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RICHARD L. O'ROURKE
Principal Member
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January 9, 2015

Via Email thay@southeast-ny.gov
First-Class Mail

Supervisor Tony Hay and
Members of the Town Board
Town of Southeast
1360 Route 22
Brewster, New York 10509

Re: Riverkeeper Comments on Crossroads 312 FEIS

Dear Supervisor Hay and Members of the Board:

We write in response to the Riverkeeper's letter, dated December 18, 2014, and its call for preparation of a Supplemental Environmental Impact Statement ("SEIS") on the Crossroads 312 project application. Simply stated, the assertions in Riverkeeper's letter are based on inaccuracies as to the content of the Draft and Final Environmental Impact Statements ("DEIS" and "FEIS," respectively) and misstatements concerning SEQRA requirements. Building on this foundation of inaccuracies and misstatements, Riverkeeper's assertion that the FEIS is deficient under SEQRA is nothing more than Riverkeeper's opinion on the matter, and is without merit. As set forth below, the FEIS is complete, accurate, and there is no need to prepare a SEIS. The Town Board properly concluded its SEQRA review of the Crossroads 312 project and should continue to the next phase of the approval and review process for this application.

1. A SEIS is not required under the circumstances

At the outset, the circumstances alleged in Riverkeeper's letter do not establish the need for a SEIS. The SEQRA regulations state that "[t]he lead agency *may* require a supplemental EIS, limited to the specific significant adverse environmental impacts not addressed or inadequately addressed in the EIS *that arise from* (a) changes proposed for the project; or (b) newly discovered information; or (c) a change in circumstances related to the project." 6 N.Y.C.R.R. § 617.9(a)(7)(i) (emphasis added).

First, preparation of a SEIS is permissive, not mandatory, based on the express language of the regulation stating that a lead agency "may" require a SEIS under certain enumerated circumstances. Thus, preparation of a SEIS is within a lead

agency's discretion, which is not to be abused. Second, as set forth below, Riverkeeper fails to demonstrate that one of the enumerated conditions has occurred to justify preparation of a SEIS. Therefore, a SEIS is neither required nor warranted.

Notwithstanding this threshold failure, we shall address the substantive comments set forth in Riverkeeper's letter. The following sections aptly demonstrate that Riverkeeper's conclusion concerning the deficiency of the FEIS is erroneous.

2. Inclusion of the Preliminary Stormwater Pollution Prevention Plan in the FEIS is proper

Riverkeeper argues inclusion of a preliminary Stormwater Pollution Prevention Plan ("SWPPP") in the FEIS is improper because this plan was not previously available for public review and comment. (Riverkeeper Ltr, p. 2). Riverkeeper further asserts the preliminary SWPPP is deficient because it fails to include an Erosion and Sediment Control Plan (Riverkeeper Ltr., p. 4). Riverkeeper then asserts the SWPPP constitutes new information triggering the requirement for a SEIS. The SWPPP, however, is based on information already reviewed and addressed during the DEIS comment period. In fact, as noted by Joseph J. Buschynski, P.E., the DEIS included multiple sheets of Erosion and Sediment Control Plans. (*See* attached letter dated January 6, 2015). Thus, rather than involving newly discovered information, the SWPPP is "merely an amplification" of the facts already presented and discussed during the DEIS comment period. *Horn v. Int'l Bus. Machines Corp.*, 110 A.D.2d 87, 97, 493 N.Y.S.2d 184, 192 (2d Dep't. 1985). A critical factor in determining whether additional information requires a supplemental impact statement is "the present state of information contained in the impact statement." *Aldrich v. Pattison*, 107 A.D.2d 258, 271, 486 N.Y.S.2d 23, 33 (2d Dep't 1985); *Glen Head-Glenwood Landing Civic Council v. Town of Oyster Bay*, 8 A.D.2d 484, 453 N.Y.S.2d 732 (2d Dep't 1982). Because much of the information contained in the SWPPP has already been presented to the public, discussed, and constitutes the basis for the plan, it is clear the SWPP does not constitute newly discovered information. Accordingly, its inclusion in the FEIS is not improper and a SEIS is not required.

3. Construction Limitations have been considered

The FEIS is not deficient with respect to examination of construction limitations on the project site. As explained in the attached letter from Ulrich LaFosse, P.E., dated January 5, 2015, "numerous machine-excavated test pits, test borings and laboratory soils testing were completed to explore site-specific conditions for the design of the project." The resulting data was included in the DEIS.

Mr. LaFosse is a highly qualified engineer with more than 30 years of experience on over 130 projects, including the World Trade Center, requiring geotechnical expertise.[1] Nevertheless, Riverkeeper ignores and makes no mention of Mr. LaFosse's interpretations of the site's soil and bedrock conditions that are set forth in Appendix M and N of the DEIS and in Chapters 9 (Geology) and 23 (Stormwater Management) of the FEIS. (*See* LaFosse Ltr., p. 2). Thus, Riverkeeper's contention that the FEIS "characterizes soils in only generic terms" is incorrect. Moreover, Riverkeeper's reliance as to site conditions, based solely on the USDA's Soil Conservation Service and NRCS's Web Site Survey, is misplaced as the accuracy of that information cannot be verified. (*Id.*, p. 1). That such is the case is confirmed by the warning found on the website.

In any event, the construction limitations associated with the soil types on the project site is an engineering issue, more appropriately addressed upon review of the specific site plans for the structures that will be built on the project site. Riverkeeper provides no explanation for why analysis of the "series, morphology or limitations" of each soil is necessary or useful at this stage in the project review. (Riverkeeper Ltr., p 2).

4. The DEIS included a sufficiently detailed preliminary Erosion & Sediment Control Plan

Preliminary Erosion and Sediment Control Plans ("E&SCP") were included as part of the DEIS. Preparation of a final E&SCP is neither feasible nor customary until final site plans are developed for the project. (Joseph J. Buschynski, P.E. letter January 6, 2015). Also, "lead agencies have considerable latitude in determining substantive environmental matters under SEQRA." *Horn v. International Business Machines Corp.*, 110 A.D.2d 87, 92, 493 N.Y.S.2d 184, 189 (2d Dep't 1985); *Aldrich v. Pattison*, 107 A.D.2d 258, 267, 486 N.Y.S.2d 23 (2d Dep't 1985). Not every conceivable environmental impact, mitigating measure or alternative must be identified and addressed before a FEIS will satisfy the substantive requirements of SEQRA, *see Horn v. Int'l Bus. Machines Corp.*, 110 A.D.2d 87, 94, 493 N.Y.S.2d 184, 190 (2d Dept. 1985); *Coalition Against Lincoln W. v. City of New York*, 94 A.D.2d 491, 465 N.Y.S.2d 483 (1st Dep't 1983); *Rusciano & Son Corp. v. Kiernan*, 300 A.D. 2d 590, 752 N.Y.S. 2d 377 (2d Dep't 2002), and "[t]he degree of detail with which each factor must be discussed will vary, of course, with the circumstances and nature of each proposal." *Horn v. Int'l Bus. Machines Corp.*, 110 A.D.2d 87, 94, 493 N.Y.S.2d 184, 190 (2d Dep't 1985); *Webster Assoc. v Town of Webster*, 59 N.Y.2d 220, 228, 464 N.Y.S.2d

[1] Copies of Mr. LaFosse's biography and firm description are attached for the Board's review.

431, 451 N.E.2d 189; *Rusciano & Son Corp. v. Kiernan*, 300 A.D.2d 590, 592, 752 N.Y.S.2d 377, 379 (2d Dep't 2002). A lead agency need not achieve scientific unanimity in its FEIS. Rather, a lead agency is required to take a 'hard look' at the areas of environmental concern and make a reasoned elaboration of the basis for its determinations. *Advocates for Prattsburgh, Inc. v. Steuben County Indus. Development Agency*, 18 Misc 3d 1126A, 859 N.Y.S.2d 892 (Sup. Ct. Monroe Co. 2007); *Rusciano & Son Corp. v. Kiernan*, 300 A.D. 2d 590, 752 N.Y.S. 2d 377 (2d Dep't 2002); *Jackson v. New York State Urban Dev. Corp.*, 67 N.Y.2d 400, 417, 494 N.E.2d 429, 436 (1986). Thus, the level of detail provided in the preliminary SWPPP at this stage is acceptable.

5. Consideration of additional alternative projects is not required

The proposed FEIS contains adequate analysis of reasonable alternatives to the project. To comply with SEQRA, an EIS must consider a range of alternatives which is "feasible considering the objectives and capabilities of the project sponsor." New York State Department of Environmental Conservation, *The SEQR Handbook*, 124 (3d ed. 2010). "SEQRA does not require that every conceivable alternative must be considered before an EIS will be considered acceptable. [T]he degree of detail with which each alternative must be discussed will, of course, vary with the circumstances and nature of each proposal. Rather, the rule is one of reasonableness and balance." *Coalition Against Lincoln West, Inc. v. City of New York*, 94 A.D.2d 483, 491-92, 465 N.Y.S.2d 170, 176 (1st Dep't 1983) (internal citations omitted). *See also*, *Halperin v. City of New Rochelle*, 24 A.D.3d 768, 776-77, 809 N.Y.S.2d 98, 108-09 (2d Dep't 2005). An EIS need not consider alternatives which are unreasonable or infeasible based on the project's objectives.

Since the initial Crossroads 312 project proposal was submitted, it is abundantly clear the project has undergone several revisions intended to and which reduce and/or eliminate potential adverse environmental impacts associated with the project, including stormwater generation and pollution, and disturbance of the wetlands buffer. Furthermore, NO disturbance of the wetlands is proposed. Riverkeeper itself noted in its letter that three alternatives were already considered in the DEIS, including the required "no action" alternative, and commended the applicant for "reducing the overall project footprint" in response to comments received. (Riverkeeper Ltr., p. 1).

Although Riverkeeper argues additional alternative projects, such as those of smaller scale or design, must be considered to comply with SEQRA, such an analysis is permissive, not mandatory, in light of the project objectives. *See Save Open Space v. Planning Bd. of Town of Newburgh*, 74 A.D.3d 1350, 1352, 904 N.Y.S.2d 188, 190 (2d Dep't 2010). And, in fact, the Town Board set forth in detail in its SEQRA

Findings Statement a thorough, reasonable explanation and analysis of alternatives (pp. 19-21). Therefore, the proposed FEIS complies with SEQRA.

6. Conclusion

The FEIS adopted by the Town Board is complete and accurate. Accordingly, the Town Board acted properly in adopting its Findings Statement on December 18, 2014 and has complied with SEQRA. Therefore, preparation of a SEIS is neither required nor warranted, and the Town Board should move on to the next step in the approvals for the Crossroads 312 project.

Very truly yours,

Richard L. O'Rourke

RLO/mq
Enclosures
cc: Town Clerk, Michelle Stancati
Town Attorney, Willis H. Stephens, Jr., Esq.
Town Consulting Planning, AKRF, Ashley Ley, AICP
Town Consulting Engineer, Nathan L. Jacobson Associates, Thomas Fenton, P.E.
Town of Southeast Planning Board
Harold Lepler

BIBBO ASSOCIATES, L.L.P.
Consulting Engineers

Joseph J. Buschynski, P.E.
Timothy S. Allen, P.E.
Sabri Barisser, P.E.

January 8, 2015

Keane and Beane, PC
445 Hamilton Ave., Suite 1500
White Plains, NY 10601

Attn: Richard L. O'Rourke, Esq.
Email: ro'rourke@kblaw.com

Re: Crossroads 312 FEIS
Riverkeeper Comments

Dear Mr. O'Rourke:

Comments provided on the Crossroads 312 FEIS by the Riverkeeper in a letter dated December 18, 2014 contain a criticism for the absence of Erosion and Sediment Control Plans within the preliminary SWPPP now included as part of the FEIS. The Riverkeeper previously noted the need for detailed erosion control plans in comments on the DEIS. It is apparent that the reviewers missed references to and the existence of erosion control plans which are in fact included in the DEIS. (See Appendix V, Sheet Nos. C-6a through C-6G.) Consistent with project design changes that customarily occur as part of the SEQRA process, more detailed erosion control plans for the multiple phases of the project were prepared and included in the Site Plan set appended to the FEIS. (See Dwgs. 16.1 to 16.12 and 16.a-16c.) Preparation of final Erosion and Sediment Control Plans is neither feasible nor customary until final site plans are developed for the project. The response addressing the comment is contained in Comment Erosion-3 in Chapter 14, Erosion Control, where reference is made to the inclusion of preliminary Erosion and Sediment Control Plans, Construction Sequence, and SWPPP as part of the FEIS.

Very truly yours,

Joseph Buschynski

Joseph J. Buschynski, P.E.

JJB/mme
cc: File

GEODESIGN
INCORPORATED P.C.

GEOTECHNICAL | CONSTRUCTION | ENVIRONMENTAL
ENGINEERS and SCIENTISTS

January 5, 2015
File No. 3022-004.02

Richard O'Rourke
Kean & Beane, P.C.
445 Hamilton Avenue, Suite 1500
White Plains, NY 10601

Email: Ro'rourke@kblaw.com

Re: Response to Comments from Riverkeeper dated 12-18-2014
Crossroads 312 FEIS
Brewster, NY

Dear Atty. O'Rourke:

Geo**Design** is pleased to submit this letter in response to comments made by Riverkeeper in their December 18, 2014 letter to the Town of Southeast Supervisor, as they pertain to the *Construction Limitations* at the site.

Riverkeeper's letter concludes that, due to the presence of surficial soils mapped by the USDA's Soil Conservation Service (SCS) at the site, "construction activities... pose significant challenges to stormwater management...". Riverkeeper also quotes portions of the SCS's 1994 Soil Survey of Putnam and Westchester Counties, NY that outlines limitations associated with some of the surficial soil types mapped at the site. The SCS survey notes that the information is "intended for land use planning, for evaluating land use, and for planning site investigations prior to design and construction". The SCS survey also notes that "the information has limitations… [and] is not site specific… because of the map scale.." (Page 89).

Moreover, the NRCS's Web Site Survey's (WSS) soil types and distribution (as referenced by Riverkeeper) and the resulting conclusion that "over 90% of the Crossroads project site require[s] [measures associated with certain soil types]" are not valid due to the fact that the WSS Soil Map "may not be accurate" at the scale used by Riverkeeper. This limitation is noted at the bottom of the map found at http://websoilsurvey.nrcs.usda.gov.app/. A screen shot depicting the Web page, the map of the Area of Interest (AOI), and the limitation note is attached.

The SCS soil types are included on Map 26 of the DEIS and are generally consistent with those that are included on the WSS Soil Map. However, the limitations of the SCS Survey are one reason why investigations in the form of numerous machine-excavated test pits, test borings and laboratory soils testing were completed to explore site-specific conditions for the design of the

project. The data obtained and the subsequent analyses were incorporated into the project design and into the DEIS and later into the FEIS.

Specifically, the project already has taken into account construction considerations associated with the soils and bedrock present at the site. Contrarily to Riverkeeper's comment that the resulting soil [and bedrock] descriptions "characterizes soils only in generic terms" the data and analyses provide specific information regarding proportions of soil particle sizes, and very importantly soil consistency (density as measured by SPT values). This level of effort, using site-specific data and exploring deeper than just surficial soils, provides a much more complete understanding of construction issues associated with site conditions than reliance on large-scale SCS and NRCS surficial mapping. Lastly, Riverkeeper provides no comment, nor even acknowledges, the important interpretations of the site's soil and bedrock conditions which are presented in Appendices M and N of the DEIS, and in Chapters 9 (Geology) and 23 (Stormwater Management) of the FEIS.

Please contact us with any questions or concerns.

Sincerely,

Geo**Design**, Inc. P.C.

Ulrich LaFosse, P.E.
Senior Principal

Attachments: WSS Soil Map

websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx

Search

Search

Map Unit Legend

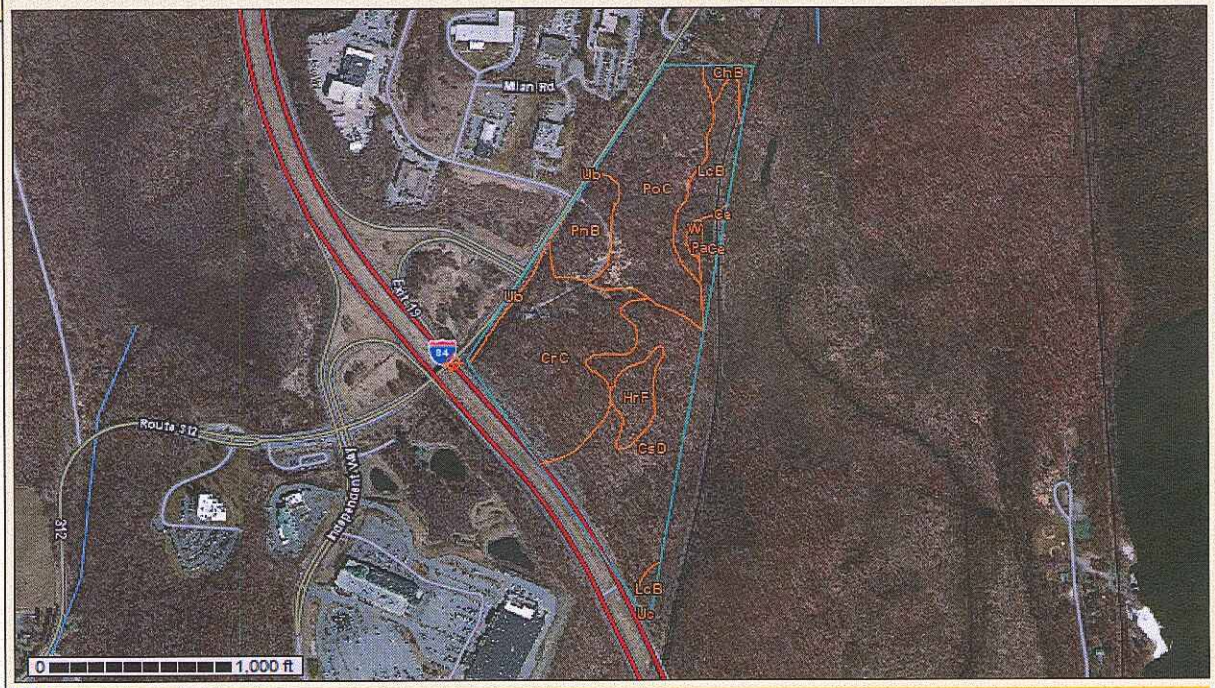
Putnam County, New York (NY079)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ce	Catden muck, 0 to 2 percent slopes	0.1	0.1%
ChB	Charlton loam, 2 to 8 percent slopes	1.0	1.6%
CrC	Charlton-Chatfield complex, rolling, very rocky	15.4	25.8%
CsD	Chatfield-Charlton complex, hilly, very rocky	16.1	26.9%
HrF	Hollis-Rock outcrop complex, very steep	2.3	3.8%
LcB	Leicester loam, 3 to 8 percent slopes, stony	4.7	7.8%
Pa	Palms muck	1.1	1.9%
PnB	Paxton fine sandy loam, 3 to 8 percent slopes	3.9	6.5%
PoC	Paxton fine sandy loam, 8 to 15 percent slopes, very stony	14.2	23.8%
Ub	Udorthents, smoothed	0.7	1.1%
Uc	Udorthents, wet substratum	0.0	0.1%
W	Water	0.4	0.6%
Totals for Area of Interest		**59.6**	**100.0%**

Legend

Soil Map

Scale (not to scale)



Warning: Soil Map may not be valid at this scale.

You have zoomed in beyond the scale at which the soil map for this area is intended to be used. Mapping of soils is done at a particular scale. The soil surveys that comprise your AOI were mapped at 1:24,000. The design of map units and the level of detail shown in the resulting soil map are dependent on that map scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

EXPERIENCE

GeoDesign, Inc. - 2/95 to present
GZA GeoEnvironmental, Inc. - 6/83 to 2/95
Other Firms - 9/80 to 9/82

AREAS OF SPECIALIZATION

- Geotechnical Engineering
- Deep Foundations
- Environmental Site Restoration
- Ground Modification
- Dam Engineering
- Blasting Evaluations
- Hydrogeology Studies
- Seismic Engineering

EDUCATION

B.S., 1980, Civil Engineering (structural specialization), University of Connecticut
M.S., 1982, Civil Engineering (geotechnical specialization), University of Connecticut

PROFESSIONAL REGISTRATION

1986 Civil Engineering CT, MA, NY, and VT.

SUMMARY OF BUSINESS EXPERIENCE

Co-Founder and Secretary/Treasurer, GeoDesign, Inc.
President, GeoDesign Software, Inc., 1995-2003
Vice-President, GZA GeoEnvironmental, 1994-1995

SUMMARY OF PROJECT EXPERIENCE

Mr. Ulrich La Fosse has over 30 years experience as a geotechnical engineer. He has had prime technical and administrative responsibility for projects covering all phases of geotechnical engineering and environmental site restoration. He has extensive experience in the areas of subsurface evaluations, foundation engineering, rock blasting, site restoration design, design and construction of deep foundations, soil structure interaction, lateral support systems, groundwater control, groundwater modeling, seismic analyses, earth dams, and highway projects. Relevant project experience includes:

BUILDING/FOUNDATION ENGINEERING

Principal-in-Charge, World Trade Center Garage, New York NY. Analyses and design of a temporary excavation support system during construction of a lower level garage adjacent to the existing World Trade Center tied-back slurry foundation wall. Including field visits to review re-use of existing structural elements and sequencing of system installation to limit existing slurry wall deflections and stresses.

Principal 605 West 42nd Street New York NY. Analyses and design of rock excavation reinforcing during temporary excavation and underpinning to install new sub-basement levels adjacent to an existing multi-story building. Analyzed the capacity of existing basement foundation walls to resist temporary construction loads during one-sided concrete pours.

Principal-in-Charge, Norwich Transportation Center (Garage), Norwich, CT. Field investigations, analyses, deep foundation design, foundation recommendations and report for the design of a new multi-story structure.

Principal-in-Charge, Mercantile Exchange Office and Garage, Norwich, CT. Field investigations, analyses, permanent rock anchor design, temporary excavation support system design, foundation recommendations and report for the design and construction of a new multi-

story structure founded on bedrock. Supervision of field-monitoring of installation and testing of rock anchors and drilled shaft foundations.

Principal-in-Charge, Kaynor Votechnical School, Waterbury, CT. Field investigations, analyses, foundation recommendations and report for a major expansion of the buildings on mixed foundations.

Principal-in-Charge, Eastern Connecticut State University, Willimantic, CT. Field investigations, analyses, foundation recommendations and report for the expansion of their Student Center Buildings.

Principal-in-Charge, Eastern Connecticut State University, Willimantic, CT. Field investigations, analyses, foundation recommendations and report for the construction of a new Science Building.

Principal-in-Charge, Central Connecticut State University, New Britain, CT. Field investigations, analyses, foundation recommendations and report for the expansion of their Student center and Dining Hall; a new Admissions Center and, New Utility Building.

Principal-in-Charge, Northwestern Connecticut Community College, Winsted, CT. Field investigations, analyses, foundation recommendations and report for the expansion of the campus and construction of the new pile-supported Learning Resource Center.

Principal-in-Charge, University of Connecticut ATIB and Greenhouse, Storrs CT Field investigations, analyses, and quality control for the construction of this new facility of the UConn campus.

Principal-in-Charge, Various Schools Including: Five in Agawam, MA; Miss Hall's School in Pittsfield, MA, New Middle School in Shelton, CT. Field investigations and geotechnical analyses for the design of new school structures.

Principal-in-Charge, Vassar Library Addition, Poughkeepsie, New York. Field investigations and analyses for the design of the new four-story addition over clays.

Principal-in-Charge, Young-Morse Visitor's Center, Poughkeepsie, New York. Field investigations and analyses including waterproofing for the design of a new visitor's center/museum to house the historic Samuel B. Morse collection.

Principal-in-Charge, Vassar Observatory, Poughkeepsie, New York. Field investigations and analyses for the design of a new astronomy observatory founded on bedrock.

Principal-in-Charge, Music & Art Center, Lakeville, Connecticut. Investigations and analyses for the design of a new three-story building and underpinning/ protection of existing auditorium.

Principal-in-Charge, Hotchkiss School Science Building Lakeville, Connecticut. Field investigations and analyses for the design of a new three-story building.

Principal-in-Charge, Hotchkiss New Athletic Complex, Lakeville, Connecticut. Investigations and analyses for the design and field observations of a new multi-building complex including an Olympic hockey rink, a pool, an indoor track and various indoor sports courts and facilities.

Principal-in-Charge, The Salisbury School Athletic Complex, Salisbury, Connecticut. Investigations and analyses for the design and field observations of a new facility including a hockey rink, an indoor track, and various indoor sports courts and facilities.

Principal-in-Charge, Holyoke Police Headquarters, Holyoke, Massachusetts. Field investigations, analyses, and construction phase qa/qc for installation of a deep pipe-pile supported foundation through soft clays.

Principal-in-Charge, Mallory Arena Eastern States Exposition, West Springfield, MA. Field investigations and analyses for the design of a mixed foundation arena structure partially over soft organic soils.

Project Engineer, Monarch Place, Springfield, Massachusetts. Design and field observation of deep foundations, lateral support system and geotechnical instrumentation for 25-foot deep cut in a heavily developed urban area. Sensitive adjacent historic structures controlled the design of temporary lateral support system, required underpinning, and required close control of construction vibrations during installation of deep (PIF) foundations. The project entailed a 26-story office tower and 14-story hotel supported on pressure-injected footings or mat foundations.

Project Engineer, Holyoke Vo-Tech School, Holyoke, Massachusetts. Field investigations and analyses for the design of a new school located partly in a side hill cut, partly over a former landfill, and partly adjacent to the Connecticut River where a 35-foot modular retaining wall was required to allow the construction of appurtenant play fields.

Project Engineer, Port of La Goulette, Tunis, Tunisia. Review of a pre-cast pile foundation design for support of waterfront port facilities including gantries over very soft marine deposits and review of laboratory testing for World Bank financed project in the Port of Tunis (La Goulette).

Project Manager, Monarch Place Garage, Springfield, Massachusetts. Geotechnical investigations, analysis, and foundation design for a deck supported parking garage the under Interstate Route 91. The project included a study of the potential impact of garage construction on nearby bridge foundations and highway structures and recommendations for minimizing that impact.

Project Manager, Phoenix Riverpoint, East Hartford, Connecticut. Geotechnical and Geoenvironmental investigations, design and construction monitoring of deep pre-cast pile foundations and a vapor barrier/subslab venting system for a luxury 18-story condominium building. Included the design and implementation of a lateral support system to protect an active Corps of Engineers flood control wall which protects site from Connecticut River at flood stage.

Project Manager, Travelers parking Garage, Hartford, Connecticut. Design and specification preparation for a 10-story 3,500 car capacity parking garage for the Travelers in a down-town setting. Designed a permanent rock lateral support system including permanent rock anchors which eliminated the need for a 30-foot deep basement along city streets to resist lateral loads.

Project Manager, Connecticut Natural Gas Co-Generation Facility, Hartford, Connecticut. Developed geotechnical criteria for machine foundations and support of a 200-foot tall stack for the Connecticut Natural Gas Cogeneration Plant. End bearing non-displacement steel H-piles were designed, installed, and load tested.

Project Manager, Air National Guard Hush House, Granby, Connecticut. Managed geotechnical engineering for the design of a hush house, tie-down pad, and appurtenant taxiway airport pavement.

Project Manager, Suffield Water, Suffield, Connecticut. Design of geotechnical recommendations for support of a 200-foot high water storage tank for the Connecticut Water Company in Suffield, CT on deep foundations. Engineering included the application of field instrumentation and testing using a dynamic pile driving analyzer (PDA) and CAPWAP analyses to estimate pile capacities at the site.

Project Manager, Meriden Square Mall, Meriden, Connecticut. Site investigations, foundation design, geohydrologic investigations, and field quality control management in connection with the Meriden Square Mall Expansion in Meriden, CT. This complex earthwork project involved the design and qa/qc of rock bolts and controlled blasting procedures for an 80-foot high rock cut in heavily fractured basalt and sandstone rock. It also involved the use of mixed foundations, including rock socket caissons and large soil-rock fills. Delineation and permitting for disposal of contaminated soils and removal of oil tanks was also required.

Project Manager, Westover Air Park North in Holyoke, Massachusetts. Analyzed, determined the need for, and designed a ground improvement program on a 90-acre industrial park. Project involved densification by blasting of loose liquefaction susceptible soils to make the site earthquake resistant and suitable for construction. A detailed large-scale testing program was designed and implemented for a footprint of over 700,000 sq. ft. that was improved.

Project Manager, Seiji Osawa Hall, Tanglewood, Lenox, Massachusetts. Managed geotechnical qa during construction of a new concert hall on mixed ground conditions below water table level.

Project Manager, AirNational Guard Barnes Airport Hush House, Westfield, Massachusetts. Geotechnical engineering design and construction phases for structure and appurtenant pavement.

Project Manager, The Harford Meadows Music Theatre , Hartford, Connecticut. Site investigations, foundation design, hydrogeologic investigations, and field quality control management in connection with the construction of an indoor-outdoor amphitheater. This complex earthwork and foundation construction project involved the design of a steel framed structure founded on pre-cast concrete piles and a 50-foot high embankment. Site soils consisted of weak compressible alluvial and lake deposit soils overlying glacial till and sedimentary bedrock. Engineering included the application of field instrumentation and testing using a dynamic pile driving analyzer (PDA) and CAPWAP analyses to estimate pile capacities at the site in lieu of the more conventional static load tests based on successfully obtaining a waiver from the City of Hartford building official.

Principal-in-Charge, Norwich Transportation Center (Garage), Norwich, CT. Field investigations, analyses, and deep foundation design recommendations to support a new multi-story structure in an area underlain by thick, soft, and compressible organic soils. Design included accommodating construction of foundations below and adjacent to an existing multi-span highway bridge carrying US Route 82, and construction adjacent to the Yantic River.

UTILITIES ENGINEERING

Rutland Airport Runway 19 Safety Area Extension & Airport Road Realignment, North Clarendon, Vermont – Project engineer responsible for slope stability evaluation of proposed

Principal-in-Charge, The Salisbury School Athletic Complex, Salisbury, Connecticut. Investigations and analyses for the design and field observations of a new facility including a hockey rink, an indoor track, and various indoor sports courts and facilities.

Principal-in-Charge, Holyoke Police Headquarters, Holyoke, Massachusetts. Field investigations, analyses, and construction phase qa/qc for installation of a deep pipe-pile supported foundation through soft clays.

Principal-in-Charge, Mallory Arena Eastern States Exposition, West Springfield, MA. Field investigations and analyses for the design of a mixed foundation arena structure partially over soft organic soils.

Project Engineer, Monarch Place, Springfield, Massachusetts. Design and field observation of deep foundations, lateral support system and geotechnical instrumentation for 25-foot deep cut in a heavily developed urban area. Sensitive adjacent historic structures controlled the design of temporary lateral support system, required underpinning, and required close control of construction vibrations during installation of deep (PIF) foundations. The project entailed a 26-story office tower and 14-story hotel supported on pressure-injected footings or mat foundations.

Project Engineer, Holyoke Vo-Tech School, Holyoke, Massachusetts. Field investigations and analyses for the design of a new school located partly in a side hill cut, partly over a former landfill, and partly adjacent to the Connecticut River where a 35-foot modular retaining wall was required to allow the construction of appurtenant play fields.

Project Engineer, Port of La Goulette, Tunis, Tunisia. Review of a pre-cast pile foundation design for support of waterfront port facilities including gantries over very soft marine deposits and review of laboratory testing for World Bank financed project in the Port of Tunis (La Goulette).

Project Manager, Monarch Place Garage, Springfield, Massachusetts. Geotechnical investigations, analysis, and foundation design for a deck supported parking garage the under Interstate Route 91. The project included a study of the potential impact of garage construction on nearby bridge foundations and highway structures and recommendations for minimizing that impact.

Project Manager, Phoenix Riverpoint, East Hartford, Connecticut. Geotechnical and Geoenvironmental investigations, design and construction monitoring of deep pre-cast pile foundations and a vapor barrier/subslab venting system for a luxury 18-story condominium building. Included the design and implementation of a lateral support system to protect an active Corps of Engineers flood control wall which protects site from Connecticut River at flood stage.

Project Manager, Travelers parking Garage, Hartford, Connecticut. Design and specification preparation for a 10-story 3,500 car capacity parking garage for the Travelers in a down-town setting. Designed a permanent rock lateral support system including permanent rock anchors which eliminated the need for a 30-foot deep basement along city streets to resist lateral loads.

Project Manager, Connecticut Natural Gas Co-Generation Facility, Hartford, Connecticut. Developed geotechnical criteria for machine foundations and support of a 200-foot tall stack for the Connecticut Natural Gas Cogeneration Plant. End bearing non-displacement steel H-piles were designed, installed, and load tested.

embankment to extend safety area at end of an existing runway to comply with FAA regulations

Principal-in-Charge, Modifications to the Central Connecticut State University Utility Network System, New Britain, Connecticut. Investigation, geotechnical analyses and design of protection systems related to construction of underground utilities in tunnels and direct burial.

Principal-in-Charge, Modifications to the Southern Connecticut State University Central Plant and New Utility Network System, North Haven, Connecticut. Investigation, geotechnical analyses and design of foundations and protection systems related to construction of underground utilities in tunnels and direct burial throughout the campus.

RAILROAD BRIDGE ENGINEERING

Principal-in-Charge, Metro-North over Old Gate Lane, Milford, CT. Planned and designed a Ground Improvement program to mitigate excessive movement of a mortared abutment and nearby catenary tower foundations.

Principal-in-Charge, Metro North Railroad Bridges, Stamford, Connecticut. Investigation, geotechnical analyses and design of foundations to rehabilitate five existing railroad bridges in a congested urban setting.

Principal-in-Charge, Rehabilitation of Several Railroad Bridges, Connecticut. Investigation, geotechnical analyses and design of foundations repairs / increased support of existing foundation and to a failed retaining wall in closed proximity to active railroad tracks. Project included cantilevered soldier piles, pre-cast lagging and flowable fill to facilitate night work, limited work hours, and difficult site access.

Principal-in-Charge, Repairs to Norwalk Retaining Wall MP 1.4 Norwalk, Connecticut. Investigation, geotechnical analyses and design of the repairs to a failed retaining wall in close proximity to active railroad tracks. Project included cantilevered soldier piles, pre-cast lagging and flowable fill to facilitate night work, limited work hours, and difficult site access.

Principal-in-Charge, Stamford Station Improvements, Stamford, Connecticut. Prepared Value-Engineering design of drilled shafts to support pedestrian platforms and relieve adjacent track loading from nearby station building. Also personally inspected installation of drilled shafts.

Principal-in-Charge, Metro-North Twin Arch Culverts over Long Meadow Brook, Naugatuck, CT. Planned and designed explorations, investigations, and analyses for the design of the rehabilitation and relining using multiplate aluminum liners and new end-walls.

Principal-in-Charge, Metro-North over Tokeneke Brook, Darien, CT. Planned and designed explorations, investigations, and analyses for the geotechnical design of jacked replacement RCP culvert.

Principal-in-Charge, Metro-North over State Route 106, New Canaan, CT. Planned and designed explorations, investigations, and analyses for the geotechnical design of slope stabilization and related abutment refacing and repair.

Principal-in-Charge, Metro-North over Westway Road, Fairfield, CT. Planned and designed explorations, investigations, and analyses for the geotechnical design of permanent ground anchors to provide added abutment stability during bridge rehabilitation.

Principal-in-Charge, Metro-North over North Benson Road, Fairfield, CT. Planned and

designed explorations, investigations, and analyses for the geotechnical design of permanent ground anchors to provide added abutment stability during bridge rehabilitation.

Technical Reviewer - Amtrak Access Roadway, Hartford, CT – Provide geotechnical review of Final Design of Foundations for three new bridges, six retaining walls, and a new 4.5 mile gravel roadway for use by maintenance traffic. Adjacent to the New-Britain-Hartford Busway.

Principal-in-Charge, Metro-North Bridge #08058R, Bridgeport, CT. Planned and designed explorations, investigations, and analyses for the geotechnical design to replace this railroad bridge with a proprietary retaining wall.

AIRPORT ENGINEERING

Rutland Airport Runway 19 Safety Area Extension & Airport Road Realignment, North Clarendon, Vermont – Project reviewer for stability evaluation and pavement design proposed embankment to extend safety area at end of an existing runway to comply with FAA regulations.

HIGHWAY AND BRIDGE ENGINEERING

Principal-in-Charge, New Britain-Hartford Busway South, Hartford, CT – Scoping, technical leader, and oversight role for all geotechnical aspects of a 2.3 mile long Busway corridor on soft soils including one bridge and 20 retaining walls. Included protection of adjacent active railroad tracks.

Principal-in-Charge, New Britain-Hartford Busway North, Hartford, CT – Scoping, technical leader, and oversight role for all geotechnical aspects of a 2.3 mile long Busway corridor on soft soils including 3 bridges and 14 retaining walls. Included protection of adjacent active railroad tracks.

Principal-in-Charge, Rehabilitation of Route 1 Over Mystic River, Mystic, Connecticut. Investigation, geotechnical analyses and design of foundations repairs / increased support of existing foundations for an existing movable (bascule) bridge which has undergone excessive differential settlements.

Principal-in-Charge, I-95 Milford-Stratford, Connecticut. Investigation, geotechnical analyses and design of the reconstruction of Interstate 95 including the crossing of the Housatonic River (Moses Wheeler Bridge) on complex flood plain deposits. Design phase included large-scale testing of drilled shafts including 3,000 ton Osterberg Cell and 1,800 ton Statnamic Tests. Project also included smaller bridge structures, and on-site subsurface disposal of stormwater flows.

Principal-in-Charge, Routes I-91 and 68 Interchange, Wallingford, Connecticut Investigation, geotechnical analyses and design of interchange bridge, ramps, and local roadways.

Principal-in-Charge, Mountain Road Slope Repairs, Bristol, Connecticut. Investigation and development of remedial stabilization options for a failed rock cut slope in steep terrain. Developed detailed controlled blasting measures and construction phase qa/qc to stabilize the slope.

Project Manager, I-84 Platforms, Hartford, Connecticut. Engineering design and analyses for the construction of a structural platform over Interstate 84 in downtown Hartford. The design of the platform entailed developing special foundation installation methods and specifications due to the necessity for protecting existing highway structure foundations.

Project Manager, Route 72, Bristol, Connecticut. Geotechnical analyses and design for the Route 72 Relocation in Bristol. Involving two miles of Interstate highway and including eight bridge structures. This project included the full geotechnical and structural design of a soil nail retaining wall which eliminated the need for a temporary earth support system.

Project Engineer, I-91 Hartford & South Windsor, Connecticut. Investigation, geotechnical analyses and design of the reconstruction of Interstate 91 in the Hartford North Meadows and South Windsor on complex Connecticut River flood plain deposits overlying Connecticut Valley varved clays. Project included three bridge structures over active railroad tracks, and the design of temporary earth support systems to protect the tracks during construction. Included reconstruction of 2.8 miles of road and 13 highway bridges for a four lane interstate highway.

Project Manager, I-91 Windsor & Windsor Locks, Connecticut. Investigation and engineering design for reconstruction of roadway and 18 highway bridge structures for Route I-91 on Connecticut Valley varved clays. Windsor to Windsor Locks, Connecticut. Also managed the redesign phase of approximately three miles of this highway and bridges to meet the need for an accelerated construction schedule. A combination of pre-loading, surcharging, and sequenced construction with wick drains was used to achieve the desired schedule for construction of embankments and shallow foundations for bridges over compressible varved silts and clays.

Project Manager, River Road, Florida, Massachusetts. Investigation and development of remedial stabilization options for highway improvements in very steep terrain adjacent to the Deerfield River in Florida, Massachusetts. Included evaluation and design of drilled and grouted cantilevered piles for lateral support, permanent drainage and erosion protection measures.

Project Manager, East Leverett Road, Amherst, Massachusetts. Investigation/ development of remedial stabilization options for a steep unstable highway embankment adjacent to a river.

Project Manager, Route 315 over the Farmington River, Simsbury, Connecticut. Geotechnical analyses to design of deep friction-type foundations for a bridge.

Project Manager, Leicester and Spencer, Massachusetts. Investigations and analyses for the design of two Conrail railroad bridges. Designs included the temporary protection of active railroad tracks during the installation of new abutment foundations.

Project Manager, US Route 6, Brooklyn, Connecticut. Planned a subsurface exploration program along the alignment of this two lane highway for its widening. The project included the design of two bridges, one over a river crossing and the other for a railroad overpass.
Project Reviewer, US Route 7, Ridgefield, Connecticut. Planned subsurface exploration program and provided review of geotechnical investigation design reports for a proposed non-access highway along steep terrain involving rock cuts and steep embankments adjacent to wetlands.

Principal-in-Charge, Rehabilitation of Route 1 Over Mystic River, Mystic, Connecticut. Rehabilitation of the Mystic Bascule Bridge # 00362. Engineering design to evaluate geotechnical issues relating to the excessive differential settlement of existing deep foundations supporting the historic bascule bridge carrying US Route 1 over the Mystic River in downtown Mystic CT. Include evaluation of 85 year-old deep foundations and developing the concepts for providing additional support in a very constricted space to permanently reinforce the main piers and halt ongoing settlement.

BRACED EXCAVATIONS/EARTH SUPPORT SYSTEMS

Principal-in-Charge, Stamford Station Improvements, Lateral Support Design and Deep Foundation Redesign, Stamford, Connecticut. Engineering design and analyses during the construction of complex rock anchored support of excavation systems adjacent to active railroad tracks and design of tied-down rock anchored drilled shaft foundations.

Principal-in-Charge, Stamford Station Improvements, Tunnel Support Design, Stamford, Connecticut. Engineering design and analyses during the staged construction of a pedestrian tunnel supporting active railroad tracks.

Principal-in-Charge, Reconstruction of I-95 & Route 8 Intersection, Bridgeport, Connecticut. Design of anchored and cantilevered support of excavation systems and underpinning of active bridge substructure foundations.

Principal-in-Charge, Otesaga Service Building, Cooperstown, New York. Design of dewatering and cantilevered support of excavation systems in very soft clays for installation of foundations.

Principal-in-Charge, Routes 10 & 202 over Pioneer Valley Railroad, Westfield, Massachusetts. Design of anchored support of excavation systems to protect active railroad track bridge embankment during bridge replacement.

Project Manager, Pfizer Building 118A, Groton, Connecticut. Engineering design for design of a research center on the Pfizer campus. Services included the development of criteria, review, and field qa/qc in connection with the installation of a soil-nailed excavation support system adjacent to an active and sensitive high voltage equipment pad. This was the first application of a soil nail wall in unconsolidated materials in New England.

Project Manager, Retaining Wall No. 111, Bristol, Connecticut. Geotechnical analyses and design, and complete structural design of a 30-foot high and 400 feet long permanent soil nail retaining wall along Interstate Route 72.
Project Manager, Bridges, Southington, Connecticut. Geotechnical analyses and design of a lateral support system and pile driving and monitoring criteria for two highway bridges.

Project Manager, Upjohn Plant, North Haven, Connecticut. Geotechnical analyses/design of lateral support system during a contaminated soil excavation adjacent to existing active facilities.

Associate-in-Charge, Pfizer Building 156, Groton, Connecticut. Completed the design of a soil nailed lateral support system and preparation of blasting specifications for blasting in the vicinity of sensitive structures for Building 156 on the Pfizer Research Center Campus in Groton, CT. Managed the field qa/qc phase and provide ongoing recommendations to the project's construction manager.

Associate-in-Charge, I-91 Founders Bridge Tunnel Structure, Hartford, Connecticut. Completed the design of a lateral earth support design for a cut and cover reinforced concrete tunnel structure founded over weak compressible soils during the construction of new approach ramps during the reconstruction of the Founders Bridge in Hartford, CT.

DAM ENGINEERING

Principal-in-Charge, Mayer Pond Dam, Pawling New York. Static stability analyses of earthen dam, evaluation, design and preparation of contract documents for the construction of a concrete

auxiliary (emergency) spillway, repairs to lower level outlet, slip-lining of outlet pipe, and design of new primary drop-inlet spillway.

Principal-in-Charge, Wyassup Lake Dam, North Stonington, Connecticut. Static stability analyses of earthen dam.

Principal-in-Charge, North Farms Reservoir, Meriden CT. Stability analyses of earthen dam.

Principal-in-Charge, SM-3 Ste. Marguerite River Dam Foundation Densification, Sept Isle, Quebec. Reviewed feasibility of densifying foundation using deep blasting method.

Principal-in-Charge, Remedial Measures to Mashapaug Pond Dam Culvert, Union, Connecticut. Evaluated the causes of leakage through a segmented pre-cast lower level outlet culvert and designed a remedial grouting and cut-off program. Also oversaw the construction of the repairs including real-time monitoring and analyses of piezometric pressures within dam embankment.

Principal-in-Charge, Drainage and Analysis of Maltby Pond Dam, Lakeville, Connecticut. Permitting and analyses to temporarily drain an earth dam via siphoning and preliminary seepage and stability analyses of existing embankment.

Principal-in-Charge, Repairs to the Thomaston Dam Spillway Abutment, Thomaston, Connecticut. Performed analyses of the downstream embankment slope during a temporarily steepened condition to provide access to construction equipment on the face of the dam.

Project Engineer, Stratton Winhall Snowmaking Pond Dam, Winhall, Vermont. Performed seepage and stability analyses for high hazard 80-foot high earth filled dam.

Project Engineer, Miscellaneous Dams, Connecticut. Performed Dam Safety Inspections under a Task Release Contract with the State of Connecticut in 1987.

Project Engineer, Goodwin Dam, Hartland, Connecticut. Dynamic and Static Stability Analyses of 140 foot high Earth-Rockfill under FERC seismic criteria.

Project Manager, Richard's Corner Dam, New Hartford, Connecticut. Stability Analyses of 75' high, 800' long concrete core/earth fill dam for the Metropolitan District Commission (MDC).

Project Engineer, Sra Ouertane Dam, Sra Ouertane, Tunisia. Recommendations for the field exploration program for design of an 80 meter high, 3000 meter long compacted earth fill and hydraulically placed sand tailings dam for storage of phosphatic clays.

Project Manager, Mashapaug Pond Dam and Dike, Union, Connecticut. Stability Analyses and Remediation Design for a 20 foot high, 300 foot long dam and 500 foot long dike.

Project Manager, Rosenthal Dam, Lakeville, Connecticut. Field investigations, recommendations for construction of a new concrete gravity dam and a low level outlet.

Project Manager, Powers Lake Dam, East Lyme, Connecticut. Field investigations and recommendations for construction of a new low level outlet and for spillway improvements.

GROUND IMPROVEMENT

Principal-in-Charge, Marine Corps Reserve Training Center Blast Densification, Westover

Airforce Base, Chicopee, MA. Design-Built value engineering and construction of alternative ground densification program to protect loose saturated soils against earthquake-induced liquefaction. Planned supplementary cone penetrometer field investigations, design of explosive compaction program, construction implementation as Prime Design-built Contractor, preparation of design concept, pre- and post ground improvement report, data acquisition and data review.

RESEARCH & DEVELOPMENT

Principal Researcher and Sr. Engineer for the ground improvement by blasting program at Westover Air Park North in Holyoke, Massachusetts. Project involved densification by blasting of loose liquefaction susceptible soils to make the site earthquake resistant and suitable for construction. A detailed large-scale testing program was designed and implemented and a total footprint of over 700,000 square feet was improved for construction of industrial buildings.

ENVIRONMENTAL ENGINEERING

Principal-in-Charge, Hydrogeologic Evaluation, Salem Hunt, North Salem, NY. Investigations and modeling of groundwater flow, site hydrogeology, and nitrate transport using MT3D to assess the impact of a proposed 16,000 gallon per day on-site septic system on undeveloped site.

Principal-in-Charge, Hydrogeologic Evaluation, Phillipstown, NY. Investigations and modeling of the groundwater flow and site hydrogeology to assess the impact of a proposed 15,000 gallon per day on-site septic system on a former sand and gravel quarry site. The system was located between a large existing pond and a stream.

Principal-in-Charge, Hydrogeologic Evaluation, Random Ridge, Mahopac, NY. Investigations and modeling of the groundwater flow and site hydrogeology to assess the impact of a proposed 16,000 gallon per day on-site septic system on an undeveloped site. Obtained NY City DEP approval for discharge of septic flows in New York City water supply watershed.

Principal-in-Charge, Hydrogeologic Evaluation, Terravest, Brewster NY. Investigations, large-scale infiltration testing, and modeling of the groundwater flow and site geohydrology assess the impact of a proposed 50,000 gallon per day on-site septic system on an undeveloped site. Also investigated the potential to infiltrate pre-treated septage.

Principal-in-Charge, Residential Septic System, Sharon CT. Investigations, and design of a site previously determined to be unsuitable for infiltration of untreated residential septage.
Principal-in-Charge, Cofferdam Excavation, Bridge in Danbury, Connecticut. Investigations and preparation of construction documents for treatment and removal of petroleum contaminated during construction of a new bridge adjacent to a river.

Principal-in-Charge, Hydrogeologic Evaluation, Research & Technology Park, Storrs, Connecticut. Investigations and modeling of the groundwater flow system to assess the impact of proposed development on the site's and adjacent closed landfill's geohydrologic characteristics.

Principal-in-Charge, Connecticut Centre for the Performing Arts, Hartford, Connecticut. Completed a Remedial Investigation of the site of a former incinerator generated ash landfill. Developed clean-up and isolation standards and health & safety plan for use by over four hundred construction workers during site development for airborne lead exposure. Coordinated the characterization, disposal, & treatment of contaminated soils, groundwater, & underground tanks.

Project Manager, Package Machinery Treatment System, East Longmeadow, MA. Geohydrological investigations, evaluation, design and implementation of a soil and groundwater remediation program to satisfy MA DEP requirements. The project included soil excavation, petroleum removal in passive collection trenches, and treatment of a groundwater plume contaminated with chlorinated and aromatic solvents using a high volume pump and treat system.

Project Engineer, Hydrogeologic Study, Pratt & Whitney Aircraft, North Haven, Connecticut. Investigations and computer modeling of the groundwater flow system using the MacDonald-Harbaugh 2-D Finite Difference Model at this 340 acre industrial site. The recharge and leakage characteristics of the Quinnipiac River and of large capacity production pumping wells were included in the models to help to develop pumping scenarios for the site.

Project Manager, Riverpoint. Completed a hydrogeologic study of the site of a former oil tank terminal located adjacent to the Connecticut River. Designed a passive liner and an active subslab ventilation system, and developed a clean up criteria and health and safety program to remediate contamination during construction of building foundations.

Project Manager, Hydrogeologic Study, Pratt & Whitney Aircraft, Middletown, Connecticut. Investigations and computer modeling of the groundwater flow system using the MacDonald-Harbaugh 2-D Finite Difference Model at this 420 acre industrial site. The recharge/leakage characteristics of the Connecticut River, the impacts of on-site pumping and simulations of pumping from a potential drinking water supply aquifer adjacent to the site were included in the model to assess differing pumping scenarios.

Project Manager, Cecos Facility, Bristol, Connecticut. Investigation of the conditions of a secondary containment system at a hazardous waste treatment facility with regard to compliance with applicable RCRA federal hazardous waste regulations.

FORENSIC ENGINEERING

Principal-in-Charge, Blast Damage, Middletown Connecticut. Reviewed alleged blasting damage regarding plaintiff's property and blast damage to long-span steel, timber, and masonry residence following repeated blasting at a nearby large industrial site required drilling and blasting.

Principal-in-Charge, Blast Damage, Greenwich, Connecticut. Prepared a report and provided expert testimony for defendant following alleged blast damage to multi-tiered dry and mortared retaining walls, and pool support walls.

Principal-in-Charge, Claimed Foundation Damage due to Subsurface Flows, Naugatuck, Connecticut. Provided expert testimony at deposition and in court in to assist the defendant relative to claimed infiltrated run-off and subsurface flows toward a stone-masonry residential foundation.

Principal-in-Charge, Defective Industrial On-Site Septic Disposal System, Sprague, Connecticut. Provided expert testimony in to assist the defendant relative to claimed failed large-scale septic disposal system.

Principal-in-Charge, Excessive Run-off and Siltation of Stream and Pond, Watertown, Connecticut. Provided expert investigation in connection with construction generated stormwater damage due to alleged siltation on private property.

Principal-in-Charge, High School Athletic Field Drainage, Deerfield, Massachusetts.

Provided expert forensic investigation and testimony in to assist the defendant relative to claimed failed drainage system below playfields.

Principal-in-Charge, Defective Pavement, Torrington, Connecticut. Provided expert testimony in to assist the plaintiff relative to defective pavement in a large subdivision.

Principal-in-Charge, Blast Damage, Cheshire, Connecticut. Provided expert testimony in court to assist the plaintiff following blast damage to a dam's mortared stone spillway.

Principal-in-Charge, Blast Damage, Milford, Connecticut. Provided expert testimony to assist the defendant following blast damage to domestic water supply wells and residential structures.

Principal-in-Charge, Blast Damage, Litchfield, Connecticut. Provided expert testimony to assist the defendant following blast damage to domestic water supply well.

Principal-in-Charge, Slope Failure, Western Massachusetts. Planned and performed forensic geotechnical field investigations and analyses to determine the causes of failure of a 25-foot high cut slope at recently constructed utility infrastructure facility. Prepared a geotechnical report for use in an action to recover damages resulting from the failure.

Project Manager, Retaining Wall Failure, Farmington, Connecticut. Planned and performed forensic geotechnical field investigations and analyses to determine the causes of failure of a 30-foot high modular wall, and served as an expert witness at trial in superior court for the plaintiff in a suit to recover damages resulting from the failure.

Project Manager, Slope Failure, East Longmeadow, Massachusetts. Planned and performed forensic geotechnical field investigations and analyses to determine causes of failure of a slope constructed on soft varved clays following installation of a deep sewer line at its toe.

Project Manager and Associate-in-Charge, Taft School, Uxbridge, Massachusetts. Performed forensic investigations and analyses of a school building addition which had been constructed on fill inadvertently placed over a deeply buried peat stratum. Estimated future settlements, planned a high accuracy optical survey program to verify actual ongoing settlements, designed remedial foundation solutions, and provided expert witness services for the defendant in depositions and in alternate dispute resolution forums.

Project Manager, Gravel Pit Property Dispute, Sunderland, Massachusetts. Planned a subsurface exploration program and engineering analyze to estimate the quality and volume of commercially available sand and gravel on two large properties. Provided expert testimony in court to assist the plaintiff in a dispute over the value of the sand and gravel.

Project Manager, Lateral Support System Design Dispute, Windsor, Connecticut. Provided testimony in a mediation proceeding to support a defense against a contractor's claim for extra work associated with the installation of a temporary lateral earth support system during the construction of a cast-in-place retaining wall.

Project Manager, North Summer Street Wall, Adams, Massachusetts. Analyses of a failed 25-foot high dry stone and masonry retaining wall. Provided recommendations for the monitoring of ongoing movements and criteria for implementation of remedial solutions.

Project Manager, North Adams State College, North Adams, Massachusetts. Performed analyses of a failed cast-in-place retaining wall on the college campus and developed foundation solutions for its rehabilitation.

Project Manager, Watertown Car Wash, Watertown, Connecticut. Performed investigations into the causes of failure of a modular concrete block retaining wall and designed a tie-back and wall facing remedial repair solution.

Project Manager, White Pines Condominiums, Lenox, Massachusetts. Planned and performed investigations of five luxury condominiums units to determine the causes of water damage in the basements, and designed remedial solutions for the repairs. Provide expert testimony in pre-trial proceedings identifying the causes of the damage.

GEOTECHNICAL INSTRUMENTATION

Principal-in-Charge, Geotechnical Monitoring of Various Railroad Bridges Norwalk and Rowayton, Connecticut. Planned and reviewed installation of automated and alarmed tiltmeters to monitor potential deformation of railroad bridge piers and abutments.

Principal-in-Charge, Stamford Station Improvements, Geotechnical Monitoring, Stamford, Connecticut. Planned and installed continuously recording movement monitoring instruments including vibrating wire strain gages, in-place inclinometers adjacent to active tracks, and DMP's. Planned and installed datalogging equipment with alarms and remote monitoring capabilities including automated graphing and reporting of large data sets.

Principal-in-Charge, Metro-North over Old Gate Lane, Geotechnical Monitoring, Milford, CT. Planned, installed, and reviewed monitoring instruments consisting of tiltmeters, convergence gages, DMP's and high precision optical prisms to measure in real time movements of abutment during compaction grouting.

Principal-in-Charge, Norwalk Treatment Plant, Norwalk, Connecticut. Planned and installed pneumatic piezometers and inclinometers under new access roadway embankment over soft compressible organic soils.

Principal-in-Charge, Stratton Winhall Snowmaking Pond Dam, Winhall, Vermont. Planned installation of vibrating wire piezometers in the embankment of an 80-foot high earth filled dam.

Principal-in-Charge, Rockway Beach, New York. Planned installation of vibrating wire piezometers under a roadway embankment on soft soils.

Project Manager, Interstate Route 91, Windsor - Windsor Locks, Connecticut. Designed a program of vibrating wire and pneumatic piezometers and inclinometers under a 70-foot high earth embankment placed on soft compressible varved clay deposits.

Project Manager, Movement monitoring of Corp of Engineer Flood Protection Wall, East Hartford, Connecticut. Planned and implemented a program consisting of tiltmeters to allow monitoring of wall movements during installation of a temporary lateral support system adjacent to a flood protection structure.

PRESENTATIONS, PUBLICATIONS and AWARDS

. "Wick Drains Expedite Learning at Goodwin College's Connecticut River Academy" - Article in GeoNotes, January 28 2013,

. Principal Geotechnical Engineer and Project Manager on the " Moses Wheeler Bridge Foundations" project which won a the American Consulting Engineers Council - Connecticut Grand Award for the 2013 Engineering Excellence Competition.
. Paper and Presentation at the Case Studies and Recent Advances in Ground Improvement – ASCE Metropolitan Section Specialty Seminar, New York, NY, May 12, 2011.
. "Earthquake Mitigation by Blast Densification" published at the Sixth International Conference On Case Histories In Geotechnical Engineering and Symposium In Honor Of Professor James K. Mitchell, Arlington, VA August 11-16, 2008 (7.36a).
. Recipient of the "Distinguished Alumnus Award for 2005 form the University of Connecticut Department of Civil & Environmental Engineering.
. Presented a case study of in-place inclinometers at the "Geotechnical Instrumentation of Field measurements Short course" held on November 1-4, 1999.
. Reviewer for the Organizing Committee of the American Society of Civil Engineers (ASCE) Settlement 94 specialty conference and the *Vertical and Horizontal Deformation of Foundations and Embankments*, Publication (1994).
. Lectured at the University of Massachusetts at Lowell on ground improvement, April 1993
. "Densification of Loose Sands by Deep Blasting" published in the proceedings of the American Society of Civil Engineers International Specialty Conference on Grouting, Soil Improvement & Geosynthetics, New Orleans, LA, February 25-28, 1992.
. Principal Researcher and Senior Project Manager on the "Westover Airpark North-Soil Densification" project which won a National Honor Award in the American Consulting Engineers Council 1992 Engineering Excellence Awards Competition.
. "Soil Improvement by Deep Blasting - A Case Study" published in the proceedings of Society of Explosives Engineers 17th Annual Conference on Explosives and Blasting Technique, Las Vegas NV, February 3-7, 1991.

PROFESSIONAL ACTIVITIES

Member of the International Society of Explosives Engineers (ISEE), of the Society of Marketing Professional Services (SMPS), and Past Northeast Regional Chair of the Membership Services Committee of ASFE.

FIRM DESCRIPTION

Geo**Design**, Inc. (d/b/a/ Geo**Design**, Inc. P.C. in New York) was founded in Connecticut in January of 1995 by geotechnical engineers Ted von Rosenvinge, P.E. and Ulrich LaFosse, P.E. to provide quality geotechnical engineering and geoenvironmental consulting services to the design and construction community. Celebrating its nineteenth year in 2014.

Geo**Design** is headquartered in Middlebury, Connecticut with offices in Vermont and New York. Geo**Design** has a staff of approximately 23 engineers, geologists, environmental scientists, technicians and support staff to provide geotechnical, construction, and environmental engineering services. Our clients and projects are located throughout the northeast, with the greatest numbers of projects performed in Connecticut, eastern New York, western Massachusetts and Vermont.

Enhancing our core expertise in geotechnical engineering, Geo**Design**'s services also include:

- "Geo-structural" engineering services to Contractors and Owners for the detailed design of earth retention systems, cofferdams, temporary supports, underpinning, piling and erection/demolition plans by experienced structural engineers;
- Environmental science services for assessment and remediation of contaminated soil and groundwater under the direction of Connecticut Licensed Environmental Professional;
- Laboratory and field testing of soils; and
- Geotechnical instrumentation.

Geo**Design**'s approach to services is characterized by its concentration on pragmatic engineering and scientific problem solving by experienced professionals. Nearly one-third of Geo**Design**'s technical staff individually possesses over 20 years experience in geotechnical, geostructural/structural and/or environmental engineering. Over one-half are licensed Professional Engineers. These seasoned professionals are directly involved in the day-to-day delivery of services to our clients. We are able to provide complete services from initial site evaluations through construction.

Geo**Design** is a Connecticut certified Small Business Enterprise (SBE).