

**Design Report**  
**Supplement to**  
**Wetland and Site Plan Applications of**  
**Groton Multifamily, LLC**  
**for**  
**Their Property Located at 375 Drozdyk Drive**  
**Groton, CT**

**Updated April 22, 2005**

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## **1. Overview**

This Design Report is intended to be a summary description of the proposed project and its principal design features. The descriptions here are generalized. This Design Report is a supplement to the application(s) and its underlying architectural and engineering plans which should be consulted for specific details.

## **2. Subject Property**

The subject property consists of two parcels totaling 16.96 acres. These two parcels will eventually be merged with a third adjacent 29.64 acre parcel of The Ledges, owned by Groton Community, LLC, creating a total development of 46.60 acres.

The applicant's two parcels and The Ledges parcel are all zoned RMF-12. The smallest parcel consisting of 0.61 acres that was acquired from the State of Connecticut was re-zoned from RMF-20 to RMF-12 on October 1, 2003.

The allowed number of units on the combined properties, based on RMF-12 zoning, is 559 units. When combined, there is a potential for  $559 - 339 = 220$  units on the remaining land to be developed. Our application(s) is/are for a development of 213 units.

## **3. Ownership**

The subject two parcels totaling 16.96 acres are owned by Groton Multifamily, LLC, a Connecticut Limited Liability Company, with its principal address at 1150 Summer Street, Stamford, Connecticut, 06905. The members of the LLC are W. Gary Craig, Gerald F. Egan, Thomas R. Kennedy, Gino R. Partenza, James R. Psaki and John A. Weyer.

Sometime before completion of the development, the subject parcels will be merged with The Ledges property. It is not presently known whether the owning entity will be either Groton Community, LLC or Groton Multifamily, LLC or an entity in which those two companies are members. Regardless of the final name of the entity, for purposes of this application and the Design Report, we will assume that the developments will be operated as one combined development with the residents sharing all of the grounds and amenities.

## **4. Abutters**

The subject property is bounded (beginning opposite Michelle Lane clockwise):

- a. On the south by Drozdyk Drive
- b. On the west by AHEPA: Map 1669917 Block 21 Lot 0394)
- c. On the northwest by The Ledges (Map 1669917 Block 11 Lot 6611, N/F Groton Community, LLC)

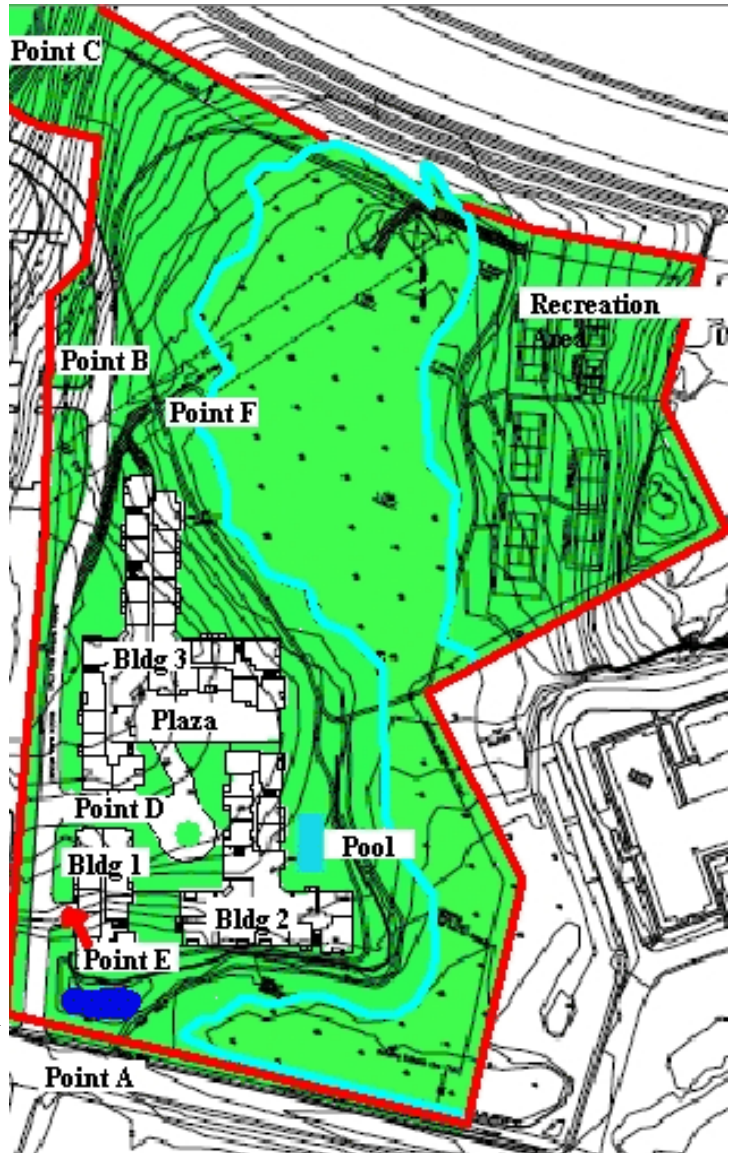
- d. On the extreme northwest by Boulder Heights, LLC (above and west of Point C on Figure 1)
- e. On the north by I-95 and on the east by
- f. Wyndham Falls (Map 169918 Block 31 Lot 2741, N/F Groton Retirement Residence Limited Partnership Holiday Retirement Corp.)

**5. Access**

The primary point of access to the development will be from a private driveway to be constructed intersecting with Drozdyk Drive opposite the existing Michelle Lane (Point A on Figure 1). The driveway has already been named Rock Hill Road on the adjoining Ledges property (Point B) from which it will be extended to Drozdyk Drive.

The possibility exists for a third point of access (Point C) if a connection is made to the Boulder Heights property lying to the northwest of the subject property.

The proposed development will also have an internal driveway (Point D) connecting to Rock Hill Road and leading east between the apartment buildings ending in a circular drive with adjacent visitor parking. We will propose to name that internal driveway Rock Hill Court and will use that name in this report.



**Figure 1 Annotated Site Plan with Building Numbers and Reference Points Cited in the Text**

**6. Project Design**

The proposed project will consist of 213 apartments in three, 4-story buildings constructed above underground parking. Each of the three apartment buildings will share a common

parking facility with one level beneath Buildings 1 and 2 and two levels beneath Building 3. Refer to the rendered site plan in Figure 1 for the building numbers and locations. Each of the buildings has four full floors of apartments; there are no split floors. Cross-hatched areas on the ground surface show proposed locations for "turfstone" surfaced fire access lanes and all weather maintenance access.

The tabulation below shows the number of each type of unit in each building. Also shown is a comparison to The Ledges.

Building Number/Type	1BR Apts	2 BR Apts	3 BR Apts	Total
1/A	20	12	4	36
2/B	34	35	4	73
3/C	56	44	4	104
Total	110	91	12	213
Percent	51.7%	42.7%	5.6%	100%
Ledges	148	156	36	339
Combined Development	258	247	48	552
Combined %	46.7%	44.7%	8.6%	100%

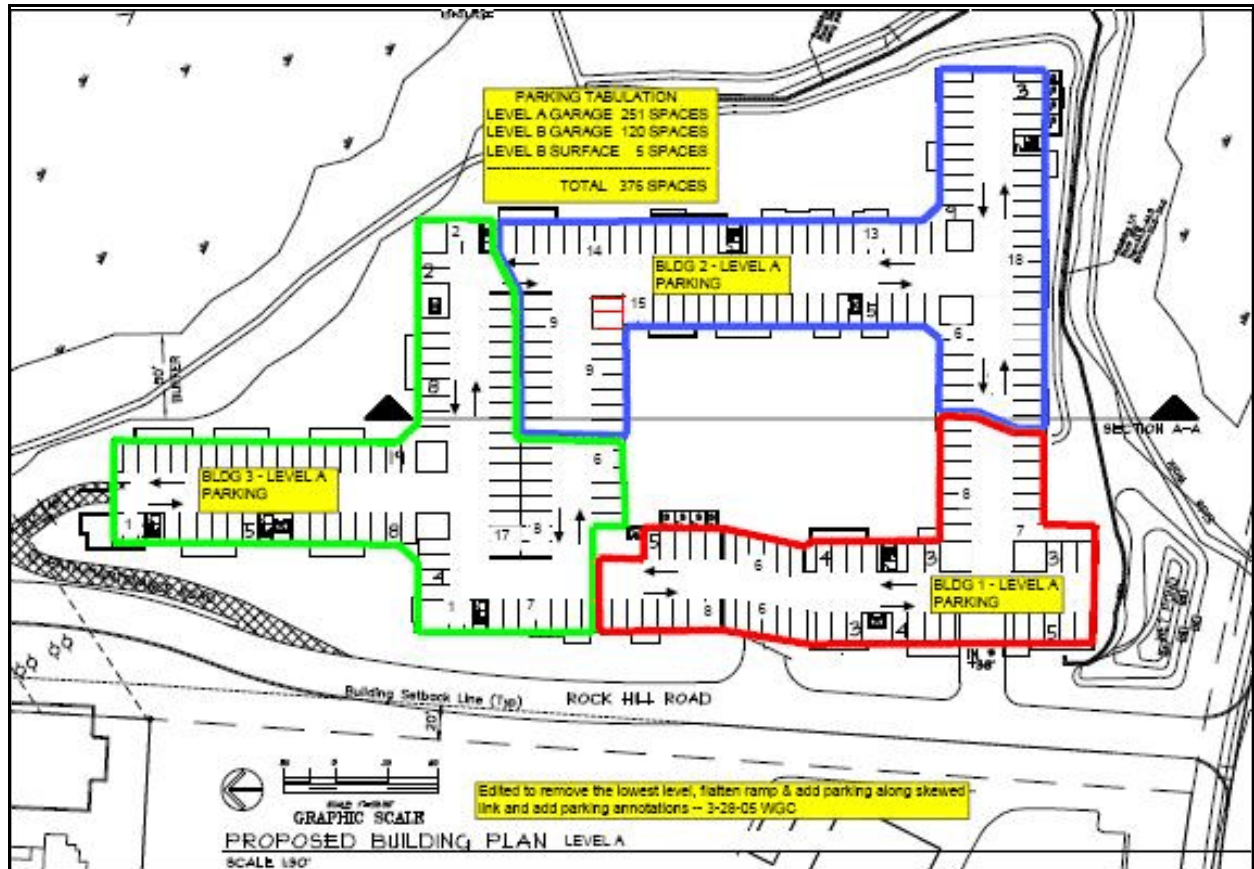
**a. Drawing Priorities**

In the event of any discrepancy between the Architectural and Site Civil Engineering drawings, use the following guidelines:

- i. Architectural drawings control for building and underground parking layout and dimensions.
- ii. Site Civil Engineering drawings control for ground elevations, inverts, slopes and all site details.

**b. Level A - Lowest Level of Parking**

Level A contains 251 parking spaces of below grade parking with an entry and exit directly off Rock Hill Road near Point E. Except for a few areas where there are below grade links connecting the various sections of the parking, areas above the parking support residential buildings. Figure 2 shows the Level A parking marked off with the allocation of parking for each building.



**Figure 2 Level A is the Lowest Level of Garage Parking.**

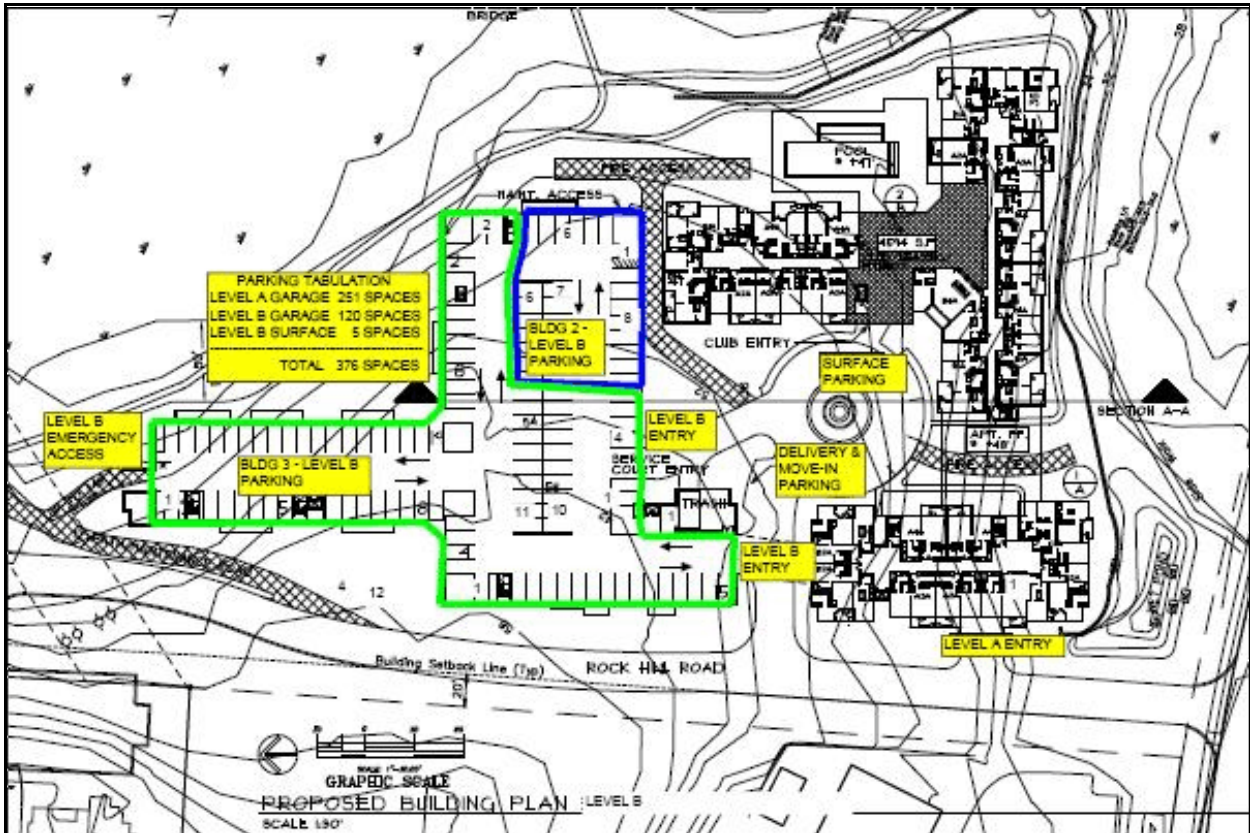
**c. Level B - First Living Level (Bldgs 1 and 2) and Parking under (Bldg 3)**

Level B, the ground floor level of Buildings 1 and 2, the two buildings nearest Drozdyk Drive, is 10 feet below the lowest occupied floor level of the northern building, Building 3. The natural site contours in the vicinity of Building 3 equal the elevation of the ground floor level of that building.

Level B contains 120 parking spaces. The entry into those parking spaces is off Rock Hill Court near Point D. The circular drive contains 5 spaces of visitor parking.

Level B also contains the Clubhouse on the first occupied level. The pool complex is located at this level outside the building on the east side.





**Figure 3 Level B is the Upper Level Garage Parking, Location of Mail and Trash/Recycling Facilities and First Living Levels of Buildings 1 and 2.**

**d. Level C**

Level C is the first living level of Building 3 and the second living level of Buildings 1 and 2. This is also the same level as the plaza, which is the landscaped roof of the Level B parking where it is not covered by Building 3.

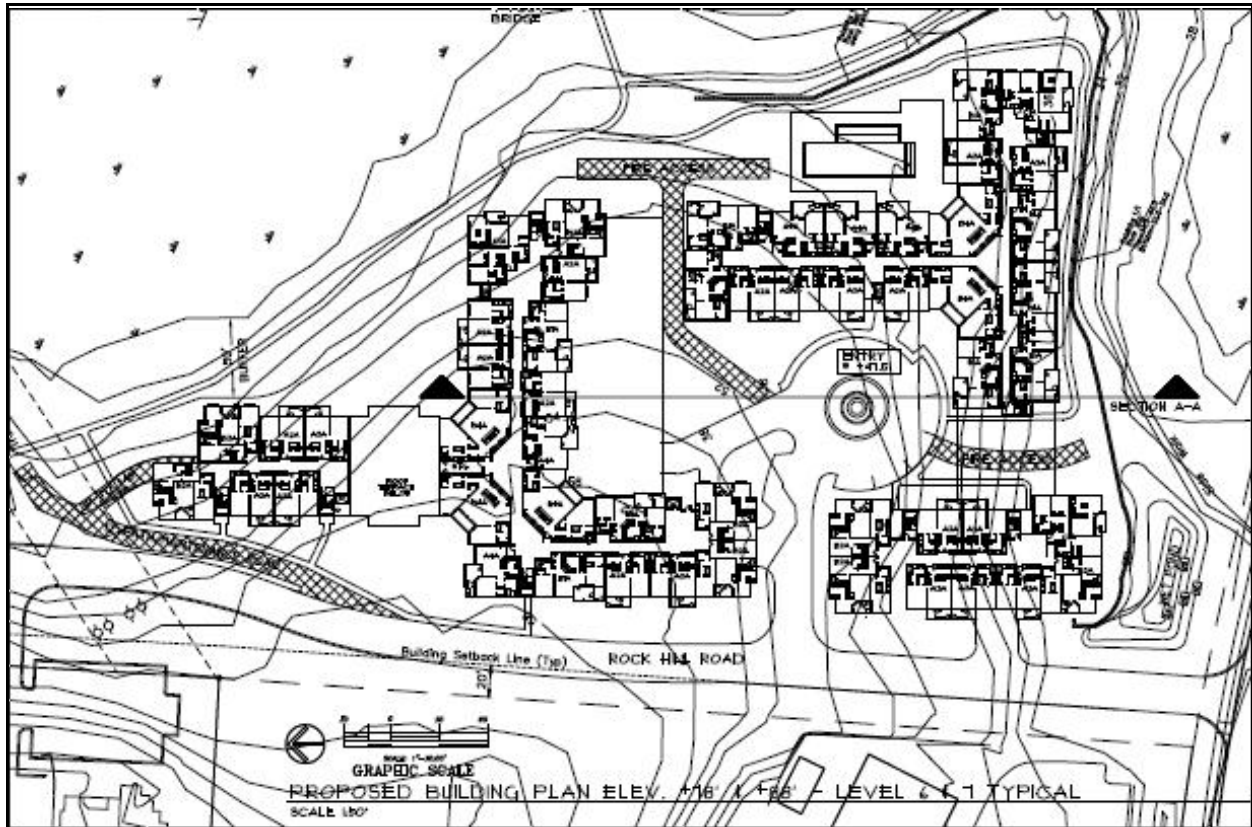
**e. Level D**

Level D looks exactly like Level C except that it is the third living level of Buildings 1 and 2 and the second living level of Building 3.

**f. Level E**

Level E is the fourth and highest level of Buildings 1 and 2. Level E is the third occupied level of Building 3 where the roof terrace provides an amenity area that visually separates the north end of Building 3 from the rest of the complex.





**Figure 4 Level E is the Roof Terrace Level.**

**g. Level F**

Level F is above any of the living levels in Buildings 1 and 2. Level F is the highest living level of Building 3. There is no access to the roof terrace from Level F.

**h. Waiver Requested**

Our proposed design includes 2 buildings (Buildings 2 and 3) that have 3-legged floor plans forming a “Tee” in the case of Building 2, and, a modified “Tee for Building 3,” where one leg of the “Tee” is turned up. The “Tee” shapes add architectural interest to the buildings and provides varying vistas for its residents.

Due to the “Tee” configuration, Buildings 2 and 3 do not meet the written requirement of the Zoning Regulations, Town of Groton, Connecticut, in Section 6.7-6 (Building and Site Requirements), where Paragraph F reads as follows:

“No building footprint (including overhang) shall exceed the bounds of an imaginary circle with a radius of 110 feet.”

Our request for a waiver from this requirement should consider that no element of our proposed design that exceeds the written requirement is clearly visible from publicly-owned property.

We understand that the intention of the 110 foot radius requirement was to prevent construction of long residential buildings having no break in the facade. The buildings proposed in this application have many breaks in their facade due to corners, projections for patios, indents for stairways and elevator shafts and other design features that provide visual relief in addition to material and color changes.

To help quantify those design elements, we prepared the following table from a take-off of the plans that included counting all the changes in direction and measuring the perimeter.

Facade Break Analysis					
Building	Number of Building Corners	Number of Changes of Direction in Facade	Average Distance Between Direction Changes	Longest Dimension Without Facade Break	Maximum per 6-7 - 6B
Building 1	4	36	9.3 FT	53 LF	100 LF
Building 2	10	81	11.2 FT	49 LF	100 LF
Building 3	17	112	12.7 FT	54 LF	100 LF

In support of our request for a waiver, we point out that there are a number of benefits for the citizens of the Town of Groton from granting the waiver. Many of those benefits are listed below:

- i. The proposed development with its underground parking will be a unique place to live due to its:
  - (1) Covered parking that will provide residents and guests both comfort in inclement weather along with secured access, and
  - (2) Centralized covered mail and trash/recycling facilities, and
  - (3) Significant green space in and around the buildings as a result of the subsurface parking, and
  - (4) Many building facade jogs, offsets and corners that provide interesting floor plans and vistas. The introduction of the roof terrace should provide for interior views in some apartments where there was previously no such opportunity, and
  - (5) The roof terrace provides a three-season recreational amenity available for use by all residents including those needing handicap accessible space. The roof terrace provides a nearly private outside

space that is completely secure from intrusion from outside the building.

- ii. The proposed development concentrates the residential buildings on the west side of the wetland which:
  - (1) Avoids the need for crossing the wetland by residential vehicular traffic, an issue currently under litigation, and
  - (2) Allows municipal services to be compactly and efficiently distributed, and
  - (3) Frees up the east side of the property for recreational use.
  
- iii. The proposed waiver would allow the site plan to:
  - (1) Be compact, but not crowded due to the lack of surface parking, and
  - (2) Provide the desired number and mix of apartment units in 3 buildings rather than the 5 originally proposed, and
  - (3) Shorten individual building facade lengths by providing the flexibility for "Tee" and offset "Tee" footprints, and
  - (4) Provide a more suitable use of the site with regard to topography of the site in relation to the placement of buildings by clustering the buildings on the west side of the site, and
  - (5) Provide an increase in useable open space or provide an increase in the area allocated for recreational use by decreasing the surface area used for parking, and
  - (6) Not result in any adverse affect on the aesthetic quality of the use providing interesting building facades and vistas, and
  - (7) To be consistent with the intent of the these regulations in providing a high quality living environment.
  
- iv. Decreased potential environmental impact to be mitigated due to:
  - (1) Substantially reduced stormwater run-off due to removal of all but 5 spaces of surface parking, and
  - (2) Avoidance of motorized wetland crossing except for maintenance and emergency vehicles after construction is completed, and
  - (3) Minimal utility crossing of the wetland, and
  - (4) Reduced clearing requirement in the east side recreational area compared to that required for buildings and parking..
  
- v. The proposed site plan would allow improved service access for Groton Utilities and for Town of Groton emergency services through:
  - (1) Providing Groton Utilities with all weather access to their existing easement including substantially reduced travel distance to their facilities. Currently, vehicular travel to their steel tower is difficult, at best. Our proposal will substantially improve their ability to respond

- (2) Similar all weather access to otherwise inaccessible areas of the site will be provided for use of Town of Groton police, fire and ambulance services as a result of the site and building layout made possible if the waiver is granted.

**i. Planning Commission Sketch Plan**

We have discussed the need for a waiver with Planning Staff on several occasions and have appeared before the Planning Commission with two sketch plan alternatives, the second of which addressed concerns and comments made by the Planning Commission at its meeting of December 14, 2004. We heard a concern expressed among some of the Planning Commission members that despite the setback in the building elevation along Rock Hill Road, the facade might still present too long an elevation when viewed from Rock Hill Road unless measures were taken to break up the appearance.

**i. Revised Concept**

This application and its underlying building design reflect the comments and requests of the Planning Commission. The north leg of Building 3 was modified in the area of the roof terrace to provide a visual break in the building facade to supplement the jog in the west building wall away from Rock Hill Road. We removed the peaked roof and the top two floors of a portion of the northern wing of Building 3 and retained two lower floors of apartment units (Level C and Level D). Above Level D, there will be a roof terrace that will provide a recreational amenity as well as a visual interruption in the roof line of the building. We retained the internal corridors and the apartment units on the first two floors to maintain circulation continuity in the buildings so that the northern most portion is not isolated from the rest of the complex.

At all times of year, residents will be able to use the corridors on Levels C and D to travel north and south in the building without leaving the building. When weather permits, residents will also be able to walk across the roof terrace on Level E. During periods of favorable weather, residents of any part of the complex will be able to enjoy the roof terrace, which will be furnished with chairs and benches to provide an outside recreational area near the units. The roof terrace will also provide handicap accessible recreational opportunities for those individuals desiring use of such a space.

ii. Cross-Section

We prepared a cross-section area showing original ground elevations, the proposed final ground surface grades, the proposed building and the visual impact of a screening berm proposed between Rock Hill Road and the building in the area of the building setback. For reference, we have also shown the roof line beyond (north of) the roof terrace.

We superimposed a red line, on the cross-section, representing the line of sight of the person sitting in a vehicle on Rock Hill Road 3.5 ft. height above pavement. The sight line is placed to show where any objects having a combined height of 12 feet would obscure the lower two floors of the building. For example, six feet high evergreens on a six foot berm or eight foot evergreens on a four foot berm.

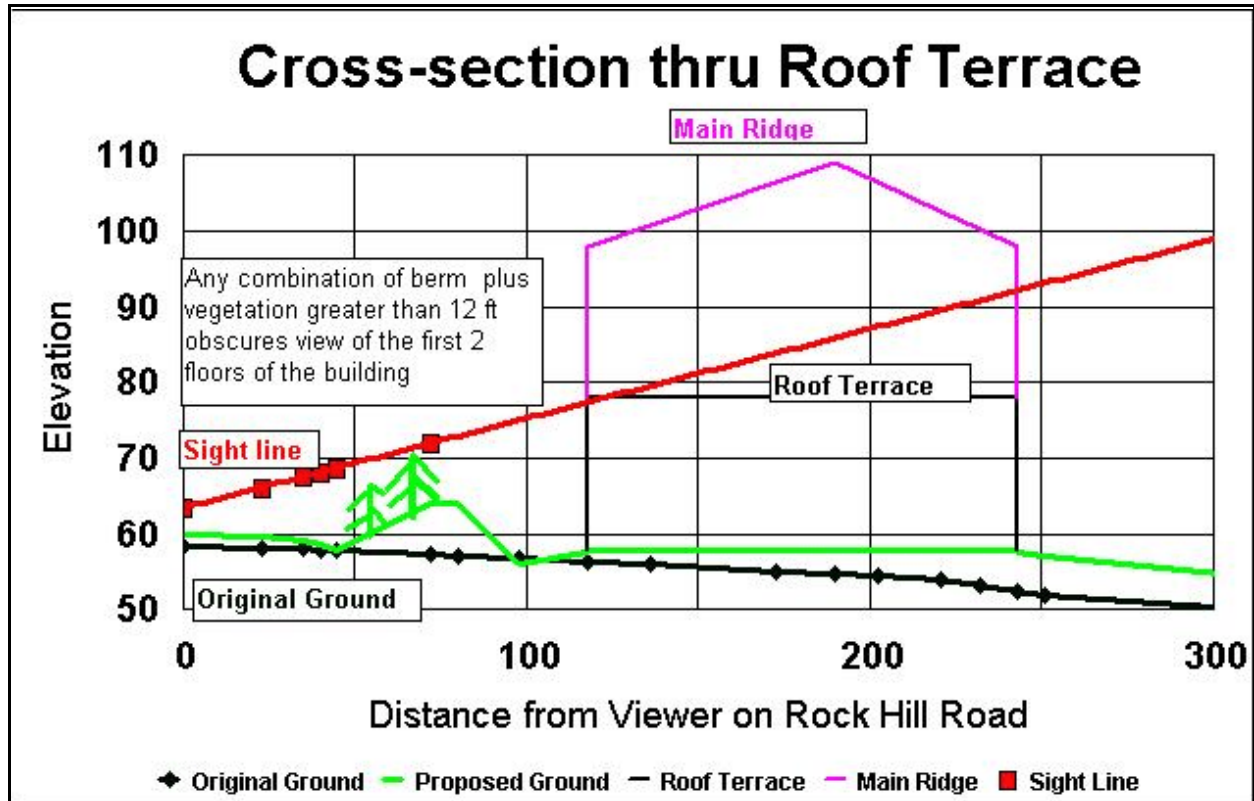


Figure 5 Roof Terrace Section Looking North. The Sight Line Shows the Visual Cutoff for a Viewer on Rock Hill Road.

iii. Building Elevations

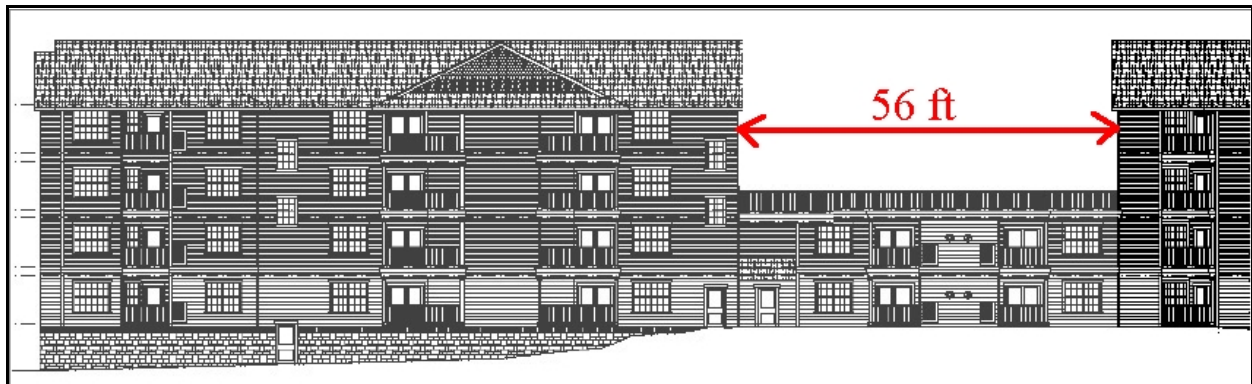
The full size building architectural elevation sheet (Drawing 1.7) shows several cross-sections. The first building elevation, numbered 1, is drawn

parallel to Drozdyk Drive through Buildings 1 and 2. The 50 foot distance (east-west) between the buildings is shown on the plan. The parking level below the buildings is shown in dashed lines. The portions of the elevations showing an end gable are projections from the general plane of the building facade.

The second building elevation, numbered 2 and continued as 2.A on the full size plans, drawn at Section A-A is perpendicular to Drozdyk Drive and depicts the building elevations as seen from Rock Hill Road. The distance (north-south) between Buildings 1 and 3 is 46 ft. At the location of that dimension, you will note the entry to the Level B parking. The right hand side of the elevation shows the entry to the Level A parking. The parking levels are shown with dashed lines.

**(1) Roof Terrace**

Figure 6 shows the north end of Building 3 opposite the 56 foot wide roof terrace. We introduced the roof terrace feature and then expanded it in response to Planning Commission comments.



**Figure 6 Partial Elevation of Building 3 Showing the Roof Ridge Line Intercepted by the Roof Terrace.**



**(2) Rendering**

The rendering in Figure 7 shows the north end of Building 3 and the vicinity of the roof terrace as seen from west of Rock Hill Road.



**Figure 7 Rendering of the North End of Building 3 Including the Roof Terrace.**

**j. Building Height**

The building height is the vertical distance from the average finished grade within ten feet from the building to the mid height of the roof. The full size elevation drawings show the building height measured from 6 inches below finished floor to the mid height of the roof. The table below shows the result of computing the average elevation ten feet from the building based on the grading plans.

Building Number	Average Elevation 10 feet from Building	Building Height Measured from Average Elevation *	Minimum Separation **	Required Separation Based on Building Height	Provided Separation
Building 1	43.4 FT	52.4 FT	35 FT	47.4 FT	Bldg. 1 - Bldg 2 51 feet
Building 2	44.6 FT	51.2 FT	35 FT	46.2 FT	Bldg. 2 - Bldg. 3 51 feet
Building 3	53.6 FT	51.0 FT	35 FT	46.0 FT	Bldg. 1 - Bldg. 3 46 feet

\* Measured from 6" below finish floor to the mid height of the roof plus the distance to the average ground elevation 10 feet from the building.

\*\* For buildings over 40 feet in height, add 1 foot for each additional foot of building height.

**k. Grading**

The adjacent Ledges project produced significantly more volume of broken rock than expected due to increased swell of the rock and additional rock quantities caused by the rock stabilization measures taken at the rear of the property. As a result of the increased volumes, we commissioned a new aerial survey that was used to update the existing ground contours on this site.

The floor elevations of the buildings and the grading of the recreation area are based on quantity calculations that account for The Ledges' material and the additional material to be excavated from the underground parking garages on this site. We will attempt to find persons needing fill who could reduce the amount needed to be handled on the subject site. We will adjust the grades of the recreation area downward to compensate for all material removed to off-site locations.

**l. Prior Approvals**

An area in the northwest corner of the subject site has been marked with cross-hatching to designate areas that were the subject of prior approvals for related work for The Ledges.

**7. Parking**

Based on our experience with market demands for parking from Ledges residents, we have designed the underground parking garage with enough spaces to meet the criteria of a development of less than 300 units. The garage parking will be beneath all of the proposed buildings. The garage parking will provide parking spaces that are secure, covered spaces for residents and visitors. Each of the parking levels will be connected to the buildings above by stairways and elevators. The garage will be mechanically vented and will have fire protection sprinklers.

The underground parking of 371 cars plus 5 surface spaces will provide a total of 376 cars for the parcel and an average of 1.76 cars per apartment unit for the development which is above The Ledges average of 1.69. The parking provided exceeds the Town of Groton Section 7.2-3B requirements for a free-standing development of less than 300 units. The parking greatly exceeds the 275 spaces required as a combined development having over 300 units, but is in line with market demands for parking.

Level A, the lowest level of parking, will be beneath all of the buildings. Parking Level A will have direct access in and out from Rock Hill Road at Point E of Figure 1 approximately 150 feet north of the intersection of Rock Hill Road at Drozdyk Drive (opposite Michelle Lane).

Approximately 135 feet further up Rock Hill Road is the intersection of the proposed Rock Hill Court. The entrance and exit to the Level B parking will be about 63 feet east of Rock Hill Road on the north side of Rock Hill Court at Point D of Figure 1. The Level B parking has an exit adjacent to the service court area near where mail and trash/recycling facilities will be located. There will also be maintenance and emergency access to this level of parking beneath the extreme north end of Building 3.

The Level B parking will be located only below Building 3 and the landscaped roof of the plaza area immediately to the south of Building 3. The most visible portion of the plaza south wall would be seen at the extreme north end of Building 2 where there is a grade level exit from Building 2 directly opposite a pedestrian entry and exit point to the upper level garage. Elsewhere, the grade change will be hidden by earthen berms or by landscaping.

## **8. Recreational Amenities**

The recreational amenities proposed for this development consist of a Clubhouse with fitness room, along with a swimming pool, roof terrace, sports courts, exercise stations, walking trails and picnic areas as outlined below.:

### **a. Clubhouse**

The 4,594 SF Clubhouse will contain meeting rooms, social areas, a computer equipped business center and other similar recreational spaces. Exercise facilities will be provided in a separate fitness room.

### **b. Swimming Pool**

The proposed development will have a swimming pool and deck area for social and recreational use. The pool and deck area will be developed in the area east of Building 2 as shown on Figure 1. In addition, residents will be able to use the Clubhouse and pool facilities located off Ledgewood Drive in The Ledges project.

### **c. Roof Terrace**

A 3,980 SF roof terrace on the north wing of Building 3 provides outside seating areas accessible from the third floor (Level E) of the building. Picnic tables and benches will be provided there, but there will be no barbecue facilities due to its location on the roof. The roof terrace will be a handicap accessible space.

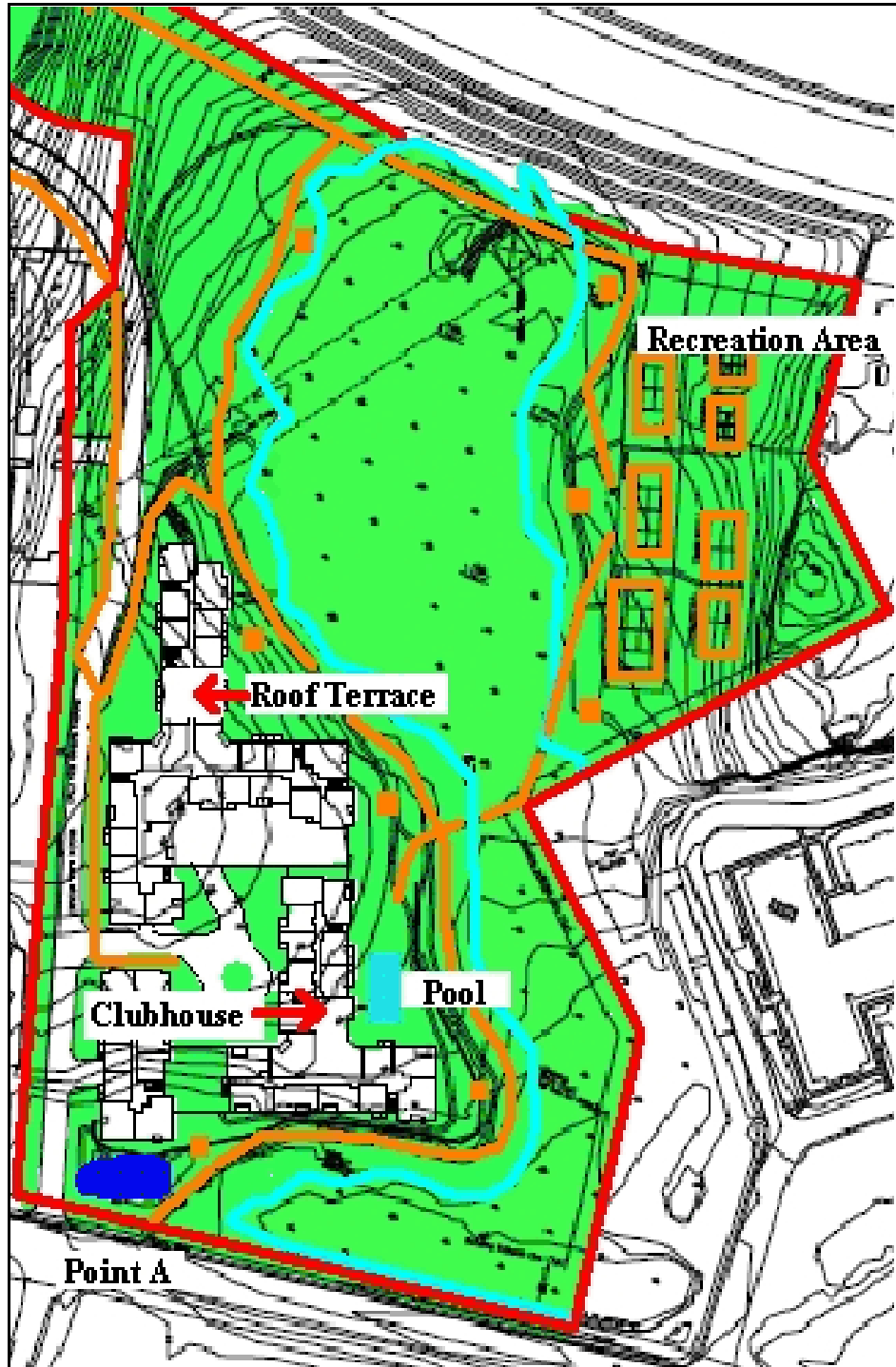
### **d. Walking Trails and Routes**

Recreational walking trails will begin near Drozdyk Drive east of Rock Hill Road and will proceed through the wetland buffer area on the west side of the wetland to the

vicinity of the Groton Utilities easement. Entry into the portion of the Groton Utilities easement crossing the wetland will be blocked for pedestrian traffic by mutual agreement with Groton Utilities. A secure gated access will be provided across the full width of the Groton Utilities easement in order to restrict foot traffic lengthwise along the easement.

From the Groton Utilities easement northward, the path will follow the maintenance road at the toe of the Rock Hill Road fill slope until intersecting another path near the I-95 right-of-way boundary. From that junction, a walker could proceed westerly ending up at Rock Hill Road northeast of Ledges Building 14. A return trip to the Clubhouse area could be made by walking down the sidewalk along the west side of Rock Hill Road ending up near the northwest corner of Building 3. From there, the walker could proceed down the sidewalk to Rock Hill Court or double back to meet the recreational path near the Groton Utilities easement.

From the path junction near I-95, the walker could also turn easterly parallel to I-95. Eastbound foot traffic on this segment of the recreational path will cross a boardwalk in the wetland portion of the path. When arriving at the Groton Utilities easement north of the steel tower, the walker could continue to the east side recreational area along the maintenance road. There will be a gate across the Groton Utilities easement in the vicinity of the tower to prevent foot traffic from turning south onto their easement. This gate will be locked except for access by Groton Utilities, Groton Multifamily maintenance personnel or Town of Groton emergency vehicles.



**Figure 8 Recreation Plan Showing Trails in Burnt Orange Color. See Engineering Plans for Locations of Exercise Stations.**

**e. East Side Recreational Area**

From the pool complex, located east of Building 2, walkers and sports enthusiasts can follow the recreational paths to a raised boardwalk which will lead them across the wetland to the east side recreational area. From there, by proceeding northerly, they can join up with the recreational path and boardwalk paralleling the I-95 boundary.

The east side recreational area will feature 3 tennis courts, 2 racket ball courts and 2 sand volley ball courts. Areas will be provided for miscellaneous other recreational uses such as horseshoe pits, bocci ball courts and a picnic area.

**f. Exercise Stations**

Exercise stations will be located along the pathways for use by residents. See Site Layout Plans for locations.

**g. Picnic Areas**

Picnic areas with tables and grills will be located as shown on the Site Layout Plans.

**h. Recreation Tabulation**

Item	West Side			East Side			Grand Total
	Active	Passive	Total SF	Active	Passive	Total SF	
Clubhouse		2,994	2,994				2,994
Exercise Room	600		600				600
Exercise Stations	640		640	160		160	800
Roof Terrace		400	400				400
Picnic Area		2,450	2,450		375	375	2,825
Sport Courts				34,160		34,160	34,160
Walking Trails	8,872	60	8,932	7,182	60	7,242	16,036
Swimming Pool	1,964		1,964				1,964
Total	12,076	5,904	17,980	41,502	435	41,937	59,779
% Allocation	30%			70%			100%



## **9. Utility Services**

Each of the utilities described below are described in a general manner. Refer to the utility plans for more specific design details than those contained in these paragraphs.

### **a. Electrical Service**

Electrical Service will be from underground facilities connected to the Groton Utilities electrical infrastructure at Drozdyk Drive and at the northeast corner of The Ledges where an interconnection will be made near the intersection of LedgeWood Drive with Rock Hill Road. Several underground laterals will be installed from the above interconnection to each of the transformer locations. The transformers will be located outside the buildings at ground level. The electric rooms fed by those transformers will be in the garage where they will be accessible to Groton Utilities' personnel through the garage entries at their respective levels.

Metered electrical service will be provided for the residents, as well as for common area use, parking garage and street lighting.

### **b. Gas**

Gas service will be provided by Yankee Gas from their mains in Drozdyk Drive, which will also connect to the existing mains in The Ledges near the intersection of LedgeWood Drive and Rock Hill Road. The principal use of gas will be for heating, hot water and cooking. Each individual unit will be separately metered in addition to meters for common area usage.

Gas meters will be on the exterior of the buildings in locations that are as removed from line of sight as possible.

### **c. Cable**

Cable service will be provided by ComCast through underground distribution connecting at Drozdyk Drive. Cable services, including Internet services, will be distributed to the residents and to the common area facilities such as the lounge and business center. The distribution will occur from within the garage and from closets located on each floor of each building.

### **d. Water**

Water for both domestic consumption, maintenance, operations and fire protection will be provided from underground mains connected to the Town of Groton Utilities located in Drozdyk Drive. The water mains will also connect to the recently installed

mains in The Ledges in the vicinity of the intersection of Ledgewood Road and Rock Hill Road.

**e. Fire Suppression Sprinklers**

Except for the restroom building in the recreational area, all of the buildings will be protected with fire suppression sprinklers that will be connected to the underground water mains. Each of the buildings will have post indicator valves (PIV) and a Fire Department connection (FDC).

The entire underground parking complex will also be protected with fire suppression sprinklers.

The fire alarm system will be monitored by the Poquonnock Bridge Fire District.

**f. Sanitary Sewer**

Underground sanitary sewer mains will connect to an existing Town of Groton stub on the north side of Drozdyk Drive east of Rock Hill Road. All of the sanitary sewers will be gravity sewers except for a force main from the seasonal grinder pump serving the recreational area. Most of the collection of sanitary sewage will occur in mains and laterals within the building and garage complex.

**g. Telephone**

Telephone services will be provided underground from the SBC facilities in Drozdyk Drive. The telephone distribution will occur from within the level of the garage immediately below the occupied space served by those facilities.

**h. Security**

All of the building entrances in individual units, as well as the Clubhouse facilities, the exercise rooms and the business center, will all have computer monitored security access. The below grade parking will be accessible only to landlord personnel and tenants who have been assigned parking in those underground facilities. Tenants will provide access for their visitors. Utility and other service personnel will be required to sign in at the Clubhouse to receive access cards, unless prior arrangements are made.

**i. Overhead Power Line**

Like The Ledges site, this property is crossed by an overhead power transmission line. No local service taps are provided from the overhead line. The line will remain in its

present location. Groton Utilities will be provided access to the transmission line easement at Point F on Figure 1.

Adjacent to Building 3, the maintenance road, providing access for Groton Utilities and others, will be constructed using a product like turfstone which will allow grass to grow through the blocks. Considering the low volume of maintenance traffic expected, the surface should resemble the adjacent lawn area. See more about the Groton Utilities access in the wetland and adjoining buffer review area paragraphs below.

**j. Site Lighting**

Site roadway lighting will be provided by pole mounted “cut-off” type light fixtures similar to those installed at The Ledges. The lighting will be privately-owned and maintained. Power for the lights will be provided from circuits run from panels in the nearby buildings.

Areas near garage and building entries will be lighted with “cut-off” type wall pak fixtures. The pool area will be lighted with low pole mounted light fixtures.

The recreation courts will be lighted, but will be switched for on-demand use. Limited area lighting and pathway lighting will also be used.

**10. Storm Drainage**

**a. Watershed**

The subject site lies entirely within the 38.8 acre sub-watershed 11 of the Long Hill Watershed Study prepared for the Town of Groton initially by Flaherty Giavara Associates, Inc. in January of 1996 and revised by a study conducted by Milone & MacBroom, Inc. in April of 1998.

**b. Rock Hill Road Stormwater Management**

Stormwater falling on Rock Hill Road and its immediate environs will be controlled by curbs and gutters constructed along both sides of the road augmented by catch basins especially at intervening intersections. The catch basins will be designed with sumps to assist in oil/grit removal. The entrance to the A level parking will have a trench drain outside the building to intercept any run-off flowing toward the garage entrance.

The effluent from the Rock Hill Road catch basins and curb inlets will be piped to the wet pond area for detention and water quality improvement.

**c. Rock Hill Court Stormwater Management**

After oil/grit removal, the effluent from the catch basins and curb inlets of Rock Hill Court will be piped to underground infiltrator beds that will receive the stormwater and hold it in its void spaces until the flows are dissipated into the ground. Catch basins will serve as area drains for the grass surfaces on the north side of Rock Hill Court outside of the paved traffic areas.

Only 5 parking spaces for cars and a larger pickup/delivery space for move in and move out will be at the ground surface. All the other parking will be below grade in covered parking areas. As a result, the stormwater run-off normally associated with large parking areas will not occur on this site.

**d. Parking Garage Stormwater Management**

The entries to the parking garage off Rock Hill Court will all be protected with trench drain installations that will intercept any exterior stormwater flowing toward the entries and exits. Inside the garage, the floor will be sloped to allow for collection of water or melted snow dripping from cars. The quantity of these actually reaching the drains will be very slight.

Instead of run-off from stormwater and melting events, the most likely source of effluent in the garage will be from periodic hosing or pressure washing of the floor of the garage. Prior to any cleaning maintenance, the garage will be power swept to collect the majority of grit that would fall off vehicles. The interior drainage system of the garage will be equipped with cartridge type filtration units for oil/grit removal. The effluent from the garage would be connected to municipal sewers. No stormwater flow from inside the garage will be discharged on the grounds or in the wetland.

**e. Roof Plaza Stormwater Management**

The roof plaza area, south of Building 3, will receive rainfall some of which will seep through the lawn cover before being intercepted by the waterproof membrane over the garage. The run-off will flow below the landscaped roof to the south edge of the plaza where it will be piped to a level spreader north of the pedestrian raised boardwalk wetlands crossing.

**f. Building Roof Stormwater Management**

The rooftop drainage from Building 1 and Building 2 will be collected and conveyed to the wet pond for disposal. The west slope of the northern roof will be collected and disposed of in the Rock Hill Court infiltrator. The east side slope of the north

roof of Building 2, together with the south slope of Building 3 and the roof plaza, will be collected and conveyed to a level spreader north of the pedestrian raised boardwalk wetlands crossing.

Most of the west slope of the Building 3 roof will be collected and conveyed to an infiltrator under the berm adjacent to Rock Hill Road. The north and west end of Building 3 roof will go to an infiltrator north of Building 3 and south of the Groton Utilities easement, but not under the access to the easement.

The north and east facing roof slopes of the Building 3 roofs will be collected and disposed of in the triangular area east of Building 3 in an infiltrator. The use of infiltrators for rooftop drainage is consistent with Permit 97-1.

**g. Recreation Area Stormwater Management**

Stormwater effluent on the recreational area will be directed by the grading and will seep into soils in that area from sump depressions in the surface elevations. Except for occasional maintenance or emergency vehicles, there will be no other vehicular traffic in that portion of the site.

**h. Stormwater Management Study**

A detailed drainage study and design completed by Cherenzia & Associates accompanies this application. The details of that drainage study should be consulted for additional information on stormwater control and treatment. The Cherenzia study and the resulting plan details from that study will show that:

- i. All vehicular traveled paved areas will have its stormwater effluent controlled and treated for oil/grit removal.
- ii. Rooftop and lawn area including the plaza effluent will be kept separate from storm drainage paved surface.
- iii. After oil/grit separation, the effluent from roadways will be directed into a wet pond.
- iv. The project design is consistent with the watershed goals in the Long Hill Drainage Study.

**11. Wetland and Adjoining Buffer Review Area**

The subject property is divided into two upland areas by a wetland that flows from I-95 to Drozdyk Drive and occupies land of both Groton Multifamily, LLC and the adjacent Wyndham Falls. See Figure 1 for the location of the wetland. Refer to the engineering plans for more detail including the delineation flag locations.

Groton Multifamily, LLC purchased its larger parcel along with an existing wetland permit (97-1), which has since been extended. The 97-1 permit would have disturbed 6,272 sq. ft. of wetland and would have filled approximately 3,175 sq. ft. of wetland in making an earth embankment to support a pedestrian crossing from the west side of the subject parcel to the Wyndham Falls property.

**a. Existing Wetland Conditions**

The existing wetland varies in elevation from elevation 28 near Drozdyk Drive to elevation 46 near I-95. Most of the wetland is wooded and undisturbed except for areas in and around the cart path crossing and the Groton Utilities easement. A previously submitted report and supplement prepared by Sanford Ecological Services describes these areas in more detail.

**b. Wetland Delineation**

The wetland delineation is based on the plans and delineations prepared by Vanasse Hangen Brustlin, Inc. for applicant Leggat McCall Retirement Properties, LLC, a former contract vendee of the larger parcel of the subject property. That delineation, prepared by Jeffrey C. Peterson, formed the basis for wetland Permit No. 97-1. This report relies on that delineation shown on the plans for the property acquired by this applicant.

**c. Description of the Potential Site Plan Impact on Wetlands**

The 3 proposed buildings and the parking levels beneath them will be constructed entirely in the upland areas of the site. A pedestrian crossing will be constructed as a raised walkway substantially along the alignment of the existing cart path wetland crossing.

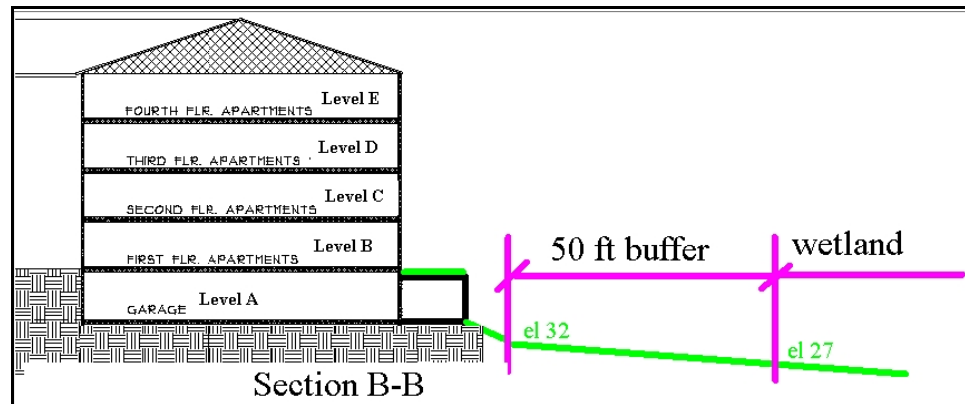
The existing gravel filled portion of the Groton Utilities easement will be extended northerly to the steel transmission tower and around it on the north side to the proposed recreational area. By mutual agreement with Groton Utilities, Groton Multifamily, LLC will restrict traffic on the easement area to construction, maintenance and emergency traffic.

The ground level of the proposed development is approximately elevation 51 for the two buildings nearest Drozdyk Drive. Building 3 is 10 feet higher, which is about the elevation of the natural site contours in that vicinity. The adjacent wetland varies in elevation from about elevation 26 near Drozdyk Drive to about elevation 46 at the upper end of the proposed development.



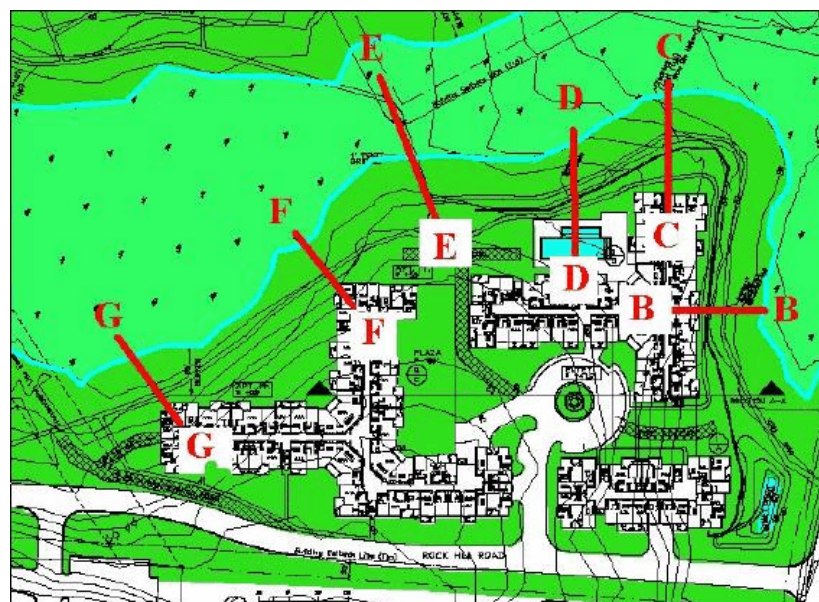
i. **Buildings near Drozdyk Drive (Buildings 1 and 2)**

The wetland south of proposed Buildings 1 and 2 is at an elevation of 26 to 28 feet. The buffer in the same area is at an elevation of approximately 32 to 33. Building 1 is at least 99 feet from the delineated wetland. Building 2 will be about 60 feet from the delineated wetland at its closest point. Along the northern edge of the review area, in upland areas, there will be a boulder wall like the one depicted in Figure 12 between it and the building wall. See the sketch below for the conditions proposed at Cross-Section B-B.



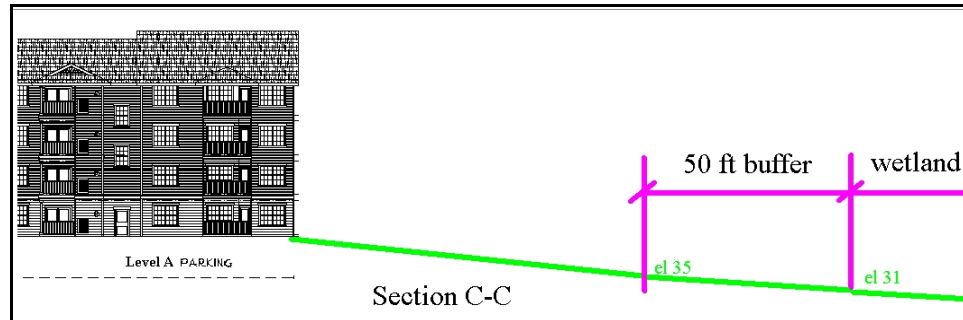
**Figure 9 Cross-Section B-B**

The wetland east of Building 2 is at an elevation of 28 to 32 feet. The buffer in the same area is at an elevation of approximately 34 to 38. The area between the buildings and the wetland buffer is sufficient to allow for grading



**Figure 10 Key Plan for Wetland Cross-Section Marks**

to a mowable slope down with no wall needed in many places and up to a 6 ft high wall elsewhere along the upland side of the buffer. See the sketch below for the conditions proposed at Cross-Section C-C where no wall is used.



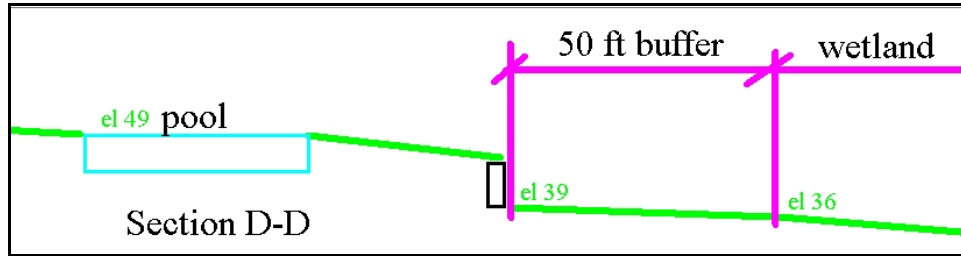
**Figure 11 Cross-Section C-C Showing Grading Concept If No Boulder Wall Is Used.**

**ii. Swimming Pool Area**

The swimming pool will be located a few feet below Level B. The wetland east of the pool is at an elevation of 32 to 36 feet and is at least 78 feet from the wetland. The buffer in the same area is at an elevation of approximately 38 to 39. We anticipate a 6 foot high wall east of the pool along the upland side of the buffer. See the sketch below for the conditions proposed at Cross-Section D-D.



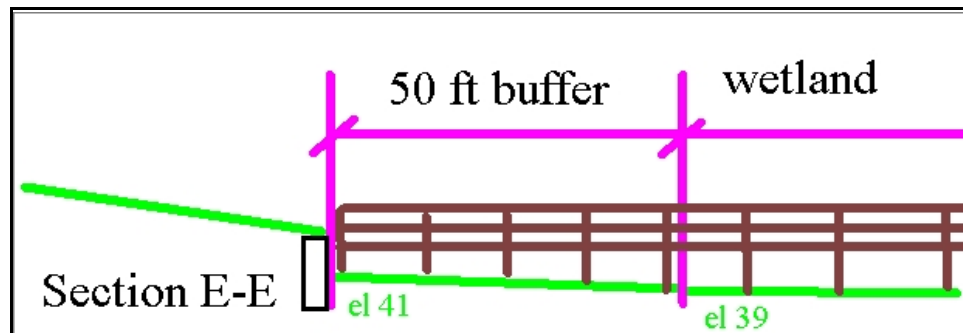
**Figure 12 Composite Photo Depicting Approximate Appearance of Boulder Wall along Wetland Buffer.**



**Figure 13 Cross-Section D-D at the Pool Area.**

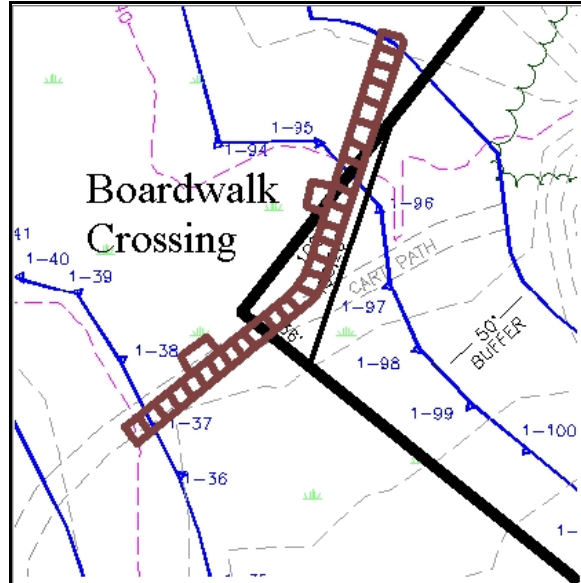
**iii. Wetland Walkway Crossing to East Side Recreation Area (Cart Path Area)**

At the west end of the existing cart path, we propose to join the recreational paths near the pool with an extension of the boardwalk crossing above the existing cart path. Using the alignment of the existing cart path, we propose to install a raised wooden boardwalk with railings leading along the cart path to the easement area obtained from the owner of the Wyndham Falls project. The walkway would be supported by horizontal synthetic lumber sleepers thus avoiding the need for any excavation along the route of the walkway. Synthetic lumber shims will be used where needed to level the sleepers. The wetland and the adjacent buffer will be cleared only to the extent necessary to construct the walkway. See Cross-Section E-E.



**Figure 14 Cross-Section E-E at the West End of the Wetland Boardwalk.**

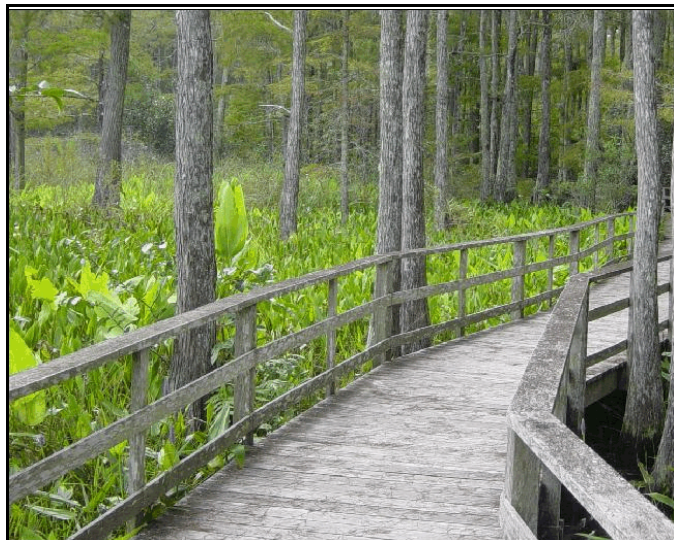
Near the easement area, the raised wooden boardwalk would turn northerly about 30 degrees and would extend about another 55-60 LF through wetland not disturbed by the cart path. Clearing, but not grubbing will be required in this portion. See the plan segment in Figure 15.



**Figure 15 Boardwalk Routing**

Our walkway would have a 6 feet clear width from rail to rail. See the detail on Sheet 17 of 18. Two widened areas will be provided with benches for use as overlook areas and for temporary refuge for pedestrians when maintenance equipment is crossing the walkway.

The boardwalk would be used by pedestrians accessing the recreational paths and facilities on the east side of the wetland. Golf carts and other maintenance equipment such as mowers would also cross on the boardwalk, when necessary. The boardwalk would also support utility lines such as power, telephone, security cables and



**Figure 16 Photo of Walkway in the Audubon Society's Corkscrew Swamp that is Similar to the Walkway Planned for this Project.**

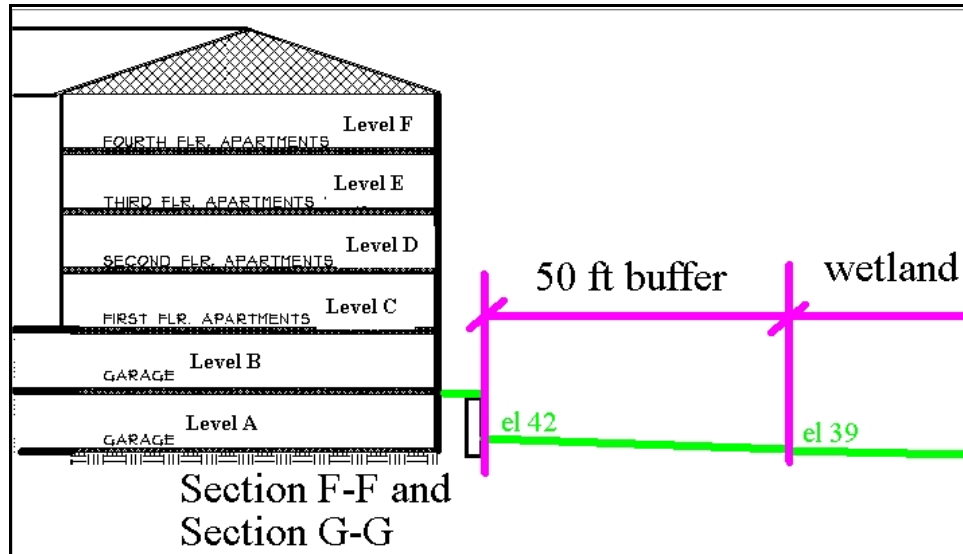
water/sewer lines for incidental use related to the recreational uses. EMT and other emergency services would utilize the maintenance road through the

Groton Utilities easement (described below).

**iv. Building 3**

The easternmost point of Building 3 and the parking levels below are close to the buffer area at the northeast corner of the building (Cross-Section F-F). The wetland east of the building is at an elevation of about 39 feet. Building 3 will be 51 feet from the wetland. The buffer in the same area is at an elevation of approximately elevation 42. At the corner, the concrete walls of the parking structure would project about 19 feet above the ground surface. When the detailed design is done, there might be an opportunity for constructing a 6-7 foot high rock wall between the building and the buffer.

At Cross-Section G-G, a similar condition would occur. North of Cross-Section G-G there would be no building construction.



**Figure 17 Cross-Section F-F and G-G**

**d. Wetland or Buffer Impacts in or near the Groton Utilities Easement**

A 12 foot wide maintenance road is proposed from the north end of the existing gravel fill in the Groton Utilities easement to follow a route west of the steel tower for about 80 LF through the area of the existing spoils pile before swinging easterly parallel to I-95. From there, the maintenance road will continue to the east side recreational area. By agreement with Groton Utilities, this road will be used initially by construction vehicles and thereafter by maintenance or emergency vehicles.



In this area, other work such as fencing, concrete barriers and a culvert, as described in the Figure 18, would be done as part of the agreement with Groton Utilities.

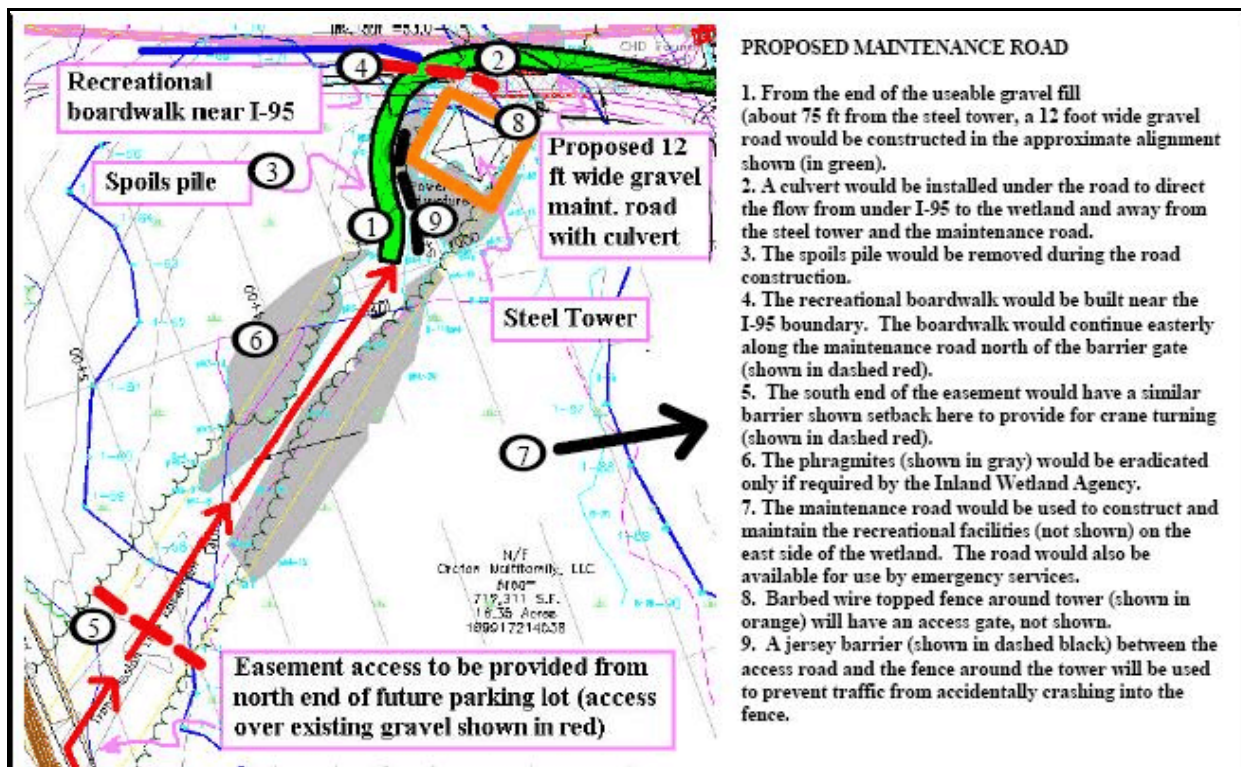


Figure 18 Proposed Maintenance Road for Groton Utilities Access.

A 5 foot wide wooden crossing, to be constructed as a mat lying on the ground surface, is proposed to traverse both buffer and wetland areas parallel to I-95 for about 59 feet long through the wetland.

Except for the maintenance road and related work near the steel tower, recreational paths in the buffer, the wooden boardwalk pedestrian crossing and the small pond near Drozdyk Drive, there will be no other construction in the wetland or buffer areas. See the summary below.

e. **Summary of Wetland Impacts**

Item	Description of Impact	Disturbed Acres (Square Feet)
Raised Boardwalk at Cart Path	Clearing only and construction of raised boardwalk. No cut or fill.	0.024 AC (1,025 SF)

Item	Description of Impact	Disturbed Acres (Square Feet)
Maintenance Road	12' Wide gravel maintenance road near steel tower, gate barriers, fence around tower, new culverts and jersey barrier at tower. No added fill except for culvert area.	0.044 AC (1,899 SF)
Recreation Boardwalk Parallel to I-95	5' Wide mat style boardwalk. Clearing only, no cut or fill.	0.006 AC (295 SF)
Total Disturbances		0.074 AC (3,219 SF)
Spoils Pile	Remove spoils pile created during steel tower construction and replant.	0.052 AC (2,274 SF)
Backhoe Tracks	Ruts made during site investigation will be graded out and replanted.	0.024 AC (1,040 SF)

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