ADDENDUM NO. 2

Furnace Bridge - Installation

Essex County, NY

July 29, 2015

TO ALL HOLDERS OF BIDDING DOCUMENTS:

This Addendum, issued to bid document holders of record, indicates clarifications to the bid documents for the Furnace Bridge - Installation 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 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, it must be delivered in its entirety only.

   It is the bidder's responsibility to determine if the information contained in this geotechnical report 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 report 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.

2. **General:** The County has received bids for supply of the precast concrete materials for the project and has awarded the fabrication and delivery of such precast materials to The Fort Miller Co., Inc.. Bidders shall note the following delivery schedule for such

precast concrete materials and shall coordinate their schedule for the work accordingly:

- Three-sided rigid frame precast concrete bridge units - 9/15/15
- Precast concrete retaining wall units - 9/21/15

3. **General:** Bidders shall note that the precast concrete materials supplier has determined that the precast concrete retaining wall system will consist of T-Wall™ units with the lowest tier of units adjacent to the cast-in-place concrete bridge footings and the precast concrete fascia bridge units having stem lengths of sixteen feet. Bidders shall adjust their earthwork quantities as required to accommodate these stem lengths.

4. **General:** Bidders shall note that the precast concrete materials supplier has determined that the precast concrete bridge system shall consist of six (6) HySpan™ units with estimated weights not to exceed 40 Tons per unit.

5. **General:** As noted in the Pre-Bid Meeting Minutes included in Addendum No. 1, modifications have been made to the stream channel reconstruction from the information currently indicated on the bidding documents. DELETE the drawing Cover Sheet and Drawing Nos. N-1, C-1 through C-4 and COE-1 and SUBSTITUTE THEREFORE the attached Cover Sheet and Drawing Nos. N-1, C-1 through C-5 and COE-1, all bearing the Revision date 7/29/15 and designation “Issued with Addendum 2". Bidders shall include all costs for the stream channel reconstruction work in their Bid for the project.

END OF ADDENDUM NO. 2
(attachments)

FURNACE BRIDGE

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GEOTECHNICAL INVESTIGATION REPORT

The following copy of the Geotechnical Report for the site included in this project is provided to the bidders 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, the report must be delivered in its entirety only.

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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 report 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 these investigations. 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.

DENTE ENGINEERING

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BUFFALO AREA
PO Box 482
Orchard Park, NY 14127
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January 27, 2015

Mr. Kirk Bassarab
Deputy Superintendent
Essex County DPW
8053 Route 9
Elizabethtown, NY 12932

Re: Geotechnical Study
Furnace Bridge over the Black River
Ledge Hill Road
Westport, NY
Project Number No. FDE-14-266

Gentlemen;

In accord with your authorization, we have completed a subsurface investigation and prepared this geotechnical evaluation report for the planned replacement of an existing culvert carrying Ledge Hill Road over Black River in the town of Westport with a HySpan Culvert.

This report presents the results of the subsurface investigation completed at the site on January 15 and 16, 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 existing culvert. 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 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 existing culvert crossing.

The fill soils were composed of a mixture of Sand, Silt, and Gravel with lesser amounts of cobbles and possibly boulders. These fills were moist and judged to be of a loose to firm relative density. The fills extended to estimated depths of between about 13 and 16 feet. Underlying the fill soils are glacial till soils composed of fine to coarse textured sand with some silt and gravel, cobbles, and boulders. These soils were of a generally very compact relative density and extended through the depths explored, between about 20 and 25 feet.

Groundwater was measured within the test borings advanced at the site as stated on the logs. In our opinion, these measurements may not be representative of the true saturated ground level at the time of the study. Groundwater should be expected to coincide with the stream level at the site throughout the seasons.

Geotechnical Recommendations

In our opinion the planned Hyspan 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 Hyspan and any headwall foundations.

Based on the available subsurface information Seismic Site Class C 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 contain cobbles and boulders.

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 stream/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 stream levels during construction, the excavations planned may penetrate saturated soils and groundwater, which will coincide with the stream 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 (FS = 1.0)

Sand/Gravel/Silt Overburden Parameters

1.	Allowable Net Bearing Pressure Total	=	5,000 PSF
2.	Overburden Unit Weight (Total)	=	135 lbs/Cu. Ft.
3.	Friction Angle of Soil	=	32 Degrees
4.	Coefficient of Active Earth pressure	=	0.31
5.	Coefficient of At-Rest Earth pressure	=	0.47
6.	Coefficient of Passive Earth pressure	=	3.25 (FS = 1.0)

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-half (½) inch, 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.

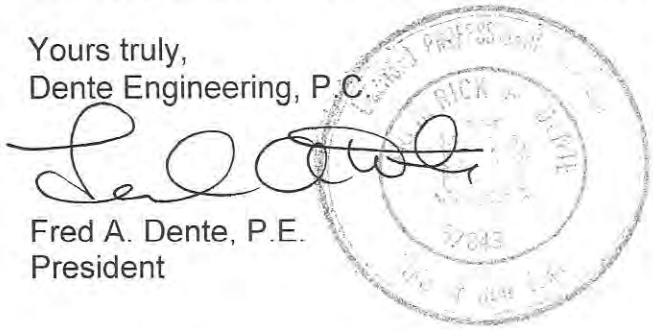
Summary

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 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 Your

Geotechnical Engineering Report

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

The following information is provided to help you manage your risks.

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 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 your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one - not even you* - should apply the 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.

A Geotechnical Engineering Report Is Based on A Unique Set of Project-Specific Factors

Geotechnical engineers consider a number of 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 alight industrial plant to a refrigerated warehouse,
- elevation, configuration, location, orientation, or weight of the proposed structure,
- 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 study was performed. *Do not rely on a geotechnical engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the 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 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 construction recommendations included in your report. *Those 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 recommendations if that engineer does not perform construction observation.

A Geotechnical Engineering Report Is Subject to Misinterpretation

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Lower 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. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing 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 Contractors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise contractors 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 contractors have sufficient time* to perform additional study. Only then might you be in a position to give contractors 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 contractors do not 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.

Geoenvironmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform a *geoenvironmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any geoenvironmental 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 geoenvironmental 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, a number of 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 ASFE-Member Geotechnical Engineer For Additional Assistance

Membership in ASFE/The Best People on Earth exposes geotechnical engineers to a wide array of risk management techniques that can be of genuine benefit for everyone involved with a construction project. Confer with your ASFE-member geotechnical engineer for more information.

ASFE
The Best People on Earth

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

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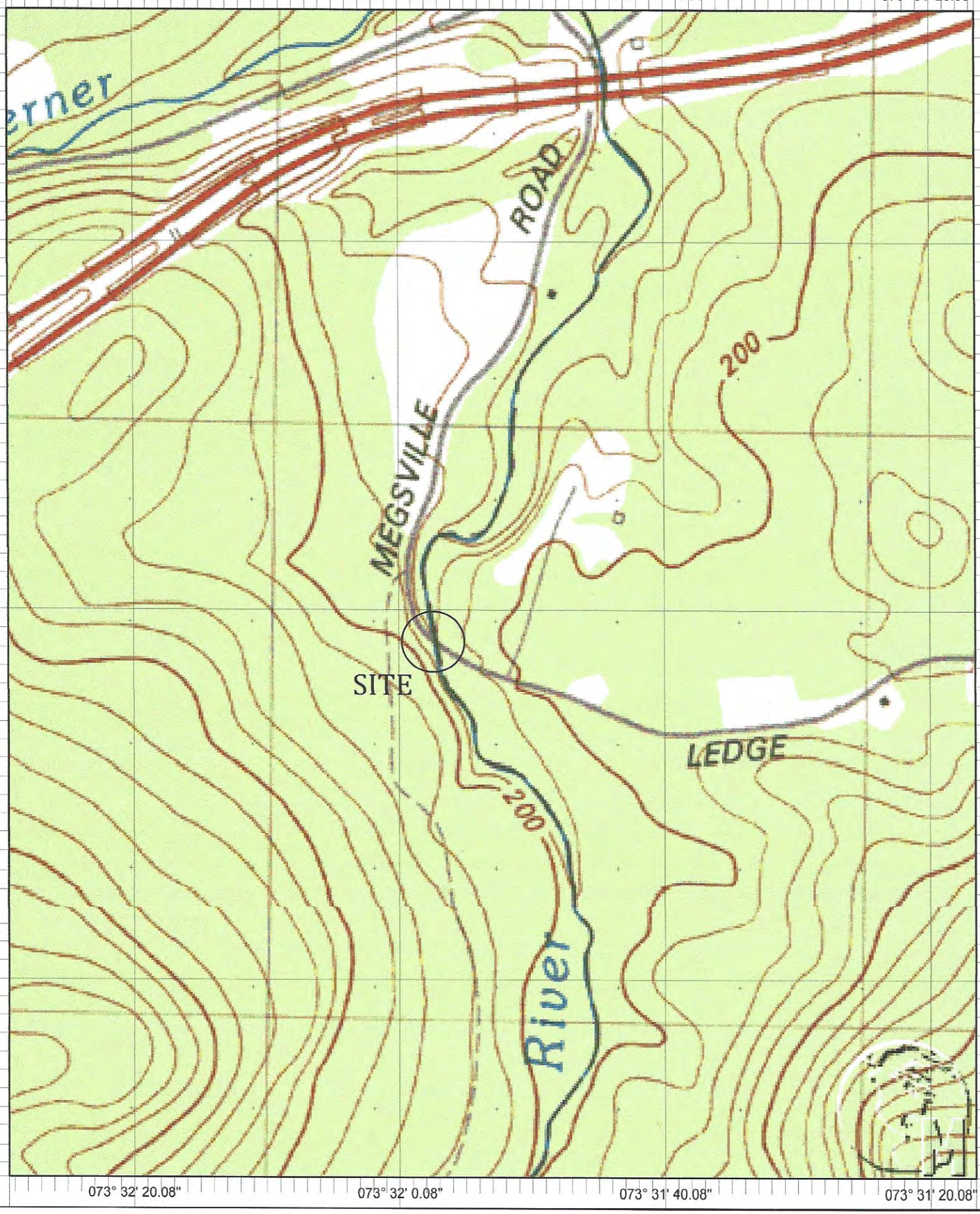
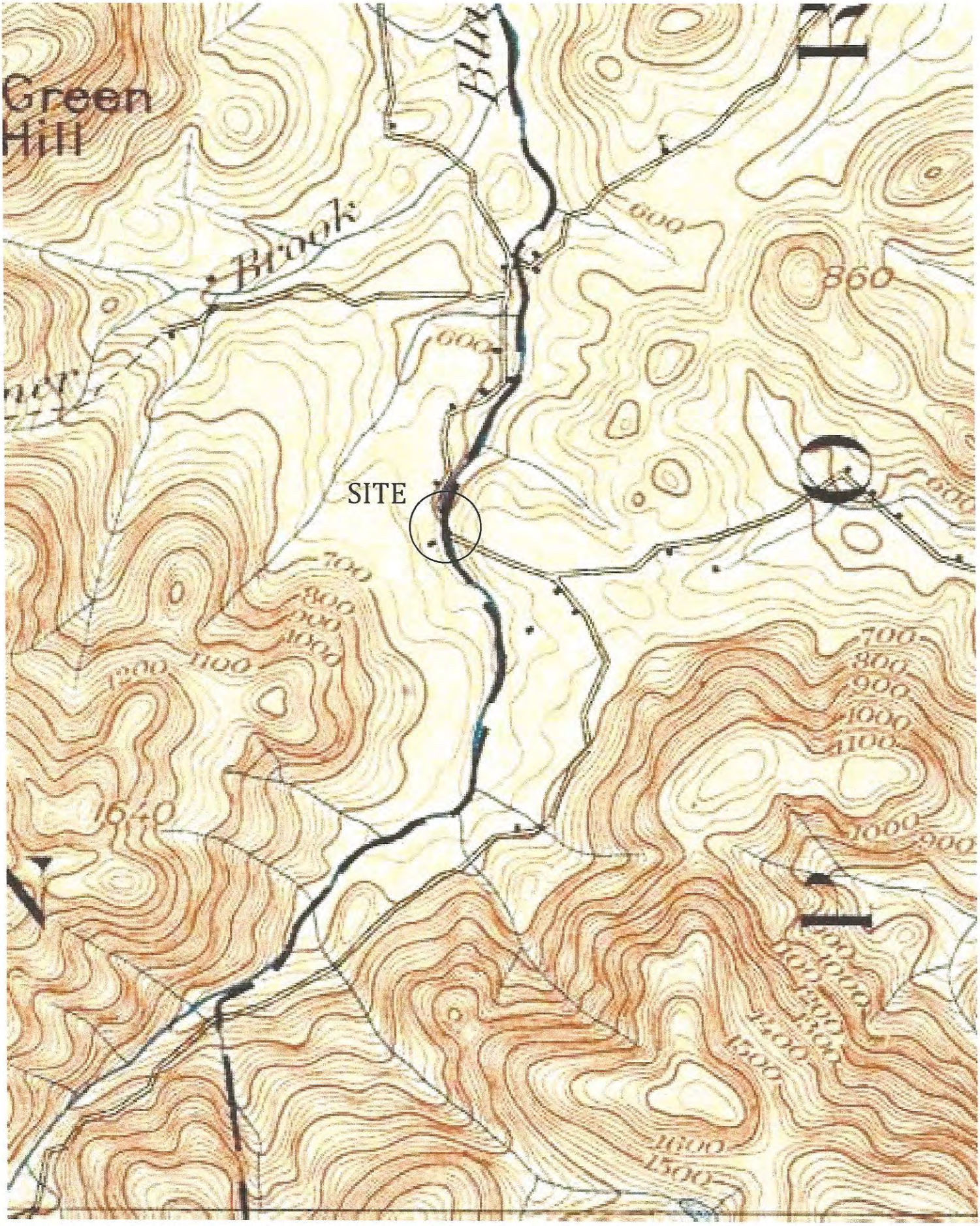


Name: ELIZABETHTOWN
Date: 1/27/115
Scale: 1 inch equals 666 feet

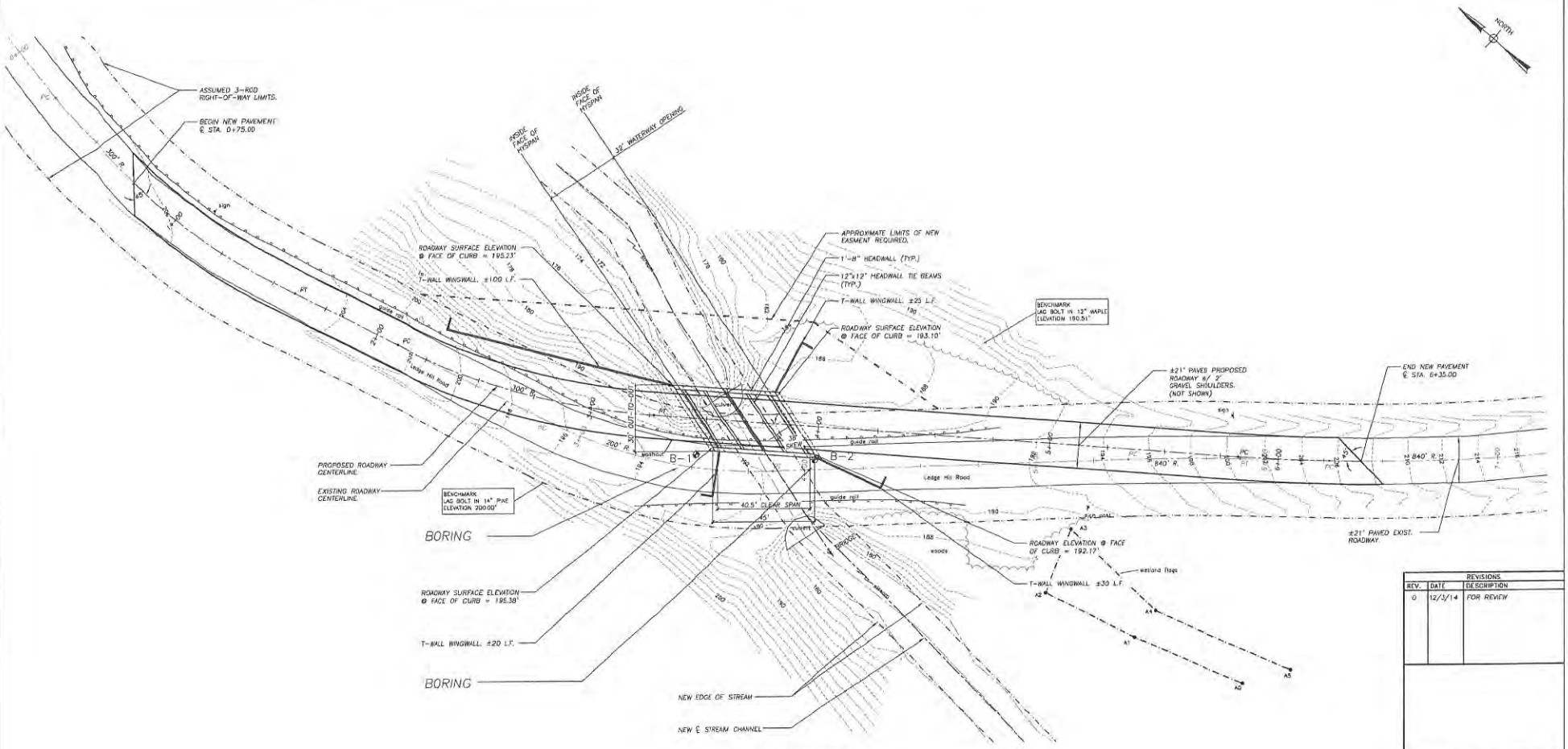
Location: 044° 11' 20.9" N 073° 31' 53.1" W
Caption: FURNACE BRIDGE
WESTPORT, NEW YORK
FDE-14-266



Furnace Bridge, Ledge Hill Road, Westport, New York 1901, FDE-14-266

View west along Ledge Hill Road

View east along Ledge Hill Road



CONCEPTUAL LAYOUT PLAN

1"=20'-0"

NOTE: NEW GUIDERAIL AND BRIDGE RAIL NOT SHOWN.

LEGEND

- 95 EXISTING CONTOUR.
- 98 NEW CONTOUR
- EXISTING OVERHEAD UTILITY.
- EDGE OF STREAM.
- CONSTRUCTION BASELINE

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

REVISIONS		
REV.	DATE	DESCRIPTION
0	12/3/14	FOR REVIEW

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:	12/3/14	ENG. BY:	JGL
PROJ. NO:	12-474.34	CHK'D BY:	CBS

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

DRAWING TITLE
FURNACE BRIDGE OVER BLACK RIVER
HYSPAN CONCEPT LAYOUT PLAN

DRAWING NO. P-1

SHT. 1 OF 4

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: Furnace Bridge	**DATE**	START: 1/16/15	FINISH: 1/16/15

LOCATION: Westport, New York	**METHODS:** 3 1/4" Hollow Stem Augers, ASTM
CLIENT: Essex County DPW	D1586 Drilling Methods with Auto Hammer
JOB NUMBER: FDE-14-266	**SURFACE ELEVATION:** +/- 193.0'
DRILL TYPE: CME 45C	**CLASSIFICATION:** O.Burns

SAMPLE		BLOWS ON SAMPLER					CLASSIFICATION / OBSERVATIONS
DEPTH	#	6"	12"	18"	24"	N	+/- 6" Asphalt
	1	50/.2				50+	**FILL**: Brown F-C SAND, Some Fine Gravel (MOIST)
	2	15	6				Grades Brown F-C SAND and GRAVEL,
5'				3	3	9	trace silt
	3	4	5				
				4	4	9	
	4	5	1/12				NO RECOVERY
					2	1	
	5	5	7				Grades Brown Mottled F-C SAND and
10'				13	12	20	GRAVEL, trace silt
	6	14	8				Grades Light Brown (WET)
				10	16	18	
	7	1	1				Similar with Brown Mottling
				1	1	2	Grades Some Wood, Brown Mottling
15'	8	4	9				**(MOIST TO WET, V.COMPACT TO LOOSE & FIRM)**
				50/.4		59+	**TILL**: Gray F-C SAND and SILT, Some Gravel
20'	9	50/.4				50+	
							Grades to NO RECOVERY
25'	10	50/0				50+	**(WET, VERY COMPACT)**
							End of boring 25.0' depth with split spoon
							refusal. Groundwater measured at 14.4'
							depth within auger casings upon completion
30'							of borehole.

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

PROJECT: Furnace Bridge	**DATE**	START: 1/15/15	FINISH: 1/15/15
LOCATION: Westport, New York	**METHODS:** 3 1/4" Hollow Stem Augers, ASTM		
CLIENT: Essex County DPW	D1586 Drilling Methods with Auto Hammer		
JOB NUMBER: FDE-14-266	**SURFACE ELEVATION:** +/- 192.0'		
DRILL TYPE: CME 45C	**CLASSIFICATION:** O.Burns		

SAMPLE		BLOWS ON SAMPLER					CLASSIFICATION / OBSERVATIONS
DEPTH	#	6"	12"	18"	24"	N	+/- 7" Asphalt
	1	50/.1				50+	**FILL**: Brown F-C SAND and GRAVEL, trace asphalt, cobbles noted (MOIST)
	2	11	11				Grades Brown F-C SAND and GRAVEL,
5'				12	11	23	trace silt
	3	10	9				
				7	5	16	
	4	5	3				
				6	6	9	
10'							
	5	6	6				
				6	7	12	
							(MOIST, V. COMPACT TO FIRM AND LOOSE)
15'							
	6	29	50/.4			50+	**TILL**: Light Brown F-C SAND, Some Gravel and Silt, boulders noted
20'							**(MOIST, VERY COMPACT)**
	7	50/.3				50+	
							End of boring 20.3' depth with split spoon refusal.
25'							
30'							

FURNACE BRIDGE
OVER BLACK RIVER
BRIDGE REPLACEMENT

BIN 3301630

TOWNS OF WESTPORT AND ELIZABETHTOWN N.Y.

ESSEX COUNTY DEPARTMENT OF PUBLIC WORKS

SCHODER RIVERS ASSOCIATES

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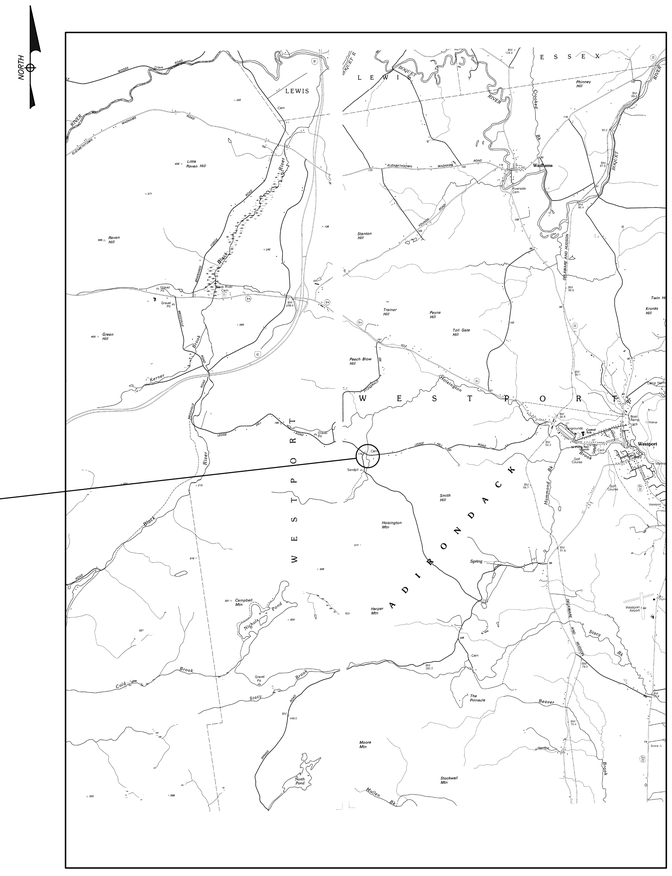
Drawing Index



LOCATION MAP
N.T.S.

PROJECT COORDINATION NOTES

1. GENERAL DESCRIPTION OF PROJECT – THE PROJECT GENERALLY CONSISTS OF THE DEMOLITION AND REMOVAL AN EXISTING CMP CULVERT AND REPLACING THE CULVERT WITH A PRECAST CONCRETE THREE-SIDED BRIDGE STRUCTURE AND PRECAST CONCRETE CRIB-TYPE WINGWALLS. THE NEW BRIDGE WILL BE PLACED ON A NEW HORIZONTAL AND VERTICAL ALIGNMENT.

2. PROJECT BIDDING AND CONTRACT REQUIREMENTS – TWO SEPARATE CONTRACTS FOR THE PROJECT SHALL BE LET BY ESSEX COUNTY FOR BIDDING, AS FOLLOWS:
   - CONTRACT FOR THE DESIGN, FABRICATION AND DELIVERY TO THE SITE OF THE PRECAST CONCRETE BRIDGE SYSTEM, THE PRECAST CONCRETE WINGWALL SYSTEMS AND PRECAST CONCRETE WINGWALL LEVELING PADS AS INDICATED IN NOTE 4 BELOW AND IN SPECIFICATION SECTION 03412.
   - CONTRACT FOR THE INSTALLATION OF THE PRECAST CONCRETE BRIDGE SYSTEM AND PRECAST CONCRETE WINGWALL SYSTEMS AND THE PERFORMANCE OF ALL WORK REQUIRED FOR THE FIELD CONSTRUCTION BY A CONTRACTOR OF COMPLETE AND OPERATIONAL BRIDGE INSTALLATION AT THE SITE AS INDICATED ON THE DRAWINGS AND AS FURTHER DESCRIBED IN NOTE 3 BELOW AND IN SPECIFICATION SECTION 03412, UNLESS SUCH WORK IS SPECIFICALLY INDICATED TO BE PERFORMED BY THE OWNER IN NOTE 5 BELOW.

3. WORK BY CONTRACTOR – THE CONTRACTOR SHALL PERFORM ALL WORK FOR THE PROJECT NOT SPECIFICALLY NOTED TO BE PERFORMED BY THE PRECAST CONCRETE STRUCTURES SUPPLIER OR THE OWNER INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:
   - LIGHTED CLOSURE BARRICADES AND CONCRETE BARRIERS AT THE LOCATIONS SHOWN ON THE DRAWINGS.
   - EROSION CONTROL, DEMOLITION, EXCAVATION AND DEWATERING.
   - SURVEY LAYOUT OF ALL CAST-IN-PLACE CONCRETE WORK AND PRECAST STRUCTURES.
   - SUBMITTALS AND SHOP DRAWINGS FOR ALL CAST-IN-PLACE CONCRETE WORK, INCLUDING FOOTINGS, TIE BEAMS & HEADWALLS
   - FORMWORK, REINFORCING AND PLACEMENT FOR CAST-IN-PLACE CONCRETE FOOTINGS, TIE BEAMS AND HEADWALLS.
   - INSTALLATION OF PRECAST CONCRETE STRUCTURES.
   - GROUTING OF JOINTS AND SHEAR KEYWAYS.
   - MEMBRANE WATERPROOFING, DRAINAGE BOARD AND GEOTEXTILE FABRIC.
   - FOAM ROADWAY FILL ABOVE THE BRIDGE STRUCTURE.
   - BACKFILLING AND SOIL COMPACTION FOR STRUCTURES TO THE TO THE INDICATED ELEVATIONS.
   - SUBBASE FOR ROADWAY CONSTRUCTION.
   - BRIDGE RAIL AND GUIDE RAIL.
   - GEOTEXTILE FABRIC AND RIPRAP FOR BRIDGE AND WINGWALLS.
   - COORDINATION WITH THE PRECAST CONCRETE STRUCTURES SUPPLIER REGARDING SCHEDULING FOR DELIVERY OF PRECAST UNITS AND RENTAL COSTS FOR ALL LIFTING DEVICES.
   - OFF-LOADING OF ALL BRIDGE, CULVERT AND WINGWALL SYSTEM MATERIALS, INCLUDING PAYMENT OF DELAY CHARGES AS APPLICABLE. SEE SPECIFICATION SECTION 03412.

4. WORK BY PRECAST CONCRETE STRUCTURES SUPPLIER – THE PRECAST CONCRETE SUPPLIER SHALL PERFORM THE FOLLOWING WORK FOR THE PROJECT:
   - DESIGN THE PRECAST CONCRETE BRIDGE SYSTEM.
   - DESIGN THE PRECAST CONCRETE CRIB-TYPE WINGWALL SYSTEMS.
   - DESIGN THE PRECAST CONCRETE WINGWALL LEVELING PADS.
   - SUBMIT DRAWINGS AND CALCULATIONS FOR THE PRECAST CONCRETE BRIDGE AND WINGWALL SYSTEMS AND PRECAST CONCRETE WINGWALL LEVELING PADS.
   - FABRICATE THE PRECAST CONCRETE BRIDGE AND WINGWALL SYSTEMS IN ACCORDANCE WITH THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATION SECTIONS.
   - COMPLETE MATERIAL TESTING DURING FABRICATION OF THE PRECAST CONCRETE UNITS AS SPECIFIED.
   - PROVIDE ALL LIFTING DEVICES REQUIRED FOR OFF-LOADING AND INSTALLATION OF ALL PRECAST CONCRETE UNITS BY THE CONTRACTOR.
   - PROVIDE ALL APPURTENANCES FOR THE PRECAST CONCRETE BRIDGE AND WINGWALL SYSTEMS INCLUDING, BUT NOT LIMITED TO, WINGWALL JOINT MATERIALS AND FABRIC, WINGWALL SHEAR KEY BLOCKS, BACKER RODS AND FOAM JOINT SEALANTS FOR BRIDGE JOINT CONSTRUCTION, REBAR SPLICES CAST IN THE PRECAST UNITS TO RECEIVE THE CAST-IN-PLACE HEADWALLS, WEEP HOLES CAST INTO THE PRECAST UNITS, AND BUTYL WALL JOINT WRAP FOR INSTALLATION BY THE CONTRACTOR.
   - SHIPPING AND DELIVERY OF ALL PRECAST CONCRETE UNITS AND APPURTENANCES TO THE PROJECT SITE.

5. WORK BY OWNER – THE OWNER SHALL PERFORM THE FOLLOWING WORK FOR THE PROJECT:
   - ROADWAY CLOSURE AND DETOUR SIGNAGE.
   - COORDINATION WITH UTILITY COMPANIES FOR TEMPORARY OR PERMANENT RELOCATION OF UTILITIES.
   - CONCRETE AND SOIL COMPACTION TESTING.
   - NEW ASPHALT PAVEMENT AT THE APPROACH ROADWAYS AND ABOVE THE PRECAST STRUCTURES BETWEEN THE ASPHALT REMOVAL LIMITS INDICATED.

GENERAL NOTES

1. DESIGN SPECIFICATIONS: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, 7TH EDITION – 2014, INCLUDING ALL CURRENT REVISIONS.

2. MATERIAL SPECIFICATIONS: NEW YORK STATE DEPARTMENT OF TRANSPORTATION (NYSDOT) STANDARD SPECIFICATIONS, CONSTRUCTION AND MATERIALS, 2008 DATED TO THE MAY 7, 2015 LETTING.

3. BRIDGE DESIGN CRITERIA: THE REPLACEMENT BRIDGE SHALL BE A PRECAST REINFORCED CONCRETE THREE-SIDED STRUCTURE CONFORMING WITH THE REQUIREMENTS OF SPECIFICATION SECTION 03412 WITH CAST-IN-PLACE CONCRETE FOOTINGS. THE FOLLOWING PARAMETERS SHALL BE USED IN THE DESIGN OF THE PRE-ENGINEERED STRUCTURE:
   - LIVE LOAD: VEHICLE LIVE LOAD OF HL-93 CONSISTING OF A DESIGN TRUCK OR DESIGN TANDEM, AND A DESIGN LANE LOAD.
   - DEAD LOADS: PER AASHTO REQUIREMENTS PLUS 40 PSF ALLOWANCE FOR FUTURE ASPHALT WEARING SURFACE.

4. 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.

5. 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.

6. 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.

GENERAL NOTES (CONT.)

7. 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.

8. 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.

9. SUBMITTALS: THE PRECAST CONCRETE STRUCTURES SUPPLIER AND 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.

   PRECAST CONCRETE STRUCTURES SUPPLIER:

   A. PRECAST CONCRETE BRIDGE STRUCTURE DESIGN CALCULATIONS
   B. PRECAST CONCRETE BRIDGE STRUCTURE SHOP DRAWINGS
   C. PRECAST CONCRETE CRIB-TYPE WINGWALL SYSTEM SHOP DRAWINGS
   D. PRECAST CONCRETE CRIB-TYPE WINGWALL SYSTEM DESIGN CALCULATIONS

   CONTRACTOR:

   A. CONCRETE MIX DESIGNS
   B. CONCRETE REINFORCING STEEL SHOP DRAWINGS
   C. SILT FENCE
   D. NON-SHRINK GROUT
   E. BRIDGE RAIL AND GUIDE RAIL SHOP DRAWINGS
   F. DEWATERING PLAN
   G. BACKFILL MATERIALS
   H. DRAINAGE BOARD
   I. FOAM ROADWAY FILL MATERIAL
   J. REINFORCING BAR MECHANICAL COUPLERS

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

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.

10. VEGETATIVE STABILIZING OF STREAM BANKS SHALL BE PROVIDED WHERE SHOWN ON THE DRAWINGS AND SHALL CONSIST OF WILLOW CUTTINGS PROVIDED BY THE ESSEX CO. SOIL AND WATER CONSERVATION DISTRICT AND INSTALLED BY THE CONTRACTOR. PLANT CUTTINGS IN ROWS PARALLEL TO FINAL GRADE CONTOURS SPACED MAX. 3'-0" BETWEEN ROWS. SPACE CUTTINGS AT ±2'-0" IN EACH ROW. (2)

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.

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 AND FOR FILL ABOVE THE BRIDGE STRUCTURE SHALL BE A TYPE 2 SUBBASE, CONFORMING WITH NYSDOT SPEC. SECTIONS 304 AND 733-04.

5. 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.

6. 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.

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

8. 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.

9. 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.

10. TOPSOIL, SEEDING AND MULCHING SHALL COMPLY WITH NYSDOT STANDARD SPEC. SECTION 713.

11. 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.

RIPRAP NOTES

1. ALL RIPRAP SHALL BE SOUND CLEAN ANGULAR 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 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.

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-RS1E TO BD-RS8E "STEEL BRIDGE RAILING, TWO RAIL" AS INDICATED ON THE DRAWINGS.

4. 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.

5. 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.

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

CONCRETE NOTES

1. CAST-IN-PLACE CONCRETE FOR THE FOR THE FOOTINGS, TIE BEAMS AND HEADWALLS 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. GROUT MATERIAL FOR BRIDGE DECK JOINTS AND FOOTING SHEAR KEY SHALL COMPLY WITH THE REQUIREMENTS OF NYSDOT SPECIFICATION SECTION 701-06 "SHEAR KEY GROUT".

4. POLYMER GROUT MATERIAL FOR ANCHOR DOWELS SHALL COMPLY WITH THE REQUIREMENTS OF NYSDOT SPECIFICATION SECTION 701-07 "ANCHORING MATERIAL – CHEMICAL CURING".

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 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. HEADWALL TIE BEAM MECHANICAL CONNECTOR SHALL BE EPOXY COATED DAYTON SUPERIOR D102A 90° HOOKED DOWEL BAR OR APPROVED EQUIVALENT.

8. MECHANICAL BAR COUPLERS SHALL COMPLY WITH THE REQUIREMENTS OF NYSDOT SPECIFICATION SECTION 709-10 "MECHANICAL CONNECTORS FOR REINFORCING BAR SPLICES" AND SHALL BE EPOXY COATED.

9. 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 FOLLOWING TESTING SHALL BE PERFORMED:

   –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.

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

11. WATERSTOPS SHALL BE BUTYL RUBBER RECTANGULAR OR TRAPEZOIDAL STRIPS WITH SODIUM BENTONITE OR OTHER HYDROPHILIC POLYMERS FOR ADHESIVE BONDING TO CONCRETE, SIZE 3/4"x1", GREENSTREAK "SWELLSTOP", OR EQUIVALENT.

DEWATERING NOTES (2)

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 AND STREAM CHANNEL RECONSTRUCTION.

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 AND THE NYS DEPARTMENT OF ENVIRONMENTAL CONSERVATION, 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. SHEETPILES MAY BE USED AS A DEWATERING OPTION AT THE DISCRETION OF THE CONTRACTOR.

WINGWALL SYSTEM NOTES

1. WINGWALLS SHALL BE A PRECAST CONCRETE CRIB-TYPE RETAINING WALL IN ACCORDANCE WITH NYSDOT STANDARD SPEC. SECTION 554. WINGWALL SYSTEMS SHALL BE T-WALL, AS MANUFACTURED BY THE FORT MILLER COMPANY, OR APPROVED EQUIVALENT.

2. DESIGN PARAMETERS FOR THE WINGWALL SYSTEMS SHALL BE AS FOLLOWS:
   - WALL HEIGHTS AS INDICATED.
   - BACKFILL FILL SLOPES AS INDICATED.
   - PRECAST CONCRETE WALL SYSTEM UNITS.
   - VERTICAL FRONT FACE.
   - FILL PROPERTIES TO CONFORM TO NYSDOT SPEC. SECTION 733-04, SUBBASE MATERIAL, TYPE 2.
   - WALL SYSTEMS TO BE STABLE FOR THE HEIGHTS INDICATED WITHOUT THE NEED FOR METAL MESH OR GEOGRID FABRIC REINFORCING ELEMENTS WITHIN THE SOIL BACKFILL.
   - PRECAST OR CAST-IN-PLACE REINFORCED CONCRETE FOOTING, AS INDICATED ON THE DRAWINGS, TO BE USED AS THE LEVELING PAD FOR THE BASE COURSE.

3. ALL EXPOSED SURFACES OF PRECAST CONCRETE WINGWALL UNITS SHALL RECEIVE AN EXPOSED AGGREGATE FINISH, COLOR BROWN OR GRAY.

4. THE PRECAST CONCRETE WINGWALLS SHALL BE PRE-ENGINEERED SYSTEMS. SUBMIT SHOP DRAWINGS AND DESIGN CALCULATIONS, BOTH SEALED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED TO PRACTICE IN NEW YORK STATE, FOR REVIEW AND APPROVAL BY THE OWNER PRIOR TO FABRICATION OF THE WALL UNITS.

5. THE TOPS OF THE WALL SYSTEM ELEMENTS SHALL BE UNIFORMLY SLOPED BETWEEN CONTROL ELEVATIONS INDICATED ON THE DRAWINGS.

6. THE WALL SYSTEM FABRICATION AND INSTALLATION SHALL COMPLY WITH THE REQUIREMENTS OF NYSDOT SPEC. SECTION 554 AND ALL SYSTEM MANUFACTURER'S AND DESIGNER'S REQUIREMENTS.

BRIDGE ROADWAY FILL NOTES

1. FOAM ROADWAY FILL ABOVE THE PRECAST CONCRETE BRIDGE SHALL BE FOAM-CONTROL EPS 29 GEOFOAM AS MANUFACTURED BY THERMAL FOAM, INC. OR APPROVED EQUIVALENT. GEOFOAM SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER REQUIREMENTS.

2. PEA STONE AGGREGATE SHALL COMPLY WITH THE REQUIREMENTS OF NYSDOT SPECIFICATION SECTION 703-02, "COURSE AGGREGATE" SIZE SHALL COMPLY WITH TABLE 704-4 FOR SIZE DESIGNATION 1.

MAINTENANCE AND PROTECTION OF TRAFFIC NOTES

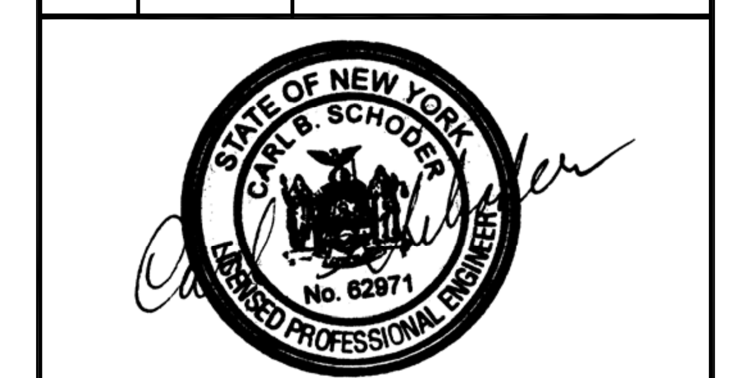
1. THE SAFE MAINTENANCE AND PROTECTION OF TRAFFIC IN AND AROUND THE SITE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR DURING THE COURSE OF THE WORK.

2. TEMPORARY CONCRETE BARRIERS AND LIGHTED CLOSURE BARRICADES SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR AT EACH END OF THE PROJECT SITE BEFORE COMMENCING WORK. BARRIERS AND BARRICADES SHALL REMAIN IN PLACE UNTIL THE WORK IS COMPLETE.

3. ALL DRIVEWAYS IN THE VICINITY OF THE PROJECT SITE SHALL REMAIN UNBLOCKED AND OPEN TO TRAFFIC AT ALL TIMES.

4. THE ROADWAY SHALL BE CLOSED TO TRAFFIC DURING CONSTRUCTION. DETOUR SIGNAGE SHALL BE PROVIDED BY THE OWNER.

REVISIONS		
REV.	DATE	DESCRIPTION
0	6/8/15	ISSUED FOR REVIEW
1	6/16/15	BID AND CONSTRUCTION
2	7/29/15	ISSUED WITH ADDENDUM 2



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SCALE:	NONE	DRAWN BY:	SRA
DATE:	6/16/15	ENG. BY:	JGL
PROJ. NO:	12-474.34	CHK'D BY:	CBS

CLIENT NAME
ESSEX COUNTY DEPT. OF PUBLIC WORKS ELIZABETHTOWN, N.Y.

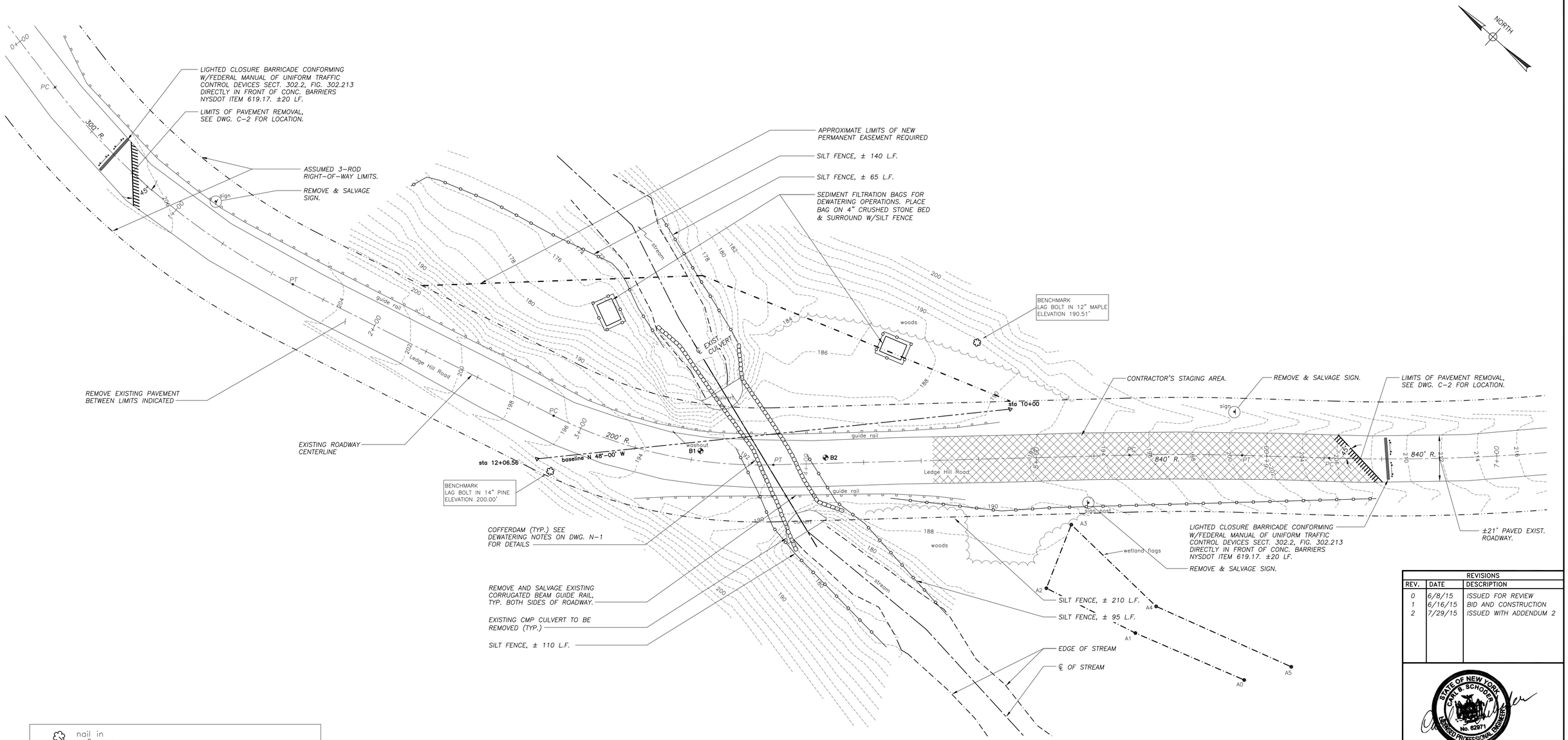
DRAWING TITLE
FURNACE BRIDGE OVER BLACK RIVER BRIDGE REPLACEMENT

NOTES

DRAWING NO. N-1

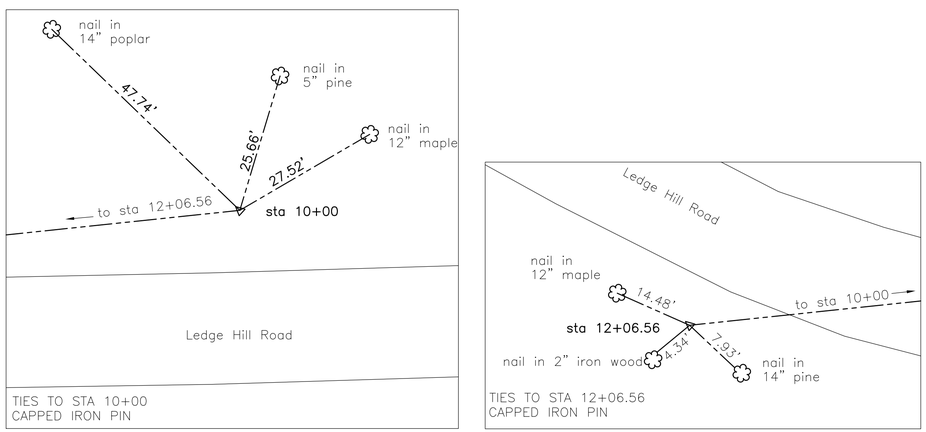
SHT. 1 OF 1

REV. 2



DEMOLITION AND EROSION CONTROL PLAN

1"=20'-0"



BASELINE STATION TIES

N.T.S.

LEGEND

- 98 — EXISTING CONTOUR.
- SILT FENCE.
- EDGE OF STREAM.
- CONSTRUCTION BASELINE
- B2 SOIL BORING

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

REVISIONS		
REV.	DATE	DESCRIPTION
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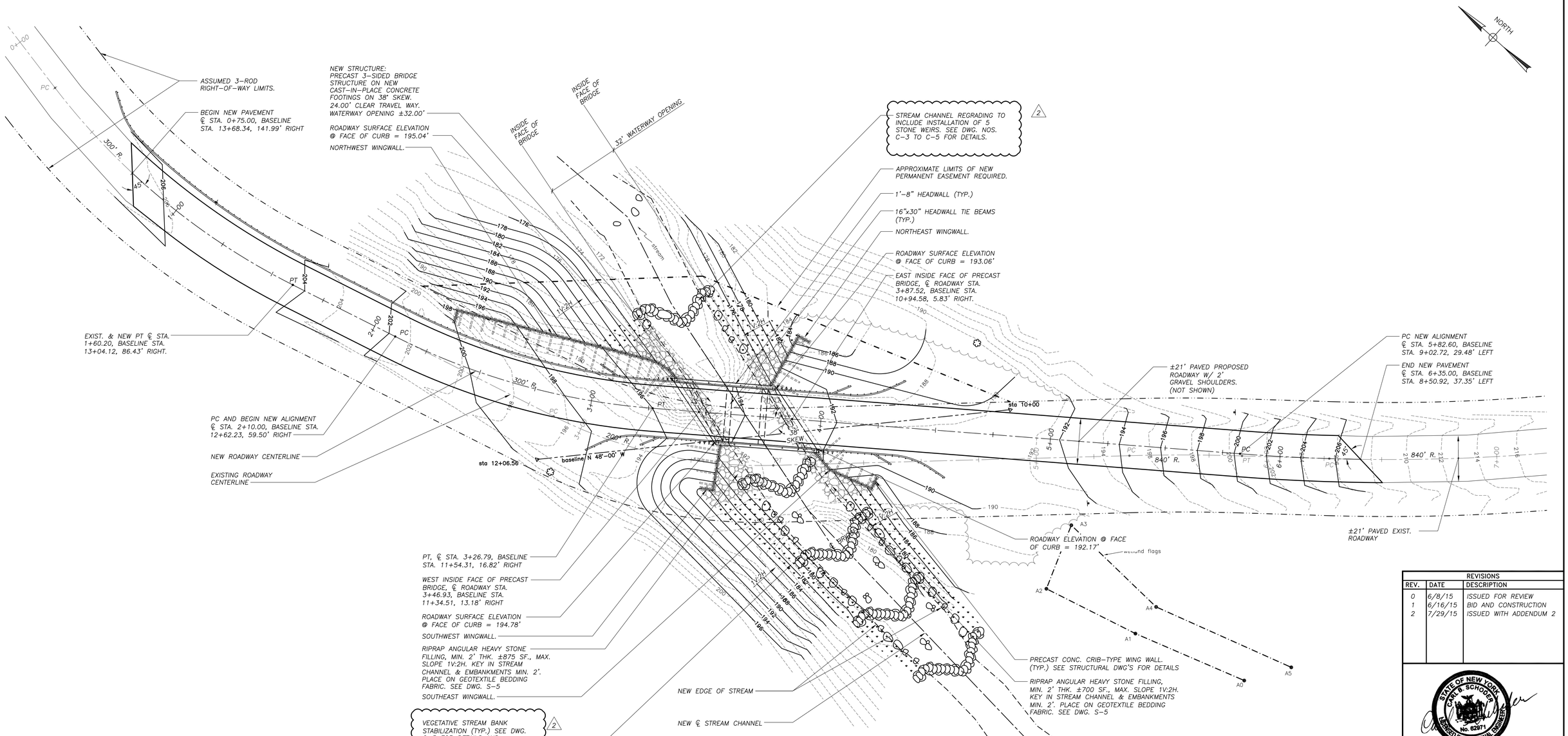
CLIENT NAME
ESSEX COUNTY DEPARTMENT OF PUBLIC WORKS
ELIZABETHTOWN, N.Y.

DRAWING TITLE
FURNACE BRIDGE OVER BLACK RIVER
BRIDGE REPLACEMENT
DEMOLITION & EROSION CONTROL PLAN

DRAWING NO. C-1 | SHT. 1 OF 5 | REV. 2



SITE PLAN
1"=20'–0"

NOTE: NEW STREAM CHANNEL GRADING NOT SHOWN FOR CLARITY. SEE DWG. NOS. C–3 TO C–5 FOR DETAILS. 2

LEGEND
- 98 EXISTING CONTOUR.
- 98 NEW CONTOUR.
- EDGE OF STREAM.
- CONSTRUCTION BASELINE

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

REVISIONS		
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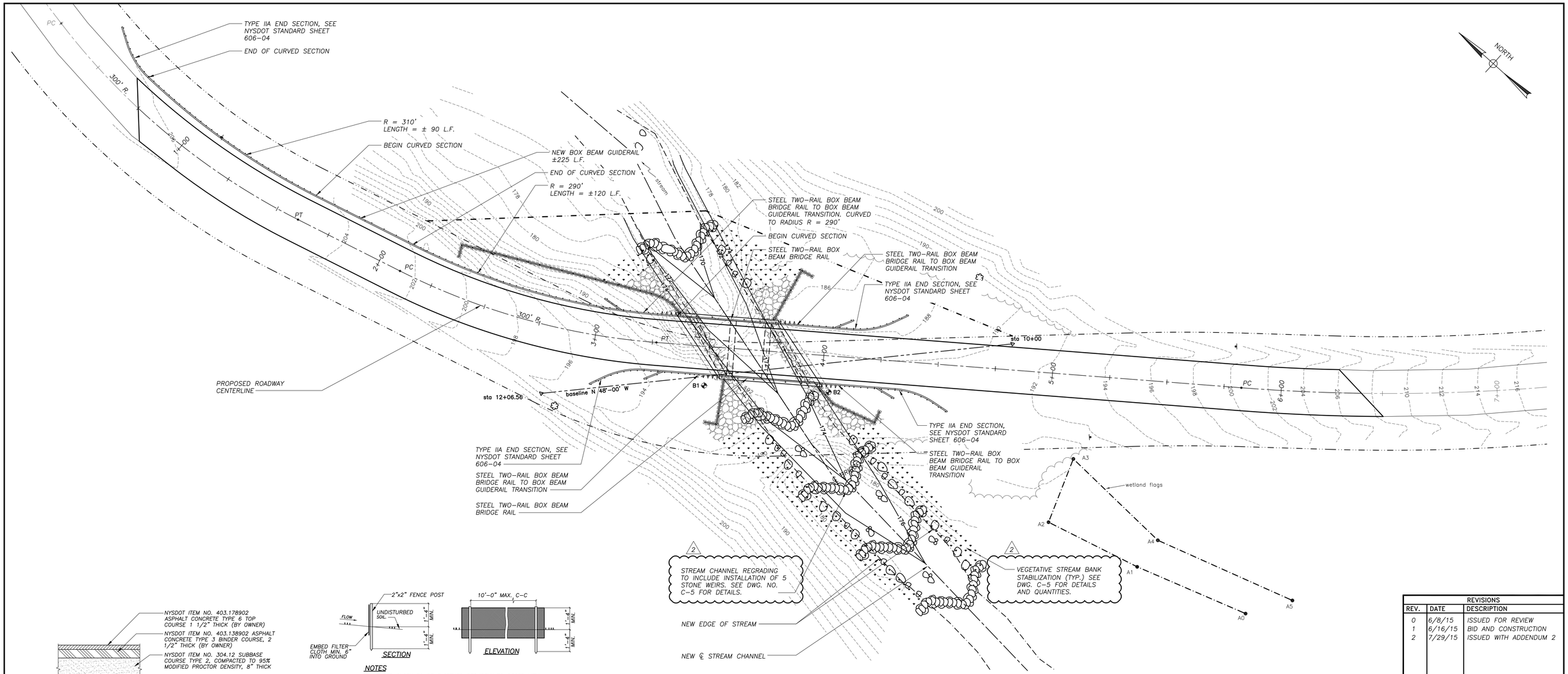
ELIZABETHTOWN, N.Y.

DRAWING TITLE
FURNACE BRIDGE
OVER BLACK RIVER
BRIDGE REPLACEMENT

SITE PLAN

DRAWING NO. C-2
SHT. 2 OF 5
REV. 2



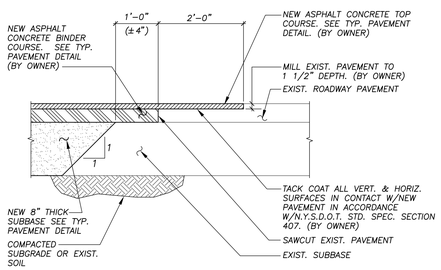
NOTE: NEW GRADING SHOWN FOR NOT SHOWN FOR CLARITY. SEE DWG. NO. C-2 FOR DETAILS.

GUIDERAIL PLAN
1"=20'-0"

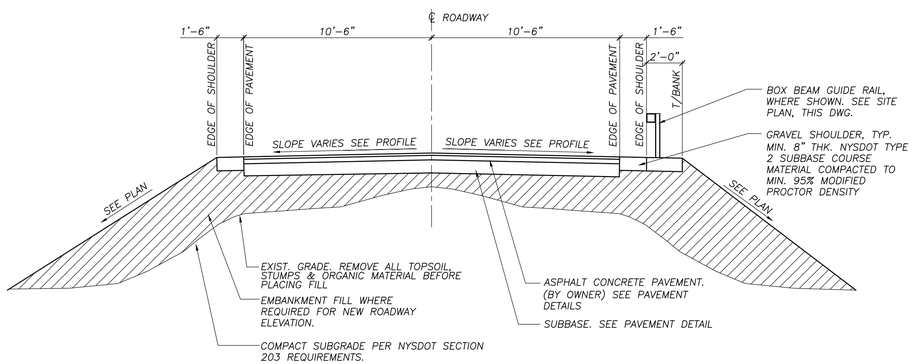
TYPICAL PAVEMENT DETAIL
N.T.S.

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.



PAVEMENT TRANSITION DETAIL
N.T.S.



TYPICAL ROADWAY SECTION
1" = 4'

LEGEND
- 98 EXISTING CONTOUR.
- 98 NEW CONTOUR.
- EDGE OF STREAM.
- CONSTRUCTION BASELINE

SURVEYED BY
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5 MAPLE STREET
CORINTH, NEW YORK

REVISIONS		
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2	7/29/15	ISSUED WITH ADDENDUM 2

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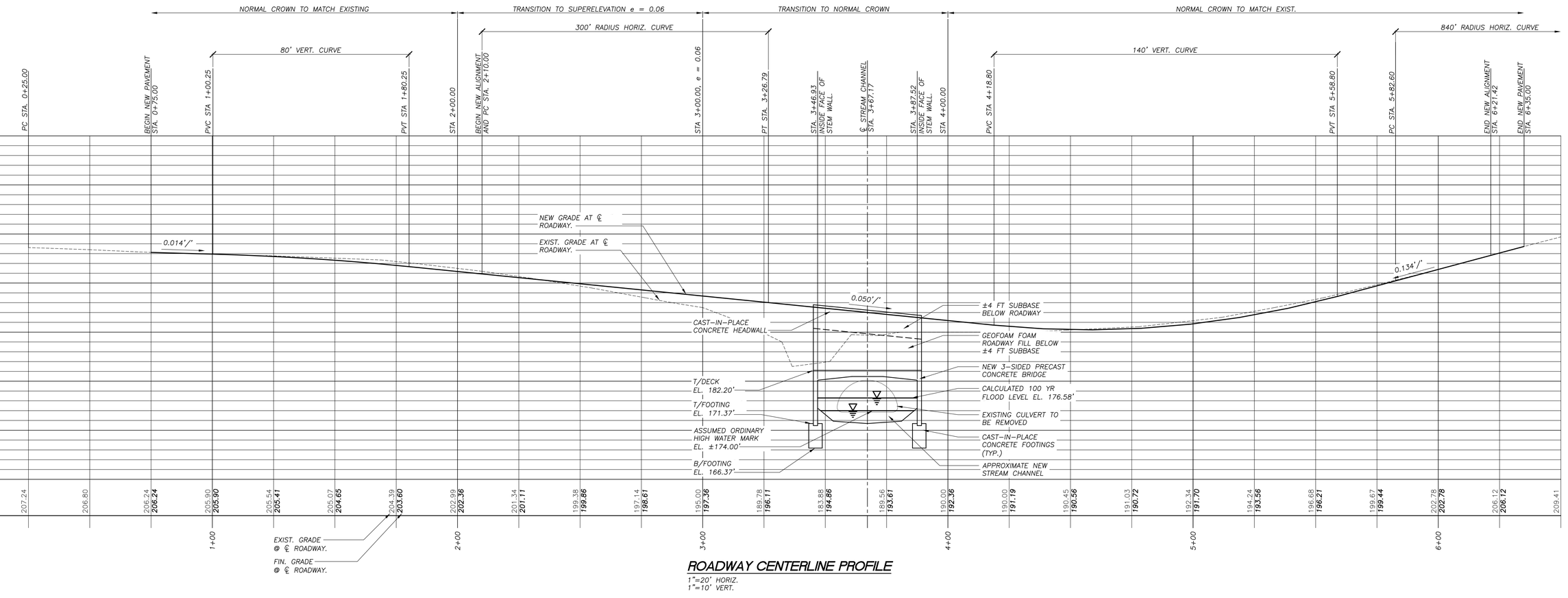
DATE:	6/16/15	ENG. BY:	JGL
PROJ. NO:	12-474.34	CHK'D BY:	CBS

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

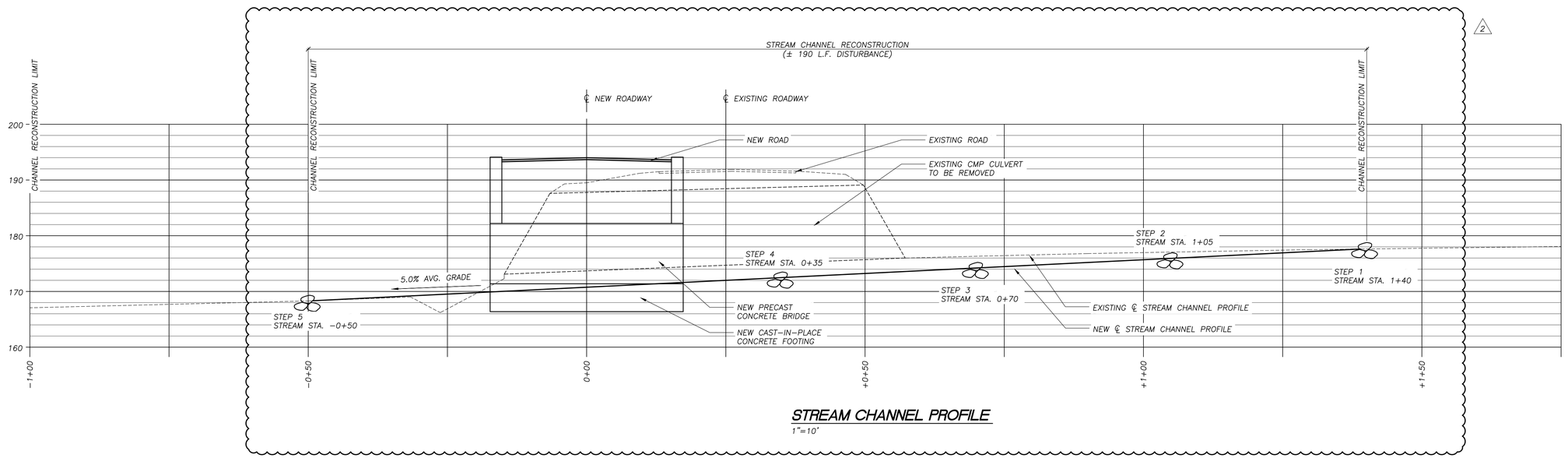
DRAWING TITLE
FURNACE BRIDGE OVER BLACK RIVER BRIDGE REPLACEMENT GUIDERAIL PLAN, SECTION & DETAILS

DRAWING NO. C-3
SHT. 3 OF 5
REV. 2



ROADWAY CENTERLINE PROFILE

1"=20' HORIZ.
1"=10' VERT.



STREAM CHANNEL PROFILE

1"=10'

REVISIONS		
REV.	DATE	DESCRIPTION
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CLIENT NAME
ESSEX COUNTY DEPARTMENT OF PUBLIC WORKS
ELIZABETHTOWN, N.Y.

DRAWING TITLE
FURNACE BRIDGE OVER BLACK RIVER BRIDGE REPLACEMENT ROADWAY PROFILE & STREAM CHANNEL PROFILE

SURVEYED BY
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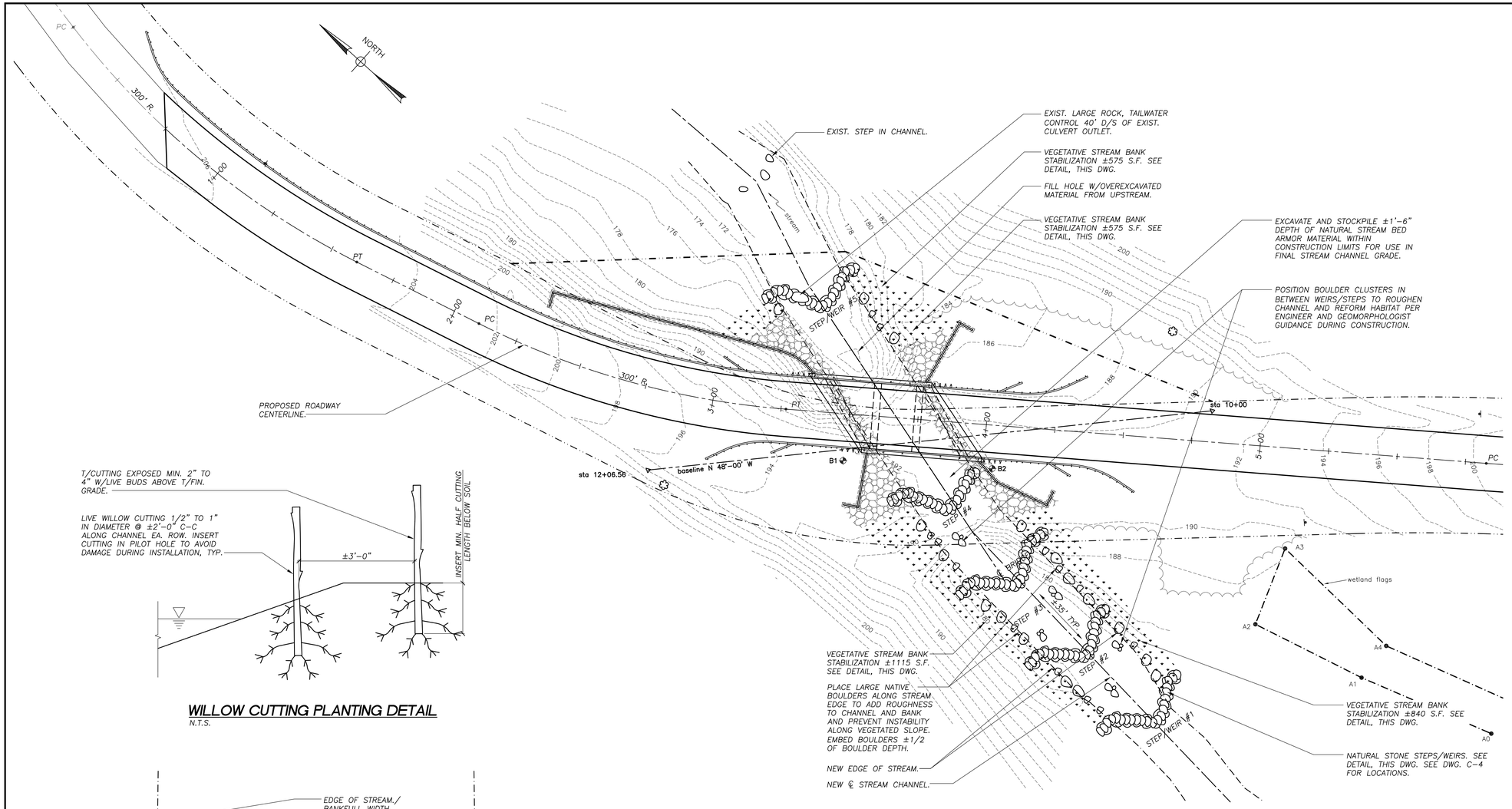
CORINTH, NEW YORK

DRAWING NO. C-4
SHT. 4 OF 5
REV. 2



NOTE: NEW GRADING SHOWN FOR NOT SHOWN FOR CLARITY. SEE DWGS. NO. C-2 AND C-3 FOR DETAILS.

STREAM CHANNEL REGRADING PLAN
1"=20'-0"

WEIR INSTALLATION NOTES

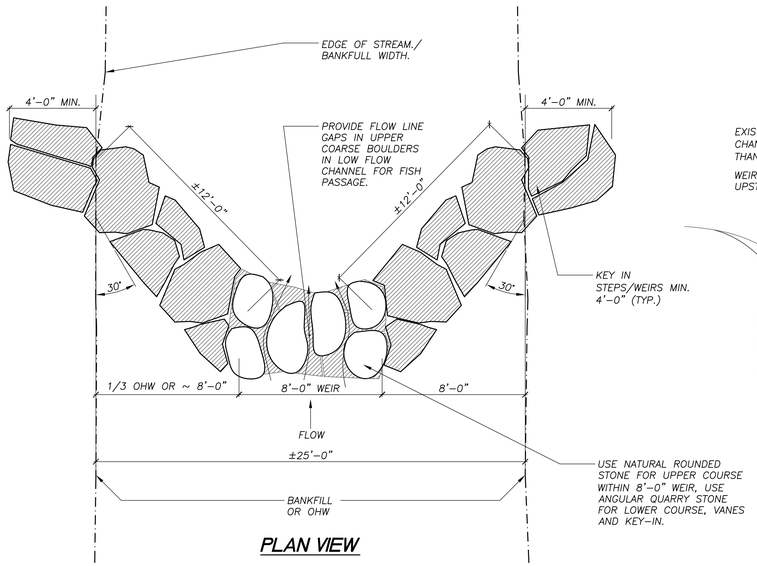
1. LOWER COURSE FOUNDATION STONE AND UPPER COURSE STONE FOR WEIR FLANKS AND BANK TIE-BACKS MUST BE UNHEWN QUARRY STONE. THE STONES SHALL BE HARD, SOUND, ANGULAR, AND RESISTANT TO ACTION OF WATER AND WEATHERING. QUARRY STONES SHALL OVERLAP AND INTERLOCK LATERALLY AND VERTICALLY.
2. UPPER COURSE STONES FOR THE CENTER THIRD OF THE CHANNEL, OR THE LOW-FLOW CHANNEL (APPROXIMATELY 8 TO 12 FEET WIDE), MAY BE SOURCED OR SALVAGED FROM WITHIN THE CHANNEL DURING CONSTRUCTION. THESE STONES SHALL BE WEATHERED, NATURALLY FORMED BOULDERS.
3. ALL STONES FOR THE STEPS/WEIRS SHALL HAVE APPROXIMATE AVERAGE DIMENSIONS OF 36 TO 48 INCHES.
4. BACKFILL AND CHINK ALL VOIDS OF THE LOWER COURSE STONES AND UPPER COURSE WEIR FLANKS AND BANK TIE-BACKS WITH NATIVE BED MATERIAL.
5. DO NOT FILL OR CHINK VOIDS OF UPPER COURSE BOULDERS IN THE CENTER LOW FLOW CHANNEL. MAINTAIN GAPS OF APPROXIMATELY 6 TO 12 INCHES TO ALLOW FOR FLOW THROUGH AND FISH PASSAGE.
6. ADJUSTMENT OF FINAL LOCATION AND ELEVATION OF UPPER COURSE STONES MAY BE REQUIRED AT THE DIRECTION OF THE PROJECT ENGINEER AND GEOMORPHOLOGIST.

BOULDER CLUSTER NOTES

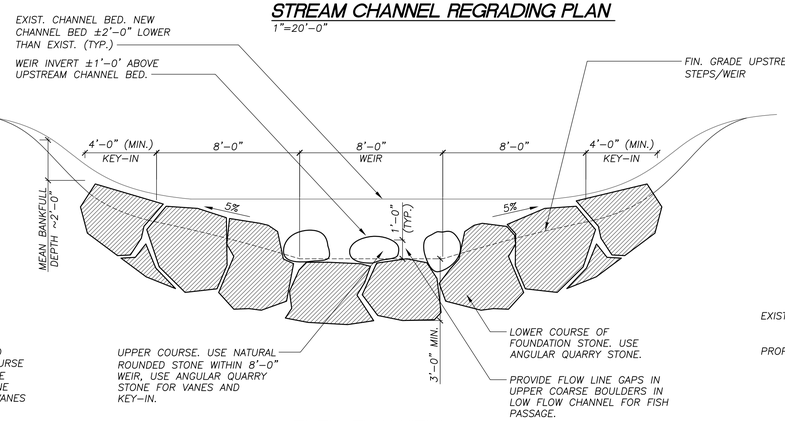
1. STONES FOR BOULDER CLUSTERS SHALL BE SOURCED OR SALVAGED FROM WITHIN THE CHANNEL DURING CONSTRUCTION. THESE STONES SHALL BE WEATHERED, NATURALLY FORMED BOULDERS.
2. STONES FOR BOULDER CLUSTERS SHALL HAVE AVERAGE DIMENSIONS FROM 18 TO 36 INCHES, AND SHALL BE EMBEDDED INTO THE CHANNEL APPROXIMATELY ONE THIRD OF DEPTH.
3. BOULDERS SHALL BE CLUSTERED IN GROUPS OF 2 TO 3.
4. ADJUSTMENT OF FINAL LOCATION OF BOULDER CLUSTERS MAY BE REQUIRED AT THE DIRECTION OF THE PROJECT ENGINEER AND GEOMORPHOLOGIST.

NOTE: STREAM SHALL BE DEWATERED DURING STREAM CHANNEL RECONSTRUCTION WORK. SEE DEWATERING NOTES, DWG. N-1.

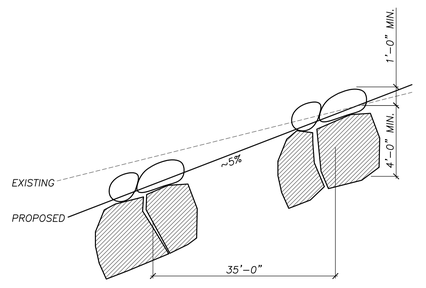
WILLOW CUTTING PLANTING DETAIL
N.T.S.



PLAN VIEW



ELEVATION VIEW



PROFILE VIEW

PROPOSED STEPS/WEIRS
N.T.S.

LEGEND

- 98 — EXISTING CONTOUR.
- 98 — NEW CONTOUR.
- EDGE OF STREAM.
- CONSTRUCTION BASELINE

REVISIONS		
REV.	DATE	DESCRIPTION
0	7/29/15	ISSUED WITH ADDENDUM 2

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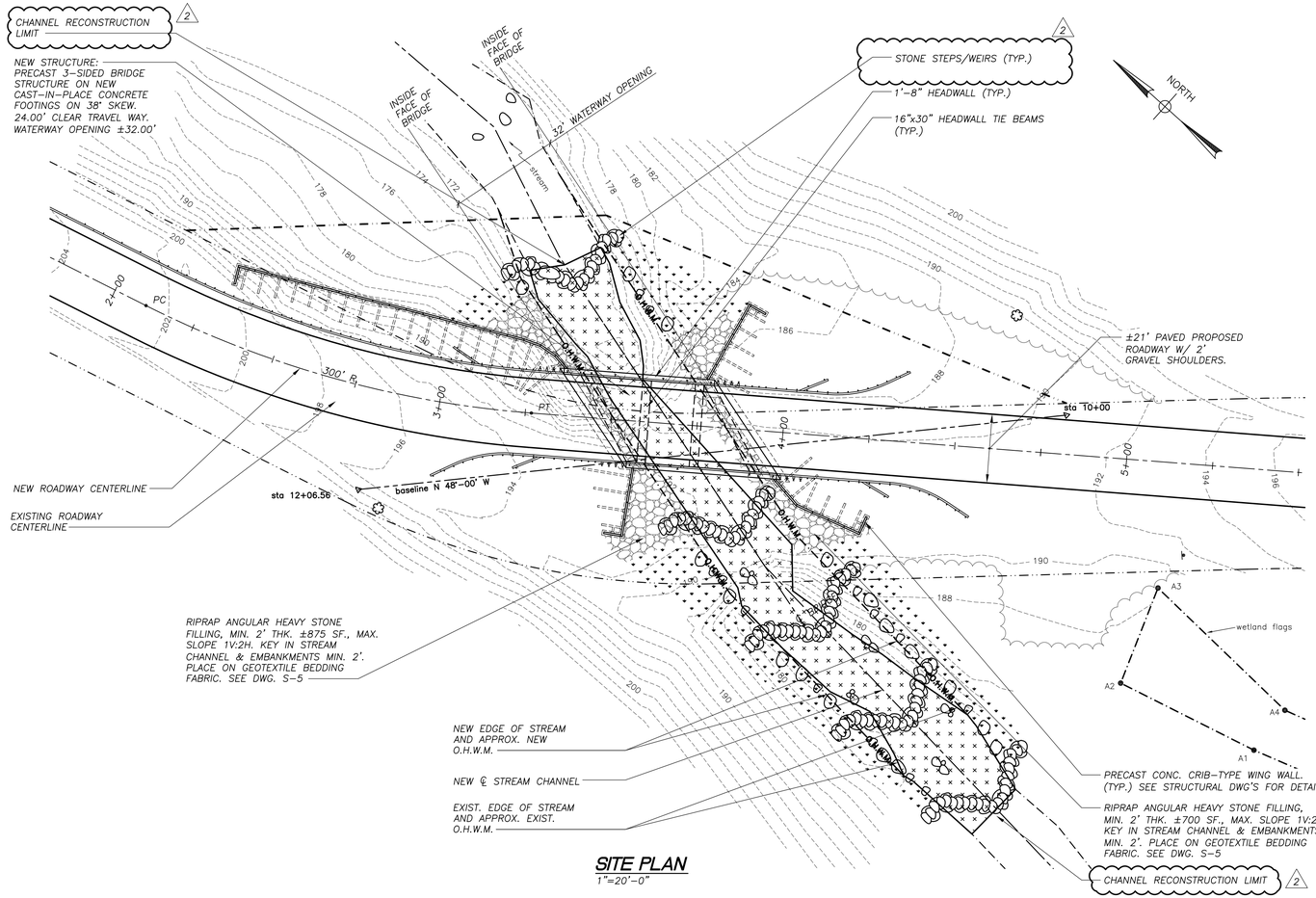
PROJ. NO:	12-474.34	CHK'D BY:	CBS

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

DRAWING TITLE
FURNACE BRIDGE OVER BLACK RIVER BRIDGE REPLACEMENT STREAM CHANNEL REGRADING PLAN

DRAWING NO. C-5
SHT. 5 OF 5
REV. 0

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



SITE PLAN
1"=20'-0"

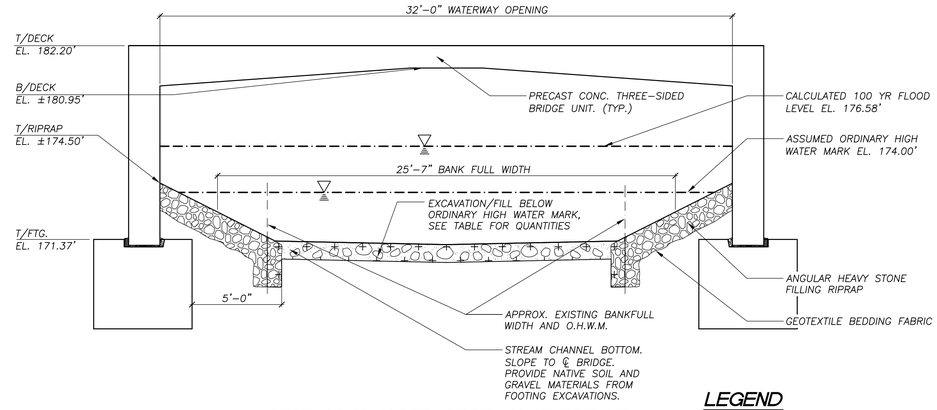
APPROXIMATE EARTHWORK QUANTITIES AND DISTURBANCE BELOW ORDINARY HIGH WATER MARK

		UPSTREAM OF BRIDGE	BELOW BRIDGE	DOWNSTREAM OF BRIDGE	TOTAL
EXCAVATION		143 cu. yd.	30 cu. yd.	88 cu. yd.	261 cu. yd.
FILL	RIPRAP	2 cu. yd.	6 cu. yd.	2 cu. yd.	10 cu. yd.
FILL	STREAM BED MATERIAL	153 cu. yd.	24 cu. yd.	98 cu. yd.	275 cu yd.
DISTURBANCE BELOW EXIST. OHWM		4040 s.f.			

2

WETLAND PROTECTION NOTES

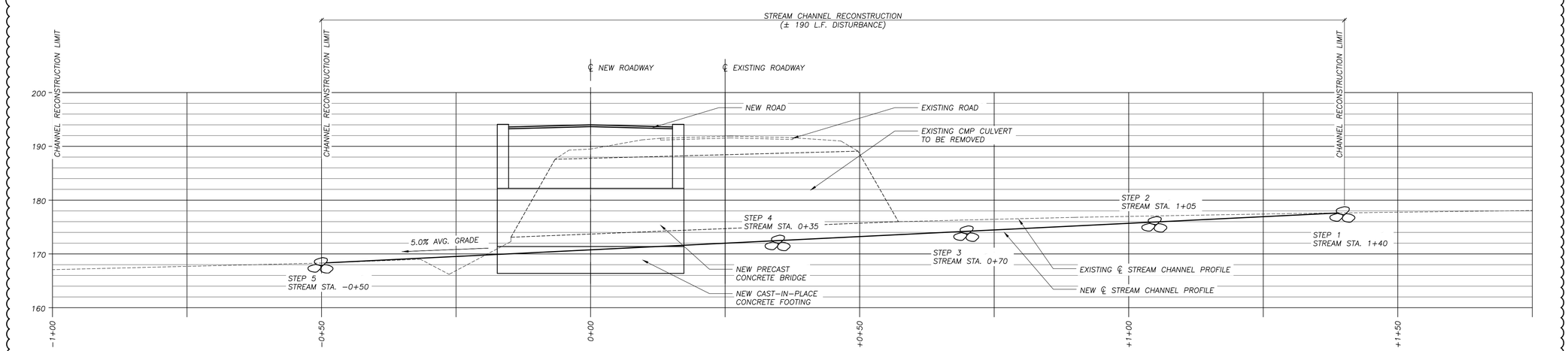
1. THE PROJECT SITE WAS VISITED BY ADIRONDACK PARK AGENCY STAFF ON 09/24/15. STAFF FLAGGED EXISTING WETLANDS AS FLAG NUMBERS A-1 THROUGH A-4 ON THE SITE PLAN. NO DISTURBANCE OF WETLAND IS ANTICIPATED WITH THIS PROJECT.



STREAM CHANNEL SECTION AT BRIDGE
1"=4'

LEGEND

- 98 — EXISTING CONTOUR
- EDGE OF STREAM
- O.H.W.M. — NEW EDGE OF STREAM (O.H.W.M.)
- CONSTRUCTION BASELINE
- DISTURBANCE AREA BELOW EX. O.H.W.M.



STREAM CHANNEL PROFILE
1"=10'

2

REVISIONS		
REV.	DATE	DESCRIPTION
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CLIENT NAME
ESSEX COUNTY DEPARTMENT OF PUBLIC WORKS ELIZABETHTOWN, N.Y.

DRAWING TITLE
FURNACE BRIDGE OVER BLACK RIVER BRIDGE REPLACEMENT U.S. ARMY CORPS OF ENGINEERS PERMIT DWG.

DRAWING NO. COE-1
SHT. 1 OF 1
REV. 2

SURVEYED BY
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