

3.1 Geology, Soils, and Topography

Comment 3.1-1 (Planning Board Meeting, November 10, 2011, James Creighton): Thank you. I appreciate that's exactly it. There is also the discussion of blasting. I appreciate their expectation that there will be no blasting except that in the DEIS they mention there may be blasting if necessary. And if there is any blasting near the northern side, they'll get in touch with the Fallsburg Fishing and Boating Club and come up with blasting protocols. I'm very concerned about that. What I'd like is a commitment that if there is any blasting anywhere on the site on the project or ten sites attached to itself or anywhere near that dam, we'd want to be sure that blasting is either non-existent or minimized to the greatest extent possible. And that there be a pre-blasting inspection done just to be sure that this can be monitored in the highest... this is a huge concern. I understand the expectation the applicant has not to blast. But the DEIS does raise it as a possibility. And their stated expectation is that they will contact us only if it has to do with the northern part of the project. I think that notification should be for the entire project and I would hope that is a completely unnecessary exercise that there won't be any need for blasting. But again, we want to raise the issue and be sure that it is fully addressed that there be no blasting or that there be very, very strict protocol in place, of course, with our participation and whatever is necessary.

Response 3.1-1: The October 2011 DEIS stated that blasting is not anticipated. The language included in the DEIS stating that if blasting was needed a blasting protocol would be created was included to illustrate what would be done if blasting were needed. However the project engineer has stated that in his experience rock formations in the county generally and in the vicinity of the project specifically are of a composition that will allow removal without blasting. Furthermore the site has been designed to avoid requiring deep areas of cut or fill for the construction of the road network or cluster layouts.

Comment 3.1-2 (Planning Board Meeting, November 10, 2011, James Creighton): They also talk about mechanical hammers being used instead of blasting. Again, I don't know the details of it whether or not that would have any impact. But it sounds like you are banging on bedrock. And if you are banging on bedrock, does that have any impact on a dam, as well. I don't know but I would like the idea of not blasting looked at but also mechanical hammers or whatever else they are planning to use to beat up the rock and take it off site. I don't expect it to be a problem. It sounds like that is an acceptable form of getting rid of the rock without blasting. But again anything that would impact us, the site is very close to the dam. And we spent an awful lot of money to upgrade it and to make sure it was all set. We just don't want to have any issues.

Response 3.1-2: The limited areas where bedrock is located at the surface of the property shows the bedrock to be friable and easily ripped apart. The proposed mechanical means of removing any bedrock (if needed) would include limited hammering or ripping. Though the property line is as close as 300 feet to the Pleasure Lake Dam, disturbance to the property is not proposed that close to the dam. Areas of exposed bedrock were observed in the southern portion of the Raleigh and Heiden Properties site, located approximately 1500 feet from the Pleasure Lake Dam. This distance combined with the "soft" rock present on the property should mitigate any vibrations felt offsite. An industry reference, the British Standard 7385 states "there should typically be no cosmetic damage if transient vibration does not exceed 15 millimeters per second (mm/s)", this same standard states that a Hydraulic rock breaker

measures 4.5 mm/s at 5 meters (m) or approximately 16 feet).

Comment 3.1-3 (Letter to Planning Board, December 16, 2011, Fallsburg Fishing and Boating Club, James Creighton): Although the DEIS proposes disturbance of 4.1% of the total steep slopes area in excess of 20%, the DEIS should include additional information regarding the amount of disturbance proposed on slopes from 15-20% and 10-15%. It should be noted that the applicant's undated long form SEQRA assessment filing for this project attached as DEIS Appendix A shows that 25% of the site consists of 15% or greater steep slopes.

Response 3.1-3: *The project scope requires that steep slopes on the property (steep slopes being defined as greater than 20 percent) be mapped for the site and the steep slope disturbance be calculated. The Town of Fallsburg Code defines steep slopes in residential zones as greater than 20 percent; it is defined as greater than 15 percent in non-residential zones. This has been completed and is included in the October 13, 2011 DEIS.*

Comment 3.1-4 (Letter to Planning Board, December 16, 2011, Fallsburg Fishing and Boating Club, James Creighton): In particular, the slopes alongside the Sheldrake Stream and the unnamed stream feeding from the Heiden Road wetlands from the northwestern portion of the site toward the Sheldrake Stream are very significant and should remain undisturbed to the largest extent possible. Irreversible damage to water quality to the Sheldrake Stream – a Class B(t) waterbody (a part of the Middle Delaware River Watershed) should be avoided at all costs, and the applicant should supplement the DEIS to describe the measures to be taken to ensure that said slopes will remain undisturbed.

Response 3.1-4: *The slopes adjacent to the Sheldrake Stream and the unnamed tributary to it, located within the northwestern portion of the property, will be left undisturbed except for the installation of the water and sewer mains to cross under the Sheldrake Stream to the eastern portion of the project site. Any disturbance to areas adjacent to Sheldrake Stream will be completed in conformance with the erosion control plan and with the requirements of the General Permit.*

A General Permit is supplied from the NYSDEC, a notice of intent regarding construction is supplied to the NYSDEC after the development of the Stormwater Pollution Prevention Plan (SWPPP), which is developed in accordance with the General Permit. This permit authorizes stormwater discharges to surface waters of the state from proposed construction activities. The SWPPP is developed to provide a solution to divert and to clean stormwater discharges so that the state is aware that the discharges are within state guidelines. This permit mandates that the construction site needs to remain within state discharge guidelines so that receiving waters are not impacted from the soil disturbance.

Comment 3.1-5 (Letter to Planning Board, December 16, 2011, Fallsburg Fishing and Boating Club, James Creighton): Compounding the potential impacts of extensive slope disturbance is the proposed excavation of 90,000 cubic yards of poorly drained soils (DEIS at pages 3.1-1 to 3.1-9). The various identified project site soil types provide substantial limitations for building sites and road construction for access roads and stormwater management. The developer has indicated in the DEIS that “the soils mentioned above have moderate to severe limitations associated with them for the construction of local roads, buildings without basements, and shallow excavations for utilities. Construction in these areas will require grading, filling and

trenching, as well as provisions to provide temporary dewatering or drainage to limit the potential effects of frost action or wetness in soils. Further site specific soils testing will be required for the design of stormwater management facilities.” (DEIS at page 3.1-7) While the DEIS states that “the limiting characteristics of these soils may be overcome through careful project planning, design and management,” (id) the developer has provided the Planning Board no indication of what “careful project planning” techniques, “design” elements or “management” principles are proposed for this project.

Response 3.1-5: The applicant has discussed the impacts of soil disturbance in this area in compliance with the scope. Such techniques discussed are mentioned on Page 3.1-7, such as dewatering techniques and drainage designs to protect against wetness in the soil and frost action. Planning techniques may include limiting basements and use of slab construction, and/or use of foundation drains if necessary.

Comment 3.1-6 (Letter to Planning Board, December 16, 2011, Fallsburg Fishing and Boating Club, James Creighton): The assertion that “further site specific soils testing will be required for the design of stormwater management facilities” leads one to believe that the engineering studies remain incomplete and that the results are either unknown or were withheld from the Planning Board in the DEIS.

Response 3.1-6: The Stormwater Pollution Prevention Plan presents the final design parameters for stormbasin design. Since this plan is subject to review by NYSDEC, there may be further testing required by that agency.

Comment 3.1-7 (Letter to Planning Board, December 16, 2011, Fallsburg Fishing and Boating Club, James Creighton): The disturbance of such an enormous area poses adverse effects to water quality not only during the construction phase, but also under post-construction development conditions after existing soil profiles and drainage patterns have been artificially reconfigured.

Response 3.1-7: The disturbance of the property for the proposed development will be conducted in conformance with an approved erosion control plan and in accordance with the New York State General Permit, both of which are required to be put into place to protect adverse effect on water quality during construction and for the post-construction phase. See response to comment 3.1-4 for a discussion of the purpose of a General Permit.

Comment 3.1-8 (Letter to Planning Board, December 16, 2011, Fallsburg Fishing and Boating Club, James Creighton): The proposed excavation of 90,000 cubic yards of soil and fill of 75,600 cubic yards of soil (with the applicant’s vague assertion that the remainder of the approximate 15,000 cubic yards of soil would “be utilized onsite as additional fill on roadsides, residential yards and stormwater basin side slopes” with no material anticipated to be exported from the site (DEIS at page 3.1-9)) is of particular concern.

Response 3.1-8: The Project Engineer plans to use all excavated material onsite. As the final design drawings are developed, soils will be used in those locations quoted in the comment, and possibly others such as for general top soil.

Comment 3.1-9 (Letter to Planning Board, December 16, 2011, Fallsburg Fishing and Boating Club, James Creighton): While the applicant states that it believes blasting is not

anticipated in light of the geology on the site and the “regulatory and safety demands inherent with blasting” and “in consideration of the nearby hotel buildings and homes as well as the proximity to the Pleasure Lake Dam situated within 1,000 ft. of potential rock excavation locations,” the applicant does not foreclose the possibility. (DEIS at page 3.1- 10 to 3.1-12) As a condition of any approval on the site, no blasting should be allowed under any circumstances. In the event blasting is “necessary” the FF&BC requests that the applicant be required to draft a blasting plan in association with the New York State DEC, the Town and the FF&BC under strict blasting protocol. Any blasting anywhere on the applicant’s site (not just the northern portion) must require a pre-blasting inspection of the dam and monitoring by an independent engineering professional at the applicant’s sole cost and expense. Similarly, any heavy mechanical hammering that may impact the Pleasure Lake Dam must be avoided, and similar measures must be taken to ensure that mechanical rock removal does not adversely affect the dam structure.

Response 3.1-9: *Comment noted. See responses to comments 3.1-1 and 3.1-2 above.*

Comment 3.1-10 (Letter to Planning Board, December 10, 2011, Jerry Chiocchio): As a member of the Fallsburg Fishing and Boating Club, we, the 100 members, own the Dam on Pleasure Lake. I must plead with you to not allow any blasting in this project. We cannot afford any latent damage done to the Dam as a result of the blasting. I am sure you can agree, fixing a Dam is very costly as we already completed a \$2.2M repair several years ago. We take it seriously in maintaining the Dam to protect our residents downstream. Blasting the bedrock can cause shock wave deep inside the soil that can cause premature failure at a later time. I really hope you will consider rejecting any request for blasting or heavy hammering.

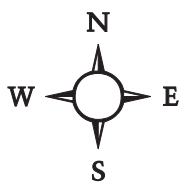
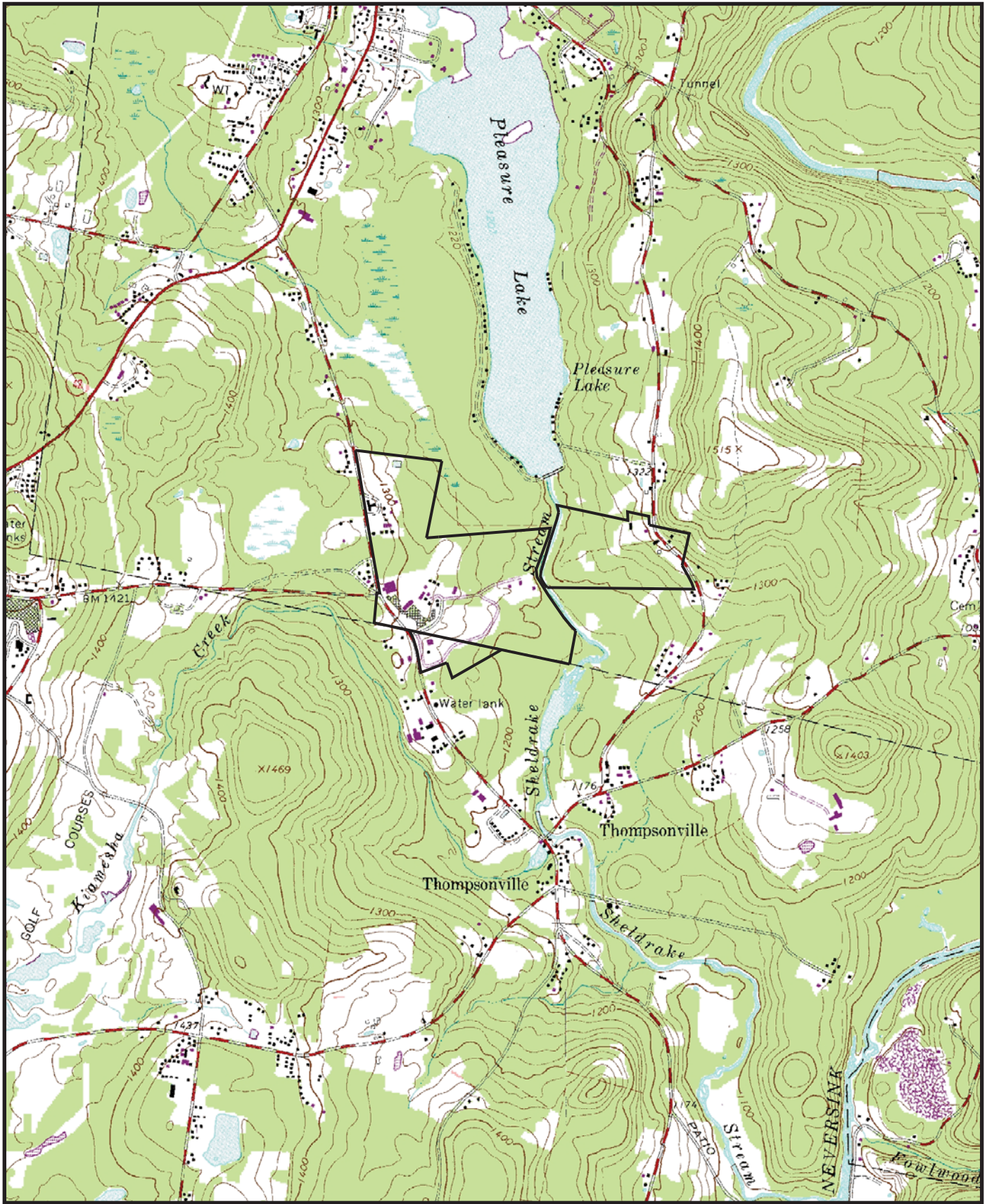
Response 3.1-10: *Comment noted, see responses to comments 3.1-1 and 3.1-2 above.*

Comment 3.1-11 (Letter to Planning Board, December 12, 2011, Bob Abbott): The dam that our club paid a very large amount of money to construct at the behest of the DEC could be damaged due to blasting which would affect the entire surrounding area.

Response 3.1-11: *Comment noted, see responses to comments 3.1-1 and 3.1-2 above.*

Comment 3.1-12 (Letter to Planning Board, December 14, 2011, Larine Harr): Blasting will potentially damage the dam as well as the spillway that was recently constructed on Pleasure Lake, which will negatively impact the nearly 100 houses on the lake as well as be a hazard to houses located down stream.

Response 3.1-12: *Comment noted, see responses to comments 3.1-1 and 3.1-2 above.*



LEGEND

□ Site Property Boundary

Figure 3.1-1: Local Topography

Raleigh and Heiden Properties

Town of Fallsburg, Sullivan County, New York

Base Map: USGS 7.5-minute Topographic Map, Monticello Quad, 2000

Scale: 1" = 2000'

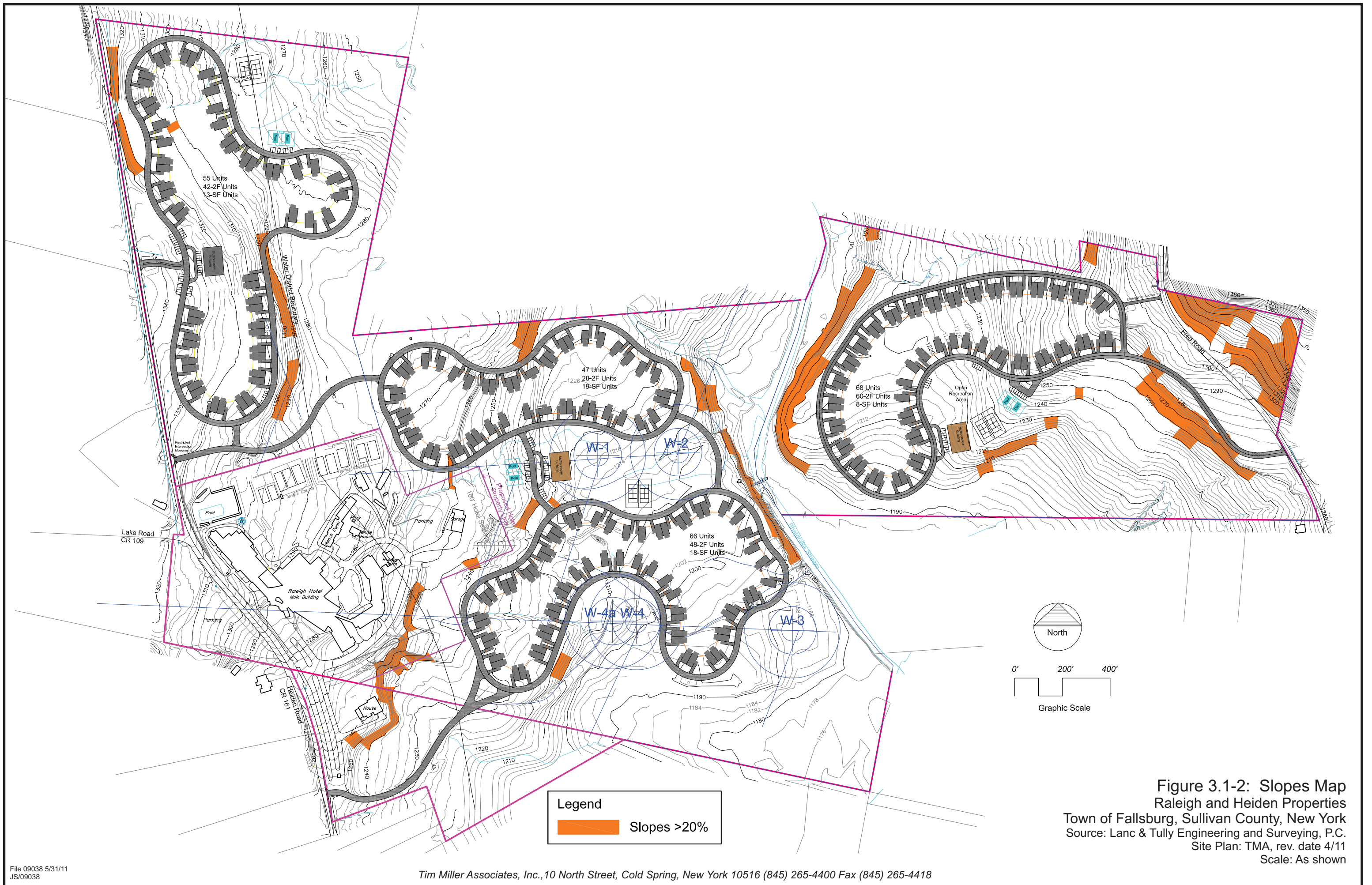
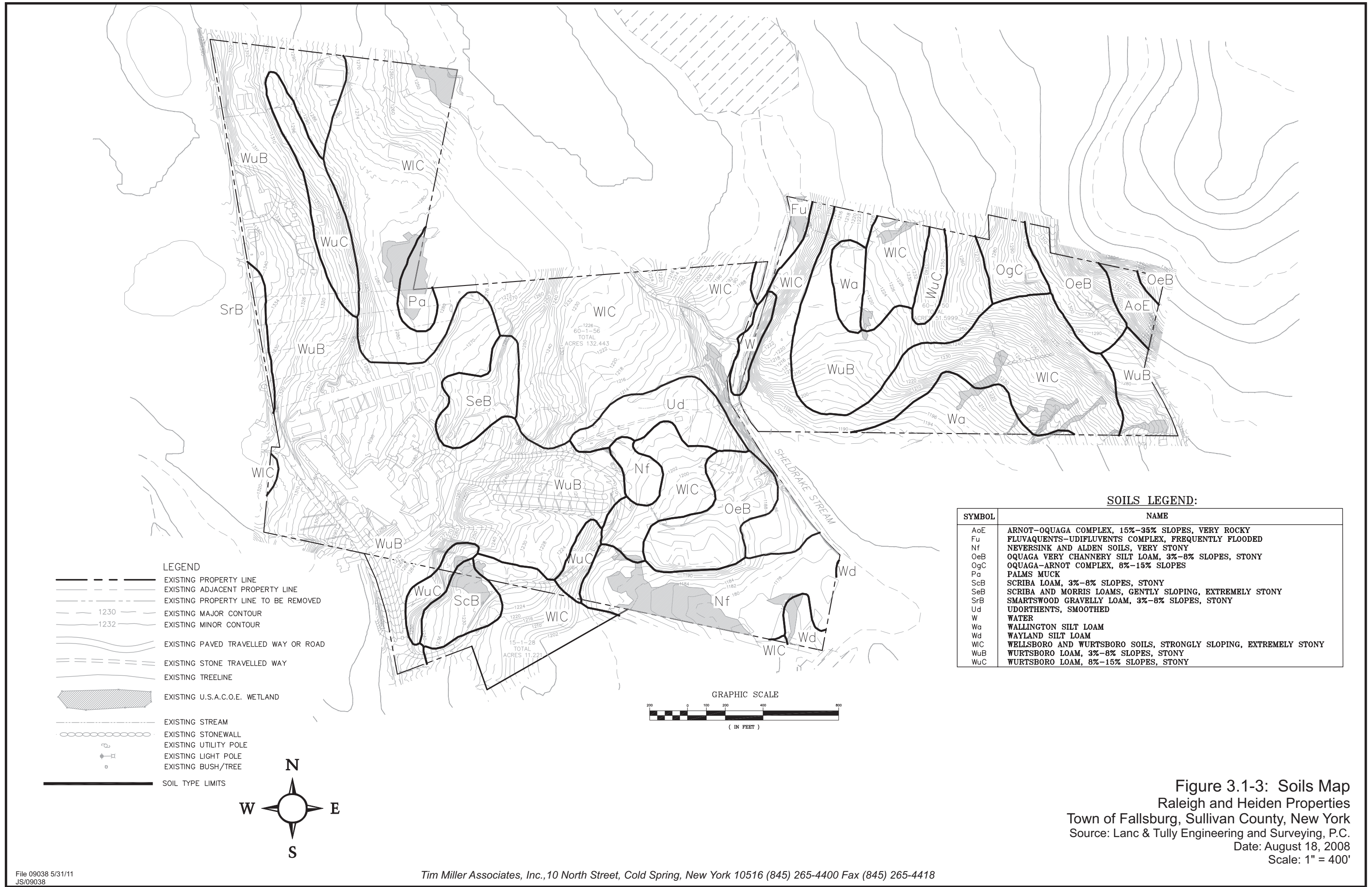
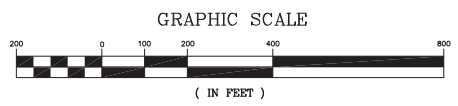
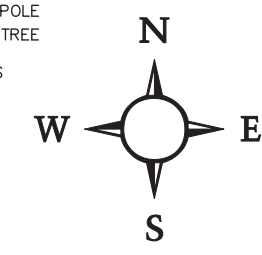


Figure 3.1-2: Slopes Map
 Raleigh and Heiden Properties
 Town of Fallsburg, Sullivan County, New York
 Source: Lanc & Tully Engineering and Surveying, P.C.
 Site Plan: TMA, rev. date 4/11
 Scale: As shown



- LEGEND**
- EXISTING PROPERTY LINE
 - - - EXISTING ADJACENT PROPERTY LINE
 - - - EXISTING PROPERTY LINE TO BE REMOVED
 - 1230 --- EXISTING MAJOR CONTOUR
 - 1232 --- EXISTING MINOR CONTOUR
 - EXISTING PAVED TRAVELLED WAY OR ROAD
 - EXISTING STONE TRAVELLED WAY
 - EXISTING TREELINE
 - ▨ EXISTING U.S.A.C.O.E. WETLAND
 - EXISTING STREAM
 - EXISTING STONEWALL
 - EXISTING UTILITY POLE
 - EXISTING LIGHT POLE
 - EXISTING BUSH/TREE
 - SOIL TYPE LIMITS



SOILS LEGEND:

SYMBOL	NAME
AoE	ARNOT-OQUAGA COMPLEX, 15%-35% SLOPES, VERY ROCKY
Fu	FLUVAQUENTS-UDIFLUVENTS COMPLEX, FREQUENTLY FLOODED
Nf	NEVERSINK AND ALDEN SOILS, VERY STONY
OeB	OQUAGA VERY CHANNERY SILT LOAM, 3%-8% SLOPES, STONY
OgC	OQUAGA-ARNOT COMPLEX, 8%-15% SLOPES
Pa	PALMS MUCK
ScB	SCRIBA LOAM, 3%-8% SLOPES, STONY
SeB	SCRIBA AND MORRIS LOAMS, GENTLY SLOPING, EXTREMELY STONY
SrB	SMARTSWOOD GRAVELLY LOAM, 3%-8% SLOPES, STONY
Ud	UDORTHERENTS, SMOOTHED
W	WATER
Wa	WALLINGTON SILT LOAM
Wd	WAYLAND SILT LOAM
WIC	WELLSBORO AND WURTSBORO SOILS, STRONGLY SLOPING, EXTREMELY STONY
WuB	WURTSBORO LOAM, 3%-8% SLOPES, STONY
WuC	WURTSBORO LOAM, 8%-15% SLOPES, STONY

Figure 3.1-3: Soils Map
 Raleigh and Heiden Properties
 Town of Fallsburg, Sullivan County, New York
 Source: Lanc & Tully Engineering and Surveying, P.C.
 Date: August 18, 2008
 Scale: 1" = 400'