ADDENDUM NO. 1

2019 - Lobdell Lane over The Boquet River Bridge Replacement

Essex County, NY

August 12, 2019

TO ALL HOLDERS OF BIDDING DOCUMENTS:

This Addendum, issued to bid document holders of record, indicates clarifications to the bid documents for the *2019 Lobdell Lane over The Boquet River Bridge Replacement* project. All clarifications described herein shall be incorporated into the Contractor's bid proposal. This Addendum is part of the Contract Documents. Adjustments required by each item shall be understood to apply to all document references affected by the clarifications described.

1. **General:** A Pre-Bid meeting was held for the project at the sites on July 31, 2019 at 9:00 AM. Minutes from the meeting are enclosed and are a part of this Addendum and the Contract Documents.

2. **General:** A copy of the Geotechnical Report for the project is attached to this Addendum for reference only. This report is provided for informational purposes and shall not be considered to be part of the contract documents. If distributed to others by the bidder or contractor, they must be delivered in their entirety only.

   It is the bidder's responsibility to determine if the information contained in these geotechnical reports is adequate for bidding purposes. The bidders may make their own investigations, tests and analyses for use in bid preparation if additional information is required. Contractors will not be relieved of any of their obligations for performance of the work for the project, nor shall they be entitled to any additional compensation on the premise of differing subsurface conditions or soils types which may be encountered.

   Individual subsurface boring logs were prepared based upon the visual classifications and laboratory testing. The individual subsurface logs and keys explaining the terms used in their preparation are presented in the geotechnical reports and should be reviewed for a description of the conditions encountered at the specific test boring locations. It should be understood that conditions are only known at the specific depths and locations sampled. Conditions at other depths and locations may differ. Determinations of earthwork quantities for

bidding must not rely solely on the soil strata thicknesses measured at the discrete test boring locations completed for this investigation. The bidder should perform their own explorations as needed to obtain representative thicknesses of soil layers and strata as required to prepare their bids for the work.

3. **General:** There are no DBE/WBE/MBE goals for this project.

4. **Regarding Drawing N-1:** Replace with attached Drawing N-1, revision 1 - “Addendum No.1" dated 8/12/19.

5. **Regarding Drawing C-3:** Replace with attached Drawing C-3, revision 1 - “Addendum No.1" dated 8/12/19.

6. **Regarding Drawing C-3:** Replace with attached Drawing C-3, revision 1 - “Addendum No.1" dated 8/12/19.

END OF ADDENDUM NO. 1
(attachments)

Pre-Bid Meeting Minutes

SCHODER RIVERS ASSOCIATES
Consulting Engineers, P.C.

Evergreen Professional Park
453 Dixon Road, Suite 7, Bldg. 3
Queensbury, NY 12804
Tel. (518) 761-0417
Fax (518) 761-0513

PRE-BID MEETING MINUTES

Report Date: August 12, 2019

Project: Lobdell Lane over The Boquet River Bridge Replacement

Attending: Matthew Huntington, PE - Schoder Rivers Assoc.
Jim Dougan - Essex County DPW
Gary Rancour - Essex County DPW
Ed Shull- Rozell
Matt Schmitt - Bette & Cring
William Patenaude - Alpine Construction
Dane Insogna - Harrison & Burrowes
Richard Kondrat - Harrison & Burrowes
(Copy of attendance sheet is attached for information)

Distribution: Via posting on the Essex County Website as a part of Addendum No. 1 for access by all holders of bidding documents.

A scheduled pre-bid meeting was held for the above referenced project on July 31st at 9:00AM at the project site. The following items were discussed:

1. Huntington provided a general summary of the overall scope of work for the project and noted the geotechnical report will be included as part of Addendum No. 1.

2. Patenaude noted the location of a Gravel Pit at the southern end of Lobdell Lane and inquired if that material is available for use during construction of the project. Rancour stated that the pit is privately owned and to the best of his knowledge is not currently active.

3. Rancour noted that excess non-hazardous construction and demolition debris may disposed of at the Essex County DPW Highway yard.

4. Huntington noted that the maximum design loading for the existing temporary bridge is AASHTO HS-20.

The meeting adjourned at 9:30 AM.

Respectfully submitted:

Matthew Huntington, PE
Sr. Project Engineer

PREBID MEETING ATTENDANCE SHEET

Project: Lobdell Lane Bridge Replacement **Date:** July 31, 2019 **Job No.** 18-392.20

NAME	COMPANY	PHONE	EMAIL
Ed Shull	Rozelle East	518-793-2634	ESHULL@ROZELLINST.COM
Matt Schmitt	Bette + Cochran	518-213-1010	mschmitt@bettecochran.com
William P. Patenaude	ALDI NE CONSTRUCTION	518-695-6739	WPATENAUDE@ALDINECONSTRUCTION.BIZ
Dane Insogna	H&B	518-465-6754	dinsogna@harrisonburrows.com
Richard Kondrat	"	"	rkondrat@harrisonburrows.com
Gary Rancour	ECDPW		
Jim Dougan	ECDPW	518-873-3789	JDOUGAN.CO.ESSEX.NY.US

Geotechnical Report

DENTE ENGINEERING

ALBANY AREA
594 Broadway
Watervliet, NY 12189
Voice 518-266-0310
Fax 518-266-9238

BUFFALO AREA
PO Box 482
Orchard Park, NY 14127
Voice 716-649-9474
Fax 716-648-3521

May 16, 2016

Mr. Jim Dougan
Essex County DPW
8053 Route 9
Elizabethtown, NY 12932

Re: Geotechnical Study
Lobdell Lane Bridge over Boquet River
Elizabethtown, NY
Project Number No. FDE-15-280

Gentlemen;

In accord with your authorization, we have completed a subsurface investigation and prepared this geotechnical evaluation report for the planned replacement of a bridge carrying Lobdell Lane over the Boquet River in Elizabethtown, New York.

This report presents the results of the subsurface investigation completed at the site on May 4, a summary of the conditions disclosed, and our recommendations for the design and construction of the geotechnical aspects of the project.

Subsurface Conditions

The Subsurface Investigation completed at the site consisted of two (2) exploratory test borings, one at each side of the planned bridge abutments. The borings were performed where accessible and without utility conflicts in the general vicinity of the locations shown on the attached Subsurface Investigation Plan. The bores were advanced using a rotary drill rig mounted on a trailer, and overburden soils were sampled in general accord with the procedures of ASTM D-1586. Subsurface Logs were prepared and are attached to this report, together with sheets that explain the terms used in their preparation. It should be understood that boring logs present a description of the conditions encountered on the date, specific locations investigated, and to the depths sampled. Conditions at locations and depths other than those investigated may differ. It should also be understood that conditions can change with time.

The Subsurface Logs should be reviewed for the specific conditions encountered at each investigated location. The borings were advanced from the previous roadway grades at the site and, as such, penetrated soil fill, which is believed to have been placed to establish the grades for the approach roads to the former bridge crossing.

The fill soils were composed of a mixture of sand, silt, and gravel with lesser amounts of cobbles. These fills were moist throughout and judged to be of a loose to firm relative density. The fills extended to estimated depths of between about 12 and 13 feet.

Underlying the fill soils are glacial outwash soils composed of alternating strata of fine sand and silt throughout the depths explored at location B-2. These soils were of a generally loose to firm relative density and extended to depths of about 49 feet at location B-1 where they graded into a medium consistency silt and clay deposit which extended through the depths explored, about 52 feet.

Groundwater did not accumulate within the augers prior to the introduction of drilling fluid/water and thus was not measured within the test borings advanced at the site. In our opinion, these measurements are not be representative of the true saturated ground level at the time of the study. Groundwater should be expected to coincide with the river level at the site throughout the seasons.

Geotechnical Recommendations

In our opinion the planned bridge may be supported upon spread foundations within sheet piles installed for scour protection, if required. It should be understood that if the spread foundation option is selected, all fills and any organic materials contained within or beneath these fill soils must be removed from beneath the foundations.

Based on the available subsurface information Seismic Site Class D should be used. The soils, during the design seismic event, should not liquify.

Steel sheet piles may be used to form a cofferdam or an abutment wall, both designed as a cantilever or tied back system. If steel sheetpiling is used, it will be necessary to remove obstructions as the fills and native soils may contain cobbles and boulders in areas.

Excavation to establish bearing for foundations should proceed through the fill and any buried organic soils, or at least one (1) foot beneath these grades, whichever is deeper. Structural fill required to establish the design bearing grade should extend beyond the edge of the foundations a distance at least equal to half the depth of the structural fill placed beneath the foundations. The bearing grade excavation should be backfilled with a run of crusher-run stone similar in gradation and quality to a NYSDOT Section 304 Type 2 Material. The material should be placed in a single lift and be compacted to at least 95 percent of its maximum dry density established through the procedures of ASTM D-1557, the Modified Proctor Test.

If the grades are established at or within a foot of the river/groundwater levels, we recommend the foundation grade be prepared by placing a layer of synthetic fabric

such as Mirafi 500X upon the approved bearing grade, followed by at least 12 inches of a 50/50 blend of NYSDOT number 1 and 2 sized aggregate to create a working surface that can also be dewatered with ordinary sumps and pumps set within it.

Dependent upon river levels during construction, the excavations planned may penetrate saturated soils and groundwater, which will coincide with the river levels in the immediate project area. Common sump and pump techniques from within cofferdam sheets and behind sheetpile walls should be capable of limited depression and control of the water table at this site. The dewatering system must be designed and operated to assure that the system does not fail and allow groundwater to rise, possibly creating "quick" conditions at the bearing grades within the cofferdam or buoyant forces upon partially completed structures.

Sheet pile cantilever walls or enclosed cofferdams should be designed to achieve stability for varying water elevations that might occur during the construction process. The Contractor's dewatering plan, as well as any construction sheeting and shoring, should be designed by a Licensed Professional Engineer. The design should meet the requirements of 29 CFR Part 1926 Occupational Safety and Health Standards - Excavations for Type C Soils.

The structural fill used to backfill the abutment walls above the water table should consist of NYSDOT Section 304 Type 4 Processed Sand and Gravel material. The fill should be placed in loose layers no more than one (1) foot thick and each layer be compacted to no less than 95 percent of the material's maximum dry density determined through the procedures of ASTM D-1557, the Modified Proctor Compaction test.

The following parameters are recommended for use in the design of the bridge foundations, abutments, and wing walls;

Fill Parameters

1.	Overburden Unit Weight (Total)	=	125 lbs/Cu. Ft.
2.	Friction Angle of Soil	=	30 Degrees
3.	Coefficient of Active Earth pressure	=	0.33
4.	Coefficient of At-Rest Earth pressure	=	0.5
5.	Coefficient of Passive Earth pressure	=	3.0
6.	Coefficient of Sliding Friction	=	0.58
7.	Resistance Factor for Passive Resistance	=	0.50
8.	Resistance Factor for Shear Resistance	=	0.80

Sand/Gravel/Silt Overburden Parameters

1.	Factored Bearing Resistance	=	3,500 PSF
2.	Nominal Bearing Resistance	=	10,500 PSF
3.	Overburden Unit Weight (Total)	=	135 lbs/Cu. Ft.
4.	Friction Angle of Soil	=	32 Degrees
5.	Coefficient of Active Earth pressure	=	0.31
6.	Coefficient of At-Rest Earth pressure	=	0.47
7.	Coefficient of Passive Earth pressure	=	3.25

8.	Coefficient of Sliding Friction	=	0.58
9.	Resistance Factor for Passive Resistance	=	0.50
10.	Resistance Factor for Shear Resistance	=	0.80

Abutment and sheet pile abutment walls should be designed to restrain lateral earth pressures calculated for the At-Rest Condition. Wing and temporary cofferdams may be designed to resist Active Lateral Earth Pressures.

Settlement of the bridge's spread foundations should occur in a semi-elastic manner as loads are actually applied and cease with each incremental loading of the foundations. We believe that the foundations will settle in total and differentially less than about one (1) and one-half (½) inches, respectively, provided our recommendations concerning bearing grade preparation are followed. It should be understood that actual settlements will be dependent in great part upon the care exercised during bearing grade preparation.

Summary

This report was prepared for specific application to the project site and the construction planned. It was prepared on the basis of a limited number of investigated locations at the site. Subsurface conditions at other than the investigated locations may be different. We should be allowed the opportunity to review appropriate plans and specifications prior to their release for bidding. The Geotechnical Engineer should be retained to observe and test earthwork and bearing grades during construction. This report was prepared using methods and practices common to Geotechnical Engineering in the area and at the time. No other warranties, expressed or implied, are made.

A sheet entitled "Important Information about your Geotechnical Engineering Report" prepared by the Association of Engineering Firms Practicing in the Geosciences is attached to this report. This sheet should never be separated from this report and be carefully reviewed as it sets the only context within which this report should be used.

We appreciate the opportunity to be of service. Should questions arise or if we may be of any other service, please contact us at your convenience.

Yours truly,
Dente Engineering, P.C.

Fred A. Dente, P.E.
President

Enclosures;

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical-engineering study conducted for a civil engineer may not fulfill the needs of a constructor — a construction contractor — or even another civil engineer. Because each geotechnical- engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client. No one except you should rely on this geotechnical-engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you* — should apply this report for any purpose or project except the one originally contemplated.

Read the Full Report

Serious problems have occurred because those relying on a geotechnical-engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

Geotechnical Engineers Base Each Report on a Unique Set of Project-Specific Factors

Geotechnical engineers consider many unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk-management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical-engineering report that was:

- not prepared for you;
- not prepared for your project;
- not prepared for the specific site explored; or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical-engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light-industrial plant to a refrigerated warehouse;
- the elevation, configuration, location, orientation, or weight of the proposed structure;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical-engineering report is based on conditions that existed at the time the geotechnical engineer performed the study. *Do not rely on a geotechnical-engineering report whose adequacy may have been affected by*: the passage of time; man-made events, such as construction on or adjacent to the site; or natural events, such as floods, droughts, earthquakes, or groundwater fluctuations. *Contact the geotechnical engineer before applying this report to determine if it is still reliable.* A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ — sometimes significantly — from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide geotechnical-construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are Not Final

Do not overrely on the confirmation-dependent recommendations included in your report. *Confirmation-dependent recommendations are not final,* because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations *only* by observing actual subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's confirmation-dependent recommendations if that engineer does not perform the geotechnical-construction observation required to confirm the recommendations' applicability.*

A Geotechnical-Engineering Report Is Subject to Misinterpretation

Other design-team members' misinterpretation of geotechnical-engineering reports has resulted in costly

problems. Confront that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Constructors can also misinterpret a geotechnical-engineering report. Confront that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing geotechnical construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical-engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make constructors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give constructors the complete geotechnical-engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise constructors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure constructors have sufficient time* to perform additional study. Only then might you be in a position to give constructors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and constructors fail to recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Environmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform an *environmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical-engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk-management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

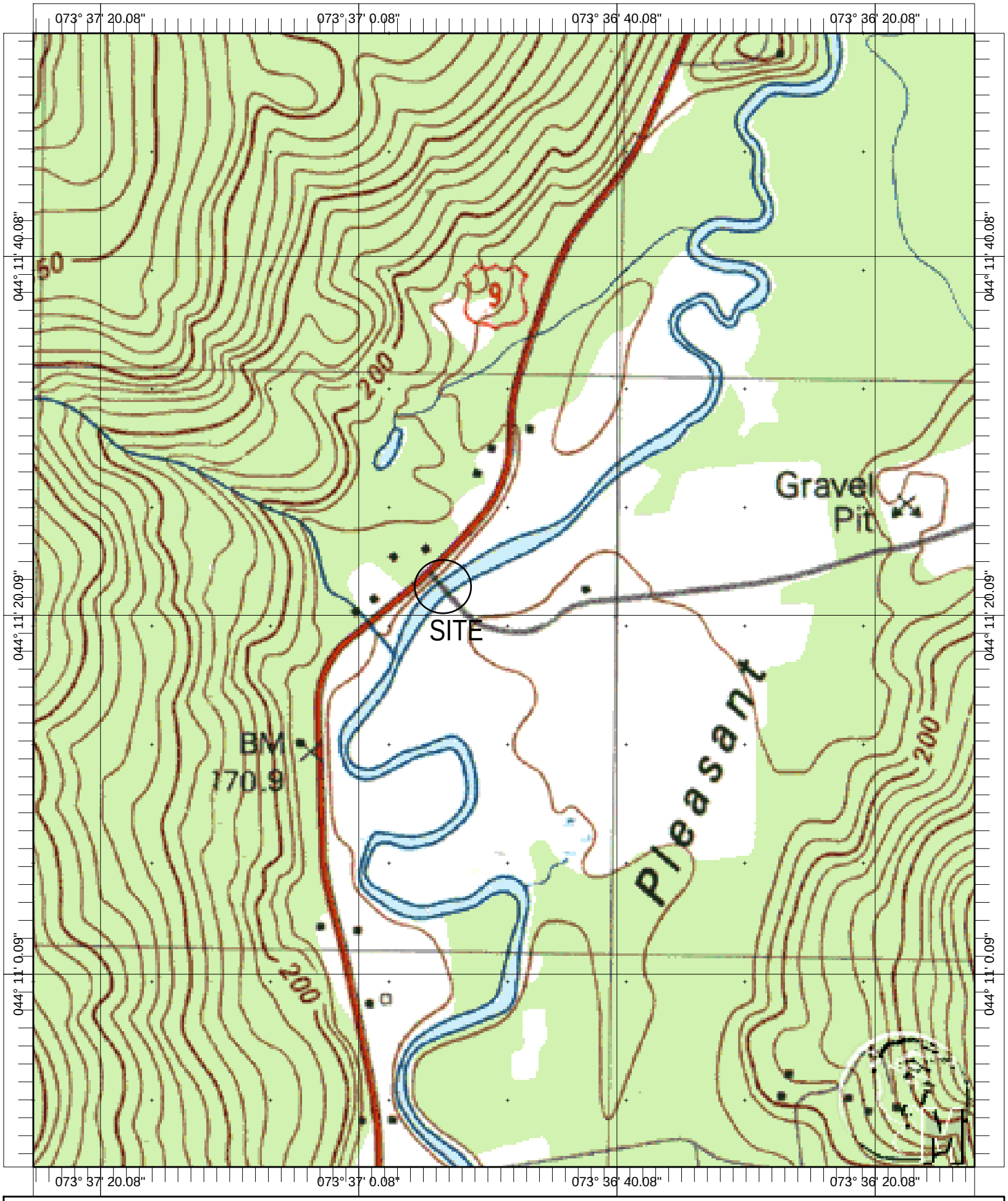
Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold-prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, many mold- prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical- engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; *none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.*

Rely, on Your GBC-Member Geotechnical Engineer for Additional Assistance

Membership in the Geotechnical Business Council of the Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project. Confer with you GBC-Member geotechnical engineer for more information.

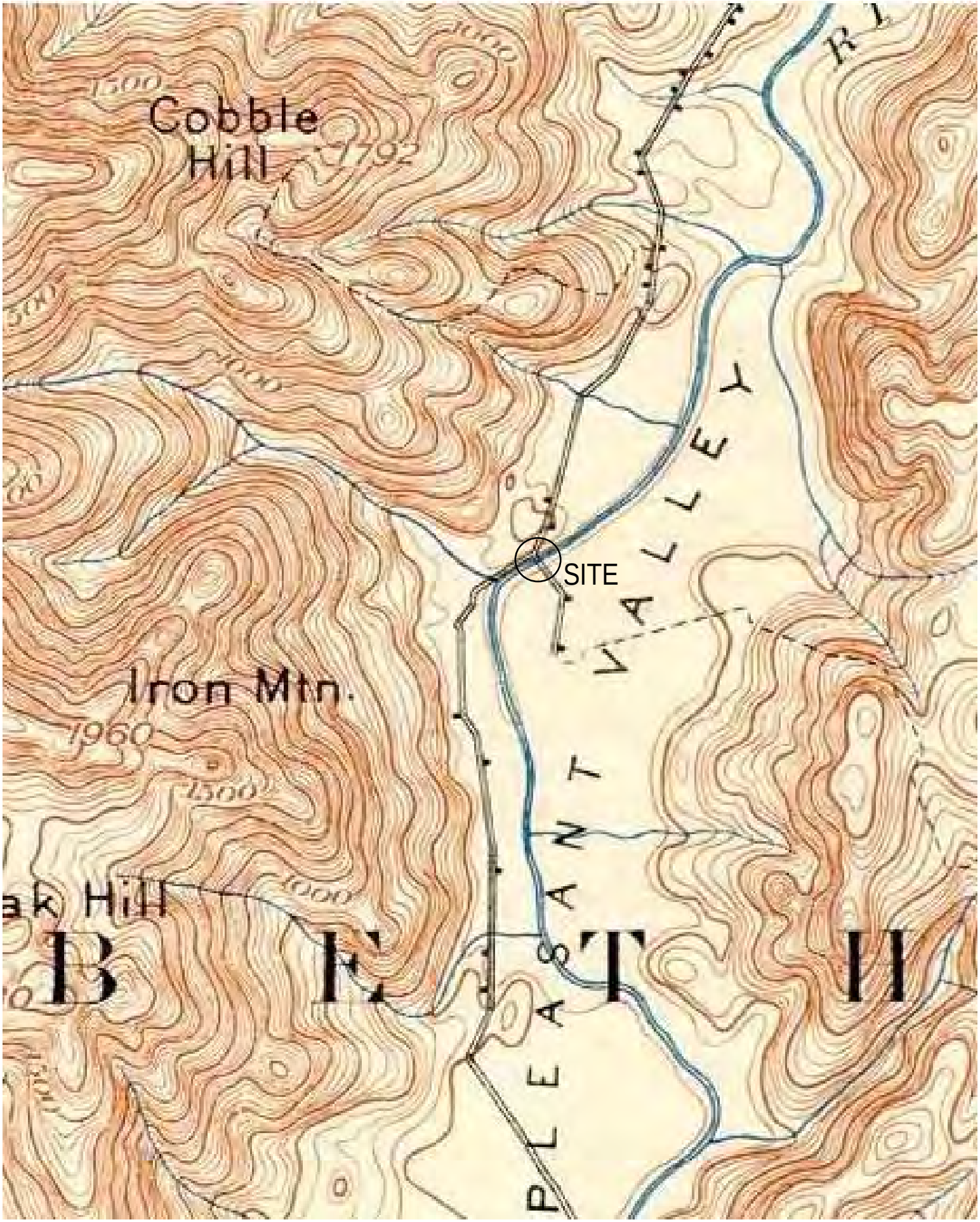
GEOTECHNICAL BUSINESS COUNCIL
of the Geoprofessional Business Association

8811 Colesville Road/Suite G106, Silver Spring, MD 20910
Telephone: 301/565-2733 Facsimile: 301/589-2017
e-mail: info@geoprofessional.org www.geoprofessional.org

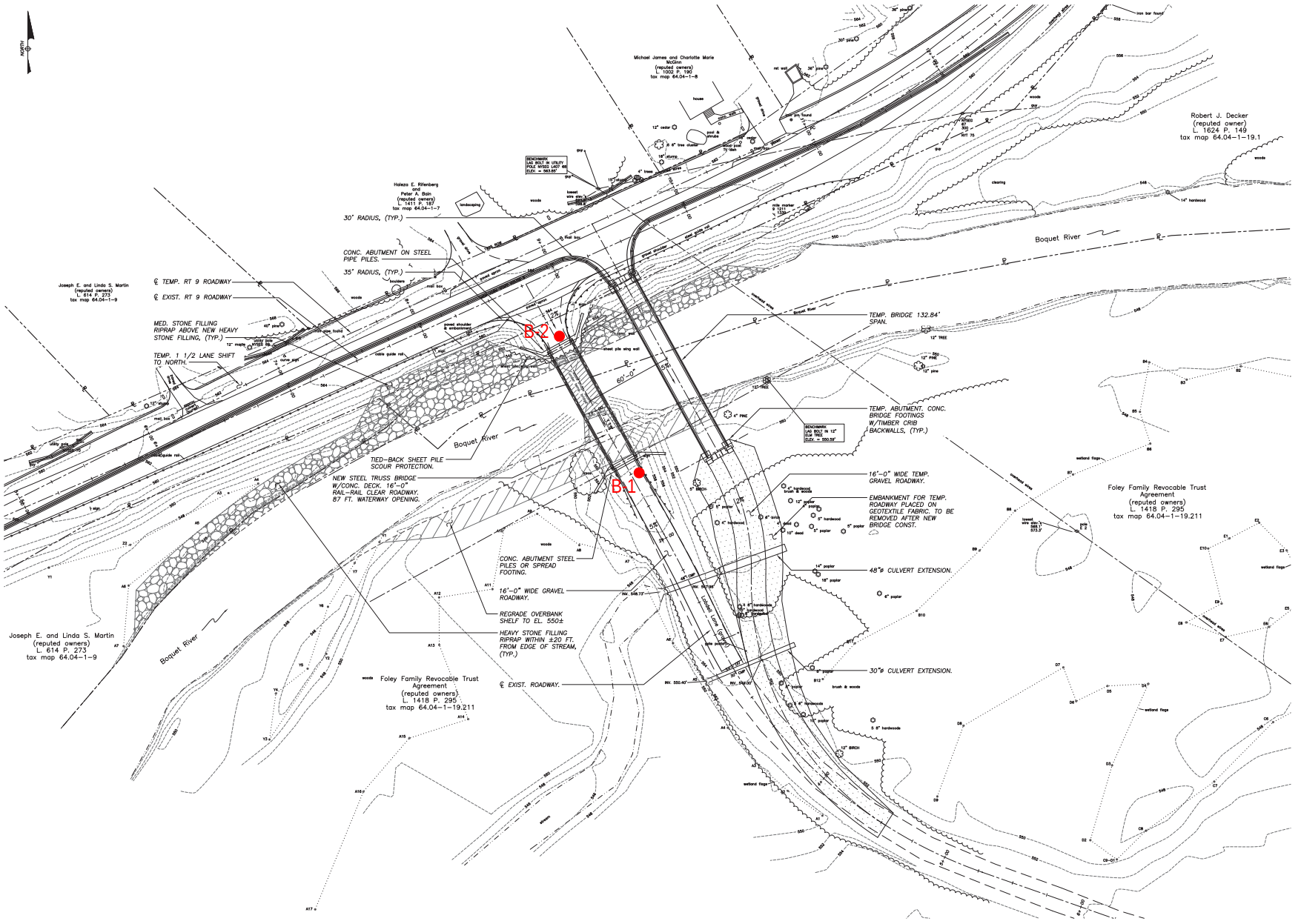


Name: ELIZABETHTOWN
Date: 5/10/116
Scale: 1 inch equals 666 feet

Location: 044° 11' 20.9" N 073° 36' 48.9" W
Caption: LOBDELL LANE BRIDGE
ELIZABETHTOWN, NY
FDE-15-280



Lobdell Lane Bridge, Elizabethtown, New York 1901



PRELIMINARY SITE PLAN
1"=30'-0"

● Approximate Soil Boring Locations

NOTE: TEMPORARY ROADWAY (ROUTE 9) ALIGNMENT SHALL REVERT TO EXISTING ALIGNMENT AND TRAFFIC FLOW CONDITIONS UPON COMPLETION OF THE BRIDGE REPLACEMENT WORK AND REESTABLISHMENT OF LOBDELL LANE ROADWAY.

NOTE: SEE DRAWING DOT-2 FOR DETAIL ON TEMPORARY LANE SHIFT.

LEGEND

- 550 EXIST. CONTOUR
- EXIST. OVERHEAD UTILITY
- EXIST. EDGE OF STREAM
- CONSTRUCTION BASELINE
- TREE LINE

REVISIONS		
REV.	DATE	DESCRIPTION
0	1/11/16	ISSUED FOR REVIEW

PRELIMINARY NOT FOR CONSTRUCTION

SCHODER RIVERS ASSOCIATES
Consulting Engineers, P.C.
Evergreen Professional Park
453 Dixon Road, Suite 7, Bldg. 3
Queensbury, New York 12804
(518) 761-0417, FAX: (518) 761-0513

SCALE:	1"=30'-0"	DRAWN BY:	SRA
DATE:	1/11/16	ENG. BY:	CBS
PROJ. NO:	12-474.15	CHK'D BY:	CBS

CLIENT NAME
ESSEX COUNTY DEPARTMENT OF PUBLIC WORKS
Elizabethtown, N.Y.

DRAWING TITLE
LOBDELL LANE BRIDGE OVER BOQUET RIVER REPLACEMENT
PRELIMINARY SITE PLAN

SURVEYED BY
DAVID F. BARRASS
LAND SURVEYOR
5 MAPLE STREET
CORINTH, NEW YORK

DRAWING NO. P-1
SHT. 1 OF 2
REV. 0

INTERPRETATION OF SUBSURFACE LOGS

The Subsurface Logs present observations and the results of tests performed in the field by the Driller, Technicians, Geologists and Geotechnical Engineers as noted. Soil/Rock Classifications are made visually, unless otherwise noted, on a portion of the materials recovered through the sampling process and may not necessarily be representative of the materials between sampling intervals or locations.

The following defines some of the terms utilized in the preparation of the Subsurface Logs.

SOIL CLASSIFICATIONS

Soil Classifications are visual descriptions on the basis of the Unified Soil Classification ASTM D-2487 and USBR, 1973 with additional comments by weight of constituents by BUHRMASTER. The soil density or consistency is based on the penetration resistance determined by ASTM METHOD D1586. Soil Moisture of the recovered materials is described as DRY, MOIST, WET or SATURATED.

SIZE DESCRIPTION		RELATIVE DENSITY/CONSISTENCY (basis ASTM D1586)			
SOIL TYPE	PARTICLE SIZE	GRANULAR SOIL		COHESIVE SOIL	
BOULDER	> 12	DENSITY	BLOWS/FT.	CONSISTENCY	BLOWS/FT.
COBBLE	3" - 12"	LOOSE	< 10	VERY SOFT	< 3
GRAVEL-COARSE	3" - 3/4"	FIRM	11 - 30	SOFT	4 - 5
GRAVEL - FINE	3/4" - #4	COMPACT	31 - 50	MEDIUM	6 - 15
SAND - COARSE	#4 - #10	VERY COMPACT	50 +	STIFF	16 - 25
SAND - MEDIUM	#10 - #40			HARD	25 +
SAND - FINE	#40 - #200				
SILT/NONPLASTIC	< #200				
CLAY/PLASTIC	< #200				

SOIL STRUCTURE		RELATIVE PROPORTION OF SOIL TYPES	
STRUCTURE	DESCRIPTION	DESCRIPTION	% OF SAMPLE BY WEIGHT
LAYER	6" THICK OR GREATER	AND	35 - 50
SEAM	6" THICK OR LESS	SOME	20 - 35
PARTING	LESS THAN 1/4" THICK	LITTLE	10 - 20
VARVED	UNIFORM HORIZONTAL PARTINGS OR SEAMS	TRACE	LESS THAN 10

Note that the classification of soils or soil like materials is subject to the limitations imposed by the size of the sampler, the size of the sample and its degree of disturbance and moisture.

ROCK CLASSIFICATIONS

Rock Classifications are visual descriptions on the basis of the Driller's, Technician's, Geologist's or Geotechnical Engineer's observations of the coring activity and the recovered samples applying the following classifications.

CLASSIFICATION TERM	DESCRIPTION
VERY HARD	NOT SCRATCHED BY KNIFE
HARD	SCRATCHED WITH DIFFICULTY
MEDIUM HARD	SCRATCHED EASILY
SOFT	SCRATCHED WITH FINGERNAIL
VERY WEATHERED	DISINTEGRATED WITH NUMEROUS SOIL SEAM
WEATHERED	SLIGHT DISINTEGRATION, STAINING, NO SEAMS
SOUND	NO EVIDENCE OF ABOVE
MASSIVE	ROCK LAYER GREATER THAN 36" THICK
THICK BEDDED	ROCK LAYER 12" - 36"
BEDDED	ROCK LAYER 4" - 12"
THIN BEDDED	ROCK LAYER 1" - 4"
LAMINATED	ROCK LAYER LESS THAN 1"
FRACTURES	NATURAL BREAKS AT SOME ANGLE TO BEDS

Core sample recovery is expressed as percent recovered of total sampled. The ROCK QUALITY DESIGNATION (RQD) is the total length of core sample pieces exceeding 4" length divided by the total core sample length for N size cored.

GENERAL

- Soil and Rock classifications are made visually on samples recovered. The presence of Gravel, Cobbles and Boulders will influence sample recovery classification density/consistency determination.
- Groundwater, if encountered, was measured and its depth recorded at the time and under the conditions as noted.
- Topsoil or pavements, if present, were measured and recorded at the time and under the conditions as noted.
- Stratification Lines are approximate boundaries between soil types. These transitions may be gradual or distinct and are approximated.

DENTE ENGINEERING, P.C.	SUBSURFACE LOG B-1

PROJECT: Lobdell Lane Bridge	**DATE**	START: 5/4/16	FINISH: 5/4/16

LOCATION: Essex County DPW	**METHODS:** 3 1/4" Hollow Stem Augers, ASTM
CLIENT: Essex County DPW	D1586 Drilling Methods with Auto Hammer
JOB NUMBER: FDE-15-280	**SURFACE ELEVATION:** +/- 560.0'
DRILL TYPE: CME 45C	**CLASSIFICATION:** O.Burns

SAMPLE		BLOWS ON SAMPLER					CLASSIFICATION / OBSERVATIONS
DEPTH	#	6"	12"	18"	24"	N	
	1	1	2				**FILL**: Brown/Gray F-C SAND and GRAVEL,
				3	2	5	trace silt (MOIST)
	2	4	4				Grades Brown F-C SAND, Little Gravel,
				6	7	10	trace silt
	3	3	4				Grades Some Gravel
5'				2	3	6	
	4	6	2				Similar with rootlets noted
				2	1	4	
	5	2	1				Grades to Brown/Gray, Little Gravel
				1	1	2	
10'	6	2	1				Grades Dark Brown F-M SAND, Little
				1	2	2	Coarse Sand and Gravel **(MOIST, LOOSE)**
	7	1	1				Dark Brown Fine SAND and SILT
				2	4	3	**(MOIST, LOOSE)**
	8	2	1/18"				Brown F-M SAND, Little Silt and Mottling
15'				-	-	1	(WET)
	9	1/12"	-				**(WET, LOOSE)**
				3	18	3	Brown/Orange GRAVEL, Some F-C Sand,
							trace silt
20'	10	12	14				**(WET, LOOSE TO FIRM)**
				14	8	28	
							Gray Fine SAND, Some Silt
							(SATURATED)
25'	11	2	4				
				3	3	7	
30'							

DENTE ENGINEERING, P.C.	SUBSURFACE LOG B-1 contin.

PROJECT: Lobdell Lane Bridge	**DATE**	**START:** 5/4/16	**FINISH:** 5/4/16

LOCATION: Essex County DPW	**METHODS:** 3 1/4" Hollow Stem Augers, ASTM
CLIENT: Essex County DPW	D1586 Drilling Methods with Auto Hammer
JOB NUMBER: FDE-15-280	**SURFACE ELEVATION:** +/- 560.0'
DRILL TYPE: CME 45C	**CLASSIFICATION:** O.Burns

SAMPLE		BLOWS ON SAMPLER					CLASSIFICATION / OBSERVATIONS
DEPTH	#	6"	12"	18"	24"	N	
	12	1	1				Gray Fine SAND, Some Silt
				2	1	3	
							(SATURATED, FIRM TO LOOSE)
35'	13	1	1				Brown/Gray Varved SILT with F-M Sand
				2	10	3	and Clay Partings
40'	14	4	6				Similar with Fine Sand Seams
				8	9	14	
45'	15	5	7				
				7	8	14	
							(SATURATED, LOOSE TO FIRM)
50'	16	5	5				Brown/Gray SILT and CLAY
				8	10	13	**(SATURATED, MEDIUM)**
							End of boring 52.0' depth.
55'							
60'							

DENTE ENGINEERING, P.C.	SUBSURFACE LOG B-2

PROJECT: Lobdell Lane Bridge	**DATE**	START: 5/4/16	FINISH: 5/4/16

LOCATION: Essex County DPW	**METHODS:** 3 1/4" Hollow Stem Augers, ASTM
CLIENT: Essex County DPW	D1586 Drilling Methods with Auto Hammer
JOB NUMBER: FDE-15-280	**SURFACE ELEVATION:** +/- 564.0'
DRILL TYPE: CME 45C	**CLASSIFICATION:** O.Burns

SAMPLE		BLOWS ON SAMPLER					CLASSIFICATION / OBSERVATIONS
DEPTH	#	6"	12"	18"	24"	N	
	1	13	18				**FILL**: Brown/Gray F-C SAND and GRAVEL,
				15	10	33	trace silt (MOIST)
	2	7	7				Grades trace plastic
				7	22	14	
	3	9	13				
5'				8	6	21	
	4	8	7				
				6	6	13	
	5	9	6				Grades Little Asphalt
				5	3	11	
10'	6	2	3				Grades Brown Mottled F-M SAND, Some
				4	3	7	Gravel, Little Coarse Sand and Silt
	7	2	3				**(MOIST, COMPACT TO LOOSE)**
				4	3	7	Brown F-C SAND and GRAVEL, trace silt
							(MOIST, LOOSE)
15'	8	3	5				Brown Fine SAND, Little Silt
				7	10	12	
							(SATURATED, FIRM)
20'	9	1	1				Brown/Gray Banded Fine SAND and SILT
				1	3	2	
							(SATURATED, LOOSE)
25'	10	3	4				Brown/Gray Fine SAND, Some Silt
				6	6	10	
							(SATURATED, LOOSE)
30'							

DENTE ENGINEERING, P.C.	SUBSURFACE LOG B-2 contin.

PROJECT: Lobdell Lane Bridge	**DATE**	START: 5/4/16	FINISH: 5/4/16

LOCATION: Essex County DPW	**METHODS:** 3 1/4" Hollow Stem Augers, ASTM
CLIENT: Essex County DPW	D1586 Drilling Methods with Auto Hammer
JOB NUMBER: FDE-15-280	**SURFACE ELEVATION:** +/- 564.0'
DRILL TYPE: CME 45C	**CLASSIFICATION:** O.Burns

SAMPLE		BLOWS ON SAMPLER					CLASSIFICATION / OBSERVATIONS
DEPTH	#	6"	12"	18"	24"	N	
	11	1	2				Gray SILT and Fine SAND
				1	2	3	
35'	12	1	1				
				2	4	3	
40'	13	1	2				
				3	3	5	
							(SATURATED, LOOSE)
45'	14	7	9				Brown/Gray SILT with Occasional F-M
				10	11	19	Sand and Clay Partings
50'	15	6	7				
				9	9	16	**(SATURATED, FIRM)**
							End of boring 52.0' depth.
55'							
60'							

View northwest toward the area of B-1

View southeast across the bridge from the area of B-2

April 17, 2018

Mr. Jim Dougan
Essex County DPW
8053 Route 9
Elizabethtown, NY 12932

Re: Supplemental Geotechnical Evaluation
Lobdell Lane Bridge over Boquet River
Elizabethtown, New York
Dente File No. JB175555

Mr. Dougan,

Presented herein are the results of a supplemental subsurface investigation and geotechnical evaluation we completed to assist in planning for replacement of the Lobdell Lane bridge over the Boquet River in Elizabethtown, New York. Our services were provided in general accordance with our proposal dated September 14, 2017 which was accepted by the County.

In May 2016 we submitted our original Geotechnical Study for this project which recommended supporting the new bridge on spread foundations with sheet piles installed as needed for scour protection. These recommendations were based upon the results of two test borings taken to a depth of about 50 feet. To expand upon our original recommendations and evaluate whether pile support is an option, we extended the borings and evaluated various options for the foundation design with the project engineer, Schoder Rivers Associates (SRA).

SUBSURFACE PROFILE

In February 2018 we extended the original test borings to depths of about 102 feet. A plan showing the approximate boring locations and logs prepared by a Geotechnical Engineer are attached.

As detailed in our original report, the test borings first encountered granular embankment fills which extended to depths of about 12 to 15 feet below the road surface. The fills were underlain by glacial outwash soils composed of fine sand and silt mixtures of loose to firm relative density. At depths of about 35 to 50 feet below the road surface, the glacial outwash soils graded to variable mixtures of silt or clayey silt with lesser amount of sand. These soils were judged to be of a loose to firm relative density or very soft to medium consistency and they extended to the maximum 102 foot depths explored.

CONCLUSIONS AND RECOMMENDATIONS

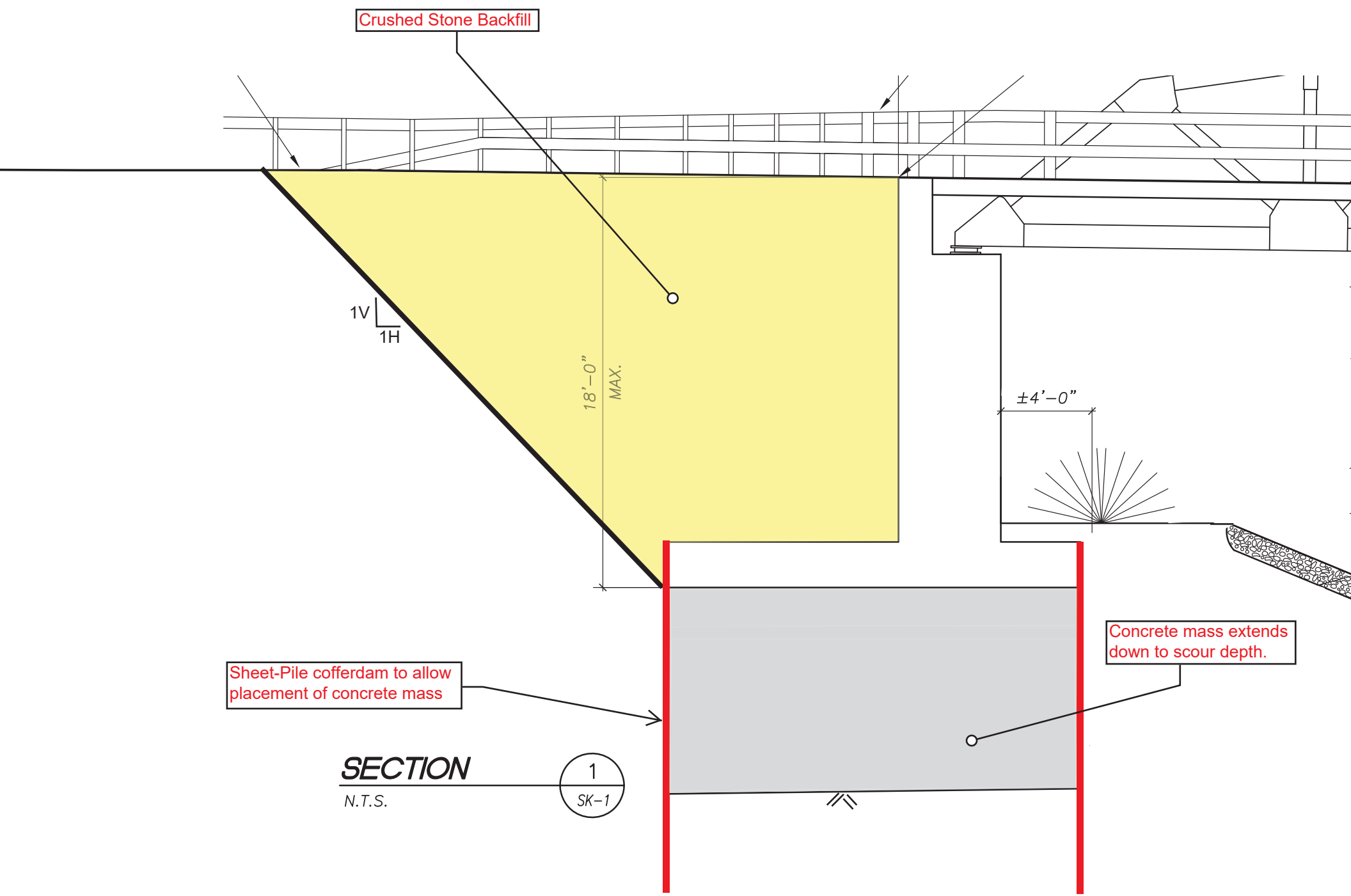
It is our opinion that the soils encountered within a depth of about 102 feet below the road surface are not a suitable bearing stratum to support a deep pile foundation system for the bridge. The allowable capacity for either a typical friction or end bearing pile in these soils would be inadequate to support the expected loads. On this basis, we continue to recommend that the bridge be supported on a shallow spread foundation system, with appropriate scour protection provided.

SRA has indicated to us that the south abutment can be designed using the recommendations contained in our original report. However, to reduce the height of the north abutment to within a tolerable limit for a standard cantilever wall design, the foundation must be seated no deeper than elevation 545.7 feet. This bearing elevation is about 4.4 feet above the scour depth estimated by SRA.

Various alternatives to provide the required scour protection were evaluated with SRA including options to provide a sheet-pile system in front of the abutment along with potential use of light-weight aggregate or geofoam as backfill, or providing anchorage for the abutment and/or the sheet-piles. Based upon this evaluation, the option shown on the following sketch was deemed feasible and we understand will be implemented by SRA in their design. As shown, this option entails constructing the abutment foundation on a base of mass concrete placed within a sheet-pile cofferdam and backfilling the abutment placed upon it with clean crushed stone to reduce lateral loads on the abutment.

The concrete infill within the sheet-pile cofferdam should be taken to or below the expected scour depth. The concrete may be tremied in place immediately as the excavation is completed and it should have a minimum 28-day compressive strength equal to 2500 psi. The sheets should be designed by the contractor’s engineer for the short-term conditions as the excavation is made and backfilled with concrete. For sheet-pile design purposes, the fine sand and silt soils can be assumed to have a total unit weight equal to 118 pcf and friction angle equal to 30 degrees.

Assuming that the abutment is backfilled with clean crushed stone composed of ASTM C33 Blend 57 aggregate, the lateral earth pressures and surcharge loads acting on the wall can be determined assuming:



SECTION 1
N.T.S. SK–1

CRUSHED STONE DESIGN PARAMETERS

- Total Unit Weight of Crushed Stone = 100 pcf
- Friction Angle of Crushed Stone = 40 degrees
- Coefficient of Active Earth Pressure = 0.22
- Coefficient of At-Rest Earth Pressure = 0.36

For design of the foundations, a coefficient of sliding friction equal to 0.70 can be assumed along with a factored bearing resistance equal to 3500 psf. Settlement of the foundation should be less than one inch. Most of this settlement should occur quickly as the bridge is constructed and loads are applied.

We appreciate the opportunity to provide these supplemental services. Should questions arise or if we may be of any other assistance, please contact us at your convenience.

Prepared by,
Dente Group

Edward Gravelle

4/17/18

Edward C. Gravelle, P.E.
Senior Engineer

FREDERICK A. DENTE
57843
STATE OF NEW YORK

4/17/18

Fred A. Dente, P.E.
Principal / Office Manager

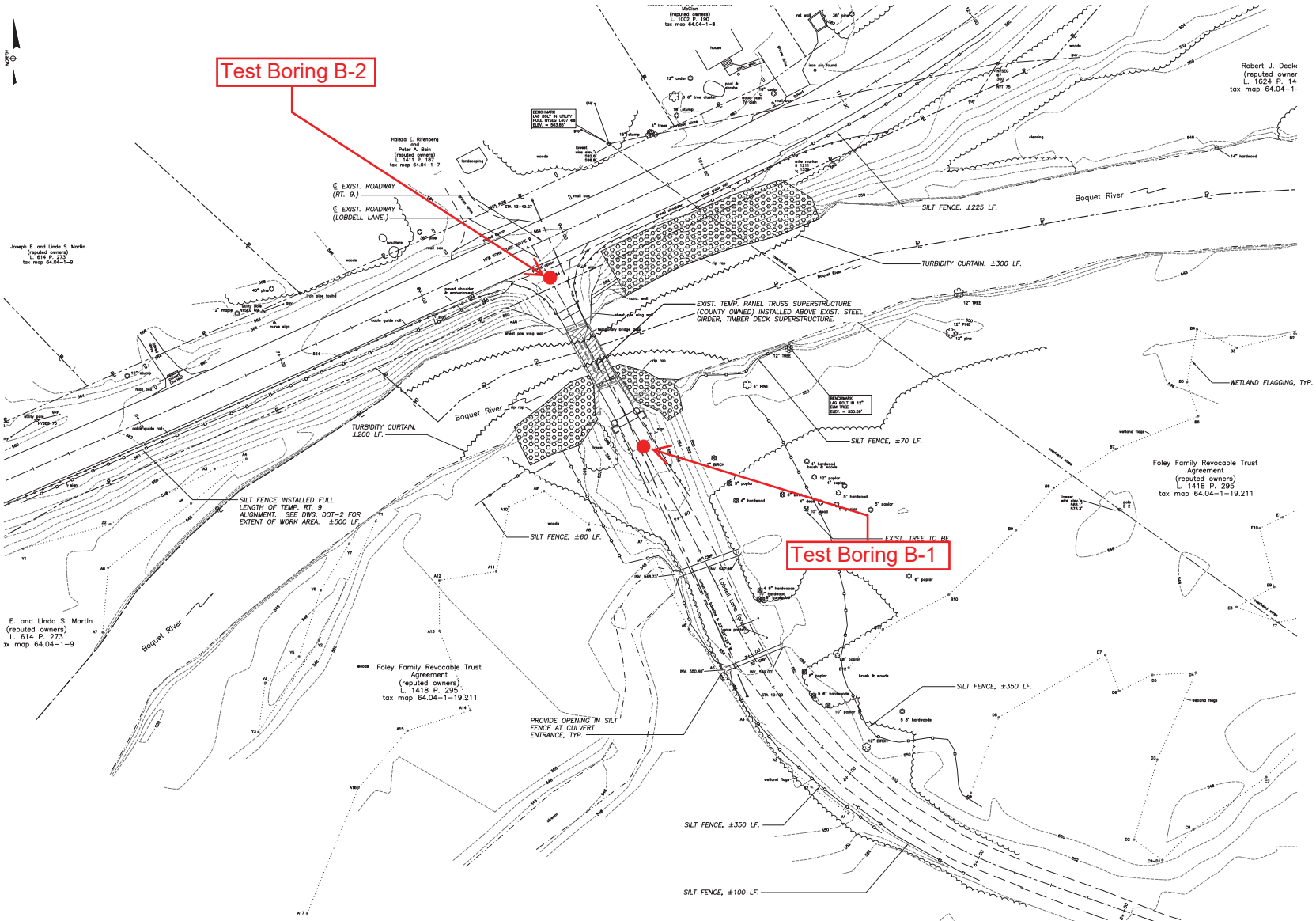
4/17/18

Attachments:

Site Plan with Boring Locations
Test Boring Logs and Key
Laboratory Gradation Test Results

SUBSURFACE INVESTIGATION PLAN

Lobdell Lane Bridge
Elizabethtown, NY



LEGEND

- 550 EXIST. CONTOUR
- EXIST. OVERHEAD UTILITY
- EXIST. EDGE OF STREAM
- CONSTRUCTION BASELINE
- TREE LINE
- ℄ PROPERTY LINE

EROSION AND SEDIMENT CONTROL PLAN
1"=30'-0"

REVISIONS		
REV.	DATE	DESCRIPTION
0	6/15/17	PROGRESS DRAWINGS

PRELIMINARY NOT FOR CONSTRUCTION

SCHODER RIVERS ASSOCIATES
Consulting Engineers, P.C.
Evergreen Professional Park
453 Dixon Road, Suite 7, Bldg. 3
Queensbury, New York 12804
(518) 761-0417, FAX: (518) 761-0513

SCALE:	1"=30'-0"	DRAWN BY:	SRA
DATE:	6/15/17	ENG. BY:	MEH
PROJ. NO:	15-880.06	CHK'D BY:	CBS

CLIENT NAME
ESSEX COUNTY DEPARTMENT OF PUBLIC WORKS
Elizabethtown, N.Y.

DRAWING TITLE
LOBDELL LANE BRIDGE OVER BOQUET RIVER REPLACEMENT
EROSION & SEDIMENT CONTROL PLAN

DRAWING NO. C-1
SHT. 1 OF 6
REV. 0

SURVEYED BY
DAVID F. BARRASS
LAND SURVEYOR
5 MAPLE STREET
CORINTH, NEW YORK

TEST BORING LOGS AND KEY

Lobdell Lane Bridge
Elizabethtown, NY

INTERPRETATION OF SUBSURFACE LOGS

The Subsurface Logs present observations and the results of tests performed in the field by the Driller, Technicians, Geologists and Geotechnical Engineers as noted. Soil/Rock Classifications are made visually, unless otherwise noted, on a portion of the materials recovered through the sampling process and may not necessarily be representative of the materials between sampling intervals or locations.

The following defines some of the terms utilized in the preparation of the Subsurface Logs.

SOIL CLASSIFICATIONS

Soil Classifications are visual descriptions on the basis of the Unified Soil Classification ASTM D-2487 and USBR, 1973 with additional comments by weight of constituents by BUHRMASTER. The soil density or consistency is based on the penetration resistance determined by ASTM METHOD D1586. Soil Moisture of the recovered materials is described as DRY, MOIST, WET or SATURATED.

SIZE DESCRIPTION		RELATIVE DENSITY/CONSISTENCY (basis ASTM D1586)			
SOIL TYPE	PARTICLE SIZE	GRANULAR SOIL		COHESIVE SOIL	
BOULDER	> 12	DENSITY	BLOWS/FT.	CONSISTENCY	BLOWS/FT.
COBBLE	3" - 12"	LOOSE	< 10	VERY SOFT	< 3
GRAVEL-COARSE	3" - 3/4"	FIRM	11 - 30	SOFT	4 - 5
GRAVEL - FINE	3/4" - #4	COMPACT	31 - 50	MEDIUM	6 - 15
SAND - COARSE	#4 - #10	VERY COMPACT	50 +	STIFF	16 - 25
SAND - MEDIUM	#10 - #40			HARD	25 +
SAND - FINE	#40 - #200				
SILT/NONPLASTIC	< #200				
CLAY/PLASTIC	< #200				

SOIL STRUCTURE		RELATIVE PROPORTION OF SOIL TYPES	
STRUCTURE	DESCRIPTION	DESCRIPTION	% OF SAMPLE BY WEIGHT
LAYER	6" THICK OR GREATER	AND	35 - 50
SEAM	6" THICK OR LESS	SOME	20 - 35
PARTING	LESS THAN 1/4" THICK	LITTLE	10 - 20
VARVED	UNIFORM HORIZONTAL PARTINGS OR SEAMS	TRACE	LESS THAN 10

Note that the classification of soils or soil like materials is subject to the limitations imposed by the size of the sampler, the size of the sample and its degree of disturbance and moisture.

ROCK CLASSIFICATIONS

Rock Classifications are visual descriptions on the basis of the Driller's, Technician's, Geologist's or Geotechnical Engineer's observations of the coring activity and the recovered samples applying the following classifications.

CLASSIFICATION TERM	DESCRIPTION
VERY HARD	NOT SCRATCHED BY KNIFE
HARD	SCRATCHED WITH DIFFICULTY
MEDIUM HARD	SCRATCHED EASILY
SOFT	SCRATCHED WITH FINGERNAIL
VERY WEATHERED	DISINTEGRATED WITH NUMEROUS SOIL SEAM
WEATHERED	SLIGHT DISINTEGRATION, STAINING, NO SEAMS
SOUND	NO EVIDENCE OF ABOVE
MASSIVE	ROCK LAYER GREATER THAN 36" THICK
THICK BEDDED	ROCK LAYER 12" - 36"
BEDDED	ROCK LAYER 4" - 12"
THIN BEDDED	ROCK LAYER 1" - 4"
LAMINATED	ROCK LAYER LESS THAN 1"
FRACTURES	NATURAL BREAKS AT SOME ANGLE TO BEDS

Core sample recovery is expressed as percent recovered of total sampled. The ROCK QUALITY DESIGNATION (RQD) is the total length of core sample pieces exceeding 4" length divided by the total core sample length for N size cored.

GENERAL

- Soil and Rock classifications are made visually on samples recovered. The presence of Gravel, Cobbles and Boulders will influence sample recovery classification density/consistency determination.
- Groundwater, if encountered, was measured and its depth recorded at the time and under the conditions as noted.
- Topsoil or pavements, if present, were measured and recorded at the time and under the conditions as noted.
- Stratification Lines are approximate boundaries between soil types. These transitions may be gradual or distinct and are approximated.

DENTE GROUP, A TERRACON COMPANY	SUBSURFACE LOG **B-1.1**

PROJECT: Lobdell Lane over Boquet River	**DATE**	START: 2/08/18	FINISH: 2/08/18

LOCATION: Elizabethtown, New York	**METHODS:** 3-1/4" I.D. Hollow Stem Augers
CLIENT: Essex County DPW	with ASTM D1586 Sampling
JOB NUMBER: JB175555	**SURFACE ELEVATION:** ± 560’
DRILL TYPE: CME 45 Trailer Mounted Rig	**CLASSIFICATION:** O. Burns / E. Gravelle

SAMPLE		BLOWS ON SAMPLER					CLASSIFICATION / OBSERVATIONS
DEPTH	#	6"	12"	18"	24"	N	**Data from 0’ to 50’ from boring on 5/4/16**
	1	1	2				**FILL:** Brown/Gray Fine to Coarse SAND and
				3	2	5	GRAVEL, trace silt
	2	4	4				Grades Little Gravel, trace silt
				6	7	10	
	3	3	4				Grades Some Gravel
5'				2	3	6	
	4	6	2				Similar with rootlets noted
				2	1	4	
	5	2	1				Grades Little Gravel
				1	2	2	
10'	6	2	1				Grades Dark Brown
				1	2	2	**(MOIST, LOOSE)**
	7	1	1				Dark Brown Fine SAND and SILT
				2	4	3	**(MOIST, LOOSE)**
	8	2	1/18”				Brown Mottled Fine to Medium Sand, Little Silt
15'				-	-	1	
	9	1/12”	-				**(WET, LOOSE)**
				3	18	3	Brown/Orange GRAVEL, Some Fine to Coarse
							Sand, trace silt
20'	10	12	14				**(WET, LOOSE TO FIRM)**
				14	8	28	Gray Fine SAND, Some Silt
25'	11	2	4				Similar
				3	3	7	

DENTE GROUP, A TERRACON COMPANY	SUBSURFACE LOG **B-1.2**

PROJECT: Lobdell Lane over Boquet River	**DATE**	START: 2/08/18	FINISH: 2/08/18

LOCATION: Elizabethtown, New York	**METHODS:** 3-1/4" I.D. Hollow Stem Augers
CLIENT: Essex County DPW	with ASTM D1586 Sampling
JOB NUMBER: JB175555	**SURFACE ELEVATION:** ± 560'
DRILL TYPE: CME 45 Trailer Mounted Rig	**CLASSIFICATION:** O. Burns / E. Gravelle

SAMPLE		BLOWS ON SAMPLER					CLASSIFICATION / OBSERVATIONS
DEPTH	#	6"	12"	18"	24"	N	**Data from 0' to 50' from boring made 5/4/16**
	12	1	1				Gray Fine SAND, Some Silt
				2	1	3	
35'							**(SATURATED, LOOSE)**
	13	1	1				Brown/Gray Varved SILT with partings Fine to
				2	10	3	Medium SAND or CLAY
40'							
	14	4	6				Similar with Fine SAND seams noted
				8	9	14	
45'							
	15	5	7				Similar
				7	8	14	
							Data from 50' to 102' from boring on 2/08/18
50'							
	1	4	5				Gray SILT, Little Fine Sand, few partings CLAY
				10	11	15	
55'							
	2	2	2				Gray SILT and CLAY
				3	4	5	

DENTE GROUP, A TERRACON COMPANY	SUBSURFACE LOG **B-1.3**

PROJECT: Lobdell Lane over Boquet River	**DATE**	START: 2/08/18	FINISH: 2/08/18

LOCATION: Elizabethtown, New York	**METHODS:** 3-1/4" I.D. Hollow Stem Augers
CLIENT: Essex County DPW	with ASTM D1586 Sampling
JOB NUMBER: JB175555	**SURFACE ELEVATION:** ± 560'
DRILL TYPE: CME 45 Trailer Mounted Rig	**CLASSIFICATION:** O. Burns / E. Gravelle

SAMPLE		BLOWS ON SAMPLER					CLASSIFICATION / OBSERVATIONS
DEPTH	#	6"	12"	18"	24"	N	
	3	WH	WH				Gray SILT, Little Clay, Little Sand
				WH	WH	WH	
65'							
	4	WH	WH				Gray SILT, trace to Some Clay
				WH	1	WH	
70'							
	5	WH	WH				Similar
				3	5	3	
75'							
	6	2	8				Gray CLAY, Some Silt, Little Sand
				5	2	13	
80'							
	7	2	6				Similar
				8	5	14	
85'							
	8	WH	1				Gray SILT, trace fine sand, few partings CLAY
				1	2	2	

DENTE GROUP, A TERRACON COMPANY	SUBSURFACE LOG **B-1.4**

PROJECT: Lobdell Lane over Boquet River	**DATE**	START: 2/08/18	FINISH: 2/08/18

LOCATION: Elizabethtown, New York	**METHODS:** 3-1/4" I.D. Hollow Stem Augers
CLIENT: Essex County DPW	with ASTM D1586 Sampling
JOB NUMBER: JB175555	**SURFACE ELEVATION:** ± 560’
DRILL TYPE: CME 45 Trailer Mounted Rig	**CLASSIFICATION:** O. Burns / E. Gravelle

SAMPLE		BLOWS ON SAMPLER					CLASSIFICATION / OBSERVATIONS
DEPTH	#	6"	12"	18"	24"	N	
	9	1	1				Gray SAND and SILT, Some Clay, trace fine gravel
				6	9	7	
95'	10	3	8				Gray SILT, trace to Little Clay with thin seams
				4	6	12	Fine to Medium SAND, Some Silt
100'	11	3	6				Gray SILT, Little Fine to Medium Sand
				5	4	11	**(SATURATED, LOOSE TO FIRM/V. SOFT TO MEDIUM)**
							Boring Ended at 102.0’
105'							No measurable groundwater in augers at completion of drilling and sampling.
110'							
115'							

DENTE GROUP, A TERRACON COMPANY	SUBSURFACE LOG **B-2.1**

PROJECT: Lobdell Lane over Boquet River	**DATE**	START: 2/13/18	FINISH: 2/13/18

LOCATION: Elizabethtown, New York	**METHODS:** 3-1/4" I.D. Hollow Stem Augers
CLIENT: Essex County DPW	with ASTM D1586 Sampling
JOB NUMBER: JB175555	**SURFACE ELEVATION:** ± 564'
DRILL TYPE: CME 45 Trailer Mounted Rig	**CLASSIFICATION:** O. Burns / E. Gravelle

SAMPLE		BLOWS ON SAMPLER					CLASSIFICATION / OBSERVATIONS
DEPTH	#	6"	12"	18"	24"	N	**Data from 0' to 50' from boring on 5/4/16**
	1	13	18				**FILL:** Brown/Gray Fine to Coarse SAND and
				15	10	33	GRAVEL, trace silt
	2	7	7				Similar with trace plastic
				7	22	14	
	3	9	13				Similar
5'				8	6	21	
	4	8	7				Similar
				6	6	13	
	5	9	6				Grades Little Asphalt
				5	3	11	
10'	6	2	3				Brown Mottled Fine to Coarse SAND, Some
				4	3	7	Gravel, Little Silt
	7	2	3				
				4	3	7	Brown Fine to Coarse SAND and GRAVEL
							(MOIST, COMPACT TO LOOSE)
15'	8	3	5				Brown Fine SAND, Little Silt, Wet
				7	10	12	
20'	9	1	1				Brown/Gray Banded Fine SAND and SILT
				1	3	2	
25'	10	3	4				Brown/Gray Fine SAND, Some Silt
				6	6	10	

DENTE GROUP, A TERRACON COMPANY	SUBSURFACE LOG **B-2.2**

PROJECT: Lobdell Lane over Boquet River	**DATE**	START: 2/13/18	FINISH: 2/13/18

LOCATION: Elizabethtown, New York	**METHODS:** 3-1/4" I.D. Hollow Stem Augers
CLIENT: Essex County DPW	with ASTM D1586 Sampling
JOB NUMBER: JB175555	**SURFACE ELEVATION:** ± 564'
DRILL TYPE: CME 45 Trailer Mounted Rig	**CLASSIFICATION:** O. Burns / E. Gravelle

SAMPLE		BLOWS ON SAMPLER					CLASSIFICATION / OBSERVATIONS
DEPTH	#	6"	12"	18"	24"	N	**Data from 0' to 50' from boring on 5/4/16**
	11	1	2				Gray SILT and Fine SAND
				1	2	3	
35'	12	1	1				Similar
				2	4	3	
40'	13	1	2				Similar
				3	3	5	
							(SATURATED, FIRM TO LOOSE)
45'	14	7	9				Brown/Gray SILT with occasional partings Fine
				10	11	19	to Medium SAND or CLAY
							Data from 50' to 102' from boring on 2/13/18
50'	1	5	5				Gray SILT and Fine SAND with partings SILT
				8	13	13	and/or CLAY
55'	2	7	10				Gray SILT
				12	13	22	

DENTE GROUP, A TERRACON COMPANY

SUBSURFACE LOG **B-2.3**

PROJECT: Lobdell Lane over Boquet River	**DATE**	START: 2/13/18	FINISH: 2/13/18
LOCATION: Elizabethtown, New York	**METHODS:** 3-1/4" I.D. Hollow Stem Augers		
CLIENT: Essex County DPW	with ASTM D1586 Sampling		
JOB NUMBER: JB175555	**SURFACE ELEVATION:** ± 564'		
DRILL TYPE: CME 45 Trailer Mounted Rig	**CLASSIFICATION:** O. Burns / E. Gravelle		

SAMPLE		BLOWS ON SAMPLER					CLASSIFICATION / OBSERVATIONS
DEPTH	#	6"	12"	18"	24"	N	
	3	13	8				Gray SILT, Some Clay, Some Sand
				8	9	16	
65'	4	WH	WH				Gray SILT with partings CLAY
				2	2	2	
70'	5	WH	2				Similar
				4	5	6	
75'	6	3	5				Gray SILT, Some Sand, Little Clay
				4	6	9	
80'	7	4	5				Similar
				7	7	12	
85'	8	4	3				Similar
				9	8	12	

DENTE GROUP, A TERRACON COMPANY	SUBSURFACE LOG **B-2.4**

PROJECT: Lobdell Lane over Boquet River	**DATE**	START: 2/13/18	FINISH: 2/13/18

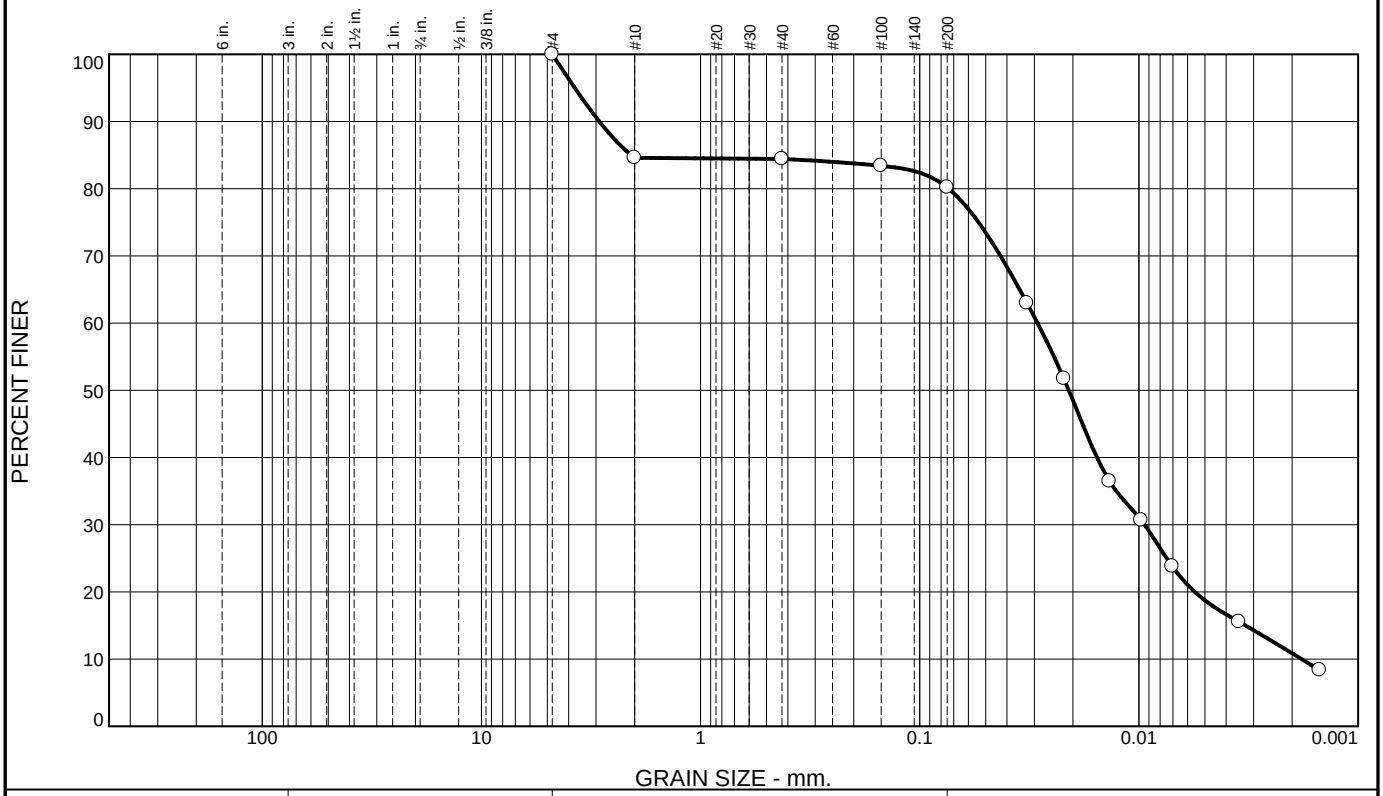
LOCATION: Elizabethtown, New York	**METHODS:** 3-1/4" I.D. Hollow Stem Augers
CLIENT: Essex County DPW	with ASTM D1586 Sampling
JOB NUMBER: JB175555	**SURFACE ELEVATION:** ± 564’
DRILL TYPE: CME 45 Trailer Mounted Rig	**CLASSIFICATION:** O. Burns / E. Gravelle

SAMPLE		BLOWS ON SAMPLER					CLASSIFICATION / OBSERVATIONS
DEPTH	#	6"	12"	18"	24"	N	
	9	3	6				Gray SILT and SAND, Little Clay
				7	8	13	
95'	10	4	5				Gray SILT, trace to Some Clay
				8	9	13	
100'	11	4	6				Grades trace to Little Clay, trace fine sand
				6	11	12	**(SATURATED, LOOSE TO FIRM / MEDIUM)**
							Boring Ended at 102.0’
105'							No measurable groundwater in augers at completion of drilling and sampling.
110'							
115'							

LABORATORY TEST RESULTS

Lobdell Lane Bridge
Elizabethtown, NY

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	15.4	0.2	4.2	61.5	18.7

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	84.6		
#40	84.4		
#100	83.4		
#200	80.2		

* (no specification provided)

Material Description

SILT, Little C-F-M Sand and Clay

Atterberg Limits

PL= NP LL= NP PI= NP

Coefficients

D_{90}= 2.8975 D_{85}= 2.0755 D_{60}= 0.0290
D_{50}= 0.0209 D_{30}= 0.0094 D_{15}= 0.0033
D_{10}= 0.0018 C_u= 16.02 C_c= 1.69

Classification

USCS= ML AASHTO= A-4(0)

Remarks

Per ASTM D422 Washed

Source of Sample: Soil Borings **Depth:** 60'-62'
Sample Number: 516 B-1/S-3

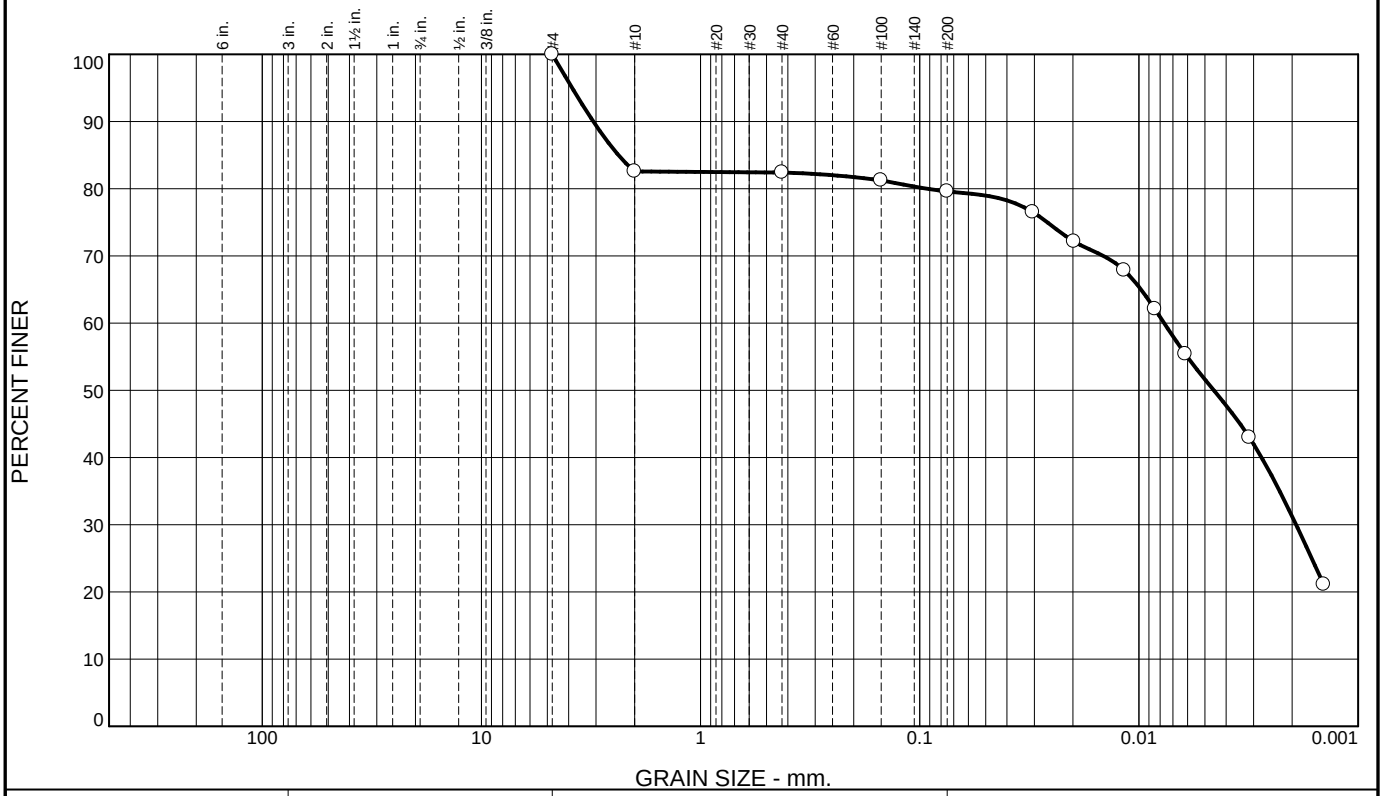
Date: 3-1-18

EVERGREEN TESTING, INC.
A Terracon Company
Watervliet, NY

Client: Essex Co. DPW
Project: Lobdell Lane Bridge
Elizabethtown, NY
Project No: JB175555 **Figure** 516

Tested By: AB **Checked By:** FD

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	17.4	0.2	2.8	28.0	51.6

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	82.6		
#40	82.4		
#100	81.2		
#200	79.6		

* (no specification provided)

Material Description

CLAY, Some Silt and C-F-M Sand

Atterberg Limits

PL= NP LL= NP PI= NP

Coefficients

D_{90}= 3.0861 D_{85}= 2.3711 D_{60}= 0.0077
D_{50}= 0.0046 D_{30}= 0.0019 D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= ML AASHTO= A-4(0)

Remarks

Per ASTM D422 Washed

Source of Sample: Soil Borings **Depth:** 75'-77'
Sample Number: 517 B-1/S-6

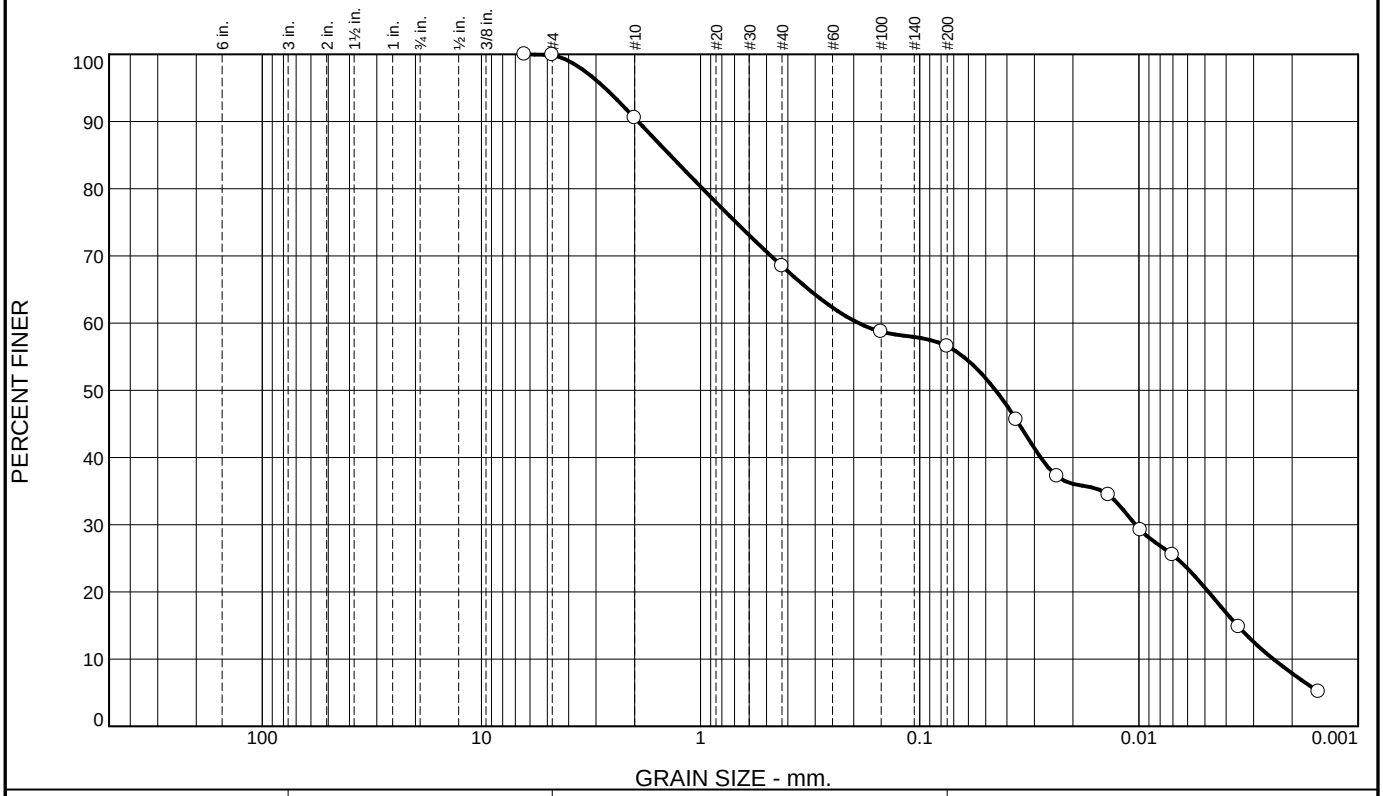
Date: 3-1-18

EVERGREEN TESTING, INC.
A Terracon Company
Watervliet, NY

Client: Essex Co. DPW
Project: Lobdell Lane Bridge
Elizabethtown, NY
Project No: JB175555 **Figure** 517

Tested By: AB **Checked By:** FD

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.1	9.4	22.0	11.9	36.0	20.6

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
0.25"	100.0		
#4	99.9		
#10	90.5		
#40	68.5		
#100	58.7		
#200	56.6		

* (no specification provided)

Material Description

M-F-C SAND and SILT, Some Clay, trace fine gravel

Atterberg Limits

PL= NP LL= NP PI= NP

Coefficients

D_{90}= 1.9301 D_{85}= 1.3771 D_{60}= 0.1901
D_{50}= 0.0451 D_{30}= 0.0104 D_{15}= 0.0036
D_{10}= 0.0024 C_u= 78.04 C_c= 0.23

Classification

USCS= ML AASHTO= A-4(0)

Remarks

Per ASTM D422 Washed

Source of Sample: Soil Borings **Depth:** 90'-92'
Sample Number: 518 B-1/S-9

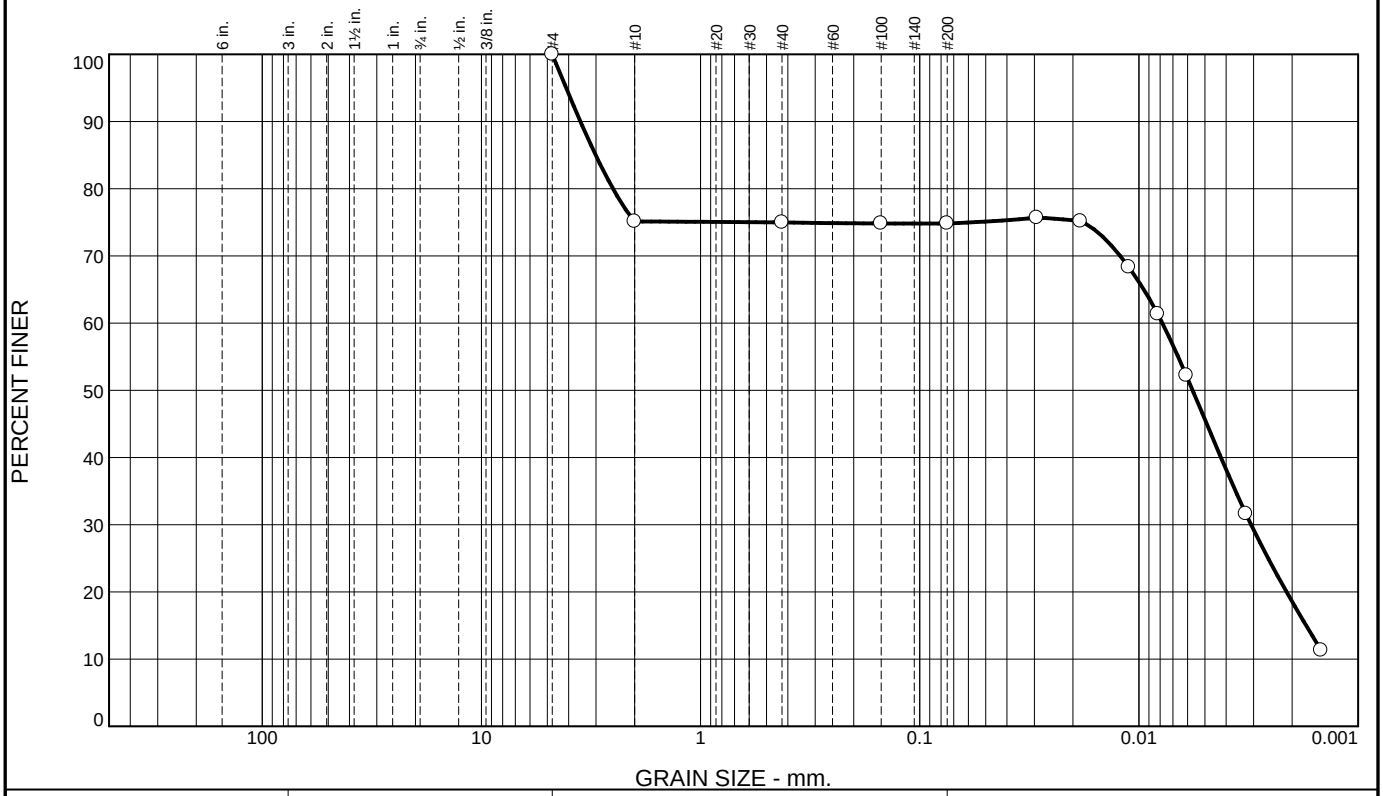
Date: 3-1-18

EVERGREEN TESTING, INC.
A Terracon Company
Watervliet, NY

Client: Essex Co. DPW
Project: Lobdell Lane Bridge
Elizabethtown, NY
Project No: JB175555 **Figure** 518

Tested By: AB **Checked By:** FD

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	24.9	0.1	0.2	29.1	45.7

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	75.1		
#40	75.0		
#100	74.8		
#200	74.8		

* (no specification provided)

Material Description

CLAY, Some Silt and C-F-M Sand

Atterberg Limits

PL= NP LL= NP PI= NP

Coefficients

D_{90}= 3.5340 D_{85}= 3.0105 D_{60}= 0.0078
D_{50}= 0.0057 D_{30}= 0.0031 D_{15}= 0.0017
D_{10}= C_u= C_c=

Classification

USCS= ML AASHTO= A-4(0)

Remarks

Per ASTM D422 Washed

Source of Sample: Soil Borings **Depth:** 60'-62'
Sample Number: 519 B-2/S-3

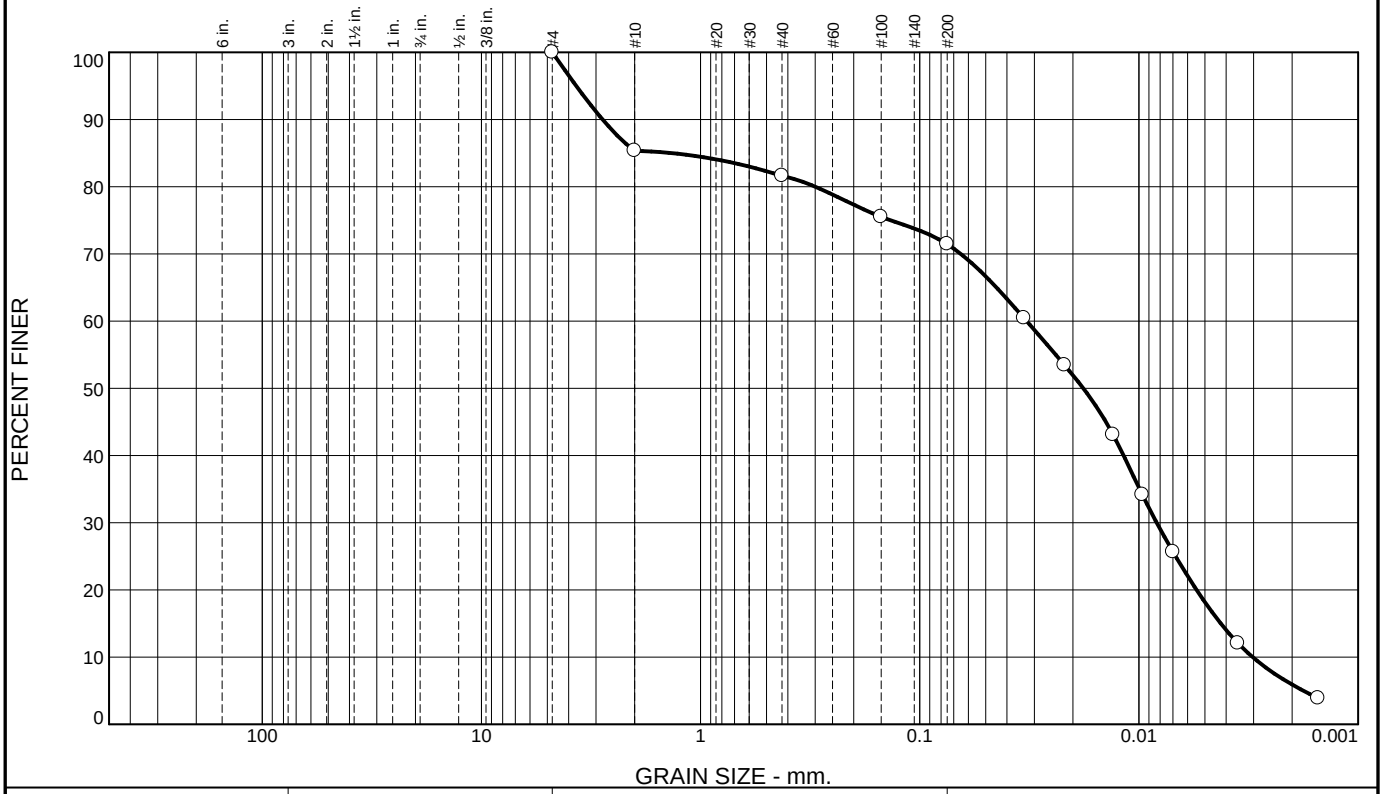
Date: 3-1-18

EVERGREEN TESTING, INC.
A Terracon Company
Watervliet, NY

Client: Essex Co. DPW
Project: Lobdell Lane Bridge
Elizabethtown, NY
Project No: JB175555 **Figure** 519

Tested By: AB **Checked By:** FD

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	14.7	3.7	10.2	53.2	18.2

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	85.3		
#40	81.6		
#100	75.5		
#200	71.4		

* (no specification provided)

Material Description

SILT, Some C-F-M Sand, Little Clay

Atterberg Limits

PL= NP LL= NP PI= NP

Coefficients

D_{90}= 2.8013 D_{85}= 1.3571 D_{60}= 0.0325
D_{50}= 0.0179 D_{30}= 0.0083 D_{15}= 0.0042
D_{10}= 0.0030 C_u= 10.75 C_c= 0.70

Classification

USCS= ML AASHTO= A-4(0)

Remarks

Per ASTM D422 Washed

Source of Sample: Soil Borings **Depth:** 75'-77'
Sample Number: 520 B-2/S-6

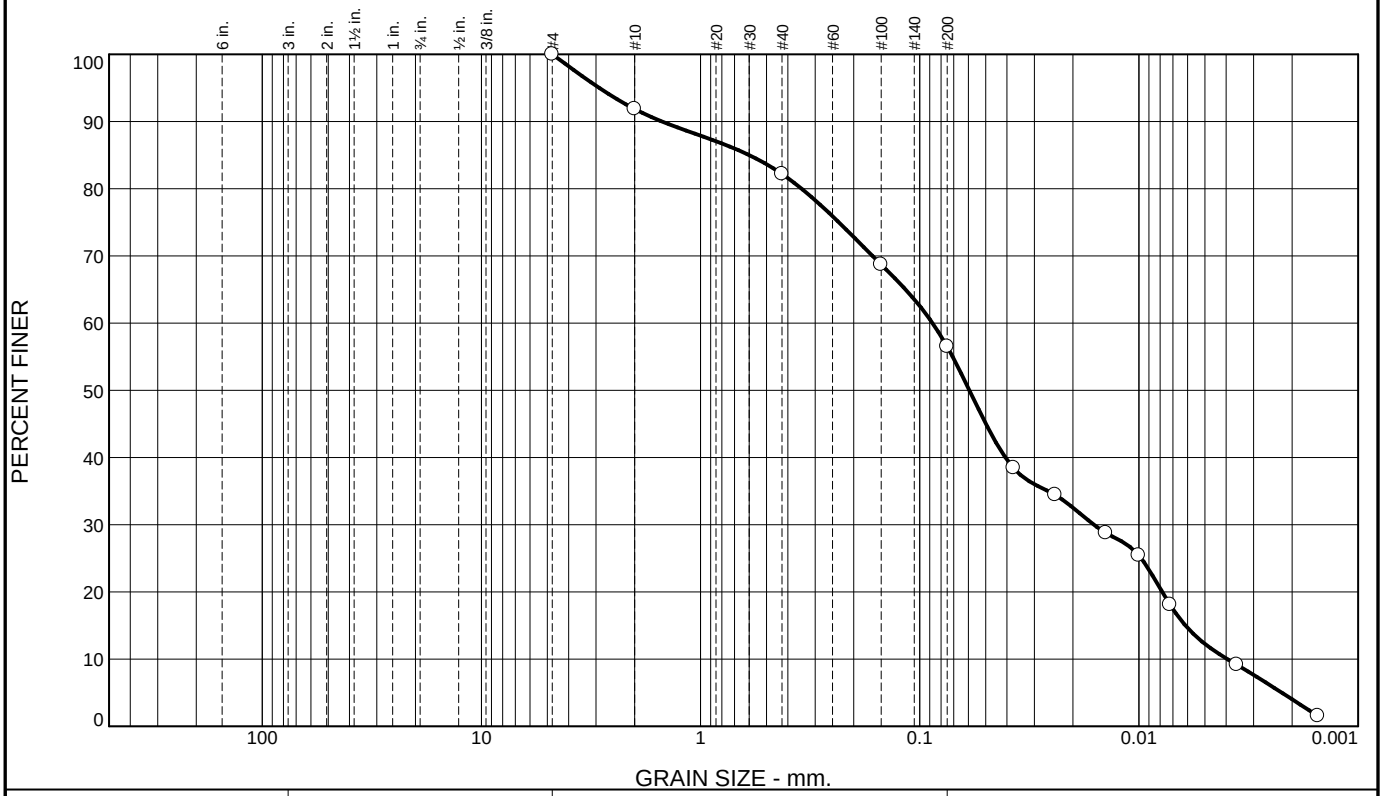
Date: 3-1-18

EVERGREEN TESTING, INC.
A Terracon Company
Watervliet, NY

Client: Essex Co. DPW
Project: Lobdell Lane Bridge
Elizabethtown, NY
Project No: JB175555 **Figure** 520

Tested By: AB **Checked By:** FD

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	8.2	9.6	25.7	44.2	12.3

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	91.8		
#40	82.2		
#100	68.7		
#200	56.5		

* (no specification provided)

Material Description

SILT and F-M-C SAND, Little Clay

Atterberg Limits

PL= NP LL= NP PI= NP

Coefficients

D_{90}= 1.5012 D_{85}= 0.6008 D_{60}= 0.0875
D_{50}= 0.0594 D_{30}= 0.0161 D_{15}= 0.0061
D_{10}= 0.0039 C_u= 22.15 C_c= 0.75

Classification

USCS= ML AASHTO= A-4(0)

Remarks

Per ASTM D422 Washed

Source of Sample: Soil Borings **Depth:** 90'-92'
Sample Number: 521 B-2/S-9

Date: 3-1-18

EVERGREEN TESTING, INC.
A Terracon Company
Watervliet, NY

Client: Essex Co. DPW
Project: Lobdell Lane Bridge
Elizabethtown, NY
Project No: JB175555 **Figure** 521

Tested By: AB **Checked By:** FD

Drawings

GENERAL NOTES

1. DESIGN SPECIFICATIONS: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 8TH EDITION – 2017, INCLUDING ALL CURRENT REVISIONS.

2. MATERIAL SPECIFICATIONS: NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) STANDARD SPECIFICATIONS, CONSTRUCTION AND MATERIALS, 2008 DATED TO THE MAY 1, 2019 LETTING.

3. STREAM PROTECTION: DURING THE COURSE OF CONSTRUCTION, THE WORK SHALL BE CONDUCTED IN A MANNER AS TO PREVENT OR REDUCE TO A MINIMUM ANY DAMAGE TO THE STREAM FROM POLLUTION BY DEBRIS, SEDIMENT OR OTHER FOREIGN MATERIAL, OR FROM MANIPULATION OF EQUIPMENT AND/OR MATERIALS IN OR NEAR THE STREAM.

4. WATER WHICH HAS BEEN USED FOR WASH PURPOSES OR OTHER SIMILAR OPERATIONS WHICH CAUSE THIS WATER TO BECOME POLLUTED WITH SAND, SILT, CEMENT, OIL, OR OTHER IMPURITIES, SHALL NOT BE RETURNED DIRECTLY TO THE STREAM. IF WATER IS USED FROM THE STREAM, AN INTAKE OR TEMPORARY DAM SHALL BE CONSTRUCTED TO PROTECT AND MAINTAIN WATER RIGHTS AND TO PROTECT FISH LIFE DOWNSTREAM.

5. DUE TO THE NATURE OF RECONSTRUCTION PROJECTS, THE EXACT EXTENT OF RECONSTRUCTION WORK CANNOT ALWAYS BE ACCURATELY DETERMINED PRIOR TO THE COMMENCEMENT OF WORK. THE CONSTRUCTION DOCUMENTS HAVE BEEN PREPARED BASED ON FIELD INSPECTIONS AND OTHER AVAILABLE INFORMATION. ACTUAL FIELD CONDITIONS MAY REQUIRE MODIFICATIONS TO THE CONSTRUCTION DETAILS AND WORK QUANTITIES.

6. THE OWNER HAS OBTAINED PERMITS FOR THIS PROJECT FROM APPROPRIATE REGULATORY AGENCIES. PERMIT CONDITIONS SHALL BE CONSIDERED A PART OF THIS WORK AND SHALL BE STRICTLY ADHERED TO. COPIES OF PERMITS ARE AVAILABLE FROM THE ESSEX COUNTY DEPARTMENT OF PUBLIC WORKS IN LEWIS, NY. ALL PERMIT NOTICES SHALL BE CLEARLY POSTED ON SITE BY THE CONTRACTOR.

7. UNDERGROUND PIPELINE AND UTILITY LOCATIONS, IF INDICATED, ARE BASED ON VISUAL EVIDENCE ABOVE EXISTING GRADE AND ARE APPROXIMATE ONLY. THE LOCATIONS OF ALL UTILITIES SHALL BE DETERMINED PRIOR TO COMMENCING CONSTRUCTION AND PROTECTED OR REROUTED AS REQUIRED TO PREVENT DAMAGE OR INTERRUPTION OF UTILITY SERVICE.

8. SUBMITTALS: THE CONTRACTOR SHALL SUBMIT MIN. (5) COPIES OF SHOP DRAWINGS AND SUBMITTALS FOR THE FOLLOWING ITEMS FOR REVIEW BY ESSEX COUNTY AND THE ENGINEER. IN LIEU OF (5) HARD COPIES, (1) COPY OF SHOP DRAWINGS AND SUBMITTALS MAY BE TRANSMITTED ELECTRONICALLY. NO FABRICATION OF THESE ITEMS SHALL BE PERMITTED UNTIL THE SUBMITTALS HAVE BEEN REVIEWED AND ACCEPTED.

   A. PRE-ENGINEERED STEEL TRUSS SUPERSTRUCTURE DESIGN CALCULATIONS
   B. PRE-ENGINEERED STEEL TRUSS SUPERSTRUCTURE SHOP DRAWINGS
   C. CONCRETE MIX DESIGNS
   D. CONCRETE REINFORCING STEEL SHOP DRAWINGS
   E. SILT FENCE
   F. BRIDGE RAIL AND GUIDE RAIL SHOP DRAWINGS
   G. DEWATERING PLAN AND CALCULATIONS
   H. BACKFILL MATERIALS
   I. DRAINAGE BOARD
   J. ARMORLESS JOINT SYSTEM COMPONENTS
   K. SIGNAGE USED FOR MAINTENANCE AND PROTECTION OF TRAFFIC
   L. TEMPORARY BARRIER USED FOR MAINTENANCE AND PROTECTION OF TRAFFIC
   M. TEMPORARY BRIDGE DESIGN CALCULATIONS
   N. TEMPORARY BRIDGE SHOP DRAWINGS
   O. TRUSS BEARINGS & ANCHOR BOLT DESIGN CALCULATIONS
   P. TRUSS BEARINGS & ANCHOR BOLT SHOP DRAWINGS
   Q. STRINGER BEARING & ANCHOR BOLT DESIGN CALCULATIONS
   R. STRINGER BEARING & ANCHOR BOLT SHOP DRAWINGS
   S. BRIDGE DECK PENETRATING SEALANT
   T. TURBIDITY CURTAIN
   U. PRECAST CONCRETE RETAINING WALL SHOP DRAWINGS
   V. PRECAST CONCRETE RETAINING WALL DESIGN CALCULATIONS

1

9. THE WORK SHALL CONFORM WITH THE REQUIREMENTS OF NYSDOT SPEC SECTION 107-05 – "SAFETY AND HEALTH REQUIREMENTS" AT ALL TIMES.

10. WORK BY OWNER – THE OWNER SHALL PERFORM THE FOLLOWING WORK FOR THE PROJECT.
   – COORDINATION WITH UTILITY COMPANIES FOR TEMPORARY OR PERMANENT RELOCATION OF UTILITIES.
   – CONCRETE AND SOIL COMPACTION TESTING (CONTRACTOR SHALL COORDINATE)
   – SUPPLY PRECAST CONCRETE SEGMENTAL BLOCK RETAINING WALL UNITS (CONTRACTOR TO INSTALL)
   – SUPPLY BAT PRESENCE SURVEY BEFORE TREE CUTTING
   – TRAFFIC CONTROL DEVICES & SIGNAGE FOR ONE WAY TRAFFIC TEMPORARY BRIDGE OPERATION

SURVEY NOTES

1. ELEVATIONS ARE BASED ON AN ARBITRARY VERTICAL DATUM.

2. TWO FOOT CONTOUR INTERVAL INDICATED.

3. THE LAYOUT OF ALL WORK FOR THE PROJECT SHALL BE COMPLETED BY A LICENSED SURVEYOR RETAINED BY THE CONTRACTOR.

EROSION CONTROL NOTES

1. ALL SILT FENCES SHALL BE IN PLACE AT LOCATIONS INDICATED IN ACCORDANCE WITH THE DETAILS BEFORE COMMENCEMENT OF ANY DISTURBANCE OF EXISTING GROUND SURFACE.

2. ALL EXPOSED CUT AND FILL EARTHWORK SURFACES SHALL BE COVERED WITH MIN. 3" OF TOPSOIL AND TURFED IN ACCORDANCE WITH NYSDOT SPEC. SECTION 713, UNLESS NOTED TO BE COVERED BY PAVEMENT OR STRUCTURES.

3. ALL AREAS UNWORKED FOR MORE THAN 14 DAYS MUST BE SEEDED WITH ANNUAL RYE GRASS AND PROTECTED WITH STRAW MULCH.

4. AFTER EVERY STORM EVENT IN EXCESS OF 1/2" RAINFALL, INSPECT ALL SILT FENCES. REMOVE ACCUMULATED MATERIAL, FILL ERODED AREAS AND RESET SILT FENCES.

5. ENCLOSE ALL STOCKPILES WITH SILT FENCE.

6. EROSION CONTROL MEASURES SHALL CONFORM WITH THE REQUIREMENTS OF NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL.

7. THE CONTRACTOR SHALL PROVIDE A DUMPSTER AT EACH SITE FOR DISPOSAL OF DEBRIS, GARBAGE AND LITTER.

8. SILT FENCES SHALL REMAIN IN PLACE UNTIL A STABLE GROWTH OF TURF IS PRESENT AT ALL DISTURBED AREAS.

9. THE CONTRACTOR SHALL PROVIDE AN APPROVED SECONDARY CONTAINMENT SYSTEM AT EACH SITE FOR ALL FUEL AND PETROLEUM PRODUCTS TEMPORARILY STORED ON THE SITE.

TREE REMOVAL NOTES

1. ALL TREE AND BRUSH REMOVAL WORK SHALL BE BY THE CONTRACTOR AND SHALL INCLUDE ONLY TREES INDICATED FOR REMOVAL ON THE DRAWINGS.

2. A SURVEY FOR THE PRESENCE OF BATS IN THE VICINITY OF THE TREES TO BE REMOVED SHALL BE PERFORMED BY THE COUNTY THE NIGHT PRIOR TO THE CUTTING OF ANY TREES. THE CONTRACTOR SHALL PROVIDE AT LEAST FOUR WORKING DAYS NOTICE TO THE COUNTY BEFORE TREE CUTTING WORK IS SCHEDULED TO BE PERFORMED. NO CUTTING OF TREES SHALL BE PERFORMED BEFORE THE BAT CONSULTANT ADVISES THE CONTRACTOR THAT NO BATS ARE PRESENT IN THE WORK AREA.

DEMOLITION AND REMOVAL NOTES

1. THE CONTRACTOR SHALL VISIT THE SITE AND VERIFY ALL DEMOLITION QUANTITIES AND CONDITIONS WHICH MAY EFFECT THE WORK AND SHALL INCLUDE IN HIS BID ALL COSTS ASSOCIATED WITH THE REQUIRED DEMOLITION OF THE EXISTING STRUCTURES.

2. DURING DEMOLITION AND REMOVAL OPERATIONS, DO NOT DROP WASTE CONCRETE, TIMBER, STEEL, DEBRIS OR OTHER MATERIAL INTO THE AREA BELOW. PLATFORMS, NETS, SCREENS OR OTHER PROTECTIVE DEVICES SHALL BE USED TO CATCH DEMOLITION DEBRIS. IF, IN THE OPINION OF THE ENGINEER, ADEQUATE PROTECTION DEVICES ARE NOT BEING EMPLOYED, THE WORK SHALL BE SUSPENDED UNTIL ADEQUATE PROTECTION IS PROVIDED. ANY DEBRIS FALLING INTO THE WATERWAY SHALL BE PROMPTLY REMOVED.

3. THE CONTRACTOR SHALL EXERCISE DUE CARE SUCH THAT ANY MATERIALS THAT ARE TO REMAIN IN PLACE OR THAT WILL REMAIN THE PROPERTY OF ESSEX COUNTY WILL NOT BE DAMAGED. ANY SUCH ITEMS DAMAGED DURING THE COURSE OF WORK SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION OF ESSEX COUNTY AT THE EXPENSE OF THE CONTRACTOR.

4. UNLESS SPECIFICALLY NOTED OTHERWISE, ALL ITEMS TO BE REMOVED IN THE CONTRACT SHALL BE DISPOSED OF OFF-SITE IN A LEGAL MANNER.

5. ALL ITEMS INDICATED TO BE SALVAGED SHALL BE DELIVERED TO THE ESSEX COUNTY DEPARTMENT OF PUBLIC WORKS YARD IN LEWIS, NY AND OFF-LOADED BY THE CONTRACTOR.

6. THE PAINT SYSTEM ON THE EXISTING SUPERSTRUCTURE FRAMING AND BRIDGE RAILS HAS NOT BEEN TESTED TO DETERMINE THE PRESENCE OF LEAD, ASBESTOS, OR OTHER HAZARDOUS MATERIALS, BUT MAY CONTAIN SUCH MATERIALS DUE TO THE AGE OF THE EXISTING STRUCTURE. THE CONTRACTOR SHALL TAKE ALL PRECAUTIONS, INCLUDING TESTING OF THE EXISTING PAINT SYSTEM FOR HAZARDOUS MATERIALS, AS THEY DEEM APPROPRIATE AND NECESSARY TO PROTECT THEIR WORKERS AT ALL TIMES DURING DEMOLITION OPERATIONS.

MAINTENANCE AND PROTECTION OF TRAFFIC NOTES

1. SEE NOTES ON DWG. DOT-1

ARMORLESS JOINT SYSTEM NOTES

1. ELASTOMERIC CONCRETE HEADER MATERIAL AND PREFORMED CLOSED-CELL FOAM SEALS FOR THE DECK JOINTS AT EACH END OF THE BRIDGE SHALL COMPLY WITH THE REQUIREMENTS INDICATED FOR ARMORLESS BRIDGE JOINT SYSTEMS IN NYS STANDARD SPECIFICATION SECTION 705-04 FOR SYSTEMS WITH PREFORMED CLOSED-CELL FOAM MATERIAL AND SHALL BE LISTED ON THE NYSDOT APPROVED LIST FOR THIS TYPE OF SYSTEM.

2. THE JOINT OPENING WIDTH SHALL BE FIELD VERIFIED AND THE FOAM SEAL WIDTH AND DEPTH SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS FOR THE MEASURED JOINT OPENING.

3. THE PREPARATION OF ALL SURFACES TO RECEIVE THE JOINT HEADER MATERIALS AND THE INSTALLATION OF ALL HEADER AND SEAL MATERIALS SHALL BE IN STRICT ACCORDANCE WITH ALL MANUFACTURER'S INSTALLATION REQUIREMENTS FOR A WATERTIGHT INSTALLATION.

4. FOAM JOINT SEALS SHALL BE PREFABRICATED TO CONFORM TO THE GEOMETRIC REQUIREMENTS OF THE BRIDGE CROSS-SECTION FOR A ONE-PIECE CONTINUOUS FOAM SEAL INSTALLATION.

5. THE SUPPLIER SHALL PROVIDE A REPRESENTATIVE FOR TECHNICAL ASSISTANCE AT THE JOB SITE AT ALL TIMES DURING INSTALLATION OF THE JOINT SYSTEM. NO INSTALLATION OF NEW MATERIALS SHALL BE PERMITTED PRIOR TO RECEIVING ACCEPTANCE OF THE SUBSTRATE PREPARATION BY THE MANUFACTURER'S REPRESENTATIVE.

6. ALLOWABLE AMBIENT TEMPERATURES FOR JOINT SYSTEM INSTALLATION SHALL CONFORM STRICTLY TO ALL MANUFACTURER'S REQUIREMENTS. THE CONTRACTOR SHALL PROVIDE TEMPORARY HEAT OR COOLING OF THE WORK AREA IN A MANNER ACCEPTABLE TO THE ENGINEER TO MAINTAIN APPROPRIATE AMBIENT AND SUBSTRATE TEMPERATURES THROUGHOUT THE INSTALLATION AND CURING PERIODS.

RIPRAP NOTES

1. ALL RIPRAP SHALL BE SOUND CLEAN ANGULAR OR ROUNDED STONE OF THE SIZES INDICATED ON THE DRAWINGS. RIPRAP SHALL BE FREE OF ORGANIC MATERIALS, DEBRIS, SOIL AND OTHER DELETERIOUS MATTER.

2. STONE SIZES SHALL CONFORM TO THE REQUIREMENTS OF NYSDOT STANDARD SPECIFICATION SECTION SECTION 620 AND SHALL BE WELL GRADED WITHIN THE LIMITS INDICATED WITH SUFFICIENT SMALLER STONE TO FILL THE VOIDS BETWEEN LARGER STONES. ALL RIPRAP SHALL BE MACHINE OR HAND PLACED AND HAND CHINKED TO PROVIDE A UNIFORM FINISH SURFACE TRUE TO THE GRADES INDICATED ON THE DRAWINGS. STONE SIZES SHALL BE EVENLY DISTRIBUTED THROUGHOUT.

3. THE MINIMUM LAYER THICKNESS SHALL BE AS INDICATED ON THE DRAWINGS.

DEWATERING NOTES

1. DEWATERING FACILITIES SHALL BE PROVIDED BY THE CONTRACTOR TO DEWATER AREAS WHERE EXCAVATION WORK WILL BE PERFORMED AS NECESSARY TO COMPLETELY DEWATER WORK AREAS FOR NEW ABUTMENT CONSTRUCTION.

2. THE CONTRACTOR SHALL RETAIN A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN NEW YORK STATE TO DESIGN A DEWATERING SYSTEM FOR THE PROJECT SITE. THE CONTRACTOR SHALL SUBMIT A DEWATERING PLAN, SEALED AND SIGNED BY THEIR PROFESSIONAL ENGINEER, WHICH SHALL INDICATE PROPOSED COFFERDAM SIZES, LOCATIONS AND MATERIALS, PROPOSED DIVERSION PUMP SIZES AND LOCATIONS, PIPING SIZES AND OTHER ELEMENTS OF THE DEWATERING SYSTEM. THE DEWATERING PLAN SHALL BE DESIGNED TO PROVIDE A STABLE EXCAVATION DEWATERED TO A LEVEL BELOW THE BOTTOM OF FOOTING ELEVATIONS. THE CONTRACTOR SHALL SUBMIT THE DEWATERING PLAN, INCLUDING CALCULATIONS, SIGNED AND SEALED BY THE DEWATERING DESIGN ENGINEER, FOR REVIEW AND ACCEPTANCE BY ESSEX COUNTY BEFORE COMMENCING ANY EXCAVATION OR DEMOLITION WORK FOR THE PROJECT.

3. THE DEWATERING SYSTEM DESIGN SHALL INCLUDE PUMPS TO DISCHARGE WATER FROM THE EXCAVATION AREA TO SEDIMENT FILTRATION BAGS ENCLOSED WITHIN A SILT FENCE TO BE INSTALLED AT LOCATIONS INDICATED ON THE SITE PLANS.

4. THE CONTRACTOR SHALL PROVIDE A STANDBY PUMP OF EQUAL CAPACITY TO THE PUMPS TO BE USED IN THE DEWATERING SYSTEM.

5. THE DEWATERING PROCESS SHALL BE COMPLETED UNDER THE OVERSIGHT OF ESSEX COUNTY TO ENSURE ALL WATER QUALITY REQUIREMENTS ARE MET.

EARTHWORK NOTES

1. EXCAVATION SHALL BE TO ELEVATIONS INDICATED WITH A TOLERANCE OF PLUS OR MINUS 1". EXCAVATIONS SHALL BE OF SUFFICIENT SIZE FOR PLACING AND REMOVING FORMS, AS WELL AS INSPECTIONS.

2. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL STAKE OUT ALL IMPROVEMENTS AND VERIFY GRADES AND ELEVATIONS. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.

3. BACKFILL MATERIALS SHALL BE SELECT STRUCTURAL FILL CONFORMING WITH NYSDOT SPEC SECTION 203. ALL BACKFILL SHALL BE PLACED IN MAXIMUM 12" LIFTS AND COMPACTED TO 95% OF THE MAXIMUM DENSITY AS ESTABLISHED THROUGH THE MODIFIED PROCTOR COMPACTION TEST PER ASTM D1557.

4. SUBBASE COURSE MATERIAL FOR APPROACH ROADWAYS SHALL BE A TYPE 2 SUBBASE CONFORMING WITH NYSDOT SPEC. SECTIONS 304 AND 733-04.

5. EMBANKMENT FILL MATERIAL FOR ROADWAYS SHALL CONFROM WITH NYSDOT SPEC. SECTIONS 203. ALL EMBANKMENT FILL SHALL BE PLACED IN MAXIMUM 12" LIFTS AND COMPACTED TO 95% OF THE MAXIMUM DENSITY AS ESTABLISHED THROUGH THE MODIFIED PROCTOR COMPACTION TEST PER ASTM D1557.

6. MATERIAL STOCKPILES, IF REQUIRED, SHALL BE LOCATED WHOLLY WITHIN THE WORK AREA. ADDITIONAL SILT FENCES SHALL BE PROVIDED AT THE BASE OF ALL STOCKPILES AND AS DIRECTED IN THE FIELD BY THE ENGINEER OR THE OWNER.

7. ALL TRENCHES AND OTHER EXCAVATED SIDE SLOPES INDICATED ON THE DRAWINGS ARE DIAGRAMMATIC ONLY AND ARE NOT INTENDED TO INDICATE A STABLE EXCAVATION SLOPE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ADEQUACY AND STABILITY OF ALL EXCAVATION SLOPES, SHEETING, SHORING, TRENCH BOXES, AND ANY OTHER MEANS REQUIRED FOR A SAFE WORK ENVIRONMENT AND FOR PROTECTION OF ADJACENT ROADWAYS AND OTHER STRUCTURES. ALL EXCAVATION WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE FOLLOWING REGULATORY AGENCIES:

   -SUBPART 23-4, "EXCAVATION OPERATIONS", OF NEW YORK DEPARTMENT OF LABOR INDUSTRIAL CODE RULE 23.

   -SUBPART P, "EXCAVATIONS" OF THE UNITED STATES DEPARTMENT OF LABOR OSHA REGULATIONS FOR CONSTRUCTION.

   -ALL OTHER MUNICIPAL, COUNTY, STATE OR FEDERAL AGENCIES, REGULATIONS OR LAWS PERTAINING TO EXCAVATION SAFETY AS MAY APPLY AT THE WORK SITE.

   THE MORE STRINGENT PROVISION IN EACH OF THE ABOVE CODES SHALL APPLY. THESE PROVISIONS SHALL BE CONSIDERED MINIMUM REQUIREMENTS AND SHALL BE INCREASED IF NECESSARY TO PROVIDE SAFE WORKING CONDITIONS.

8. ALL NEW GRADES SHALL BE BLENDED SMOOTHLY WITH EXISTING GRADES TO PROVIDE A SMOOTH TRANSITION BETWEEN NEW GRADING AND EXISTING SURFACES TO REMAIN.

9. GEOTEXTILE FABRIC SHALL COMPLY WITH NYSDOT STANDARD SPEC. SECTION 737-01. ALL FABRIC SHALL APPEAR ON THE NYSDOT LIST OF APPROVED MATERIALS FOR THE USAGE INDICATED.

10. THE OWNER SHALL RETAIN AN INDEPENDENT QUALIFIED GEOTECHNICAL TESTING AGENCY TO PERFORM SOIL COMPACTION TESTING. SUBMIT ONE COPY OF ALL TEST REPORTS TO THE OWNER AND THE ENGINEER. FIELD IN-PLACE DENSITY TESTS SHALL BE PERFORMED BY EITHER ASTM D1556 (SAND CONE METHOD) OR ASTM D2922 (NUCLEAR METHOD). TESTS SHALL BE PERFORMED IN ALL BACKFILL, ONE TEST PER 250 SQUARE FEET OF BACKFILL SURFACE FOR EACH LIFT, MINIMUM (2) TESTS PER LIFT.

11. TOPSOIL, SEEDING AND MULCHING SHALL COMPLY WITH NYSDOT STANDARD SPEC. SECTION 713. CONTRACTOR SHALL ONLY USE NATIVE SEED MATERIAL FOR SITE RESTORATION.

12. CONTRACTOR SHALL NOTE THAT AMBIENT AIR TEMPERATURE DURING THE CONSTRUCTION PERIOD FOR THIS PROJECT MAY BE BELOW FREEZING. CONTRACTOR SHALL PROTECT ALL SUBGRADES AND PREVIOUSLY INSTALLED BACKFILL LIFTS FROM FREEZING. COSTS FOR ALL BLANKETS, GROUND HEATERS OR OTHER ACCEPTABLE METHODS AS REQUIRED TO PROTECT IN-PLACE SOILS FROM FREEZING SHALL BE INCLUDED IN HIS BID. THE PLACEMENT OF FILL MATERIALS ON FROZEN SOILS OR USE OF FROZEN BACKFILL MATERIALS IS STRICTLY PROHIBITED.

BRIDGE RAIL AND GUIDE RAIL NOTES

1. GUIDE RAIL SHALL COMPLY WITH THE PROVISIONS OF THE NEW YORK STATE STANDARD SPECIFCATIONS – CONSTRUCTION AND MATERIALS 2008 SECTIONS 606 AND 710-21.

2. FABRICATION AND INSTALLATION OF GUIDE RAIL SHALL COMPLY WITH NYSDOT STANDARD DETAIL SHEET 606-04, BOX BEAM GUIDE RAIL.

3. FABRICATION AND INSTALLATION OF BRIDGE RAIL SHALL COMPLY WITH NYSDOT BRIDGE DESIGN DETAIL SHEETS BD-RL3E TO BD-RL5E "DOUBLE BOX BEAM BRIDGE RAIL CURBLESS FOR LOW VOLUME BRIDGES" AS INDICATED ON THE DRAWINGS.

4. BRIDGE RAIL SUPPLIER SHALL SUPPLY ANCHORS FOR THE BRIDGE RAIL FOR INSTALLATION BY THE CONTRACTOR.

5. ANCHOR ROD MATERIAL SHALL CONFORM TO ASTM F1554, GRADE 36 MATERIAL. ANCHORS SHALL BE SUPPLIED WITH HEAVY HEX NUTS CONFORMING TO ASTM A563 AND HARDENED CARBON STEEL WASHERS CONFORMING TO ASTM F436.

6. ALL STEEL SHAPES, PLATES, ETC. FOR THE GUIDE RAIL AND BRIDGE RAIL SHALL BE HOT-DIP GALVANIZED CONFORMING WITH ASTM A123 AND NYSDOT SPEC. SECTION 719-01. REPAIRS TO DAMAGED GALVANIZING SHALL COMPLY WITH NYSDOT SPEC. SECTION 719-01.

7. STEEL BOLTS, NUTS, WASHERS AND MISC. HARDWARE SHALL BE HOT DIP GALVANIZED CONFORMING WITH ASTM A153 AND NYSDOT SPEC. SECTION 719-01.

STREAM CHANNEL NOTES

1. STREAM CHANNEL REGRADING SHALL USE NATIVE MATERIAL TO MATCH THE BED MATERIAL UPSTREAM AND DOWNSTREAM OF THE STRUCTURE. EXCEPT FOR THE LOCATIONS OF HEAVY STONE AND ROUNDED MEDIUM STONE RIPRAP INDICATED ON THE DRAWINGS.

SHEET PILE NOTES

1. ALL SHEET PILING SHALL CONFORM TO NYSDOT STANDARD SPECIFICATION SECTION 552 FOR PERMANENT SHEETING. SHEET PILE SECTIONS SHALL CONFORM TO NYSDOT SPECIFICATION SECTION 715-17 ASTM 572 GR. 50.

2. SHEET PILING SHALL BE PZ 27 SECTIONS WITH A MINIMUM THICKNESS OF 3/8" AND A MINIMUM ELASTIC SECTION MODULUS OF 30.2 CUBIC INCHES PER FOOT. ALL SHEET PILES SHALL CONSIST OF NEW MATERIAL.

3. ALL CORNERS, TEE INTERSECTIONS AND SIMILAR CHANGES IN SHEET PILE WALL ALIGNMENT SHALL BE CONSTRUCTED USING MANUFACTURER'S STANDARD PREFABRICATED SHAPES. FIELD WELDED SPECIAL SHAPES SHALL NOT BE PERMITTED.

4. SHEET PILING SHALL BE DRIVEN PLUMB AND TRUE TO LINE AND GRADE AT THE LOCATIONS AND ELEVATIONS INDICATED ON THE DRAWINGS. BOULDERS MAY BE ENCOUNTERED DURING PILE INSTALLATION. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY EQUIPMENT TO INSTALL SHEET PILING TO THE DEPTHS INDICATED ON THE DRAWINGS AND PROVIDE TEMPORARY GUIDE FRAMES AS REQUIRED TO MAINTAIN SHEET PILE ALIGNMENT.

CONCRETE NOTES

1. CAST-IN-PLACE CONCRETE FOR THE FOR THE ABUTMENTS AND WINGWALLS SHALL CONFORM TO NYSDOT SPEC. SECTION 501, CLASS A.

2. CONCRETE WORK SHALL BE PERFORMED IN STRICT CONFORMANCE WITH THE REQUIREMENTS OF NYSDOT SPEC. SECTION 555, "STRUCTURAL CONCRETE".

3. HIGH PERFORMANCE CONCRETE FOR THE BRIDGE DECK AND APPROACH SLABS SHALL BE IN STRICT CONFORMANCE WITH THE REQUIREMENTS OF NYSDOT SPEC. SECTIONS 501 AND 718-06, CLASS HP.

4. GROUT MATERIAL FOR ANCHOR DOWELS SHALL COMPLY WITH THE REQUIREMENTS OF NYSDOT SPECIFICATION SECTION 701-05 "CONCRETE GROUTING AND ANCHORING MATERIAL".

5. CONTRACTOR TO NOTE THAT AMBIENT AIR TEMPERATURE DURING THE CONSTRUCTION PERIOD ANTICIPATED FOR CONSTRUCTION OF CONCRETE WORK FOR THIS PROJECT MAY REQUIRE PROVISIONS FOR COLD WEATHER CONCRETING. CONTRACTOR SHALL INCLUDE IN HIS BID ALL LABOR AND MATERIALS NECESSARY FOR SUCH COLD WEATHER CONCRETING PROVISIONS. NO ADDITIONAL PAYMENT FOR COLD WEATHER CONCRETE WORK SHALL BE PERMITTED.

6. ALL REINFORCING STEEL SHALL BE EPOXY COATED IN CONFORMANCE WITH THE REQUIREMENTS OF NYSDOT SPEC SECTION 709-04, UNLESS NOTED OTHERWISE. REINFORCING STEEL SHALL BE PLACED IN CONFORMANCE WITH THE REQUIREMENTS OF NYSDOT SPEC. SECTION 556.

7. THE OWNER SHALL RETAIN A TESTING LABORATORY CERTIFIED BY THE NYS DEPARTMENT OF TRANSPORTATION TO CONDUCT CONCRETE TESTING DURING CONSTRUCTION. REPRESENTATIVES OF THE TESTING LABORATORY SHALL BE PRESENT ON-SITE DURING ALL CONCRETE PLACEMENT OPERATIONS AS SPECIFIED IN NYSDOT SPEC. SECTION 555. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SCHEDULING AND COORDINATING WITH THE TESTING LABORATORY FOR THE FOLLOWING TESTING SERVICES:

   -SAMPLING FRESH CONCRETE: ASTM C172 EXCEPT AS MODIFIED FOR SLUMP TO COMPLY WITH ASTM C94.

   -SLUMP: ASTM C143, ONE TEST AT THE POINT OF DISCHARGE FOR EACH SET OF COMPRESSIVE TEST SPECIMENS. PERFORM ADDITIONAL TESTS WHEN THE CONSISTENCY OF THE CONCRETE APPEARS TO CHANGE.

   -AIR CONTENT: ASTM C173, VOLUMETRIC METHOD OR ASTM C231, PRESSURE METHOD FOR EACH SET OF COMPRESSIVE TEST SPECIMENS.

   -CONCRETE TEMPERATURE: ASTM C1064 FOR EACH SET OF COMPRESSIVE TEST SPECIMENS. TEST HOURLY WHEN AIR TEMPERATURE FALLS BELOW 40 DEG. F. OR WHEN AIR TEMPERATURE EXCEEDS 80 DEG, F.

   -COMPRESSIVE TEST SPECIMENS: ASTM C31 ONE SET OF 4 STANDARD CYLINDERS FOR EACH COMPRESSIVE STRENGTH TEST. MOLD AND STORE CYLINDERS FOR LABORATORY CURED TEST SPECIMENS.

   -COMPRESSIVE STRENGTH TESTS: ASTM C39, ONE SET FOR EACH DAY'S PLACEMENT EXCEEDING 5 CU. YDS. PLUS ONE ADDITIONAL SET FOR EACH ADDITIONAL 20 CU. YDS. PLACED IN ANY ONE DAY. TEST ONE SAMPLE AT 7 DAYS AND TWO AT 28 DAYS, WITH ONE SAMPLE HELD IN RESERVE FOR LATER TESTING. WHEN FREQUENCY OF TESTING WILL PROVIDE LESS THAN 5 STRENGTH TESTS CONDUCT ADDITIONAL TESTS FROM RANDOMLY SELECTED BATCHES.

   -TEST REPORTS: TEST RESULTS WILL BE REPORTED IN WRITING TO ESSEX CO. DPW AND TO THE ENGINEER WITHIN 24 HOURS OF THE TESTS. REPORTS SHALL CONTAIN THE PROJECT IDENTIFICATION NAME AND NUMBER, DATE OF PLACEMENT, NAME OF THE TESTING SERVICE, CONCRETE TYPE AND CLASS, LOCATION OF THE CONCRETE IN THE STRUCTURE, DESIGN COMPRESSIVE STRENGTH, BATCH PROPORTIONS AND MATERIALS, COMPRESSIVE BREAKING STRENGTH AND TYPE OF BREAK FOR BOTH 7 AND 28 DAYS TESTS.

8. PREFABRICATED DRAINAGE BOARD SHALL BE MIRAFI G-SERIES AS MANUFACTURED BY TenCate GEOSYNTHETICS OR EQUIVALENT. WRAP DRAINAGE BOARD IN FILTER FABRIC.

9. APPROACH SLAB AND BRIDGE DECK WEARING SURFACES SHALL BE TEXTURED WITH LONGITUDINAL SAW CUT GROOVING. TEXTURING SHALL BE APPLIED IN STRICT CONFORMANCE WITH THE REQUIREMENTS OF NYSDOT SPEC. SECTION 558.

10. UPON COMPLETION OF THE BRIDGE DECK CONSTRUCTION, ALL TOP OF DECK AND VERTICAL DECK FASCIA SURFACES SHALL BE COATED WITH A PENETRATING TYPE PROTECTIVE SEALER APPLIED IN ACCORDANCE WITH THE SEALER MANUFACTURER RECOMMENDATIONS. THE PENETRATING SEALER SHALL BE ON THE NYSDOT LIST OF APPROVED MATERIALS AND SHALL COMPLY WITH NYSDOT STANDARD SPECIFICATION SECTION 717-03.

11. STAY-IN-PLACE GALVANIZED METAL FORM DECK, SUPPORT ANGLES, CLOSURES AND ACCESSORIES SHALL COMPLY WITH ALL REQUIREMENTS OF NYSDOT SPEC. SECTION 736 "PERMANENT CORRUGATED METAL FORMS FOR BRIDGE SLABS" AND SHALL BE INSTALLED IN ACCORDANCE WITH THE PROVISIONS OF SECTION 557 "SUPERSTRUCTURE SLABS AND STRUCTURAL APPROACH SLABS." MINIMUM DEPTH OF FORMS SHALL BE AS INDICATED. METAL THICKNESS SHALL BE AS REQUIRED TO SUPPORT ALL REQUIRED LOADING. MANUFACTURER'S STANDARD FOAM INSERTS SHALL BE PROVIDED. DAMAGE TO HOT DIP GALVANIZED COATINGS RESULTING FROM WELDING SUPPORT ANGLES TO THE SUPERSTRUCTURE FRAMING SHALL BE REPAIRED TO CONFORM WITH NYSDOT SPECIFICATION SECTION 719-01. REPAIR MATERIALS CONTAINING ALUMINUM SHALL NOT BE USED TO RESTORE DEFECTIVE AREAS.

TEMPORARY EARTH SUPPORT SYSTEM NOTES

1. THE CONTRACTOR SHALL RETAIN A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN NEW YORK STATE TO DESIGN A TEMPORARY EARTH SUPPORT SYSTEM FOR THE EXCAVATION AND CONSTRUCTION OF THE NEW BRIDGE SUBSTRUCTURE. THE CONTRACTOR SHALL SUBMIT A TEMPORARY EARTH SUPPORT SYSTEM PLAN AND DESIGN CALCULATIONS FOR REVIEW. THE SUBMITTAL SHALL INCLUDE ASSUMPTIONS MADE REGARDING SOIL PROPERTIES, GEOMETRY OF THE EXCAVATION, LATERAL PRESSURE DIAGRAMS, LOCATIONS AND MAGNITUDES OF ALL SURCHARGE LOADS, DEFLECTION ANALYSIS AND A PROPOSED MONITORING PROGRAM FOR THE CONSTRUCTION PERIOD.

2. EACH COMPONENT OF THE EXCAVATION SUPPORT SYSTEM SHALL BE DESIGNED TO SUPPORT THE MAXIMUM COMBINATION OF LOAD THAT CAN OCCUR.

3. THE TEMPORARY EARTH SUPPORT SYSTEM IS ANTICIPATED TO CONSIST OF DRIVEN OR DRILLED IN SOLIDER PILES WITH LAGGING, POSSIBLY SHEET PILING THAT IS CANTILEVERED, BRACED OR TIED BACK OR OTHER SOIL SUPPORT OR MODIFICATION METHODS THAT MAY BE SUITED TO THE CONDITIONS AND CONTRACTOR'S CAPABILITIES AND EQUIPMENT ALL DEPENDENT UPON THE ACTUAL EXCAVATION LIMITS AND THE GRADE REQUIRED FOR THE PARTICULAR CONTRACTOR'S EQUIPMENT AND METHODS PLANNED.

TEMPORARY BRIDGE NOTES

1. THE TEMPORARY MODULAR PANEL TRUSS BRIDGE SHALL BE A MABEY UNIVERSAL SYSTEM AS MANUFACTURED BY MABEY BRIDGE & SHORE, INC. OR APPROVED EQUIVALENT. BACKWALL HEIGHTS AND BEARING LOCATIONS MAY REQUIRE MODIFICATIONS FOR OTHER BRIDGE MANUFACTURERS.

2. DESIGN REQUIREMENTS: THE TEMPORARY PRE-ENGINEERED BRIDGE SUPERSTRUCTURE SYSTEM SHALL BE DESIGNED IN ACCORDANCE WITH THE CURRENT NEW YORK STATE STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES AND ALL ADDENDA THERETO TO ACCOMMODATE THE FOLLOWING CRITERIA:

   A. DEAD LOAD

   B. VEHICLE LIVE LOAD OF HS-20.

   C. ADDITIONAL FORCES AS DEFINED BY AASHTO, INCLUDING BUT NOT LIMITED TO LONGITUDINAL FORCE, FRICTION AT EXPANSION BEARINGS, WIND LOADS, SEISMIC LOADING AND VEHICULAR IMPACT ON THE BRIDGE RAIL SYSTEM.

   D. SINGLE TRAFFIC LANE.

   E. THE BRIDGE SUPERSTRUCTURE SYSTEM SHALL CONFORM TO THE DIMENSIONS INDICATED ON THE CONTRACT DRAWINGS.

   F. THE BRIDGE SUPERSTRUCTURE SYSTEM AND BEARINGS SHALL BE DESIGNED IN CONFORMANCE WITH ALL APPLICABLE REQUIREMENTS OF THE AASHTO SPECIFICATIONS.

   G. BRIDGE BEARINGS SHALL ACCOMMODATE BRIDGE DEAD LOAD AND LIVE LOAD DEFLECTIONS AND BEAM END ROTATIONS IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF THE AASHTO SPECIFICATIONS. THE BEARINGS SHALL BE DESIGNED TO PROVIDE UNIFORM BEARING STRESSES TO THE CONCRETE SUBSTRUCTURE AT THE BEARING SEAT LOCATIONS. BEARINGS SHALL BE FIRMLY ANCHORED TO THE SUBSTRUCTURE. BEARING AND ANCHOR BOLT DESIGN CALCULATIONS, INCLUDING A TABLE SUMMARIZING ALL DESIGN INFORMATION, SHALL BE INCLUDED IN THE CALCULATIONS.

   H. THE BRIDGE RAIL SYSTEM SHALL BE AS INDICATED. THE RAIL SYSTEM DOES NOT NEED TO HAVE A CRASH TESTED RATING.

3. THE TEMPORARY BRIDGE SHALL BE A ONE LANE BRIDGE. ESSEX COUNTY SHALL DESIGN AND PROVIDE ALL APPROPRIATE TRAFFIC CONTROLS, SIGNAGE, AND SIMILAR DEVICES AS REQUIRED TO SAFELY DIRECT TRAFFIC ONTO THE TEMPORARY ROADWAY AND TO CONTROL TRAFFIC FLOW FOR SINGLE LANE OPERATION. TEMPORARY TRAFFIC CONTROL SIGNALS, IF NEEDED, SHALL BE PROVIDED BY ESSEX COUNTY AT EACH END OF THE PROJECT SITE.

4. THE FOUNDATION AND ABUTMENT SYSTEM INDICATED IS INTENDED FOR TEMPORARY USE ONLY. MOVEMENT OF THE FOUNDATION AND ABUTMENT SYSTEM DUE TO FROST ACTION MAY RESULT AS A FUNCTION OF LONG-TERM USE.

5. ALL PRESSURE TREATED LUMBER SHALL BE MIN. 0.4#/C.F. RETENTION, NO. 2 GRADE SYP, OR BETTER.

6. ALL HARDWARE SHALL BE GALVANIZED CONFORMING WITH ASTM A153 AND NYSDOT SPEC. SECTION 719-01.

7. BEARINGS FOR THE MABEY BRIDGE STRUCTURE SHALL BE CENTERED ON THE FOOTINGS AND SHALL BE ANCHORED WITH DRILLED-IN ANCHOR BOLTS SET IN EPOXY ADHESIVE CONFORMING TO NYSDOT STANDARD SPECIFICATION SECTION 701-07.

1

PRECAST CONCRETE RETAINING WALL NOTES

1. PRECAST CONCRETE RETAINING WALL SHALL BE A PRE-ENGINEERED PRECAST CONCRETE SEGMENTAL BLOCK RETAINING WALL SYSTEM UTILIZING INTERLOCKING CONCRETE UNITS IN A GRAVITY CONFIGURATION. THE WALL SYSTEM USED AS A BASIS FOR DESIGN WAS REDI-ROCK™, AS MANUFACTURED BY CARROLL CONCRETE CO., NEWPORT, NEW HAMPSHIRE. OTHER PRECAST CONCRETE SEGMENTAL BLOCK RETAINING WALL SYSTEMS MAY BE PROPOSED AS EQUIVALENTS SUBJECT TO REVIEW BY THE OWNER.

2. THE WALL SYSTEMS SHALL BE CAPABLE OF RESISTING LATERAL EARTH LOADS FROM THE MAXIMUM GRADE SEPARATIONS INDICATED ON THE DRAWINGS PLUS 2.0 FT. OF EQUIVALENT SOIL HEIGHT SURCHARGE LOADING BEHIND THE WALL.

3. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS PREPARED BY THE WALL SYSTEM SUPPLIER WHICH SHALL INDICATE PROPOSED WALL SYSTEM PLAN, SECTION AND ELEVATION VIEWS. CONTRACTOR SHALL ALSO SUBMIT THE MANUFACTURER'S DESIGN CALCULATIONS FOR THE WALL HEIGHTS AND CONFIGURATIONS TO BE CONSTRUCTED AND MANUFACTURER'S INSTALLATION MANUALS FOR THE WALL SYSTEM.

4. THE PRECAST CONCRETE SUPPLIER SHALL DESIGN ALL PRECAST WALL UNITS UNDER THE DIRECT SUPERVISION AND CONTROL OF A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN NEW YORK STATE. ALL SHOP DRAWINGS AND CALCULATION SUBMITTALS SHALL BE SEALED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN NEW YORK STATE.

5. THE PRECAST CONCRETE SUPPLIER SHALL BE REGULARLY ENGAGED IN THE DESIGN AND FABRICATION OF PRECAST CONCRETE SEGMENTAL BLOCK RETAINING WALL SYSTEMS FOR A MINIMUM OF 5 YEARS.

SEE ALSO DWG. DOT-1 FOR ADDITIONAL NOTES.

REVISIONS		
REV.	DATE	DESCRIPTION
0	7/16/19	BID & CONSTRUCTION
1	8/12/19	ADDENDUM No. 1

SCHODER RIVERS ASSOCIATES
Consulting Engineers, P.C.
Evergreen Professional Park
453 Dixon Road, Suite 7, Bldg. 3
Queensbury, New York 12804
(518) 761-0417, FAX: (518) 761-0513

SCALE:	AS SHOWN	DRAWN BY:	SRA
DATE:	7/16/19	ENG. BY:	DJG
PROJ. NO:	15-880.06	CHK'D BY:	ES/CBS

CLIENT NAME
ESSEX COUNTY DEPARTMENT OF PUBLIC WORKS
Elizabethtown, NY

DRAWING TITLE
LOBDELL LANE BRIDGE OVER BOQUET RIVER

NOTES

DRAWING NO. N-1

SHT. 1 OF 2

REV. 1

NORTH

PRE-ENGINEERED WEATHERING STEEL TRUSS SUPERSTRUCTURE. 16.00' CLEAR ROADWAY WIDTH. 90.00' ℄–℄ BEARINGS, 0° SKEW. SEE STRUCTURAL DWG'S. FOR DETAILS.

DOUBLE BOX BEAM BRIDGE RAIL, TRANSITION BENT TO 25' RADIUS.

℄ BRG. @ ℄ ROAD STA. 0+49.75 = BASELINE STA. 12+72.66, 7.23' LT.

ASPHALT PAVED APPROACH ROADWAY.

BEGIN LOBDELL LANE ℄ ROAD STA. 0+00 = BASELINE STA. 13+22.19, 11.97' LT.

℄ NEW & EXIST ROADWAY (LOBDELL LANE.)

MED. STONE FILLING RIPRAP ABOVE NEW HEAVY STONE FILLING, (TYP.)

DOUBLE BOX BEAM BRIDGE RAIL TRANSITION, BENT TO 35' RADIUS.

±175 LF. BOX BEAM GUIDERAIL W/TYPE IIA END SECTION.

Michael James and Charlotte Marie McGinn (reputed owners) L. 1002 P. 180 tax map 64.04-1-8

Holeza E. Rifenberg and Peter A. Bain (reputed owners) L. 1411 P. 187 tax map 64.04-1-7

Joseph E. and Linda S. Martin (reputed owners) L. 614 P. 273 tax map 64.04-1-9

℄ EXIST. ROADWAY (RT. 9.)

±535 LF. BOX BEAM GUIDERAIL W/TYPE IIA END SECTION.

Ginger Lynn Phinney (reputed owner) L. 1661 P. 324 tax map 64.04-1-5

Joseph E. and Linda S. Martin (reputed owners) L. 614 P. 273 tax map 64.04-1-9

Joseph E. and Linda S. Martin (reputed owners) L. 614 P. 273 tax map 64.04-1-9

Foley Family Revocable Trust Agreement (reputed owners) L. 1418 P. 295 tax map 64.04-1-19.211

HEAVY STONE RIPRAP FILLING WITHIN ±30 FT. FROM EDGE OF STREAM, (TYP.)

MEDIUM ROUNDED STONE RIPRAP. (TYP.)

TEMP. BRIDGE TO BE REMOVED UPON COMPLETION OF NEW BRIDGE AND ROADWAY CONSTRUCTION.

TEMP. ROADWAY FILL TO BE REMOVED. COVER DISTURBED AREA W/MIN. 3" TOPSOIL AND SEED, TYP.

60"ø x68' LG. HDPE CULVERT W/END SECTION @ OUTLET. INLET INV. EL. 548.00'. OUTLET INV. EL. 546.64'.

TEMP. CULVERT EXTENSION TO BE REMOVED, TYP.

EDGE OF NEW STREAM CHANNEL, TYP.

CAST-IN-PLACE CONC. ABUTMENT AND WING WALLS W/SHEET PILE SCOUR PROTECTION. SEE STRUCTURAL DWG'S. FOR DETAILS.

SHEET PILE SCOUR PROTECTION.

WILLOW CUTTINGS OR SIMILAR PLANTINGS INSTALLED ALONG BANKFULL BENCH. SEE DETAIL DWG. C-5. (TYP.)

CAST-IN-PLACE CONC. ABUTMENT AND WING WALLS. SEE STRUCTURAL DWG'S. FOR DETAILS.

℄ BRG. @ ℄ ROAD STA. 1+39.75 = 11+83.07, 1.33' RT.

DOUBLE BOX BEAM BRIDGE RAIL TRANSITION, 2' BEND @ BEGIN OF TRANSITION RAIL, TYP.

±72 FT. LONG PRECAST CONC. REDI-ROCK RETAINING WALL. SEE RETAINING WALL LAYOUT SITE PLAN, TYPICAL SECTION AND HEADWALL PENETRATION DETAIL, DWG. C-5. T/WALL EL. 554.00'.

PC ℄ ROAD STA. 1+96.93 = BASELINE STA. 11+26.15, 6.78' RT.

1,000.00' RADIUS HORIZONTAL CURVE.

PT ℄ ROAD STA. 2+46.64 = BASELINE STA. 10+76.57, 10.28' RT.

PC ℄ ROAD STA. 2+74.98 = BASELINE STA. 10+48.26, 11.57' RT.

EXIST. CULVERT TO REMAIN.

WETLAND FLAGGING, TYP.

WETLAND AREA, TYP.

325.00' RADIUS HORIZONTAL CURVE.

END NEW GRAVEL PAVEMENT. MATCH EXIST. ℄ ROAD STA. 4+86.00 = BASELINE STA. 8+54.97, 86.60' RT.

±135 LF. BOX BEAM GUIDERAIL, TYP.

TYPE IIA END SECTION, TYP.

16.00' WIDE GRAVEL ROADWAY, TYP.

BENCHMARK
LAG BOLT IN UTILITY POLE NYSEG L407 68
ELEV. = 563.85'

BENCHMARK
LAG BOLT IN 12" ELM TREE
ELEV. = 550.59'

Boquet River

LEGEND

- PROPERTY LINE
- 550 EXIST. CONTOUR
- 560 NEW CONTOUR
- EXIST. OVERHEAD UTILITY
- EXIST. EDGE OF STREAM
- CONSTRUCTION BASELINE
- TREE LINE
- WETLAND
- ANGULAR RIPRAP
- ROUNDED RIPRAP

REVISIONS		
REV.	DATE	DESCRIPTION
0	7/16/19	BID & CONSTRUCTION
1	8/12/19	ADDENDUM No. 1

STATE OF NEW YORK
CLERK C.F. SANDLOND
No. 076481
LICENSED PROFESSIONAL ENGINEER

SCHODER RIVERS ASSOCIATES
Consulting Engineers, P.C.
Evergreen Professional Park
453 Dixon Road, Suite 7, Bldg. 3
Queensbury, New York 12804
(518) 761-0417, FAX: (518) 761-0513

SCALE:	1"=30'-0"	DRAWN BY:	SRA
DATE:	7/16/19	ENG. BY:	MEH
PROJ. NO:	15-880.06	CHK'D BY:	ES/CBS

CLIENT NAME
ESSEX COUNTY DEPARTMENT OF PUBLIC WORKS
Elizabethtown, N.Y.

DRAWING TITLE
LOBDELL LANE BRIDGE OVER BOQUET RIVER REPLACEMENT

SITE PLAN

DRAWING NO. C-3

SHT. 3 OF 6

REV. 1

SITE PLAN

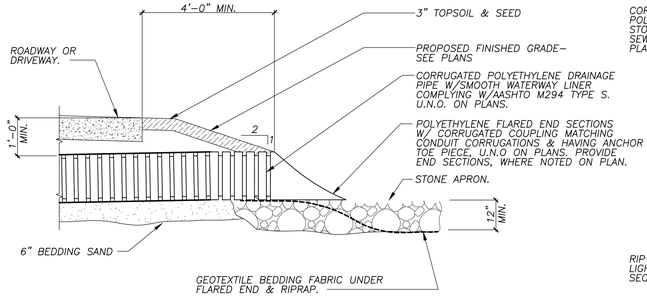
1"=30'-0"

NOTE: SEE DWG'S. DOT-1 & DOT-2 FOR ROUTE 9 TEMP. ALIGNMENT AND DETAILS.

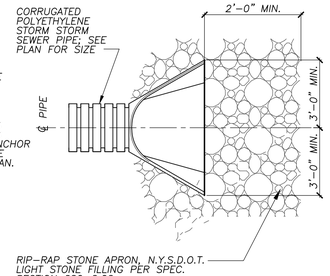
NOTE: ALL AREAS DISTURBED DURING CONSTRUCTION NOT COVERED WITH SITE IMPROVEMENTS OR LANDSCAPING SHALL BE COVERED WITH MIN. 3" OF TOPSOIL AND SEED TO ESTABLISH DENSE GROWTH OF TURF.

NOTE: SEE DWG. DOT-2 FOR BASELINE STATION LOCATIONS AND TIES.

SURVEYED BY
DAVID F. BARRASS
LAND SURVEYOR
5 MAPLE STREET
CORINTH, NEW YORK



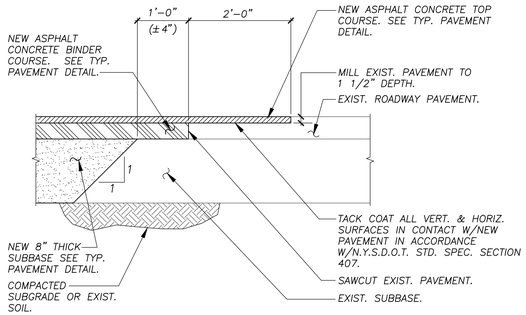
SECTION



PLAN

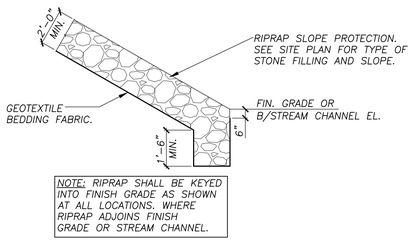
TYPICAL CULVERT DETAIL

N.T.S.



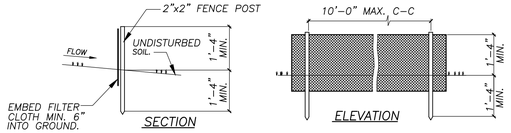
ASPHALT PAVEMENT TRANSITION DETAIL

N.T.S.



RIPRAP KEYING DETAIL

N.T.S.

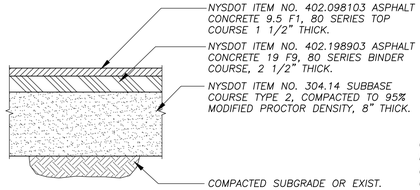


NOTES

1. FILTER CLOTH TO BE FASTENED SECURELY TO POSTS WITH STAPLES OR TIES AT 6" MAX. SPACING.
2. WHEN TWO SECTIONS OF FILTER CLOTH ADJOIN EACH OTHER THEY SHALL BE OVERLAPPED BY 6" AND FOLDED.
3. MAINTENANCE SHALL BE PERFORMED AS NEEDED AND MATERIAL REMOVED WHEN "BULGES" DEVELOP IN THE SILT FENCE.

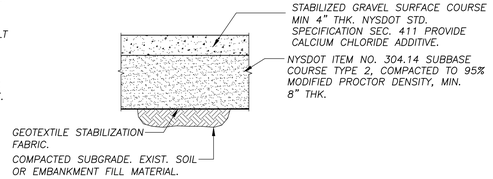
SILT FENCE DETAIL

N.T.S.



TYPICAL ASPHALT PAVEMENT DETAIL

N.T.S.



TYPICAL GRAVEL PAVEMENT DETAIL

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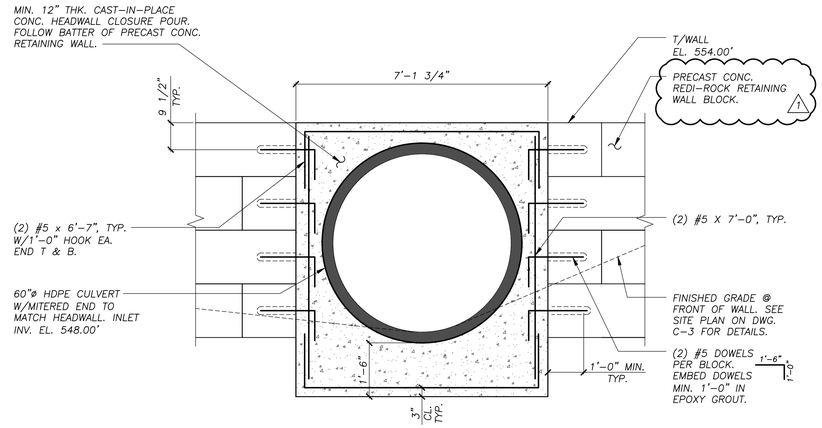

CULVERT PENETRATION DETAIL

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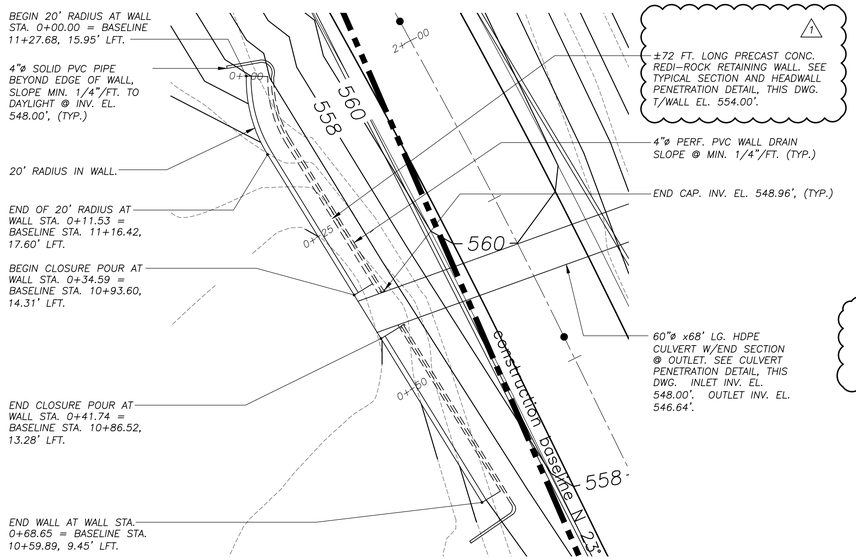
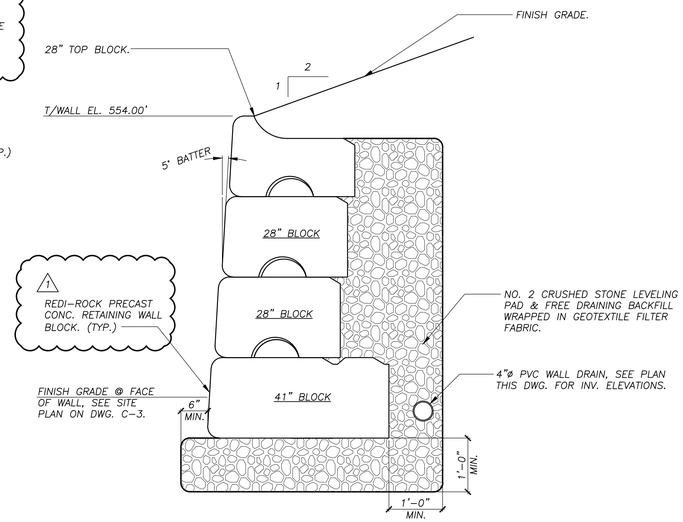


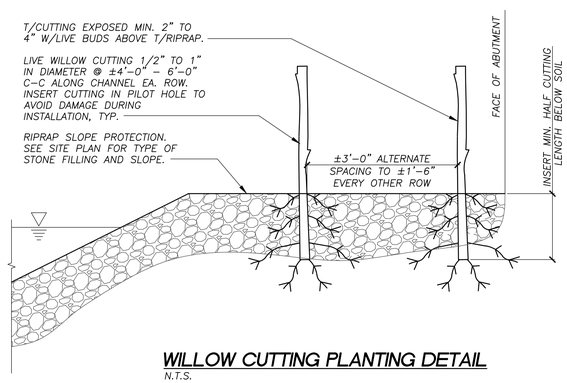
RETAINING WALL LAYOUT SITE PLAN

1"=10'-0"



SEGMENTAL BLOCK WALL SECTION

N.T.S.



WILLOW CUTTING PLANTING DETAIL

N.T.S.

REVISIONS		
REV.	DATE	DESCRIPTION
0	7/16/19	BID & CONSTRUCTION
1	8/12/19	ADDENDUM No. 1

STATE OF NEW YORK ★ ERIK C. F. SANDBERG ★ NO. 076491 ★ LICENSED PROFESSIONAL ENGINEER

SCHODER RIVERS ASSOCIATES
Consulting Engineers, P.C.
Evergreen Professional Park
453 Dixon Road, Suite 7, Bldg. 3
Queensbury, New York 12804
(518) 761-0417, FAX: (518) 761-0513

SCALE:	1"=30'-0"	DRAWN BY:	SRA
DATE:	7/16/19	ENG. BY:	MEH
PROJ. NO:	15-880.06	CHK'D BY:	ES/CBS

CLIENT NAME
ESSEX COUNTY DEPARTMENT OF PUBLIC WORKS
Elizabethtown, N.Y.

DRAWING TITLE
LOBDELL LANE BRIDGE OVER BOQUET RIVER REPLACEMENT

DETAILS

DRAWING NO. C-5

SHT. 5 OF 6

REV. 1