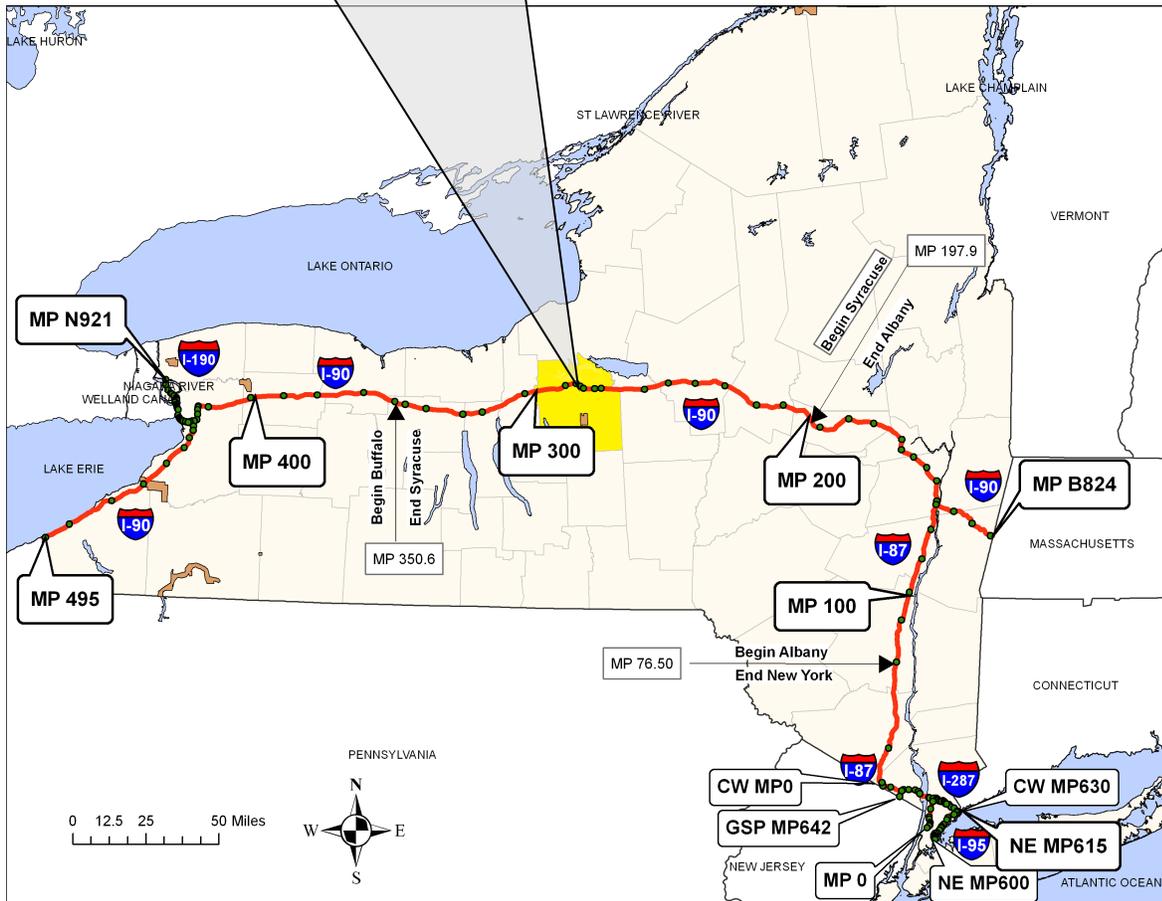


TRANSPORTATION

FINAL DESIGN REPORT

June 2017

Bridge Project
Interstate I-90 over Bear Trap Creek
MP 282.62, BIN 5510130
PIN S52886 B559.1
Town of Salina
Onondaga County



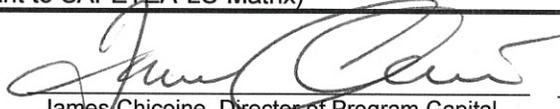
PROPOSED

PROJECT APPROVAL SHEET

(Pursuant to SAFETEA-LU Matrix)

A. Capital Plan Project Proposal Approved

The project is ready to be added to the NYSTA Capital Program


 James Chicoine, Director of Program Capital Management
 8/12/17
 Date

B. Scope Approval

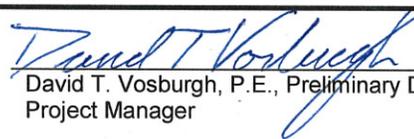
The project cost, schedule, and scope of work are consistent with the NYSTA Capital Program

Scoping Concurrent w/Design (Approved by):


 Thomas A. Mahar, P.E., Director of Engineering Support Services
 8/9/17
 Date

C. Public Hearing Certification (23 USC 128):

A public hearing was not required.

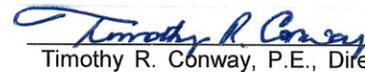

 David T. Vosburgh, P.E., Preliminary Design Project Manager
 7/12/17
 Date

D. Recommendation for Design Approval

This Project Design Report has been reviewed and meets my approval. The report documents the project needs and has evaluated appropriate alternatives.


 Patrick Hoehn, P.E., Division Director
 7/21/17
 Date

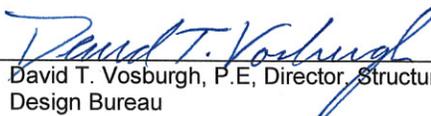

 Mark A. Hixson, P.E.
 Director, Maintenance and Operations
 7/24/17
 Date


 Timothy R. Conway, P.E., Director, Office of Design
 7/24/2017
 Date

E. Recommendation for Design and Nonstandard Feature Approval

All requirements requisite to these actions and approvals have been met, the required independent quality control reviews separate from the functional group reviews have been accomplished, and the work is consistent with established standards, policies, regulations and procedures, except as otherwise noted and explained.


 Albert Mastroianni, P.E., Director, Highway Design Bureau
 7/12/17
 Date


 David T. Vosburgh, P.E., Director, Structures Design Bureau
 7/12/17
 Date

F. Nonstandard Feature Approval

No nonstandard features have been created or will be retained.


 Richard W. Lee, P.E., Chief Engineer
 8/9/17
 Date

G. Design Approval

The project cost, schedule, and scope of work are consistent with the NYSTA Capital Program. The required environmental determinations have been made and the preferred alternative for this project is ready for final design.


 Richard W. Lee, P.E., Chief Engineer
 8/9/17
 Date

LIST OF PREPARERS

This report was prepared by the following Consultant staff:

James Hofmann, P.E., Project Manager, Stantec Consulting Services Inc.

Timothy Bradley, P.E., Structures Engineer, Stantec Consulting Services Inc.

Robert Cody, P.E., Transportation Engineer, Stantec Consulting Services, Inc.

Description of Work Performed:

Prepared or supervised subconsultants for all report chapters and appendices for the Design Approval Document in accordance with established standards, policies, regulations and procedures, except as otherwise explained in this document.

Note: *It is a violation of law for any person, unless they are acting under the direction of a licensed professional engineer, architect, landscape architect, or land surveyor, to alter an item in any way. If an item bearing the stamp of a licensed professional is altered, the altering engineer, architect, landscape architect, or land surveyor shall stamp the document and include the notation "altered by" followed by their signature, the date of such alteration, and a specific description of the alteration.*



Timothy Bradley, P.E.
NYS License No. 063695



Robert Cody, P.E.
NYS License No. 068312

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B.	Environmental Agency Correspondence
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F.	Cost Estimates

Separate Reports

Cultural Resource Survey Report (February 2017)
Hazardous Waste-Contaminated Materials Screening Report (February 2017)
Hazardous Waste-Contaminated Materials Technical Memorandum (Asbestos) (February 2017)
Wetland Delineation Letter Report (February 10, 2017)
Hydraulic Analysis / Floodplain Evaluation Report (May 2017)

CHAPTER 1 - EXECUTIVE SUMMARY

1.1. Introduction

This project proposes to replace the existing bridge carrying the New York State Thruway over Bear Trap Creek (BIN 5510130) located at milepost 282.62 in the Town of Salina, Onondaga County, New York.

This report will assess existing conditions, identify the overall project objectives, analyze alternative solutions, and discuss the social, economic and environmental effects on the community resulting from the implementation of the feasible alternative under consideration.

1.2. Purpose and Need

1.2.1. Where is the Project Located?

This project is located within the Town of Salina, Onondaga County. For more information, see Figure 1 – General Location Map and Figure 2 – Project Location Map.

- (1) Route number - I-90
- (2) Route name – New York State Thruway
- (3) SH number and official highway description - N/A
- (4) BIN and feature crossed – 5510130, Bear Trap Creek
- (5) City/Village/Township – Town of Salina
- (6) County - Onondaga
- (7) Length – 56 foot span
- (8) Project Termini – Begin – 100 feet west of Bear Trap Creek
 End – 100 feet east of Bear Trap Creek

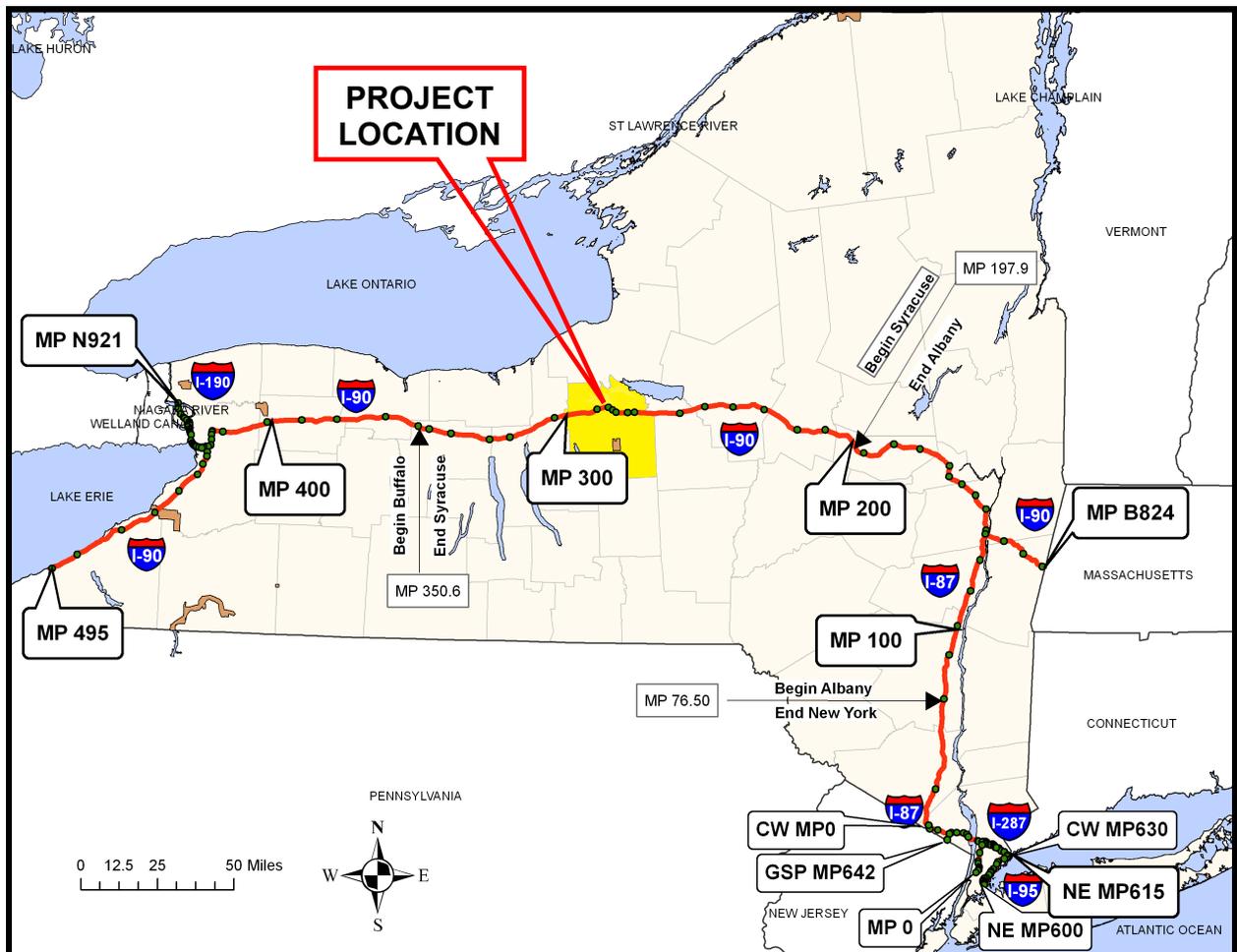


FIGURE 1 - GENERAL LOCATION MAP

NEW YORK STATE THRUWAY AUTHORITY
Interstate 90 over Bear Trap Creek Bridge Replacement
Town of Salina

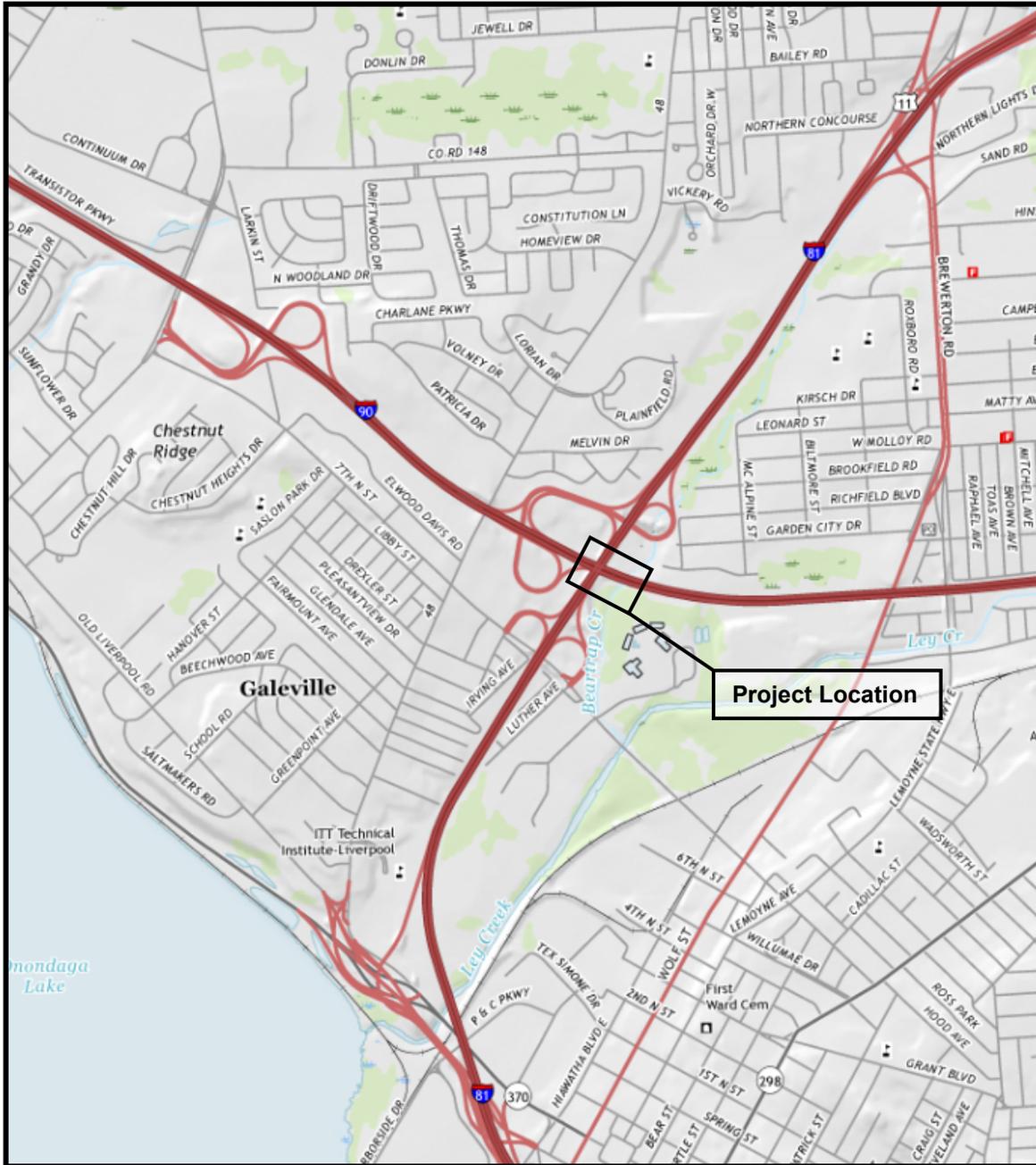


FIGURE 2 - PROJECT LOCATION MAP

NEW YORK STATE THRUWAY AUTHORITY
Interstate 90 over Bear Trap Creek Bridge Replacement
Town of Salina

1.2.2. Why is the Project Needed?

The need for a bridge replacement project was identified by the New York State Thruway Authority after review of Biennial Inspection Reports. The existing bridge has a current NYS General Recommendation of 4. The bridge is categorized as “Deficient” under the NYS definition based on a NYS General Recommendation less than 5.



1.2.3. What are the Objectives/Purposes of the Project?

The following project objectives have been identified:

- (1) Eliminate structural deficiencies and provide a safe crossing over Bear Trap Creek with a service life of at least 75 years.
- (2) Provide a sufficient hydraulic opening for the Base and Design Year Storm events
- (3) Meet the objectives above in a socially, economically, and environmentally sensitive manner.



1.3. What Alternative(s) Are Being Considered?

The following alternatives representing possible engineering solutions are presented in this report:

- Null or No Build Alternative
- Rehabilitation Alternative
- Reconstruction Alternative - Bridge replacement with single span structure that possesses a sufficient hydraulic opening.

Null or No Build Alternative – Under this alternative the existing structure would remain. NYSTA maintenance forces would continue routine maintenance and repairs on the structure, as required. This alternative does not meet the project objectives, therefore has been eliminated from further review.

Rehabilitation Alternative – Under this alternative the existing structure would be rehabilitated to current standards by repairing the deteriorated concrete structure.

Rehabilitation of the existing structure by repairing deteriorated concrete was determined to be an ineffective method for rehabilitation for this project. Due to the severity of the deterioration at all joints along the roof slab and walls, as well as deterioration of the inlet and outlet headwalls and outlet wingwalls, the cost to complete (\$1.3 million) the extensive repairs would not be economical and the life of the structure would not be sufficiently improved. Refer to Appendix F for the Cost Estimate.

Reconstruction Alternative 1 – Bridge replacement with single span structure – This alternative would include complete removal and replacement of the existing structure with a new bridge on the existing alignment. The replacement structure would accommodate 2-12-foot travel lanes in each direction (as well as a single 12-foot wide acceleration lane in the eastbound direction), and 12 foot right and 10 foot left shoulders (4-6 foot paved). The existing 23-foot-wide median across the structure would be retained. For estimating purposes, the new bridge is assumed to be a 56 foot long single-span steel girder superstructure with integral abutments founded on piles. A monolithic concrete deck slab would be

constructed with concrete approach slabs at each end of the bridge. The design build team will determine the final structure type and configuration. New wingwalls would be installed along with stone fill protection on embankment slopes. This alternative would fully meet the project needs and objectives and is considered the only feasible and prudent alternative.

For a more in-depth discussion of the design criteria see Section 3.2.3. Design Criteria for Feasible Alternative.

1.4 How will the Alternative(s) Affect the Environment?

Exhibit 1.4-A Environmental Summary			
NEPA Classification	No Federal Action	BY	NYSTA
SEQR Type:	Type II	BY	NYSTA

Anticipated Permits/Certifications/Coordination:

NYSDEC: State Pollutant Discharge Elimination System (SPDES) General Permit
 NYSDEC: Section 401 Water Quality Certification
 NYSDEC: Article 15 Protection of Waters Permit
 USACE: Section 404 Nationwide Permit #3 (Maintenance)
 US Fish and Wildlife
 New York State Historic Preservation Office

1.5. What are the Costs & Schedules?

The estimated construction cost for the preferred alternative is \$9.54 million (includes bridge design and construction inspection costs). The project will be funded solely by the New York State Thruway Authority. See Section 3.2, Exhibit 3.2.1 for a summary of alternative costs.

Design Approval is scheduled for July 2017. Construction is scheduled to last 30 months beginning in July 2018.

Exhibit 1.5 Project Schedule	
Activity	Date Occurred/Tentative
Letter of Intent	March 1, 2017
Request for Qualifications	April 1, 2017
Statement of Qualifications	May 1, 2017
Request for Proposals	July 1, 2017
Proposal Due Date	September 27, 2017

1.6. Which Alternative is Preferred?

The preferred alternative is a replacement structure with a sufficient and similar hydraulic opening.

1.7. Who Will Decide Which Alternative Will Be Selected and How Can I Be Involved in This Decision?

The New York State Thruway Authority is responsible for making the decision on the preferred alternative for the project. When making the decision the Thruway will consider all comments received from the various review agencies.

Exhibit 1.7 Schedule of Milestone Dates	
Activity	Date Occurred/Tentative
Design Approval	July 2017
Proposal Due Date	September 27, 2017

For further information, questions or comments contact:

Timothy Conway, P.E. NYSTA
email: Timothy.Conway@thruway.ny.gov
Telephone: (518) 436-2988

New York State Thruway Authority
200 Southern Blvd
Albany, New York 12209

The remainder of this report is a detailed technical evaluation of the existing conditions, the proposed alternatives, the impacts of the alternatives, copies of technical reports and plans and other supporting information.

CHAPTER 2 - PROJECT CONTEXT: HISTORY, TRANSPORTATION PLANS, CONDITIONS AND NEEDS

This chapter addresses the history and existing context of the project site including the existing conditions, deficiencies, and needs for this part of the Interstate 90 corridor including the bridge carrying Interstate 90 over Bear Trap Creek at milepost 282.62.

2.1. Project History

Interstate 90, near milepost 282.62, is a full access controlled four-lane divided highway originally funded and constructed by the New York State Thruway Authority. The Thruway was constructed to serve as the primary transportation connecting link from the metropolitan region of New York City with upstate urbanized areas northerly to Albany, westerly to Buffalo, eventually terminating at the Pennsylvania State Line. The highway became part of the Eisenhower Interstate System following passage of the Federal-Aid Highway Act of 1956 and subsequent construction of its highway network. Currently the highway continues to serve its New York based patrons along with interstate and international travelers.

The New York State Thruway Bridge over Bear Trap Creek at MP 282.62 was constructed with the original highway in 1946, and based on recent semi-annual bridge inspection reports, is currently near the end of its economical service life.

The project was initially conceived due to advancing deterioration to various bridge components observed in routine biennial inspections. As the structure is currently rated as deficient, it was identified as a suitable candidate for rehabilitation or replacement once capital funding became available.

A recent decision was made to advance the project utilizing a design-build procurement package bundled with seven other structures in the area.

2.2. Transportation Plans and Land Use

2.2.1. Local Plans for the Project Area

2.2.1.1. Local Master Plan

No local master plans will be affected by this project.

2.2.1.2. Local Private Development Plans

There are no approved developments planned within the project area that will impact traffic operations.

2.2.2. Transportation Corridor

2.2.2.1. Importance of the Project Route Segment

The New York State Thruway serves as one of the major connecting transportation network links within New York State and the Northeast. The highway is the primary mobility link between the New York metropolitan area and transportation links in northern and western New York. The subject roadway segment is the mainline over Bear Trap Creek.

2.2.2.2. Alternate Routes

There are no practical alternate routes for a mainline roadway closure.

2.2.2.3. Corridor Deficiencies and Needs

The existing bridge which accommodates mainline traffic over Bear Trap Creek is structurally deficient. Replacement of this infrastructure is necessary to maintain mobility of all operators using this segment of the interstate system.

2.2.2.4. Transportation Plans

This project is being progressed as a bridge replacement project which, when bundled with seven other bridges within the Syracuse Division to be replaced, will be let as a single Design Build project. Since this project is 100% Thruway funded, it has not been added to the Statewide Transportation Improvement Program (STIP).

2.2.2.5. Abutting Highway Segments and Future Plans for Abutting Highway Segments -

The existing Interstate 90 highway section through the project limits is typical of an urban interstate. Two travel lanes in each direction exist with 10 foot right shoulders and 10 foot left shoulders (4-6 foot paved). Also, in the westbound direction, a deceleration lane associated with the Interchange 36 (I-81) exit ramp begins just west of the subject bridge, while in the eastbound direction, a single acceleration lane associated with the Interchange 36 entrance ramp exists across the subject bridge. The eastbound and westbound travel lanes are bounded along the outer edges by w-beam and box-beam guide rail, respectively, and separated by a grassed median and w-beam median barrier.

NYSTA is planning to reconstruct this segment (MP 284 – MP 289.2) of the mainline in 2020.

2.3. Transportation Conditions, Deficiencies and Engineering Considerations

2.3.1. Operations (Traffic and Safety) & Maintenance

2.3.1.1. Functional Classification and National Highway System (NHS)

Exhibit - 2.3.1.1 Classification Data	
Route(s)	I-90
Functional Classification	Urban Principal Arterial – Interstate
National Highway System (NHS)	Yes
Designated Truck Access Route	Yes
Qualifying Highway	N/A
Within 0.25 miles of a Qualifying Highway	No
Within the 16 ft. vertical clearance network	Yes

2.3.1.2. Control of Access

Access to I-90 is fully-controlled. The highway is a toll facility with access limited via toll booths at interchanges.

2.3.1.3. Traffic Control Devices

There are no traffic signals within the project limits. All signs, pavement markings, delineators, mile markers and rumble strips conform to the latest guidelines and warrants.

2.3.1.4. Intelligent Transportation Systems (ITS)

The Thruway fiber optic ITS line is located within the westbound right embankment area of I-90. There are no ITS elements within the project limits.

2.3.1.5. Speeds and Delay

Refer to Exhibit 2.3.1.5 for existing speed data along Interstate 90 within the project limits:

Exhibit - 2.3.1.5	
Speed Data	
Route	Interstate 90
Existing Speed Limit	65 MPH
Operating Speed and Method Used for Measurement	70 MPH ¹ (Estimated)
Travel Speed and Delay Runs for Existing Conditions	N/A ¹
Travel Time and Delay Runs Estimates	N/A ¹

¹ A speed study was not required for operational studies or for use in accident investigations since the project is a bridge replacement project and does not contain a high accident location.

2.3.1.6. Traffic Volumes

2.3.1.6. (1) Existing traffic volumes

Refer to Exhibit 2.3.1.6-1 for a summary of the traffic data:

Exhibit - 2.3.1.6-1				
Existing and Forecast Traffic Volumes				
Route	Interstate 90			
Year	AADT	DHV	DDHV	% Trucks
Existing (2016)	31,890	4,064	2,032	19
ETC (2020)	33,847	4,314	2,157	19
ETC+10 (2030)	39,281	5,006	2,503	19
ETC+20 (2040)	45,587	5,810	2,905	19
ETC+30 (2050)	52,905	6,742	3,371	19

An assumed annual growth rate of 1.5% was used for future traffic volume projections.

2.3.1.6. (2) Future no-build design year traffic volume forecasts

The Estimated Time of Completion, ETC+30 design year was selected per Project Development Manual Appendix 5. An ETC+30 year projection was completed as the project involves the replacement of a bridge.

2.3.1.7. Level of Service and Mobility

2.3.1.7. (1) Existing level of service and capacity analysis

Level of Service (LOS) defines traffic operating conditions in which “A” represents the best conditions (traffic that is free flowing with minimal delay) and “F” which represents the condition where upstream demand exceeds capacity on a regular basis (results in reduction in free flow speed and unacceptable delay). A LOS C is considered to be the minimum acceptable LOS for urban interstate highways on level or rolling terrain. The results of the LOS analysis for the 30th highest hourly volume (30 HV), based on the 2000 Highway Capacity Manual indicates that the existing system operates at a LOS B.

2.3.1.7. (2) Future no-build design year level of service

Exhibit - 2.3.1.7-1 Thruway Mainline Service Summary	
	Level of Service (LOS)
Interstate 90	
Existing (2016)	B
ETC (2020)	B
ETC+10 (2030)	C
ETC+20 (2040)	C
ETC+30 (2050)	D

2.3.1.8. Safety Considerations, Accident History and Analysis

An accident analysis was conducted for the time period of 1/1/13 to 12/31/15. During that timeframe, a total of 99 accidents occurred (no fatalities). 26 accidents occurred on the mainline while the remaining 73 accidents occurred on the interchange. The 3-year accident rate is 94.17 acc/100 MVM, which is below the statewide average of 110 acc/100 MVM.

There were no Possible High Accident Locations (PHAL) within the project limits between 2013 and 2015.

2.3.1.9. Existing Police, Fire Protection and Ambulance Access

Troop T Zone 3 of the New York State Police is responsible for enforcement along Interstate 90 within the project limits. Access is available for enforcement and emergency responders via periodic gated connections with local roadways and directionally on the system via U-turns.

2.3.1.10. Parking Regulations and Parking Related Conditions

Parking is restricted by law on Interstate highways.

2.3.1.11. Lighting

There is no street lighting on Interstate 90 within the project limits.

2.3.1.12. Ownership and Maintenance Jurisdiction

The New York State Thruway Authority operates and maintains the Thruway and the bridge (BIN 5510130) carrying Interstate 90 over Bear Trap Creek within the project limits.

2.3.2. Multimodal

2.3.2.1. Pedestrians

Pedestrians are prohibited on Interstate Highways by state law.

2.3.2.2. Bicyclists

Bicyclists are prohibited on Interstate Highways by state law.

2.3.2.3. Transit

There are no transit providers with operating facilities within the project limits.

2.3.2.4. Airports, Railroad Stations, and Ports

There are no airports, railroad stations, or port entrances within or near the project limits.

2.3.2.5. Access to Recreation Areas (Parks, Trails, Waterways, State Lands)

There are no entrances to recreation areas within the project limits.

2.3.3. Infrastructure

2.3.3.1. Existing Highway Section

The existing Interstate 90 highway section through the project limits is typical of an urban interstate. Two (2) travel lanes and an acceleration lane exist in the eastbound direction and two lanes (and a deceleration lane that begins just west of the subject bridge) exist in the westbound direction. 10-foot-wide left and right shoulders exist in both directions. The 10-foot-wide left shoulders consist of 4 and 6 feet of pavement in the westbound and eastbound directions, respectively, with the remainder of the shoulder being graded gravel. The existing pavement section consists of 9" PCC pavement over a 12" subbase. The pavement section shows signs of asphalt concrete pavement overlay but overlay thickness is unknown.

2.3.3.2. Geometric Design Elements Not Meeting Standards

2.3.3.2.(1) Critical Design Elements

No non-standard features have been identified within the project limits.

2.3.3.2.(2) Other Design Parameters

Also, at ETC+30, the level of service on the mainline is expected to drop to LOS D, which is below the conventional minimum acceptable of LOS C.

2.3.3.3. Pavement and Shoulder

A pavement evaluation was not completed for this project as this is a bridge replacement project.

2.3.3.4. Drainage Systems

Stormwater runoff from within the project area is generally collected by shallow median and roadside swales, then conveyed to minor closed systems before ultimately discharging to Bear Trap Creek.

2.3.3.5. Geotechnical

Subsurface explorations were completed as part of the original bridge design in 1946. Two bore holes were advanced at the site to assess in-situ conditions. The soils at the time were determined to consist of a mix of dry/wet sand and silt. Bedrock was not observed within 40 feet of the ground surface and at a depth of 40 feet, soils transitioned to primarily of clay (mixed with gravel) layer. Two additional soil borings were performed in December 2016 that generally confirm the prior borings. Refer to Appendix E for the soil boring logs.

2.3.3.6. Structure

2.3.3.6.(1) Description

There is one structure located within the project limits that carries I-90 over Bear Trap Creek.

- (a) BIN - 5510130
- (b) Feature carried and crossed – I-90 over Bear Trap Creek.
- (c) Type of bridge, number and length of spans, etc. – Twin cell 4-sided reinforced cast-in-place concrete box structure. Each cell has a 12 foot 6-inch span; the center pier is 1 foot 8 inches wide.
- (d) Width of travel lanes and shoulders –There are three lanes in the eastbound direction and two lanes in the westbound direction that are 12 feet wide, 10 foot right shoulders and 10 foot (4-6 foot paved) left shoulders. Opposing directions are separated by a 23-foot-wide grass median.
- (e) Sidewalks – There are no sidewalks on the bridge.
- (f) Utilities carried – There are no utilities on the bridge.

2.3.3.6.(2) Clearances (Horizontal/Vertical)

The minimum horizontal clearance is established by the location of the existing w-beam and box beam guiderail that borders the outside edge of shoulder in both directions. As such, the horizontal clearance is established at 10 feet, the width of the existing shoulder. The bridge over Bear Trap Creek has an existing 9-foot vertical hydraulic opening. A reduction of the vertical rise is permissible provided a minimum 2 feet of freeboard is maintained.

2.3.3.6.(3) History & Deficiencies

This bridge was constructed in 1946 under Contract OT 46-2. Available records indicate medium stone fill was installed in the outlet channel under contract TAS 98-22B.

2.3.3.6.(4) Inspection

The bridge was last inspected on 05/11/2016. A full copy of the Inspection Report and the current bridge inventory can be found in Appendix D.

- (a) General Recommendation – 4
- (b) Summary of Condition and Inspection Reports: The 2016 biennial inspection report rates the bridge as being in a fair to poor condition.

The bridge is generally in fair to poor condition with most elements of the reinforced concrete culvert rated as Condition States 2 and 3. The walls have extensive full height vertical cracking and efflorescence. The underside of the top slab has large areas of cracking as well as areas that are leaching efflorescence. All horizontal construction joints and vertical construction joints have extensive spalling (4 inches deep) and delamination of the concrete with exposed rusted reinforcing steel, delamination, and broken bars.

Headwalls are in poor condition with a Condition State of 3. The headwalls have extensive spalling (3 inches deep) along the complete lower edge. The upper portion of both headwalls have areas of cracked, hollow, and spalled concrete.

Wingwalls are in poor condition with a Condition State of 3. The end right wingwall has a large area of full height delamination and spalling (3 inches deep) with exposed reinforcing steel.

Other areas of moderate deterioration include metal guide rail and sedimentation of the stream channel. The foundations conditions are unknown as they are not visible for inspection.

2.3.3.6.(5) Restrictions

There are currently no load postings on the bridge.

2.3.3.6.(6) Future Conditions

If no maintenance actions are taken to address the conditions of this bridge the areas of deterioration will continue to a point where continued and more frequent maintenance will be necessary for the bridge. In addition, deterioration may progress to a point where load restrictions may be necessary.

2.3.3.6.(7) Waterway

A Coast Guard Checklist is not required. Bear Trap Creek is a protected Class C(T) stream. With a 2.8 square mile acre contributing watershed, the channel is well-defined with a silty/sandy channel bottom and vegetated banks.

2.3.3.7. Hydraulics of Bridges and Culverts

The subject tributary under I-90 has been studied by the Federal Emergency Management Agency (FEMA) via a countywide Flood Insurance Study (FIS). Based on the FEMA FIS, the existing bridge is adequately sized with more than sufficient freeboard to convey the design and base (flood) flows. The new bridge shall not reduce the constriction in the channel width through the opening.

In accordance with USACE Section 404 Nationwide Permit Conditions, it is presumed that the new structure will possess a span length that is 1.25 times the bank full channel width.

2.3.3.8. Guide Railing, Median Barriers and Impact Attenuators

Corrugated w-beam guide rail is present along the right shoulder line in the eastbound direction while box beam guide rail exists in the westbound direction. W-beam median barrier is present within the grass median. All the guide rail within the project limits is in fair condition and currently meets design standards.

2.3.3.9. Utilities

There are no utilities mounted to the existing bridge.

The following utility companies have been identified as holding NYSTA Utility Permits in the project area.

<u>Utility Company</u>	<u>Type of Utility</u>
G4S	Fiber optic
Onondaga County Water Authority	Sanitary Sewer
Buckeye Partners, LP	High Pressure Petroleum Pipeline
Time Warner Cable	Aerial Cable

2.3.3.10. Railroad Facilities

There are no railroads within the project limits and no at-grade crossings within one mile that could impact traffic conditions.

2.3.4. Landscape and Environmental Enhancement Opportunities

This section focuses on the critical existing areas to identify potential enhancement opportunities related to the project and to help avoid and minimize impacts. Chapter 4 focuses on the impacts, enhancements, and mitigation.

2.3.4.1. Landscape

2.3.4.1.(1) Terrain

The terrain throughout the project corridor is classified as rolling.

2.3.4.1.(2) Unusual Weather Conditions

There are no unusual weather conditions within the project area.

2.3.4.1.(3) Visual Resources

The areas adjacent to the bridge on the north and south side of the interstate can be mainly characterized as wooded riparian side slopes near Bear Trap Creek. Directly to the west is Interchange 36 (at I-81). And east of the project bridge is an Onondaga County Resource Recovery Agency (OCRRA) transfer station on the south side and a residential subdivision north of the interstate.

The area within the Thruway right of way consists of a divided, fully controlled access highway, separated by a grassed median and roadside ditches on either side.

There are no practical opportunities for environmental enhancements within the project limits.

CHAPTER 3 – ALTERNATIVES

This chapter discusses the alternatives considered and examines the engineering aspects for all feasible alternatives to address project objectives outlined in Chapter 1 of this report.

3.1. Alternatives Considered and Eliminated from Further Study

The following alternatives have been considered as possible solutions but eliminated from further study since they did not satisfy objectives of the project:

Null / No Build Alternative

The Null alternative would leave the existing structure in place and would not take any action beyond normal maintenance operations. Work required to correct current structural deficiencies is beyond the scope of normal maintenance. As the structure continues to deteriorate and it is deemed unsafe for normal traffic the bridge will be posted for reduced loading and eventually closed to all traffic.

This alternative will not satisfy the project objectives; therefore, it will be removed from further consideration.

Rehabilitation Alternative

Under this alternative, the existing structure would be rehabilitated to current standards. The repair scope would include the removal and replacement of concrete and reinforcing steel along the top slab at all joints as well as both fascias. All vertical joints in both the abutment walls and pier as well as several locations along the walls will require removal and replacement of concrete. Extensive removal and replacement of concrete and reinforcing steel will also be needed along the end wingwall. Channel work would include the removal of accumulated sediment within both spans of the existing structure and the addition of medium stone at the outlet end of the bridge. This option would theoretically extend the service life to 75 years; however, given the level of current deterioration and age, it is likely that unknown conditions will be identified during construction, thereby adding additional unanticipated costs for the repairs.

Cost estimates place the total cost for the rehabilitation option (\$1.3 million; Refer to Appendix F for the Cost Estimate) very near (81% of) a similarly sized pre-cast rigid structure bridge replacement cost. This rehabilitation option however would be approximately 46% of the cost of a new fully compliant replacement, since the replacement structure would require a much longer span that is 1.25 times the bank full channel width. The required structure length would preclude the use of a flat top rigid frame and as such would require a conventional constructed bridge in order to meet the required freeboard.

This alternative will not satisfy the project objectives; therefore, it will be removed from further consideration.

3.2. Feasible Build Alternatives

3.2.1. Description of Feasible Alternatives

Reconstruction Alternative 1 – Bridge Replacement with Single Span Structure

This alternative consists of a complete replacement of the existing bridge on the existing horizontal alignment. For estimating purposes, the new structure is assumed to be a 56 foot long single-span steel girder superstructure with integral abutments founded on piles. Key elements of this alternative include:

- Geometry
- All existing horizontal geometric attributes will be maintained under this alternative. The bridge centerline will be maintained at the existing location and all roadway approaches will remain unchanged. The existing vertical profile will remain unchanged as well.
- Operational
- This alternative does not affect operations.
- Control of Access
- This alternative does not affect control of access.
- Right of Way
- No acquisition of right of way will be required.
- Environmental
- There are no significant environmental impacts from this project.
- Project Costs
- Total estimated cost of this alternative is \$9.54 M.
- Project Goals
- This alternative will meet all project objectives of increasing the design life of the structure to over 75 years, providing a sufficient hydraulic opening and meeting the objectives in a social, economic and environmentally sensitive manner.

Exhibit 3.2.1 Activities		Alternative 1 (Replacement)
Construction	Bridge	\$2,853,442
	Highway	\$1,834,977
Subtotal (2017)		\$4,688,419
Incidentals (2017) 20%		\$937,684
Subtotal (2017)		\$5,626,103
Contingencies 15%		\$843,915
Subtotal (2017)		\$6,470,018
Potential Field Change Order 5%		\$323,501
Subtotal (2017)		\$6,793,519
Mobilization (4%)		\$271,741
Subtotal (2017)		\$7,065,260
Expected Award Amount – Inflated @ 5%/yr to midpoint of Construction (2019)		\$353,263
Final Bridge Design and Construction Inspection (30%)		\$2,119,578
Total Cost		\$9,538,101

3.2.2 Preferred Alternative

The preferred alternative is Reconstruction Alternative – Bridge Replacement with a Single Span Structure. See Appendix A for proposed concept plans.

3.2.3. Design Criteria for Feasible Alternative(s)

3.2.3.1. Design Standards

Design criteria for this project are based on the New York State Thruway Authority mainline standards and NYSDOT Highway Design Manual standards for Urban Principal Arterial Interstates.

3.2.3.2. Critical Design Elements

The following table identifies critical design elements applicable to this project.

Exhibit 3.2.3.2.a Interstate 90 – NYSTA Mainline				
PIN:	B	NHS (Y/N):	Yes	
Route No. & Name:	I-90, Syracuse Section Subdivision 8A, BIN 5510130	Functional Classification:	Urban Principal Arterial – Interstate (11)	
Project Type:	Bridge Replacement & New Construction	Design Classification:	Interstate – HDM 2.7.1.1	
% Trucks:	19%	Terrain:	Rolling	
ADT:	52,905	Truck Access/Qualifying Hwy.	Yes	
Element	Standard		Existing Condition	Proposed Condition
1 Design Speed ¹	70 mph HDM Section 2.7.1.1 A		70 mph	70 mph
2 Lane Width	12 ft min HDM Section 2.7.1.1 B		12 ft.	12 ft.
3 Shoulder Width	Left – 4 ft min, 8' desired Right – 10 ft. min., 12' desirable w/ barrier HDM Section 2.7.1.1 C		10 ft. right 4-6 ft. left	12 ft. right 4-6 ft. left
4 Horizontal Curve Radius	1810 ft. @ e=8.0% HDM Section 2.7.1.1 D, Exhibit 2-2		Tangent	Tangent
5 Superelevation	8% Maximum HDM Section 2.7.1.1 E, Exhibit 2-2		None	N/A
6 Stopping Sight Distance	730 ft Minimum (Crest) HDM Section 2.7.1.1 F, Exhibit 2-2		561 ft (Sag curve)	561 ft. (Sag curve)
7 Grade	4% HDM Section 2.7.1.1 G, Exhibit 2-2		2.15%	2.15%
8 Cross Slope	1.5% Min. to 2.5% Max. HDM Section 2.7.1.1 H		2%	2%
9 Vertical Clearance	2 foot freeboard over 50-year design flood BM Section 2.6.1, HDM 19.5.3		4 ft.	2 ft. (min)
10 Design Loading Structural Capacity	NYSDOT LRFD Specifications AASHTO HL-93 Live Load and NYSDOT Design Permit Vehicle NYSDOT Bridge Manual, Section 2		HS 25	HL-93

Notes:

- The Divisional Traffic Engineer has concurred that the use of a Design Speed of 70 mph is consistent with the anticipated off-peak 85th percentile speed within the range of functional class speeds for the terrain and volume.

3.2.3.3. Other Design Parameters

There are no non-conforming geometric features within the project limits.

The mainline traffic operation at ETC+30 is expected to drop to a LOS D, which is below the typical minimum of LOS C. If need be, at some future date, NYSTA has the ability to add a 3rd lane in each direction within the median to improve traffic flow.

3.3. Engineering Considerations

3.3.1. Operations (Traffic and Safety) & Maintenance

3.3.1.1. Functional Classification and National Highway System

This project will not change the functional classification of either roadway.

3.3.1.2. Control of Access

Access control will remain unchanged.

3.3.1.3. Traffic Control Devices

Traffic Signals: No new traffic signals are proposed.

Roadway Striping and Signage: Impacted elements will be replaced to current standards

3.3.1.4. Intelligent Transportation Systems (ITS)

No additional ITS measures are proposed

3.3.1.5. Speeds and Delay

The existing posted speed limit will remain unchanged. Travel time estimates are not applicable for a bridge replacement project.

3.3.1.6. Traffic Volumes

No changes in traffic volumes are anticipated (see Section 2.3.1.6 for existing and future traffic volumes).

3.3.1.7. Level of Service and Mobility

There are no anticipated changes in Levels of Service (see Section 2.3.1.7 for existing and future Levels of Service).

3.3.1.8. – Work Zone Safety & Mobility

For the replacement of the bridge, construction zone traffic operations will include temporary mainline cross-overs to allow for staged operations. Intermediate cross-overs will also be included to maintain entering and exiting ramps to/from Interchange 36. Refer to Appendix A for general plans for cross-overs and staged construction.

One feasible scenario to maintain traffic flow during construction includes Phase 1: Shifting the three existing eastbound travel lanes to the westbound side where two westbound travel lanes currently exist. The shift would begin just east of Bear Trap Creek and extend to the Interchange 36 ramp bridge, approximately 1000 feet to the west. When considering the need for temporary concrete barrier (TCB) separating the opposing directions, 1 foot offsets to all barriers (rail and TCB) and 11-foot-wide temporary travel lanes, the overall Phase 1 roadway width is 61 feet over Bear Trap Creek.

During Phase 1, the existing Interchange 36 eastbound entrance lane would remain on the eastbound side of the I-81 mainline bridge, then merge with the Phase 1 travel lanes east of the bridge but prior to reaching Bear Trap Creek.

In order to accommodate five lanes on one side of the expressway, prior to the implementation of Phase 1, the existing westbound shoulders would need to be reconstructed full depth and approximately 10 feet of temporary pavement within the median area and 10 feet along the right side (outside the existing guide rail) would need to be constructed.

Phase 2, preceded by the installation of approximately 10 feet of temporary pavement within the median area, would be similar to Phase 1.

Worth noting is that the phased construction assumes that the existing structure (at a moderate skew to the overlying roadway) will be removed by first sawcutting the structure within the median on a line that is parallel to the travel way (and not perpendicular to the structure). Temporary supports may be required to reinforce the top slab cut end of the existing culvert.

Refer to Appendix A for staging details.

3.3.1.9. Safety Considerations, Accident History and Analysis

No accident reduction or preventative needs have been identified for this project. As part of the replacement scope, existing guide railing will be replaced to meet current standards. Although the minimum required right shoulder width is 10 feet, 12-foot wide shoulders are proposed to accommodate the adjacent guide rail.

3.3.1.10. Impacts on Police, Fire Protection and Ambulance Access

No significant impacts to emergency vehicle access through the project site are anticipated during and upon project completion.

3.3.1.11. Parking Regulations and Parking Related Issues

No changes are proposed.

3.3.1.12. Lighting

No changes are proposed.

3.3.1.13. Ownership and Maintenance Jurisdiction

No changes are proposed. Refer to section 2.3.1.12.

3.3.1.14. Constructability Review

A review by the NYSTA Constructability review team of the NYSTA will take place as part of the RFP evaluation and during final design phases.

3.3.2. Multimodal

3.3.2.1. Pedestrians

Pedestrians are prohibited on Interstate Highways by state law.

3.3.2.2. Bicyclists

Bicyclists are prohibited on Interstate Highways by state law.

3.3.2.3. Transit

No changes are proposed.

3.3.2.4. Airports, Railroad Stations, and Ports

No changes are proposed.

3.3.2.5. Access to Recreation Areas (Parks, Trails, Waterways, and State Lands)

No changes are proposed.

3.3.3. Infrastructure

3.3.3.1. Proposed Highway Section

The existing travel lanes, median and paved shoulders along Interstate 90 within the immediate proximity of the project bridge will, for the most part, be reconstructed to the same width with this project. The only exception would be the outer shoulder width. In order to accommodate new guide rail along the outer roadside, the new shoulder width will be 12 feet. Refer to Appendix A for a typical section.

3.3.3.1. (1) Right of Way

No right of way acquisitions will be required.

3.3.3.1. (2) Curb

Curbing does not exist and is not proposed for this project.

3.3.3.1. (3) Grades

The roadway approach grades will remain unchanged.

3.3.3.1. (4) Intersection Geometry and Conditions

There are no intersections within the project limits.

3.3.3.1. (6) Roadside Elements

(a) Snow Storage, Sidewalks, Utility Strips, Bikeways, Bus Stops – There are no special roadside elements within the project limits. Snow storage will be accommodated in the area outside of the roadway shoulder.

(b) Driveways – Driveways do not exist on Interstate 90.

(c) Clear Zone - The clear zone width at the bridge along Interstate 90 will be set based on the current NYSTA standard of 30 feet from the outside edge of travel lane. The required clear zone along Interstate 90 cannot be obtained due to embankment slopes and vertical drop-off. These areas will be protected by the replacement of guide railing that meet current standards.

3.3.3.2. Special Geometric Design Elements

3.3.3.2. (1) Non-Standard Features

There are no non-standard features proposed.

3.3.3.3. Pavement and Shoulder

A pavement evaluation is not required for a bridge replacement project. Approach roadway sections will utilize a conventional pavement design section.

3.3.3.4. Drainage Systems

The existing system of median and roadside swales w/ minor connecting closed systems will remain essentially unchanged. Depending on the actual disturbance area, the replacement of a small diameter culvert coupled with a minor drainage structure may require replacement. All drainage patterns within the project limits will be maintained.

3.3.3.5. Geotechnical

Two (2) new soil borings were conducted at the project site that extended deeper than the original 1946 design bore holes. Based on the boring logs, the underlying soils consist of a mix of sand, silts and clay. Weathered shale and denser soils were encountered below 65 feet. The soils do not appear to be problematic for bridge design and/or construction. Refer to Appendix E for the soil boring logs.

3.3.3.6. Structures

The existing bridge will be completely removed and replaced with a new structure. The new bridge will be constructed along the same horizontal and vertical alignment. The width of the bridge will coincide with the outside side guide rail.

3.3.3.6. (1) Description of Work

(a) The new bridge will be a single span (using weathering steel), approximately 56-foot clear space (minimum). Stone fill protection will be placed on embankment slopes adjacent to the structure, and instream stone fill will be replaced/restored.

(b) The bridge will carry three travel lanes in the eastbound direction and two lanes in the westbound direction, with 12 foot right shoulders and 4-6 foot left shoulders. The existing 23-foot-wide grass median will be retained as is. Refer to the typical section included in Appendix A.

(c) There are no utilities carried by the bridge.

3.3.3.6. (2) Clearances

Horizontal clearances will be equal to the new shoulder widths.

3.3.3.6. (3) Live Load

The new bridge will be designed to carry HL-93 and the NYS Design Permit Vehicle.

3.3.3.6. (4) Associated Work

The existing (box culvert) bridge will be removed in stages thereby allowing the mainline travel lanes to be provided on either the existing (culvert) bridge or new (conventional) bridge. Also, additional effort will be needed to ensure suitable ramp connections to the mainline are maintained during all stages of construction. Ramp closures during construction will not be permitted. No other special considerations have been identified and the construction of the new bridge is assumed to be of moderate complexity.

3.3.3.6. (5) Waterway

A Coast Guard Checklist is not required. The creek is not considered to be navigable.

3.3.3.7. Hydraulics of Bridges and Culverts

In order to maintain compliance with local floodplain development regulations, the replacement structure will require the existing channel elevations to be maintained. The minimum clear span length shall be 56 feet and the low chord elevation shall provide minimum freeboard of at least 2 feet above the 50-year flood elevation.

3.3.3.8. Guide Railing, Median Barriers and Impact Attenuators

All guide rail within the project limits will be evaluated during final design for conformance to design standards and replaced or repaired, as needed

3.3.3.9. Utilities

Existing utilities will be supported/maintained during and after construction.

3.3.3.10. Railroad Facilities

There are no railroad facilities within the project limits.

3.3.4. Landscape and Environmental Enhancements**3.3.4.1. Landscape Development and Other Aesthetics Improvements**

No significant landscape or other aesthetic enhancements are planned for this project.

3.3.5. Miscellaneous

There are no other special or unique aspects to this project.

CHAPTER 4 SOCIAL, ECONOMIC and ENVIRONMENTAL CONDITIONS and CONSEQUENCES

4.1 Introduction

4.1.1 Environmental Classification

NEPA Classification -

This project is 100% Thruway funded; therefore, NEPA does not apply.

SEQR Classification -

In accordance with 6 NYCRR, Part 617, "State Environmental Quality Review", the Thruway has determined that this project is a SEQR Type II Action. No further SEQR processing is required. The New York State Thruway Authority is the SEQR lead agency. The project has been identified as a Type II action, per 6 NYCRR Part 617.5, Subdivision (c), Item 2. This permits the project to be classified as Type II since the project does not meet or exceed any of the thresholds in Section 617.4, and is of a scale and scope illustrated by the following:

- (2) replacement, rehabilitation or reconstruction of a structure or facility, in kind, on the same site, including upgrading buildings to meet building or fire codes, unless such action meets or exceeds any of the thresholds in Section 617.4 of this Part.

As stated in Section 617.4 (b), actions that meet the thresholds listed below are Type I if they are to be directly undertaken, funded or approved by an agency.

The proposed project does not include or result in:

- (1) the adoption of a municipality's land use plan, the adoption by any agency of a comprehensive resource management plan or the initial adoption of a municipality's comprehensive zoning regulations;
- (2) the adoption of changes in the allowable uses within any zoning district, affecting 25 or more acres of the district;
- (3) the granting of a zoning change, at the request of an applicant, for an action that meets or exceeds one or more of the thresholds given elsewhere in this list;
- (4) the acquisition, sale, lease, annexation or other transfer of 100 or more contiguous acres of land by a state or local agency;
- (5) construction of new residential units that meet or exceed the following thresholds:
 - (i) 10 units in municipalities that have not adopted zoning or subdivision regulations;
 - (ii) 50 units not to be connected (at the commencement of habitation) to existing community or public water and sewerage systems including sewage treatment works;
 - (iii) in a city, town or village having a population of less than 150,000, 250 units to be connected (at the commencement of habitation) to existing community or public water and sewerage systems including sewage treatment works;
 - (iv) in a city, town or village having a population of greater than 150,000 but less than 1,000,000, 1,000 units to be connected (at the commencement of habitation) to existing community or public water and sewerage systems including sewage treatment works; or
 - (v) in a city or town having a population of greater than 1,000,000, 2,500 units to be connected (at the commencement of habitation) to existing community or public water and sewerage systems including sewage treatment works;
- (6) activities, other than the construction of residential facilities, that meet or exceed any of the following thresholds; or the expansion of existing nonresidential facilities by more than 50 percent of any of the following thresholds:

- (i) a project or action that involves the physical alteration of 10 acres;
 - (ii) a project or action that would use ground or surface water in excess of 2,000,000 gallons per day;
 - (iii) parking for 1,000 vehicles; (iv) in a city, town or village having a population of 150,000 persons or less, a facility with more than 100,000 square feet of gross floor area;
 - (v) in a city, town or village having a population of more than 150,000 persons, a facility with more than 240,000 square feet of gross floor area;
- (7) any structure exceeding 100 feet above original ground level in a locality without any zoning regulation pertaining to height;
 - (8) any Unlisted action that includes a nonagricultural use occurring wholly or partially within an agricultural district (certified pursuant to Agriculture and Markets Law, article 25AA, sections 303 and 304) and exceeds 25 percent of any threshold established in this section;
 - (9) any Unlisted action (unless the action is designed for the preservation of the facility or site) occurring wholly or partially within, or substantially contiguous to, any historic building, structure, facility, site or district or prehistoric site that is listed on the National Register of Historic Places, or that has been proposed by the New York State Board on Historic Preservation for a recommendation to the State Historic Preservation Officer for nomination for inclusion in the National Register, or that is listed on the State Register of Historic Places (The National Register of Historic Places is established by 36 *Code of Federal Regulations* [CFR] parts 60 and 63, 1994 [see section 617.17 of this Part]);
 - (10) any Unlisted action, that exceeds 25 percent of any threshold in this section, occurring wholly or partially within or substantially contiguous to any publicly owned or operated parkland, recreation area or designated open space, including any site on the Register of National Natural Landmarks pursuant to 36 CFR part 62, 1994 (see section 617.17 of this Part); or
 - (11) any Unlisted action that exceeds a Type I threshold established by an involved agency pursuant to section 617.14 of this Part.

4.1.2 Coordination with Agencies

NEPA Cooperating and Participating Agencies -

This project is 100% State funded; therefore, the FHWA NEPA requirements for Cooperating and Participating Agencies do not apply.

SEQR Cooperating and Participating Agencies -

The following agencies have been identified as involved and Interested Agencies under SEQR:

The New York State Department of Environmental Conservation (NYSDEC)

4.2 Social

The purpose of this section is to discuss the social environment of the site. This project involves the replacement of the New York State Thruway (I-90) mainline bridge over Bear Trap Creek at MP 282.62. This project involves the replacement of the existing bridge on the existing alignment. Based on the scope of the project, no adverse effects to the surrounding social environment are anticipated as a result of this project.

4.2.1 Land Use

Demographics and Affected Population -

The project is located in the Town of Salina in Onondaga County. The project vicinity is largely developed; with a residential neighborhood present to the northeast, Interstate Route 81 to the west, and the Ley Creek Waste Transfer Station and Old Salina Landfill present to the southeast.

The 2010 US Census reports that the Town has a population of 33,710 persons. The median reported age was 41.9, with 7.3% of the population being reported at age 65 or older. Approximately 90.2% of the population was identified as white. Based on data collected from the US Census' American Community Survey, approximately 7.8% of the Town's population identified as disabled under age 65 (although specific disabilities were not listed). This percentage is higher than the percentage for Onondaga County, 8.7%, and New York State, 8.1%. The Town had 11.1% of its population reported to be below the poverty level, which was below that year's national average of 13.5%. This project is not located in a potential NYSDEC Environmental Justice Area.

Comprehensive Plans and Zoning -

Replacement of the existing bridge on the same general alignment will not conflict with any local community's comprehensive plans, nor will it affect local zoning.

4.2.2 Neighborhoods and Community Cohesion

Community Cohesion -

The project will not divide neighborhoods, isolate part of a neighborhood, generate new development or otherwise affect community cohesion. During construction, a temporary detour will be in place, which will increase travel times. There will be no permanent effect on neighborhoods or community cohesion.

Home and Business Relocations -

Since this project involves the replacement of an existing bridge on the existing alignment, the proposed project would require no displacement of residences or businesses and there would be no relocation impacts.

4.2.3 Social Groups Benefited or Harmed

Elderly and/or Disabled Persons or Groups -

A review of US Census data in Section 4.2.1.1 indicates that there is no significant concentration of elderly or disabled persons in the project area. No social groups will be benefited or harmed as a result of this project.

Transit Dependent -

This project involves the replacement of an existing bridge on the existing alignment and does not involve existing transit facilities such as bus or train stations, nor park and ride lots.

Low Income, Minority and Ethnic Groups (Environmental Justice) -

The project is not located in or near an environmental justice area.

4.2.4 School Districts, Recreational Areas, and Places of Worship

School Districts -

The proposed project is within the Liverpool Central School District. There are no schools or school properties within or near the project corridor. During construction, a temporary detour will be in place, which will increase travel times. The NYS Thruway Authority will coordinate the construction schedule and detour details with the Liverpool Central School District.

Recreational Areas -

There are no parks within the project corridor.

One recreational trail was identified in the project vicinity, The Bear Trap Creek Bikeway. This bikeway is a paved pedestrian and bicycle trail that crosses over the mainline west of the project bridge. This 1.6-mile recreational trail runs from 7th North Street to the Mattydale Plaza, parallel to Interstate Route 81. The trail crosses over the Thruway via an elevated bridge, to the west of Bear Trap Creek. The proposed project will not impact this recreational trail.

Places of Worship –

There are no places of worship within or near the project corridor. Thus, this project will have no impacts to existing places of worship.

4.3 Economic

4.3.1 Regional and Local Economies

There will be no measurable or apparent adverse impact on the general economic conditions, tax base, employment opportunities, economic development zones, or property values within the project limits or surrounding area as a result of this project.

4.3.2 Business District Impacts

This project is not located within a defined business district. There will be no permanent adverse impact on businesses as a result of this project.

4.3.3 Specific Business Impacts

There will be no measurable or known adverse impacts to established businesses as a result of this project.

4.4 Environmental

4.4.1 Wetlands

A site visit conducted on November 16, 2016, which identified wetlands within and adjacent to the Project Area. The Wetland Delineation Letter Report is included in Appendix B.

State Freshwater Wetlands -

There are no NYSDEC regulated freshwater wetlands or regulated adjacent areas (100-feet) within the project area, as per the NYSDEC Environmental Resource Mapper. A site visit was performed to verify this. No further investigation is required and Environmental Conservation Law (ECL), Article 24 is satisfied.

State Tidal Wetlands -

A review of the NYSDEC GIS wetland data files indicates that there are no NYSDEC jurisdictional tidal wetlands or regulated adjacent areas within or near the project limits, and ECL Article 25 does not apply.

Federal Jurisdiction Wetlands -

A review of existing wetland and stream databases (National Wetland Inventory [NWI], New York State Department of Environmental Conservation [NYSDEC] mapped wetlands, and NYSDEC mapped streams) indicates the presence of one NWI mapped riverine resource, Bear Trap Creek (also a NYSDEC Class C(T) protected stream), within the Project Area. No other NWI mapped or NYSDEC mapped wetlands are present within the Project Area. However, one NWI mapped wetland is present approximately 45 feet north of the northern Project Area boundary (see Wetland Delineation Letter Report, Appendix B).

The Project Area has been reviewed for wetlands in accordance with the criteria defined in the 1987 US Army Corps of Engineers Wetland Delineation Manual. The Wetland Delineation Letter Report is included in Appendix B. The Wetland Delineation Letter Report concluded:

Environmental Design and Research DPS (EDR) delineated two palustrine emergent (PEM) wetlands and one perennial stream within the Project Area (Wetland A and Wetland B). The wetlands were identified based on the presence of hydrophytic vegetation, hydric soils, and wetland hydrology and total approximately 0.13 acre within the Project Area. Portions of Bear Trap Creek were delineated as Stream 1, which is a NYSDEC Class C(T) protected stream. Bear Trap Creek totals approximately 320 linear feet within the Project Area. Total surface area of wetlands and streams within the Project Area is approximately 0.24 acre.

Wetland B to the west of Bear Trap Creek appears to have a direct surface water connection to Bear Trap Creek, while wetland A at the eastern edge of the Project Area appears to continue downslope, off-site, likely connecting to other waters of the United States. Both of the wetlands and the stream are likely to be considered jurisdictional by the U.S. Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act. Due to the distance from the nearest NYSDEC regulated wetland (approximately 0.2 mile) and lack of continuous hydrologic or significant habitat connectivity, in EDR's opinion, Wetland A and Wetland B should not be regulated under Article 24 of the Environmental Conservation Law (ECL). However, Bear Trap Creek is a NYSDEC protected stream and is expected to be regulated under Article 15 of the ECL. Final determination of the jurisdictional status of all wetlands must be made by the USACE and NYSDEC.

Based on the presence of wetlands and a stream within the Project Area, it is anticipated that the project will impact wetlands. Wetland permitting through the USACE is expected to be authorized under a Nationwide Permit. If the project proceeds under a USACE Nationwide Permit, it is anticipated that a Blanket Section 401 Water Quality Certification (WQC) will also apply to this project. Bear Trap Creek is a NYSDEC protected stream and is expected to be regulated under Article 15 of the ECL (see 4.4.2). If wetland permits are necessary, work will not commence until the permits are acquired, and work will adhere to all permit conditions.

Executive Order 11990 -

Federal funding will not be used in the design or construction of this project. Therefore, the requirements of Executive Order 11990 do not apply to this project.

Mitigation Summary -

If necessary, depending on the final project design, appropriate measures will be taken to avoid and minimize wetland impacts. Note that if impacts to wetlands are 1/10 of an acre or less and a Nationwide Permit applies to the proposed activities, no wetland mitigation/monitoring plan would be required.

4.4.2 Surface Waterbodies and Watercourses**Surface Waters –**

Bear Trap Creek is located at the center of the Project Area. Bear Trap Creek is a mapped NWI riverine resource, and is also a NYSDEC Class C(T) protected stream. Bear Trap Creek totals approximately 320 linear feet within the project Area.

It is anticipated that the proposed project activities will require impacts to Waters of the U.S., which is expected to be authorized under a USACE Nationwide Permit.

Bear Trap Creek is a NYSDEC protected stream and is expected to be regulated under Article 15 of the ECL.

A Blanket Section 401 Water Quality Certification is also expected to apply to this project since the work required is anticipated to meet the requirements of a USACE Nationwide Permit.

The permit(s) will be obtained once the location and the extent of the impacts are ascertained. Mitigation to minimize impacts may be required. Work will not commence until the permits are acquired, and will adhere to any conditions set forth by the permit requirements.

Surface Water Classification and Standards -

Based upon a review of the NYSDEC GIS data maps for regulated streams, there is one regulated stream, Bear Trap Creek, within the project limits. Bear Trap Creek is a Class C(T) protected stream, and totals approximately 320 linear feet within the Project Area.

The best usage for Class/Standard “C(T)” waters is fishing. The water quality is suitable for trout propagation and survival. Water quality shall be suitable for primary and secondary contact recreation, although other factors may limit the use for these purposes.

The NYSDEC should be consulted to determine any restrictions to construction activities due to fish spawning seasons or other water quality concerns.

Stream Bed and Bank Protection -

Based upon a review of the NYSDEC GIS database, and as verified by a site visit, there is one protected stream in the Project Area, Bear Trap Creek, which is designated as a Class C(T) Surface Water. Bear Trap Creek is a NYSDEC protected stream and is expected to be regulated under Article 15 of the ECL.

4.4.3 Wild, Scenic, and Recreational Rivers

State Wild, Scenic and Recreational Rivers -

There are no NYSDEC Designated, Study or Inventory State Wild, Scenic or Recreational Rivers within or adjacent to the Project Area. No further review is required.

National Wild and Scenic Rivers -

The project does not involve a National Wild and Scenic River as shown by the Nationwide Rivers Inventory List of National Wild and Scenic Rivers. No further review is required.

4.4.4 Navigable Waters

State Regulated Waters -

There are no state regulated navigable waters located within the Project Area that will be impacted by the project.

Office of General Services Lands and Navigable Waters -

There are no OGS underwater holdings located within the Project Area that will be impacted by the project.

Rivers and Harbors Act – Section 9 -

Since the project does not involve the construction or modification of any bridge, dam, dike, or causeway over any navigable water of the United States, Section 9 is not applicable.

Rivers and Harbors Act – Section 10 -

Since the project does not involve the creation of any obstruction to the navigable capacity of any of the waters of the United States, or in any manner alter or modify the course, location, condition, or capacity of any navigable water of the United States, Section 10 is not applicable.

4.4.5 Floodplains

State Flood Insurance Compliance Program -

The proposed project, in some locations, is within the 100-year floodplain of Bear Trap Creek, as indicated by FEMA on the GIS data base. In accordance with the provisions of 6 NYCRR 502 - Flood Plain Management for State Projects, this action has considered and evaluated the practicality of alternatives to any floodplain encroachments. As a result of this evaluation, it is concluded that: (1) a significant encroachment does not exist, (2) there is no significant potential for interruption or termination of a transportation facility which is needed for emergency vehicles, (3) there are no significant impacts on natural beneficial floodplain values.

A floodplain hydraulic analysis/floodplain evaluation has been prepared, affirming that the new structure hydraulic opening (invert, span and area) should, at a minimum, match the existing structure opening. It is assumed herein, however, that the new structure span length will be 1.25 times the bank full channel width, as required by USACE Nationwide Permit General Condition #9.

Executive Order 11988 -

In order to comply with EO 11988, there will be an evaluation of potential effects of any actions taken within the floodplain, and alternatives to avoid any adverse effects shall be considered. If the project alternatives require the use of a floodplain, there will be an attempt to minimize potential impacts, and consistent with the regulations issued in accord with section 2(d) of this Order, an explanation of why the action is proposed to be located within the floodplain will be prepared and circulated.

4.4.6 Coastal Resources**State Coastal Zone Management Program –**

The proposed project is not located in a State Coastal Zone Management (CZM) area, according to the Coastal Zone Area Map from the NYS Department of State's Coastal Zone Management Unit.

State Coastal Erosion Hazard Area -

The proposed project is not located in or near a Coastal Erosion Hazard Area.

Waterfront Revitalization and Coastal Resources Program -

According to NYS DOS "List of Approved Coastal Local Waterfront Revitalization Programs (LWRPs), dated July 2016, the proposed project is not located in a Local Waterfront Revitalization Area. No further action is required.

Federal Coastal Barrier Resources Act (CBRA) and Coastal Barrier Improvement Act (CBIA) -

The proposed project is not located in, or near a coastal area under the jurisdiction of the Coastal Barrier Resources Act (CBRA) or the Coastal Barrier Improvement Act (CBIA).

4.4.7 Groundwater Resources, Aquifers, and Reservoirs**Aquifers -**

NYSDEC aquifer GIS data files have been reviewed and it has been determined that the proposed project is located in a primary aquifer. This project will take measures in design and construction to avoid, minimize or mitigate any possible adverse impacts to the aquifer. These measures are intended to minimize contamination from highway runoff and construction activities. Project activities will comply with the applicable standards in 6 NYCRR Part 703.

Drinking Water Supply Wells (Public and Private Wells) and Reservoirs -

There are no municipal drinking water wells, wellhead influence zones, or reservoirs within or near the project area, according to the *NYS Atlas of Community Water System Sources*, dated 1982, issued by the NYS Department of Health and the NYS Department of Environmental Conservation Water Wells GIS data.

4.4.8 Stormwater Management

A SPDES General Permit GP-0-15-002 will be required because the project includes more than one acre of soil disturbance. A Stormwater Pollution Prevention Plan (SWPPP) with the appropriate sediment and

erosion control measures will be developed. Based on the SWPPP, permanent stormwater management practices may be required depending on the total amount of disturbance and changes in total impervious area.

The project corridor is located within a Total Maximum Daily Load (TMDL) Watershed (Onondaga Lake Watershed). This project should be evaluated for water quality treatment practices to reduce pollutant and phosphorous loadings.

4.4.9 General Ecology and Wildlife Resources

The Project Area encompasses a portion of the New York State Thruway mainline in a highly-disturbed area. The Project Area includes primarily paved roadways and mowed grassy areas within and adjacent to the Thruway right of way, which provides limited habitat opportunities for wildlife.

However, the Project Area also includes a portion of Bear Trap Creek, a NYSDEC protected stream, which is classified as suitable for trout propagation and survival. Note that although Bear Trap Creek is classified as a C(T) stream, trout have not been present in the stream for several decades. The stream has been documented to be badly polluted, stemming in part from operations at the Syracuse Hancock International Airport. The Bear Trap Creek reclamation project began in 1991. The stream was investigated, and improvements were made to reduce the discharge of pollutants into the stream from the airport. In 2003/2004, stream habitat assessments identified Bear Trap Creek to be suitable for various minnow and sucker species, but not yet suitable for trout survival. A habitat improvement project undertaken by a local school included the placement of stone cobbles in the creek in 2006. By late 2007, increased wildlife was identified in the stream including crayfish and minnows. Stream restoration and monitoring are reportedly ongoing with the goal of improved habitat diversification and potentially the return of viable trout populations to Bear Trap Creek (<http://projectwatershed.org/story/bear-trap-creek-success-story>).

Fish, Wildlife, and Waterfowl -

A cursory review of the Project Area indicates that there is not a special habitat or breeding area for certain species of plants or animals at or adjacent to the project. As noted above, Bear Trap Creek is part of a habitat restoration project which is attempting to increase habitat diversification and return viable trout populations to the stream.

Habitat Areas, Wildlife Refuges, and Wildfowl Refuges -

The proposed project is 100% State funded; therefore, Section 4(f) of the US Department of Transportation Act does not apply.

Endangered and Threatened Species -

Information regarding the occurrence of rare, threatened, and endangered species and significant natural communities in the project area was solicited from the New York Natural Heritage Program (NYNHP) and the U.S. Fish and Wildlife Service (USFWS). Consultation with the USFWS through the Information, Planning, and Conservation (IPaC) decision support system was conducted. The USFWS Official Species List (see Appendix B) indicated that three Federally Threatened species could potentially be present in the vicinity of the Project Area: the northern long-eared bat (*Myotis septentrionalis*), the Indiana bat (*Myotis sodalis*), and eastern massasauga (*Sistrurus catenatus*).

No clearing of trees greater than 3 inches in diameter at breast height is expected to be required for this project. Further, no evidence of bats was noted under the bridge during the site reconnaissance (guano, staining, etc.). As such, the project is not expected to impact habitat suitable for the Indiana bat or the northern long-eared bat. If it is determined during detailed design that clearing of trees greater than 3

inches in diameter at breast height is required, clearing activities will only be permitted during the winter clearing period of October 31st and March 31st.

The only documented occurrence of the eastern massasauga rattlesnake in Onondaga County is in the Cicero Swamp Wildlife Management Area, which is over 5 miles northeast of the Project Area. The delineated wetlands in the Project Area do not have extensive areas of sphagnum hummocks or other characteristics typical of suitable habitat for this species. Based on the lack of suitable habitat, the occurrence of eastern massasauga is considered unlikely.

According to the NYNHP, this office does not have any records of known occurrences of rare, or state-listed animals or plants, or significant natural communities within or immediately in the vicinity of the proposed project site.

Invasive Species -

This project includes an interstate highway and associated right of way. During the site reconnaissance for the project, typical roadside invasive species were identified at ground level including, but not limited to, common reed (*Phragmites australis*), and canary reed grass (*Phalaris arundinacea*).

Precautions will be taken to prevent the spread of invasive species, intentionally or accidentally, during project design and construction.

Roadside Vegetation Management -

Existing roadside vegetation consists primarily of maintained lawn areas. Efforts will be made to replace wildlife-supporting vegetation that is removed in the course of construction.

4.4.10 Critical Environmental Areas

State Critical Environmental Areas –

According to information obtained from NYSDEC, the proposed project does not involve work in or near a Critical Environmental Area.

State Forest Preserve Lands -

According to information obtained from NYSDEC, the proposed project does not involve work in or near state forest preserve lands.

4.4.11 Historic and Cultural Resources

National Heritage Areas Program -

The proposed project will not impact areas identified as National Heritage Areas.

National Historic Preservation Act – Section 106 / State Historic Preservation Act – Section 14.09 -

A Project Submittal Package (PSP) has been prepared for the proposed project (see Appendix B). The PSP will be submitted to the Thruway's Preservation Officer for review.

Architectural Resources -

As stated in the PSP, the New York State Office of Parks, Recreation and Historic Preservation (NYSOPRHP) Cultural Resources Information System (CRIS) website was reviewed to determine the location of properties listed on the National Register of Historic Places (NRHP) within and immediately adjacent to the Area of Potential Effect (APE). No properties previously listed on, or determined eligible for, the NRHP are located within the APE.

Archaeological Resources -

As stated in the PSP, review of the NYSOPRHP CRIS website determined that the APE is not located in an archaeologically sensitive area, and there are no previously reported archaeological sites in the APE. In addition, no previous cultural resources surveys have been conducted within or immediately adjacent to the proposed APE.

The land within and immediately adjacent to the APE has been heavily disturbed by the construction of the New York State Thruway and associated bridges and ramps. Although land adjacent to small streams such as Bear Trap Creek has an increased likelihood of being occupied by historic or prehistoric populations, the APE for the proposed project is considered to have low archaeological sensitivity for historic and prehistoric cultural resources.

There are no previously reported archaeological sites in the APE. All ground disturbance will be restricted to the areas around existing bridge abutments and piers, which consist of made land built up during the construction of the New York State Thruway circa 1946. Therefore, the proposed project is not anticipated to impact any archaeological resources.

Historic Bridges -

The bridge over Bear Trap Creek was constructed in 1946 and is not eligible for inclusion on the NYSDOT Historic Bridge Inventory.

Historic Parkways -

This project does not have any potential to impact any Historic Parkways.

Native American Involvement -

The proposed project does not lie within Federal or Native-American-owned property. Further, the project is 100% State funded; therefore, the Act for the Preservation of American Antiquities does not apply.

Section 4(f) Involvement -

The reconnaissance survey determined that there are no properties on, or eligible for, the NRHP, or properties over 50 years old that may be eligible within the project's APE. Further, the project is 100% state-funded. Therefore, a Section 4(f) evaluation is not required.

4.4.12 Parks and Recreational Resources

State Heritage Area Program -

The proposed project will not impact areas identified as State Heritage Areas.

National Heritage Areas Program -

The proposed project will not impact areas identified as National Heritage Areas.

National Registry of Natural Landmarks -

There are no listed nationally significant natural areas within, or adjacent to, the project area.

Section 4(f) Involvement -

The proposed project is 100% State funded. This section does not apply.

Section 6(f) Involvement -

The project does not impact parklands or facilities that have been partially or fully federally funded through the Land and Water Conservation Act. No further consideration under Section 6(f) is required.

Section 1010 Involvement -

This project does not involve the use of land from a park to which Urban Park and Recreation Recovery Program funds have been applied.

4.4.13 Visual Resources

The project will involve a temporary disturbance to the visual environment through the establishment of a project construction staging area. The staging area will be in place during construction and will be removed upon project completion. The bridge replacement will have a similar appearance in terms of span, design, and materials as the existing bridge. No significant permanent visual impacts are anticipated from the project.

4.4.14 Farmlands**State Farmland and Agricultural Districts -**

Based on a review of the NYS Agricultural District Maps for Onondaga County, the proposed project is not located in or adjacent to an Agricultural District.

Federal Prime and Unique Farmland -

The proposed project is 100% State funded; therefore, the Federal Farmland Protection Policy Act does not apply.

4.4.15 Air Quality**Transportation Conformity –**

The project is not located within a non-attainment area; therefore, the transportation conformity regulations, published by the EPA on August 15, 1997 (40 CFR Parts 51 and 93), do not apply.

Carbon Monoxide (CO) Microscale Analysis -

An air quality analysis for CO is not required since this project will not increase traffic volumes, reduce source-receptor distances by 10% or more, or change other existing conditions to such a degree as to jeopardize attainment of the National Ambient Air Quality Standards. The project does not require a project-level conformity determination.

Mesoscale Analysis -

A Mesoscale Analysis is not required for this project since it does not significantly affect air quality conditions over a large area and is not a regionally significant project.

Mobile Source Air Toxics (MSATs) Analysis -

This project modifies existing highway infrastructure and does not add capacity or new interchanges that would contribute to additional vehicular usage. It can therefore be concluded that the project will have no significant adverse impact on ambient MSAT levels.

Particulate Matter (PM) Analysis -

This project has been classified as a SEQRA Type II project and has been determined to result in no significant increase in traffic volumes. The project actions do not individually or cumulatively have a significant effect on PM emissions. It can therefore be concluded that the project will have no significant adverse impact on ambient PM levels.

Greenhouse Gas Analysis –

This project will not add capacity or new interchanges that will result in additional vehicular usage. It can therefore be concluded that the project will have no significant adverse impact on ambient greenhouse gas levels.

4.4.16 Energy

Construction of the project will involve the use of energy in the form of fuel for construction equipment. The completed project involves no direct energy consumption.

4.4.17 Noise

Construction equipment operation will cause noise levels to temporarily increase. The completed project will not significantly change either the horizontal or vertical alignment of the bridge, or increase the number of through-traffic lanes. Therefore, no long-term noise impact will occur as a result of the project.

4.4.18 Asbestos

Potential asbestos containing materials (ACMs) were not observed during this assessment. However, in accordance with 12 NYCRR 56, no demolition or renovation work shall be commenced by any owner or agent prior to completion of asbestos abatement performed by a licensed asbestos abatement contractor. If suspect asbestos containing materials not identified in this pre-demolition asbestos survey report are discovered during the demolition process, it is required that the presence, location and quantity of newly discovered material, be conveyed within twenty-four (24) hours of discovery to the owner or their representative. All activities must cease in the area where the presumed asbestos containing material or suspect miscellaneous ACM is found, until a licensed asbestos contractor appropriately assesses and manages the discovered materials

4.4.19 Hazardous Waste and Contaminated Materials

A Hazardous Waste/Contaminated Materials Site Screening has been conducted in accordance with the NYSDOT Environmental Procedures Manual, Chapter 5, to document the likely presence or absence of hazardous/contaminated environmental conditions. A hazardous/contaminated environmental condition is the presence or likely presence of any hazardous substances or petroleum products (including products currently in compliance with applicable regulations) on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, ground water, or surface water of the property.

The Hazardous Waste/Contaminated Materials Screening is included in Appendix B.

This assessment included a walkover reconnaissance of the Project Area on November 16, 2016, a review of existing information about past and current land use, and a review of published databases and government records, including Inactive Hazardous Waste Site Registry, Chemical and Petroleum Bulk Storage records, waste incident/chemical releases reports, and other federal, state, county, and local sources of information. In February 2017, Environmental Data Resource, Inc. was contracted by EDR to provide a listing of published databases of hazardous waste sites in the vicinity of the Project Area. These databases provide a listing of sites of potential concern as identified by a review of Federal, State and local databases. This database review was supplemented with a review of published databases available through the NYSDEC web site. The environmental database report is available upon request.

The conclusions of this screening included the following:

A marker indicating the presence of a buried petroleum pipeline was observed along the Thruway, adjacent to the Project Area. Based on the location of this marker, it is expected that the buried petroleum pipeline runs parallel to the Thruway in an east/west direction adjacent to the Project Area. Prior to excavations for the proposed Project, the location of the pipeline should be confirmed to avoid potential impacts to this pipeline.

The Ley Creek Transfer Station, operated by Onondaga County Resource Recovery Agency (OCRRA), is located southeast of the Project Area. This facility is listed as a state registered landfill, and is also listed eight times on the NYSDEC Spills database. The listed NYSDEC spills at this facility are listed as closed. Due to active landfill operations on this adjacent property, if excavation on or adjacent to this transfer station are planned, soil and/or groundwater sampling is warranted.

The Old Salina Landfill is located to the east of the Ley Creek Transfer Station, southeast of the Project Area. Contamination from this landfill has been identified as causing soil contamination, groundwater contamination, and contamination of water and sediments in Ley Creek, which is southeast of the landfill. The Town of Salina Landfill is contributing contamination to Onondaga Lake; therefore, it is considered a "Sub-Site" of the Onondaga Lake National Priorities List (NPL) site. Remedial actions are reportedly ongoing through cooperation with the New York State Department of Environmental Conservation (NYSDEC) and the United States Environmental Protection Agency (EPA) in an effort to clean up contamination associated with the Old Salina Landfill. However, based on documented soil and groundwater contamination at this adjacent site, if excavation on or adjacent to this parcel is planned, soil and/or groundwater sampling is warranted.

No other significant hazardous waste/contaminated materials were identified within or adjacent to the Project Area during the course of the Hazardous Waste/Contaminated Materials Site Screening.

4.5 Construction Effects

4.5.1 Construction Impacts

Construction of the proposed project is expected to include traditional construction methods and products. The impacts of construction can therefore be reasonably anticipated and mitigated by using conventional methods. Construction impacts are temporary in nature. Temporary soil erosion and increased dust may occur from disturbance of soils during construction activities. Soil erosion and runoff can impact the water quality of nearby surface water bodies. A site-specific Stormwater Pollution Prevention Plan (SWPPP) will be developed that will include soil erosion control, dust control, and runoff control measures.

Construction of the proposed project may also have temporary noise impacts. The proposed project is located on the mainline of the NYS Thruway, where elevated noise levels are typical. Surrounding properties include Interstate Route 81. Residential properties are located to the northwest of the Project Area. Temporary noise impacts are not expected to have a significant adverse impact on residences or nearby businesses.

4.6 Indirect and Secondary Effects

4.6.1 Indirect Socioeconomic Effects

The proposed project is a replacement of an existing bridge in the same location; therefore, the project is not expected to have indirect social or economic effects.

4.6.2 Social Consequences

The proposed project is a replacement of an existing bridge in the same location; therefore, the project will not affect land use, planning, or zoning. Existing adjacent properties will be minimally affected and no social groups will be harmed.

4.6.3 Economic Consequences

The proposed project is a replacement of an existing bridge in the same location; therefore, the project will not affect the regional or local economies. No business districts will be impacted, and no businesses will be relocated. Any economic impacts associated with the project will be minimal and temporary, resulting from construction impacts.

4.7 Cumulative Effects

No adverse cumulative effects are anticipated to result from the proposed project.

Appendix A Concept Plans

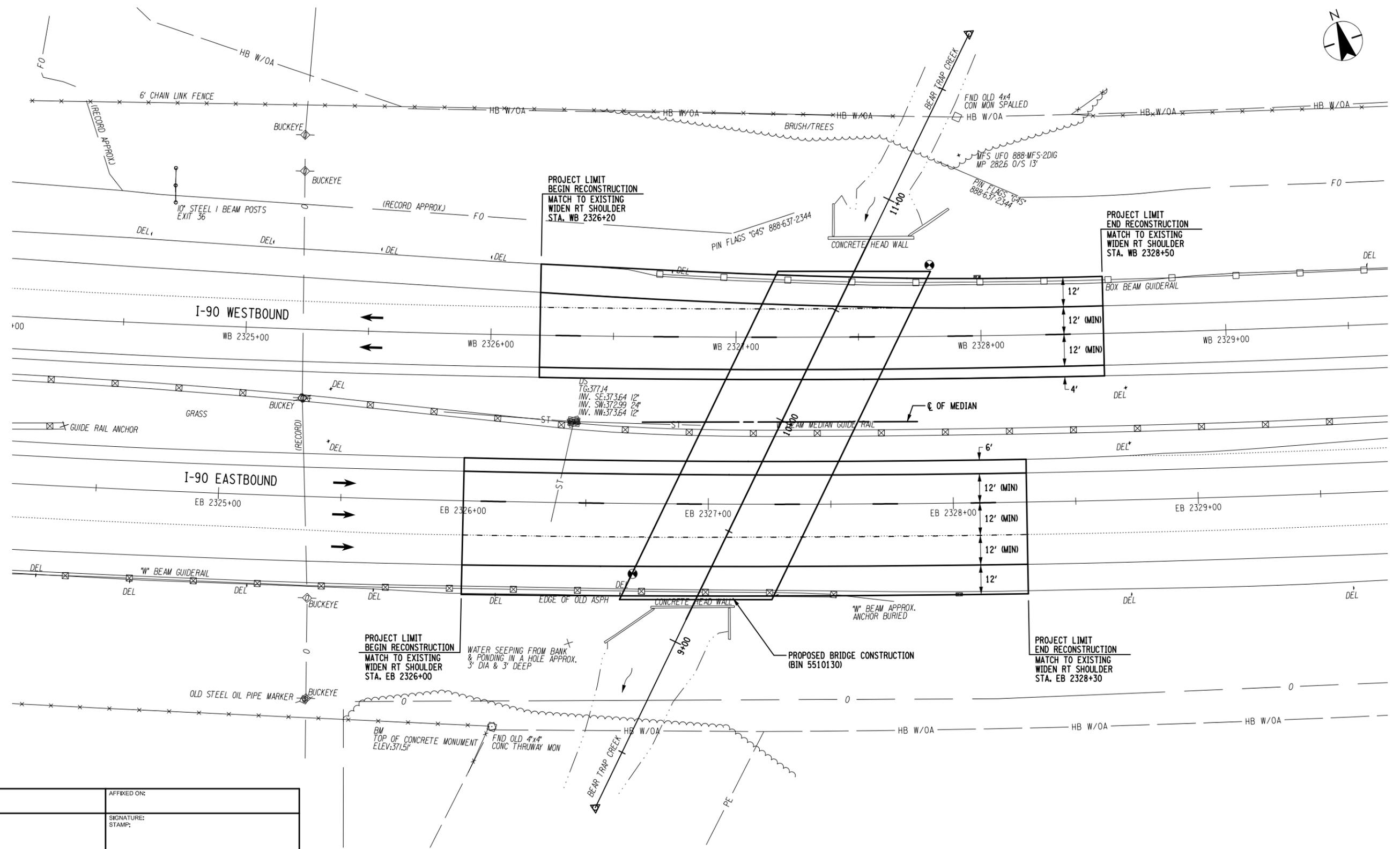
CHECKED BY: B. WALKER

DRAFTED BY: S. ROMEISER

CHECKED BY: R. CODY

DESIGNED BY: B. WALKER

DESIGN SUPERVISOR: J. HOFMANN



ALTERED ON:	AFFIXED ON:
SIGNATURE: STAMP:	SIGNATURE: STAMP:

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

REVISIONS			
DATE	DESCRIPTION	BY	SYM.

TITLE OF PROJECT INTERSTATE 90 OVER BEAR TRAP CREEK MP 282.62 / BIN 5510130	CONTRACT NUMBER: TAB 17-XX
LOCATION OF PROJECT TOWN OF SALINA ONONDAGA COUNTY	DATE: MAY, 2017
TITLE OF DRAWING ROADWAY PLAN STA. WB 2326+20 TO STA. WB 2328+50 STA. EB 2326+00 TO STA. EB 2328+30	DRAWING NUMBER: PL-01



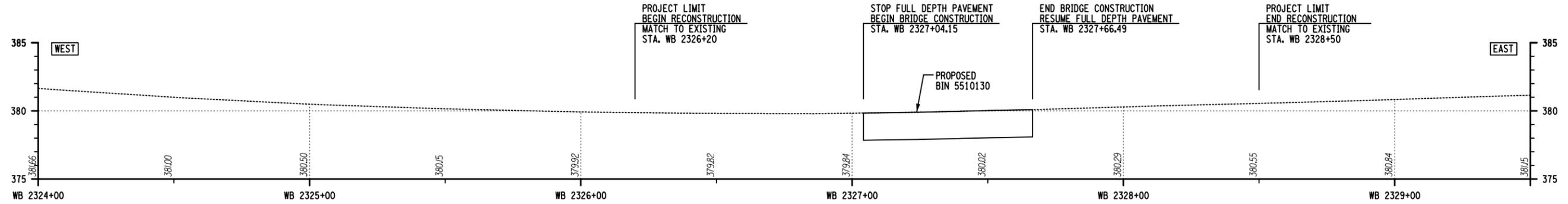
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DRAFTED BY: S. ROMEISER

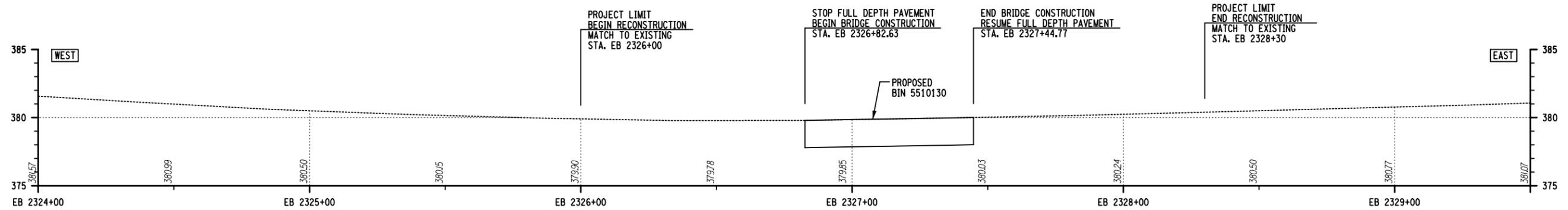
CHECKED BY: R. CODY

DESIGNED BY: B. WALKER

DESIGN SUPERVISOR: J. HOFMANN



I-90 WESTBOUND



I-90 EASTBOUND

ALTERED ON:	AFFIXED ON:
SIGNATURE: STAMP:	SIGNATURE: STAMP:

GENERAL PROFILE NOTE:
 FOR HORIZONTAL CONTROL LINE (HCL), SEE PLAN SHEETS OR TYPICAL SECTIONS FOR MORE INFORMATION.

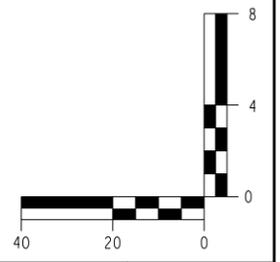
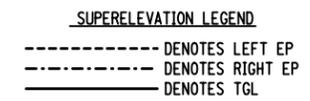
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REVISIONS			
DATE	DESCRIPTION	BY	SYMBOL



TITLE OF PROJECT
 INTERSTATE 90 OVER BEAR TRAP CREEK
 MP 282.62 / BIN 5510130
 LOCATION OF PROJECT
 TOWN OF SALINA
 ONONDAGA COUNTY
 TITLE OF DRAWING
 ROADWAY PROFILE
 STA. WB 2326+20 TO STA. WB 2328+50
 STA. EB 2326+00 TO STA. EB 2328+30
 BEAR TRAP CREEK 8+00 TO 12+00

CONTRACT NUMBER:
 TAB 17-XX
 DATE:
 MAY, 2017
 DRAWING NUMBER:
 PRO-1



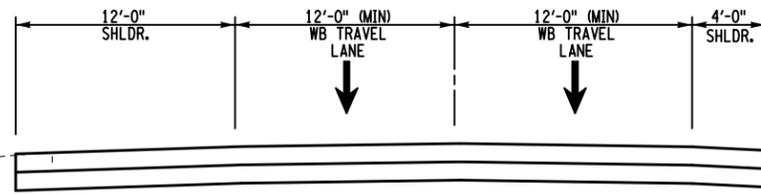
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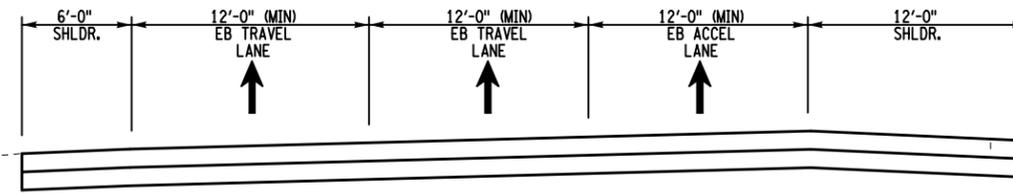
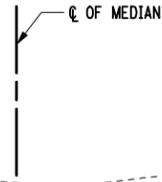
CHECKED BY: R. CODY

DESIGNED BY: B. WALKER

DESIGN SUPERVISOR: J. HOFMANN



I-90 WESTBOUND



I-90 EASTBOUND

1A I-90 PAVEMENT RECONSTRUCTION
 STA. WB 2326+20 TO STA. WB 2327+04.15
 STA. WB 2327+66.49 TO STA. WB 2328+50
 STA. EB 2326+00 TO STA. EB 2326+82.63
 STA. EB 2327+44.77 TO STA. 2328+30
 N.T.S.

ALTERED ON:	AFFIXED ON:
SIGNATURE: STAMP:	SIGNATURE: STAMP:

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

REVISIONS			
DATE	DESCRIPTION	BY	SYMBOL

TITLE OF PROJECT INTERSTATE 90 OVER BEAR TRAP CREEK MP 282.62 / BIN 5510130	CONTRACT NUMBER: TAB 17-XX
LOCATION OF PROJECT TOWN OF SALINA ONONDAGA COUNTY	DATE: MAY, 2017
TITLE OF DRAWING TYPICAL SECTIONS I-90 EASTBOUND I-90 WESTBOUND	DRAWING NUMBER: TYP-1

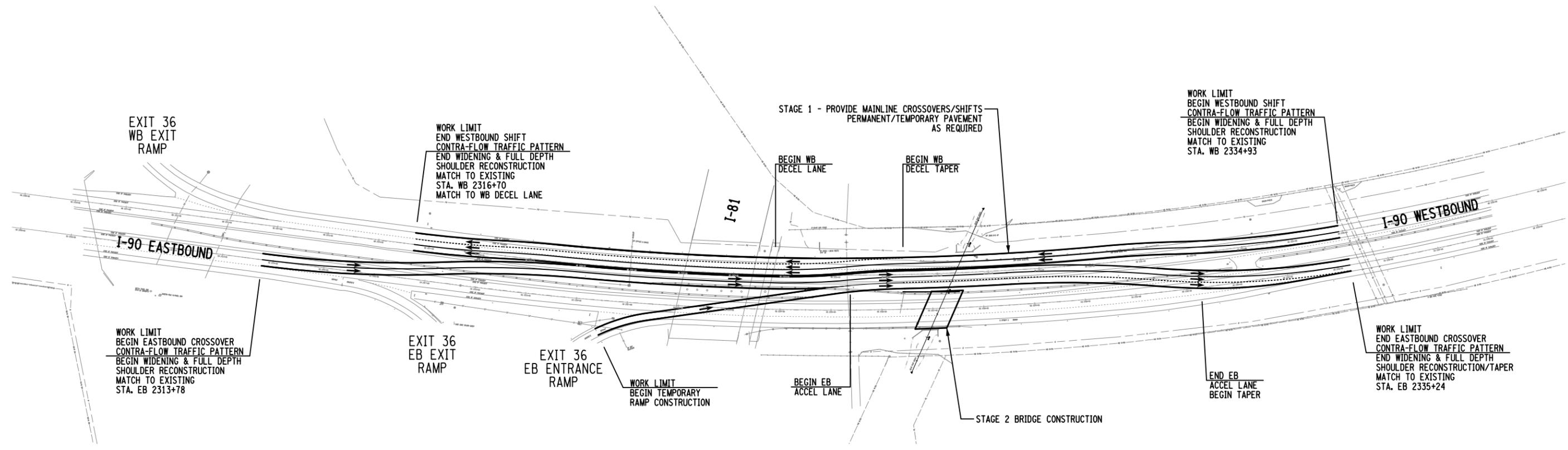
CHECKED BY: B. WALKER

DRAFTED BY: S. ROMEISER

CHECKED BY: R. CODY

DESIGNED BY: B. WALKER

DESIGN SUPERVISOR: J. HOFMANN



ALTERED ON:	AFFIXED ON:
SIGNATURE: STAMP:	SIGNATURE: STAMP:

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

REVISIONS			
DATE	DESCRIPTION	BY	SYMBOL

TITLE OF PROJECT INTERSTATE 90 OVER BEAR TRAP CREEK MP 282.62 / BIN 5510130	CONTRACT NUMBER: TAB 17-XX
LOCATION OF PROJECT TOWN OF SALINA ONONDAGA COUNTY	DATE: MAY, 2017
TITLE OF DRAWING WORK ZONE TRAFFIC CONTROL PLAN	DRAWING NUMBER: WZP-01



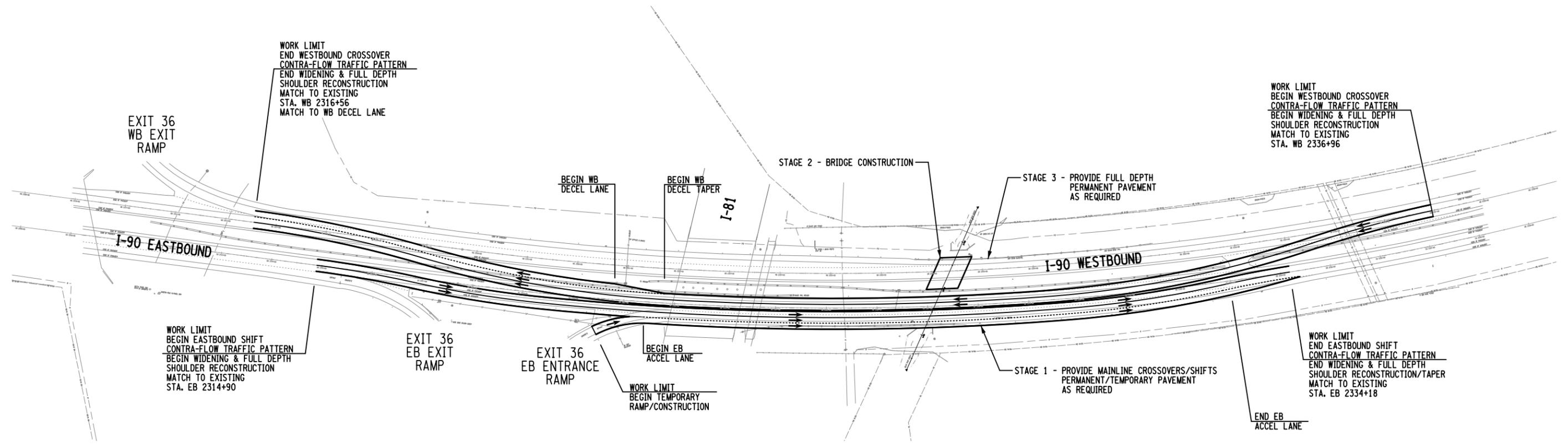
CHECKED BY: B. WALKER

DRAFTED BY: S. ROMEISER

CHECKED BY: R. CODY

DESIGNED BY: B. WALKER

DESIGN SUPERVISOR: J. HOFMANN



PHASE 2 WZTC CROSSOVER
SHIFT WB TRAFFIC TO EB LINE

ALTERED ON:	AFFIXED ON:
SIGNATURE: STAMP:	SIGNATURE: STAMP:

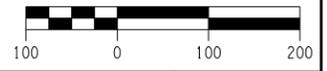
IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

REVISIONS			
DATE	DESCRIPTION	BY	SYMBOL



TITLE OF PROJECT
INTERSTATE 90 OVER BEAR TRAP CREEK
MP 282.62 / BIN 5510130
LOCATION OF PROJECT
TOWN OF SALINA
ONONDAGA COUNTY
TITLE OF DRAWING
WORK ZONE TRAFFIC CONTROL
PLAN

CONTRACT NUMBER:
TAB 17-XX
DATE:
MAY, 2017
DRAWING NUMBER:
WZP-02



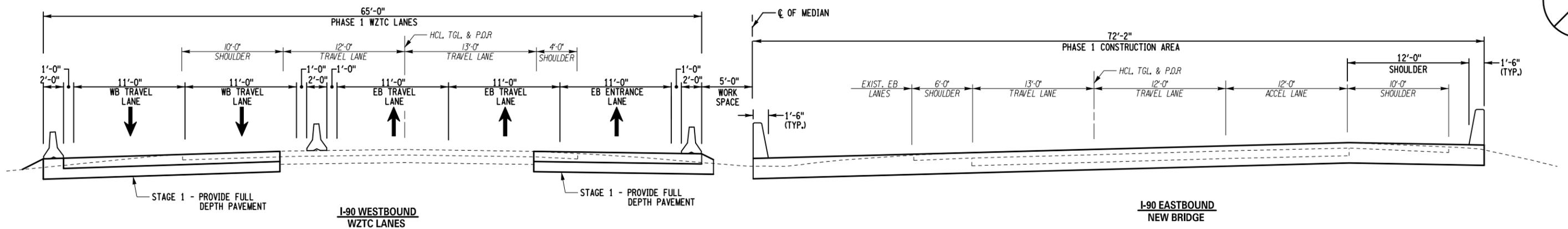
CHECKED BY: B. WALKER

DRAFTED BY: S. ROMEISER

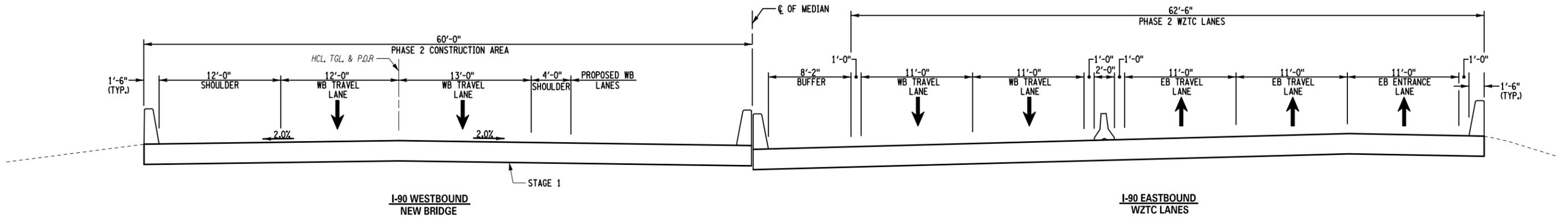
CHECKED BY: R. CODY

DESIGNED BY: B. WALKER

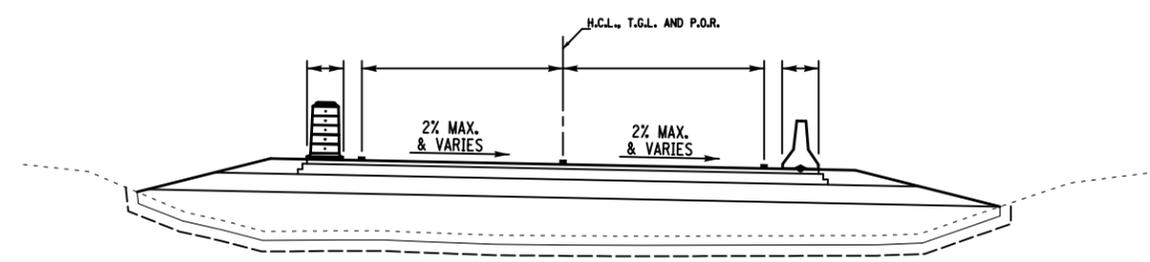
DESIGN SUPERVISOR: J. HOFMANN



1A PHASE 1 CROSSOVER
 SHIFT EB TRAFFIC TO WB LINE
 N.T.S.



2A PHASE 2 CROSSOVER
 SHIFT WB TRAFFIC TO EB LINE
 N.T.S.



ALTERED ON:	AFFIXED ON:
SIGNATURE: STAMP:	SIGNATURE: STAMP:

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

REVISIONS			
DATE	DESCRIPTION	BY	SYM.

NEW YORK STATE OF OPPORTUNITY | **Thruway Authority**

Stantec

TITLE OF PROJECT INTERSTATE 90 OVER BEAR TRAP CREEK MP 282.62 / BIN 5510130	CONTRACT NUMBER: TAB 17-XX
LOCATION OF PROJECT TOWN OF SALINA ONONDAGA COUNTY	DATE: MAY, 2017
TITLE OF DRAWING TYPICAL SECTIONS I-90 EASTBOUND CROSSOVER I-90 WESTBOUND CROSSOVER	DRAWING NUMBER: WZTYP-1

LANES REQUIRED TO BE OPEN BY HOUR AND TIME OF DAY
 SPRING SEASON March 1 through May 31

HR/DAY	MON	TUES	WEDS	THUR	FRI	SAT	SUN
0	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1
7	2	2	2	2	2	1	1
8	2	2	2	2	2	1	1
9	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1
11	1	1	1	1	1	1	1
12	1	1	1	1	2	1	1
13	1	1	1	1	2	1	1
14	1	1	1	1	2	1	1
15	1	1	2	2	2	1	1
16	1	1	2	2	2	1	1
17	1	1	2	2	2	1	1
18	1	1	1	1	1	1	1
19	1	1	1	1	1	1	1
20	1	1	1	1	1	1	1
21	1	1	1	1	1	1	1
22	1	1	1	1	1	1	1
23	1	1	1	1	1	1	1

LANES REQUIRED TO BE OPEN BY HOUR AND TIME OF DAY
 SUMMER SEASON June 1 through September 15

HR/DAY	MON	TUES	WEDS	THUR	FRI	SAT	SUN
0	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1
7	1	2	2	2	2	1	1
8	1	2	2	2	2	1	1
9	1	1	1	2	2	1	1
10	1	1	1	2	2	2	2
11	2	1	1	2	2	2	2
12	2	1	1	2	2	2	2
13	2	1	1	2	2	2	2
14	2	1	2	2	2	2	2
15	2	2	2	2	2	1	2
16	2	2	2	2	2	1	2
17	2	2	2	2	2	1	2
18	1	1	1	1	2	1	1
19	1	1	1	1	1	1	1
20	1	1	1	1	1	1	1
21	1	1	1	1	1	1	1
22	1	1	1	1	1	1	1
23	1	1	1	1	1	1	1

LANES REQUIRED TO BE OPEN BY HOUR AND TIME OF DAY
 FALL SEASON September 16 through November 30

HR/DAY	MON	TUES	WEDS	THUR	FRI	SAT	SUN
0	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1
7	2	2	2	2	2	1	1
8	2	2	2	2	2	1	1
9	1	1	1	1	1	1	1
10	1	1	1	1	2	1	1
11	1	1	1	1	2	1	2
12	1	1	1	1	2	1	2
13	1	1	1	1	2	1	2
14	1	1	1	1	2	1	2
15	2	2	2	2	2	1	2
16	2	2	2	2	2	1	2
17	2	2	2	2	2	1	2
18	1	1	1	1	2	1	1
19	1	1	1	1	1	1	1
20	1	1	1	1	1	1	1
21	1	1	1	1	1	1	1
22	1	1	1	1	1	1	1
23	1	1	1	1	1	1	1

LANES REQUIRED TO BE OPEN BY HOUR AND TIME OF DAY
 WINTER SEASON December 1 through February 28

HR/DAY	MON	TUES	WEDS	THUR	FRI	SAT	SUN
0	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1
7	2	2	2	2	2	1	1
8	2	2	2	2	1	1	1
9	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1
11	1	1	1	1	1	1	1
12	1	1	1	1	1	1	1
13	1	1	1	1	1	1	1
14	1	1	1	1	1	1	1
15	1	1	1	1	2	1	1
16	1	1	1	1	2	1	1
17	1	1	1	1	2	1	1
18	1	1	1	1	1	1	1
19	1	1	1	1	1	1	1
20	1	1	1	1	1	1	1
21	1	1	1	1	1	1	1
22	1	1	1	1	1	1	1
23	1	1	1	1	1	1	1

LANES REQUIRED TO BE OPEN BY HOUR AND TIME OF DAY
 SPRING SEASON March 1 through May 31

HR/DAY	MON	TUES	WEDS	THUR	FRI	SAT	SUN
0	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1
7	2	2	2	2	2	1	1
8	2	2	2	2	2	1	1
9	2	1	1	1	2	1	1
10	2	1	1	1	2	1	1
11	2	1	1	1	2	1	1
12	2	1	1	1	2	1	2
13	2	1	1	1	2	1	2
14	2	1	1	2	2	1	2
15	2	2	2	2	2	1	2
16	2	2	2	2	2	1	2
17	2	2	2	2	2	1	2
18	1	1	1	1	2	1	1
19	1	1	1	1	1	1	1
20	1	1	1	1	1	1	1
21	1	1	1	1	1	1	1
22	1	1	1	1	1	1	1
23	1	1	1	1	1	1	1

LANES REQUIRED TO BE OPEN BY HOUR AND TIME OF DAY
 SUMMER SEASON June 1 through September 15

HR/DAY	MON	TUES	WEDS	THUR	FRI	SAT	SUN
0	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1
6	2	1	1	1	1	1	1
7	2	2	2	2	2	1	1
8	2	2	2	2	2	1	1
9	2	2	2	2	2	2	1
10	2	2	2	2	2	2	2
11	2	2	2	2	2	2	2
12	2	2	2	2	2	2	2
13	2	2	2	2	2	2	2
14	2	2	2	2	2	2	2
15	2	2	2	2	2	2	2
16	2	2	2	2	2	2	2
17	2	2	2	2	2	2	2
18	1	1	1	2	2	1	2
19	1	1	1	1	2	1	1
20	1	1	1	1	1	1	1
21	1	1	1	1	1	1	1
22	1	1	1	1	1	1	1
23	1	1	1	1	1	1	1

LANES REQUIRED TO BE OPEN BY HOUR AND TIME OF DAY
 FALL SEASON September 16 through November 30

HR/DAY	MON	TUES	WEDS	THUR	FRI	SAT	SUN
0	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1
6	1	1	1	2	1	1	1
7	2	2	2	2	2	1	1
8	2	2	2	2	2	1	1
9	2	1	2	2	2	1	1
10	2	1	2	2	2	2	2
11	2	1	2	2	2	2	2
12	2	1	2	2	2	2	2
13	2	1	2	2	2	2	2
14	2	2	2	2	2	2	2
15	2	2	2	2	2	1	2
16	2	2	2	2	2	1	2
17	2	2	2	2	2	1	2
18	1	1	1	1	2	1	2
19	1	1	1	1	1	1	1
20	1	1	1	1	1	1	1
21	1	1	1	1	1	1	1
22	1	1	1	1	1	1	1
23	1	1	1	1	1	1	1

LANES REQUIRED TO BE OPEN BY HOUR AND TIME OF DAY
 WINTER SEASON December 1 through February 28

HR/DAY	MON	TUES	WEDS	THUR	FRI	SAT	SUN
0	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1
7	2	2	2	2	2	1	1
8	2	2	2	2	2	1	1
9	1	1	1	1	2	1	1
10	1	1	1	1	2	1	1
11	1	1	1	1	2	1	1
12	1	1	1	1	2	1	1
13	1	1	1	1	2	1	1
14	1	1	1	1	2	1	1
15	2	2	2	2	2	1	1
16	2	2	2	2	2	1	1
17	2	2	2	2	2	1	1
18	1	1	1	1	1	1	1
19	1	1	1	1	1	1	1
20	1	1	1	1	1	1	1
21	1	1	1	1	1	1	1
22	1	1	1	1	1	1	1
23	1	1	1	1	1	1	1

LANES REQUIRED TO BE OPEN BY HOUR AND TIME OF DAY
 SPRING SEASON March 1 through May 31

HR/DAY	MON	TUES	WEDS	THUR	FRI	SAT	SUN
0	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1
8	1	1	1	1	1	1	1
9	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1
11	1	1	1	1	1	1	1
12	1	1	1	1	1	1	1
13	1	1	1	1	1	1	1
14	1	1	1	1	2	1	1
15	2	2	2	2	2	1	1
16	2	2	2	2	2	1	1
17	2	2	2	2	2	1	1
18	1	1	1	1	1	1	1
19	1	1	1	1	1	1	1
20	1	1	1	1	1	1	1
21	1	1	1	1	1	1	1
22	1	1	1	1	1	1	1
23	1	1	1	1	1	1	1

LANES REQUIRED TO BE OPEN BY HOUR AND TIME OF DAY
 SUMMER SEASON June 1 through September 15

HR/DAY	MON	TUES	WEDS	THUR	FRI	SAT	SUN
0	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1
8	1	1	1	1	1	1	1
9	1	1	1	1	1	1	1
10	1	1	1	1	2	2	1
11	2	1	1	1	2	2	2
12	2	1	1	2	2	2	2
13	2	1	1	2	2	2	2
14	2	2	2	2	2	2	2
15	2	2	2	2	2	2	2
16	2	2	2	2	2	1	2
17	2	2	2	2	2	1	2
18	1	1	1	1	2	1	2
19	1	1	1	1	1	1	1
20	1	1	1	1	1	1	1
21	1	1	1	1	1	1	1
22	1	1	1	1	1	1	1
23	1	1	1	1	1	1	1

LANES REQUIRED TO BE OPEN BY HOUR AND TIME OF DAY
 FALL SEASON September 16 through November 30

HR/DAY	MON	TUES	WEDS	THUR	FRI	SAT	SUN
0	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1
8	1	1	1	1	1	1	1
9	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1
11	1	1	1	1	1	1	1
12	1	1	1	1	1	1	2
13	1	1	1	1	2	1	2
14	2	1	2	1	2	1	2
15	2	2	2	2	2	1	2
16	2	2	2	2	2	1	2
17	2	2	2	2	2	1	2
18	1	1	1	1	2	1	1
19	1	1	1	1	1	1	1
20	1	1	1	1	1	1	1
21	1	1	1	1	1	1	1
22	1	1	1	1	1	1	1
23	1	1	1	1	1	1	1

LANES REQUIRED TO BE OPEN BY HOUR AND TIME OF DAY
 WINTER SEASON December 1 through February 28

HR/DAY	MON	TUES	WEDS	THUR	FRI	SAT	SUN
0	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1
8	1	1	1	1	1	1	1
9	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1
11	1	1	1	1	1	1	1
12	1	1	1	1	1	1	1
13	1	1	1	1	1	1	1
14	1	1	1	1	2	1	1
15	1	1	2	2	2	1	1
16	2	2	2	2	2	1	1
17	2	2	2	2	2	1	1
18	1	1	1	1	1	1	1
19	1	1	1	1	1	1	1
20	1	1	1	1	1	1	1
21	1	1	1	1	1	1	1
22	1	1	1	1	1	1	1
23	1	1	1	1	1	1	1

LANES REQUIRED TO BE OPEN BY HOUR AND TIME OF DAY
 SPRING SEASON March 1 through May 31

HR/DAY	MON	TUES	WEDS	THUR	FRI	SAT	SUN
0	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1
8	1	1	1	1	1	1	1
9	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1
11	1	1	1	1	2	1	1
12	2	1	1	1	2	1	2
13	2	1	1	1	2	1	2
14	2	1	2	2	2	1	2
15	2	2	2	2	2	1	2
16	2	2	2	2	2	1	2
17	2	2	2	2	2	1	2
18	1	1	1	1	2	1	2
19	1	1	1	1	1	1	1
20	1	1	1	1	1	1	1
21	1	1	1	1	1	1	1
22	1	1	1	1	1	1	1
23	1	1	1	1	1	1	1

LANES REQUIRED TO BE OPEN BY HOUR AND TIME OF DAY
 SUMMER SEASON June 1 through September 15

HR/DAY	MON	TUES	WEDS	THUR	FRI	SAT	SUN
0	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1
7	2	1	1	1	1	1	1
8	2	1	1	1	2	1	1
9	2	1	1	2	2	2	1
10	2	2	2	2	2	2	2
11	2	2	2	2	2	2	2
12	2	2	2	2	2	2	2
13	2	2	2	2	2	2	2
14	2	2	2	2	2	2	2
15	2	2	2	2	2	2	2
16	2	2	2	2	2	2	2
17	2	2	2	2	2	2	2
18	2	2	2	2	2	1	2
19	1	1	1	1	2	1	2
20	1	1	1	1	1	1	1
21	1	1	1	1	1	1	1
22	1	1	1	1	1	1	1
23	1	1	1	1	1	1	1

LANES REQUIRED TO BE OPEN BY HOUR AND TIME OF DAY
 FALL SEASON September 16 through November 30

HR/DAY	MON	TUES	WEDS	THUR	FRI	SAT	SUN
0	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1
8	1	1	1	1	1	1	1
9	1	1	1	1	1	1	1
10	1	1	1	1	1	2	1
11	2	1	1	2	2	2	2
12	2	1	2	2	2	2	2
13	2	2	2	2	2	2	2
14	2	2	2	2	2	2	2
15	2	2	2	2	2	2	2
16	2	2	2	2	2	2	2
17	2	2	2	2	2	1	2
18	1	1	1	2	2	1	2
19	1	1	1	1	1	1	1
20	1	1	1	1	1	1	1
21	1	1	1	1	1	1	1
22	1	1	1	1	1	1	1
23	1	1	1	1	1	1	1

LANES REQUIRED TO BE OPEN BY HOUR AND TIME OF DAY
 WINTER SEASON December 1 through February 28

HR/DAY	MON	TUES	WEDS	THUR	FRI	SAT	SUN
0	1	1	1	1	1	1	1
1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1
8	1	1	1	1	1	1	1
9	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1
11	1	1	1	1	1	1	1
12	1	1	1	1	1	1	1
13	1	1	1	1	2	1	1
14	2	1	2	1	2	1	1
15	2	2	2	2	2	1	1
16	2	2	2	2	2	1	1
17	2	2	2	2	2	1	1
18	1	1	1	1	2	1	1
19	1	1	1	1	1	1	1
20	1	1	1	1	1	1	1
21	1	1	1	1	1	1	1
22	1	1	1	1	1	1	1
23	1	1	1	1	1	1	1

Appendix B Environmental Agency Correspondence



United States Department of the Interior



FISH AND WILDLIFE SERVICE
New York Ecological Services Field Office
3817 LUKER ROAD
CORTLAND, NY 13045
PHONE: (607)753-9334 FAX: (607)753-9699
URL: www.fws.gov/northeast/nyfo/es/section7.htm

Consultation Code: 05E1NY00-2017-SLI-0249

November 09, 2016

Event Code: 05E1NY00-2017-E-00637

Project Name: NYSTA MP 282.62 Bear Trap Creek

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (ESA) of 1973, as amended (16 U.S.C. 1531 *et seq.*). This list can also be used to determine whether listed species may be present for projects without federal agency involvement. New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list.

Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the ESA, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC site at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list. If listed, proposed, or candidate species were identified as potentially occurring in the project area, coordination with our office is encouraged. Information on the steps involved with assessing potential impacts from projects can be found at: <http://www.fws.gov/northeast/nyfo/es/section7.htm>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (

http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the Services wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the ESA. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment



United States Department of Interior
Fish and Wildlife Service

Project name: NYSTA MP 282.62 Bear Trap Creek

Official Species List

Provided by:

New York Ecological Services Field Office

3817 LUKER ROAD

CORTLAND, NY 13045

(607) 753-9334

<http://www.fws.gov/northeast/nyfo/es/section7.htm>

Consultation Code: 05E1NY00-2017-SLI-0249

Event Code: 05E1NY00-2017-E-00637

Project Type: BRIDGE CONSTRUCTION / MAINTENANCE

Project Name: NYSTA MP 282.62 Bear Trap Creek

Project Description: The purpose of this environmental review is to facilitate the preliminary design for the rehabilitation or replacement of an existing bridge.

Please Note: The FWS office may have modified the Project Name and/or Project Description, so it may be different from what was submitted in your previous request. If the Consultation Code matches, the FWS considers this to be the same project. Contact the office in the 'Provided by' section of your previous Official Species list if you have any questions or concerns.



United States Department of Interior
Fish and Wildlife Service

Project name: NYSTA MP 282.62 Bear Trap Creek

Project Location Map:



Project Coordinates: MULTIPOLYGON (((-76.16755843162537 43.09407319326856, -76.16714000701903 43.094817470960464, -76.16387844085693 43.09346209534859, -76.16218328475952 43.092976346498176, -76.16189360618591 43.093258394686835, -76.1612069606781 43.0930390239857, -76.16150736808777 43.09278831365078, -76.15907192230225 43.09232606378015, -76.15686178207397 43.09214586373288, -76.15678668022154 43.091542581454995, -76.15897536277771 43.09169927872185, -76.16098165512085 43.091949993514916, -76.16196870803833 43.092169368116934, -76.16222620010376 43.091926489046664, -76.16283774375916 43.092138028936176, -76.16259098052979 43.092412246224, -76.16755843162537 43.09407319326856)))

Project Counties: Onondaga, NY



United States Department of Interior
Fish and Wildlife Service

Project name: NYSTA MP 282.62 Bear Trap Creek

Endangered Species Act Species List

There are a total of 3 threatened or endangered species on your species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. Critical habitats listed under the **Has Critical Habitat** column may or may not lie within your project area. See the **Critical habitats within your project area** section further below for critical habitat that lies within your project. Please contact the designated FWS office if you have questions.

Mammals	Status	Has Critical Habitat	Condition(s)
Indiana bat (<i>Myotis sodalis</i>) Population: Wherever found	Endangered		
Northern long-eared Bat (<i>Myotis septentrionalis</i>) Population: Wherever found	Threatened		
Reptiles			
eastern Massasauga (<i>Sistrurus catenatus</i>) Population: Wherever found	Threatened		



United States Department of Interior
Fish and Wildlife Service

Project name: NYSTA MP 282.62 Bear Trap Creek

Critical habitats that lie within your project area

There are no critical habitats within your project area.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
Division of Fish & Wildlife
New York Natural Heritage Program
625 Broadway, 5th Floor, Albany, New York 12233-4757
Phone: (518) 402-8935 • **Fax:** (518) 402-8925
Website: www.dec.ny.gov



December 14, 2016

Caitlin Graff
Environmental Design & Research
217 Montgomery Street, Suite 1000
Syracuse, NY 13202

Re: NYSTA MP 282.62, New York State Thruway Bridge over Bear Trap Creek, Syracuse,
BIN 5510130, EDR No. 16134-7
Town/City: Salina. County: Onondaga.

Dear Ms. Graff:

In response to your recent request, we have reviewed the New York Natural Heritage Program database with respect to the above project.

We have no records of rare or state-listed animals or plants, or significant natural communities at the project site or in its immediate vicinity.

The absence of data does not necessarily mean that rare or state-listed species, significant natural communities, or other significant habitats do not exist on or adjacent to the proposed site. Rather, our files currently do not contain information that indicates their presence. For most sites, comprehensive field surveys have not been conducted. We cannot provide a definitive statement on the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other resources may be required to fully assess impacts on biological resources.

This response applies only to known occurrences of rare or state-listed animals and plants, significant natural communities, and other significant habitats maintained in the Natural Heritage Database. Your project may require additional review or permits; for information regarding other permits that may be required under state law for regulated areas or activities (e.g., regulated wetlands), please contact the NYS DEC Region 7 Office, Division of Environmental Permits, as listed at www.dec.ny.gov/about/39381.html.

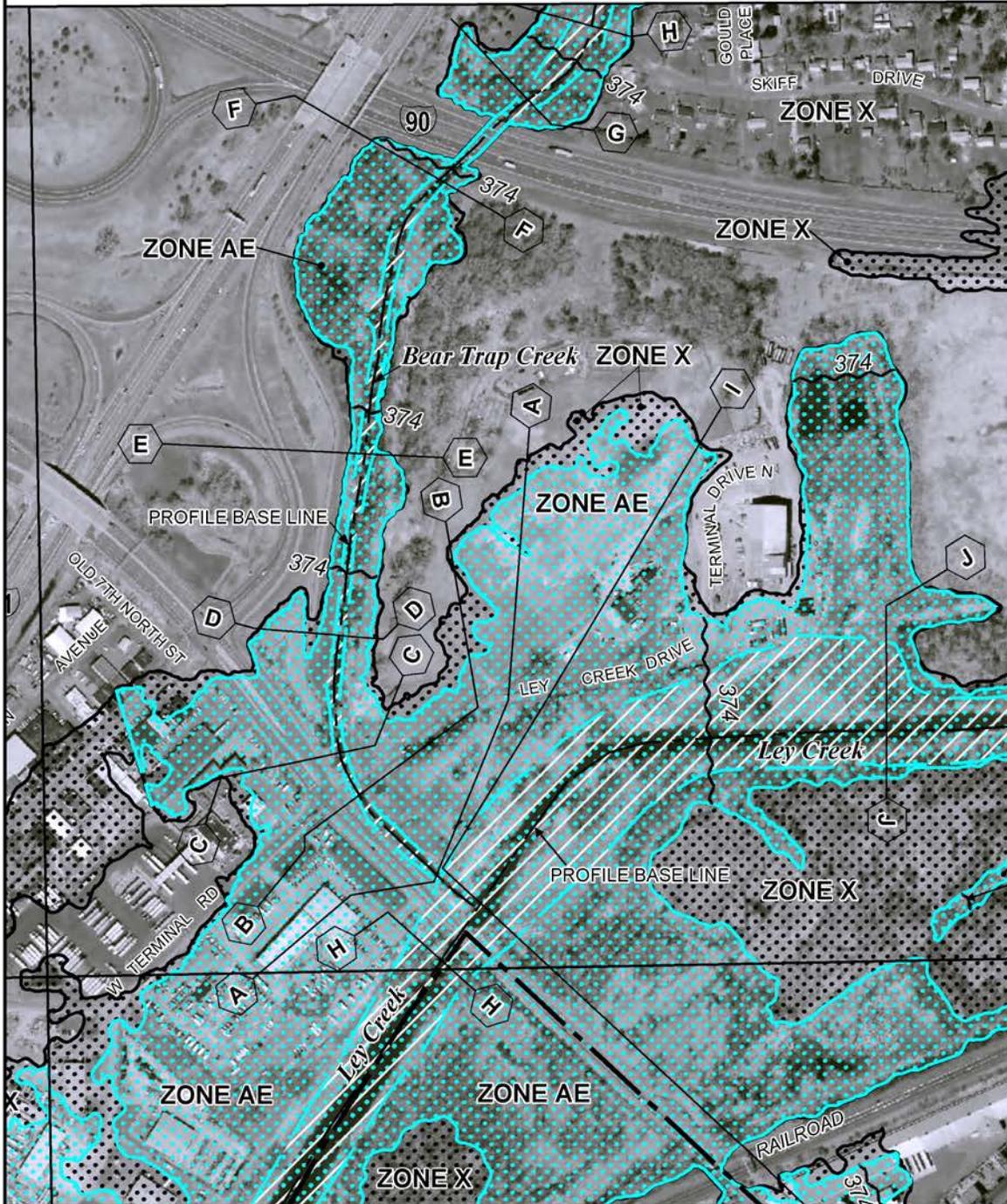
Sincerely,

A handwritten signature in black ink, appearing to read "Nick Conrad", written in a cursive style.

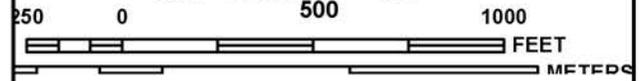
Nicholas Conrad
Information Resources Coordinator
New York Natural Heritage Program

76° 09' 22.5"

43° 05'



MAP SCALE 1" = 500'



NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0208F

FIRM
FLOOD INSURANCE RATE MAP
ONONDAGA COUNTY,
NEW YORK
 (ALL JURISDICTIONS)

PANEL 208 OF 520
 (SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
GEDDES, TOWN OF	360579	0208	F
SALINA, TOWN OF	360591	0208	F
SYRACUSE, CITY OF	360595	0208	F

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.



MAP NUMBER
36067C0208F
EFFECTIVE DATE
NOVEMBER 4, 2016

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Appendix C Smart Growth Checklist

SMART GROWTH IMPACT STATEMENT

This Smart Growth Impact Statement is a tool to assist the New York State Thruway/Canal Corporation (NYSTA/CC) determine whether a NYSTA/CC-funded project is consistent with the State Smart Growth Public Infrastructure Criteria. Not all questions/answers may be relevant to all projects.

Project Name: **See Report Cover**

Project Number: **See Report Cover**

Date: **February 13, 2012**

Have any other entities issued a Smart Growth Impact Statement with regard to this project? (If so, attach same).

- Yes
- No

1. Does the project advance or otherwise involve the use, maintenance or improvement of existing infrastructure?

- Yes
- No
- Not relevant

Explain briefly: **Capital project advanced to address condition-based needs of highway system.**

2. Is the project located wholly or partially in a **municipal center**, characterized by any of the following: (check those that apply)

- A city or a village
- Area of concentrated and mixed land use that serves as a center for various activities including, but not limited to:
 - Central business district (e.g. the commercial and/or economic heart or center of the municipality)
 - Downtown area (such as a city's core (or center), which may include the [central business district](#) and functions as a “center” in a geographical, commercial, and community sense).
 - Brownfield Opportunity Area (http://nyswaterfronts.com/BOA_projects.asp)
 - Downtown areas of Local Waterfront Revitalization Plan area (http://nyswaterfronts.com/maps_regions.asp)
 - Locations of transit-oriented development (such as projects serving areas that have access to mass or public transit for residents)
 - Environmental Justice area (<http://www.dec.ny.gov/public/899.html>)

- Hardship areas, which may include areas with high poverty rates, high unemployment, poor infrastructure, or other socio-demographic indicator considered below average.
- A developed area or area designated for concentrated infill development in a municipally approved comprehensive land use plan, LWRP or Brownfield Opportunity area plan? Hardship areas, which may include areas with high poverty rates, high unemployment, poor infrastructure, or other socio-demographic indicator considered below average.

Explain briefly: (Indicate if the project is located adjacent to municipal centers, in an area that exhibits strong land use, transportation, infrastructure and economic connections to an existing municipal center, or in an area designated for concentrated development in the future in a municipal or regional comprehensive plan.)

- Yes
- No
- Not relevant

If Yes, please describe: **as the NYS Thruway is an integral component of the nation's Interstate Highway System providing both regional and national transportation mobility as well as connecting areas of concentrated development both within and outside NYS.**

3. Does the project preserve and enhance the State's resources, including agricultural lands, forests, surface and groundwater, air quality, recreation and open space, scenic areas, and/or significant historic and archeological resources?
- Yes
 - No
 - Not relevant

Explain briefly: **Project is developed consistent with all social, economic, and environmental policies and procedures. See project SEQR documentation.**

4. Does the project foster mixed land uses and compact development, downtown revitalization, brownfield redevelopment, the enhancement of beauty in public spaces, the diversity and affordability of housing in proximity to places of employment, recreation and commercial development and/or the integration of all income and age groups?
- Yes
 - No
 - Not relevant

Explain briefly: **The NYS Thruway is a fully access-controlled highway system on an existing alignment.**

5. Does the project provide mobility through transportation choices, including improved public transportation and reduced automobile dependency?
- Yes
 - No
 - Not relevant

Explain briefly: **The NYS Thruway is a fully access-controlled highway system on an existing alignment.**

6. Does the project demonstrate coordination among state, regional, intermunicipal and local planning and governmental officials?
- Yes
 - No
 - Not relevant

Explain briefly: **Project is intended to only address corrective and preventative maintenance repairs to extend the useful life of the highway system. Coordination with environmental agencies and interested parties will occur to obtain permits and approvals consistent with regulatory requirements.**

(Demonstration of coordination may include SEQR coordination with involved and interested agencies, district formation, agreements between involved parties, letters of support, SPDES permit issuance/revision notices, etc.)

7. Does the project involve community-based planning and collaboration?
- Yes
 - No
 - Not relevant

Explain briefly: **Project is intended to only address corrective and preventative maintenance repairs to extend the useful life of the highway system.**

8. Does the project help ensure predictability in building and land use codes?
- Yes
 - No
 - Not relevant

Explain briefly:

9. Sustainability

- a. Does the project promote sustainability by strengthening existing communities or creating new communities that reduce greenhouse gas emissions and do not compromise the needs of future generations?

- Yes
- No
- Not relevant

Explain briefly: **Project is intended to only address corrective and preventative maintenance repairs to extend the useful life of the highway system.**

b. During the development of the project, was there broad based public involvement?

- Yes
- No
- Not relevant

Explain the extent of public involvement (briefly): (Public involvement may include SEQR coordination with involved and interested agencies, SPDES permit issuance/revision notice, approval of Bond Resolution, formation of district, public hearings, ENB or other published notices, letters of support, etc.) **Not required by SEQR or needed based upon project type. Regulatory agencies will be provided an opportunity to comment on the project through their requirements associated with required of permits and approvals.**

c. If the project included development or implementation of all or part of a community plan, is there a governance structure in place (within the Authority and/or the local community) to ensure further implementation of the plan?

- Yes
- No
- Not relevant

If Yes, please describe:

NYSTA/CC SMART GROWTH IMPACT STATEMENT

The New York State Thruway Authority/ Canal Corporation (NYSTA/CC) has reviewed the available information regarding the following project and determined that it is consistent with the State Smart Growth Public Infrastructure Criteria: (check one)

Project Name: _____ **See Report Cover**

Project Number: _____ **See Report Cover**

- The project was developed in general consistency with the relevant Smart Growth Criteria.

- It was impracticable to develop this project in a manner consistent with the relevant Smart Growth Criteria for the following reasons:

ATTESTATION

I, as designee of the Chief Executive Officer of the NYSTA/CC, hereby attests that this project, to the extent practicable, meets the relevant criteria set forth above and, that to the extent that it is not practical to meet any relevant criterion, for the reasons given above.

See Report Signature Page
[signature] [date]

See Report Signature Page
[print name & title]

Appendix D Structure Information

STATE	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
N.Y.		7	22

ONTARIO THRUWAY STA. 2307+70 TO 2360+80
 MOHAWK THRUWAY STA. 2377+00 TO 2504+72

STATE OF NEW YORK
 DEPARTMENT OF PUBLIC WORKS
 DIVISION OF CONSTRUCTION

PLANS FOR CONSTRUCTING PORTIONS OF THE
ONTARIO THRUWAY

From Station A 2307+70 approximately 0.05 mile east of Buckley Road easterly to Station 2360+80 a length of 1.04 miles in the Town of Salina

CONTRACT No. O.T. 46-2

MOHAWK THRUWAY

From Station 2377+00 to Station 2416+50, Station 2418+50 to Station 2446+00, Station 2448+50 to Station 2504+42; a length of 1.27 miles in the Town of Salina, 1.06 miles in the Town of DeWitt, a total length of 2.33 miles

CONTRACT No. M.T. 46-1

TOTAL LENGTH OF CONTRACT, 3.37 MILES
ONONDAGA COUNTY

22 Sheets

TYPE OF CONSTRUCTION
 FOUNDATION COURSE, RUN OF BANK GRAVEL
 3.32 MILES
 GRADING 0.05 MILE
 BRIDGE - STATION "A" 2327+25, ONTARIO THRUWAY
 TWIN BOX, SPANS 2 @ 13.9'
 BRIDGE - STATION 2481+74, MOHAWK THRUWAY
 CONCRETE SLAB, SPAN 41.37'

STANDARD STRUCTURE SHEETS
 41-6, 46-4, 46-7, 44-27, 45-33, 44-24BR, 44-32BR

All work contemplated under this contract to be covered by and in conformity with the specifications adopted January 2, 1942, except as modified on these plans and in the Itemized Proposal.

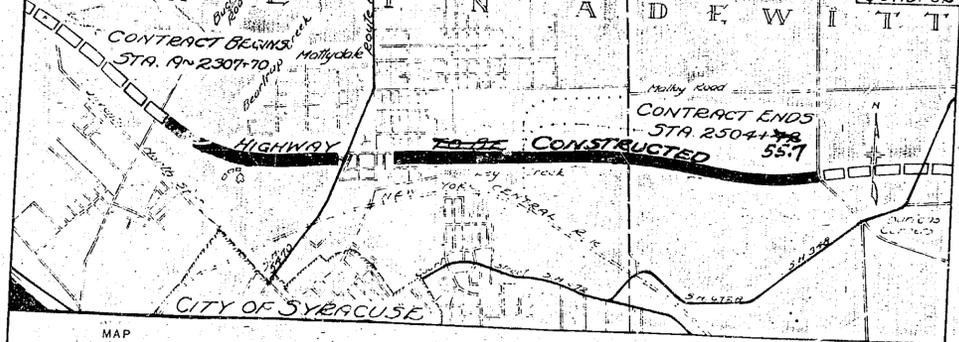
Meas. Length	TYPE	Materials
O.T. 46-2 532.67'	1.04 Mi Grading &	Sand Stone Cement
M.T. 46-1 12305.70'	2.34 " STRUCTURES	Lagoon Solway Federal Pen Drive
Young Ave 1447.0'	0.27	For Grav. 12" Thick Crush Stone Jamesillo Centur. No. 3 N.Y.

Date of Contract - Nov. 18, 1946 Date of Start - Nov. 18, 1946
 Date of Completion - July 14, 1948
 U.S. Government
 Syracuse Army Air Base

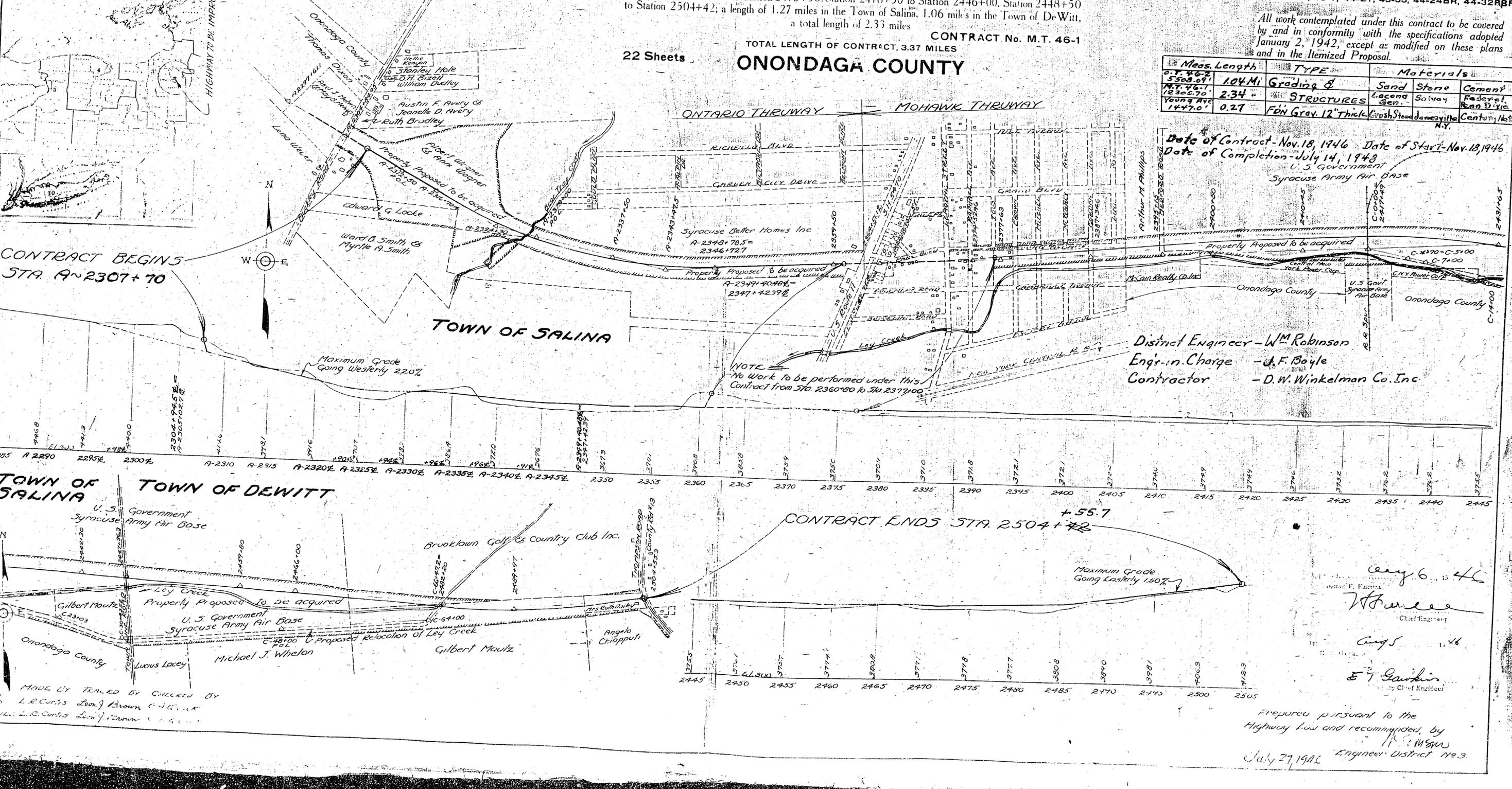
District Engineer - W.M. Robinson
 Engin. in Charge - J.F. Boyle
 Contractor - D.W. Winkelman Co. Inc.

July 6, 1946
 W. Wallace
 Chief Engineer
 July 5, 1946
 E.T. Gawlin
 City Chief Engineer

Prepared pursuant to the Highway Law and recommended by
 J. W. Mason
 July 27, 1946 Engineer District No. 3



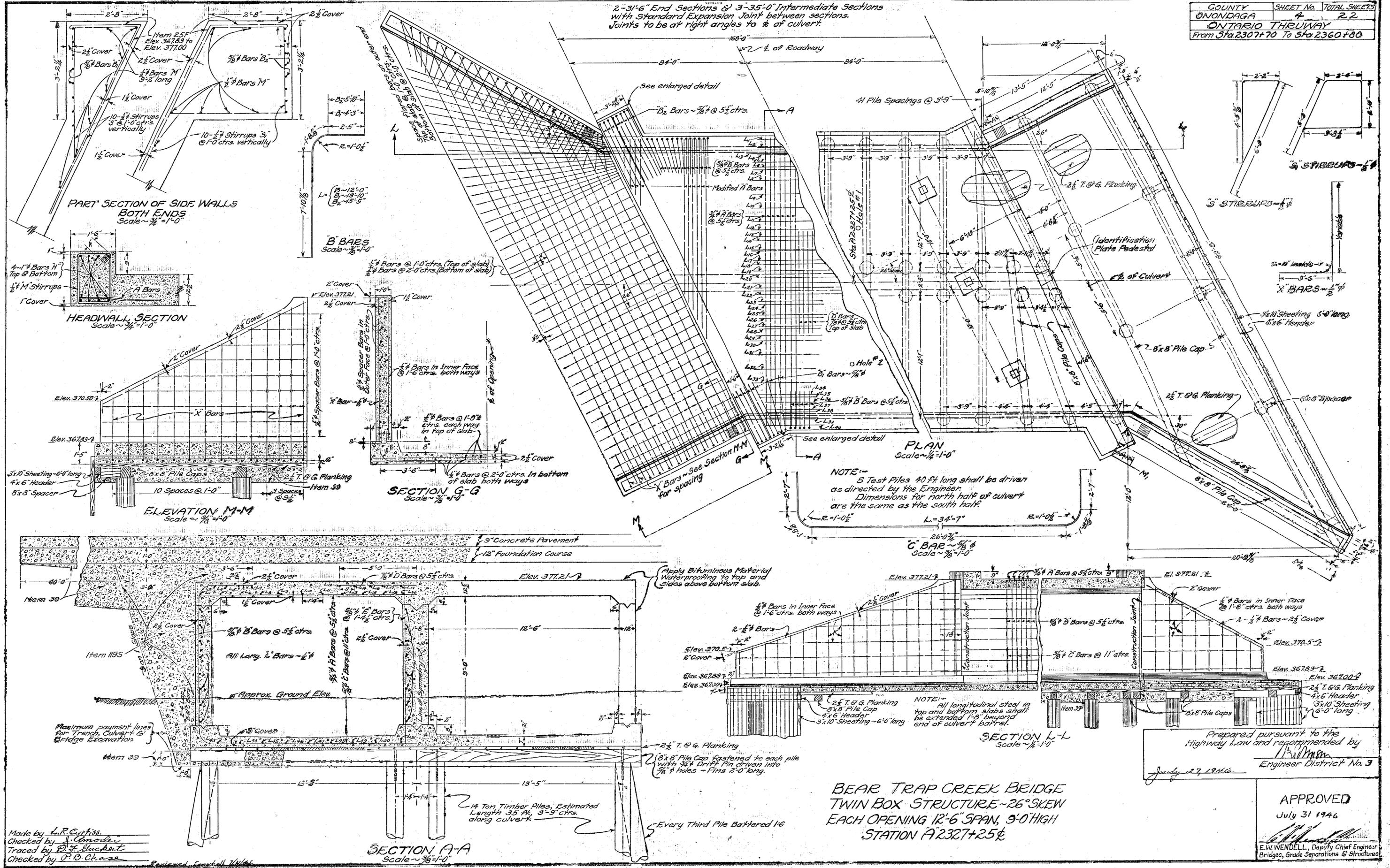
MAP of the STATE OF NEW YORK showing Districts and Location of District Offices of the State Department of Public Works



MADE BY TRACED BY CHECKED BY
 L. R. Curtis L. R. Curtis L. R. Curtis
 L. R. Curtis L. R. Curtis L. R. Curtis

COUNTY	SHEET No.	TOTAL SHEETS
ONONDAGA	4	22
ONTARIO THRUWAY		
From Sta. 2307+70 To Sta. 2360+80		

2'-3'-6" End Sections & 3'-35'-0" Intermediate Sections with Standard Expansion Joint between sections. Joints to be at right angles to $\frac{1}{2}$ of culvert.



NOTE: 5 Test Piles 40 ft long shall be driven as directed by the Engineer. Dimensions for north half of culvert are the same as the south half.

C BAR ~ #5 @ 5" ctrs. Scale ~ 1/4" = 1'-0"

NOTE: All longitudinal steel in top and bottom slabs shall be extended 1'-3" beyond end of culvert barrel.

BEAR TRAP CREEK BRIDGE
TWIN BOX STRUCTURE ~ 26° SKEW
EACH OPENING 12'-6" SPAN, 9'-0" HIGH
STATION A 2327+25 1/2

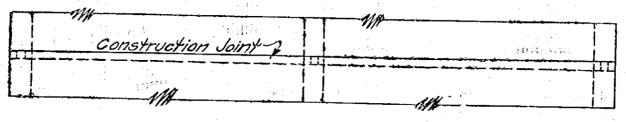
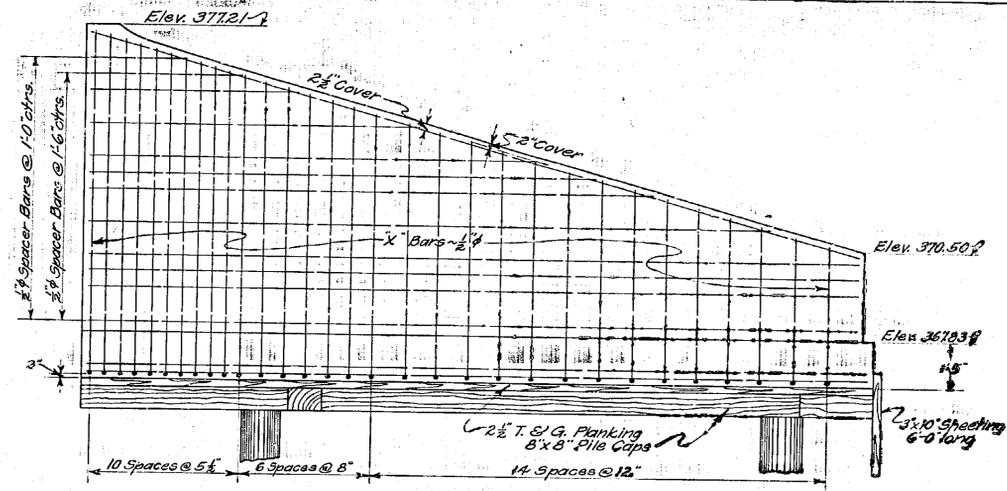
Prepared pursuant to the Highway Law and recommended by
E. W. Wendell
January 27, 1946
Engineer District No. 3

APPROVED
July 31 1946
E. W. WENDELL, Deputy Chief Engineer
Bridges, Grade Separations & Structures

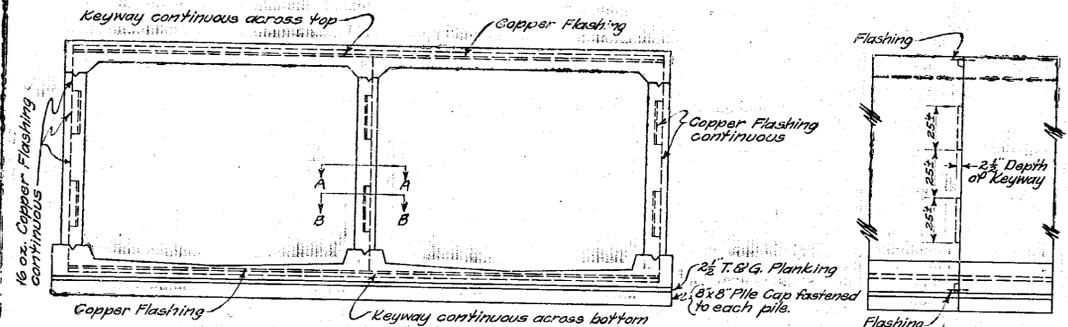
Made by L. R. Curtis
Checked by J. Conder
Traced by D. F. Macbert
Checked by P. D. Chase

Reviewed Campbell Walker

COUNTY	SHEET No.	TOTAL SHEETS
ONONDAGA	5	22
ONTARIO THRUWAY		
From Sta. 2307+70 to Sta. 2360+80		

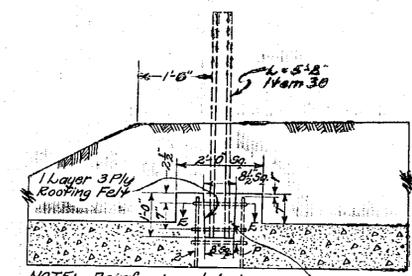


TOP VIEW

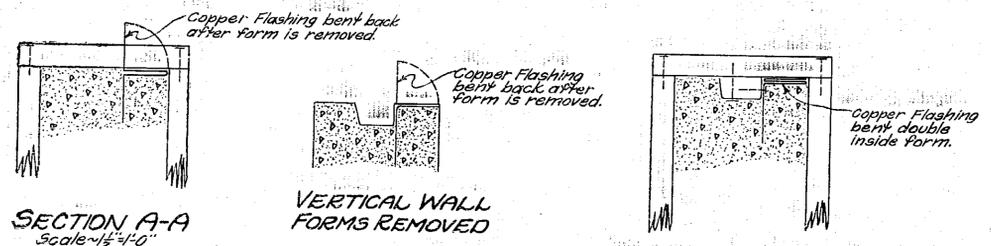


SECTION M-M Scale 1/8"=1'-0"

SIDE ELEVATION



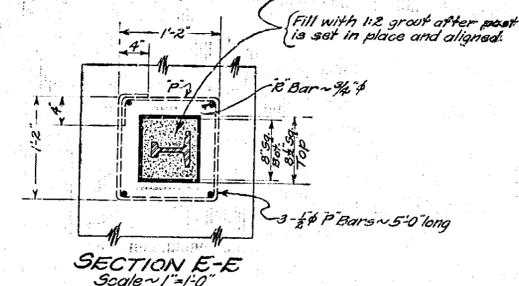
SETTING OF GUIDE RAIL POSTS Scale 1/2"=1'-0"



SECTION A-A Scale 1/2"=1'-0"

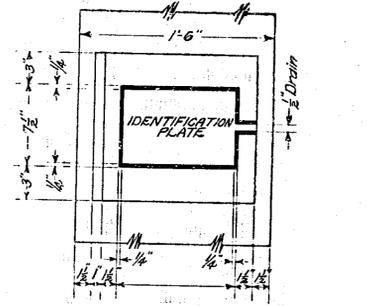
VERTICAL WALL FORMS REMOVED

SECTION OF VERTICAL WALL SHOWING FORMS SECTION B-B Scale 1/2"=1'-0"

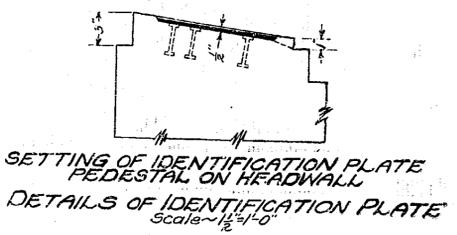


SECTION E-E Scale 1"=1'-0"

MARK	SIZE	SPACING	No.	LENGTH	LOCATION
A1	3/4"	5"	334	28'-3"	Bottom of Top Slab
A2	3/4"	5"	334	28'-3"	End Sections
A3	3/4"	5"	334	28'-3"	End Sections
A4	3/4"	5"	334	28'-3"	End Sections
A5	3/4"	5"	334	28'-3"	End Sections
A6	3/4"	5"	334	28'-3"	End Sections
A7	3/4"	5"	334	28'-3"	End Sections
A8	3/4"	5"	334	28'-3"	End Sections
A9	3/4"	5"	334	28'-3"	End Sections
A10	3/4"	5"	334	28'-3"	End Sections
A11	3/4"	5"	334	28'-3"	End Sections
A12	3/4"	5"	334	28'-3"	End Sections
A13	3/4"	5"	334	28'-3"	End Sections
A14	3/4"	5"	334	28'-3"	End Sections
A15	3/4"	5"	334	28'-3"	End Sections
A16	3/4"	5"	334	28'-3"	End Sections
A17	3/4"	5"	334	28'-3"	End Sections
A18	3/4"	5"	334	28'-3"	End Sections
A19	3/4"	5"	334	28'-3"	End Sections
A20	3/4"	5"	334	28'-3"	End Sections
A21	3/4"	5"	334	28'-3"	End Sections
A22	3/4"	5"	334	28'-3"	End Sections
A23	3/4"	5"	334	28'-3"	End Sections
A24	3/4"	5"	334	28'-3"	End Sections
A25	3/4"	5"	334	28'-3"	End Sections
A26	3/4"	5"	334	28'-3"	End Sections
A27	3/4"	5"	334	28'-3"	End Sections
A28	3/4"	5"	334	28'-3"	End Sections
A29	3/4"	5"	334	28'-3"	End Sections
A30	3/4"	5"	334	28'-3"	End Sections
A31	3/4"	5"	334	28'-3"	End Sections
A32	3/4"	5"	334	28'-3"	End Sections
A33	3/4"	5"	334	28'-3"	End Sections
A34	3/4"	5"	334	28'-3"	End Sections
A35	3/4"	5"	334	28'-3"	End Sections
A36	3/4"	5"	334	28'-3"	End Sections
A37	3/4"	5"	334	28'-3"	End Sections
A38	3/4"	5"	334	28'-3"	End Sections
A39	3/4"	5"	334	28'-3"	End Sections
A40	3/4"	5"	334	28'-3"	End Sections
A41	3/4"	5"	334	28'-3"	End Sections
A42	3/4"	5"	334	28'-3"	End Sections
A43	3/4"	5"	334	28'-3"	End Sections
A44	3/4"	5"	334	28'-3"	End Sections
A45	3/4"	5"	334	28'-3"	End Sections
A46	3/4"	5"	334	28'-3"	End Sections
A47	3/4"	5"	334	28'-3"	End Sections
A48	3/4"	5"	334	28'-3"	End Sections
A49	3/4"	5"	334	28'-3"	End Sections
A50	3/4"	5"	334	28'-3"	End Sections
A51	3/4"	5"	334	28'-3"	End Sections
A52	3/4"	5"	334	28'-3"	End Sections
A53	3/4"	5"	334	28'-3"	End Sections
A54	3/4"	5"	334	28'-3"	End Sections
A55	3/4"	5"	334	28'-3"	End Sections
A56	3/4"	5"	334	28'-3"	End Sections
A57	3/4"	5"	334	28'-3"	End Sections
A58	3/4"	5"	334	28'-3"	End Sections
A59	3/4"	5"	334	28'-3"	End Sections
A60	3/4"	5"	334	28'-3"	End Sections
A61	3/4"	5"	334	28'-3"	End Sections
A62	3/4"	5"	334	28'-3"	End Sections
A63	3/4"	5"	334	28'-3"	End Sections
A64	3/4"	5"	334	28'-3"	End Sections
A65	3/4"	5"	334	28'-3"	End Sections
A66	3/4"	5"	334	28'-3"	End Sections
A67	3/4"	5"	334	28'-3"	End Sections
A68	3/4"	5"	334	28'-3"	End Sections
A69	3/4"	5"	334	28'-3"	End Sections
A70	3/4"	5"	334	28'-3"	End Sections
A71	3/4"	5"	334	28'-3"	End Sections
A72	3/4"	5"	334	28'-3"	End Sections
A73	3/4"	5"	334	28'-3"	End Sections
A74	3/4"	5"	334	28'-3"	End Sections
A75	3/4"	5"	334	28'-3"	End Sections
A76	3/4"	5"	334	28'-3"	End Sections
A77	3/4"	5"	334	28'-3"	End Sections
A78	3/4"	5"	334	28'-3"	End Sections
A79	3/4"	5"	334	28'-3"	End Sections
A80	3/4"	5"	334	28'-3"	End Sections
A81	3/4"	5"	334	28'-3"	End Sections
A82	3/4"	5"	334	28'-3"	End Sections
A83	3/4"	5"	334	28'-3"	End Sections
A84	3/4"	5"	334	28'-3"	End Sections
A85	3/4"	5"	334	28'-3"	End Sections
A86	3/4"	5"	334	28'-3"	End Sections
A87	3/4"	5"	334	28'-3"	End Sections
A88	3/4"	5"	334	28'-3"	End Sections
A89	3/4"	5"	334	28'-3"	End Sections
A90	3/4"	5"	334	28'-3"	End Sections
A91	3/4"	5"	334	28'-3"	End Sections
A92	3/4"	5"	334	28'-3"	End Sections
A93	3/4"	5"	334	28'-3"	End Sections
A94	3/4"	5"	334	28'-3"	End Sections
A95	3/4"	5"	334	28'-3"	End Sections
A96	3/4"	5"	334	28'-3"	End Sections
A97	3/4"	5"	334	28'-3"	End Sections
A98	3/4"	5"	334	28'-3"	End Sections
A99	3/4"	5"	334	28'-3"	End Sections
A100	3/4"	5"	334	28'-3"	End Sections



SETTING OF IDENTIFICATION PLATE PEDESTAL ON HEADWALL Scale 1/2"=1'-0"



DETAILS OF IDENTIFICATION PLATE Scale 1/2"=1'-0"

ITEM No.	ITEM	UNIT	AMOUNT
4CS	Unclassified Excavation (Channel)	C.Y.	1420
5	Trench, Culvert & Bridge Excavation	C.Y.	1200
15	Portland Cement	Bbl.	912
15D	Natural Cement	Bbl.	154
18VS	Concrete for Structures	C.Y.	532
25F	Steel Fabric Reinforcement for Structures	S.Y.	35
28	Bar Reinforcement for Structures	Lbs.	44820
30	Miscellaneous Iron & Steel	Lbs.	1481
39	Foundation Course - Run of Bank Gravel	C.Y.	682
61	Bituminous Material Water-proofing	Gal.	337
82	Copper Dams, Pumping, Bailing & Draining	L.S.	Nec.
83A	Timber Sheet Piles	M.F.B.M.	2.0
84BS	Untreated Timber Test Piles	L.F.	200
84T	Untreated Timber Piles	L.F.	6825
87S	Furnishing Equipment for Driving Piles	L.S.	Nec.
107	Timber & Lumber	M.F.B.M.	24
119S	Run of Bank Gravel Backfill	C.Y.	850

NOTES - All concrete shall be Item 18VS, Concrete for Structures, 1:2:3 1/2 Mix. Backfill shall be deposited on both sides of the culvert to approximately the same elevation at the same time. All exposed edges of concrete and exposed joints shall be chamfered one inch. Roofing felt in post recesses shall be cut to fit. Payment for joint material, 3 ply roofing felt and 16 oz. copper flashing shall be included in the price bid for Item 18VS.

BEAR TRAP CREEK BRIDGE
TWIN BOX STRUCTURE ~ 26° SKEW
EACH OPENING 12'-6" SPAN, 9'-0" HIGH
STATION 192327+25 1/2

Prepared pursuant to the Highway Law and recommended by
M.R. Pison
Engineer District No. 3
July 27, 1946

APPROVED
July 31, 1946
E.W. Wendell
E.W. WENDELL, Deputy Chief Engineer
Bridges, Grade Separations & Structures

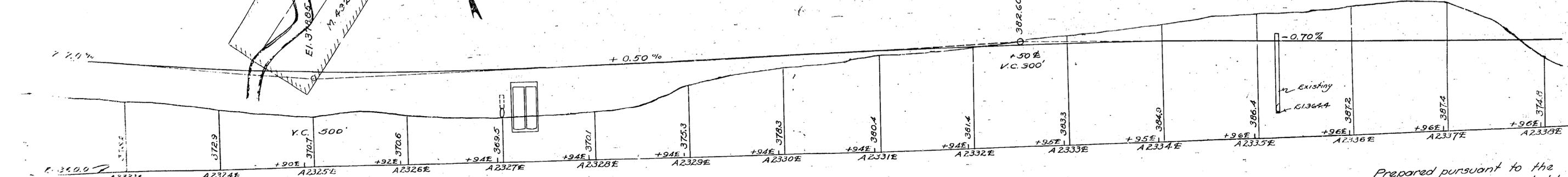
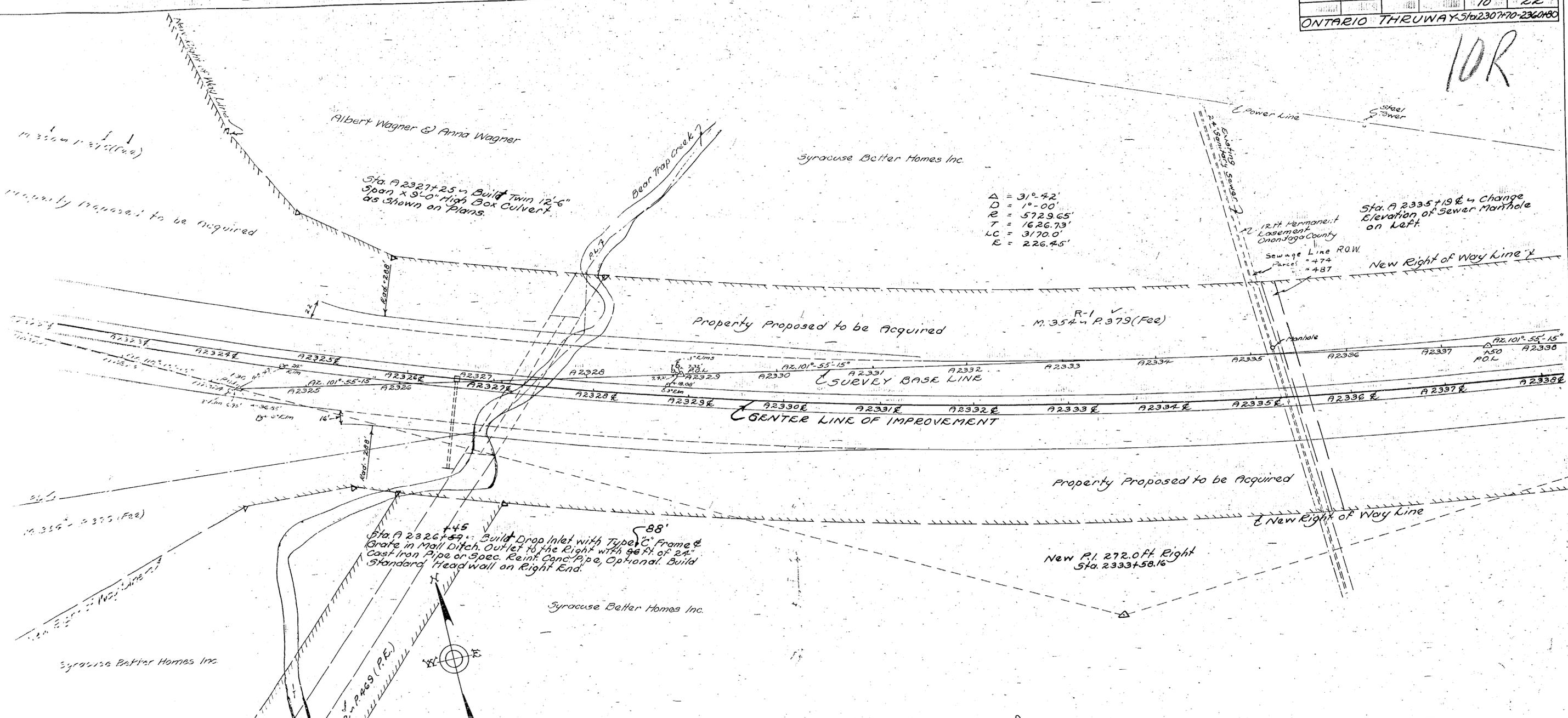
Made by *L.R. Curtis*
checked by *A. Amodeo*
Traced by *B.F. Buckner*
checked by *A.B. Chase*

Reviewed Campbell 2/2/46

STATE	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
ONTARIO	1946	10	22

ONTARIO THRUWAY Sta. 2307+70-2360+80

10R



Prepared pursuant to the Highway Law and recommended by *[Signature]* Engineer District No. 3
 July 27, 1946

Traced By: *[Signature]*
 Checked By: *[Signature]*

New York State Department of Transportation General Bridge Inspection Report

Inspection Date: May 11, 2016

Structure Information

BIN: 5510130

Feature Carried: 90IX

Feature Crossed: BEAR TRAP CREEK

Orientation: 3 - EAST

Region: 03 - SYRACUSE

County: ONONDAGA

Political Unit: Town of SALINA

Approximate Year Built: 1946

Primary Owner: 2L - NYS Thruway Authority

Primary Maintenance Responsibility: 2L - NYS Thruway Authority

General Type Main Span: 1 - Concrete, 19 - Culvert

This Bridge is not a Ramp

Number of Spans: 2

Postings

Posted Vertical Clearance On: Not Posted

Bridge Load Posting: Not Posted

Posted Vertical Clearance Under: Not Posted

Number of Flags Issued

Red PIA: 0

Red: 0

Yellow: 0

Safety PIA: 0

New York State Inspection Overview

General Recommendation: 4

Federal NBI Ratings

NBI Deck Condition: N

NBI Channel Condition: 6

NBI Superstructure Condition: N

NBI Culvert Condition: 4

NBI Substructure Condition: N

Action Items

Non-Structural Condition Observations noted: YES

Vulnerability Reviews Recommended: NO

Diving Inspection Requested: NO

Further Investigation Requested: NO

Inspector & Reviewer Signature Information

Inspection Signature: Douglas Hilleges, P.E. 63759

Date: May 17, 2016

Review Signature: Mike Sullivan, P.E. 72693

Date: July 06, 2016

Report Printed: January 25, 2017 2:28:25

Special Emphasis Inspection

Special Emphasis Detail	"Other" Special Emphasis Detail Description	Hands-On Insp Performed	Hands-On Inspection Note
Other (Unique & unusual features)	Untreated Timber Piles	Yes	No settlement or deficiencies found related to untreated timber piles.

Additional Information

Overloads Observed

No overload vehicles observed during this inspection.

Notes to Next Inspector

None

Improvements Observed

None

Pedestrian Fence Height

None

Snow Fence

None

Element Quantities

Element Assessment Summary Table

Element	Total Quantity	Unit	CS-1	CS-2	CS-3	CS-4	CS-5
228 - Timber Pile	180	each	0	0	0	0	180
241 - Reinforced Concrete Culvert	336	ft	0	224	112	0	0
330 - Metal Bridge Railing	90	ft	60	30	0	0	0
515 - Steel Protective Coating	198	ft ²	0	198	0	0	0
800 - Scour	100	ft	100	0	0	0	0
801 - Stream Hydraulics	1	each	0	1	0	0	0
853 - Wingwall	78	ft	70	1	7	0	0
860 - Culvert Headwall	64	ft	0	0	64	0	0
870 - Culvert Apron/Cut-off Wall	4	each	0	0	0	0	4

Element Assessment by Span*

Element**	Total Quantity	Unit	CS-1	CS-2	CS-3	CS-4	CS-5
<i>Span Number : 1</i>							
228 - Timber Pile	135	each	0	0	0	0	135
241 - Reinforced Concrete Culvert	168	ft	0	114	54	0	0
330 - Metal Bridge Railing	45	ft	30	15	0	0	0
515 - Steel Protective Coating	99	ft ²	0	99	0	0	0
800 - Scour	50	ft	50	0	0	0	0
801 - Stream Hydraulics	1	each	0	1	0	0	0
853 - Wingwall	39	ft	39	0	0	0	0
860 - Culvert Headwall	32	ft	0	0	32	0	0
870 - Culvert Apron/Cut-off Wall	2	each	0	0	0	0	2
<i>Span Number : 2</i>							
228 - Timber Pile	45	each	0	0	0	0	45
241 - Reinforced Concrete Culvert	168	ft	0	110	58	0	0
330 - Metal Bridge Railing	45	ft	30	15	0	0	0
515 - Steel Protective Coating	99	ft ²	0	99	0	0	0
800 - Scour	50	ft	50	0	0	0	0
853 - Wingwall	39	ft	31	1	7	0	0
860 - Culvert Headwall	32	ft	0	0	32	0	0
870 - Culvert Apron/Cut-off Wall	2	each	0	0	0	0	2

*For structures with 3 or less spans, all elements of all spans are shown.

For structures with 4 or more spans, elements (parent/child) with Condition State values of 3, 4, or 5 are shown.

** Elements with a prefix designate the locations of BA-Begin Abutment, BW-Begin Wingwall, EA-End Abutment, EW-End Wingwall, CO-Culvert Outlet, and PR-Pier. No prefix generally indicates the element is part of the superstructure.

Inspection Notes

General Comments

Box culvert has concrete aprons and 1' - 2 1/2" cutoff walls in place. Medium stone protection, 2' - 6" deep, was installed in outlet channel under TAS 98-22B. Inlet and outlet stream bed elevation is at or above elevation of stone protection and concrete apron as 6" to 16" of mucky silt is accumulated. No scour present, no channel readings taken.

Element Condition Notes

Span 1: 228 - Timber Pile **Condition State 5 Note**
Span 2: 228 - Timber Pile

Referenced Photo(s): None
Referenced Sketch(es): None

Element not visible.

Span 1: 241 - Reinforced Concrete Culvert **Condition State 3 Note**
Span 2: 241 - Reinforced Concrete Culvert

Referenced Photo(s): 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13
Referenced Sketch(es): None

Underside of culvert slab in both spans is damp, cracked, delaminated, leaching efflorescence and spalled 2" to 5" deep for 2' wide at each side "fascia" and 2' to 13' wide each side of all longitudinal construction joints exposing rusted, delaminated, and broken reinforcing bars.

More specifically:

Span 1: 2' wide at left side (fascia), 2' left and 8' right of joint 1, 8' left and 4' right of joint 2, 5' left and 4' right of joint 3, 13' left and 5' right of joint 4, and 2' wide at right side (fascia);

Span 2: 3' wide at left side (fascia), 4' left and 8' right of joint 1, 6' left and 5' right of joint 2, 5' left and 5' right of joint 3, 12' left and 3' right of joint 4, and 2' wide at right side (fascia).

Overall, 30% to 35% of the total culvert slab area has severe deterioration.

Remainder of culvert slab has large areas of damp pattern cracking with smaller areas that are starting to leach efflorescence.

Culvert stem walls have random full height vertical cracks that are starting to leach efflorescence. 1' to 4' wide adjacent to all vertical construction joints is damp, discolored, and delaminated. Two feet wide, full height at right side of end stem is also hollow and spalling to 2" deep. Note: These areas of deterioration coincide with deteriorated areas of culvert slab.

Additional area of CS-3 stem wall is at end stem beneath drainage pipe at centerline where concrete is hollow and spalling to 4" deep for 5' width.

At pier stem: Concrete at both ends is delaminated full height for up to 3' wide on both faces. Left (upstream) nose is worst with spalling to 4" deep full height on nose. 2' to 12' wide adjacent to each side of all vertical construction joints is damp, hollow, cracking with efflorescence, and spalling to 4" deep, area at joint 4 is worst. Note: These areas of deterioration coincide with deteriorated areas of culvert slab.

Footings (floor of culvert) are not visible as they are beneath 16" of murky water and 6" to 16" of mucky silt. No settlement or displacement issues are evident.

Span 1: 330 - Metal Bridge Railing **Condition State 2 Note**
Span 2: 330 - Metal Bridge Railing

Referenced Photo(s): None
Referenced Sketch(es): None

Median corrugated rail is leaning approximately 15 degrees toward WB lanes. Railing remains functional.

Span 1: 800 - Scour **Condition State 1 Note**
Span 2: 800 - Scour

Referenced Photo(s): None
Referenced Sketch(es): None

Box culvert has concrete aprons with 1' - 2 1/2" cutoff walls in place. Medium stone protection, 2' - 6" deep, was installed in outlet channel under TAS 98-22B. Inlet and outlet stream bed elevation is at or above elevation of concrete apron as 6" to 16" of mucky silt is accumulated. No scour present, no channel readings taken. No significant bank erosion in vicinity of structure.

Span 1: 801 - Stream Hydraulics **Condition State 2 Note**

Referenced Photo(s): 14, 15

Referenced Sketch(es): None

Channel and both spans of culvert have 6" to 16" of mucky silt deposited throughout. Stone protection in downstream channel is mostly silted over but remains in place. Opening remains adequate. 100' +/- downstream (right) of outlet, deadfall lies across channel collecting deadfall and sediment creating a damming effect and restricting flow to a 10' width along end right channel bank. No erosion or serious backwater conditions are evident. Upstream channel has narrowed over the years to a 15' +/- width but flow remains adequate, minor brush overhangs channel.

Span 1: 860 - Culvert Headwall **Condition State 3 Note**

Span 2: 860 - Culvert Headwall

Referenced Photo(s): 12, 17

Referenced Sketch(es): None

2" to 3" deep lower edge slab/fascia spalling extends up to 1' high into headwall area for full length of both headwalls. Upper 8" of span 1 right fascia is cracked, hollow, and spalling to 6" deep for 6' near begin of span. End 7' of span 2 right fascia is cracked, hollow and spalled to 4" deep full height. Span 1, left fascia is spalled to 1" deep, full height, for a 3' length near 3/4 span. Remainder of both fascias have tight cracking with efflorescence for 20% area.

Span 1: 870 - Culvert Apron/Cut-off Wall **Condition State 5 Note**

Span 2: 870 - Culvert Apron/Cut-off Wall

Referenced Photo(s): None

Referenced Sketch(es): None

Element not visible.

Span 2: 853 - Wingwall **Condition State 3 Note**

Referenced Photo(s): 16

Referenced Sketch(es): None

End right wingwall for 6' wide adjacent to stem is cracked and delaminated full height and is spalled to 8" deep with reinforcing exposed for upper 5'. Remainder of end right wingwall is good. End left wingwall is good having a hairline vertical crack at mid-wall and minor 3" deep x 3" wide spalling adjacent to stem (1LF CS-3; 1LF CS-2).

Non-Structural Condition Observations

Category: ATTACHMENTS - Bridge Related Signs Quantity: NONE Unit: NONE

Referenced Element(s): NONE

Referenced Photo(s): NONE

Referenced Sketch(es): NONE

Flood elevation signs: Only 1 sign in good condition is in place at left (upstream) side of begin stem. Sign at left side of end abutment is missing.

Field Notes

Staff Present During Inspection

Name	Title	Organization
Douglas Hilleges	TL	NYSTA
Michael Jauch	ATL	NYSTA

General Equipment Required for Inspection*

Access Type
13 - Walking

* For span specific equipment requirements refer to the Active Inventory's "Access Needs" tab in BDIS.

Detailed Time & Weather Conditions

Field Date	Arrival	Departure	Temp (F)	Weather Conditions
05/11/2016	10:45 AM	01:00 PM	66	Sunny

Inspection Times (hours)

Time required for travel, inspection and report preparation	6
Lane closure usage	
Railroad flagging time	

Inspection Photographs

Photo Number: 1

Photo Filename: 282-62 Sp1 Slab at Jt1.JPG

Attachment Description:
282-62 Sp1 Slab at Jt1 -
Slab cracked, delaminated
and spalled at joint.



Photo Number: 2

Photo Filename: 282-62 Sp1 Slab at Jt2.JPG

Attachment Description:
282-62 Sp1 Slab at Jt2 -
Slab cracked, delaminated
and spalled at joint.



Photo Number: 3

Photo Filename: 282-62 Sp1 Slab at Jt3.JPG

Attachment Description:
282-62 Sp1 Slab at Jt3 -
Slab cracked, delaminated
and spalled at joint.



Photo Number: 4

Photo Filename: 282-62 Sp1 Slab at Jt4.JPG

Attachment Description:
282-62 Sp1 Slab at Jt4 -
Slab cracked, delaminated
and spalled at joint.



Photo Number: 5

Photo Filename: 282-62 Sp2 Slab at Jt1.JPG

Attachment Description:
282-62 Sp2 Slab at Jt1 -
Slab cracked, delaminated
and spalled at joint.



Photo Number: 6

Photo Filename: 282-62 Sp2 Slab at Jt2.JPG

Attachment Description:
282-62 Sp2 Slab at Jt2 -
Slab cracked, delaminated
and spalled at joint.



Photo Number: 7

Photo Filename: 282-62 Sp2 Slab at Jt3.JPG

Attachment Description:
282-62 Sp2 Slab at Jt3 -
Slab cracked, delaminated
and spalled at joint.



Photo Number: 8

Photo Filename: 282-62 Sp2 Slab at Jt4.JPG

Attachment Description:
282-62 Sp2 Slab at Jt4 -
Slab cracked, delaminated
and spalled at joint.



Photo Number: 9

Photo Filename: 282-62 End Abut - Cntr.JPG

Attachment Description:
282-62 End Abut - Cntr -
stem wall delaminated,
spalled beneath pipe.



Photo Number: 10

Photo Filename: 282-62 Pr1 Begin at Jt4.JPG

Attachment Description:
282-62 Pr1 Begin at Jt4 -
Pier wall delaminated
adjacent to joint.



Photo Number: 11 Photo Filename: 282-62 Pr1 Begin at Lt Side.JPG

Attachment Description:
282-62 Pr1 Begin at Lt Side
- Nose of pier wall
delaminated and spalled.



Photo Number: 12 Photo Filename: 282-62 Lt Headwall - Slab.JPG

Attachment Description:
282-62 Lt Headwall and
Slab Underside - Spalled



Photo Number: 13

Photo Filename: 282-62 Sp2 Slab near Lt side.JPG

Attachment Description:
282-62 Sp2 Slab near Lt
side - Typical damp pattern
cracking with light
efflorescence.



Photo Number: 14

Photo Filename: 282-62 Downstream.JPG

Attachment Description:
282-62 Downstream -
Deadfall across
downstream channel.



Photo Number: 15

Photo Filename: 282-62 Upstrm.JPG

Attachment Description:
282-62 Upstrm -
Sedimentation along banks
constricting flow slightly.



Photo Number: 16

Photo Filename: 282-62 End Rt WW.JPG

Attachment Description:
282-62 End Rt WW - Upper
5' spalled.



Photo Number: 17

Photo Filename: 282-62 Rt Headwall.JPG

Attachment Description:
282-62 Rt Headwall -
Spalled along lower edge
and full height at end.



Inspection Sketches

Sketch Number: 1

Sketch Filename: Load Rating Verification.jpg

NEW YORK STATE THRUWAY AUTHORITY

BRIDGE INSPECTION FIELD VERIFICATION OF LOAD RATING DATA

Date: 5/11/16

MP/BIN: 282.62 / 5510130

Feature Carried / Crossed: 90IX / BEAR TRAP CREEK

Dead Load:

WS Thickness & Material Shown on Plans - unrated Box Culvert - typical HWY X-section
Changes Noted in Field: None

Railing Type Shown on Plans - Box Beam & W-section
Changes Noted in Field: None

Other DL Contributions (e.g. utilities) on Plans - _____
Changes Noted in Field: None

Section Loss:

Existing Documentation (sketches, etc.)? - None

Location of Documentation (previous report, blue folder, etc.)? - _____

New Section Loss noted? - None

Brief Description (attach sketches if helpful) - _____

Additional Notes: None

Attachments: yes **no** (please circle)

Team Leader: DOUGLAS R. HILLEGES, P.E.

Signature: Douglas Hilleges Date: 5/11/16

Sketch Description: Load Rating Verification

Sketch Number: 2

Sketch Filename: Level 2 - Virtis.jpg

LEVEL 2 LOAD RATING (VIRTIS)

MILEPOST: 282.62 BIN: 5510130
 REGION: 3 COUNTY: ONONDAGA
 FEATURE CARRIED: 90IX
 FEATURE CROSSED: BEAR TRAP CREEK

LEVEL 2 LOAD RATING REVIEW

Dayle R. Hills
 5/11/16

VIRTIS RUN DATE: 6/17/2014

CHANGES TO INPUT DATA: UNRATABLE BOX CULVERT

LOADING	INVENTORY RATING (TONS)	OPERATING RATING (TONS)
HS-20		
H-20		

CONTROLLING MEMBER FOR RATING

SPAN: _____
 COMPONENT: _____
 FAILURE TYPE: _____

EFFECTIVE SPAN LENGTH: _____
 H EQUIVALENT OF LEGAL LOAD: _____
 PRIMARY MEMBER RATING: _____

SAFE LOAD CAPACITY: _____

SLC COMPUTATION USED (IN BOLD)				
0.60 HOR	0.70 HOR	0.80 HOR	0.85 HOR	HOR

ACTION TAKEN: NONE REQUIRED _____
 RECOMMEND LEVEL 1 _____
 UNRATABLE X

COMPLETED BY
Michael Gaskill
 MICHAEL GASKILL
 PE # 092560
 LOAD RATING ENGINEER

REVIEWED BY
Garret Hoffmann
 GARRET HOFFMANN
 PE # 070686
 QUALITY CONTROL ENGINEER

Sketch Description: Level 2 - Virtis

Sketch Number: 3

Sketch Filename: Photo Location Map.jpg

BD 186 (4/95)

BIN: 5510130

M.P.: 282.62

TEAM _____

LEADER: Douglas R. Hilleges, P.E.

Feature Carried: _____

Feature Crossed: _____



NYS THRUWAY AUTHORITY
BRIDGE INSPECTION REPORT
SHEET 1 OF _____

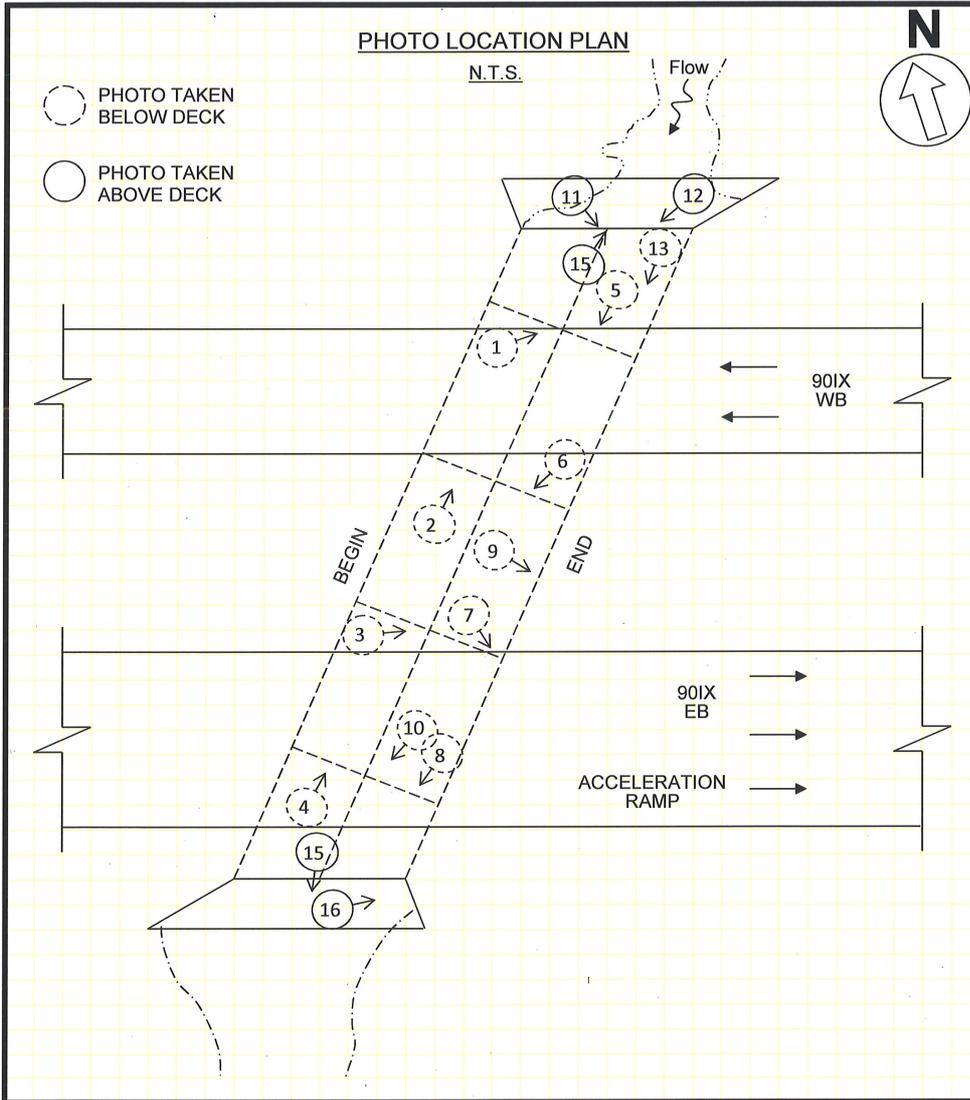
ASST. TEAM

LEADER: Michael Jauch, P.E.

DATE: 05/11/2016

90IX

BEAR TRAP CREEK



Sketch Description: Photo Location Map

Standard Photographs

282.62-STD-99-00-04____.jpg



282.62-STD-99-00-14BgApEB.JPG



282.62-STD-99-00-14BgApWB.JPG

BEGIN APPROACH - WESTBOUND



04.28.2014

282.62-STD-99-00-14EnApEB.JPG

END APPROACH - EASTBOUND



04.28.2014

282.62-STD-99-00-14EnApWB.JPG

END APPROACH - WESTBOUND



282.62-STD-99-00-14EnLtWW.JPG

END LEFT WINGWALL



282.62-STD-99-00-14EndAbt.JPG



282.62-STD-99-00-14LookLt.JPG



282.62-STD-99-00-14LookRt.JPG



282.62-STD-99-00-14LtElev.JPG



282.62-STD-99-00-14PrBgRt.JPG



282.62-STD-99-00-14RtElev.JPG



282.62-STD-99-00-14S1Undr.JPG



282.62-STD-99-01-04____.jpg



282.62-STD-99-02-04____.jpg

RIGHT ELEVATION



282.62-STD-99-03-04____.jpg

END APPROACH



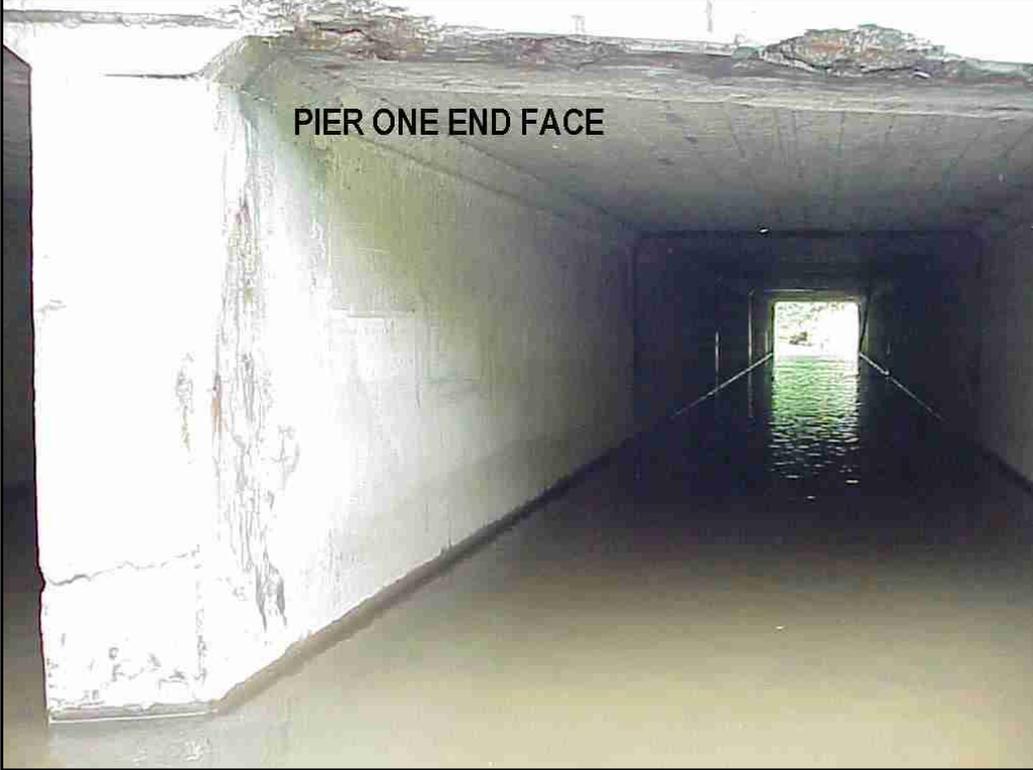
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282.62-STD-99-06-04____.jpg



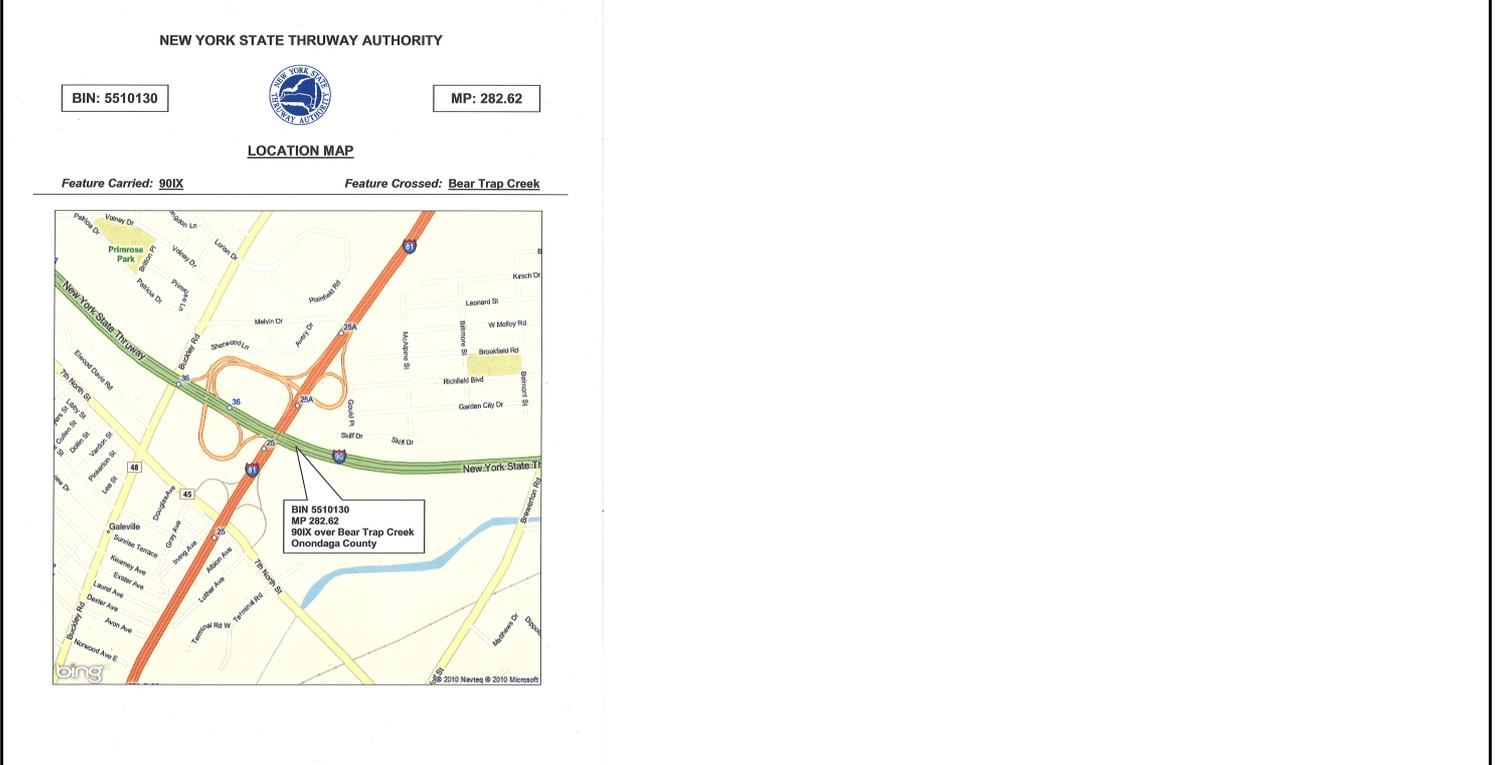
282.62-STD-99-07-04____.jpg



282.62-STD-99-08-04 .jpg



Location Map.jpg



Appendix E Soil Borings

SM 282 E 12/02

PSN BORNUM FHK-16
 DIVISION Syracuse
 COUNTY Onondaga
 PIN S52886
 ROUTE Thruway Mainline
 MILEPOST 282.62
 PROJECT Syracuse Division 2017 Design-Build Bridge Replacements



NEW YORK STATE THRUWAY AUTHORITY
 NEW YORK STATE CANAL CORPORATION
SUBSURFACE EXPLORATION LOG



HOLE LINE FH-K
 STA _____
 OFFSET ft
 SURF. ELEV. 379.12, NAD 88
 DEPTH TO WATER 7.60

COORDINATES (Lat) 43.092728°N (Long) 76.161936°W
 DATE START 11/30/2016 DATE FINISH 12/2/2016

AUGER 4 1/4" I.D. HOLLOW STEM FLIGHT AUGER WT OF HAMMER-CASING lb HAMMER FALL-CASING in
 CASING O. D. in I. D. in WT OF HAMMER-SAMPLER 140 lb HAMMER FALL-SAMPLER 30 in
 SAMPLER O. D. 2 in I. D. 1-3/8 in HAMMER TYPE Automatic

CASING BLOWS/ft	DEPTH (ft.) BELOW SURFACE	SAMPLE NO.	BLOWS ON SAMPLER (in.)				MOIST. CONT. (%)	Soil Recovery (in.)	Rock Recovery (ft.)	DESCRIPTION OF SOIL AND ROCK
			0-6	6-12	12-18	18-24				
	0.0									
	5.0	SS1	7	6	6	8	5.7%	16	Brown gravelly (SILTY-SAND) fill with 10 to 25% gravel, trace to little silt, loose, massive soil structure, (SM). M - NPL	
	10.0	SS2	3	5	9	12	18.2%	10	8.0-9.0' - Faintly mottled brown (CLAYEY-SILT) fill with some clay, stiff, weakly thinly laminated with nearly vertical gray desiccation cracks to massive soil structure, (CL). M to W - PL 9.0-10.0' - Brown gravelly (SILTY-SAND) with 10 to 20% mostly rounded to sub-rounded gravel, little silt, compact, weakly stratified, (SM).	
	15.0	SS3	6	6	6	5	12.8%	11	Brown gravelly (SILTY-SAND) with 10 to 20% mostly sub-rounded to rounded gravel, little silt, loose, weakly stratified, (SM). S - NPL	
	20.0	SS4	2	1	2	2	47.0%	22	Not mottled to faintly mottled brownish gray (SANDY-SILT) with trace to little sand and organic matter, trace clay, very loose, thinly bedded with an occasional thin (SILTY-SAND) lense with mostly very fine to fine size sand, (ML) with occasional thin (SM) interbeds. M - NPL	
	25.0	SS5	WR	WR	4	4	22.5%	14	Brown (SILTY-SAND) with trace silt, mostly very fine to fine size sand, very loose to loose, weakly thinly bedded, (SM). S - NPL	

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DRILL RIG OPERATOR Andrew Kempisty
 SOIL & ROCK DESCRIPTION Kyle Shearing
 INSPECTOR Joe Dorety (Fisher)
 BIN 5510130
 STRUCTURE NAME Thruway/Bear Trap Creek

CONTRACT _____ CONTRACTOR Earth Dimensions, Inc.

SHEET 1 OF 5 HOLE FH-K

TWY-CAN SUBSURF EXPLORATION 7K16_BIN-5510130-DRAFTS.GPJ TWYSE1TMPL_V05.GDT 3/31/17



PSN BORNUM FHK-16
 DIVISION Syracuse
 COUNTY Onondaga
 PIN S52886
 ROUTE Thruway Mainline
 MILEPOST 282.62
 PROJECT Syracuse Division 2017 Design-Build Bridge Replacements

NEW YORK STATE THRUWAY AUTHORITY
 NEW YORK STATE CANAL CORPORATION
SUBSURFACE EXPLORATION LOG

HOLE LINE STA FH-K
 OFFSET ft
 SURF. ELEV. 379.12, NAD 88
 DEPTH TO WATER 7.60

COORDINATES (Lat) 43.092728°N (Long) 76.161936°W
 DATE START 11/30/2016 DATE FINISH 12/2/2016

AUGER 4 1/4" I.D. HOLLOW STEM FLIGHT AUGER WT OF HAMMER-CASING lb HAMMER FALL-CASING in
 CASING O. D. in I. D. in WT OF HAMMER-SAMPLER 140 lb HAMMER FALL-SAMPLER 30 in
 SAMPLER O. D. 2 in I. D. 1-3/8 in HAMMER TYPE Automatic

CASING BLOWS/ft	DEPTH (ft.) BELOW SURFACE	SAMPLE NO.	BLOWS ON SAMPLER (in.)				MOIST. CONT. (%)	Soil Recovery (in.)	Rock Recovery (ft.)	DESCRIPTION OF SOIL AND ROCK
			0-6	6-12	12-18	18-24				
	25.0								Note: At 27.5 feet driller noticed change (stiffer/more gravel)	
									Note: Wet running sands before sampling 28.0-30.0 feet.	
	30.0	SS6	15	10	17	88	12.8%	22	Brown (SILTY-SAND) with 5 to 10% gravel, little to some silt, mostly very fine to fine size sand, compact to very dense, thinly bedded, (SM). S to W - NPL	
	35.0	SS7	WR	2	3	3	20.9%	12	33.0-33.5' - Brown (SILTY-SAND) with trace silt, mostly fine size sand, very loose, weakly thinly bedded, (SM). S - NPL 33.5-35.0' - Reddish brown (SILTY-SAND) with trace to little silt, mostly very fine to fine size sand, loose, weakly thinly bedded, (SM).	
	40.0	SS8	2	1	2	2	20.8%	14	Brown (SAND) with trace silt, mostly very fine to fine size sand, very loose, weakly thinly bedded, (SM). S - NPL Note: Sampled from 43.0-43.2 feet Split Spoon-Refusal: Advanced auger without sampling to 44.0 feet: Sampled from 44.0-44.2 feet. Split Spoon-Refusal: Advanced to 44.8 feet - auger refusal	
	45.0	SS9	50/2"		100/2"		12.9%	4	Brown very gravelly (SILTY-SAND) with 40 to 60% gravel, occasional cobbles and boulders, little silt, very dense, weakly stratified to massive soil structure, (SM),(GM). S - NPL Note: Started core run at 44.8 feet with 10 foot NQ-2 core barrel with impregnated diamond bit, cored from 44.8 feet to 48.3 feet. Boulders and cobbles. Boulder from 44.2-45.4 feet.	
	50.0	SS10	21	36	56	50/2"	9.2%	12	Faintly mottled grayish brown gravelly (SILTY-SAND) with 25 to 40% gravel, occasional cobbles, some silt, very dense, massive soil structure, (SM). W - NPL	

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DRILL RIG OPERATOR Andrew Kempisty
 SOIL & ROCK DESCRIPTION Kyle Shearing
 INSPECTOR Joe Dorety (Fisher)
 BIN 5510130
 STRUCTURE NAME Thruway/Bear Trap Creek

CONTRACT _____ CONTRACTOR Earth Dimensions, Inc.

SHEET 2 OF 5 HOLE FH-K

SM 282 E 12/02



PSN BORNUM FHK-16
 DIVISION Syracuse
 COUNTY Onondaga
 PIN S52886
 ROUTE Thruway Mainline
 MILEPOST 282.62
 PROJECT Syracuse Division 2017 Design-Build Bridge Replacements

NEW YORK STATE THRUWAY AUTHORITY
 NEW YORK STATE CANAL CORPORATION
SUBSURFACE EXPLORATION LOG

HOLE LINE FH-K
 STA _____
 OFFSET ft
 SURF. ELEV. 379.12, NAD 88
 DEPTH TO WATER 7.60

COORDINATES (Lat) 43.092728°N (Long) 76.161936°W
 DATE START 11/30/2016 DATE FINISH 12/2/2016

AUGER 4 1/4" I.D. HOLLOW STEM FLIGHT AUGER WT OF HAMMER-CASING lb HAMMER FALL-CASING in
 CASING O. D. in I. D. in WT OF HAMMER-SAMPLER 140 lb HAMMER FALL-SAMPLER 30 in
 SAMPLER O. D. 2 in I. D. 1-3/8 in HAMMER TYPE Automatic

CASING BLOWS/ft	DEPTH (ft.) BELOW SURFACE	SAMPLE NO.	BLOWS ON SAMPLER (in.)				MOIST. CONT. (%)	Soil Recovery (in.)	Rock Recovery (ft.)	DESCRIPTION OF SOIL AND ROCK
			0-6	6-12	12-18	18-24				
	50.0									
		SS11	99	100/2			8.2%	6	Same as 48.0-50.0' W - NPL	
	55.0									
		SS12	15	31	26		7.2%	14	Reddish brown gravelly (SANDY-SILT) with 20 to 40% W to M - LPL gravel, occasional cobble, little sand, trace clay, very dense, massive soil structure, (ML).	
	60.0									
		SS13	34	33	100		10.3%	14	Same as 58.0-60.0' W to M - LPL	
	65.0								Note: At 67.0 feet driller noticed change, much harder, possible weathered bedrock	
		SS14	75	100/2			8.7%	8	Dark gray aparent weathered shale bedrock, soft to very soft.	
	70.0	RUN1						1.8	Run #1: NQ-2 size diamond core barrel 68.8-73.8' Dark gray to gray (68.8-69.9') light bluish gray (69.9-73.8') shale, soft to moderately soft, sedimentary, very fine clay/silt, smooth, thickly laminated to thinly bedded, diagonal bedding planes in first 1.1 feet of run, horizontal thereafter, very intensely fractured along bedding planes with some near vertical to vertical fractures, core pieces range from (0.01-0.30'), breaks appear fresh, core is pitted with occasional pyrite vugs/crystals (68.8-69.9'), core is very slightly pitted with large vertical fracture (69.9-73.8').	
	75.0	RUN2						2.4	Recovery: 1.8'/5.0' = 36% RQD: 0' = 0%	

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DRILL RIG OPERATOR Andrew Kempisty
 SOIL & ROCK DESCRIPTION Kyle Shearing
 INSPECTOR Joe Dorety (Fisher)
 BIN 5510130
 STRUCTURE NAME Thruway/Bear Trap Creek

CONTRACT _____ CONTRACTOR Earth Dimensions, Inc.

SHEET 3 OF 5

HOLE FH-K

TWY-CAN SUBSURF EXPLORATION 7K16_BIN-5510130-DRAFTS.GPJ_TWYSE1TMPL_V05.GDT 3/31/17



PSN BORNUM FHK-16
DIVISION Syracuse
COUNTY Onondaga
PIN S52886
ROUTE Thruway Mainline
MILEPOST 282.62
PROJECT Syracuse Division 2017 Design-Build Bridge Replacements

NEW YORK STATE THRUWAY AUTHORITY
 NEW YORK STATE CANAL CORPORATION
SUBSURFACE EXPLORATION LOG

HOLE LINE STA FH-K
OFFSET ft
SURF. ELEV. 379.12, NAD 88
DEPTH TO WATER 7.60

COORDINATES (Lat) 43.092728°N (Long) 76.161936°W
DATE START 11/30/2016 **DATE FINISH** 12/2/2016

AUGER 4 1/4" I.D. HOLLOW STEM FLIGHT AUGER **WT OF HAMMER-CASING** lb **HAMMER FALL-CASING** in
CASING O. D. in I. D. in **WT OF HAMMER-SAMPLER** 140 lb **HAMMER FALL-SAMPLER** 30 in
SAMPLER O. D. 2 in I. D. 1-3/8 in **HAMMER TYPE** Automatic

CASING BLOWS/ft	DEPTH (ft.) BELOW SURFACE	SAMPLE NO.	BLOWS ON SAMPLER (in.)				MOIST. CONT. (%)	Soil Recovery (in.)	Rock Recovery (ft.)	DESCRIPTION OF SOIL AND ROCK
			0-6	6-12	12-18	18-24				
75.0									Number of Pieces >4": 0 Number of Pieces total: >30 Run #2: NQ-2 size diamond core barrel 73.8-78.8' Light bluish gray shale, moderately soft to soft, with an occasional thin bed of fine grained sandstone, moderately hard, sedimentary, shale - very fine/smooth, sandstone - fine/coarse, thickly laminated to thinly bedded, very intensely fractured horizontally along bedding planes, with larger vertical fractures along almost entire length of core barrel, core pieces range from (0.05-0.25') slightly weathered, large vertical fractures along almost entire length of core recovered with some iron staining, core is slightly pitted.	
80.0		RUN3						2.8	Recovery: 2.4'/5.0' = 48% RQD: 0' = 0% Number of Pieces >4": 0 Number of Pieces total: >50	
85.0		RUN4						3.3	Run #3: NQ-2 size diamond core barrel 78.8-83.8' Light bluish gray shale, soft, sedimentary, very fine, smooth, thinly to thickly laminated, intensely fractured horizontally along bedding planes, with an occasional thin vertical fracture, core pieces range from (0.02-0.27') slightly weathered, core is slightly pitted, with some slight iron staining. Recovery: 2.8'/5.0' = 56% RQD: 0' = 0% Number of Pieces >4": 0 Number of Pieces total: >50	
									Run #4: NQ-2 size diamond core barrel 83.8-88.8' Light bluish gray shale with an occasional thin dark gray siltstone interbed and an occasional very thin gypsum interbed, moderately soft to soft, sedimentary very fine clay/silt, thinly laminated to thickly laminated, intensely fractured horizontally along bedding planes, with occasional thin near vertical fractures, core pieces range from (0.04-0.50') breaks appear fresh, core is slightly pitted with an occasional thin siltstone interbed and occasional very thin gypsum interbeds. Recovery: 3.3'/5.0' = 66% RQD: 0.8' = 16% Number of Pieces >4": 2 Number of Pieces total: >30 BOTTOM OF HOLE AT 88.80 ft	

Note:
 Advanced bore hole with 4 1/4" ID x 8" OD hollow stem auger casing with 5.0-foot interval sampling to 44.8 feet to auger refusal. Continued below with a NQ-2 size double tubed wireline core barrel with impregnated diamond bit, cored from 44.8 feet to 48.3 feet, switched back to 4 1/4" ID x 8" OD hollow stem auger casing with 5.0-foot interval sampling to 68.8 feet, switched to coring with a NQ-2 size double tubed wireline core barrel with impregnated diamond bit to end of

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DRILL RIG OPERATOR Andrew Kempisty
SOIL & ROCK DESCRIPTION Kyle Shearing
INSPECTOR Joe Dorety (Fisher)
BIN 5510130
STRUCTURE NAME Thruway/Bear Trap Creek

CONTRACT _____ **CONTRACTOR** Earth Dimensions, Inc.

SHEET 4 OF 5 **HOLE** FH-K



PSN BORNUM FHK-16
DIVISION Syracuse
COUNTY Onondaga
PIN S52886
ROUTE Thruway Mainline
MILEPOST 282.62
PROJECT Syracuse Division 2017 Design-Build Bridge Replacements

NEW YORK STATE THRUWAY AUTHORITY
 NEW YORK STATE CANAL CORPORATION
SUBSURFACE EXPLORATION LOG

HOLE LINE STA FH-K
OFFSET ft
SURF. ELEV. 379.12, NAD 88
DEPTH TO WATER 7.60

COORDINATES (Lat) 43.092728°N (Long) 76.161936°W
DATE START 11/30/2016 **DATE FINISH** 12/2/2016

AUGER 4 1/4" I.D. HOLLOW STEM FLIGHT AUGER **WT OF HAMMER-CASING** lb **HAMMER FALL-CASING** in
CASING O. D. in I. D. in **WT OF HAMMER-SAMPLER** 140 lb **HAMMER FALL-SAMPLER** 30 in
SAMPLER O. D. 2 in I. D. 1-3/8 in **HAMMER TYPE** Automatic

CASING BLOWS/ft	DEPTH (ft.) BELOW SURFACE	SAMPLE NO.	BLOWS ON SAMPLER (in.)					MOIST. CONT. (%)	Soil Recovery (in.)	Rock Recovery (ft.)	DESCRIPTION OF SOIL AND ROCK
			0-6	6-12	12-18	18-24	24-30				

coring at 88.8 feet. Bore hole was backfilled with bentonite chips to top of rock and tremmie grouted from top of rock to ground surface at completion due to artesian condition. Water level came up to ground surface upon completion and bore hole was tremmie grouted to plug condition and prevent artesian erosion.

DATE	TIME	DEPTH (ft.)			ARTESIAN HEAD HEIGHT ABOVE GROUND	FILLED WITH WATER AT END OF DAY
		HOLE	CASING	WATER		
30-Nov-16	10:00	10.00	8.00	7.60	NO	No
30-Nov-16	13:20	44.80	44.80	15.30	NO	No
01-Dec-16	09:00	45.00	45.00	10.10	NO	No
01-Dec-16	17:30	88.80	68.80	0.00	NO	No
02-Dec-16	09:00	88.80	68.80	0.00	NO	No

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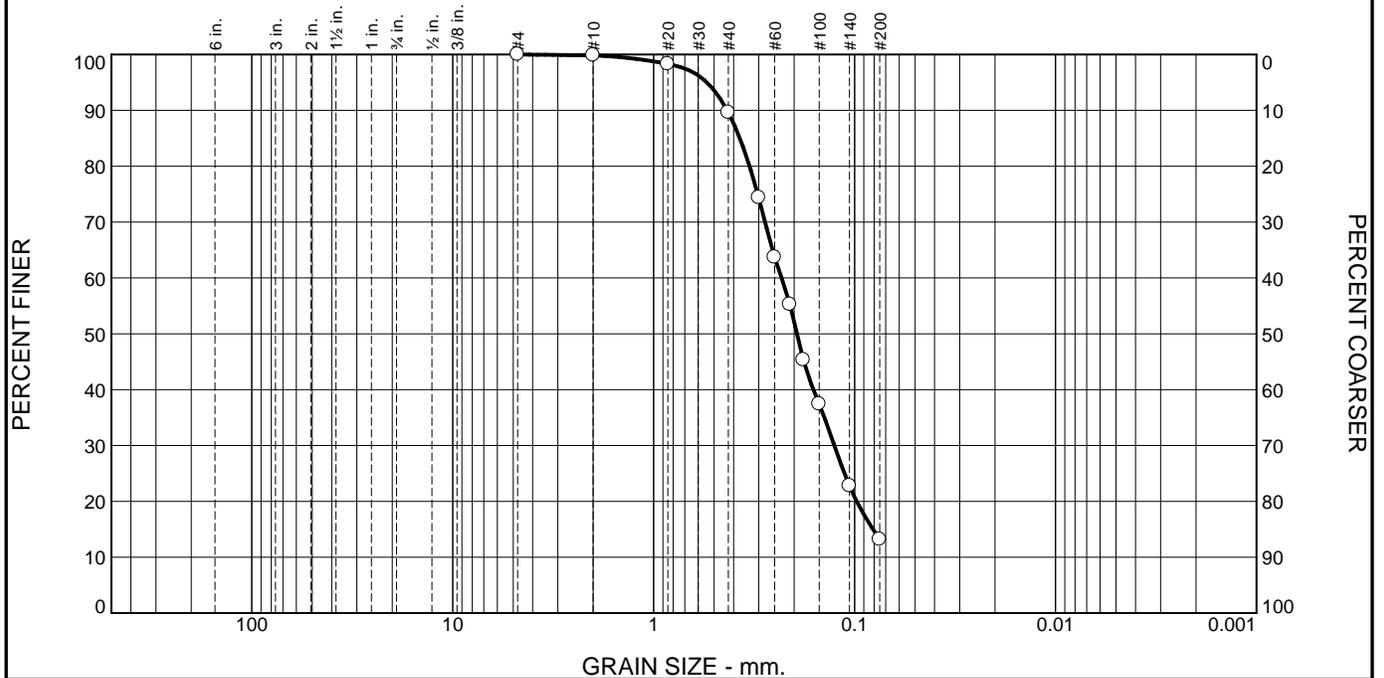
DRILL RIG OPERATOR Andrew Kempisty
SOIL & ROCK DESCRIPTION Kyle Shearing
INSPECTOR Joe Dorety (Fisher)
BIN 5510130
STRUCTURE NAME Thruway/Bear Trap Creek

CONTRACT _____ **CONTRACTOR** Earth Dimensions, Inc.

SHEET 5 OF 5

HOLE FH-K

Particle Size Distribution Report



APPENDIX A
ROCK CORE EVALUATION SHEET

PSN _____
PIN 552886
BIN 5510130
Project Thruway/Bear Trap Creek

Boring ID FHK-16
Surface Elevation _____
Depth From 68.8' to 88.8'
Number of Runs 4
Core Size NQ-2

Date Evaluated 12-01-16

Evaluator (s) Kyle Shearing

Top of Rock 67.0' (Depth) _____ (Elevation)

Top of Sound Rock 69.9' (Depth) _____ (Elevation)

Comments _____

RUN #1 Run Length 5.0'

Depth Range: From 68.8' To 73.8'

RQD 0 (as measured) 0 %

Photo(s) _____

Rock Type Shale

Color Dark gray to gray (68.8'-69.9') Light bluish gray (69.9'-73.8')

Mineralogy, Grain Size, & Texture Sedimentary, very fine clay/silt, smooth

Bedding Thickly laminated to thinly bedded, diagonal bedding planes in first 1.1' of run, horizontal thereafter

Fractures Very intensely fractured along bedding planes with some near vertical to vertical fractures

Size Range of Pieces 0.01'-0.3'

Hardness Soft to moderately soft

Weathering Breaks appear fresh

Number of Pieces >4": 0

Additional Comments Recovery: 1.8' or 36% Number of Pieces total: >30

68.8 → 69.9' core is pitted with occasional pyrite vugs/crystals

69.9 → 73.8' core is very slightly pitted with large vertical fracture - 0.5'

APPENDIX A

ROCK CORE EVALUATION SHEET (CONTINUED)

PSN _____ PIN 552886 Boring ID FHK-16

RUN # 2 Run Length 5.0 Depth Range: From 73.8' to 78.8'

RQD 0 (as measured) 0 % Photo(s) _____

Rock Type Shale with an occasional thin bed of fine grained sandstone

Color Light bluish gray

Mineralogy, Grain Size, & Texture Sedimentary, Shale-very fine/smooth, Sandstone-fine/coarse

Bedding Thickly laminated to thinly bedded

Fractures Very intensely fractured horizontally along bedding planes, with large vertical fracture along almost

Size Range of Pieces 0.05-0.25' } entire length of core recovered

Hardness Shale-moderately soft to soft, Sandstone is moderately hard

Weathering Slightly weathered } Number of Pieces > 4": 0

Additional Comments Recovery: 2.4' or 48% } Number of Pieces total: >50

Large vertical fracture along almost entire length of core recovered with some iron staining, core is slightly pitted

RUN # 3 Run Length 5.0 Depth Range: From 78.8' to 83.8'

RQD 0 (as measured) 0 % Photo(s) _____

Rock Type Shale

Color Light bluish gray

Mineralogy, Grain Size, & Texture Sedimentary, very fine, smooth

Bedding Thinly to thickly laminated

Fractures Intensely fractured horizontally along bedding planes with an

Size Range of Pieces 0.02-0.27' } occasional thin vertical fracture

Hardness Soft

Weathering Slightly weathered } Number of Pieces > 4": 0

Additional Comments Recovery: 2.8' or 56% } Number of Pieces total: >50

Core is slightly pitted with some slight iron staining

APPENDIX A
ROCK CORE EVALUATION SHEET (CONTINUED)

PSN _____ PIN 552886 Boring ID FHK-16

RUN # 4 Run Length 5.0' Depth Range: From 83.8' to 88.8'

RQD 0.8' (as measured) 16 % Photo(s) _____

Rock Type Shale with an occasional thin siltstone interbed and occasional very thin gypsum

Color Light bluish gray, siltstone is dark gray } interbeds

Mineralogy, Grain Size, & Texture Sedimentary, very fine, clay/silt

Bedding Thinly laminated to thickly laminated

Fractures Intensely fractured horizontally along bedding planes with occasional thin near

Size Range of Pieces 0.04-0.5' } vertical fractures

Hardness Soft to moderately soft

Weathering Breaks appear fresh / Number of Pieces >4": 2

Additional Comments Recovery: 3.3 or 66% Number of Pieces total: >30

Core is slightly pitted with occasional thin siltstone interbeds and occasional very thin gypsum interbeds

RUN # _____ Run Length _____ Depth Range: From _____ to _____

RQD _____ (as measured) _____ % Photo(s) _____

Rock Type _____

Color _____

Mineralogy, Grain Size, & Texture _____

Bedding _____

Fractures _____

Size Range of Pieces _____

Hardness _____

Weathering _____

Additional Comments _____

EDI K16
 NYSTA
 Stanlec/Fisher
 MP-282.62
 Truway/Bear Trul creek
 FH-K16
 MF-278.93
 Truway/Im. 35 RAMP
 DN-B-13

Date	Bottom	MF	Rtn	Depth	Length	Rec	Rec%	RQD	RA D%	# of core pieces greater than 4ft
12-1-16	FH-K-16	282.62	1	68.8-73.8	5.0	1.8	36%	0	0	0
12-1-16	FH-K-16	282.62	2	73.8-78.8	5.0	2.4	48%	0	0	0
12-1-16	FH-K-16	282.62	3	78.8-83.8	5.0	2.8	56%	0	0	0
12-1-16	FH-K-16	282.62	4	83.8-88.8	5.0	3.3	66%	0.8	16%	2
12-22-16	DN-B-13	278.93	1	33.4-38.3	4.9	2.9	59%	0.4	8%	1
12-22-16	DN-B-13	278.93	2	38.3-43.3	5.0	5.0	100%	3.5	70%	4





PSN BORNUM FHK-17
 DIVISION Syracuse
 COUNTY Onondaga
 PIN S52886
 ROUTE Thruway Mainline
 MILEPOST 282.62
 PROJECT Syracuse Division 2017 Design-Build Bridge Replacements

NEW YORK STATE THRUWAY AUTHORITY
 NEW YORK STATE CANAL CORPORATION
SUBSURFACE EXPLORATION LOG

HOLE LINE STA FH-K
 OFFSET ft
 SURF. ELEV. 380.20, NAD 88
 DEPTH TO WATER 14.0

COORDINATES (Lat) 43.092508°N (Long) 76.162516°W
 DATE START 11/30/2016 DATE FINISH 12/1/2016

AUGER 4 1/4" I.D. HOLLOW STEM FLIGHT AUGER WT OF HAMMER-CASING lb HAMMER FALL-CASING in
 CASING O. D. in I. D. in WT OF HAMMER-SAMPLER 140 lb HAMMER FALL-SAMPLER 30 in
 SAMPLER O. D. 2 in I. D. 1-3/8 in HAMMER TYPE Safety

CASING BLOWS/ft	DEPTH (ft.) BELOW SURFACE	SAMPLE NO.	BLOWS ON SAMPLER (in.)				MOIST. CONT. (%)	Soil Recovery (in.)	Rock Recovery (ft.)	DESCRIPTION OF SOIL AND ROCK
			0-6	6-12	12-18	18-24				
	0.0								Dark gray asphalt pavement to 1.8 feet.	
	5.0	SS1	16	12	15	20	7.3%	16	Reddish brown gravelly (SILTY-SAND) fill with 15 to 25% gravel, mostly very fine to coarse size sand, trace to little silt, dense, massive soil structure, (SM). M to W - NPL	
	10.0	SS2	9	16	9	12	8.2%	14	Same as 3.0-5.0' M to W - NPL	
	15.0	SS3	9	8	7	9	8.9%	13	Brown gravelly (SILTY-SAND) with 15 to 25% gravel, little silt, compact, stratified, (SW). W - NPL	
	20.0	SS4	5	5	9	12	60.6%	16	Dark brown to brown (SANDY-SILT) with little very fine size sand, trace to little organic matter, trace clay, compact, thinly bedded, (ML). M to W - LPL	
	25.0	SS5	WR	1	2	5	24.2%	12	Grayish brown (SILTY-SAND) with 0 to 3% gravel, mostly very fine to fine size sand, trace to little silt, very loose, weakly thinly bedded, slight tendency to liquefy when disturbed, (SM). W - NPL	

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DRILL RIG OPERATOR Philip Bence
 SOIL & ROCK DESCRIPTION Brandon Mikolin
 INSPECTOR Matthew Conley (Stantec)
 BIN 5510130
 STRUCTURE NAME Thruway/Bear Trap Creek

CONTRACT _____ CONTRACTOR Earth Dimensions, Inc.

SHEET 1 OF 4 HOLE FH-K

SM 282 E 12/02

PSN BORNUM FHK-17
 DIVISION Syracuse
 COUNTY Onondaga
 PIN S52886
 ROUTE Thruway Mainline
 MILEPOST 282.62
 PROJECT Syracuse Division 2017 Design-Build Bridge Replacements



NEW YORK STATE THRUWAY AUTHORITY
 NEW YORK STATE CANAL CORPORATION
SUBSURFACE EXPLORATION LOG



HOLE LINE FH-K
 STA _____
 OFFSET ft
 SURF. ELEV. 380.20, NAD 88
 DEPTH TO WATER 14.0

COORDINATES (Lat) 43.092508°N (Long) 76.162516°W
 DATE START 11/30/2016 DATE FINISH 12/1/2016

AUGER 4 1/4" I.D. HOLLOW STEM FLIGHT AUGER WT OF HAMMER-CASING _____ lb HAMMER FALL-CASING _____ in
 CASING O. D. _____ in I. D. _____ in WT OF HAMMER-SAMPLER 140 lb HAMMER FALL-SAMPLER 30 in
 SAMPLER O. D. 2 in I. D. 1-3/8 in HAMMER TYPE Safety

CASING BLOWS/ft	DEPTH (ft.) BELOW SURFACE	SAMPLE NO.	BLOWS ON SAMPLER (in.)				MOIST. CONT. (%)	Soil Recovery (in.)	Rock Recovery (ft.)	DESCRIPTION OF SOIL AND ROCK
			0-6	6-12	12-18	18-24				
	25.0									
		SS6	2	6	4	3	26.2%	14	Brown (SANDY-SILT) with trace to little mostly very fine to fine size sand, trace clay, loose, thinly bedded, (ML). W - LPL	
	30.0									
		SS7	WR	WR	8	8	31.5%	15	Light brown to brown (SILTY-SAND) with mostly very fine to fine size sand, trace silt, loose, single grain, (SP). W - NPL	
	35.0									
		SS8	WR	WR	1	5	27.0%	13	Reddish brown (SILTY-SAND) with 5 to 10% gravel, trace to little silt, very loose, weakly stratified, (SW). W - NPL	
	40.0									
		SS9	WR/18			4	27.1%	15	Light brown (SILTY-SAND) with 3 to 7% gravel, trace silt, very loose, stratified, (SW). W - NPL	
	45.0									
		SS10	WR	8	7	32	24.5%	13	Light brownish gray (SILTY-SAND) with mostly very fine to fine size sand, trace to little silt, compact, weakly thinly bedded, (SM). W - NPL	
	50.0									

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DRILL RIG OPERATOR Philip Bence
 SOIL & ROCK DESCRIPTION Brandon Mikolin
 INSPECTOR Matthew Conley (Stantec)
 BIN 5510130
 STRUCTURE NAME Thruway/Bear Trap Creek

CONTRACT _____ CONTRACTOR Earth Dimensions, Inc.

SHEET 2 OF 4 HOLE FH-K

TWY-CAN SUBSURF EXPLORATION 7K16_BIN-5510130-DRAFTS.GPJ TWYSE1TMPL_V05.GDT 3/31/17



PSN BORNUM FHK-17
 DIVISION Syracuse
 COUNTY Onondaga
 PIN S52886
 ROUTE Thruway Mainline
 MILEPOST 282.62
 PROJECT Syracuse Division 2017 Design-Build Bridge Replacements

NEW YORK STATE THRUWAY AUTHORITY
 NEW YORK STATE CANAL CORPORATION
SUBSURFACE EXPLORATION LOG

HOLE LINE FH-K
 STA _____
 OFFSET ft
 SURF. ELEV. 380.20, NAD 88
 DEPTH TO WATER 14.0

COORDINATES (Lat) 43.092508°N (Long) 76.162516°W
 DATE START 11/30/2016 DATE FINISH 12/1/2016

AUGER 4 1/4" I.D. HOLLOW STEM FLIGHT AUGER WT OF HAMMER-CASING _____ lb HAMMER FALL-CASING _____ in
 CASING O. D. _____ in I. D. _____ in WT OF HAMMER-SAMPLER 140 lb HAMMER FALL-SAMPLER 30 in
 SAMPLER O. D. 2 in I. D. 1-3/8 in HAMMER TYPE Safety

CASING BLOWS/ft	DEPTH (ft.) BELOW SURFACE	SAMPLE NO.	BLOWS ON SAMPLER (in.)				MOIST. CONT. (%)	Soil Recovery (in.)	Rock Recovery (ft.)	DESCRIPTION OF SOIL AND ROCK
			0-6	6-12	12-18	18-24				
	50.0									
		SS11	33	96	100/3	9.8%	7		Light grayish brown gravelly (SANDY-SILT) with 15 to 40% gravel, little sand, trace clay, very dense, massive soil structure, (ML) tending toward (ML-CL). M - LPL	
	55.0									
		SS12	100/5			8.6%	3		Same as 53.0-55.0' M - LPL	
	60.0									
		SS13	33	100/4		18.6%	7		63.0-63.5' Light brown (SILT) very dense, thinly bedded, (ML). 63.5-63.9' Reddish brown (CLAYEY-SILT) with little to some clay, stiff, thinly laminated, (ML-CL) tending toward (CL). M - LPL	
	65.0									
		SS14	40	49	53	7.7%	16		Reddish brown gravelly (SAND-SILT-CLAY) with 15 to 25% gravel, little to some sand, trace to little clay, hard, massive soil structure, (ML-CL). M to W - LPL	
	70.0									
		SS15	100/3			10.6%	3		Gray shale stone fragments. D - NPL	
	75.0									

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DRILL RIG OPERATOR Philip Bence
 SOIL & ROCK DESCRIPTION Brandon Mikolin
 INSPECTOR Matthew Conley (Stantec)
 BIN 5510130
 STRUCTURE NAME Thruway/Bear Trap Creek

CONTRACT _____ CONTRACTOR Earth Dimensions, Inc.

SHEET 3 OF 4 HOLE FH-K



PSN BORNUM FHK-17
 DIVISION Syracuse
 COUNTY Onondaga
 PIN S52886
 ROUTE Thruway Mainline
 MILEPOST 282.62
 PROJECT Syracuse Division 2017 Design-Build Bridge Replacements

NEW YORK STATE THRUWAY AUTHORITY
 NEW YORK STATE CANAL CORPORATION
SUBSURFACE EXPLORATION LOG

HOLE FH-K
 LINE _____
 STA _____
 OFFSET ft
 SURF. ELEV. 380.20, NAD 88
 DEPTH TO WATER 14.0

COORDINATES (Lat) 43.092508°N (Long) 76.162516°W
 DATE START 11/30/2016 DATE FINISH 12/1/2016

AUGER 4 1/4" I.D. HOLLOW STEM FLIGHT AUGER WT OF HAMMER-CASING _____ lb HAMMER FALL-CASING _____ in
 CASING O. D. _____ in I. D. _____ in WT OF HAMMER-SAMPLER 140 lb HAMMER FALL-SAMPLER 30 in
 SAMPLER O. D. 2 in I. D. 1-3/8 in HAMMER TYPE Safety

CASING BLOWS/ft	DEPTH (ft.) BELOW SURFACE	SAMPLE NO.	BLOWS ON SAMPLER (in.)					MOIST. CONT. (%)	Soil Recovery (in.)	Rock Recovery (ft.)	DESCRIPTION OF SOIL AND ROCK
			0-6	6-12	12-18	18-24	24-30				
	75.0	RUN1							0.9	Note: Top of Rock at 73.2 feet. Advanced bore hole with 3 7/8" roller bit to 75.0 feet to clean the hole and confirm bedrock. Run #1: NQ-2 size diamond core barrel 75.0-78.0' Light gray shale bedrock, very soft, smooth very fine grains not visible, thinly laminated, intensely fractured, slightly to moderately weathered, core pieces range from (0.05-0.20'), slight iron staining. Recovery: 0.9'/3.0' = 30% RQD: 0' = 0% Number of Pieces >4": 0 Number of Pieces total: >20 Run #2: NQ-2 size diamond core barrel 78.0-83.0' 78.0-79.6' Light gray shale, soft to very soft, very smooth, grains are not visible, thinly laminated, 79.6-80.8' Light gray sandstone, moderately soft to soft, fine grained, massive soil structure, 80.8-83.0' Reddish gray shale, soft to very soft, very smooth, grains not visible, thinly laminated, intensely to moderately fractured, moderately weathered, core pieces range from (0.01-0.4'), slight iron staining in shale. Recovery: 3.65'/5.0' = 73% RQD: 0.4'/5.0' = 8% Number of Pieces >4": 1 Number of Pieces total: >50 BOTTOM OF HOLE AT 83.00 ft	
	80.0	RUN2							3.65		

Note:
 Advanced bore hole with 4 1/4" ID x 8" OD hollow stem auger casing with 5.0-foot interval sampling to 73.3 feet. Continued below with 3 7/8" tricone roller bit to 75.0 feet. Continued below with a NQ-2 size double tubed wireline core barrel with impregnated diamond bit. Bore hole was backfilled with cuttings and ground surface repaired with a concrete patch.

DATE	TIME	DEPTH (ft.)			ARTESIAN HEAD HEIGHT ABOVE GROUND	FILLED WITH WATER AT END OF DAY
		HOLE	CASING	WATER		
30-Nov-16	10:30	15.00	13.00	14.00	NO	No
30-Nov-16	14:00	60.00	58.00	18.00	NO	No
01-Dec-16	09:00	60.00	58.00	18.00	NO	No
01-Dec-16	15:00	83.00	73.30	18.00	NO	No

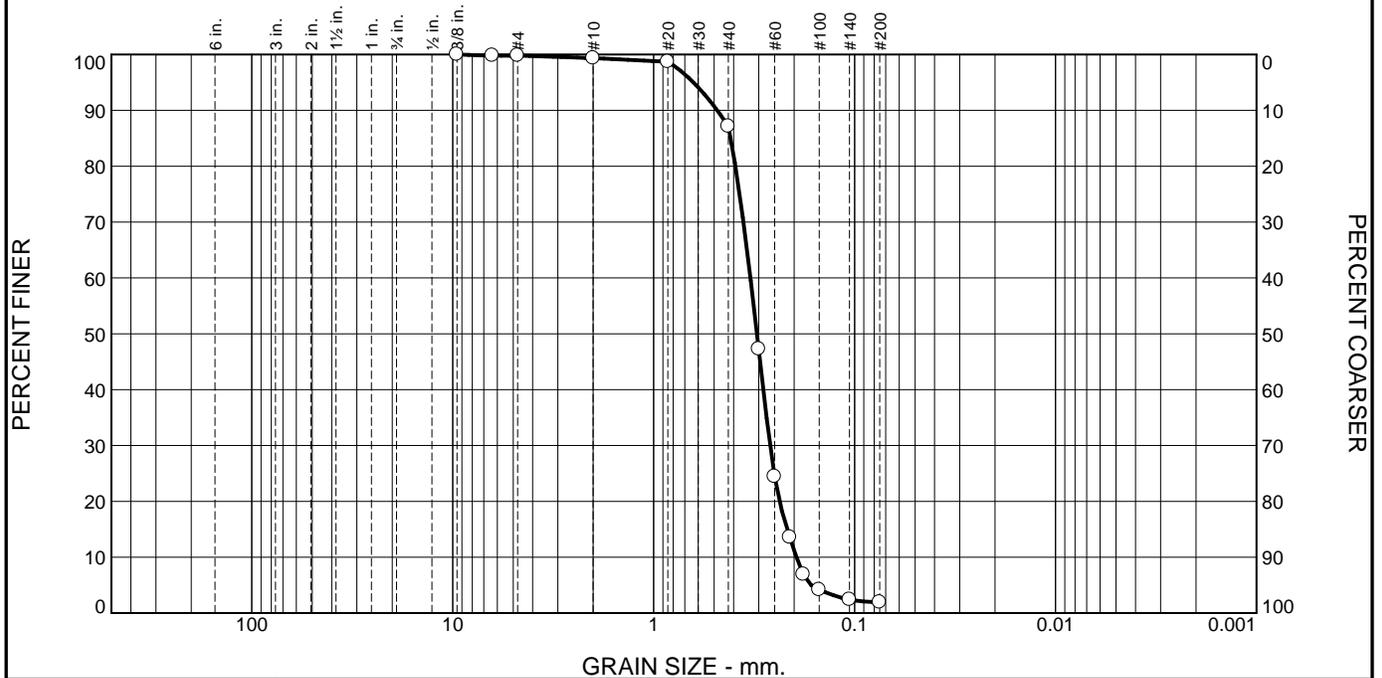
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DRILL RIG OPERATOR Philip Bence
 SOIL & ROCK DESCRIPTION Brandon Mikolin
 INSPECTOR Matthew Conley (Stantec)
 BIN 5510130
 STRUCTURE NAME Thruway/Bear Trap Creek

CONTRACT _____ CONTRACTOR Earth Dimensions, Inc.

SHEET **4 OF 4** HOLE **FH-K**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.2	0.5	12.2	85.2	1.9	

TEST RESULTS (D6913)			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
.375"	100.0		
.25	99.8		
#4	99.8		
#10	99.3		
#20	98.7		
#40	87.1		
#50	47.2		
#60	24.4		
#70	13.6		
#80	6.9		
#100	4.2		
#140	2.4		
#200	1.9		

Material Description

ID#17-056
Poorly graded sand

Atterberg Limits (ASTM D 4318)

PL= _____ LL= _____ PI= _____

Classification

USCS (D 2487)= SP AASHTO (M 145)= _____

Coefficients

D₉₀= 0.4829 D₈₅= 0.4141 D₆₀= 0.3299
D₅₀= 0.3061 D₃₀= 0.2634 D₁₅= 0.2164
D₁₀= 0.1949 C_u= 1.69 C_c= 1.08

Remarks

Date Received: 2/9/17 Date Tested: 2/15/17
Tested By: ETC
Checked By: JMA
Title: LM

* (no specification provided)

Source of Sample: 6K16 & 7K16
Sample Number: FHK-17, SS9

Date Sampled:

<p>3rd Rock, LLC</p> <p>East Aurora, NY</p>	<p>Client: Earth Dimensions, Inc. Project: 6K16; 7K16 Project No: 17-002</p>
---	--

Figure

APPENDIX A
ROCK CORE EVALUATION SHEET

PSN _____
PIN 552886
BIN 55/0130
Project Thruway/Bear Trap Creek

Boring ID FHK-17
Surface Elevation _____
Depth From 75.0' to 83.0'
Number of Runs 2
Core Size NQ-2

Date Evaluated 12-01-16

Evaluator (s) Brandon Mikolin

Top of Rock 73.2' (Depth) _____ (Elevation)

Top of Sound Rock 75.0' (Depth) _____ (Elevation)

Comments _____

RUN #1 Run Length 3.0'

Depth Range: From 75.0' To 78.0'

RQD 0 (as measured) 0 %

Photo(s) _____

Rock Type Shale

Color Light gray

Mineralogy, Grain Size, & Texture Smooth very fine grains not visible

Bedding Thinly laminated

Fractures Intensely fractured

Size Range of Pieces 0.05-0.20'

Hardness Very soft

Weathering Slightly to moderately weathered

Additional Comments Recovery: 0.9' or 30% Number of Pieces >4": 0

Slight iron staining

Number of Pieces total: >20

APPENDIX A
ROCK CORE EVALUATION SHEET (CONTINUED)

PSN _____ PIN S52886 Boring ID FHK-17

RUN # 2 Run Length 5.0 Depth Range: From 78.0' to 83.0'

RQD 0.4' (as measured) 8 % Photo(s) _____

Rock Type Shale(78.0-79.6'), Sandstone(79.6-80.8'), Shale(80.8-83.0')

Color Light gray(78.0-79.6'), Light gray(79.6-80.8'), Reddish gray(80.8-83.0')

Mineralogy, Grain Size, & Texture Very smooth, grains not visible(78.0-79.6'; 80.8-83.0'), fine grained(79.6-80.8')

Bedding Thinly laminated(78.0-79.6'), Massive soil structure(79.6-80.8'), Thinly laminated(80.8-83.0')

Fractures Intensely to moderately fractured

Size Range of Pieces 0.01-0.40'

Hardness Soft to very soft(78.0-79.6'; 80.8-83.0'), Moderately soft to soft(79.6-80.8')

Weathering Moderately weathered

Additional Comments Recovery: 3.65' or 73%

Slight iron staining in shale

Number of Pieces >4": 1

Number of Pieces total: >50

RUN # _____ Run Length _____ Depth Range: From _____ to _____

RQD _____ (as measured) _____ % Photo(s) _____

Rock Type _____

Color _____

Mineralogy, Grain Size, & Texture _____

Bedding _____

Fractures _____

Size Range of Pieces _____

Hardness _____

Weathering _____

Additional Comments _____

EDI#7K16

7K16 NYSTA

Stantec/Fisher
Thruway, Mainline Rt 90

Thruway/Int 35 Ramp
MP-278.93

Thruway/Culvert
MP-282.62

Date	MP	Boring	Run	Depth	Length	Rec	%	RQD	%	# of Cores	Pieces
12-23-16	278.93	DN-B-15	1	18.5'-23.0'	4.5	2.6	58%	0	0	0	0
12-23-16	278.93	DN-B-15	2	23.0'-28.0'	5.0	2.9	58%	0	0	0	0
12-23-16	278.93	DN-B-15	3	28.0'-33.0'	5.0	4.2	84%	3.2	64%	6	6
12-1-16	282.62	DN-K-17	1	75.0'-78.0'	3.0	0.9	30%	0	0	0	0
12-1-16	282.62	DN-K-17	2	78.0'-83.0'	5.0	3.65	73%	0.4	8%	1	1



DN-B-15
DN-K-17



**Compressive Properties Report
ASTM D7012**

Project: NYSTA Syr. Div.; EDI
Project No.: 17-002
Analyst: JMA
Date: 3/3/2017
Specimen Type: Rock Core, 2" Diameter, ~4" height

Borehole Number	Laboratory ID No.	Average Diameter in.	Average Length in.	Maximum Load lbf	Maximum Compressive Strength psi
FHB-13, 42.9'	17-072	1.967	4.037	19508	6420
DNB-14, 30.9'	17-073	1.966	3.989	8770.7	2889
DNB-15, 31.5'	17-074	1.970	4.004	11223	3682
FHK-16, 88.3'	17-075	1.968	4.327	3800.1	1249
FHK-17, 78.5'	17-076	1.801	3.717	5634.8	2212

Jeanne M. Ciofalo

Respectfully Submitted,
3rd Rock, LLC



Water Content Test Results by ASTM D2216

Project: New York State Thruway
EDI Project No.: 7K16
Client: Earth Dimensions, Inc.

Project No: 16-008
Date: 12/15/16

Borehole No.	Sample Nos.	Depth, fbg	Lab ID No.	Natural Water Content, %
FH-K-16	S-1	3-5	16-537	5.7
	S-2	8-10	16-537	18.2
	S-3	13-15	16-537	12.8
	S-4	18-20	16-537	47.0
	S-5	23-25	16-537	22.5
	S-6	28-30	16-537	12.8
	S-7	33-35	16-537	20.9
	S-8	38-40	16-537	20.8
	S-9	43-45	16-537	12.9
	S-10	48-50	16-537	9.2
	S-11	53-55	16-537	8.2
	S-12	58-60	16-537	7.2
	S-13	63-65	16-537	10.3
	S-14	68-68.7	16-537	8.7
FH-K-17	S-1	3-5	16-536	7.3
	S-2	8-10	16-536	8.2
	S-3	13-15	16-536	8.9
	S-4	18-20	16-536	60.6
	S-5	23-25	16-536	24.2
	S-6	28-30	16-536	26.2
	S-7	33-35	16-536	31.5
	S-8	38-40	16-536	27.0
	S-9	43-45	16-536	27.1
	S-10	48-50	16-536	24.5
	S-11	53-55	16-536	9.8
	S-12	58-60	16-536	8.6
	S-13	63-65	16-536	18.6
	S-14	68-70	16-536	7.7
	S-15	73-73.3	16-536	10.6

3rd Rock, LLC
 580 Olean Road
 East Aurora, NY 14052
 (716)655-4933
 (716)655-8638 fax

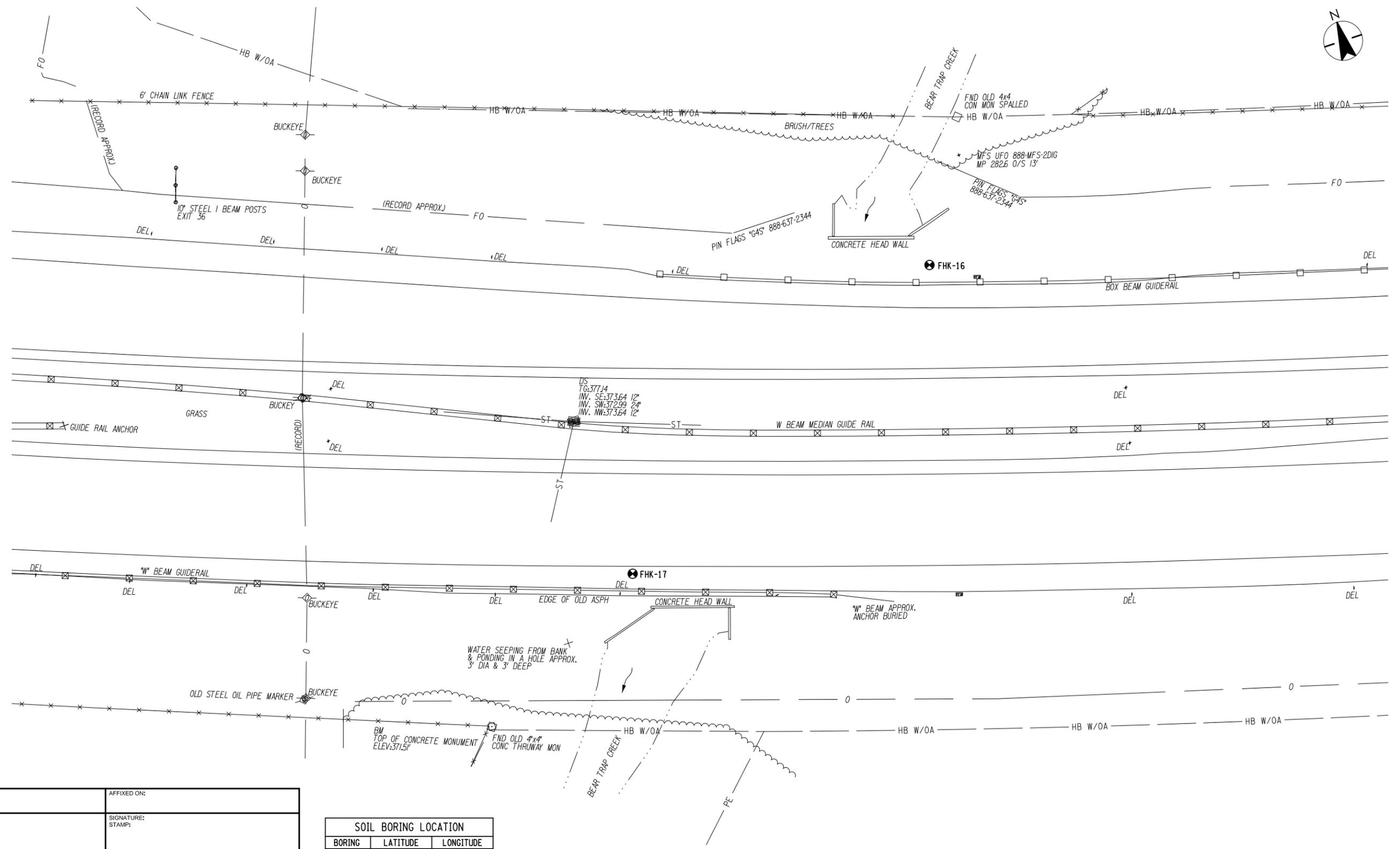
CHECKED BY: B. WALKER

DRAFTED BY: S. ROMEISER

CHECKED BY: R. CODY

DESIGNED BY: B. WALKER

DESIGN SUPERVISOR: J. HOFMANN



SOIL BORING LOCATION		
BORING	LATITUDE	LONGITUDE
DNK-16	43.092728 N	-76.161936 E
DNK-17	43.092508 N	-76.162516 E

SOIL BORING LOCATION PLAN

ALTERED ON:	AFFIXED ON:
SIGNATURE:	SIGNATURE:
STAMP:	STAMP:

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR, TO ALTER AN ITEM IN ANY WAY. IF AN ITEM BEARING THE STAMP OF A LICENSED PROFESSIONAL IS ALTERED, THE ALTERING ENGINEER, ARCHITECT, LANDSCAPE ARCHITECT, OR LAND SURVEYOR SHALL STAMP THE DOCUMENT AND INCLUDE THE NOTATION "ALTERED BY" FOLLOWED BY THEIR SIGNATURE, THE DATE OF SUCH ALTERATION, AND A SPECIFIC DESCRIPTION OF THE ALTERATION.

REVISIONS			
DATE	DESCRIPTION	BY	SYM.

TITLE OF PROJECT INTERSTATE 90 OVER BEAR TRAP CREEK MP 282.62 / BIN 5510130	CONTRACT NUMBER: TAB 17-XX
LOCATION OF PROJECT TOWN OF SALINA ONONDAGA COUNTY	DATE: FEB. 2017
TITLE OF DRAWING BORING LOCATION PLAN	DRAWING NUMBER: BP-07

Appendix F Cost Estimates

U.S. CUSTOMARY UNITS **PRELIMINARY COST ESTIMATE WORKSHEET (NEW AND REPLACEMENT BRIDGES)**

P.I.N. _____ B.I.N. 5510130 PS&E 1/0/00 Anticipated Year of Construction 2018
 BRIDGE I-90 _____ OVER Bear Trap Creek
 NUMBER of SPANS: 1 SPAN ARRANGEMENT 56 WIDTH 150.583 ft
 ABUTMENT TYPE integral SKEW 25.80 DEG CURVED GIRDERS no RADIUS 0.00 ft
 SUPERSTRUCTURE: steel straight
 Alternate Design: Timber Inverset Slab
 WZTC By: on existing bridge
 PREPARED BY: DTC DATE: 05/07/17

Shoulder Break Area Calculation Data * See Shoulder Break Area Diagram for dimensions.

	<u>25.8</u> Average Skew (Degrees)	<u>13.75</u> * Over Roadway Height (ft) <small>(From Roadway to to bottom of culvert)</small>	<u>50.22</u> * Bottom Angle Length (ft) <small>(Length of barrel for culvert)</small>	<u>150.583</u> Bridge Width (ft) <small>(Width of opening for culvert)</small>	<u>17,599</u> * Shoulder Break Area (Square Feet)
1A.) Base: (\$ / ft ² SB AREA)	<u>\$115</u>	DOT Regions 1 - 7 & 9 = \$115 steel, Multi-Span Add \$15; Regions 8 & 10 = \$173, Multi-Span Add \$27. DOT Regions 1 - 7 & 9 = \$129 adjacent concrete box, Multi-Span Add \$31; Regions 8 & 10 = \$149, Multi-Span Add \$43. DOT Regions 1 - 7 & 9 = \$165 next beam or spread box, Multi-Span Add \$31; Regions 8 & 10 = \$190, Multi-Span Add \$43. DOT Regions 1 - 7 & 9 = \$117 concrete I-beam or N.E. bulb-T, Multi-Span Add \$31; Regions 8 & 10 = \$135, Multi-Span Add \$43. RR Bridge = \$317. THIS IS NOT A BID PRICE PER SHOULDER BREAK AND SHOULD NOT BE THE SOLE FACTOR IN DETERMINING TYPE OF BRIDGE Notes: 1) Base costs are based on single span bridge designs with integral abutments with average pile lengths. 2) RR Bridge cost estimates based on a limited amount of in house data.			
1B.) Culverts & three sided structures with horizontal openings	<u>\$0</u>	Culvert - DOT Regions 1 - 7 & 9 = \$166 Regions 8 & 10 = \$249; 3 Sided Frame - DOT Regions 1 - 7 & 9 = \$176 Regions 8 & 10 = \$264. NO "BASE BRIDGE" COST SHOULD BE ENTERED IN SECTION 1 IF USING THESE COSTS.			
2.) Foundations:	<u>\$20</u>	Spread footing, add \$14. All abutment types footings on rock subtract \$20. 3 sided frame average pile length add \$3; Poor soil or pile length > 39 ft add \$17. Integral abutments average pile length add \$10; Poor soil or pile length > 39 ft add \$20. All other abutments & piers with average pile length add \$6; Poor soil or pile length > 39 ft add \$31.			
3.) Abutments:	<u>\$0</u>	Abutments 20 to 30 ft add \$8. MSE Walls supporting CIP stub abutments are addressed as contingencies below.			
4.) Cofferdams: Water depths based on bottom of footing to Divide cost on right by shoulder break ft ² &	<u>\$1</u>	Costs based on bridges up to 49 ft wide. Minor Water Diversion (Sand Bags) \$3500 per bridge. Abutments in 4 ft to 6 ft of water \$6,000 per unit. Substructure in 5 ft to 8 ft water \$15,000; 8 ft to 12 ft of water \$24,000 ; 12 ft to 14 ft of water \$26,000. Canal Pier Protection Cofferdam System \$145,000 per unit (Max Water Height Retained to 13 feet). Tremie Seals And Associated Forms \$200,000 per unit.			
5.) Span Adjustment:	<u>\$0</u>	Each foot > average span length of 66 feet add - Concrete 0.31 or Steel 0.46 \$/ Ft (Ex. 138 ft Conc. -> 72Ft *0.31\$/Ft). Thru Truss add \$226. Use the span adjustment with trusses also.			
6.) Curved Girders:	<u>\$0</u>	1601 ft radius or less add \$16; 1601 ft to 2499 ft add \$3; 2499 ft to 3001 ft add \$3.			
7.) Long Wing Walls:	<u>\$3</u>	For total combined wingwall length > 60 ft calculate adjustment using the LongWingWallCosts worksheet.			
8.) Stage Construct.:	<u>\$5</u>	Minor wingwall \$12; WZTC On superstructure staged with sheet piling or GRES add \$15. WZTC On superstructure staged with H-Pile wall lagging add \$75. Down state multiply factor by 1.5.			
9.) Miscellaneous:	<u>\$0</u>	Bridge width less than 30 ft add \$50; Paint or galvanize steel girders add \$45; Paint steel trusses add \$50. Protection walls other than for staging.			

TOTAL BRIDGE COST
 \$ / ft² SB AREA = \$144

Shoulder Break Area (ft²) 17,599 X Cost / ft² \$144 = BRIDGE ONLY COST \$2,531,191

Contingencies:	Remove existing bridge	<u>\$47,200</u>
	Work Zone Traffic Control (WZTC)	<u> </u>
	Detour structure	<u> </u>
	Channel work	<u> </u>
	Slope protection, other than for channel work	<u> </u>
	Utilities	<u> </u>
	Aesthetics (e.g. Form liners, decorative railing, lights & stone facades)	<u> </u>
	MSE for abutments. Specified "Plain" \$53, "As Shown" \$102 per ft ² of MSE	<u> </u>
	Overhead (e.g. Construction office, computer software & hardware, office supplies)	<u>\$10,000</u>

Simple Inflation Rate For SFY: 13/14 to 14/15 - 3.0%; 14/15 to 15/16 - 3.0%; 15/16 to 16/17 - 3.0%;
 = \$ 0.060
TOTAL BRIDGE SHARE (Includes additional 4 % for mobilization) = \$ 2,853,442



Project: Interstate I-90 over Bear Trap Creek

Project#: 192800033

By: DC

Date: 5/5/17

ITEM	DESCRIPTION	UNIT	QTY	PRICE	TOTAL
553.020001	COFFERDAMS (TYPE 2)	EA	1	\$7,000.00	\$7,000.00
553.020002	COFFERDAMS (TYPE 2)	EA	1	\$7,000.00	\$7,000.00
555.0105	CONCRETE FOR STRUCTURES, CLASS A	CY	9	\$860.00	\$7,482.00
556.0203	GALVANIZED BAR REINFORCEMENT FOR CONCRETE STRUCTURES	LB	6,200	\$1.60	\$9,920.00
570.100001	ENVIRONMENTAL WATERWAY PROTECTION	LS	1	\$500.00	\$500.00
580.01	REMOVAL OF STRUCTURAL CONCRETE	CY	9	\$1,800.00	\$15,660.00
582.07	REMOVAL OF STRUCTURAL CONCRETE - REPLACEMENT WITH VERTICAL AND OVERHEAD PATCHING MATERIAL	SF	6,345	\$175.00	\$1,110,375.00
586.0201	DRILLING AND GROUTING BOLTS OR REINFORCING BARS	EA	120	\$32.00	\$3,840.00
620.04	STONE FILLING (MEDIUM)	CY	40	\$110.00	\$4,400.00
621.02	CLEANING CULVERTS WITH SPAN OF MORE THAN 50 IN.	LF	366	\$55.00	\$20,130.00
				Subtotal	\$1,186,307.00
699.040001	MOBILIZATION	LS	1	\$47,452.28	\$47,452.28
	INFLATION - 6%	LS	1	\$71,178.42	\$71,178.42

TOTAL BRIDGE REHAB (rounded)	\$1,305,000.00
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Project: Interstate I-90 over Bear Trap Creek
 Project#: 192800033
 By: RW
 Date: 5/8/2017

ITEM	DESCRIPTION	UNIT	UNIT PRICE	QUANTITY	COST
201.06	CLEARING AND GRUBBING	LS	\$ 12,000.00	1	\$ 12,000.00
203.02	UNCLASSIFIED EXCAVATION AND DISPOSAL	CY	\$ 20.00	5,900	\$ 118,000.00
203.03	EMBANKMENT IN PLACE	CY	\$ 15.00	4,065	\$ 60,975.00
304.12	SUBBASE COURSE, TYPE 2	CY	\$ 50.00	4,426	\$ 221,300.00
402.125203	12.5 F2 TOP COURSE HMA, 50 SERIES COMPACTION	TON	\$ 200.00	1,260	\$ 252,000.00
402.255903	25 F9 BINDER COURSE HMA, 50 SERIES COMPACTION	TON	\$ 150.00	2,380	\$ 357,000.00
402.376903	37 .5 F9 BASE COURSE HMA, 60 SERIES COMPACTION	TON	\$ 125.00	4,805	\$ 600,625.00
407.0103	STRAIGHT TACK COAT	GAL	\$ 2.50	1,465	\$ 3,662.50
418.7603	ASPHALT PAVEMENT JOINT ADHESIVE	LF	\$ 1.00	1,765	\$ 1,765.00
610.1402	TOPSOIL - ROADSIDE	CY	\$ 66.00	1,015	\$ 66,990.00
610.1601	TURF ESTABLISHMENT - ROADSIDE	SY	\$ 1.00	6,095	\$ 6,095.00
685.11	WHITE EPOXY REFLECTORIZED PAVEMENT STRIPES - 20 MILS	LF	\$ 1.00	1,170	\$ 1,170.00
685.12	YELLOW EPOXY REFLECTORIZED PAVEMENT STRIPES - 20 MILS	LF	\$ 1.00	460	\$ 460.00
698.04	ASPHALT PRICE ADJUSTMENT	DC	\$ 1.00	2,400	\$ 2,400.00
698.05	FUEL PRICE ADJUSTMENT	DC	\$ 1.00	400	\$ 400.00
698.06	STEEL / IRON PRICE ADJUSTMENT	DC	\$ 1.00	100	\$ 100.00
619.01	BASIC WORK ZONE TRAFFIC CONTROL	LS	\$ 68,197.70	1	\$ 68,197.70
625.01	SURVEY OPERATIONS	LS	\$ 29,836.49	1	\$ 29,836.49
637.12	ENGINEER'S FIELD OFFICE - TYPE 2	MO	\$ 2,500.00	12	\$ 30,000.00
637.34	OFFICE TECHNOLOGY AND SUPPLIES	DC	\$ 1.00	2,000	\$ 2,000.00
SUBTOTAL					\$ 1,834,976.69