FORM 2-3

CERTIFICATION OF NEPA CLASSIFICATION

Project Number: _____

It is the finding of the Essex County Government Center (Recipient Name)

that the activity(ies) proposed in its 2012 (Project Year) NYS CDBG project,

Town of Keene Fire Department (Project Name) are:

Check the applicable classification.

☐ Exempt as defined in 24 CFR 58.34 (a).

☐ Categorically Excluded as defined in 24 CFR 58.35(b).

☐ Categorically Excluded as defined in 24 CFR 58.35(a), and no activities are affected by federal environmental statues and executive orders [i.e., exempt under 58.34(a)(12)].

☐ Categorically Excluded as defined in 24 CFR 58.35(a), and some activities are affected by federal environmental statues and executive orders.

☑ "Other" neither exempt (24 CFR 58.34(a)) nor categorically excluded (24 CFR 58.35(a) and (b)).

☐ Part or all of the project is located in an area identified as a floodplain or wetland. For projects located in a floodplain or wetland, evidence of compliance with Executive Orders 11988 and/or 11990 is required.

For activities excluding those classified as "Other", attached is the appropriate Classification Checklist (Exhibit 2-4) that identifies each activity and the corresponding citation.

Signature of Certifying Officer

9/7/12
Date

Michael Mascarenas
Print Name

Director
Title

FORM 2-4

NEPA CLASSIFICATION CHECKLIST
EXEMPT ACTIVITIES (24 CFR 58.34)

- ☐ Environmental and other studies, resource identification and development of plans and strategies [58.34(a)(1)].
- ☐ Information and financial services [58.34(a)(2)].
- ☑ Administration and management activities [58.34(a)(3)].
- ☐ Public services that will not have a physical impact or result in physical changes, such as services concerned with employment, crime prevention, child care, health, drug abuse, education, counseling, energy conservation and welfare or recreational needs [58.34(a)(4)].
- ☐ Inspections and testing of properties for hazards or defects [58.34(a)(5)].
- ☐ Purchase of insurance [58.34(a)(6)].
- ☐ Purchase of tools [58.34(a)(7)].
- ☑ Engineering or design costs [58.34(a)(8)].
- ☐ Technical assistance and training [58.34(a)(9)].
- ☐ Assistance for temporary or permanent improvements that do not alter environmental conditions and are limited to protection, repair or restoration activities necessary only to control or arrest the effects from physical disasters, imminent threats or physical deterioration [58.34(a)(10)].
- ☐ Payment of principal and interest on loans made or obligations guaranteed by HUD [58.34(a)(11)].
- ☐ Any of the categorical exclusions listed in 58.35(a), provided that there are no circumstances which require compliance with any other Federal laws and authorities cited in 58.5 [58.34(a)(12)].

In accordance with 24CFR 58.34(b), no further approval form from HUD or the State is necessary for the drawdown of funds to implement this program.

However, the responsible entity must still document in writing its compliance with and/or applicability of the "Other requirements" list at 58.6.

Signature

9/7/2012
Date

FORM 2-4

NEPA CLASSIFICATION CHECKLIST
CATEGORICALLY EXCLUDED ACTIVITIES [24 CFR 58.35(a)]

Activities in this section require compliance with related laws and authorities at 24 CFR 58.5 and 58.6

☐ Acquisition, repair, construction, reconstruction, rehabilitation or installation of public facilities and improvements (other than buildings) when the facilities and improvements are in place and will be retained in the same use without change in size or capacity of more than 20 percent. Examples of this type of activity include replacement of water and sewer lines, reconstruction of curbs and sidewalks, street repaving [58.35(a)(1)].

☐ Special projects directed to the removal of material and architectural barriers that restrict the mobility of and accessibility to elderly and handicapped persons [58.35(a)(2)].

☐ Rehabilitation of buildings and improvements for residential use (with one to four units), where the density is not increased beyond four units, the land use is not changed, and the footprint of the building isn't increased in a floodplain or in a wetland [58.35(a)(3)(i)].

☐ Rehabilitation of multifamily residential buildings (with five or more units), when the following conditions are met: a) unit density is not changed more than 20 percent, b) the project does not involve changes in land use from residential to non-residential; and c) the estimated cost of rehabilitation is less than 75 percent of the total estimated cost of replacement after rehabilitation [58.35(a)(3)(ii)].

☐ Rehabilitation of non-residential structures, including commercial, industrial, and public buildings when the following conditions are met: a) the facilities and improvements are in place and will not be changed in size or capacity by more than 20 percent, and b) the activity does not involve a change in land use, such as from non-residential to residential, commercial to industrial or from one industrial use to another [58.35(a)(3)(iii)].

☐ An individual action on up to four dwelling units [not including rehabilitation (see 58.35(a)(3)(i) above)] where there is a maximum of four units on any one site. The units can be four one-unit buildings or one four-unit building or any combination in between [58.35(a)(4)(i)].

☐ An individual action on a project of five or more housing units [not including rehabilitation (see 58.25(a)(3)(i) above)] developed on scattered sites when the sites are more than 2000 feet apart and there are not more than four housing units on any one site [58.35(a)(4)(ii)].

☐ Acquisition (including leasing) or disposition of an existing structure, equity loans on an existing structure, or acquisition (including leasing) of vacant land provided that the structure or land acquired, financed or disposed of will be retained for the same use [58.35(a)(5)].

☐ Any combination of the above activities [58.35(a)(6)].

FORM 2-4

NEPA CLASSIFICATION CHECKLIST
CATEGORICALLY EXCLUDED ACTIVITIES [24 CFR 58.35(b)]

*Activities in this section require compliance with related laws and authorities at 24 CFR 58.6 only**

☐ Tenant-based rental assistance [58.35(b)(1)].

☐ Supportive services including, but not limited to, health care, housing services, permanent housing placement, day care, nutritional services, short-term payments for rent/mortgage/utility costs, and assistance in gaining access to local, State, and Federal government benefits and services [58.35(b)(2)].

☐ Operating costs including maintenance, equipment, supplies, staff training, staff recruitment, security, operation, utilities, furnishings and other incidental costs [58.35(b)(3)].

☐ Economic development activities, including but not limited to, equipment purchase, inventory financing, interest subsidy, operating expenses, and similar costs not associated with construction or expansion of existing operations [58.35(b)(4)].

☐ Activities to assist homebuyers to purchase existing dwelling units or dwelling units under construction**, including closing costs and down payment assistance, interest buydowns, and similar activities that result in the transfer of title [58.35(b)(5)].

☐ Affordable housing pre-development costs including legal, consulting, developer, and other costs related to obtaining site options, project financing, administrative costs and fees for loan commitments, zoning approvals, and other related activities which do not have a physical impact [58.35(b)(6)].

☐ Approval of supplemental assistance (including insurance or guarantee) to a project previously approved under this part, if the approval is made by the same responsible entity that conducted the environmental review on the original project and re-evaluation of the environmental finding is not required under 58.47 [58.35(b)(7)].

* If a responsible entity determines that an activity or project identified above, because of extraordinary circumstances or conditions at or affecting the location of the activity or project may have a significant environmental effect, an environmental assessment must be prepared and a determination of significance made.

** This exclusion applies only to financial assistance for purchase of existing for-sale homes or homes under construction. Homebuyer assistance for units not under construction is classified as Categorically Excluded. In all cases, for this exclusion to apply, the prospective buyer must have discretion regarding selection of properties within the target area.

FORM 2-5

STATUTORY CHECKLIST (58.5)

Federal Laws and Authorities listed at Sec. 58.5

Project Name and Identification Number: Town of Keene Fire Department

Area of Statutory or Regulatory Compliance	Not Applicable	Consultation, Permit and/or Mitigation Required	Source/compliance documentation must be provided. Additional material may be attached.*
Historic Properties	☐	☑	Attached SHPO Letter
Floodplain Management	☑	☐	Proposed Project is not in a floodplain
Wetlands Protection	☐	☑	Please see APA response Attached
Coastal Zone Management	☑	☐	Proposed Project is not in Coastal Zone
Water Quality - Aquifers	☑	☐	Area is not designated as sole source aquifer
Endangered Species	☑	☐	No endangered species in target area
Wild and Scenic Rivers	☑	☐	Project will not effect characteristics of a free flowing river
Air Quality	☑	☐	Project is not on a scale that requires consideration
Farmlands Protection	☑	☐	This project does not convert farmland
Manmade Hazards: Thermal/Explosive Airport Clear Zones	☑	☐	Project is not in proximity to manmade hazards including thermal/explosive hazards and airport clear zones.
Noise	☑	☐	National Standards for noise abatement apply to project
HUD Environmental Standards	☑	☐	All properties are free of hazardous marerials, contamination, toxic chemicals, gases, and radioactive substance.
Environmental Justice	☑	☐	Project will not have adverse health effects on minority and low income populations

* Attach evidence that required actions have been taken

FORM 2-5A

24 CFR Part 58.6 "Other Requirements" Checklist (58.6)

Federal Laws and Authorities listed at Sec. 58.6
and Permits, Licenses, Forms of Compliance Under Other Laws - Federal, State and Local

Project Name and Identification Number: Town of Keene Fire Department

For "exempt" and "categorically excluded not subject to" projects/activities, compliance with the related laws and authorities listed in 58.5 is not required. However, recipients remain responsible for addressing and carrying out any applicable compliance measures for the requirements listed in 58.6. These requirements include:

Area of Statutory or Regulatory Compliance Applicable to Project	Not Applicable	Consultation, Permit and/or Mitigation Required	Provide compliance documentation. Additional material may be attached.
Federal Requirements			
Flood Insurance - 58.6(a)	☑	☐	Project is not in floodplain
Coastal Areas - 58.6(b) Coastal Zone Areas Coastal Barrier Resources	☑	☐	Project is not in a coastal area
Runway Clear Zone	☑	☐	Runway zones do not apply to this project.
State or Local Statutes (to be added by Responsible Entity)			
State Historic Preservation Office (SHPO)	☐	☑	Attached SHPO Letter
State Environmental Quality Review Act (SEQRA)	☐	☑	Attached SEQR Form
Coastal Zone Management	☑	☐	Project is not in a coastal zone

Prepared By: Michael Mascarenas	**Certifying Officer Signature:** Michael Mascarenas
Title: Director of Community Resources	**Title:** Director of Community Resources
Date: 09/07/12	**Date:** 09/07/12

FORM 2-6

ENVIRONMENTAL ASSESSMENT CHECKLIST

Project Name and Identification Number: Town of Keene Fire Department

Impact Categories	1 No Impact Anticipated	2 Potentially Beneficial	3 Potentially Adverse Requires Documentation	4 Potentially Adverse Requires More Study	5 Needs Mitigation	6 Requires Project Modification	7 Source or Documentation (Note date of contract or page reference) Additional material may be attached
Land Development							
Conformance with comprehensive plans and Zoning	☐	☑	☐	☐	☐	☐	Please see attached Map
Compatibility and Urban Impact	☑	☐	☐	☐	☐	☐	Project has no Urban Impact
Slope	☑	☐	☐	☐	☐	☐	Slope will not be impacted
Erosion	☑	☐	☐	☐	☐	☐	See attached Erosion Control Plan
Soil Suitability	☑	☐	☐	☐	☐	☐	See attached Geotechnical Report
Hazards and Nuisances, including Site Safety	☑	☐	☐	☐	☐	☐	Site safety will be followed. Hazards have been considered and employees will be OSHA certified
Energy Consumption	☑	☐	☐	☐	☐	☐	Project does not effect energy consumption
Noise							
Effect of Ambient Noise on Project and Contribution to Community Noise Level	☑	☐	☐	☐	☐	☐	See Attached Noise Control
Air Quality							
Effects of Ambient Air Quality on Project and Contribution to Community Pollution Levels	☑	☐	☐	☐	☐	☐	Project scale does not require consideration for air quality
Environmental Design and Historic Values							
Visual Quality - Coherence, Diversity, Compatible Use, and Scale	☑	☐	☐	☐	☐	☐	See attached drawings
Historic, Cultural, and Archeological Resources	☑	☐	☐	☐	☐	☐	See Attached SHPO Letter

FORM 2-6

ENVIRONMENTAL ASSESSMENT CHECKLIST

Project Name and Identification Number: Town of Keene Fire Department

Impact Categories	1 No Impact Anticipated	2 Potentially Beneficial	3 Potentially Adverse Requires Documentation	4 Potentially Adverse Requires More Study	5 Needs Mitigation	6 Requires Project Modification	7 Source or Documentation (Note date of contract or page reference) Additional material may be attached
Socioeconomic							
Demographic/Character Changes	☑	☐	☐	☐	☐	☐	There will be no demographic or character changes
Displacement	☑	☐	☐	☐	☐	☐	Displacement will not occur due to this project
Employment and Income Patterns	☑	☐	☐	☐	☐	☐	Project will not effect employment and income patterns
Community Facilities and Services							
Educational Facilities	☑	☐	☐	☐	☐	☐	Project does not impact Educational Facilities
Commercial Facilities	☑	☐	☐	☐	☐	☐	Project does not Impact Commercial Facilities
Health Care	☑	☐	☐	☐	☐	☐	Project does not impact Health Care
Social Services	☑	☐	☐	☐	☐	☐	Project does not Impact Social Services
Solid Waste	☑	☐	☐	☐	☐	☐	See attached Septic Specs
Waste Water	☑	☐	☐	☐	☐	☐	See Attached Waste water Specs
Storm Water	☑	☐	☐	☐	☐	☐	See Attached Storm Water Specs
Water Supply	☑	☐	☐	☐	☐	☐	Project does not impact water supply

FORM 2-6

ENVIRONMENTAL ASSESSMENT CHECKLIST

Project Name and Identification Number: Town of Keene Fire Department

Community Facilities and Services (Continued)							
Public Safety: Police	☑	☐	☐	☐	☐	☐	Project does not impact Police
Public Safety: Fire Protection	☐	☑	☐	☐	☐	☐	Please see attached building SPECS for Fire Department
Public Safety: Emergency Medical	☑	☐	☐	☐	☐	☐	Project does not impact emergency medical
Open Space	☑	☐	☐	☐	☐	☐	Project does not impact open space use
Recreation	☑	☐	☐	☐	☐	☐	Project does not impact recreational opportunities
Cultural Facilities	☑	☐	☐	☐	☐	☐	Project does not impact cultural facilities
Transportation	☑	☐	☐	☐	☐	☐	Project does not impact Transportation
Natural Features							
Water Resources	☑	☐	☐	☐	☐	☐	Water resources remain uneffected
Surface Water	☑	☐	☐	☐	☐	☐	There will be no impact to surface water
Floodplains	☑	☐	☐	☐	☐	☐	Project is not in a floodplain
Wetlands	☑	☐	☐	☐	☐	☐	See APA response
Coastal Zone	☑	☐	☐	☐	☐	☐	Project is not in a coastal zone
Unique Natural Features and Agricultural Lands	☑	☐	☐	☐	☐	☐	There are no unique natural features and agicultural lands
Vegetation and Wildlife	☑	☐	☐	☐	☐	☐	Vegetation and wildlife will remain uneffected

FORM 2-6

ENVIRONMENTAL ASSESSMENT CHECKLIST

Project Name and Identification Number: Town of Keene Fire Department

Summary of Findings and Conclusions:

The summary of findings is that the rebuild of Keene Fire Department has No Significant Impact. The project is not of sufficient size, scale or mass and does not exceed the threshold for preparation of a statement nor will the project have significant impact on the human environment under NEPA.

Summary of Environmental Conditions:

Project Modifications and Alternatives Considered:

Additional Studies Performed: (Attach study or summary)

Mitigation Measures Needed:

FORM 2-6

ENVIRONMENTAL ASSESSMENT CHECKLIST

Project Name and Identification Number: Town of Keene Fire Department

Conclusions:

1. Is project in compliance with applicable laws and regulations?

   ☑ Yes ☐ No

2. Is an Environmental Impact Statement Required?

   ☐ Yes ☑ No

3. Can a Finding of No Significant Impact (FONSI) be made? (Project will not significantly affect the quality of the human environment).

   ☑ Yes ☐ No

This Environmental Assessment was prepared by:

NAME:	TITLE:
Michael Mascarenas	Director of Community Resources

DATE: 09/14/12

ADDITIONAL NOTES:

617.20
Appendix A
State Environmental Quality Review
FULL ENVIRONMENTAL ASSESSMENT FORM

Purpose: The full EAF is designed to help applicants and agencies determine, in an orderly manner, whether a project or action may be significant. The question of whether an action may be significant is not always easy to answer. Frequently, there are aspects of a project that are subjective or unmeasurable. It is also understood that those who determine significance may have little or no formal knowledge of the environment or may not be technically expert in environmental analysis. In addition, many who have knowledge in one particular area may not be aware of the broader concerns affecting the question of significance.

The full EAF is intended to provide a method whereby applicants and agencies can be assured that the determination process has been orderly, comprehensive in nature, yet flexible enough to allow introduction of information to fit a project or action.

Full EAF Components: The full EAF is comprised of three parts:

Part 1: Provides objective data and information about a given project and its site. By identifying basic project data, it assists a reviewer in the analysis that takes place in Parts 2 and 3.

Part 2: Focuses on identifying the range of possible impacts that may occur from a project or action. It provides guidance as to whether an impact is likely to be considered small to moderate or whether it is a potentially-large impact. The form also identifies whether an impact can be mitigated or reduced.

Part 3: If any impact in Part 2 is identified as potentially-large, then Part 3 is used to evaluate whether or not the impact is actually important.

THIS AREA FOR LEAD AGENCY USE ONLY

DETERMINATION OF SIGNIFICANCE -- Type 1 and Unlisted Actions

Identify the Portions of EAF completed for this project: ☑ Part 1 ☑ Part 2 ☑ Part 3

Upon review of the information recorded on this EAF (Parts 1 and 2 and 3 if appropriate), and any other supporting information, and considering both the magnitude and importance of each impact, it is reasonably determined by the lead agency that:

☒ A. The project will not result in any large and important impact(s) and, therefore, is one which **will not** have a significant impact on the environment, therefore **a negative declaration will be prepared.**

☐ B. Although the project could have a significant effect on the environment, there will not be a significant effect for this Unlisted Action because the mitigation measures described in PART 3 have been required, therefore **a CONDITIONED negative declaration will be prepared.***

☐ C. The project may result in one or more large and important impacts that may have a significant impact on the environment, therefore **a positive declaration will be prepared**.

*A Conditioned Negative Declaration is only valid for Unlisted Actions

KEENE FIRE STATION
Name of Action

Keene Fire District
Name of Lead Agency

Mike Piserchia
Print or Type Name of Responsible Officer in Lead Agency

Commissioner
Title of Responsible Officer

Signature of Responsible Officer in Lead Agency

Signature of Preparer (If different from responsible officer)

10/30/2012
Date

website

PART 1--PROJECT INFORMATION
Prepared by Project Sponsor

NOTICE: This document is designed to assist in determining whether the action proposed may have a significant effect on the environment. Please complete the entire form, Parts A through E. Answers to these questions will be considered as part of the application for approval and may be subject to further verification and public review. Provide any additional information you believe will be needed to complete Parts 2 and 3.

It is expected that completion of the full EAF will be dependent on information currently available and will not involve new studies, research or investigation. If information requiring such additional work is unavailable, so indicate and specify each instance.

Name of Action Keene Fire Station

Location of Action (include Street Address, Municipality and County)

10858 NYS Route 9N Keene, NY 12942 Town of Keene, Essex County

Name of Applicant/Sponsor Keene Fire District - Attn: Mike Piserchia

Address P.O. Box 136

City / PO Keene State NY Zip Code 12942

Business Telephone 518-576-4301

Name of Owner (if different)

Address

City / PO State Zip Code

Business Telephone

Description of Action:

The project is to construct a +/- 8,000 square foot fire station for the Town of Keene. Site plan includes the demolition of an existing building and associated cottages to construct the proposed fire station and paved parking areas and utilities. This proposed project is to provide a new fire station for the community as a replacement for the station that was destroyed during Hurricane Irene in the summer of 2011.

Please Complete Each Question--Indicate N.A. if not applicable

A. SITE DESCRIPTION

Physical setting of overall project, both developed and undeveloped areas.

1. Present Land Use: ☐ Urban ☐ Industrial ☑ Commercial ☐ Residential (suburban) ☐ Rural (non-farm)
   ☐ Forest ☐ Agriculture ☐ Other _____

2. Total acreage of project area: 1.9 acres.

APPROXIMATE ACREAGE	PRESENTLY	AFTER COMPLETION
Meadow or Brushland (Non-agricultural)	_____ acres	_____ acres
Forested	0.9 acres	0.9 acres
Agricultural (Includes orchards, cropland, pasture, etc.)	_____ acres	_____ acres
Wetland (Freshwater or tidal as per Articles 24,25 of ECL)	_____ acres	_____ acres
Water Surface Area	_____ acres	_____ acres
Unvegetated (Rock, earth or fill)	_____ acres	_____ acres
Roads, buildings and other paved surfaces	0.2 acres	0.5 acres
Other (Indicate type) open grass area	0.8 acres	0.5 acres

3. What is predominant soil type(s) on project site? HSG A, Duxbury Silt Loam
   a. Soil drainage: ☑ Well drained 100 % of site ☐ Moderately well drained ____% of site.
   ☐ Poorly drained ____% of site
   b. If any agricultural land is involved, how many acres of soil are classified within soil group 1 through 4 of the NYS Land Classification System? _____ acres (see 1 NYCRR 370).

4. Are there bedrock outcroppings on project site? ☐ Yes ☒ No
   a. What is depth to bedrock +7' (in feet)

5. Approximate percentage of proposed project site with slopes:
   ☑ 0-10% 53 % ☐ 10- 15%____% ☑ 15% or greater 47 %

6. Is project substantially contiguous to, or contain a building, site, or district, listed on the State or National Registers of Historic Places? ☐ Yes ☒ No

7. Is project substantially contiguous to a site listed on the Register of National Natural Landmarks? ☐ Yes ☒ No

8. What is the depth of the water table? +7' (in feet)

9. Is site located over a primary, principal, or sole source aquifer? ☐ Yes ☒ No

10. Do hunting, fishing or shell fishing opportunities presently exist in the project area? ☐ Yes ☒ No

11. Does project site contain any species of plant or animal life that is identified as threatened or endangered? ☐ Yes ☒ No

According to:

Identify each species:

12. Are there any unique or unusual land forms on the project site? (i.e., cliffs, dunes, other geological formations?

☐ Yes ☒ No

Describe:

13. Is the project site presently used by the community or neighborhood as an open space or recreation area?

☐ Yes ☒ No

If yes, explain:

14. Does the present site include scenic views known to be important to the community? ☐ Yes ☒ No

15. Streams within or contiguous to project area:

Dart Brook (located on opposite side of Route 9N

a. Name of Stream and name of River to which it is tributary

Ausable River

16. Lakes, ponds, wetland areas within or contiguous to project area:

None

b. Size (in acres):

17. Is the site served by existing public utilities? ☒ Yes ☐ No

a. If **YES**, does sufficient capacity exist to allow connection? ☒ Yes ☐ No

b. If **YES**, will improvements be necessary to allow connection? ☐ Yes ☒ No

18. Is the site located in an agricultural district certified pursuant to Agriculture and Markets Law, Article 25-AA, Section 303 and 304? ☐ Yes ☒ No

19. Is the site located in or substantially contiguous to a Critical Environmental Area designated pursuant to Article 8 of the ECL, and 6 NYCRR 617? ☐ Yes ☒ No

20. Has the site ever been used for the disposal of solid or hazardous wastes? ☐ Yes ☒ No

B. Project Description

1. Physical dimensions and scale of project (fill in dimensions as appropriate).

a. Total contiguous acreage owned or controlled by project sponsor: 1.9 acres.

b. Project acreage to be developed: .9 acres initially; .9 acres ultimately.

c. Project acreage to remain undeveloped: 1.0 acres.

d. Length of project, in miles: n/a (if appropriate)

e. If the project is an expansion, indicate percent of expansion proposed. n/a %

f. Number of off-street parking spaces existing +/- 10 ; proposed 16

g. Maximum vehicular trips generated per hour: 20 (upon completion of project)?

h. If residential: Number and type of housing units:

	One Family	Two Family	Multiple Family	Condominium
Initially				
Ultimately				

i. Dimensions (in feet) of largest proposed structure: 36' height; 75' width; 131' length.

j. Linear feet of frontage along a public thoroughfare project will occupy is? 274 ft.

2. How much natural material (i.e. rock, earth, etc.) will be removed from the site? 0 tons/cubic yards.

3. Will disturbed areas be reclaimed ☒ Yes ☐ No ☐ N/A

a. If yes, for what intended purpose is the site being reclaimed?

grass areas

b. Will topsoil be stockpiled for reclamation? ☒ Yes ☐ No

c. Will upper subsoil be stockpiled for reclamation? ☒ Yes ☐ No

4. How many acres of vegetation (trees, shrubs, ground covers) will be removed from site? 0.0 acres.

5. Will any mature forest (over 100 years old) or other locally-important vegetation be removed by this project?

☐ Yes ☒ No

6. If single phase project: Anticipated period of construction: 12 months, (including demolition)

7. If multi-phased: N/A

   a. Total number of phases anticipated _____ (number)

   b. Anticipated date of commencement phase 1: _____ month _____ year, (including demolition)

   c. Approximate completion date of final phase: _____ month _____ year.

   d. Is phase 1 functionally dependent on subsequent phases? ☐ Yes ☐ No

8. Will blasting occur during construction? ☐ Yes ☒ No

9. Number of jobs generated: during construction 30 ; after project is complete 0

10. Number of jobs eliminated by this project 0 .

11. Will project require relocation of any projects or facilities? ☐ Yes ☒ No

    If yes, explain:

    Project is for the construction of a new volunteer fire station to replace the existing fire station that was destroyed from a flood

12. Is surface liquid waste disposal involved? ☐ Yes ☒ No

    a. If yes, indicate type of waste (sewage, industrial, etc) and amount _____

    b. Name of water body into which effluent will be discharged _____

13. Is subsurface liquid waste disposal involved? ☒ Yes ☐ No Type Standard Septic system

14. Will surface area of an existing water body increase or decrease by proposal? ☐ Yes ☒ No

    If yes, explain:

15. Is project or any portion of project located in a 100 year flood plain? ☐ Yes ☒ No

16. Will the project generate solid waste? ☒ Yes ☐ No

    a. If yes, what is the amount per month? 0.25 tons

    b. If yes, will an existing solid waste facility be used? ☒ Yes ☐ No

    c. If yes, give name Essex County Landfill ; location Town of Lewis

    d. Will any wastes not go into a sewage disposal system or into a sanitary landfill? ☐ Yes ☒ No

e. If yes, explain:

17. Will the project involve the disposal of solid waste? ☐ Yes ■ No

a. If yes, what is the anticipated rate of disposal? _____ tons/month.

b. If yes, what is the anticipated site life? _____ years.

18. Will project use herbicides or pesticides? ☐ Yes ■ No

19. Will project routinely produce odors (more than one hour per day)? ☐ Yes ■ No

20. Will project produce operating noise exceeding the local ambient noise levels? ☐ Yes ■ No

21. Will project result in an increase in energy use? ☐ Yes ■ No

If yes, indicate type(s)

22. If water supply is from wells, indicate pumping capacity _____ gallons/minute. N/A Public Water is Available

23. Total anticipated water usage per day 375 gallons/day.

24. Does project involve Local, State or Federal funding? ■ Yes ☐ No

If yes, explain:

NYS HUD
FEMA grant

25. Approvals Required:

			Type	Submittal Date
City, Town, Village Board	☐ Yes	■ No		
City, Town, Village Planning Board	■ Yes	☐ No	Town of Keene	04/02/2012
City, Town Zoning Board	☐ Yes	■ No		
City, County Health Department	☐ Yes	■ No		
Other Local Agencies	☐ Yes	■ No		
Other Regional Agencies	■ Yes	☐ No	APA	03/21/2012
State Agencies	■ Yes	☐ No	NYSDOT	04/27/2012
Federal Agencies	☐ Yes	■ No		

C. Zoning and Planning Information

1. Does proposed action involve a planning or zoning decision? ■ Yes ☐ No

If Yes, indicate decision required:

☐ Zoning amendment	☐ Zoning variance	☐ New/revision of master plan	☐ Subdivision
■ Site plan	☐ Special use permit	☐ Resource management plan	☐ Other

2. What is the zoning classification(s) of the site?

Commercial

3. What is the maximum potential development of the site if developed as permitted by the present zoning?

As shown

4. What is the proposed zoning of the site?

No Zone Change is Required

5. What is the maximum potential development of the site if developed as permitted by the proposed zoning?

N/A

6. Is the proposed action consistent with the recommended uses in adopted local land use plans? ☒ Yes ☐ No

7. What are the predominant land use(s) and zoning classifications within a ¼ mile radius of proposed action?

commercial and residential

8. Is the proposed action compatible with adjoining/surrounding land uses with a ¼ mile? ☒ Yes ☐ No

9. If the proposed action is the subdivision of land, how many lots are proposed? n/a

   a. What is the minimum lot size proposed? _____

10. Will proposed action require any authorization(s) for the formation of sewer or water districts? ☐ Yes ☒ No

11. Will the proposed action create a demand for any community provided services (recreation, education, police, fire protection?

☐ Yes ☒ No

a. If yes, is existing capacity sufficient to handle projected demand? ☐ Yes ☐ No

12. Will the proposed action result in the generation of traffic significantly above present levels? ☐ Yes ☒ No

a. If yes, is the existing road network adequate to handle the additional traffic. ☐ Yes ☐ No

D. Informational Details

Attach any additional information as may be needed to clarify your project. If there are or may be any adverse impacts associated with your proposal, please discuss such impacts and the measures which you propose to mitigate or avoid them.

E. Verification

I certify that the information provided above is true to the best of my knowledge.

Applicant/Sponsor Name Keene Fire District Date 10/30/2012

Signature Matthew R. Napierala

Title Professional Engineer, President of Napierala Consulting ... agent for Keene Fire District

If the action is in the Coastal Area, and you are a state agency, complete the Coastal Assessment Form before proceeding with this assessment.

PART 2 - PROJECT IMPACTS AND THEIR MAGNITUDE

Responsibility of Lead Agency

General Information (Read Carefully)

! In completing the form the reviewer should be guided by the question: Have my responses and determinations been **reasonable?** The reviewer is not expected to be an expert environmental analyst.

! The **Examples** provided are to assist the reviewer by showing types of impacts and wherever possible the threshold of magnitude that would trigger a response in column 2. The examples are generally applicable throughout the State and for most situations. But, for any specific project or site other examples and/or lower thresholds may be appropriate for a Potential Large Impact response, thus requiring evaluation in Part 3.

! The impacts of each project, on each site, in each locality, will vary. Therefore, the examples are illustrative and have been offered as guidance. They do not constitute an exhaustive list of impacts and thresholds to answer each question.

! The number of examples per question does not indicate the importance of each question.

! In identifying impacts, consider long term, short term and cumulative effects.

Instructions (Read carefully)

a. Answer each of the 20 questions in PART 2. Answer **Yes** if there will be **any** impact.

b. **Maybe** answers should be considered as **Yes** answers.

c. If answering **Yes** to a question then check the appropriate box(column 1 or 2)to indicate the potential size of the impact. If impact threshold equals or exceeds any example provided, check column 2. If impact will occur but threshold is lower than example, check column 1.

d. Identifying that an Impact will be potentially large (column 2) does not mean that it is also necessarily **significant**. Any large impact must be evaluated in PART 3 to determine significance. Identifying an impact in column 2 simply asks that it be looked at further.

e. If reviewer has doubt about size of the impact then consider the impact as potentially large and proceed to PART 3.

f. If a potentially large impact checked in column 2 can be mitigated by change(s) in the project to a small to moderate impact, also check the **Yes** box in column 3. A **No** response indicates that such a reduction is not possible. This must be explained in Part 3.

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change
Impact on Land			
1. Will the Proposed Action result in a physical change to the project site? NO ☒ YES ☐			
Examples that would apply to column 2			
• Any construction on slopes of 15% or greater, (15 foot rise per 100 foot of length), or where the general slopes in the project area exceed 10%.	☐	☐	☐ Yes ☐ No
• Construction on land where the depth to the water table is less than 3 feet.	☐	☐	☐ Yes ☐ No
• Construction of paved parking area for 1,000 or more vehicles.	☐	☐	☐ Yes ☐ No
• Construction on land where bedrock is exposed or generally within 3 feet of existing ground surface.	☐	☐	☐ Yes ☐ No
• Construction that will continue for more than 1 year or involve more than one phase or stage.	☐	☐	☐ Yes ☐ No
• Excavation for mining purposes that would remove more than 1,000 tons of natural material (i.e., rock or soil) per year.	☐	☐	☐ Yes ☐ No

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change
• Construction or expansion of a santary landfill.	☐	☐	☐Yes ☐No
• Construction in a designated floodway.	☐	☐	☐Yes ☐No
• Other impacts:	☐	☐	☐Yes ☐No

2. Will there be an effect to any unique or unusual land forms found on the site? (i.e., cliffs, dunes, geological formations, etc.)
☒NO ☐YES

• Specific land forms:	☐	☐	☐Yes ☐No

Impact on Water

3. Will Proposed Action affect any water body designated as protected? (Under Articles 15, 24, 25 of the Environmental Conservation Law, ECL)
☒NO ☐YES

Examples that would apply to column 2

• Developable area of site contains a protected water body.	☐	☐	☐Yes ☐No
• Dredging more than 100 cubic yards of material from channel of a protected stream.	☐	☐	☐Yes ☐No
• Extension of utility distribution facilities through a protected water body.	☐	☐	☐Yes ☐No
• Construction in a designated freshwater or tidal wetland.	☐	☐	☐Yes ☐No
• Other impacts:	☐	☐	☐Yes ☐No

4. Will Proposed Action affect any non-protected existing or new body of water?
☒NO ☐YES

Examples that would apply to column 2

• A 10% increase or decrease in the surface area of any body of water or more than a 10 acre increase or decrease.	☐	☐	☐Yes ☐No
• Construction of a body of water that exceeds 10 acres of surface area.	☐	☐	☐Yes ☐No
• Other impacts:	☐	☐	☐Yes ☐No

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change
5. Will Proposed Action affect surface or groundwater quality or quantity? ☒ NO ☐ YES			
Examples that would apply to column 2			
• Proposed Action will require a discharge permit.	☐	☐	☐ Yes ☐ No
• Proposed Action requires use of a source of water that does not have approval to serve proposed (project) action.	☐	☐	☐ Yes ☐ No
• Proposed Action requires water supply from wells with greater than 45 gallons per minute pumping capacity.	☐	☐	☐ Yes ☐ No
• Construction or operation causing any contamination of a water supply system.	☐	☐	☐ Yes ☐ No
• Proposed Action will adversely affect groundwater.	☐	☐	☐ Yes ☐ No
• Liquid effluent will be conveyed off the site to facilities which presently do not exist or have inadequate capacity.	☐	☐	☐ Yes ☐ No
• Proposed Action would use water in excess of 20,000 gallons per day.	☐	☐	☐ Yes ☐ No
• Proposed Action will likely cause siltation or other discharge into an existing body of water to the extent that there will be an obvious visual contrast to natural conditions.	☐	☐	☐ Yes ☐ No
• Proposed Action will require the storage of petroleum or chemical products greater than 1,100 gallons.	☐	☐	☐ Yes ☐ No
• Proposed Action will allow residential uses in areas without water and/or sewer services.	☐	☐	☐ Yes ☐ No
• Proposed Action locates commercial and/or industrial uses which may require new or expansion of existing waste treatment and/or storage facilities.	☐	☐	☐ Yes ☐ No
• Other impacts:	☐	☐	☐ Yes ☐ No

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change

6. Will Proposed Action alter drainage flow or patterns, or surface water runoff?
☒ NO ☐ YES

Examples that would apply to column 2

• Proposed Action would change flood water flows	☐	☐	☐ Yes ☐ No
• Proposed Action may cause substantial erosion.	☐	☐	☐ Yes ☐ No
• Proposed Action is incompatible with existing drainage patterns.	☐	☐	☐ Yes ☐ No
• Proposed Action will allow development in a designated floodway.	☐	☐	☐ Yes ☐ No
• Other impacts:	☐	☐	☐ Yes ☐ No

IMPACT ON AIR

7. Will Proposed Action affect air quality?
☒ NO ☐ YES

Examples that would apply to column 2

• Proposed Action will induce 1,000 or more vehicle trips in any given hour.	☐	☐	☐ Yes ☐ No
• Proposed Action will result in the incineration of more than 1 ton of refuse per hour.	☐	☐	☐ Yes ☐ No
• Emission rate of total contaminants will exceed 5 lbs. per hour or a heat source producing more than 10 million BTU's per hour.	☐	☐	☐ Yes ☐ No
• Proposed Action will allow an increase in the amount of land committed to industrial use.	☐	☐	☐ Yes ☐ No
• Proposed Action will allow an increase in the density of industrial development within existing industrial areas.	☐	☐	☐ Yes ☐ No
• Other impacts:	☐	☐	☐ Yes ☐ No

IMPACT ON PLANTS AND ANIMALS

8. Will Proposed Action affect any threatened or endangered species?
☒ NO ☐ YES

Examples that would apply to column 2

• Reduction of one or more species listed on the New York or Federal list, using the site, over or near the site, or found on the site.	☐	☐	☐ Yes ☐ No

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change
• Removal of any portion of a critical or significant wildlife habitat.	☐	☐	☐ Yes ☐ No
• Application of pesticide or herbicide more than twice a year, other than for agricultural purposes.	☐	☐	☐ Yes ☐ No
• Other impacts:	☐	☐	☐ Yes ☐ No

9. Will Proposed Action substantially affect non-threatened or non-endangered species?
☒ NO ☐ YES

Examples that would apply to column 2

• Proposed Action would substantially interfere with any resident or migratory fish, shellfish or wildlife species.	☐	☐	☐ Yes ☐ No
• Proposed Action requires the removal of more than 10 acres of mature forest (over 100 years of age) or other locally important vegetation.	☐	☐	☐ Yes ☐ No
• Other impacts:	☐	☐	☐ Yes ☐ No

IMPACT ON AGRICULTURAL LAND RESOURCES

10. Will Proposed Action affect agricultural land resources?
☒ NO ☐ YES

Examples that would apply to column 2

• The Proposed Action would sever, cross or limit access to agricultural land (includes cropland, hayfields, pasture, vineyard, orchard, etc.)	☐	☐	☐ Yes ☐ No
• Construction activity would excavate or compact the soil profile of agricultural land.	☐	☐	☐ Yes ☐ No
• The Proposed Action would irreversibly convert more than 10 acres of agricultural land or, if located in an Agricultural District, more than 2.5 acres of agricultural land.	☐	☐	☐ Yes ☐ No

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change
• The Proposed Action would disrupt or prevent installation of agricultural land management systems (e.g., subsurface drain lines, outlet ditches, strip cropping); or create a need for such measures (e.g. cause a farm field to drain poorly due to increased runoff).	☐	☐	☐ Yes ☐ No
• Other impacts:	☐	☐	☐ Yes ☐ No

IMPACT ON AESTHETIC RESOURCES

11. Will Proposed Action affect aesthetic resources? (If necessary, use the Visual EAF Addendum in Section 617.20, Appendix B.)
☒ NO ☐ YES

Examples that would apply to column 2			
• Proposed land uses, or project components obviously different from or in sharp contrast to current surrounding land use patterns, whether man-made or natural.	☐	☐	☐ Yes ☐ No
• Proposed land uses, or project components visible to users of aesthetic resources which will eliminate or significantly reduce their enjoyment of the aesthetic qualities of that resource.	☐	☐	☐ Yes ☐ No
• Project components that will result in the elimination or significant screening of scenic views known to be important to the area.	☐	☐	☐ Yes ☐ No
• Other impacts:	☐	☐	☐ Yes ☐ No

IMPACT ON HISTORIC AND ARCHAEOLOGICAL RESOURCES

12. Will Proposed Action impact any site or structure of historic, prehistoric or paleontological importance?
☒ NO ☐ YES

Examples that would apply to column 2			
• Proposed Action occurring wholly or partially within or substantially contiguous to any facility or site listed on the State or National Register of historic places.	☐	☐	☐ Yes ☐ No
• Any impact to an archaeological site or fossil bed located within the project site.	☐	☐	☐ Yes ☐ No
• Proposed Action will occur in an area designated as sensitive for archaeological sites on the NYS Site Inventory.	☐	☐	☐ Yes ☐ No

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change
• Other impacts:	☐	☐	☐ Yes ☐ No

IMPACT ON OPEN SPACE AND RECREATION

13. Will proposed Action affect the quantity or quality of existing or future open spaces or recreational opportunities?
☒ NO ☐ YES

Examples that would apply to column 2

• The permanent foreclosure of a future recreational opportunity.	☐	☐	☐ Yes ☐ No
• A major reduction of an open space important to the community.	☐	☐	☐ Yes ☐ No
• Other impacts:	☐	☐	☐ Yes ☐ No

IMPACT ON CRITICAL ENVIRONMENTAL AREAS

14. Will Proposed Action impact the exceptional or unique characteristics of a critical environmental area (CEA) established pursuant to subdivision 6NYCRR 617.14(g)?
☒ NO ☐ YES

List the environmental characteristics that caused the designation of the CEA.

Examples that would apply to column 2

• Proposed Action to locate within the CEA?	☐	☐	☐ Yes ☐ No
• Proposed Action will result in a reduction in the quantity of the resource?	☐	☐	☐ Yes ☐ No
• Proposed Action will result in a reduction in the quality of the resource?	☐	☐	☐ Yes ☐ No
• Proposed Action will impact the use, function or enjoyment of the resource?	☐	☐	☐ Yes ☐ No
• Other impacts:	☐	☐	☐ Yes ☐ No

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change

IMPACT ON TRANSPORTATION

15. Will there be an effect to existing transportation systems?
☒ NO ☐ YES

Examples that would apply to column 2

• Alteration of present patterns of movement of people and/or goods.	☐	☐	☐ Yes ☐ No
• Proposed Action will result in major traffic problems.	☐	☐	☐ Yes ☐ No
• Other impacts:	☐	☐	☐ Yes ☐ No

IMPACT ON ENERGY

16. Will Proposed Action affect the community's sources of fuel or energy supply?

☒ NO ☐ YES

Examples that would apply to column 2

• Proposed Action will cause a greater than 5% increase in the use of any form of energy in the municipality.	☐	☐	☐ Yes ☐ No
• Proposed Action will require the creation or extension of an energy transmission or supply system to serve more than 50 single or two family residences or to serve a major commercial or industrial use.	☐	☐	☐ Yes ☐ No
• Other impacts:	☐	☐	☐ Yes ☐ No

NOISE AND ODOR IMPACT

17. Will there be objectionable odors, noise, or vibration as a result of the Proposed Action?

☒ NO ☐ YES

Examples that would apply to column 2

• Blasting within 1,500 feet of a hospital, school or other sensitive facility.	☐	☐	☐ Yes ☐ No
• Odors will occur routinely (more than one hour per day).	☐	☐	☐ Yes ☐ No
• Proposed Action will produce operating noise exceeding the local ambient noise levels for noise outside of structures.	☐	☐	☐ Yes ☐ No
• Proposed Action will remove natural barriers that would act as a noise screen.	☐	☐	☐ Yes ☐ No
• Other impacts:	☐	☐	☐ Yes ☐ No

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change

IMPACT ON PUBLIC HEALTH

18. Will Proposed Action affect public health and safety?
☒ NO ☐ YES

• Proposed Action may cause a risk of explosion or release of hazardous substances (i.e. oil, pesticides, chemicals, radiation, etc.) in the event of accident or upset conditions, or there may be a chronic low level discharge or emission.	☐	☐	☐ Yes ☐ No
• Proposed Action may result in the burial of "hazardous wastes" in any form (i.e. toxic, poisonous, highly reactive, radioactive, irritating, infectious, etc.)	☐	☐	☐ Yes ☐ No
• Storage facilities for one million or more gallons of liquefied natural gas or other flammable liquids.	☐	☐	☐ Yes ☐ No
• Proposed Action may result in the excavation or other disturbance within 2,000 feet of a site used for the disposal of solid or hazardous waste.	☐	☐	☐ Yes ☐ No
• Other impacts:	☐	☐	☐ Yes ☐ No

IMPACT ON GROWTH AND CHARACTER OF COMMUNITY OR NEIGHBORHOOD

19. Will Proposed Action affect the character of the existing community?
☒ NO ☐ YES

Examples that would apply to column 2

• The permanent population of the city, town or village in which the project is located is likely to grow by more than 5%.	☐	☐	☐ Yes ☐ No
• The municipal budget for capital expenditures or operating services will increase by more than 5% per year as a result of this project.	☐	☐	☐ Yes ☐ No
• Proposed Action will conflict with officially adopted plans or goals.	☐	☐	☐ Yes ☐ No
• Proposed Action will cause a change in the density of land use.	☐	☐	☐ Yes ☐ No
• Proposed Action will replace or eliminate existing facilities, structures or areas of historic importance to the community.	☐	☐	☐ Yes ☐ No
• Development will create a demand for additional community services (e.g. schools, police and fire, etc.)	☐	☐	☐ Yes ☐ No

	1 Small to Moderate Impact	2 Potential Large Impact	3 Can Impact Be Mitigated by Project Change
• Proposed Action will set an important precedent for future projects.	☐	☐	☐ Yes ☐ No
• Proposed Action will create or eliminate employment.	☐	☐	☐ Yes ☐ No
• Other impacts:	☐	☐	☐ Yes ☐ No

20. Is there, or is there likely to be, public controversy related to potential adverse environment impacts?
☒ NO ☐ YES

If Any Action in Part 2 Is Identified as a Potential Large Impact or If you Cannot Determine the Magnitude of Impact, Proceed to Part 3

Part 3 - EVALUATION OF THE IMPORTANCE OF IMPACTS

Responsibility of Lead Agency

Part 3 must be prepared if one or more impact(s) is considered to be potentially large, even if the impact(s) may be mitigated.

Instructions (If you need more space, attach additional sheets)

Discuss the following for each impact identified in Column 2 of Part 2:

1. Briefly describe the impact.

2. Describe (if applicable) how the impact could be mitigated or reduced to a small to moderate impact by project change(s).

3. Based on the information available, decide if it is reasonable to conclude that this impact is **important**.

   To answer the question of importance, consider:

   - The probability of the impact occurring
   - The duration of the impact
   - Its irreversibility, including permanently lost resources of value
   - Whether the impact can or will be controlled
   - The regional consequence of the impact
   - Its potential divergence from local needs and goals
   - Whether known objections to the project relate to this impact.

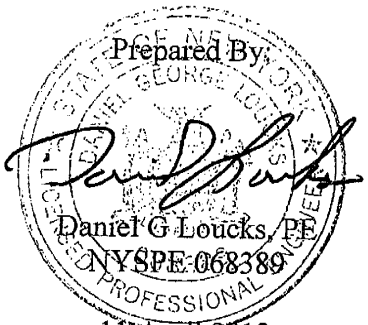
Reset

Geotechnical Report
For
Keene Fire Station
Keene, New York

File No. 2409

Prepared For:

Hubert-Breuer Construction Corp.



Prepared By:

Daniel G Loucks, PE
NYSPE 068389

11 April 2012

INTRODUCTION:

The subsurface investigation for the proposed Keene Fire Station, Keene, New York has been completed. Northern Technical Services of Bangor, New York has completed five (5) soil borings at the site. The logs of these borings, along with a location diagram, have been included in the appendix of this report.

It is my understanding that the proposed construction will include a single single-story building located approximately as indicated on the boring location diagram. The building will have a block bearing wall and steel frame design.

The maximum column loadings will range from 50 to 75 kips. Bearing wall loads will range from 1 to 3 kips per foot of wall. The settlement tolerances are normal. Settlement tolerances are considered to include up to 1 inch of total settlement and 3/4 inch of differential settlement between column locations.

The first floor slab will be established at approximately elevation 889.8. This will require approximately 3 feet of cut and 2 feet of fill in the proposed building area. Up to 5 feet of cut will be required for the proposed driveway area in the rear of the site.

Pavement design recommendations for parking lots and roadways are included in this report.

The purpose of this report is to describe the investigation conducted and the results obtained; to analyze and interpret the data obtained; and to make recommendations for the design and construction of the feasible foundation types and earthworks for the project.

The scope of my services has been limited to coordinating the boring and laboratory investigation, analyzing the soils information, and providing a geotechnical report with foundation recommendations and seismic site classifications as per NYS Building Code. Environmental aspects of the project as well as grading and site design should be performed by qualified others.

FIELD INVESTIGATION PROCEDURES:

The borings were extended by means of 3.25 inch ID, hollow-stem augers and by continuous sampling with a split-spoon sampler.

Representative samples were obtained from the boring holes by means of the split-spoon sampling procedure performed in accordance with ASTM D 1586. The standard penetration values obtained from this procedure have been indicated on the soil boring logs.

Soil samples obtained from these procedures were examined in the field, sealed in containers, and shipped to the laboratory for further examination, classification and testing, as applicable.

During the investigation, water level readings were obtained at various times where water accumulated in the boring hole. The water level readings, along with an indication of the time of the reading relative to the boring procedure, have been indicated on the soil boring logs.

In addition to the field boring investigation, the soil engineer visited the site to observe the surface conditions.

LABORATORY INVESTIGATION:

All samples were examined in the laboratory by the soil engineer and classified according to the Unified Soil Classification System. In this system, the soils are visually classified according to texture and plasticity. The appropriate group symbol is indicated on the soil boring logs.

Sieve Analyses were performed on representative samples in accordance with ASTM Specification D 422. These tests were performed to verify the visual soil classifications. Results of the tests can be found in the appendix of the report.

SITE CONDITIONS:

At the time of my site visit the proposed building area was a gently sloping grass covered lawn area. There were existing cabins to the north of the proposed building and a house to the west. I understand that there was an old gas station building to the south of the proposed building near Route 9N.

To the north of the proposed building, the ground surface slopes up more steeply than in the building area. This portion of the site was lightly wooded.

SUBSURFACE CONDITIONS:

The specific subsurface conditions encountered at each boring location are indicated on the individual soil boring logs. However, to aid in the evaluation of this data, I have prepared a generalized description of the soil conditions based on the boring data.

All the borings encountered an upper layer of sandy topsoil that extended to between 0.4 and 4.5 feet. In borings 2 and 3 this topsoil is fill material. At these locations the topsoil extended to between approximately 2.5 and 4.5 feet. A layer of sand with a trace to some silt was encountered below the topsoil fill in borings 2 and 3. This layer is medium dense and has been labeled as possible fill. This possible fill extends to between 3.0 and 6.0 feet.

Beneath the topsoil and uncontrolled fill is a layer of sand with varying amounts of gravel and a trace to a trace to some silt and occasional cobbles/boulders. This layer is medium dense to very dense and extended to the bottom of all the borings except boring 1. Refusal was encountered in these borings at between 6.7 and 7.0 feet. In boring 1 this layer extended to approximately 2.0 feet.

Underlying the upper layer of sand and gravel in boring 1 is a layer of sand with a trace to a trace to some silt. This sand is medium dense and extended to approximately 37 feet at the end of the boring.

GROUNDWATER CONDITIONS:

Based on the groundwater levels observed during the boring investigation, the moisture condition of the samples recovered from the boring holes and coloration of the soil samples, I judge that the groundwater level was located below depth of 17 feet.

Perched groundwater tables may occur at higher elevations in the soil profile due to groundwater being retained by layers or lenses of silt or clay soils. Perched or seasonal groundwater levels were observed as shallow as 3 feet below the existing ground surface near boring 5. The topographic map does indicate a drainage swale in this area. The contractor may experience higher groundwater/perched water levels depending on rainfall in this and adjacent areas.

Some fluctuation in hydrostatic groundwater levels and perched water conditions should be anticipated with variations in the seasonal rainfall and surface runoff.

It should be noted that the groundwater levels were obtained during the drilling procedure. Actual water levels may vary at the time of construction. Some groundwater could be encountered in soil layers labeled moist to wet on the boring logs.

ANALYSIS AND RECOMMENDATIONS:

Site Work:

The proposed construction areas should be cleared and grubbed and all organic topsoil and vegetation along with any uncontrolled fill and debris should be stripped from the site. Existing foundations and septic tanks should be removed. Basements should be filled with controlled fill up to the required grades. Basement walls should be removed to a minimum of 4 feet below any footings or floor slabs. The basement floor can remain provided holes are drilled in it or it is fractured to allow water to drain freely.

I should observe the stripped subgrade to verify all the uncontrolled fill/topsoil and building foundations have been removed and to observe the proof rolling of the subgrade. The subgrade should be proof-rolled with a 10-ton roller. This proof rolling will compact the subgrade and reveal the presence of soft spots. If saturated subgrade conditions exist, I recommend that the subgrade be observed and probed by the soil engineer in place of proof rolling. Any soft spots should be excavated and backfilled with controlled fill material.

The removal of any uncontrolled fill should extend to a minimum horizontal distance past the edge of the footings equal to the depth that the fill extends under the footing. This is equal to a 1:1 slope down from the outer edge of the footing to the virgin soil. All fill within the proposed building area should also be removed.

A way to stabilize a spongy, but suitable, virgin, subgrade would be to spread a reinforcement or separation type of geotextile on the subgrade and follow with a lift of clean, granular fill or stone. The thickness of the controlled fill can range from 1.0 to 2.5 feet, as necessary, to achieve a working mat upon which to construct the remainder of the controlled fill

or to place footings. If open graded stone is used as controlled fill a layer of geotextile should be placed between the stone and any sand/gravel controlled fill or virgin soil.

A third method for stabilizing spongy areas of the subgrade would be to improve the drainage by use of properly designed drain tiles or by using properly designed sump pit and pump dewatering systems. Using these methods, the local groundwater table maybe able to be lowered sufficiently to aid in stabilizing the subgrade surface. If large quantities of water are encountered vacuum well point dewatering maybe required.

Controlled Fill:

Before any controlled fill is placed the site should be inspected to verify that the site has been prepared according to the recommendations contained in this report as required by the NYS Building Code Section 1704.7.1.

Controlled, relatively clean, granular fill can be spread in lifts not exceeding 12 inches in loose thickness. These materials should be compacted to a minimum of 95 percent of the maximum ASTM Specification D 1557 density, modified proctor.

Some on-site material may be difficult to compact during wet weather or poor drying conditions. Given good drying conditions, the on-site soils with more than 10 percent silt/clayey silt could be compacted using disc harrows and sheepsfoot rollers or rubber-tired rollers, as applicable. These types of soils are sensitive to moisture content and weather conditions. During freezing or wet weather conditions these materials may not be able to be adequately compacted for use as structural fill.

If crushed stone is used as controlled fill it should have a layer of geotextile with a minimum tensile strength of 200 lbs and a minimum burst strength of 400 psi placed between the stone and existing soils. The stone should be placed in lifts not exceeding 12 inches in thickness and should be compacted with a minimum of 5 passes of a vibratory roller rated at 5 tons or larger. Weathered shale or crushed shale should not be used as controlled fill within the proposed building area.

Free Draining Controlled Fill Material: Naturally or artificially graded mixture of sand, natural or crushed stone or gravel conforming to NYS DOT Item 304-2.03, Type 4 or 2 as follows:

U.S. Sieve No.	Percent Passing by Weight
2 inch	100
1/4 inch	30-65
No. 40	5-40
No. 200	0-10

NYS DOT Table 703-4, Size 2 crushed stone, clean, durable, angular, and of uniform quality throughout:

U.S. Sieve No.	Percent Passing by Weight
1 ½ inch	100
1 inch	90-100
1/2 inch	0-15

All controlled fill should be free of organic and/or frozen material.

Free-draining controlled fill should have less than 10 percent fines passing the #200 sieve.

I recommend performing one field density test for every 2,000 square feet of controlled fill placed, within the overlaying building footprint, but in no case fewer than three tests per lift.

I recommend that for foundation wall and footing backfill that in each compacted backfill layer have at least one field in place density test for each 50 feet or less of wall or footing length, but not fewer than two tests along a wall face or footing be performed per lift.

Exterior portions of the footings for the entrance and exits of the apparatus bay should also be backfilled with controlled granular fill. Pavement or pavement slabs will be placed over this backfill. If proper compaction is not achieved in these areas, greater than normal settlements could occur in the pavement structures.

Proper placement and compaction of backfill along the remaining exterior portions of foundation walls should provided, especially in locations where there are sidewalks or building

entries. Proper placement of backfill materials can reduce possible settlements and the use of properly designed backfill and drainage can reduce possible frost heave movements.

Building Foundations:

I recommend that the proposed structure be supported by spread footing foundations resting on virgin, inorganic, soils or on controlled fill which, in turn, rests on these virgin materials. Footings can be designed for a maximum, net, allowable soil bearing pressure of 3500 psf.

The soil engineer should observe the footing subgrade at the beginning of the project or if soil conditions change to verify the allowable bearing pressure of the soil encountered.

Loads from adjacent footings or structures should be assumed to distribute based on the elastic theory. Typical Boussinesq charts can be used to approximate loads at various depths and locations due to adjacent structures.

A minimum footing width of 2.0 feet is recommended for load bearing strip footings. Isolated footings should be at least 3.0 feet wide.

Exterior footings or footings in unheated areas should have a minimum of 4.5 feet of embedment for protection from frost action. Interior footings should have a minimum embedment of 2.0 feet below finished grade to develop the bearing value of the soils.

All walls that retain soil on only one side should have a drain tile placed along the base of the wall. The drain tile should be a minimum of 4 inches in diameter, surrounded by a minimum of 6 inches of properly graded washed sand or crushed stone wrapped with a non woven filter fabric with a maximum apparent opening size of 70 and a minimum trapezoid tearing strength of 100 lbs. The drain tile should drain to a stormwater sewer, daylight, or a sump equipped with a pump.

The wall should then be backfilled with a controlled, well graded, free-draining granular material. The material should extend away from the wall a horizontal distance of two-thirds the height of the fill being placed. The upper 1 foot of material should be a fairly impermeable material to shed surface water.

If these procedures are used, a static lateral soil pressure of 40 psf per foot of retained soil can be used for design of the wall. This static, active lateral soil pressure is based on a moist unit weight of 125 pcf and an angle of internal friction of 32 degrees. A wall soil friction angle of 18 degrees and a coefficient of base sliding of 0.45 can also be used for design.

If the retaining wall is braced or if the deflection is limited prior to backfilling so the active soil pressure is not achieved, a static, at-rest lateral soil pressure of 63 psf per foot of retained soil can be used for design.

To resist overturning and sliding a static lateral passive pressure of 250 psf per foot of embedment can be used. This static, passive pressure resistance value has been reduced from the calculated full passive pressure because of stress/strain characteristics of the soil. To develop the full, calculated resistance a certain amount of movement or deflection in the structure is required. The amount of movement required to generate this resistance generally greater then is acceptable for structures. I therefore recommend that the full passive pressure not be used.

The passive resistance of the upper two feet of soil should be ignored due to surface effects of frost and moisture.

Any surcharge load should also be added to the above pressures as determined using Boussinesq charts.

Floor Slabs:

Concrete floor slabs in the office area and apparatus bays can be designed to rest on controlled fills resting on virgin materials. A minimum of a 6-inch layer of well-graded, free-draining, granular material should be placed beneath the floor slab in the office areas and a minimum of a 12 inch layer of well graded controlled fill should be placed below the apparatus bay slabs to provide drainage, act as a capillary break, and to provide better and more uniform support.

If vehicle loadings are to be applied to the floor slab, the proposed slab and supporting soils should be analyzed as a pavement structure. I recommend that a minimum of 12 inches of free draining controlled granular fill be placed below any concrete pavements.

A modulus of subgrade reaction of 150 psi per inch can be used to design concrete slabs resting on a minimum of 6 inches of free draining controlled fill that in turn rests on virgin soils. A modulus of subgrade reaction of 175 psi per inch can be used to design concrete slabs resting on a minimum of 12 inches of free draining controlled fill that in turn rests on virgin soils. A modulus of subgrade reaction of 135 psi per inch can be used to design exterior slabs or pavements resting on a minimum of 12 inches of free draining controlled fill. This reduced value is recommended due to seasonal variations that occur due to frost in the soils.

I recommend that the architect/owner consider using a reinforced concrete apron that is doweled into the top of the foundation wall at the entrances and exits to the apparatus bay. This will reduce the amount of differential settlement and/or rutting that may occur due to concentrated wheel loadings. The rigidity of the reinforced concrete pavement will distribute the wheel loads better the asphalt concrete pavements.

Exterior concrete pavements will experience some frost heave movements during the winter and spring. If these movements are not acceptable then a minimum of 4.0 feet of approved subbase material and properly designed drains would be required below the concrete pavements or sidewalks. The use of properly designed footing drains can also be used to reduce possible frost heave movements adjacent to the proposed structure.

If the moisture levels of floor slab areas are critical additional drainage materials and vapor barriers will be required beneath the floor slab. Also the moisture content of the subbase soils should be carefully monitored to prevent excess water from saturating these subbase soils before the floor slab is poured. This aspect of the design should be performed by qualified others.

Seismic Conditions:

The potential seismic conditions at the proposed site have been investigated using the information provided in ASCE 7-05 Section 9, The NYS Building Code Section 1613 and 18 and the boring information obtained during my investigation.

Based on the soil boring information it is my opinion that the Site Classification (Table 1615.1.1) could be assumed to be c. Using figures 1615 (1 and 2), and the data from the USGS Hazards

Mapping and the USGS 2009 NEHRP Seismic Design Provisions, I estimate that the MCE spectral acceleration (S_{MS}) at short periods is 47.3 and the MCE spectral acceleration (S_{M1}) at 1 s period is 18.1.

The probabilistic ground motion values are expressed in %g for rock site class B. Peak ground accelerations in the upper soil profile may vary. If specific peak ground accelerations or shear wave velocities are required for the upper soil profile additional testing would be required. If it is determined by the structural engineer that the Seismic Design Category is D,E or F additional geotechnical recommendations can be provided.

A copy of the MCE Ground Motion Data has been included in the appendix of this report to provide additional information if required.

The soil borings and my analysis do not indicate any significant potential seismic hazards such as liquefaction, sensitive clays, weakly cemented soil or surface rupture. The analysis does indicate that there is a chance that the total seismically induced settlement of the soils at the site, if the design earthquake with a PGA value of 0.232g did occur could exceed normal tolerances. The analysis indicates that a total settlement of 1.15 inches could occur. This value is only slightly greater than the normal design value of 1.0 inches. If the owner is willing to accept the risk of slightly greater than normal settlements, if the design seismic event was to occur, no additional work would be required. If the owner is not willing to accept this risk, then additional site specific testing such as shear wave velocity testing could be performed to more accurately assess this issue. I should be contacted for additional information, if the owner wants to proceed with this testing.

Pavement Designs:

I have included two pavement designs based on a 15-year design life. The pavement recommendations contained in this report are based on the AASHTO Guide for Design of Pavement Structures and the Asphalt Institute Design Manual.

This first pavement design is for Standard Duty Parking Lot areas. I recommend that the subgrade be stripped of all topsoil and debris and proof rolled. A layer of woven geotextile (min. tensile strength of 250 lbs and min. burst strength of 600 psi) should be placed over the proof rolled subgrade. A minimum of 12

inches of subbase (NYSDOT Par. 304-2.02, Type 1,2 or 4) can then be placed over the geotextile. The subbase should be compacted to a minimum of 95 percent of the maximum density ASTM D 1557. The asphalt pavement (NYSDOT Table 401-1 Base or Binder, and Top) should be a minimum of 3.0 inches thick.

The second pavement design is for truck areas with an average loading of 25 trucks per week. This approximately equals 70,000 Equivalent Axle Loads (EAL). One EAL is equivalent to an 18,000-lb. single axle load. I recommend that the subgrade be stripped of all topsoil and debris and proof rolled. A layer of woven geotextile (min. tensile strength of 250 lbs and min. burst strength of 600 psi) should be placed over the stripped proof rolled subgrade. A minimum of 12.0 inches of subbase should then be placed over the geotextile and properly compacted. The asphalt pavement (NYSDOT Table 401-1 Base and/or Binder and Top) should be a minimum of 4.5 inches thick.

All asphalt pavement and subbase should be properly placed, compacted and tested. Asphalt pavement compaction should meet or exceed 90 percent of the maximum specific density. All asphalt pavement should be placed in accordance with NYSDOT Standard Specification for Hot Mix Asphalt Pavement.

It should be noted that because of the relatively high point loads imposed by the tires some rutting of the asphalt could occur especially if trucks are parked in the same locations for long periods. If the owner is not willing to accept the possible rutting, then a reinforced concrete pavement should be used in place of the asphalt pavement.

All pavement structures in unheated areas may experience movements due to frost heave.

CONSTRUCTION PROCEDURES AND PROBLEMS:

The NYS Building Code Section 17 requires special inspections and follow up reports. These inspections should be performed to verify compliance with the recommendations contained in this report.

All excavations of more than a few feet should be sheeted and braced or laid back to prevent sloughing in of the sides.

Excavations should not extend below adjacent footings or structures unless properly designed sheeting and bracing or underpinning is installed.

Footing and floor slab subgrades should be tamped to compact any soil disturbed during the excavation process. A flat plate should be placed on the end of the excavator or backhoe bucket to reduce disturbance of the footing subgrade. If the removal of cobbles or boulders results in the over excavation of the subgrade the area should be backfilled with lean concrete or controlled granular fill.

A layer of geotextile (min. tensile strength of 200 lbs and min. burst strength of 250 psi) and 4 to 8 inches of crushed stone may be required in footing excavations to prevent disturbance of the virgin subgrade during wet weather.

Sump-pit and sump-pump-type dewatering may be required in excavations or low areas during wet weather or if groundwater is encountered. All dewatering programs should be designed to prevent bottom heave. Any dewatering program should be performed with properly designed filtration protection on all pumps to prevent loss of ground. All excavations should be dewatered t a minimum of 1 foot below the bottom of the excavation.

Temporary paving using coarse fill material or separation/ reinforcement geotextile and coarse fill material may be required for moving about the site during wet or thaw weather.

The recommended pavement subbase is not designed for construction type traffic. Additional subbase, up to 24 inches of total thickness, may be required to support traffic loadings. Any areas of the pavement subgrades that become disturbed during construction should be removed and replaced with subbase materials.

Subgrades should be kept from freezing during construction.

Water, snow, and ice should not be allowed to collect and stand in excavations or low areas of the subgrade.

Some obstacles, including foundations, leach fields, septic tanks and utilities and possibly cobbles/boulders, may be encountered in excavations.

The use of hydraulically operated rippers, pneumatic tools, or drilling and blasting may be required to remove bedrock or large boulders if encountered.

Design and construction procedures should include measures to limit the potential for slab curl and vapor transmission. The shrinkage properties of the concrete should be controlled and the curing of the concrete controlled. Differential shrinkage between the top and bottom of the slabs could otherwise result in curling of the slabs. The control of vapor transmission through the slab should also be addressed. These phenomena may be only indirectly related to soil conditions. The architect/structural engineer should address this aspect of the design.

Current American Concrete Institute recommendations for the design and construction of floor slabs and the control of shrinkage, slab curl and vapor transmission can be referred to.

Keene Fire Station
Keene, New York
File No. 2409

CONTENTS OF APPENDIX:

GENERAL NOTES

DRILLING & SAMPLING SYMBOLS

SS : Split-Spoon — 1¾ " I.D., 2" O.D., except where noted
S : Shelby Tube — 2" O.D., except where noted
PA : Power Auger Sample
DB : Diamond Bit — NX: BX: AX:
CB : Carboloy Bit — NX: BX: AX:
OS : Osterberg Sampler — 3" Shelby Tube
HS : Housel Sampler
WS : Wash Sample
FT : Fish Tail
RB : Rock Bit
WO : Wash Out

Standard "N" Penetration: Blows per foot of a 140 pound hammer falling 30 inches on a 2 inch OD split spoon, except where noted

WATER LEVEL MEASUREMENT SYMBOLS

WL : Water Level
WCI : Wet Cave In
DCI : Dry Cave In
WS : While Sampling
WD : While Drilling
BCR : Before Casing Removal
ACR : After Casing Removal
AB : After Boring

Water levels indicated on the boring logs are the levels measured in the boring at the times indicated. In pervious soils, the indicated elevations are considered reliable ground water levels. In impervious soils the accurate determination of ground water elevations is not possible in even several day's observation, and additional evidence on ground water elevations must be sought.

CLASSIFICATION

COHESIONLESS SOILS

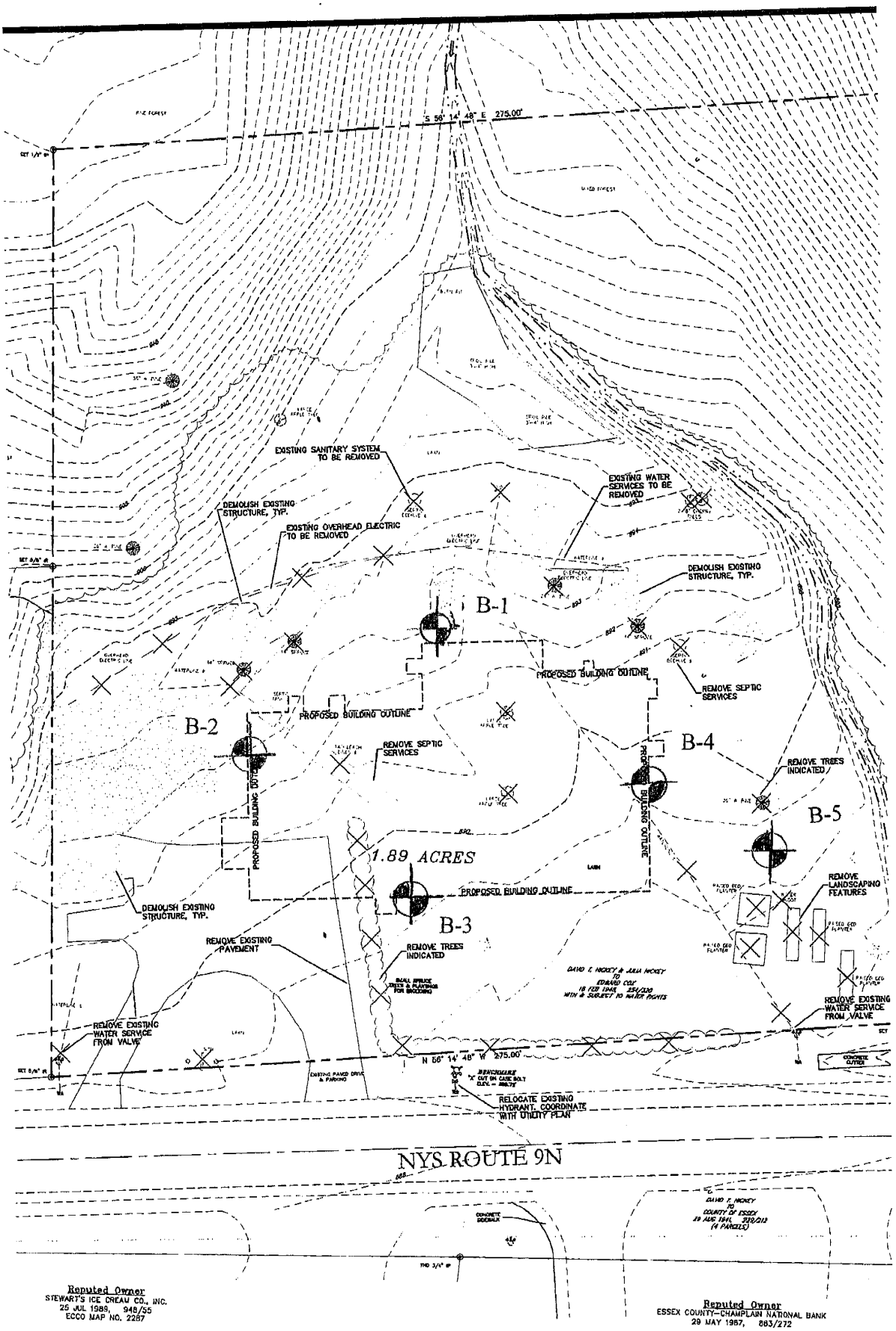
"Trace"	:	1% to 10%
"Trace to some"	:	10% to 20%
"Some"	:	20% to 35%
"And"	:	35% to 50%
Loose	:	0 to 9 Blows
Medium Dense	:	10 to 29 Blows
Dense	:	30 to 59 Blows
Very Dense	:	≥60 Blows

} or equivalent

COHESIVE SOILS

If clay content is sufficient so that clay dominates soil properties, then clay becomes the principle noun with the other major soil constituent as modifiers: i.e., silty clay. Other minor soil constituents may be added according to classification breakdown for cohesionless soils; i.e., silty clay, trace to some sand, trace gravel.

Soft	:	0.00 —0.59 tons/ft²
Medium	:	0.60 — 0.99 tons/ft²
Stiff	:	1.00 — 1.99 tons/ft²
Very Stiff	:	2.00 — 3.99 tons/ft²
Hard	:	≥ 4.00 tons/ft²



PRELIMINAI

THIS PLAN IS FOR CONCEPTUAL PLANNING PURP

BORING LOG

BORING NO: 1

SHEET 1 of 2

PROJECT NAME: Keene Fire Station

LOCATION: Keene, New York

DATE STARTED/COMPLETED: April 2012

ENGINEER/ARCHITECT: Pacheco-Ross Architects

DRILLING METHOD: Hollow Stem Auger

DRILL RIG TYPE: Truck Mount

HAMMER WEIGHT: 140 Lbs

DROP: 30 Inches

CASING DIAMETER: OD/ID: 3.25 inch ID

WATER LEVEL DEPTH: 17 ft **TIME:** ACR

FILE NUMBER: 2409

OFFSET: 15 feet south

SURFACE ELEV.: 891+/- ft

DRILL CONTRACTOR: Northern Technical Services

Daniel G Loucks PE
PO Box 163
Ballston Spa, New York 12020
Phone: 518-371-7622
Fax: 518-383-2069

DEPTH	Sample Number	Sample Type	BLOW COUNTS per 6 inches	"N" Value	Recovery	DESCRIPTION
1	1	SS	2-18-50/.3	68+		Topsoil
2						Fine to Coarse Sand, some Gravel, trace to some Silt, Brown, Moist, Dense to Very Dense (SM)
3	2	SS	13-19-21-25	40		Refusal on Boulder Off Set 15 Feet South
4						Fine Sand, some Silt, Brown, Moist, Dense (SM)
5	3	SS	10-10-12-9	22		Fine Sand, trace to some Silt, Brown, Moist, Medium Dense (SM-SP)
6						
7	4	SS	8-11-10-10	21		
8						
9	5	SS	8-7-9-11	16		
10						
11						
12		PA				
13						
14						
15						
16	6	SS	9-9-11-11	20		
17						
18		PA				Fine to Medium Sand, trace Silt, Dark Brown, Wet, Medium Dense (SM-SP)
19						
20						
21	7	SS	6-8-10-11	18		
22						
23		PA				
24						
25						
26	8	SS	6-8-9-12	17		
27						

BORING LOG

BORING NO: 1

SHEET 2 of 2

PROJECT NAME: Keene Fire Station

LOCATION: Keene, New York

DATE STARTED/COMPLETED: April 2012

ENGINEER/ARCHITECT: Pacheco-Ross Architects

DRILLING METHOD: Hollow Stem Auger

DRILL RIG TYPE: Truck Mount

HAMMER WEIGHT: 140 Lbs

DROP: 30 Inches

CASING DIAMETER: OD/ID: 3.25 inch ID

WATER LEVEL DEPTH: 17 ft **TIME:** ACR

FILE NUMBER: 2409

OFFSET: 15 feet south

SURFACE ELEV.: 891+/- ft

DRILL CONTRACTOR: Northern Technical Services

Daniel G Loucks PE
PO Box 163
Ballston Spa, New York 12020
Phone: 518-371-7622
Fax: 518-383-2069

DEPTH	Sample Number	Sample Type	BLOW COUNTS per 6 inches	"N" Value	Recovery	DESCRIPTION
28		PA				Fine to Medium Sand, trace Silt, Dark Brown, Wet, Medium Dense (SM-SP)
29						
30						
31	9	SS	8-8-9-8	17		
32						
33		PA				Fine to Medium Sand, trace Gravel, Silt, Dark Brown, Wet, Medium Dense (SM-SP)
34						
35						
36	10	SS	12-16-21-19	37		
37						End of boring at 37.0 Feet
38						
39						
40						
41						
42						
43						
44						
45						
46						
47						
48						
49						
50						
51						
52						
53						
54						

BORING LOG

BORING NO: 2

SHEET 1 of 1

PROJECT NAME: Keene Fire Station

LOCATION: Keene, New York

DATE STARTED/COMPLETED: April 2012

ENGINEER/ARCHITECT: Pacheco-Ross Architects

DRILLING METHOD: Hollow Stem Auger

DRILL RIG TYPE: Truck Mount

HAMMER WEIGHT: 140 Lbs

DROP: 30 Inches

CASING DIAMETER: OD/ID: 3.25 inch ID

WATER LEVEL DEPTH: None Observed **TIME:** WS

FILE NUMBER: 2409

OFFSET: None

SURFACE ELEV.: 893+/- ft

DRILL CONTRACTOR: Northern Technical Services

Daniel G Loucks PE
PO Box 163
Ballston Spa, New York 12020
Phone: 518-371-7622
Fax: 518-383-2069

DEPTH	Sample Number	Sample Type	BLOW COUNTS per 6 inches	"N" Value	Recovery	DESCRIPTION
1	1	SS	3-3-4-4	7		Fine to Medium Sand, trace to some Gravel, Silt, trace Roots, Dark Brown, Moist, Loose to Medium Dense (SM) Topsoil FILL
2						
3	2	SS	5-6-5-20	11		
4						
5	3	SS	7-8-7-9	15		Fine to Medium Sand, trace to some Silt, Brown, Moist, Medium Dense (SM) Possible Fill
6	4	SS	50/.3	100+		Coarse Gravel, trace to some Silt, Sand, Dark Brown, Moist, Very Dense (GM) Driller Notes Cobbles
		PA				
7						End of Boring at 7.0 Feet Power Auger Refusal
8						
9						
10						
11						
12						
13						
14						
15						

BORING LOG

BORING NO: 3

SHEET 1 of 1

PROJECT NAME: Keene Fire Station

LOCATION: Keene, New York

DATE STARTED/COMPLETED: April 2012

ENGINEER/ARCHITECT: Pacheco-Ross Architects

DRILLING METHOD: Hollow Stem Auger

DRILL RIG TYPE: Truck Mount

HAMMER WEIGHT: 140 Lbs

DROP: 30 Inches

CASING DIAMETER: OD/ID: 3.25 inch ID

WATER LEVEL DEPTH: None Observed **TIME:** WS

FILE NUMBER: 2409

OFFSET: 5 feet north

SURFACE ELEV.: 889+/- ft

DRILL CONTRACTOR: Northern Technical Services

Daniel G Loucks PE
PO Box 163
Ballston Spa, New York 12020
Phone: 518-371-7622
Fax: 518-383-2069

DEPTH	Sample Number	Sample Type	BLOW COUNTS per 6 inches	"N" Value	Recovery	DESCRIPTION
1	1	SS	2-2-2-3	4		Fine to Medium Sand, trace to some Silt, trace Gravel, Roots, Dark Brown, Moist, Loose (SM) Topsoil FILL
2	2	SS	5-50/.4	100+		Fine to Medium Sand, trace to some Silt, Dark Brown, Moist, Medium Dense (SM) Driller Notes Cobbles Possible Fill
3		PA				Fine to Coarse Sand, some Gravel, trace to some Silt, Brown, Moist, Very Dense (SM) Driller Notes Cobbles
4	3	SS	50/.4	100+		
5		PA				
6	4	SS	21-50/.2	100+		Fine to Coarse Sand, some Gravel, trace Silt, Brown, Moist, Very Dense (SM-SP)
7						End of Boring at 6.7 Feet Split Spoon Refusal
8						
9						
10						
11						
12						
13						
14						
15						

BORING LOG

BORING NO: 4

SHEET 1 of 1

PROJECT NAME: Keene Fire Station

LOCATION: Keene, New York

DATE STARTED/COMPLETED: April 2012

ENGINEER/ARCHITECT: Pacheco-Ross Architects

DRILLING METHOD: Hollow Stem Auger

DRILL RIG TYPE: Truck Mount

HAMMER WEIGHT: 140 Lbs

DROP: 30 Inches

CASING DIAMETER: OD/ID: 3.25 inch ID

WATER LEVEL DEPTH: None Observed **TIME:** WS

FILE NUMBER: 2409

OFFSET: None

SURFACE ELEV.: 890+/- ft

DRILL CONTRACTOR: Northern Technical Services

Daniel G Loucks PE
PO Box 163
Ballston Spa, New York 12020
Phone: 518-371-7622
Fax: 518-383-2069

DEPTH	Sample Number	Sample Type	BLOW COUNTS per 6 inches	"N" Value	Recovery	DESCRIPTION
1	1	SS	5-9-50.3	100+		Topsoil Fine to Medium Sand, trace to some Silt, trace Gravel, Brown, Moist, Medium Dense (SM) Driller Notes Cobbles
2		PA				
3	2	SS	27-30-32-41	62		Medium to Coarse Sand, some Gravel, trace Silt, Brown, Moist, Very Dense (SM-SP) Driller Notes Cobbles
4	3	SS	36-50/.2	100+		
5		PA				
6	4	SS	50-50.3	100+		Medium Gravel, some Sand, trace Silt, Brown, Moist, Very Dense (GM-GP) Driller Notes Cobbles
7						End of Boring at 6.8 Feet Split Spoon Refusal
8						
9						
10						
11						
12						
13						
14						
15						

BORING LOG

BORING NO: 5

SHEET 1 of 1

PROJECT NAME: Keene Fire Station

LOCATION: Keene, New York

DATE STARTED/COMPLETED: April 2012

ENGINEER/ARCHITECT: Pacheco-Ross Architects

DRILLING METHOD: Hollow Stem Auger

DRILL RIG TYPE: Truck Mount

HAMMER WEIGHT: 140 Lbs

DROP: 30 Inches

CASING DIAMETER: OD/ID: 3.25 inch ID

WATER LEVEL DEPTH: Wet at 3 ft **TIME:** WS

FILE NUMBER: 2409

OFFSET: None

SURFACE ELEV.: 888+/- ft

DRILL CONTRACTOR: Northern Technical Services

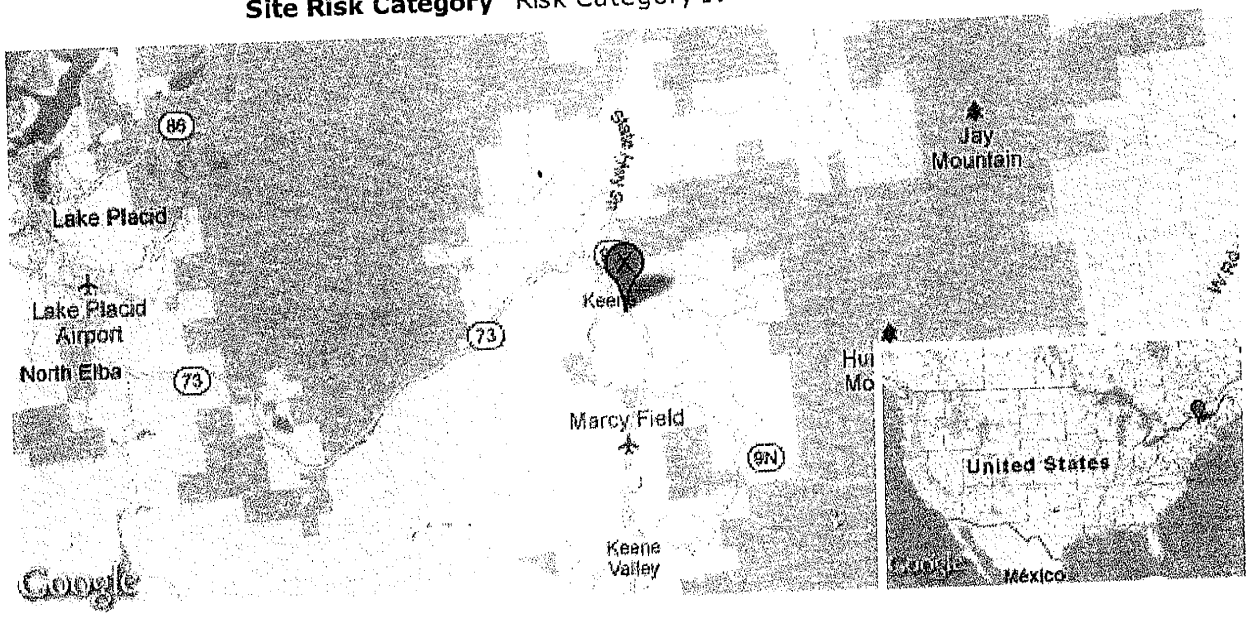
Daniel G Loucks PE
PO Box 163
Ballston Spa, New York 12020
Phone: 518-371-7622
Fax: 518-383-2069

DEPTH	Sample Number	Sample Type	BLOW COUNTS per 6 inches	"N" Value	Recovery	DESCRIPTION
0						Topsoil
1	1	SS	2-4-10-27	14		Fine to Coarse Sand and Gravel, trace to some Silt, Brown, Moist, Medium Dense (SM-GM)
2						
3	2	SS	30-19-50/.4	100+		Fine to Medium Sand and Gravel, trace to some Silt, Brown, Wet, Dense (SM-GM) Driller Notes Cobbles
4						End of Boring at 3.4 Feet
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						

USGS "DesignMaps" Summary Report

User-Specified Input

Report Title	Keene Fire Station Wed April 11, 2012 18:18:42 UTC
Building Code Reference Document	2009 NEHRP Recommended Seismic Provisions (which makes use of 2008 USGS hazard data).
Site Coordinates	44.25308°N, 73.78682°W "10858 Route 9N, Keene, NY 12942"
Site Soil Classification	Site Class C – "Very Dense Soil and Soft Rock"
Site Risk Category	Risk Category IV – "Essential"

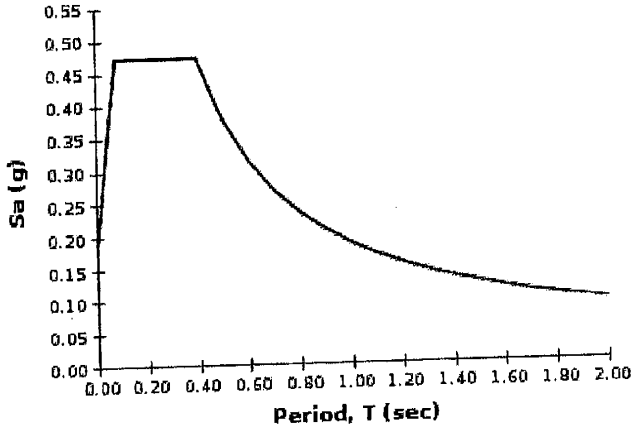


USGS-Provided Output

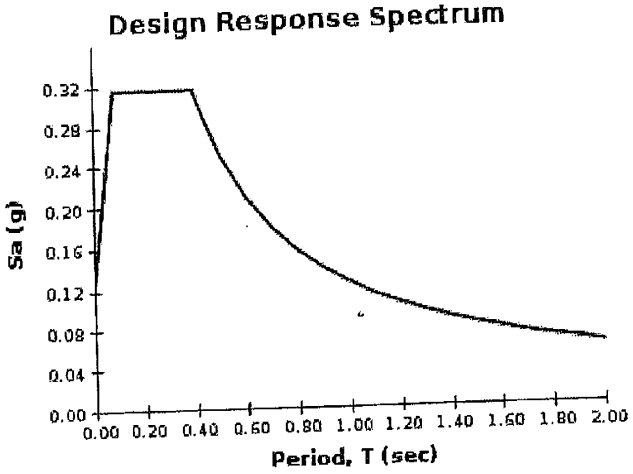
S_S =	0.395 g	S_{MS} =	0.473 g	S_{DS} =	0.316 g
S_1 =	0.111 g	S_{M1} =	0.187 g	S_{D1} =	0.125 g

For information on how the S_S and S_1 values above have been calculated from probabilistic (risk-targeted) and deterministic ground motions in the direction of maximum horizontal response, please view the detailed report.

MCE_R Spectrum Sa Vs T



Design Response Spectrum



For PGA_M, T_L, C_{RS}, and C_{R1} values, please view the detailed report.

Keene Fire Station
B-1
Liquefaction Analysis

SPT No.	Depth (ft)	N field	Ce	Cr	Cs	Cb	Total Stress (psf)	Effective Stress (psf)	Cn	N1,60	FC (%)	N1,60,cs	Ksigma	Alpha	Kalpha	CRR	CSR	FS	PI (%)
1	1	68	.95	.7	1	1	110	110	1.6	72.3	15	77.38	1.5	---	---	---	.149	---	---
2	3	40	.95	.7	1	1	330	330	1.6	42.5	12	45.14	1.5	---	---	---	.147	---	---
3	5	22	.95	.76	1	1	550	550	1.6	25.4	12	27.21	1.4	---	---	---	.145	---	---
4	7	21	.95	.8	1	1	770	770	1.6	25.5	12	27.32	1.29	---	---	---	.142	---	---
5	9	16	.95	.84	1	1	990	990	1.46	18.6	12	20.09	1.2	---	---	---	.139	---	---
6	16	20	.95	.92	1	1	1760	1760	1.09	19	12	20.51	1.03	---	---	---	.129	---	---
7	21	18	.95	.95	1	1	2310	2060.39	1.01	16.4	8	17.32	.99	---	---	.196	.131	1.49	< 5
8	26	17	.95	.97	1	1	2870	2308.39	.95	14.8	8	15.67	.96	---	---	.168	.133	1.26	< 5
9	31	17	.95	.98	1	1	3470	2596.39	.9	14.2	8	15.05	.93	---	---	.155	.13	1.19	< 5
10	36	37	.95	.98	1	1	4070	2884.4	.85	29.2	8	30.53	.9	---	---	.481	.125	3.84	< 5

Notes:
CSR analysis using Seed & Idriss (1971) and Cetin et al. (2001)
CSR File:
CRR using SPT Data and Cetin et. al. (2001) Probabilistic Method
CRR File: C:\Program Files\GeoMotions\Projects\2409.CRR
Earthquake used in CSR Analysis: 6.0 Mw
Earthquake Magnitude for CRR Analysis: 6
Peak Ground Acceleration for CSR Analysis (g, from User): .232
Magnitude Scaling Factor (MSF): 1.643
Depth to Water Table for CRR Analysis (ft): 17
Depth to Water Table for Cn Calculation (ft): 17
Depth to Base Layer for CSR Analysis (ft): 47.5
MSF Option: Cetin et al. (2001)
Cn Option: Liao & Whitman (1986)
Ksigma Option:
SPT Energy Ratio: Safety Hammer(1): .95
**effective stress computed using Depth to Water Table for CRR Analysis
*value modified by user

Keene Fire Station
B-1
Seismic Induced Settlement Analysis

SPT No.	Depth (ft)	Thickness (ft)	Soil Type	(N)1	(N1)60,cs	N(1,J)	CSR M=7.5	FSL	Ecyc (%)	Evol (%)	Settlement (in)
1	1	2		77.38	----	----	.09	----	1.4896E-03	.002	0
2	3	2		45.14	----	----	.089	----	3.3589E-03	.002	0
3	5	2		27.21	----	----	.088	----	5.4996E-03	.0046	.001
4	7	2		27.32	----	----	.086	----	6.3957E-03	.0053	.001
5	9	4.5		20.09	----	----	.084	----	7.9208E-03	.0101	.005
6	16	4.5		20.51	----	----	.078	----	9.3011E-03	.0116	.006
7	21	6.5		----	17.32		.079	1.49		.5	.39
8	26	5		----	15.67		.08	1.26		.5	.299
9	31	5		----	15.05		.079	1.19		.5	.299
10	36	2.5		----	30.53		.076	3.84		.5	.149
									Total Settlement (in):		1.15

Notes:
CSR analysis using Seed & Idriss (1971) and Cetin & Seed (2000)
CSR analysis on File:
Earthquake used in CSR Analysis: 6.0 Mw
CRR File: C:\Program Files\GeoMotions\Projects\2409.CRR
CRR - SPT Data & Seed et. al. Method in NCEER Workshop and Cetin et al. (2001) Probabilistic Method and Cetin et al. (2001) Method
CRR results on File: C:\Program Files\GeoMotions\Projects\2409.CRR
Depth to Water Table for CRR Analysis (ft): 17
Settlement of Dry Sands: Tokimatsu & Seed (1987)
Settlement of Saturated Sands: Wu (2003)

CONSTRUCTION TECHNOLOGY

INSPECTION & TESTING DIVISION, P.D.& T.S., INC.
4 William Street, Ballston Lake, New York 12019
Phone: (518) 399-1848 Fax: (518) 399-1913

CLIENT: **DANIEL LOUCKS, P.E.**
POST OFFICE BOX 163
BALLSTON SPA, NEW YORK 12020

ATT'N: MR. DANIEL LOUCKS, P.E.
PROJECT: **KEENE FIRE STATION**

REPORT DATE: 04/06/12
SAMPLE NUMBER: 13052
OUR FILE NO: 750.001

REVIEWED BY: TOM JOSLIN, SET, NICET

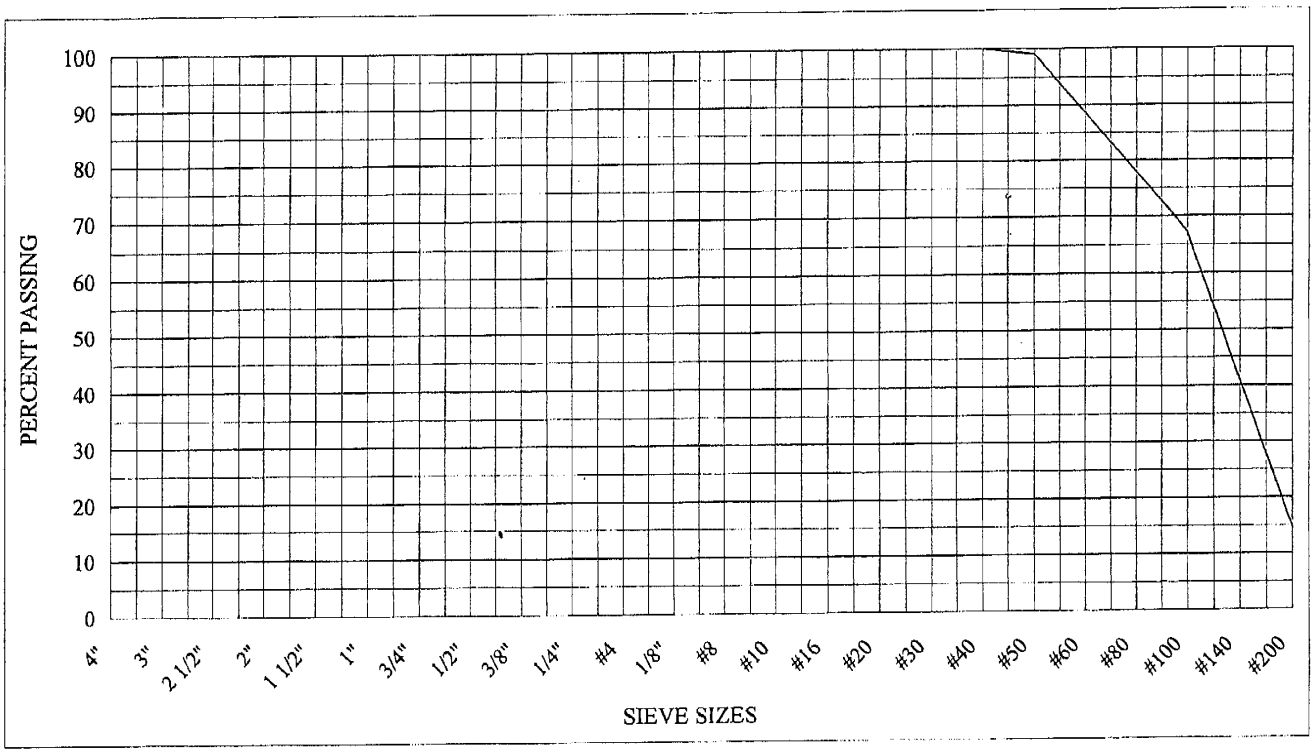
ASTM C136 / C117 / D422: SIZE DISTRIBUTION OF SOIL & AGGREGATES: SIEVE ANALYSIS

MATERIAL SOURCE: **B-1, S-5, 8-10'**
MATERIAL DESCRIPTION: SAND, fine; little Silt/Clay
MATERIAL PROJECT USE: PER CLIENT:
EVALUATION SPECIFICATION: PER CLIENT:

COARSE SIEVE SERIES: US STANDARD			
SIEVE SIZE	PERCENT RETAINED	PERCENT PASSING	SPECIFICATION ALLOWANCE
4"			
3"			
2 1/2"			
2"			
1 1/2"			
1"			
3/4"			
1/2"			
3/8"			

MEDIUM SIEVE SERIES: US STANDARD			
SIEVE SIZE	PERCENT RETAINED	PERCENT PASSING	SPECIFICATION ALLOWANCE
1/4"			
#4			
1/8"			
#8			
#10			
#16			
#20			
#30			
#40		100.0	

FINE SIEVE SERIES: US STANDARD			
SIEVE SIZE	PERCENT RETAINED	PERCENT PASSING	SPECIFICATION ALLOWANCE
#50	0.9	99.1	
#60			
#80			
#100	32.8	67.2	
#140			
#200	85.3	14.7	
SILT			
CLAY			
COLLOID			



CONSTRUCTION TECHNOLOGY

INSPECTION & TESTING DIVISION, P.D.& T.S., INC.
4 William Street, Ballston Lake, New York 12019
Phone: (518) 399-1848 Fax: (518) 399-1913

CLIENT: **DANIEL LOUCKS, P.E.**
POST OFFICE BOX 163
BALLSTON SPA, NEW YORK 12020

ATT'N: MR. DANIEL LOUCKS, P.E.
PROJECT: **KEENE FIRE STATION**

REPORT DATE: 04/06/12
SAMPLE NUMBER: 13053
OUR FILE NO: 750.001

REVIEWED BY: TOM JOSLIN, SET, NICET

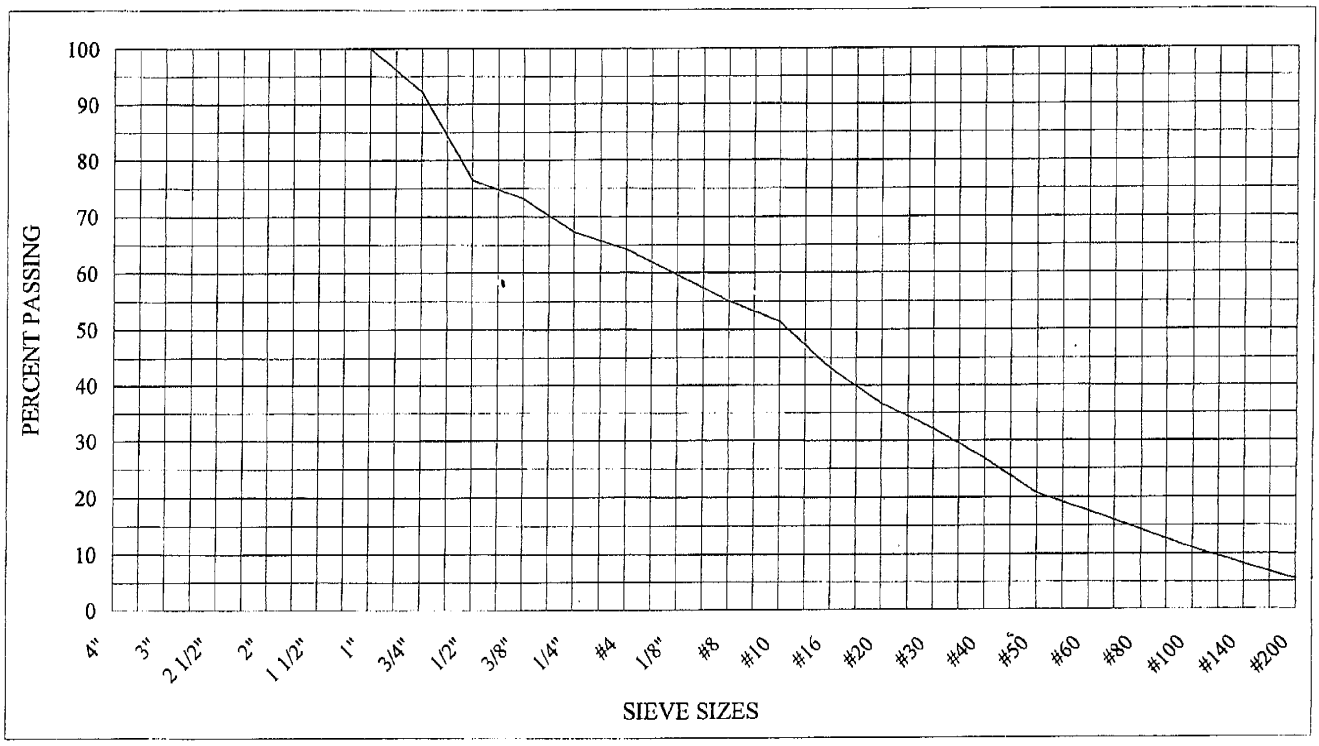
ASTM C136 / C117 / D422: SIZE DISTRIBUTION OF SOIL & AGGREGATES: SIEVE ANALYSIS

MATERIAL SOURCE: **B-4, S-3, 4-6'**
MATERIAL DESCRIPTION: SAND, fine; little Silt/Clay
MATERIAL PROJECT USE: PER CLIENT:
EVALUATION SPECIFICATION: PER CLIENT:

COARSE SIEVE SERIES: US STANDARD			
SIEVE SIZE	PERCENT RETAINED	PERCENT PASSING	SPECIFICATION ALLOWANCE
4"			
3"			
2 1/2"			
2"			
1 1/2"			
1"		100.0	
3/4"	7.7	92.3	
1/2"	23.5	76.5	
3/8"	26.8	73.2	

MEDIUM SIEVE SERIES: US STANDARD			
SIEVE SIZE	PERCENT RETAINED	PERCENT PASSING	SPECIFICATION ALLOWANCE
1/4"	32.7	67.3	
#4	35.7	64.3	
1/8"			
#8	44.9	55.1	
#10			
#16	56.9	43.1	
#20			
#30	67.9	32.1	
#40	73.3	26.7	

FINE SIEVE SERIES: US STANDARD			
SIEVE SIZE	PERCENT RETAINED	PERCENT PASSING	SPECIFICATION ALLOWANCE
#50	79.3	20.7	
#60			
#80			
#100	89.0	11.0	
#140			
#200	94.5	5.5	
SILT			
CLAY			
COLLOID			



Soil Characteristics Pertinent to Roads and Airfields

Major Divisions		Letter (1)	Name	Value as Subgrade When Not Subject to Frost Action	Value as Subbase When Not Subject to Frost Action	Value as Base When Not Subject to Frost Action	Potential Frost Action	Compressibility and Expansion	Drainage Characteristics	Compaction Equipment	Unit Dry Weight lb. per cu. ft.	Typical Design Values	
												CBR (2)	Subgrade Modulus k lb. per cu. in.
Coarse-Grained Soils	Gravel and Gravelly soils	GW	Well-graded gravels or gravel-sand mixtures, little or no fines	Excellent	Excellent	Good	None to very slight	Almost none	Excellent	Crawler-type tractor, rubber-tired roller, steel-wheeled roller	125-140	40-80	300-500
		GP	Poorly graded gravels or gravel-sand mixtures, little or no fines	Good to excellent	Good	Fair to good	None to very slight	Almost none	Excellent	Crawler-type tractor, rubber-tired roller, steel-wheeled roller	110-140	30-60	300-500
		GM d	Silty gravels, gravel-sand-silt mixtures	Good to excellent	Good	Fair to good	Slight to medium	Very slight	Fair to poor	Rubber-tired roller, sheepsfoot roller; close control of moisture	125-145	40-60	300-500
		GM u		Good	Fair	Poor to not suitable	Slight to medium	Slight	Poor to practically impervious	Rubber-tired roller, sheepsfoot roller	115-135	20-30	200-500
		GC	Clayey gravels, gravel-sand-clay mixtures	Good	Fair	Poor to not suitable	Slight to medium	Slight	Poor to practically impervious	Rubber-tired roller, sheepsfoot roller	130-145	20-40	200-500
	Sand and Sandy soils	SW	Well-graded sands or gravelly sands, little or no fines	Good	Fair to good	Poor	None to very slight	Almost none	Excellent	Crawler-type tractor, rubber-tired roller	110-130	20-40	200-400
		SP	Poorly graded sands or gravelly sands, little or no fines	Fair to good	Fair	Poor to not suitable	None to very slight	Almost none	Excellent	Crawler-type tractor, rubber-tired roller	105-135	10-40	150-400
		SM d	Silty sands, sand-silt mixtures	Fair to good	Fair to good	Poor	Slight to high	Very slight	Fair to poor	Rubber-tired roller, sheepsfoot roller; close control of moisture	120-135	15-40	150-400
		SM u		Fair	Poor to fair	Not suitable	Slight to high	Slight to medium	Poor to practically impervious	Rubber-tired roller, sheepsfoot roller	100-130	10-20	100-300
		SC	Clayey sands, sand-clay mixtures	Poor to fair	Poor	Not suitable	Slight to high	Slight to medium	Poor to practically impervious	Rubber-tired roller, sheepsfoot roller	100-135	5-20	100-300
Fine-Grained Soils	Silts and Clays LL is less than 50	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity	Poor to fair	Not suitable	Not suitable	Medium to very high	Slight to medium	Fair to poor	Rubber-tired roller, sheepsfoot roller; close control of moisture	90-130	15 or less	100-200
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays	Poor to fair	Not suitable	Not suitable	Medium to high	Medium	Practically impervious	Rubber-tired roller, sheepsfoot roller	90-130	15 or less	50-150
		OL	Organic silts and organic silt-clays of low plasticity	Poor	Not suitable	Not suitable	Medium to high	Medium to high	Poor	Rubber-tired roller, sheepsfoot roller	90-105	5 or less	50-100
	Silts and Clays LL is Greater than 50	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts	Poor	Not suitable	Not suitable	Medium to very high	High	Fair to poor	Sheepsfoot roller, rubber-tired roller	80-105	10 or less	50-100
		CH	Inorganic clays of medium to high plasticity, organic silts	Poor to fair	Not suitable	Not suitable	Medium	High	Practically impervious	Sheepsfoot roller, rubber-tired roller	90-115	15 or less	50-150
		OH	Organic clays of high plasticity, fat clays	Poor to very poor	Not suitable	Not suitable	Medium	High	Practically impervious	Sheepsfoot roller, rubber-tired roller	80-110	5 or less	25-100
Highly Organic Soils		Pt	Peat and other highly organic soils	Not suitable	Not suitable	Not suitable	Slight	Very high	Fair to poor	Compaction not practical	—	—	—

Note:

(1) Unit Dry Weights are for compacted soil at optimum moisture content for modified AASHO compaction effort. Division of GM and SM groups into subdivision of d and u are for roads and airfields only. Subdivision is basis of Atterberg limits; suffix d (e.g., GMd) will be used when the liquid limit (LL) is 25 or less and the plasticity index is 6 or less; the suffix u will be used otherwise.

(2) The maximum value that can be used in design of airfields is, in some cases, limited by gradation and plasticity requirements.

GENERAL QUALIFICATIONS

This report has been prepared in order to aid in the evaluation of this property and to assist the architect and/or engineer in the design of this project. The scope of the project and location described herein, and my description of the project represents my understanding of the significant aspects relevant to soil and foundation characteristics. In the event that any changes in the design or location of the proposed facilities, as outlined in this report, are planned, I should be informed so the changes can be reviewed and the conclusions of this report modified or approved in writing by myself.

It is recommended that all construction operations dealing with earthwork and foundations be inspected by an experienced soil engineer to assure that the design requirements are fulfilled in the actual construction. If you wish, I would welcome the opportunity to review the plans and specifications when they have been prepared so that I may have the opportunity of commenting on the effect of soil conditions on the design and specifications.

The analysis and recommendations submitted in this report are based upon the data obtained from the soil borings and/or test pits performed at the locations indicated on the location diagram and from any other information discussed in the report. This report does not reflect any variations which may occur between these boring and/or test pits. In the performance of subsurface investigations, specific information is obtained at specific locations at specific times. However, it is a well-known fact that variations in soil and rock conditions exist on most sites between boring locations and also such situations as groundwater conditions vary from time to time. The nature and extent of variations may may not become evident until the course of construction. If variations then appear evident, it will be necessary for a reevaluation of the recommendations of this report after performing on-site observations during the construction period and noting the characteristics of any variations.

ESE Earth Science Engineering, P.C.

• Civil • Geotechnical • Environmental • Zebra Mussel Controls •
A Design-Build Affiliate of ZEBRA-TECH, LLC

December 29, 2011

Mountain Manor
10858 NYS Rte 9N
Keene, NY 12942

Attn: Ms. Linda LaBarge

Re: Subsurface Investigation
Petroleum Conveyance System
Mountain Manor Property
Keene, NY

Dear Ms. LaBarge:

On December 21 and 27, 2011, representatives from Earth Science Engineering, P.C., visited the referenced property to conduct a metal detection survey and review the findings of a shallow subsurface investigation (conducted by others), respectively. These activities were undertaken in an attempt to verify the presence of underground storage tanks (USTs). Pursuant to areas outlined by the metal detection survey, shallow excavations were completed within three (3) general areas: the grassy area within the driveway; adjacent to and northeast of an apparent "service station" island; and a short distance southeast of the island.

The excavation within the circular driveway revealed a pile of metal debris, but no apparent evidence of USTs or associated piping. The excavation adjacent to the concrete island exposed two (2) metal pipelines heading northeasterly away from the island. The two lines met approximately 10 ft from the island, and continued parallel, eastwardly for approximately 5 ft, each terminating at a coupling. The third excavation contained an apparent small-diameter metal electrical conduit.

The excavation revealing the two pipelines continued eastwardly, deepening in an attempt to locate the USTs. The excavation terminated at a depth of approximately 5 ft within a clean sand (fill). The excavation walls were extended to a point where native undisturbed sand, gravel, cobbles and boulders were discovered. There was no evidence (visual/olfactory) of petroleum within the excavation. It appeared the pipelines had been properly disconnected at the couplings, and the remaining lines and USTs removed. The lack of petroleum residue and apparent absence of USTs suggest no environmental impact is present.

ESE

ZEBRA-TECH

In summary, it appears that by following remnants of the former service island pipelines, USTs associated with the tanks once supplying petroleum to the service island are not present. Please contact me if you should have any questions or if I can be of further assistance. Thank you.

Sincerely,

Earth Science Engineering, P.C.
Mark J. Chauvin

MJC/slc

Asbestos Lab Services Chain of Custody

EMSL Order Number (Lab Use Only): 141202683

Buffalo, NY
490 Rowley Road
Depew, NY 14043
PHONE: (716) 651-0030
FAX: (716) 651-0394

Company: GYMO P.C.	**EMSL-Bill to:** ☑ Same ☐ Different If Bill to is Different note instructions in Comments** *Third Party Billing requires written authorization from third party*
Street: 220 Sterling Street	
City/State/Zip: Watertown, NY 13601	
Report To (Name): Jason Preston	**Fax:** 315 788 0668
Telephone: 315-788-3800	**Email Address:** jason@gymopc.com / sue@gymopc.com
Project Name/Number: 2012-125V / KEEN FIRE STATION	
Please Provide Results:	**Purchase Order:** **State Samples Taken:** NY

Turnaround Time (TAT) Options* – Please Check

☐ 3 Hour ☐ 6 Hour ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☐ 1 Week ☒ 2 Week

*For TEM AHERA 4-hour TAT, please call ahead to schedule. There is a premium charge for a 4 hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.

PCM - Air
☐ NIOSH 7400
☐ w/ OSHA 8hr. TWA

PLM - Bulk (reporting limit)
☐ PLM EPA 600/R-93/116 (<1%)
☐ PLM EPA NOB (<1%)
Point Count
☐ 400 (<0.25%) ☐ 1000 (<0.1%)
Point Count w/Gravimetric
☐ 400 (<0.25%) ☐ 1000 (<0.1%)
☒ NYS 198.4 Friable-in ID)
☐ NYS 198.6 NOB (non-friable-NY)
☐ NIOSH 9002 (<1%)

TEM - Air ☐ 4-6 hr TAT (AHERA only)
☐ AHERA 40 CFR, Part 763
☐ NIOSH 7402
☐ EPA Level II
☐ ISO 10312

TEM - Bulk
☐ TEM EPA NOB
☒ NYS NOB 198.4 (non-friable-NY)
☐ Chatfield SOP
☐ TEM Mass Analysis EPA 600 sec 2.5

TEM - Water EPA 100.2
Fibers >10um ☐ Waste ☐ Drinking
All Fiber Sizes ☐ Waste ☐ Drinking

TEM - Dust
☐ Microvac - ASTM D 5755
☐ Wipe - ASTM D6480
☐ Carpet Sonication (EPA 600/J-93/167)

Soil/Rock/Vermiculite
☐ PLM CARB 435 - A (0.25% sensitivity)
☐ PLM CARB 435 - B (0.1% sensitivity)
☐ TEM CARB 435 - B (0.1% sensitivity)
☐ TEM CARB 435 - C (0.01% sensitivity)
☐ EPA Protocol (Prep) Quantitative)
☐ EPA Protocol (Quantitative)

Other:
☐

☒ Check For Positive Stop – Clearly Identify Homogeneous Group

Samplers Name: JASON PRESTON **Samplers Signature:**

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
1A,B	WINDOW GLAZING	375 LM1+	6/8/12
2A,B	LINOLEUM (MECH. ROOM)(MANOR)	75 SF +/-	"
3A,B,C,D,E	SHEETROCK (TTP) (MANOR)	1,000 SF +/-	12:00
4A,B,C	12x12 FT (MENS/WOMENS ROOM)(MANOR) B MASTIC, C MASTIC	100 SF +/-	
5A,B	ASPHALT PAPER SUBFLOOR (TTP)	900 SF +/-	
6A,B	12x12 FT (KITCHEN)(TOP LOFT)(MANOR)	150 SF +/-	
7A,B	ASPHALT ROOFING (WOOD SHED)	150 SF +/-	
8A,B	9x9 FT (KITCHEN)(BOTTOM LOFT)(MANOR)	130 SF +/-	

Client Sample # (s): 1-2 **Total # of Samples:** 30

Relinquished (Client): **Date:** 6/11/12 **Time:** FED-EX

Received (Lab): FEDEX **Date:** 6/12/12 **Time:** 10:05am

Comments/Special Instructions:

Asbestos Lab Services Chain of Custody

EMSL Order Number *(Lab Use Only)*: 141202683

Buffalo, NY
490 Rowley Road
Depew, NY 14043
PHONE: (716) 651-0030
FAX: (716) 651-0394

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
9A,B,C	(MANOR) 101 CEILING TILES (TREES/HOLL)	200 Sq. Ft.	6/8/12
10A,B	ASPHALT PAPER (ROOF) (MANOR)	2,000 Sq. Ft.	" 12:00
11A,B	ASPHALT SHINGLE (ROOF) (MANOR)	2,000 Sq. Ft.	"
12A,B,C	CABIN SHINGLES (ASPHALT)	900 Sq. Ft.	"

Comments/Special Instructions:

EMSL Analytical, Inc.
490 Rowley Road, Depew, NY 14043
Phone/Fax: (716) 651-0030 / (716) 651-0394
http://www.emsl.com buffalolab@emsl.com

EMSL Order:	141202683
CustomerID:	GYMO50
CustomerPO:	
ProjectID:	

Attn: **Jason Preston**
GYMO P.C.
220 Sterling St.
Watertown, NY 13601

Phone:	(315) 788-3800
Fax:	(315) 788-0668
Received:	06/12/12 10:05 AM
Analysis Date:	6/16/2012
Collected:	6/8/2012

Project: **2012-125V Keen Fire Station**

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via the NY State ELAP 198.6 Method

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
1a *141202683-0001*	window glazing	Tan Non-Fibrous Homogeneous	100	None	**Inconclusive: No Asbestos Detected**
1b *141202683-0002*	window glazing	Tan Non-Fibrous Homogeneous	100	None	**Inconclusive: No Asbestos Detected**
2a *141202683-0003*	linoleum mech room manor	Tan Non-Fibrous Homogeneous	83.7	None	16.3% Chrysotile 16.3% Total
2b *141202683-0004*	linoleum mech room manor				**Positive Stop (Not Analyzed)**
4a *141202683-0010*	12x12 ft mens/womans room manor	Tan Non-Fibrous Homogeneous	100	None	**Inconclusive: No Asbestos Detected**
4b *141202683-0011*	12x12 ft mens/womans room manor	Tan Non-Fibrous Homogeneous	100	None	**Inconclusive: No Asbestos Detected**
4b *141202683-0012*	mastic	Tan Non-Fibrous Homogeneous	100	None	**Inconclusive: No Asbestos Detected**
4c *141202683-0013*	12x12 ft mens/womans room manor	Tan Non-Fibrous Homogeneous	100	None	**Inconclusive: No Asbestos Detected**
4c *141202683-0014*	mastic	Tan Non-Fibrous Homogeneous	100	None	**Inconclusive: No Asbestos Detected**

Analyst(s)

Tom Hanes (25)

Rhonda McGee

Rhonda McGee, Laboratory Manager
or other approved signatory

*Polarized Light Microscopy (PLM) is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative Transmission Electron Microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing. The test results contained within this report meet the requirements of NELAC unless otherwise noted. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. The above test report relates only to the items tested. EMSL bears no responsibility for sample collection activities or analytical method limitations. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

Samples analyzed by EMSL Analytical, Inc. Depew, NY NYS ELAP 11606

Initial report from 06/16/2012 16:38:32

EMSL Analytical, Inc.
490 Rowley Road, Depew, NY 14043
Phone/Fax: (716) 651-0030 / (716) 651-0394
http://www.emsl.com buffalolab@emsl.com

EMSL Order:	141202683
CustomerID:	GYMO50
CustomerPO:	
ProjectID:	

Attn: **Jason Preston**
GYMO P.C.
220 Sterling St.
Watertown, NY 13601

Phone:	(315) 788-3900
Fax:	(315) 788-0668
Received:	06/12/12 10:05 AM
Analysis Date:	6/16/2012
Collected:	6/8/2012

Project: **2012-125V Keen Fire Station**

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via the NY State ELAP 198.6 Method

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
5a *141202683-0015*	asphalt paper subfloor typ	Black Non-Fibrous Homogeneous	100	None	**Inconclusive: No Asbestos Detected**
5b *141202683-0016*	asphalt paper subfloor typ	Black Non-Fibrous Homogeneous	100	None	**Inconclusive: No Asbestos Detected**
6a *141202683-0017*	12x12 ft kitchen top layer manor	Tan Non-Fibrous Homogeneous	100	None	**Inconclusive: No Asbestos Detected**
6b *141202683-0018*	12x12 ft kitchen top layer manor	Tan Non-Fibrous Homogeneous	100	None	**Inconclusive: No Asbestos Detected**
7a *141202683-0019*	asphalt roofing wood shed	Black Non-Fibrous Homogeneous	100	None	**Inconclusive: No Asbestos Detected**
7b *141202683-0020*	asphalt roofing wood shed	Black Non-Fibrous Homogeneous	100	None	**Inconclusive: No Asbestos Detected**
8a *141202683-0021*	9x9 ft kitchen bottom layer manor	Black Non-Fibrous Homogeneous	93.5	None	**6.5% Chrysotile** **6.5% Total**
8b *141202683-0022*	9x9 ft kitchen bottom layer manor				**Positive Stop (Not Analyzed)**
9a *141202683-0023*	1x1 ceiling tiles hall manor	Tan Non-Fibrous Homogeneous	100	None	**Inconclusive: No Asbestos Detected**
9b *141202683-0024*	1x1 ceiling tiles hall manor	Black Fibrous Homogeneous	100	None	**Inconclusive: No Asbestos Detected**

Analyst(s)

Tom Hanes (25)

Rhonda McGee

Rhonda McGee, Laboratory Manager
or other approved signatory

*Polarized Light Microscopy (PLM) is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative Transmission Electron Microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing. The test results contained within this report meet the requirements of NELAC unless otherwise noted. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except in full, without written approval by EMSL. The above test report relates only to the items tested. EMSL bears no responsibility for sample collection activities or analytical method limitations. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

Samples analyzed by EMSL Analytical, Inc. Depew, NY NYS ELAP 11606

Initial report from 06/16/2012 16:38:32

EMSL Analytical, Inc.
490 Rowley Road, Depew, NY 14043
Phone/Fax: (716) 651-0030 / (716) 651-0394
http://www.emsl.com buffalolab@emsl.com

EMSL Order:	141202683
CustomerID:	GYMO50
CustomerPO:	
ProjectID:	

Attn: **Jason Preston**
GYMO P.C.
220 Sterling St.
Watertown, NY 13601

Phone:	(315) 788-3900
Fax:	(315) 788-0668
Received:	06/12/12 10:05 AM
Analysis Date:	6/16/2012
Collected:	6/8/2012

Project: **2012-125V Keen Fire Station**

Test Report: Asbestos Analysis of Non-Friable Organically Bound Materials by PLM via the NY State ELAP 198.6 Method

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES
9c *141202683-0025*	1x1 ceiling tiles hall manor	Tan Fibrous Homogeneous	100	None	**Inconclusive: No Asbestos Detected**
10a *141202683-0026*	asphalt paper roof manor	Black Non-Fibrous Homogeneous	100	None	**Inconclusive: No Asbestos Detected**
10b *141202683-0027*	asphalt paper roof manor	Black Non-Fibrous Homogeneous	100	None	**Inconclusive: No Asbestos Detected**
11a *141202683-0028*	asphalt shingle roof manor	Black Non-Fibrous Homogeneous	100	None	**Inconclusive: No Asbestos Detected**
11b *141202683-0029*	asphalt shingle roof manor	Black Non-Fibrous Homogeneous	100	None	**Inconclusive: No Asbestos Detected**
12a *141202683-0030*	cabin shingles asphalt	Black Non-Fibrous Homogeneous	100	None	**Inconclusive: No Asbestos Detected**
12b *141202683-0031*	cabin shingles asphalt	Black Non-Fibrous Homogeneous	100	None	**Inconclusive: No Asbestos Detected**
12c *141202683-0032*	cabin shingles asphalt	Black Non-Fibrous Homogeneous	100	None	**Inconclusive: No Asbestos Detected**

Analyst(s)

Tom Hanes (25)

Rhonda McGee

Rhonda McGee, Laboratory Manager
or other approved signatory

*Polarized Light Microscopy (PLM) is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative Transmission Electron Microscopy is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing. The test results contained within this report meet the requirements of NELAC unless otherwise noted. EMSL maintains liability limited to cost of analysis. This report relates only to the samples reported above and may not be reproduced, except infull, without written approval by EMSL. The above test report relates only to the items tested. EMSL bears no responsibility for sample collection activities or analytical method imitations. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

Samples analyzed by EMSL Analytical, Inc. Depew, NY NYS ELAP 11606

Initial report from 06/16/2012 16:38:32

EMSL Analytical, Inc.
490 Rowley Road, Depew, NY 14043
Phone/Fax: (716) 651-0030 / (716) 651-0394
http://www.emsl.com buffalolab@emsl.com

EMSL Order:	141202683
CustomerID:	GYMO50
CustomerPO:	
ProjectID:	

Attn: **Jason Preston**
GYMO P.C.
220 Sterling St.
Watertown, NY 13601

Phone:	(315) 788-3900
Fax:	(315) 788-0668
Received:	06/12/12 10:05 AM
Analysis Date:	6/25/2012
Collected:	6/8/2012

Project: **2012-125V Keen Fire Station**

Test Report: Asbestos Analysis of Bulk Materials by PLM via the NY State ELAP 198.1 Method

Sample	Description	Appearance	Non-Asbestos % Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
3a *141202683-0005*	sheetrock typ manor	Gray Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
3b *141202683-0006*	sheetrock typ manor	Gray Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
3c *141202683-0007*	sheetrock typ manor	Gray Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
3d *141202683-0008*	sheetrock typ manor	Gray Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**
3e *141202683-0009*	sheetrock typ manor	Gray Non-Fibrous Homogeneous		100.00% Non-fibrous (other)	**None Detected**

Analyst(s)

Taron Williams (5)

Rhonda McGee

Rhonda McGee, Laboratory Manager
or other approved signatory

Initial report from 06/16/2012 16:38:32

EMSL Analytical, Inc.
490 Rowley Road, Depew, NY 14043
Phone/Fax: (716) 651-0030 / (716) 651-0394
http://www.emsl.com buffalolab@emsl.com

EMSL Order: 141202683
CustomerID: GYMO50
CustomerPO:
ProjectID:

Attn: **Jason Preston**
GYMO P.C.
220 Sterling St.
Watertown, NY 13601

Phone: (315) 788-3900
Fax: (315) 788-0668
Received: 06/12/12 10:05 AM
Analysis Date: 6/21/2012
Collected: 6/8/2012

Project: **2012-125V Keen Fire Station**

Test Report: Asbestos Analysis of Non-Friable Organically Bound materials by Transmission Electron Microscopy via NYS ELAP Method 198.4

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES	% TOTAL ASBESTOS
1a *141202683-0001*	window glazing	Tan Non-Fibrous Homogeneous	100.0	None		No Asbestos Detected
1b *141202683-0002*	window glazing	Tan Non-Fibrous Homogeneous	100.0	None		No Asbestos Detected
2a *141202683-0003* Not Analyzed	linoleum mech room manor					
2b *141202683-0004* Not Analyzed	linoleum mech room manor					
4a *141202683-0010*	12x12 ft mens/womans room manor	Tan Non-Fibrous Homogeneous	100.0	None		No Asbestos Detected
4b *141202683-0011*	12x12 ft mens/womans room manor	Tan Non-Fibrous Homogeneous	100.0	None		No Asbestos Detected
4b *141202683-0012*	mastic	Tan Non-Fibrous Homogeneous	100.0	None		No Asbestos Detected
4c *141202683-0013*	12x12 ft mens/womans room manor	Tan Non-Fibrous Homogeneous	100.0	None		No Asbestos Detected
4c *141202683-0014*	mastic	Tan Non-Fibrous Homogeneous	100.0	None		No Asbestos Detected
5a *141202683-0015*	asphalt paper subfloor typ	Black Non-Fibrous Homogeneous	100.0	None		No Asbestos Detected

Analyst(s)

Rachel Giese (23)

Rhonda McGee

Rhonda McGee, Laboratory Manager
or other approved signatory

This laboratory is not responsible for % asbestos in total sample when the residue only is submitted for analysis. The above report relates only to the items tested. This report may not be reproduced, except in full, without written approval by EMSL Analytical, Inc. Samples received in good condition unless otherwise noted. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample.

Samples analyzed by EMSL Analytical, Inc. Depew, NY NYS ELAP 11606

Initial report from 06/16/2012 16:38:32

EMSL Analytical, Inc.
490 Rowley Road, Depew, NY 14043
Phone/Fax (716) 651-0030 / (716) 651-0394
http://www.emsl.com buffalolab@emsl.com

EMSL Order:	141202683
CustomerID:	GYMO50
CustomerPO:	
ProjectID:	

Attn: **Jason Preston**
GYMO P.C.
220 Sterling St.
Watertown, NY 13601

Phone:	(315) 788-3900
Fax:	(315) 788-0668
Received:	06/12/12 10:05 AM
Analysis Date:	6/21/2012
Collected:	6/8/2012

Project: **2012-125V Keen Fire Station**

Test Report: Asbestos Analysis of Non-Friable Organically Bound materials by Transmission Electron Microscopy via NYS ELAP Method 198.4

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES	% TOTAL ASBESTOS
5b *141202683-0016*	asphalt paper subfloor typ	Black Non-Fibrous Homogeneous	100.0	None	No Asbestos Detected	
6a *141202683-0017*	12x12 ft kitchen top layer manor	Tan Non-Fibrous Homogeneous	100.0	None	No Asbestos Detected	
6b *141202683-0018*	12x12 ft kitchen top layer manor	Tan Non-Fibrous Homogeneous	100.0	None	No Asbestos Detected	
7a *141202683-0019*	asphalt roofing wood shed	Black Non-Fibrous Homogeneous	100.0	None	No Asbestos Detected	
7b *141202683-0020*	asphalt roofing wood shed	Black Non-Fibrous Homogeneous	100.0	None	No Asbestos Detected	
8a *141202683-0021* Not Analyzed	9x9 ft kitchen bottom layer manor					
8b *141202683-0022* Not Analyzed	9x9 ft kitchen bottom layer manor					
9a *141202683-0023*	1x1 ceiling tiles hall manor	Tan Non-Fibrous Homogeneous	100.0	None	No Asbestos Detected	
9b *141202683-0024*	1x1 ceiling tiles hall manor	Black Fibrous Homogeneous	100.0	None	No Asbestos Detected	
9c *141202683-0025*	1x1 ceiling tiles hall manor	Tan Fibrous Homogeneous	100.0	None	No Asbestos Detected	

Analyst(s)

Rachel Giese (23)

Rhonda McGee

Rhonda McGee, Laboratory Manager
or other approved signatory

Initial report from 06/16/2012 16:38:32

EMSL Analytical, Inc.
490 Rowley Road, Depew, NY 14043
Phone/Fax (716) 651-0030 / (716) 651-0394
http://www.emsl.com buffalolab@emsl.com

EMSL Order:	141202683
CustomerID:	GYMO50
CustomerPO:	
ProjectID:	

Attn: **Jason Preston**
GYMO P.C.
220 Sterling St.
Watertown, NY 13601

Phone:	(315) 788-3900
Fax:	(315) 788-0668
Received:	06/12/12 10:05 AM
Analysis Date:	6/21/2012
Collected:	6/8/2012

Project: **2012-125V Keen Fire Station**

Test Report: Asbestos Analysis of Non-Friable Organically Bound materials by Transmission Electron Microscopy via NYS ELAP Method 198.4

SAMPLE ID	DESCRIPTION	APPEARANCE	% MATRIX MATERIAL	% NON-ASBESTOS FIBERS	ASBESTOS TYPES	% TOTAL ASBESTOS
10a *141202683-0026*	asphalt paper roof manor	Black Non-Fibrous Homogeneous	100.0	None	No Asbestos Detected	
10b *141202683-0027*	asphalt paper roof manor	Black Non-Fibrous Homogeneous	100.0	None	No Asbestos Detected	
11a *141202683-0028*	asphalt shingle roof manor	Black Non-Fibrous Homogeneous	100.0	None	No Asbestos Detected	
11b *141202683-0029*	asphalt shingle roof manor	Black Non-Fibrous Homogeneous	100.0	None	No Asbestos Detected	
12a *141202683-0030*	cabin shingles asphalt	Black Non-Fibrous Homogeneous	100.0	None	No Asbestos Detected	
12b *141202683-0031*	cabin shingles asphalt	Black Non-Fibrous Homogeneous	100.0	None	No Asbestos Detected	
12c *141202683-0032*	cabin shingles asphalt	Black Non-Fibrous Homogeneous	100.0	None	No Asbestos Detected	

Analyst(s)

Rachel Giese (23)

Rhonda McGee

Rhonda McGee, Laboratory Manager
or other approved signatory

Initial report from 06/16/2012 16:38:32

4020-DR-NY
PW 07289 Revised: Keene Fire Station Replacement on New Site

New York State Office of Parks, Recreation and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island Resource Center, PO Box 189, Waterford, NY 12188-0189

[redacted]

Please complete this form and attach it to the top of any **and all information submitted to this office** for review. Accurate and complete forms will assist this office in the timely processing and response to your request.

☒ **PROJECT NUMBER** 12PR03826 (only if a project was previously submitted)

☐ This is a new project (If checked, complete **ALL** the following)

Project Name: **Keene Fire Station Replacement on a New Site**
Location: **10858 New York State Route 9N (44.25279, -73.78695)**

City/Town/Village: **Town of Keene (MCD 03106)**
County: **Essex County**

TYPE OF REVIEW REQUIRED/REQUESTED

This Project at a minimum is using federal funds (FEMA) AND state funds (New York State Emergency Management Office)

FEMA CONTACT FOR PROJECT

Name: Daria E. Merwin
Title: Historic Preservation Specialist
Phone: 571-408-3144
Fax:

E-Mail address: Daria.Merwin@fema.dhs.gov

Send Correspondence to:
FEMA 4020-DR-NY
Ms. Donna Bolognino, Environmental Advisor
Leo O'Brien Federal Building, Suite 742
1 Clinton Square
Albany, New York 12207

URGENCY OF REVIEW: **Immediate** (3 days) ☐ **Expedited** (14 days) ☐ **Regular** (30 days) ☒
Comments:

FEMA Disaster Number: 4020-DR-NY
PW #07289 revised

SIGNATURE: Daria E. Merwin **DATE:** October 26, 2012
Daria E. Merwin, Historic Preservation Specialist, for
Megan Jadrosich, Regional Environmental Officer

Location and Resource:	New Keene Fire District Fire Station, 10858 New York State Route 9N, Town of Keene (MCD 03106), Essex County (44.25279, -73.78695) (Figures 1-5).
Cause of Failure:	High winds and heavy rains associated with Hurricane Irene resulted in Gulf Brook overtopping its banks, flooding the original fire station on Hurricane Road to a depth of approximately 2 feet. The foundation on the east side of the structure was undermined, leading to partial collapse, with a section of the building washed downstream.
Description of Damage:	Based on FEMA's cost estimating format, the cost to repair the original structure would exceed 50% of the replacement cost; therefore the replacement of the building is eligible for funding. The Keene Fire District opted to relocate the new building away from Gulf Brook, to a site at 10858 New York State Route 9N (Figures 1-2). The options for repair and demolition of the original structure were the subject of a previous FEMA consultation with SHPO (12PR02719).
Undertaking:	Construction of a new fire station on New York State Route 9N includes demolition of several mid-twentieth century buildings, clearing and grading, excavation for new foundation footings, installation of utilities, and other earth-moving activities (Figures 3-4).
APE:	The area of potential effect (APE) encompasses approximately one acre of the 1.9 acre parcel purchased for the new fire station.
Archeology:	A review of SHPO records on October 5, 2012 indicated that the APE is within an area of known archeological sensitivity (Figure 5). The files of the SHPO and NYS Museum indicate that the closest reported site consists of the historic period horse scale site (SHPO 03106.000184, 03106.000186), roughly 300 feet to the northwest. A substantial portion of the APE has witnessed previous disturbance from mid-twentieth century building construction, installation of below ground utilities such as water lines and a septic system, and other earth-moving activities (two soil bores contained fill in the upper 3.5 to 5 feet).
Standing Structures:	A review of SHPO records on October 5, 2012 indicated that there are no listed or previously determined eligible National Register properties in the vicinity of the new fire station on New York State Route 9N (Figure 5). Prior to their demolition, a house and five small cabins stood on the property, known as Mountain Manor. The ranch house was built in 1951, and had a large attached garage added in 1983. The house is depicted on the 1953 USGS topographic map of Lake Placid, and while the cabins are not shown they may date to the 1950s as well. No buildings are illustrated within the APE on historic maps dating from 1876 and 1898.
Findings:	Construction of a new fire station on the property formerly occupied by Mountain Manor (a 1950s ranch house and five small cabins) entailed some excavation for foundation footings, but much of the APE was previously disturbed. The Mountain Manor buildings (1951 modified ranch house and

cabins) do not appear to have been eligible for the National Register of Historic Places. FEMA finds that the undertaking resulted in "no historic properties affected."

Prepared by: Daria E. Merwin, FEMA Historic Preservation Specialist

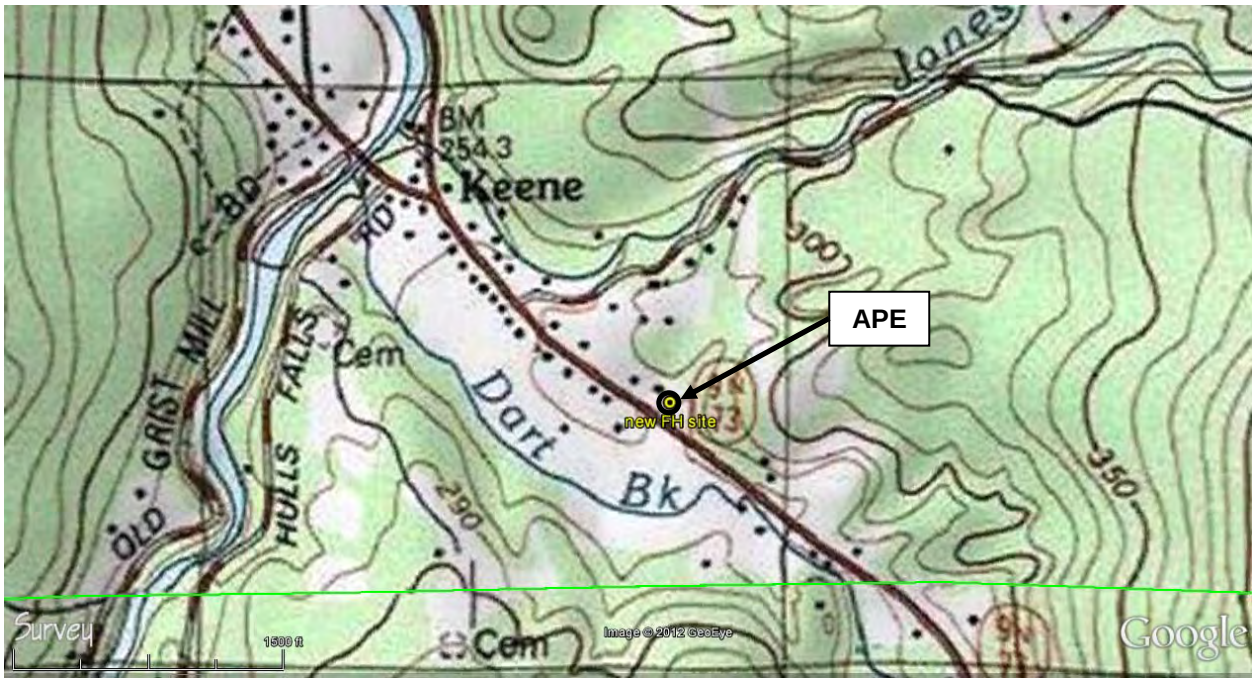


Figure 1. 1979 USGS topographic map of *Lake Placid, New York* (7.5 x 15 minute series).

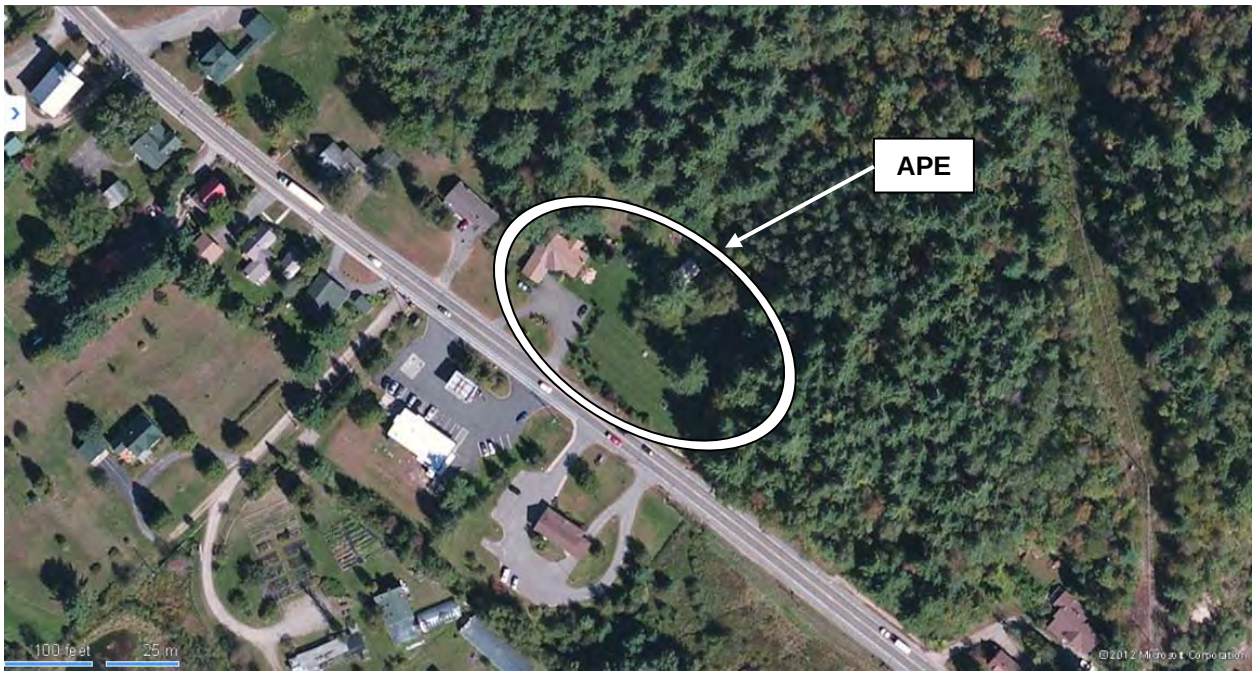


Figure 2. Aerial view of the APE prior to demolition of the mid-twentieth century buildings.

Figure 3. The APE prior to building demolition and site clearing, looking northeast.

Figure 4. View southeast along New York State Route 9N at construction site for the new Keene fire station.

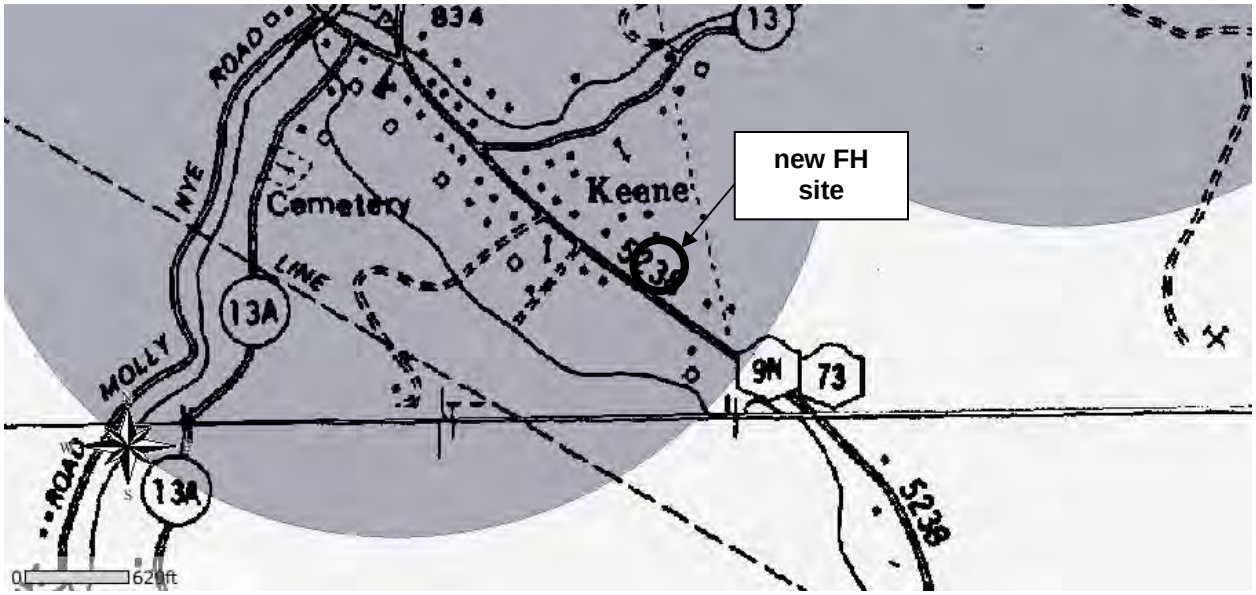


Figure 5. Archeological Sensitivity Area (gray circles); note that there are no National Register properties in the vicinity of the APE (online SHPO GIS database, accessed October 5, 2012).

Andrew M. Cuomo
Governor

Rose Harvey
Commissioner

New York State Office of Parks, Recreation and Historic Preservation

Division for Historic Preservation
Peebles Island, PO Box 189, Waterford, New York 12188-0189
518-237-8643
www.nysparks.com

October 30, 2012

FEMA 4020-DR-NY
Donna Bolognino
EHP Team Lead
Leo O'Brien Federal Building
11A Clinton Avenue, Suite 742
Albany, New York, 12207
(via e-mail only)

Re: FEMA,SEOM
Disaster Mitigation/4 Projects
12PR04625

Dear Ms. Bolognino:

Thank you for requesting the comments of the State Historic Preservation Office (SHPO). We have reviewed the projects in accordance with Section 106 of the National Historic Preservation Act of 1966. These comments are those of the SHPO and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your projects. Such impacts must be considered as part of the environmental review of the projects pursuant to the National Environmental Policy Act and/or the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8).

I have reviewed the materials submitted for each of these undertakings and our findings are attached. Our determinations are based on the submitted scopes of work for each undertaking.

If I can be of any further assistance do not hesitate to contact me at (518) 237-8643, ext. 3260.

Sincerely,

Eric N. Kuchar
Weatherization Specialist

cc: Richard Lord, SOEM *(via e-mail)*
enc: Findings

Findings Attachment

1	05353	Edison Ave over Schermerhorn Creek	City of Schenectady	Schenectady	no historic properties affected	Concur
2	07289	10858 NY Route 9N	Town of Keene	Essex	no historic properties affected	Concur
3	08632	Woodstock Ave	Palenville/Town of Catskill	Greene	no historic properties affected	Concur
4	09097	Jones Beach State Park	Town of Hempstead	Nassau	no adverse effect to historic properties	Concur

New York State Office of Parks, Recreation and Historic Preservation
Historic Preservation Field Services Bureau
Peebles Island Resource Center, PO Box 189, Waterford, NY 12188-0189 (Mail)
Delaware Avenue, Cohoes 12047 (Delivery)
(518) 237-8643

PROJECT REVIEW COVER FORM

Rev. 5-05

Please complete this form and attach it to the top of ***any and all information submitted to this office*** *for review.*
Accurate and complete forms will assist this office in the timely processing and response to your request.

This information relates to a previously submitted project.

PROJECT NUMBER ____PR_____

COUNTY Essex

☐ If you have checked this box and noted the previous Project Review (PR) number assigned by this office you do not need to continue unless any of the required information below has changed.

---

2. This is a new project. ☒ If you have checked this box you will need to complete ALL of the following information.

Project Name Keene Fire Station Replacement Project

Location 10858 NYS Rt. 9N
You MUST include street number, street name and/or County, State or Interstate route number if applicable

City/Town/Village Keene
List the correct municipality in which your project is being undertaken. If in a hamlet you must also provide the name of the town.

County Essex
If your undertaking* covers multiple communities/counties please attach a list defining all municipalities/counties included.

TYPE OF REVIEW REQUIRED/REQUESTED (Please answer both questions)

A. Does this action involve a permit approval or funding, now or ultimately from any other governmental agency?

☐ No ☒ Yes

If Yes, list agency name(s) and permit(s)/approval(s)

Agency involved	Type of permit/approval	State	Federal
NYS Homes & Community Renewal	HISTORICAL/ENVIRONMENTAL	☑	☑
		☐	☐
		☐	☐

B. Have you consulted the NYSHPO web site at **http://nysparks.state.ny.us to determine the preliminary presence or absence of previously identified cultural resources within or adjacent to the project area? If yes: ☐ Yes ☑ No

Was the project site wholly or partially included within an identified archeologically sensitive area? ☐ Yes ☐ No

Does the project site involve or is it substantially contiguous to a property listed or recommended for listing in the NY State or National Registers of Historic Places? ☐ Yes ☑ No

CONTACT PERSON FOR PROJECT

Name Mike Mascarenas Title Director

Firm/Agency Essex Co. Office of Community Resources

Address PO Box 217 City Elizabethtown STATE NY Zip 12932

Phone (518)873-3426 Fax (518)873-3751 E-Mail mmascarenas@co.essex.ny.us

http://nysparks.state.ny.us then select **HISTORIC PRESERVATION then select **On Line Resources**

The Historic Preservation Review Process in New York State

In order to insure that historic preservation is carefully considered in publicly-funded or permitted undertakings*, there are laws at each level of government that require projects to be reviewed for their potential impact/effect on historic properties. At the federal level, Section 106 of the National Historic Preservation Act of 1966 (NHPA) directs the review of federally funded, licensed or permitted projects. At the state level, Section 14.09 of the New York State Parks, Recreation and Historic Preservation Law of 1980 performs a comparable function. Local environmental review for municipalities is carried out under the State Environmental Quality Review Act (SEQRA) of 1978.
regulations on line at:
http://nysparks.state.ny.us then select **HISTORIC PRESERVATION** then select **Environmental Review**

Project review is conducted in two stages. First, the Field Services Bureau assesses affected properties to determine whether or not they are listed or eligible for listing in the New York State or National Registers of Historic Places. If so, it is deemed "historic" and worthy of protection and the second stage of review is undertaken. The project is reviewed to evaluate its impact on the properties significant materials and character. Where adverse effects are identified, alternatives are explored to avoid, or reduce project impacts; where this is unsuccessful, mitigation measures are developed and formal agreement documents are prepared stipulating these measures.

ALL PROJECTS SUBMITTED FOR REVIEW SHOULD INCLUDE THE FOLLOWING MATERIAL(S).

☑ **Project Description**

Attach a full description of the nature and extent of the work to be undertaken as part of this project. Relevant portions of the project applications or environmental statements may be submitted.

☑ **Maps Locating Project**

Include a map locating the project in the community. The map must clearly show street and road names surrounding the project area as well as the location of all portions of the project. Appropriate maps include tax maps, Sanborn Insurance maps, and/or USGS quadrangle maps.

☑ **Photographs**

Photographs may be black and white prints, color prints, or color laser/photo copies; standard (black and white) photocopies are NOT acceptable.

-*If the project involves rehabilitation*, include photographs of the building(s) involved. Label each exterior view to a site map and label all interior views.

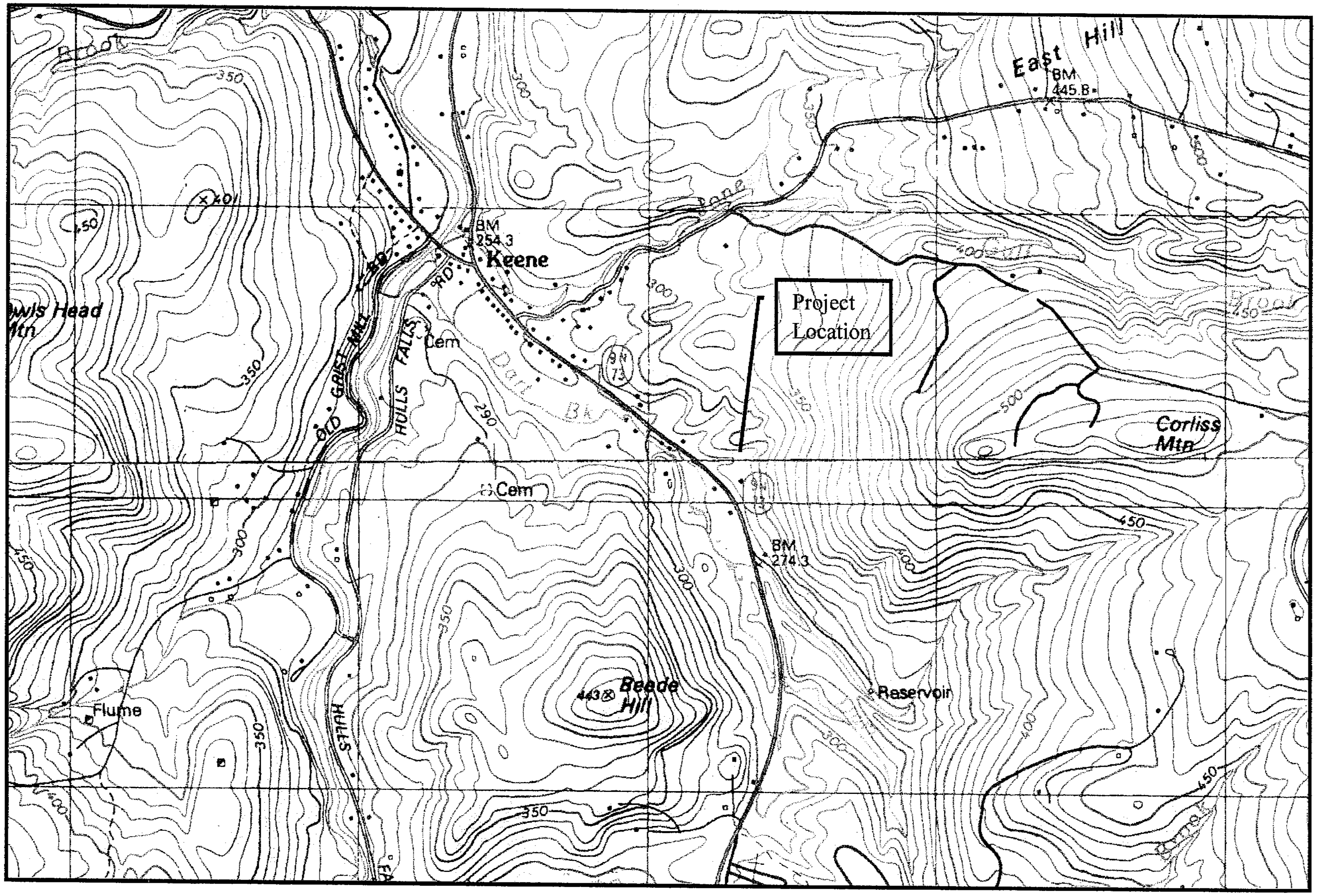
-*If the project involves new construction*, include photographs of the surrounding area looking out from the project site. Include photographs of any buildings (more than 50 years old) that are located on the project property or on adjoining property.

NOTE: Projects submissions will not be accepted via facsimile or e-mail.

*__Undertaking__ is defined as an agency's purchase, lease or sale of a property, assistance through grants, loans or guarantees, issuing of licenses, permits or approvals, and work performed pursuant to delegation or mandate.

Site of Proposed Keene Firehouse

The project entails the construction of an 8,000 s.f. firehouse situated on a 1.0 acre parcel on NYS RT. 9N to replace the original firehouse that was destroyed by floodwaters from Hurricane Irene in 2011. The project elements include site grading, facility construction, a stormwater management system, water and sewer service connections, and landscaping.



East Hill
BM
445.8
Project
Location
Corliss
Mtn
Keene
BM
254.3
Owls Head
Mtn
OLD GRIST MILL
HULLS FALLS RD
Cem
Cem
Dart Bk
BM
274.3
Beede
Hill
443
Reservoir
Flume
HULLS

Andrew M. Cuomo
Governor

Rose Harvey
Commissioner

New York State Office of Parks,
Recreation and Historic Preservation
Historic Preservation Field Services Bureau • Peebles Island, PO Box 189, Waterford, New York 12188-0189
518-237-8643
www.nysparks.com

September 07, 2012

Michael Mascarenas, Director
Essex County Office of Community Resources
7533 Route 9
P.O Box 217
Elizabethtown, New York 12932
(via email only)

Re: NYSHCR
Keene Fire Station Replacement Project
10858 NY Rte 9N
T/Keene, Essex County
12PR03826

Dear Mr. Mascarenas:

Thank you for requesting the comments of the State Historic Preservation Office (SHPO). We have reviewed the project in accordance with Section 106 of the National Historic Preservation Act of 1966.

Based on review of the submitted documents, it is the SHPO opinion that your project will have No Effect on cultural resources in or eligible for inclusion in the National Register of Historic Places

These comments are those of the SHPO and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project. Such impacts must be considered as part of the environmental review of the project pursuant to the National Environmental Policy Act and/or the State Environmental Quality Review Act (New York Environmental Conservation Law Article 8).

If you have any questions regarding this review, please call me at (518) 237-8643, extension 3283 or email me at james.warren@parks.ny.us.

Sincerely,

James Warren
Historic Sites Restoration Coordinator