 100 year storm.

In order to provide recharge to the wetland/watercourse system which bisects the property in a northwesterly to southeasterly direction, the project engineer has provided for roof top runoff from Buildings I, J and M as depicted on the Overall Layout Plan to be discharged to a rip rap splash pad at a westerly corner of each building. These stormwater discharges have been formulated to replicate the existing flows which currently reach and contribute to the recharge of the wetland system associated with Bride Brook.

The Property, with the exclusion of the wetland system which accommodates Bride Brook, is entirely composed of upland soils. A description of the vegetation and soil composition, including a detailed analysis of the characteristics and functions of the wetland and watercourse systems on the Property is contained in a report dated October 3, 2019 prepared on behalf of the Applicant by James Sipperly, certified soil scientist. This report is submitted with and constitutes an integral component of the application for permits to conduct regulated activities which is being submitted contemporaneously herewith to the Town of East Lyme Inland Wetlands and Watercourses Commission.

The Applicant is seeking a permit from the Town of East Lyme Inland Wetlands and Watercourses Commission to conduct regulated activities in the upland review area adjacent easterly to the wetland/watercourse system which bisects the Property in a northwesterly to southeasterly direction in conjunction with the development of its proposed 108 unit multi-family affordable residential development. Activities proposed by the application in the upland review area include the construction of Buildings J and M and a portion of Building I, the construction of a portion of the roadway and parking system which will provide access to and parking for Buildings I, J, K, L and M, grading and landscaping adjacent to Buildings I, J and M

and the stormwater discharge of the rooftop stormwater from Buildings I, J and M incorporated into the project design to provide stormwater recharge to the adjacent wetland system. The Applicant, in conjunction with the development of the multi-family residential project, is not proposing any direct disturbance to any inland wetland or watercourse. There are 4.56 acres of upland review area located adjacent to the wetland/watercourse system which bisects the Property. In conjunction with the development of its multi-family residential project, the Applicant is proposing disturbance of 1.44 acres of this upland review area. Through the incorporation of a robust erosion and sediment control program during construction, and well thought out stabilization techniques and a long term maintenance program, it is not anticipated that the activities proposed by the Applicant in the upland review area will have any adverse impact on the adjacent wetland/watercourse system. The statements contained in this Narrative are affirmed by the Evaluation Report of James Sipperly contained in his correspondence to the East Lyme Inland Wetlands and Watercourses Commission dated October 3, 2019.

The design of the stormwater collection, treatment and discharge system for the project was chosen by the Applicant's engineer in order to (i) avoid disturbance in conjunction with the development of the Property in wetlands and limit disturbance to upland review areas, resulting in no direct impact to or disturbance of any regulated inland wetland or watercourse (ii) maintain the existing hydraulic regime on the Property post-development in order to insure that there is adequate recharge for the wetland/watercourse system which bisects the Property in a northwesterly to southeasterly direction and (iii) discharge a highly renovated stormwater to the environment in a location which will not adversely impact wetlands or watercourses.

The development plan for the Property, as well as the development techniques specified by the design engineer, all of which have been incorporated into the site development plan, have been formulated to accomplish the following goals:

1. To avoid, to the maximum extent possible, wetland and environmental resources, and upland review areas adjacent to those resources located on the Property.
2. To provide housing units which will represent a good value to the public.
3. To replicate the pre-development hydrology of the wetland/watercourse system which bisects the Property.

The stormwater quality system which has been incorporated into the project vernacular has been designed by the Applicant's consulting engineer, Yantic River Consultants, LLC, in order to satisfy the goals enunciated in the 2004 Connecticut Department of Environmental Protection Stormwater Quality Manual. The stormwater quality forebay has been designed to receive and detain the water quality volume which will consist of the first one (1") inch of rainfall. The collection, treatment and discharge system has been designed both to meet the stormwater quality goals as well as to provide flood control by the attenuation of peak rates of discharge before the stormwater is released to the environment.

The soil designation for all soils located on the Property are identified on the Overall Layout Plan and their characteristics are set forth in the next section of this Narrative.

Stormwater runoff calculations for the project are contained in a report submitted herewith by Yantic River Consultants, LLC dated November 1, 2019.

SOIL CHARACTERISTICS

Upland areas of the Property are comprised of three (3) soil types designated on the Overall Layout Plan as “Haven Silt Loam 0-3% (Code 703A)”, “Charlton-Chatfield Complex, 15-45% (Code 73E)” and “Charlton-Chatfield Complex, 0-15% (Code 73C)”. The soil characteristics for each soil type are as follows:

Haven Silt Loam

The Haven Silt Loam soils are located in the southeasterly corner of the project site, primarily in the location of the parking area associated with Building E and the stormwater treatment and detention area. This soil type consists of well drained soils that formed in glacial outwash. Haven soils are found on stream terraces and outwash plains. Haven soils are found in a drainage sequence on the landscape with moderately well-drained Tisbury soils and poorly drained Raypol soils. They are near excessively drained Hinckley soils, well-drained Canton, Charlton, Narragansett and Agawam soils and moderately well-drained Ninigret soils. The typical soil stratification for the Haven soil is as follows:

- | | |
|-----------|---|
| 0” – 7” | Dark brown silty loam; weak fine granular structure; very friable; common fine and medium roots; 5% coarse fragments; strongly acid; abrupt wavy boundary. |
| 7” – 11” | Brown silty loam; weak medium subangular blocky structure; friable; few fine roots; 5% coarse fragments; strongly acid; gradual wavy boundary. |
| 11” – 15” | Dark yellowish brown silt loam; weak medium subangular blocky structure; friable; few fine roots; 10% coarse fragments; strongly acid; gradual wavy boundary. |
| 15” – 23” | Yellowish brown silt loam; weak medium subangular blocky structure; friable; few fine roots; 15% coarse fragments; strongly acid; clear wavy boundary. |
| 23” – 60” | Light yellowish brown very gravelly sand; single grain; loose; 55% coarse fragments; medium acid. |

Charlton-Chatfield Complex (0-15%)

This soil complex is found on gently sloping to strongly sloping landscapes with bedrock controlled hills and bedrock controlled uplands. 0-3% of the surface area is covered with stones. This complex is comprised of 45% Charlton soils, 30% Chatfield soils and 25% other soils.

The stratification of the Charlton soils is as follows:

0" – 4"	Fine sandy loam.
4" – 7"	Fine sandy loam.
7" – 19"	Fine sandy loam.
19" – 27"	Gravelly fine sandy loam.
27" – 65"	Gravelly fine sandy loam.

The stratification of the Chatfield soils is as follows:

0" – 1"	Highly decomposed plant material.
1" – 6"	Gravelly fine sandy loam.
6" – 15"	Gravelly fine sandy loam.
15" – 29"	Gravelly fine sandy loam.
29" – 80"	Unweathered bedrock.

Permeability in the Charlton-Chatfield complex is well drained. Available water capacity is moderate to high. Depth to restrictive features in the Charlton soils is greater than 72" and 20" to 40" in the Chatfield soil.

Included with these soils and mapping are areas of moderately well-drained Sutton soils and poorly drained Leicester soils. Sutton soils are in slight depressions in the landscape; Leicester soils are in depressions and drainage ways. Also included are small areas of shallow, somewhat excessively drained Hollis soils where bedrock is 10" – 20" below the surface.

This soil group (designated as 73C on the Overall Layout Plan) is located in the northeasterly portion of the proposed to be developed project site and accommodates the entire westerly portion of the Property located westerly of the wetland/watercourse system which bisects the Property.

Charlton-Chatfield Complex (15-45%)

This Charlton-Chatfield complex (15-45%) is found on moderately steep to steep slopes on the landscape with bedrock controlled hills and bedrock controlled hills and uplands. 0-3% of the surface area of this soil is covered by stones. Charlton soils comprise 45% of the Charlton-Chatfield complex, Chatfield soils comprise 30% of the complex and 25% of the complex is comprised of other soils. Depth to bedrock in the Charlton soils is very deep and depth to bedrock in the Chatfield soils is moderately deep or deep. Both soils are well drained soils

formed from course-loamy melt-out till derived from granite and/or Schist and/or Gneiss. Both components of the Charlton-Chatfield complex are well-drained soils and permeability in each soil is moderate or moderately rapid. The depth to the restrictive layer in the Charlton soils is greater than 72" and the depth to the restrictive layer in the Chatfield soils is 20" to 40". Depth to seasonal groundwater in both soils is greater than 6'.

The stratification of the Charlton soil is as follows:

0" – 4"	Fine sandy loam.
4" – 7"	Fine sandy loam.
7" – 19"	Fine sandy loam.
19" – 27"	Gravelly fine sandy loam.
27" – 65"	Gravelly fine sandy loam.

The stratification of the Chatfield soils is as follows:

0" – 1"	Highly decomposed plant material.
1" – 6"	Gravelly fine sandy loam.
6" – 15"	Gravelly fine sandy loam.
15" – 29"	Gravelly fine sandy loam.
29" – 80"	Unweathered bedrock.

The Charlton-Chatfield complex is found on the landscape in areas of moderately well-drained Sutton soils and poorly drained Leicester soils. Sutton soils are found in slight depressions on the landscape. Leicester soils are found in depressions and drainage ways. Also included in this complex are small areas of shallow, somewhat excessively drained Hollis soils where bedrock is 10" – 20" below the surface.

WETLAND SOILS

The wetland soils associated with the riparian corridor of Bride Brook extending in a northeasterly to southeasterly orientation through and across the Property are Ridgebury, Leicester, Whitman soils. These nearly level, poorly drained and very poorly drained soils are found in drainage ways and depressions on glacial till, upland hills, ridges, plains and drumloidal landforms. Stones and boulders cover 8-25% of the surface. Slopes range from 0-3%. The mapped acreage of this undifferentiated group is about 35% Ridgebury soil, 30% Leicester soil, 20% Whitman soil and 15% other soils. Some mapped areas consist of one of these soils, and

other areas consist of two or three. These soils were mapped together because there are no major differences in use and management.

The soil stratification for the Ridgebury soil is as follows:

- 0" – 1" Partly decomposed leaves.
- 0" – 4" Black, fine sandy loam; weak medium granular structure; friable; common fine roots; 5% rock fragments; strongly acid; clear wavy boundary.
- 4" – 13" Gray fine sandy loam; common medium distinct strong brown mottles and common, medium faint yellowish brown mottles; massive; friable; 5% rock fragments; strongly acid; gradual wavy boundary.
- 13" – 20" Brown fine sandy loam; many medium distinct yellowish brown mottles and few fine faint grayish brown mottles; massive; friable; firm in place; 10% rock fragments; slightly acid; clear wavy boundary.
- 20" – 60" Grayish brown sandy loam; few fine faint yellowish brown mottles; massive; very firm, brittle; 5% rock fragment; slightly acid.

The stratification of the Leicester soil is as follows:

- 0" – 2" Decomposed leaves.
- 2" – 6" Very dark gray fine sandy loam; weak fine granular structure; very friable; few fine and medium roots; 5% rock fragments; very strongly acid; abrupt smooth boundary.
- 6" – 12" Dark grayish brown, fine sandy loam; few fine faint yellowish-brown mottles and many medium distinct light brownish gray mottles; weak medium subangular blocky structure; very friable; few medium roots; 5% rock fragments; strongly acid; clear wavy boundary.
- 12" – 24" Grayish brown, fine sandy loam; few medium distinct yellowish-brown and dark grayish brown mottles; weak medium subangular blocky structure; friable; 10% rock fragments; strongly acid; gradual wavy boundary.
- 24" – 32" Pale olive fine sandy loam; many coarse distinct yellowish brown mottles; weak medium subangular blocky structure; friable; 15% rock fragments; strongly acid; gradual wavy boundary.
- 32" – 60" Light olive gray gravelly fine sandy loam; many medium distinct yellowish brown mottles; massive; friable; 25% rock fragment; strongly acid.

The stratification of the Whitman soil is as follows:

0" – 1"	Decomposed leaf litter.
1" – 9"	Black fine sandy loam; weak medium granular structure; friable; common fine and medium roots; strongly acid; abrupt wavy boundary.
9" – 16"	Dark grayish brown fine sandy loam; few fine faint yellowish brown mottles; weak medium subangular blocky structure; friable; few fine roots; 5% rock fragments; medium acid; clear wavy boundary.
16" – 22"	Grayish brown, fine sandy loam; common medium distinct strong brown mottles and few medium light brownish gray mottles; moderate medium platy structure; very firm, brittle; 5% rock fragments; slightly acid; gradual wavy boundary.
22" – 60"	Grayish brown fine sandy loam; common medium distinct strong brown mottles and few medium faint light brownish gray mottles; massive; firm, brittle; 5% rock fragments; slightly acid.

Included with these soils and mapping are small areas of moderately well drained Rainbow, Sutton and Woodbridge soils and very poorly drained Adrian and Palms soils. The Ridgebury soil has a seasonal high water table at a depth of about 6". Permeability is moderate or moderately rapid in the surface layer and subsoil and slow or very slow in the substratum. The Leicester soil has a seasonal high water table at a depth of about 6". Permeability is moderate or moderately rapid. The Whitman soil has a high water table at or near the surface for most of the year. Permeability is moderate or moderately rapid in the surface layer and subsoil and slow or very slow in the substratum.

PROPOSED REGULATED ACTIVITIES

1. The development of proposed Building J and proposed Building M and a portion of proposed Building I in the upland review area adjacent easterly to the wetland system as depicted on the Overall Layout Plan.
2. The construction and use of a portion of the cul-de-sac, secondary access drive and parking in the upland review area adjacent easterly to the wetland system on the Property.
3. Grading and landscaping in the upland review area in conjunction with the development of proposed Buildings I, J and M, the cul-de-sac, secondary access drive and parking in the upland review area adjacent easterly to the wetland system on the Property.

4. The discharge of roof collected stormwater from Buildings I, J and M as depicted on the Overall Layout Plan in the upland review area adjacent easterly to the wetland system on the Property to provide recharge for the adjacent wetlands.

GENERAL PROCEDURES

1. Prior to the conducting any construction activities on the Property, the Applicant, and its contractor, shall meet with the East Lyme Wetlands Enforcement Officer and the East Lyme Zoning Enforcement Officer to discuss and agree upon the method of installation and maintenance of erosion and sediment control measures during construction as well as a construction inspection schedule (the "Preconstruction Meeting").
2. Subsequent to the Preconstruction Meeting, the Applicant's surveyor shall delineate in the field the limits within which construction activities shall occur and shall further delineate the location for the installation of all erosion and sediment control measures as depicted on a plan entitled "North Bride Brook Multi-Family Development Prepared For Pazz & Construction, LLC Erosion & Sedimentation Control Plan N. Bride Brook Road (Assessor's Map 9, Lot 37-2) East Lyme, CT Sheet 5 of 7 Date 9/25/19 Yantic River Consultants, LLC 191 Norwich Avenue Lebanon, Conn 06249 Phone (860) 367-7264 E-mail: yanticriver@gmail.com Web: www.yanticriverconsultants.com" (the "Erosion Control Plan").
3. Upon agreement of the East Lyme Wetlands Enforcement Officer and the East Lyme Zoning Enforcement Officer, the Applicant shall clear (but not grub) the area required for the installation of erosion and sediment control measures as delineated on the Erosion Control Plan.
4. Once clearing of the areas for the installation of erosion and sediment control measures has been accomplished, the Applicant (or its contractor) shall install the erosion and sediment control measures as delineated on the Erosion Control Plan. In no event shall grubbing or soil disturbance (other than that required for the clearing associated with the installation of erosion and sediment control measures) occur until such time as all erosion and sediment control measures have been installed and inspected, as hereinafter provided.
5. At such time as all erosion and sediment control measures have been installed in accordance with the Erosion Control Plan and in accordance with the directives of the East Lyme Wetlands Enforcement Officer and the East Lyme Zoning Enforcement Officer enunciated at the Preconstruction Meeting, the Applicant shall contact the East Lyme Wetlands Enforcement Officer and the East Lyme Zoning Enforcement Officer to perform an on-site inspection of the installation of said erosion and sediment control measures. In no event shall actual construction activities be commenced either with respect to the infrastructure for the project or on any buildings, until such time as the East Lyme Wetlands Enforcement Officer and the East Lyme Zoning Enforcement Officer have reviewed and approved the installation of all applicable erosion and sediment control measures.

6. In conjunction with the development of the North Bride Brook Multi-Family Development, marketable timber removed in conjunction with construction activities shall be removed from the site. Construction debris (i.e. stumps, branches, etc.) shall either be (i) ground in place or (ii) removed to an area approved, in advance, by the East Lyme Zoning Enforcement Officer. In no event shall stumps or construction debris be buried on site.
7. All erosion and sediment control measures shall be inspected at least twice weekly while construction is ongoing and after every storm event resulting in the deposition of in excess of one-tenth of one (0.10") inch of precipitation and repaired and maintained as necessary.
8. If any erosion and sediment control measure fails or is not installed or maintained in accordance with the Erosion Control Plan or the directives of the East Lyme Wetlands Enforcement Officer or the East Lyme Zoning Enforcement Officer, the Applicant shall be required to cease all construction activities with respect to the development of the North Bride Brook Multi-Family Development until such time as said erosion and sediment and control measures have been installed in accordance with the Erosion Control Plan and/or the directives of the East Lyme Wetlands Enforcement Officer or the East Lyme Zoning Enforcement Officer and approval of the same has been certified, in writing, by the East Lyme Wetlands Enforcement Officer and the East Lyme Zoning Enforcement Officer.
9. During the stabilization period (after construction of any area on the Property has been completed, but prior to certification of approval thereof by the East Lyme Wetlands Enforcement Officer and the East Lyme Zoning Enforcement Officer for removal of erosion and sediment control measures) all erosion and sediment control measures shall be maintained in proper working order and condition. Unless notice otherwise is provided to the East Lyme Wetlands Enforcement Officer and the East Lyme Zoning Enforcement Officer, Jason Pazzaglia, 21 Darrows Ridge Road, East Lyme, Connecticut 06333, (860) 961-2364, jpazz17@gmail.com shall be the responsible party for compliance with all erosion and sediment control measures and requirements in conjunction with construction activities on the Property. All erosion and sediment control measures shall be inspected, maintained and/or repaired, as necessary, as set forth above.
10. Subject to permitting requirements, it is anticipated that the construction of infrastructure improvements for the North Bride Brook Multi-Family Development shall commence in the summer of 2020. The project will be constructed in increments and it is anticipated that a 3 – 4 year period will be required for the complete construction and stabilization of the North Bride Brook Multi-Family Development.
11. During the stabilization period, any erosion which occurs shall be immediately repaired by the Applicant, reseeded with the seeding mixes set forth in the Construction Sequencing section of this Narrative and re-stabilized.

12. Once complete site stabilization has been achieved, and certification thereof obtained, in writing, from the East Lyme Wetlands Enforcement Officer and the East Lyme Zoning Enforcement Officer, all erosion and sediment control measures shall be removed by the Applicant.

CONSTRUCTION SEQUENCING

1. The Applicant shall clear the area for the initial phase of construction of the North Bride Brook Multi-Family Development. No grubbing shall occur until subsequent to the installation and inspection of erosion and sediment control measures. Any marketable timber shall be removed from the Property.
2. The Applicant shall install silt fence down gradient of the area of all construction activities as depicted on the Erosion Control Plan. The Applicant may use wood chip berms in lieu of silt fence as an acceptable methodology for sediment and erosion control. Silt fence installation, if utilized, shall be effected in accordance with the "Silt Fence" detail as depicted on Sheet 6 of 7 of the project site plan.
3. The Applicant shall install the anti-tracking apron at the construction interface of the access road to the Property with North Bride Brook Road in accordance with the "Anti-Tracking Pad Detail" as depicted on Sheet 6 of 7 of the project plans.
4. Upon completion of installation of erosion and sediment control measures, the Applicant shall contact the East Lyme Wetlands Enforcement Officer and the East Lyme Zoning Enforcement Officer to perform an inspection of the installation of erosion and sediment control measures. In no event shall mass soil disturbance and/or grubbing occur in the first phase of the project until such time as the installation of erosion and sediment control measures has been approved by the East Lyme Wetlands Enforcement Officer and the East Lyme Zoning Enforcement Officer.
5. Surface soil shall be stripped in the first phase construction area and stockpiled in a surface soil stockpile area as depicted on the Erosion Control Plan. Surface soil stockpiles shall have a slope not exceeding 4:1, and shall be stabilized by seeding with a perennial ryegrass mix and mulch. The perennial ryegrass mix shall be applied at a rate of 40 pounds per acre. Mulch shall be applied at the rate of 80 pounds per 1,000 square feet, and shall be spread by hand or with a mulch blower. Silt fence or staked hay bales shall be installed along the down gradient periphery of each surface stockpile location.
6. Excavation for the installation of the water quality forebay and stormwater detention basin shall be effected at the location delineated on the plans. Excavated materials shall be retained for use as fill in fill areas on the project site as delineated on the project plans. The water quality/detention basin shall be excavated and shaped to the contours and at the depths depicted on the project site development plan. Culvert trenches shall be excavated in order to effect the interconnection of the outlet structure within the detention basin to the catch basin system in North Bride Brook Road.

7. Upon completion of the excavation of the culvert trenches, bedding material, not less than 12" shall be installed and compacted in each trench bed.
8. The outlet structure (OCS #100) shall be installed in the northeasterly corner of the detention basin and interconnected to the 15" HDPE outlet culvert which will extend to and interconnect with an existing CB-C (Type II) catch basin in North Bride Brook Road.
9. Upon placement of the outlet culvert, bedding, not less than 12" in thickness shall be installed over the top of the culvert pipe installation and compacted in place. Thereafter, the culvert trenches shall be backfilled with stored surface soil.
10. The filter berm shall be installed separating the water quality forebay from the detention basin in accordance with the detention filter berm detail as depicted on Sheet 7 of 7 of the site development plan.
11. The water quality-detention basin embankments shall be constructed of silty sand and/or clay material.
12. The stormwater quality forebay shall be loamed with not less than 6" of surface soil containing not less than 8% organic content.
13. The stormwater detention basin shall be loamed with not less than 6" of surface soil containing not less than 8% organic content.
14. The water quality forebay and detention basin shall be planted by installing the New England Erosion Control/Restoration Mix or equal. The New England Erosion Control/Restoration Mix contains a selection of native grasses and wild flowers designed to colonize generally moist, recently disturbed sites where quick growth of vegetation is desired to stabilize the soil surface. This mix is particularly appropriate for water quality/detention basins which do not normally hold standing water. The plants in this mix can tolerate infrequent inundation but not constant flooding. The New England Erosion Control/Restoration Mix contains the following species: Switchgrass, Virginia Wild Rye, Creeping Red Fescue, Fox Sedge, Creeping Bent Grass, Silky Wild Rye, Nodding Bur-marigold, Soft Rush, Grass-Leaved Goldenrod, Sensitive Fern, Jo-Pyc Weed, Boneset, Flat-Top Aster, New York Aster and Blue Vervain. The seed mix shall be applied at a rate of 1 pound per 1,245 square feet of disturbed area.

Disturbed areas on the water quality/detention basin berm and exterior thereto which are not anticipated to contain the hydrology required to support the New England Erosion Control/Restoration Mix shall be prepared by spreading ground limestone equivalent to 50% calcium plus magnesium oxide applied at a rate of 50 pounds per 1,000 square feet. Fertilizer (10-10-10) is to be applied at a rate of 7.5 pounds per 1,000 square feet. Following the initial application of lime and fertilizer, there are to be no periodic applications of lime and fertilizer. Disturbed areas will be seeded with a seeding mixture of Kentucky Bluegrass applied at a rate of 20 pounds per acre, Creeping Red Fescue applied at a rate of 20 pounds per acre and Perennial Ryegrass applied at a rate of 5

pounds per acre for a total application of 45 pounds per acre. In the event that a hydroseed mix is not utilized, after seeding, the areas seeded shall be stabilized with hay mulch immediately applied at a rate of 70 pounds per 1,000 square feet, and anchored by tracking. Seeding shall only occur between April 15 and June 15 and August 15 to October 1.

15. As areas of the project site are cleared and grubbed, the Applicant shall install, in the downgradient locations delineated on the Erosion Control Plan, temporary sediment traps in accordance with the "Temporary Sediment Trap" detail depicted on Sheet 6 of 7 of the site development plan which shall be sized, in the field, by the Applicant's consulting civil engineer in accordance with the "Temporary Sediment Trap (TST) Sizing" chart as depicted on Sheet 6 of 7 of the site development plan.
16. Upon completion of the installation and stabilization of the water quality/stormwater detention basin, construction shall progress sequentially in the first phase of project development in accordance with the site development plan.
17. All utility installations, including stormwater, the potable water distribution system and sanitary sewer facilities shall be installed in accordance with the design plans utilizing the trenching, compaction and cover requirements as hereinbefore set forth.
18. As the stormwater drainage system is being sequentially completed, the Applicant shall install sediment control devices in each installed catch basin in accordance with the "Inlet Sediment Control Device" detail depicted on Sheet 6 of 7 of the project site development plan.
19. Areas for road and parking construction and building construction in the first phase of the project shall be "boxed-out" and/or excavated, as the case may be, in accordance with the specifications, and at the elevations depicted on the project site development plan.
20. Excavated material derived from site development shall either be utilized as structural fill in fill areas in the first phase of the project or stored in soil stockpiles in the soil stockpile locations as depicted on the Erosion Control Plan. Any stockpiled earth product material shall be stabilized and protected by the installation of erosion control devices in accordance with the requirement hereinbefore set forth in this Construction Sequencing Narrative.
21. Each road location shall be boxed out and trenches excavated for the installation of all utilities, including stormwater drainage.
22. Upon the completion of culverting, not less than 12" of clean bedding material shall be installed in each utility trench.
23. Subsequent to the installation of bedding, utilities, including stormwater drainage pipes, shall be installed as delineated on the utilities plan incorporated into the site development plan.

24. Once utilities have been installed, each utility trench shall be backfilled with clean bedding material compacted to a depth of not less than 12" over each utility installation. Areas to be paved will be prepared by installing a compacted gravel subgrade base, overlaid with 8" of processed gravel (compacted) and thereafter by the installation of 3" of compacted Class 2 bituminous concrete placed in 1.5" lifts in accordance with the Bituminous Pavement detail delineated on Sheet 6 of 7 of the project site development plan. Bituminous concrete curbing shall be installed in accordance with the "Bituminous Concrete Curb (BCLC) Detail" as depicted on Sheet 6 of 7 of the project site development plan.
25. Buildings in the first phase of the project shall be constructed in accordance with the architectural plans for the development of the same.
26. Upon completion of construction in the first phase of the project, disturbed areas shall be stabilized by spreading stockpiled surface soil over these areas at a thickness of not less than 4". Areas to be seeded will be prepared by spreading ground limestone equivalent to 50% calcium plus magnesium oxide applied at a rate of 50 pounds per 1,000 square feet. Fertilizer (10-10-10) is to be applied at a rate of 7.5 pounds per 1,000 square feet. Following the initial application of lime and fertilizer, there are to be no periodic applications of lime and fertilizer.
27. All disturbed areas on slopes greater than 6' in height shall be stabilized by the installation of North American Green S150 or approved equal erosion control blanket installed in accordance with the Erosion Control Blanket Slope Installation Detail as depicted on Sheet 6 of 7 of the site development plan. Other disturbed areas will be seeded with a seeding mix of Kentucky Bluegrass applied at a rate of 20 pounds per acre, Creeping Red Fescue applied at a rate of 20 pounds per acre and perennial Ryegrass applied at a rate of 5 pounds per acre for a total application of 45 pounds per acre. A hydroseed mix utilizing comparable cultivars shall be a suitable substitute. In the event that a hydroseed mix is not utilized, after seeding, the areas seeded shall be stabilized with hay mulch immediately applied at a rate of 70 pounds per 1,000 square feet, and anchored by tracking. Seeding shall only occur between April 15 and June 15 and August 15 to October 1.
28. Once all disturbed areas have been thoroughly stabilized, erosion and sediment control measures shall be removed.
29. As the Applicant nears completion of construction of improvements in the first phase of the North Bride Brook Multi-Family Development, the Applicant shall commence construction of the second phase of the project; and, thereafter, sequentially, each additional phase until completion of the project has been achieved.
30. As each sequential phase of the North Bride Brook Multi-Family Development is constructed, the Applicant shall install, maintain and utilize the erosion control measures and structures depicted on the Erosion Control Plan which shall be installed, administered

and utilized in accordance with the procedures set forth in the General Procedures section of this Narrative and, as applicable, the construction sequencing requirements contained in the Construction Sequencing section of this Narrative.

MAINTENANCE REQUIREMENTS

1. As delineated in the General Procedures section of this Narrative, the Applicant shall, during construction of the project, be responsible for inspecting all erosion control measures installed in the active development phase of the project on a twice weekly basis and after each storm event resulting in the deposition of in excess of 0.10" of precipitation.
2. At any time that sediment reaches one-half the height of the silt fence or the wood chip berm, the sediment shall be removed and utilized as site fill on the Property.
3. Temporary sedimentation traps shall be inspected in accordance with the inspection schedule required pursuant to the General Procedures section of this Narrative. At such time as temporary sedimentation traps are filled to 50% of their capacity, excavation equipment shall be introduced into the temporary sediment traps and all collected sediment shall be excavated and removed from the sedimentation traps to restore the temporary sedimentation traps to their designed capacity. Removed sediment shall be utilized as structural site fill on the project site.
4. Check dams and water bars shall be inspected in accordance with the inspection schedule required pursuant to the requirements of the General Procedures section of this Narrative and cleaned and repaired as necessary in order to insure their functional utility.
5. Inlet sediment control devices shall be inspected weekly and after every storm event resulting in more than 0.10" of precipitation and cleaned as necessary. If any inspection discloses any breach in an inlet sediment control device, the inlet sediment control device shall be replaced immediately.

PERMANENT MAINTENANCE SCHEDULE

1. All parking areas, roadways, sidewalks, driveways and other impervious areas (other than rooftops) shall be swept clean of sand, litter and other possible pollutants twice each year, once between November 14 and December 15 (after leaf fall has concluded) and once during the month of April (after the possibility of further sanding has ended). All material accumulated as a result of the sweeping activities shall be disposed of in accordance with law.
2. The Applicant shall utilize a sand/salt mix of 80/20 for winter roadway, parking lot and sidewalk treatments.

3. All catch basin sumps shall be cleaned at least once per year between the period April 15 and May 30. All material cleaned from catch basin sumps shall be disposed of in accordance with law.
4. A monthly inspection of all stormwater structures installed within the project, including the water quality forebay and the stormwater detention basin, and outfalls, shall be conducted for floating or surface debris. Any floating or surface debris encountered shall be removed and properly disposed of.
5. Except during the grow-in period, the water quality forebay shall be inspected once per year. At such time as accumulated sediments attain a depth of 12", accumulated sediment shall be removed and disposed of in accordance with law. The water quality forebay and detention basin shall be mowed once each year at the conclusion of the growing season.
6. The Applicant shall be responsible for compliance with all of the terms and provisions of this Narrative, including adherence to the maintenance requirements contained in this section hereof.
7. During the first two (2) years subsequent to the completion of the project, the Applicant shall inspect all downgradient discharge areas within the project for channelization subsequent to any storm event resulting in the deposition of in excess of 1" of rainfall. If channelization is occurring, the Applicant shall immediately retain the services of a certified soil and erosion control specialist in order to design remedial measures in order to diffuse the flow causing the channelization and shall forthwith implement the remedial measures designed by the certified soil and erosion control specialist.



Statewide Inland Wetlands & Watercourses Activity Reporting Form

Please complete and mail this form in accordance with the instructions on pages 2 and 3 to:

DEEP Land & Water Resources Division, Inland Wetlands Management Program, 79 Elm Street, 3rd Floor, Hartford, CT 06106

Incomplete or incomprehensible forms will be mailed back to the inland wetlands agency.

PART I: Must Be Completed By The Inland Wetlands Agency

- 1. DATE ACTION WAS TAKEN: year: _____ month: _____
- 2. ACTION TAKEN (see instructions, only use one code): _____
- 3. WAS A PUBLIC HEARING HELD (check one)? yes no
- 4. NAME OF AGENCY OFFICIAL VERIFYING AND COMPLETING THIS FORM:
(print name) _____ (signature) _____

PART II: To Be Completed By The Inland Wetlands Agency Or The Applicant

- 5. TOWN IN WHICH THE ACTION IS OCCURRING (print name): East Lyme
does this project cross municipal boundaries (check one)? yes no
if yes, list the other town(s) in which the action is occurring (print name(s)): _____
- 6. LOCATION (see instructions for information): USGS quad name: Niantic or number: 101
subregional drainage basin number: Bride Brook 2206
- 7. NAME OF APPLICANT, VIOLATOR OR PETITIONER (print name): Pazz & Construction, LLC
- 8. NAME & ADDRESS / LOCATION OF PROJECT SITE (print information): North Bride Brook Multi-Family Development,
90 North Bride Brook Road, East Lyme, CT
briefly describe the action/project/activity (check and print information): temporary permanent description: _____
Construction activities in upland review areas adjacent to wetlands and a watercourse in conjunction with the development of a multi-family affordable housing project.
- 9. ACTIVITY PURPOSE CODE (see instructions, only use one code): C
- 10. ACTIVITY TYPE CODE(S) (see instructions for codes): 9 12 14
- 11. WETLAND / WATERCOURSE AREA ALTERED (must provide acres or linear feet):
wetlands: 0.00 acres open water body: 0.00 acres stream: 0.00 linear feet
- 12. UPLAND AREA ALTERED (must provide acres): 1.44 acres
- 13. AREA OF WETLANDS / WATERCOURSES RESTORED, ENHANCED OR CREATED (must provide acres): 0.00 acres

DATE RECEIVED:

PART III: To Be Completed By The DEEP

DATE RETURNED TO DEEP:

FORM COMPLETED: YES NO

FORM CORRECTED / COMPLETED: YES NO

Ex "E"

Town of East Lyme


P.O. DRAWER 519

NIANTIC, CONNECTICUT 06357



Town Engineer
Victor A. Benni, P.E.

860-691-4112
FAX 860-739-6930

To: Gary A. Goeschel II, Director of Planning
From: Victor Benni, P.E., Town Engineer 
Date: December 13, 2019
Re: North Bride Brook Multi-Family Development
Wetlands Application Review

Information submitted by the Applicant which was considered in this review:

- (Drawing Set) North Bride Brook Multi-Family Development, Prepared for: Pazz & Construction, LLC, East Lyme, CT, 7-Sheet Drawing Set, Date: 9/25/19, By: Yantic River Consultants, LLC.
- (Wetlands Report) Inland Wetland Soils and Watercourses Investigation, And Delineation, North Bride Brook Multi-Family Development, North Bride Brook Road, East Lyme, CT, Date: October 3, 2019, By: James Sipperly, Certified Soil Scientist.
- Application Narrative, Application of Pazz & Construction, LLC, North Bride Brook Multi-Family Residential Development, North Bride Brook Road, East Lyme, Connecticut, Date: November 22, 2019.
- Stormwater Management Report, North Bride Brook Multi-Family Development, North Bride Brook Road, East Lyme, CT, Prepared for: Pazz & Construction, LLC, Date November 1, 2019, By: Yantic River Consultants, LLC.

This office has reviewed the above referenced information and has the following comments in regard to that portion of the development pertaining to the Wetlands and the 100' Upland Review Area:

1. The Wetland Report indicates that the proposed development in the upland review area will not be disturbing any wetlands and/or watercourses on the site.
2. Bride Brook and the un-named tributary to Bride Brook are both listed with the CT DEEP as being "impaired" water bodies. The construction and long-term operations & maintenance components of the stormwater management system should be strictly adhered to.
3. As indicated in the Wetlands Report, "All of the wetland areas are classified as a forested wetland general classification. Its functions include: groundwater recharge and discharge, sediment stabilization, nutrient removal and transformation, product export, and wildlife diversity." The Application Narrative indicates that the project engineer has provided for roof top runoff from Buildings I, J & M to be discharged to the westerly corner of each building in order to replicate the existing flows which currently reach and contribute to the recharge of the wetland system associated with Bride Brook.
4. Catch basin #'s 313, 315, & 324 shall be equipped with 4' deep sumps and hooded outlets.
5. A landscaping/planting plan should be considered for the developed area between the Limit of Proposed Tree Clearing and the Secondary Access Drive; between the Cul-de-sac and Building M. A proposed treeline and understory should be established up to the edge of the two parking areas and the Secondary Access Drive.

Ex "F"

6. The Erosion & Sedimentation Control Plan (Sheet 5), and the Details (Sheets 6 & 7) are in compliance with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control. The Sequence of Construction and E&S Control Narrative notes on Sheet 5 propose that the project will be completed in multiple phases. Inspection and Maintenance notes along with Temporary Sediment Trap sizing and detail have also been included. Provide correction of numbering system for Drawing Set, Sheet Numbers 6 & 7.
7. The Project Narrative calls for all erosion and sediment control measures to be inspected at least twice weekly during construction and following storm events resulting in excess of 0.1" of precipitation. The Wetlands Agency may wish to consider that weekly or monthly reports be submitted to the East Lyme Wetlands Agent during construction; on a weekly or monthly basis.
8. The results of the 5 soil test pits in the vicinity of the water quality-detention basin shall be provided for review to the East Lyme Engineering Department. Construction of the water quality-detention basin requires an approximate 5' cut into existing grades. The CT DEEP 2004 Connecticut Stormwater Quality Manual (11-P3-3) recommends that the bottom of the infiltration facility be located at least 3 feet above the seasonally high water table or bedrock.
9. The CT DOT Drainage Manual (October 2000) recommends that for quantity purposes, dry detention basins shall be designed to be able to pass a 100-year storm safely (Chapter 10.11-2). This is to ensure that the embankment will not be damaged or fail during the passage of the 100-year storm. In addition, the Manual indicates that the crest of the outlet control structure be set be a minimum of 1 foot below the crest of the emergency spillway, that 1 foot of freeboard be provided between the 100-year storm and the top of the embankment elevations, and 4:1 side slope maintenance access. This criteria should be incorporated into the stormwater management, calculations, design plan, and details for the water quality-detention basin.
10. The Stormwater Management Report verifies that the proposed detention pond attenuates peak flow rates and volumes as compared to the pre-development conditions, resulting in a zero-net increase in runoff from the development.
11. An Erosion and Sedimentation bond should be reviewed by the Engineering Department, following the Wetlands Agency's determination as to the addition of the potential planting plan in the upland review area and the decision whether or not to require the submittal of weekly/monthly E&S inspection reports.



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TOWN OF EAST LYME
INLAND WETLANDS AGENCY
Notice of Public Hearing

The East Lyme Inland Wetlands Agency will hold a Public Hearing on January 27, 2020, at 7:00 p.m., at the East Lyme Town Hall, 108 Pennsylvania Avenue, Niantic, CT, to consider the following application:

A. NORTH BRIDE BROOK MULTI-FAMILY DEVELOPMENT: Application of Pazz & Construction, LLC; Jason Pazzaglia, Applicant; Pazz & Construction, LLC, Owner; to conduct regulated activities in the upland review area in association with a proposed multi-family residential community on property identified in the application as N Bride Brook Rd, East Lyme Assessor's Map 09.0, Lot 37-2

Copies of specific proposals are available for public viewing in the Land Use Office.

Gary Upton, Chairman

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Town of East Lyme

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December 19, 2019

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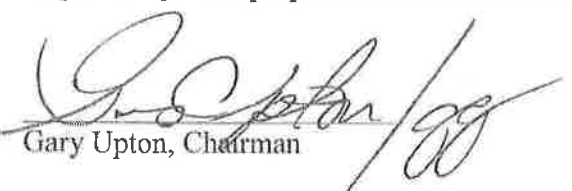
Please publish the following notice on January 15, 2020 and January 23, 2020

TOWN OF EAST LYME
INLAND WETLANDS AGENCY
Notice of Public Hearing

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Copies of specific proposals are available for public viewing in the Land Use Office.


Gary Upton, Chairman

EAST LYME INLAND WETLAND AGENCY

APPLICATION REVIEW SHEET

Please return comments to Gary Goeschel, Wetlands Enforcement Officer

TITLE OF PLAN:	North Bride Brook Multi-Family Development, Prepared for Pazz & Construction LLC, by Yantic River Consultants, LLC, dated September 25, 2019
DATE RECEIVED:	11/22/2019
DATE DISTRIBUTED:	12/4/2019
REVIEW DEADLINE:	12/13/2019

	Reports	Plans
Victor Benni, Town Engineer	✓	✓
Brad Kargl, Utility Engineer		✓
Ray Hart, Fire Marshal		✓
William Mulholland, Zoning Official		✓

COMMENTS:

In general, this office finds the conceptual layout for the water & sewer utilities to be acceptable. This office will require detailed design plans, at which time, location of utility structures including hydrants, blowoffs, services and mains will be reviewed and may deviate from that shown on the plans.

REVIEWED BY: B. Kargl DATE: 12/12/19

EAST LYME INLAND WETLAND AGENCY

APPLICATION REVIEW SHEET

Please return comments to Gary Goeschel, Wetlands Enforcement Officer

TITLE OF PLAN:	North Bride Brook Multi-Family Development, Prepared for Pazz & Construction LLC, by Yantic River Consultants, LLC, dated September 25, 2019
DATE RECEIVED:	11/22/2019
DATE DISTRIBUTED:	12/4/2019
REVIEW DEADLINE:	12/13/2019

	Reports	Plans
Victor Benni, Town Engineer	✓	✓
Brad Kargl, Utility Engineer		✓
Ray Hart, Fire Marshal		✓
William Mulholland, Zoning Official		✓

COMMENTS:

application needs a zone change and affordable housing development approval by the zoning commission. also needs site plan approval. application will need a storm water management approval as well.

REVIEWED BY:

CMC

DATE:

12/4/19

Ex "I"

HELLER, HELLER & McCOY
Attorneys at Law
736 Norwich-New London Turnpike
Uncasville, Connecticut 06382

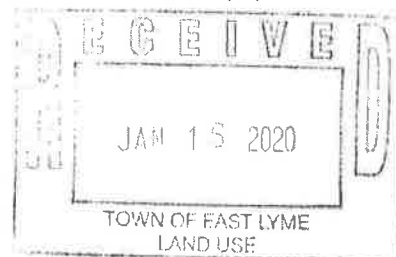
Sidney F. Heller (1903-1986)
Harry B. Heller
William E. McCoy

Telephone: (860)-848-1248
Facsimile: (860)-848-4003

Mary Gagne O'Donal

January 15, 2020

Town of East Lyme Inland Wetlands Agency
108 Pennsylvania Avenue
Niantic, CT 06357



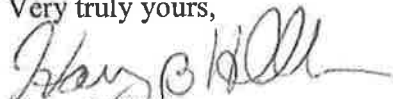
Re: Pazz & Construction, LLC – North Bride Brook Multi-Family Development
Wetlands Application

Gentleperson:

Enclosed herewith please find copies of notices which were forwarded to owners of properties located within 200 feet of the property for which the above referenced wetlands application has been filed. These notices have been provided to alert all neighboring property owners of the public hearing that has been scheduled for the above referenced application on January 27, 2020 at 7:00 p.m. in accordance with Section 9.2 of the East Lyme Zoning Regulations.

Also enclosed please find the United States Postal Service Certificate of Mailing – Firm form that has been stamped by the United States Postal Service evidencing that the notices were mailed on January 13, 2020, pursuant to the provisions of Section 9.2 of the East Lyme Zoning Regulations.

Very truly yours,


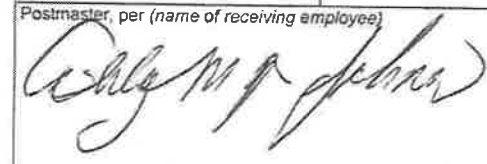


Harry B. Heller

HBH/rmb

"Ex J"




Certificate of Mailing — Firm

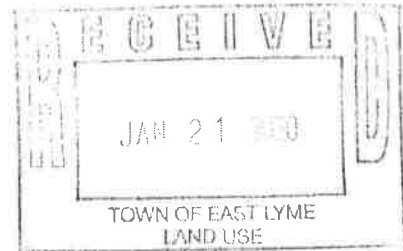
Name and Address of Sender Heller, Heller & McCoy 736 Norwich-New London Turnpike Uncasville, Connecticut 06382		TOTAL NO. of Pieces Listed by Sender	TOTAL NO. of Pieces Received at Post Office™	Affix Stamp Here Postmark with Date of Receipt 		
		8	8			
		Postmaster, per (name of receiving employee) 				
USPS® Tracking Number Firm-specific Identifier	Address (Name, Street, City, State, and ZIP Code™)	Postage	Fee	Special Handling	Parcel Airlift	
1.	Ms. Geraldine J. Dzwilewski 90 North Bride Brook Road East Lyme, CT 06333	.55	.41			
2.	Ms. Margaret Berry Balon 86 North Bride Brook Road Niantic, CT 06357	.55	.41			
3.	State of Connecticut NCI & JB Gates Prison 199 West Main Street Niantic, CT 06357	.55	.41			
	Ms. Alice T. Welsh 102 North Bride Brook Road Niantic, CT 06357	.55	.41			
5.	Ms. Alice T. Welsh 102 North Bride Brook Road Niantic, CT 06357	.55	.41			
6.	Mr. William C. Brown P.O. Box 863 Niantic, CT 06357	.55	.41			



Certificate of Mailing — Firm

Name and Address of Sender Heller, Heller & McCoy 736 Norwich-New London Turnpike Uncasville, Connecticut 06382	TOTAL NO. of Pieces Listed by Sender <div style="font-size: 2em; text-align: center;">8</div>	TOTAL NO. of Pieces Received at Post Office™	Affix Stamp Here <i>Postmark with Date of Receipt.</i> 
	Postmaster, per (name of receiving employee)		

USPS® Tracking Number Firm-specific Identifier	Address (Name, Street, City, State, and ZIP Code™)	Postage	Fee	Special Handling	Parcel Airlift
7.	State of Connecticut Department of Environmental Protection 79 Elm Street Hartford, CT 06106	.55	.41		
8.	Pazz & Construction, LLC Attn: Mr. Jason Pazzaglia 21 Darrows Ridge Road East Lyme, CT 06333	.55	.41		
<div style="font-size: 4em; opacity: 0.5;">X</div>					



COMMENT RESPONSE SUMMARY

FROM: Victor Benni, P.E., Town Engineer

DATE: December 13, 2019

RE: North Bride Brook Multi-Family Development, Wetlands Application Review

1. The Wetland Report indicates that the proposed development in the upland review area will not be disturbing any wetlands and/or watercourses on the site.

Response. Confirmed.

2. Bride Brook and the un-named tributary to Bride brook are both listed with the CT DEEP as being "impaired" waterbodies. The construction and long-term operations & maintenance components of the stormwater management system should be strictly adhered to.

Response. Noted and agree.

3. As indicated in the Wetlands Report, "All of the wetland areas are classified as a forested wetland general classification. Its functions include: groundwater recharge and discharge, sediment stabilization, nutrient removal and transformation, product export, and wildlife diversity." The Application Narrative indicates that the project engineer has provided for roof top runoff from Buildings I, J, & M to be discharged to the westerly corner of each building in order to replicate the existing flows which currently reach and contribute to the recharge of the wetland system associated with Bride Brook.

Response. Confirmed.

4. Catch basin #'s 313, 315, & 324 shall be equipped with 4' deep sumps and hooded outlets.

Response. Per our conversation, the overall collection network was evaluated to determine which basins warrant deeper sumps and trap hoods. Catch basins #302, 313, 319 and 324 are the final open-top structures of each intermediate pipe run. These basins were selected as the appropriate structures for 4' sumps and labeled accordingly. All other catch basins will have a 2' deep sump. Drainage note 3B was also added to Sheet 3 for clarity.

5. A landscaping/planting plan should be considered for the developed area between the Limit of Proposed Tree Clearing and the Secondary Access Drive; between the Cul-de-sac and Building M. A proposed tree line and understory should be established up to the edge of the two parking areas and the Secondary Access Drive.

Response. Proposed landscaping within the 100' Upland Review Area was added to Sheet 2 along the westerly clearing limit parallel with the inland wetlands. The proposed landscaping consists of seeding the bordering upland areas with New England Wetland Plants 'Conservation/wildlife mix'. Once properly established, this seed mix creates a native vegetated buffer that requires no fertilization and minimal maintenance or mowing.

6. The Erosion & Sediment Control Plan (Sheet 5), and the Details (Sheets 6 & 7) are in compliance with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control. The Sequence of Construction and E&S Control Narrative notes on Sheet 5 proposed that the



project will be completed in multiple phases. Inspection and Maintenance notes along with the Temporary Sediment Trap sizing and detail have also been included. Provide correction of numbering system for Drawing Set, Sheet Numbers 6 & 7.

Response. The Sheet Numbers have been corrected as requested.

7. The Project Narrative calls for all erosion and sediment control measures to be inspected at least twice weekly during construction and following storm events resulting in excess of 0.1" of precipitation. The Wetlands Agency may wish to consider that weekly or monthly reports be submitted to the East Lyme Wetlands Agent during construction; on a weekly or monthly basis.

Response. The project will be registered with the CT DEEP. This registration will include the preparation and implementation of a Stormwater Pollution Control Plan, which includes a requirement for routine inspections and reports. The weekly reports will be transmitted to the Town Wetland Enforcement Officer on a monthly basis.

8. The results of the 5 soil test pits in the vicinity of the water quality-detention basin shall be provided for review to the East Lyme Engineering Department. Construction of the water-quality-detention basin requires an approximate 5' cut into existing grades. The CT DEEP 2004 Connecticut Stormwater Quality Manual (11-P3-3) recommends that the bottom of the infiltration facility be located at least 3 feet above seasonally high-water table or bedrock.

Response. The results of the soil testing have been added to Sheet 3 of the revised plan set. The first round of testing performed on 7/25/19 consisted of test pits excavated to a depth of 7'-8' below existing grade. Groundwater or ledge was not witnessed. Soils below the water quality-detention basin consisted of fine sandy loam (trace silt) over medium to coarse sands and gravels. Falling head permeability tests were conducted on the sands & gravels with an average calculated permeability of 55 to 85 ft/day. The calculated values exceed the NRCS published rate of 25 ft/day for the Haven silt loam soils.

On 1/14/20, 2 additional pits were excavated to a depth of 9'-10'. Groundwater was witnessed at a depth of 114" in TP7, which is 4.5' below the bottom of basin. Standpipes were installed to allow for monitoring.

Given the depth to witnessed groundwater, it is our opinion that sufficient separation has been provided between the bottom of basin and seasonally high groundwater. In addition, to minimize the potential for long-term standing water, a granular filter material and moist site conservation seed mix has been specified for the basin bottom to promote infiltration.

9. The CT DOT Drainage Manual (October 2000) recommends that for quantity purposes, dry detention basins shall be designed to be able to pass a 100-year storm safely (Chapter 10.11-2). This is to ensure that the embankment will not be damaged or fail during the passage of the 100-year storm. In addition, the Manual indicates that the crest of the outlet control structure be set to a minimum of 1 foot below the crest of the emergence spillway, that 1 foot of freeboard be provided between the 100-year storm and the top of the embankment elevations, and 4:1 side slope maintenance access. This criteria should be incorporated into the stormwater management, calculations, design plans, and details for the water quality-detention basin.



Response. A berm will be constructed along the southern and eastern perimeter of the basin to provide a minimum of 1' of freeboard. In addition, a riprap emergency spillway has been added to divert overflow from storms in excess of 100-year towards a secondary overflow catch basin.

10. The stormwater management report verifies that the proposed detention pond attenuates peak flow rates and volumes as compared to the pre-development conditions, resulting in a zero-net increase in runoff from the development.

Response. Confirmed.

11. An Erosion and Sedimentation bond should be reviewed by the Engineering Department, following the Wetland Agency's determination as to the addition of the potential planting plan in the upland review area and the decision whether or not to require a submittal of weekly/monthly E&S inspection reports.

Response. A bond estimate spreadsheet is included for erosion and sedimentation controls and restoration activities to be performed within the 100' upland review area.



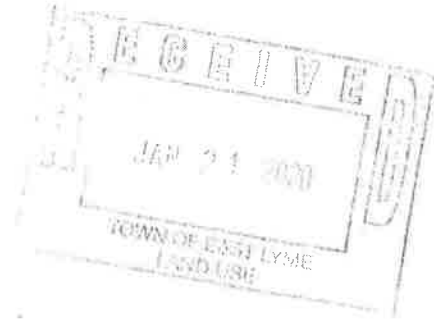
WESTLEDGE APARTMENT COMMUNITY
 2 WESTLEDGE DRIVE
 BOND ESTIMATE

BOND QUANTITIES FORM

Project Name: NORTH BRIDE BROOK MULTI-FAMILY DEV.
Address: NORTH BRIDGE BROOK ROAD, EAST LYME, CT
Bond Amount: \$28,000.00
Project No.: 00057-00001
Bond Type: E&S CONTROL - IWA ONLY

Owner/Developer: PAZZ & CONSTRUCTION, LLC
Address: 21 DARROWS RIDGE ROAD
 EAST LYME, CT 06333
Phone #: (860) 961-2364

ITEM NO.	ITEM DESCRIPTION	QUANTITY	UNIT	UNIT PRICE	ITEM AMOUNT
1	Clearing and Grubbing	1.30	ACRE	\$2,000.00	\$2,600.00
2	Anti-Tracking Pad	1.00	EA	\$1,500.00	\$1,500.00
3	Sedimentation Control System	1,000.00	LF	\$5.00	\$5,000.00
4	Sedimentation Control at Catch Basin	4.00	EA	\$100.00	\$400.00
5	Erosion Control Blanket	3,000.00	SF	\$1.50	\$4,500.00
6	Riprap Splash Pad @ Roof Leaders	10.00	EA	\$200.00	\$2,000.00
7	Restoration of Lawn Areas	2,000.00	SY	\$3.00	\$6,000.00
8	Wildlife/Conservation Areas	1,500.00	SY	\$4.00	\$6,000.00
SUBTOTAL					\$28,000.00



Town of East Lyme


P.O. DRAWER 519

NIANTIC, CONNECTICUT 06357



Town Engineer
Victor A. Benni, P.E.

860-691-4112
FAX 860-739-6930

To: Gary A. Goeschel II, Director of Planning
From: Victor Benni, P.E., Town Engineer 
Date: January 27, 2020
Re: North Bride Brook Multi-Family Development
Wetlands Application Review

Information submitted by the Applicant which was considered in this review:

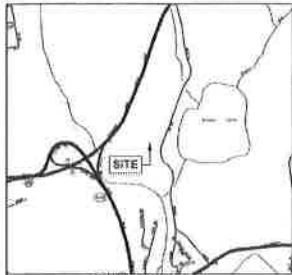
- (Drawing Set) North Bride Brook Multi-Family Development, Prepared for: Pazz & Construction, LLC, East Lyme, CT, 7-Sheet Drawing Set, Date: 9/25/19, Revised: 01/15/20, By: Yantic River Consultants, LLC.
- (Wetlands Report) Inland Wetland Soils and Watercourses Investigation, And Delineation, North Bride Brook Multi-Family Development, North Bride Brook Road, East Lyme, CT, Date: October 3, 2019, By: James Sipperly, Certified Soil Scientist.
- Application Narrative, Application of Pazz & Construction, LLC, North Bride Brook Multi-Family Residential Development, North Bride Brook Road, East Lyme, Connecticut, Date: November 22, 2019.
- Stormwater Management Report, North Bride Brook Multi-Family Development, North Bride Brook Road, East Lyme, CT, Prepared for: Pazz & Construction, LLC, Date November 1, 2019, By: Yantic River Consultants, LLC.
- Bond Quantities Form, North Bridebrook Multi-Family Dev., E&S Control – IWA Only, Received by Land Use Department: 01/21/20.

This office has reviewed the above referenced information and has the following comments in regard to that portion of the development pertaining to the Wetlands and the 100' Upland Review Area:

1. The Wetland Report indicates that the proposed development in the upland review area will not be disturbing any wetlands and/or watercourses on the site.
2. Bride Brook and the un-named tributary to Bride Brook are both listed with the CT DEEP as being "impaired" water bodies. The construction and long-term operations & maintenance components of the stormwater management system should be strictly adhered to.
3. As indicated in the Wetlands Report, "All of the wetland areas are classified as a forested wetland general classification. Its functions include: groundwater recharge and discharge, sediment stabilization, nutrient removal and transformation, product export, and wildlife diversity." The Application Narrative providing for roof top runoff from Buildings I, J & M to be discharged to the westerly corner of each building should be adhered to in order to replicate the existing flows which currently reach and contribute to the recharge of the wetland system associated with Bride Brook.

Ex "L"

4. The Erosion & Sedimentation Control Plan (Sheet 5) and the Details (Sheets 6 & 7) provide compliance with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control. The Sequence of Construction and E&S Control Narrative notes (Sheet 5) propose that the project will be completed in multiple phases; Inspection and Maintenance notes along with Temporary Sediment Trap sizing and detail have also been included.
5. The Project Narrative calls for all erosion & sediment control measures to be inspected at least twice weekly during construction and following storm events resulting in excess of 0.1" of precipitation. The Wetlands Agency may wish to consider that the weekly reports required by the CT DEEP Stormwater Pollution Control Plan be submitted to the East Lyme Wetlands Agent.
6. The Stormwater Management Report verifies that the proposed detention pond attenuates peak flow rates and volumes as compared to the pre-development conditions, resulting in a zero-net increase in runoff from the development.
7. The East Lyme Engineering Department recommends that the Wetlands Agency consider an Erosion & Sedimentation (E&S) bond in the amount of \$30,000 for the installation & maintenance of the E&S control measures.



SITE LOCATION MAP

GENERAL NOTES

1. GENERAL NOTES TO THE DEVELOPER AND OWNER
2. THE PROJECT IS SUBJECT TO THE 2012 ZONING ORDINANCE AND THE 2012 SUBDIVISION MAP ACT. THE DEVELOPER AND OWNER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.
3. THE DEVELOPER AND OWNER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.
4. THE DEVELOPER AND OWNER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.
5. THE DEVELOPER AND OWNER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.
6. THE DEVELOPER AND OWNER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.

PROJECT PHASING

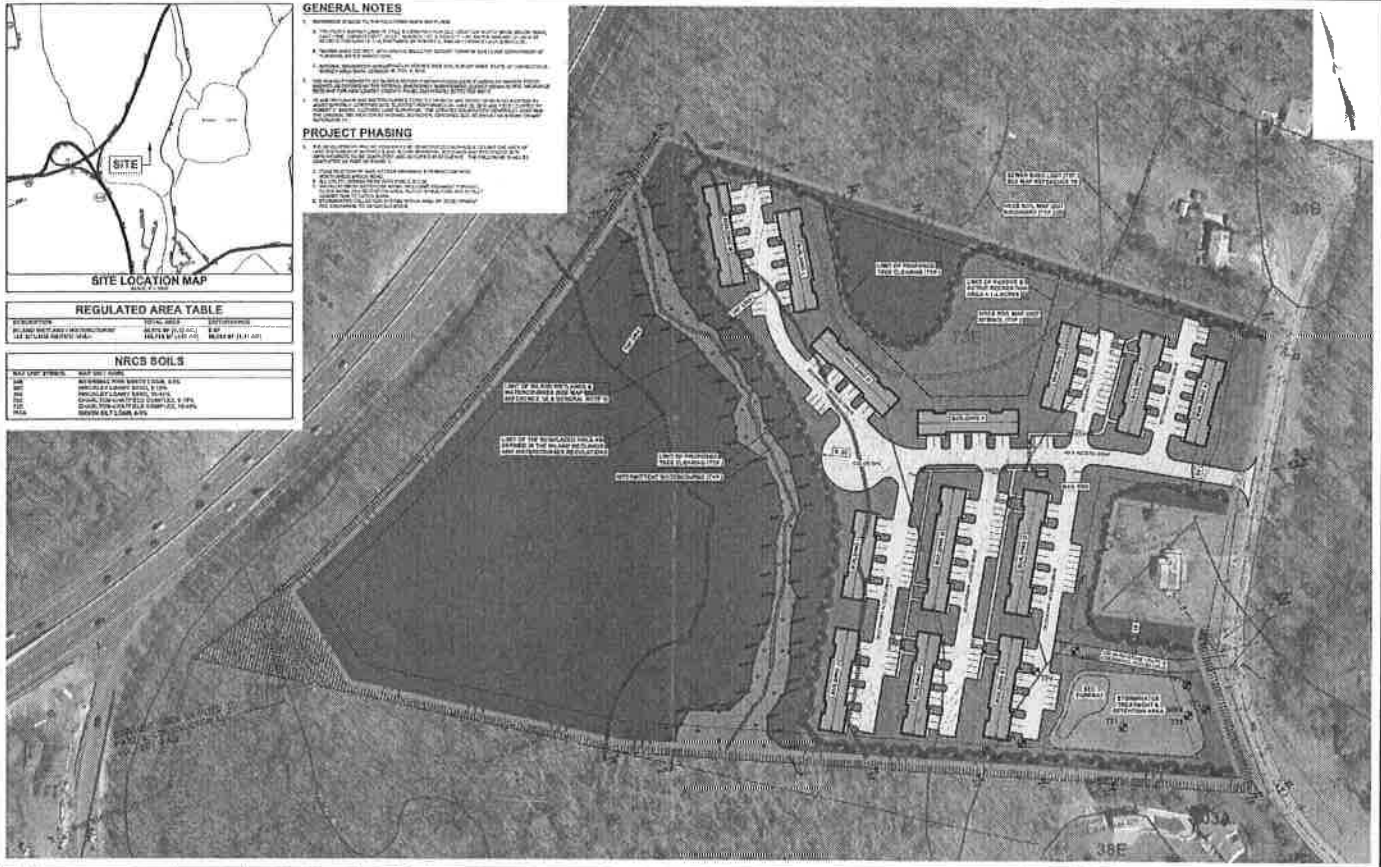
1. ALL CONSTRUCTION SHALL BE COMPLETED WITHIN THE PERIOD OF 18 MONTHS FROM THE DATE OF COMMENCEMENT OF CONSTRUCTION.
2. THE DEVELOPER AND OWNER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.
3. THE DEVELOPER AND OWNER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.
4. THE DEVELOPER AND OWNER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.
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6. THE DEVELOPER AND OWNER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.

REGULATED AREA TABLE

REGULATED AREA	DATE	DESCRIPTION
1. 2012 ZONING ORDINANCE	2012	2012 ZONING ORDINANCE
2. 2012 SUBDIVISION MAP ACT	2012	2012 SUBDIVISION MAP ACT

NRCB SOILS

SOIL TYPE	PERCENTAGE
USDA	100%
USDA	100%
USDA	100%
USDA	100%
USDA	100%
USDA	100%
USDA	100%
USDA	100%
USDA	100%
USDA	100%



Scale: 1" = 40'

PROJECT NUMBER: 10027-10001

CONTACT INFORMATION
 YRC CONSULTANTS, LLC
 111 HUNTERS LANE
 GARDEN CITY, NY 11530
 TEL: 516-466-1000
 FAX: 516-466-1001
 WWW.YRC-CONSULTANTS.COM

**NORTH BRIDE BROOK
 MULTI-FAMILY DEVELOPMENT
 PHASE 2 CONSTRUCTION, LLC
 OVERALL LAYOUT PLAN**

REVISION	DATE	DESCRIPTION
1	08/15/2011	ISSUED FOR PERMITTING
2	08/15/2011	ISSUED FOR PERMITTING
3	08/15/2011	ISSUED FOR PERMITTING
4	08/15/2011	ISSUED FOR PERMITTING
5	08/15/2011	ISSUED FOR PERMITTING
6	08/15/2011	ISSUED FOR PERMITTING
7	08/15/2011	ISSUED FOR PERMITTING
8	08/15/2011	ISSUED FOR PERMITTING
9	08/15/2011	ISSUED FOR PERMITTING
10	08/15/2011	ISSUED FOR PERMITTING

EX "M"

UTILITY STATEMENT

THE UTILITIES SHOWN ON THIS PLAN ARE BASED ON RECORD DRAWINGS, FIELD SURVEY AND VISUAL OBSERVATION. THE LOCATION AND DEPTH OF UTILITIES ARE SUBJECT TO CHANGE. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF UTILITIES PRIOR TO CONSTRUCTION.

GENERAL GRADING NOTES

1. THE ELEVATIONS SHOWN ON THIS PLAN ARE IN FEET ABOVE SEA LEVEL UNLESS OTHERWISE NOTED.
2. THE PROPOSED GRADING SHALL BE AS SHOWN ON THE GRADING PLAN.
3. THE CONTRACTOR SHALL MAINTAIN THE EXISTING ELEVATIONS OF ALL UTILITIES AND STRUCTURES.
4. THE CONTRACTOR SHALL MAINTAIN THE EXISTING ELEVATIONS OF ALL ADJACENT PROPERTIES.
5. THE CONTRACTOR SHALL MAINTAIN THE EXISTING ELEVATIONS OF ALL ADJACENT ROADS AND DRIVEWAYS.
6. THE CONTRACTOR SHALL MAINTAIN THE EXISTING ELEVATIONS OF ALL ADJACENT WATER BODIES.
7. THE CONTRACTOR SHALL MAINTAIN THE EXISTING ELEVATIONS OF ALL ADJACENT TREES AND PLANTS.
8. THE CONTRACTOR SHALL MAINTAIN THE EXISTING ELEVATIONS OF ALL ADJACENT UTILITIES.

DRAINAGE NOTES

1. THE DRAINAGE PLAN IS BASED ON A 1% GRADE.
2. THE DRAINAGE PLAN IS BASED ON A 2% GRADE.
3. THE DRAINAGE PLAN IS BASED ON A 3% GRADE.
4. THE DRAINAGE PLAN IS BASED ON A 4% GRADE.
5. THE DRAINAGE PLAN IS BASED ON A 5% GRADE.
6. THE DRAINAGE PLAN IS BASED ON A 6% GRADE.
7. THE DRAINAGE PLAN IS BASED ON A 7% GRADE.
8. THE DRAINAGE PLAN IS BASED ON A 8% GRADE.
9. THE DRAINAGE PLAN IS BASED ON A 9% GRADE.
10. THE DRAINAGE PLAN IS BASED ON A 10% GRADE.

STORMWATER O & M NOTES

1. THE CONTRACTOR SHALL MAINTAIN THE EXISTING STORMWATER SYSTEM.
2. THE CONTRACTOR SHALL MAINTAIN THE EXISTING STORMWATER SYSTEM.
3. THE CONTRACTOR SHALL MAINTAIN THE EXISTING STORMWATER SYSTEM.
4. THE CONTRACTOR SHALL MAINTAIN THE EXISTING STORMWATER SYSTEM.
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7. THE CONTRACTOR SHALL MAINTAIN THE EXISTING STORMWATER SYSTEM.
8. THE CONTRACTOR SHALL MAINTAIN THE EXISTING STORMWATER SYSTEM.

TEST PIT DATA											
PIT NO.	DATE	DEPTH (FT)	LOCATION	SOIL TYPE	ROCK TYPE	WATER TABLE	REMARKS	TESTER	CLIENT	PROJECT	DATE
1	11/11/11	4.5	LOT 1	CLAY	GRANITE	1.2	TEST PIT	J. SMITH	ABC	XYZ	11/11/11
2	11/11/11	3.5	LOT 2	SAND	GRANITE	0.8	TEST PIT	J. SMITH	ABC	XYZ	11/11/11
3	11/11/11	5.5	LOT 3	CLAY	GRANITE	1.5	TEST PIT	J. SMITH	ABC	XYZ	11/11/11
4	11/11/11	4.0	LOT 4	CLAY	GRANITE	1.0	TEST PIT	J. SMITH	ABC	XYZ	11/11/11
5	11/11/11	3.0	LOT 5	SAND	GRANITE	0.5	TEST PIT	J. SMITH	ABC	XYZ	11/11/11
6	11/11/11	6.0	LOT 6	CLAY	GRANITE	1.8	TEST PIT	J. SMITH	ABC	XYZ	11/11/11
7	11/11/11	4.5	LOT 7	CLAY	GRANITE	1.2	TEST PIT	J. SMITH	ABC	XYZ	11/11/11
8	11/11/11	5.0	LOT 8	CLAY	GRANITE	1.4	TEST PIT	J. SMITH	ABC	XYZ	11/11/11
9	11/11/11	4.0	LOT 9	CLAY	GRANITE	1.0	TEST PIT	J. SMITH	ABC	XYZ	11/11/11
10	11/11/11	3.5	LOT 10	SAND	GRANITE	0.8	TEST PIT	J. SMITH	ABC	XYZ	11/11/11
11	11/11/11	5.5	LOT 11	CLAY	GRANITE	1.5	TEST PIT	J. SMITH	ABC	XYZ	11/11/11
12	11/11/11	4.0	LOT 12	CLAY	GRANITE	1.0	TEST PIT	J. SMITH	ABC	XYZ	11/11/11

SCALE: 1" = 40'

YRC
YORBA LINDA REGIONAL CENTER



NORTH ENDER BLVD
 MULTI-FAMILY DEVELOPMENT
 JULY 2011
 GRADING & DRAINAGE PLAN

SHEET NO. 11 OF 12
 DATE: 11/11/11
 DRAWN BY: J. SMITH
 CHECKED BY: M. JONES

UTILITY STATEMENT

This statement is prepared in accordance with the requirements of the Massachusetts Department of Public Utilities (DPU) and the Massachusetts Board of Public Utilities (BPU). It is intended to provide information regarding the utility services to be provided to the project and the location of existing and proposed utility lines.

GENERAL UTILITY NOTES

1. All utility lines shown on this plan are based on the most recent available records and field surveys.
2. The location of utility lines is shown by the centerline of the line and the depth of the line is shown by the number of feet below the ground surface.
3. All utility lines shown on this plan are assumed to be in good condition and to be in compliance with all applicable codes and regulations.
4. The location of utility lines is shown by the centerline of the line and the depth of the line is shown by the number of feet below the ground surface.

WATER

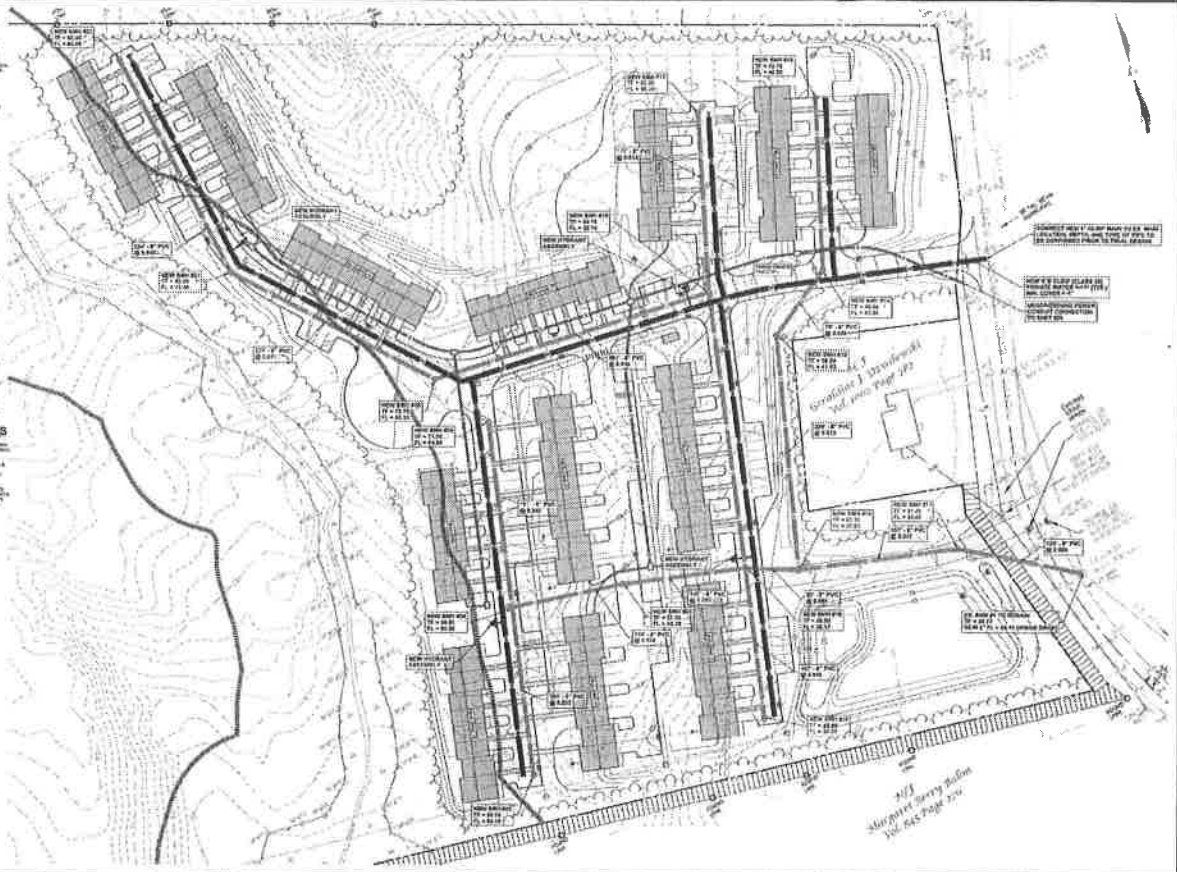
1. All water lines shown on this plan are based on the most recent available records and field surveys.
2. The location of water lines is shown by the centerline of the line and the depth of the line is shown by the number of feet below the ground surface.

SANITARY

1. All sanitary lines shown on this plan are based on the most recent available records and field surveys.
2. The location of sanitary lines is shown by the centerline of the line and the depth of the line is shown by the number of feet below the ground surface.

ELECTRIC & TELECOMMUNICATIONS

1. All electric and telecommunications lines shown on this plan are based on the most recent available records and field surveys.
2. The location of electric and telecommunications lines is shown by the centerline of the line and the depth of the line is shown by the number of feet below the ground surface.



CONTACT INFORMATION
 YONKERS REGIONAL COUNCIL
 100 NORTH COLONY TOWER 11C
 YONKERS, NEW YORK 10590
 Phone: 914-947-1000
 Fax: 914-947-1001
 Website: www.yrcny.com

PROJECT INFORMATION
 PROJECT NAME: NORTH BRIDGE BROOK
 PROJECT NUMBER: 0067-0001
 SHEET NUMBER: 4 of 2
 DATE: 6/10/09
 DRAWN BY: [Name]
 CHECKED BY: [Name]

CLIENT INFORMATION
 CLIENT NAME: [Name]
 CLIENT ADDRESS: [Address]
 CLIENT PHONE: [Phone]
 CLIENT FAX: [Fax]

NO.	DATE	DESCRIPTION
1	6/10/09	ISSUED FOR PERMITS
2	6/10/09	ISSUED FOR CONSTRUCTION
3	6/10/09	ISSUED FOR RECORD

GENERAL CONSTRUCTION NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN ALL NECESSARY PERMITS FOR THE PROJECT FROM THE APPROPRIATE AGENCIES.
2. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL ADJACENT PROPERTIES AT ALL TIMES.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE APPROPRIATE AGENCIES.
4. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL ADJACENT PROPERTIES AT ALL TIMES.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE APPROPRIATE AGENCIES.
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7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE APPROPRIATE AGENCIES.
8. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL ADJACENT PROPERTIES AT ALL TIMES.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE APPROPRIATE AGENCIES.
10. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL ADJACENT PROPERTIES AT ALL TIMES.

SEQUENCE OF CONSTRUCTION:

1. DEMOLITION OF EXISTING STRUCTURES AND GRADING.
2. INSTALLATION OF TEMPORARY EROSION CONTROL MEASURES.
3. EXCAVATION AND INSTALLATION OF FOUNDATIONS.
4. CONSTRUCTION OF CONCRETE SLABS AND WALLS.
5. INSTALLATION OF ROOFING AND INTERIORS.
6. EXTERIOR FINISHES AND LANDSCAPING.
7. FINAL INSPECTION AND COMPLETION.

E & S CONTROL NARRATIVE:

This narrative describes the erosion and sedimentation control measures to be implemented during the construction of the project. The measures are designed to prevent soil erosion and sedimentation from the construction site, which could cause water quality degradation and other adverse effects on the environment. The measures include the installation of temporary erosion control measures, such as silt fences, sediment basins, and straw bales, as well as the installation of permanent erosion control measures, such as vegetative cover and concrete structures. The measures will be implemented in accordance with the following schedule:

E & S CONTROL PLAN:

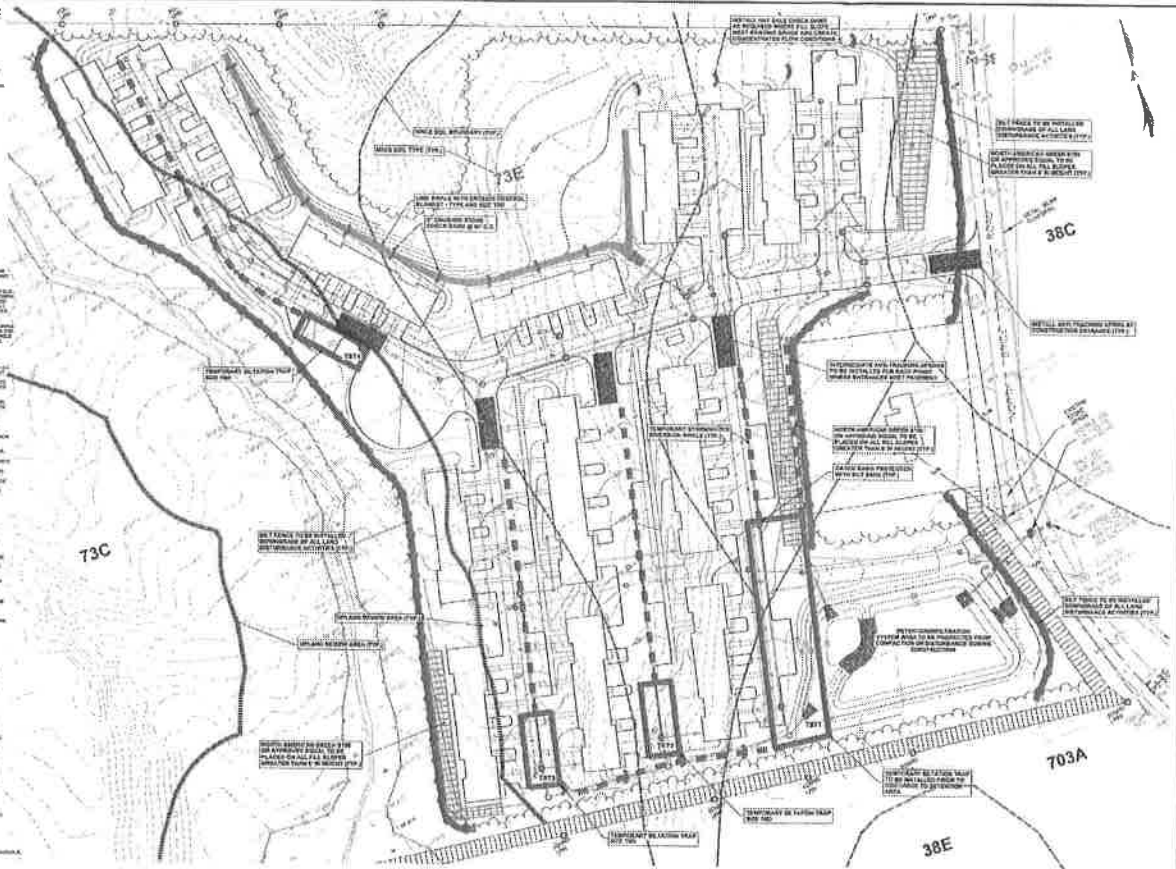
1. EROSION CONTROL MEASURES SHALL BE INSTALLED IMMEDIATELY UPON THE START OF CONSTRUCTION.
2. EROSION CONTROL MEASURES SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
3. EROSION CONTROL MEASURES SHALL BE REMOVED IMMEDIATELY UPON COMPLETION OF CONSTRUCTION.
4. EROSION CONTROL MEASURES SHALL BE REPLACED IMMEDIATELY UPON COMPLETION OF CONSTRUCTION.
5. EROSION CONTROL MEASURES SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
6. EROSION CONTROL MEASURES SHALL BE REMOVED IMMEDIATELY UPON COMPLETION OF CONSTRUCTION.
7. EROSION CONTROL MEASURES SHALL BE REPLACED IMMEDIATELY UPON COMPLETION OF CONSTRUCTION.
8. EROSION CONTROL MEASURES SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
9. EROSION CONTROL MEASURES SHALL BE REMOVED IMMEDIATELY UPON COMPLETION OF CONSTRUCTION.
10. EROSION CONTROL MEASURES SHALL BE REPLACED IMMEDIATELY UPON COMPLETION OF CONSTRUCTION.

E & S CONTROL NOTES:

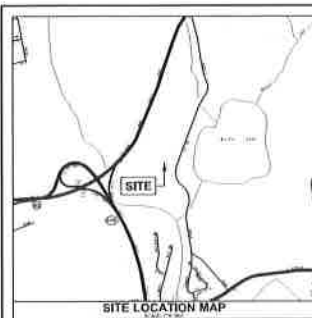
1. EROSION CONTROL MEASURES SHALL BE INSTALLED IMMEDIATELY UPON THE START OF CONSTRUCTION.
2. EROSION CONTROL MEASURES SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
3. EROSION CONTROL MEASURES SHALL BE REMOVED IMMEDIATELY UPON COMPLETION OF CONSTRUCTION.
4. EROSION CONTROL MEASURES SHALL BE REPLACED IMMEDIATELY UPON COMPLETION OF CONSTRUCTION.
5. EROSION CONTROL MEASURES SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
6. EROSION CONTROL MEASURES SHALL BE REMOVED IMMEDIATELY UPON COMPLETION OF CONSTRUCTION.
7. EROSION CONTROL MEASURES SHALL BE REPLACED IMMEDIATELY UPON COMPLETION OF CONSTRUCTION.
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9. EROSION CONTROL MEASURES SHALL BE REMOVED IMMEDIATELY UPON COMPLETION OF CONSTRUCTION.
10. EROSION CONTROL MEASURES SHALL BE REPLACED IMMEDIATELY UPON COMPLETION OF CONSTRUCTION.

INSPECTION AND MAINTENANCE:

1. EROSION CONTROL MEASURES SHALL BE INSPECTED REGULARLY TO ENSURE THEY ARE MAINTAINED PROPERLY.
2. EROSION CONTROL MEASURES SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
3. EROSION CONTROL MEASURES SHALL BE REMOVED IMMEDIATELY UPON COMPLETION OF CONSTRUCTION.
4. EROSION CONTROL MEASURES SHALL BE REPLACED IMMEDIATELY UPON COMPLETION OF CONSTRUCTION.
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10. EROSION CONTROL MEASURES SHALL BE REPLACED IMMEDIATELY UPON COMPLETION OF CONSTRUCTION.



<p>SCALE: 1" = 20'</p> <p>PROJECT NUMBER: 0001</p> <p>YRC</p>	<p>CONTACT INFORMATION</p> <p>YRC 1000... ...</p>	<p>NORTH BRIDGE BROOK MULTI-FAMILY DEVELOPMENT</p> <p>PREPARED FOR: YRC</p> <p>EROSION & SEDIMENTATION CONTROL PLAN</p>	<p>DATE: 01/15/2021</p> <p>PROJECT: 0001</p> <p>DATE: 01/15/2021</p>
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REGULATED AREA TABLE		
DESCRIPTION	TOTAL AREA	REGULATIONS
REGULATED AREA	10.50 AC	8.50 AC
UNREGULATED AREA	10.50 AC	2.00 AC (2.50 AC)

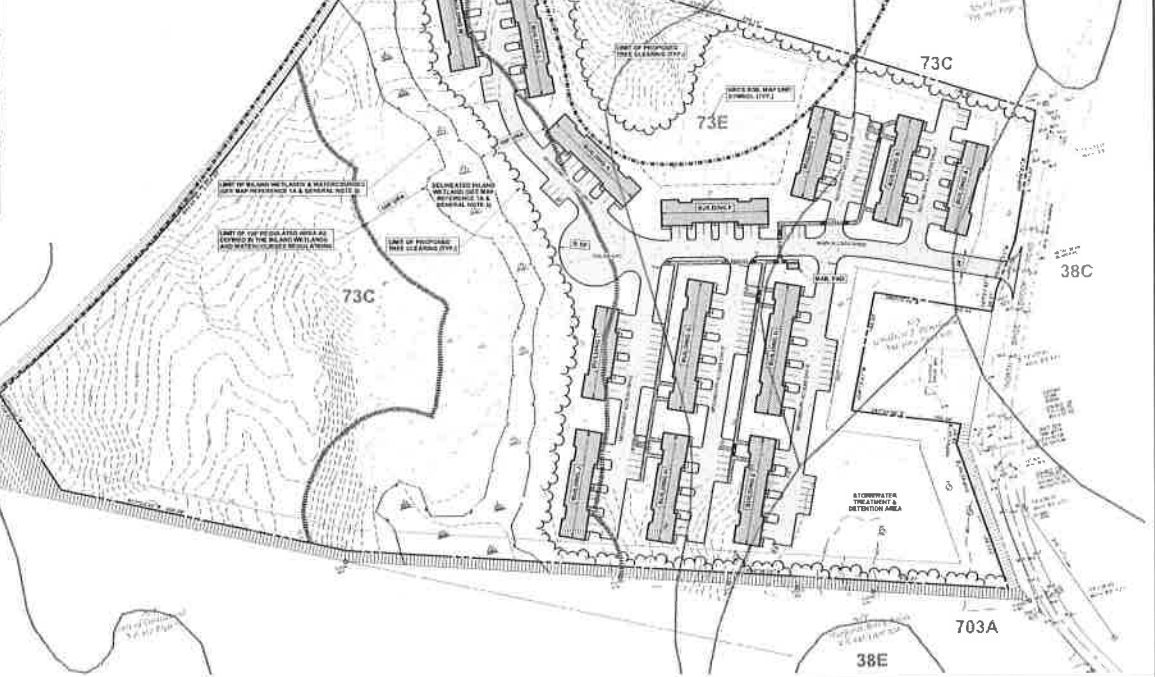
NRCS SOILS	
SOIL TYPE SYMBOL	SOIL TYPE NAME
U1	UNSATURATED FINE SANDY CLAY SOILS
U2	UNSATURATED FINE SANDY CLAY SOILS
U3	UNSATURATED FINE SANDY CLAY SOILS
U4	UNSATURATED FINE SANDY CLAY SOILS
U5	UNSATURATED FINE SANDY CLAY SOILS
U6	UNSATURATED FINE SANDY CLAY SOILS
U7	UNSATURATED FINE SANDY CLAY SOILS
U8	UNSATURATED FINE SANDY CLAY SOILS
U9	UNSATURATED FINE SANDY CLAY SOILS
U10	UNSATURATED FINE SANDY CLAY SOILS
U11	UNSATURATED FINE SANDY CLAY SOILS
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U96	UNSATURATED FINE SANDY CLAY SOILS
U97	UNSATURATED FINE SANDY CLAY SOILS
U98	UNSATURATED FINE SANDY CLAY SOILS
U99	UNSATURATED FINE SANDY CLAY SOILS
U100	UNSATURATED FINE SANDY CLAY SOILS

GENERAL NOTES

1. THE SITE IS LOCATED ON THE 10.50 AC PARCEL SHOWN ON THE SITE LOCATION MAP.
2. THE SITE IS LOCATED ON THE 10.50 AC PARCEL SHOWN ON THE SITE LOCATION MAP.
3. THE SITE IS LOCATED ON THE 10.50 AC PARCEL SHOWN ON THE SITE LOCATION MAP.
4. THE SITE IS LOCATED ON THE 10.50 AC PARCEL SHOWN ON THE SITE LOCATION MAP.
5. THE SITE IS LOCATED ON THE 10.50 AC PARCEL SHOWN ON THE SITE LOCATION MAP.

PROJECT PHASING

1. THE SITE IS TO BE DEVELOPED IN PHASES AS SHOWN ON THE PHASING MAP.
2. THE SITE IS TO BE DEVELOPED IN PHASES AS SHOWN ON THE PHASING MAP.
3. THE SITE IS TO BE DEVELOPED IN PHASES AS SHOWN ON THE PHASING MAP.
4. THE SITE IS TO BE DEVELOPED IN PHASES AS SHOWN ON THE PHASING MAP.
5. THE SITE IS TO BE DEVELOPED IN PHASES AS SHOWN ON THE PHASING MAP.



SCALE: 1" = 40'

PROJECT NUMBER: 00057-00001

CONTACT INFORMATION
 YARC NORTH CAROLINA, LLC
 101 BROADWAY
 LEASING, CONSULTING
 RALEIGH, NC 27601
 PHONE: 919.978.1234
 FAX: 919.978.1235
 WWW.YARC.COM

PREPARED FOR:
 P&Z A CONTRACTORS, LLC
OVERALL LAYOUT PLAN

DATE: 08/20/2018
 DRAWN BY: J. SMITH
 CHECKED BY: M. JONES
 APPROVED BY: K. BROWN

REVISIONS

NO.	DATE	DESCRIPTION
1	08/20/2018	ISSUED FOR PERMIT

PROJECT NUMBER: 00057-00001
 SHEET: 1 OF 1

GENERAL SITE NOTES

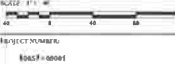
1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST OF CONVALENTS DEPARTMENT OF PUBLIC WORKS ENGINEERING STANDARDS FOR DRIVEWAYS, SIDEWALKS AND SIDEWALKS.
2. ALL UTILITIES SHALL BE DEEPER THAN THE MINIMUM PAVER DEPTH OUTSIDE PAVER OF THE SIDEWALK OR SIDEWALK TO BE CONSTRUCTED.
3. THE FINISH OF SIDEWALKS, CURBS AND DRIVEWAYS SHALL BE FINISHED TO CORRESPOND WITH THE FINISH OF THE ADJACENT SIDEWALK OR DRIVEWAY TO WHICH THEY ARE CONNECTED.
4. THE FINISH OF SIDEWALKS, CURBS AND DRIVEWAYS SHALL BE FINISHED TO CORRESPOND WITH THE FINISH OF THE ADJACENT SIDEWALK OR DRIVEWAY TO WHICH THEY ARE CONNECTED.
5. ALL UTILITIES SHALL BE DEEPER THAN THE MINIMUM PAVER DEPTH OUTSIDE PAVER OF THE SIDEWALK OR SIDEWALK TO BE CONSTRUCTED.
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15. ALL UTILITIES SHALL BE DEEPER THAN THE MINIMUM PAVER DEPTH OUTSIDE PAVER OF THE SIDEWALK OR SIDEWALK TO BE CONSTRUCTED.

UTILITY STATEMENT

UTILITIES SHALL BE DEEPER THAN THE MINIMUM PAVER DEPTH OUTSIDE PAVER OF THE SIDEWALK OR SIDEWALK TO BE CONSTRUCTED. ALL UTILITIES SHALL BE DEEPER THAN THE MINIMUM PAVER DEPTH OUTSIDE PAVER OF THE SIDEWALK OR SIDEWALK TO BE CONSTRUCTED.

LEGEND

(Symbol)	EDGE OF PAVEMENT BY CURB	(Symbol)	INTERMEDIATE CONCRETE DRIVE
(Symbol)	BARRETTED PAVEMENT	(Symbol)	SHOULDER PAVED DRIVEWAY (2" MIN)
(Symbol)	CONCRETE WALK	(Symbol)	SHOULDER PAVED DRIVEWAY (1" MIN)
(Symbol)	CONCRETE DRIVE	(Symbol)	STOP RAMP (1" MIN)
(Symbol)	ROOF LEAKAGE	(Symbol)	CONCRETE WALK (1" MIN)
(Symbol)	CONTAINER OR SWALE DRAIN	(Symbol)	CONCRETE DRIVE & WALK (SHOULDER)
(Symbol)	SEWER SERVICE	(Symbol)	CONCRETE SIDEWALK
(Symbol)	WATER	(Symbol)	SHOULDER RAMP TO FOOTWALK
(Symbol)	GAS SERVICE	(Symbol)	REINFORCED CONCRETE CURB (SIDE)
(Symbol)	ELECTRIC	(Symbol)	INTERMEDIATE CONCRETE CURB (SIDE)
(Symbol)	TELECOMMUNICATIONS	(Symbol)	MAL PAD
(Symbol)	ELB. FENCE	(Symbol)	STOP SIGN
(Symbol)	FENCE & INTERIOR LIGHT FIXTURES		
(Symbol)	METAL LIGHT FIXTURES		
(Symbol)	HANDICAP PARKING MARKINGS		



CONTACT INFORMATION
 YRC RIVER COMPANY, LLC
 1111 BROADWAY
 YONKERS, NY 10596
 TEL: (914) 233-3333
 FAX: (914) 233-3334
 WWW.YRCNY.COM

NORTH BRIDE BROOK MULTI-FAMILY DEVELOPMENT PRELIMINARY PAVEMENT LAYOUT PLAN DETAILED LAYOUT PLAN	REVISIONS	DATE

PROJECT NUMBER: B0528-20081

UTILITY STATEMENT

THESE UTILITIES ARE SHOWN AS LOCATED BY FIELD SURVEY AND RECORD DRAWINGS. THE LOCATION AND DEPTH OF UTILITIES ARE NOT GUARANTEED. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES.

GENERAL GRADING NOTES

1. ALL FINISH GRADES SHALL BE AS SHOWN ON THIS PLAN UNLESS OTHERWISE NOTED.
2. THE CONTRACTOR SHALL MAINTAIN THE FINISH GRADES AS SHOWN ON THIS PLAN UNLESS OTHERWISE NOTED.
3. THE CONTRACTOR SHALL MAINTAIN THE FINISH GRADES AS SHOWN ON THIS PLAN UNLESS OTHERWISE NOTED.
4. THE CONTRACTOR SHALL MAINTAIN THE FINISH GRADES AS SHOWN ON THIS PLAN UNLESS OTHERWISE NOTED.
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9. THE CONTRACTOR SHALL MAINTAIN THE FINISH GRADES AS SHOWN ON THIS PLAN UNLESS OTHERWISE NOTED.
10. THE CONTRACTOR SHALL MAINTAIN THE FINISH GRADES AS SHOWN ON THIS PLAN UNLESS OTHERWISE NOTED.

DRAINAGE

1. THE DRAINAGE SYSTEM SHALL BE AS SHOWN ON THIS PLAN UNLESS OTHERWISE NOTED.
2. THE DRAINAGE SYSTEM SHALL BE AS SHOWN ON THIS PLAN UNLESS OTHERWISE NOTED.
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STORMWATER O & M NOTES

1. THE STORMWATER O & M SYSTEM SHALL BE AS SHOWN ON THIS PLAN UNLESS OTHERWISE NOTED.
2. THE STORMWATER O & M SYSTEM SHALL BE AS SHOWN ON THIS PLAN UNLESS OTHERWISE NOTED.
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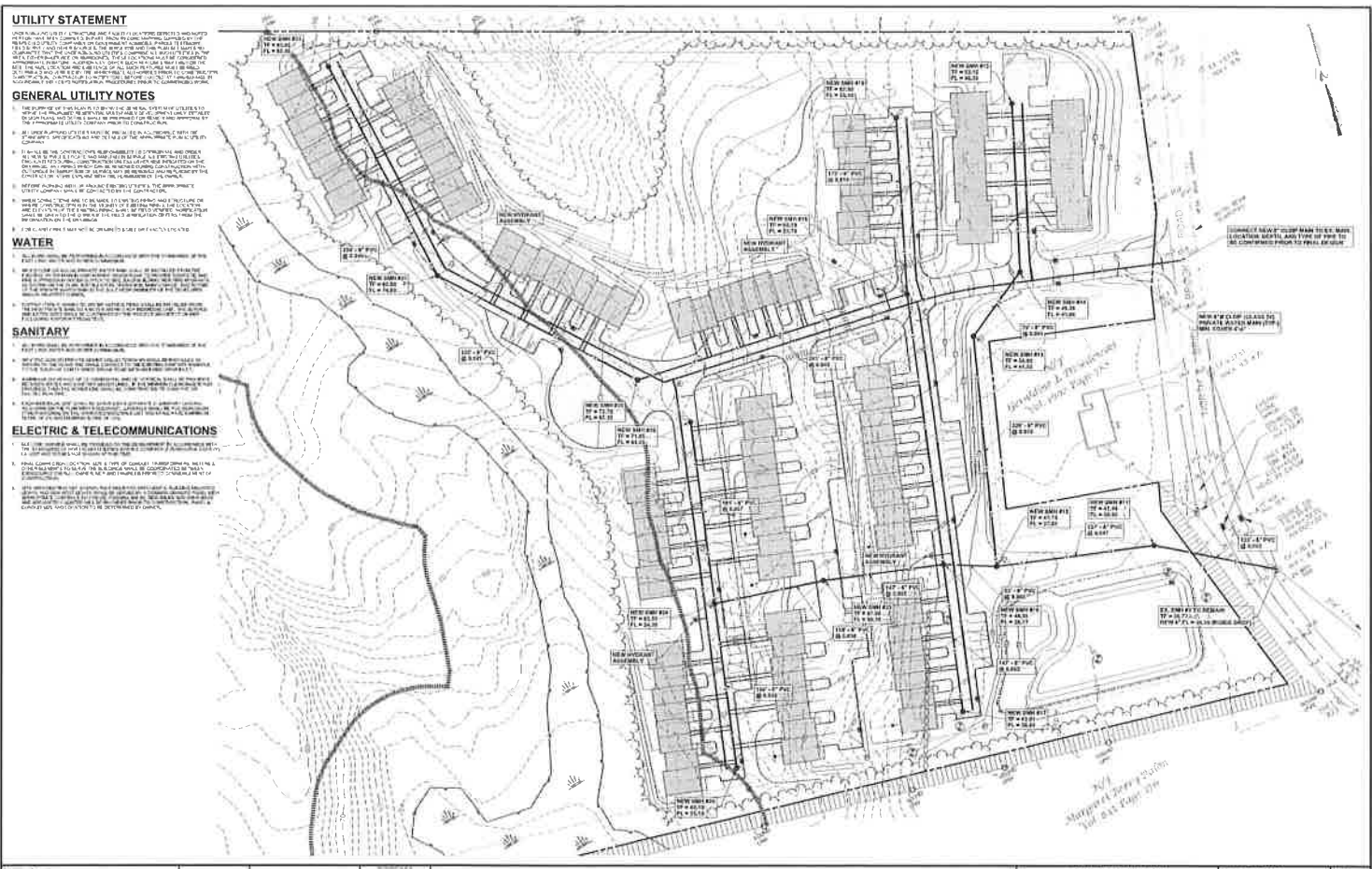


SCALE: 1" = 40'
 PROJECT NUMBER: 00057-00001

CONTACT INFORMATION
 WALTER BUCHER ENGINEERS, LLC
 100 HUNTERS AVENUE
 CHANDLER, AZ 85226

NORTH BRIDE BROOK MULTI-FAMILY DEVELOPMENT
 PREPARED FOR: PALAZZO CONSTRUCTION, LLC
GRADING & DRAINAGE PLAN

REVISION NUMBER	DATE	BY	CHKD



UTILITY STATEMENT

THE GENERAL NOTES AND SPECIFICATIONS OF THESE UTILITIES ARE SUBJECT TO THE REQUIREMENTS OF THE LOCAL AGENCIES AND THE UTILITIES PROVIDERS. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL AGENCIES AND UTILITIES PROVIDERS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES AND FOR THE INSTALLATION OF ALL NEW UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL UTILITIES THROUGHOUT THE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL UTILITIES THAT ARE NOT REQUIRED FOR THE PROJECT. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ALL UTILITIES THAT ARE DAMAGED DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES THAT ARE NOT DAMAGED DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ALL UTILITIES THAT ARE DAMAGED DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES THAT ARE NOT DAMAGED DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ALL UTILITIES THAT ARE DAMAGED DURING CONSTRUCTION.

GENERAL UTILITY NOTES

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE LOCAL AGENCIES AND UTILITIES PROVIDERS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING UTILITIES AND FOR THE INSTALLATION OF ALL NEW UTILITIES.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL UTILITIES THROUGHOUT THE CONSTRUCTION PERIOD.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL UTILITIES THAT ARE NOT REQUIRED FOR THE PROJECT.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ALL UTILITIES THAT ARE DAMAGED DURING CONSTRUCTION.
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES THAT ARE NOT DAMAGED DURING CONSTRUCTION.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ALL UTILITIES THAT ARE DAMAGED DURING CONSTRUCTION.

WATER

1. WATER SERVICE SHALL BE PROVIDED BY THE LOCAL WATER UTILITY.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF ALL WATER SERVICE LINES AND FITTINGS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING WATER SERVICE LINES AND FITTINGS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ALL WATER SERVICE LINES AND FITTINGS THAT ARE DAMAGED DURING CONSTRUCTION.

SANITARY

1. SANITARY SERVICE SHALL BE PROVIDED BY THE LOCAL SANITARY UTILITY.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF ALL SANITARY SERVICE LINES AND FITTINGS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING SANITARY SERVICE LINES AND FITTINGS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ALL SANITARY SERVICE LINES AND FITTINGS THAT ARE DAMAGED DURING CONSTRUCTION.

ELECTRIC & TELECOMMUNICATIONS

1. ELECTRIC AND TELECOMMUNICATIONS SERVICE SHALL BE PROVIDED BY THE LOCAL UTILITY.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF ALL ELECTRIC AND TELECOMMUNICATIONS SERVICE LINES AND FITTINGS.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL EXISTING ELECTRIC AND TELECOMMUNICATIONS SERVICE LINES AND FITTINGS.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ALL ELECTRIC AND TELECOMMUNICATIONS SERVICE LINES AND FITTINGS THAT ARE DAMAGED DURING CONSTRUCTION.



CONTACT INFORMATION
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 YONKERS, NEW YORK 10594
 PHONE: (914) 941-1100
 FAX: (914) 941-1101
 WWW: WWW.YRC-LLC.COM

PROJECT NUMBER:
 0057-0068

**NORTH BRIDGE BROOK
 MULTI-FAMILY DEVELOPMENT
 PRELIMINARY
 PLANNING AND DESIGN PHASE
 UTILITY PLAN**

REVISIONS TO DRAWING	DATE

GENERAL CONSTRUCTION NOTES:

1. THE CONTRACTOR IS TO MAINTAIN THE EXISTING UTILITY LOCATIONS AND PROTECT THEM THROUGHOUT THE CONSTRUCTION PERIOD.

SEQUENCE OF CONSTRUCTION:

1. COMMENCEMENT OF CONSTRUCTION SHALL BE WITHIN 10 DAYS OF THE DATE OF COMMENCEMENT OF THE CONTRACT.
2. ALL CONSTRUCTION SHALL BE COMPLETED WITHIN THE CONTRACT PERIOD.
3. THE CONTRACTOR SHALL MAINTAIN ACCESS TO ALL ADJACENT PROPERTIES AND UTILITIES AT ALL TIMES.
4. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF CHICAGO ORDINANCES AND THE ILLINOIS CONSTRUCTION ACT.
5. THE CONTRACTOR SHALL MAINTAIN ALL NECESSARY PERMITS AND INSURANCE THROUGHOUT THE CONSTRUCTION PERIOD.
6. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF CHICAGO ORDINANCES AND THE ILLINOIS CONSTRUCTION ACT.

E & S CONTROL NARRATIVE:

The Erosion and Sedimentation Control Plan is designed to prevent sediment from leaving the construction site and entering the adjacent water bodies. The plan includes the installation of sediment control structures such as silt fences, sediment basins, and erosion control blankets. The structures are placed in strategic locations to intercept sediment before it reaches the water bodies. The plan also includes measures to control erosion on exposed soil surfaces, such as the use of erosion control blankets and mulch. The contractor is responsible for maintaining the structures and ensuring that they are in good working order throughout the construction period.

E & S CONTROL PLAN:

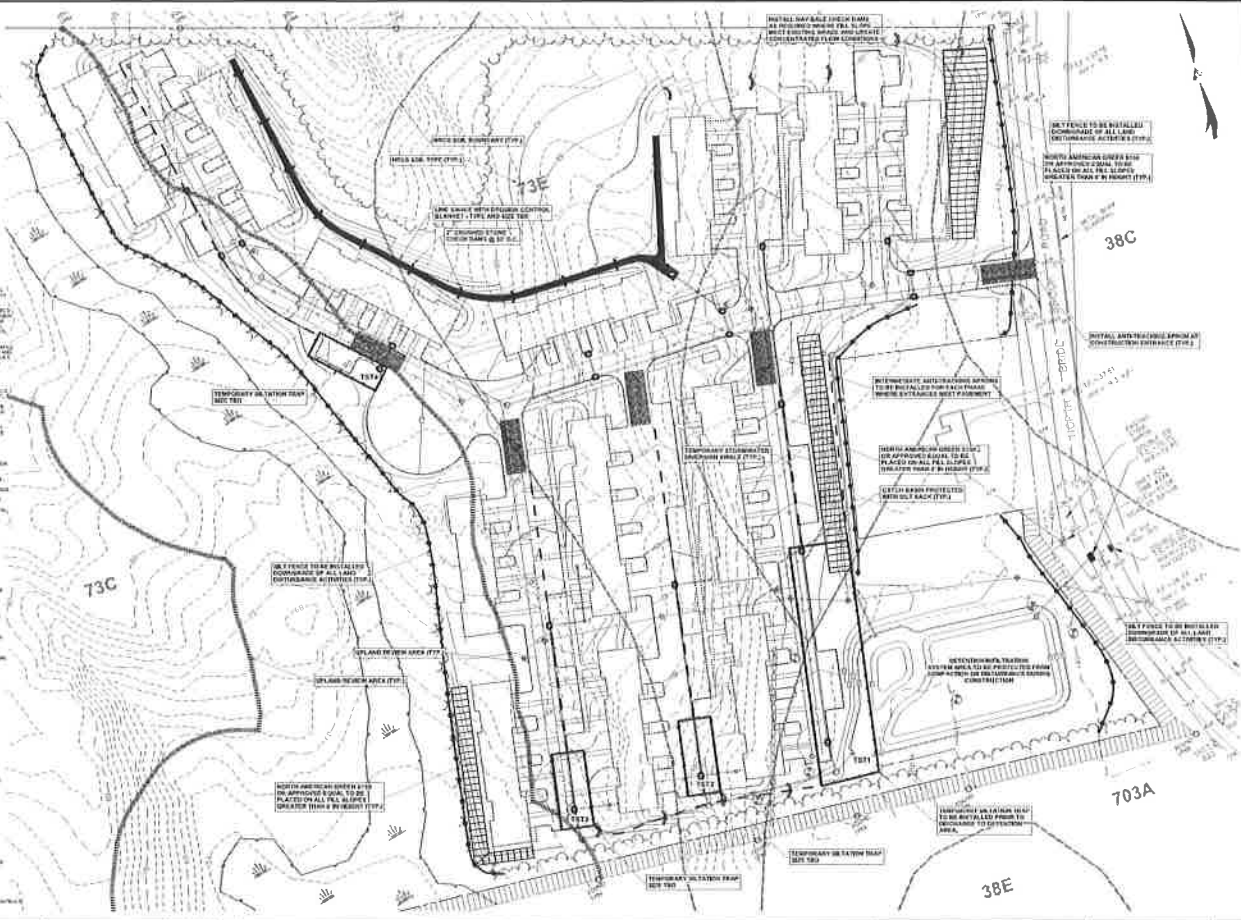
1. ALL EROSION AND SEDIMENTATION CONTROL STRUCTURES SHALL BE INSTALLED PRIOR TO THE START OF CONSTRUCTION.
2. ALL EROSION AND SEDIMENTATION CONTROL STRUCTURES SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
3. ALL EROSION AND SEDIMENTATION CONTROL STRUCTURES SHALL BE REMOVED OR REPAIRED AS NECESSARY.
4. ALL EROSION AND SEDIMENTATION CONTROL STRUCTURES SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF CHICAGO ORDINANCES AND THE ILLINOIS CONSTRUCTION ACT.
5. ALL EROSION AND SEDIMENTATION CONTROL STRUCTURES SHALL BE MAINTAINED IN ACCORDANCE WITH THE CITY OF CHICAGO ORDINANCES AND THE ILLINOIS CONSTRUCTION ACT.

E & S CONTROL NOTES:

1. ALL EROSION AND SEDIMENTATION CONTROL STRUCTURES SHALL BE INSTALLED PRIOR TO THE START OF CONSTRUCTION.
2. ALL EROSION AND SEDIMENTATION CONTROL STRUCTURES SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
3. ALL EROSION AND SEDIMENTATION CONTROL STRUCTURES SHALL BE REMOVED OR REPAIRED AS NECESSARY.
4. ALL EROSION AND SEDIMENTATION CONTROL STRUCTURES SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF CHICAGO ORDINANCES AND THE ILLINOIS CONSTRUCTION ACT.
5. ALL EROSION AND SEDIMENTATION CONTROL STRUCTURES SHALL BE MAINTAINED IN ACCORDANCE WITH THE CITY OF CHICAGO ORDINANCES AND THE ILLINOIS CONSTRUCTION ACT.

INSPECTION AND MAINTENANCE:

1. ALL EROSION AND SEDIMENTATION CONTROL STRUCTURES SHALL BE INSPECTED AT LEAST ONCE PER WEEK.
2. ALL EROSION AND SEDIMENTATION CONTROL STRUCTURES SHALL BE MAINTAINED AS NECESSARY TO ENSURE THEY ARE IN GOOD WORKING ORDER.
3. ALL EROSION AND SEDIMENTATION CONTROL STRUCTURES SHALL BE REMOVED OR REPAIRED AS NECESSARY.
4. ALL EROSION AND SEDIMENTATION CONTROL STRUCTURES SHALL BE INSTALLED IN ACCORDANCE WITH THE CITY OF CHICAGO ORDINANCES AND THE ILLINOIS CONSTRUCTION ACT.
5. ALL EROSION AND SEDIMENTATION CONTROL STRUCTURES SHALL BE MAINTAINED IN ACCORDANCE WITH THE CITY OF CHICAGO ORDINANCES AND THE ILLINOIS CONSTRUCTION ACT.



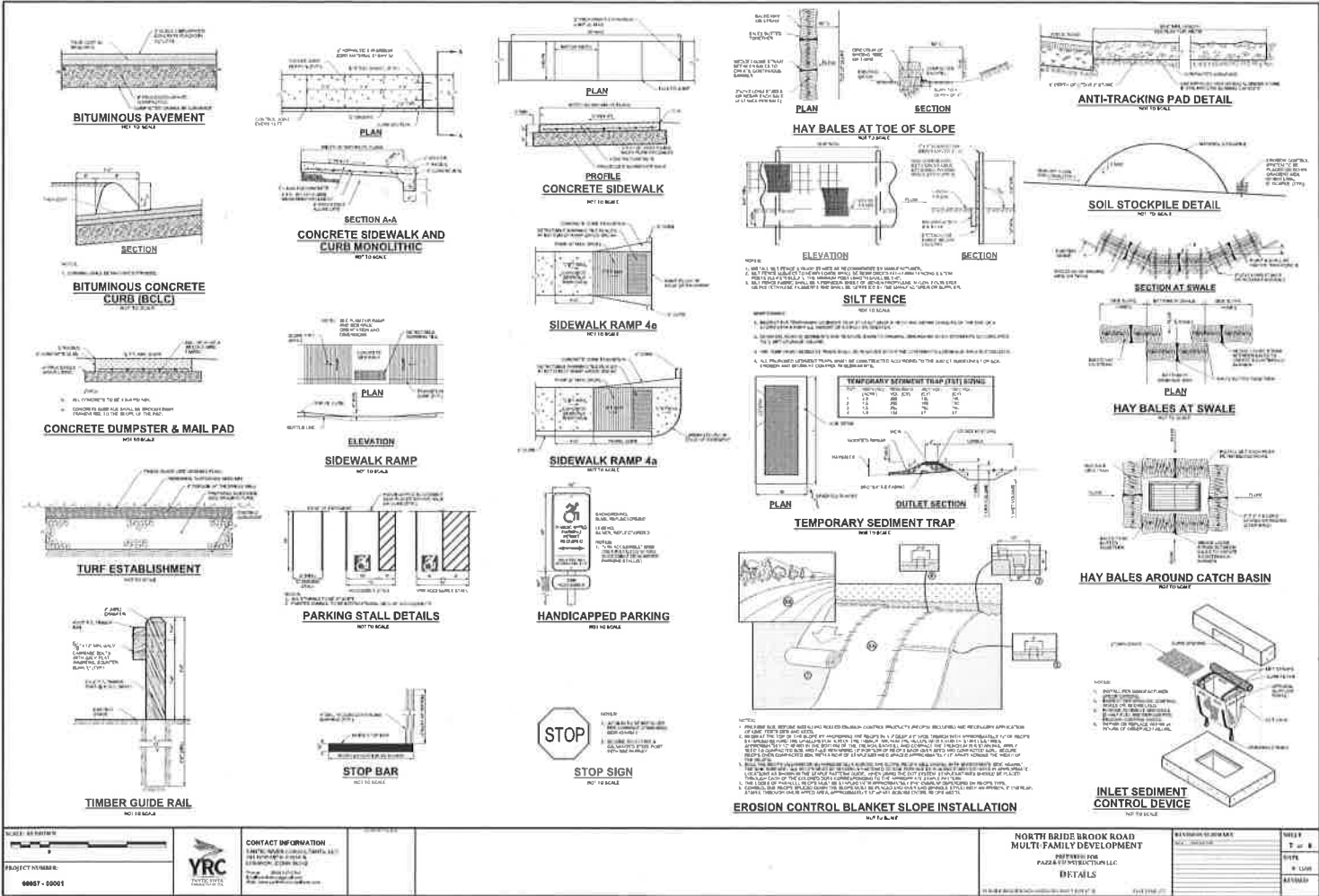
SCALE: 1" = 40'
PROJECT NUMBER: 0067-0001



CONTACT INFORMATION:
 YARC WISCONSIN CONSULTANTS, LLC
 100 WOODRIDGE AVENUE
 LESANOW, WISCONSIN 53001
 PHONE: (262) 488-1100
 FAX: (262) 488-1101
 WWW: www.yarc.com

PROJECT INFORMATION:
 NORTH BRIDE BROOK
 MULTI-FAMILY DEVELOPMENT
 PREPARED FOR:
 PACE & COMPANY, LLC
EROSION & SEDIMENTATION CONTROL PLAN

REVISION	DATE	BY
1	08/20/2019	JM
2	08/20/2019	JM
3	08/20/2019	JM
4	08/20/2019	JM
5	08/20/2019	JM
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50	08/20/2019	JM



SCALE: AS SHOWN
 PROJECT NUMBER:
 66007-0001

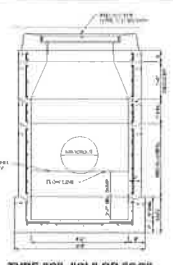


CONTACT INFORMATION
 YRC
 201 W. 10th Street
 Fargo, ND 58103
 Phone: 701.785.1234
 Fax: 701.785.1235
 Email: info@yrc.com

DATE: 08/20/19
 DRAWING NO.: 66007-0001-01
 SHEET NO.: 1 OF 1

NORTH BRIDE BROOK ROAD
 MULTI-FAMILY DEVELOPMENT
 PREPARED FOR:
 PARRA LTD INTERIORS LLC
 DETAILS

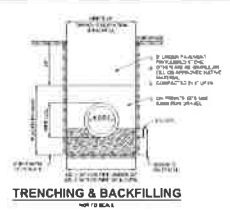
DATE	BY	REVISION



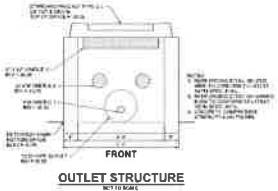
TYPE "C", "CL" OR "CG" STANDARD CATCH BASIN
NOT TO SCALE



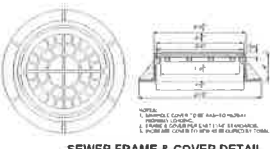
FRAME & COVER DETAIL
NOT TO SCALE



TRENCHING & BACKFILLING
NOT TO SCALE



OUTLET STRUCTURE
NOT TO SCALE



SEWER FRAME & COVER DETAIL
NOT TO SCALE



ROOF LEADER SPLASH PAD
NOT TO SCALE



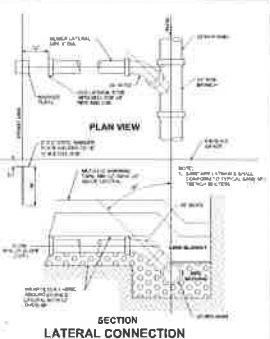
SECTION A-A



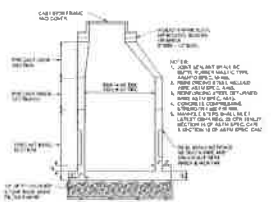
RIPRAP SPLASH PAD
NOT TO SCALE



PRECAST SANITARY MANHOLE
NOT TO SCALE



SECTION LATERAL CONNECTION
NOT TO SCALE



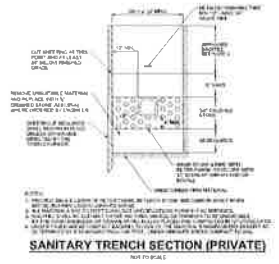
PRECAST STORM DRAIN MANHOLE
NOT TO SCALE



DETENTION BASIN BERM



DETENTION FILTER BERM
NOT TO SCALE



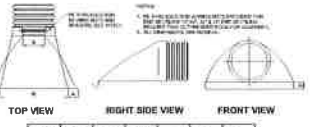
SANITARY TRENCH SECTION (PRIVATE)
NOT TO SCALE



TYPICAL TRENCH DETAIL (WATER)
NOT TO SCALE

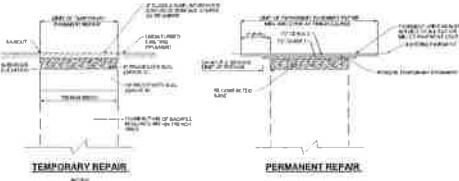


YARD DRAIN
NOT TO SCALE

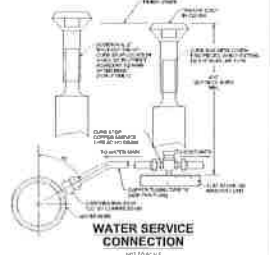


FLARED END DETAIL
NOT TO SCALE

SIZE	W	D	H	W	D	H	W	D	H
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24" DIA	24"	24"	24"	24"	24"	24"	24"	24"	24"
30" DIA	30"	30"	30"	30"	30"	30"	30"	30"	30"
36" DIA	36"	36"	36"	36"	36"	36"	36"	36"	36"
42" DIA	42"	42"	42"	42"	42"	42"	42"	42"	42"
48" DIA	48"	48"	48"	48"	48"	48"	48"	48"	48"
54" DIA	54"	54"	54"	54"	54"	54"	54"	54"	54"
60" DIA	60"	60"	60"	60"	60"	60"	60"	60"	60"



PAVEMENT RESTORATION OVER TRENCH
NOT TO SCALE



WATER SERVICE CONNECTION
NOT TO SCALE

<p>SCALE: AS SHOWN</p> <p>PROJECT # 06601</p>	<p>YRC YORK REGIONAL CONSULTANTS, LLC 181 BROADWAY, SUITE 200 LEWISTON, ME 04240</p>	<p>CONTACT INFORMATION YORK REGIONAL CONSULTANTS, LLC 181 BROADWAY, SUITE 200 LEWISTON, ME 04240</p>	<p>REVISIONS</p> <table border="1"> <tr> <th>NO.</th> <th>DATE</th> <th>DESCRIPTION</th> </tr> <tr> <td>1</td> <td>7-1-20</td> <td>ISSUE FOR PERMIT</td> </tr> <tr> <td>2</td> <td>7-1-20</td> <td>ISSUE FOR PERMIT</td> </tr> <tr> <td>3</td> <td>7-1-20</td> <td>ISSUE FOR PERMIT</td> </tr> <tr> <td>4</td> <td>7-1-20</td> <td>ISSUE FOR PERMIT</td> </tr> <tr> <td>5</td> <td>7-1-20</td> <td>ISSUE FOR PERMIT</td> </tr> <tr> <td>6</td> <td>7-1-20</td> <td>ISSUE FOR PERMIT</td> </tr> <tr> <td>7</td> <td>7-1-20</td> <td>ISSUE FOR PERMIT</td> </tr> <tr> <td>8</td> <td>7-1-20</td> <td>ISSUE FOR PERMIT</td> </tr> <tr> <td>9</td> <td>7-1-20</td> <td>ISSUE FOR PERMIT</td> </tr> <tr> <td>10</td> <td>7-1-20</td> <td>ISSUE FOR PERMIT</td> </tr> </table>	NO.	DATE	DESCRIPTION	1	7-1-20	ISSUE FOR PERMIT	2	7-1-20	ISSUE FOR PERMIT	3	7-1-20	ISSUE FOR PERMIT	4	7-1-20	ISSUE FOR PERMIT	5	7-1-20	ISSUE FOR PERMIT	6	7-1-20	ISSUE FOR PERMIT	7	7-1-20	ISSUE FOR PERMIT	8	7-1-20	ISSUE FOR PERMIT	9	7-1-20	ISSUE FOR PERMIT	10	7-1-20	ISSUE FOR PERMIT	<p>PROJECT INFORMATION NORTH BRIDE BROOK ROAD MULTI-FAMILY DEVELOPMENT PREPARED FOR: PAZZ & COMPANY, INC. DETAILS</p> <p>DATE: 7-1-20</p> <p>SCALE: AS SHOWN</p>
NO.	DATE	DESCRIPTION																																			
1	7-1-20	ISSUE FOR PERMIT																																			
2	7-1-20	ISSUE FOR PERMIT																																			
3	7-1-20	ISSUE FOR PERMIT																																			
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10	7-1-20	ISSUE FOR PERMIT																																			

Town of

P.O. Drawer 519

Department of Planning &
Inland Wetlands Agency

*Gary A. Goeschel II, Director of Planning /
Inland Wetlands Agent*



East Lyme

108 Pennsylvania Ave
Niantic, Connecticut 06357

Phone: (860) 691-4114

Fax: (860) 860-691-0351

MEMORANDUM

To: East Lyme Inland Wetlands Agency

From: Gary A. Goeschel II, Director of Planning/ Inland Wetlands Agent

Date: May 18, 2020

RE: Inland Wetlands Application – Application of Glenn Knowles, Applicant/Owner, for the proposed construction of a patio, correction of water runoff and wetlands restoration at property identified as 21 Brightwater Road, Niantic, East Lyme Assessor's Map 5.L9, lot 58.

In regards to the above referenced application, the East Lyme Inland Wetlands Agency at a meeting held on Monday, February 24, 2020, at the East Lyme Town Hall, 108 Pennsylvania Avenue, Niantic, Connecticut, directed me to prepare a draft motion for the above referenced application for discussion and a resolution at their next regularly scheduled meeting which was to be held on March 9, 2020. Unfortunately, due to extenuating circumstance the Agency canceled the meeting and set a Special Meeting to discuss the items that were initially scheduled for the March 9, 2020 Meeting. Subsequently, the Town of East Lyme was forced to close its doors to the public as a result of the COVID-19 Pandemic. As a result, the Inland Wetlands Agency has been unable to meet in a public forum to render a final decision on your application. As such, upon discussing the matter with the Inland Wetlands Agency Chairman, Gary Upton, the Vice Chair, Kristen Chantrell, and First Selectman, Mark Nickerson, it was agreed that I, as Agent for the Commission, would approve the proposed work within the upland review area as it will still be consistent with State Statutes and the East Lyme Inland Wetland and Watercourses Regulations. Upon the opening of the Town Hall to the public or the establishment of virtual meetings pursuant to the criteria provided in the Governor's Executive Orders, the Agency will then be able to act on the portion of work within the on-site inland wetlands.

As such, only the portion of work within the 100-foot upland review area as proposed in the above referenced application known as "Application of Glenn Knowles, Applicant/Owner, for the proposed construction of a patio, correction of water runoff and wetlands restoration at property identified as 21 Brightwater Road, Niantic, East Lyme Assessor's Map 5.19, lot 58 was approved with the following conditions to the site plan;

1. Notify conservation officer at least 2 days prior to sitework in order that they may monitor the work.

2. Any proposed Additional work beyond this permit in the wetlands or watercourse or its 100-foot regulated area will require approval from the Inland Wetlands Agency or its certified Agent.
3. Any changes to the site plan listed on this permit require notification to the Inland Wetlands Agent and may require Agency approval- a new plan incorporating said changes shall be given to the Agent before any work begins.
4. No site work shall commence until all applicable conditions are satisfied.
5. Notify Inland Wetlands Agent upon completion of all regulated activities for final inspection and sign off.

In regards to the work proposed within the on-site wetlands, it may only be permitted by the Agency. Therefore, I offer the following:

FINDINGS:

Whereas: The Agency may find this application to be in conformance with the Inland Wetlands Regulations of the Town of East Lyme and more specifically based on the following:

Whereas: In accordance with Section 7.6, the Agency required information to be submitted including but not limited to site plans which show the land which will be affected thereby which shows existing and proposed conditions, wetland and watercourse boundaries, contours, and other pertinent features of the land and the proposed activity;

Whereas: In accordance with Section 7, Application Requirements, of the Inland Wetlands Regulations the applicant has provided the all the information required by Section 7.5 and the necessary additional information required by Section 7.6, As such, the application appears to be complete.

Whereas: Victor Benni, PE, Town Engineer has reviewed the proposed plans

Whereas: Demonstrated by the Memorandum from Victor Benni, PE, Town Engineer to G. Goeschel II, Director of Planning, dated March 6, 2020 indicates the slight increase in stormwater from the site improvements will be mitigated by the inclusion of the proposed rain garden on the upland side of the wetland and the rock flow diffuser at the low point of the on-site wetland addresses the existing erosion potential.

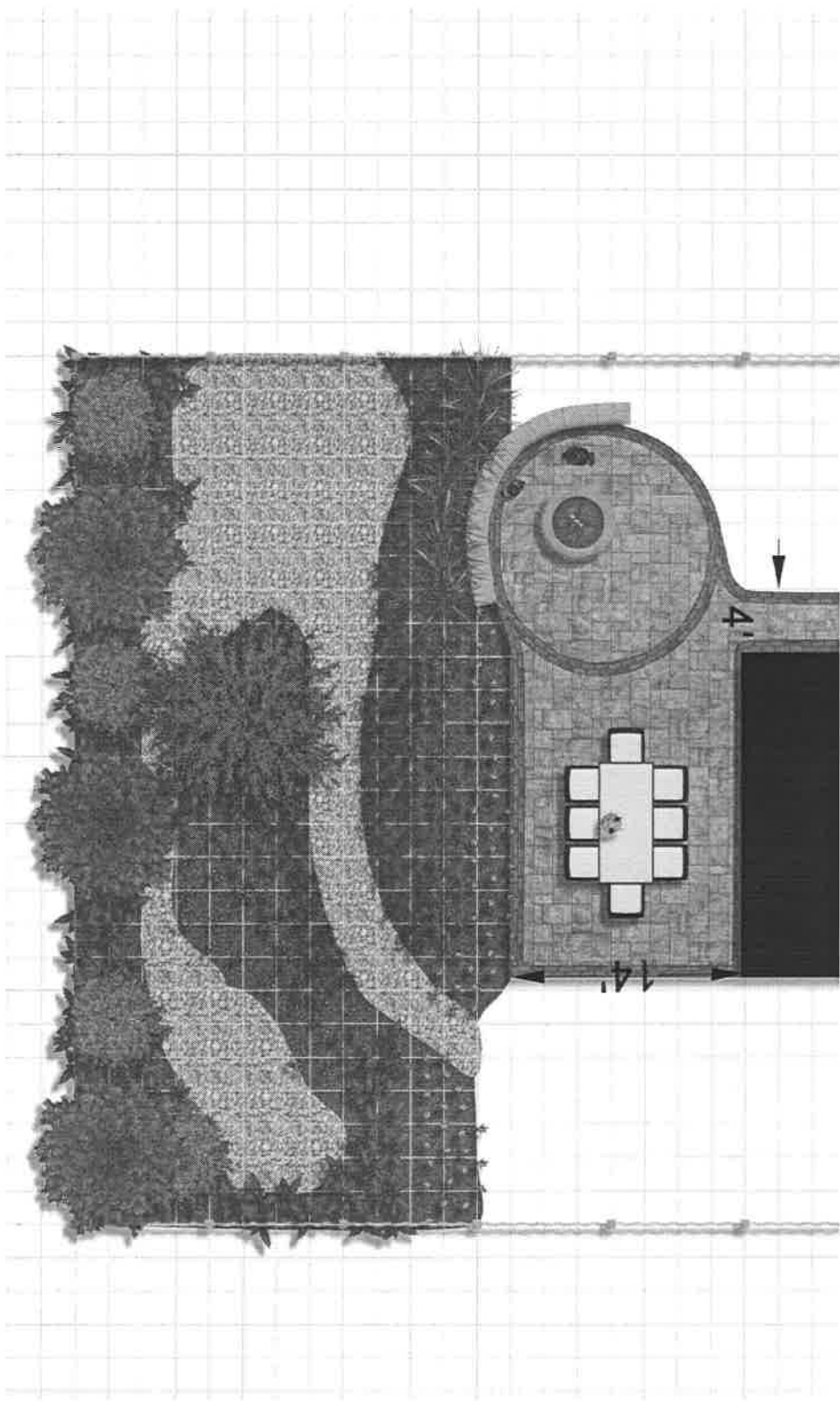
Whereas: Indicated in the memorandum from Victor Benni, PE, Town Engineer to G. Goeschel II, Director of Planning, dated March 6, 2020, the proposed modification to the wetlands will accommodate additional water and restore native wetlands plants; and

Whereas: The proposed improvements do not change the overall surface runoff flow pattern at the rear portion of the property.

SUGGESTED RESOLUTION

Therefore, based on the Findings in the memorandum from Gary A. Goeschel II, Director of Planning/Inland Wetlands Agent to the Inland Wetlands Agency dated March 30, 2020, and the record before the Agency, I move the Agency APPROVE the Application known as the Application of Glenn Knowles, Applicant/Owner, for the proposed construction of a patio, correction of water runoff and wetlands restoration at property identified as 21 Brightwater Road, Niantic, East Lyme Assessor's Map# 5.19, Lot# 58. This approval is specific to the site development plan submitted as the Application of Glenn Knowles, Applicant/Owner, for the proposed construction of a patio, correction of water runoff and wetlands restoration at property identified as 21 Brightwater Road, Niantic, East Lyme Assessor's Map# 5.19, Lot# 58. Any change in the plan, development plan layout, or any modifications of this approval other than those identified herein shall constitute a new application unless prior approval from the Agency or its Agent is granted.

The applicant/owner shall be bound by the provisions of this Application and Approval.



Plant	cont. size		quantity
BETULA NIGRA `HERITAGE` - HEAVY	#15	8-10`	1
ILEX VERT. `JIM DANDY`	#5	18-21``	1
ILEX VERTICILLATA `WINTER RED`	#5	42-48``	3
JUNIPERUS VIRGINIANA	#7	-	3
ASTER NOVAE-ANGLIAE `PURPLE DOME`	#2	-	12
ECHINACEA PURPUREA `HAPPY STAR`	#1	-	15
EUPATORIUM `BABY JOE`	#2	-	6
IRIS VERSICOLOR	#1	-	15
RUDBECKIA FULGIDA `GOLDSTURM`	#1	-	12
OSMUNDA CINNAMOMEA/CINNAMON FERN	#1	-	15
CAREX STRICTA	#1	-	21
PANICUM VIRGATUM `SHENANDOAH`	#2	-	5

Town of

P.O. Drawer 519

**Department of Planning &
Inland Wetlands Agency**

*Gary A. Goeschel II, Director of Planning /
Inland Wetlands Agent*



East Lyme

108 Pennsylvania Ave
Niantic, Connecticut 06357

Phone: (860) 691-4114

Fax: (860) 860-691-0351

March 27, 2020

Toby & Glenn Knowles
21 Brightwater Road
East Lyme, CT 06375

RE: Inland Wetlands Application – Application of Glenn Knowles, Applicant/Owner, for the proposed construction of a patio, correction of water runoff and wetlands restoration at property identified as 21 Brightwater Road, Niantic, East Lyme Assessor's Map 5.L9, lot 58.

Dear Mr. and Mrs. Knowles,

The East Lyme Inland Wetlands Agency at a meeting held on Monday, February 24, 2020, at the East Lyme Town Hall, 108 Pennsylvania Avenue, Niantic, Connecticut, directed me to prepare a draft motion for the above referenced application for discussion and a resolution at their next regularly scheduled meeting which was to be held on March 9, 2020. Unfortunately, due to extenuating circumstance the Agency canceled the meeting and set a Special Meeting to discuss the items that were initially scheduled for the March 9, 2020 Meeting. Subsequently, the Town of East Lyme was forced to close its doors to the public as a result of the COVID-19 Pandemic. As a result, the Inland Wetlands Agency has been unable to meet in a public forum to render a final decision on your application. As such, upon discussing the matter with the Inland Wetlands Agency Chairman, Gary Upton, the Vice Chair, Kristen Chantrell, and First Selectman, Mark Nickerson, it was agreed that I, as Agent for the Commission, would approve the proposed work within the upland review area as it will still be consistent with State Statutes and the East Lyme Inland Wetland and Watercourses Regulations. Upon the opening of the Town Hall to the public or the establishment of virtual meetings pursuant to the criteria provided in the Governor's Executive Orders, the Agency will then be able to act on the portion of work within the on-site inland wetlands.

Therefore, please consider this correspondence as APPROVAL of only the portion of work within the 100-foot upland review area proposed in your application known as "Application of Glenn Knowles, Applicant/Owner, for the proposed construction of a patio, correction of water runoff and wetlands restoration at property identified as 21 Brightwater Road, Niantic, East Lyme Assessor's Map 5.L9, lot 58 which, is further subject to the following administrative requirements and required modifications to the site plan and other materials submitted in support of this application:

1. Notify conservation officer at least 2 days prior to sitework in order that they may monitor the work.
2. Any proposed Additional work beyond this permit in the wetlands or watercourse or its 100-foot regulated area will require approval from the Inland Wetlands Agency or its certified Agent.
3. Any changes to the site plan listed on this permit require notification to the Inland Wetlands Agent and may require Agency approval- a new plan incorporating said changes shall be given to the Agent before any work begins.
4. No site work shall commence until all applicable conditions are satisfied.
5. Notify Inland Wetlands Agent upon completion of all regulated activities for final inspection and sign off.

This approval is specific to the site development plan submitted as the Application of Glenn Knowles, Applicant/Owner, for the proposed construction of a patio, correction of water runoff and wetlands restoration at property identified as 21 Brightwater Road, Niantic, East Lyme Assessor's Map 5.L9, lot 58. Any change in the plan, development plan layout, or any modifications of this approval other than those identified herein shall constitute a new application unless prior approval from the Agency or its Agent is granted.

The applicant/owner shall be bound by the provisions of this Application and Approval.

If you have any further questions regarding this letter or any of the Inland Wetland Regulations, please do not hesitate to contact me at (860) 235-6211 or ggoeschel@eltownhall.com.

Sincerely,



Gary A. Goeschel II
Director of Planning/
Wetlands Enforcement Officer

cc: William Mulholland, Zoning Official
Steven E. Way, Building Official
Victor Benni, Town Engineer
Mark C. Nickerson, First Selectman
Inland Wetlands Agency
File

[https://eltownhall-my.sharepoint.com/personal/ggoeschel_eltownhall_com/Documents/21 Brightwater_Notice of Decision_AdminApproval.doc](https://eltownhall-my.sharepoint.com/personal/ggoeschel_eltownhall_com/Documents/21%20Brightwater_Notice%20of%20Decision_AdminApproval.doc)

Town of East Lyme • P.O. Box 519 • 108 Pennsylvania Avenue • Niantic, Connecticut 06375
Phone: (860) 691-4114 • Fax: (860) 691-0351

Town of East Lyme

P.O. DRAWER 519

NIANTIC, CONNECTICUT 06357



Town Engineer
Victor A. Benni, P.E.

860-691-4112
FAX 860-739-6930

To: Gary A. Goeschel II, Director of Planning

From: Victor Benni, P.E., Town Engineer

A handwritten signature in black ink, appearing to read "Victor Benni".

Date: March 6, 2020

Re: 21 Brightwater Road
Wetlands Application Review

Information submitted by the Applicant which was considered in this review:

- Written Narrative (Narrative), Assessors Map #5.19 Lot 58, 2020, by: Toby and Glenn Knowles.
- Proposed Site Plan Design, Guy Turgeon, 21 Brightwater Road, Scale: 1"=10', Date: April 19, 2002, Revised to: 2/12/09, by: Gerwick-Mereen LLC.
- Sketch Drawings (Sketches), 21 Brightwater Rd, Knowles, GSK1 As Is, GSK 2 Transition, GSK3 Final.

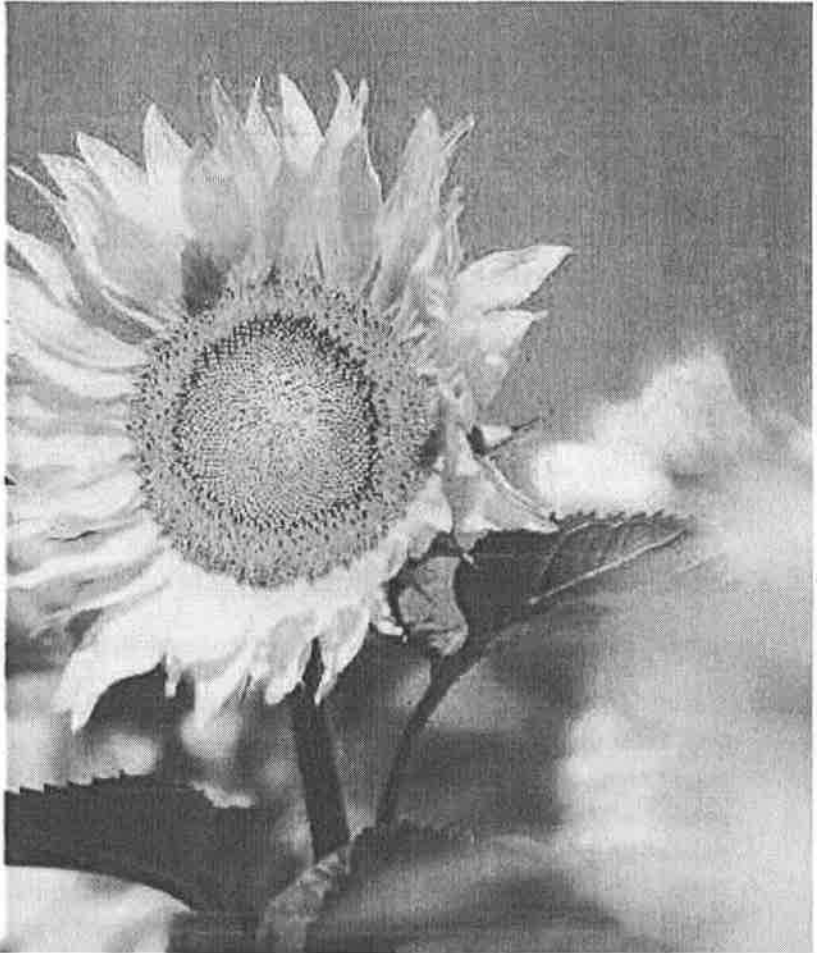
This office has reviewed the above referenced information and has the following comments:

1. The Narrative indicates that the modification to the wetlands will accommodate additional water and restore native wetland plants.
2. The proposed improvements do not change the overall surface runoff flow pattern at the rear portion of the property.
3. The Narrative demonstrates that the slight increase in stormwater from the site improvements will be mitigated by the inclusion of the proposed rain garden on the upland side of the wetland.
4. The proposed rock flow diffuser at the low point of the on-site wetland addresses the already existing erosion potential.
5. The Wetlands Agency may consider having the Wetlands Agent monitor the site as the work progresses; the Engineering Department is available at your disposal to assist in this matter.

Wetlands Narrative

Assessors Map # 5.19 Lot 58

2020



The purpose of this narrative is to provide the East Lyme Wetland Commission the details of our project to correct a water issue, build a patio, and modify the wetland to accommodate additional water and restore it with native plants.

Toby and Glenn Knowles
21 Brightwater Rd
Niantic, CT 06357
(860) 334-0199



Assessors Map # 5.19 Lot # 58

Subject: Written Narrative in Support of Application for Permit East Lyme Inland Wetland Agency

The purpose of this permit application is three-fold:

1. Correct water issues in the lawn and around the house and slab
2. Construct a patio in back of the house
3. Modify the wetland to accommodate additional water and restore with native wetland plants

Four drawings have been provided with this permit application

1. GJK 1 – As Is of 21 Brightwater Rd
2. GJK 2 – Transition of 21 Brightwater Rd
3. GJK 3 – Final of 21 Brightwater Rd
4. Original Site Plan Design by Guy Turgeon

Correct water issues in the lawn and around the house slab

Surface water from the upland neighbor, 23 Brightwater Road passes under the properties fence along with water from the roof, causing puddles in the grass on the left side of the property. At the back right corner of the property, water pools against the foundation from runoff of the house roof. The proposed changes are to add gutters to the back half of the house and pipe the water into the wetlands at the low point of the property. A flow diffuser will be used to mitigate impact to the wetlands from water exiting the pipe. It is estimated that 250 gallons would be directly transiting the pipe in a 1" rain storm. A majority of this water would normally end up in the wetlands area as it is the low point of the property (see Drawing # 4). On the upland side of the house reused top soil from grading and top soil will be brought in to grade the grass area towards the wetland. The grade in the transition from the grass to the wetlands will be lowered to allow water to flow into the wetlands. A gentle swale will be installed to direct the flow of water. A rain garden will be added to the upland side of the wetland to mitigate additional flow of water. The size of the rain garden will be approximately 100 square feet and 8" deep, treating up to approximately 500 gallons water.

Construction of a patio

The location of the patio will be placed directly behind the house and flowing to the back and right of the property. The location of the patio is shown on drawing # 3. The patio will be constructed of UNILOCK pavers. A low wall will be constructed at the edge of the wetlands to provide a defined border from the patio to the wetland area.

Modify Wetland Area to accommodate additional water and restore with native wetland plants

Alternative 1:

The existing wetland has a high spot directly in the center. The proposed concept is to better define this high spot and enhance the naturally occurring swales to the north and south of the high spot. A rain garden will be constructed on the upland side of the high spot shown on drawing # 3. The rain garden will extensively be used as a fore bay. The rain garden will be designed and installed using the Nemo.uconn.edu/raingardens/installation.htm web site for rain gardens. There are two naturally occurring swales to the north and south of the high spot. The overflow of the water from the rain garden will be channeled by the existing swale on the north side of the high spot. This will allow the water to flow to the water storage site on the east side of the high spot. The water that flows from the left side of the house via the grass swale will be directed to the existing swale on the southern side of the high spot. This will allow the water to flow to the water storage site of the east side of the high spot as well. Both existing swales in the wetland will be enhanced for better flow and will be filled with river rock. The water storage site will allow rain water to settle and be processed into the ground. The capacity of the water storage site may have to be increased. A flow diffuser of rock approximately 24" wide by 18" deep and 6 feet long will be installed at the low point of the property at the far east point of the wetland. In extreme rainfall it will mitigate any potential erosion to the down land property, 19 Brightwater Road. Sod will be planted on all grass areas that have been disturbed during installation of the patio.

The purpose of the wetland upgrade is to improve wildlife habitat and native vegetation diversity while better managing water runoff. Native wetland plants will be installed to restore, enhance and create productive wetland. Plants such as Winterberry Holly will provide food for birds during the winter. Grasses such as Carex Amphibola (Creek Sedge) will be planted along the water transition sites for erosion control. Cephalanthus Occidentalis (Button Bush) will be planted because it tolerates flooding and some salt and also has a spicy sent that attracts butterflies and bees. The rain garden will have Iris, Cone Flowers and Asters. Evergreens will be planted at the far North of the property to create a blind from the neighbor at 24 Saltaire Ave. This is our initial considerations for this wetland area. As time progresses other productive plants maybe be introduced. We utilized the Connecticut association of conservation and inland wetlands commission web site for potential plantings. A complete list of plantings can be found in appendix A.

Alternative 2:

The do nothing option for this work will not resolve the issues with water in the grass area around the house and water pooling against the slab.

Alternative 3:

I have discussed options of installing galley's in the upland area of the wetland to accommodate water runoff from the roof and from property at 23 Brightwater Road. I have dug test wells in the upland and have hit groundwater approximately 18" below grade. This would render the galley's ineffective.

Appendix A

Property Plantings

Native plants were selected to replant the wetlands area. Plantings were also selected to aid wildlife. The following plants will be introduced into the wetlands:

Wetland area:

Winterberry Holly

Rush Grasses

Pickerelweed

Arrow Arum

Red Star Hibiscus

Cardinal Flower

White Cedar

White Birch

Creek Sage

Button Bush

Rain Garden:

Asters

Iris

Cone Flowers

Day lilies

Sage

Toby and Glenn Knowles

21 Brightwater Rd

Niantic, CT 06357

Assessors Map # 5.19 Lot # 58

Subject: Written Narrative in Support of Application for Permit East Lyme Inland Wetland Agency

The purpose of this permit application is three-fold:

1. Correct water issues in the lawn and around the house and slab
2. Construct a patio in back of the house
3. Modify the wetland to accommodate additional water and restore with native wetland plants

Four drawings have been provided with this permit application

1. GJK 1 – As Is of 21 Brightwater Rd
2. GJK 2 – Transition of 21 Brightwater Rd
3. GJK 3 – Final of 21 Brightwater Rd
4. Original Site Plan Design by Guy Turgeon

Correct water issues in the lawn and around the house slab

Surface water from the upland neighbor, 23 Brightwater Road passes under the properties fence along with water from the roof, causing puddles in the grass on the left side of the property. At the back right corner of the property, water pools against the foundation from runoff of the house roof. The proposed changes are to add gutters to the back half of the house and pipe the water into the wetlands at the low point of the property. A flow diffuser will be used to mitigate impact to the wetlands from water exiting the pipe. It is estimated that 250 gallons would be directly transiting the pipe in a 1" rain storm. A majority of this water would normally end up in the wetlands area as it is the low point of the property (see Drawing # 4). On the upland side of the house top soil will be brought in to grade the grass area towards the wetland. The grade in the transition from the grass to the wetlands will be lowered to allow water to flow into the wetlands. A gentle swale will be installed to direct the flow of water. A rain garden will be added to the upland side of the wetland to mitigate additional flow of water. The size of the rain garden will be approximately 100 square feet and 8" deep, treating up to approximately 500 gallons water.

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ggoeschelle
etownhall.com

APPLICATION FOR PERMIT EAST LYME INLAND WETLANDS AGENCY

CR# 1492	Office Use Only	
Fee Paid \$210 ⁰⁰	Date Submitted 1/21/2020	Application # _____
Date of Receipt 2/24/2020	Date Approved _____	Permit Number _____
Major Impact: YES NO Public Hearing: YES NO Agent Approved: YES NO		

Note: In accordance with the Inland Wetland and Watercourses Regulations, Eleven (11) copies of all application materials must be submitted.

1. SITE LOCATION (Street) and Description: 21 BRIGHTWATER RD
Assessor's Map 5.19 Lot # 58

Note: It is the applicant's responsibility to provide the correct site address, map/lot number for the legal notice. Provide a description of the land in sufficient detail to allow identification of the inland wetlands and watercourses, the area(s) (in acres or square feet) of wetlands and watercourses to be disturbed, soil type(s), and wetland vegetation.

2. APPLICANT: Toby + Glenn Knowles
Address: 21 Brightwater Rd Phone: _____
Niantic CT 06357 Fax: _____
Business: _____ Cell: 860 334-0199
Email: gknowles1@icloud.com
Applicant's interest in the land: _____

**If the applicant is a Limited Liability Corporation or a Corporation provide the managing member's or responsible corporate officer's name, address, and telephone number.

3. OWNER: Toby + Glenn Knowles
Address: 21 Brightwater Rd Phone: _____
Niantic CT 06357 Fax: _____
Email: gknowles1@icloud.com Cell: 860 334 0199

**As the legal owner of the property listed on this application, I hereby consent to the proposed activities. And I hereby authorize the members and agents of the Agency to inspect the subject land, at reasonable times, during the pendency of the application and for the life of the permit.

Owners Printed Name: Glenn J Knowles
Owners Signature: [Signature] Date: 1/20/20

4. Area of wetland to be disturbed: 900 sq. ft. or ac _____
Area of watercourse to be disturbed: _____ sq. ft. or ac _____
Upland review area to be disturbed: _____ sq. ft. or ac _____

Will fill be needed on site? Yes No
If yes, how much fill is needed? 20 - 30 Cubic yards

5. The property contains (circle one or more)

WATERCOURSE WATERBODY WOODED-WETLAND SWAMP
FLOODPLAIN OTHER: _____

Description of soil types on site: _____

Description of wetland vegetation: Pepper bush, Blueberry

Name of Soil Scientist(s) and date of survey: Donald Fortunado

6. Provide a written narrative of the purpose and a description of the proposed activity and proposed erosion and sedimentation controls and other best management practices and mitigation measures which may be considered as a condition of issuing a permit for the proposed regulated activity including, but not limited to, measures to (1) prevent or minimize pollution or other environmental damage, (2) maintain or enhance existing environmental quality, or (3) in the following order of priority: restore, enhance and create productive wetland or watercourse resources. Depending on the complexity of the project, include the following: construction schedule, sequence of operations, drainage computations with pre and post construction runoff quantities and runoff rates, plans clearly showing the drainage areas corresponding to the drainage computation, existing wetland inventory and functional assessment, soils report, construction plans signed by a certified soils scientist, licensed surveyor, and licensed professional engineer.

7. Provide information of all alternatives considered. List all alternatives which would cause less or no environmental impact to wetlands or watercourses and state why the alternative as set forth in the application was chosen. All such alternatives shall be diagrammed on a site plan or drawing. (Attach plans showing all alternates considered).

Alternative 1: Proposed Plan in narrative
Alternative 2: DO NOTHING
Alter Native 3: USE OF GALLEY'S in upland

8. Attach a site plan showing the proposed activity and existing and proposed conditions in relation to wetlands and watercourses and identifying any further activities associated with, or reasonably related to, the proposed regulated activity which are made inevitable by the proposed regulated activity and which may have an impact on wetlands and watercourses.

9. Provide the name and mailing addresses of adjacent landowners (including across a street). Attach additional sheets if necessary.

Name/Address: Brian Harrington / 23 Brightwater Rd Niantic CT 06357
Name/Address: Laurene O'LOUGHLIN / 19 Brightwater Rd Niantic CT 06357
Name/Address: Linda Gesualdi / 24 Saltaire Ave Niantic CT 06357
William Molloy / 22 Brightwater Rd, Niantic CT 06357

10. Attach a completed DEP reporting form.

The Agency shall revise or correct the information provided by the applicant and submit the form to the Commissioner of Environmental Protection in accordance with section 22a-30-14 of the Regulations of Connecticut State Agencies.

11. Name of Erosion Control Agent (Person Responsible for Compliance):

Glenn Knowles

Address: 21 Brightwater Rd
Niantic CT 06357

Phone: 860 334-0199

Fax: _____

Email: gknowles1@gmail.com

Cell: _____

12. Are you aware of any wetland violations (past or present) on this property? Yes No

If yes, please explain: _____

13. Are there any vernal pools located on or adjacent (within 500') to the property? Yes No

14. For projects that do not fall under the ACOE Category I general permit - Have you contacted the Army Corps of Engineers? Yes No

15. Is this project within a public water supply aquifer protection area or a watershed area? Yes No

16. If so, have you notified the Commissioner of the Connecticut Department of Public Health and the East Lyme Water and Sewer Department? Yes No (Proof of notification must be submitted with your application).

17. Attach the appropriate filing fee based on the fee schedule established in Section 19 of the Regulations.
Fee: 210 (Make checks payable to "Town of East Lyme").

18. PUBLIC HEARINGS ONLY: The applicant must provide proof of mailing notices to the abutters prior to the hearing date.

The undersigned Applicant hereby consents to necessary and proper inspection of the above mentioned property by the East Lyme Inland Wetlands Agency and/or its agents at reasonable times both before and after the permit in question has been granted.

The Applicant affirms that the information supplied in this application is accurate to the best of his/her knowledge and belief. As the applicant I hereby certify that I am familiar with the information provided in this application and I am aware of the penalties for obtaining a permit through deception or through inaccurate or misleading information.

Printed Name: Glenn Knowles Date: 1/20/20

Signature: 

Please note:

Above notice to be published in legal section of newspaper having general circulation in the Town of East Lyme. Applicant to pay cost of publication. You or a representative must attend the Inland Wetlands Agency meeting to present your application.

CHECKLIST FOR A COMPLETE APPLICATION

- completed application form including Department of Environmental Protection reporting form (green copy)
- A narrative of the purpose and description and methodology of all propose activities;
- Alternatives considered by the applicant, reasons for leaving less than a 10' buffer between clearing and the wetlands. Such alternatives to be diagrammed on a site plan or drawing and submitted to the commission as part of the application;
- Names and mailing addresses of abutting property owners;
- Three copies of approximately 1"=40' scale plans
- Locations of existing and proposed land uses
- Locations of existing and proposed buildings
- Locations of existing and proposed subsurface sewage disposal systems, and test hole descriptions
- Existing and proposed topographical and man-made features including roads and driveways, on and adjacent to the site
- Location and diagrams of proposed erosion control structures
- Assessor map and lot number
- Key or inset map
- North arrow
- Flood zone classification and delineation
- Use of wetland and watercourse markers where appropriate.
- Soil types classification and boundary delineation (flagged and numbered boundary), Soil Scientist's original signature and certification on plans
- Soil Scientist's (or other wetland scientist) report on the function of the wetlands
- Watercourse channel location and flow direction, where appropriate
- 100 ft. regulated area depicted on plans
- Conservation easements where appropriate
- A detailed erosion and sediment control plan which meets requirements set forth in the most recent revision of the *Connecticut Guidelines for Soil Erosion and Sediment Control*, published by the Connecticut Council on Soil and Water Conservation, including:
 - Location of areas to be stripped of vegetation and other unprotected areas
 - Schedule of operations including starting and completion dates for major development phases
 - Seeding, sodding, or re-vegetation plans for all unprotected or un-vegetated areas
 - Location and design of structural sediment control measures
 - Timing of planned sediment control measures
 - Use of wetland and watercourse markers
 - Proper certification on the application documents and plans

In the case of filling in wetlands, watercourses, or regulated upland areas, the following items are necessary:

- Area to be filled
- Volume of requested fill
- Finished slopes of filled areas
- Containment and stabilization measures
- Proposed finished contours
- Evaluation of the effect of filling the wetlands with respect to storage volume and its impact downstream showing before and after development flows, and the evaluation of storm water detention including the existing need for flood control downstream

Other required items:

- Proof of adjoining Town notification, where required;
- All application fees required by Section 16 of these regulations;
- A written narrative detailing how the effects of the applicant's proposed activities upon wetlands and watercourses shall be mitigated.
- A written description of any and all future plans which may be linked to the activities proposed in the current application.
- Address the potential to enhance the current buffer area.
- Review drainage information with Town Engineering
- Mailing requirements for abutters (public hearing only)

Appendix D - ORDINANCE ESTABLISHING SCHEDULE OF FEES FOR CONSERVATION, PLANNING AND ZONING COMMISSIONS

1.1	Application Fee **	
1.1.1	Residential Uses.....	\$150.00 Plus *\$50.00/LOT
	Plus Fee from Schedule A	
1.1.2	Commercial Uses.....	\$400.00
	Plus Fee from Schedule A	
1.1.3	All Other Uses.....	\$200.00
	Plus Fee from Schedule A	

*Each lot with regulated activities

**\$60 fee required by C.G.S 22a-27j will be added to the base fees.

1.2	Approval by Duly Authorized Agent **	\$100.00
1.3	Appeal of Duly Authorized Agent Decision.....	\$300.00
1.4	Significant Activity Fee	\$300.00
1.5	Public Hearing Fee	
	1.5.1 Single Residential	\$200.00
	1.5.2 Commercial/Industrial/Multi-Family	\$450.00

1.6 Complex Application Fee..... Actual Cost

The Inland Wetlands Agency may charge an additional fee sufficient to cover the cost of reviewing and acting on complex applications. Such fee may include, but not be limited to, the cost of retaining experts, to advise, analyze, review, and report on issues requiring such experts. The Agency or the duly authorized agent shall estimate the complex application fee, which shall be paid pursuant to section 19.1 of these regulations within 10 days of the applicant's receipt or notice of such estimate. Any portion of the complex application fee in excess of the actual cost shall be refunded to the applicant no later than 30 days after publication of the agency's decision.

1.7	Permitted and Nonregulated Uses :	
1.7.1	Permitted Uses as of Right	\$0.00
1.7.2	Nonregulated	\$0.00
1.8	Regulation Amendment Petitions.....	\$500.00
	(Does not include Notices or Regulation Advisories from DEP)	
1.8.1	Map Amendment Petitions.....	\$500.00
	Plus Fee from Schedule B	
1.9	Modification of Previous Approval:	\$100.00
1.10	Renewal of Previous Approval	\$100.00
1.11	Monitoring Compliance Fee	\$100.00

1.12 SCHEDULE A. For the purpose of calculating the permit application fee, the area in schedule A is the total area of wetlands and watercourses and the upland review area upon which a regulated activity is proposed.

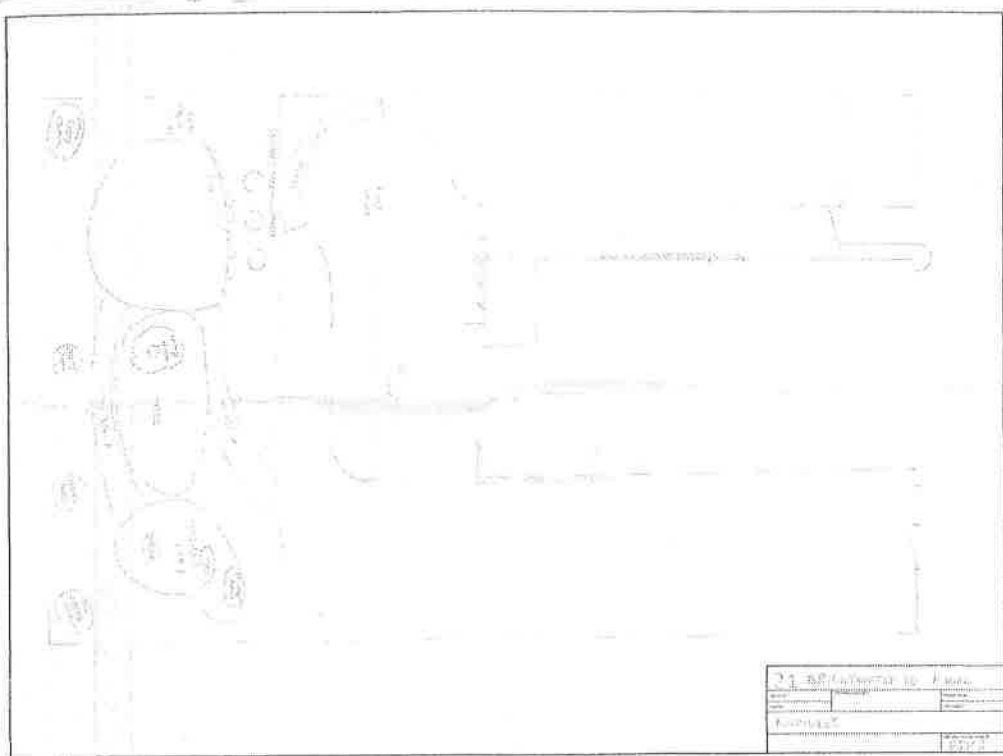
SQUARE FEET of AREA

1.12.1.	Less than 1,000	\$0.00
1.12.2.	1,000 to 5,000	\$250.00
1.12.3.	More than 5,000	\$750.00

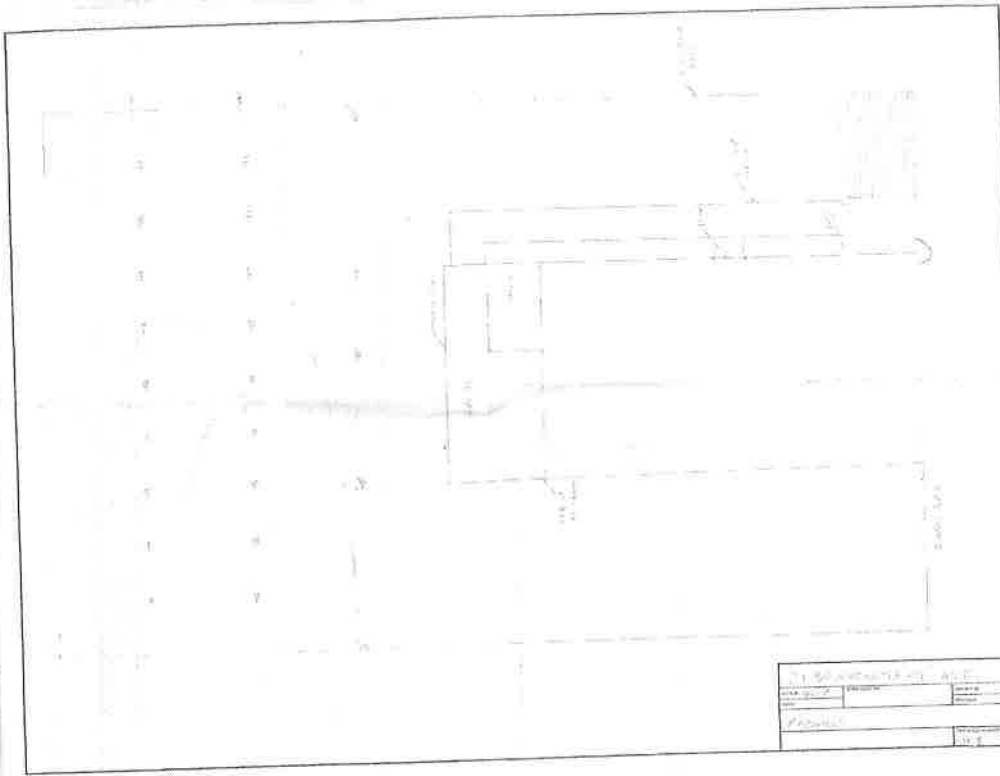
1.13 SCHEDULE B. For the purpose of calculating the map amendment petition fee, linear feet in schedule B is the total length of wetlands and watercourses boundary subject to the proposed boundary change.

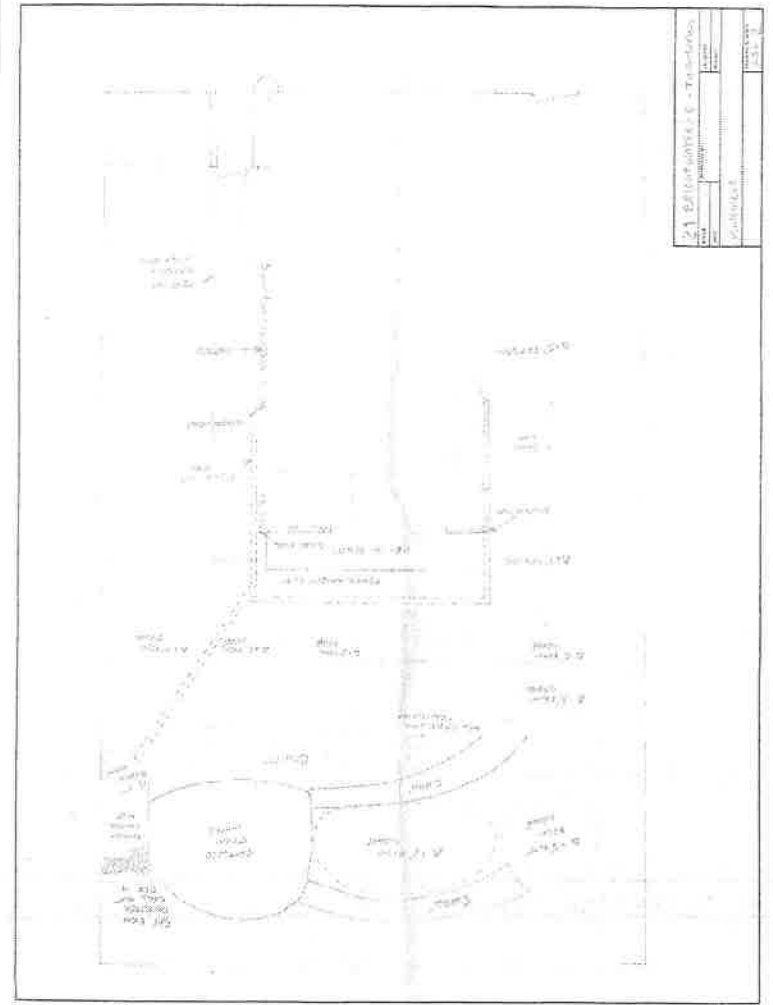
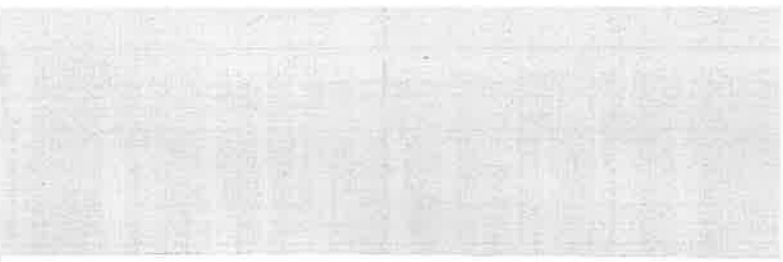
LINEAR FEET

1.13.1.	Less than 500	\$0.00
1.13.2	500 to 1,000.....	\$250.00
1.13.3	More than 1,000	\$750.00

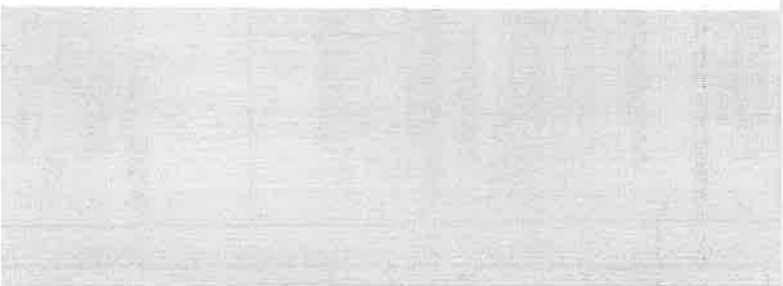


Dj. 10/10/2010	
Author	
Scale	
Project	
Date	10/10/2010





21 8/10/2016, E - Translation	
DATE	8/10/2016
TIME	10:00
LOCATION	
COURTNO. 1	
SHEET NO. 1	



**EAST LYME INLAND WETLANDS AGENCY
REGULAR MEETING MINUTES
June 8, 2020
Remote Participation by ZOOM due to Covid 19
7:00 p.m.**

Present: Gary Upton, Phyllis Berger, Rosemary Ostfeld, Theodore Koch, Kristin Chantrell, David Schmitt, Doreen Rhein, Alt., Jason Deeble, Alt

Absent: Don Phimister, Sandy Gignac alt.

Also Present: Gary Goeschel, Director of Planning/Inland Wetlands Agent, Jennifer Lindo, Administrative Assistant, Mark S. Zamarka, Town Attorney

Call to Order:

G. Upton called the meeting to order at 7:07. He explained the rules for participation in the remote ZOOM meeting. The materials for the applications are on the town's website.

I. ADDITIONS TO THE AGENDA-none

Attorney Paul Gerahty, representing Nottingham Hills Re-subdivision stated that Town Attorney Zamarka and any attorneys from the law firm Waller Smith and Palmer cannot partake in any conversations or deliberations involving his client or anyone he represents due to a federal consent decree. Attorney Zamarka stated he was not aware of the specifics, but is aware of the existence of an agreement, although it was before his time. He stated that he is not attending the meeting to participate in discussion of issues that are represented by Attorney Gerahty; he will be muted and video turned off during the Nottingham Hills application.

FILED

II. PUBLIC HEARINGS-none

III. PUBLIC DELEGATIONS-none

June 15, 2020 AT 3:55 AM/PM
Brooke Strom ATC
EAST LYME TOWN CLERK

IV. ACCEPTANCE OF MINUTES:

Meeting Minutes of May 18, 2020 Special Meeting

MOTION (Schmitt/Ostfeld) To approve the minutes of May 18, 2020 Special Meeting as presented. Vote: Approved Unanimously.

(D. Rhein is seated for D. Phimister)

V. EX-OFFICIO REPORT-none

VI. PENDING APPLICATIONS:

A. Inland Wetlands Regulations: Changes to regulations and updates

G. Goeschel stated that the Public Hearing for the regulation changes cannot be held on June 8 due to the timing of notifications.

MOTION: (Upton/Ostfeld) to rescind the previous date of June 8, 2020 that was previously set for the Public Hearing to change regulations. Vote: Approved Unanimously.

MOTION: (Upton/Berger) to reschedule the Public Hearing on July 13, 2020. Vote: Approved Unanimously.

B. Nottingham Hills Re-subdivision; Request of Kristen T. Clarke, P.E. Agent for Owner English Harbor Asset Management, LLC for a Determination of Permitted/Non-Regulated Activity at Upper Kensington Drive, as part of a 4-lot re-subdivision. East Lyme Assessor's Map 40.0, Lot 23 and 22.

(Attorney Zamarka recused himself from the application discussion)

Attorney Gerahty stated there was a memo submitted from K. Clarke, P.E., who is a member of English Harbor Asset Management LLC, addressing some of the questions the members had at the last meeting. He reminded the agency that they are looking for a determination of no jurisdiction of the agency.

Gerahty explained the reserve septic system which is the closest activity to the wetlands is not to be built, but is reserved. The design is an advanced technology system (GST) which allows for a smaller design. It will be much smaller and farther away from the regulated area. He stated it is a more sophisticated system and is pitched away from the wetlands. In response to a comment made on the site walk, he stated the rain garden will not be a mosquito breeding ground as the rain garden is not at the lowest point of the slope and will not puddle, therefore creating a breeding ground for mosquitos.

Gerahty stated that due to new regulations the sub-division can now have one driveway as opposed to the two that were originally proposed, therefore reducing the amount of impervious surfaces. He also stated that in addition to the usual E & S controls there will also be staked hay bales as an additional wetlands buffer.

The GST septic system design reduces the leaching fields on all lots by 50% and a note will be added to the final site plans that all the lots in the application will utilize the GST septic system. There is no activity proposed in a protected or endangered species areas according to the NDDDB and the tree canopy has not changed or been altered by the proposed application.

Attorney Gerahty stated the applicant has demonstrated the agency has no jurisdiction as there is no proposed activity in a regulated area. In order to call a public hearing, the agency would have to have expert testimony proving there is, "significant activity." He stated that the Planning Commission will have a public hearing as the application is a re-subdivision.

G. Goeschel stated that according to the plan submitted there is no activity proposed in the regulated area and all activity is outside the 100' upland review area. He stated the town engineer and Ledge Light Health District will be reviewing the application.

Attorney Gerahty stated previously there was a wetlands public hearing for the original lots.

The agency asked who would be maintaining the rain garden and how are the wetlands going to be protected during construction. Attorney Gerahty stated there should not be any maintenance for the rain garden and any rights and obligations of the property owners will be clearly drafted and put into the deeds. He stated the wetlands would be marked off during construction and the access for construction purposes will be the proposed driveway.

MOTION: (Schmitt /Koch) there is no need for the agency to require a permit because it is not in its jurisdiction given all the information provided in the application. Vote: Approved Unanimously.

- C. **21 Marshfield Rd, Your Brothers Keeper LLC, Agent for Owner Brandy and Derek Moore, for Determination of a Permitted/Non-Regulated Activity at 21 Marshfield Road, for the clean out of a culvert entrance and exit to maintain the natural flow of water. East Lyme Assessor's Map 04.7, Lot 19.**
- D. **Creek Road, Giants Neck Heights Club House, your Brothers Keeper LLC, Agent for Owner Giants Neck Heights Association, for Determination of a Permitted/Non-Regulated Activity at 21 Marshfield Road, for the clean out of a culvert entrance and exit to maintain the natural flow of water. East Lyme Assessor's Map 04.7, Lot 18.**

(Items C & D were combined for discussion purposes.)

G. Upton provide photos and gave the history provided at the previous meeting.

G. Goeschel stated the applicants may need a DEEP permit and zoning may require a CAM (Coastal Area Management) review/permit. The question of when the pipe was installed could not be definitely determined.

MOTION: (Upton/Ostfeld) The applicants from 21 Marshfield Rd. and Creek Road need to make an application for a permit to the East Lyme Inland Wetlands Agency for the proposed activity. The applicant only needs to submit one application with the two properties listed. Vote: Approved Unanimously.

VII. NEW BUSINESS-none

VIII. OLD BUSINESS-none

IX. REPORTS

A. Chairman's Report

G. Upton shared photos of property along a boat ramp taken during the site walk for 21 Marshfield Rd. He stated there was significant amount of fill. It was determined the property was owned by the railroad. G. Goeschel stated that he had also noticed the fill and has forwarded the issue to B. Mulholland for investigation.

G. Upton had photos of a building (285 Boston Post Rd) which was taken as part of a site walk on 297 Boston Post Rd. He does not remember the agency approving a building that large. G. Goeschel will investigate the as built submitted.

MOTION: (Upton/Ostfeld) to take a 2-5-minute break. The agency went into the break at 9:05 and came back at 9:13. Vote: Approved Unanimously

B. Inland Wetlands Agent Report-

G. Goeschel approved a deck extension in the URA at 21 Fairhaven Rd. and a shed at 16 Egret Rd in the URA.

C. Enforcement

Notice of Violation; 297 Boston Post Road; Al Smith Owner, Jason Pazzaglia, Other; Outside storage of equipment, construction materials, and the stockpiling of earthen materials including but not limited to yard debris within 100 feet of a watercourse without or in violation of an Inland Wetlands Permit.

The members were surprised there were still so many vehicles and equipment on the site. They stated the issue has been before the agency for over a year and wanted to know what other steps can be taken to force the owner to clean up the site. The question of how many vehicles are registered came up.

MOTION: (Upton/Schmitt) to issue a Cease and Desist for the violation at 297 Boston Post Rd and ceasing and desisting any activity that is not permitted. Vote: Approved Unanimously.

D. Correspondence

G. Upton read the letter from the First Selectman which is posted on the town's website as well as his response. K. Chantel's letter is also posted on the website. G. Upton informed the members that he and the First Selectman had a phone conversation in the morning.

X. ADJOURNMENT

MOTION: (Schmitt/Ostfeld) to adjourn at 9:45. Vote: Approved Unanimously.

Respectfully Submitted

**Sue Spang
Recording Secretary**