

## C. Soils, Topography and Steep Slopes

### 1. Soils

#### a. Existing Conditions

The Project Site is  $\pm 30.0$  acres in size and is mostly wooded with some expanses of landscaped lawn area ( $5.5 \pm$  acres) extending to the existing residence on Todd Lane. There are also areas of grass along the existing paved roads. There are no wetlands or watercourses on the site. There is, however a NYSDEC Freshwater Wetland (ID #O-16) situated south of the site on the opposite side of Washburn Road adjacent to the Taconic State Parkway. There are  $0.38 \pm$  acres of NYSDEC wetland buffer area, which extend on to the project site. It is noted that NYSDEC designates a 100-foot wetland buffer, whereas the Town of Mt. Pleasant requires only a 50-foot setback. The 100-foot setback has been shown on the plans. The only work which will take place within the NYSDEC wetland or its buffer would be construction of the sewer main connection to the Westchester County Trunk Line.

According to the "Soil Survey of Westchester County" by the U.S. Department of Agriculture, Soil Conservation Service, on-site soils predominantly include Chatfield-Charlton (CsD), Charlton-Chatfield (CrC), Paxton (PnD) and Paxton (PnC). The predominant on-site soil types with their characteristics shown in Exhibit III.C-1 are as follows:

*Chatfield-Charlton complex, hilly, very rocky (CsD):* This unit consists of very deep and moderately deep, well-drained and somewhat excessively drained Chatfield soil and well drained Charlton soil. It is located on the tops and side of hills that are underlain by highly folded bedrock. Slopes range from 15 to 35 percent. Individual areas are highly irregular in shape and range from 3 to 75 acres in size. The typical sequence is 0 to 7 inches of topsoil, 7 to 24 inches of dark grayish brown sandy loam and 24 to 60 inches of dark brown or grayish sandy loam. In Chatfield soils fractured bedrock could be encountered as close as 24 inches from the surface. Water table is at a depth of more than 6 feet throughout the year and the permeability is moderate or moderately rapid (0.6-6in/hr). This unit covers approximately 48% of the site, primarily at both the northern and central portions of the site.

*Charlton-Chatfield complex, rolling (CrC):* This soil is moderately steep, very deep and well drained. It is on side slopes of broad ridges and small hills. Individual areas are irregularly shaped or are long and narrow on slopes ranging from 15% to 25%. The typical sequence is 2-8 inches of top soil, 8 to 24 inches of yellowish brown sandy loam and 24 to 60 inches of dark grayish or brown sandy loam. Water table is usually perched from February to April above the dense substratum of sandy loam. Permeability is moderate (0.6-20. in/hr) in the subsurface layer and slow (less than 0.2 in/hr) in the substratum. This unit covers approximately 25% of the site, primarily at the north portion of site.

*Paxton fine sandy loam (PnD):* This unit consists of moderately steep, very deep, and well drained soil. It is located on side slopes of broad ridges and small hills.

Individual areas are irregularly shaped or are long and narrow. They range from 2 to 75 acres in size. The typical sequence is 0 to 10 inches of topsoil, 10 to 20 inches of yellowish or loam and 20 to 60 inches of firm grayish sandy or gravelly loam. The water table is usually perched above the firm substratum and the permeability is moderate (0.6-2.0 in/hr) in the surface layer and slow (less than 0.2 in/hr) in the substratum. Paxton soils are located on the east side of the property towards the Taconic Parkway and represents approximately 26% of the site.

*Paxton Loam, 8 to 15 percent slopes (PnC)*: This unit consists of a mix of Urban Land and Charlton Complex. The Charlton component on the site is found on slopes of 15 to 25 percent. This component is on hills, ridges, till plains. The parent material consists of acid loamy till derived mainly from schist, gneiss, or granite. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 4 percent. This soil does not meet hydric criteria. Paxton soils (PnC) are located towards the Taconic Parkway and represents approximately 1% of the site.

As noted in the Soil Survey of Putnam and Westchester County (“the Soil Survey”), the information presented in Table III.C-2 provides descriptive background to soil properties.

A description of the ratings as provided on the website for Soils Surveys by the Natural Resources Conservation Service<sup>1</sup> is as follows:

Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. “Not limited” indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. “Somewhat limited” indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. “Very Limited” indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

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<sup>1</sup> [www.websoilsurvey.nrcs.usda.gov](http://www.websoilsurvey.nrcs.usda.gov)

**Table III.C-1 – Building Site Development**

	Chatfield-Charlton complex (CsD)		Charlton-Chatfield complex (CrC)		Paxton fine sandy loam (PnC)	Paxton Loam (Pnd)
	Chatfield Component	Charlton Component	Charlton Component	Chatfield Component		
Suitability for Roadfill	Very Limited - Depth to Bedrock Slope	Very Limited - Slope	Good	Very Limited - Depth to Bedrock	Somewhat Limited - Wetness Depth	Somewhat Limited - Wetness Depth & Slope
Dwellings without Basements	Very Limited - Slope & Depth to Bedrock	Very Limited - Slope	Somewhat Limited - Slope	Somewhat Limited - Slope & Depth to Bedrock	Somewhat Limited - Slope & Depth to Saturated Zone	Very Limited - Slope & Depth to Saturated Zone
Dwellings with Basements	Very Limited - Slope & Depth to Bedrock	Very Limited - Slope	Somewhat Limited - Slope	Very Limited - Slope & Depth to Bedrock	Very Limited - Slope & Depth to Saturated Zone	Very Limited - Slope & Depth to Saturated Zone
Lawn Areas	Very Limited - Slope, Droughty & Depth to Bedrock	Very Limited - Slope	Somewhat Limited - Slope	Somewhat Limited - Slope, Droughty, & Depth to Bedrock	Somewhat Limited - Slope & Depth to Saturated Zone	Very Limited - Slope & Depth to Saturated Zone
Shallow Excavation	Very Limited - Depth to Bedrock, Cutbacks Cave & Slope	Very Limited - Cutbacks Cave & Slope	Somewhat Limited - Cutbacks Cave & Slope	Very Limited - Depth to Bedrock, Cutbacks Cave & Slope	Very Limited - Depth to Saturated Zone, Cutbacks Cave, Density Layer, & Slope	Very Limited - Depth to Saturated Zone, Cutbacks Cave, Density Layer, & Slope
Local Roads & Streets	Somewhat Limited - Depth to Bedrock, Frost Action & Slope	Very Limited - Slope	Somewhat Limited - Slope	Somewhat Limited - Depth to Bedrock, Frost Action & Slope	Somewhat Limited - Depth to Saturated Zone, Frost Action & Slope	Very Limited - Depth to Saturated Zone, Frost Action & Slope
Paths & Trails	Very Limited - Slope	Very Limited - Slope	Not Limited	Not Limited	Not Limited	Somewhat Limited - Slope
Embankments, Levees, Dikes	Somewhat Limited - Thin Layer	Somewhat Limited - Seepage	Somewhat Limited - Seepage	Somewhat Limited - Thin Layer	Very Limited - Depth to Saturated Zone & Seepage	Very Limited - Depth to Saturated Zone & Seepage
Pond Reservoir Area	Very Limited - Seepage, Slope, & Depth to Bedrock	Very Limited - Seepage & Slope	Very Limited - Seepage	Very Limited - Seepage & Depth to Bedrock	Somewhat Limited - Seepage & Slope	Somewhat Limited - Seepage & Slope

Source: Soil Survey of Putnam and Westchester County

The site is underlain with Fordham Gneiss from the Precambrian – Middle Proterozoic age (approximately 1.1 billion years ago). This gneiss is generally formed from metamorphosed sediments, which form a rock with black and white bands composed of quartz and feldspar that alternate with bands of biotite and hornblende. On July 7, 2009, a geologic investigation was conducted at the Site to examine the depth to bedrock within the areas proposed for development. This investigation consisted of a visual inspection of the project site as well as deep test pits and soil probes. The results from the deep test pits and soil probes can be found in Appendix I. The project site has numerous metamorphic rock outcroppings that exhibited the general characteristics of granite gneiss with some mica-schist. Depth to rock as determined by the deep test pits varied from 18” below grade to greater than 48” below grade. Soil probes were taken in areas where disturbance to lawn areas was to be minimal. Data from the soil probes proved to be similar, with depth to rock (refusal) varying from 18” to 42”.

**b. Anticipated Impacts**

Approximately 10.01 acres, or 33.4% of the site, will be regraded and temporarily exposed during construction of the Proposed Action, although construction will be phased, and only limited portions of the site will be under construction at any one time. The regrading will occur mainly along the roadways and in the vicinity of the proposed houses, their driveways, and in areas where utilities will be installed.. Within the proposed Open Space grading is minimized and limited to areas adjacent to Road A, the cul-de-sac for Road B, and the detention basin. The work is needed to develop the road system, building platforms, drainage basin, and access to the lots. Proposed grading is shown in Exhibit III.C-2 and the Schematic Site Plans provided in Appendix L. Disturbance was broken down by proposed land use. Areas designated a “Road Use” include slope areas beyond the right-of-way that would require disturbance for the sole purpose of road construction (i.e. as if the houses were not built). “Building/Landscaped Areas” include the grading for driveway access, the building footprint, and grading around the houses. Disturbance attributed to “Drainage” includes the detention basin, and drainage pipes and water quality swales that are outside of road or building disturbance areas. The amounts of these disturbances are presented in Table III.C-2.

Table III.C-2

## Area of Disturbance Breakdown with Soil Types and Limitations

USE	AREA OF DISTURBANCE (Acres) Limitations*				PERCENT (%) OF TOTAL PARCEL AREA			
	CrC	CsD	PnD	Total	CrC	CsD	PnD	Total
Buildings/Landscaped Areas	3.46 SL/VL	2.46 VL	0.87 VL	6.39	10.2%	8.2%	2.9%	27.2%
Roads	1.53 SL	1.52 SL/VL	0.20 VL	3.25	5.1%	5.1%	0.7%	5.0%
Drainage Facilities	0.00 VL	0.27 SL/VL	0.10 SL/VL	0.37	0.0%	0.9%	0.3%	1.2%
<b>Total</b>	<b>4.59</b>	<b>4.25</b>	<b>1.17</b>	<b>10.01</b>	<b>15.3%</b>	<b>14.2%</b>	<b>3.9%</b>	<b>33.4%</b>

\* SL = Somewhat Limited; VL = Very Limited

The proposed development of the property would require approximately 40,200 cubic yards (cy) of excavation and 10,100 cy of fill, resulting in a net 30,100 cy of excavation.

Blasting will be avoided wherever practicable and will generally be limited to those areas requiring rock removal of greater than four feet in depth. Excavation equipment or mechanical means of rock removal will be employed to remove rock, where practical. Based on initial field investigations using test pits and soil probes with the proposed grading, the areas most likely to encounter the need for rock removal would be in the areas of lots 4 and 5, Road A between Sta. 5+50± and 9+40±, and Road B between Sta. 0+10± and 8+60±.

Soil limitations for pertinent uses for each of the soils' types present within the project limits are shown in Table III.C-1. The majority of the development on the site will take place in the areas with Chatfield/Charlton soil complexes (CrC and CsD), whose soil limitations are mainly related to slopes and bedrock. These soil limitations were taken into consideration in the planning of a project. The slope limitations impact the placement of structures and will require careful planning to minimize erosion impacts during construction. The presence of bedrock would impact the siting of structures and infrastructure, and needs to be considered when designing the residence to be built on a particular lot.

### c. Proposed Mitigation

#### Erosion and Sediment Control

Proper erosion and sedimentation control prevents downstream siltation, clogged inlets, fish and wildlife habitat destruction, and water quality degradation. It also avoids the possibility that common organic contaminants (e.g., petroleum products and pesticides) might adhere to sediment to potentially be transported throughout the length of the water body. Stormwater issues including details of temporary and permanent erosion and sediment control measures have been addressed in Section III.E.1.c of this report to limit redundancy of information, and reference is made to

that section, since stormwater controls are a method of erosion and sedimentation control. Soil erosion controls addressed in this section are the fundamental methods of avoiding downstream water quality impacts. Stormwater and surface water are the path and destination, respectively, of mobile pollutants, chiefly sediment.

Permanent stabilization will occur within 15 days of establishing final grade. Permanent stabilization of disturbed areas will be achieved by using a mixture of grasses, groundcovers, shrubs and trees as appropriate. In areas where final grade will not be achieved within 60 days, temporary soil stabilization (i.e., temporary turf establishment and/or mulching) will occur within two days of disturbance. Soil will be stockpiled in level areas of the site to minimize erosion. Soil will not be stockpiled in areas with greater than 10% slopes.

Schematic Site Plans have been prepared (see Appendix L), as well as detailed descriptions of the soil erosion control measures proposed for the site, which are described in the Stormwater Management Plan (see Section III.E and Appendix B). During preparation of construction drawings, a SWPPP will be prepared in compliance with the following documents:

- New York State Stormwater Management Design Manual (NYSDEC, 2003)
- Standard Specifications for Erosion and Sediment Control (NYSDEC, 2004)
- Standards recited in Stormwater Ordinance Chapter 183-MS4 Regs and GP-0-08-0001

Erosion and sediment control measures for the Proposed Action will include a construction sequence narrative for the full scope of site work specified within the plans and sediment and erosion control measures as shown on the Schematic Site Plans (see Appendix L). Provisions for the installation of a silt fence, anti-tracking apron, naturalized riprap, and temporary diversions will be incorporated. Erosion and sediment control will be an integral part of construction management.

The objective of the Stormwater Management Plan as it relates to sediment and erosion control are as follows (the Stormwater Management Plan can be found in Appendix B):

- Control erosion at its source with temporary control structures;
- Minimize the amount of sediment-laden runoff from areas of disturbance, and control the runoff prior to discharge off-site; and
- Deconcentrate and distribute stormwater runoff through natural vegetation or structural means before discharge to streams or wetlands.

The contractor will be required to install all sediment and erosion control measures and maintain them throughout the entire construction process. These measures will be monitored during construction as required by the NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activities (Permit No. GP-0-08-0001).

### Blasting

The need for blasting for house construction will be avoided as much as possible through careful planning of the building design and its placement on the lot. Site-specific investigations will be conducted to determine the location and depth to bedrock, as well as the required method of rock removal (mechanical means or blasting) which will assist in the design of specific lot improvements to minimize the need for rock removal. The proposed roads have been laid out so as to minimize the need for rock removal, while taking into consideration providing buffer areas to adjacent properties and the Town road standards.

Where it has been determined that methods other than blasting such as cutting, ripping, or chipping of rock are infeasible, blasting shall be used for rock removal. A blasting protocol that incorporates the Town of Mount Pleasant Blasting Ordinance (see Appendix K) and State regulations will be submitted to the Town prior to the start of construction. The potential effects upon nearby building foundations and local aquifers can be minimized by employing proper blasting techniques. These techniques minimize the amount of vibration from the blast that can impact structures and local aquifers, and control the amount of flyrock resulting from the blast. In general the blasting protocols will include the following:

- Blasting will be conducted in compliance with New York State requirements (Title 12 of the New York Code of Rules and Regulations [12 NYCRR Part 39]) for the possession, handling, storage, and transportation of explosives.
- All blasting will be conducted by a licensed blasting contractor. The contractor shall obtain the necessary permits from the town of Mt. Pleasant.
- A preblast survey shall be conducted for any structures within 500 feet of the blasting area. The surveys shall include photographic and written documentation of existing conditions.
- A preblast meeting shall be held with the Town Building Inspector and Engineer to review the proposed blasting plan and schedule. The blasting plan shall include the layout, size of blasts, timing of charges, and quantity of material to be removed.
- Seismographs with decibel meters shall be placed at the property line between the blast site and adjoining residences to monitor the blasting operations.
- Blasting operations shall be limited to between the hours of 8:00 am and 4:00 pm, Monday through Friday.
- Notification of blasting will be made to the Town Building Inspector and Police Department, as well as all residences within 500 feet of the blast site twice prior to blasting. The initial notification shall be made not less than 3 days nor more than 30 days prior to the start of blasting operations and shall include an approximate schedule (day and time) of the blasting. A second notice shall be made not less than 24 hours nor more than 3 days prior to the blast that provides the exact time of the blast.
- The blast zone shall be clearly marked and adequate precautions taken to prevent unauthorized entry into the blast area.

- Immediately prior to and after blasting a warning horn shall be sounded. The horn shall be sounded at prescribed intervals and times prior to the blast and after the blast as an all clear notification.
- The blast site shall be covered with 12 ft. by 15 ft. rubber and/or steel mats to prevent the ejection of material. The quantity of blasting material used shall be in accordance with the Town Code.

#### Soil Limitations

The majority of the construction will occur in areas of Chatfield-Charlton (CsD) or Charlton-Chatfield (CrC) complex soils. Only Lots 6 and 7, the Road C cul-de-sac, and a small portion of the proposed detention basin fall in a third soil group, Paxton Loam (Pnd). The CsD and CrC complexes are rated as somewhat or very limited for road construction and dwellings due to slopes and the depth to bedrock in the Chatfield components of those soils. (See Section C.1.a for a description of the limitation ratings.) Slope impacts can be mitigated by constructing dwellings on the more level portions of the lots and building the homes into the slopes. Additionally, the slopes can create erosion hazards during construction. This can be overcome by implementing stringent erosion control measures and reestablishing plant cover as soon as possible after an area is disturbed. Road profiles are designed to follow the natural contours of the land as much as possible, while still meeting the Town's standards for roadways.

The other major soil limitation in these complexes is the depth to bedrock. As noted in the blasting sub-section, site-specific investigations will be conducted for each lot as part of the site plan process. Based on these investigations, the siting of the residences and driveways will be done so as to minimize impacts due to rock. House designs will take into consideration the location, depth, and type of rock found and mitigate its impacts through variations in the building footprint, partial or no basements, and providing garages under the first floor.

The proposed detention pond is situated in CsD and PnD soils that are very to somewhat limited due to slopes and seepage. Slope limitations have been addressed by placing the detention basin in a flatter area of the site and providing embankments to detain the water. Seepage can be mitigated by providing a clay barrier within the basin.

## **2. Topography and Steep Slopes**

### **a. Existing Conditions**

The on-site topography is hilly to gently sloping with elevations ranging from approximately 250 feet to 380 feet. The highpoint is located in the northwest portion of the site at approximately elevation 380 (Highpoint #1). There is also a secondary high point located in the central portion of the site at elevation 362 (Highpoint #2). For a complete topographic map of the project site, see Exhibit III.C-3.

From Highpoint #1, the land slopes moderately to the south-southeast towards adjacent properties and ultimately, Washburn Road. In the southern and eastern

portion of the property, the land slopes toward the property line. The elevation along the eastern portion of the site varies from elevation 330 to elevation 250. The low point is located at the most southeastern corner of the site. The southern portion of the site slopes toward Washburn Road. The elevation along the south property line varies from elevation 260 to the low point along the southern property line. Rock outcrops were present predominantly in the area of Highpoint #2 and in the adjacent slopes. A slope analysis of the site using the categories established in the Town’s Steep Slope Ordinance has identified that of the ±30.0 acres that comprise the site, approximately 13.3 acres (44.4%) contain slopes of less than 0 to 15%, 9.0 acres (30.0%) that contain slopes 15% to 25%, 4.8 acres (15.9%) that contain slopes from 25% to 35% and 2.9 acres (9.7%) contain slopes greater than 35.

**b. Anticipated Impacts**

The Proposed Action is subject to Chapter 180 – Steep Slope Protection of the Town Code. This ordinance regulates construction activities on any slope that is equal to or exceeds 15%. Steep slopes are defined by three categories:

**Steep Slope** – a topographic gradient equal to or greater than 15%, but less than 25%

**Very Steep Slope** – a topographic gradient equal to or greater than 25%, but less than 35%

**Excessively Steep Slope** – a topographic gradient equal to or greater than 35%

The development of the site would impact each of these categories by the following amounts:

**Table III.C-3 – Slope Disturbance**

Slopes	Existing Conditions		Proposed Action			Conventional Plan		
	Acres	%	Area (acres)	% of Disturbance	% of Total Site	Area (acres)	% of Disturbance	% of Total Site
0% to less than 15%	13.33	44.4%	6.52	65.1%	21.7%	6.24	54.0%	20.8%
15% to less than 25%	9.01	30.0%	2.50	25.0%	8.3%	3.58	31.0%	11.9%
25% to less than 35%	4.77	15.9%	0.59	5.9%	2.0%	1.24	10.7%	4.1%
35% and greater	2.90	9.7%	0.40	4.0%	1.3%	0.50	4.3%	1.7%
<b>Total</b>	<b>30.01</b>	<b>100%</b>	<b>10.01</b>	<b>100%</b>	<b>32.1%</b>	<b>11.56</b>	<b>100%</b>	<b>36.9%</b>

Source: WSP Sells

Activities within the very steep and excessively steep slopes require review and issuing of a permit from the Planning Board. The following is a list of the review standards contained within the Steep Slopes Ordinance and the Proposed Action's compliance with those standards:

- (1) *There is no reasonable alternative for the proposed regulated activity on that portion of the site not containing steep slopes;*

The alternatives to the Proposed Action are discussed in Section VI of this DEIS.

- (2) *The planning, design and development of buildings and site improvements limits the rate of stormwater runoff to a zero increase with overflow to a municipal drain system where practicable and provides the maximum in structural safety, slope stability, and human enjoyment while adapting the affected site to, and taking advantage of, the best use of the natural terrain and aesthetic character;*

The development plan has been planned in a manner to follow or blend with the natural contours of the land. The SWPPP has been designed to provide a zero increase in peak runoff to adjacent areas and the municipal system. It also incorporates permanent and temporary erosion and sediment control measures to provide maximum structural safety and slope stability. In order to minimize slope disturbance retaining walls have been proposed. These retaining walls were designed in accordance with Town requirements to reduce the amount of grading needed to meet the existing elevations.

- (3) *The terracing of building sites is kept to a minimum;*

The property layouts were arranged to utilize the flatter areas for the main building footprint, the area in which most disturbance will occur, wherever possible, while still providing for the desired square footage. Building floor levels have been selected so as to minimize the need for excessive terracing.

- (4) *Roads and driveways follow the natural topography to the greatest extent possible in order to minimize the potential for erosion, and they are consistent with other applicable regulations of the Town of Mount Pleasant and current engineering practices;*

The alignments of the proposed roads and driveways were configured so that the impact to the steeper slopes would be minimal. Slopes at intersections, driveways and along roads have been designed to be in compliance with the Town of Mount Pleasant regulations. Due to vertical alignment restrictions on slopes at intersections and cul-de-sacs, road construction will require a net cut of 10,300± cubic yards. The maximum depth of cut for each road is 6.7 feet for Road A, 14.4 feet for Road B, and 13.22 feet for Road C.

- (5) *Habitat is quantified and protected, no endangered species of flora or fauna are adversely impacted and any replanting shall be maintained by the applicant for two years and shall consist of indigenous vegetation that at a minimum replicates the original vegetation on the site, in kind;*

The habitat is discussed in Section V.B – Flora and Fauna. There are no species of flora or fauna that are adversely impacted on-site. New plantings will be detailed on the landscape plans as part of the Site Plan approval and shall conform to the Town's ordinances.

- (6) *The natural elevations and vegetative cover of ridgelines are disturbed only if the crest of a ridge and the tree line at the ridge remain uninterrupted. This will be accomplished either by positioning buildings and areas of disturbance below a ridgeline or by positioning buildings and areas of disturbance at a ridgeline so that the elevation of the roofline of the building is no greater than the elevation of the natural tree line, so long as no more than 100 feet along the ridgeline, to a width of 100 feet generally centered on the ridgeline, is disturbed;*

The Project Site is situated south of the major ridgeline, whose high point is located at elevation 440± approximately 165 feet north of Stonington Drive. From this ridgeline the topography falls off to the north towards Route 9A/100 and south towards the Taconic State Parkway. The highest elevation on the project site, 380, is 60 feet below this ridgeline. See Exhibit III.C-3. Therefore the ridgeline provisions do not apply to this site.

- (7) *Any regrading blends in with the natural contours and undulations of the land;*

In the Applicant's opinion, regrading, as shown on the proposed grading plan, blends into the natural contours of the site.

- (8) *Cuts and fills are rounded off to eliminate sharp angles at the top, bottom, and sides of regraded slopes;*

Rounding has been provided at the top, bottom, and sides for regraded slopes.

- (9) *The angle of cut and fill slopes does not exceed a slope of one vertical to two horizontal, except where retaining walls, structural stabilization, or other methods acceptable to the Town Engineer are used;*

The maximum proposed slope for any regrading is one vertical to two horizontal, except where retaining walls have been proposed.

- (10) *Tops and bottoms of cut and fill slopes are set back from the structures an adequate distance to ensure the safety of the structures in the event of the collapse of the cut or fill slopes. Generally, such distance is six feet plus 1/2 the height of the cut or fill;*

The cut and fill slopes will be constructed in accordance with the recommendations of a geotechnical engineer and subject to the approval of the Town Engineer.

- (11) *Disturbance of rock outcrops is by means of explosives only if labor and machines are not effective and only if rock blasting is conducted in accordance with all applicable regulations of the Town of Mount Pleasant and the State of New York. The rock shall be effectively stabilized;*

Blasting will be avoided wherever practicable and will generally be limited to those areas requiring rock removal of greater than four feet in depth. Excavation equipment or mechanical means of rock removal will be employed to remove rock, where practical. All blasting will be conducted in accordance with Town and State regulations. Details of mitigation measures for blasting are provided in Section C.1.c – Blasting.

- (12) *Disturbance of slopes is undertaken in workable units in which the disturbance can be completed and stabilized in one construction season so that areas are not left bare and exposed during the period from December 15 through April 15;*

All on-site disturbance will be performed and maintained in accordance with NYSDEC regulations and limited to a maximum of 5-acres of disturbance at any one time. The work shall be conducted in accordance with the scheduling and sequencing proposed in the SWPPP and as approved by the Town Engineer.

- (13) *Disturbance of existing vegetative ground cover does not take place more than 15 days prior to grading and construction;*

Disturbance of vegetative cover is addressed in the SWPPP and will be done in accordance with NYSDEC regulations.

- (14) *Temporary soil stabilization, including, if appropriate, temporary stabilization measures such as netting or mulching to secure soil during the grow-in period, is applied to an area of disturbance within two days of establishing the final grade, and permanent stabilization is applied within 15 days of establishing the final grade;*

Temporary soil stabilization measures are specified in the erosion and sediment control plan and addressed in The Proposed Mitigation portion of this section.

- (15) *Soil stabilization is applied within two days of disturbance if the final grade is not expected to be established within 60 days;*

Soil stabilization measures are specified in the erosion and sediment control plan and addressed in The Proposed Mitigation portion of this section.

- (16) *Measures for the control of erosion and sedimentation are undertaken consistent with the Westchester County Soil and Water Conservation District's "Best Management Practices Manual for Erosion and Sediment Control," and the New York State Department of Environmental Conservation's "Guidelines for Urban Erosion and Sediment Control," as amended, or its equivalent satisfactory to the Planning Board;*

The erosion and sediment control plan as addressed in The Proposed Mitigation portion of this section and is conformance with all applicable local, County, and State regulations.

- (17) *All proposed disturbance of slopes is undertaken with consideration of the soils limitations characteristics contained in the latest Identification Legend, Westchester County Soils Survey, as prepared by the Westchester County Soil and Water Conservation District, in terms of recognition of limitation of soils on slopes for development and application of all mitigating measures, and as deemed necessary by the Town Engineer;*

All excavation and fill will be conducted in accordance with the recommendations of a geotechnical engineer and as approved by the Town Engineer.

- (18) *Topsoil is removed from all areas of disturbance, stockpiled and stabilized in a manner to minimize erosion and sedimentation, and replaced elsewhere on the site at the time of final grading;*

Disturbance, stockpiling, and stabilization of topsoil is specified in the erosion and sediment control plans and addressed in The Proposed Mitigation portion of this section and is conformance with all applicable local, County, and State regulations.

- (19) *Topsoil stockpiling is not permitted on slopes of greater than 10%;*

Topsoil stockpiles will not be located on slopes that are greater than 10%.

- (20) *Compaction of fill materials in fill areas is such to ensure support of proposed structures and stabilization for intended uses;*

Fill material will be compacted in accordance with the recommendations of a geotechnical engineer.

- (21) *Structures are designed to fit into the hillside rather than altering the hillside to fit the structure, employing methods such as reduced footprint design, step-down structures, stilt houses, and minimization of grading outside the building footprint;*

The floor elevations have been specified so as to fit into the hillsides. Final building designs will be designed for the specific lot on which they are located so as to take into consideration the topography of the particular lot. Building techniques such as split/stepped levels, garage under, and walk out basements will be utilized to minimize grading outside of the house footprint.

- (22) *Development is sited on that portion of the site least likely to impact the natural landforms, geological features, and vegetation;*

The Proposed Action has been designed to utilize areas that already contain some form of “site improvements” such as landscaped lawn areas, paved travel ways, and maintained landscape areas. The natural landforms, geological features, and vegetation on the site are primarily located along the areas abutting Washburn Road and the Taconic State Parkway. These areas are designated as open space in the Proposed Action.

- (23) *The applicant has provided landscaping plans for after-development;*

Landscaping Plans will be developed as part of the Site Plan approval process.

- (24) *The development conforms with the requirements set forth in Chapter 218, Zoning, of the Code of the Town of Mount Pleasant;*

Zoning compliance is addressed in Section III.A – Land Use and Zoning.

- (25) *The construction equipment has adequate access so as not to disturb anything outside the approved limit of disturbance that shall be shown on the plan drawings and, when approved, staked in the field.*

Construction access is addressed in Section III.L – Construction and all limits of disturbance will be delineated with construction fence prior to the start of work.

**c. Proposed Mitigation**

The proposed roadways have been designed to follow the natural contours of the site, to the extent feasible, to minimize the impacts to steep slopes. The proposed alignments follow existing travel ways wherever possible to take advantage of the previously graded areas of the site. Regrading will be implemented to blend with natural existing contours of the site. Cuts and fills will be rounded at the top and base of the slopes. Maximum slopes will be limited to one vertical over two horizontal. In areas where excessive grading would be required, retaining walls have been proposed to minimize impacts. In general proposed retaining walls are 4 feet high, but in no case do they exceed 6 feet in height.

To minimize site impacts, roads and buildings have been sited to avoid the steeper slopes as much as is practical.

During the final site plan development of each of these buildings, adjustments can be made to reduce the building area that falls within the greater than 25% slope areas.

The main limitation on the Project Site is the low to moderate depth to rock. To mitigate this concern, the proposed residences shall be constructed and placed as to minimize the need for deep excavations (and potential rock removal) by eliminating basements from the house designs. Although the proposed roads within the project site shall also be designed to limit the required excavation quantities, because the proposed roads shall meet existing roads adjacent to the project site and because of design constraints imposed by municipal code, substantial excavations, resulting in a net cut amount of 10,300 cubic yards, along the proposed road alignment(s) are required at some locations.

G:\D\D-429 Taconic Tract-Mt. Pleasant\DEIS\III.C-Soils topo slopes.doc

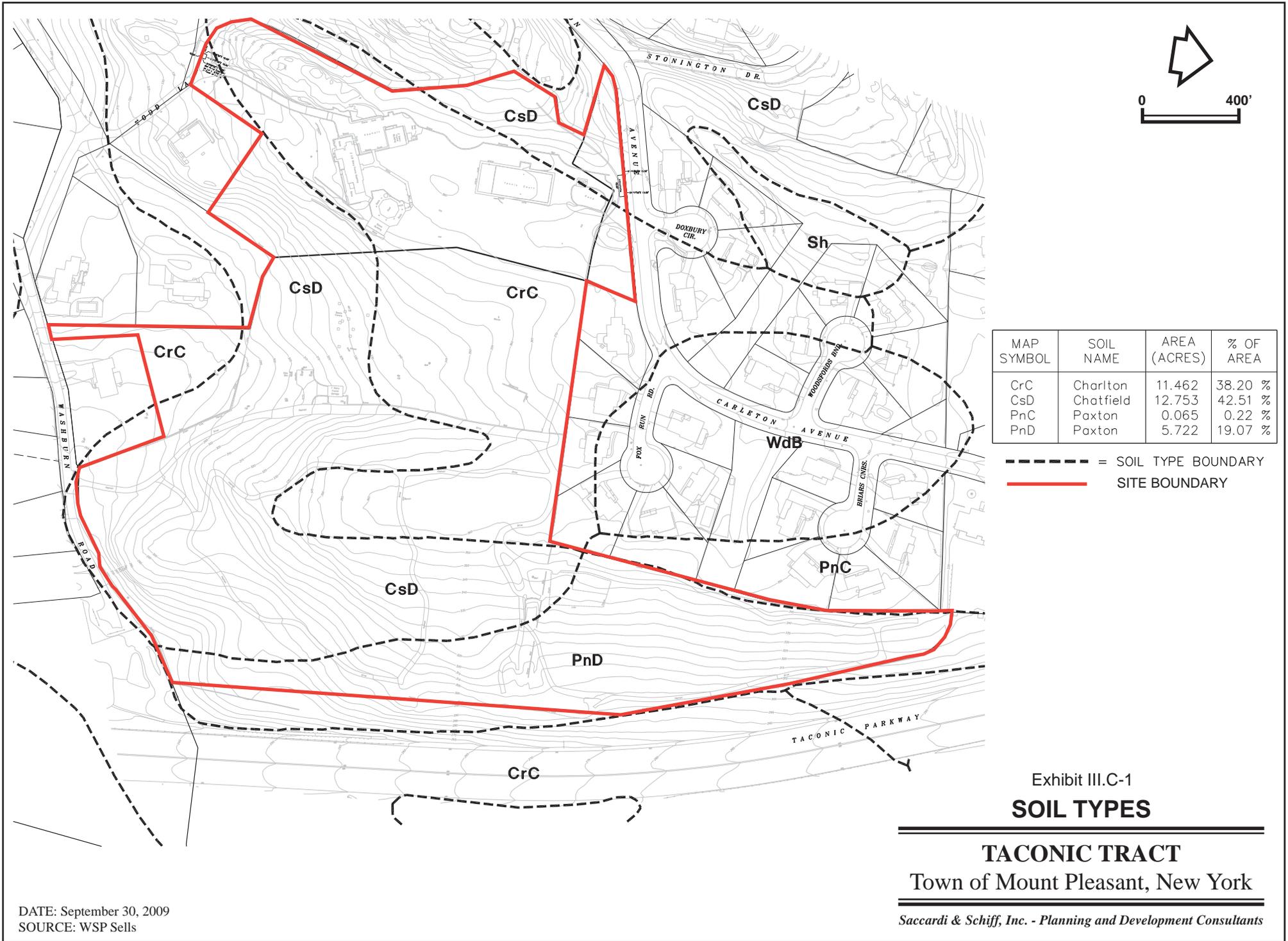
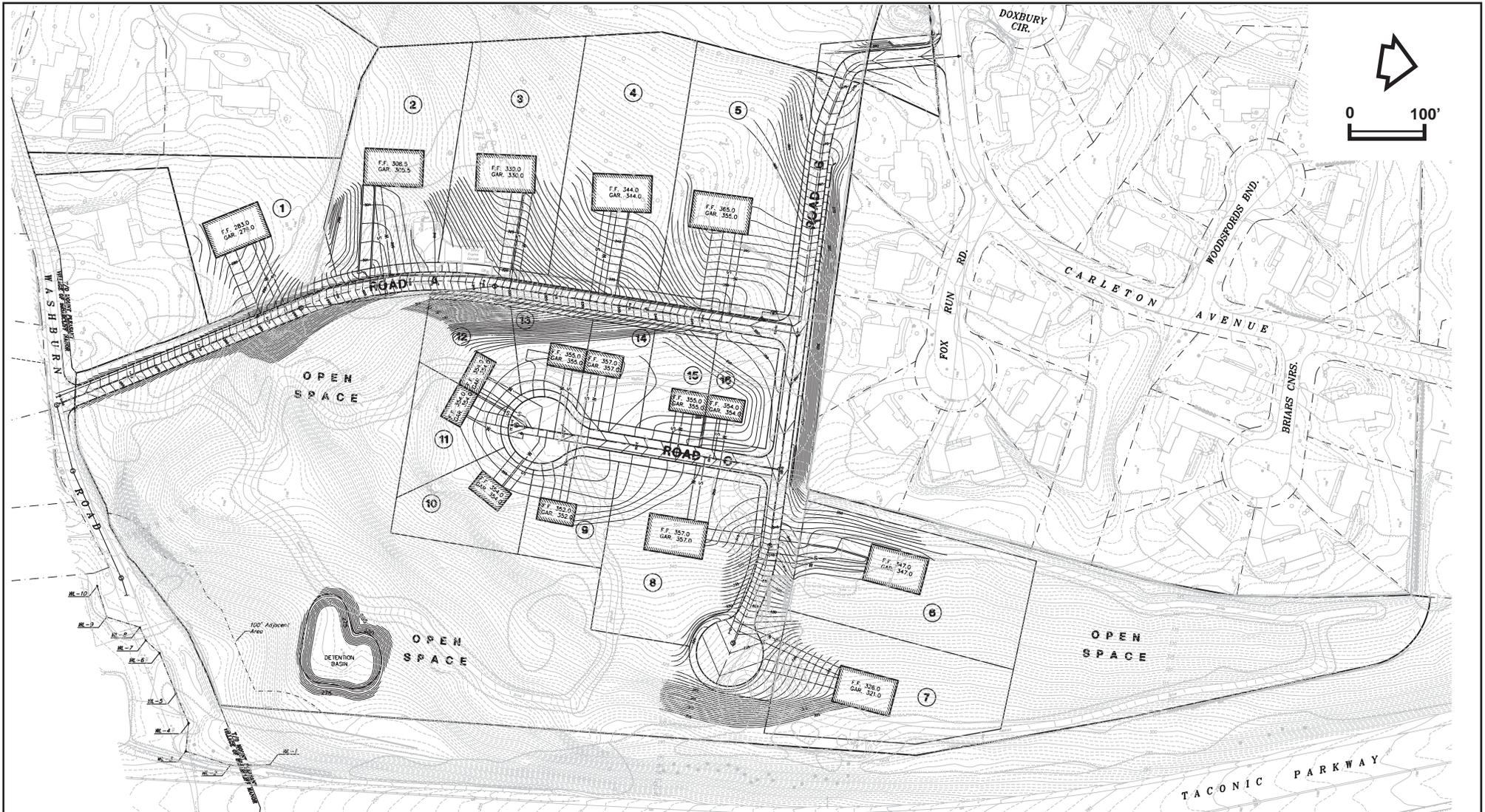


Exhibit III.C-1  
**SOIL TYPES**

**TACONIC TRACT**  
 Town of Mount Pleasant, New York  
*Saccardi & Schiff, Inc. - Planning and Development Consultants*

DATE: September 30, 2009  
 SOURCE: WSP Sells



**ZONING CONFORMANCE CHART**  
ZONING DISTRICT: R-40 (SINGLE FAMILY RESIDENTIAL)

CATEGORY	REQUIRED	PROVIDED										
		LOT 1	LOT 2	LOT 3	LOT 4	LOT 5	LOT 6	LOT 7	LOT 8	LOT 11*	LOT 12*	
MINIMUM LOT AREA	40,000 SQ.FT.	43,510	45,015	46,865	51,170	57,153	47,786	42,552	42,135	330,368		
MINIMUM LOT WIDTH	150 FT.	180	150	150	150	169	150	150	198	320		
MINIMUM LOT DEPTH	175 FT.	195	305	310	327	328	316	315	230	700+		
MINIMUM BUILDING HEIGHT	2 1/2 STORES OR/ 35 FT.	35 FT.	35 FT.	35 FT.	35 FT.	35 FT.	35 FT.	35 FT.	35 FT.	2 1/2 STORES		
MINIMUM FRONT YARD (PRINCIPAL STRUCTURE)	60 FT.	80	100	100	96	95	92	82	64	663		
MINIMUM SIDE YARD (PRINCIPAL STRUCTURE)	25 FT.	26	28	26	25	25	34	35	61	415		
MINIMUM REAR YARD (PRINCIPAL STRUCTURE)	50 FT.	61	135	150	185	187	143	150	53	417		
MAXIMUM BUILDING COVERAGE (PERCENT OF LOT AREA)	10%	9.2	8.9	8.5	7.8	7.0	8.4	9.2	9.5	1.7		
MINIMUM FLOOR AREA	1,200 SQ.FT.	4,000 SQ.FT.	4,000 SQ.FT.	4,000 SQ.FT.	4,000 SQ.FT.	4,000 SQ.FT.	4,000 SQ.FT.	4,000 SQ.FT.	4,000 SQ.FT.	3,311 SQ.FT.		

\* EXISTING WATERHOUSE LOT

**ZONING CONFORMANCE CHART**  
ZONING DISTRICT: R-10 (SINGLE FAMILY RESIDENTIAL)

CATEGORY	REQUIRED	PROVIDED									
		LOT 9	LOT 10	LOT 11	LOT 12	LOT 13	LOT 14	LOT 15	LOT 16		
MINIMUM LOT AREA	10,000 SQ.FT.	15,384	17,792	15,173	14,895	10,411	11,607	11,487	11,560		
MINIMUM LOT WIDTH	75 FT.	113	98	93	92	87	85	100			
MINIMUM LOT DEPTH	100 FT.	116	116	125	120	124	116	115	145		
MINIMUM BUILDING HEIGHT	2 1/2 STORES OR/ 35 FT.	35 FT.	35 FT.	35 FT.	35 FT.	35 FT.	35 FT.	35 FT.	35 FT.		
MINIMUM FRONT YARD (PRINCIPAL STRUCTURE)	30 FT.	36	37	43	43	33	33	30	30		
MINIMUM SIDE YARD (PRINCIPAL STRUCTURE)	10 FT. MIN./25 FT. TOTAL 2 SIDES	15.8	16	0	0	0	0	0	0		
MINIMUM REAR YARD (PRINCIPAL STRUCTURE)	30 FT.	49	53	40	60	40	41	74	74		
MAXIMUM BUILDING COVERAGE (PERCENT OF LOT AREA)	20%	9.8	8.4	9.9	10.0	14.4	12.9	13.1	13.0		
MINIMUM FLOOR AREA	1,200 SQ.FT.	1,500 SQ.FT.	1,500 SQ.FT.	1,500 SQ.FT.	1,500 SQ.FT.	1,500 SQ.FT.	1,500 SQ.FT.	1,500 SQ.FT.	1,500 SQ.FT.		

Exhibit III.C-2  
**GRADING PLAN**

**TACONIC TRACT**

Town of Mount Pleasant, New York

Saccardi & Schiff, Inc. - Planning and Development Consultants



Exhibit III.C-3  
**TOPOGRAPHY OF SITE**

**TACONIC TRACT**  
Town of Mount Pleasant, New York

*Saccardi & Schiff, Inc. - Planning and Development Consultants*

DATE: September 30, 2009  
SOURCE: WSP Sells