#54

Response to Town Review Comments

Application for Special Exception Use

Planning Commission
Old Saybrook, CT

THE PRESERVE

Prepared for:
River Sound Development LLC

November 10, 2004

BL Companies

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BL Companies

PLANNING COMMISSION EXHIBIT #54 I.

Response to Town Review Comments

Town Comment Subject: Preliminary Open Space Subdivision and Conceptual Standard Subdivision Plan
Topic or Commission: Old Saybrook, Planning Commission
Date of Response: November 10, 2004

This response to town comments is associated with the Special Exception Application, dated August 20, 2004 and is a joint effort from the applicant's project team in response to staff comments received through November 3, 2004. Since many of the comments are related we are providing a single response instead of addressing each comment individually.

Each town staff's specific area of expertise is interrelated, as are this project team's and the decisions it has made over the past 2 years. Therefore, it is important that the commission and staff consider these responses holistically and not in isolation to his/her area of focus. This document along with testimony presented during the public hearing process is meant to define the interrelated decisions, their impact on the landscape and the formulation of the proposed plan.

We have arranged this response into three categories. First, the Application Structure addresses comments specific to the application mechanisms and it's objectives. Second, Conventional Plan Response, addresses comments associated solely with the yield plan. The third, Preliminary Open Space Subdivision, addresses comments specific to the plan the applicant intends to move forward with. Specific subsections or major topics further define each section.

Application Structure

Consistent with the approach outlined in Attorney Branse's letter of October 12,2004, River Sound Development, LLC is proceeding with the Preliminary Approval of the Open Space Subdivision, to be followed by an application to the Old Saybrook Zoning Commission for approval of a Planned Residential Development ("PRD"). The initial proposal of River Sound was to make an application for approval of a PRD consisting of its entire property, exclusive of the Pianta piece, except for the entry road. It had been the intent of River Sound to apply separately for future development of the Pianta parcel, to allow for flexibility in proposed housing product to meet future demand.

Attorney Branse has expressed the concern that some might view the exclusion of the Pianta parcel from the overall PRD with suspicion, particularly with respect to potential environmental issues related to that property. He also indicates a concern that this property should be included because of the comprehensive nature of a PRD where the road system, utilities and open space characteristics are integrated, even where the separate parcels are separated by the Valley

Railroad right-of way. As River Sound has previously stated, its acquisition of the Pianta piece was primarily to provide another through road access to the property. Its focus has therefore been on that access connection, and the development of the major portion of its property, rather than the development of the Pianta parcel itself. However, River Sound does not wish its initial proposal to be viewed with suspicion or with concern. River Sound has therefore opted to include the Pianta parcel within its proposed PRD and is submitting an amended Statement of Use in connection with the current Special Exception application for the purpose of documenting that intention.

River Sound is providing attached to this document a master plan for development of the Pianta Parcel. This plan illustrates the layout of 35 village units, similar in concept to those proposed within the 248 units of The Preserve property. Development of the Pianta Parcel is also of a concern to the Town of Westbrook and is discussed in further detail within the correspondence addressed to Mr. Jay Northrup, the Westbrook Planner, and attached herein.

As Attorney Branse has correctly pointed out, the PRD is to consist of the entire property, not just what he terms 'Multifamily' lots (for purposes of this submission, we will refer to these 'Multifamily' lots as 'Village Cluster' lots). In other words, the individual building lots (45 half to three-quarter acre and 24 one to three acre), the country club lot and the open space are all part of the PRD. In order to avoid any confusion in the labeling, the golf course lot which is separated by a street and open space as permitted under the regulations, will be labeled "the golf course lot" and the Village Cluster lot which is likewise so separated, will be designated as the "Village Lot – Central" and the "Village Lot – East".

The foregoing will require certain changes to the maps designated Preliminary Open Space Plan. It is the understanding of the applicant that it is the preference of the Planning Commission and its staff that map revisions be made at one time so as to avoid the need to review numerous revisions to the Plan, each of which involves that reprinting and redistribution of a massive amount of plan sheets. All the revisions, as are indicated by the responses to staff, public and Commission comments, will be submitted prior to the end of the Public Hearing process. Also, the applicant will agree and consent to such extensions of statutory timeframes as are required for a full and complete review of this application.

Conceptual Standard Plan

River Sound has developed a 'yield plan' for the property demonstrating that 293 single-family residential dwellings could be developed under a conventional subdivision development. This plan meets the bulk requirements of the zoning and the subdivision regulations. This 'yield plan' takes into consideration the town's roadway design standards, the site's soils as it pertains to suitability for on site septic and meets the minimum area of land required to be set aside for open space.

Some comments focus on proximity to vernal pool resources on the site. Vernal pools are wetlands. The 100 foot review area as it relates to vernal pools is no different than any other 100 foot review area from wetlands and watercourses, except as to the nature of the adjacent resource. It is a regulated area, not a "no build" area, although that may be the ideal sought by environmental reviewers. However, in performing a review as to whether a road layout can

comply realistically to applicable regulations and design principles River Sound believes the reviewers must also take into consideration the same considerations that would have to be taken into account in a conventional subdivision review process:

a. Whether there is any prudent and feasible alternative to the location of the roadway within that 100 foot regulated area in order to provide access to developable upland areas.

b. If there is no prudent and feasible alternative, have all appropriate mitigation measures been taken?

c. Whether or not a waiver of subdivision regulations (such as the minimum length of cul-de-sac) would allow access to buildable upland areas without such an encroachment. The Old Saybrook Wetlands Commission has made recommendations to the Planning Commission in the past to allow such waivers to occur for specific environmental reasons relating to the site. Certainly the same standard of reasonableness should be applied to the Conceptual Standard Plan, as it has been applied in the past to actual conventional subdivisions which have been approved.

Yield Plan and Open Space Use

Attorney Branse and others have raised the question of the appropriateness of our interpretation of the Regulations with respect to whether or not the country club use needs to be incorporated into the Conceptual Standard Plan under Section 56.3.1 of your amended Open Space Subdivision Regulations. River Sound Development believes that its interpretation of the Regulations meets not only the letter, but also the spirit, purpose and intent of the Regulations.

With respect to the letter of the Regulations, River Sound would bring the following points to the attention of the Commission.

First, it is a basic principle of interpretation of land use regulations that since they are a limitation on constitutional property rights, these limiting terms and provisions must be specific. You do not include restrictions within regulations by implication. In other words, if the Conceptual Standard Plan requirements were intended for any purpose other than to show the number of lots that constitutes reasonable conventional subdivision of the land, the Regulation must state those requirements. There is no requirement that any other permitted use be shown on the Conceptual Standard Plan. The Regulation does require showing the infrastructure, building lots and mandatory open space as would be required in a conventional subdivision.

Second, the "legislative history" of the adoption of this regulation is significant on this issue. Almost from the outset of the consideration this Regulation by the Planning Commission, River Sound participated, since it clearly was the most immediately affected landowner. At all times the Planning Commission and thereafter the Zoning Commission were fully aware that the River Sound Open Space Plan included the mixed uses of Village Cluster development (the Villages), single family lots, private recreation open space (the Golf Course) and passive open space.

It is also clearly because of this awareness, that the Planning Commission recommended the inclusion of the specific restriction in the standards for the Open Space Subdivision Plan, that in

calculating the area of open space land "areas of a lot, including a PRD lot, dedicated to or available for non-municipal active recreational uses shall be excluded." (Section 56.6.4). Thus the Commissions were conscious of this specific use and specifically addressed its exclusion from the calculation of Open Space. Because of this restriction, there is a limitation on the actual number of dwelling units that can be placed on any specific piece of property that includes such uses.

As correctly pointed out by Attorney Branse, in a PRD the dwelling density is primarily a function of the number of allowable bedrooms, which is 8 bedrooms per non-wetlands acre. This would allow significantly more density than River Sound proposes. River Sound's purpose in seeking an Open Space Subdivision approval is to allow separate ownership, not only of the golf course, but also of 24 three quarter acre and 45 one to three acre lots. It is seeking less density, not more. It is also a principle of land use law that land use regulations are concerned with the use of land not with the form of ownership of the land. The same use of the land with even greater density could be obtained through a PRD approval only, but not the subdivision into separate lots for individual ownership.

Randall Arendt, FRTPI, has submitted comments on this topic for review. He is an integral member of our team and arguably the leading national proponent on the use of yield plans as a tool in creating open space communities. His comments follow:

> The purpose of a Yield Plan is to demonstrate the realistic potential for creating conventional lots in a conventional subdivision layout. As such, Yield Plans contain little more than simply houselots and streets, plus obligatory stormwater management areas and mandatory open space dedication, usually in the range of ten percent of the total acreage, as specified in section 5.8 of the Old Saybrook subdivision ordinance. (This section also states that possible uses of the open space, among other possible uses such as preservation of natural resources or retention of natural drainage ways, may also be used to establish coherent urban form or provide active and passive recreation).
>
> It has been suggested that the Yield Plan must also make provision for the preservation of cultural and natural resources and for major recreational amenities (such as an 18-hole golf course) as proposed in the Preliminary Open Space Plan, unlike 99% of conventional plans submitted and approved in the state of Connecticut.
>
> Significantly, the Town's amended regulation, as presented and approved, is silent on this issue. It makes no mention of any requirement that Yield Plans must contain such large recreational open space components. There is good reason for this, because normally approved and built conventional plans do not, by their very nature, contain such huge amenities.
>
> Similarly, the suggestion that dozens of lots shown on the Yield Plan should be excluded on the basis that they interrupt "prevalent trails", impact "particular stone walls", or interrupt "the historical travel way for Old Ingham Hill Road" lacks the necessary legal basis, because these cultural features are not listed among the kinds of resources that the Town has chosen to protect through its zoning and subdivision ordinances. It should be

noted, however, that the proposed alternative Open Space layout has in fact been carefully designed to minimize or avoid negative impacts on such features. However, the Town's ordinances do not require conventional subdivision plans to avoid them. Conventional subdivisions are routinely approved with houselots and streets impacting stone walls, trails, and abandoned roads because there is no legal foundation in the municipal ordinances for denying approval on such a basis. Therefore, these site features cannot be used as a reason for reducing the lot count on the Yield Plan, which does in fact conform with the standards and criteria contained in the Town's land-use codes.

From a planning perspective and as required within the Town's regulations, the purpose of a Yield Plan is to establish numbers of potential lots that could be built 'as of right,' and then to invite an alternative open space plan to be submitted with that same number of homes (or fewer) and with significant open space uses, whether they be areas for active recreation, passive recreation, or no activity, taking up the difference in land area between the conventional layout and the cluster or open space layout.

Under the Town's regulation, this 'Open Space Subdivision' plan must contain a minimum of fifty per cent natural (passive) open space-- but it can also provide recreational (active) open space and associated supporting facilities on the remaining fifty per cent of the land that is not needed for residential use.

In other words, it is in the Open Space Plan, but NOT in the Yield Plan, that the provision of recreational space reduces residential areas, and effectively the number of dwelling units. The amount of land taken up by houselots in the Yield Plan is not required to be reduced to make room for a major recreational amenity, such as an 18-hole golf course. Conventional layouts are comprised of large lots and do not contain such facilities. That is why they are called conventional layouts. To suggest that the conventional Yield Plan must include an 18-hole golf course makes no sense. Such a layout would not at all reflect what conventional subdivisions in town, and across the state, traditionally provide. (R. Arendt)

If the proposed recreational open space uses are not allowed on the remaining fifty per cent of the land that is made available by reducing lot sizes, such a denial would conflict fundamentally with the intent of the ordinance, which was meant to act as an incentive for creating new developments with maximum clustering of homes to protect wildlife, to connect priority habitats, and to provide for a variety of outdoor recreational activities.

It is also important to note that the River Sound open space proposal exceeds the minimum requirement of a 50% set aside of preserved Open Space. This is accomplished without including the golf course or any other active recreational component within the open space system. Neither the nature center, the firehouse, the golf course nor any other active recreational component of the Open Space Plan should be taken into consideration when reviewing a yield plan.

Soil Classifications and Suitability for On Site Septic

The regulations governing the development of the yield plan specifically state that no on site testing is required to determine a house lot's reasonable suitability. The use of readily available data is sufficient if the determination of suitability and application of such information is based upon sound engineering principles – as is done within this Conceptual Standard Plan. We offer the following conclusions in support of the yield plan.

The applicant has taken into account the soil types. The soil classifications on site vary but, the dominant soil map units are CrC and HpE. These are soil complexes containing predominately soils of the Hollis and Chartlon series. In the memorandum dated October 27, 2004, Nathan L. Jacobson and Associates (NLJA) has employed a methodology that would suggest that these two soil series exists in isolation within the respective soil classifications thus limiting the potential suitability to support on site septic. This methodology results in a false conclusion as to the ability to meet Public Health Code requirements for a septic system. Hollis – Charlton and Charlton – Hollis map units contain soils of both series (plus other series in smaller quantities) not a composite of isolated locations of the individual soil type as suggested. The documented soil descriptions of the CrC and HpE supports that bedrock is generally greater than 24" and in many cases greater than 60".

To supplement documented soil designations River Sound has utilized existing test hole data and has conducted additional testing to supplement this information. The test hole data demonstrates that the majority of the site is not limited by depth of bedrock, contrary to comments made by NLJA. The test information confirms that 94% (687 test holes) of the 731 test pits completed on site have bedrock at a depth of greater than 24". (The application package includes test hole data for 504 test locations. Section III of this document has logs for an additional 227 test holes and mapping which highlights the results of this analysis). Clearly this analysis is in contrast to NLJA assumption that 30% and 40% (CrC and HpE respectively) of the lots could not support on site septic.

In addition, the regulations allow a MABL to conform to the minimum requirements of State Department of Health regulations for on site septic systems. State health code allows an engineered system if a minimum depth to bedrock is 24". As discussed above soil types on the site meet this criteria. Therefore, the MABL requirement can be met. Furthermore, this standard is the one applied by the Old Saybrook Planning Commission with respect to an actual application under the very same regulation on a portion of subject property in the same soils being questioned. (See attached memorandum from Scott Martinson to Judith Gallicchio, dated February 6, 2001.)

Not only has the layout of the house lots and location of the proposed septic systems taken into account documented soils information, field observations were also a factor in determining the plan layout and lot yield. Most of the high points throughout the site had shallow observed bedrock. The house lots and septic systems avoided these locations. Steep slopes (20% +) throughout the site had exposed ledge. Homes and septic systems were not positioned in these locations and home sites are typically located up slope in relation to the septic area.

It should also be noted that many of the adjacent subdivisions were constructed in similar soil types that are mapped on The Preserve. A total of 58 Lots and a portion of 26 lots are within the soil types CrC and HpE. The following is a list of the number of lots for each street abutting the site with the soils types that have been targeted by the staff to have limited septic capability (although in actual practice this appears not to be the case):

- Barley Hill Road (HpE, 1 lot plus half of one lot)
- Fox Hill Road (CrC, half of one lot)
- Wild Apple Lane (CrC, 4 lots plus half of 2 lots)
- Leada Woods Road (CrC, 4 lots plus a portion of 2 others. HpE, 2 lots plus a portion of one other)
- Deer Run (CrC, half of 4 lots. HpE, 2 lots plus half of 4 lots)
- Ingham Hill Road (CrC, 1 lot plus half of 2 lots. HpE, half of two lots)
- Essex Road (Rt. 153) (CrC, 1 lot and half of one lot. HpE, 4 lots and half of one lot.)
- School House Road (CrC, 5 lots and half of one lot. HpE, 1 lot and half of one lot.)
- Pepperidge Trail (CrC, 20 lots)
- Fox Hollow Road (CrC, 12 lots and half of one lot. HpE, one lot and half of 2 lots)

Roadway Design and Lot Layout

As a result of the restrictive regulations that govern a conventional subdivision it is the inherent nature of a standard plan to take the form of "the classic condition of suburban sprawl", limit flexibility for open space uses, and not provide the flexibility of clustered design typical of an open space subdivision. It is the flexibility of the Open Space Subdivision, which allows for the preservation of open space that protects sensitive landscapes, provides meaningful places and options for recreation.

To assist in the design of both the standard and the open space plans extensive ecological studies have been conducted. This includes not only wetland analysis but, an inventory of vernal pools and flora and fauna. These studies have been documented and have been submitted to the commission. As a summary, the authors of those studies, Michael S. Klein and Michael W. Klemens, have provided the following comments as part of this response:

> An ecological assessment of the 31 vernal pools on the site has been submitted (see ***Herpetological Survey and Vernal Pool Analysis with Conservation Planning Recommendations and Strategies*** by Michael W. Klemens, PhD 26 October 2004). This should be noted as many of the comments are prefaced with the statement that "since no ecological assessment of the various individual vernal pools located on the property was submitted, a presumption was made that they were all of sufficient quality to at least merit protection of the forested habitat located within the vernal pool envelope". Many of the comments will need to be adjusted based on the location of the twelve scientifically identified high priority pools on the site (1, 6, 7, 10, 12, 15, 16, 17, 18, 20, 25, 31).

Of the proposed roads identified (Road 4, 5, 6, and 7) allegedly impacting vernal pool envelopes of pools (Pools 3, 7, and 24) it should be noted that only pool 7 is considered to be of high conservation priority. The alternative that exists is moving Road 4 slightly north. This would place Road 4 outside the pool envelope but would require a wetland crossing, which we consider a less prudent alternative. The end of proposed Road 2 northeast of its intersection with Road 8 impacts only one high conservation priority pool (10). This roadway can be modified to be outside of the vernal pool envelope. Furthermore the cul-de-sac of Road 2 can easily be modified to obtain the minimum 75' ROW (which under alternative road standards could be reduced to a 60' ROW). Pools 9 and 11 are not high priority pools. We concur with the suggestion that roads 1, 8, 11 located in the envelopes of pools 6,10, 17, and 18 be relocated as suggested by the Jacobson Memorandum as those four pools are all high conservation priority pools. If deemed necessary, this can be shown on the revised Conceptual Standard Plan.

Stormwater basins should be excluded from vernal pool envelopes of conservation priority pools. However, it is not the intent of the yield plan to have a complete design of the means of stormwater management but, merely the suggestion that stormwater can be dealt with. Furthermore, relocation of stormwater basins does not necessitate the arbitrary elimination of house lots. Alternatively, basins can be relocated into areas of open space ultimately, reducing or relocating the quantity of open space set aside, while still meeting the minimum required.

Jurisdictional issues non-withstanding, the suggestion to eliminate lots 5 and 11 to protect the two box turtles found at the edge of the site in Westbrook fails to consider the topography of the area. The box turtle population is confined to a stream corridor and wetland separated from house lots 5 and 11 by a sheer escarpment that is not surmountable by these high-domed and top-heavy terrestrial turtles. The Box Turtle habitat does not extend to the top of the escarpment where Lots 5 and 11 are located. Furthermore, the forested area is not high quality box turtle habitat, even if they were able to climb the escarpment. The Opuntia on Lot 11 will be demarcated in the field. It is easily propagated and can become part of the landscaping on the lot. Increased clearing will likely result in an increase in the size of the population in this area. Furthermore, there is no regulatory nexus between the creation of a building lot and the presence of a species of special concern. Once again it is the flexibility in design and essential goal of an open space subdivision that allows for the preservation of these habitat areas – not a conventional plan. (Michael S. Klein, Michael W. Klemens)

The roadway plans provided as part of the conventional subdivision plan are conceptual in nature and are meant to demonstrate only that the minimum roadway design standards can be met. The level of detail associated with the review of this plan is extensive. Roadway profiles were provided as a convenience to the reviewer although not required as part of the application. However, we offer the following responses to the issues raised by Mr. Hillson, the Town's traffic consultant.

Under the Town of Old Saybrook's "Design and Construction Specifications", Section 3.6.2, it is stated that no intersection shall be at an angle of less than 60 degrees. As such, all intersections designed for the Conventional and Open Space Subdivisions are designed so that the acute angle between the main road and the side road is 60 degrees or greater. Furthermore the Subdivision Regulations, Article 6.4.3, state that when a Local Road intersects a Feeder Road, the sightline along the main road (Feeder) should be 275 feet. This sightline uses a height-of-eye equal to 3.5 feet and an object height equal to 3.5 feet. This type of sightline is for a driver to see another vehicle and should not be confused with Stopping Sight Distance (SSD) where the recommended object height is 2 feet (AASHTO). The proposed profile has an eye to vehicle sightline of 240 feet along Road #7. This sightline can be increased to meet the required 275 feet. This article does not mention Intersection Sight Distance (ISD).

With respect to additional concerns associated with intersections, modifications to the plan could easily be made without impacting lot yield. Road 10 profile can be modified to include a 3% shelf at the intersection of Road 1. This new design will save Lots 212 through 217. There is no tangent section proposed on Road 11 in the vicinity of Sta. 33+50 therefore, the minimum 50' tangent length is not applicable. If deemed necessary, this can be shown on a revised Conceptual Standard Plan.

Many roadway design comments are associated with sight line easements. Since the standard plan is not proposed to be constructed no easements were shown. However, if this plan was to be implemented such easements would certainly be proposed. If deemed necessary, this can be shown on a revised Conceptual Standard Plan and elimination of lots will not be required.

The conceptual standard plan has four points of access, three from Ingham Hill Road and one from RT 153 in Westbrook. The applicant owns an additional 32 acres along Bokum Road; however, this parcel is not included in the yield plan since this Lot would only be proposed for an access road and Village Cluster development under the PRD regulations. It is not relied upon for the Open Space subdivision density. Since it is the intent of the standard plan to determine yield, this point of access was not needed for compliance with the conventional subdivision regulations and thus was not considered for the yield plan.

Preliminary Open Space Subdivision

Unlike a conventional plan, an open space subdivision (or conservation subdivision) is meant to allow flexibility in design to accomplish the preservation of sensitive natural and cultural resources and provide for optional means of recreation. The Preliminary Open Space Subdivision proposed by River Sound accomplishes this objective by employing the Open Space Subdivision regulations along with the Planned Residential Development regulations, creating a clustered neighborhood design indigenous to southern Connecticut. The locations and layout of the villages and house lots have been planned to respond to the natural and cultural resources on site.

Village Design and Lot Layout

Again, Randall Arendt FRTPI has provided comment on the issues raised in the Town's consultant comments:

The two village areas (one Village Cluster lot) are so situated because of the unique configuration of the topography on this site. Village locations were selected in large part on the basis of the availability of the flattest or most gently rolling terrain, and the locations with the fewest impediments for creating village-sized home sites. This approach mirrors the historic approach of early settlers, who generally tended to found their villages in the areas that were the easiest to develop. Occasionally that resulted in a modest separation between areas that might otherwise have been larger single villages.

The same is true for the street pattern, which again follows natural features. This is very different from development in the late 20th century, when huge earth-moving equipment has often been employed to alter the terrain so that larger areas of flat land can be "created" through mass-grading, and by and terracing in hilly country. This is not the approach we wanted to take at The Preserve. The relative shortness of the cross-streets is reflective of the site's topographical conditions that we did not wish to artificially alter by such practices.

The fact that some streets are "single-loaded" is a positive attribute, in our view, rather than a negative. Many historic hamlets and villages contain various lengths of streets with homes on one side facing open space on the other. Every New England green is an example of that kind of planning, for example, but it also occasionally occurs when streets follow rivers, streams, or other breaks in the topography

At The Preserve, our site designers also needed to blend several other factors into the layout, namely the provision of leaching fields for the community wastewater system, and the recreational amenity embodied by the 18-hold golf course. I do not think that any resident will complain of the open space vistas from their front porches, or the "view from the road" as they pass alongside protected open space flanking the edges of the villages. In fact, in Scottish golf hamlets such as Elie (or even larger towns such as St Andrews), the distinctive contrast between a frontage of dense village units and the green expanse of an adjacent fairway is an integral part of their design quality and charm. Similarly in Fenwick, the homes closest together overlook either the Sound or the golf course.

Apart from the two village locations, it is true that house lots have been designed to face onto neighborhood streets rather than onto the main spine road. This was a deliberate planning decision, aimed at creating the most favorable living environments for the residents, as well as improving traffic safety by minimizing the number of driveway entrances onto the main spine road. It is also consistent with the provisions of the Old Saybrook Subdivision regulations that discourages direct access to any main road. Most people prefer living on low-traffic side-streets, and motorists using main roads

connecting Points A and B generally prefer not to have to dodge cars exiting and entering onto them from numerous driveways.

The absence of a true road network is due to the fact that the site is so hilly and divided by many drainageways. Anyone walking the site would quickly realize that this is not a piece of ground that lends itself to what some of the review comments feel should be extensive street networking. Environmental considerations alone would prohibit such an approach, not to mention the enormous cost of crossing wet or steep areas simply to add more cross streets. With respect to walking trails, bike paths and the like, the perceived lack of articulation is due to the fact that this is a Preliminary Plan, which by its very nature does not have such articulation. The applicant agrees with the intent of the comment, however, that the final site plan which would be subject to review and approval by the Zoning Commission should indeed have such articulation. (R. Arendt)

The two villages discussed above lie within one Village Cluster lot separated by a public road as allowed by Section 55.6.1 of the zoning regulations. We acknowledge that the calculation of minimum lot size did not take into consideration the exclusion of wetlands from the proposed lot size. This will be corrected on a revised plan as will the lot numbering be clarified - including the golf course lot. The golf course lot is divided into to parcels, but is considered contiguous because it is separated by a street as allowed under the Zoning Regulations. Also, Attorney Branse questioned the proposal of a right of way access strip northeast of lots 17 and 18. This ROW was requested by the landowner and was included as a reasonable accommodation to him. River Sound has no interest – present or future - in that parcel of land. The unidentified parcel to the south of estate lot 46 is a proposed green area within the Village Cluster lot. .

River Sound has been working with the town Fire Marshal and Fire Chief with respect to public safety. We are in receipt of comments from Mr. Dobson as it pertains to this application. All planning of the site including roadways throughout the development and the Villages have been laid out to accommodate the town's largest fire apparatus. All on street parking will be designed with designated parking locations and room for emergency vehicles to pass through, and plantings will be provided to ensure movements are not inhibited. Also, access to the open space system and golf course will be readily available via cart paths. Hydrants will be located at locations in the golf course network and at locations within the development as specified by town officials. All hydrant locations have yet to be finalized and will be determined prior to final site plan application, again in consultation with the town Fire Marshal and Fire Chief. All the review requirements in the Fire Marshal's review comments of October 21, 2004 can and will be incorporated into the final open space subdivision and PRD application plans.

As presented during past public meetings and discussed during the public hearing of November 3rd the development will be serviced by public water and on site community septic systems. We have attached for the Record correspondence from the Connecticut Water Company attesting to their ability to meet our water demands. Since the wastewater of the entire development will be serviced by a community system no testing of individual lots is required. As noted in Mr. Martinson's memorandum of October 4, 2004 the State Department of Environmental Protection regulates a community septic system. Since the local WPCA will have also have jurisdiction, River Sound has been working with Mr. Luckett and the local WPCA regarding this matter.

Recreation

The needs for active recreation on this site will be met in two ways. First, it will be met by the publicly accessible walking, biking and jogging trails provided throughout the site, connecting the residential areas to the larger open space areas, and allowing non-residents of the Preserve easy access from the roadway system, the nature center and two adjacent town owned park areas. A bike path is proposed along Road A connecting Bokum Road with RT 153. This path, constructed of bituminous pavement, is separated from Road A by a landscaped area. Furthermore, an observation platform overlooking Pequot Swamp Pond is proposed and accessible by the trail network. A second means of recreation is provided by a private golf club. The members will have access to golfing, several tennis courts and a swimming pool. Although membership is private as required by the Zoning Regulations, it is not restricted to residents of the Preserve.

As this project is age-targeted for a primarily empty-nester population, it is fairly safe to predict that ballfields would not be in high demand. In addition, the very nature of the site, with its slopes and drainages, is for the most part not conducive to the creation of flat playing fields for active recreation (one of the reasons for focusing on the mature market).

In any event, the proposed numbers of ballfields and other facilities proposed by the Parks and Recreation Department 'for the increased population of adults and youth in this subdivision' significantly overstates the need, even for a non-adult emphasis community according to national criteria.

River Sound proposes to convey over 500 acres in full fee ownership to the Town as Open Space. The new regulation only excludes non-municipal recreation sites from this land area. The conveyance would not prohibit development of ballfields by the Town, except in areas unsuitable for environmental, topographic or other site plan reasons. This is an issue that may be addressed by the Planning Commission at the time of the final subdivision layout approval or by the Town thereafter. Land appropriate for ballfield areas is limited. River Sound will continue to evaluate the site for this purpose, and make this information available. However, the inherent conflict between the use of open space land for passive or active recreation, and the need for each are issues that will be decided by the Town.

All in all, the proposed arrangement of streets, walkways, house lots, and open spaces reflects a design dictated and driven by the land, and a desire to create a unique settlement having its own special character. It is reflective of the best in traditional New England villages, which in adapting themselves to the terrain, have historically produced delightful places with a spontaneity and unpredictability not generally seen in other parts of the country where grid-like planning has been imposed on the landscape.

Roadway Design, Designation and Access

Consistent with the goals of open space or conservation subdivision design, the Town has adopted a policy to allow and encourage the use of alternative roadway design standards. River

Sound has adhered to this policy. In fact, over the past several months River Sound has met with staff and the Board of Selectmen to review the alternatives. The proposed attached standards are attached and based upon our meeting with the Board of Selectmen on September 16, 2004, and from recent discussions with staff, we understand that these standards are acceptable and preferred. These meeting minutes are attached for reference.

Many of the comments provided by the Town Traffic consultant specific to the roadway engineering refer to the prior road standards and do not take into consideration these alternative design standards. .

The following addresses comments that are not specific to the alternative design standards:

- The Villages are proposed as a Village Cluster Lot within an overall PRD. Accordingly, the maximum number of lots on a private residential street is not applicable in this situation. The roads, although privately owned, will be constructed to Town local street standards.
- The Board of Selectmen in reviewing the prior developer's conventional plan for this property with a golf course and greater density, recommended that "all roads approved for this subdivision be local residential streets." See Memorandum from the Board of Selectmen dated May 17, 2004 attached. A second correspondence from Nathan L. Jacobson's office, dated October 16, 2000 also confirms the agreement of alternative design standards. These standards correspond to our proposed alternative designs.
- Under the Town of Old Saybrook's "Design and Construction Specifications", Section 3.6.2, it is stated that no intersection shall be at an angle of less than 60 degrees. As such, all intersections designed for the Conventional and Open Space Subdivisions are designed so that the acute angle between the main road and the side road is 60 degrees or greater. Also, each intersection approach is greater than 100 feet.
- Under the Town of Old Saybrook's "Subdivision Regulations", Article 6.4.3, it states that centerlines of alternate roadways shall not be closer than 125 feet measured along the main road centerline. As such, intersections were designed using a minimum distance of 125 feet between centerlines.
- Road "I" is a one-way street. Therefore, the minimum width is for a two-way roadway is not required.
- This portion of Road "A" is an intersection, rather than an alignment. For clarification, we can label the two portions of Road "A" as: Road "A-1" and Road "A-2".
- Road "G" is an aesthetic alternative design to two opposing cul-de-sacs in this location. Although the turning radii do not meet the minimum for a through moving vehicle, they do meet the requirements of a cul-de-sac.
- A question was raised as to a vertical curve with no location given. We believe all vertical curves meet design standards.

Attorney Branse has suggested that the Preliminary Open Space Plan clearly designate which roads are public and which are private. This clarification will be made on the revised plan. In accordance with the requirements of the applicable Subdivision Regulations, all roads are proposed as being public, except for the roads classified as "private residential streets" under the Subdivision Regulations. "Private residential streets" may provide sole access to not more than

four abutting lots, with two additional lots allowed to be accessed by the private residential street, provided the two lots have frontage on a public road. As indicated previously, the distinction between the two type roads will be made clear on the revised plan. The roadways within the Village Cluster lot are proposed as private, similar to the roadways in existing PRD developments such as Banbury Crossing and Chatham. Since these roadways will be serving a larger number of units, they will be constructed to the alternate road standards approved for Town residential streets. Maintenance, repair and replacement, however, will be the obligation of the Homeowners Association and not the Town. Extending from the Village Cluster lot is the emergency access roadway to Ingham Hill Road. A deeded emergency access easement will be provided to the Town of Old Saybrook.

The topic of fulltime access to Ingham Hill Road in Old Saybrook has been raised by not only Old Saybrook but Westbrook as well. This is also the case as it pertains to the condition of Ingham Hill Road and Bokum Road and the impact traffic from this development may have on its safety and function. Please refer to the attached correspondence addressed to Mr. Jay Northrup, Westbrook Planner, November 5, 2004, which addresses these issues. It should be made clear that River Sound takes no position on this issue; we have proposed the plan without such access but will consider alternatives as requested.

River Sound concurs with the statement by Attorney Branse that it will be necessary to determine if there is a nexus between the burden created by the proposed development and the adequacy of Bokum Road. A traffic impact study has been submitted for the Record in these proceedings, which addresses the question raised, and recommends certain Bokum Road improvements. River Sound would suggest that the development of the property, whether as a conventional subdivision or as an open space subdivision, would require some improvements to Bokum Road, and that the full detailed review of the improvements required would be part of the final subdivision approval process.

River Sound's traffic report has analyzed trip generation of the proposed development. The Town has also commissioned an independent analysis of trip generation. We concur with this independent analysis and it corresponds to the figures developed in our traffic. Plans will be submitted to the State Traffic Commission and an encroachment permit will be required – both unnecessary at this stage in the application process.

Site Ecology, Preservation and Open Space

Our environmental consultants, Michael S. Klein and Michael W. Klemens, have provided comment on these issues:

> There is no regulatory requirement for protection of Species of Special Concern. Nevertheless, the Open Space Subdivision and open space layout provides significant protection for flora and fauna in general, and these species in particular. The Prickly Pear (*Opuntia humifusa*) is not mobile and extensive buffer zones are not required. The knolls where it is found will not be disturbed as a result of the construction either the home or the golf course. The box turtles near lots 3-5, and Road B, are found in a

wetland corridor that is separated from these lots and road by a steep escarpment that forms an effective barricade to turtles trying to move from the wetlands into this area.

The Open Space Plan protects the hydrology, water quality and wildlife values of the wetlands. The DEP report cited describes a methodology for development of a regulation for an upland review area. This is a buffer, or exclusionary zone, as noted above. Furthermore, Old Saybrook has expressly chosen a fixed 100' upland review area.

The preservation of Pequot Swamp Pond was a design criterion for the Open Space Plan. There is no scientific justification for establishing a 400-600' wide "buffer", which actually would include areas that do not drain to Pequot Swamp Pond. Furthermore, the golf course will include numerous features to enhance wildlife habitat. In addition, the Village has been designed with numerous stormwater BMPs, a tertiary wastewater treatment system, and will be served by public water. Existing watersheds and runoff rates have been preserved. The golf course IPM plan will protect water quality. Therefore, we believe that the Open Space Plan provides flexibility necessary to effectively "buffer" the wetlands from the development. (Michael S. Klein)

A contiguous block of open space 1500' wide will connect the east side of wetland 18 to the Atlantic White Cedar Swamp. Golf course fairways will be constructed in a manner to facilitate wildlife passage over the cleared areas. Therefore, the golf fairways, cart paths, and bridges will not serve as an impediment to wildlife movement.

An ecological assessment of vernal pools has been provided, which includes 12 high priority vernal pools determined by numbers of obligate and facultative species and biomass production. All of these pools will be conserved using the criteria developed by Calhoun and Klemens (2002), which include a 750' wide protected zone of reduced development intensity. This enlarges the zone of protection 650' beyond that which is provided under the Old Saybrook wetland regulations.

Further, an environmental risk assessment has been performed that focuses specifically on these species. On November 3 2004, the document, ***Pesticides and Fertilizers--Methods and Preliminary Results: Risk Assessment, Risk Management, and Water Quality Monitoring*** (Cohen et al) was submitted. This provides an interim report on the science that is being used to develop a proactive stewardship program that protects amphibians, reptiles, plants, and drinking water. In addition, it lists key components of a surface water and ground water monitoring program.

We agree that a wildlife corridor should be established and that it should use the vernal pools as the centerpiece of the interconnected habitat strategy. In the report (see ***Herpetological Survey and Vernal Pool Analysis with Conservation Planning Recommendations and Strategies*** by Michael W. Klemens, PhD 26 October 2004) such a plan as envisioned by Goodfriend *et al* was provided (See Map 28—Ecological Connectivity: Vernal Pool Stepping Stones into Upland Habitat).

Golf course fairways will be constructed in a manner to facilitate wildlife passage over the cleared areas. Therefore we do not agree with the conclusion that the cleared area associated with Golf Hole 12 will be an impediment to interconnectedness between the vernal pool cluster 9, 10, and 11. The eastern ribbon snake occurs at scattered areas throughout the site and the clearing associated with the golf course may provide additional edge habitat near wetlands that would be used by this species. One could reasonably anticipate that the ribbon snake population surrounding vernal pool cluster 9, 10, and 11 may increase because of the development of Golf Hole 12.

An ecological assessment and conservation plan for the vernal pools on the site has been provided and the conserved vernal pools that have been identified include Pools 1, 7, 8, 10, 11, and 12. Pool 9 is an intermediate priority pool that was not conserved in order to protect upland habitat of more highly ranked pools. Pool 2 is a low priority pool. In two years of observations, Pool 2 contained 2 wood frog egg masses in 2002, and no egg masses in 2003 indicating that it is an insignificant wetland in terms of obligate species production.

Concern was expressed regarding protection of the snake den. We believe that through appropriate education, snake/human conflicts can be minimized. Also, the forested habitat on Lots 26 and 27 is very marginal snake habitat as it is densely forested. In addition, these conflicts would only be anticipated with the black rat and black racer snakes, neither of which is State-listed. They are both quite abundant on the property and in the surrounding towns of Essex, Old Saybrook, Westbrook. (Michael W. Klemens)

Along with the trail system, River Sound proposes a nature center as part of the open space system. River Sound has met with staff during the summer of 2004 to review the open space system and discuss the program of the nature center. During this meeting it was made clear that the Town of Old Saybrook would like to take ownership of the open space. The Board of Selectmen reaffirmed this statement through written correspondence. It is River Sound's intent to convey the open space system to the Town.

The nature center, as recommended by staff and Park& Recreation, will be an open-air pavilion with a roof for protection. Parking and a kiosk will be provided as a trailhead to the open space system. River Sound will condition it conveyance to allow town of Westbrook residents to have use of the nature center under the same terms as residents of Old Saybrook.

The focus of the Open Space Plan has been to create larger areas that are less fragmented. In reviewing the Open Space Plan, it should be noted that there are several large unfragmented parcels within the Open Space. These parcels have been designated for Open Space treatment by reason of their environmental sensitivity as well as their connection to other municipal properties. For example, the large Open Space parcel at the southeast corner of the site contains approximately 86 acres and connects to the Gleason property. Another large parcel consisting of approximately 42 acres along the boundary line with Essex contains a significant vernal pool and also connects to the Town owned former CL&P parcel which contains significant wetland areas on its easterly side. A third large area is located on the westerly side of the property in the area

of the nature center consisting of approximately 80 acres. The fourth large parcel, of approximately 104 acres, is on the southerly end of the site and connects to the Town owned Clark Municipal Park property on Schoolhouse Road. The third and fourth parcels are connected through the trail system and are only separated from each other by the golf course.

Over 500 acres are proposed to be deeded outright to the Town of Old Saybrook, including the nature center. No utilities are proposed for these Open Space areas.

Section II

PLANNING COMMISSION EXHIBIT #54 II.

APPLICATION OF RIVER SOUND DEVELOPMENT, LLC

AMENDED STATEMENT OF USE -11/10/04

River Sound, LLC makes this amended Statement of Use in accordance with Old Saybrook Zoning Regulations Section 56.3.4. Deleted material will be bracketed andThe amended material will be underlined.

RESOURCES

Same

USE

The proposed Preliminary Open Space Subdivision Plan is an open space and recreation community with a variety of housing options and recreational choices, including a golf course. The Open Space Subdivision is part of a proposed Planned Residential Development ("PRD") for the applicant's property, including its property lying between Bokum Road and the Valley Railroad tracks, known as the Pianta property. The plan incorporates the residential units and country club into the landscape by utilizing a clustered planning approach – thus preserving a vast amount of the landscape. The subdivision concept plan consists of one [PRD] Multifamily lot to accommodate 179 single family and duplex units, one lot for the country club, 45 half to three-quarter acre individual building lots and 24 one to three acre individual building lots, with the remaining land dedicated as open space. The Pianta parcel is proposed as a Multifamily lot separated by the entry road providing access to the major portion of the development southwesterly of the Valley Railroad tracks.

OPEN SPACE PURPOSES

Same

METHOD OF PRESERVATION AND DISPOSITION

This proposal anticipates 54.1% of the site (483.3 acres) to be conveyed in fee to the Town of Old Saybrook as preservation open space, including the "nature center". An additional 6.6% (58.9 acres) of the site will have conservation restrictions conveyed to the Town to prohibit development and further protect the landscape. A total of 60.7% (542.2 acres) of landscape will be protected. These calculations do not include the Pianta parcel. However, since the Pianta parcel is located in Residence District C, its development as a Multifamily lot under the PRD regulation would require that 50% of the lot area be set aside as Open Space permanently dedicated for preservation.

BL Companies

TP-3052
BL Project # 01c955-F
Friday, 11/5/2004

TEST PIT FIELD LOG

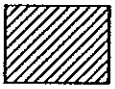
PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Sunny
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
James Fielding- BL Companies	Make	N/A	Model	N/A	
Wayne Violette- BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remarks
0" to 6"	Topsoil			
6" to 44"+	Light Brown Fine Sandy Loam			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

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Architecture § Engineering § Planning § Landscape Architecture § Land Surveying § Environmental Sciences

BL Companies

TP-3054
BL Project # 01c955-F
Friday, 11/5/2004

TEST PIT FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Sunny
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Stephen Benben- BL Companies	Make	N/A	Model	N/A	
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 6"	Topsoil			
6" to 20"	Brown Sandy Loam			
20" to 26"+	Orange Brown Sand			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN

North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

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BL Companies

TP-3055
BL Project # 01c955-F
Friday, 11/5/2004

TEST PIT FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Sunny
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
James Fielding- BL Companies	Make	N/A	Model	N/A	
Wayne Violette- BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 6"	Topsoil			
6" to 39"+	Light Brown Fine Sandy Loam			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN

North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

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Architecture § Engineering § Planning § Landscape Architecture § Land Surveying § Environmental Sciences

BL Companies

TP-3058
BL Project # 01c955-F
Friday, 11/5/2004

TEST PIT FIELD LOG

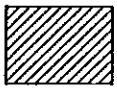
PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Sunny
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Stephen Benben- BL Companies	Make	N/A	Model	N/A	
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 3"	Topsoil			
3" to 27"	Light Brown Sandy Loam			
27"	Bedrock			

REMARKS:

No mottling observed
No groundwater observed
Bedrock observed at 27"

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

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Architecture § Engineering § Planning § Landscape Architecture § Land Surveying § Environmental Sciences

BL Companies

TP-3059
BL Project # 01c955-F
Friday, 11/5/2004

TEST PIT FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Sunny
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
James Fielding- BL Companies	Make	N/A	Model	N/A	
Wayne Violette- BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 2"	Topsoil			
2" to 32"	Dark Brown Fine Sandy Loam			
32"	Bedrock			

REMARKS:

No mottling observed
No groundwater observed
Bedrock observed at 32"

TEST PIT PLAN

North

LEGEND

COBBLES AND BOULDERS		PROPORTIONS USED (QUANTITATIVE TERMS)		QUALITATIVE TERMS	EXCAVATION EFFORT
Size Range Classification	Letter Designation				E - Easy
3" - 12"	Cobble (C)	TRACE (TR)	0-10%	OCCASIONAL	M - Moderate
12" - 24	Small (S)	LITTLE (LI)	10-20%	FEW	D - Difficult
24" - 36"	Medium (M)	SOME (SO)	20-35%	FREQUENT	
36" and Larger	Large (L)	AND	35-50%	NUMEROUS	▼ Observed Depth to Groundwater

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BL Companies

TP-3061
BL Project # 01c955-F
Friday, 11/5/2004

TEST PIT FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Sunny
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Stephen Benben- BL Companies	Make	N/A	Model	N/A	
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 6"	Topsoil			
6" to 39"+	Orange Brown Sandy Silt			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN

North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

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Architecture § Engineering § Planning § Landscape Architecture § Land Surveying § Environmental Sciences

BL Companies

TP-3062
BL Project # 01c955-F
Friday, 11/5/2004

TEST PIT FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Sunny
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
James Fielding- BL Companies	Make	N/A	Model	N/A	
Wayne Violette- BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remarks
0" to 6"	Topsoil			
6" to 30"+	Light Brown Fine Sandy Loam			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN

North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION DIFFICULTY

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

355 Research Parkway Meriden, CT 06450 Tel.(203) 630-1406 Fax (203) 630-2615 Toll Free (8[illegible]) 301-3[illegible]
Architecture § Engineering § Planning § Landscape Architecture § Land Surveying § Environmental Sciences

BL Companies

TP-3063
BL Project # 01c955-F
Friday, 11/5/2004

TEST PIT FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Sunny
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Stephen Benben- BL Companies	Make	N/A	Model	N/A	
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 3"	Topsoil			
3" to 36"+	Brown Sandy Loam			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN

North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

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Architecture § Engineering § Planning § Landscape Architecture § Land Surveying § Environmental Sciences

BL Companies

TP-3064
BL Project # 01c955-F
Friday, 11/5/2004

TEST PIT FIELD LOG

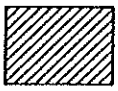
PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Sunny
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Stephen Benben- BL Companies	Make	N/A	Model	N/A	
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 6"	Topsoil			
6" to 31"+	Brown Sandy Loam			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

355 Research Parkway Meriden, CT 06450 Tel.(203) 630-1406 Fax (203) 630-2615 Toll Free (800) 301-3077
Architecture § Engineering § Planning § Landscape Architecture § Land Surveying § Environmental Sciences

BL Companies

TP-3065
BL Project # 01c955-F
Friday, 11/5/2004

TEST PIT FIELD LOG

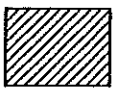
PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Sunny
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
James Fielding- BL Companies	Make	N/A	Model	N/A	
Wayne Violette- BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 6"	Topsoil			
6" to 30"+	Light Brown Fine Sandy Loam			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS		PROPORTIONS USED (QUANTITATIVE TERMS)		QUALITATIVE TERMS	EXCAVATION EFFORT
Size Range Classification	Letter Designation				E - Easy
3" - 12"	Cobble (C)	TRACE (TR)	0-10%	OCCASIONAL	M - Moderate
12" - 24	Small (S)	LITTLE (LI)	10-20%	FEW	D - Difficult
24" - 36"	Medium (M)	SOME (SO)	20-35%	FREQUENT	
36" and Larger	Large (L)	AND	35-50%	NUMEROUS	▼ Observed Depth to Groundwater

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BL Companies

TP-3066
BL Project # 01c955-F
Friday, 11/5/2004

TEST PIT FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Sunny
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Stephen Benben- BL Companies	Make	N/A	Model	N/A	
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 3"	Topsoil			
3" to 32"	Brown Sandy Loam			
32"	Bedrock			

REMARKS:

No mottling observed
No groundwater observed
Bedrock observed at 32"

TEST PIT PLAN

North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

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BL Companies

TP-3067
BL Project # 01c955E
Friday, 11/5/2004

TEST PIT FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Sunny
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Stephen Benben- BL Companies	Make	N/A	Model	N/A	
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 6"	Topsoil			
6" to 40"+	Brown Sandy Loam			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN

North

LEGEND

COBBLES AND BOULDERS		PROPORTIONS USED (QUANTITATIVE TERMS)		QUALITATIVE TERMS	EXCAVATION EFFORT
Size Range Classification	Letter Designation				E - Easy
3" - 12"	Cobble (C)	TRACE (TR)	0-10%	OCCASIONAL	M - Moderate
12" - 24	Small (S)	LITTLE (LI)	10-20%	FEW	D - Difficult
24" - 36"	Medium (M)	SOME (SO)	20-35%	FREQUENT	
36" and Larger	Large (L)	AND	35-50%	NUMEROUS	▼ Observed Depth to Groundwater

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BL Companies

TP-3068
BL Project # 01c955-F
Friday, 11/5/2004

TEST PIT FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Sunny
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Stephen Benben- BL Companies	Make	N/A	Model	N/A	
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 3"	Topsoil			
3" to 29"	Brown Sandy Loam			
29"	Bedrock			

REMARKS:

No mottling observed
No groundwater observed
Bedrock observed at 29"

TEST PIT PLAN

North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

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BL Companies

TP-3069
BL Project # 01c955-F
Friday, 11/5/2004

TEST PIT FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Sunny
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Stephen Benben- BL Companies	Make	N/A	Model	N/A	
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 6"	Topsoil			
6" to 40"+	Brown Sandy Loam			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN

North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

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BL Companies

TP-3070
BL Project # 01c955-F
Friday, 11/5/2004

TEST PIT FIELD LOG

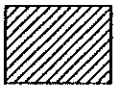
PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Sunny
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
James Fielding- BL Companies	Make	N/A	Model	N/A	
Wayne Violette- BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 6"	Topsoil			
6" to 32"+	Light Brown Orange Very Fine Silty Sand			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

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BL Companies

TP-3071
BL Project # 01c955-F
Friday, 11/5/2004

TEST PIT FIELD LOG

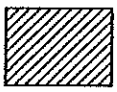
PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Sunny
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Stephen Benben- BL Companies	Make	N/A	Model	N/A	
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 3"	Topsoil			
3" to 36"+	Light Brown Sandy Loam			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

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BL Companies

TP-3073
BL Project # 01c955-F
Friday, 11/5/2004

TEST PIT FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Sunny
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
James Fielding- BL Companies	Make	N/A	Model	N/A	
Wayne Violette- BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No
0" to 6"	Topsoil			
6" to 33"+	Light Brown Fine Sandy Loam			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN

North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

355 Research Parkway Meriden, CT 06450 Tel.(203) 630-1406 Fax (203) 630-2615 Toll Free (800) 301-3073
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TP-3074
BL Project # 01c955-F
Friday, 11/5/2004

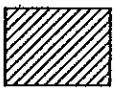
TEST PIT FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Sunny
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Stephen Benben- BL Companies	Make	N/A	Model	N/A	
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 6"	Topsoil			
6" to 36"+	Dark Brown Sandy Loam			

REMARKS:

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS		PROPORTIONS USED (QUANTITATIVE TERMS)		QUALITATIVE TERMS	EXCAVATION EFFORT
Size Range Classification	Letter Designation				E - Easy
3" - 12"	Cobble (C)	TRACE (TR)	0-10%	OCCASIONAL	M - Moderate
12" - 24	Small (S)	LITTLE (LI)	10-20%	FEW	D - Difficult
24" - 36"	Medium (M)	SOME (SO)	20-35%	FREQUENT	
36" and Larger	Large (L)	AND	35-50%	NUMEROUS	▼ Observed Depth to Groundwater

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Supplemental Test Hole Logs

2004

TP-1000 series

By: Haley & Aldrich

TABLE I
SUMMARY OF SUBSURFACE EXPLORATIONS
THE PRESERVE
OLD SAYBROOK, ESSEX, AND WESTBROOK, CONNECTICUT

DRAFT

BORING NO.		APPROXIMATE GROUND SURFACE ELEVATION (FT.)	TOTAL DEPTH (FT.)	THICKNESS OF SOIL STRATA (FT.)					TOP OF BEDROCK (FT.)		GROUNDWATER LEVEL (FT.)	
				TOPSOIL	SUBSOIL/ RESIDUAL SOIL	GLACIO-FLUVIAL	GLACIAL TILL	WEATHERED BEDROCK	DEPTH	ELEVATION	DEPTH	ELEVATION
1000		49.0	5.0	1.1	1.6	>2.3	--	--	--	--	--	--
1001		60.0	5.5	1.0	1.8	--	2.7	--	--	--	5.5	54.5
1003	(R)	61.0	3.3	0.3	0.7	--	2.3	--	3.3	57.7	--	--
1003A		78.0	9.0	0.3	1.7	--	7.0	--	--	--	--	--
1003B	(R)	108.0	0.0	--	--	--	--	--	0	108.0	--	--
1004	(R)	188.0	3.0	0.2	2.8	--	--	--	3.0	185.0	--	--
1005	(R)	136.0	5.5	0.3	3.7	--	1.5	--	5.5	130.5	--	--
1006	(R)	142.0	2.5	0.2	2.3	--	--	--	2.5	139.5	--	--
1007	(R)	136.0	3.0	0.2	2.8	--	--	--	3.0	133.0	--	--
1010	(R)	102.0	2.5	0.3	2.2	--	--	--	2.5	99.5	--	--
1028	(R)	184.0	3.0	1.0	--	--	2.0	--	3.0	181.0	--	--
1029	(R)	208.0	0.5	0.5	--	--	-0.5	--	0.5	207.5	--	--
1037	(R)	184.0	9.0	0.3	3.7	--	5.0	--	9.0	175.0	--	--
1038	(R)	157.0	9.0	0.3	4.7	--	4.0	--	9.0	148.0	--	--
1039	(R)	126.0	11.0	0.5	3.0	--	7.5	--	11.0	115.0	--	--
1040	(R)	140.0	9.0	0.3	2.2	--	6.5	--	9.0	131.0	--	--
1041	(R)	91.0	11.0	0.3	4.2	--	6.5	--	11.0	80.0	--	--
1044	(R)	105.0	13.0	0.3	3.7	--	4.0	5.0	13.0	92.0	--	--
1055	(R)	104.0	2.5	0.3	2.2	--	--	--	2.5	101.5	--	--
1056	(R)	120.0	6.0	0.5	3.5	--	2.0	--	6.0	114.0	--	--
1057	(R)	109.0	4.0	0.3	1.7	--	2.0	--	4.0	105.0	--	--
1061	(R)	62.0	2.0	0.5	1.5	--	--	--	2.0	60.0	--	--
1063	(R)	164.0	10.0	0.3	2.7	--	7.0	--	10.0	154.0	--	--
1064	(R)	148.0	5.0	0.3	--	--	4.7	--	5.0	143.0	--	--
1065	(R)	129.0	10.0	0.5	3.5	--	6.0	--	10.0	119.0	--	--
1066	(R)	132.0	8.0	0.3	3.7	--	4.0	--	8.0	124.0	--	--
1067	(R)	169.0	5.0	0.5	3.5	--	1.0	--	5.0	164.0	--	--
1068	(R)	158.0	6.5	0.3	3.7	--	2.5	--	6.5	151.5	--	--
1069	(R)	152.0	9.0	0.5	4.0	--	4.5	--	9.0	143.0	--	--
1070	(R)	146.0	3.0	0.3	2.7	--	--	--	3.0	143.0	--	--
1071	(R)	122.0	17.5	0.5	3.0	--	12.5	1.5	17.5	104.5	17.0	105.0
1072	(R)	113.0	15.0	0.5	4.0	--	10.5	--	15.0	98.0	--	--
1073	(R)	142.0	6.0	0.7	--	--	5.3	--	6.0	136.0	--	--
1074	(R)	157.0	11.0	0.5	3.5	--	7.0	--	11.0	146.0	--	--
1075	(R)	150.0	10.0	0.5	4.5	--	5.0	--	10.0	140.0	--	--
1076	(R)	150.0	4.5	0.5	1.5	--	2.5	--	4.5	145.5	--	--
1077		132.0	15.0	0.5	3.5	--	11.0	--	>15	--	--	--
1078	(R)	124.0	7.5	0.5	4.0	--	3.0	--	7.5	116.5	--	--
1079		139.0	16.5	0.5	4.0	--	12.0	--	>16.5	--	14.0	125.0
1080	(R)	148.0	13.0	0.5	2.5	--	10.0	--	13.0	135.0	--	--
1081	(R)	142.0	10.0	0.5	3.5	--	6.0	--	10.0	132.0	--	--
1082	(R)	157.0	9.0	0.5	2.5	--	6.0	--	9.0	148.0	--	--
1083	(R)	68.0	8.0	0.8	2.5	--	4.8	--	8.0	60.0	--	--
1084	(R)	138.0	4.0	0.3	1.7	--	2.0	--	4.0	134.0	--	--

NOTES:
1. "--" indicates not encountered
   (R) - indicates refusal in excavation
2. Elevations are in feet and refer to the NGVD? datum. Elevations were on the location stake (BL Companies survey), except for 1003A, 1003B and 1005 which were estimated from the topographic plan.
3. Refer to test pit reports for detailed soil descriptions.
4. Water levels measured shortly after excavation may not have stabilized.

Section III c

Additional Test Hole Logs

July 2000 & December 2000

TP-4000 series and 9000 series

From Engineering Report - Water Supply and Septic Design
December 14, 2000 – Final

By: Milone & MacBroom, Inc.

Testpit 116-7 (1/14/00) "Fortunato"

00"-05"	Fine sandy loam, topsoil (SM); brown; fine granular; friable; A horizon.
05"-23"	Very fine sandy loam, subsoil (SM-ML); yellowish brown; medium subangular blocky friable; B horizon.

Ledge at 23"
No Water
No Mottling

Testpit 9001 (12/5/00) "Castanho/Fortunato"

00"-03"	Fine sandy loam, topsoil (SM); dark brown; 10YR 3/3; fine granular; friable; A horizon.
03"-26"	Very fine sandy loam, subsoil (SM-ML); yellowish brown 10YR 5/6; medium subangular blocky; friable; B1 horizon.
26"-39"	Silt loam, subsoil (ML); light yellowish brown 10YR 6/4 and pale brown 10YR 6/3; coarse subangular blocky; friable to firm; common, faint light gray reductions (mottles); perched water table; B2 horizon.
39"-48"	Saprolite (decomposed rock), gravelly sand, substratum (GW-SW); black 10YR 2/1 and dark gray 10YR 3/1; coarse granular; very friable to loose; C horizon.

Ledge at 48"
No Water
Mottling at 26" (Perched water table)

Testpit 113-5 (1/14/00) "Fortunato"

00"-06"	Fine sandy loam, topsoil (SM); dark brown; fine granular; friable; A horizon.
06"-31"	Fine sandy loam, subsoil (SM); yellowish brown; medium subangular blocky friable; B horizon.
31"-48"	Gravelly loamy sand, substratum (SW-GM); light gray, brown, and pale brown; medium to coarse granular; very friable to loose; C horizon.

Ledge at 48"
No Water
No Mottling

Testpit 113-6 (1/14/00) "Fortunato"

00"-06"	Fine sandy loam, topsoil (SM); dark brown; fine granular; friable; A horizon.
06"-31"	Fine sandy loam, subsoil (SM); yellowish brown; medium subangular blocky friable; B horizon.
31"-48"	Gravelly loamy sand, substratum (SW-GM); light gray, brown, and pale brown; medium to coarse granular; very friable to loose; C horizon.

Ledge at 48"
No Water
No Mottling

Testpit 9000 (12/5/00) "Castanho/Fortunato"

00"-03"	Fine sandy loam, topsoil (SM); dark brown 10YR 3/3; fine granular; friable; A horizon.
03"-26"	Fine sandy loam, subsoil (SM); yellowish brown 10YR 5/8; medium subangular blocky; friable; B1 horizon.
26"-50"	Loamy fine sand, subsoil (SM-SP); light brownish gray 10YR 6/2; coarse subangular blocky; friable; wet, slightly-sticky, slightly-plastic @ 36 inches; Bg2 horizon (gleyed).
50"-53"	Gravelly sand, substratum (GW-SW); grayish brown 10YR 5/2; coarse granular; wet, non-sticky, non-plastic; coarse fragments 10% to 4 inches; IIC horizon.

Ledge at 53"
Water at 50" (Seepage at 36")
No Mottling

Testpit 9012 (12/5/00) "Castanho/Fortunato"

00"-04"	Fine sandy loam, topsoil (SM); brown 10YR 5/3; fine granular; friable; A horizon.
04"-32"	Fine sandy loam, subsoil (SM); yellowish brown 10YR 5/8; medium subangular blocky; friable; B horizon.
32"-49"	Sand, medium to coarse, substratum (SW); dark grayish brown 10YR 3/2 and dark gray 10YR 3/1; single grain; loose; IIC horizon.

Ledge at 49"
No Water
No Mottling

Testpit 9013 (12/5/00) "Castanho/Fortunato"

00"-03"	Fine sandy loam, topsoil (SM); brown 10YR 5/3; fine granular; friable; A horizon.
03"-18"	Fine sandy loam, subsoil (SM); yellowish brown 10YR 5/6; fine subangular blocky; friable; B horizon.

Ledge at 18"
No Water
No Mottling

Perc Hole #112 - 1/18/00 - Depth=36"		
Time	Reading	Interval Perc Rate
12:49	21.000	
12:54	22.500	3.33 min/inch
12:59	23.500	5.00 min/inch
13:04	24.500	5.00 min/inch
13:09	25.250	6.67 min/inch
13:14	26.000	6.67 min/inch
13:24	27.500	3.33 min/inch
13:29	28.000	10.00 min/inch
13:34	28.500	10.00 min/inch
13:39	29.125	8.00 min/inch
13:44	29.500	13.33 min/inch
Perc Rate		1.0-10 min/inch

Testpit 111-7 (1/14/00) "Fortunato"

00"-07"	Fine sandy loam, topsoil (SM); dark brown; fine granular; friable; A horizon.
07"-44"	Fine sandy loam, subsoil (SM); yellowish brown; medium subangular blocky friable; B horizon.
44"-68"	Gravelly loamy sand, substratum (GW-GM); brown medium granular; wet non-sticky, non-plastic; wet at 50" C horizon.

Ledge at 68"
Water at 60"
Mottling at 50

Testpit 9009 (12/6/00) "Castanho/Fortunato"

00"-04"	Fine sandy loam, topsoil (SM); brown 10YR 5/3; fine granular; friable; A horizon.
04"-35"	Fine sandy loam, subsoil (SM); strong brown 7.5YR 5/8; medium subangular blocky; friable; B horizon.
35"-55"	Gravelly loamy sand to gravelly sand, substratum (GW-GM); pale brown 10YR 6/3; medium granular; very friable; coarse fragments 20% to 5 inches; C horizon.

Ledge at 55"
No Water
No Mottling

Testpit 9010 (12/6/00) "Castanho/Fortunato"

00"-02"	Fine sandy loam, topsoil (SM); brown 10YR 5/3; fine granular; friable; A horizon.
02"-13"	Fine sandy loam, subsoil (SM); strong brown 7.5YR 5/8; fine subangular blocky; friable; B horizon.
13"-29"	Bedrock depth varies in test hole.

Ledge at 13"-29"
No Water
No Mottling

Testpit 9010A (12/6/00) "Castanho/Fortunato"

00"-04"	Fine sandy loam, topsoil (SM); brown 10YR 4/3; fine granular; friable; A horizon.
04"-30"	Fine sandy loam, subsoil (SM); yellowish brown 10YR 5/8; medium subangular blocky; friable; B1 horizon.
30"-40"	Gravelly loamy sand, subsoil (SM); light yellowish brown 10YR 6/4; medium to coarse granular; very friable; B2 horizon.
40"-56"	Silt loam, subsoil, (ML); light gray 10YR 6/1; coarse subangular blocky; perched water table; common, distinct gray and dark gray reductions (mottles); Bgd3 horizon (densipan and gleyed).
56"-67"	Gravelly loamy sand to gravelly sand, substratum (GW-GM); pale brown 10YR 6/3; medium granular; very friable; coarse fragments 20-30% to 5 inches; C horizon.

Ledge at 67"
No Water
No Mottling (Perched water table at 40-56")

Testpit 9011 (12/6/00) "Castanho/Fortunato"

00"-08"	Fine sandy loam, topsoil (SM); brown 10YR 5/3; fine granular; friable; A horizon.

Ledge at 8"
No Water
No Mottling

Testpit 9011A (12/6/00) "Castanho/Fortunato"

00"-04"	Fine sandy loam, topsoil (SM); brown 10YR 5/3; fine granular; friable; A horizon.
04"-40"	Very fine sandy loam, subsoil (SM); strong brown 7.5YR 5/8; coarse subangular blocky; friable; B horizon.
40"-53"	Loamy fine sand, substratum (SM); pale brown 10YR 6/3; medium subangular blocky; friable; C horizon.

Ledge at 55"
No Water
No Mottling

Testpit 105-5 (1/13/00) "Fortunato"

00"-07"	Fine sandy loam, topsoil (SM); dark brown; fine granular; friable; A horizon.
07"-30"	Very fine sandy loam, subsoil (SM-ML); yellowish brown; medium subangular blocky friable; B horizon.

Ledge at 30"
No Water
No Mottling

Testpit 105-6 (1/13/00) "Fortunato"

00"-07"	Fine sandy loam, topsoil (SM); dark brown; fine granular; friable; A horizon.
07"-43"	Very fine sandy loam, subsoil (SM-ML); yellowish brown; medium subangular blocky friable; B horizon.

Ledge at 43"
No Water
No Mottling

Testpit 9002 (12/5/00) "Castanho/Fortunato"

00"-03"	Fine sandy loam, topsoil (SM); brown 10YR 5/3; fine granular; friable; A horizon.
03"-33"	Very fine sandy loam to silt loam, subsoil (ML-SM); yellowish brown 10YR 5/4; medium subangular blocky; friable; B horizon.
33"-51"	Gravelly sandy loam, substratum (SM-GM); pale brown 10YR 6/3 to grayish brown 10YR 5/2; massive; firm; Cd (densipan) horizon.

Ledge at 51"
No Water
No Mottling (Water may perch at 33")

Testpit 9003 (12/5/00) "Castanho/Fortunato"

00"-03"	Fine sandy loam, topsoil (SM); brown 10YR 5/3; fine granular; friable; A horizon.
03"-25"	Very fine sandy loam to silt loam, subsoil (ML-SM); yellowish brown 10YR 5/4; medium subangular blocky; friable; B horizon.
25"-43"	Fine sandy loam to sandy loam, substratum (SM); brown 10YR 5/3 to black 10YR 2/1; massive; firm; Cd (densipan) horizon.

Ledge at 43"
No Water
No Mottling (Water may perch at 25")

Testpit 106-5(1/13/00) "Fortunato"

00"-07"	Fine sandy loam, topsoil (SM); dark brown; fine granular; friable; A horizon.
07"-35"	Very fine sandy loam, subsoil (SM-ML); yellowish brown; medium subangular blocky friable; B horizon.
35"-44"	Gravelly loamy sand, substratum (SM-GM); brown to pale brown; medium to coarse granular; very friable to loose, C. horizon.

Ledge at 44"
No Water
No Mottling

Testpit 106-6(1/13/00) "Fortunato"

00"-07"	Fine sandy loam, topsoil (SM); dark brown; fine granular; friable; A horizon.
07"-36"	Very fine sandy loam, subsoil (SM-ML); yellowish brown; medium subangular blocky friable; B horizon.
36"-45"	Gravelly loamy sand, substratum (SM-GM); brown to pale brown; medium to coarse granular; very friable to loose, C. horizon.

Ledge at 45"
No Water
No Mottling

Testpit 9004 (12/5/00) "Castanho/Fortunato"

00"-03"	Fine sandy loam, topsoil (SM); brown 10YR 5/3; fine granular; friable; A horizon.
03"-31"	Fine sandy loam, subsoil (SM); yellowish brown 10YR 5/4; fine subangular blocky; friable; B1 horizon.
31"-78"	Loamy sand to sandy loam, substratum (SM); yellowish brown 10YR 5/6 and grayish brown 10YR 4/2; medium granular; very friable to firm; water may perch at firm layers at 40 inches and 60 inches; C horizon.

No Ledge
No Water (may perch at 40")
No Mottling

Testpit 9005 (12/5/00) "Castanho/Fortunato"

00"-03"	Fine sandy loam, topsoil (SM); brown 10YR 5/3; fine granular; friable; A horizon.
03"-40"	Very fine sandy loam to silt loam, subsoil (ML-SM); yellowish brown 10YR 5/4; medium subangular blocky; friable; B1 and B2 horizon.

Ledge at40"
No Water
No Mottling

Testpit 108-5

+1-0"	Leaf litter
00"-08"	Dark brown, fine sandy loam topsoil.
08"-20"	Yellow brown moist, sandy loam subsoil, light brown mottles at 20", denser layer at 22".
20"-42"	Light brown to brown sandy loam.

Ledge at 42"
No Water
Mottling at 20"

Testpit 9006 (12/5/00)."Castanho/Fortunato"

00"-02"	Fine sandy loam, topsoil (SM); brown 10YR 5/3; fine granular; friable; A horizon.
02"-18"	Fine sandy loam, subsoil (SM); yellowish brown 10YR 5/4; fine subangular blocky; friable; B horizon.
18"-26"+	Bedrock depth varies in test pit.

Ledge 18"-26"
No Water
No Mottling

Testpit 9007 (12/5/00) "Castanho/Fortunato"

00"-05"	Very fine sandy loam, topsoil (SM); brown 10YR 5/3; fine granular; friable; A horizon.
05"-41"	Very fine sandy loam to silt loam, subsoil (ML-SM); yellowish brown 10YR 5/6; medium subangular blocky; friable; B1 horizon.
41"-51"	Heavy very fine sandy loam to silt loam, subsoil (ML-SM); light yellowish brown 10YR 6/4; medium subangular blocky; friable to firm; common, distinct light gray reductions (mottles); perched water table; B2 horizon.
51"-77"	Loamy fine sand, substratum (SM); light brownish gray 10YR 6/2; fine granular; friable; C horizon.

No Ledge
No Water
Mottling at 41" (Water perches at 41"-51")

Testpit 9008 (12/5/00) "Castanho/Fortunato"

0-4	Fine sandy loam, topsoil (SM); brown 10YR 5/3; fine granular; friable; A horizon.
4-35	Fine sandy loam, subsoil (SM); yellowish brown 10YR 5/8; fine subangular blocky; friable; B horizon.
35-62	Gravelly loamy sand, substratum (GW-GM); pale brown 10YR 6/3; medium granular; very friable; coarse fragments 20% to 4 inches; C horizon.

Ledge at 62"
No Water
No Mottling

Testpit 9014 (12/5/00) "Castanho/Fortunato"

00"-03"	Fine sandy loam, topsoil (SM); grayish brown 10YR 5/2; fine granular; friable; A horizon.
03"-32"	Fine sandy loam, subsoil (SM); yellowish brown 10YR 5/8; fine subangular blocky; friable; moist at 26 inches on top of bedrock; B horizon.

Ledge at 33"
No Water
No Mottling (Moist at 26")

Testpit 9015 (12/5/00) "Castanho/Fortunato"

00"-05"	Fine sandy loam, topsoil (SM); dark brown 10YR 3/3; fine granular; friable; A horizon.
05"-32"	Very fine sandy loam, subsoil (SM-ML); yellowish brown 10YR 5/8; medium subangular blocky; friable; B1 horizon.
32"-42"	Very fine sandy loam, subsoil (SM-ML); light yellowish brown 10YR 6/4; coarse subangular blocky; wet, slightly-sticky, slightly-plastic @ 38 inches; common, distinct light gray reductions (mottles); B2 horizon.
42"-72"	Gravelly sand, substratum (GW-SW); light brownish gray 10YR 6/2; medium granular; wet, non-sticky, non-plastic; coarse fragments 10% to 4 inches; IIC horizon.

Ledge at 72"
Water at 38"
Mottling at 32"

Testpit 9016 (12/5/00) "Castanho/Fortunato"

00"-03"	Fine sandy loam, topsoil (SM); grayish brown 10YR 5/2; fine granular; friable; A horizon.
03"-38"	Fine sandy loam, subsoil (SM); yellowish brown 10YR 5/8; fine subangular blocky; friable; moist at 32 inches on top of bedrock; B horizon.

Ledge at 38"
No Water
Mottling at 32"

Testpit 9025 (12/5/00) "Castanho/Fortunato"

00"-04"	Fine sandy loam, topsoil (SM); brown 10YR 5/3; fine granular; friable; A horizon.
04"-34"	Sandy loam, subsoil (SM); yellowish brown 10YR 5/8; fine subangular blocky; friable; B horizon.
34"-66"	Gravelly loamy sand to gravelly sand, substratum (GW-SW); light brownish gray 10YR 6/2 and gray 10YR 5/1; coarse granular; very friable to loose; coarse fragments 30% to 12 inches in size; IIC horizon.

Ledge at 66"
No Water
No Mottling

Testpit 9026 (12/5/00) "Castanho/Fortunato"

00"-05"	Fine sandy loam, topsoil (SM); dark brown 10YR 4/3; fine granular; friable; A horizon.
05"-33"	Very fine sandy loam to loamy fine sand, subsoil (SM); yellowish brown 10YR 5/8; fine subangular blocky; friable; B horizon.
33"-70"	Gravelly loamy sand to gravelly sand, substratum (GW-SW); light brownish gray 10YR 6/2 and light gray 10YR 6/1; coarse granular; very friable to loose; coarse fragments 30% to 6 inches in size; IIC horizon.

Ledge at 70"
No Water
No Mottling

Testpit 9027 (12/5/00) "Castanho/Fortunato"

00"-03"	Fine sandy loam, topsoil (SM); brown 10YR 5/3; fine granular; friable; A horizon.
03"-30"	Sandy loam, subsoil (SM); yellowish brown 10YR 5/8; fine subangular blocky; friable; B horizon.
30"-36"	Gravelly loamy sand to gravelly sand, substratum (GW-SW); light brownish gray 10YR 6/2 and gray 10YR 5/1; coarse granular; very friable to loose; coarse fragments 30% to 12 inches in size; IIC horizon.
36"-56"	Bedrock, depth varies in test pit.

Ledge at 36"
No Water
No Mottling

Testpit 9028 (12/5/00) "Castanho/Fortunato"

00"-04"	Sandy loam, topsoil (SM); dark brown 10YR 3/3; fine granular; friable; A horizon.
04"-24"	Sandy loam, subsoil (SM); yellowish brown 10YR 5/6; fine to medium subangular blocky; friable; B1 horizon.
24"-40"	Loamy sand to medium sand, substratum (SW); light yellowish brown 10YR 6/4; medium granular; loose; C1 horizon.
40"-63"	Saprolite (decomposed rock), medium sand, substratum (SW); black 10YR 2/1 and dark gray 10YR 3/1; single grain; loose; C2 horizon.

Ledge at 63"
No Water
No Mottling

Perc Hole #9028 12/8/00 - Depth=26"		
Time	Reading	Interval Perc Rate
9:55	7.325	
10:00	10.875	1.41 min/inch
10:05	13.250	2.11 min/inch
10:10	14.875	3.08 min/inch
10:15	16.325	3.45 min/inch
10:20	17.500	4.26 min/inch
10:25	18.625	4.44 min/inch
10:30	19.500	5.71 min/inch
Perc Rate		1.1-10.0 min/inch

Section III d

Test Hole Location Maps

November 2004

TP-2000 series and 3000 series

By: BL Companies

BL Companies

TP-2090
BL Project # 01c955-F
Thursday, 11/4/2004

TEST PIT FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies Tom Fries - BL Companies Stephen Benben- BL Companies Shawn Bearce - BL Companies	Contractor	BL Companies			Weather: Cloudy
	Operator	Dug By Manual Post Hole Digger			
	Make	N/A	Model	N/A	
	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remarks
0" to 6"	Topsoil			
6" to 36"	Orange Sandy Silt			
36"	Bedrock			

REMARKS:

No mottling observed
No groundwater observed
Bedrock observed at 36"

TEST PIT PLAN

North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EASE

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

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BL Companies

TP-2103
BL Project # 01c955-F
Thursday, 11/4/2004

TEST PIT FIELD LOG

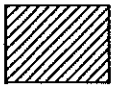
PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Cloudy
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Stephen Benben- BL Companies	Make	N/A	Model	N/A	
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 6"	Topsoil			
6" to 30"	Orange Sandy Loam			
30"to 38"	Gray Sand			
38"+	No Soil Type Recorded			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

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BL Companies

TP-2108
BL Project # 01c955.E
Thursday, 11/4/2004

TEST PIT FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Cloudy
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Stephen Benben- BL Companies	Make	N/A	Model	N/A	
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 6"	Topsoil			
6" to 38"	Orange Brown Sandy Silt			
38"+	No Soil Type Recorded			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN

North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

Observed Depth to Groundwater

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BL Companies

TP-2111
BL Project # 01c955-F
Thursday, 11/4/2004

TEST PIT FIELD LOG

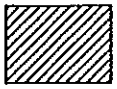
PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Cloudy
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Cameron Hendry- BL Companies	Make	N/A	Model	N/A	
Tom Martell - BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 36"+	No Soil Type Recorded			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

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BL Companies

TP-2113
BL Project # 01c955-F
Thursday, 11/4/2004

TEST PIT FIELD LOG

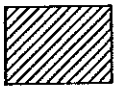
PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies Tom Fries - BL Companies Cameron Hendry- BL Companies Tom Martell - BL Companies	Contractor	BL Companies		Weather	Cloudy
	Operator	Dug By Manual Post Hole Digger			
	Make	N/A	Model	N/A	
	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 36"+	No Soil Type Recorded			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

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BL Companies

TP-2114
BL Project # 01c955-F
Thursday, 11/4/2004

TEST PIT FIELD LOG

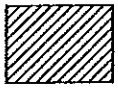
PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Cloudy
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Cameron Hendry- BL Companies	Make	N/A	Model	N/A	
Tom Martell - BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 36"+	No Soil Type Recorded			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

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Architecture § Engineering § Planning § Landscape Architecture § Land Surveying § Environmental Sciences

BL Companies

TP-2115
BL Project # 01c955-F
Thursday, 11/4/2004

TEST PIT FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Cloudy
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Stephen Benben- BL Companies	Make	N/A	Model	N/A	
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 6"	Topsoil			
6" to 36"	Brown Gravelly Sand			
36"+	No Soil Type Recorded			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN

North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

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M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

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Architecture § Engineering § Planning § Landscape Architecture § Land Surveying § Environmental Sciences

BL Companies

TP-2120
BL Project # 01c955-F
Thursday, 11/4/2004

TEST PIT FIELD LOG

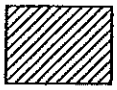
PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Cloudy
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Cameron Hendry- BL Companies	Make	N/A	Model	N/A	
Tom Martell - BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remarks
0" to 27"	No Soil Type Recorded			
27"	Bedrock			

REMARKS:

No mottling observed
No groundwater observed
Bedrock observed at 27"

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

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Architecture § Engineering § Planning § Landscape Architecture § Land Surveying § Environmental Sciences

BL Companies

TP-2122
BL Project # 01c955-F
Thursday, 11/4/2004

TEST PIT FIELD LOG

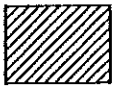
PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Cloudy
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Stephen Benben- BL Companies	Make	N/A	Model	N/A	
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 6"	Topsoil			
6" to 30"	Dark Brown Sandy Loam			
30" to 39"	Light Brown Sandy Loam			
39"+	No Soil Type Recorded			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

355 Research Parkway Meriden, CT 06450 Tel.(203) 630-1406 Fax (203) 630-2615 Toll Free (800) 301-3077
Architecture § Engineering § Planning § Landscape Architecture § Land Surveying § Environmental Sciences

BL Companies

TP-2125
BL Project # 01c955-F
Thursday, 11/4/2004

TEST PIT FIELD LOG

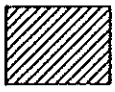
PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Cloudy
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Stephen Benben- BL Companies	Make	N/A	Model	N/A	
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 6"	Topsoil			
6" to 30"	Dark Brown Sandy Loam			
30"+	No Soil Type Recorded			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

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Architecture § Engineering § Planning § Landscape Architecture § Land Surveying § Environmental Sciences

BL Companies

TP-2126
BL Project # 01c955-F
Thursday, 11/4/2004

TEST PIT FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Cloudy
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Stephen Benben- BL Companies	Make	N/A	Model	N/A	
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 6"	Topsoil			
6" to 30"	Orange Brown Sandy Silt			
30"+	No Soil Type Recorded			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN

North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

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Architecture § Engineering § Planning § Landscape Architecture § Land Surveying § Environmental Sciences

BL Companies

TP-2128
BL Project # 01c955-F
Thursday, 11/4/2004

TEST PIT FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Cloudy
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Cameron Hendry- BL Companies	Make	N/A	Model N/A		
Tom Martell - BL Companies	Bucket Capacity	N/A	Reach N/A		

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 36"+	No Soil Type Recorded			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN

North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

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BL Companies

TP-2131
BL Project # 01c955-F
Thursday, 11/4/2004

TEST PIT FIELD LOG

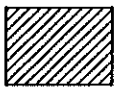
PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Cloudy
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Cameron Hendry- BL Companies	Make	N/A	Model	N/A	
Tom Martell - BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 36"+	No Soil Type Recorded			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

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Architecture § Engineering § Planning § Landscape Architecture § Land Surveying § Environmental Sciences

BL Companies

TP-2132
BL Project # 01c955-F
Thursday, 11/4/2004

TEST PIT FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Cloudy
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Stephen Benben- BL Companies	Make	N/A	Model	N/A	
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 6"	Topsoil			
6" to 26"	Dark Brown Sandy Loam			
26"+	Bedrock			

REMARKS:

No mottling observed
No groundwater observed
Bedrock observed at 26"

TEST PIT PLAN

North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

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BL Companies

TP-2133
BL Project # 01c955-F
Thursday, 11/4/2004

TEST PIT FIELD LOG

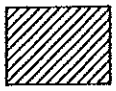
PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Cloudy
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Stephen Benben- BL Companies	Make	N/A	Model	N/A	
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 6"	Topsoil			
6" to 39"	Light Brown Silty Sand			
39"+	No Soil Type Recorded			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

355 Research Parkway Meriden, CT 06450 Tel.(203) 630-1406 Fax (203) 630-2615 Toll Free (800) 301-3077
Architecture § Engineering § Planning § Landscape Architecture § Land Surveying § Environmental Sciences

BL Companies

TP-2137
BL Project # 01c955-F
Thursday, 11/4/2004

TEST PIT FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Cloudy
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Cameron Hendry- BL Companies	Make	N/A	Model	N/A	
Tom Martell - BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 36"+	No Soil Type Recorded			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN

North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

355 Research Parkway Meriden, CT 06450 Tel.(203) 630-1406 Fax (203) 630-2615 Toll Free (800) 301-3077
Architecture § Engineering § Planning § Landscape Architecture § Land Surveying § Environmental Sciences

BL Companies

TP-2141
BL Project # 01c955-F
Thursday, 11/4/2004

TEST PIT FIELD LOG

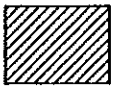
PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Cloudy
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Cameron Hendry- BL Companies	Make	N/A	Model	N/A	
Tom Martell - BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 36"+	No Soil Type Recorded			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

355 Research Parkway Meriden, CT 06450 Tel.(203) 630-1406 Fax (203) 630-2615 Toll Free (800) 301-3077
Architecture § Engineering § Planning § Landscape Architecture § Land Surveying § Environmental Sciences

BL Companies

TP-2142
BL Project # 01c955E
Thursday, 11/4/2004

TEST PIT FIELD LOG

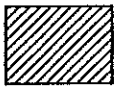
PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Cloudy
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Stephen Benben- BL Companies	Make	N/A	Model	N/A	
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remarks
0" to 6"	Topsoil			
6" to 36"	Light Brown Sandy Silt			
36" to 40"	Grey Sand			
40"+	No Soil Type Recorded			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

355 Research Parkway Meriden, CT 06450 Tel.(203) 630-1406 Fax (203) 630-2615 Toll Free (800) 201-2072
Architecture § Engineering § Planning § Landscape Architecture § Land Surveying § Environmental Sciences

BL Companies

TP-2145
BL Project # 01c955-F
Thursday, 11/4/2004

TEST PIT FIELD LOG

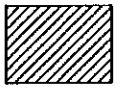
PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Cloudy
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Cameron Hendry- BL Companies	Make	N/A	Model	N/A	
Tom Martell - BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 27"	No Soil Type Recorded			
27"	Bedrock			

REMARKS:

No mottling observed
No groundwater observed
Bedrock observed at 27"

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

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2/16/01 xc: P.C

PLANNING COMMISSION EXHIBIT #54 III.

TOWN OF OLD SAYBROOK
Health Department

302 Main Street • Old Saybrook, Connecticut 06475-1741
Telephone (860) 395-2482 • FAX (860) 395-3125

MEMORANDUM

PLANNING COMMISSION EXHIBIT #29

To: Judith Gallicchio, Chairman
Planning Commission

From: Scott R. Martinson, M.S.,R.S.
Health Official

Date: February 6, 2001

Subject: "The Preserve (Section 1)" Subdivision – 14 lots
Proposed basis of design - 4 bedroom dwellings

An Engineering report on the water supply and septic design for "The Preserve, (Section 1)", has been submitted by Milone & MacBroom, Inc. with a final date of December 14, 2000. This department has reviewed the report. We find the engineer has adequately demonstrated and certified the feasibility to design subsurface systems compliant with the Connecticut Public Health Code. Therefore, the Health Department has no objection to the proposed subdivision provided that the following applies:

- The proposed subdivision is served by the Connecticut Water Company.
- Lots 1, 3, 4, 6, 7, 8, 9, 10, 11, and 12 are unsuitable in their present condition and will require filling of the lot to provide for suitable soil conditions at a later date.

Building permits will not be issued until the stipulations on Page 5 of the water and sewer report are followed.

C: Milone & MacBroom , Inc.

BL Companies

TP-2007
BL Project # 01c955-F
Wednesday, 11/3/2004

TEST PIT FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Sunny
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Stephen Benben- BL Companies	Make	N/A	Model	N/A	
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 6"	Topsoil			
6" to 24"	Brown Sandy Loam			
24"+	No Soil Type Recorded			

REMARKS:

N676200
E1089300
No mottling observed
No groundwater observed
Refusal at 24"
No bedrock observed

TEST PIT PLAN

North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

355 Research Parkway Meriden, CT 06450 Tel.(203) 630-1406 Fax (203) 630-2615 Toll Free (800) 301-3077
Architecture § Engineering § Planning § Landscape Architecture § Land Surveying § Environmental Sciences

BL Companies

TP-2009
BL Project # 01c955-F
Wednesday, 11/3/2004

TEST PIT FIELD LOG

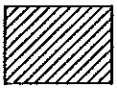
PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Sunny
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Stephen Benben- BL Companies	Make	N/A	Model	N/A	
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 4"	Topsoil			
4" to 30"	Brown Sandy Loam			
30" to 39"	Gray Sandy Gravel			
39"+	No Soil Type Recorded			

REMARKS:

N675600
E1089100
No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

355 Research Parkway Meriden, CT 06450 Tel.(203) 630-1406 Fax (203) 630-2615 Toll Free (800) 301-3077
Architecture § Engineering § Planning § Landscape Architecture § Land Surveying § Environmental Sciences

BL Companies

TP-2013
BL Project # 01c955-F
Wednesday, 11/3/2004

TEST PIT FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT			
Martin Malin-BL Companies	Contractor	BL Companies		
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger		
Stephen Benben- BL Companies	Make	N/A	Model	N/A
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach	N/A

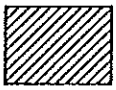
Weather: Sunny

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 4"	Topsoil			
4" to 44"	Light Brown Silty Sand			
44"+	No Soil Type Recorded			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

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BL Companies

TP-2017
BL Project # 01c955-F
Wednesday, 11/3/2004

TEST PIT FIELD LOG

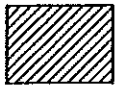
PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Sunny
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Stephen Benben- BL Companies	Make	N/A	Model	N/A	
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 6"	Topsoil			
6" to 34"	Light Brown Silty Sand-Dense, Wet			
34"+	No Soil Type Recorded			

REMARKS:

No groundwater observed
No bedrock observed

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS		PROPORTIONS USED (QUANTITATIVE TERMS)		QUALITATIVE TERMS	EXCAVATION EFFORT
Size Range Classification	Letter Designation				E - Easy
3" - 12"	Cobble (C)	TRACE (TR)	0-10%	OCCASIONAL	M - Moderate
12" - 24	Small (S)	LITTLE (LI)	10-20%	FEW	D - Difficult
24" - 36"	Medium (M)	SOME (SO)	20-35%	FREQUENT	
36" and Larger	Large (L)	AND	35-50%	NUMEROUS	▼ Observed Depth to Groundwater

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BL Companies

TP-2023
BL Project # 01c955-F
Wednesday, 11/3/2004

TEST PIT FIELD LOG

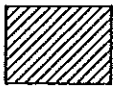
PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Sunny
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Stephen Benben- BL Companies	Make	N/A	Model	N/A	
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 4"	Topsoil			
4" to 36"	Brown Sandy Loam-Broken Rock			
36"+	No Soil Type Recorded			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

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BL Companies

TP-2025
BL Project # 01c955-F
Wednesday, 11/3/2004

TEST PIT FIELD LOG

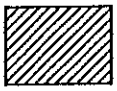
PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Sunny
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Stephen Benben- BL Companies	Make	N/A	Model	N/A	
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 4"	Topsoil			
4" to 30"	Orange Sandy Loam			
30"	Bedrock			

REMARKS:

No mottling observed
No groundwater observed
Bedrock observed at 30"

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

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BL Companies

TP-2033
BL Project # 01c955-F
Wednesday, 11/3/2004

TEST PIT FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Sunny
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Stephen Benben- BL Companies	Make	N/A	Model	N/A	
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 4"	Topsoil			
4" to 30"	Brown Sandy Loam			
30" to 37"	Light Brown Sand			
37"+	No Soil Type Recorded			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN

North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

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BL Companies

TP-2034
BL Project # 01c955.E
Wednesday, 11/3/2004

TEST PIT FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Sunny
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Stephen Benben- BL Companies	Make	N/A	Model	N/A	
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 4"	Topsoil			
4" to 45"	Light Brown Sandy Loam			
45"+	No Soil Type Recorded			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN

North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

Observed Depth to Groundwater

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BL Companies

TP-2039
BL Project # 01c955-F
Thursday, 11/4/2004

TEST PIT FIELD LOG

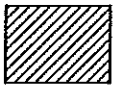
PERSONNEL PRESENT	EXCAVATION EQUIPMENT					
Martin Malin-BL Companies	Contractor	BL Companies			Weather	Cloudy
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			Elevation	90±
Stephen Benben- BL Companies	Make	N/A	Model	N/A		
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach	N/A		

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 4"	Topsoil			
4" to 38"	Light Brown Silty Sand			
38"+	No Soil Type Recorded			

REMARKS:

N675300
E1089700
No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

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Architecture § Engineering § Planning § Landscape Architecture § Land Surveying § Environmental Sciences

BL Companies

TP-2040
BL Project # 01c955-F
Thursday, 11/4/2004

TEST PIT FIELD LOG

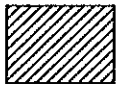
PERSONNEL PRESENT	EXCAVATION EQUIPMENT					
Martin Malin-BL Companies	Contractor	BL Companies			Weather	Cloudy
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			Elevation	95±
Stephen Benben- BL Companies	Make	N/A	Model	N/A		
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach	N/A		

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 6"	Topsoil			
6" to 30"	Light Brown Sandy Loam			
30"to 38"	Light Brown Silty Sand			
38"+	No Soil Type Recorded			

REMARKS:

N675300
E1089800
No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

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Architecture § Engineering § Planning § Landscape Architecture § Land Surveying § Environmental Sciences

BL Companies

TP-2041
BL Project # 01c955-F
Thursday, 11/4/2004

TEST PIT FIELD LOG

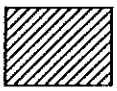
PERSONNEL PRESENT	EXCAVATION EQUIPMENT					
Martin Malin-BL Companies	Contractor	BL Companies			Weather	Cloudy
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			Elevation	95±
Stephen Benben- BL Companies	Make	N/A	Model	N/A		
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach	N/A		

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 6"	Topsoil			
6" to 24"	Orange Sandy Loam			
24"to 41"	Light Brown Silty Sand			
41"+	No Soil Type Recorded			

REMARKS:

N675300
E1089900
No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

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Architecture § Engineering § Planning § Landscape Architecture § Land Surveying § Environmental Sciences

BL Companies

TP-2042
BL Project # 01c955-F
Thursday, 11/4/2004

TEST PIT FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Cloudy
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger		Elevation	904
Stephen Benben- BL Companies	Make	N/A	Model N/A		
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach N/A		

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 6"	Topsoil			
6" to 34"	Light Brown Silty Loam			
34"+	No Soil Type Recorded			

REMARKS:

N675500
E1089900
No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN

North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION [illegible]

E - Easy
M - Moderate
D - Difficult

▼ Observed [illegible]
Ground[illegible]

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Architecture § Engineering § Planning § Landscape Architecture § Land Surveying § Environmental Sciences

BL Companies

TP-2043
BL Project # 01c955.E
Thursday, 11/4/2004

TEST PIT FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Cloudy
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger		Elevation	95±
Stephen Benben- BL Companies	Make	N/A	Model	N/A	
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remarks
0" to 6"	Topsoil			
6" to 30"	Brown Sandy Loam			
30"+	No Soil Type Recorded			

REMARKS:

N675500
E1090000
No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN

North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION DIFFICULTY

E - Easy
M - Moderate
D - Difficult

Observed Depth to Groundwater

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BL Companies

TP-2044
BL Project # 01c955-F
Thursday, 11/4/2004

TEST PIT FIELD LOG

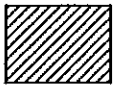
PERSONNEL PRESENT	EXCAVATION EQUIPMENT					
Martin Malin-BL Companies	Contractor	BL Companies			Weather	Cloudy
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			Elevation	85±
Stephen Benben- BL Companies	Make	N/A	Model	N/A		
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach	N/A		

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 30"	Topsoil			
30" to 36"	Light Brown Sandy Loam			
36"+	No Soil Type Recorded			

REMARKS:

N675500
E1090100
No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

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BL Companies

TP-2045
BL Project # 01c955-F
Thursday, 11/4/2004

TEST PIT FIELD LOG

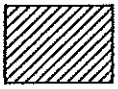
PERSONNEL PRESENT	EXCAVATION EQUIPMENT					
Martin Malin-BL Companies	Contractor	BL Companies			Weather	Cloudy
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			Elevation	110+
Stephen Benben- BL Companies	Make	N/A	Model	N/A		
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach	N/A		

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 6"	Topsoil			
6" to 30"	Orange Sandy Loam			
30" to 36"	Red Brown Silty Loam			
36-41+"	No Soil Type Recorded			

REMARKS:

N675200
E1090000
No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

355 Research Parkway Meriden, CT 06450 Tel.(203) 630-1406 Fax (203) 630-2615 Toll Free (800) 301-3077
Architecture § Engineering § Planning § Landscape Architecture § Land Surveying § Environmental Sciences

BL Companies

TP-2046
BL Project # 01c955-F
Thursday, 11/4/2004

TEST PIT FIELD LOG

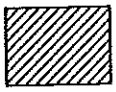
PERSONNEL PRESENT	EXCAVATION EQUIPMENT			
Martin Malin-BL Companies Tom Fries - BL Companies Stephen Benben- BL Companies Shawn Bearce - BL Companies	Contractor	BL Companies		Weather: Cloudy
	Operator	Dug By Manual Post Hole Digger		
	Make	N/A	Model: N/A	
	Bucket Capacity	N/A	Reach: N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 6"	Topsoil			
6" to 24"	Brown Sandy Loam			
24" to 40"	Brown Silty Loam			
40+"	No Soil Type Recorded			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

355 Research Parkway Meriden, CT 06450 Tel.(203) 630-1406 Fax (203) 630-2615 Toll Free (800) 301-3077
Architecture § Engineering § Planning § Landscape Architecture § Land Surveying § Environmental Sciences

BL Companies

TP-2047
BL Project # 01c955-F
Thursday, 11/4/2004

TEST PIT FIELD LOG

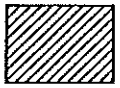
PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Cloudy
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Stephen Benben- BL Companies	Make	N/A	Model	N/A	
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 6"	Topsoil			
6" to 41"	Brown Silty Loam			
41"+	No Soil Type Recorded			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS		PROPORTIONS USED (QUANTITATIVE TERMS)		QUALITATIVE TERMS	EXCAVATION EFFORT
Size Range Classification	Letter Designation				E - Easy
3" - 12"	Cobble (C)	TRACE (TR)	0-10%	OCCASIONAL	M - Moderate
12" - 24	Small (S)	LITTLE (LI)	10-20%	FEW	D - Difficult
24" - 36"	Medium (M)	SOME (SO)	20-35%	FREQUENT	
36" and Larger	Large (L)	AND	35-50%	NUMEROUS	▼ Observed Depth to Groundwater

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Architecture § Engineering § Planning § Landscape Architecture § Land Surveying § Environmental Sciences

BL Companies

TEST PIT FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies Tom Fries - BL Companies Stephen Benben- BL Companies Shawn Bearce - BL Companies	Contractor	BL Companies		Weather	Cloudy
	Operator	Dug By Manual Post Hole Digger			
	Make	N/A	Model N/A		
	Bucket Capacity	N/A	Reach N/A		

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data
0" to 6"	Topsoil		
6" to 30"	Brown Sandy Loam-Rocky		
30"	Bedrock		

REMARKS:

No mottling observed
No groundwater observed
Bedrock observed at 30"

TEST PIT PLAN

North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

355 Research Parkway Meriden, CT 06450 Tel.(203) 630-1406 Fax (203) 630-2615 Toll Free (800) 301-3077
Architecture § Engineering § Planning § Landscape Architecture § Land Surveying § Environmental Sciences

BL Companies

TP-2050
BL Project # 01c955-F
Thursday, 11/4/2004

TEST PIT FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT			
Martin Malin-BL Companies	Contractor	BL Companies		
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger		
Stephen Benben- BL Companies	Make	N/A	Model	N/A
Shawn Bearce - BL Companies	Bucket Capacity	N/A	Reach	N/A

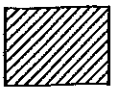
Weather: Cloudy

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 6"	Topsoil			
6" to 43"	Light Brown Sandy Loam			
43"	No Soil Type Recorded			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

355 Research Parkway Meriden, CT 06450 Tel.(203) 630-1406 Fax (203) 630-2615 Toll Free (800) 301-3077
Architecture § Engineering § Planning § Landscape Architecture § Land Surveying § Environmental Sciences

BL Companies

TP-2052
BL Project # 01c955-F
Thursday, 11/4/2004

TEST PIT FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Cloudy
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Cameron Hendry- BL Companies	Make	N/A	Model	N/A	
Tom Martell- BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Water Data
0" to 35"+	No Soil Type Recorded			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN

North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

355 Research Parkway Meriden, CT 06450 Tel.(203) 630-1406 Fax (203) 630-2615 Toll Free (800) 301-3677
Architecture § Engineering § Planning § Landscape Architecture § Land Surveying § Environmental Sciences

BL Companies

TP-2054
BL Project # 01c955-F
Thursday, 11/4/2004

TEST PIT FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Cloudy
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Cameron Hendry- BL Companies	Make	N/A	Model	N/A	
Tom Martell- BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 24"	No Soil Type Recorded			
24"	Bedrock			

REMARKS:

No mottling observed
No groundwater observed
Bedrock observed at 24"

TEST PIT PLAN

North

LEGEND

COBBLES AND BOULDERS		PROPORTIONS USED (QUANTITATIVE TERMS)		QUALITATIVE TERMS	EXCAVATION EFFORT
Size Range Classification	Letter Designation				E - Easy
3" - 12"	Cobble (C)	TRACE (TR)	0-10%	OCCASIONAL	M - Moderate
12" - 24	Small (S)	LITTLE (LI)	10-20%	FEW	D - Difficult
24" - 36"	Medium (M)	SOME (SO)	20-35%	FREQUENT	
36" and Larger	Large (L)	AND	35-50%	NUMEROUS	▼ Observed Depth to Groundwater

355 Research Parkway Meriden, CT 06450 Tel.(203) 630-1406 Fax (203) 630-2615 Toll Free (800) 301-3077
Architecture § Engineering § Planning § Landscape Architecture § Land Surveying § Environmental Sciences

BL Companies

TP-2058
BL Project # 01c955-F
Thursday, 11/4/2004

TEST PIT FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Cloudy
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Cameron Hendry- BL Companies	Make	N/A	Model	N/A	
Tom Martell- BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 36"+	No Soil Type Recorded			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN

North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

355 Research Parkway Meriden, CT 06450 Tel.(203) 630-1406 Fax (203) 630-2615 Toll Free (800) 301-3077
Architecture § Engineering § Planning § Landscape Architecture § Land Surveying § Environmental Sciences

BL Companies

TP-2063
BL Project # 01c955-F
Thursday, 11/4/2004

TEST PIT FIELD LOG

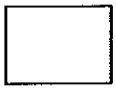
PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Cloudy
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Cameron Hendry- BL Companies	Make	N/A	Model N/A		
Tom Martell- BL Companies	Bucket Capacity	N/A	Reach N/A		

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 36"+	No Soil Type Recorded			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN



North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

355 Research Parkway Meriden, CT 06450 Tel.(203) 630-1406 Fax (203) 630-2615 Toll Free (800) 301-3077
Architecture § Engineering § Planning § Landscape Architecture § Land Surveying § Environmental Sciences

BL Companies

TP-2070
BL Project # 01c955-F
Thursday, 11/4/2004

TEST PIT FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Cloudy
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Cameron Hendry- BL Companies	Make	N/A	Model	N/A	
Tom Martell- BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 36"+	No Soil Type Recorded			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN

North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

355 Research Parkway Meriden, CT 06450 Tel.(203) 630-1406 Fax (203) 630-2615 Toll Free (800) 301-3077
Architecture § Engineering § Planning § Landscape Architecture § Land Surveying § Environmental Sciences

BL Companies

TP-2073
BL Project # 01c955-F
Thursday, 11/4/2004

TEST PIT FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Cloudy
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Cameron Hendry- BL Companies	Make	N/A	Model	N/A	
Tom Martell- BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 12"	No Soil Type Recorded			
12"	Bedrock			

REMARKS:

No mottling observed
No groundwater observed
Bedrock observed at 12"

TEST PIT PLAN

North

LEGEND

COBBLES AND BOULDERS

Size Range Classification	Letter Designation
3" - 12"	Cobble (C)
12" - 24	Small (S)
24" - 36"	Medium (M)
36" and Larger	Large (L)

PROPORTIONS USED (QUANTITATIVE TERMS)

TRACE (TR)	0-10%
LITTLE (LI)	10-20%
SOME (SO)	20-35%
AND	35-50%

QUALITATIVE TERMS

OCCASIONAL
FEW
FREQUENT
NUMEROUS

EXCAVATION EFFORT

E - Easy
M - Moderate
D - Difficult

▼ Observed Depth to Groundwater

355 Research Parkway Meriden, CT 06450 Tel.(203) 630-1406 Fax (203) 630-2615 Toll Free (800) 301-3077
Architecture § Engineering § Planning § Landscape Architecture § Land Surveying § Environmental Sciences

BL Companies

TP-2078
BL Project # 01c955-F
Thursday, 11/4/2004

TEST PIT FIELD LOG

PERSONNEL PRESENT	EXCAVATION EQUIPMENT				
Martin Malin-BL Companies	Contractor	BL Companies		Weather	Cloudy
Tom Fries - BL Companies	Operator	Dug By Manual Post Hole Digger			
Cameron Hendry- BL Companies	Make	N/A	Model	N/A	
Tom Martell- BL Companies	Bucket Capacity	N/A	Reach	N/A	

Depth	SOIL DESCRIPTION	Excav. Effort	Cobble and Boulder Data	Remark No.
0" to 36"+	No Soil Type Recorded			

REMARKS:

No mottling observed
No groundwater observed
No bedrock observed

TEST PIT PLAN

North

LEGEND

COBBLES AND BOULDERS		PROPORTIONS USED (QUANTITATIVE TERMS)		QUALITATIVE TERMS	EXCAVATION EFFORT
Size Range Classification	Letter Designation				E - Easy
3" - 12"	Cobble (C)	TRACE (TR)	0-10%	OCCASIONAL	M - Moderate
12" - 24	Small (S)	LITTLE (LI)	10-20%	FEW	D - Difficult
24" - 36"	Medium (M)	SOME (SO)	20-35%	FREQUENT	
36" and Larger	Large (L)	AND	35-50%	NUMEROUS	▼ Observed Depth to Groundwater

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N.T.S.

LEGEND

- TEST PITS W/24" OR GREATER TO BEDROCK
- TEST PITS W/LESS THAN 24" TO BEDROCK
- HpE — SOIL MAPPING BOUNDARY

STATE PLANE COORDINATE SYSTEM -- NAD83

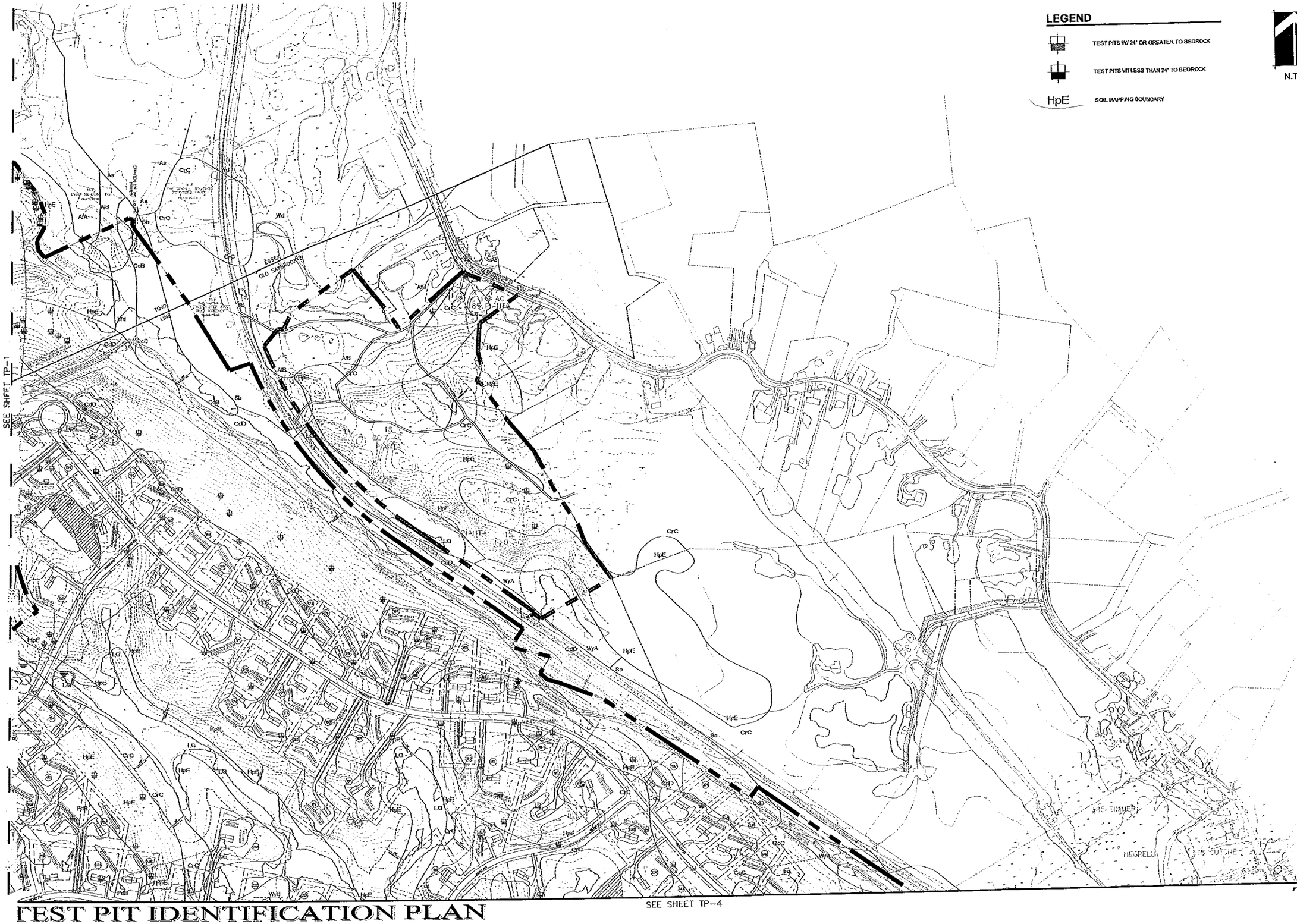
N

THE PRESERVE
River Sound Development, LLC

TEST PIT IDENTIFICATION PLAN

TP-1

BL Companies



LEGEND

- TEST PITS W/ 24" OR GREATER TO BEDROCK
- TEST PITS W/ LESS THAN 24" TO BEDROCK
- HpE — SOIL MAPPING BOUNDARY

N.T.S.

THE PRESERVE
River Sound Development, LLC

TEST PIT IDENTIFICATION PLAN

TP-2

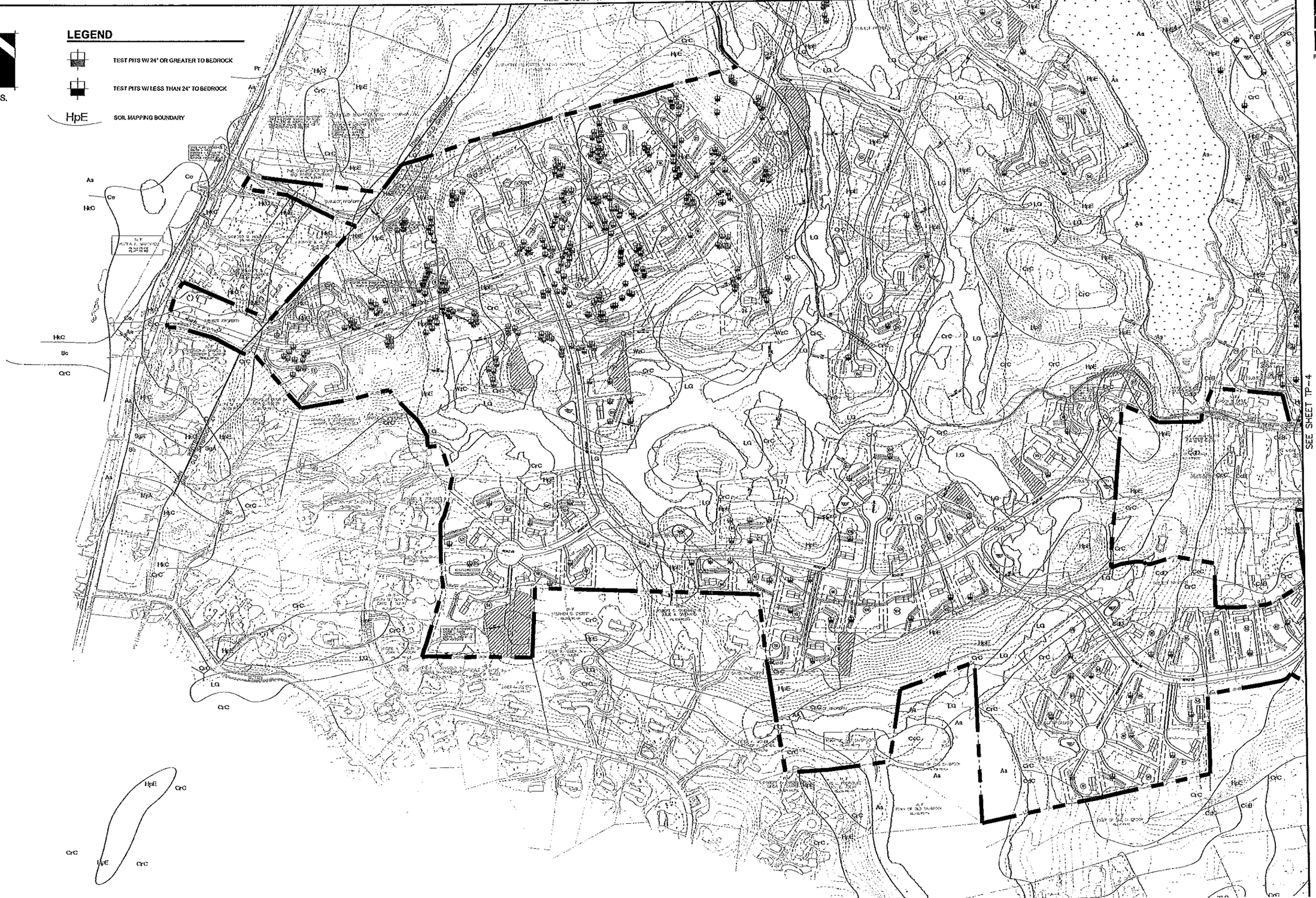
BL Companies

SEE SHEET TP-1

N.T.S.

LEGEND

- TEST PITS W/ 24" OR GREATER TO BEDROCK
- TEST PITS W/ LESS THAN 24" TO BEDROCK
- HpE — SOIL MAPPING BOUNDARY



SEE SHEET TP-4

THE PRESERVE
River Sound Development, LLC

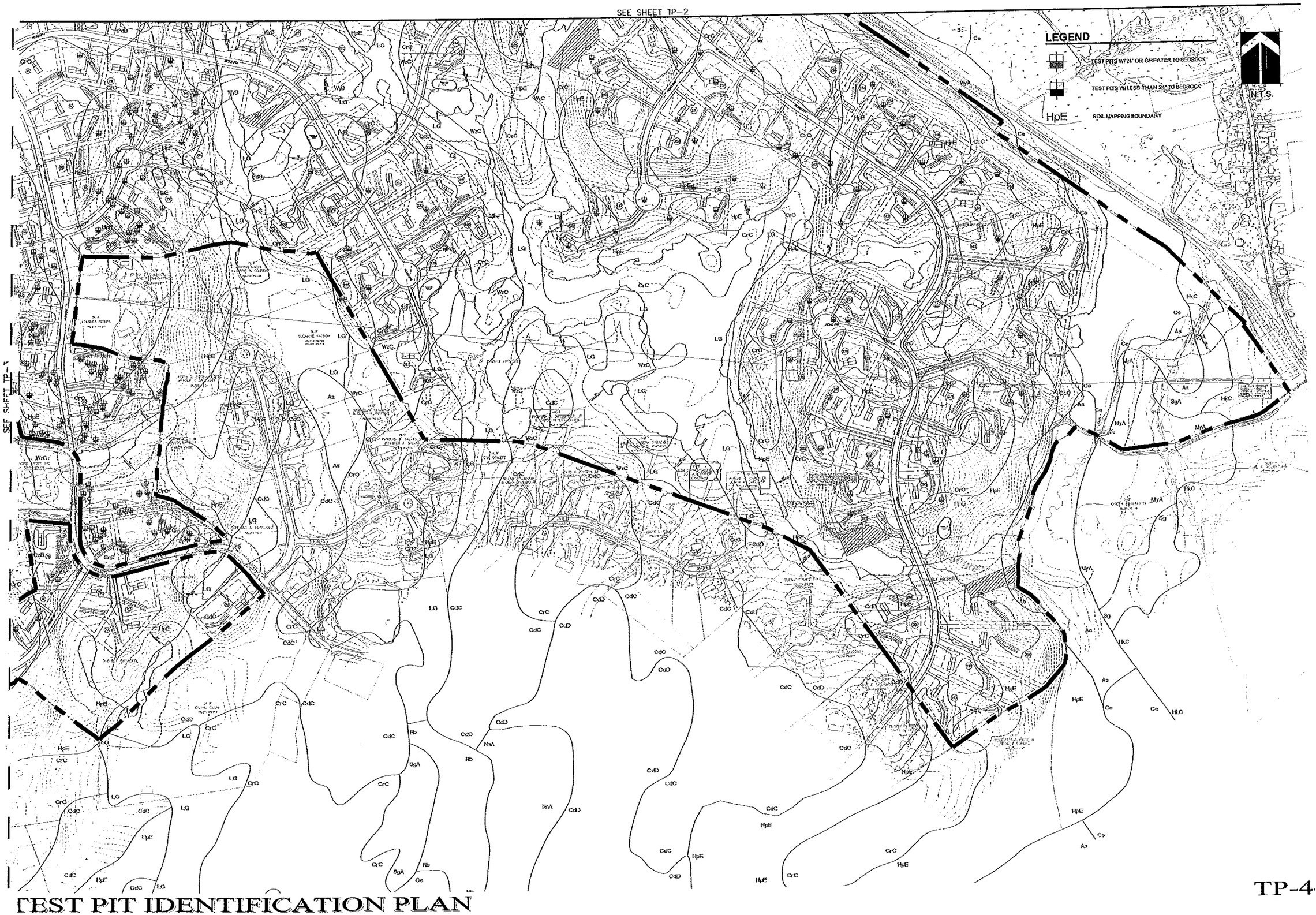
TEST PIT IDENTIFICATION PLAN

TP-3

BL Companies

SEE SHEET TP-2

SEE SHEET TP-3



TEST PIT IDENTIFICATION PLAN

THE PRESERVE
River Sound Development, LLC

BL Companies

Section IV

Memorandum

Town of Old Saybrook
Office of the First Selectman
302 Main Street
(860) 395-3123

To: Planning Commission
CC: Conservation Commission
Inland Wetlands Commission
Environmental Health
Michael Ott, Nathan Jacobson Associates
Joseph Santinello, State Traffic Commission
Lt. Nigosanti, Police Commission
Christine Rosenthal, Town Planner
Chester Sklodosky, Zoning Enforcement Officer
From: Larry Bonin, Director Public Works
William A. Peace, Selectman
Date: May 17, 2000
Re: Roadway Enhancements – The Preserve

Please be advised we have reviewed the plans for the Preserve. We have determined that due to the large size of the development there will be a significant impact on the existing roadways in the area. As a result, we have concerns regarding safety and long-term maintenance issues.

To mitigate some of the impact we would like to recommend that some of the following design considerations be included in the final roadway plans.

1. It doesn't appear reasonable that there would be an improvement to the vertical and/or horizontal alignment of Ingham Hill Road. It may be desirable to retain the existing roadway but we have serious concerns about the safety for pedestrian and bicycle traffic due to the increase of traffic. We recommend that the developer be required to build a pedestrian/bicycle walkway from the development to I-95.

2. With regards to concerns of the roadways within the Preserve we recommend traffic calming design features be included and that a maximum roadway width of 24' be considered.

3. With regards to drainage we would recommend that every attempt be made to design the roadway without curbing or catch basins. This feature would automatically reduce long-term maintenance concerns, would not provide a breeding place for mosquitoes and would not create a point source of pollution.

4. It would be our desire to have a clear roadside. Our recommendation is to make every attempt to not have guardrails installed and that the slopes be flattened.

5. We also ask that there be conditional approval based on access onto Route 153. We ask that access to Route 153 be in place at least midway through the project. We do not want to overburden Ingham Hill Road with additional traffic during the construction period.

6. This office is also opposed to "major collector roads" for the Preserve subdivision. All roads approved for this subdivision should be local residential streets.

Thank you for your consideration of the above stated concerns.

Jacobson

October 16, 2000

Ms. Judith Gallicchio, Chairman
Planning Commission
Town of Old Saybrook
302 Main Street
Old Saybrook, Connecticut 06475

Re: The Preserve Residential Subdivision
and Golf Course Development
Alternate Design Standards Review
NLJ# 0719-0005

Dear Ms. Gallicchio:

The Applicant for the above referenced pending application to the Planning Commission has indicated that he would like to incorporate alternate standards in the design of the roadways and stormwater management facilities within the proposed development. The request is being made in accordance with Section 2.6.3 of the Town of Old Saybrook Design and Construction Specifications and the recent Board of Selectmen policy statement with regard to alternate design standards.

We have met with the Applicant and his consulting engineers, and have reviewed a memorandum from Ted Hart, P.E. of Milone & Macbroom, Inc. dated October 5, 2000 (copy attached herewith) that summarizes the discussions held during our meeting and the consensus of ideas that was reached.

We are in general agreement with the alternate design standards to be incorporated as identified in the memorandum with the exception of a proposed twelve (12) percent maximum road grade. We note that the intent of increasing the maximum road grade from ten (10) to twelve (12) percent was to reduce the depths of cut and fill, and the resulting limits of disturbance associated with roadway construction. However, based on discussions with the Public Works Director regarding snow plowing requirements and a field survey of the grade of several roads in Town where he has experienced difficulties, we believe that the current maximum road grade of ten (10) percent should be held for the design of all roadways within the development.

It is our opinion that the proposed alternate design standards represent current engineering practice and their incorporation into the design of the project is in accordance with the Board of Selectmen's policy with regard to minimizing potential impacts to the environment, reducing the Public Works Department operation and maintenance costs and maintaining and enhancing the character of the Town of Old Saybrook.

Nathan L. Jacobson & Associates, Inc.
Nathan L. Jacobson & Associates, P.C. (NY)
86 Main Street P.O. Box 337 Chester, Connecticut 06412-0337
☎ (860) 526-9591 Fax (860) 526-5416
Consulting Civil and Environmental Engineers Since 1972

Jacobson

Ms. Judith Gallicchio, Chairman
Re: The Preserve Residential Subdivision
NLJ# 0719-0005
October 16, 2000
Page 2

Upon having had a chance to review this letter, please do not hesitate to contact me should you have any questions.

Very truly yours,

NATHAN L. JACOBSON & ASSOCIATES, INC.

Michael J. Ott, L.S.
Project Engineer

MJO:mjo

Enclosure

cc: Michael A. Pace, First Selectmen, w/encl.
Christine N. Rosenthal, AICP, Town Planner, w/encl.
Lawrence Bonin, Director of Public Works, w/encl.
Edward C. Cole, Chairman, Inland Wetlands and Watercourses Commission, w/encl.
J. H. Torrance Downes, CRERPA, w/encl.
Timothy Taylor, The Preserve, LLC, w/encl.
David M. Royston, Esq., Dzialo, Pickett & Allen, P.C., w/encl.
Edward A. Hart, P.E., Milone & MacBroom, Inc., w/encl.
File, w/encl.

DRAFT
MEMORANDUM

TO: Attendees, Planning Commission, Board of Selectmen

FROM: Ted Hart, P.E.
Milone & MacBroom, Inc.

DATE: October 5, 2000

RE: The Preserve – Alternate Road Standards
Old Saybrook, CT
MMI #2065-01-1

Attendees: Torrence Downs, CREPA
Michael Ott, Nathan L. Jacobsen & Associates, Inc.
Jeff Jacobsen, Nathan L. Jacobsen & Associates, Inc.
David Royston, Dzialo, Pickett & Allen, P.C.
Tim Taylor, The Preserve, LLC
Jim MacBroom, Milone & MacBroom, Inc.
Ted Hart, Milone & MacBroom, Inc.
Darin Overton, Milone & MacBroom, Inc.

Introduction

Milone & MacBroom, Inc. has been retained to help prepare plans and supporting technical data for The Preserve, a 1,000± acre project in Old Saybrook and portions of Essex and Westbrook. We have inspected the site, assessed local land use regulations, met with Town staff and consultants, and reviewed the site plans prepared to date.

It is our opinion that the project size and scope warrant consideration of low impact development criteria that facilitate reduced site disturbance and minimize off-site stormwater related impacts. The fundamental concept is to reduce impervious cover, preserve existing vegetation, encourage groundwater recharge, control non-point sources of pollution, and to replicate natural runoff patterns as much as possible.

A meeting was held on October 5, 2000 in the Old Saybrook Town Hall to review the proposed alternative roadway design standards for The Preserve. The general consensus was to incorporate the following standards into the design of The Preserve.

Proposed Alternative Roadway Design Standards

Width of Pavement (Local Residential Street):

- Through street — 24 feet
- Dead end (cul-de-sac) street — 20 feet for 10 homes or less, 22 feet for more than 10 homes
- Cul-de-sac — Center islands are acceptable
  Provide 60' right-of-way radius
  Design for SU-30 design vehicle

DRAFT

Curbing:

- Avoid where possible – Limit to:
  - within 100 feet of intersections
  - roadway grades over 6 percent
  - fill area's greater than 6 feet
- Use low "Cape Cod style" curbs for aesthetics

Lane Arrangement:

- Permit boulevard style roads with center islands

Shoulders:

- Provide 6 foot wide shoulder, loamed and seeded
- Slope shoulder away from pavement
- Extend structural subbase and processed aggregate base 3 feet beyond edge of pavement where no curbing is installed
- Minimize clearing, grading and tree removal (especially in the front setback)
- Coordinate with utility companies for location of their facilities in a right-of-way. A wider shoulder may be necessary in certain areas to provide proper width for utility installation.
- Drain shoulders to open swales where appropriate
- Provide adequate shoulder area for utility facilities

Design Speed:

- No change in the design speed criteria

Grade:

- Maximum road grade may be increased to 12% for a distance of 300' where necessary to reduce cuts and fills. Length of maximum road grade is to be measured between points of vertical tangency.

Stormwater Management and Drainage:

- Minimize use of conventional catch basin and pipe drainage systems
- Install conventional drainage system in areas where curbing is required
- Encourage sheet flow and vegetated swale drainage. Provide paved leak-offs or outlets past road shoulders
- Provide lateral swales generally perpendicular to road and along property lines, where possible
- Provide depressed grassed islands in the center of cul-de-sac to collect stormwater runoff
- Incorporate stormwater quality management into drainage system using multiple best management practices
- Provide CLCB inlets at curbless road sags to drain winter snow/ice melt
- Analyze multiple storm frequencies
- Analyze/minimize cumulative off-site drainage impacts

Memorandum

To:	Christine Nelson, Goeff Jacobson	**BL Project:**	The Preserve
Company:	Town of Old Saybrook	**BL Project No.:**	01c955-F
From:	Mark E. Moriarty, P.E.	**Copy to:**	
Date:	09/16/04		

Re: **Roadway Design Standards**

PRESERVE ROADWAY DESIGN STANDARD SUMMARY

The Preserve site involves ten (10) residential roadways that together have a total length of approximately 4.9 miles. The standards followed for the design of these roadways are in accordance with the Town of Old Saybrook's "Local Residential Street" classification. Additional consideration is given to whether a local street is a through street or a cul-de-sac. In general the Preserve roadways meet or exceed the design criteria listed in Table 1 of this memorandum. Road design issues mostly involve our interpretation of the Town's 2000 Policy Statement. The purpose of this memo is to coordinate larger scale issues that affect the design of the Preserve roadways, and for the Town to verify that our interpretation of their Policy Statement meets their intent. This needs to occur prior our finalizing our design and submitting permitting drawings.

Various Design Standards have been utilized for the design of the Preserve roadways including:

- "Design and Construction Specifications of the Town of Old Saybrook, Connecticut" (DCS) dated December 19, 1974
- "Old Saybrook Subdivision Regulations" (SR) dated May 21, 1997
- Town of Old Saybrook's "Policy Statement" regarding alternate design standards
- Connecticut Department of Transportation's "Guidelines of Highway Design", 2003 Edition AASHTO's Policy on the Geometric Design of Highways and Streets, dated 2001
- 2002 CT Guidelines for Soil Erosion and Sediment Control were used.

The following table shows the basic design criteria that the design of the Preserve roadways follows:

Table 1 – Preserve Roadway Design Standard

Item	Unit	Town Standards
Pavement Width	Ft	26' Local Streets 20' Private Street R=50' cul-de-sacs (DCS 3.3 & SR 5.3.4 & 6.4.4)
Minimum Radius	Ft	250' with N.C. (DCS 3.7 & SR 6.4.1)
Maximum Grade	%	10.0% 3.0% Turnarounds / Cul-de-sacs (DCS 3.4 & SR 6.4.2)
Minimum Grade	%	1.0% (DCS 3.4 & SR 6.4.2)
Roadway Cross slope	Ft/Ft	2.0%
Stopping Sight Distance	Ft	200' (DCS 3.5 & SR 6.4.2)
R.O.W.	Ft	50' 75' Cul-de-sacs (DCS 3.2 & SR 6.4.4)
Min. Tangent Length between Reverse Curves	Ft	50' (SR 6.4.2a)
Max. Cul-de-Sac Length	Ft	1,000' (SR 5.3.4)
Min. angle for Intersecting Roads	Deg.	60° (DCS 3.6.2)

Roadways design objectives include:

- Accommodating a SU design vehicle turning movement
- Provide a suitable length at 1%-3% landing for the minor leg of intersecting roads
- Utilize roadway alignments that minimize disturbance to the existing topography and the environment
- Utilize design methods to coincide with the ideas expressed in the Town's Policy Statement on Alternate Design Methods

The following is a basic description of some of the critical design issues associated with the design of the Preserve Local Residential Streets.

PRESERVE THROUGH ROAD - ROAD A

Road A will serve as the main through road for the Preserve. It will have a total length of 13,320 lf±, and will connect Route 153 on the site's western end to Bokum Road on the project's eastern end. The first 450 lf± of Road A on its western end will be located in Westbrook. It acts primarily as a residential collector street, and as proposed, does not provide direct access to any residential properties. Typical cross sections developed for Road A were developed based on the concepts discussed in the Town's 2000 Policy Statement and utilize low gradient vegetated swales, minimize the use of curbing and encourage sheet flow, strive to reduce the Town's operation and maintenance costs, and incorporate a shared bike and pedestrian lane into the roadway. By utilizing these alternate design standards in some cases Road A does not meet the Town's Design and Construction Specifications or Subdivision Regulations.

Typical cross sections for Road A have been included with this submittal, and should be referred to visualize how the alternate design standards have been used.

Basic design information for the design of Road A is as follows:

1. ROW width varies from 54-86 feet (86' at entrance boulevard)
2. Pavement width is 24 feet
3. Grades vary from 1 to 10%
4. Length is 13,319.71 feet
5. Centerline horizontal curve radii vary and meet minimum
6. Vertical sight distances vary and meet minimum
7. Length of 1-3% grade landings meet minimum of 50 feet
8. Street intersection angles are 70-90 degrees
9. Boulevard entrance at Rt. 153 with designated right and left turns leaving the site onto Rt 153

CUL-DE-SAC AND VILLAGE ROADWAYS – ROADS B-K

Other Local Residential Streets proposed within the Preserve involve four (4) small cul-de-sacs that intersect Road A (Roads B,C,D,K), one (1) road through the main village area (Road I), and four (4) roads on the eastern end of the site that are associated with the East Village Area and the Estate lots. To reduce impacts and in accordance with the 2000 Policy Statement a reduced roadway width of 18 to 22 feet and reduced shelf widths of 5 to 6 feet have been proposed for these roads. Where practical items such as low gradient vegetated swales and minimizing the use of curbing to encourage sheet flow will be utilized. In most cases the ability to use roadside swales is limited on the roadways do to steeper roadway profile grades (5.0% to 10.0%) on the cul-de-sacs and the urban setting of the two village area. Due to this curbed roadways with closed drainage systems are proposed in most of these areas. The use of porous pavements is being strongly considered for some uses along these roadways to further encourage groundwater recharge, and lessen overland runoff flows.

A typical cross section for these roads has been included with this submittal. Other typical sections that utilize roadside swales will be developed during the permitting phase as site conditions allow. Basic design information for the design of Preserve Roads B-K is as follows:

Road B

1. 1st cul-de-sac in from west intersecting Road A
2. ROW width is 50 feet
3. Pavement width is 18 feet
4. Grades vary from 1-8%
5. Cul-de-sac grade is 1%
6. Turnaround ROW radius is 60 feet
7. Length is 504.85 feet to ROW
8. Centerline horizontal curve radii vary and meet minimum
9. Vertical sight distances vary and meet minimum
10. Tangent length from intersection is 140.92 feet
11. Length of 1-3% grade landing is 39 feet
12. Street intersection angle is 72 degrees

Road C

1. 2nd cul-de-sac in from west intersecting Road A
2. ROW width is 50 feet
3. Pavement width is 22 feet
4. Grades vary from 1-10%
5. Cul-de-sac grade is 1%
6. Turnaround ROW radius is 60 feet
7. Length is 1060.67 feet to ROW
8. Centerline horizontal curve radii vary and meet minimum
9. Vertical sight distances vary and meet minimum
10. Tangent length from intersection is 114.44 feet
11. Length of 1-3% grade landing is 50 feet
12. Street intersection angle is 76 degrees

Road D

1. West boulevard entrance to east village intersecting Road A
2. ROW width is 50 feet
3. Pavement width is 20 feet for two-way traffic without on-street parking
4. Pavement width is 28 feet for two-way traffic with on-street parking
5. Grades vary from 1-10%
6. Length is 1300.34 feet from Road A to Road F intersection; 1510.22 feet from Road F to Road E intersection
7. Centerline horizontal curve radii vary and meet minimum
8. Vertical sight distances vary and meet minimum except for sta. 23+37.66 (Road F intersection sag curve) designed as a comfort curve for 34 mph design velocity with street lighting at Road "F", vertical curve length of 500 feet resulting in approximately 150 feet of site distance.
9. Tangent length from intersection is 156.65 feet
10. Length of 1-3% grade landings meet minimum of 50 feet
11. Street intersection angles are 60 and 62 degrees

12. Boulevard entrance at Road A intersection provides 2-18' Travel Lanes and maintains 12' wide landscaped median

Road E

1. Estate lot road intersecting Road F
2. ROW width is 50 feet
3. Pavement width is 22 feet
4. Grades vary from 1.2-7.8%
5. Length is 1366.04 feet from Road F to Road D intersection; 899.53 feet from Road D to Road G intersection
6. Centerline horizontal curve radii vary and meet minimum
7. Vertical sight distances vary and meet minimum except for sta. 11+26.08 (1st sag curve) designed as a comfort curve for 35.49 mph design velocity, vertical curve length of 130 feet resulting in approximately 168 feet of site distance
8. Tangent length from intersection is 220.62 feet
9. Length of 1-3% grade landings meet minimum of 50 feet
10. Street intersection angles are 83 and 90 degrees

Road F

1. East entrance to East village intersecting Road A
2. ROW width is 50 feet
3. Pavement width is 22 feet
4. Grades vary from 3-8.5%
5. Length is 466.93 feet
6. Centerline horizontal curve radii vary and meet minimum
7. Vertical sight distances vary and meet minimum except for sta. 11+06.56 (1st sag curve) designed as a comfort curve for 35.61 mph design velocity, vertical curve length of 150 feet resulting in approximately 164 feet of site distance
8. Tangent length from intersection is 134.76 feet
9. Length of 1-3% grade landing is 31 feet
10. Street intersection angles are 63 and 75 degrees

Road G

1. Double-ended cul-de-sac
2. ROW width is 50 feet
3. Pavement width is 20 feet
4. Grades vary from 1-5.65%
5. Cul-de-sac grades are from 1-3%
6. Turnaround ROW radius is 60 feet
7. Length is 521.60 feet to ROW
8. Centerline horizontal curve radii vary and meet minimum
9. Vertical sight distances vary and meet minimum

Road H

1. West road in main village connecting Road A and Ingham Hill Road
2. ROW width is 50 feet w/ parking
3. Pavement width is 22-30 feet
4. Uses 2-11' travel lanes and provides a 8' parking lane for a portion of its length

5. Grades vary from 1-5%
6. Length is 2964.21 feet
7. Centerline horizontal curve radii vary and meet minimum
8. Vertical sight distances vary and meet minimum
9. Tangent length from intersection is 30.41 feet
10. Length of 1-3% grade landings meet minimum of 50 feet
11. Street intersection angle is 90 degrees
12. Provides a gated access to and from Ingham Hill Road

Road J

1. 3rd cul-de-sac in from west intersecting Road A
2. ROW width is 50 feet
3. Pavement width is 20 feet
4. Grades vary from 1.75-6%
5. Cul-de-sac grade is 3%
6. Turnaround ROW radius is 60 feet
7. Length is 670.64 feet to ROW
8. Centerline horizontal curve radii vary and meet minimum
9. Vertical sight distances vary and meet minimum
10. Tangent length from intersection is 129.80 feet
11. Length of 1-3% grade landing is 133 feet
12. Street intersection angle is 90 degrees

Road K

1. 4th cul-de-sac in from west intersecting Road A
2. ROW width is 50 feet
3. Pavement width is 20 feet
4. Grades vary from 3-10%
5. Cul-de-sac grade is 3%
6. Turnaround ROW radius is 60 feet
7. Length is 600.93 feet to ROW
8. Centerline horizontal curve radii vary and meet minimum
9. Vertical sight distances vary and meet minimum except for sta. 14+46.95 (sag curve) designed as a comfort curve for 25.77 mph design velocity, vertical curve length of 100 feet resulting in approximately 105 feet of site distance
10. Tangent length from intersection is 240.77 feet
11. Length of 1-3% grade landing is 52 feet
12. Street intersection angle is 82 degrees

TOWN OF OLD SAYBROOK
SELECTMEN'S OFFICE

302 Main Street • Old Saybrook, Connecticut 06475-2304
Telephone (860) 395-3123 • Fax (860) 395-3125

TOWN OF OLD SAYBROOK
REGULAR MEETING OF THE BOARD OF SELECTMEN
Thursday September 16, 2004
6:30 p.m.
In the Program Room, Acton Public Library
MINUTES

Board of Selectmen met in regular session on Thursday, September 16, 2004 at 6:30 p.m., in the Program Room at the Acton Public Library.

PRESENT: First Selectman Michael A. Pace, Selectman William Peace. Selectman Velma Thomas arrived at 6:35 p.m.
Others present: John Torrenti, Chairman Republican Town Committee, Jim Keating, members of the press and interested citizens.

I. CALL TO ORDER
First Selectman Michael Pace called the meeting to order at 6:31 p.m.

II. PLEDGE OF ALLEGIANCE
First Selectman Michael Pace led those in attendance in the Pledge of Allegiance.

III. COMMENTS FROM THE PUBLIC
Comments were taken from the Public.

IV. COMMENTS FROM THE SELECTMEN
First Selectman Pace spoke of the Planning Commission Meeting last night, 9/15/04, and the review and gain of support on the 4 major issues (South Cove, Attainable Housing, Old Town Hall Conversion and the Donnelly's Property). He was very pleased and proud of the attendance and initiative of the Legislative Body. First Selectman Pace noted his appointment to the Board of Directors of CCM and CIRMA as well as serving on several subcommittees.

Selectman William Peace stated that he continues to maintain dialogue with people involved with the I-95study and the rail corridor. He noted the improvements will not happen until 2022 at a cost of approximately 2 billion dollars. He stated, what to do between now and then is push for a Metro North type service between New York and Boston.

Selectman Peace thoroughly endorsed the concept of alternate road specifications that include zero curbs, catch basins or guardrails. Selectman Peace expressed concern about the 10% grade. In regards to the fire protection, Selectman Peace did not feel one truck and four firemen on site could fight a fire. Selectman Peace stated concern with the three large bridges and the cost to maintain them would place an unreasonable burden on the town. Also, mentioning the small Public Work crew now available and the role they will play vs. the 5 miles of road staying private. Mark Moriarty outlined the planned roadway design to include 10 residential roads and intended to follow the Town's Alternate Design Standards. Selectman Peace stated concern for impact on Bokum Road, responsibility for road improvements on Bokum Rd. and at the intersection of Bokum and Rte. 154. Selectman Thomas commented on the bus turn around on Bokum Road and that the roadway is one of the most difficult and dangerous roadway's in our town. Selectman Peace and First Selectman Pace both agreed. Selectman Peace asked Attorney Royston about roadway improvements on Bokum Road to mitigate safety concerns. Attorney Royston indicated the improvements were not the developer's responsibility. Attorney Dave Royston commented on the obligation of the off site improvements to be paid for by the developer. Selectmen Peace and Thomas noted concern on the grade percentage on the roadway between Rte. 153 to Bokum Road (Road A). Moriarty stated the grades vary from 1% to 10% and the roadway profile is exaggerated. Selectman Thomas commented as to jogging on Road A. Moriarty noted alongside Road A is an 8 ft. bituminous bike lane/sidewalk Two and half miles from Rte. 153 to Bokum Road (Road A).

First Selectman Pace commented as to the soil type being found on Road A? Is it soft and any heaving? Moriarty stated profile grades allow for grass drainage swales for storm water drainage. First Selectman Pace noted concern with the cut backs, swales, trees and drainage; trying to maintain the aesthetics of a country road while letting sunlight onto the roadway and not to canopy over for potential icing. Also, the issue of streetlights and the environmental impact of illumination. First Selectman suggested a joint meeting with WPCA.

Selectman Thomas questioned if there is a way to design a bridge, to simplify it so it is less expensive. Moriarty stated environmental requirements to satisfy the balance of concerns with regard to the wetlands and wildlife helped determine the selected crossing point with least environmental disruption.

First Selectman Pace commented as to little impact as possible on the ground; alternate road design; exemplary in NEMO project. The tree line should not be clear cut and recommended no streetlights.

First Selectman Pace commented on the waste water system and if the system should fail who is responsible for the maintenance and upkeep. Attorney Royston stated the Association is responsible. First Selectman Pace noted that because it is a private system our Town inspector will need to be allowed to inspect it and suggested a future document in that regard be provided.

Section V

Connecticut Water Company
93 West Main Street
Clinton, CT 06413-1600

Office: 860.669.8636
Fax: 860.669.9326
Customer Service: 800.286.5700

ConnecticutWater

November 3, 2004

Mr. William T. Fries
BL Companies
355 Research Parkway
Meriden, CT 06450

Re: The Preserve

Dear Mr. Fries:

After reviewing our current water supply and distribution facilities, we can adequately serve your proposed 248 unit residential project, as illustrated and titled The Preserve, Master Plan Prelim. Water Layout dated 6/11/03, provided sufficient storage facilities are provided on site to deliver adequate domestic and fire protection service and a tie in to CWC's existing distribution system mains in Westbrook and Essex. The residential water supply average day demand for this project has been estimated at 100,000 gallons per day. The proposed water storage tank, nominal one million gallons, needs to be located so that its overflow is at elevation 300' USGS. This project will also require substantial capital improvements off site to make this water available to properly serve your development.

It is our understanding that irrigation water for the golf course portion of this development will be provided by on site wells.

If you have any questions, or require additional information, please contact Keith Nadeau, at 860-669-8630 ext. 3052.

Sincerely,

James R. McQueen
Sr. Vice President

JRM/kan

Section VI

BL Companies

PLANNING COMMISSION EXHIBIT #54 VI
(same as EXHIBIT #51)

November 5, 2004

Mr. Jay Northrup, AICP
Town Planner
Mulvey Municipal Center
866 Boston Post Road
Westbrook, CT 06498-1881

Re: The Preserve; Clarification of Programmatic Elements

Dear Mr. Northrup,

We are providing the following information as promised in my letter of October 20, 2004. We hope this will address the questions or concerns the Town of Westbrook (the "**Town**") may have. I will start by addressing Attorney Bennet's letter of October 12, 2004. Many elements he raised are similar to those in Attorney Branse's letter of June 3, 2004.

Alternative Procedures for Creation of a Public Highway

River Sound ("**RS**") will file all site plan applications the Town believes are legally necessary. RS started this process on October 19, 2004 by filing an application with Westbrook IWWC. Based upon Attorney Bennet's letter and with respect to creation of a public highway, the determination about how to proceed is now up to the Board of Selectman. We await the Town's direction on this matter. Once that direction is given, we will proceed as necessary.

To assist the Board in making their determination, we are providing the following additional information and clarification. Although we acknowledge our responsibility to provide this information, previously the design process had not progressed sufficiently to enable us to respond with complete and accurate information. We now are able to do that and offer the following information you requested:

The Program

1. **The Pianta Parcel**

   Under the Section 55.6.2 of the Old Saybrook Zoning Regulations, we are allowed to develop up to eight (8) bedrooms per acre (excluding wetlands) in forms typical for residential development. However, upon completion of our due diligence and preliminary site development plans for the

Pianta Parcel we understand the site has a carrying capacity which restricts us from obtaining the maximum allowable density.

Therefore, our proposal will show no development beyond 105 bedrooms (35 village units). We are willing to place this restriction in the Declaration of Restrictive Covenants. Development which may occur on the Pianta Parcel will be in the form of a village cluster – consistent in character with the village clusters we are proposing on the main development site and under the same covenants. We have included a Master Plan for this parcel with the Westbrook IWWC application.

The planning and engineering of the proposed 248 units and golf course has taken the Pianta Parcel Master Plan into consideration. Similarly, our traffic study, stormwater management of the roadway (Road A), community septic system and environmental studies have taken into account development on this parcel. The traffic study, previously submitted to the Town, contains a separate appendix discussing the Pianta Parcel Master Plan. The community septic system has been designed to accommodate the sanitary flows from the development of 105 bedrooms. The Town has received details on the construction of the leach area and a summary of the proposed system.

Stormwater management of Road A that traverses the site also has been coordinated with the Pianta Parcel Master Plan. However, because the Pianta Parcel Master Plan is a conceptual plan, it is still preliminary in nature. Stormwater management will be addressed in more detail when a site plan application is made to the Town of Old Saybrook. Westbrook has received the details of the Trout Brook Watershed Stormwater Management Program. The Pianta Parcel is not within this watershed.

2. Access to Trails and Golf Course

The Town of Old Saybrook has expressed interest in taking ownership in fee of all open space at The Preserve. It is envisioned that such open space will contain a circuit of earthen trails connecting to various points within the development and to open space and trails owned by Old Saybrook and that it will be open to use by Westbrook residents.

In addition, a "greenway" trail will connect from RT 153 in Westbrook to Bokum Road. This greenway will be separated from the spine road by vegetation, topography and guide rails. This greenway will also connect to trails within The Preserve's open space. An open-air pavilion, trailhead and parking area (in close proximity to Westbrook) will be easily accessible from the greenway.

The golf course at The Preserve will be open for the Westbrook and Old Saybrook high school student golf teams at no cost. The course will be private, however, membership will be open to the general public, not just to the Preserve residents.

3. Construction Traffic

As a point of clarification, we have not submitted final site plan application for a subdivision in Old Saybrook. As discussed in the October 20 letter, that application is preliminary only. Therefore, we were not previously in a position to provide any of the information requested as it relates to construction traffic. Now that an IWWC application has been filed in Westbrook, the plans are developed to a level of detail sufficient to respond to this request.

The site plans provided as part of the IWWC application contain detailed grading plans. In addition, a general construction phasing plan has been developed and is included with the application. We have proposed three (3) development phases. We have taken care to ensure each development phase is balanced with respect to earthwork – including the development of the golf course. This will minimize the need for importing or exporting material and will thereby minimize truck traffic. Erosion control measures and the provided narrative also correspond to the proposed phasing.

Once site development begins, we estimate that the construction traffic will be on average of ten (10) trips per day.

The applications submitted to the Town of Old Saybrook in support of prior owner's development proposal included restrictions on the use of local residential roads for construction traffic. Specifically, construction traffic was barred from Ingham Hill Road. In recognition of its function and its designation as a scenic road, we anticipate the same restriction will be placed on the use of Ingham Hill Road during construction and that that this restriction will also apply Bokum Road. Accordingly, State Route 153 would serve as the primary access point for construction vehicles. Imported material will come from State Route 9, Exit 3, not from the Route 95/153 interchange.

4. The Entrance Road

Development of The Preserve includes construction of an entrance road at Route 153 in Westbrook. RS has proposed that the land for the entrance road be conveyed to the Town for a Town highway. RS also understands that specific bonding requirements will be required to ensure the approved construction specifications are met.

We appreciate that the Town feels it is reasonable to place signage on the land to be conveyed. We reaffirm our commitment to maintain the land including all plantings and lawn areas within the property.

5. Distribution of Traffic, Access to Ingham Hill Road

We respectfully request that you reconsider your position on the connection between the proposed development and Ingham Hill Road in Essex. Ingham Hill Road is a local residential street with no functionality or history as a collector road which accesses other streets. By contrast, Ingham Hill Road in Old Saybrook has evolved over time into a legitimate collector road as a result of several residential neighborhoods that have been constructed over the past

thirty years. In addition, Ingham Hill Road in Old Saybrook provides regional access to I-95 via Exit 67 and is the only connection from its neighborhoods to the center of Old Saybrook.

Therefore, a proposed Old Saybrook connection between the development and Ingham Hill Road in Old Saybrook is more appropriate from a planning perspective. Our only concern is that this recommendation may be in conflict with Old Saybrook. We therefore recommend that this proposed connection be a strong recommendation from your commission which we will forward to Old Saybrook staff and urge their adoption in the planning process.

6. **Condition of Ingham Hill Road and Bokum Road**

The proposed roadway connections between The Preserve and Ingham Hill Road and Bokum Road in Old Saybrook provides a unique opportunity to dramatically improve public safety and emergency vehicle access. This is accomplished in several ways.

First, the construction of a proposed fire station with a residential apartment will provide significantly improved first responder time to residents of The Preserve, and to residents of the surrounding neighborhoods in the northern reaches of Old Saybrook, as well as the southern most neighborhoods in Essex. The need for a substation in this neighborhood has been in discussion by both the Towns of Westbrook and Old Saybrook for well over a decade, and its implementation will ensure that public safety in this region dramatically improves immediately upon implementation.

Second, the construction of the proposed boulevard between State Route 153 in Westbrook, and Bokum Road in Old Saybrook is yet again a solution to a long debated problem of finding a suitable location for an east-west connector road between these two areas. When called upon, the travel time for fire and other emergency vehicles will be significantly reduced following the completion of this connector road.

Finally, improvements are proposed at both the access points along State Route 153 and Bokum Road, and these will ensure that vehicles can safely enter, exit and travel thru the vicinity of both locations. Isolated additional improvements may be desired along Bokum Road following review by the Legal Traffic Authority (LTA) in the Town of Old Saybrook along the stretch between State Routes 154 and 153.

In aggregate, these traffic improvements not only mitigate proposed impacts to The Preserve, but dramatically improve public safety for neighborhoods its surrounds. With the proposed roadway connections and fire substation in place, this development might actually save lives over the long term.

7. **Drainage Discharges**

We have provided the Town with detailed drainage analysis and design as part of our IWWC site plan application. This application includes site plans depicting all stormwater management measures within each of the three (3) watersheds. In addition, we have provided the Town with complete hydraulic calculations and analysis as it pertains to the Trout Brook Watershed.

8. Residential Units and Support Buildings

None of the support buildings within the development will be for public use or for use by the residents of the Preserve. This will be clarified in the Declaration of Covenants Restrictions.

We believe that the 10,000 SF of maintenance buildings outlined within our June 30 response is reasonable. Our proposal of 10,000 SF is in line with that of Fox Hopyard referenced in Attorney Bennet's letter. Our 10,000 SF breaks down as follows: 4,720 SF of office/workshop space, 2,700 SF of enclosed maintenance space, and 1,625 SF of chemical storage for a total of 9,045 SF. Fox Hopyard's maintenance facility is a total of 9,700 SF.

9. Nature Center

As previously mentioned, the Town of Old Saybrook has expressed interest in taking ownership of the open space system, which includes the nature center and its parking area. We will be providing the Old Saybrook Board of Selectmen a draft of the deed for their review with the suggestion that the nature center and open space be open for public use and not restricted solely to Old Saybrook residents. Our proposal to Old Saybrook is to have the nature center and trail system open to Westbrook residents on the same basis as Old Saybrook residents.

10. The Golf Course Facility

The golf course will have 375 full members and 125 social members. Members will not have to be residents of the Preserve. The memberships will be family memberships, typical of golf clubs of this nature.

Our IWWC application includes floor plans for not only the golf club house but also the maintenance area and all other "public" buildings proposed – including use areas and building elevations. In drawing parallels to other golf courses, it is necessary to consider comparable facilities that cater to market segments that are similar to The Preserve. The Town has compared the Preserve's golf course with three facilities. Two of those facilities are not similar. They are older, cater to a different market, and are open for public play.

I. Minnechaug Golf Course, Glastonbury, CT: Minnechaug, as you noted, is a 9-hole public golf facility. It has been an unsuccessful venture. At one time, it consisted of 18 holes. Subsequently, nine (9) holes were sold and those nine (9) holes now consist of dense single-family housing, something that will be restricted from occurring at The Preserve. This is not a reasonable comparison.

II. Fox Hopyard, East Haddam, CT: Fox Hopyard is a reasonable comparison as it is within close proximity of The Preserve's market and is relatively new. However, our research shows that the data supplied in Attorney Bennet's letter is inaccurate. We have consulted the design architect of the Fox Hopyard clubhouse and facilities. The following matrix compares Fox Hopyard with our proposal two facilities:

Use	Fox Hopyard	The Preserve
a. Clubhouse (includes mechanical, storage and circulation)		
Basement	7,000 SF	8,850 SF (see item c below)
First Floor	7,000 SF	8,850 SF (see item d below)
Second Floor	3,500 SF	none proposed
Subtotal	17,500 SF	17,000 SF
b. Outdoor Pavilion for dining and events	2,300 SF	none proposed
c. Pro Shop	3,370 SF	(767 SF) included within Total of clubhouse basement
d. Cart Barn	6,540 SF	(3,600 SF) included within Total of clubhouse basement
e. Maintenance Buildings	9,700 SF	9,045SF
Total Area of All Uses	**39,410 SF**	**26,045 SF**

Fox Hopyard consists of 13,365 SF more area than what RS proposes for the Preserve.

III. Manchester Country Club, Manchester, CT: The Manchester Country Club is a semi private club constructed in 1917. The course is just over 6,000 yards in length. Membership initiation fee is $110 dollars with annual fees ranging from $1,300 – $4,000. This fee structure is the low end of golf course memberships within the golf industry and not consistent with the market area The Preserve is located. The course proposed at The Preserve is designed for a substantially different market, requiring a facility and course that considers modern amenities and features and meets the demands of the target members. Comparing The Preserve with the Manchester Country Club is inaccurate.

We are proposing a golf course and club facility that is modest by today's standards. We have restricted the amenities and uses to ensure that we respect, and adhere to, the Town's and Old Saybrook's traffic concerns. We have designed the golf course with ecology placed in the forefront. We believe the golf course will be a successful business and an asset to the community.

11. Firehouse

The firehouse is centrally located within the proposed development. The facility is a single bay accompanied by miscellaneous support spaces. It will accommodate a ladder truck for structure fires, a brush truck to fight woodland fires and an all terrain vehicle to respond to health emergencies within the open space system and the golf course.

The firehouse also has a one-bedroom apartment to be occupied by a volunteer fire fighter. Since the Old Saybrook fire department is volunteer, no full time personnel will be in place at all times at this substation. The newly-constructed firehouse at The Preserve will assist in fighting fires and increasing the chances that a fire fighter is present at a time of emergency.

The firehouse has been designed for future expansion. Additional apartments/bedrooms can be accommodated and a second bay can be constructed. As you will see on the site plans, the site conditions and architecture has been designed to accommodate this. These plans are supplied within the October 19 IWWC application.

12. Compensation for Lost Taxes

RS stands by its offer to provide a payment in lieu of taxes to the Town. However, Town stakeholders have requested that RS not provide such an offer until local approvals have been secured. If this request has changed, please notify us immediately. We are willing to discuss a PILOT at this time.

The Declaration of Restrictive Covenants

We have reviewed the proposed revisions to the Declaration of Restrictive Covenants and we are in the process of making necessary changes. Revisions will be completed and delivered to you on November 10.

RS respects the Town's needs and concerns relative to the proposed development. We look forward to working through these issues and discussing them with you during the next regularly scheduled Planning Commission meeting on November 15, 2004. We have requested to be placed on the agenda of this meeting via fax correspondence dated November 5, 2004.

We trust that this response and our future meeting will provide you with the information necessary to file a referral with the Old Saybrook Planning Commission.

Respectfully,

Dennis G. Goderre, ASLA, AICP
BL Companies

cc: Tony Palermo, First Selectman
Mark Branse, Special Counsel
Westbrook Planning Commission
Westbrook Zoning Commission
Westbrook Inland Wetlands and Watercourses Commission
Michael A. Pace, First Selectmen, Old Saybrook
Christine Nelson, AICP, Town Planner, Old Saybrook
Old Saybrook Planning Commission
Old Saybrook Zoning Commission
Old Saybrook Inland Wetlands and Watercourses Commission
Sam Stern, River Sound Development LLC
Dwight Merriam, Robinson and Cole
David Royston, Dzialo Picket and Allen

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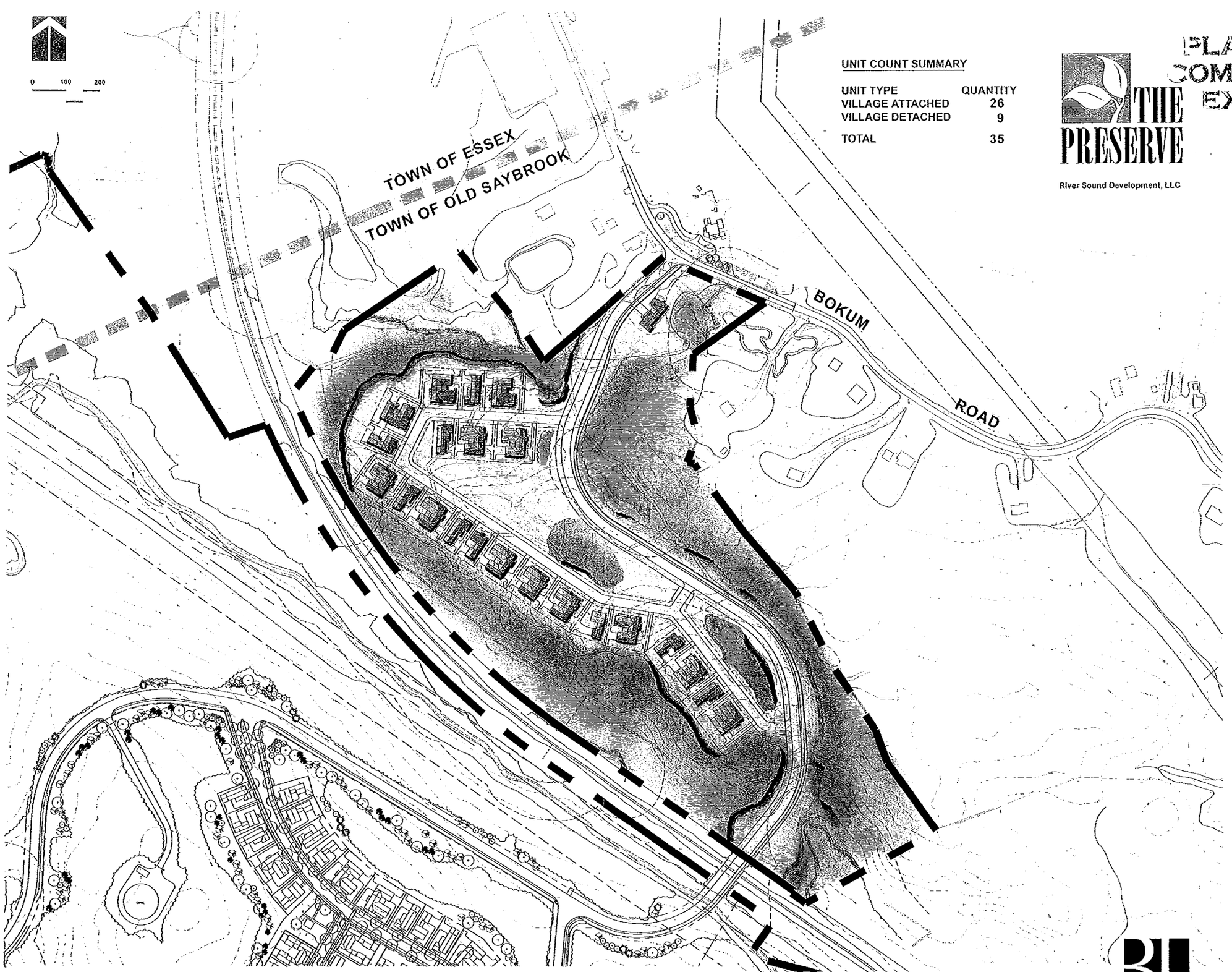
section VII



UNIT COUNT SUMMARY

UNIT TYPE	QUANTITY
VILLAGE ATTACHED	26
VILLAGE DETACHED	9
TOTAL	35

THE PRESERVE

River Sound Development, LLC

PLANNING COMMISSION EXHIBIT #~~S4~~ VII

PIANTA PROPERTY - MASTER PLAN

BL Companies