



FINAL REPORT



LOCAL CONCEPT DEVELOPMENT
**Lincoln Avenue Bridge Replacement
Trenton City, Mercer County**



Submitted December 2017 by:

GPI

in association with:
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Submitted to:

**Mercer County
Division of Engineering
Delaware Valley Regional
Planning Commission**

Table of Contents

- I. INTRODUCTION 1
 - A. Foreword..... 1
 - B. Original and Successor Projects 1
 - C. Data Reviewed 2
 - D. Design Standards 2
 - E. Characteristics of the Roadways and Surrounding Area 3
 - F. Concept Development Scope Statement..... 3
 - G. CD Public Action Plan 3
- II. PURPOSE AND NEED..... 3
 - A. Bridge Needs..... 3
 - B. Scour Needs 4
 - C. Roadway Needs 4
 - D. Goals and Objectives..... 4
- III. EXISTING INVENTORY AND CONDITION 4
 - A. Existing Bridge Inventory and Condition..... 4
 - B. Scour 5
 - C. Railroad Operations 5
 - D. Existing Roadway Inventory and Condition 5
 - 1) Passing & Stopping Sight Distance 5
 - 2) Horizontal Alignment 6
 - 3) Vertical Alignment..... 6
 - 4) Major Roadway Cross Section Elements 6
 - 5) Clear Zone..... 7
 - 6) Lighting 7
 - 7) Signing 7
 - E. Existing Utilities..... 8
 - F. Drainage 8
 - G. Summary of Existing Deficiencies 8
 - H. List of Substandard Design Elements..... 9
 - I. Management Systems Input..... 9
 - J. As-Built Plans, Right of Way Maps and Jurisdiction Map 9
- IV. TRAFFIC AND CRASH SUMMARY 9
 - A. Traffic Operations 9
 - B. Traffic Data..... 9
 - C. Traffic Volume Forecasts 10
 - D. Crash Data Analysis and Crash Diagram 10
- V. SOCIAL, ECONOMIC AND ENVIRONMENTAL SCREENING 10
 - A. Community Outreach..... 10
 - B. Noise and Air Quality 11
 - C. Socioeconomics 11
 - D. Cultural Resources 11

E. Section 4(f) Properties	11
F. Highlands/Pinelands	11
G. Wetlands	11
H. Reforestation	12
I. Floodplain	12
J. Sole Source Aquifer.....	12
K. Threatened/Endangered Species.....	12
L. Category 1 Waters	12
M. Vernal Pools	12
N. Stormwater	12
O. Hazardous Waste	12
P. Anticipated Environmental Permits or Approvals	12
Q. Environmental Summary with Probable NEPA Document required	12
VI. EVALUATION OF CONCEPTUAL ALTERNATIVES.....	13
A. Bridge Rehabilitation versus Bridge Replacement.....	13
B. Temporary Bridge Location and Widening Constraints.....	14
C. Conceptual Alternatives.....	14
1) Bridge Alternatives	14
2) Geometric Alternatives	16
D. Traffic Analysis	16
E. Geotechnical Summary.....	17
F. Right of Way Impacts and Review	17
G. Utility Impacts	17
H. ITS Facilities.....	18
I. Complete Streets Policy	18
J. Access Impacts and Review	18
K. Constructability and Staging Plans and Detour Plan	18
L. Controlling Substandard Design Elements and Reasonable Assurance	20
M. Construction Cost Estimate	20
N. Alternatives Matrix	20
O. Risk Analysis Summary.....	20
P. Discussions with Subject Matter Experts.....	20
Q. Value Engineering Study	21
R. Railroad Operations	21
S. Preliminary Preferred Alternative (PPA).....	21
1) Structural Design	21
2) Geometrics	22
3) Pedestrian and Bicycle Compatibility.....	22
4) Drainage / Environmental	22
5) Construction Staging	23
6) Utility Impacts	23
7) Right of Way and Access Impacts.....	23
8) Cost Estimates	23
9) Schedule	23

T. Preliminary Engineering Scope Statement 24

VII. CONCEPT DEVELOPMENT RECOMMENDATION..... 24

 A. Interagency Review Committee (IRC) Coordination..... 24

 B. Federal Highway Administration (FHWA) Approval of Report 24

List of Figures and Tables

Figure 1 – Project Location 1

Table 1 – Data Reviewed..... 2

Table 2 – Horizontal Alignment Data 6

Table 3 – Vertical Alignment Data 6

Appendices

- A. Problem Statement
- B. Bridge Re-evaluation Survey Report (15th cycle)
- C. As-Built Plans, Tax Maps and Timing Directives
- D. Crash Data and Diagrams
- E. Traffic Counts and Flow Diagram
- F. Aerial Plan and Digital Images
- G. NJDOT Straight Line Diagrams
- H. Environmental Screening
- I. Alternatives
- J. Public Communications
- K. NJDOT Communications
- L. Construction Cost Estimate
- M. Alternatives Matrix
- N. Preliminary Preferred Alternative (PPA)
- O. Risk Register and Utility Risk Assessment Plan (URAP)
- P. Complete Streets Checklist
- Q. County Communications
- R. Preliminary Engineering Public Action Plan
- S. Preliminary Engineering Scope Statement
- T. Amtrak/NJ Transit Coordination
- U. Utilities
- V. Interagency Review Committee Communications

On Compact Disc

- As-Built Plans (Appendix C)
- Utility Log and Plans
- Digital Images
- Community Profile
- Information from Amtrak

I. INTRODUCTION

Lincoln Avenue (County Route 626) Bridge Replacement

Project Number 15-62-100

DVRPC Office of Project Implementation, Manager – John Coscia, Jr.

Mercer County Division of Engineering, Project Manager – Basit (Sunny) A. Muzaffar, P.E.

NJDOT Division of Local Aid and Economic Development, District 3 – Arun Kumar

A. Foreword

The Delaware Valley Regional Planning Commission (DVRPC) on behalf of Mercer County performed a Local Concept Development (LCD) Study for the replacement of State Structure No. 1100-055 (Mercer County Structure No. 140.9), which carries Lincoln Avenue (CR 626) over the Amtrak Northeast Corridor (NEC) rail line, an inactive NJ Transit rail yard and the Assunpink Creek in the City of Trenton, Mercer County, New Jersey. (See Figure 1). The bridge is in ‘serious’ condition and is recommended for replacement. This report summarizes the findings of the LCD Study.

Copies of the NJDOT Straight Line Diagrams for CR 626 and Lincoln Avenue within the project limits are included within Appendix G.

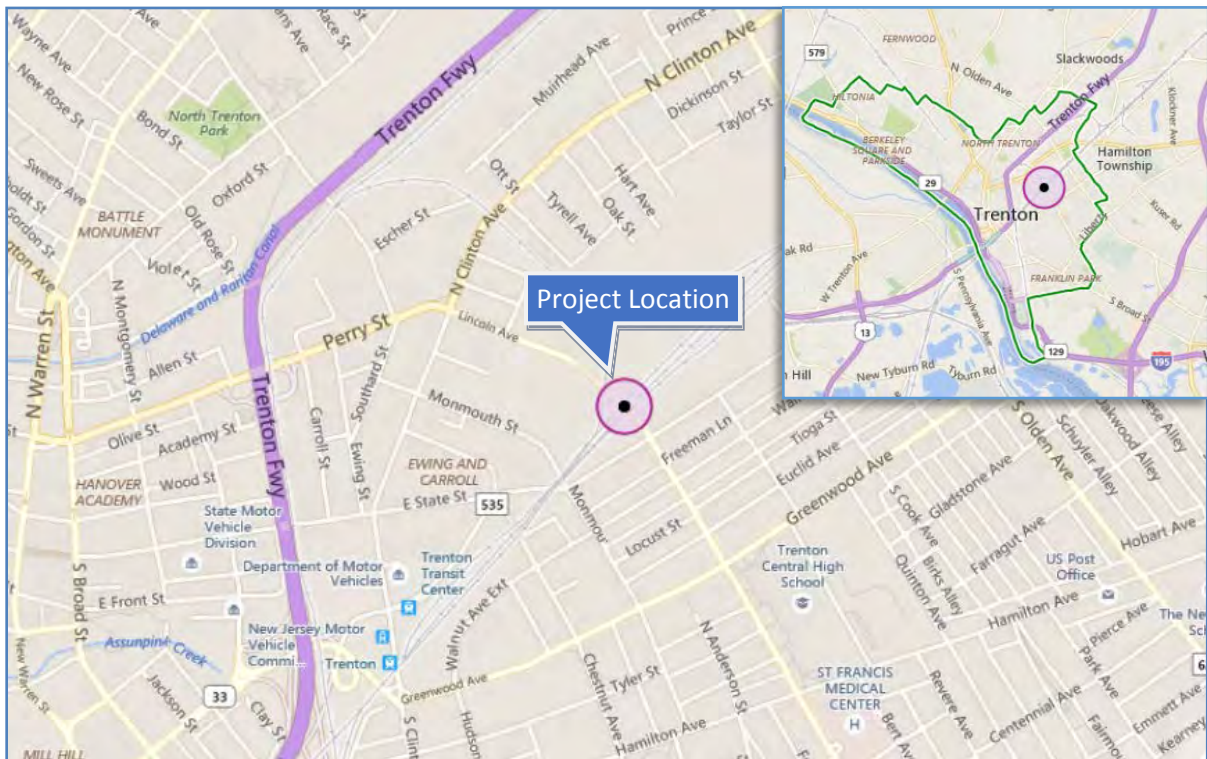


Figure 1 – Project Location

B. Original and Successor Projects

Structure No. 1100-055, which carries Lincoln Avenue (CR 626) over the NEC, an inactive NJ Transit rail yard and the Assunpink Creek, was originally built in 1931 and reconstructed in 1965. The current structure replaced the previous steel truss bridge on a similar alignment.

C. Data Reviewed

During the data collection phase of this project, various sources were consulted to obtain information on the existing conditions in the study area. This information was evaluated to determine areas of non-conformance with current design standards and to also form the base data for use in the development of alternatives. For this project, the following information was available for review:

Table 1 – Data Reviewed

Data	Source	Date
As-Built Plans of Mercer County Bridge No. 140.9B, Chambers St. Trenton over the P.R.R. and Assunpink Creek	Mercer County	Nov. 1931
As-Built Plans of Route U.S. 1/33/129 Section 1N/1C/11B, Rehabilitation of Market Street Extension Bridge over Amtrak	NJDOT	Apr. 1991
City of Trenton Tax Maps, Key Maps 1, 4, 7 and 8	Online	Mar. 2000
15th Cycle Bridge Re-Evaluation Report	Mercer County	Jun. 2013
Existing Timing Directive for North Clinton Avenue and Monmouth Street	Trenton City	No Date
Existing Timing Directive for Chestnut Avenue, East State Street, Raoul Wallenberg Avenue and Wall Street	Trenton City	Sept. 1997
Existing Timing Directive for North Clinton Avenue, Lincoln Avenue and Perry Street	Trenton City	Jan. 1998
Existing Timing Directive for Clinton Avenue and East State Street	Trenton City	April 1998
Existing Timing Directive for North Clinton Avenue and North Olden Avenue	Trenton City	Sept. 1998
Existing Timing Directive for Olden Avenue and East State Street	Trenton City	Feb. 1998
Existing Timing Directive for East State Street and Lincoln Avenue / Chambers Street	Trenton City	No Date

Copies of the as-built plans, tax maps and existing timing directives can be found in Appendix C. A copy of the 15th Cycle Bridge Re-Evaluation Report can be found in Appendix B. In the addition to this specific information, numerous field visits were conducted to ascertain and document existing conditions. Digital images were collected and are included in Appendix F.

D. Design Standards

The following design standards were utilized in the analysis of the existing conditions and deficiencies within the project area and in the development of conceptual solutions for this project. The abbreviated title used throughout this report is noted in parentheses.

1. *A Policy on Geometric Design of Highways and Streets* (AASHTO) – AASHTO, 2011;
2. *Roadside Design Guide* (RDG) – AASHTO, 2011;
3. *LRFD Bridge Design Specifications* (LRFD) – AASHTO, 2014 as amended;
4. *Roadway Design Manual* (NJDOT-RDM) – NJDOT, 2015;

5. *Bridges and Structures Design Manual* (NJDOT-BDM) – NJDOT, 2010;
6. *Highway Capacity Manual* (HCM) – Transportation Research Board, 2010;
7. *Manual on Uniform Traffic Control Devices* (MUTCD) – FHWA, 2009.

E. Characteristics of the Roadways and Surrounding Area

Lincoln Avenue is a two lane, urban minor arterial with no posted speed limit. Therefore, a speed limit of 25 mph is assumed based on the urban setting. On and east of Structure No. 1100-055, Lincoln Avenue is under the jurisdiction of Mercer County and is designated as CR 626. West of Structure No. 1100-055, Lincoln Avenue is under the jurisdiction of Trenton City. The existing roadway cross section consists of two 18-foot wide lanes with no shoulders. On structure, 6-foot 2-inch wide sidewalks are present between the through-girders and concrete parapets. Lincoln Avenue serves as an important connector across the NEC and Assunpink Creek and is the first crossing outside of the central business district of Trenton City. Adjacent land use is a mix of residential and business / commercial use. The Catholic Youth Organization (CYO) East State Street Center and Martin House are located in the southwest and northwest corners of the signalized intersection of Lincoln Avenue and E. State Street, respectively. The Rush Crossing Apartment/Townhome Development and Lincoln Supply Company are located immediately west of Structure No. 1100-055 on the south and north sides of Lincoln Avenue, respectively.

Based on available data, the current Lincoln Avenue Bridge (Structure No. 1100-055) is the third bridge on this site with its second set of piers, all within same general footprint. The first bridge was a timber truss built circa 1888 on a stone masonry foundation. Sometime during the early 1900s, the timber truss was replaced with a steel truss on the same foundation. The present structure was built in 1931 and the masonry foundation was replaced with the current concrete piers on concrete piles.

F. Concept Development Scope Statement

A CD Scope Statement was not prepared for this project.

G. CD Public Action Plan

A Public Action Plan (PAP) was prepared and submitted for approval to Mercer County in February 2016. Arun Kumar is the NJDOT Local Aid representative for this project.

II. PURPOSE AND NEED

The overall purpose of this project is to replace Structure No. 1100-055 (Mercer County Structure No. 140.9), which carries Lincoln Avenue over the NEC, an inactive NJ Transit rail yard and the Assunpink Creek, to provide a low maintenance long-term solution which eliminates all existing structural deficiencies; incorporates operational, safety and pedestrian access improvements to the bridge; and minimizes impacts to the adjoining community and environment.

A. Bridge Needs

Based on the 15th Cycle Bridge Re-Evaluation Report completed in June 2013, the superstructure for Structure No. 1100-055 is in serious condition due to the exposed,

moderately to severely rusted steel in the girders and floorbeams at the areas of missing encasement. As a result, the deck is also in poor condition with large areas of spalled and delaminated concrete with exposed rusted rebar. The substructure is in fair condition due to wide vertical cracks, large spalls and delaminated concrete with exposed rusted rebar, and loose coping. This bridge has a sufficiency rating of 46.2.

B. Scour Needs

Structure No. 1100-055 was not identified as scour critical.

C. Roadway Needs

Substandard stopping sight distance on vertical curves, shoulder width, cross slope and vertical clearance were identified as Controlling Substandard Design Elements (CSDEs) within the study limits during Concept Development. In addition, the clear zone is obstructed by the through girder which results in deficient horizontal stopping sight distance.

D. Goals and Objectives

It is the goal of this project to replace Structure No. 1100-055 while minimizing environmental, quality of life, access, right of way, utility, road user and community impacts. It is anticipated that, at a minimum, the proposed improvements will not further degrade the CSDEs within the project limits. Any proposed improvements must consider impacts to emergency services, pedestrian traffic, Amtrak operations and the commuter routes during construction. In addition, any changes to the roadway profile will consider the impacts to the approach roadways and adjacent intersections.

III. EXISTING INVENTORY AND CONDITION

A. Existing Bridge Inventory and Condition

Structure No. 1100-055 is comprised of eight (8) simple spans, each consisting of riveted steel through-girders with steel floorbeams and a concrete deck. The structure was built in 1931 and deck reconstructed in 1965. It is 687 feet long and 56 feet wide out-to-out with a roadway width of 36 feet curb-to-curb. The existing minimum vertical underclearance is 20 feet 9 inches to top of track which is less than the minimum 24 feet 3 inches and 24 feet 6 inches required by Amtrak and NJDOT, respectively. Also, the bridge is fracture critical due to its non-redundant members (through girder) and is not scour critical.

Based on the June 2013 inspection (Appendix B), the overall condition of the structure is serious due to the condition of the superstructure. This bridge has a sufficiency rating of 46.1.

The deck is in poor condition due to the large areas of spalled and delaminated concrete with exposed rusted rebar, areas of deteriorated concrete repair patches and the areas of uneven bituminous concrete patches on the top of the deck surface. The underside of the deck exhibits areas of heavy efflorescence along the centerline joint and areas of checkerboard cracking throughout all spans. Also, there are spall areas with exposed rusted rebar on the underside of the deck in Spans 6 and 7 (from west). It is estimated that 45% of the total deck area is chloride contaminated.

The superstructure is in serious condition due to the exposed, moderately to severely rusted steel in the girders and floorbeams at the areas of missing encasement. The exposed areas of the web plates and bottom flanges at the through girders exhibit severe rust (approximately 7 inches high) along the curb and sidewalk with section loss of up to ¼-inch ($1^{11}/_{16}$ inches remaining). Severe rust was also noted in the bottom flange with up to ⅛-inch section loss ($2-3/_{16}$ inches remaining) and advanced section loss in the bottom flange rivets. The exposed bottom flange of the floor beam exhibits severe rust (up to ½-inch maximum section loss, 1-½ inches remaining) at random locations throughout the all spans. In addition, knee braces 1, 2, 5 and 6 to 11 (from east) at the north girder and 4, 8 and 11 from east at the south girder exhibit through holes up to 1-inch by 3-inch at the sidewalk level.

The substructure is in fair condition due to wide vertical cracks in the abutment breastwalls and backwalls. There are also large spalls and delaminated concrete with exposed rusted rebar in the east abutment breastwall; pier crashwalls; Pier 3-5 and 7 caps (from west); Pier 2 and 4 south columns; Pier 7 north columns; wingwalls; and the loose coping for the full length of the southwest wingwall.

The fracture critical through girders exhibit moderate to severe rust in the exposed web plates and bottom flanges with section losses as noted above.

Of note, Mercer County has performed short-term fixes on the structure, including covering a deck hole with a steel plate and constructing an asphalt overlay across the structure.

B. Scour

The June 2013 inspection indicated that based on the scour evaluation program database provided by NJDOT (May 2007) and Stage I Bridge Scour Evaluation, the structure is considered to be a low priority for Stage III in-depth bridge scour evaluation. This inspection revealed no footing exposure, undermining or scour. Of note, rock riprap channel countermeasures exist along the west face of Pier 7.

C. Railroad Operations

The NEC rail line runs from Washington, D.C. to Boston and is used by Amtrak, NJ Transit and freight trains within NJ. Five (5) mainline and one (1) siding electrified tracks with overhead catenary lines are present under the structure. The NEC rail line is on the NJ Register as an eligible historic district (Pennsylvania RR, NY to Philadelphia, ID#4568). Between the Assunpink Creek and the NEC, NJ Transit owns four inactive rail lines, catenary structures, and a platform.

D. Existing Roadway Inventory and Condition

1) Passing & Stopping Sight Distance

According to AASHTO, the minimum stopping sight distance (SSD) for a design speed of 30 mph is 200 feet. No passing zones are present along Lincoln Avenue within the study limits. Based on available as-built information and field observations, horizontal stopping sight distance is not obstructed within the study limits. An analysis of the vertical alignment determined that two vertical sag curves do not meet the minimum stopping sight distance for vertical curves.

2) Horizontal Alignment

The following table summarizes the existing horizontal curves along Lincoln Avenue within the study limits, all of which meet or exceed the minimum requirement of a 279-foot radius for a design speed of 30 mph with a normal crown section as identified in AASHTO.

Table 2 – Horizontal Alignment Data

Horizontal Element	Start	End	Curve Length	Radius
	Station	Station	(ft)	(ft)
Curve 1	04+04.96	06+38.67	233.71	660.00
Curve 2	11+30.36	12+84.53	154.17	1140.00
Curve 3	12+84.53	13+38.56	54.03	291.71

3) Vertical Alignment

The following table summarizes the existing vertical curves within the study limits along Lincoln Avenue. Minimum length values were calculated based on the existing algebraic difference in grade and design speed, however curves not meeting the calculated minimum length do not necessarily fail the requirements for stopping sight distance. Existing vertical curves which do not meet the minimum stopping sight distance as per AASHTO are noted in bold.

Table 3 – Vertical Alignment Data

PVI Station	Curve Type	As-Built A	As-Built K	As-Built Length (ft)	Minimum Length (ft)
01+42.19	Sag	2.23	13.45	30	83
03+31.43	Sag	4.62	21.65	100	171
04+72.18	Sag	1.38	36.23	50	51
05+91.32	Crest	4.09	44.01	180	78
08+86.72	Crest	2.27	132.16	300	43
11+94.15	Crest	5.20	30.77	160	99
13+93.11	Sag	6.06	4.13	25	224

4) Major Roadway Cross Section Elements

a) Lane Widths

The existing lane width along Lincoln Avenue within the study limits is 18 feet which exceeds the minimum 10-foot width per AASHTO. Lane widths of 11 feet are used extensively for urban arterial street designs.

b) Shoulder Widths

No marked shoulders are present along Lincoln Avenue within the project limits. This does not meet the minimum width of 8 feet per Table 7-3 of AASHTO for a design volume over 2,000 vehicles per day.

c) *Superelevation*

Superelevation is not provided along the curves identified in Table 2. However, according to Section 7.3.2 of AASHTO, low-speed, curbed urban arterial streets, such as Lincoln Avenue, are usually not superelevated. Therefore, the existing normal crown is not considered substandard.

d) *Cross Slope*

According to the as-built plans, the roadway cross section of Lincoln Avenue has a six-inch parabolic cross slope (variable rate). AASHTO does not provide a minimum parabolic cross slope. It also states that the minimum plane cross slope for pavement should be 1.5 percent, increasing in each successive lane by 0.5 percent. Based on the data reviewed, Lincoln Avenue has an approximate cross slope of 3.7 percent six feet from the curb line, which exceeds the minimum plane cross slope requirements. However, near the centerline of the roadway the parabolic shape provides a plane cross slope less than the minimum 1.5 percent.

5) *Clear Zone*

The clear zone is defined as the area starting at the edge of the traveled way that is available for safe use by errant vehicles. The width of the clear zone varies with speed, traffic volume, roadside slope and horizontal roadway alignment. Based on a design speed of 30 mph, as well as an ADT over 6,000 vehicles, the range of the existing clear zone for Lincoln Avenue is between 14 and 16 feet. Currently, the through girders serve as obstructions at the edge of the travel lane.

6) *Lighting*

Roadway lighting exists along both sides of Structure No. 1100-055. Luminaire standards are mounted onto the through girders with the base plates connected directly to the girder. Junction boxes and conduits are also connected to the outside face of each girder. Each standard consists of two High Pressure Sodium (HPS) luminaires each mounted on a separate arm with one arm extending over the roadway and the other over the sidewalk. The standards on each side are typically spaced between 100 and 120 feet with the spacing alternating between the two sides of roadway. Field investigations noted that the fixtures were all functioning at night. A lighting warrant analysis and illumination analysis was not performed to verify if the existing lighting meets the illumination requirements of AASHTO and Section 11 of the NJDOT-RDM since replacement of the entire structure will eliminate the existing lighting system. A lighting warrant analysis and, if applicable, an illumination analysis of the proposed roadway and sidewalks should be performed during Preliminary Engineering.

7) *Signing*

All existing regulatory and warning signs appear to be in conformance with the most recent edition of the MUTCD. A sign inventory should be conducted during Preliminary

Engineering. The inventory will evaluate all signs relative to their conformance with the MUTCD and the NJDOT Standard Details.

E. Existing Utilities

GPI prepared and distributed a utility verification letter, which requests information of existing and/or proposed facilities within the project limits and the name, address and telephone number of the appropriate contact, to those utilities that have facilities within the project limits. Based on information provided to date, the following utility providers have facilities within the study limits. Responses can be found in Appendix U.

- Electric – Public Service Electric & Gas (PSE&G)
- Gas – PSE&G
- Telephone – Verizon
- Cable – Comcast
- Water – Trenton Water Works
- Sewer – Trenton Sewer Utility
- Fiber – AT&T Local, Zayo, CenturyLink, Level 3, Lighttower, MCI
- Other – USGS Stream Gauge Station

The existing structure currently carries ten 4-inch electrical conduits and a 16-inch (equivalent) gas main. In addition, an existing 30-inch cast iron water main is located under the structure (through the foundation). Of additional note, 138 kV power lines are located above the bridge and catenary lines are attached to the bottom of the bridge.

F. Drainage

Currently, the bridge has 18 small rectangular roadway drainage scuppers with two scuppers located at each abutment and pier as well as 18 small diameter scuppers for sidewalk drainage. These scuppers were originally designed to “air drop” stormwater through the bridge deck onto the flood plain below. However, most of the existing roadway and sidewalk scuppers do not appear to be functional, and therefore the bridge drains overland to the abutments and then overland to the existing drainage system consisting of stormwater inlets at low points off the bridge. On the east side of the bridge, the existing drainage system conveys runoff through a 24-inch reinforced concrete pipe (RCP) which discharges into a scour hole located approximately 45 feet east of the railroad tracks and 10 feet south of the bridge. The scour hole also picks up runoff travelling parallel to the railroad. Runoff then travels through a 36-inch deteriorated CMP that is approximately 550 feet in length and discharges to the Assunpink Creek. An option to replacing the 36-inch corrugated metal pipe (CMP), which would impact railroad operations, is to line the deteriorated pipe. Drainage pipes and structures on the west end of the bridge appear to be in adequate condition at this stage of the project.

G. Summary of Existing Deficiencies

- Bridge has a Sufficiency Rating less than 50 based on the deficiencies identified in the previous sections.
- Obstructions within the clear zone

H. List of Substandard Design Elements

- Vertical stopping sight distance
- Shoulder width
- Cross slope
- Vertical clearance

I. Management Systems Input

Since Lincoln Avenue is not a State roadway, Management system data was not available.

J. As-Built Plans, Right of Way Maps and Jurisdiction Map

As-built plans and tax maps are listed in Table 1. Jurisdictional maps and right of way plans were not readily available. Copies of the available plans can be found in Appendix C.

IV. TRAFFIC AND CRASH SUMMARY

A. Traffic Operations

Lincoln Avenue is a two lane, urban minor arterial with no posted speed limit. Therefore, a speed limit of 25 mph is assumed based on the urban setting. Lincoln Avenue forms signalized intersections with East State Street and North Clinton Avenue approximately 560 feet east and 1,450 feet west of the bridge center, respectively. Lincoln Avenue also forms unsignalized 'T' intersections with Creekview Drive, Rider Avenue, and Seward Avenue west of the bridge.

B. Traffic Data

GPI performed classified manual turning movement traffic counts at the following locations on Wednesday, October 14th, 2015 from 6:30AM – 6:30PM and Saturday, October 17th, 2015 from 11AM – 2PM.

1. CR 635 East State Street and Raoul Wallenberg Avenue / Wall Street / Chestnut Avenue
2. CR 635 East State Street and Monmouth Street
3. CR 635 East State Street and CR 626 Chambers Street / Lincoln Avenue
4. North Clinton Street and Monmouth Street
5. North Clinton Street and Lincoln Avenue
6. North Clinton Street and CR 622 North Olden Avenue

The count data was classified in 15-minute increments into the following categories:

- Pedestrians/Bicyclists
- Passenger Vehicles (Motorcycles, cars, SUV's, pick-up trucks, mini- and full-size vans)
- Medium Trucks (Single unit trucks)
- Heavy Trucks/Buses (Tractor Trailers)

The aforementioned counts were supplemented by manual turning movement traffic counts performed by the DVRPC at the following intersections with the date performed noted immediately afterward:

7. CR 635 East State Street and CR 622 South Olden Avenue (March 18, 2014)

8. CR 635 East State Street and South Clinton Avenue (May 15, 2014)
9. CR 635 East State Street and Raoul Wallenberg Avenue / Chestnut Avenue (June 24, 2014)

GPI also performed Automatic Traffic Recorder (ATR) counts October 12 to 16, 2015. These counts were aggregated in 15-minute intervals. ATR counts were conducted at the following locations:

- A. Lincoln Avenue between Creekview Drive and Assunpink Creek (MP 0.23)
- B. E. State Street between Lincoln Avenue and Monmouth Street (MP 0.40)
- C. N. Clinton Avenue between Monmouth Street and Model Avenue (MP 3.95)

GPI summarized the aforementioned turning movement count data in a flow diagram and balanced the same, where appropriate. A copy of the count data and flow diagram can be found in Appendix E.

C. Traffic Volume Forecasts

Growth rates were obtained from the Delaware Valley Regional Planning Commission (DVRPC) for a design year of 2040. A copy of the growth rate calculations can be found in Appendix E.

D. Crash Data Analysis and Crash Diagram

In December 2015, the NJDOT Bureau of Transportation Data and Safety (BTDS) provided a crash analysis for Lincoln Avenue from Seward Avenue through to East State Street for the three-year period from January 2011 through December 2013, which is summarized below.

Segment	Total Crashes	Overrepresented Crash Types
0.00 – 0.10	19	Same direction- rear end and sideswipe, left turn, encroachment, pedalcycle, at signalized intersection, wet surface and ice, at dusk and night.

Collision diagrams for Lincoln Avenue were developed from individual crash reports for the three-year period between 2011 and 2013. Copies of the 2011-2013 crash analyses and collision diagrams can be found in Appendix D.

V. SOCIAL, ECONOMIC AND ENVIRONMENTAL SCREENING

Amy S. Greene Environmental Consultants (ASGECI) prepared an environmental screening for this project in August 2016 to identify any possible environmental “fatal flaws” for the proposed replacement of Structure No. 1100-055. Potential environmental constraints identified within the Screening are summarized below. A copy of the Screening can be found in Appendix H.

A. Community Outreach

A Public Action Plan (PAP) was prepared and submitted for approval to Mercer County in February 2016. In addition, the following meetings were held with local officials and the public. Copies of the minutes for each meeting can be found in Appendix J.

Date	Meeting
February 17, 2016	Stakeholders: Amtrak
April 4, 2016	Local Officials: City of Trenton
September 21, 2016	Local Officials: City of Trenton
November 9, 2016	Public Information Center (PIC)

B. Noise and Air Quality

Sensitive receptors, such as educational, religious, residential and service areas, were identified within the project limits.

C. Socioeconomics

A Community Profile was submitted to Mercer County in September 2015 which serves to alert the project team of the characteristics and demographics within the project area. This evaluation determined that the population within the study area is predominately African American, with populations of Hispanic/Latino and White dispersed throughout. Large portions of the population speak Spanish. All of the tracts in the study area are below the poverty line. Due to the neighboring public facilities such as schools, emergency services, and transportation hubs, impacts to these services and those they serve should be carefully considered. Efforts were made to reach out to the surrounding communities and stakeholders during the scoping process to obtain their input including holding a Public Information Center at the project site. A more detailed impact analysis will be conducted to evaluate potential environmental justice issues as the project progresses.

D. Cultural Resources

The NEC rail line is listed in the NJ Register with a SHPO opinion of eligibility for a historic district (Pennsylvania RR, NY to Philadelphia, ID#4568). The rail line has a period of significance between 1835 and 1963. No additional historic properties or districts were identified within the project limits.

E. Section 4(f) Properties

The Monmouth Field (Assunpink Greenway) property was identified as Green Acres encumbered and owned by Trenton City. The property is bounded by Lincoln Avenue, Monmouth Street, and the Rush Crossing Development.

F. Highlands/Pinelands

This project does not lie within the Highlands or Pinelands boundaries.

G. Wetlands

Forested wetlands were identified along a portion of the Assunpink Creek. Field investigation also identified a wetlands swale along the east side of the NEC north of Lincoln Avenue. It is anticipated that the forested wetlands would be subject to a 50-foot transition area whereas the swale would not have an associated transition area.

H. Reforestation

It is not anticipated that this project will impact ½ acre or more of forested land. Therefore, replanting in accordance with the NJ No Net Loss Reforestation Act is not required.

I. Floodplain

The Assunpink Creek has a FEMA mapped 100-year floodplain. It is anticipated that the creek also has an associated 50-foot riparian zone from the stream channel top-of-bank.

J. Sole Source Aquifer

This project is located within the USEPA-designated Coastal Plain Sole Source Aquifer.

K. Threatened/Endangered Species

No State or Federally listed threatened or endangered species, or their habitats, were identified within the project limits.

L. Category 1 Waters

No C1 waters were identified within the project limits. The Assunpink Creek is classified as freshwater, non-trout (FW2-NT).

M. Vernal Pools

No vernal habitats were identified within the project limits.

N. Stormwater

It is not anticipated that the project will result in new impervious area greater than ¼ acre or over one acre of total land disturbance. Therefore, compliance with the NJDEP Stormwater Management Rules (SWM) will not be required.

O. Hazardous Waste

No known contaminated sites were identified within the project limits. Field observation noted that JR Auto Repairs, located along the north side of Lincoln Avenue near N. Clinton Avenue, may be a potential contaminated site.

P. Anticipated Environmental Permits or Approvals

The following permits and interagency coordination may be required for this project:

- Freshwater Wetlands GP
- Stormwater Construction GP (RFA)
- Flood Hazard Area Individual Permit
- Section 4(f)

Q. Environmental Summary with Probable NEPA Document required

In summary, the Environmental Screening did not identify any “fatal flaws” that would prohibit the advancement of this project. The probable NEPA document required for this project is a

Categorical Exclusion Document (CED). BEPR provided concurrence of the same on July 17, 2017 via a memorandum that can be found in Appendix K.

VI. EVALUATION OF CONCEPTUAL ALTERNATIVES

A. Bridge Rehabilitation versus Bridge Replacement

Bridge Rehabilitation: For the bridge rehabilitation alternative, full restoration of the existing bridge including the superstructure and substructure was evaluated. This option requires a complete deck replacement, removal of concrete encasement on existing members, significant strengthening/repair of the existing steel members, structural steel painting, and substructure repairs. The rehabilitation of a structure with this age and in this condition is not typically ideal; however, rehabilitation causes far fewer impacts to the railroad and utilities than the other build alternatives. The option also has less environmental and right of way challenges which would compress the overall project duration. Additionally, rehabilitation would not require the raising of the roadway profile over the NEC because vertical and lateral clearances would match that of the existing structure. However, based on the age and the existing condition of the structure, rehabilitation of the existing bridge was not deemed reasonable by the key stakeholders during Concept Development; therefore, it was not considered further.

Superstructure Replacement: A superstructure replacement will eliminate some of the variables associated with the rehabilitation option, particularly the state of the existing steel members underneath the concrete encasement and the need to repair these members. Completely replacing the superstructure offers the opportunity to replace the components of the structure in the most critical condition (deck, girders, floorbeams, and bearings), while retaining the elements in fair to good condition (substructure) with some repair/modifications. This alternative greatly increases the service life of the bridge in comparison with the rehabilitation option, while benefiting from reuse the substructure (reduced impacts and schedule). By replacing the entire superstructure, the deck and main load carrying members can be designed to meet current AASHTO design requirements. The NJDOT Design Manual (Section 8.6) recognizes that the existing substructure, in superstructure replacement projects, may not meet all current AASHTO design requirements, and allows the designer to evaluate only the Strength I limit state (with current HL-93 loading) to ensure the reconstructed structure is capable of supporting the current design live load. Additionally, since the superstructure will be completely removed in this option, it offers an excellent opportunity to repair and make modifications to the substructure.

This option also minimizes the environmental and right of way impacts but carries more impacts to the NEC and catenary lines as the superstructure needs to be removed and completely replaced near these critical components which increases required coordination with Amtrak in comparison to rehabilitation. Similar to the rehabilitation option, this alternative does not require raising the profile over the NEC because vertical and lateral clearances will match the existing structure. However, this option does afford the opportunity to raise the profile by raising the substructure since the superstructure is being completely removed and replaced.

Nevertheless, given the unknowns of the existing foundation underground location and condition, and since this is the third bridge on this site and second set of piers within same

general footprint, superstructure replacement may not provide a 75-year service life for all bridge elements. While several alternatives were initially proposed, as noted in Section VI.C.1, it was determined that they do not completely address the project Purpose and Need.

Complete Replacement: The complete replacement of the structure offers the most opportunity to extend the life of the bridge, correct deficiencies, and meet current design requirements, however, it also creates the most impacts and requires the most coordination with utilities, railroads, and stakeholders. This option also has the potential for various construction staging options including offline, partial offline, and advanced construction.

Under this option, significant coordination will be required with Amtrak to determine the vertical and lateral clearances required, as well as proposed pier locations. Replacement or relocation of the piers resulting in construction of new footings and foundations will significantly impact the underground water main and require its relocation.

After review of the three main build alternatives, it was determined that Complete Replacement best fits the Proposed Need.

B. Temporary Bridge Location and Widening Constraints

A temporary bridge is not anticipated for construction of the proposed structure if the structure is constructed in stages using a partial detour. If the proposed structure is replaced under a full detour, then a temporary pedestrian bridge would be required. Widening of the existing out to out cross-section is not anticipated for the construction of the proposed structure.

C. Conceptual Alternatives

1) Bridge Alternatives

The following structural alternatives were considered in preparation of this report and are summarized in the Alternatives Matrix found in Appendix M.

Superstructure Replacement:

Alternative Nos. 2 through 3A consist of the replacement of the deck and superstructure only on the existing alignment.

- Alternative No. 2 proposes a multi-girder steel beam structure;
- Alternative No. 2A proposes a minimum depth multi-girder steel beam structure;
- Alternative No. 3 proposes a concrete bulb-tee structure;
- Alternative No. 3A proposes a concrete box beam structure.

Rehabilitation of Existing Foundation: The above superstructure alternatives utilize the existing foundation which requires repair or rehabilitation to meet the foundation capacity requirements. This requires subsurface investigation and bearing evaluation of the existing foundation as well as rehabilitation design. The type, material and physical condition of the existing foundation and subsurface conditions are unknown at this stage to evaluate rehabilitation alternatives. Additional foundation elements will be required to withstand the design loads per the current design standards. The existing foundation may limit the type of

deep foundation system that can be used. For lateral capacity, if required, batter piles will be needed.

As aforementioned, under these alternatives, some bridge elements may not meet the 75-year design life. Therefore, they do not completely address the project Purpose and Need.

Complete Replacement:

The Complete Replacement build alternative was chosen by the key stakeholders for advancement and therefore, Structural Alternatives 4 thru 6, as described below, were further evaluated.

Alternative Nos. 4 through 5A consist of the replacement of the entire structure along the existing alignment. The new bridge would consist of six (6) spans with a cast-in-place reinforced concrete deck. The new superstructure would be supported by cast-in-place reinforced concrete piers and full height abutments founded on deep foundations. The new bridge with an increase in the vertical profile and relocated foundations would meet the required horizontal and vertical track clearance requirements. An 8'-0" tall railroad protection would be used at each fascia to protect the railroad property below. Each alternative proposes that the concrete deck be supported by different superstructure types, as listed below.

- Alternative No. 4 proposes a concrete bulb-tee structure;
- Alternative No. 5 proposes a multi-girder steel beam structure;
- Alternative No. 5A proposes a minimum depth multi-girder steel beam structure.

Alternative No. 6 is similar to Alternative No. 5 except that it proposes a new horizontal alignment along Lincoln Avenue, replacing the existing broken back curves with a single 900-foot radius curve. This would allow the majority of the structure to be constructed off-line and minimize staging impacts to motorists and pedestrians. The new bridge would be a six (6) span bridge with a cast-in-place reinforced concrete deck supported by structural steel welded plate girders. The new superstructure would be supported by cast-in-place reinforced concrete piers and full height abutments founded on deep foundations. The new bridge with an increase in the vertical profile and relocated foundations would meet the required horizontal and vertical track clearance requirements. An 8'-0" tall railroad protection would be used at each fascia to protect the railroad property below. However, additional environmental and right of way impacts would occur as a result of realigning the roadway.

A copy of each alternative group can be found in Appendix I.

The alternatives listed above are primarily based on the superstructure type. Within the Complete Replacement build alternatives, substructure alternatives would also need to be considered. The foundation elements considered as part of this Alternative Analysis consist of deep foundations, including driven piles, drilled shafts and micropiles.

Alternative No. F1, Driven Piles are a viable option for the foundation of a new structure. Driven piles are a conventional method that will be familiar to all contractors and relatively inexpensive to install as compared with other foundation types. Construction would need to

consider vibration due to the proximity of the tracks and existing buildings to the site. This method would likely require battered piles to resist lateral loading which could potentially conflict with existing piles and substructure.

Alternative No. F2, Drilled Shafts can also be used for the foundation of a new structure but are generally more expensive than driven piles. The shafts may need to be socketed into rock to resist uplift and lateral forces. If the top soil consists of loose material, casing may be required. Also, due to expected ground water table, wet method of construction will be required which extends the construction duration.

Alternative No. F3, Micropiles are also feasible for the proposed structure. These are typically more expensive than conventional foundation elements and also require a specialized subcontractor. Micropiles can resist uplift forces by being socketed into rock and they can also be installed close to existing foundation elements to avoid potential conflicts.

2) Geometric Alternatives

All replacement structure cross sections will consist of a 12-foot lane, 8-foot shoulder and 6-foot sidewalk along each direction of Lincoln Avenue, as required by AASHTO. Over electrified rail lines, minimum vertical clearances of 24'-6" and 24'-3" are required by NJDOT and Amtrak, respectively. Structural Alternative Nos. 4 through 5A propose to maintain the existing horizontal alignment, whereas Structural Alternative No. 6 proposes a new alignment with a 900-foot radius. The following geometric alternatives were considered.

Alternative No. G1 proposes to maintain the existing horizontal alignment and provides the standard 24'-6" vertical clearance over Amtrak and NJ Transit rail lines.

Alternative No. G2 proposes a new alignment, consisting of a horizontal curve with a 900-foot radius, and provides the standard 24'-6" vertical clearance over Amtrak and NJ Transit rail lines.

Alternative No. G3 proposes to maintain the existing horizontal alignment and either meet or exceed the existing 20'-9" vertical clearance, but not meet the minimum 24'-3" or 24'-6" required by Amtrak and NJDOT, respectively.

Alternative No. G4 proposes a new alignment, consisting of a horizontal curve with a 900-foot radius, and either meet or exceed the existing 20'-9" vertical clearance, but not meet the minimum 24'-3" or 24'-6" required by Amtrak and NJDOT, respectively

D. Traffic Analysis

The alternatives developed during Concept Development would have similar operations to the No-Build Condition, since no capacity changes are proposed.

The project area was evaluated for a full closure of the bridge, as well as a partial closure detouring either eastbound or westbound traffic. Eastbound traffic would be detoured via North Clinton Avenue, North Olden Avenue, and East State Street while westbound traffic would be detoured via East State Street, Monmouth Street, and North Clinton Avenue. Traffic mitigation improvements such as lengthened turn slots, traffic signal timing changes and

temporary traffic signals were evaluated along each detour route. It was determined that a partial detour should maintain westbound traffic due to reduced mitigation required to maintain an acceptable Level of Service (LOS) at the intersections.

Based on the capacity analyses performed using Synchro, each of the proposed detour alternatives result in a significant increase in delay and queue lengths for many approaches and/or movements during various peak hours in comparison with the existing conditions without substantial mitigation. However, the partial detour of eastbound traffic has better LOS when compared to a full closure without mitigation along the detour route. This information is summarized in Appendix I.

See Section VI.K for additional information on the construction staging.

E. Geotechnical Summary

The geotechnical aspects of this study are based on the available subsurface condition information and field visit findings.

The subsurface soil condition is expected to be a 20 to 25 feet of loose to medium sand intermixed with gravels underlain by 15 to 20 feet of soft to medium consistency residual cohesive soils and decomposed rock. Bedrock is expected at about 60 feet below the ground surface. Based on our preliminary understanding of subsurface soils, a shallow foundation scheme doesn't appear to be feasible. The construction of deep foundation scheme is viable for the expected soil condition where the bedrock can be utilized for end bearing to reduce settlements and liquefaction problems. Special vibration monitoring would be required at all stages of construction to avoid possible settlements, distortions and soil stability near the railroad track, roadway embankments and existing facilities. The settlement and lateral deflection could be an issue for the foundation excavation near the tracks. Braced supported excavation would be required.

F. Right of Way Impacts and Review

Structural Alternative Nos. 4 through 5A, as well as Geometric Alternative Nos. G1 and G3, propose to maintain the existing horizontal alignment, therefore no right of way takings are anticipated. Temporary construction easements would be required for any sidewalk repairs abutting the CYO East State Street Center and the Martin House.

Structural Alternative No. 6, as well as Geometric Alternative Nos. G2 and G4, propose a new alignment with a 900-foot radius that results in additional right of way impacts compared to the other alternatives. Right of way would be required from Amtrak to cross over the NEC at a location north of the current crossing.

G. Utility Impacts

The existing structure currently carries ten 4-inch electrical conduits and a 16-inch equivalent gas main. In addition, an existing 30-inch cast iron water main is located under the structure (through the foundation). Several options were considered for relocation, support, or shielding as shown in the Utility Alternative Matrix. The goal is to minimize or avoid multiple relocations and long-term disruptions to existing services.

It is recommended that subsurface utility engineering be conducted during Preliminary Engineering to determine the exact location of underground utilities, specifically in the areas of proposed footings to identify potential conflicts.

H. ITS Facilities

No intelligent transportation systems (ITS) equipment exists within the study area, and no proposed ITS equipment is anticipated for this project.

I. Complete Streets Policy

A “Complete Street” is defined as a means to provide safe access for all users by designing and operating a comprehensive, integrated, connected multi-modal network of transportation options. The policy dictates that complete streets shall be considered during the planning, design, construction, maintenance and operation of new and retrofit transportation facilities, enabling safe access and mobility of pedestrians, bicyclists, and transit users of all ages and abilities.

Sidewalk is currently provided along Lincoln Avenue on the structure and within the project limits. Shoulders with widths of eight feet, or greater, which can accommodate bicyclists, are not provided along both sides of Lincoln Avenue within the project limits. However, the lanes are wide enough for shared vehicular and bicyclist use.

In accordance with the NJDOT Complete Streets Policy, sidewalk will be provided along both sides of Lincoln Avenue and connect to the existing sidewalk network. Full width shoulders, where feasible, will be provided to accommodate bicyclists. This project will address the following policy points:

2. Provide safe and accessible accommodations for existing and future pedestrian, bicycle and transit facilities.
6. Transportation facilities are long-term investments that shall anticipate likely future demand for bicycling and walking facilities and not preclude the provision of future improvements.
7. The design of intersections, interchanges and bridges shall accommodate bicyclists and pedestrians in a manner that is safe, accessible and convenient.
10. Make provisions for pedestrians and bicyclists when closing roads, bridges or sidewalks for construction projects.
13. Improvements must comply with Title VI/Environmental Justice, Americans with Disabilities Act (ADA) and should complement the context of the surrounding community.

The completed CD portion of the Complete Streets Checklist can be found in Appendix P.

J. Access Impacts and Review

No permanent access impacts are anticipated. Access to existing businesses and residences will be maintained at all times during construction.

K. Constructability and Staging Plans and Detour Plan

The following staging alternatives were evaluated in the preparation of this report and are summarized in the Alternatives Matrix found in Appendix M.

Staging Alternatives S1A and S1B consist of two construction stages. Pedestrian and westbound vehicular traffic will be maintained on the structure while eastbound vehicular traffic is to be detoured along North Clinton Avenue northbound, North Olden Avenue eastbound, and East State Street westbound. Alternative S1A provides traffic mitigation improvements consisting of extended turn slots and signal optimization along the detour route while Alternative S1B maintains the existing conditions.

Staging Alternatives S2A and S2B consist of two stage construction of the proposed bridge. Pedestrian traffic will be maintained via a temporary structure while both eastbound and westbound vehicular traffic are to be detoured. Eastbound vehicular traffic will be detoured as identified in Staging Alternatives S1A and S1B. Westbound vehicular traffic will be detoured via East State Street westbound, Monmouth Street westbound, and North Clinton Avenue northbound. Alternative S2A provides traffic mitigation improvements along the detour routes consisting of extended turn slots, signal optimization, and a temporary traffic signal at the intersection of East State Street and Monmouth Street. Alternative S2B maintains the existing conditions.

Staging Alternatives S3A and S3B consist of single stage construction. Both directions of vehicular traffic will be detoured as described in Staging Alternatives S2A and S2B. Pedestrian traffic will be detoured along Rider Avenue, Monmouth Street, and East State Street. Alternative S3A provides the same traffic mitigation improvements as Alternative S2A and Alternative S3B maintains the existing conditions.

Due to the high pedestrian volumes along Lincoln Avenue, detouring pedestrians may be an adverse effect to the community. Therefore, at a minimum, pedestrian access will be maintained at this crossing and Staging Alternatives S3A and S3B were not evaluated further.

Structural Alternative No. 6, as well as Geometric Alternative Nos. G2 and G4, propose a new alignment with a 900-foot radius. The ability to construct a majority of the proposed structure prior to the demolition of the existing bridge offers the advantage of reduced construction duration and impacts to road users. A short-term roadway closure would be required to complete the tie-in to the existing roadway to allow for the construction of the new bridge.

Based on the capacity analyses performed using Synchro, and as described in Section VI.D, Alternative S1A provides a better overall LOS along the detour routes, maintains pedestrian traffic throughout construction, and requires less modifications to the proposed detour route for traffic mitigation.

Bridge replacement alternatives to be studied in Preliminary Engineering include Accelerated Bridge Construction (ABC) methods using prefabricated bridge elements to minimize the overall construction schedule and impacts. Access to the site below the bridge, some of which is Amtrak property, to construct the foundation will be a key element. Other issues to address include working in proximity to 138 kV power lines located above the bridge and the catenary lines attached to the bottom of the bridge. The goal is to minimize or avoid disruptions to the NEC while considering future needs.

L. Controlling Substandard Design Elements and Reasonable Assurance

The Preliminary Preferred Alternative (PPA) will require a Design Exception from the standards set forth in AASHTO for the following Controlling Substandard Design Elements (CSDE).

- Stopping Sight Distance (SSD), Vertical Curves
- Shoulder Width

A memorandum was prepared requesting reasonable assurance of a design exception approval indicating the CSDE and justification for a design exception. Mercer County performed a review of this memorandum and provided reasonable assurance of approval of the same on March 23, 2017. A copy of the aforementioned memorandum and email can be found in Appendix Q.

M. Construction Cost Estimate

The construction cost estimate for each alternative, listed which includes geometrics and roadway, construction, lump sum items, contingencies and construction engineering, is summarized below. A copy of the construction cost estimate can be found in Appendix L.

- | | |
|---------------------------------|--------------|
| • Structural Alternative No. 4 | \$38,700,000 |
| • Structural Alternative No. 5 | \$38,415,000 |
| • Structural Alternative No. 5A | \$43,576,000 |
| • Structural Alternative No. 6 | \$42,919,000 |

N. Alternatives Matrix

A comparison matrix of all the alternatives was developed for this project. A copy of the same can be found in Appendix M.

O. Risk Analysis Summary

The risk management efforts conducted during CD included performing risk analysis to determine the probability and impacts of potential risk events and populating the risk register with the associated risks for the PPA. As noted in the NJDOT Risk Management Guideline, during CD and PE, the probability of uncertainty in the cost estimate is 100%, due to uncertain quantities and unit costs, and should be included in the risk register.

Other risk events identified for this project included, but are not limited to, potential impacts to the water main located through a portion of the existing substructure; unforeseen impacts to surrounding properties or buildings; and railroad agreement negotiations may result in schedule overruns. A copy of the risk register and utility risk assessment plan can be found in Appendix O.

P. Discussions with Subject Matter Experts

Two meetings were held with NJDOT Subject Matter Experts during the course of CD on October 3, 2016 and June 7, 2017. A copy of the minutes for each meeting can be found in Appendix K.

Q. Value Engineering Study

As recommended by FHWA, a Value Engineering Analysis will be considered as part of Preliminary Engineering in coordination with Mercer County and NJDOT Local Aid.

R. Railroad Operations

Close coordination with Amtrak and NJ Transit is required for development of the proposed staging, construction schedule, and determination of any impacts to existing railroad operations or equipment. In addition, relocation of existing catenary lines off of the structure will likely require reprofiling and may require new catenary structures. The proposed structure will meet all horizontal and vertical clearances.

During PE, a Design Phase Agreement with Amtrak will be established to review plans, perform inspections, prepare estimates for subsequent phases and attend meetings. A draft copy of the same can be found in Appendix T. Preliminary roadway and bridge plans will be prepared and submitted to Amtrak as a 30% and 60% submission. Included within the submission is a proposed construction sequence for railroad work that will minimize impacts to existing facilities.

S. Preliminary Preferred Alternative (PPA)

The Preliminary Preferred Alternative (PPA) is based on Structural Alternative No. 5 and Geometric Alternative No. G1; input received from Mercer County, Trenton City, NJDOT Subject Matter Experts and the public; and further investigations performed as a part of this study. The following summarizes the proposed features and impacts of the PPA, a copy of which can be found in Appendix N.

1) Structural Design

The PPA proposes complete replacement of the bridge along its existing horizontal alignment to extend the life of the bridge, correct deficiencies, and meet current design requirements. The new bridge consists of six (6) spans with a cast-in-place reinforced concrete deck supported by structural steel welded plate girders. The structure would have a depth of 51 inches” and maximum girder spacing of 7 feet. The new superstructure would be supported by cast-in-place reinforced concrete piers and full height abutments founded on deep foundations. The vertical profile and pier locations will be revised to provide the required horizontal and vertical clearance over the railroad tracks. An eight (8) foot tall parapet for railroad protection would be used at each fascia to protect the railroad property below. Approach slabs will be provided.

Architectural treatments, such as stone facing, veneer or form liners; galvanized and powder coated steel; aesthetic parapet or railing treatments; colored concrete; decorative lighting; etc. are also being considered. Two examples were developed during CD for the November 9, 2016 Public Information Center (PIC) as shown in Appendix J. One proposed a concrete parapet with decorative inset panels while the other proposed an acrylite parapet with a decorative base. Ornamental lighting was proposed for both. The PIC attendees preferred

the concrete parapet example. Architectural treatments will be modified and/or refined as the project progresses.

2) Geometrics

The PPA proposes to maintain the existing alignment and provide the standard 24'-6" vertical clearance required by NJ Transit and NJDOT. The cross section consists of a 12-foot lane, 8-foot shoulder and 6-foot sidewalk along each direction of Lincoln Avenue. The shoulders can be used by bicyclists and as a standard bicycle lane. Minor roadway widening is required along the west approach to East State Street in order to provide a standard width left turn slot and shared vehicular/bicycle outside lanes.

CSDEs for substandard cross slope and vertical clearance will be brought into conformance with current AASHTO design standards as part of the PPA. Remaining CSDEs for shoulder width and stopping sight distance for vertical sag curve cannot be corrected without significant impacts to adjacent properties or expanding the project area. Based on the design exception crash analysis, maintaining the existing substandard elements will not degrade the safety. Reasonable assurance of a design exception approval for all CSDEs was received on March 23, 2017.

3) Pedestrian and Bicycle Compatibility

As aforementioned, 6-foot wide sidewalks for pedestrians are provided on structure, and will tie into the existing sidewalk network in the project vicinity. The 8-foot shoulders will be marked as a standard bicycle lane, as proposed in the June 2016 *Downtown Trenton Bicycle and Pedestrian Plan*. The bicycle lane would transition to a shared lane east and west of the structure, with appropriate pavement markings (i.e. sharrow), due to the existing roadway width and lane configuration.

As a result of the replaced sidewalks and minor widening to accommodate the shared travel lane, the traffic signal at the intersection of E. State Street and Lincoln Avenue will be replaced in compliance with MUTCD and ADA. The signalized intersection will be upgraded to meet ADA standards including the construction of ADA compliant curb ramps and the installation of ADA accessible pushbuttons to the maximum extent feasible and following current design standards.

4) Drainage / Environmental

The PPA stays within the SWM thresholds. Since stormwater is not permitted to "air drop" onto railroad property, scuppers cannot be proposed over these locations and the bridge must drain overland to the abutments and either 1) be allowed to air-drop or 2) continue to drain overland to stormwater inlets at the low points off the bridge. The existing scuppers appear to be non-functional and therefore, all inlets and points of discharge analyzed will receive similar volumes in the proposed condition.

It is anticipated that this project will require a Flood Hazard Area Individual Permit due to the pier and abutment work within the floodway and flood hazard area of the Assunpink

Creek. A Freshwater Wetlands General Permit, stormwater construction permit and Green Acres involvement may also be required (Assunpink Greenway).

5) Construction Staging

The new structure will be constructed in two (2) main stages. Pedestrian access will be maintained at this crossing during construction. One lane for the westbound direction of Lincoln Avenue will also be maintained for vehicular traffic, while the eastbound direction will be detoured along North Clinton Avenue northbound, North Olden Avenue eastbound, and East State Street westbound. Construction duration is estimated to be 28 months. GPI prepared preliminary construction staging plans for the construction of the PPA. A copy of the same can be found in Appendix N.

6) Utility Impacts

The existing structure currently carries ten 4-inch electrical conduits and a 16-inch equivalent gas main. In addition, an existing 30-inch cast iron water main is located under the structure (through the foundation). It is anticipated that the water main will be relocated outside the area of the existing and proposed foundations prior to construction. The electrical conduits and gas main will be relocated onto the new structure during Stage 1 of construction.

7) Right of Way and Access Impacts

Right of way impacts would be limited to areas near East State Street. Temporary construction easements would be required for any sidewalk repairs abutting the CYO East State Street Center and the Martin House.

8) Cost Estimates

The total construction cost estimate of the PPA, including construction staging, is approximately **\$41,340,000** based on Classification No. 2 – Reconstruction, Widening and Dualization of the NJDOT Transport Construction Cost Estimating Guide, as amended. A copy of the construction cost estimate can be found in Appendix L.

9) Schedule

The following are the anticipated start dates and estimated funding needs for the subsequent stages of this project:

Project Delivery Phase	Anticipated Start Date (Fiscal Year)	Estimate
Concept Development	Complete Summer 2017	\$471,220
Preliminary Engineering	April 2018 (FY 2018)	\$1,510,000
Final Design	March 2019 (FY 2019)	\$2,253,000
Construction	April 2021 (FY 2021)	\$41,340,000

T. Preliminary Engineering Scope Statement

The Scope Statement documents key elements of the project scope starting with information gathered during Concept Development. It is refined as more details become available. All input received to date from the various NJDOT offices, bureaus and units was incorporated into the Scope Statement and a copy of the same can be found in Appendix S.

VII. CONCEPT DEVELOPMENT RECOMMENDATION

It is recommended to advance this project to Local Preliminary Engineering.

A. Interagency Review Committee (IRC) Coordination

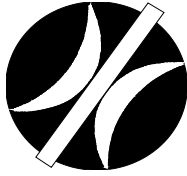
On October 23, 2017 the project was presented to the IRC, where it was recommended to advance the PPA to the Local Preliminary Engineering and Final Design Phases. On November 22, 2017, the IRC issued a letter acknowledging that the PPA best addressed the purpose and need and that the project should advance to the Local Preliminary Engineering and Final Design Phases, pending FHWA approval. DVRPC anticipates that the subsequent phases of this project will be federally funded in Fiscal Year 2018. Construction will be funded by the federal-aid Surface Transportation Program, pending approval of the draft FY 2018-2027 STIP. Documentation of the IRC approval can be found in Appendix V.

B. Federal Highway Administration (FHWA) Approval of Report

FHWA reviewed the draft CD Report submitted in September 2017 and provided comments on the same on October 26, 2017. A comment resolution summary was prepared and submitted on November 11, 2017. FHWA provided approval of this report via email on December 6, 2017. All correspondence with FHWA can be found in Appendix K.

Appendix A

Problem Statement



DELAWARE VALLEY
REGIONAL PLANNING COMMISSION

The ACP Building, 190 N. Independence Mall West
Philadelphia, PA 19106-1520

Telephone: (215) 592-1800
FAX: (215) 592-9125
www.dvrpc.org

Dated: 2/13/2015

Request for Proposals

for

Mercer County Local Concept Development Study

Lincoln Avenue Bridge Replacement

The Delaware Valley Regional Planning Commission (DVRPC) on behalf of Mercer County is seeking consultant support for the preparation of a Concept Development study being advanced through its Local Capital Project Delivery (LCPD) Program. This program is consistent with the Project Delivery Process recently implemented by the New Jersey Department of Transportation (NJDOT). Through this RFP, DVRPC is seeking to engage one firm to provide professional consultant services to study NJ State structure #1100-055, Mercer County #140.9, under Mercer County jurisdiction, in the City of Trenton, carrying Lincoln Avenue (CR 626) over the Northeast Corridor rail line, an abandoned rail yard, and Assunpink Creek. DVRPC invites all firms pre-qualified by NJDOT with relevant experience in this area to submit proposals for this project.

For Additional Information Please Contact:

John R. Griffies, Contracts Manager

Delaware Valley Regional Planning Commission

The ACP Building, 190 N. Independence Mall West

Philadelphia, PA 19106-2515

Phone: 215-238-2925

Fax: 215-925-4886

email: jgriffies@dvrpc.org

Proposals submitted for this project will accepted up until the due date of
Monday, March 16, 2015 at 4:00 PM

APPENDIX A

LCD Project: Lincoln Avenue Bridge Replacement

Project Sponsor: Mercer County

Project Description:

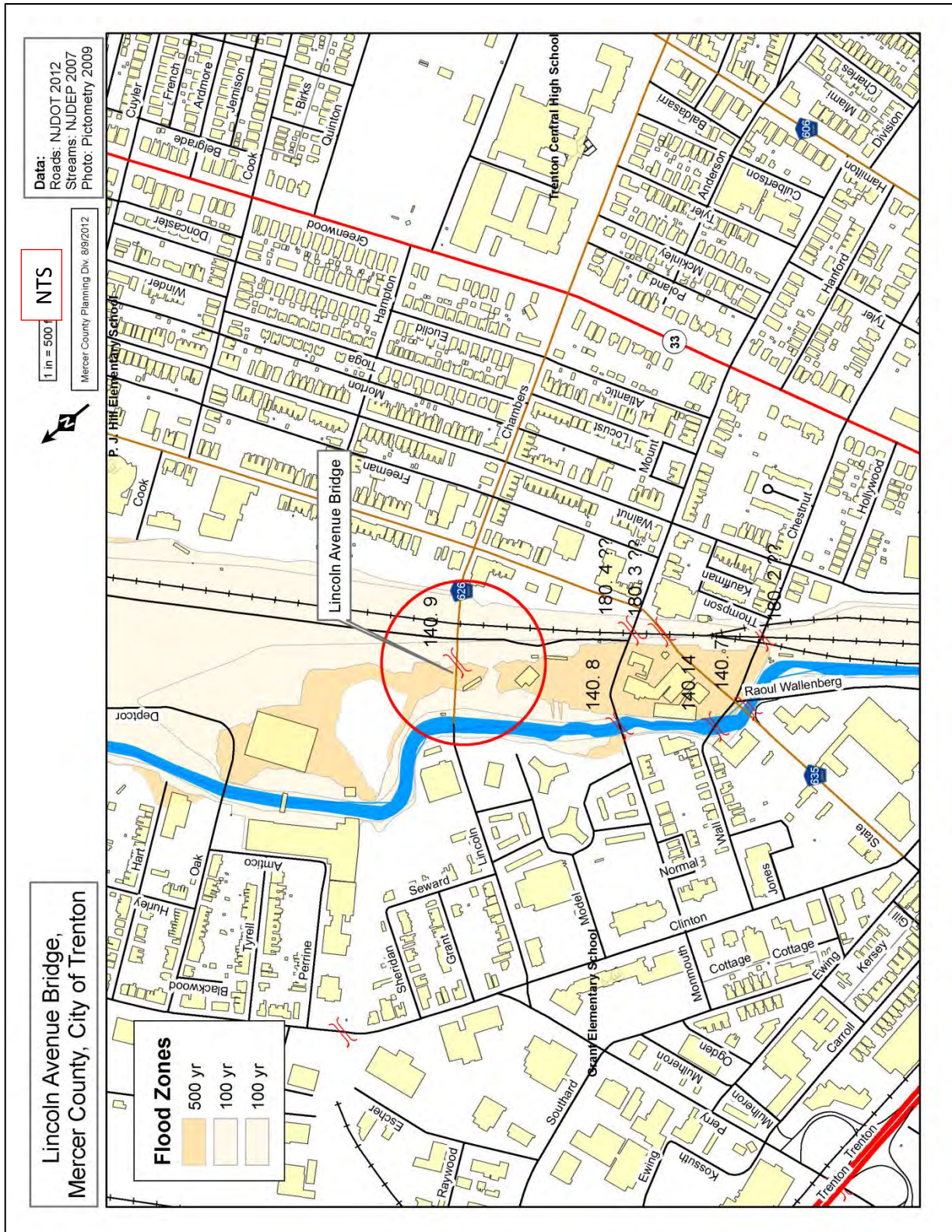
Regional Significance: The Lincoln Avenue Bridge is under the jurisdiction of Mercer County and carries County Route 626 (11000626, urban minor arterial, federal aid route) over the Northeast Corridor rail line, an abandoned rail yard, and Assunpink Creek. It is an important east-west connector across these physical barriers, and is the first crossing outside of the central business district of the City of Trenton. For local traffic, it participates in a significant travel corridor within the City and between Hamilton and Ewing Townships, carrying 11,772 vehicles per day (DVRPC AADT) in 2009. Immediately to the west of the bridge, the City of Trenton is redeveloping the site of the former THA Miller Homes to contribute to its redevelopment plan for the Trenton train station area. 204 mixed-income rental units are under construction at a total project cost of \$61 million.

The Bridge: NJ State Structure #1100-055 (Mercer Structure 140.9) is 687' long, in 8 spans, steel through-girder construction with a concrete deck, built in 1931, reconstructed in 1965. Assunpink Creek runs under the westernmost span. 4 electrified NEC rail tracks run under span 2 (from the east); a non-electrified spur track runs under span 3. The bridge overspans the Assunpink floodway, with its center in the 500-year flood zone and the remainder within the 100-year flood. The NEC rail line is listed in the NJ Register as an eligible historic district (Pennsylvania RR, NY to Philadelphia, ID#4568).

Issues: The overall condition of the bridge was rated 'serious' in the 2013 inspection report (sufficiency rating of 46.2) primarily due to the condition of its superstructure (concrete spalling off of the steel girders over the NEC rail line). The deck and substructure are in poor and fair condition respectively. The inspection report recommended replacement of the entire structure at a cost of \$20.4 million. This cost may increase if Amtrak requires that the 20.75' under-clearance at the rail tracks be raised to the 23' minimum they require for new construction.

APPENDIX B

Location Map



Appendix B

Bridge Re-evaluation Survey Report (15th Cycle)



Mercer County
MERCER COUNTY DEPARTMENT OF TRANSPORTATION AND INFRASTRUCTURE
640 SOUTH BROAD STREET
P.O. Box 8068
TRENTON, NJ 08650-0068

BRIDGE RE-EVALUATION SURVEY REPORT

STRUCTURE NO. 1100-055
MERCER COUNTY STRUCTURE NO. 140.9
LINCOLN AVENUE (CR 626) OVER
AMTRAK AND ASSUNPINK CREEK
ROUTE 6016; USRA LINE CODE 1401 & R.R.M.P. 56.54
CITY OF TRENTON
MERCER COUNTY

15TH CYCLE

JUNE 13, 2013

**NOTE: This Bridge Re-evaluation Report
shall be filed immediately after the
14TH Cycle Inspection Report.**

Prepared By

IH ENGINEERS, P.C.
103 College Road East, 1st Floor
Princeton, NJ 08540

TABLE OF CONTENTS

	<u>Page No.</u>
1 Structural Data	15-1
2 Conclusions and Recommendations	15-2
3 Structural Inventory & Appraisal and Pontis Sheets	15-4
4 Load Rating Summary Sheet (LRSS)	15-7
5 Drawings and Photographs	15-10
6 Field Notes	15-35
7 Associated Documents	15-76

**MERCER COUNTY DEPARTMENT OF TRANSPORTATION AND INFRASTRUCTURE
BRIDGE RE-EVALUATION SURVEY REPORT**

CYCLE NO. 15

STRUCTURAL DATA:

Bridge No.:	1100-055	Year Built:	1931	Widened/Rehab:	1965
Route No.:	9011	Length:	687.0'	Width:	40.0'
Mile Point:	0.050	Date of this Evaluation:	6/13/2013		
	R.R. MP: 56.54 USRA Line Code 1401				
Name:	Lincoln Avenue (CR 626) over Amtrak & Assunpink Creek	By:	IH Engineers, P.C.	Tom Weiler	
		Date of Previous Evaluation:	7/7/2011		
		By:	IH Engineers, P.C.	Tom Weiler	
		Special Equipment Used:	Large Ladder and bucket van (Photos 15-43 and 15-44).		
Structure Type:	Eight Span, Simply Supported, Riveted Steel Through Girder with Floorbeams	Date of Underwater Inspection:	Not Required		
		Scour Critical:	No		

WORK DONE: The through hole in the south sidewalk has been patched with concrete ([Photo 15-40](#)).
New bituminous concrete overlay at the east approach roadway ([Photo 15-04](#)).
Two new sidewalk panels have been constructed at north sidewalk of the east approach
roadway ([Photo 15-08](#)).
New electrical conduit box has been installed at SW corner of structure ([Photo 15-22](#)).

OVERALL PHYSICAL CONDITION: Serious due to the condition of the superstructure (Item 59 = 3)

OVERALL CONDITION (ITEM 67): Serious due to the condition of the superstructure (Item 67 = 3)

Inspection Team Leader: Tom Weiler
Certifying Engineer: Sid W. Sidhom, P.E.
N.J. P.E. Number: GE 04070000

Initials: TRW

I certify that this report is an accurate description of the subject structure, to the extent determinable by visual inspection and testing performed.

Signature: Sid Sidhom, PE
Date: 2/19/14

Original Signed and Sealed

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
Name: Lincoln Avenue (CR 626) over Amtrak & Assunpink Creek Insp. Date: 6/13/2013

CONCLUSIONS AND RECOMMENDATIONS:

The overall condition of the structure is serious due to the condition of the superstructure.

The deck is in poor condition due to the large areas of spalled and delaminated concrete with exposed rusted rebar. The areas of deteriorated concrete repair patches and the areas of uneven bituminous concrete patches on the top of the deck surface (Photos 15-23, 15-24 and 15-25). The underside of the deck exhibits areas of heavy efflorescence along the centerline joint and areas of checkerboard cracking throughout all spans (Photo 15-10). Also there are spall areas with exposed rusted rebar on the underside of the deck in Spans 6 and 7 from west (Photo 15-31). It is estimated that 45% of the total deck area is chloride contaminated.

The superstructure is in serious condition due to the exposed moderately to severely rusted steel in the girders and floorbeams at the areas of missing encasement. The exposed areas of the web plates and bottom flanges at the through girders exhibit severe rust (up to $\frac{1}{4}$ " section loss, $\frac{11}{16}$ " remaining in the web plate for 7" high at the sidewalk/curb level (Photo 15-34) and up to $\frac{1}{16}$ " section loss, $2\frac{3}{16}$ " remaining in the bottom flange with advanced section loss in the bottom flange rivets (Photos 15-10, 15-11, 15-13, 15-14 and 15-19). The exposed bottom flange of the floor beam exhibits severe rust (up to $\frac{1}{8}$ " maximum section loss, $1\frac{1}{8}$ " remaining) at random locations throughout the all spans (Photo 15-12). Also the knee braces 1, 2, 5 and 6 to 11 from east at the north girder and 4, 8 and 11 from east at the south girder exhibit through holes up to 1" x 3" at the sidewalk level (Photo 15-35). There has been no increase in the superstructure section losses since the previous inspection.

The substructure is in fair condition due to the wide vertical cracks in the abutment breastwalls and backwalls, the large spalls and delaminated concrete with exposed rusted rebar in the east abutment breastwall (Photo 15-36), pier crashwalls, pier caps (Piers 3, 4, 5 and 7 from west) (Photos 15-38, 15-39), pier columns (south column of Piers 2 and 4 and north column of Pier 7) and wingwalls, and the loose coping for the full length of the southwest wingwall (Photos 15-26, 15-27).

The channel is in fair condition due to the heavy bank scour with exposed and undermined tree roots along the northeast and southwest channel embankments (Photos 15-05 and 15-06).

Since the previous inspection, there has been no change in the condition of the structural.

The bridge is fracture critical due to its non-redundant construction (through girder). The fracture critical through girders exhibit moderate to severe rust in the exposed web plates and bottom flanges with section losses as noted above.

Based on the bridge scour evaluation program revised database provided by NJDOT (May 2007) and Stage I Bridge Scour Evaluation, the structure is considered to be a low priority for Stage II In-Depth bridge scour evaluation. This inspection revealed no footing exposure, undermining or scour. There is rock riprap channel countermeasures along the west face of Pier 7. Therefore the appraisal of item 113 remains 7 (Item 113 = 7).

The bridge crosses Amtrak's electrified northeast corridor. Therefore, the superstructure in Spans 2 and 3 and Pier 2 bridge seat and bearings were visually inspected from the ground using binoculars.

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assunpink Creek Insp. Date: 6/13/2013

The bridge is structurally deficient due to the conditions of the deck (poor) and superstructure (serious). In order to remove it from this category, we recommend the following remedial action: Replace the bridge:

a) Demolition (Lump Sum)		\$ 1,000,000
b) New structure: existing length = 687' x 1.04 (FHWA expansion factor) = 714.48 Say 715' x 54' (40' curb to curb and 6' sidewalk/ 1' parapet each side) x \$370/SF		
	(Item 94)	\$14,285,700
c) Approach roadway work (10%)	(Item 95)	\$1,428,570
d) Traffic Maintenance (Lump Sum)		\$ 1,000,270
	Subtotal	\$ 17,714,540
	Preliminary Engineering (15% of subtotal)	\$ 2,657,181
	Total Project Cost (Item 96)	\$ 20,371,721

While performing the field inspection in the current cycle, Priority E and 1 Repair conditions were found related to incipient spalls in girder encasements, missing hand hole covers at top of deck light poles, snag potential at the north and south through girders above the deck, spalled concrete at the top of deck Span 3 right wheel path, incipient spalls in encasement at south girder in Span 3, and the fractured coping of the southwest wingwall ([Priority E and Priority 1 Repair letters 1100055_20130613cy15_prE_01.pdf](#) and [1100055_20130613cy15_pr1_01.pdf](#)).

In the interim, until the bridge is replaced, we recommend that the following Priority E & 1 Repairs be made to retard further deterioration, preserve the structural integrity of the bridge, improve safety and extend its useful life:

- | | |
|---|------------|
| 1. Install a steel plate over the opening of the junction box in Span 1 from east north sidewalk near north girder and east abutment header (Photos 15-08 & 15-09). | 1 Crew Day |
| 2. Remove all hanging and loose concrete encasement at the following locations: (Photo 15-10 through Photo 15-14). | 14 LF |
| 3. Replace the missing cover plates over the handholes at the light poles (Photos 15-15). | 11 units |
| 4. Remove all loose and deteriorated concrete and patch the spalls with epoxy concrete at the curb (Photo 15-16 through Photo 15-18). | 10 SF |
| 5. Remove all hanging and loose concrete at the following locations: (Photos 15-19 & 15-20). | 6 SF |
| 6. Install a guiderail system in both leading end corners and extend to the full length of the deck (Photos 15-21 and 15-22). | 1494 LF |
| 7. Remove all loose concrete from the fractured areas, clean the exposed rebar and repair the area with epoxy concrete (Photo 15-23 through Photo 15-25). | 2 units |
| 8. Remove fractured concrete from top coping and rebuild in kind on. (Photos 15-26 & 15-27). | 7 SF |
| | 21 SF |

Note: The following structural members should be inspected on an interim basis at the frequency indicated:

- | | |
|-------------------------------------|-------------|
| A. Superstructure (Through Girders) | (12 months) |
|-------------------------------------|-------------|

StructNum: 1100055

NJDOT SI and A Sheet

Name: LINCOLN AVE (CR 626)/AMTRAK & ASSUNPINK CREEK S.R.: 46.2 SD/FO- 1 -Structurally Defici..

IDENTIFICATION

1 State: 34 New Jersey 8 Struc Num: 1100055
 7 Facility Carried: LINCOLN AVE(CO626) 9 Location: 0.1 MI W OF EAST STATE ST
 5A Rte.(On/Under): Route On Structure 5B Rte. Signing Prefix: 4 -County Hwy
 5C Level of Service: 1 -Mainline 5D Rte. Number: 00626
 5E Directional Suffix: 0- Not Applicable % Responsibility : NA
 2 SHD District: 02- Central 3 County Code: Mercer
 4 Place Code: Trenton, Mercer 11 Mile Post: 0.050 mi
 6 Feature Intersected : AMTRAK & ASSUNPINK CRK
 16 Latitude: 40d 13' 28.01" 17 Longitude: 074d 44' 58.24"
 98 Border Bridge Code: -2 Not Applicable (P)
 99 Border Bridge Number: NA

INSPECTION

91 Frequency: 24 months 90 Inspection Date: 6/13/2013 Next Inspection: 06/13/2015
 92A FC Frequency: 24 months 93A FC Inspection Date: 6/13/2013 Next FC Inspection: 6/13/2015
 92B UW Frequency: NA 93B UW Inspection Date: NA Next UW Inspection: NA
 92C SI Frequency: 12 months 93C SI Date: 6/13/2013 Next SI: 6/13/2014
 Element Frequency: 24 months Element Inspection Date: 06/13/2013 Next Elem. Insp. Due: 06/13/2015

CLASSIFICATION

100 STRAHNET Highway: 0 -Not a STRAHNET hwy 101 Parallel Structure: N -No || bridge exists
 102 Direction of Traffic: 2 -2-way traffic 103 Temporary Structure: ~~4~~ *
 104 Highway System: 0 -Not on NHS 112 NBIS Length: Y - Long Enough
 20 Toll Facility: 3 -On free road 26 Functional Class: 16- Urban Minor Arterial
 37 Historical Significance: 5 -Not eligible for NRHP
 22 Owner: 02 County Hwy Agency
 21 Custodian: 02 County Hwy Agency

STRUCTURE TYPE AND MATERIALS

46 Number of Approach Spans : 0 45 Number of Spans Main Unit: 8
 43A/B Main Span Material/Design:
 3 -Steel 03 -Girder-Floorbeam

CONDITION

58 Deck: 4 -Poor 59 Super: 3 -Serious 60 Sub: 5 -Fair
 62 Culvert: N -Not applicable 61 Channel/Channel Protection: 5 -Bank Prot Eroded

107 Deck Type: 1- Conc.-Cast-in-Place
 108A Wearing Surface: 1 -Monolithic Concrete
 108B Membrane: 0- None
 108C Deck Protection: 0- None

LOAD RATING AND POSTING

65 Inventory Rating Method: 1- LF Load Factor 63 Operating Rating Method: 1 -LF Load Factor
 66 Inventory Rating: HS32.0 64 Operating Rating: HS53.0
 31 Design Load: 0 -Unknown 70 Posting: 5 A/Above Legal Loads
 41 Posting status: A -Open, no restriction

AGE AND SERVICE

27 Year Built: 1931 106 Year Reconstructed: 1965
 42A Type of Service On: 5 -Highway-pedestrian
 42B Type of Service Under: 7 -Railroad-waterway
 28A Lanes on: 2 28B Lanes Under: 0 19 Detour Length: 1.0 mi
 29 ADT: 3,683 109 Truck ADT: 4 % 30 Year of ADT: 2013

APPRAISAL

36A Bridge Rail: 0 -Substandard 36C Approach Rail: 0 -Substandard
 36B Transition: 0 -Substandard 36D Approach Rail Ends: 0 -Substandard
 67 Str. Evaluation: 3 68 Deck Geometry: 5 Above Tolerable
 69 Underclearance, Vertical and Horizontal: 4 -Tolerable
 71 Waterway Adequacy: 9 -Above Desirable 72 Approach Alignment: 5 -Above Tolerable
 113 Scour Critical: 7 -Countermeasures

GEOMETRIC DATA

48 Length Max Span: 84.0 ft 49 Structure Length: 687.0 ft
 50A Curb/Sdwk Width L: 6.5 ft 50B Curb/Sidewalk Width R: 6.5 ft
 Width Curb to Curb 51: 36.0 ft 52 Width Out to Out: 40.0 ft
 32 Approach Roadway Width: 36 ft 33 Median: 0 No median (w/ shoulders)
 Deck Area: 27,480. sq. ft
 34 Skew: 4.00 ° 35 Structure Flared: 0 -No flare
 53 Minimum Vertical Clearance Over Bridge: 9999
 54A Minimum Vertical Underclearance Reference: R -Railroad beneath str.
 54B Minimum Vertical Underclearance: 20.75 ft
 55A Minimum Lateral Underclearance Reference R: R -Railroad beneath str.
 55B Minimum Lateral Underclearance R: 8.30 ft
 56 Minimum Lateral Underclearance L: 0.00 ft

PROPOSED IMPROVEMENTS

94 Bridge Cost: \$14,285,700 75 Type of Work: 31
 95 Roadway Cost: \$1,428,570 76 Length of Improvement: 715 ft
 96 Total Cost: \$20,371,721 114 Future ADT: 4,494
 97 Year of Cost Estimate: 2013 115 Year of Future ADT: 2033

NAVIGATION DATA

38 Navigation Control: 0 0 -Permit Not Required
 39 Vertical Clearance: 0.0 ft 40 Horizontal Clearance: 0.0 ft
 111 Pier Protection: ~~N/A~~ * 116 Lift Bridge Vertical Clearance:

ELEMENT CONDITION STATE DATA

* option not available

Str Unit	Elm/Env	Description	Units	Total Qty	% in 1	Qty. St. 1	% in 2	Qty. St. 2	% in 3	Qty. St. 3	% in 4	Qty. St. 4	% in 5	Qty. St. 5
0	12/3	Bare Concrete Deck	(SF)	27,480	0 %	0	0 %	0	100 %	27,480	0 %	0	0 %	0
0	170/3	Open Gird/Enc Stl	(LF)	1,374	0 %	0	0 %	0	80 %	1,100	20 %	274	0 %	0
0	171/3	Conc Enc St Stringer	(LF)	1,374	0 %	0	95 %	1,300	5 %	74	0 %	0	0 %	0
0	174/3	Fir Beam/Enc Stl	(LF)	4,400	0 %	0	89 %	3,920	5 %	200	6 %	280	0 %	0
0	205/3	R/Conc Column	(EA)	14	64 %	9	21 %	3	14 %	2	0 %	0	0 %	0
0	215/3	R/Conc Abutment	(LF)	143	0 %	0	56 %	80	44 %	63	0 %	0	0 %	0

StructNum: 1100055

NJDOT SI and A Sheet

Str Unit	Elm/Env	Description	Units	Total Qty	% in 1	Qty. St. 1	% in 2	Qty. St. 2	% in 3	Qty. St. 3	% in 4	Qty. St. 4	% in 5	Qty. St. 5
0	234/3	R/Conc Cap	(LF)	259	0 %	0	83 %	215	17 %	44	0 %	0	0 %	0
0	301/3	Pourable Joint Seal	(LF)	117	0 %	0	83 %	97	17 %	20	0 %	0	0 %	0
0	302/3	Compressn Joint Seal	(LF)	324	0 %	0	60 %	194	40 %	130	0 %	0	0 %	0
0	331/3	Conc Bridge Railing	(LF)	1,374	0 %	0	89 %	1,219	11 %	155	0 %	0	0 %	0
0	358/3	Deck Cracking SmFlag	(EA)	1	100 %	1	0 %	0	0 %	0	0 %	0	0 %	0
0	359/3	Soffit Smart Flag	(EA)	1	0 %	0	100 %	1	0 %	0	0 %	0	0 %	0
0	362/3	Traf Impact SmFlag	(EA)	1	100 %	1	0 %	0	0 %	0	0 %	0	0 %	0
0	363/3	Section Loss SmFlag	(EA)	1	0 %	0	0 %	0	100 %	1	0 %	0	0 %	0
0	374/3	Rocker Bearing	(EA)	16	0 %	0	0 %	0	100 %	16	0 %	0	0 %	0
0	375/3	Pinned Bearing	(EA)	16	0 %	0	0 %	0	100 %	16	0 %	0	0 %	0
0	503/3	Curbs/Walks - Conc	(LF)	1,374	47 %	644	51 %	700	2 %	30	0 %	0	0 %	0


NJDOT BRIDGE FIELDS

(V1.2)

Brkey: 1100055

Inspkey

GENERAL

(A) Town: Trenton City
 (AA) Route: 9011
 (AD) Admin: 
 (AE) Alt Agency: 9011 B

STRUCTURE AND APPURTENANCES

(AC) Non-Inv Feature: RW Rdwy ovr RR and wtrwy
 (AF) Alt Struct #: 140.9
 (AG) Rail Type: 09 Solid Metal ThrGirder
 (AH) Rail Height: 4.58
 (AJ) Slope Protection: -1
 (AK) Abutment: 33 Full Height
 (AL) Pier: 46 All Con Col Br
 (AM) Depth of Fill:
 (AP) Fender System:
 (AT) Special Material 1: -
 (AT) Special Material 2: -
 (AU) Add Struct: 1 F
 2 -
 (AV) Widen Stru: Material Design
 1st Widen - -1
 2nd Widen - -1

FUNDING AND COST

(BL) Discretionary: -
 (BM) Fed Job #: STP NBIS760
 (BN) State Job #: 2205569
 (BO) St Maint Cost: -1.00
 (BP) Brdg Demo: N

SCOUR EVALUATION

(FA) FHWA Category: 02
 (FB) Stage 1 Date: 11/1/1992
 (FC) Stage 1 Consultant: L10
 (FD) Prioritization: 3
 (FE) Sufficiency: 62.5
 (FF) Date Stage II: 1/1/1901
 (FG) Stage II Consultant: -1
 (FH) Crit. Element: -1

POSTINGS

(CG) Load Type: -
 (CG) Tons: -1
 (AI) Speed: -1

COUNTER MEASURES

(FI) Recommended: -1
 (FJ) Cost: -1.00
 (FK) Installed: 1 _ 2 _ 3 _
 (FL) Monitoring Req: -

PROJECT PROGRAMMING

(HB) Bridge List ID: 11E1_
 (HC) Consultant: B34
 (HD) 2-Cy Insp Contr: Y
 (HE) Proceed Date: I 5/19/2003
 II 4/25/2005
 (HF) State Proj Mgr: GTR

BRIDGE NOISE BARRIER (HA)

Material 1: -
 2: -
 Height 1: -
 2: -

PAINTING

(GB) Environment: 02
 (GR) Last Painting: 01/1901
 (GA) Painting Req: Y

FENCING

(AQ) Chain Link: . ft
 (FN) Warranted: Y

SIGN STRUCTURES

(GS) Overhead: -1
 (GT) Cantilever: -1
 (GU) Fascia Mounted: -1

TEMPORARY STRUCTURES

(GV) Bridge: N
 (GW) Shoring: N
 (GX) Reports: N
 (GY) Measures: N
 (GZ) Cond Desc: -1

LOAD RATINGS

Type	Inv	Opr
H (BQ)	17	(CA) 29
HS (BR)	32	(CB) 53
3 (BS)	27	(CC) 45
3S2 (BT)	44	(CD) 73
3-3 (BU)	52	(CE) 87
M (BV)	--	(CF) --
Misc (CH1)	L	
(CH2)		

MISCELLANEOUS

(CQ) Bridge List:
 (BK) Overstress %:
 (FV) Route Milepost:
 (FM) Incident Reprtd: -
 (AO) Utilities: 1: G
 2: -
 3: -
 4: -
 (CR) Off-Route Bridge: N
 (BB) Orphan Bridge: N
 (AN) Plan Available: Y
 (FX) Fed Error Uncorr: N
 (FW) Estimated ADT: Y

RAILROAD

(BC) USRA Code: 1401
 (BD 1) Rail On/Under: 0
 (BD2) RRRs intersected: 6
 (BE) Rail Milepost: 56.54

*option not available

StructNum: 1100055

NJDOT SI and A Sheet

NJDOT INSPECTION FIELDS

(V1.2)

<p>GENERAL</p> <p>(CI) Cycle Number: 15 (CJ) Insp Type: S (CK) Inspection Crew: K (CM) Consultant: 112 (CO) Prev Consultant: 112 (CP) Federal Report: -</p>	<p>MISCELLANEOUS</p> <p>(B) Deletion Code: N (BA) Apr Rdwy Cond: 7</p>	<p>REMARKS</p> <p>(BF) Deck: 1: Q 2: N 3: T 4: L 5: E (BG) Super: 1: C 2: A 3: D (BH) Sub: 1: C 2: J 3: A (BI) Channel: M (BJ) Culvert: -</p>	<p>PAINTING</p> <p>(GD) Fascia Beam: 03 (GE) Fascia B. Flange: 01 (GF) Interior Beam: 04 (GH) Interior B. Flange: 04 (GI) Beam Ends: 02 (GJ) Connections: 04 (GK) Bracings: -1 (GL) Bearings: 00 (GM) Substructure: -1 (GN) Above Deck Super: 04 (GO) Railings/Fence: -1 (GP) Remarks 1: FASCIA BEAM=GIRDERS; INTERIOR BEAM=FB (GQ) Remarks 2: EXPOSED STEEL ONLY</p>
<p>INSPECTION DATES</p> <p>(AW) Mech/Electrical: 1/1/1901 (AX) Deck: 1/1/1901 (AY) Special Testing: 1/1/1901 (GC) Paint: 6/13/2013 (AR) Equipment: 1: L 2: - 3: - (AS) Testing: 1: - 2: - 3: -</p>	<p>FATIGUE DETAIL (AZ)</p> <p>Location 1: 04 03 Location 2: -1 -1 Location 3: -1 -1</p>	<p>FENCING</p> <p>(FO) Pedestrian Traffic: 0 (FP) Improvement Cost: \$98 Thousands 103*</p>	
	<p>IN-DEPTH PIN-HANGER</p> <p>(FR) Consultant: -1 (FS) -1 (FT) Combo: N (FQ) FCM/Pin-Hngr Insp Date: 1/1/1901</p>		

ROADWAY DATA

Bridge Id: 1100055
 SRI: 11000626__

(V1.2)

<p>ROADWAY IDENTIFICATION</p> <p>NBI Roadway?: 1 Roadway Name: LINCOLN AVENUE (CR 626) Item 5A: 1 Item 5B: 4 Item 5C: 1 Item 5D: 00626 Item 5E: 0</p>	<p>TRAFFIC AND ACCIDENTS</p> <p>28 Lanes: 2 Num Median: 0 Road Speed: 25 mph ADTclass: 03 29 ADTtotal: 3683 30 Year of ADT: 2013 114 Future ADT: 4494 115 Year of Future ADT: 2033 109 Truck ADTT %: 4 19 Bypass Length: 1.00 mi Detour Speed: 25 mph</p>
<p>HWY NETWORKS AND SERVICE CLASSIFICATION</p> <p>11 Milepost: 0.050 mi 12 Base Hwy Network: 0 20 Toll Facility: 3 13A LRS Inventory Route -1 Subroute No.: -1 26 Functional Class: 16 102 TraffDirection: 2</p>	<p>CLEARANCES</p> <p>10 Vertical Clearance: 99.99 ft 47 Invent Route Horiz Clear: 36.00 ft (DJ) Min Vert Undrcir: 00.00 ft</p>
<p>ALTERNATE CLASSIFICATION</p> <p>100 Strahnet Hwy: 0 Transit Rt: 0 104 NHS System: 0 Emergency: 0 105 Fed. Lands Hwy: 0 110 Truck Hwy Net: 0 School Bus: 0</p>	<p>WIDTHS</p> <p>32 Appr Rdwy Width: 36 ft 51 Brgd Rdwy With Curb-Curb: 36.0 ft</p>

* option not available

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
Name: Lincoln Avenue (CR 626) over Amtrak & Assunpink Creek Insp. Date: 6/13/2013

LOAD RATING SUMMARY SHEET (LRSS)

(Form NJ-BI-101 Created 1/25/2011)

Project Information:

Group: 11E1 Agreement No.: 2011BI818D Contract ID: 11-50816 Agree/Mod No.: 1

Rating Information:

Method: LRFR: Yes LFR: Yes ASR: Yes Other (Specify): _____

Rating Date: 12/23/2011 Computer Software Used: LARS Bridge Version: 5.00.06.03

Load Testing: No Cycle Rating Performed: 14 Design Load: Unknown

Structure Information:

Plans Available? Yes Contract Designation: Unknown

Overlay? No Considered in Rating? N/A Type/Thickness: N/A

Section Losses? No Considered in Rating? No Item 59: 3

For LRFR Use Only:

Dynamic Load Allowance: 1 Condition Factor: 1 System Factor: 1

ADTT (one direction): 74 Resistance Factor: 1 FCM: Yes

Load Rating Engineer (LRE):

Name: Mahmud Rahman Firm: IH Engineers, P.C. Initial: _____

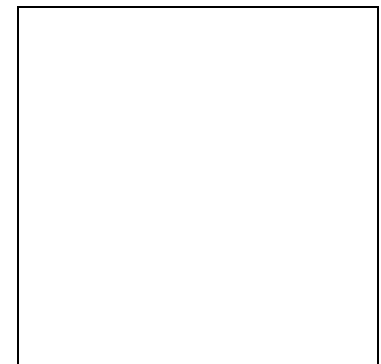
Load Rating Reviewer (LRR) certification as per the NBIS Title 23 CFR Section 650.309(c):

Name: Mushtaq A Nasim, P.E. N.J. P.E. No.: 24GE04799000

Firm: IH Engineers, P. C.

I certify that this rating is an accurate representation of the subject structure, considering all deterioration and/or changes to loading conditions, to the extent determinable by research and visual inspection and testing performed. I am charged with the overall responsibility for bridge capacity evaluation for the above mentioned structure.

Sign Date



Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assunpink Creek Insp. Date: 6/13/2013

LOAD RATING SUMMARY SHEET (LRSS) (cont.)

Rating Comments:

Since the serviceability and moment ratings are lower than shear ratings, hence the constant uniform loading (also called DL2) of 316 lb/ft. Section loss of 1/4" (11/16" remaining) to the girder web, 1/16" (2 3/16" remaining) to the girder bottom flange and 1/8" (1 1/8" remaining) to the floorbeam bottom flange were considered in the rating.

The Load Factor/Working Stress and LRFR ratings, computed in accordance with the FHWA directive dated November 1993, AASHTO Manual for Bridge Evaluation, 2008, as modified by Section 43 of the NJDOT Design Manual, Bridges and Structures, are as follows:

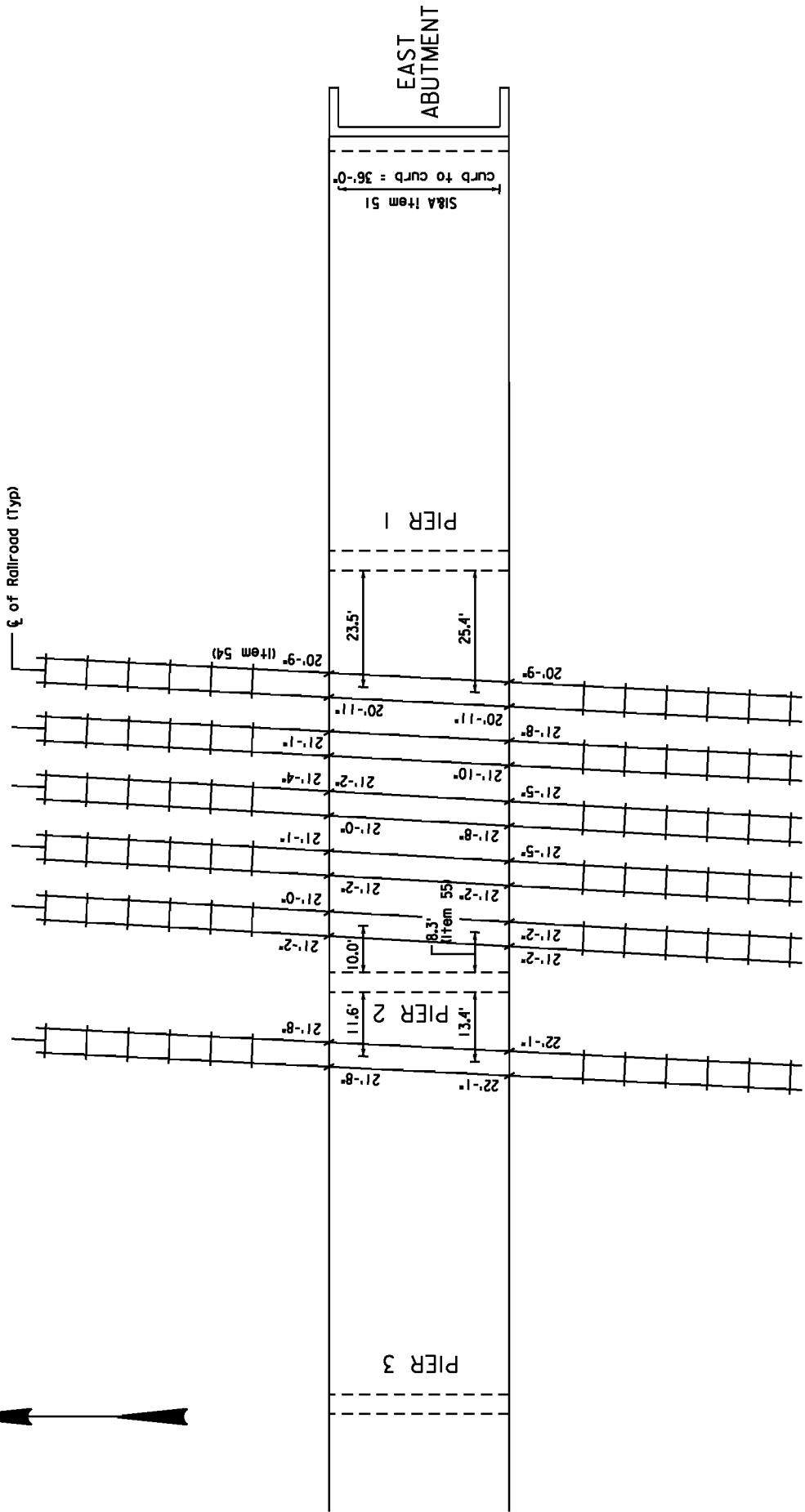
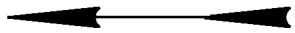
<u>Material</u>	<u>Compressive Strength f_c</u>	<u>Tensile Strength</u>	<u>Yield</u>	<u>Inventory</u>	<u>Operating</u>
Concrete	3,000			950	1,300
Structural Steel	N/A		33,000	20,000	27,000

<u>Member</u>	<u>Truck Type (Tons)</u>		<u>Rating (Tons) / Rating Factor</u>							
			<u>LFR</u>				<u>WSD</u>			
			<u>As-Built</u>		<u>As-Insp.</u>		<u>As-Built</u>		<u>As-Insp.</u>	
		<u>Inv.</u>	<u>Op.</u>	<u>Inv.</u>	<u>Op.</u>	<u>Inv.</u>	<u>Op.</u>	<u>Inv.</u>	<u>Op.</u>	
Interior Floorbeam Spans 2 to 7 Condition Rating 5	H15	(15T)	26	43	17*	29*	----	----	----	----
	HL-93	(NL)	---	---	----	----	----	----	----	----
	HS-20	(36T)	47	78	32*	53*	----	----	----	----
	3	(25T)	40	67	27*	45*	----	----	----	----
	3S2	(40T)	64	108	44*	73*	----	----	----	----
	3-3	(40T)	78	131	53	89	----	----	----	----
	SU4	(27T)	----	----	----	----	----	----	----	----
	SU5	(31T)	----	----	----	----	----	----	----	----
	SU6	(35T)	----	----	----	----	----	----	----	----
	SU7	(39T)	----	----	----	----	----	----	----	----

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assunpink Creek Insp. Date: 6/13/2013

<u>Member</u>		<u>Rating (Tons) / Rating Factor</u>									
		<u>LFR</u>				<u>WSD</u>					
		<u>As-Built</u>		<u>As-Insp.</u>		<u>As-Built</u>		<u>As-Insp.</u>			
<u>Truck Type (Tons)</u>		<u>Inv.</u>	<u>Op.</u>	<u>Inv.</u>	<u>Op.</u>	<u>Inv.</u>	<u>Op.</u>	<u>Inv.</u>	<u>Op.</u>	<u>Inv.</u>	<u>Op.</u>
Girder Condition Rating 3	H15	(15T)	33	56	28	47	----	----	----	----	
	HL-93	(NL)	---	---	---	---	----	----	----	----	
	HS-20	(36T)	45	76	39	65	----	----	----	----	
	3	(25T)	44	73	37	62	----	----	----	----	
	3S2	(40T)	54	91	46	77	----	----	----	----	
	3-3	(40T)	60	100	52*	87*	----	----	----	----	
	SU4	(27T)	----	----	----	----	----	----	----	----	
	SU5	(31T)	----	----	----	----	----	----	----	----	
	SU6	(35T)	----	----	----	----	----	----	----	----	
	SU7	(39T)	----	----	----	----	----	----	----	----	

* Controlling Rating
 (NL) = Notional Load



AMTRAK

MERCER COUNTY DEPARTMENT OF TRANSPORTATION
& INFRASTRUCTURE, DIVISION OF ENGINEERING

STRUCTURE NO. 1100-055

MERCER COUNTY STRUCTURE NO. 140.9
LINCOLN AVENUE (CR 626) OVER AMTRAK AND
ASSUNPINK CREEK ROUTE 6016; USRA LINE
CODE 1401 & R.R.M.P. 56.38
CITY OF TRENTON MERCER COUNTY

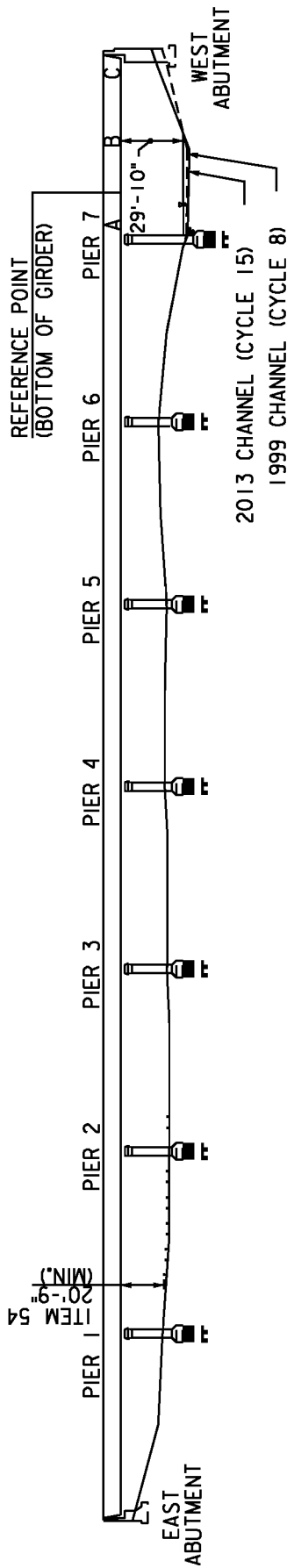
CLEARANCE

SCALE: N.T.S.

CYCLE NO. 15

IH ENGINEERS, P.C.

DATE: 6/13/13



UPSTREAM (NORTH) CROSS SECTION

N.T.S.

NOTES:

1. THE CLEAR DIMENSIONS ARE REFERENCED FROM THE BOTTOM OF GIRDER AT NORTH FASCIA (AT POINT B) TO STREAMBED.
2. THE WATER DEPTH DIMENSIONS ARE MEASURED FROM THE WATER SURFACE (AT THE TIME OF INSPECTION) TO THE STREAMBED.
3. AS BUILT PLANS ARE MISSING THE SUPERSTRUCTURE AND FOOTING ELEVATIONS.

LEGEND

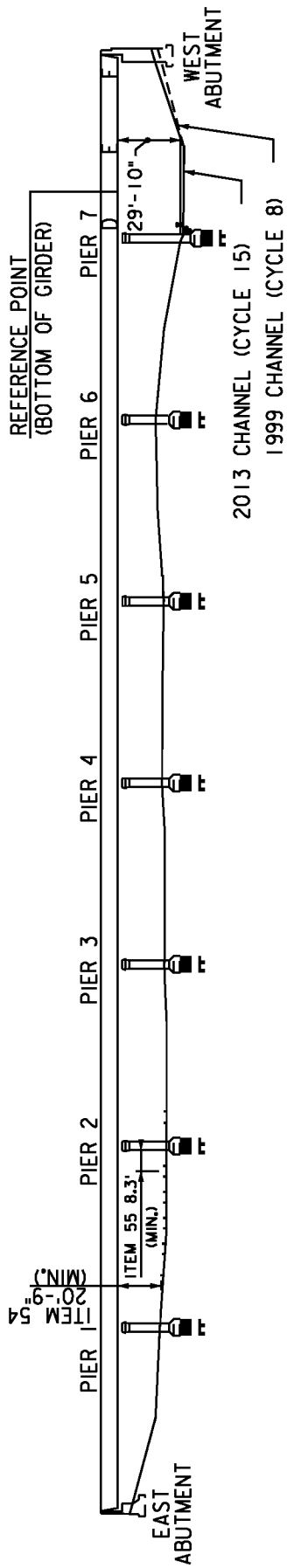
- — BASELINE SOUNDING: 1999 (CYCLE 8)
- — UPDATED SOUNDING: 2013 (CYCLE 15)

BASELINE		CYCLE 15	
1999		JUNE 2013	
POINT	LOCATION	CLEAR DIMENSION	WATER DEPTH
A	W OF PIER 7	31'-5"	2'-1"
B	MIDSPAN	31'-11"	3'-0"
C	W ABUTMENT	32'-10"	0'-0"
		25'-5"	17'-0"

MERCER COUNTY DEPARTMENT OF TRANSPORTATION & INFRASTRUCTURE, DIVISION OF ENGINEERING

STRUCTURE NO. 1100-055
 MERCER COUNTY STRUCTURE NO. 140.9
 LINCOLN AVENUE (CR 626) OVER AMTRAK AND ASSUNPINK CREEK ROUTE 6016; USRA LINE
 CODE 1401 & R.R.M.P.56.38
 CITY OF TRENTON MERCER COUNTY

IH ENGINEERS, P.C. CYCLE NO. 15
 DATE: 6/13/13



DOWNSTREAM (SOUTH) CROSS SECTION

N.T.S.

NOTES:

1. THE CLEAR DIMENSIONS ARE REFERENCED FROM THE BOTTOM OF GIRDER AT SOUTH FASCIA (AT POINT E) TO STREAMBED.
2. THE WATER DEPTH DIMENSIONS ARE MEASURED FROM THE WATER SURFACE (AT THE TIME OF INSPECTION) TO THE STREAMBED.
3. AS BUILT PLANS ARE MISSING THE SUPERSTRUCTURE AND FOOTING ELEVATIONS.

LEGEND

- BASELINE SOUNDING: 1999 (CYCLE 8)
- UPDATED SOUNDING: 2013 (CYCLE 15)

POINT	LOCATION	CYCLE 15	
		BASELINE	JUNE 2013
D	W OF PIER 7	31'-5"	31'-2"
E	MIDSPAN	31'-7"	31'-6"
F	W ABUTMENT	25'-2"	17'-10"
			0'-0"

MERCER COUNTY DEPARTMENT OF TRANSPORTATION & INFRASTRUCTURE, DIVISION OF ENGINEERING

STRUCTURE NO. 1100-055
 MERCER COUNTY STRUCTURE NO. 140.9
 LINCOLN AVENUE (CR 626) OVER AMTRAK AND ASSUNPINK CREEK ROUTE 6016; USRA LINE
 CODE 1401 & R.R.M.P. 56.38
 CITY OF TRENTON MERCER COUNTY

IH ENGINEERS, P.C.

CYCLE NO. 15

DATE: 6/13/13

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assunpink Creek Insp. Date: 6/13/2013



Photo No: 15-01

Location: North elevation, looking south.

Description: General view.



Photo No: 15-02

Location: South elevation, looking north.

Description: General view.



Photo No: 15-03

Location: West approach roadway, looking east.

Description: General view.



Photo No: 15-04

Location: East approach roadway, looking west.

Description: General view. Work Done: New bituminous concrete overlay.
 Note the spalled and fractured sections of the north and south curbs.



Photo No: 15-05

Location:	Upstream channel, looking north.
Description:	General view. Note the heavy bank scour with undermined tree roots along the east embankment.



Photo No: 15-06

Location:	Downstream channel, looking south.
Description:	General view. Note the heavy bank scour with undermined tree roots along the west embankment. Also note the concrete debris restricting the flow.

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assunpink Creek Insp. Date: 6/13/2013



Photo No: 15-07

Location: Underside of deck and superstructure, Span 4, looking east.

Description: General view.



Photo No: 15-08

Location: Span 1 (from east), north sidewalk, looking southeast.

Description: The junction box cover is missing (7' W x 1.5' L). Most of the box is corroded through creating a (1 SF) through hole ([Priority E Repair letter 1100055_20130613cy15_prE_01.pdf](#)).
 Work done: Two new sidewalk panels have been constructed.



Photo No: 15-09

Location: Span 1 (from east), north sidewalk, looking south.

Description: The junction box cover is missing (7" W x 1.5' L). Most of the box is corroded through creating a (1 SF) through hole ([Priority E Repair letter 1100055_20130613cy15_prE_01.pdf](#)).



Photo No: 15-10

Location: North girder in Span 3 (from east), looking south.

Description: Hanging concrete encasement along the bottom flange over Track 5. ([Priority E Repair letter 1100055_20130613cy15_prE_01.pdf](#)). Note the areas of checkerboard cracking with efflorescence.



Photo No: 15-11

Location:	North girder in Span 2 (from east), looking northeast.
Description:	Loose concrete encasement along the bottom flange over the east outside track (Track 0). (Priority E Repair letter 1100055_20130613cy15_prE_01.pdf) .



Photo No: 15-12

Location:	Floorbeam F6 near north girder in Span 2 (from east), looking north.
Description:	Cracked and loose concrete encasement along the bottom flange over Track 2. (Priority E Repair letter 1100055_20130613cy15_prE_01.pdf) .



Photo No: 15-13

Location:	North girder in Span 2 (from east), looking northeast.
Description:	Loose concrete encasement along the bottom flange over the east outside track (Track 0). (Priority E Repair letter 1100055_20130613cy15_prE_01.pdf) .



Photo No: 15-14

Location:	South girder in Span 3 (from east), looking southeast.
Description:	Hanging concrete encasement along the bottom flange over Track 5. (Priority E Repair letter 1100055_20130613cy15_prE_01.pdf) . Note the areas of spalling in the sidewalk stringer brackets with exposed moderately corroded steel.



Photo No: 15-15

Location: Light pole on top of north through girder, Span 3(from east) (typical at 11 of 16 light poles throughout structure), looking east.

Description: Missing cover plate with exposed electrical wires. Note the pedestrian traffic ([Priority 1 Repair letter 1100055_20130613cy15_pr1_01.pdf](#)).



Photo No: 15-16

Location: Span 6(from east), north curb between 3rd and 4th knee brace from east, looking northeast.

Description: Severely spalled curb with exposed broken rebar. ([Priority 1 Repair letter 1100055_20130613cy15_pr1_01.pdf](#)).



Photo No: 15-17

Location:	Span 1(from east), south curb between 2 nd and 3 rd knee brace from east, looking southeast.
Description:	Severely spalled curb with exposed rebar. (Priority 1 Repair letter 1100055_20130613cy15_pr1_01.pdf).



Photo No: 15-18

Location:	Span 5(from east), north curb at Pier 4, looking northwest.
Description:	Spalled curb with exposed rebar. (Priority 1 Repair letter 1100055_20130613cy15_pr1_01.pdf).



Photo No: 15-19

Location: South fascia girder, Span 3 (from east), looking south.

Description: Concrete encasement is hanging for a length of 4 LF over the railroad access road. ([Priority 1 Repair letter 1100055_20130613cy15_pr1_01.pdf](#)).



Photo No: 15-20

Location: North fascia girder, Span 3 (from east), looking north.

Description: Concrete encasement is hanging for a length of 2 LF over the railroad access road. ([Priority 1 Repair letter 1100055_20130613cy15_pr1_01.pdf](#)).

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assunpink Creek Insp. Date: 6/13/2013



Photo No: 15-21

Location: East end of north through girder, looking northwest.

Description: Blunt concrete end pylon and exposed knee braces. ([Priority 1 Repair letter 1100055_20130613cy15_pr1_01.pdf](#)). Note the severe scaling and delaminated concrete on end pylon.



Photo No: 15-22

Location: West approach, south side, looking southeast.

Description: Blunt end of through girder and unprotected power cabinet. ([Priority 1 Repair letter 1100055_20130613cy15_pr1_01.pdf](#)). Work Done: New electrical conduit box has been installed.



Photo No: 15-23

Location:	Top of deck, Span 3(from east), right wheel path of westbound lane, looking east.
Description:	Area of fractured concrete (4 SF) with loose concrete and two exposed rebar. (Priority 1 Repair letter 1100055_20130613cy15_pr1_01.pdf).



Photo No: 15-24

Location:	Top of deck, Span 3(from east), right wheel path of westbound lane, looking east.
Description:	Area of fractured concrete (6 SF) with loose concrete and one exposed rebar. (Priority 1 Repair letter 1100055_20130613cy15_pr1_01.pdf).



Photo No: 15-25

Location:	Top of deck, Span 3(from east), right wheel path of westbound lane, looking east.
Description:	Area of fractured concrete (4 SF) with loose concrete and two exposed rebar. (Priority 1 Repair letter 1100055_20130613cy15_pr1_01.pdf).



Photo No: 15-26

Location:	Southwest wingwall, looking west.
Description:	Fractured, shifted and detached (14' L x 1.5' H) top coping with a 10" displacement. (Priority 1 Repair letter 1100055_20130613cy15_pr1_01.pdf).



Photo No: 15-27

Location:	Southwest wingwall, looking up and south (close-up view of Previous photo).
Description:	Fractured top coping with a 10" displacement. (Priority 1 Repair letter 1100055_20130613cy15_pr1_01.pdf).



Photo No: 15-28

Location:	Span 3(from east), north sidewalk, looking east.
Description:	Severe scaling with cracked and deteriorated concrete.

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assunpink Creek Insp. Date: 6/13/2013



Photo No: 15-29

Location: Span 1 (from east), south parapet, looking south.

Description: Spalls with exposed rebar.



Photo No: 15-30

Location: Pier 5 (from east) deck joint, looking south.

Description: Note the settled and deteriorated seal throughout.



Photo No: 15-31

Location: Span 7(from east), FB11, looking west.

Description: Large spall (3'x3'x3') with exposed rusted rebar in the underside of deck at the northwest corner near the scupper.



Photo No: 15-32

Location: South girder, Spans 6 and 7(from east) bearings at Pier 6, looking north.

Description: Severe rust on the bearing components. Typical severe rusting in all bearings with up to 100% section loss in anchor bolts and nuts. Note the debris on the bridge seat.

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assunpink Creek Insp. Date: 6/13/2013



Photo No: 15-33

Location:	Span 7 (from east), underside of south sidewalk, looking east.
Description:	Three broken/disconnected conduits.



Photo No: 15-34

Location:	Span 7 (from east), north girder, looking northeast.
Description:	Laminar rust (approximately 7" high) along the curb and sidewalk with section loss of up to 1/4" (11/16" remaining).

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assunpink Creek Insp. Date: 6/13/2013



Photo No: 15-35

Location: Span 3 (from east), north knee brace 2 from east, looking west.

Description: 1" diameter through hole at curb elevation.



Photo No: 15-36

Location: East abutment breastwall, looking east.

Description: Wide full height vertical crack at center point extending into backwall. Note the heavy debris accumulation on the bridge seat.



Photo No: 15-37

Location:	Span 3, Pier 3 from west, bearing for south Girder G1, looking south.
Description:	Bearing is in expansion position of 6 degrees at 70 degrees F.



Photo No: 15-38

Location:	Pier 5(from east) north column pier cap, looking southwest.
Description:	Incipient spall at the pier cap (partially hidden due to vegetation growth).

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assunpink Creek Insp. Date: 6/13/2013



Photo No: 15-39

Location: Pier 5 (from east), south column, looking north.

Description: Large spall and delaminated concrete with efflorescence.



Photo No: 15-40

Location: South sidewalk in Span 1 near Pier 1 joint, looking northwest.

Description: Work Done: The through hole in the sidewalk has been patched with concrete.



Photo No: 15-41

Location: West face of Pier 6 crashwall, looking east.

Description: Spall 2' x 1' x 1" deep with exposed rebar near the south column.



Photo No: 15-42

Location: East abutment embankment, looking west.

Description: Moderate surface erosion.

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assunpink Creek Insp. Date: 6/13/2013



Photo No: 15-43

Location: Pier 5, south end, looking west.

Description: General view of large ladder used for inspection



Photo No: 15-44

Location: Span 7, looking northwest.

Description: General view of bucket van used for inspection

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assumpink Creek Insp. Date: 6/13/2013

MERCER COUNTY
 BRIDGE EVALUATION CHECK LIST
FIELD NOTES

Inspectors: Nishit Patel Name: Lincoln Avenue (CR 626) over Amtrak and Assumpink Creek
 Crew Chief: Tom Weiler
 Temperature: 70°F Weather: Overcast
 Special Equipment Used: Large Ladder and Bucket van (Photos 15-43 and 15-44)

RATINGS:

- N Not applicable.
- 9 Excellent Condition.
- 8 Very Good Condition – no problems noted.
- 7 Good Condition – some minor problems.
- 6 Satisfactory Condition – some minor deterioration of structural elements.
- 5 Fair Condition – minor section loss to primary structural elements.
- 4 Poor Condition – advanced section loss to primary structural elements.
- 3 Serious Condition – seriously deteriorated primary structural elements.**
- 2 Critical Condition – facility should be closed until repairs are made.
- 1 Imminent Failure Condition – facility closed. Study of repairs is feasible.
- 0 Failed Condition – facility is closed and beyond repair.

GPS COORDINATES			
@ Southwest corner			
N	40°	13' 28.01"	Lat.
W	74°	44' 58.24"	Long.

GENERAL

Type of Bridge: Eight Span, Simply Supported, Riveted Steel Through Girder with Floorbeams

Year Built: 1931 Year of Widening / Major Repairs: 1965

No. of Lanes: On 2 Under Railroad (Amtrak) and Waterway

Vertical Clearances: Over Deck: Unlimited

Minimum Under: 20'-9" (east rail of the eastern track to the bottom flange of the through girder in Span 2)

Maximum Under (Item 10): N/A

Horizontal Underclearance: Total Horizontal Clearance: 36.0' curb to curb (Top)
N/A railroad/waterway (Bottom)

Right 8.3' (from east face of Pier 2 to the centerline of the west track in span 2 under the south fascia)

Left N/A

Overall Physical Condition of Structure: Serious due to the condition of the superstructure (Item 59 = 3).

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assumpink Creek Insp. Date: 6/13/2013

DECK

SI&A Item 58 Condition Rating: 4

SPAN # 1 (East)

RATING	COMPONENT	REMARKS
4	Top of Deck (Concrete)	Concrete repaired areas 5% and bituminous concrete patched areas 5% throughout the top of deck. Large areas of delaminated and spalled concrete with bituminous concrete patches in both travel lanes (80 S.F. total). Light to moderate scaling throughout. Fine to medium diagonal cracks at northeast and northwest corners. Random fine cracks and small to large concrete patches throughout the deck; 15" wide x 40' deteriorated/cracked concrete patch at centerline of the deck (Similar to Photo 15-24). (Estimated 45% of the deck in span 1 is deteriorated).
5	Underside of Deck (Concrete)	Heavy efflorescence along cold joint at centerline (Similar to Photo 15-10).
N	Median	None
5	Curbs (Concrete)	South: Severe scaling with exposed rebar at east; delaminated and spalled near the east end (18 LF) (Photo 15-17 and the Priority 1 Repair letter 1100055_20130613cy15_pr1_01.pdf). North: Previously reconstructed for full length.
5	Sidewalks (Concrete)	South: Severe scaling with deteriorated concrete and bituminous concrete patches (50 SF); moderate debris along the girder and parapet (Similar to Photo 15-28). North: Missing cover to utility trench at north girder at east end (7" x 1'-6").
5	Parapets (Concrete)	South: Large spalls (10 SF) with exposed moderately rusted rebar throughout (Photo 15-29); 1" lateral misalignment in Span 2 parapet. North: Large spalls with exposed rebar thru-out (20 SF)
5	End Pylons (Concrete)	At ends of the girders. South: Severe scaling and delaminated concrete (30 SF). North: Severe scaling and delaminated concrete (30 SF), settled, and leaning to the west (Photo 15-21 and Priority 1 Repair letter 1100055_20130613cy15_pr1_01.pdf).
5	Deck Joints / Filler Material (Compression Seal in roadway and pourable in sidewalk)	Pier 1: Bituminous concrete patched. Severely deteriorated and torn in north ³ / ₄ . Abutment: 1 1/2" joint opening. Deteriorated and torn (10 LF) (Similar to Photo 15-30).
7	Drains and Scuppers	At northeast and southeast corners; clean
5	Light Stands (One at SW, NE, SE corners)	3 light stands. At Northeast and Southwest Corners: Missing hand hole cover (Similar to Photo 15-15 and the Priority 1 Repair letter 1100055_20130613cy15_pr1_01.pdf).
5	Utilities	20" x 8" steel conduit along the north side of the north girder above the sidewalk. 10- 4" steel conduits (abandoned) below north and south sidewalks with several broken/disconnected sections (Similar to Photo 15-33)
N	Others	None

Additional Remarks:

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assunpink Creek Insp. Date: 6/13/2013

DECK

SI&A Item 58 Condition Rating: 4

SPAN # 2

RATING	COMPONENT	REMARKS
4	Top of Deck (Concrete)	1' to 2' wide spall partially patched with bituminous concrete and with deteriorated concrete patches (50 SF) and concrete patch with fine cracks at centerline of the deck. Random fine cracks throughout. Random small pop-outs and delaminated concrete (8 SF) mostly in westbound lane. 2% spalled, 5% bituminous concrete patched and 3% concrete patched (Similar to Photo 15-24). (Estimated 35% of deck in span 2 is delaminated, spalled, or patched).
5	Underside of Deck (Concrete)	Heavy efflorescence along the cold joint and fine to medium longitudinal cracks along the centerline (Photo 15-10).
N	Median	None
6	Curbs (Concrete)	South: Fine to medium longitudinal cracks between knee braces kb4 thru kb6. North: Small spalls with a gap (full length x up to 1/2") along the base. Delaminated concrete (4 LF) at east end. Fine to medium longitudinal cracks between knee braces kb 8 to kb 10 (Similar to Photo 15-16 and the Priority 1 Repair letter 1100055 20130613cy15_pr1_01.pdf).
6	Sidewalks (Concrete)	Severe scaling with deteriorated concrete and bituminous concrete patches (50 SF); moderate debris along the girder and parapet (similar to Photo 15-28).
5	Parapets (Concrete)	South: Large spalls and incipient spalls (20 SF) to the north face and slight (1 5/8") misalignment at the top / pier 2 deck joint (Span 2 toward north). Severe scaling throughout. North: Small and large spalls (25 SF) throughout the south face with exposed rusted rebars. Medium scaling throughout (similar to Photo 15-29).
N	Railings/ Fencing	None
5	Deck Joints / Filler Material (Compression Seal in roadway and pourable in sidewalk)	Pier 2: Deteriorated, missing (20 LF), settled, and filled with gravel throughout (similar to Photo 15-30).
7	Drains and Scuppers	No significant defects.
5	Light Stands (One at NE, SW corners)	2 light stands with missing hand hole cover and 1 light (SW) is not functioning. (Refer to similar Photo 15-15 and the Priority 1 Repair letter 1100055 20130613cy15_pr1_01.pdf).
5	Utilities	20" x 8" welded steel conduit along the north side of the north girder above the sidewalk. 10- 4" steel conduits (abandoned) below north and south sidewalks with several broken/disconnected sections (Similar to Photo 15-33)
N	Others	None

Additional Remarks:

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assumpink Creek Insp. Date: 6/13/2013

DECK

SI&A Item 58 Condition Rating: 4

SPAN # 3

RATING	COMPONENT	REMARKS
4	Top of Deck (Reinforced Concrete)	Eastbound Lane: Delaminated concrete (4 SF) near east end, large spall (1 SF) and 4" to 8" wide spalling with deteriorated bituminous concrete patches at west end (10 S.F.); delaminated concrete and bituminous concrete patched spalls along the centerline. Full length x 1' wide. Westbound Lane: 2 large concrete patched spalls with fine to wide cracks and bituminous concrete patched spalls (200 SF), delaminated concrete (10 SF) Area of map cracking (20 SF) and several small to large concrete and bituminous concrete patched spalls (100 SF) throughout (Photos 15-24 and 15-25 and Priority 1 Repair letter 1100055_20130613cy15_pr1_01.pdf). WB lane near midspan has an area (3' x 1') of fractured concrete with loose concrete and two exposed rebar (Photo 15-23 and Priority 1 Repair letter 1100055_20130613cy15_pr1_01.pdf). Area 2' x 1' of fractured concrete with loose concrete and one exposed rebar 3' west of previous mentioned fractured area. (Estimated 50% of the deck in Span 3 is deteriorated)
5	Underside of Deck (Concrete)	Heavy efflorescence along the cold joint and fine to medium longitudinal cracks at the centerline (Photo 15-10); incipient spalling or moderate scaling along the north side of the deck between floorbeams 5 thru 10 (20 SF).
N	Median	None
6	Curbs (Concrete)	North: Gaps (up to 1") between the deck and the curb. Medium longitudinal cracks between knee braces 3 to 8 (Similar to Photo 15-16 and Priority 1 Repair letter 1100055_20130613cy15_pr1_01.pdf).
6	Sidewalks (Concrete)	Severe scaling with deteriorated concrete and bituminous concrete patches (10 SF) (Photo 15-28); moderate debris along the girder and parapet.
6	Parapets (Concrete)	Both: Moderate scaling with spalls and incipient spalls with exposed moderately rusted rebar (20 S.F. at north and 30 SF at south). South: Severe scaling along top (10 LF) at east end (Similar to Photo 15-29).
N	Railings/ Fencing	None
5	Deck Joints / Filler Material (Compression Seal in roadway and pourable in sidewalk)	Pier 3: 80% is patched with bituminous concrete other 20% is torn (Similar to Photo 15-30).
7	Drains and Scuppers	No significant defects.
5	Light Stands (One at north midspan and SE)	1 light at north side with missing hand hole cover and both lights are not functioning (Photo 15-15 and Priority 1 Repair letter 1100055_20130613cy15_pr1_01.pdf).
5	Utilities	20" x 8" welded steel conduit along the north side of the north girder above the sidewalk. 10- 4" steel conduits (abandoned) below north and south sidewalks with several broken/disconnected sections (Similar to Photo 15-33)
N	Others	None

Additional Remarks:

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assumpink Creek Insp. Date: 6/13/2013

DECK

SI&A Item 58 Condition Rating: 4

SPAN # 4

RATING	COMPONENT	REMARKS
4	Top of Deck (Reinforced Concrete)	Delaminated and spalled area (1' wide x full length; 30 S.F.) with deteriorated concrete and bituminous concrete patches at both ends along the centerline. Westbound Lane: Large concrete patch with fine random cracks and large spall / delaminated concrete (10 S.F.) with partial bituminous concrete patch at east end; several spalls and delaminated concrete (10 S.F.) near east end; large bituminous concrete patched spalls (8 S.F.), 1 delaminated concrete patch and 1 concrete patch with fine random cracks at west end along centerline; concrete patch near east end (6 SF) (Similar to Photo 15-24). (Estimated 40% of the deck in span 4 is deteriorated).
5	Underside of Deck (Concrete)	Light to moderate efflorescence and random fine cracks (Similar to Photo 15-10). Leakage along the centerline joint and an area of unsound concrete (8 SF) near the drainage inlet.
N	Median	None
6	Curbs (Concrete)	North: Area of severe scaling (3 SF) at west end; medium to wide longitudinal cracks at top (similar to Photo 15-16 and Priority 1 Repair letter 1100055_20130613cy15_pr1_01.pdf).
6	Sidewalks (Concrete)	South: Severe scaling with deteriorated concrete and bituminous concrete patches (30 SF); moderate debris along the girder and parapet (similar to Photo 15-28). North: Entire sidewalk previously patched w/ concrete. West half has medium transverse cracks (30 LF) and moderate scaling (20 SF).
5	Parapets (Concrete)	South: Missing section (7'-9" long x 4'-11") with a steel gate section between concrete parapets; random small and large spalls and incipient spalls (30 SF) with some exposed rusted rebar; severe scaling and delaminated concrete (20 SF) at 1 st and 3 rd pylons from west ends (Similar to Photo 15-29). North: Small to large spalls and incipient spalls (10 SF). Lateral misalignment up to 2½" at top adjacent to pier 4 deck joint (Span 4 toward north).
N	Railings/Fencing	None
5	Deck Joints / Filler Material (Compression)	Pier 4: 2" joint opening; settled, loose and deteriorated throughout (Similar to Photo 15-30).
7	Drains and Scuppers	No significant defects.
5	Light Stands (One at north midspan and SE)	North: Missing hand hole cover. South: Missing hand hole cover; both lights are not functioning; 1 light with broken lens (similar to Photo 15-15 and Priority 1 Repair letter 1100055_20130613cy15_pr1_01.pdf).
5	Utilities	20" x 8" welded steel conduit along the north side of the north girder above the sidewalk. 10- 4" steel conduits (abandoned) below north and south sidewalks with several broken/disconnected sections (Similar to Photo 15-33)
N	Others	None

Additional Remarks:

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assumpink Creek Insp. Date: 6/13/2013

DECK

SI&A Item 58 Condition Rating: 4

SPAN # 5

RATING	COMPONENT	REMARKS
5	Top of Deck (Concrete)	Delaminated area (1' wide x full length) with 1 concrete patch and several bituminous concrete patches along the centerline; deteriorated bituminous concrete patch (1 SF) at northwest corner. 1% is concrete patched and 3% is bituminous concrete patched (Similar to Photo 15-24). (Estimated 35% of the deck in span 5 is delaminated, spalled, or patched).
5	Underside of Deck (Concrete)	Heavy efflorescence along the cold joint at the centerline (similar to Photo 15-10). Smoke stains.
N	Median	None
6	Curbs (Concrete)	North: Area of severe scaling at east end w/ one exposed rebar (Photo 15-18 and Priority 1 Repair letter 1100055_20130613cy15_pr1_01.pdf).
6	Sidewalks (Concrete)	South: Severe scaling with deteriorated concrete and bituminous concrete patches (30 SF); moderate debris along the girder and parapet (Similar to Photo 15-28). North: Entire sidewalk previously patched w/ concrete. West half has medium transverse cracks (30 LF) and moderate scaling (20 SF).
5	Parapets (Concrete)	South: Missing section (7'-9" long x 4'-11") with a steel gate section between concrete parapets; random small and large spalls and incipient spalls (30 SF) with some exposed rusted rebars; severe scaling and delaminated concrete (20 SF) at 1 st and 3 rd pylons from west ends (Similar to Photo 15-29). North: Small to large spalls and incipient spalls (10 SF). Lateral misalignment of up to 2½" at top adjacent to the pier 4 deck joint (Span 4 toward north).
N	Railings/Fencing	None
5	Deck Joints / Filler Material (Compression Seal in roadway and pourable in sidewalk)	Pier 5: 2½" joint opening; settled and deteriorated throughout and filled with gravel at both ends (Photo 15-30).
7	Drains and Scuppers	No significant defects.
5	Light Stands (One at north midspan and SE)	2 light stands. North: Missing hand hole cover. South: Missing hand hole cover; both lights are not functioning; 1 light with broken lens (Similar to Photo 15-15 and the Priority 1 Repair letter 1100055_20130613cy15_pr1_01.pdf).
5	Utilities	20" x 8" welded steel conduit along the north side of the north girder above the sidewalk. 10- 4" steel conduits (abandoned) below north and south sidewalks with several broken/disconnected sections (Similar to Photo 15-33).
N	Others	None

Additional Remarks:

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assumpink Creek Insp. Date: 6/13/2013

DECK

SI&A Item 58 Condition Rating: 4

SPAN # 6

RATING	COMPONENT	REMARKS
5	Top of Deck (Concrete)	1½' wide spall near east end; delaminated concrete with bituminous concrete patches (20 S.F.) and up to 18" wide x 35' concrete patches with fine cracks at centerline. Westbound Lane: Large spalls with bituminous concrete patches, spalls and deteriorated concrete patch (40 SF); several sound concrete patches and fine longitudinal crack. Eastbound Lane: Bituminous concrete patch (2 SF) and delaminated concrete areas (20 SF) (Similar to Photo 15-24). (Estimated 45% of the deck in Span 6 is deteriorated).
5	Underside of Deck (Concrete)	Heavy efflorescence along the cold joint at the centerline. 3' x 2' x 3" deep spall with exposed rusted rebar near deck drain at southwest corner (FB 11 and G1) (similar to Photos 15-10 and 15-31).
N	Median	None
5	Curbs (Concrete)	North: A few fine to medium longitudinal cracks (20 LF section) near the east end. Severe scaling and delaminated concrete in east third with exposed rusted rebar (20 SF) (Photo 15-16 and Priority 1 Repair letter 1100055_20130613cy15_pr1_01.pdf).
6	Sidewalks (Concrete)	Severe scaling with deteriorated concrete and bituminous concrete patches (20 SF); moderate debris along the girder and parapet (Similar to Photo 15-28).
5	Parapets (Concrete)	North: Small to large shallow spalls (20 SF) with exposed rebar South: Small to large shallow spalls (18 SF) with exposed rebar (Similar to Photo 15-29).
N	Railings/Fencing	None
5	Deck Joints / Filler Material (Compression Seal in roadway and pourable in sidewalk)	Pier 6: 2" joint opening; a few minor tears, and some settlement at the shoulders (Similar to Photo 15-30).
7	Drains and Scuppers	No significant defects.
6	Light Stands (One at south midspan)	South: 1 light standard; missing hand hole cover and not functioning (Similar to Photo 15-15 and the Priority 1 Repair letter 1100055_20130613cy15_pr1_01.pdf).
5	Utilities	20" x 8" welded steel conduit along the north side of the north girder above the sidewalk. 10- 4" steel conduits (abandoned) below north and south sidewalks with several broken/disconnected sections (Similar to Photo 15-33).
N	Others	None

Additional Remarks:

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assumpink Creek Insp. Date: 6/13/2013

DECK

SI&A Item 58 Condition Rating: 4

SPAN # 7

RATING	COMPONENT	REMARKS
4	Top of Deck (Concrete)	At Centerline: Large spall (6 SF) at the centerline of the roadway with a bituminous concrete patch at west end; deteriorated and heavily cracked concrete patch (30 SF); several large spalls (4 SF) with concrete and bituminous concrete patches. Westbound Lane: Delaminated concrete, spall, cracked concrete patch and bituminous concrete patches (15 SF) throughout (Similar to Photo 15-24). Eastbound Lane: 20% area is with concrete patches; large spalls (2 SF) w/ exposed rebar near midspan, incipient spalls, bituminous concrete patch, and deteriorated concrete patch (20 S.F) throughout; edge spalling along the pier 7 deck joint. (Estimated 45% of the deck in span 7 is delaminated, spalled, or patched).
5	Underside of Deck (Concrete)	Heavy efflorescence along the cold joint at the centerline. Large spall (3'x3'x3" deep) with exposed rusted rebar in the northwest corner (Photo 15-31)
N	Median	None
6	Curbs (Concrete)	North: Medium to wide longitudinal cracks in east 1/3 rd (Similar to Photo 15-16 and Priority 1 Repair letter 1100055_20130613cy15_pr1_01.pdf). South: Medium longitudinal cracks near center span.
6	Sidewalks (Concrete)	Severe scaling with deteriorated concrete and bituminous concrete patches (350 SF); moderate debris along the girder and parapet (Similar to Photo 15-28).
5	Parapets (Concrete)	North: Several small to large spalls (5 SF) with exposed rebar. South: Several small to large spalls (10 SF) with exposed rebar (Similar to Photo 15-29).
N	Railings/Fencing	None
5	Deck Joints / Filler Material (Compression Seal in roadway and pourable in sidewalk)	Pier 7: 2½" joint opening; settled, cracked, and filled in with debris (similar to Photo 15-30).
7	Drains and Scuppers	No significant defects.
5	Light Stands (One at NE, SW)	2 light stands North: 1 light is not functioning. South: Missing hand hole cover; not functioning (Similar to Photo 15-15 and Priority 1 Repair letter 1100055_20130613cy15_pr1_01.pdf).
5	Utilities	20" x 8" welded steel conduit along the north side of the north girder above the sidewalk. 10- 4" steel conduits (abandoned) below north and south sidewalks with several broken/disconnected sections (Photo 15-33)
N	Others	None

Additional Remarks:

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assumpink Creek Insp. Date: 6/13/2013

DECK

SI&A Item 58 Condition Rating: 4

SPAN # 8

RATING	COMPONENT	REMARKS
4	Top of Deck (Concrete)	Delaminated concrete and spalls with bituminous concrete patch (30 SF); concrete patch from west end to $\frac{3}{4}$ length with fine to medium random cracks at centerline. Eastbound Lane: Fine diagonal crack at southwest corner and large spall (2 SF) with bituminous concrete patch at abutment deck joint (Similar to Photo 15-24). Westbound Lane: Large concrete patch with medium cracks and large spall (4 SF) with bituminous concrete patch at east end; bituminous concrete patched spalls and delaminated concrete (40 SF) and several concrete patches throughout. (Estimated 50% of the deck in Span 8 is deteriorated).
5	Underside of Deck (Concrete)	Heavy efflorescence along the cold joint at the centerline.
N	Median	None
5	Curbs (Concrete)	South: 3" wide spalls (5 LF total) with exposed rebar near midspan. North: Medium longitudinal crack (5 LF) at top / midspan (Similar to Photo 15-16 and the Priority 1 Repair letter 1100055_20130613cy15_pr1_01.pdf).
6	Sidewalks (Concrete)	Severe scaling with deteriorated concrete and bituminous concrete patches (50 SF); moderate debris along the girder and parapet (Similar to Photo 15-28).
5	Parapets (Concrete)	North: Small to large spalls (10 SF) with exposed rebar. South: Small to large spalls (30 SF) with exposed rebar. (Similar to Photo 15-29).
5	End Pylon (Concrete)	At end of north girder only; severe scaling throughout with an area of unsound concrete (30 SF) (Similar to Photo 15-21).
5	Deck Joints / Filler Material (Compression Seal in roadway and pourable in sidewalk)	West Abutment: Deteriorated joint material and partially filled in with dirt debris at both ends (Similar to Photo 15-30).
7	Drains and Scuppers	1 each along curb line near west abutment deck joint.
5	Light Stands (One at south, two at north)	3 light stands. South: Not functioning and missing cover (over sidewalk). North: 1 light is not functioning; overhead wires connecting the south light standard to the northwest light standard (Similar to Photo 15-15).
5	Utilities	20" x 8" welded steel conduit along the north side of the north girder above the sidewalk. 10- 4" steel conduits (abandoned) below north and south sidewalks with several broken/disconnected sections (Similar to Photo 15-33).
N	Others	None

Additional Remarks:

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assunpink Creek Insp. Date: 6/13/2013

APPROACHES

SI&A Item BA Rating: 7

SI&A Item 72 Rating: 5

APPROACH West

RATING	COMPONENT	REMARKS
7	Approach Pavement (Bituminous Concrete)	Wide cracking along abutment joint area. A few wide longitudinal cracks (35 LF).
N	Approach Shoulder	None
	Approach Roadway Vertical and Horizontal Alignment	Vertical: Moderate upgrade slope on to the structure. Horizontal: Slight curve from the south. Road speed limit of 25 MPH. Moderate speed restriction required.
N	Guide Rail Condition	None
7	Sidewalks (Concrete)	A few medium diagonal cracks in north (5 LF total).
8	Curbs (Concrete)	No significant defects.
7	Utilities	Electrical conduit at the southwest corner (for lights on the structure). Manhole at both sidewalks and at roadway.
8	Approach Roadway Embankment	South: Moderate slope; heavy vegetation; stable. North: Concrete paved parking lot.
N	Others	None

Additional Remarks:

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assunpink Creek Insp. Date: 6/13/2013

APPROACHES

SI&A Item BA Rating: 7

SI&A Item 72 Rating: 5

APPROACH East

RATING	COMPONENT	REMARKS
8	Approach Slab / Pavement (Bituminous Concrete)	No defects noted.
N	Approach Shoulder	None
	Approach Roadway Vertical and Horizontal Alignment	Vertical: Moderate upgrade slope on to the structure. Horizontal: Slight curve from the south. Road speed limit of 25 MPH. Moderate speed reduction required.
N	Guide Rail Condition	None
7	Sidewalks (Concrete)	No significant defects.
5	Curbs (Concrete)	South: Several spalled and fractured sections 3 LF at 25' from deck (rest are scaled) (6 LF); 2" settled at bridge end (Photo 15-04). North: Several spalled and fractured sections (23 LF). 3 LF at 25' from deck, 4 LF at 35' from deck, 10 LF at 50' from deck and 4 LF at 55' from deck (Photo 15-04).
7	Utilities	Manhole at south sidewalk and roadway.
7	Approach Roadway Embankment	Concrete retaining walls.
N	Others	None

Additional Remarks:

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assumpink Creek Insp. Date: 6/13/2013

SUPERSTRUCTURE

SI&A Item 59 Condition Rating: 3

SPAN # 1 (East)

RATING	COMPONENT	REMARKS
3	2 Through Girders (Steel) (Girders numbered South to North)	<p>The concrete line at the curb side is ± 4" higher at the web of the girder than at the sidewalk.</p> <p><u>Above Deck:</u> Laminar rust (2" to 6" high along the sidewalks and up to 5" along the curbs) with measured section losses of ¼" typical (1¹/₁₆" remaining) particularly at the connections (near the floorbeam knee-braces and vertical stiffeners) (covered by the new curb in some areas) (Similar to Photo 15-34).</p> <p><u>Knee-Braces:</u> Typical Condition - 3" high full width laminar rust at concrete curb line with section loss up to 3⁄8" (some are now covered by the new curb sections); random pack-rust between plates; up to 1½ diameter hole in web of south girder knee braces 1, 4, 8, 10 and 11 and 1" diameter to 1½" x 4" holes in the web of north girder knee braces 1, 2 and 5 to 11 from east (some are now covered by the new concrete curb sections) (Similar to Photo 15-35); minor collision damage in north girder knee brace 2 and stiffener 1 from east.</p> <p><u>Vertical Stiffeners:</u> Typical Condition - ½" to 2" high laminar rust at the concrete line on the sidewalk side, 1" high at the roadway side (some are now covered by the new curb sections) with typical 1⁄16" remaining (t_o = 3⁄8"); 2" by 2" hole at the sidewalk side between floorbeams 10 and 11; collision damage .</p> <p><u>Below Deck:</u> Encasement exhibits fine cracks & staining throughout. Bottom flange exhibits loose concrete encasement (40 S.F. total) & medium to wide longitudinal cracks with efflorescence at several locations. Edge spalling (1" to 2" wide) along bottom flange. Exposed steel exhibits moderate to severe rust with up to 1⁄16" section loss (2 3⁄16" remaining) and severely rusted rivets (Similar to Photos 15-10 to 15-11). North Girder: Exposed & severe rust in the web (2 S.F.) at north side near the pier.</p>
5	Floorbeams (Steel) (11 Nos., Numbered East to West)	<p>Random fine and medium cracks to the encasement with localized efflorescence stains and leakage. Top flange steel is typically exposed at edges due to previous deck rehabilitation. Exposed steel is moderately to severely rusted. Bottom flange encasement shows random areas of delaminated/unsound concrete (Similar to Photo 15-12).</p> <p>Floorbeam 1: Bottom flange encasement delaminated and spalled (18 L.F. at north end) in full length. Exposed steel exhibits severe rust with moderate pitting up to ¼" deep (localized); estimated section loss = 1⁄8", flange edge measured at edge near north bearing 1⁄8" remaining (Similar to Photo 15-12).</p> <p>Floorbeam 2: Spalled at west edge (6 L.F.) with exposed moderately rusted steel bottom flange near the north girder.</p> <p>Floorbeam 11: Bottom flange loose concrete full length; exposed steel (6 L.F.) with severe rust exfoliation (section loss 1⁄16" and up to ¼" deep pitting); exposed severely rusted top flange at east edge in full length.</p>

Additional Remarks:

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assumpink Creek Insp. Date: 6/13/2013

SUPERSTRUCTURE (continued)

SI&A Item 59 Condition Rating: 3

SPAN # 1 (East)

RATING	COMPONENT	REMARKS
4	Bearings (Steel)	<p><u>2 Expansion (Rocker) Bearings at Pier 1:</u> Moderate to severe rust at all bearing elements with up to 75% section loss at anchor bolts. Expanded 5° at 75°F with heavy debris accumulation limiting movement (appear frozen) (Similar to Photo 15-32).</p> <p><u>2 Fixed Bearings at Abutment:</u> Severe rust with lamination and estimated 1/16" section loss throughout; severe rust in anchor bolts with up to 80% section loss in the nuts.</p>
	Deflection and Vibration	Minor vibration under heavy loads.
5	Sidewalk Stringers and Brackets (Steel)	<p>The end brackets beneath the sidewalk exhibit spalled encasement with exposed moderately rusted steel (Similar to Photo 15-14).</p> <p>North Sidewalk Brackets: Several brackets with small spall with exposed steel at top horizontal strut near the girder connections.</p> <p>South sidewalk stringer: Several wide longitudinal cracks, loose and deteriorated concrete at bay 8 from east and deteriorated concrete encasement at bay 1 at underside.</p> <p>North Sidewalk Stringer: Spalled encasement at bottom flange with exposed severely rusted steel at abutment and pier; loose encasement at underside at bay 6.</p>

Additional Remarks: Remove the unsound concrete encasement (220 S.F.) from the superstructure.

FATIGUE DETAILS

Estimated percentage of Large trucks in ADT = 4%

Category	Detail Description and Location
D	Riveted connections (no detail available).

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assumpink Creek Insp. Date: 6/13/2013

SUPERSTRUCTURE

SI&A Item 59 Condition Rating: 3

SPAN # 2

RATING	COMPONENT	REMARKS
3	2 Through Girders (Steel) (Girders numbered South to North)	<p><u>Above Deck:</u> Laminar rust (up to 6" high) along the curb and sidewalk with measured section losses of 1/8" (13/16" remaining) and up to 3/16" at the connections (near the floorbeam knee-braces and vertical stiffeners) (covered by the new curb sections in some areas) (Similar to Photo 15-34).</p> <p><u>Knee-Braces:</u> Typical Condition - 3" high full width laminar rust at concrete line with section loss up to 3/8". Random pack-rust between plates. 1" diameter x up to 2" by 3" holes at the concrete line at north girder knee braces 1, 3, 4, 7, 9, 10 and 11 from east (covered by the new curb in some areas) (Similar to Photo 15-35). A few knee braces have collision damage.</p> <p><u>Vertical Stiffeners:</u> Typical Condition - 1/2" to 2" high laminar rust at the concrete line on the sidewalk side, 1" high at the roadway side with typical 1/16" remaining (t₀ = 3/8") (covered by the new curb in some areas). South girder 2" diameter hole at sidewalk side between floorbeams 6 and 7. Seven north girder stiffeners have 1" diameter to 1"x 2" hole at the sidewalk side.</p> <p><u>Below Deck:</u> Bottom flange encasement of girders has spalled off at several locations with exposed steel exhibiting severe rust with estimated section loss = 1/16" (2 3/16" remaining) with up to 1/4" deep pitting and severely rusted rivets; remaining encasement is severely delaminated. Concrete encasement is loose for a length of 3 LF at the bottom flange of the north girder over the east track (Photo 15-11 & Photo 15-13 and Priority E Repair letter 1100055_20130613cy15_prE_01.pdf).</p>
5	Floorbeams (Steel) (11 Nos., Numbered East to West)	<p>Top flange steel is typically exposed at edges due to previous deck rehabilitation. Exposed steel is moderately rusted.</p> <p>Floorbeam1: Edge spalls with exposed rusted steel near the north girder and missing encasement at south end (7 L.F. and 1/16" section loss, 1 1/8" remaining) in bottom flange (over pier); exposed severely rusted west edge of the top flange for full length (Similar to Photo 15-12).</p> <p>Floorbeam 4: Exposed severely rusted edges of the bottom flange along with some loose concrete encasement.</p> <p>Floorbeam 5: Bottom flange encasement is spalled with exposed moderately rusted steel at middle (10 L.F.) and near the south girder; some loose concrete encasement.</p> <p>Floorbeam 6: Exposed east edge of the bottom flange near the north girder (6 L.F.); several locations of loose concrete (Photo 15-12 and Priority E Repair letter 1100055_20130613cy15_prE_01.pdf).</p> <p>Floorbeam 8: Bottom flange encasement is spalled at middle with exposed severely rusted steel (1/16" section loss, 1 1/8" remaining) and has loose concrete.</p> <p>Floorbeam 10: Bottom flange steel is exposed and severely rusted (1/16" section loss, 1 1/8" remaining) at south girder.</p> <p>Floorbeam11: Loose bottom flange encasement in full length (over pier).</p>

Additional Remarks:

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assunpink Creek Insp. Date: 6/13/2013

SUPERSTRUCTURE (continued)

SI&A Item 59 Condition Rating: 3

SPAN # 2

RATING	COMPONENT	REMARKS
4	Bearings (Steel)	<u>2 Expansion (Rocker) Bearings at Pier 1:</u> Expanded 5° at 75°F and debris is limiting movement (Similar to Photo 15-37). <u>2 Fixed Bearings at Pier 2:</u> Severe rust at all anchor bolt nuts typical up to 75% section loss (Similar to Photo 15-32).
	Deflection and Vibration	Minor vibration under heavy loads.
5	Sidewalk Stringers and Brackets (Steel)	The end brackets beneath the sidewalk exhibit spalled encasement with exposed moderately rusted steel (Similar to Photo 15-14). Several brackets with areas of deteriorated concrete encasements.

Additional Remarks: Remove the unsound concrete encasement (220 S.F.) from the superstructure.

FATIGUE DETAILS

Estimated percentage of Large trucks in ADT = 4%

Category	Detail Description and Location
D	Riveted connections (no detail available).

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assumpink Creek Insp. Date: 6/13/2013

SUPERSTRUCTURE

SI&A Item 59 Condition Rating: 3

SPAN # 3

RATING	COMPONENT	REMARKS
3	2 Through Girders (Steel) (Girders numbered South to North)	<p><u>Above Deck:</u> Laminar rust (up to 6" high) along the curb and sidewalk with measured section losses of up to 1/4" typical (1 1/16" remaining) particularly at the connections (near the floorbeam knee-braces and vertical stiffeners) (covered by the new curb in some areas) (Similar to Photo 15-34)</p> <p><u>Knee-Braces:</u> Typical condition - 3" high full width laminar rust at concrete line with section loss up to 3/8" ; random pack-rust between plates; 1" diameter to 1" x 3" holes at the concrete line at north girder knee braces 1, 2, 5 and 6 to 11 and at south knee braces 4, 8 and 11 from east (Photo 15-35). Few knee braces have collision damage (covered by the new curb in some areas).</p> <p><u>Vertical Stiffeners:</u> Typical Condition - 1/2" to 2" high laminar rust at the concrete line on the sidewalk side, 1" high at the roadway side with typical 1/16" remaining (t_o = 3/8") (covered by the new curb in some areas).</p> <p><u>Below Deck:</u> Exposed steel at bottom flange exhibits severe laminar rust (estimated 1/16" section loss) (2 3/16" remaining) and severely rusted rivets; remaining encasement is typically stained, exhibits severe scaling and wide cracks; several large edge spalls and loose encasement along bottom flange (over the railroad track in both girders). Concrete encasement is hanging for a length of 4 LF at the bottom flange of the north girder over the west track (Photo 15-10 and Priority E Repair letter 1100055_20130613cy15_prE_01.pdf); Concrete encasement is hanging for a length of 4 LF at the bottom flange of the south girder over the Railroad access road (Photo 15-19 and Priority 1 Repair letter 1100055_20130613cy15_prE_01.pdf). rusted wire mesh and small incipient spalls. Also, concrete hanging over access road at bottom flange of north girder between FB 9 and 10 (Photo 15-20 and Priority 1 Repair letter 1100055_20130613cy15_prE_01.pdf).</p>
5	Floorbeams (Steel) (11 Nos., Numbered East to West)	<p>Top flange steel is typically exposed at edges due to previous deck rehabilitation. Pattern cracks with light stains to the encasement.</p> <p>Floorbeam 1: Exposed steel bottom flange exhibits up to 1/16" section loss (1 1/8" remaining) (Similar to Photo 15-12).</p> <p>Floorbeams 2, 3, 5, 6 and 7: Spalled bottom flange encasement with exposed severely rusted steel along the edges (1/16" section loss, 1 1/8" remaining).</p> <p>Floorbeams 3, 4, 5 and 6: Wide cracks in the bottom flange encasement</p> <p>Floorbeam 4: Spalled bottom flange encasement with exposed steel along the edges (1/16" section loss, 1 1/8" remaining) at south end.</p> <p>Floorbeam 11: Several wide cracks in the encasement and spalled encasement with exposed moderately to severe (est. -1/16" loss, 1 1/8" remaining) rusted steel (Similar to Photo 15-12).</p>

Additional Remarks:

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assunpink Creek Insp. Date: 6/13/2013

SUPERSTRUCTURE (continued)

SI&A Item 59 Condition Rating: 3

SPAN # 3

RATING	COMPONENT	REMARKS
4	Bearings (Steel)	<u>2 Expansion (Rocker) Bearings at Pier 3:</u> Moderate to severe rust ($1/16$ " section loss); anchor bolt nuts have 10% section loss to the north and 50% at the south; moderate to heavy debris; rockers are expanded 5° at 58°F and appear frozen (Similar to Photo 15-32). <u>2 Fixed Bearings at Pier 2:</u> Moderate to severe rusting (up to 75% section loss in anchor bolt nuts).
	Deflection and Vibration	Minor vibration under heavy loads.
5	Sidewalk Stringers and Brackets (Steel)	Brackets: The end brackets beneath the sidewalk exhibit spalled encasement with exposed moderately rusted steel (Photo 15-14). Sidewalks Stringers: Several locations of delaminated and spalled encasements with exposed rusted steel.

Additional Remarks:

Since span 3 is over electrified railroad tracks at the east end, the superstructure elements including the pier 2 bearings were visually inspected from the ground using binoculars (railroad flagman did not allow the use of the ladder at pier). The pier 3 bearings were accessible with a ladder. Remove the unsound concrete encasement (200 S.F.) from superstructure.

FATIGUE DETAILS

Estimated percentage of Large trucks in ADT = 4%

Category	Detail Description and Location
D	Riveted connections (no detail available).

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assumpink Creek Insp. Date: 6/13/2013

SUPERSTRUCTURE

SI&A Item 59 Condition Rating: 3

SPAN # 4

RATING	COMPONENT	REMARKS
4	2 Through Girders (Steel) (Girders numbered South to North)	<p><u>Above Deck:</u> Laminar rust (up to 4" high) along the curb and sidewalk with measured section losses of 1/4" typical (11/16" remaining) particularly at the connections (near the floorbeam knee-braces and vertical stiffeners) (covered by the new curb in some areas) (Similar to Photo 15-34).</p> <p><u>Knee-Braces:</u> Typical Condition - 3" high full width laminar rust at concrete line with section loss up to 3/8". Random pack-rust between plates; 1" diameter to 1" x 3" holes at the concrete line at north girder knee braces 1, 2, 4 and 6 to 10 from east and at south girder knee brace 1 (covered by the new curb in some areas) (Similar to Photo 15-35). Few knee braces have collision damage.</p> <p><u>Vertical Stiffeners:</u> Typical Condition - 1/2" to 2" high laminar rust at the concrete line on the sidewalk side, 1" high at the roadway side with typical 1/16" remaining (to = 3/8") (covered by the new curb in some areas).</p> <p><u>Below deck:</u> The undersides of the bottom flange encasements are missing or cracked, loose and delaminated in full span length. Flange edges are exposed at several locations (50%). The exposed steel exhibits moderate to severe (estimated 1/16" section loss) (2 3/16" remaining) rust (Similar to Photos 15-10 to 15-11).</p>
5	Floorbeams (Steel) (11 Nos., Numbered East to West)	<p>Moderately rusted top flange steel is typically exposed at edges due to previous deck rehabilitation.</p> <p>Floorbeam 1: Spalled and loose encasement in full length. Steel exhibits moderate to severe rust with section loss ($\pm 1/16"$, 1/8" remaining) and up to 1/8" deep pitting (Similar to Photo 15-12).</p> <p>Floorbeams 3 through 11: Typical loose encasement with random medium to large edge spalls, exposed steel exhibits moderate to severe rust (1/16" section loss, 1/8" remaining).</p> <p>Floorbeam 11: Spalled encasement at west edge in bottom flange; exposed steel exhibits severe rust (1/16" section loss, 1/8" remaining) (Similar to Photo 15-12).</p>

Additional Remarks:

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assunpink Creek Insp. Date: 6/13/2013

SUPERSTRUCTURE (continued)

SI&A Item 59 Condition Rating: 3

SPAN # 4

RATING	COMPONENT	REMARKS
4	Bearings (Steel)	<u>2 Expansion (Rocker) Bearings at Pier 3:</u> Moderate to severe rust ($1/16$ " section loss). The anchor bolts exhibit 20% section loss to north and 50% to the south; up to 80% section loss (Similar to Photo 15-37). Bearings are expanded 5° at 75°F. <u>Fixed Bearings:</u> Anchor bolt nuts exhibit 50% section loss and moderate rust typical at all bearing elements. Masonry plates exhibit severe rust and lamination with minor section loss (Similar to Photo 15-32).
	Deflection and Vibration	Minor vibration under heavy loads.
5	Sidewalk Stringers and Brackets (Steel)	Brackets: The end brackets beneath the sidewalk exhibit spalled encasement with exposed moderately rusted steel (Similar to Photo 15-14). Sidewalk Stringers: Several large areas spalled encasement with exposed moderately rusted steel particularly at the north fascia (80 L.F.).

Additional Remarks:

FATIGUE DETAILS

Estimated percentage of Large trucks in ADT = 4%

Category	Detail Description and Location
D	Riveted connections (no detail available).

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assumpink Creek Insp. Date: 6/13/2013

SUPERSTRUCTURE

SI&A Item 59 Condition Rating: 3

SPAN # 5

RATING	COMPONENT	REMARKS
3	2 Through Girders (Steel) (Girders numbered South to North)	<p><u>Above Deck:</u> Laminar rust (up to 6" high) along the curb and sidewalk with measured section losses of 1/4" typical (11/16" remaining) particularly at the connections (near the floorbeam knee-braces and vertical stiffeners) (covered by the newer curb in some areas) (Similar to Photo 15-34).</p> <p><u>Knee-Braces:</u> Typical Condition - 3" high full width laminar rust at concrete line with section loss up to 3/8". Random pack-rust between plates. 1" diameter to 1" x 3" holes at the concrete line at north girder knee braces 1, 2, 3, 5, 8, 9 and 10 from east and at south knee braces 3, 8 and 11 from east (covered by the newer curb in some areas) (Similar to Photo 15-35). Few knee braces have collision damage.</p> <p><u>Vertical Stiffeners:</u> Typical Condition - 1/2" to 1" high laminar rust at the concrete line on the sidewalk side, 1" high at the roadway side with typical 1/16" remaining (t₀ = 3/8") (covered by the newer curb in some areas).</p> <p><u>Below Deck:</u> Typical full length bottom flange open and incipient spalls throughout outside edges with random medium cracks. Exposed steel has severe (1/16" section loss) (2 3/16" remaining) rust and severely rusted rivets; wire mesh has rusted thru on the north girder (Similar to Photos 15-10, 15-11).</p>
5	Floorbeams (Steel) (11 Nos., Numbered East to West)	<p>Top flange steel is typically exposed at edges due to previous deck rehabilitation.</p> <p>Floorbeam 1: Loose/hanging and spalled encasement on bottom flange in full length; spalled encasement with severe rust; pitting up to 1/8" and exfoliation (up to 1/16" section loss; original bottom flange thickness is 1 1/8") (Similar to Photo 15-12).</p> <p>Floorbeams 2 through 10: Random spalled encasement of the top and bottom flanges; loose encasement on the bottom flange.</p> <p>Floorbeam 11: Severely spalled encasement with severe rust at bottom flange (up to 1/8" section loss at center, 1 1/16" remaining) (Similar to Photo 15-12).</p>

Additional Remarks:

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assumpink Creek Insp. Date: 6/13/2013

SUPERSTRUCTURE (continued)

SI&A Item 59 Condition Rating: 3

SPAN # 5

RATING	COMPONENT	REMARKS
4	Bearings (Steel)	<u>2 Expansion (Rocker) Bearings at Pier 5:</u> Moderate to heavy debris under the rockers; expanded 6° (S) and 5° (N) at 92°F and appear frozen. Anchor bolt nuts have 75% section loss. Light to moderate rust typical for all bearing elements (Similar to Photo 15-32). Masonry plate severe rust exfoliating pack rust (minor section loss). <u>2 Fixed Bearings at Pier 4:</u> Moderate rust with 50% section loss on the anchor bolt nuts.
	Deflection and Vibration	Minor vibration under heavy loads.
5	Sidewalk Stringers and Brackets (Steel)	Brackets: Incipient spalls (4 S.F.) at the west end of the north fascia and large spall (2 S.F.) with exposed moderately rusted rebar at center of span. Several north sidewalk brackets exhibit spalled encasement with exposed steel at top horizontal strut at girder connections (Similar to Photo 15-14). Both sidewalk end brackets exhibit spalled encasement with moderate to severe (¹ / ₁₆ " section loss) rusting of exposed steel. North Sidewalk Stringer: Incipient spall at bracket 3 from west.

Additional Remarks:

There is evidence of smoke stains to the superstructure and the underside of the deck.

FATIGUE DETAILS

Estimated percentage of Large trucks in ADT = 4%

Category	Detail Description and Location
D	Riveted connections (no detail available).

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assumpink Creek Insp. Date: 6/13/2013

SUPERSTRUCTURE

SI&A Item 59 Condition Rating: 3

SPAN # 6

RATING	COMPONENT	REMARKS
4	2 Through Girders (Steel) (Girders numbered South to North)	<p><u>Above Deck:</u> Laminar rust (up to 7" high) along the curb and sidewalk with measured section losses of 1/4" typical (1/16" remaining) particularly at the connections (near the floorbeam knee-braces and vertical stiffeners) (covered by the new curb in some areas) (Similar to Photo 15-34).</p> <p><u>Knee-Braces:</u> Typical Condition - 3" high full width laminar rust at concrete line with section loss up to 3/8". Random pack-rust between plates. 1" to 3" holes at the concrete line at north girder knee braces 1 to 10 and at south girder knee braces 2, 3, 4, 7, 9 and 10 from east (covered by the new curb in some areas) (Similar to Photo 15-35). Few knee braces have collision damage.</p> <p><u>Vertical Stiffeners:</u> Typical Condition - 1/2" to 1" high laminar rust at the concrete line on the sidewalk side, 1" high at the roadway side with typical 1/16" remaining (t₀ = 3/8") (covered by the new curb in some areas).</p> <p><u>Below Deck:</u> Both - Large spalls on the outside web encasements at the west end; exposed steel exhibits minor pitting up to 1/16". North girder, mid-span, bottom flange thickness, north side, is 2 1/4". Several edge spalls with exposed severely rusted steel and incipient spalls and wide cracks on both bottom flange encasements (Photos 15-10 to 15-11).</p>
5	Floorbeams (Steel) (11 Nos., Numbered East to West)	<p>Top flange steel is typically exposed with moderate rust at edges due to previous deck rehabilitation. Medium to wide cracks in the flange encasements – random spalls (similar to Photo 15-12).</p> <p>Floorbeam 1: Bottom flange encasement spall full length; exposed steel exhibits severe rust with lamination and heavy pitting up to 1/8" deep. Top flange where exposed exhibits moderate rust. Spalling of encasement at east face (joint side) typical.</p> <p>Floorbeams 2 through 10: Minor spalling along the bottom flange; loose delaminated concrete at random areas of bottom flange.</p> <p>Floorbeam 11: Encasement is loose and spalled at both edges / ends with exposed steel in the bottom flange; severe laminar rust (1/16" section loss with up to 1/8" deep pitting) measured approximately 1 1/2" thick at bottom flange, southwest side (Similar to Photo 15-12).</p>

Additional Remarks:

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assunpink Creek Insp. Date: 6/13/2013

SUPERSTRUCTURE (continued)

SI&A Item 59 Condition Rating: 3

SPAN # 6

RATING	COMPONENT	REMARKS
4	Bearings (Steel)	<u>2 Expansion (Rocker) Bearings at Pier 5:</u> North bearing is expanded 5° at 90°F; debris blocking the bearing movement. Severe rust on bearing elements. South bearing is slightly expanded (4°) at 90° F with moderate to severe rust (¹ / ₁₆ " section loss) on all bearing elements. Pack rust between rocker and masonry plate interface and moderate debris behind bearing inhibiting movement (Similar to Photo 15-32). <u>2 Fixed Bearings at Pier 6:</u> Anchor bolt nuts exhibit 60% section loss typical and moderate to heavy debris.
	Deflection and Vibration	Moderate under heavy loads.
5	Sidewalk Stringers and Brackets (Steel)	Brackets: South fascia bracket has exposed moderately rusted reinforcing steel at the east end. The end brackets exhibit random encasement spalls with exposed moderately to severely rusted steel (Similar to Photo 15-14).

Additional Remarks:

There is evidence of smoke stains to the superstructure and the underside of the deck.

FATIGUE DETAILS

Estimated percentage of Large trucks in ADT = 4%

Category	Detail Description and Location
D	Riveted connections (no detail available).

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assumpink Creek Insp. Date: 6/13/2013

SUPERSTRUCTURE

SI&A Item 59 Condition Rating: 3

SPAN # 7

RATING	COMPONENT	REMARKS
4	2 Through Girders (Steel) (Girders numbered South to North)	<p><u>Above Deck:</u> Laminar rust (approximately 7" high) along the curb and sidewalk with measured section losses of up to 1/4" typical (11/16" remaining) particularly at the connections (near the floorbeam knee-braces and vertical stiffeners) (covered by the newer curb in some areas) (Photo 15-34).</p> <p><u>Knee-Braces:</u> Typical Condition - 3" high full width laminar rust at concrete line with section loss up to 3/8". Random pack-rust between plates. 1" diameter to 1" x 3" holes at the concrete line at north girder knee braces 3 to 10 and at south girder knee-brace 11 from east (covered by the new curb in some areas) (similar to Photo 15-35). Few knee braces have collision damage.</p> <p><u>Vertical Stiffeners:</u> Typical Condition - 1/2" to 1" high laminar rust at the concrete line on the sidewalk side, 1" high at the roadway side with typical 1/16" remaining (t_o = 3/8") (covered by the new curb in some areas). 3 north girder stiffeners have 1" diameter hole above the sidewalk.</p> <p><u>Below Deck:</u> Delaminated encasements with wide longitudinal cracks and random edge spalling. Randomly exposed steel exhibits moderate to severe rust and heavy pitting (estimated 1/16" section loss with up to 1/8" deep pitting) (2 3/16" remaining) and severely rusted rivets (Similar to Photos 15-10 to 15-11).</p>
5	Floorbeams (Steel) (11 Nos., Numbered East to West)	<p>Top flange steel is typically exposed with moderate rust, at edges due to previous deck rehabilitation. A few areas of exposed bottom flange edges at FB's 8 to 10.</p> <p>Floorbeam 1: Loose/hanging encasement on the bottom flange at west side at south 3/4; large spalls on the west side.</p> <p>Floorbeam 10: Medium to wide longitudinal cracks in the bottom flange encasement.</p> <p>Floorbeam 11: Bottom flange encasement is spalled off and hanging from the east side in full length; exposed steel is severely rusted (1/16" section loss, 1/8" remaining) (Similar to Photo 15-12). Water stains with efflorescence throughout, typical on west side of the floorbeam.</p>

Additional Remarks:

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assunpink Creek Insp. Date: 6/13/2013

SUPERSTRUCTURE (continued)

SI&A Item 59 Condition Rating: 3

SPAN # 7

RATING	COMPONENT	REMARKS
4	Bearings (Steel)	<u>2 Expansion (Rocker) Bearings at Pier 7:</u> Moderate to severe rust and expanded 6° at 90°F. Heavy pack rust and debris between rocker and masonry plate and appear frozen (Photo 15-32). Masonry plate has severe rust, negligible section loss with up to 1/8" deep pitting. Sole plate bolts have 70% section loss at nuts. <u>2 Fixed Bearings at Pier 6:</u> Moderate to severe rust on the masonry plate. Section loss on the anchor bolt nuts: 75% on south, 100% on north.
	Deflection and Vibration	Moderate vibration under heavy loads.
5	Sidewalk Stringers and Brackets (Steel)	Brackets: The end brackets beneath the sidewalk exhibit spalled encasement with exposed moderately rusted steel (Similar to Photo 15-14). Sidewalk Stringers: South sidewalk stringer exhibits large spall (1 S.F.) at top near pier 6 and spalls (4 S.F.) at underside with exposed rebars and steel at middle.

Additional Remarks:

FATIGUE DETAILS

Estimated percentage of Large trucks in ADT = 4%

Category	Detail Description and Location
D	Riveted connections (no detail available).

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assunpink Creek Insp. Date: 6/13/2013

SUPERSTRUCTURE

SI&A Item 59 Condition Rating: 3

SPAN # 8 (West)

RATING	COMPONENT	REMARKS
4	2 Through Girders (Steel) (Girders numbered South to North)	<p><u>Above Deck:</u> Large areas of peeling paint at the web (random) with light to moderate rust at exposed steel at north girder with moderate to severe rusting along curb line (up to 7" high) with up to 1/8" section loss (13/16" remaining), typical at curb line in both girders (Similar to Photo 15-34).</p> <p><u>Knee-Braces:</u> Typical Condition - 3" high full width laminar rust at concrete line with section loss up to 3/8". Random pack-rust between plates. 1" diameter to 1" x 3" holes at the concrete line at north girder knee braces 2 to 7, 10 and 11 and at south girder knee braces 2, 3, 4, 5, 6 and 8 to 11 from east (Similar to Photo 15-35). Few knee braces have collision damage.</p> <p><u>Vertical Stiffeners:</u> Typical Condition - 1/2" to 1" high laminar rust at the concrete line on the sidewalk side, 1" high at the roadway side with typical 1/16" remaining (t₀ = 3/8"). 1 north girder stiffener at north side exhibits 1" diameter hole at top of the sidewalk (9th from west end).</p> <p><u>Below Deck:</u> South girder bottom flange encasement has large spalled areas and spalled off at east end; exposed steel at edges show moderate to severe rust (1/16" section loss) (2 3/16" remaining); remaining encasement has fine and medium longitudinal cracks with efflorescence; random water stains with unsound concrete. North girder bottom flange encasement has edge spalling; fine pattern cracking with efflorescence along the entire length of the north side; exposed steel exhibits moderate rust (Similar to Photos 15-10 to 15-11).</p>
5	Floorbeams (Steel) (11 Nos., Numbered East to West)	<p>Top flange steel is typically exposed, with moderate to severe rust at edges due to the previous deck rehabilitation.</p> <p>Floorbeam 1: Spalled encasement in the bottom flange; exposed steel exhibits severe exfoliating laminar rust; measured bottom flange thickness at center of beam is 1 1/8" minimum (with heavy pitting and up to 1/8" section loss) (Similar to Photo 15-12).</p> <p>Floorbeams 2 through 10: Cracked encasement with random efflorescence throughout. Areas of delaminated concrete at bottom flange.</p> <p>Floorbeam 9: Spalled edge at west side / midspan with exposed steel bottom flange.</p> <p>Floorbeam 11: Cracked encasement of the bottom flange and spalled at east edge with exposed severely rusted steel (Similar to Photo 15-12). Water stains (joint is not watertight). The bottom flange encasement is delaminated in full length.</p>

Additional Remarks:

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assunpink Creek Insp. Date: 6/13/2013

SUPERSTRUCTURE (continued)

SI&A Item 59 Condition Rating: 3

SPAN # 8

RATING	COMPONENT	REMARKS
4	Bearings (Steel)	<p><u>2 Expansion (Rocker) Bearings at Pier 7:</u> South bearing exhibits 100% section loss on the anchor bolts; expanded 7° at 90°F; severe rust in the bearing and masonry plate; severe rust and debris packed between the rocker and masonry plate(Similar to Photo 15-32).</p> <p>North bearing is expanded 5° at 90°F; 100% section loss on the anchor bolt nuts; severe rust in the bearing and masonry plate; severe rust and debris packed between the rocker and the masonry plate.</p> <p><u>2 Fixed Bearings at West Abutment:</u> Severe rustings.</p>
	Deflection and Vibration	Moderate vibration under heavy loads.
5	Sidewalk Stringers and Brackets (Steel)	<p>Brackets: The end brackets beneath the sidewalk exhibit spalled encasement with exposed moderately rusted steel (Similar to Photo 15-14).</p> <p>Sidewalk Stringers: South sidewalk stringer exhibits delaminated concrete encasement at east end. North sidewalk stringer exhibits spalled encasement (1 S.F.) at midspan and delaminated concrete encasement at west end.</p>

Additional Remarks:

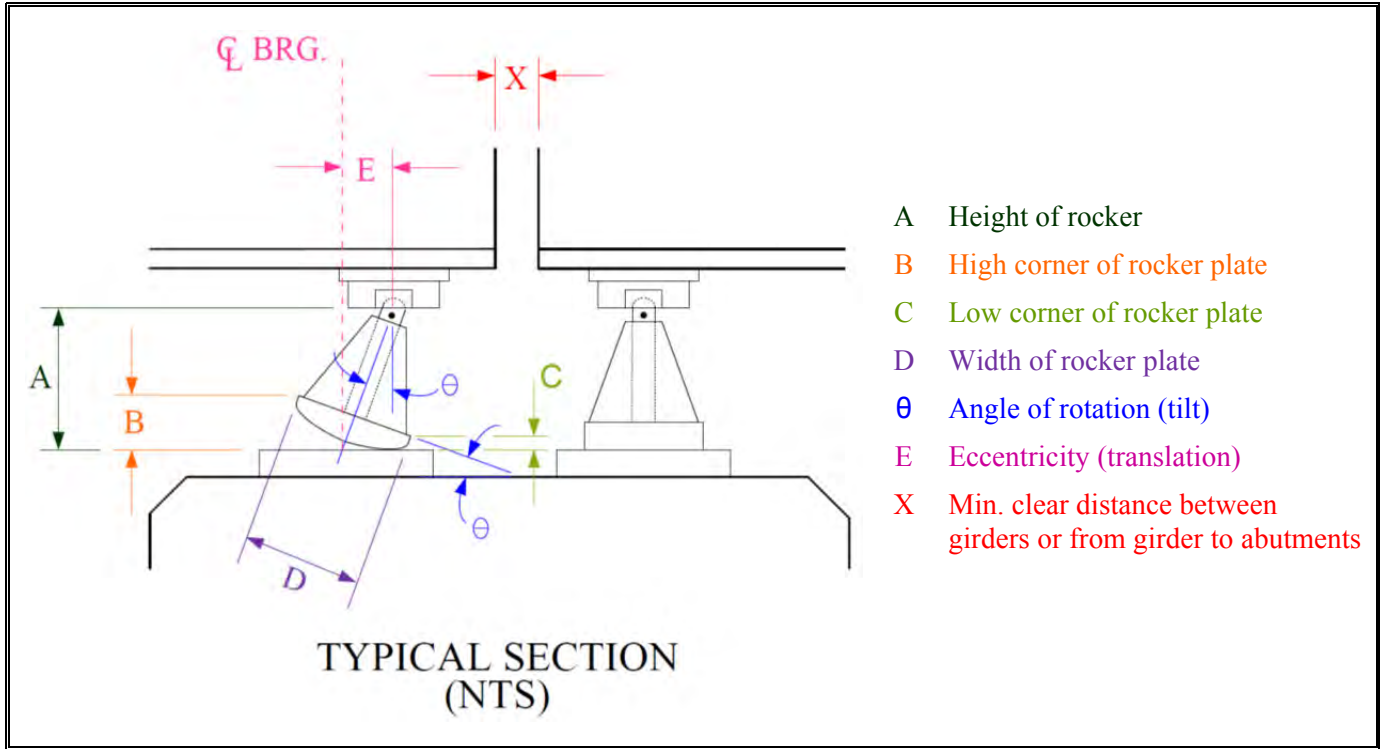
FATIGUE DETAILS

Estimated percentage of Large trucks in ADT = 4%

Category	Detail Description and Location
D	Riveted connections (no detail available).

SUPERSTRUCTURE
(ROCKER BEARINGS)

SI&A Item 59 Condition Rating: 3



DIMENSIONS – HISTORICAL RECORD

Date	Cycle	Bearing Location	Temp . (°F)	A (in.)	B (in.)	C (in.)	D (in.)	θ (deg.)	E (in.)	X (in.)
6/13/13	15	Span 3, Pier 3, South Bearing	70	15	1-9/16	3/8	12	6E	1-3/8	10
6/13/13	15	Span 6, Pier 5, North Bearing	70	15	2	1/4	12	9E	1-7/8	10
10/3/11	14	Span 3, Pier 3, South Bearing	58	15	1-3/4	1/2	12	5E	1-5/16	10
10/3/11	14	Span 6, Pier 5, North bearing	58	15	1-7/8	3/16	12	7E	1-13/16	10

PAINT INSPECTION

*Environment: 2

Date of Last Painting: Unknown

- 1. Rural or Industrial, Mild exposure
- 2. Industrial, Severe Exposure
- 3A. Marine, Mild Exposure
- 3B. Marine, Severe Exposure
- *Ref. NJDOT Design Manual Sec. 1.24.19

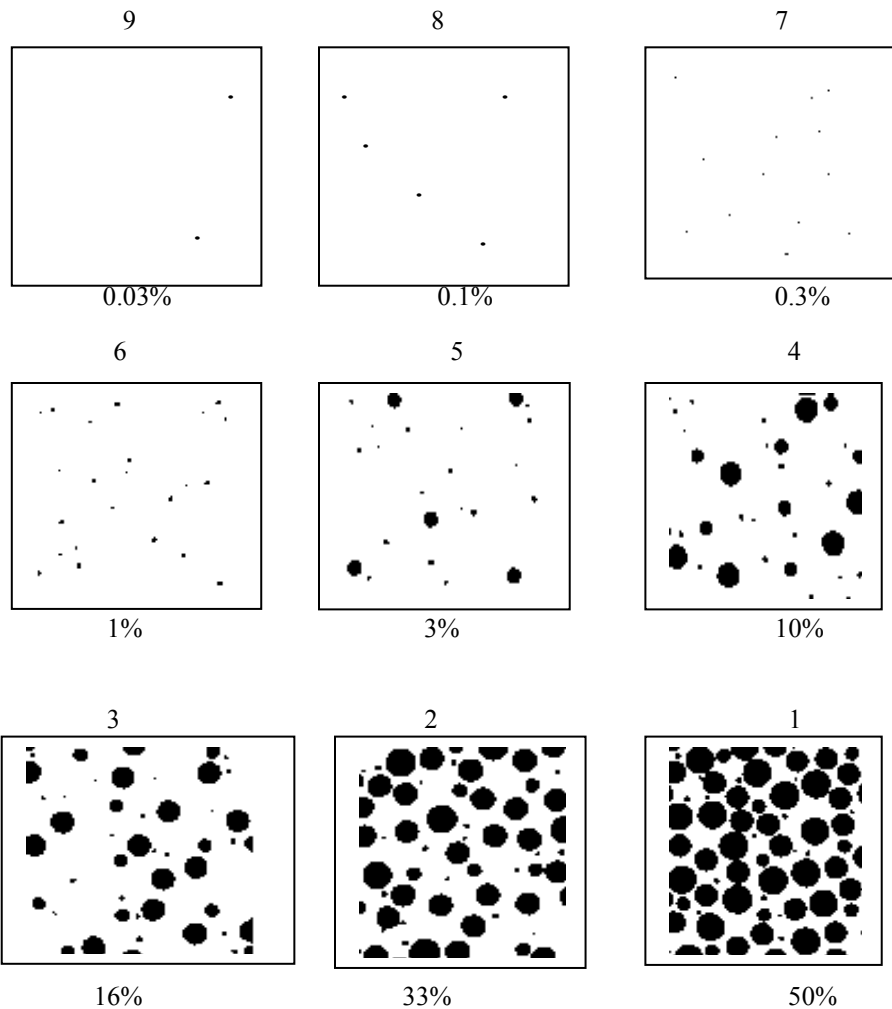


FIG. 1 Examples of Area Percentages

Notes: Blistered Paint areas are counted as rust

10 = 0% Rust
0 = 100% Rust

Use the closest rating to the actual field condition based on the average for the bridge. Indicate any areas of severe rusting in remarks.

For structures composed of weathering steel, this sheet should be used to rate the effectiveness of the iron oxide coating (see Appendix G from the state coding guide). For beam ends, use the controlling rating (paint or oxide coating).

INSPECTION RATINGS (0 THROUGH 10 OR N/A)

Fascia Beam:	<u>3</u>	Fascia Bottom Flange:	<u>1</u>	Beams Ends:	<u>2</u>
Interior Beam:	<u>4</u>	Interior Bottom Flange:	<u>4</u>	Connections:	<u>4</u>
Bracing:	<u>N/A</u>	Substructure:	<u>N/A</u>	Railings/Fence:	<u>N/A</u>
Bearings:	<u>0</u>	Above Deck Superstructure	<u>4</u>		

Remarks 1: Fascia beam = Girders; Interior beam = Floorbeam

Remarks 2: Concrete encased superstructure below deck. Ratings are for exposed steel.

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assumpink Creek Insp. Date: 6/13/2013

SUBSTRUCTURE

SI&A Item 60 Condition Rating: 5

ABUTMENT West

RATING	COMPONENT	REMARKS
5	Breastwall (Concrete)	Wide full height vertical crack at 1/3 point from north girder and 8' north of south girder (16 L.F. each) (Similar to Photo 15-36).
6	Backwall (Concrete)	Wide full height vertical crack at 1/3 point from north girder (Similar to Photo 15-36).
6	Bridge Seat (Concrete)	Moderate to heavy debris accumulation (Similar to Photo 15-36)
5	Wingwalls / Retaining Walls (Concrete)	South: Loose section of coping (14 L.F. x up to 1.5' high) has shifted by up to 10" eastward (no change from last cycle) and about to fall (Photos 15-26 and 15-27 and Priority 1 Repair letter 1100055_20130613cy15_pr1_01.pdf); fine vertical/diagonal crack (15 L.F.) with efflorescence; large missing section (8 S.F.) with a 2' gap between the top of the wall and the coping. Exposed and unattached reinforcement. North: Medium to wide full height vertical crack (12 L.F.). Random fine cracks with water stains near the top of the wingwall.
7	Embankment (Dirt)	No significant defects.
8	Others / Footings/ Waterway Probing	Out of the normal channel.

Additional Remarks:

ABUTMENT East

RATING	COMPONENT	REMARKS
5	Breastwall (Concrete)	Large spall and delaminated concrete (10 S.F.) south of north bearing and at south bearing (2 S.F.); wide vertical crack at the middle (Photo 15-36).
6	Backwall (Concrete)	Wide vertical crack at middle (3 LF) (Photo 15-36).
6	Bridge Seat (Concrete)	Moderate to heavy debris (Photo 15-36).
6	Wingwalls / Retaining Walls	One large spall in NE wingwall near joint with backwall (1 SF) (Similar to Photos 15-26 and 15-27).
6	Embankment (Dirt)	Moderate surface erosion (Photo 15-42).
N	Others / Footings/ Waterway Probing	None

Additional Remarks:

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assumpink Creek Insp. Date: 6/13/2013

SUBSTRUCTURE

SI&A Item 60 Condition Rating: 5

PIER 1 (East)

RATING	COMPONENT	REMARKS
7	Crashwall (Concrete)	No significant defects.
7	Columns (Concrete) (2 Nos., South and North)	No significant defects.
6	Pier Cap (Concrete)	Wide longitudinal crack in the underside at middle. One wide longitudinal crack in underside (4 LF) near centerline bridge. Large spall (3' x 1' x 1" deep) with exposed rebar at top near south column (Similar to Photo 15-38).
5	Bridge Seat (Concrete)	Covered with debris (Similar to Photo 15-32).
N	Others	None

**Additional
Remarks:**

PIER 2

RATING	COMPONENT	REMARKS
5	Crashwall (Concrete)	Large spall with exposed rusted rebar and associated unsound concrete (1 S.F.) at the south end of the west face and a large spall and delaminated concrete (2 S.F. each face) with exposed severely rusted rebar with an estimated 15% section loss to the north end (Similar to Photo 15-41). Fine to medium vertical crack (7 L.F.) near the south end and few fine full height vertical cracks. Large spall and incipient spall (8 S.F.) with exposed rusted reinforcing steel near the north end of the east face. The top of the east face has a large unsound patched spall (2S.F.). Area of severe scaling and unsound concrete (1S.F.) and light to moderate scaling throughout.
5	Columns (Concrete) (2 Nos., South and North)	South: Large spall and delaminated concrete (6 S.F.) at top / south side along with heavy efflorescence (Similar to Photo 15-39).
6	Pier Cap (Concrete)	1 SF spall at top near south column (Similar to Photo 15-38). Medium diagonal crack on west face at south column.
5	Bridge Seat (Concrete)	Covered with debris (Similar to Photo 15-32).
N	Others	None

**Additional
Remarks:**

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assumpink Creek Insp. Date: 6/13/2013

SUBSTRUCTURE

SI&A Item 60 Condition Rating: 5

PIER 3

RATING	COMPONENT	REMARKS
7	Crashwall (Concrete)	No significant defects.
7	Columns (Concrete) (2 Nos., South and North)	No significant defects.
6	Pier Cap (Concrete)	Wide longitudinal crack in the underside at middle. One wide longitudinal crack in underside (4 LF) near centerline bridge. Large spall (3' x 1' x 1" deep) with exposed rebar at top near south column (Similar to Photo 15-38).
5	Bridge Seat (Concrete)	Covered with debris (Similar to Photo 15-32).
N	Others	None

Additional Remarks:

PIER 4

RATING	COMPONENT	REMARKS
5	Crashwall (Concrete)	Large spall with exposed rusted rebar and associated unsound concrete (1 S.F.) at the south end of the west face and a large spall and delaminated concrete (2 S.F. each face) with exposed severely rusted rebars with an estimated 15% section loss to the north end (Similar to Photo 15-41). Fine to medium vertical crack (7 L.F.) near the south end and few fine full height vertical cracks. Large spall and incipient spall (8 S.F.) with exposed rusted reinforcing steel near the north end of the east face. The top of the east face has a large unsound patched spall (2S.F.). Area of severe scaling and unsound concrete (1S.F.) and light to moderate scaling throughout.
5	Columns (Concrete) (2 Nos., South and North)	South: Large spall and delaminated concrete (6 S.F.) at top / south side along with heavy efflorescence (Similar to Photo 15-39).
6	Pier Cap (Concrete)	1 SF spall at top near south column (Similar to Photo 15-38). Medium diagonal crack on west face at south column.
5	Bridge Seat (Concrete)	Covered with debris (Similar to Photo 15-32).
N	Others	None

Additional Remarks:

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assunpink Creek Insp. Date: 6/13/2013

SUBSTRUCTURE

SI&A Item 60 Condition Rating: 5

PIER 5

RATING	COMPONENT	REMARKS
7	Crashwall (Concrete)	No significant defects.
5	Columns (Concrete) (2 Nos., South and North)	North column- incipient spall on east face in front of bearing (no undermining) (2.5' x 6") (Photo 15-39).
6	Pier Cap (Concrete)	Medium to wide cracks with rust stains on underside (Photo 15-38).
6	Bridge Seat (Concrete)	Covered with concrete debris (Photo 15-32).
N	Others	None

**Additional
Remarks:**

PIER 6

RATING	COMPONENT	REMARKS
6	Crashwall (Concrete)	West face has 2' x 1' x 1" deep spall with exposed rebar near south column (Photo 15-41). East face has 2' x 10" x 1" deep spall with exposed rebar near south column.
6	Columns (Concrete) (2 Nos., South and North)	Shallow spall 0.5 SF at bottom west face of south column (Similar to Photo 15-39).
7	Pier Cap (Concrete)	No significant defects.
6	Bridge Seat (Concrete)	Covered with debris (Photo 15-32).
N	Others	None

**Additional
Remarks:**

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assunpink Creek Insp. Date: 6/13/2013

SUBSTRUCTURE

SI&A Item 60 Condition Rating: 5

PIER 7 (West)

RATING	COMPONENT	REMARKS
7	Crashwall (Concrete)	No significant defects.
5	Columns (Concrete) (2 Nos., South and North)	North: Small to large spalls (20 S.F. x up to 8" deep) with exposed rusted rebar (up to 50% section loss in vertical rebars and up to 100% section loss in the tie bars) at the bottom; spall (2 S.F.) at mid height at south face (Similar to Photo 15-39).
5	Pier Cap (Concrete)	Large spall (2 S.F.) with exposed moderately rusted reinforcing steel. Full width open and incipient spall (20 S.F.) with exposed moderately to severely rusted (up to 25% section loss) and broken stirrups at midspan (Similar to Photo 15-38).
6	Bridge Seat (Concrete)	Covered with concrete debris (Similar to Photo 15-32).
8	Others / Probing	Probing with a 1" diameter rod resulted in less than 1" penetrations along the west face. No footing exposure, undermining, or scour detected.

**Additional
Remarks:**

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assunpink Creek Insp. Date: 6/13/2013

SUBSTRUCTURE/SCOUR

SI&A Item 60 Condition Rating: 5

ABUTMENT West

RATING	COMPONENT	REMARKS
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COUNTERMEASURES

	Description	None (scattered rocks)
N	Condition	None

PROBING/SCOUR

8	Findings	Out of the normal channel.
	Changes Since Prior Inspection	No significant changes.
	Debris	Minor

Repair Quantities: None

PIER 7 (West)

RATING	COMPONENT	REMARKS
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COUNTERMEASURES

	Description	Rock riprap protection and large concrete pieces.
7	Condition	No significant defects.

PROBING/SCOUR

7	Findings	Probing with a 1" diameter rod resulted in less than 1" penetrations along the west face. No footing exposure, undermining, or scour detected. Item 113 is coded 7 due to countermeasure.
	Changes Since Prior Inspection	No significant changes.
	Debris	Minor

Repair Quantities: None

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assumpink Creek Insp. Date: 6/13/2013

WATERWAY/CHANNEL

SI&A Item No. 61: 5 (Field)

SI&A Item No. 71: 9 (Field)

WATERWAY Assumpink Creek

Prioritization Category: 3

SPAN(S) Span 8

Scour Sufficiency Rating: 62.5

RATING	COMPONENT	REMARKS
FLOW CONDITIONS		
	Direction	The flow is from north to south at Span 8 only.
	Magnitude	The bridge waterway opening does not constrict the upstream channel. The upstream channel width is 50' and the downstream channel width is 40'.
	Velocity	Moderate rapids beneath the structure and downstream and slower upstream.
EMBANKMENTS		
5	Upstream	Heavy bank scour (4' to 5' high) with undermined tree roots along the east embankment (30 CY). Several fallen trees along the west embankment; moderate to steep slope (Photo 15-05).
5	Downstream	Heavy bank scour (6' to 8' high) with undermined tree roots along the west embankment (45 CY). Several fallen trees (50 C.Y.) across the channel partially blocking the channel at both embankments; moderate to steep slope (Photo 15-06).
7	Channel Countermeasures	There is a stone and concrete wall at the east embankment.
CHANNEL MOVEMENT AND CHANGES		
	Horizontal Location	Meandering and non-braided. The east embankment is approximately inline with the centerline of pier 7.
	Cross Section	See sounding sheets
	Alignment	The upstream channel is directed at pier 7, is mostly parallel beneath the structure, and flows diagonally toward the west abutment at downstream (slight skew).
	Changes Since Previous Inspection	No significant changes
	Navigation Clearances	Not applicable.
	Waterway Opening	Adequate for the present flow.
5	Other/Debris in Channel	Large pile of concrete debris at east half of the downstream channel near the bridge (Photo 15-06).

Repair Quantities: Place riprap along scoured embankments (75 CY)
Remove concrete debris (1 Crew Day)

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assunpink Creek Insp. Date: 6/13/2013

HIGHWAY SAFETY

Coding of SI&A Item 36: 0000
 1: Meets Currently Acceptable Standards
 0: Does Not Meet Currently Acceptable Standards
 N: Not Applicable

RATING		COMPONENT	REMARKS
0		Bridge Railing	Substandard 4'-7" high steel through girder. Due to the substandard design standards.
0	0	Transition to Bridge Railing	No guide rail system. Unprotected ends of the through girders. (Refer to Photo 15-21 and the Priority 1 Repair letter 1100055_20130613cy15_pr1_01.pdf). The northwest and southeast corners are out of clear zone. Due to the lack of a guide rail system at the northeast and southwest corners.
	N	Curb / Sidewalk Terminations	The curbs and sidewalks are continuous at all four corners.
0		Approach Guide Rails	No guide rail system. Unprotected ends of the through girders. The northwest and southeast corners are out of clear zone. Due to the lack of a guide rail system at the northeast and southwest corners.
0		Approach Guide Rail End Terminals	No guide rail system. Unprotected ends of the through girders. The northwest and southeast corners are out of clear zone. Due to the lack of a guide rail system at the northeast and southwest corners.

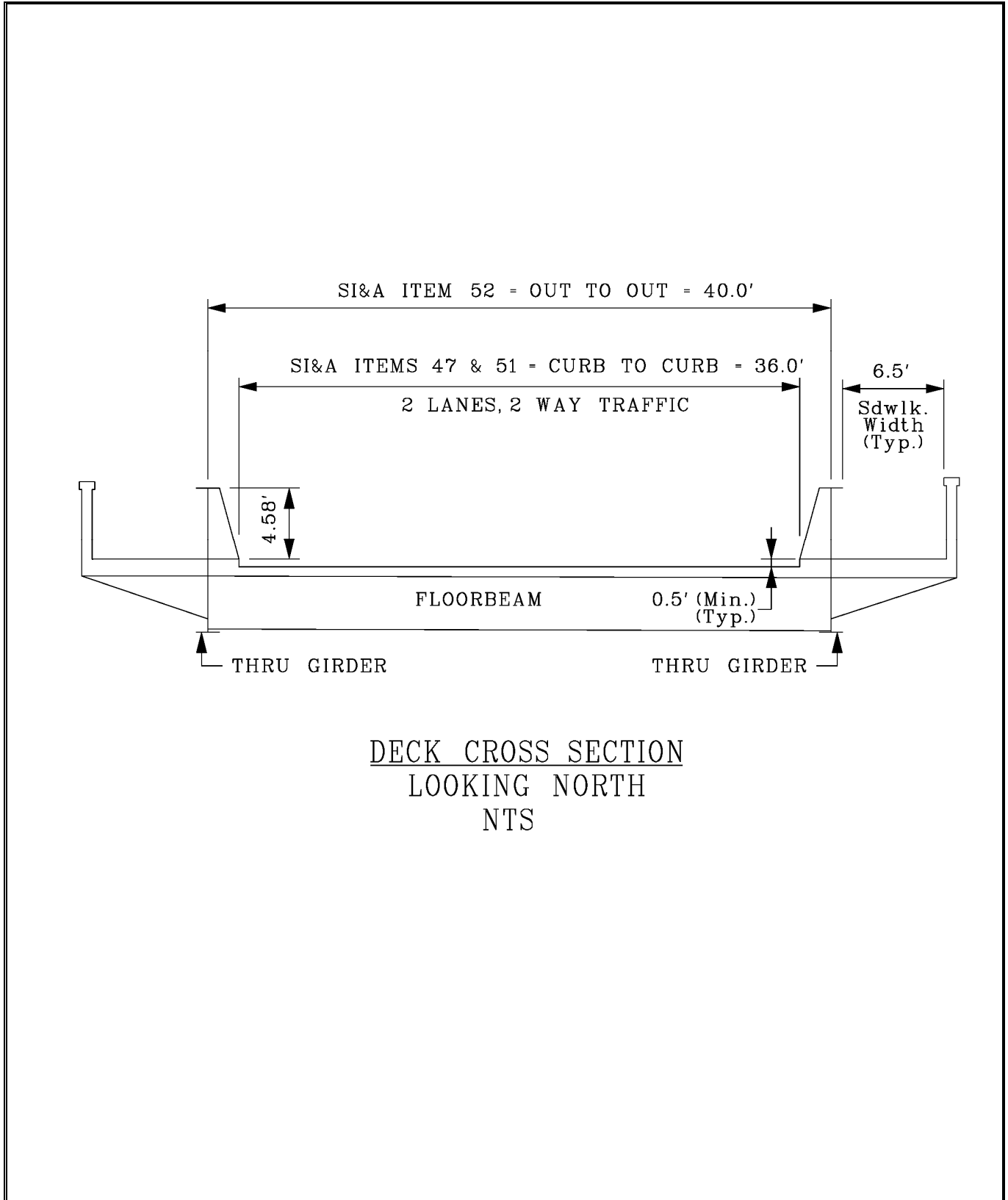
DECK GEOMETRY

SI&A Item 68 Rating: 5

COMPONENT	REMARKS
Bridge Cross Section	The approach roadway widths are consistent the structure roadway width (see roadway cross section on the next page).
Adequacy of Lane / Shoulder Widths	Two lanes; Two-way traffic (Table 2A) Curb-to-Curb = 36.0' ADT = 3,683 (2013); Above Tolerable
Vertical Clearance over Deck	Unlimited

*Posting for Load / Speed / Clearance Restrictions	None
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DECK CROSS SECTION



DECK CROSS SECTION
LOOKING NORTH
NTS

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assunpink Creek Insp. Date: 6/13/2013

CLEARANCES

FEATURE ON STRUCTURE: Lincoln Avenue (CR 626) SI&A SHEET 1

Minimum Vertical Clearance (SI&A Item 10)	99.99'
Total Horizontal Clearances (SI&A Item 47)	36.0' (curb-to-curb of Lincoln Avenue)

CONTROLLING UNDERCLEARANCE DATA:	
Minimum Vertical Underclearance (SI&A Item 54)	20'-9" (from east rail of the eastern track to the bottom flange of both through girders in span 2).
Minimum Vertical Underclearance (incl. shoulders) (SI&A Item DJ)	N/A
Lateral Right (SI&A Item 55)	8.3' (from east face of pier 2 to the centerline of the west track in span 2 under the south fascia).
Lateral Left (SI&A Item 56)	N/A

*** Minimum clearance for a 10 foot width of the pavement or traveled part of the roadway where the clearance is greatest shall be coded in feet and inches.**

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assunpink Creek Insp. Date: 6/13/2013

FENCING

Coding of SI&A Item FN: Y
 Coding of SI&A Item FO: 0
 Coding of SI&A Item FP (in thousands): \$103

Warranted (Per Design Manual Section 23):	Yes	
If Yes: (#1) Description:	Highway carrying, grade separation with facility for pedestrian traffic.	
<u>Current Status of Fence & Sidewalk:</u>	<u>Left Side</u>	<u>Right Side</u>
a. Fence:	No	No
b. Sidewalk Width:	6.50 FT	6.50 FT
c. Total Height of fence above curb/sidewalk:	N/A	N/A
d. Type of Fence (per Design Manual Section 23):	N/A	N/A
Action Recommended: Replace the existing parapet section over the railroad tracks with Type 2 parapets (6'-6" high) along both sidewalks.		
Estimated Cost: \$ 387 LF x 265 \$/LF = \$102,555 SAY \$103,000		

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
 Name: Lincoln Avenue (CR 626) over Amtrak & Assunpink Creek Insp. Date: 6/13/2013

WORK DONE HISTORICAL DATA

CYCLE NO.	YEAR	WORK DONE SUMMARY
15	2013	The through hole in the south sidewalk has been patched with concrete. New bituminous concrete overlay at the east approach roadway. Two new sidewalk panels have been constructed at north sidewalk of the east approach roadway. New electrical conduit box has been installed at SW corner of structure.
14	2011	Top of deck spalls over Pier 5 eastbound roadway have been patched with bituminous concrete.
13	2009	New concrete repaired areas and bituminous concrete patched areas throughout the top of deck; new concrete repaired/reconstructed areas in both bridge sidewalks and curbs; removal of loose concrete encasement along the bottom flange of the end floorbeam (in span 3) over pier 2; new hand hole covers for the light poles.

Structure No.: 1100-055 Route: 9011 Cycle No.: 15
Name: Lincoln Avenue (CR 626) over Amtrak & Assunpink Creek Insp. Date: 6/13/2013

The following reports, files and memos are associated with this document:

PRIORITY REPAIRS:

The following Priority Letter(s) have been included for this structure:

Each Priority Letter has been submitted as a separate PDF file.

PDF Filename(s):

[110055_20130613cy15_prE_01.pdf](#)

[110055_20130613cy15_pr1_01.pdf](#)

Appendix C

As-Built Plans, Tax Maps & Timing Directives

The following plans used during Concept Development can be found on the CD provided with this report.

Data	Source	Date
As-Built Plans of Mercer County Bridge No. 140.9B, Chambers St. Trenton over the P.R.R. and Assunpink Creek	Mercer County	Nov. 1931
As-Built Plans of Route U.S. 1/33/129 Section 1N/1C/11B, Rehabilitation of Market Street Extension Bridge over Amtrak	NJDOT	Apr. 1991
City of Trenton Tax Map, Key Maps 1, 4, 7 and 8	Online	Mar. 2000

NORTH CLINTON AVENUE AND MONMOUTH STREET

SIGNAL SEQUENCE

70 Second Background Cycle

Phase	Signal Face				Time
	1-4	5-8	9-12	13-16	
Without Pedestrian Actuation					
1. ROW North Clinton Avenue	G	R	W(F)	DW	44-22
Ped. Clearance	G	R	DW(F)	DW	12
Change	Y	R	DW	DW	3
Clear	R	R	DW	DW	1
2. ROW Monmouth Street	R	G	DW	DW	8-28
Change	R	Y	DW	DW	3
Clear	R	R	DW	DW	1
With Pedestrian Actuation					
1. ROW North Clinton Avenue	G	R	W(F)	DW	27-22
Ped. Clearance	G	R	DW(F)	DW	12
Change	Y	R	DW	DW	3
Clear	R	R	DW	DW	1
2. ROW Monmouth Street	R	G	DW	W(F)	13
Ped. Clearance	R	G	DW	DW(F)	12
Vehicle Extension	R	G	DW	DW	0-3
Change	R	Y	DW	DW	3
Clear	R	R	DW	DW	1
Flashing Operation	Y	R	OUT	OUT	

Vehicle interval is to be 2 seconds.

Memory circuits are to be disconnected.

6:00 AM to 10:00 PM - 70 seconds background cycle.

10:00 PM to 6:00 AM - free float, with 33 seconds of minimum green time to phase 1 ROW.

TRAFFIC SIGNAL TIMING SCHEDULE FOR THE INTERSECTION OF
CHESTNUT AVENUE, EAST STATE STREET, RAOUL WALLENBERG AVENUE, AND WALL STREET
CITY OF TRENTON, MERCER COUNTY, NEW JERSEY

70 SECOND BACKGROUND CYCLE

REVISED SEPTEMBER 24, 1997

WITHOUT PEDESTRIAN ACTUATION									
MOVEMENT	SIGNAL FACES								TIMING (SECONDS)
	1 - 3	4 - 6	13 - 15	16	7 - 8	9 - 10	11 - 12	17 - 18	
1. EAST STATE STREET R.O.W.	G	R + G↗	R	R	DW	DW	DW	W	24.5
PED. CLEARANCE	G	R + G↗	R	R	DW	DW	DW	FDW	14
CHANGE	Y	R + G↗	R	R	DW	DW	DW	DW	3.5
CLEAR	R	R + G↗	R	R	DW	DW	DW	DW	1
2. RAOUL WALLENBERG R.O.W.	R	G ←↗	G↗	G	DW	DW	W	DW	17
PED. CLEARANCE	R	G ←↗	G↗	G	DW	DW	FDW	DW	5.5
CHANGE	R	Y + G↗	Y	Y	DW	DW	DW	DW	3.5
CLEAR	R	R + G↗	R	R	DW	DW	DW	DW	1
EMERGENCY FLASH	Y	Y	R	R	DARK	DARK	DARK	DARK	

PEDESTRIAN ACTUATION									
MOVEMENT	SIGNAL FACES								TIMING (SECONDS)
	1 - 3	4 - 6	13 - 15	16	7 - 8	9 - 10	11 - 12	17 - 18	
1. EAST STATE STREET R.O.W.	G	R + G↗	R	R	DW	DW	DW	W	24.5
PED. CLEARANCE	G	R + G↗	R	R	DW	DW	DW	FDW	14
CHANGE	Y	R + Y	R	R	DW	DW	DW	DW	3.5
CLEAR	R	R	R	R	DW	DW	DW	DW	1
2. RAOUL WALLENBERG R.O.W.	R	R + G←	G↗	G	W	W	W	DW	4
PED. CLEARANCE 1	R	R + G←	G↗	G	W	FDW	W	DW	8.5
PED. CLEARANCE 2	R	R + G←	G↗	G	FDW	FDW	W	DW	4.5
PED. CLEARANCE 3	R	R + G←	G↗	G	FDW	FDW	FDW	DW	5.5
CHANGE	R	R + Y	Y	Y	DW	DW	DW	DW	3.5
CLEAR	R	R	R	R	DW	DW	DW	DW	1
EMERGENCY FLASH	Y	Y	R	R	DARK	DARK	DARK	DARK	

TRAFFIC SIGNAL TIMING SCHEDULE FOR THE INTERSECTION OF
NORTH CLINTON AVENUE, LINCOLN AVENUE, AND PERRY STREET
CITY OF TRENTON, MERCER COUNTY, NEW JERSEY

70 SECOND BACKGROUND CYCLE

REVISED JANUARY 2, 1998

VEHICLE ACTUATION													
MOVEMENT	SIGNAL FACE											TIMING (SECONDS)	
	1, 2, 4, 5	3	6, 7, 8	9, 10, 12	11	13, 16	14, 15	17, 18	19, 20	21, 22	23, 24		
1 PERRY ST. EASTBOUND	G + G←	G	R	R	R	R	R + G→	W	DW	DW	DW	4 - 9	
CHANGE	G + Y←	G	R	R	R	R	R + Y→	W	DW	DW	DW	3	
2 PERRY ST./LINCOLN AVE. R.O.W.	G	G	G	R	R	R	R	W	W	DW	DW	22 - 4	
PED. CLEARANCE	G	G	G	R	R	R	R	FDW	FDW	DW	DW	14	
CHANGE	Y	Y	Y	R	R	R	R	DW	DW	DW	DW	3	
CLEAR	R	R	R	R	R	R	R	DW	DW	DW	DW	2	
3 N. CLINTON AVE. NORTHBOUND	R	R	R	G + G←	G	R	R	DW	DW	DW	DW	4 - 6	
CHANGE	R	R	R	G + Y←	G	R	R	DW	DW	DW	DW	3	
4 N. CLINTON AVE. R.O.W.	R	R	R	G	G	G	G	DW	DW	DW	DW	10 - 21	
CHANGE	R	R	R	Y	Y	Y	Y	DW	DW	DW	DW	3	
CLEAR	R	R	R	R	R	R	R	DW	DW	DW	DW	2	
EMERGENCY FLASH	Y	Y	Y	R	R	R	R	DARK	DARK	DARK	DARK		

PEDESTRIAN AND VEHICLE ACTUATION													
MOVEMENT	SIGNAL FACE											TIMING (SECONDS)	
	1, 2, 4, 5	3	6, 7, 8	9, 10, 12	11	13, 16	14, 15	17, 18	19, 20	21, 22	23, 24		
1 PERRY ST. EASTBOUND	G + G←	G	R	R	R	R	R + G→	W	DW	DW	DW	4 - 9	
CHANGE	G + Y←	G	R	R	R	R	R + Y→	W	DW	DW	DW	3	
2 PERRY ST./LINCOLN AVE. R.O.W.	G	G	G	R	R	R	R	W	W	DW	DW	11 - 4	
PED. CLEARANCE	G	G	G	R	R	R	R	FDW	FDW	DW	DW	14	
CHANGE	Y	Y	Y	R	R	R	R	DW	DW	DW	DW	3	
CLEAR	R	R	R	R	R	R	R	DW	DW	DW	DW	2	
3 N. CLINTON AVE. NORTHBOUND	R	R	R	G + G←	G	R	R	DW	DW	W	DW	4 - 6	
CHANGE	R	R	R	G + Y←	G	R	R	DW	DW	W	DW	3	
4 N. CLINTON AVE. R.O.W.	R	R	R	G	G	G	G	DW	DW	W	W	4	
PED. CLEARANCE	R	R	R	G	G	G	G	DW	DW	FDW	FDW	17	
CHANGE	R	R	R	Y	Y	Y	Y	DW	DW	DW	DW	3	
CLEAR	R	R	R	R	R	R	R	DW	DW	DW	DW	2	
EMERGENCY FLASH	Y	Y	Y	R	R	R	R	DARK	DARK	DARK	DARK		

NOTES:

- 1 THE TRAFFIC SIGNAL IS TO REST IN THE PERRY STREET/LINCOLN AVENUE GREEN/WALK STATE.
- 2 A 70 SECOND BACKGROUND CYCLE SHALL BE IN EFFECT AT ALL TIMES.
- 3 THE VEHICLE EXTENSION TIME FOR ALL ACTUATED PHASES SHALL BE TWO (2) SECONDS.
- 4 ALL VEHICLE DETECTORS SHALL OPERATE IN PRESENCE MODE.
- 5 SERVICE FOR PERRY ST./LINCOLN AVE. R.O.W. SHALL ALWAYS FOLLOW SERVICE FOR PERRY ST. EASTBOUND.
- 6 SERVICE FOR N. CLINTON AVE. R.O.W. SHALL ALWAYS FOLLOW SERVICE FOR N. CLINTON AVE. NORTHBOUND.
- 7 IN THE ABSENCE OF DETECTION, THE ACTUATED PHASES SHALL BE SKIPPED EXCEPT AS INDICATED ABOVE.
- 8 S1 AND S2 SIGNS FOR N. CLINTON AVE. SOUTHBOUND TRAFFIC SHALL ILLUMINATE UPON VEHICULAR DETECTION IN THE EXISTING POLICE HEADQUARTERS DRIVEWAY AND SHALL RETURN TO DARK UPON ABSENCE OF SUCH DETECTION AND SHALL REMAIN DARK DURING EMERGENCY FLASH.

TRAFFIC SIGNAL TIMING SCHEDULE FOR THE INTERSECTION OF
CLINTON AVENUE AND EAST STATE STREET
CITY OF TRENTON, MERCER COUNTY, NEW JERSEY

70 SECOND BACKGROUND CYCLE

REVISED APRIL 28, 1998

VEHICLE ACTUATION					
MOVEMENT	SIGNAL FACE				TIMING IN SECONDS
	1 - 4	5 - 9	10 - 13	14 - 17	
1. EAST STATE STREET R.O.W.	G	R	W	DW	37 - 26
PEDESTRIAN CLEARANCE	G	R	FDW	DW	12
CHANGE	Y	R	DW	DW	3
CLEAR	R	R	DW	DW	2
2. CLINTON AVENUE R.O.W.	R	G	DW	DW	11 - 22
CHANGE	R	Y	DW	DW	3
CLEAR	R	R	DW	DW	2
EMERGENCY FLASH	Y	R	DARK	DARK	

PEDESTRIAN AND VEHICLE ACTUATION					
MOVEMENT	SIGNAL FACE				TIMING IN SECONDS
	1 - 4	5 - 9	10 - 13	14 - 17	
1. EAST STATE STREET R.O.W.	G	R	W	DW	29 - 26
PEDESTRIAN CLEARANCE	G	R	FDW	DW	12
CHANGE	Y	R	DW	DW	3
CLEAR	R	R	DW	DW	2
2. CLINTON AVENUE R.O.W.	R	G	DW	W	8
PEDESTRIAN CLEARANCE	R	G	DW	FDW	11
VEHICLE EXTENSION	R	G	DW	DW	0 - 3
CHANGE	R	Y	DW	DW	3
CLEAR	R	R	DW	DW	2
EMERGENCY FLASH	Y	R	DARK	DARK	

NOTES:

1. THE CONTROLLER SHALL REST IN THE EAST STATE STREET GREEN/WALK INTERVAL.
2. CONTROLLER AND DETECTOR MEMORY CIRCUITS SHALL BE DISABLED.
3. THE PASSAGE TIME FOR CLINTON AVENUE SHALL BE 2 SECONDS.

TRAFFIC SIGNAL TIMING SCHEDULE FOR THE INTERSECTION OF
NORTH CLINTON AVENUE AND NORTH OLDEN AVENUE
CITY OF TRENTON, MERCER COUNTY, NEW JERSEY

70 SECOND BACKGROUND CYCLE

REVISED SEPTEMBER 16, 1998

VEHICLE ACTUATION						
MOVEMENT	SIGNAL FACE					TIMING IN SECONDS
	1 - 4, 17	5, 6	7, 8	9 - 12	13 - 16	
1. N. OLDEN AVENUE R.O.W.	G	R	R	W	DW	40 - 24
PEDESTRIAN CLEARANCE	G	R	R	FDW	DW	12
CHANGE	Y	R	R	DW	DW	3
CLEAR	R	R	R	DW	DW	2
2. N. CLINTON AVENUE R.O.W.	R	G	G	DW	DW	8 - 24
CHANGE	R	Y	Y	DW	DW	3
CLEAR	R	R	R	DW	DW	2

PEDESTRIAN AND VEHICLE ACTUATION						
MOVEMENT	SIGNAL FACE					TIMING IN SECONDS
	1 - 4, 17	5, 6	7, 8	9 - 12	13 - 16	
1. N. OLDEN AVENUE R.O.W.	G	R	R	W	DW	27 - 24
PEDESTRIAN CLEARANCE	G	R	R	FDW	DW	12
CHANGE	Y	R	R	DW	DW	3
CLEAR	R	R	R	DW	DW	2
2. N. CLINTON AVENUE R.O.W.	R	G	G	DW	W	6
PEDESTRIAN CLEARANCE	R	G	G	DW	FDW	15
VEHICLE EXTENSION	R	G	G	DW	DW	0 - 3
CHANGE	R	Y	Y	DW	DW	3
CLEAR	R	R	R	DW	DW	2

EMERGENCY FLASH						
MOVEMENT	SIGNAL FACE					
	1 - 4, 17	5, 6	7, 8	9 - 12	13 - 16	
1. N. OLDEN AVENUE R.O.W. (FLASHING YELLOW)	Y	R	R	DARK	DARK	

NOTES:

1. THE VEHICLE INTERVAL SHALL BE 2 SECONDS.
2. THE CONTROLLER MEMORY SHALL BE DISABLED.

FIRE PREEMPTION DURING NORTH OLDEN AVENUE R.O.W.						
MOVEMENT	SIGNAL FACE					TIMING IN SECONDS
	1 - 4, 17	5, 6	7, 8	9 - 12	13 - 16	
1. N. OLDEN AVENUE R.O.W.	G	R	R	W	DW	-
PEDESTRIAN CLEARANCE	G	R	R	FDW	DW	12
CHANGE	Y	R	R	DW	DW	3
CLEAR	R	R	R	DW	DW	2
2a. N. CLINTON AVENUE EASTBOUND*	R	R	G	DW	DW	25
CHANGE	R	R	Y	DW	DW	3
CLEAR	R	R	R	DW	DW	2
1. RESUME NORMAL OPERATION WITH N. OLDEN AVENUE R.O.W.	G	R	R	W	DW	


FIRE PREEMPTION DURING NORTH CLINTON AVENUE R.O.W. WITHOUT PEDESTRIAN ACTUATION						
MOVEMENT	SIGNAL FACE					TIMING IN SECONDS
	1 - 4, 17	5, 6	7, 8	9 - 12	13 - 16	
2. N. CLINTON AVENUE R.O.W.	R	G	G	DW	DW	-
CHANGE	R	Y	G	DW	DW	3
CLEAR	R	R	G	DW	DW	2
2a. N. CLINTON AVENUE EASTBOUND*	R	R	G	DW	DW	25
CHANGE	R	R	Y	DW	DW	3
CLEAR	R	R	R	DW	DW	2
1. RESUME NORMAL OPERATION WITH N. OLDEN AVENUE R.O.W.	G	R	R	W	DW	

FIRE PREEMPTION DURING NORTH CLINTON AVENUE R.O.W. WITH PEDESTRIAN ACTUATION						
MOVEMENT	SIGNAL FACE					TIMING IN SECONDS
	1 - 4, 17	5, 6	7, 8	9 - 12	13 - 16	
2. N. CLINTON AVENUE R.O.W.	R	G	G	DW	W	-
PEDESTRIAN CLEARANCE	R	G	G	DW	FDW	12
CHANGE	R	Y	G	DW	DW	3
CLEAR	R	R	G	DW	DW	2
2a. N. CLINTON AVENUE EASTBOUND*	R	R	G	DW	DW	25
CHANGE	R	R	Y	DW	DW	3
CLEAR	R	R	R	DW	DW	2
1. RESUME NORMAL OPERATION WITH N. OLDEN AVENUE R.O.W.	G	R	R	W	DW	

* NORTH OLDEN AVENUE RUNS NORTH AND SOUTH, AND NORTH CLINTON AVENUE RUNS EAST AND WEST.

**CITY OF TRENTON, NEW JERSEY
MEMORANDUM**

TO: Olayinka A. Olanipekun, Director
Division of Engineering and Operations

FROM: Edward R. Pantaleone 
Supervisor of Traffic Signals

DATE: March 18, 1998

RE: The Traffic Signal at the Intersection of Olden Avenue and East State Street

On Tuesday, March 17, 1998, a new Safetran 303 control cabinet was installed at the intersection of Olden Avenue and East State Street to replace an Eagle EF70 controller with a 170 controller. The cast aluminum meter cabinet was also replaced with a new fabricated sheet metal cabinet, and a new service panel was installed.

The new 170 controller has been programmed in accordance with the attached timing schedule, because the original schedule dated July 9, 1974 is obsolete by current standards. The differences between the two schedules are as follows:

1. Red clearance intervals have been added to meet the ITE standards given geometry and travel speed.
2. The yellow change intervals have been reduced to 3.0 seconds from 3.5 seconds, also to meet the ITE standards given geometry and travel speed.
3. The pedestrian clearance time for each phase has been increased to 10 seconds in accordance with the MUTCD given the geometry. Originally, the pedestrian clearance time was 9.1 seconds, which was a less than the minimum required.
4. The green/walk intervals have been shortened to free time for the red clearance and pedestrian clearance intervals.

Attachment

TRAFFIC SIGNAL TIMING SCHEDULE FOR THE INTERSECTION OF
 OLDEN AVENUE AND EAST STATE STREET
 CITY OF TRENTON, MERCER COUNTY, NEW JERSEY

70 SECOND BACKGROUND CYCLE

REVISED FEBRUARY 25, 1998

FIXED TIME OPERATION					
MOVEMENT	SIGNAL FACE				TIMING IN SECONDS
	1 - 4	5 - 8	P1 - P4	P5 - P8	
1. OLDEN AVENUE R.O.W.	G	R	W	DW	20
PEDESTRIAN CLEARANCE	G	R	FDW	DW	10
CHANGE	Y	R	DW	DW	3
CLEAR	R	R	DW	DW	2
2. EAST STATE STREET	R	G	DW	W	20
PEDESTRIAN CLEARANCE	R	G	DW	FDW	10
CHANGE	R	Y	DW	DW	3
CLEAR	R	R	DW	DW	2
FLASHING OPERATION	Y	R	DARK	DARK	

NOTES:

1. STOP-AND-GO OPERATION SHALL BE IN EFFECT AT ALL TIMES.
2. FLASHING OPERATION SHALL BE IN EFFECT FOR EMERGENCY USE ONLY.

Cc: Julia Steponanko; Bernard Boerchers

Subject: Fwd: Lincoln Ave Bridge Replacement, Local CD, Traffic Signal Timing Directives

George

Can you help with this?

Thanks

Basit (Sunny) A. Muzaffar, P.E.
Supervising Engineer, Highways & Bridges
Mercer County DOT&I
Division of Engineering
640 South Broad Street
Trenton, NJ 08650-0068
609-989-6641
609-989-8295 fax

Begin forwarded message:

From: "Steponanko, Julia" <jsteponanko@gpinet.com>

Date: December 23, 2015 at 9:06:54 AM EST

To: "Muzaffar, Basit" <bmuzaffar@mercercounty.org>

Cc: "Sandusky, Greg" <gsandusky@mercercounty.org>, "Boerchers, Bernard" <bboerchers@gpinet.com>

Subject: Lincoln Ave Bridge Replacement, Local CD, Traffic Signal Timing Directives

Hi Sunny,

We respectfully request the timing directives for the traffic signals listed below for the above subject project.

1. CR 635 (E. State Street) and N. Clinton Avenue ✓
2. CR 635 (E. State Street) and Chestnut Avenue/Wall Street and Raoul Wallenburg Avenue ✓
3. CR 635 (E. State Street) and Lincoln Avenue/Chambers Street ✓
4. CR 635 (E. State Street) and CR 622 (N. Olden Avenue) ✓
5. CR 622 (N. Olden Avenue) and N. Clinton Avenue ✓
6. N. Clinton Avenue and Monmouth Street ✓
7. N. Clinton Avenue and Lincoln Avenue ✓

Thanks,



Julia Steponanko, P.E.

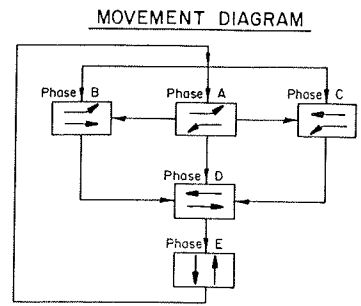
Greenman-Pedersen, Inc.
Engineering and Construction Services

100 Corporate Drive, Suite 301, Lebanon, NJ 08833
908.236.9001 — ext. 5064 | f 908.236.9660
jsteponanko@gpinet.com | www.gpinet.com

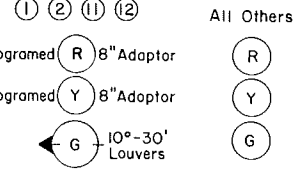
An Equal Opportunity Employer

This communication and any attachments are intended only for the use of the individual or

FACE NO.	PHASE A			PHASE B			PHASE C			PHASE D			PHASE E						
	R/W	Clear. if to Phase B	Clear. if to Phase C	Clear. if to Phase D or E	R/W	Clear. if to Phase A	Clear. if to Phase C or E	Clear. if to Phase D	R/W	Clear. if to Phase A	Clear. if to Phase B or E	Clear. if to Phase D	R/W	Clear. if to Phase A or E	Clear. if to Phase B	Clear. if to Phase C	R/W	Clear. if to Phase A, B, C, or D	
1 & 2	←G	Y	←G	Y	R	R	R	R	←G	←G	Y	Y	R	R	R	R	R	R	R
3, 4 & 16	R	R	R	R	G	Y	Y	G	R	R	R	R	G	Y	G	Y	R	R	R
5, 6, 7, 8, 9 & 10	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	G	Y
11 & 12	←G	←G	Y	Y	←G	←G	Y	Y	R	R	R	R	R	R	R	R	R	R	R
13, 14 & 15	R	R	R	R	R	R	R	R	G	Y	Y	G	G	Y	Y	G	R	R	R



SIGNAL FACES



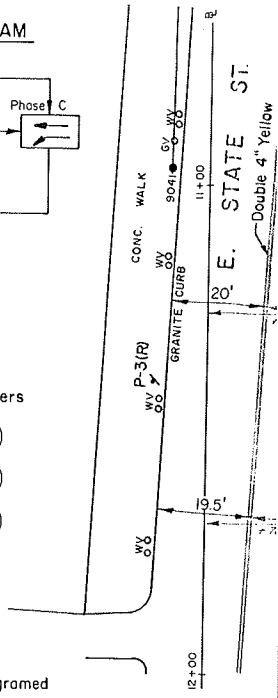
TIME SETTING FOR INDIVIDUAL MODULES

INTERVAL	MOVEMENT				
	↘	↗	→	←	↑↓
INITIAL	8	8	10	10	10
VEHICLE	4	4	5	5	4
MAXIMUM	25	25	30	30	30
CLEAR.	3	3	3	3	3

SIGNAL FACES

(15) - 10°-30' Louvers
 (16) - Programmed B" Adaptor
 Arrow Lenses to be 12" Dia.
 Shading Delineates Areas of Programmed and/or Louvered Signal Visibility

Controller Type 5
 Pedestrian Push Button Actuation will call opposite phase.
 Flashing Operation: Face Nos. 1, 2, 3, 4, 11, 12, 13, 14, 15 & 16 Flash Y
 5, 6, 7, 8, 9 & 10 Flash R
 Signal Nos. (2) & (12) to be mounted on 10' Pedestal Poles.



State Street & Chambers street / Lincoln Avenue

Appendix D

Crash Data & Diagrams



State of New Jersey

DEPARTMENT OF TRANSPORTATION
P.O. Box 600
Trenton, New Jersey 08625-0600

CHRIS CHRISTIE
Governor

RICHARD T. HAMMER
Acting Commissioner

KIM GUADAGNO
Lt. Governor

December 2, 2015

Christopher Marra, Design Engineer
Greenman-Pedersen, Inc.
Engineering and Construction Services
100 Corporate Drive, Suite 301
Lebanon, NJ 08833

RECEIVED MAY 05 2016

RE: Crash Reports
Lincoln Avenue MP 0.09 – 0.35 / County Route 626 MP 0.00 – 0.10
Trenton City, Mercer County

This is in reference to your request dated October 7, 2015, requesting this office to furnish the crash data for the above referenced location for the most recent years.

Enclosed are the Crash Summary, Details of Motor Vehicle Accidents and Police Crash Reports for the years January 1, 2011, through December 31, 2013. The Details will show the frequency, severity, conditions and circumstances surrounding the section crashes. The crash summary will show overrepresentations for this section of County Route 626 and is herewith attached. The percentages on the summary are 2013 statewide average values corresponding to overrepresented crash categories. This information may help your office in any engineering decision that might be made to improve or upgrade this section of County Route 626.

ATTENTION

The police crash reports supplied with this analysis contain sensitive personal data. Appropriate caution must be used in the handling of these reports to ensure the privacy of the individuals involved in these crashes. Once the crash reports are no longer needed, please make sure they are shredded to maintain this privacy.

If there are any further questions, please contact Geoffrey Gayanilo of this office at 609-530-4278.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Mark Tozzi', with a long horizontal flourish extending to the right.

Mark Tozzi, Project Engineer
Bureau of Transportation Data and Safety

MT:TZ:GG
Mail Log No. 135-15

Cc: Arun Kumar, NJDOT Local Aid

CRASH SUMMARY

County Route 626 MP 0.00 - 0.10
Trenton City, Mercer County
01/01/2011 THRU 12/31/2013

TOTAL CRASHES: 19

SEVERITY	COUNT	% OF TOTAL	2013 Average
Fatal	0	0.00%	
Injury - Maj	0	0.00%	
Injury - Mod	0	0.00%	
Injury - Min	6	31.58%	21.64%
Property Damage	13	68.42%	
Total	19		

COLLISION TYPE	COUNT	% OF TOTAL	2013 Average	**
Same Dir.-Rear End	7	36.84%	32.96%	
Same Dir.-Sideswipe	4	21.05%	11.94%	
Angle	2	10.53%		
Head On	1	5.26%		
Parked Vehicle	0	0.00%		
Left Turn / U Turn	1	5.26%	4.30%	
Backing	0	0.00%		
Encroachment	1	5.26%	0.34%	
Overturned	0	0.00%		
Fixed Object	2	10.53%		
Animal	0	0.00%		
Pedestrian	0	0.00%		
Pedalcycle	1	5.26%	0.87%	
Non-Fixed Object	0	0.00%		
Unknown	0	0.00%		
Other	0	0.00%		
Total	19			

INTERSECTION	COUNT	% OF TOTAL	2013 Average	**
At Signalized Intersection	13	68.42%	16.07%	
At Unsignalized Intersection	2	10.53%		
Between Intersections	4	21.05%		
Railroad Crossing	0	0.00%		
Total	19			

SURFACE CONDITION	COUNT	% OF TOTAL	2013 Average	**
Dry	12	63.16%		
Wet Surface	4	21.05%	18.38%	
Snow	0	0.00%		
Ice	2	10.53%	1.33%	
Unknown	1	5.26%	0.32%	
Other	0	0.00%		
Total	19			

LIGHT	COUNT	% OF TOTAL	2013 Average	**
Day	10	52.63%		
Dusk	1	5.26%	2.63%	
Night	7	36.84%	24.61%	
Dawn	0	0.00%		
Unknown	1	5.26%	0.45%	
Total	19			

Note: ** These columns indicate the number of fatal crashes in each accident category.

Length of Segment _____
 Number of Years _____
 AADT _____

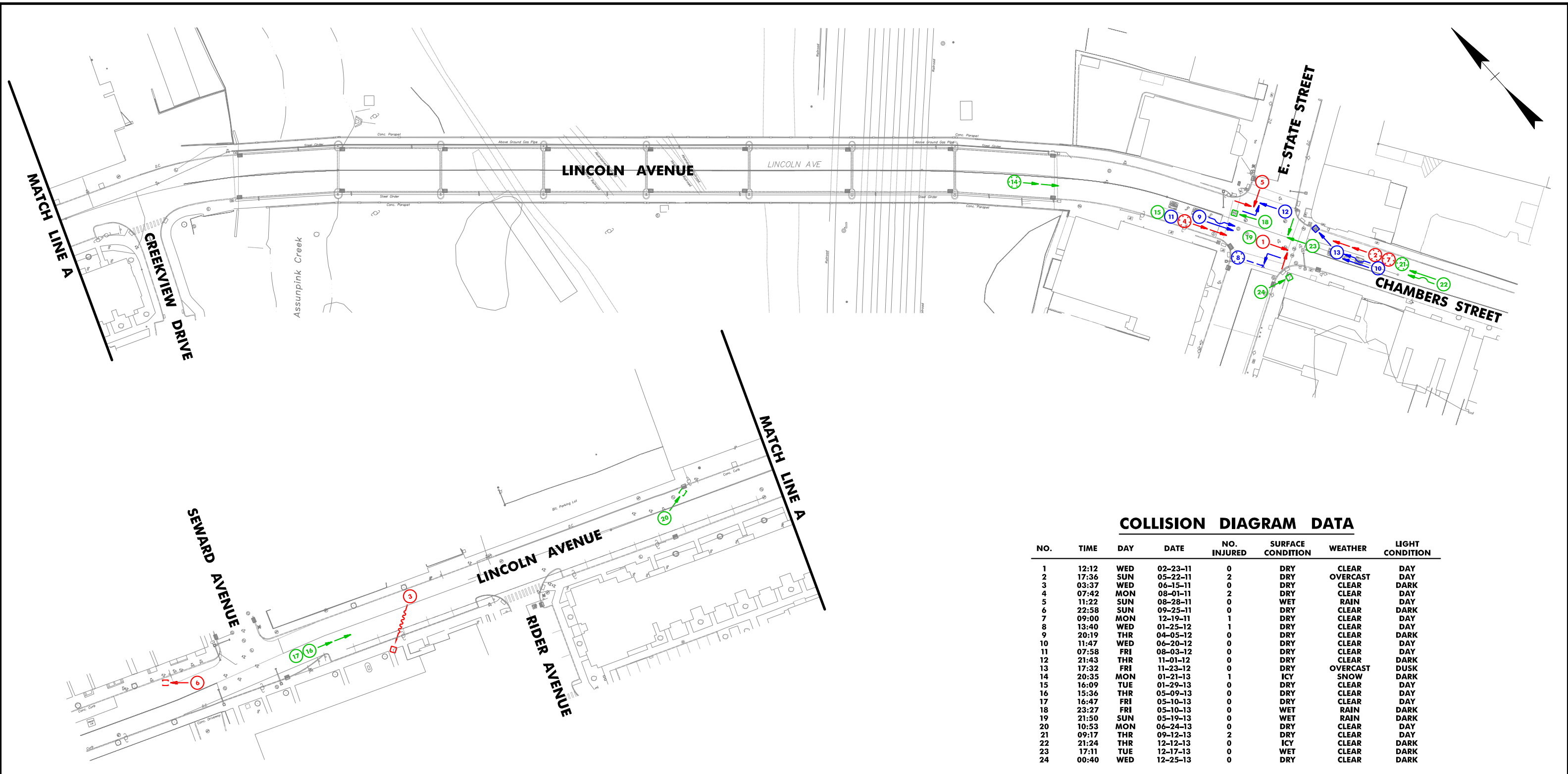
Crash Rate/MMVM _____

2013 Statewide Crash Rate/MMVM _____

BUREAU OF SAFETY PROGRAMS
DETAIL OF MOTOR VEHICLE ACCIDENTS
ON ROUTE 626
MILEPOST 0.000 TO 0.100
01/01/2011 TO 12/31/2013

ROAD SYS	COLLISION TYPE	VEHICLE 1 DIR TRAV	VEH TYPE, VEH ACTN	VEHICLE 2 DIR TRAV	VEH TYPE, VEH ACTN	WEA SUR	LITE	DATE	DOW	TIME	CIRCUMSTANCES	VEH 1 CONTRIB CIRCUMSTANCES	VEH 2 CONTRIB CIRCUMSTANCES	NO. KIL	NO. MAJ MOD	INJURED MIN	NO. INJURED MAX
CCOUNTY ROAD	CR 626	MP 000.08	N- SUV-STOP-TRAF	NEAR CR 635 / E STATE ST	N- PASS-GOING STRT	CL/DR	DAY	09/12/13	THR	09:17	NONE-DRIVER/CYC	MERCER	DRI INATTENTION	0	0	0	2
CCOUNTY ROAD	CR 626	MP 000.10	W- PASS-GOING STRT	NEAR E STATE ST	E- PKUP-GOING STRT	RN/WT	DAY	08/28/11	SUN	11:22	CD DEFECT/MSSNG	MERCER	CD DEFECT/MSSNG	0	0	0	2
CCOUNTY ROAD	CR 626	MP 000.10	N- PASS-GOING STRT	NEAR E STATE ST	N- PASS-SLOW-STOP	CL/DR	DAY	12/19/11	MON	09:00	NONE-DRIVER/CYC	DRI INATTENTION	DRI INATTENTION	0	0	0	1
CCOUNTY ROAD	CR 626	MP 000.10	U- PASS-SLOW-STOP	NEAR E STATE ST	U- PASS-SLOW-STOP	SN/IC	DARK	01/21/13	MON	20:35	RD SURF CNDITON	RD SURF CNDITON	RD SURF CNDITON	0	0	0	1
CCOUNTY ROAD	CR 626	MP 000.10	E- PASS-GOING STRT	AT E STATE ST	S- PASS-GOING STRT	CL/DR	DAY	02/23/11	WED	12:12	NONE-DRIVER/CYC	MERCER	DRI INATTENTION	0	0	0	1
CCOUNTY ROAD	CR 626	MP 000.10	U- UNKN-GOING STRT	AT E STATE ST	U- UNKN-GOING STRT	OC/DR	DAY	05/22/11	SUN	17:36	DRI INATTENTION	DRI INATTENTION	DRI INATTENTION	0	0	0	2
CCOUNTY ROAD	CR 626	MP 000.10	W- OTHER-SLOW-STOP	AT E STATE ST	W- PASS-SLOW-STOP	CL/DR	DAY	08/01/11	MON	07:42	NONE-DRIVER/CYC	NONE-DRIVER/CYC	NONE-DRIVER/CYC	0	0	0	2
CCOUNTY ROAD	CR 626	MP 000.10	N- SUV-LEFT TURN	AT E STATE ST	N- PASS-GOING STRT	CL/DR	DAY	01/25/12	WED	13:40	FAIL TO YLD ROW	DRI INATTENTION	DRI INATTENTION	0	0	0	1
CCOUNTY ROAD	CR 626	MP 000.10	S- SUV-GOING STRT	AT E STATE ST	S- PASS-PASSING	CL/DR	DARK	04/05/12	THR	20:19	NONE-DRIVER/CYC	DRI INATTENTION	DRI INATTENTION	0	0	0	0
CCOUNTY ROAD	CR 626	MP 000.10	N- PASS-LEFT TURN	AT E STATE ST	N- OTHER-GOING STRT	CL/DR	DAY	06/20/12	WED	11:47	NONE-DRIVER/CYC	NONE-DRIVER/CYC	NONE-DRIVER/CYC	0	0	0	0
CCOUNTY ROAD	CR 626	MP 000.10	N- PASS-STOP-TRAF	AT E STATE ST	N- SUV-START TRAF	CL/DR	DAY	08/03/12	FRI	07:58	NONE-DRIVER/CYC	DRI INATTENTION	DRI INATTENTION	0	0	0	0
CCOUNTY ROAD	CR 626	MP 000.10	S- PASS-LEFT TURN	AT E STATE ST	S- PASS-LEFT TURN	CL/DR	DAY	11/01/12	THR	21:43	DISOBEYED TCD	DISOBEYED TCD	DISOBEYED TCD	0	0	0	0
CCOUNTY ROAD	CR 626	MP 000.10	U- UNKN-GOING STRT	AT E STATE ST	U- UNKN-GOING STRT	OC/DR	DUSK	11/23/12	FRI	17:32	DRI INATTENTION	DRI INATTENTION	DRI INATTENTION	0	0	0	0
CCOUNTY ROAD	CR 626	MP 000.10	U- PASS-STOP-TRAF	AT E STATE ST	U- PASS-STOP-TRAF	CL/DR	DAY	01/29/13	TUE	16:09	NONE-DRIVER/CYC	NONE-DRIVER/CYC	NONE-DRIVER/CYC	0	0	0	0
CCOUNTY ROAD	CR 626	MP 000.10	S- PASS-GOING STRT	AT E STATE ST	S- PASS-GOING STRT	RN/WT	DARK	05/10/13	FRI	23:27	RD SURF CNDITON	DRI INATTENTION	DRI INATTENTION	0	0	0	0
CCOUNTY ROAD	CR 626	MP 000.10	S- SUV-GOING STRT	AT E STATE ST	S- PASS-GOING STRT	RN/WT	DARK	05/19/13	SUN	21:50	NONE-DRIVER/CYC	DRI INATTENTION	DRI INATTENTION	0	0	0	0
CCOUNTY ROAD	CR 626	MP 000.10	N- PASS-STOP-TRAF	AT E STATE ST	N- PASS-GOING STRT	CL/IC	DARK	12/12/13	THR	21:24	NONE-DRIVER/CYC	UNSAFE SPEED	UNSAFE SPEED	0	0	0	0
CCOUNTY ROAD	CR 626	MP 000.10	N- PKUP-STOP-TRAF	AT E STATE ST	N- OTHER-LEFT TURN	CL/WT	DARK	12/17/13	TUE	17:11	NONE-DRIVER/CYC	DRI INATTENTION	DRI INATTENTION	0	0	0	0
CCOUNTY ROAD	CR 626	MP 000.10	N- PASS-GOING STRT	AT E STATE ST	N- PASS-GOING STRT	CL/DR	DARK	12/25/13	WED	00:40	NONE-DRIVER/CYC	DRI INATTENTION	DRI INATTENTION	0	0	0	0

FILE: I:\2010088-DVPRC Lincoln Ave Bridge Replacement\LCD_Subs\CAD\Crashes\Lincoln Avenue Crash Diagrams.dgn
 TIME: 3:48:32 PM
 DATE: 5/6/2016
 GREENMAN-PEDERSEN, INC.



COLLISION DIAGRAM DATA

NO.	TIME	DAY	DATE	NO. INJURED	SURFACE CONDITION	WEATHER	LIGHT CONDITION
1	12:12	WED	02-23-11	0	DRY	CLEAR	DAY
2	17:36	SUN	05-22-11	2	DRY	OVERCAST	DAY
3	03:37	WED	06-15-11	0	DRY	CLEAR	DARK
4	07:42	MON	08-01-11	2	DRY	CLEAR	DAY
5	11:22	SUN	08-28-11	0	WET	RAIN	DAY
6	22:58	SUN	09-25-11	0	DRY	CLEAR	DARK
7	09:00	MON	12-19-11	1	DRY	CLEAR	DAY
8	13:40	WED	01-25-12	1	DRY	CLEAR	DAY
9	20:19	THR	04-05-12	0	DRY	CLEAR	DARK
10	11:47	WED	06-20-12	0	DRY	CLEAR	DAY
11	07:58	FRI	08-03-12	0	DRY	CLEAR	DAY
12	21:43	THR	11-01-12	0	DRY	CLEAR	DARK
13	17:32	FRI	11-23-12	0	DRY	OVERCAST	DUSK
14	20:35	MON	01-21-13	1	ICY	SNOW	DARK
15	16:09	TUE	01-29-13	0	DRY	CLEAR	DAY
16	15:36	THR	05-09-13	0	DRY	CLEAR	DAY
17	16:47	FRI	05-10-13	0	DRY	CLEAR	DAY
18	23:27	FRI	05-10-13	0	WET	RAIN	DARK
19	21:50	SUN	05-19-13	0	WET	RAIN	DARK
20	10:53	MON	06-24-13	0	DRY	CLEAR	DAY
21	09:17	THR	09-12-13	2	DRY	CLEAR	DAY
22	21:24	THR	12-12-13	0	ICY	CLEAR	DARK
23	17:11	TUE	12-17-13	0	WET	CLEAR	DARK
24	00:40	WED	12-25-13	0	DRY	CLEAR	DARK

LEGEND

<p>NUMBER OF COLLISIONS WITH</p> <p>PROPERTY DAMAGE ONLY <u>18</u></p> <p>INJURIES <u>6</u></p> <p>FATALITIES <u>0</u></p> <p>TOTAL NO. OF COLLISIONS <u>24</u></p>	<p>SYMBOLS</p> <p>← MOVING VEHICLE</p> <p>←→ BACKING VEHICLE</p> <p>- - - NON-INVOLVED VEHICLE</p> <p>⊙ INJURY IN ACCIDENT</p> <p>⊙ FATAL ACCIDENT</p> <p>x - - - PEDESTRIAN</p> <p>□ FIXED OBJECT</p> <p>□ NON-FIXED OBJECT</p> <p>△ ANIMAL</p> <p>⊗ POTHOLE</p>	<p>TYPES OF COLLISIONS</p> <p>← REAR END</p> <p>→ HEAD ON</p> <p>←→ SIDE SWIPE</p> <p>~ OUT OF CONTROL</p> <p>⊖ OVERTURNED</p> <p>←→ LEFT TURN</p> <p>←→ RIGHT ANGLE</p>	<p>COLORS</p> <p>⊙ 2011 CRASHES</p> <p>⊙ 2012 CRASHES</p> <p>⊙ 2013 CRASHES</p>
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DELAWARE VALLEY REGIONAL PLANNING COMMISSION

LINCOLN AVENUE BRIDGE REPLACEMENT
LOCAL CONCEPT DEVELOPMENT

2011 - 2013 COLLISION DIAGRAMS

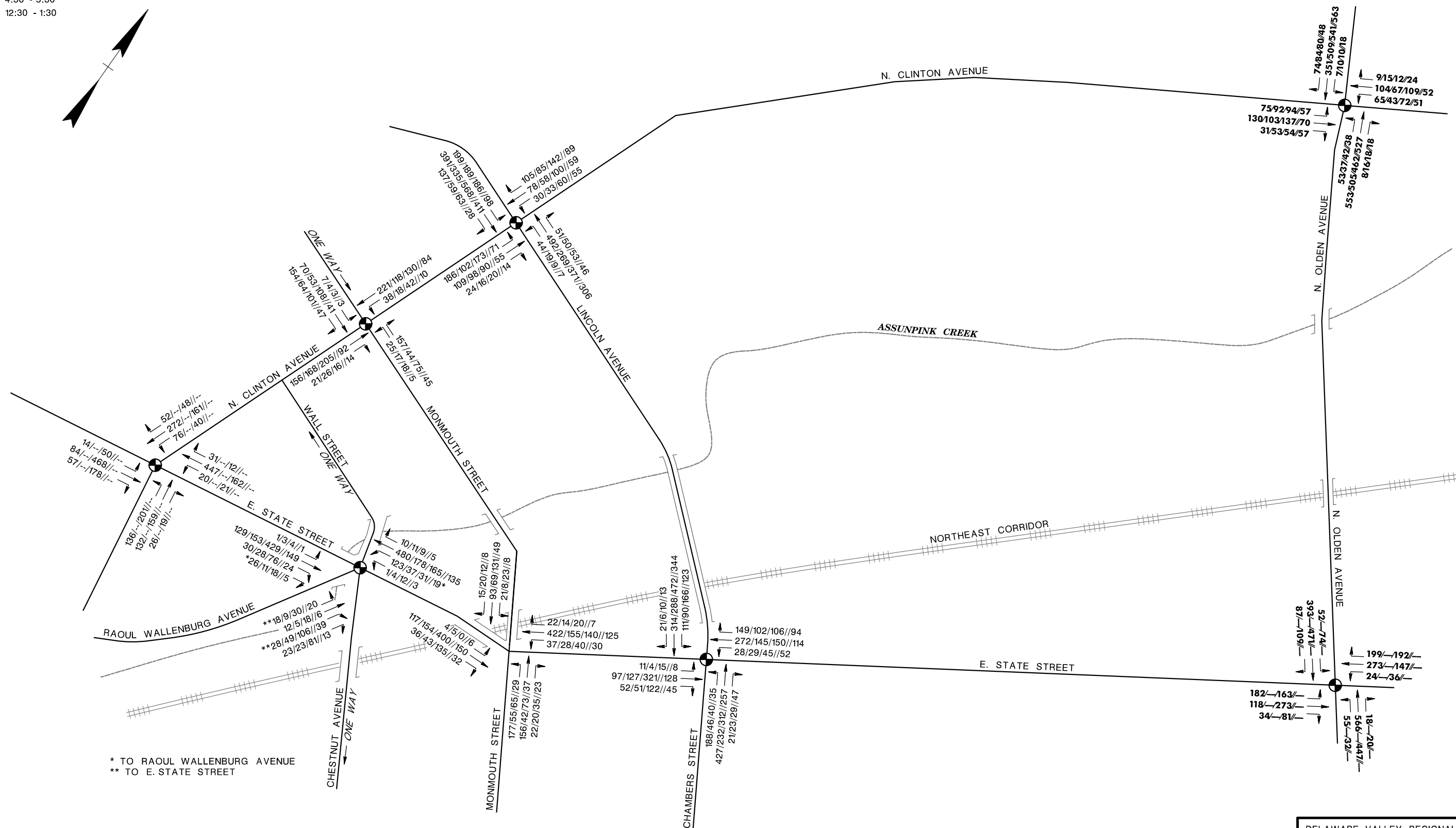
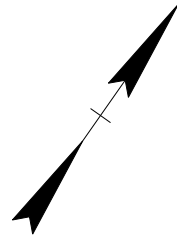
GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

NOT TO SCALE

Appendix E

Traffic Counts and Flow Diagram

PEAK HOURS:
 AM: 8:00 - 9:00
 MID: 12:45 - 1:45
 PM: 4:30 - 5:30
 SAT: 12:30 - 1:30



* TO RAOUL WALLENBURG AVENUE
 ** TO E. STATE STREET

NOTE:
 PEAK HOUR VOLUMES AT N. OLDEN AVENUE INTERSECTIONS WITH N. CLINTON AVENUE AND E. STATE STREET WERE NOT BALANCED DUE TO THEIR DISTANCE FROM THE PROJECT LOCATION.
 MTMC - 2015 WEEKDAY PERFORMED ON OCTOBER 14 AND OCTOBER 29, 2015 BY GREENMAN-PEDERSEN, INC.
 - 2015 SATURDAY PERFORMED ON OCTOBER 17 AND NOVEMBER 14, 2015 BY GREENMAN-PEDERSEN, INC.
 - 2014 WEEKDAY PERFORMED ON MAY 15 AND MARCH 18, 2014 BY DVRPC (E. STATE ST INTERSECTIONS WITH N. CLINTON AVE AND N. OLDEN AVE ONLY).

LEGEND
 ● SIGNALIZED INTERSECTION
 AM/MIDDAY/PM/SAT PEAK HOURS (BALANCED)
 AMMIDDAY/PM/SAT PEAK HOURS (UNBALANCED)
 MTMC MANUAL TURNING MOVEMENT COUNT

DELAWARE VALLEY REGIONAL PLANNING COMMISSION

**BALANCED VOLUMES
 AMMIDDAY/PM/SAT PEAK HOUR**

LINCOLN AVENUE BRIDGE REPLACEMENT
 FLOW DIAGRAM
 TRENTON CITY
 MERCER COUNTY

Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

North Clinton Ave & Lincoln Ave
Trenton, Mercer County, NJ
6:30am-6:30pm Pat H & Romesh R
Lat: 40.225681 Long: -74.753221

File Name : Clinton & Lincoln
Site Code :
Start Date : 10/14/2015
Page No : 1

Groups Printed- Passenger Vehicles - Medium Trucks & Small Buses - Heavy Trucks & Full Size Buses

Start Time	North Clinton Avenue Southbound					Lincoln Avenue Westbound					North Clinton Avenue Northbound					Lincoln Avenue Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
06:30 AM	11	9	5	0	25	3	55	1	0	59	0	6	11	0	17	1	25	19	1	46	147
06:45 AM	16	16	6	0	38	6	80	0	3	89	0	14	15	0	29	2	62	35	0	99	255
Total	27	25	11	0	63	9	135	1	3	148	0	20	26	0	46	3	87	54	1	145	402
07:00 AM	22	6	5	2	35	9	76	1	6	92	4	7	16	1	28	10	51	24	2	87	242
07:15 AM	17	8	4	0	29	10	82	4	10	106	1	12	21	1	35	17	65	26	0	108	278
07:30 AM	18	4	2	0	24	10	91	2	10	113	5	13	23	2	43	19	73	20	0	112	292
07:45 AM	23	15	3	4	45	20	123	4	9	156	3	16	39	0	58	23	82	31	0	136	395
Total	80	33	14	6	133	49	372	11	35	467	13	48	99	4	164	69	271	101	2	443	1207
08:00 AM	36	24	11	1	72	8	106	6	6	126	3	18	54	5	80	25	103	54	0	182	460
08:15 AM	20	19	6	0	45	14	110	8	5	137	5	28	50	0	83	44	95	50	2	191	456
08:30 AM	21	27	5	3	56	10	119	15	15	159	12	34	44	12	102	40	94	41	2	177	494
08:45 AM	31	11	9	3	54	14	109	11	3	137	4	27	34	1	66	28	99	54	3	184	441
Total	108	81	31	7	227	46	444	40	29	559	24	107	182	18	331	137	391	199	7	734	1851
09:00 AM	17	22	13	2	54	16	89	8	11	124	5	26	27	3	61	21	86	40	2	149	388
09:15 AM	31	7	1	1	40	18	73	6	1	98	1	28	29	0	58	19	74	45	3	141	337
*** BREAK ***																					
Total	48	29	14	3	94	34	162	14	12	222	6	54	56	3	119	40	160	85	5	290	725
*** BREAK ***																					
10:30 AM	31	11	9	0	51	3	47	1	5	56	3	14	37	1	55	12	60	31	0	103	265
10:45 AM	11	11	8	0	30	6	70	4	6	86	7	18	22	3	50	15	81	25	0	121	287
Total	42	22	17	0	81	9	117	5	11	142	10	32	59	4	105	27	141	56	0	224	552
11:00 AM	12	13	3	0	28	17	53	7	4	81	4	13	18	1	36	16	68	17	0	101	246
11:15 AM	10	14	7	0	31	9	51	3	5	68	8	16	27	4	55	11	53	24	1	89	243
11:30 AM	13	8	5	1	27	9	65	5	11	90	6	10	25	2	43	10	61	19	1	91	251
11:45 AM	28	4	6	1	39	8	59	1	3	71	4	13	29	0	46	15	82	36	2	135	291
Total	63	39	21	2	125	43	228	16	23	310	22	52	99	7	180	52	264	96	4	416	1031
12:00 PM	21	10	10	0	41	8	63	4	4	79	3	27	30	0	60	22	90	36	1	149	329
12:15 PM	29	12	4	2	47	9	50	1	7	67	9	9	24	2	44	10	70	46	0	126	284
12:30 PM	22	11	5	1	39	4	67	5	4	80	3	21	30	3	57	19	73	50	0	142	318
12:45 PM	16	17	9	3	45	16	65	6	7	94	4	31	38	2	75	15	88	50	1	154	368
Total	88	50	28	6	172	37	245	16	22	320	19	88	122	7	236	66	321	182	2	571	1299
01:00 PM	27	18	6	2	53	8	57	6	6	77	5	28	31	3	67	17	100	52	2	171	368
01:15 PM	25	18	13	0	56	13	83	4	3	103	4	25	21	0	50	12	66	52	2	132	341
01:30 PM	24	10	8	0	42	12	60	3	2	77	4	20	18	0	42	18	98	45	3	164	325
01:45 PM	36	20	6	1	63	10	63	3	11	87	2	18	15	2	37	22	93	36	1	152	339
Total	112	66	33	3	214	43	263	16	22	344	15	91	85	5	196	69	357	185	8	619	1373
*** BREAK ***																					
03:00 PM	34	26	9	1	70	19	86	9	18	132	3	26	48	15	92	31	115	42	4	192	486
03:15 PM	38	24	16	18	96	16	79	8	20	123	15	33	47	13	108	18	105	50	14	187	514
03:30 PM	43	34	25	8	110	17	88	5	7	117	5	20	42	8	75	20	145	59	1	225	527
03:45 PM	25	18	22	3	68	9	85	2	9	105	8	20	24	2	54	12	106	38	3	159	386
Total	140	102	72	30	344	61	338	24	54	477	31	99	161	38	329	81	471	189	22	763	1913
04:00 PM	39	28	21	1	89	14	81	6	4	105	19	34	77	1	131	11	109	43	3	166	491
04:15 PM	12	21	24	1	58	10	69	3	14	96	6	28	54	7	95	7	103	28	2	140	389
04:30 PM	40	31	22	1	94	15	89	3	10	117	10	25	49	3	87	15	134	45	1	195	493
04:45 PM	31	25	9	3	68	14	85	4	8	111	2	20	49	1	72	11	123	47	7	188	439
Total	122	105	76	6	309	53	324	16	36	429	37	107	229	12	385	44	469	163	13	689	1812
05:00 PM	27	23	13	5	68	13	90	2	7	112	4	28	42	1	75	21	134	44	11	210	465

Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

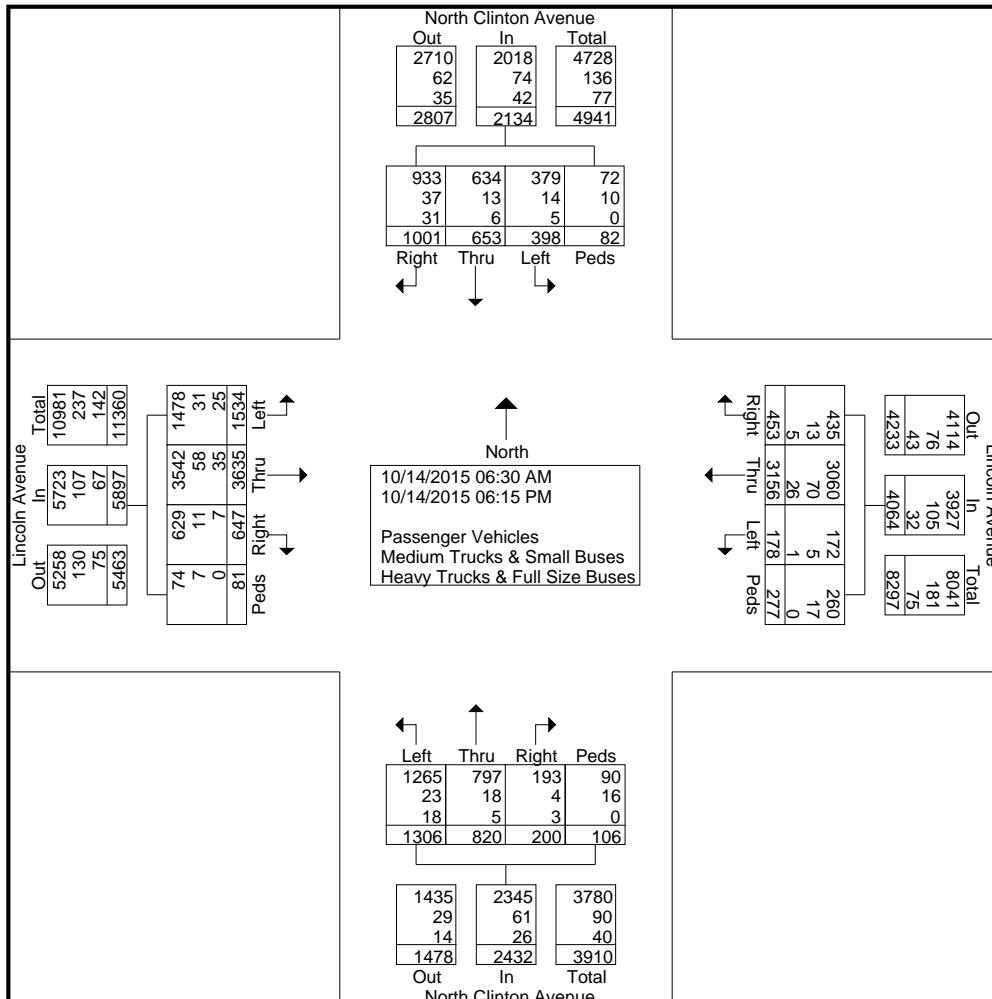
Engineering and Construction Services

North Clinton Ave & Lincoln Ave
Trenton, Mercer County, NJ
6:30am-6:30pm Pat H & Romesh R
Lat: 40.225681 Long: -74.753221

File Name : Clinton & Lincoln
Site Code :
Start Date : 10/14/2015
Page No : 2

Groups Printed- Passenger Vehicles - Medium Trucks & Small Buses - Heavy Trucks & Full Size Buses

Start Time	North Clinton Avenue Southbound					Lincoln Avenue Westbound					North Clinton Avenue Northbound					Lincoln Avenue Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
05:15 PM	44	21	16	3	84	8	89	0	2	99	5	21	40	0	66	11	134	36	0	181	430
05:30 PM	37	12	16	3	68	12	112	1	11	136	2	19	36	2	59	2	120	37	3	162	425
05:45 PM	24	17	13	4	58	11	91	4	7	113	5	19	29	0	53	12	125	35	1	173	397
Total	132	73	58	15	278	44	382	7	27	460	16	87	147	3	253	46	513	152	15	726	1717
06:00 PM	20	15	10	4	49	12	65	6	1	84	4	17	21	4	46	6	112	44	0	162	341
06:15 PM	19	13	13	0	45	13	81	6	2	102	3	18	20	1	42	7	78	28	2	115	304
Grand Total	1001	653	398	82	2134	453	3156	178	277	4064	200	820	1306	106	2432	647	3635	1534	81	5897	14527
Apprch %	46.9	30.6	18.7	3.8		11.1	77.7	4.4	6.8		8.2	33.7	53.7	4.4		11	61.6	26	1.4		
Total %	6.9	4.5	2.7	0.6	14.7	3.1	21.7	1.2	1.9	28	1.4	5.6	9	0.7	16.7	4.5	25	10.6	0.6	40.6	
Passenger Vehicles	933	634	379	72	2018	435	3060	172	260	3927	193	797	1265	90	2345	629	3542	1478	74	5723	14013
% Passenger Vehicles	93.2	97.1	95.2	87.8	94.6	96	97	96.6	93.9	96.6	96.5	97.2	96.9	84.9	96.4	97.2	97.4	96.3	91.4	97	96.5
Medium Trucks & Small Buses	37	13	14	10	74	13	70	5	17	105	4	18	23	16	61	11	58	31	7	107	347
% Medium Trucks & Small Buses	3.7	2	3.5	12.2	3.5	2.9	2.2	2.8	6.1	2.6	2	2.2	1.8	15.1	2.5	1.7	1.6	2	8.6	1.8	2.4
Heavy Trucks & Full Size Buses	31	6	5	0	42	5	26	1	0	32	3	5	18	0	26	7	35	25	0	67	167
% Heavy Trucks & Full Size Buses	3.1	0.9	1.3	0	2	1.1	0.8	0.6	0	0.8	1.5	0.6	1.4	0	1.1	1.1	1	1.6	0	1.1	1.1



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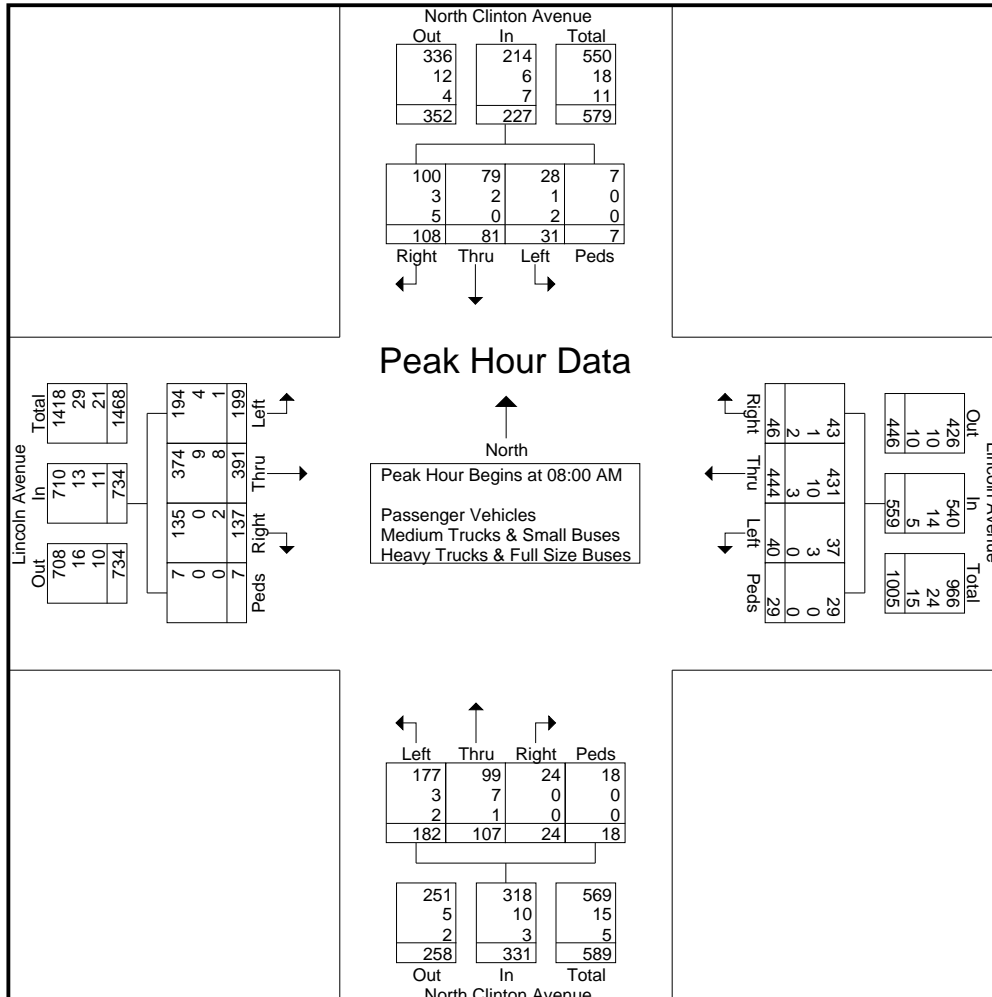
100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

North Clinton Ave & Lincoln Ave
Trenton, Mercer County, NJ
6:30am-6:30pm Pat H & Romesh R
Lat: 40.225681 Long: -74.753221

File Name : Clinton & Lincoln
Site Code :
Start Date : 10/14/2015
Page No : 3

Start Time	North Clinton Avenue Southbound					Lincoln Avenue Westbound					North Clinton Avenue Northbound					Lincoln Avenue Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 06:30 AM to 09:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	36	24	11	1	72	8	106	6	6	126	3	18	54	5	80	25	103	54	0	182	460
08:15 AM	20	19	6	0	45	14	110	8	5	137	5	28	50	0	83	44	95	50	2	191	456
08:30 AM	21	27	5	3	56	10	119	15	15	159	12	34	44	12	102	40	94	41	2	177	494
08:45 AM	31	11	9	3	54	14	109	11	3	137	4	27	34	1	66	28	99	54	3	184	441
Total Volume	108	81	31	7	227	46	444	40	29	559	24	107	182	18	331	137	391	199	7	734	1851
% App. Total	47.6	35.7	13.7	3.1		8.2	79.4	7.2	5.2		7.3	32.3	55	5.4		18.7	53.3	27.1	1		
PHF	.750	.750	.705	.583	.788	.821	.933	.667	.483	.879	.500	.787	.843	.375	.811	.778	.949	.921	.583	.961	.937
Passenger Vehicles	100	79	28	7	214	43	431	37	29	540	24	99	177	18	318	135	374	194	7	710	1782
% Passenger Vehicles																					
Medium Trucks & Small Buses	3	2	1	0	6	1	10	3	0	14	0	7	3	0	10	0	9	4	0	13	43
% Medium Trucks & Small Buses	2.8	2.5	3.2	0	2.6	2.2	2.3	7.5	0	2.5	0	6.5	1.6	0	3.0	0	2.3	2.0	0	1.8	2.3
Heavy Trucks & Full Size Buses	5	0	2	0	7	2	3	0	0	5	0	1	2	0	3	2	8	1	0	11	26
% Heavy Trucks & Full Size Buses	4.6	0	6.5	0	3.1	4.3	0.7	0	0	0.9	0	0.9	1.1	0	0.9	1.5	2.0	0.5	0	1.5	1.4



Greenman-Pedersen, Inc.

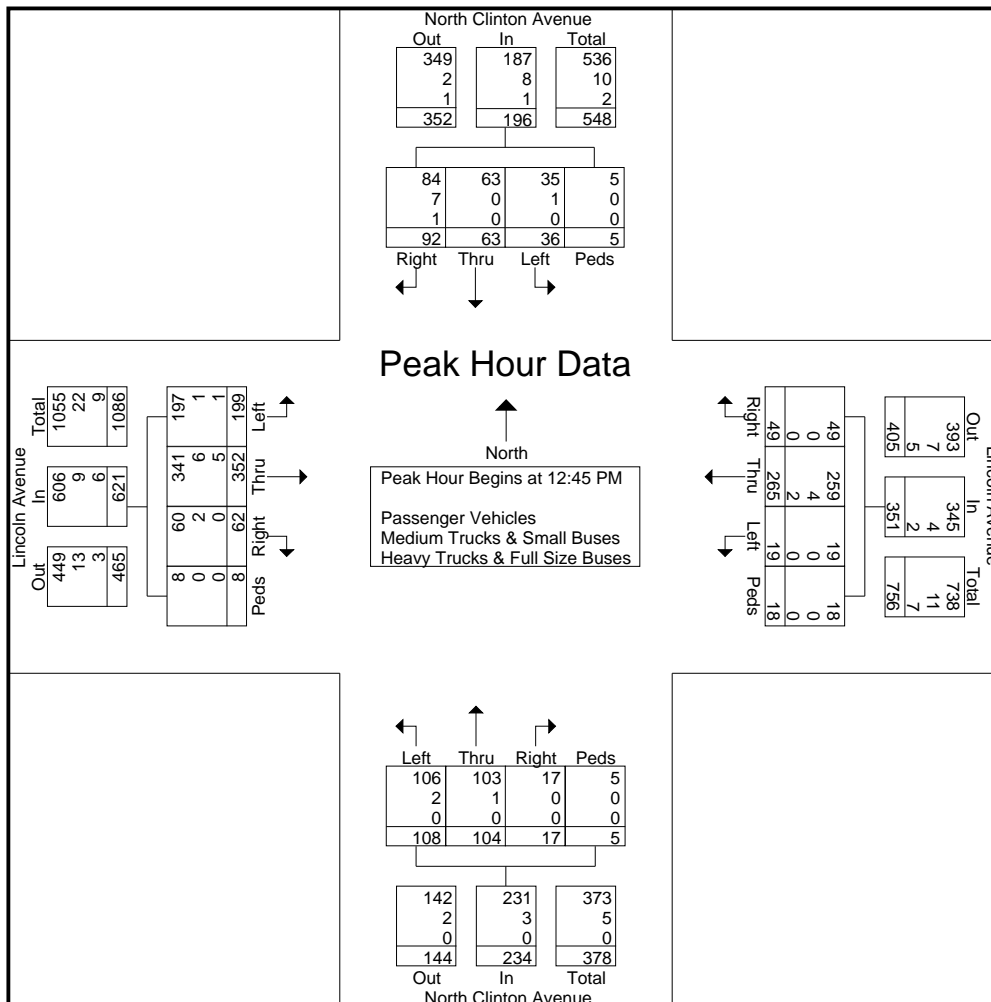
100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

North Clinton Ave & Lincoln Ave
Trenton, Mercer County, NJ
6:30am-6:30pm Pat H & Romesh R
Lat: 40.225681 Long: -74.753221

File Name : Clinton & Lincoln
Site Code :
Start Date : 10/14/2015
Page No : 4

Start Time	North Clinton Avenue Southbound					Lincoln Avenue Westbound					North Clinton Avenue Northbound					Lincoln Avenue Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 10:30 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:45 PM																					
12:45 PM	16	17	9	3	45	16	65	6	7	94	4	31	38	2	75	15	88	50	1	154	368
01:00 PM	27	18	6	2	53	8	57	6	6	77	5	28	31	3	67	17	100	52	2	171	368
01:15 PM	25	18	13	0	56	13	83	4	3	103	4	25	21	0	50	12	66	52	2	132	341
01:30 PM	24	10	8	0	42	12	60	3	2	77	4	20	18	0	42	18	98	45	3	164	325
Total Volume	92	63	36	5	196	49	265	19	18	351	17	104	108	5	234	62	352	199	8	621	1402
% App. Total	46.9	32.1	18.4	2.6		14	75.5	5.4	5.1		7.3	44.4	46.2	2.1		10	56.7	32	1.3		
PHF	.852	.875	.692	.417	.875	.766	.798	.792	.643	.852	.850	.839	.711	.417	.780	.861	.880	.957	.667	.908	.952
Passenger Vehicles	84	63	35	5	187	49	259	19	18	345	17	103	106	5	231	60	341	197	8	606	1369
% Passenger Vehicles																					
Medium Trucks & Small Buses	7	0	1	0	8	0	4	0	0	4	0	1	2	0	3	2	6	1	0	9	24
% Medium Trucks & Small Buses	7.6	0	2.8	0	4.1	0	1.5	0	0	1.1	0	1.0	1.9	0	1.3	3.2	1.7	0.5	0	1.4	1.7
Heavy Trucks & Full Size Buses	1	0	0	0	1	0	2	0	0	2	0	0	0	0	0	0	5	1	0	6	9
% Heavy Trucks & Full Size Buses	1.1	0	0	0	0.5	0	0.8	0	0	0.6	0	0	0	0	0	0	1.4	0.5	0	1.0	0.6



Greenman-Pedersen, Inc.

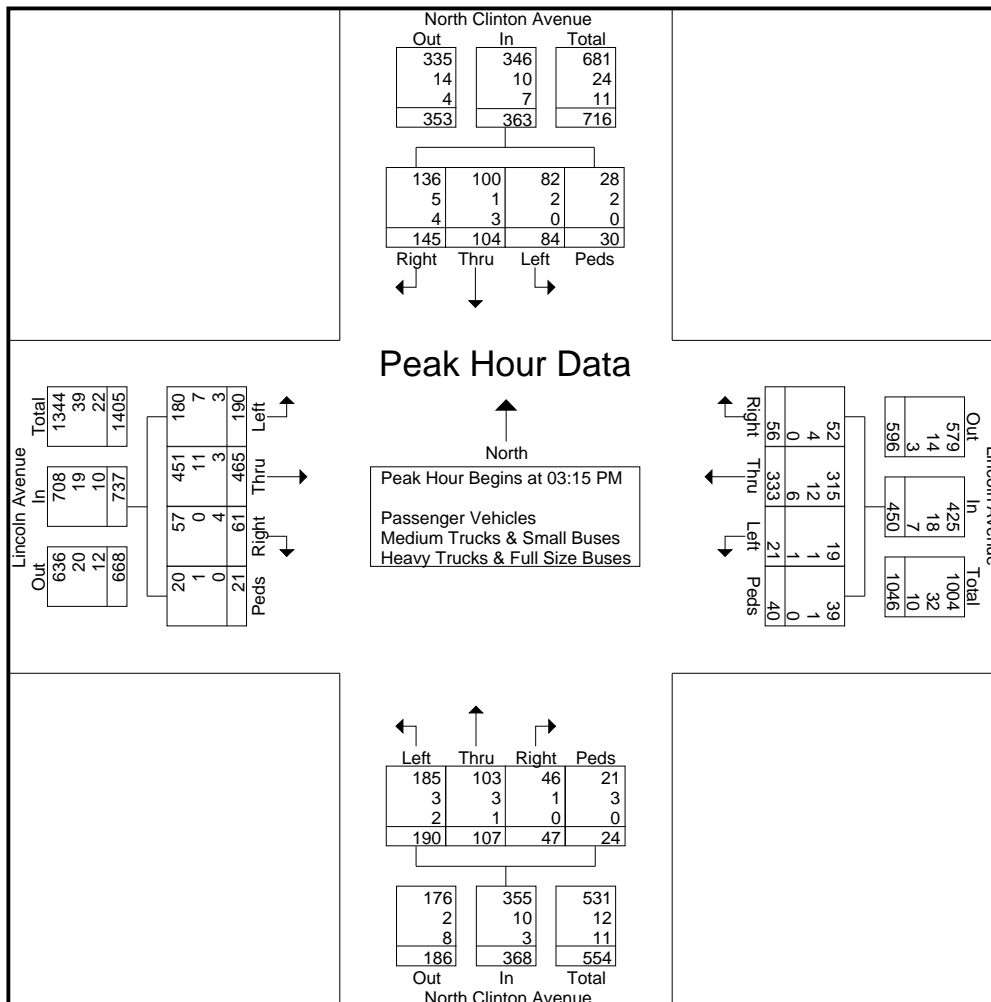
100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

North Clinton Ave & Lincoln Ave
Trenton, Mercer County, NJ
6:30am-6:30pm Pat H & Romesh R
Lat: 40.225681 Long: -74.753221

File Name : Clinton & Lincoln
Site Code :
Start Date : 10/14/2015
Page No : 5

Start Time	North Clinton Avenue Southbound					Lincoln Avenue Westbound					North Clinton Avenue Northbound					Lincoln Avenue Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 03:00 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:15 PM																					
03:15 PM	38	24	16	18	96	16	79	8	20	123	15	33	47	13	108	18	105	50	14	187	514
03:30 PM	43	34	25	8	110	17	88	5	7	117	5	20	42	8	75	20	145	59	1	225	527
03:45 PM	25	18	22	3	68	9	85	2	9	105	8	20	24	2	54	12	106	38	3	159	386
04:00 PM	39	28	21	1	89	14	81	6	4	105	19	34	77	1	131	11	109	43	3	166	491
Total Volume	145	104	84	30	363	56	333	21	40	450	47	107	190	24	368	61	465	190	21	737	1918
% App. Total	39.9	28.7	23.1	8.3		12.4	74	4.7	8.9		12.8	29.1	51.6	6.5		8.3	63.1	25.8	2.8		
PHF	.843	.765	.840	.417	.825	.824	.946	.656	.500	.915	.618	.787	.617	.462	.702	.763	.802	.805	.375	.819	.910
Passenger Vehicles	136	100	82	28	346	52	315	19	39	425	46	103	185	21	355	57	451	180	20	708	1834
% Passenger Vehicles																					
Medium Trucks & Small Buses	5	1	2	2	10	4	12	1	1	18	1	3	3	3	10	0	11	7	1	19	57
% Medium Trucks & Small Buses	3.4	1.0	2.4	6.7	2.8	7.1	3.6	4.8	2.5	4.0	2.1	2.8	1.6	12.5	2.7	0	2.4	3.7	4.8	2.6	3.0
Heavy Trucks & Full Size Buses	4	3	0	0	7	0	6	1	0	7	0	1	2	0	3	4	3	3	0	10	27
% Heavy Trucks & Full Size Buses	2.8	2.9	0	0	1.9	0	1.8	4.8	0	1.6	0	0.9	1.1	0	0.8	6.6	0.6	1.6	0	1.4	1.4



Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

North Clinton Ave & Lincoln Ave
Trenton, Mercer County, NJ
11:00am - 2:00pm Pat H & Romesh R
Lat: 40.225681 Long: -74.753221

File Name : Clinton & Lincoln-Sat
Site Code :
Start Date : 10/17/2015
Page No : 1

Groups Printed- Passenger Vehicles - Medium Trucks & Small Buses - Heavy Trucks & Full Size Buses

Start Time	North Clinton Avenue Southbound					Lincoln Avenue Westbound					North Clinton Avenue Northbound					Lincoln Avenue Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
11:00 AM	25	15	4	3	47	13	69	2	3	87	3	12	23	3	41	8	84	19	2	113	288
11:15 AM	27	12	8	2	49	12	69	3	3	87	2	14	17	13	46	10	76	37	4	127	309
11:30 AM	25	18	10	2	55	13	72	1	8	94	2	22	19	27	70	6	95	35	4	140	359
11:45 AM	31	11	11	3	56	12	63	1	5	81	2	20	20	11	53	2	80	34	5	121	311
Total	108	56	33	10	207	50	273	7	19	349	9	68	79	54	210	26	335	125	15	501	1267
12:00 PM	23	20	8	2	53	13	51	3	12	79	2	19	23	16	60	12	96	33	3	144	336
12:15 PM	27	17	13	6	63	8	44	3	7	62	5	23	25	9	62	10	109	31	1	151	338
12:30 PM	20	19	18	1	58	19	76	2	8	105	5	18	27	7	57	8	105	24	0	137	357
12:45 PM	28	17	17	3	65	18	116	0	3	137	3	14	17	8	42	6	102	29	3	140	384
Total	98	73	56	12	239	58	287	8	30	383	15	74	92	40	221	36	412	117	7	572	1415
01:00 PM	21	12	9	6	48	10	99	1	5	115	3	15	19	1	38	5	113	26	2	146	347
01:15 PM	20	11	11	3	45	8	77	6	1	92	4	12	13	2	31	11	114	24	1	150	318
01:30 PM	31	8	5	3	47	8	88	2	4	102	3	15	14	1	33	7	101	27	2	137	319
01:45 PM	25	7	16	7	55	17	76	0	4	97	2	14	14	0	30	8	103	35	0	146	328
Total	97	38	41	19	195	43	340	9	14	406	12	56	60	4	132	31	431	112	5	579	1312
Grand Total	303	167	130	41	641	151	900	24	63	1138	36	198	231	98	563	93	1178	354	27	1652	3994
Apprch %	47.3	26.1	20.3	6.4		13.3	79.1	2.1	5.5		6.4	35.2	41	17.4		5.6	71.3	21.4	1.6		
Total %	7.6	4.2	3.3	1	16	3.8	22.5	0.6	1.6	28.5	0.9	5	5.8	2.5	14.1	2.3	29.5	8.9	0.7	41.4	
Passenger Vehicles	295	167	129	32	623	150	890	23	48	1111	35	197	231	91	554	92	1171	347	16	1626	3914
% Passenger Vehicles	97.4	100	99.2	78	97.2	99.3	98.9	95.8	76.2	97.6	97.2	99.5	100	92.9	98.4	98.9	99.4	98	59.3	98.4	98
Medium Trucks & Small Buses	5	0	1	9	15	1	8	1	15	25	1	1	0	7	9	1	7	6	11	25	74
% Medium Trucks & Small Buses	1.7	0	0.8	22	2.3	0.7	0.9	4.2	23.8	2.2	2.8	0.5	0	7.1	1.6	1.1	0.6	1.7	40.7	1.5	1.9
Heavy Trucks & Full Size Buses	3	0	0	0	3	0	2	0	0	2	0	0	0	0	0	0	0	1	0	1	6
% Heavy Trucks & Full Size Buses	1	0	0	0	0.5	0	0.2	0	0	0.2	0	0	0	0	0	0	0	0.3	0	0.1	0.2

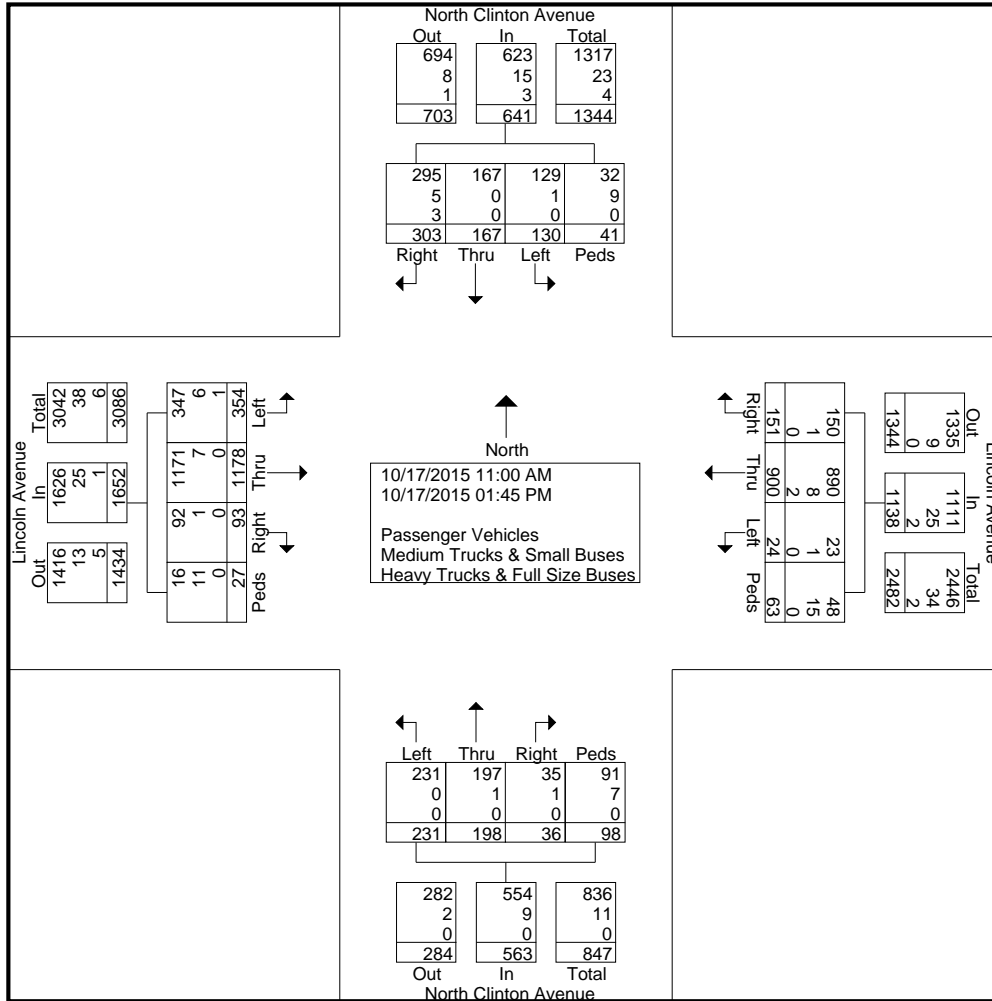
Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

North Clinton Ave & Lincoln Ave
Trenton, Mercer County, NJ
11:00am - 2:00pm Pat H & Romesh R
Lat: 40.225681 Long: -74.753221

File Name : Clinton & Lincoln-Sat
Site Code :
Start Date : 10/17/2015
Page No : 2



Greenman-Pedersen, Inc.

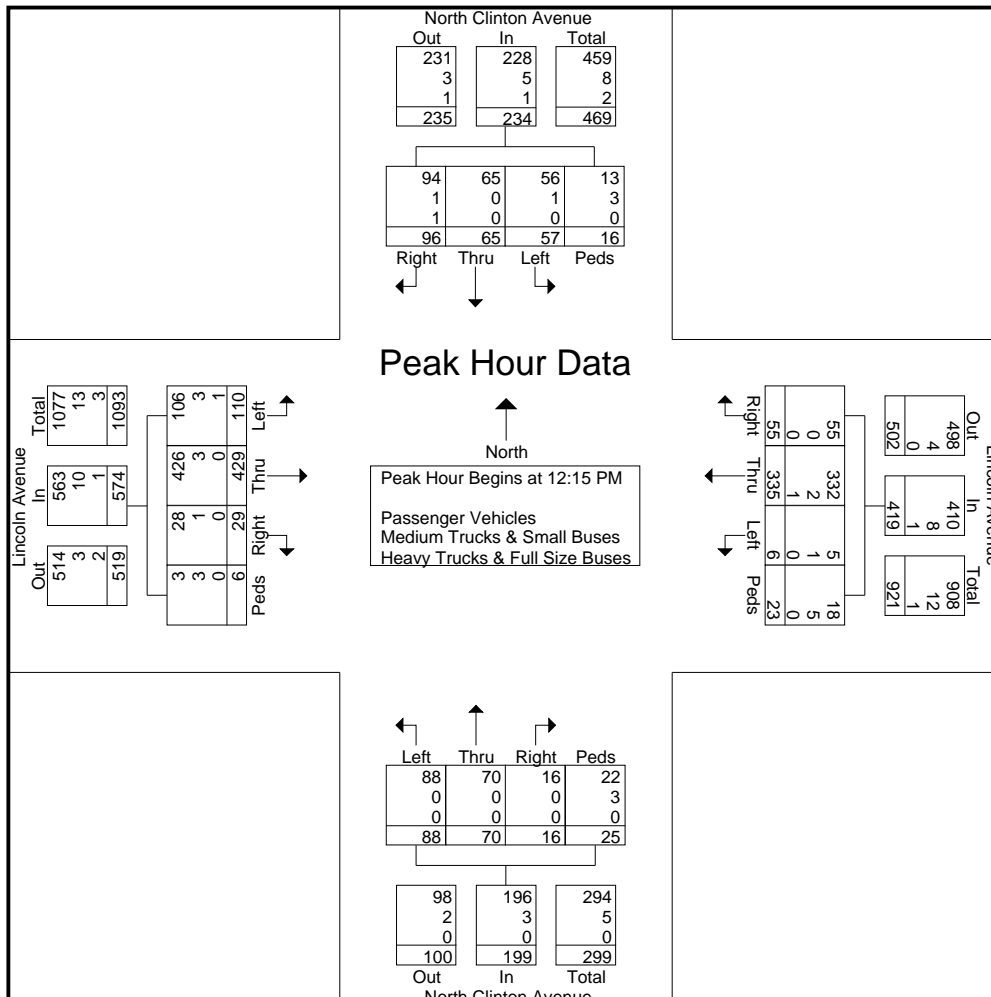
100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

North Clinton Ave & Lincoln Ave
Trenton, Mercer County, NJ
11:00am - 2:00pm Pat H & Romesh R
Lat: 40.225681 Long: -74.753221

File Name : Clinton & Lincoln-Sat
Site Code :
Start Date : 10/17/2015
Page No : 3

Start Time	North Clinton Avenue Southbound					Lincoln Avenue Westbound					North Clinton Avenue Northbound					Lincoln Avenue Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:15 PM																					
12:15 PM	27	17	13	6	63	8	44	3	7	62	5	23	25	9	62	10	109	31	1	151	338
12:30 PM	20	19	18	1	58	19	76	2	8	105	5	18	27	7	57	8	105	24	0	137	357
12:45 PM	28	17	17	3	65	18	116	0	3	137	3	14	17	8	42	6	102	29	3	140	384
01:00 PM	21	12	9	6	48	10	99	1	5	115	3	15	19	1	38	5	113	26	2	146	347
Total Volume	96	65	57	16	234	55	335	6	23	419	16	70	88	25	199	29	429	110	6	574	1426
% App. Total	41	27.8	24.4	6.8		13.1	80	1.4	5.5		8	35.2	44.2	12.6		5.1	74.7	19.2	1		
PHF	.857	.855	.792	.667	.900	.724	.722	.500	.719	.765	.800	.761	.815	.694	.802	.725	.949	.887	.500	.950	.928
Passenger Vehicles	94	65	56	13	228	55	332	5	18	410	16	70	88	22	196	28	426	106	3	563	1397
% Passenger Vehicles																					
Medium Trucks & Small Buses	1	0	1	3	5	0	2	1	5	8	0	0	0	3	3	1	3	3	3	10	26
% Medium Trucks & Small Buses	1.0	0	1.8	18.8	2.1	0	0.6	16.7	21.7	1.9	0	0	0	12.0	1.5	3.4	0.7	2.7	50.0	1.7	1.8
Heavy Trucks & Full Size Buses	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	3
% Heavy Trucks & Full Size Buses	1.0	0	0	0	0.4	0	0.3	0	0	0.2	0	0	0	0	0	0	0	0.9	0	0.2	0.2



Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

North Clinton Ave & Monmouth St
Trenton, Mercer County, NJ
6:30am - 6:30pm Chris M
Lat: 40.223762 Long: -74.754167

File Name : Clinton & Monmouth
Site Code :
Start Date : 10/14/2015
Page No : 1

Groups Printed- Passenger Vehicles - Medium Trucks & Small Buses - Heavy Trucks & Small Buses

Start Time	North Clinton Avenue Southbound					Monmouth Street Westbound					North Clinton Avenue Northbound					Monmouth Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
06:30 AM	0	9	0	0	9	6	0	0	2	8	1	9	0	1	11	5	0	1	1	7	35
06:45 AM	0	15	1	0	16	14	0	2	4	20	1	19	0	0	20	6	4	0	2	12	68
Total	0	24	1	0	25	20	0	2	6	28	2	28	0	1	31	11	4	1	3	19	103
07:00 AM	0	10	3	1	14	8	0	3	4	15	2	10	0	1	13	4	1	1	0	6	48
07:15 AM	0	18	4	1	23	18	0	7	8	33	4	17	0	0	21	17	7	1	4	29	106
07:30 AM	0	18	3	2	23	17	0	2	7	26	8	25	0	2	35	25	8	2	4	39	123
07:45 AM	0	32	4	5	41	33	0	9	6	48	5	18	0	5	28	36	23	1	8	68	185
Total	0	78	14	9	101	76	0	21	25	122	19	70	0	8	97	82	39	5	16	142	462
08:00 AM	0	36	7	8	51	37	0	4	2	43	5	34	0	1	40	35	25	1	19	80	214
08:15 AM	0	55	9	4	68	33	0	6	3	42	5	45	0	1	51	45	15	1	8	69	230
08:30 AM	0	75	9	7	91	41	0	3	3	47	6	43	0	3	52	37	17	3	19	76	266
08:45 AM	0	44	11	0	55	28	0	9	5	42	5	34	0	3	42	37	13	2	11	63	202
Total	0	210	36	19	265	139	0	22	13	174	21	156	0	8	185	154	70	7	57	288	912
09:00 AM	0	43	4	0	47	17	0	4	4	25	6	27	0	1	34	30	12	1	12	55	161
09:15 AM	0	33	4	1	38	11	0	6	2	19	4	36	0	2	42	29	17	1	2	49	148
09:30 AM	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	1	0	0	0	1	3
*** BREAK ***																					
Total	0	76	8	1	85	28	0	10	6	44	11	64	0	3	78	60	29	2	14	105	312
*** BREAK ***																					
10:30 AM	0	25	4	0	29	10	0	3	5	18	2	37	0	2	41	11	6	3	6	26	114
10:45 AM	0	20	4	2	26	10	0	6	4	20	2	33	0	1	36	7	7	0	3	17	99
Total	0	45	8	2	55	20	0	9	9	38	4	70	0	3	77	18	13	3	9	43	213
11:00 AM	0	29	5	0	34	8	0	5	8	21	3	26	0	1	30	14	10	0	3	27	112
11:15 AM	0	28	1	1	30	5	0	2	5	12	2	36	0	3	41	17	7	3	6	33	116
11:30 AM	0	18	6	2	26	7	0	9	3	19	2	33	0	1	36	11	13	1	3	28	109
11:45 AM	0	17	3	1	21	12	0	3	4	19	4	31	0	2	37	13	12	2	9	36	113
Total	0	92	15	4	111	32	0	19	20	71	11	126	0	7	144	55	42	6	21	124	450
12:00 PM	0	29	3	3	35	9	0	5	2	16	4	42	0	4	50	18	13	1	1	33	134
12:15 PM	0	23	1	0	24	12	0	1	8	21	5	33	0	2	40	19	11	0	7	37	122
12:30 PM	0	28	1	3	32	12	0	3	2	17	3	37	0	1	41	21	9	1	2	33	123
12:45 PM	0	36	2	1	39	20	0	6	10	36	5	36	0	2	43	11	16	2	2	31	149
Total	0	116	7	7	130	53	0	15	22	90	17	148	0	9	174	69	49	4	12	134	528
01:00 PM	0	25	8	0	33	9	0	6	5	20	11	47	0	1	59	21	14	0	1	36	148
01:15 PM	0	26	3	4	33	10	0	2	5	17	4	42	0	1	47	19	11	0	2	32	129
01:30 PM	0	21	3	0	24	10	0	5	0	15	4	27	0	0	31	20	18	2	5	45	115
01:45 PM	0	37	2	1	40	6	0	8	4	18	7	32	0	0	39	17	10	0	5	32	129
Total	0	109	16	5	130	35	0	21	14	70	26	148	0	2	176	77	53	2	13	145	521
*** BREAK ***																					
03:00 PM	0	27	12	10	49	22	0	6	6	34	10	58	0	7	75	25	18	2	19	64	222
03:15 PM	0	49	21	33	103	22	0	8	16	46	6	45	0	11	62	31	33	4	40	108	319
03:30 PM	0	42	11	4	57	22	0	4	3	29	6	29	0	3	38	20	45	4	9	78	202
03:45 PM	0	32	6	0	38	13	0	5	7	25	4	40	0	0	44	18	14	1	5	38	145
Total	0	150	50	47	247	79	0	23	32	134	26	172	0	21	219	94	110	11	73	288	888
04:00 PM	0	30	2	0	32	19	0	1	0	20	10	87	0	1	98	16	24	2	1	43	193
04:15 PM	0	32	10	1	43	16	0	5	6	27	8	47	0	1	56	15	20	2	6	43	169
04:30 PM	0	36	13	1	50	15	0	8	3	26	3	52	0	2	57	21	22	1	4	48	181
04:45 PM	0	27	15	1	43	18	0	5	8	31	5	52	0	1	58	24	25	0	2	51	183
Total	0	125	40	3	168	68	0	19	17	104	26	238	0	5	269	76	91	5	13	185	726

Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

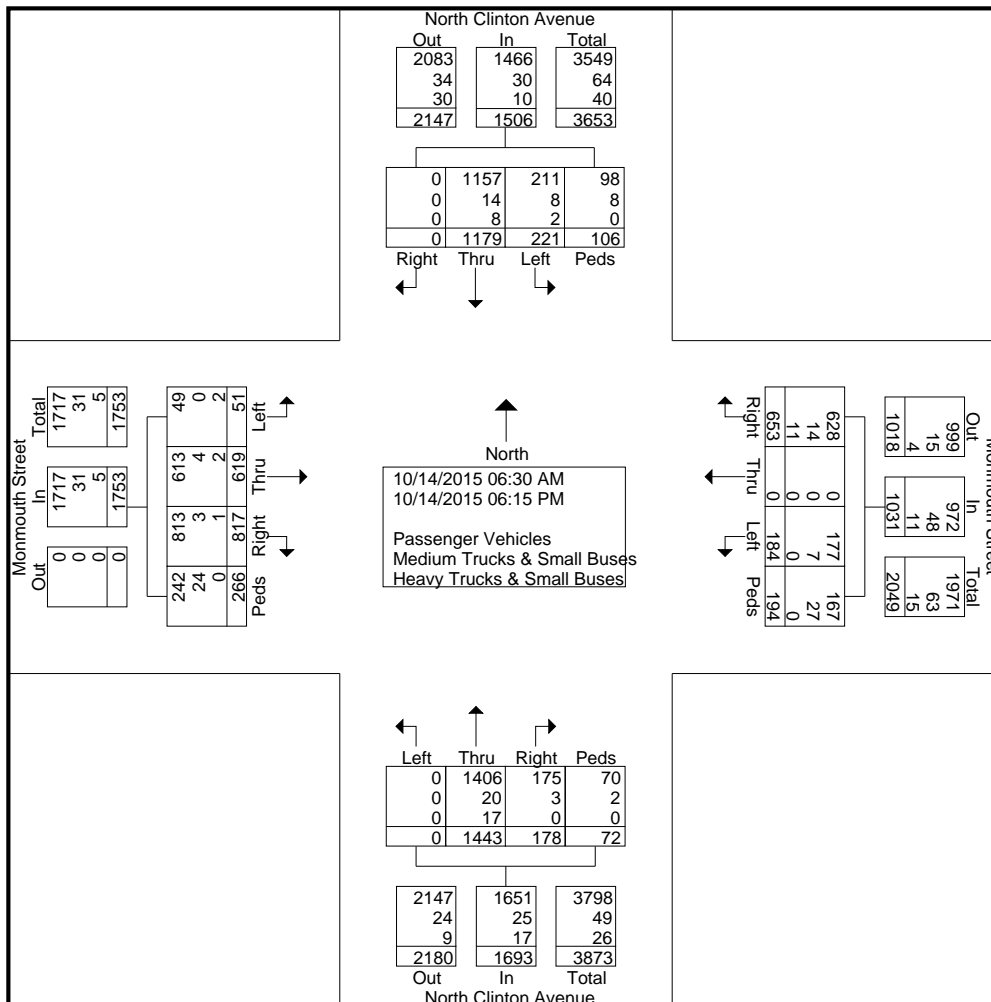
Engineering and Construction Services

North Clinton Ave & Monmouth St
Trenton, Mercer County, NJ
6:30am - 6:30pm Chris M
Lat: 40.223762 Long: -74.754167

File Name : Clinton & Monmouth
Site Code :
Start Date : 10/14/2015
Page No : 2

Groups Printed- Passenger Vehicles - Medium Trucks & Small Buses - Heavy Trucks & Small Buses

Start Time	North Clinton Avenue Southbound					Monmouth Street Westbound					North Clinton Avenue Northbound					Monmouth Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
05:00 PM	0	37	10	1	48	32	0	6	2	40	5	41	0	0	46	30	23	0	11	64	198
05:15 PM	0	28	4	3	35	22	0	2	6	30	2	51	0	3	56	18	29	2	3	52	173
05:30 PM	0	20	2	2	24	15	0	4	8	27	0	37	0	1	38	22	15	0	11	48	137
05:45 PM	0	29	4	0	33	17	0	5	4	26	2	32	0	0	34	14	20	2	5	41	134
Total	0	114	20	6	140	86	0	17	20	123	9	161	0	4	174	84	87	4	30	205	642
06:00 PM	0	21	3	1	25	10	0	2	6	18	3	32	0	1	36	16	15	0	5	36	115
06:15 PM	0	19	3	2	24	7	0	4	4	15	3	30	0	0	33	21	17	1	0	39	111
Grand Total	0	1179	221	106	1506	653	0	184	194	1031	178	1443	0	72	1693	817	619	51	266	1753	5983
Apprch %	0	78.3	14.7	7		63.3	0	17.8	18.8		10.5	85.2	0	4.3		46.6	35.3	2.9	15.2		
Total %	0	19.7	3.7	1.8	25.2	10.9	0	3.1	3.2	17.2	3	24.1	0	1.2	28.3	13.7	10.3	0.9	4.4	29.3	
Passenger Vehicles	0	1157	211	98	1466	628	0	177	167	972	175	1406	0	70	1651	813	613	49	242	1717	5806
% Passenger Vehicles	0	98.1	95.5	92.5	97.3	96.2	0	96.2	86.1	94.3	98.3	97.4	0	97.2	97.5	99.5	99	96.1	91	97.9	97
Medium Trucks & Small Buses	0	14	8	8	30	14	0	7	27	48	3	20	0	2	25	3	4	0	24	31	134
% Medium Trucks & Small Buses	0	1.2	3.6	7.5	2	2.1	0	3.8	13.9	4.7	1.7	1.4	0	2.8	1.5	0.4	0.6	0	9	1.8	2.2
Heavy Trucks & Small Buses	0	8	2	0	10	11	0	0	0	11	0	17	0	0	17	1	2	2	0	5	43
% Heavy Trucks & Small Buses	0	0.7	0.9	0	0.7	1.7	0	0	0	1.1	0	1.2	0	0	1	0.1	0.3	3.9	0	0.3	0.7



Greenman-Pedersen, Inc.

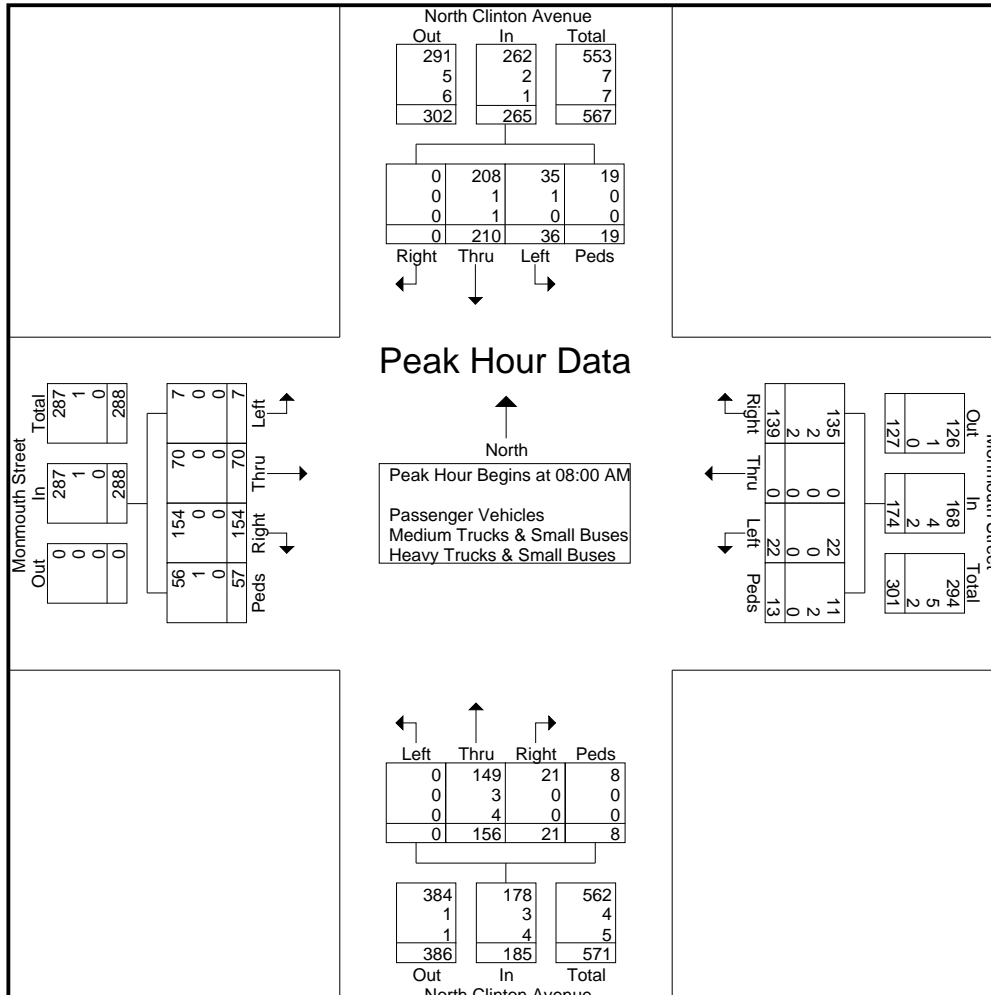
100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

North Clinton Ave & Monmouth St
Trenton, Mercer County, NJ
6:30am - 6:30pm Chris M
Lat: 40.223762 Long: -74.754167

File Name : Clinton & Monmouth
Site Code :
Start Date : 10/14/2015
Page No : 3

Start Time	North Clinton Avenue Southbound					Monmouth Street Westbound					North Clinton Avenue Northbound					Monmouth Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 06:30 AM to 09:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	36	7	8	51	37	0	4	2	43	5	34	0	1	40	35	25	1	19	80	214
08:15 AM	0	55	9	4	68	33	0	6	3	42	5	45	0	1	51	45	15	1	8	69	230
08:30 AM	0	75	9	7	91	41	0	3	3	47	6	43	0	3	52	37	17	3	19	76	266
08:45 AM	0	44	11	0	55	28	0	9	5	42	5	34	0	3	42	37	13	2	11	63	202
Total Volume	0	210	36	19	265	139	0	22	13	174	21	156	0	8	185	154	70	7	57	288	912
% App. Total	0	79.2	13.6	7.2		79.9	0	12.6	7.5		11.4	84.3	0	4.3		53.5	24.3	2.4	19.8		
PHF	.000	.700	.818	.594	.728	.848	.000	.611	.650	.926	.875	.867	.000	.667	.889	.856	.700	.583	.750	.900	.857
Passenger Vehicles	0	208	35	19	262	135	0	22	11	168	21	149	0	8	178	154	70	7	56	287	895
% Passenger Vehicles																					
Medium Trucks & Small Buses	0	1	1	0	2	2	0	0	2	4	0	3	0	0	3	0	0	0	1	1	10
% Medium Trucks & Small Buses	0	0.5	2.8	0	0.8	1.4	0	0	15.4	2.3	0	1.9	0	0	1.6	0	0	0	1.8	0.3	1.1
Heavy Trucks & Small Buses	0	1	0	0	1	2	0	0	0	2	0	4	0	0	4	0	0	0	0	0	7
% Heavy Trucks & Small Buses	0	0.5	0	0	0.4	1.4	0	0	0	1.1	0	2.6	0	0	2.2	0	0	0	0	0	0.8



Greenman-Pedersen, Inc.

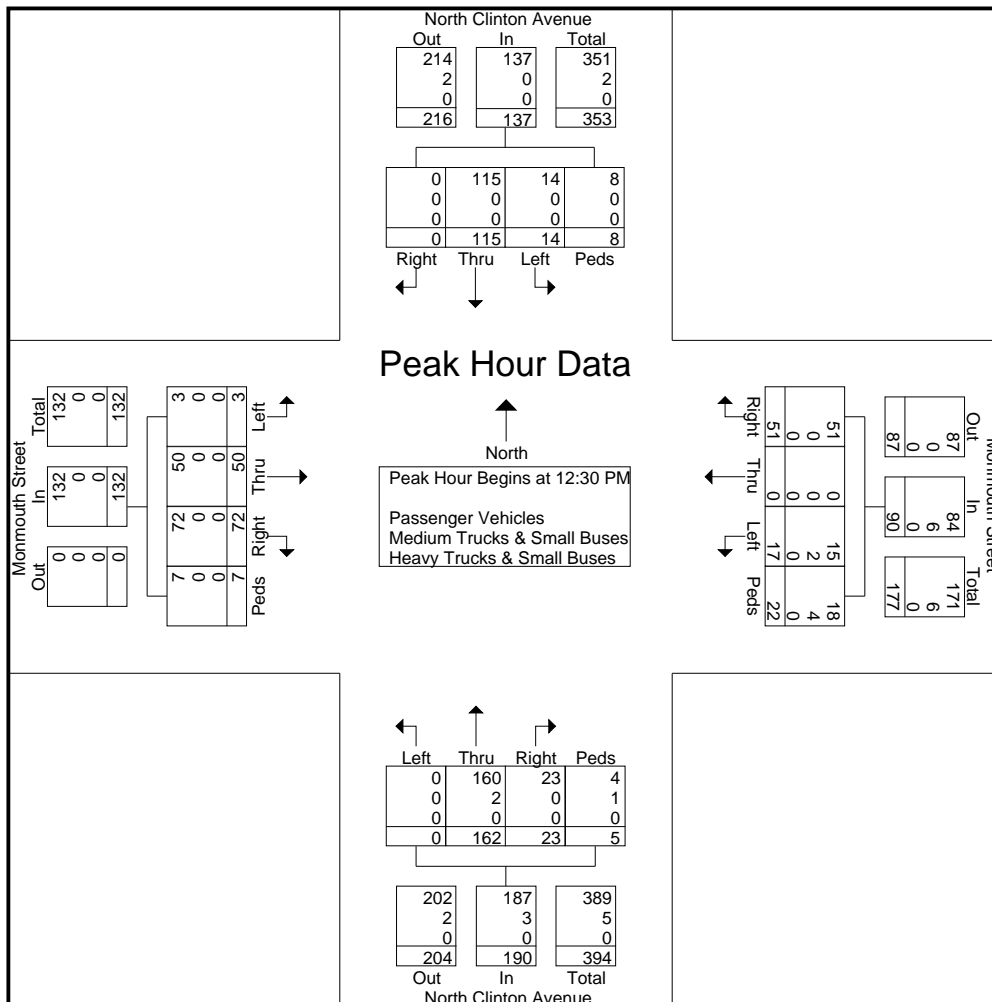
100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

North Clinton Ave & Monmouth St
Trenton, Mercer County, NJ
6:30am - 6:30pm Chris M
Lat: 40.223762 Long: -74.754167

File Name : Clinton & Monmouth
Site Code :
Start Date : 10/14/2015
Page No : 4

Start Time	North Clinton Avenue Southbound					Monmouth Street Westbound					North Clinton Avenue Northbound					Monmouth Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 10:30 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:30 PM																					
12:30 PM	0	28	1	3	32	12	0	3	2	17	3	37	0	1	41	21	9	1	2	33	123
12:45 PM	0	36	2	1	39	20	0	6	10	36	5	36	0	2	43	11	16	2	2	31	149
01:00 PM	0	25	8	0	33	9	0	6	5	20	11	47	0	1	59	21	14	0	1	36	148
01:15 PM	0	26	3	4	33	10	0	2	5	17	4	42	0	1	47	19	11	0	2	32	129
Total Volume	0	115	14	8	137	51	0	17	22	90	23	162	0	5	190	72	50	3	7	132	549
% App. Total	0	83.9	10.2	5.8		56.7	0	18.9	24.4		12.1	85.3	0	2.6		54.5	37.9	2.3	5.3		
PHF	.000	.799	.438	.500	.878	.638	.000	.708	.550	.625	.523	.862	.000	.625	.805	.857	.781	.375	.875	.917	.921
Passenger Vehicles	0	115	14	8	137	51	0	15	18	84	23	160	0	4	187	72	50	3	7	132	540
% Passenger Vehicles																					
Medium Trucks & Small Buses	0	0	0	0	0	0	0	2	4	6	0	2	0	1	3	0	0	0	0	0	9
% Medium Trucks & Small Buses								11.8	18.2	6.7		1.2		20.0	1.6						1.6
Heavy Trucks & Small Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Heavy Trucks & Small Buses																					



Greenman-Pedersen, Inc.

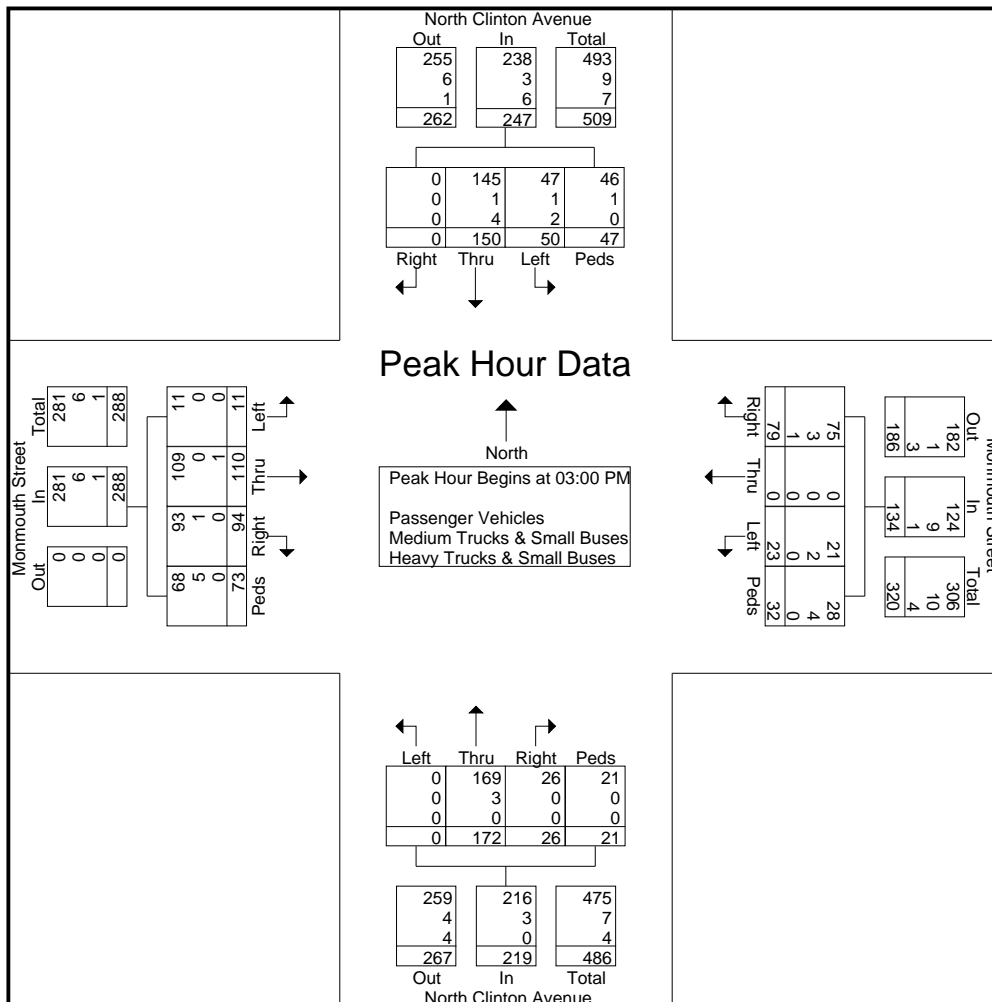
100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

North Clinton Ave & Monmouth St
Trenton, Mercer County, NJ
6:30am - 6:30pm Chris M
Lat: 40.223762 Long: -74.754167

File Name : Clinton & Monmouth
Site Code :
Start Date : 10/14/2015
Page No : 5

Start Time	North Clinton Avenue Southbound					Monmouth Street Westbound					North Clinton Avenue Northbound					Monmouth Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 03:00 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	0	27	12	10	49	22	0	6	6	34	10	58	0	7	75	25	18	2	19	64	222
03:15 PM	0	49	21	33	103	22	0	8	16	46	6	45	0	11	62	31	33	4	40	108	319
03:30 PM	0	42	11	4	57	22	0	4	3	29	6	29	0	3	38	20	45	4	9	78	202
03:45 PM	0	32	6	0	38	13	0	5	7	25	4	40	0	0	44	18	14	1	5	38	145
Total Volume	0	150	50	47	247	79	0	23	32	134	26	172	0	21	219	94	110	11	73	288	888
% App. Total	0	60.7	20.2	19		59	0	17.2	23.9		11.9	78.5	0	9.6		32.6	38.2	3.8	25.3		
PHF	.000	.765	.595	.356	.600	.898	.000	.719	.500	.728	.650	.741	.000	.477	.730	.758	.611	.688	.456	.667	.696
Passenger Vehicles	0	145	47	46	238	75	0	21	28	124	26	169	0	21	216	93	109	11	68	281	859
% Passenger Vehicles																					
Medium Trucks & Small Buses	0	1	1	1	3	3	0	2	4	9	0	3	0	0	3	1	0	0	5	6	21
% Medium Trucks & Small Buses	0	0.7	2.0	2.1	1.2	3.8	0	8.7	12.5	6.7	0	1.7	0	0	1.4	1.1	0	0	6.8	2.1	2.4
Heavy Trucks & Small Buses	0	4	2	0	6	1	0	0	0	1	0	0	0	0	0	0	1	0	0	1	8
% Heavy Trucks & Small Buses	0	2.7	4.0	0	2.4	1.3	0	0	0	0.7	0	0	0	0	0	0	0.9	0	0	0.3	0.9



Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

North Clinton Ave & Monmouth St
Trenton, Mercer County, NJ
11:00am - 2:00pm Chris M
Lat: 40.223762 Long: -74.754167

File Name : Clinton & Monmouth-Sat
Site Code :
Start Date : 10/17/2015
Page No : 1

Groups Printed- Passenger Vehicles - Medium Trucks & Small Buses - Heavy Trucks & Small Buses

Start Time	North Clinton Avenue Southbound					Monmouth Street Westbound					North Clinton Avenue Northbound					Monmouth Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
11:00 AM	0	23	2	2	27	14	0	2	4	20	3	20	0	1	24	9	14	2	3	28	99
11:15 AM	0	16	4	0	20	14	0	3	8	25	0	18	0	2	20	9	12	0	5	26	91
11:30 AM	0	19	2	1	22	10	0	5	12	27	2	33	0	1	36	10	13	0	5	28	113
11:45 AM	0	15	3	3	21	5	0	3	7	15	2	37	0	0	39	12	17	1	4	34	109
Total	0	73	11	6	90	43	0	13	31	87	7	108	0	4	119	40	56	3	17	116	412
12:00 PM	0	33	8	0	41	19	0	4	17	40	3	24	0	0	27	7	10	0	1	18	126
12:15 PM	0	21	8	1	30	25	0	0	15	40	0	29	0	0	29	7	6	1	2	16	115
12:30 PM	0	28	3	6	37	16	0	1	7	24	4	30	0	2	36	14	11	2	1	28	125
12:45 PM	0	19	3	0	22	5	0	2	11	18	3	21	0	1	25	14	8	1	4	27	92
Total	0	101	22	7	130	65	0	7	50	122	10	104	0	3	117	42	35	4	8	89	458
01:00 PM	0	17	2	1	20	17	0	1	4	22	1	19	0	0	20	13	10	0	2	25	87
01:15 PM	0	24	3	0	27	7	0	1	1	9	5	15	0	0	20	11	17	0	2	30	86
01:30 PM	0	16	2	0	18	7	0	3	4	14	4	18	0	0	22	17	10	1	1	29	83
01:45 PM	0	12	3	0	15	10	0	5	2	17	7	19	0	1	27	8	11	0	2	21	80
Total	0	69	10	1	80	41	0	10	11	62	17	71	0	1	89	49	48	1	7	105	336
Grand Total	0	243	43	14	300	149	0	30	92	271	34	283	0	8	325	131	139	8	32	310	1206
Apprch %	0	81	14.3	4.7		55	0	11.1	33.9		10.5	87.1	0	2.5		42.3	44.8	2.6	10.3		
Total %	0	20.1	3.6	1.2	24.9	12.4	0	2.5	7.6	22.5	2.8	23.5	0	0.7	26.9	10.9	11.5	0.7	2.7	25.7	
Passenger Vehicles	0	243	43	12	298	149	0	29	79	257	33	281	0	5	319	131	139	8	21	299	1173
% Passenger Vehicles																					
Medium Trucks & Small Buses	0	0	0	2	2	0	0	1	13	14	1	2	0	3	6	0	0	0	11	11	33
% Medium Trucks & Small Buses	0	0	0	14.3	0.7	0	0	3.3	14.1	5.2	2.9	0.7	0	37.5	1.8	0	0	0	34.4	3.5	2.7
Heavy Trucks & Small Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Heavy Trucks & Small Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

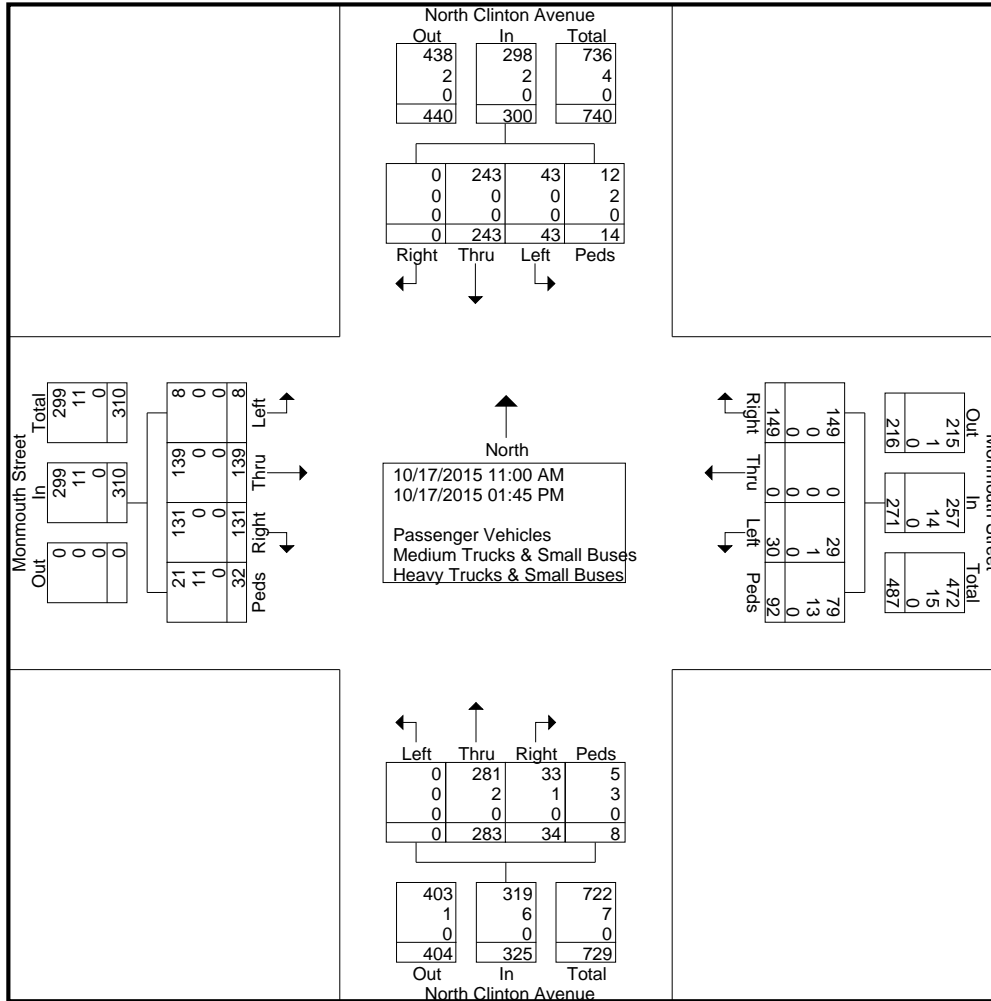
Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

North Clinton Ave & Monmouth St
Trenton, Mercer County, NJ
11:00am - 2:00pm Chris M
Lat: 40.223762 Long: -74.754167

File Name : Clinton & Monmouth-Sat
Site Code :
Start Date : 10/17/2015
Page No : 2



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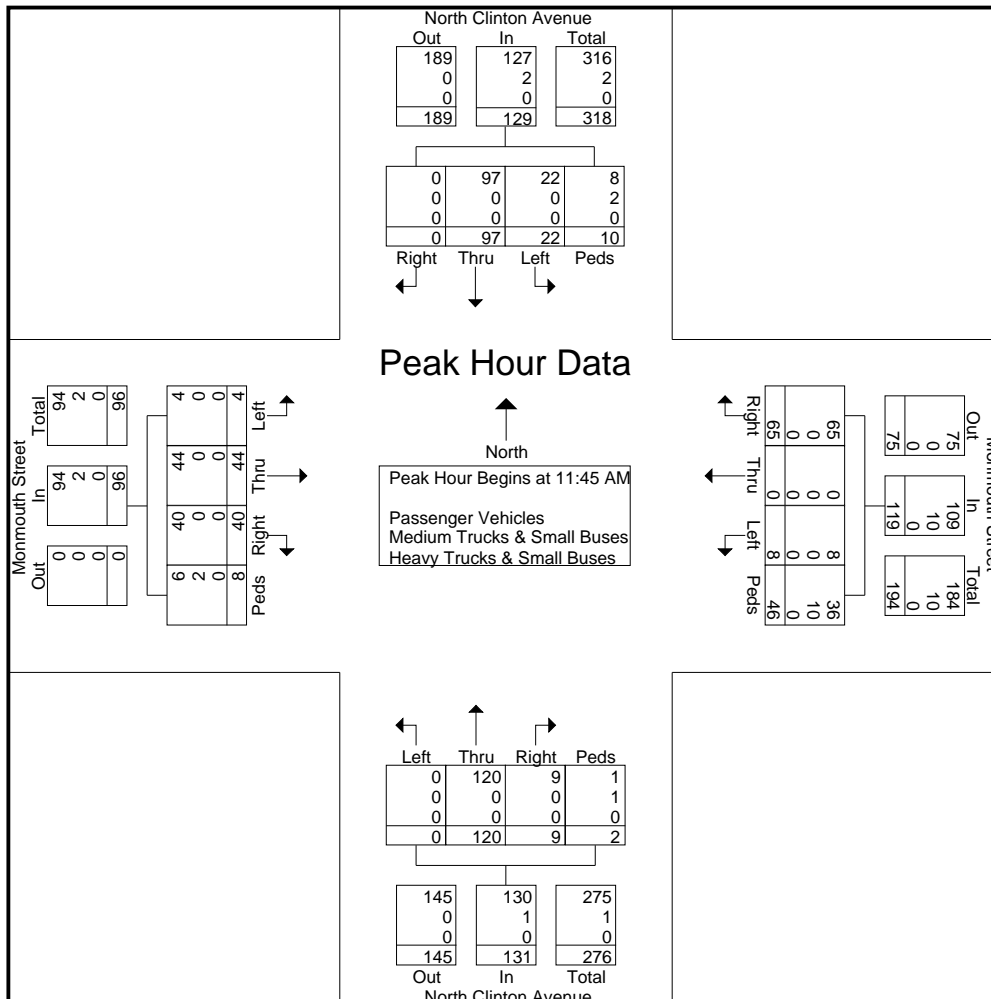
100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

North Clinton Ave & Monmouth St
Trenton, Mercer County, NJ
11:00am - 2:00pm Chris M
Lat: 40.223762 Long: -74.754167

File Name : Clinton & Monmouth-Sat
Site Code :
Start Date : 10/17/2015
Page No : 3

Start Time	North Clinton Avenue Southbound					Monmouth Street Westbound					North Clinton Avenue Northbound					Monmouth Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:45 AM																					
11:45 AM	0	15	3	3	21	5	0	3	7	15	2	37	0	0	39	12	17	1	4	34	109
12:00 PM	0	33	8	0	41	19	0	4	17	40	3	24	0	0	27	7	10	0	1	18	126
12:15 PM	0	21	8	1	30	25	0	0	15	40	0	29	0	0	29	7	6	1	2	16	115
12:30 PM	0	28	3	6	37	16	0	1	7	24	4	30	0	2	36	14	11	2	1	28	125
Total Volume	0	97	22	10	129	65	0	8	46	119	9	120	0	2	131	40	44	4	8	96	475
% App. Total	0	75.2	17.1	7.8		54.6	0	6.7	38.7		6.9	91.6	0	1.5		41.7	45.8	4.2	8.3		
PHF	.000	.735	.688	.417	.787	.650	.000	.500	.676	.744	.563	.811	.000	.250	.840	.714	.647	.500	.500	.706	.942
Passenger Vehicles	0	97	22	8	127	65	0	8	36	109	9	120	0	1	130	40	44	4	6	94	460
% Passenger Vehicles																					
Medium Trucks & Small Buses	0	0	0	2	2	0	0	0	10	10	0	0	0	1	1	0	0	0	2	2	15
% Medium Trucks & Small Buses	0	0	0	20.0	1.6	0	0	0	21.7	8.4	0	0	0	50.0	0.8	0	0	0	25.0	2.1	3.2
Heavy Trucks & Small Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Heavy Trucks & Small Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

North Clinton Ave & North Olden Ave
Trenton, Mercer County, NJ
6:30am - 6:30pm Luke H & Sara L
Lat: 40.231962 Long: -74.744395

File Name : Clinton & Olden
Site Code :
Start Date : 10/14/2015
Page No : 1

Groups Printed- Passenger Vehicles - Medium Trucks & Small Buses - Heavy Trucks & Full Size Buses

Start Time	CR 622 North Olden Avenue Southbound					North Clinton Avenue (SB) Westbound					CR 622 North Olden Avenue Northbound					North Clinton Avenue (NB) Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
06:30 AM	6	62	0	0	68	2	5	5	1	13	3	101	4	1	109	1	10	5	0	16	206
06:45 AM	14	77	3	0	94	2	10	6	3	21	5	121	6	2	134	11	14	16	0	41	290
Total	20	139	3	0	162	4	15	11	4	34	8	222	10	3	243	12	24	21	0	57	496
07:00 AM	5	89	2	2	98	5	10	13	2	30	4	97	9	0	110	5	17	7	2	31	269
07:15 AM	5	106	0	5	116	5	14	9	3	31	2	131	7	2	142	5	15	14	4	38	327
07:30 AM	4	111	0	15	130	3	17	10	1	31	2	144	6	0	152	8	26	16	0	50	363
07:45 AM	16	125	3	3	147	5	14	11	1	31	1	139	10	0	150	7	21	15	0	43	371
Total	30	431	5	25	491	18	55	43	7	123	9	511	32	2	554	25	79	52	6	162	1330
08:00 AM	16	96	3	4	119	3	30	15	5	53	3	126	17	6	152	13	28	15	5	61	385
08:15 AM	18	82	0	2	102	2	26	10	0	38	1	137	13	6	157	6	46	15	0	67	364
08:30 AM	16	76	1	5	98	4	22	14	0	40	1	132	15	1	149	7	32	22	0	61	348
08:45 AM	24	97	3	5	129	0	26	26	1	53	3	158	8	4	173	5	24	23	0	52	407
Total	74	351	7	16	448	9	104	65	6	184	8	553	53	17	631	31	130	75	5	241	1504
09:00 AM	21	91	8	6	126	5	27	16	1	49	2	109	12	2	125	10	21	21	0	52	352
09:15 AM	10	94	2	4	110	3	12	9	2	26	2	105	7	1	115	13	21	25	2	61	312
09:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
*** BREAK ***																					
Total	31	185	10	10	236	8	39	25	3	75	4	215	19	3	241	23	42	46	2	113	665
*** BREAK ***																					
10:30 AM	14	81	6	2	103	3	15	17	4	39	4	92	7	4	107	13	12	18	0	43	292
10:45 AM	15	111	4	1	131	5	17	11	1	34	4	115	11	1	131	19	15	14	0	48	344
Total	29	192	10	3	234	8	32	28	5	73	8	207	18	5	238	32	27	32	0	91	636
11:00 AM	16	124	3	0	143	6	9	14	0	29	7	107	12	8	134	6	25	14	1	46	352
11:15 AM	15	121	4	3	143	7	12	7	0	26	8	100	10	3	121	9	11	21	0	41	331
11:30 AM	15	106	3	2	126	3	10	7	1	21	2	94	9	3	108	7	20	11	0	38	293
11:45 AM	17	116	2	5	140	3	11	13	2	29	4	131	5	3	143	5	16	19	0	40	352
Total	63	467	12	10	552	19	42	41	3	105	21	432	36	17	506	27	72	65	1	165	1328
12:00 PM	10	86	1	1	98	6	12	8	2	28	8	125	11	4	148	11	33	23	0	67	341
12:15 PM	19	125	3	11	158	5	15	11	1	32	3	115	6	3	127	19	28	17	5	69	386
12:30 PM	21	116	1	3	141	3	15	14	1	33	2	126	9	5	142	11	18	14	0	43	359
12:45 PM	26	128	3	2	159	2	15	11	1	29	1	111	11	2	125	14	35	28	1	78	391
Total	76	455	8	17	556	16	57	44	5	122	14	477	37	14	542	55	114	82	6	257	1477
01:00 PM	16	120	2	0	138	4	23	11	1	39	2	124	6	0	132	13	16	24	2	55	364
01:15 PM	30	115	3	4	152	4	10	10	1	25	6	138	12	0	156	13	34	22	2	71	404
01:30 PM	12	146	2	1	161	5	19	11	2	37	7	132	8	1	148	13	18	18	0	49	395
01:45 PM	24	105	4	2	135	2	19	14	10	45	6	88	16	2	112	12	23	16	2	53	345
Total	82	486	11	7	586	15	71	46	14	146	21	482	42	3	548	51	91	80	6	228	1508
*** BREAK ***																					
03:00 PM	22	129	5	0	156	2	29	12	1	44	2	119	9	9	139	19	40	22	0	81	420
03:15 PM	21	122	3	9	155	6	50	22	11	89	4	103	13	9	129	17	30	23	1	71	444
03:30 PM	26	116	4	11	157	9	32	13	3	57	1	140	11	5	157	10	40	19	0	69	440
03:45 PM	18	139	1	0	158	6	29	19	1	55	2	112	15	6	135	12	19	19	4	54	402
Total	87	506	13	20	626	23	140	66	16	245	9	474	48	29	560	58	129	83	5	275	1706
04:00 PM	24	144	5	2	175	6	25	11	1	43	4	129	6	0	139	6	30	12	1	49	406
04:15 PM	24	143	2	12	181	1	29	14	0	44	6	109	7	2	124	7	26	20	1	54	403
04:30 PM	23	123	1	1	148	3	36	21	0	60	3	102	12	2	119	15	32	23	0	70	397
04:45 PM	17	139	3	5	164	2	27	12	1	42	3	103	12	7	125	12	44	17	0	73	404
Total	88	549	11	20	668	12	117	58	2	189	16	443	37	11	507	40	132	72	2	246	1610

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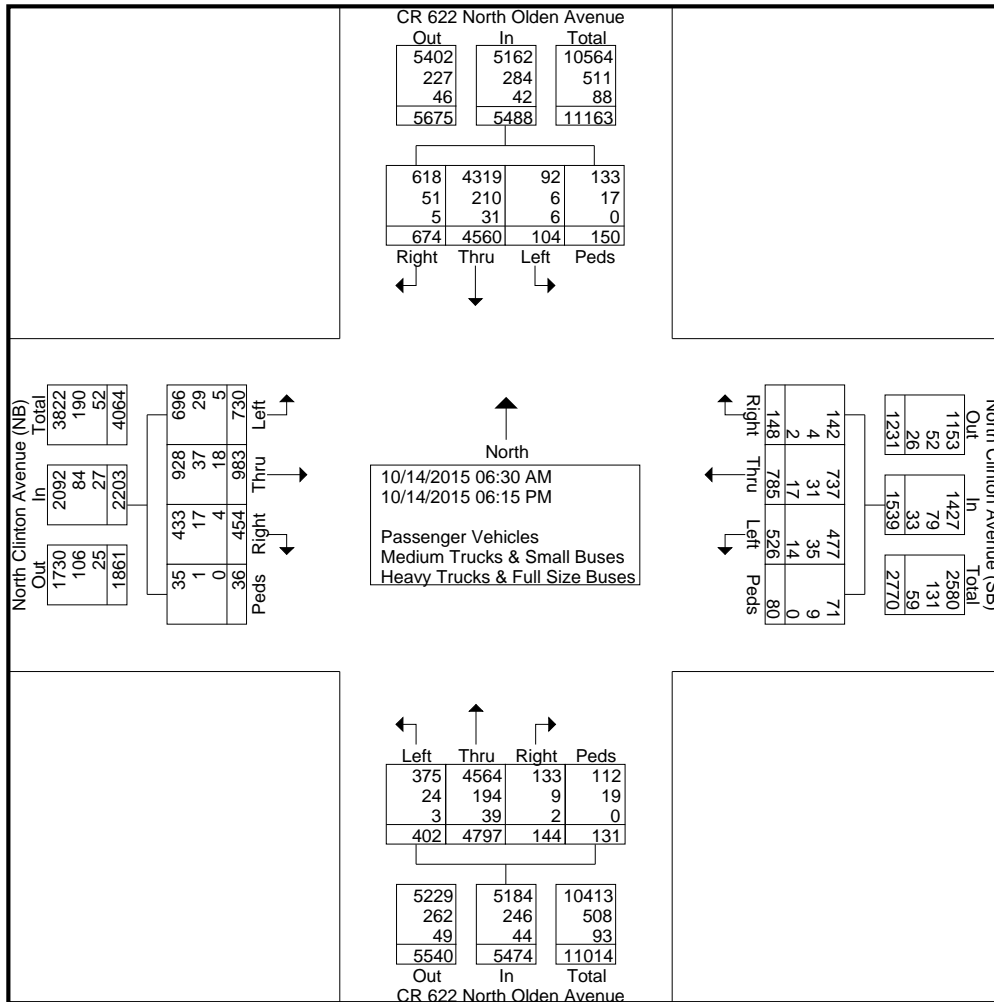
Engineering and Construction Services

North Clinton Ave & North Olden Ave
Trenton, Mercer County, NJ
6:30am - 6:30pm Luke H & Sara L
Lat: 40.231962 Long: -74.744395

File Name : Clinton & Olden
Site Code :
Start Date : 10/14/2015
Page No : 2

Groups Printed- Passenger Vehicles - Medium Trucks & Small Buses - Heavy Trucks & Full Size Buses

Start Time	CR 622 North Olden Avenue Southbound					North Clinton Avenue (SB) Westbound					CR 622 North Olden Avenue Northbound					North Clinton Avenue (NB) Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
05:00 PM	20	142	5	5	172	1	27	20	1	49	7	118	10	3	138	17	31	27	0	75	434
05:15 PM	20	137	1	8	166	6	19	19	4	48	5	139	8	6	158	10	30	27	0	67	439
05:30 PM	19	144	4	4	171	3	19	16	2	40	5	127	19	8	159	20	20	15	1	56	426
05:45 PM	10	124	2	1	137	1	18	12	4	35	2	137	15	3	157	19	29	13	2	63	392
Total	69	547	12	18	646	11	83	67	11	172	19	521	52	20	612	66	110	82	3	261	1691
06:00 PM	10	129	2	2	143	2	13	21	3	39	5	131	11	2	149	15	14	20	0	49	380
06:15 PM	15	123	0	2	140	3	17	11	1	32	2	129	7	5	143	19	19	20	0	58	373
Grand Total	674	4560	104	150	5488	148	785	526	80	1539	144	4797	402	131	5474	454	983	730	36	2203	14704
Apprch %	12.3	83.1	1.9	2.7		9.6	51	34.2	5.2		2.6	87.6	7.3	2.4		20.6	44.6	33.1	1.6		
Total %	4.6	31	0.7	1	37.3	1	5.3	3.6	0.5	10.5	1	32.6	2.7	0.9	37.2	3.1	6.7	5	0.2	15	
Passenger Vehicles	618	4319	92	133	5162	142	737	477	71	1427	133	4564	375	112	5184	433	928	696	35	2092	13865
% Passenger Vehicles	91.7	94.7	88.5	88.7	94.1	95.9	93.9	90.7	88.8	92.7	92.4	95.1	93.3	85.5	94.7	95.4	94.4	95.3	97.2	95	94.3
Medium Trucks & Small Buses	51	210	6	17	284	4	31	35	9	79	9	194	24	19	246	17	37	29	1	84	693
% Medium Trucks & Small Buses	7.6	4.6	5.8	11.3	5.2	2.7	3.9	6.7	11.2	5.1	6.2	4	6	14.5	4.5	3.7	3.8	4	2.8	3.8	4.7
Heavy Trucks & Full Size Buses	5	31	6	0	42	2	17	14	0	33	2	39	3	0	44	4	18	5	0	27	146
% Heavy Trucks & Full Size Buses	0.7	0.7	5.8	0	0.8	1.4	2.2	2.7	0	2.1	1.4	0.8	0.7	0	0.8	0.9	1.8	0.7	0	1.2	1



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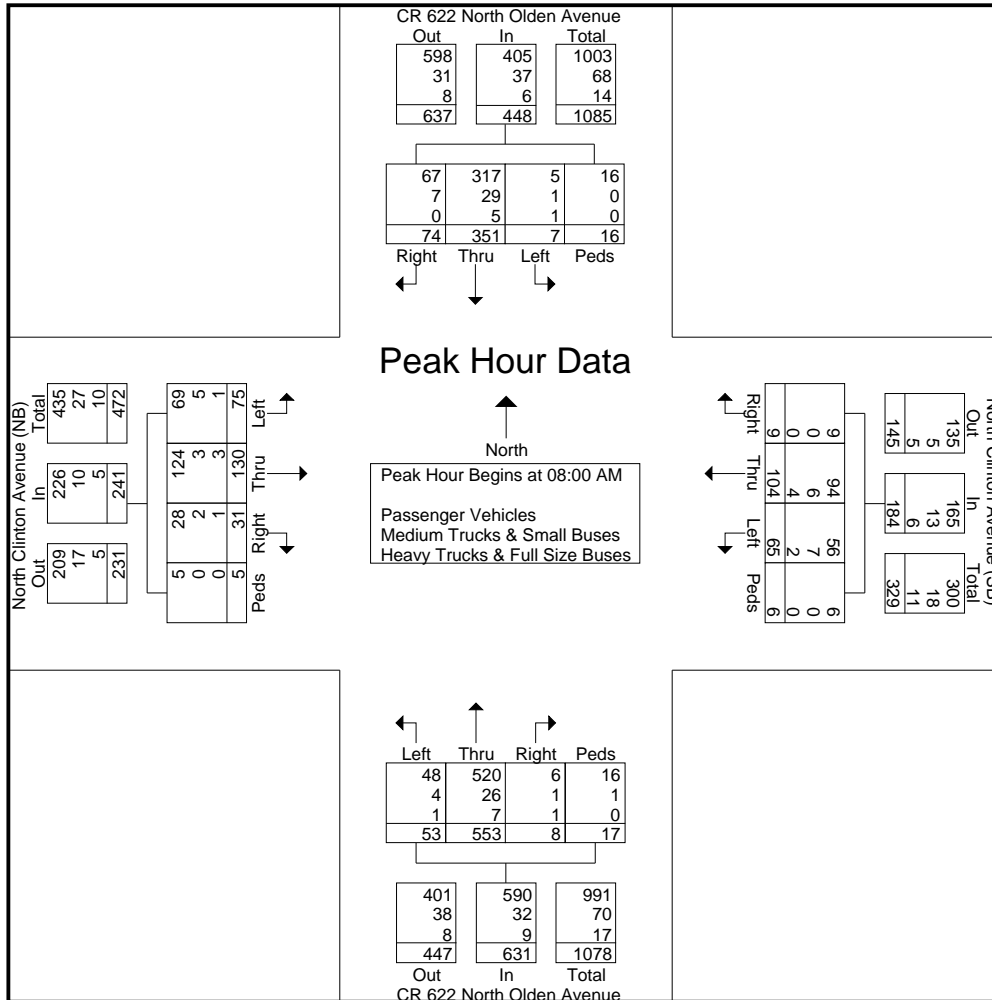
100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

North Clinton Ave & North Olden Ave
Trenton, Mercer County, NJ
6:30am - 6:30pm Luke H & Sara L
Lat: 40.231962 Long: -74.744395

File Name : Clinton & Olden
Site Code :
Start Date : 10/14/2015
Page No : 3

Start Time	CR 622 North Olden Avenue Southbound					North Clinton Avenue (SB) Westbound					CR 622 North Olden Avenue Northbound					North Clinton Avenue (NB) Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 06:30 AM to 09:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	16	96	3	4	119	3	30	15	5	53	3	126	17	6	152	13	28	15	5	61	385
08:15 AM	18	82	0	2	102	2	26	10	0	38	1	137	13	6	157	6	46	15	0	67	364
08:30 AM	16	76	1	5	98	4	22	14	0	40	1	132	15	1	149	7	32	22	0	61	348
08:45 AM	24	97	3	5	129	0	26	26	1	53	3	158	8	4	173	5	24	23	0	52	407
Total Volume	74	351	7	16	448	9	104	65	6	184	8	553	53	17	631	31	130	75	5	241	1504
% App. Total	16.5	78.3	1.6	3.6		4.9	56.5	35.3	3.3		1.3	87.6	8.4	2.7		12.9	53.9	31.1	2.1		
PHF	.771	.905	.583	.800	.868	.563	.867	.625	.300	.868	.667	.875	.779	.708	.912	.596	.707	.815	.250	.899	.924
Passenger Vehicles	67	317	5	16	405	9	94	56	6	165	6	520	48	16	590	28	124	69	5	226	1386
% Passenger Vehicles																					
Medium Trucks & Small Buses	7	29	1	0	37	0	6	7	0	13	1	26	4	1	32	2	3	5	0	10	92
% Medium Trucks & Small Buses	9.5	8.3	14.3	0	8.3	0	5.8	10.8	0	7.1	12.5	4.7	7.5	5.9	5.1	6.5	2.3	6.7	0	4.1	6.1
Heavy Trucks & Full Size Buses	0	5	1	0	6	0	4	2	0	6	1	7	1	0	9	1	3	1	0	5	26
% Heavy Trucks & Full Size Buses	0	1.4	14.3	0	1.3	0	3.8	3.1	0	3.3	12.5	1.3	1.9	0	1.4	3.2	2.3	1.3	0	2.1	1.7



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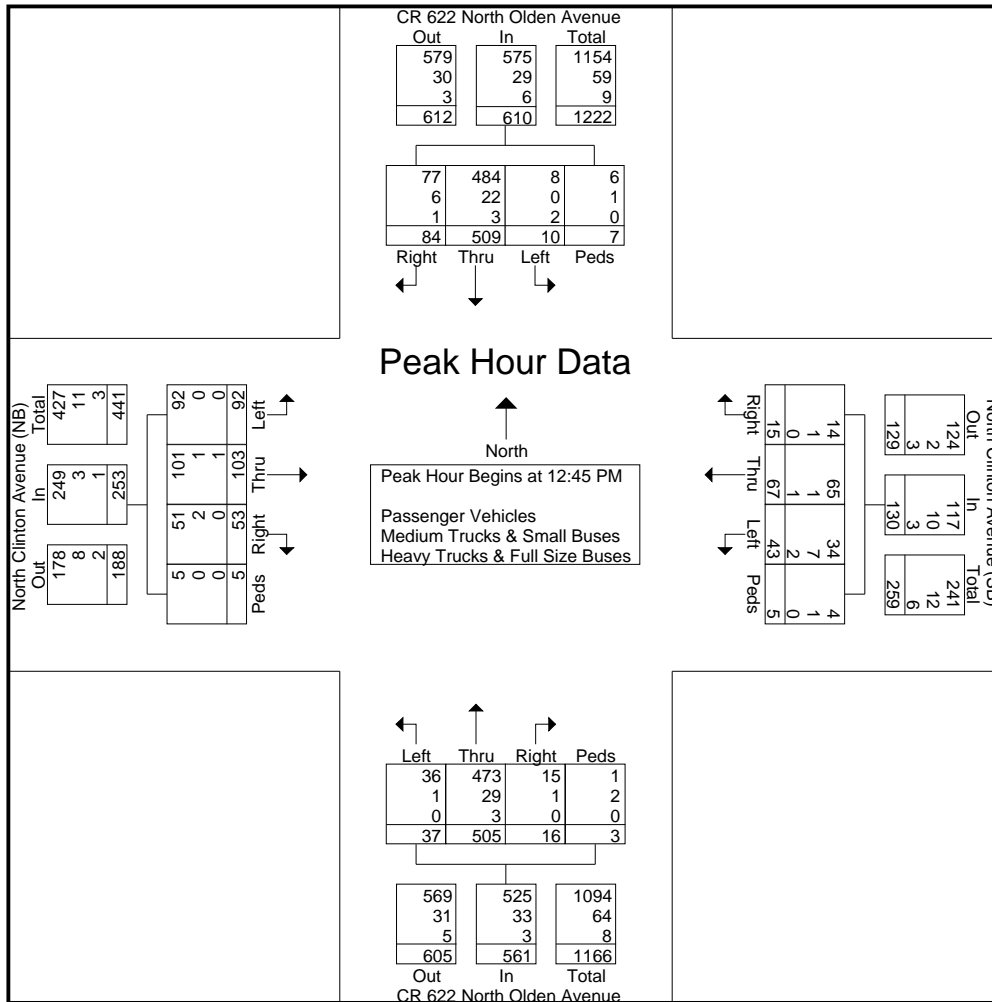
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Engineering and Construction Services

North Clinton Ave & North Olden Ave
Trenton, Mercer County, NJ
6:30am - 6:30pm Luke H & Sara L
Lat: 40.231962 Long: -74.744395

File Name : Clinton & Olden
Site Code :
Start Date : 10/14/2015
Page No : 4

Start Time	CR 622 North Olden Avenue Southbound					North Clinton Avenue (SB) Westbound					CR 622 North Olden Avenue Northbound					North Clinton Avenue (NB) Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 10:30 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:45 PM																					
12:45 PM	26	128	3	2	159	2	15	11	1	29	1	111	11	2	125	14	35	28	1	78	391
01:00 PM	16	120	2	0	138	4	23	11	1	39	2	124	6	0	132	13	16	24	2	55	364
01:15 PM	30	115	3	4	152	4	10	10	1	25	6	138	12	0	156	13	34	22	2	71	404
01:30 PM	12	146	2	1	161	5	19	11	2	37	7	132	8	1	148	13	18	18	0	49	395
Total Volume	84	509	10	7	610	15	67	43	5	130	16	505	37	3	561	53	103	92	5	253	1554
% App. Total	13.8	83.4	1.6	1.1		11.5	51.5	33.1	3.8		2.9	90	6.6	0.5		20.9	40.7	36.4	2		
PHF	.700	.872	.833	.438	.947	.750	.728	.977	.625	.833	.571	.915	.771	.375	.899	.946	.736	.821	.625	.811	.962
Passenger Vehicles	77	484	8	6	575	14	65	34	4	117	15	473	36	1	525	51	101	92	5	249	1466
% Passenger Vehicles																					
Medium Trucks & Small Buses	6	22	0	1	29	1	1	7	1	10	1	29	1	2	33	2	1	0	0	3	75
% Medium Trucks & Small Buses	7.1	4.3	0	14.3	4.8	6.7	1.5	16.3	20.0	7.7	6.3	5.7	2.7	66.7	5.9	3.8	1.0	0	0	1.2	4.8
Heavy Trucks & Full Size Buses	1	3	2	0	6	0	1	2	0	3	0	3	0	0	3	0	1	0	0	1	13
% Heavy Trucks & Full Size Buses	1.2	0.6	20.0	0	1.0	0	1.5	4.7	0	2.3	0	0.6	0	0	0.5	0	1.0	0	0	0.4	0.8



Greenman-Pedersen, Inc.

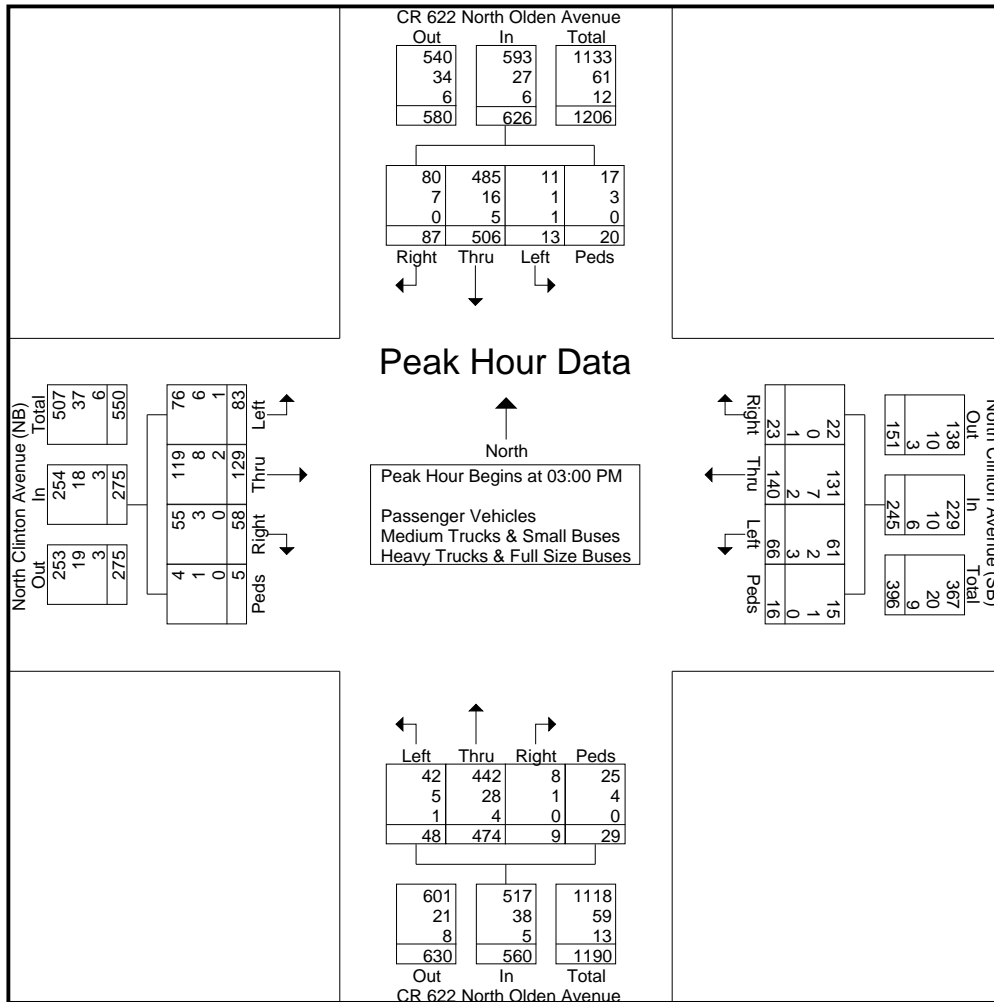
100 Corporate Drive, Suite 301
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Engineering and Construction Services

North Clinton Ave & North Olden Ave
Trenton, Mercer County, NJ
6:30am - 6:30pm Luke H & Sara L
Lat: 40.231962 Long: -74.744395

File Name : Clinton & Olden
Site Code :
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Page No : 5

	CR 622 North Olden Avenue Southbound					North Clinton Avenue (SB) Westbound					CR 622 North Olden Avenue Northbound					North Clinton Avenue (NB) Eastbound					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	22	129	5	0	156	2	29	12	1	44	2	119	9	9	139	19	40	22	0	81	420
03:15 PM	21	122	3	9	155	6	50	22	11	89	4	103	13	9	129	17	30	23	1	71	444
03:30 PM	26	116	4	11	157	9	32	13	3	57	1	140	11	5	157	10	40	19	0	69	440
03:45 PM	18	139	1	0	158	6	29	19	1	55	2	112	15	6	135	12	19	19	4	54	402
Total Volume	87	506	13	20	626	23	140	66	16	245	9	474	48	29	560	58	129	83	5	275	1706
% App. Total	13.9	80.8	2.1	3.2		9.4	57.1	26.9	6.5		1.6	84.6	8.6	5.2		21.1	46.9	30.2	1.8		
PHF	.837	.910	.650	.455	.991	.639	.700	.750	.364	.688	.563	.846	.800	.806	.892	.763	.806	.902	.313	.849	.961
Passenger Vehicles	80	485	11	17	593	22	131	61	15	229	8	442	42	25	517	55	119	76	4	254	1593
% Passenger Vehicles																					
Medium Trucks & Small Buses	7	16	1	3	27	0	7	2	1	10	1	28	5	4	38	3	8	6	1	18	93
% Medium Trucks & Small Buses	8.0	3.2	7.7	15.0	4.3	0	5.0	3.0	6.3	4.1	11.1	5.9	10.4	13.8	6.8	5.2	6.2	7.2	20.0	6.5	5.5
Heavy Trucks & Full Size Buses	0	5	1	0	6	1	2	3	0	6	0	4	1	0	5	0	2	1	0	3	20
% Heavy Trucks & Full Size Buses	0	1.0	7.7	0	1.0	4.3	1.4	4.5	0	2.4	0	0.8	2.1	0	0.9	0	1.6	1.2	0	1.1	1.2



Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

North Clinton Ave & North Olden Ave
Trenton, Mercer County, NJ
11:00am - 2:00pm Luke H & Alicia U
Lat: 40.231962 Long: -74.744395

File Name : Clinton & Olden-Sat
Site Code :
Start Date : 10/17/2015
Page No : 1

Groups Printed- Passenger Vehicles - Medium Trucks & Small Buses - Heavy Trucks & Full Size Buses

Start Time	CR 622 North Olden Avenue Southbound					North Clinton Avenue (SB) Westbound					CR 622 North Olden Avenue Northbound					North Clinton Avenue (NB) Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
11:00 AM	15	125	4	3	147	4	23	10	0	37	6	134	7	6	153	9	21	13	0	43	380
11:15 AM	18	120	2	4	144	8	13	13	0	34	9	133	9	2	153	15	20	9	4	48	379
11:30 AM	25	127	5	2	159	2	14	10	3	29	4	109	13	4	130	18	28	14	0	60	378
11:45 AM	15	143	4	1	163	1	18	10	5	34	8	118	12	6	144	7	11	26	1	45	386
Total	73	515	15	10	613	15	68	43	8	134	27	494	41	18	580	49	80	62	5	196	1523
12:00 PM	13	153	3	4	173	4	22	12	0	38	7	133	12	2	154	17	15	24	1	57	422
12:15 PM	16	137	2	0	155	3	7	10	1	21	8	121	13	6	148	19	16	24	1	60	384
12:30 PM	15	135	5	0	155	4	19	14	2	39	3	134	11	4	152	17	15	13	1	46	392
12:45 PM	13	143	5	4	165	7	8	12	0	27	5	138	16	3	162	15	17	19	0	51	405
Total	57	568	15	8	648	18	56	48	3	125	23	526	52	15	616	68	63	80	3	214	1603
01:00 PM	9	126	1	6	142	8	17	11	8	44	2	123	3	10	138	13	21	15	1	50	374
01:15 PM	11	159	7	6	183	5	8	14	1	28	8	132	8	4	152	12	17	10	1	40	403
01:30 PM	19	146	4	5	174	4	10	6	0	20	1	122	8	1	132	10	16	11	3	40	366
01:45 PM	15	131	3	3	152	3	11	6	4	24	6	133	15	5	159	13	25	22	1	61	396
Total	54	562	15	20	651	20	46	37	13	116	17	510	34	20	581	48	79	58	6	191	1539
Grand Total	184	1645	45	38	1912	53	170	128	24	375	67	1530	127	53	1777	165	222	200	14	601	4665
Apprch %	9.6	86	2.4	2		14.1	45.3	34.1	6.4		3.8	86.1	7.1	3		27.5	36.9	33.3	2.3		
Total %	3.9	35.3	1	0.8	41	1.1	3.6	2.7	0.5	8	1.4	32.8	2.7	1.1	38.1	3.5	4.8	4.3	0.3	12.9	
Passenger Vehicles	179	1614	44	32	1869	53	166	124	20	363	67	1504	124	43	1738	163	220	197	11	591	4561
% Passenger Vehicles	97.3	98.1	97.8	84.2	97.8	100	97.6	96.9	83.3	96.8	100	98.3	97.6	81.1	97.8	98.8	99.1	98.5	78.6	98.3	97.8
Medium Trucks & Small Buses	4	26	1	6	37	0	2	4	4	10	0	24	3	10	37	2	1	3	3	9	93
% Medium Trucks & Small Buses	2.2	1.6	2.2	15.8	1.9	0	1.2	3.1	16.7	2.7	0	1.6	2.4	18.9	2.1	1.2	0.5	1.5	21.4	1.5	2
Heavy Trucks & Full Size Buses	1	5	0	0	6	0	2	0	0	2	0	2	0	0	2	0	1	0	0	1	11
% Heavy Trucks & Full Size Buses	0.5	0.3	0	0	0.3	0	1.2	0	0	0.5	0	0.1	0	0	0.1	0	0.5	0	0	0.2	0.2

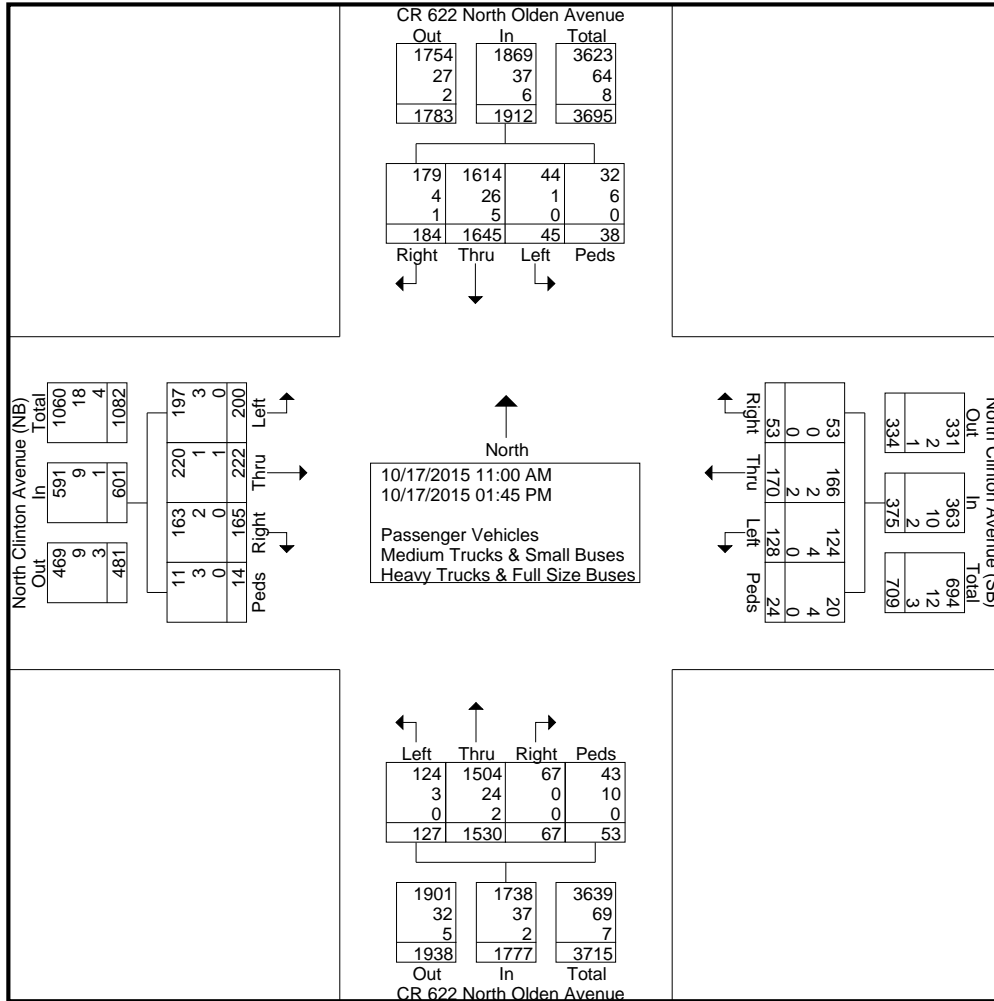
Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

North Clinton Ave & North Olden Ave
Trenton, Mercer County, NJ
11:00am - 2:00pm Luke H & Alicia U
Lat: 40.231962 Long: -74.744395

File Name : Clinton & Olden-Sat
Site Code :
Start Date : 10/17/2015
Page No : 2



Greenman-Pedersen, Inc.

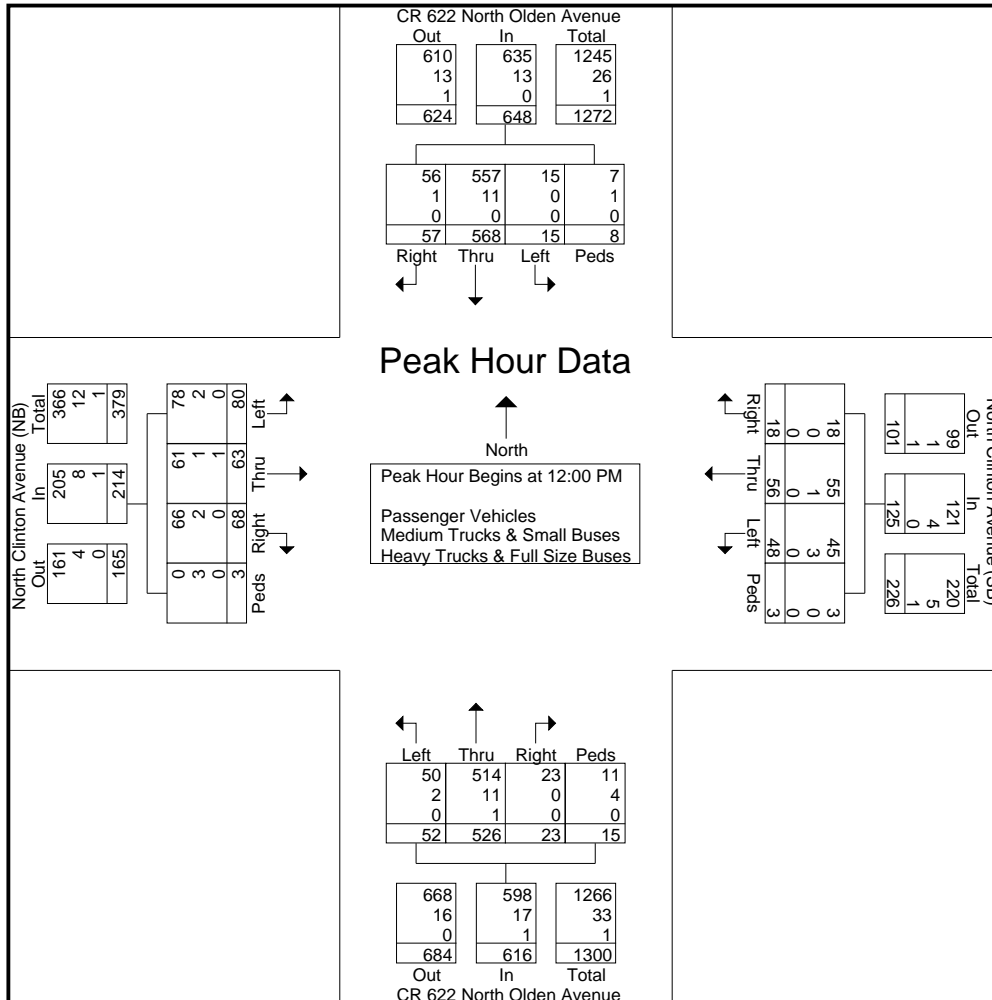
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Engineering and Construction Services

North Clinton Ave & North Olden Ave
Trenton, Mercer County, NJ
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Page No : 3

Start Time	CR 622 North Olden Avenue Southbound					North Clinton Avenue (SB) Westbound					CR 622 North Olden Avenue Northbound					North Clinton Avenue (NB) Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	13	153	3	4	173	4	22	12	0	38	7	133	12	2	154	17	15	24	1	57	422
12:15 PM	16	137	2	0	155	3	7	10	1	21	8	121	13	6	148	19	16	24	1	60	384
12:30 PM	15	135	5	0	155	4	19	14	2	39	3	134	11	4	152	17	15	13	1	46	392
12:45 PM	13	143	5	4	165	7	8	12	0	27	5	138	16	3	162	15	17	19	0	51	405
Total Volume	57	568	15	8	648	18	56	48	3	125	23	526	52	15	616	68	63	80	3	214	1603
% App. Total	8.8	87.7	2.3	1.2		14.4	44.8	38.4	2.4		3.7	85.4	8.4	2.4		31.8	29.4	37.4	1.4		
PHF	.891	.928	.750	.500	.936	.643	.636	.857	.375	.801	.719	.953	.813	.625	.951	.895	.926	.833	.750	.892	.950
Passenger Vehicles	56	557	15	7	635	18	55	45	3	121	23	514	50	11	598	66	61	78	0	205	1559
% Passenger Vehicles																					
Medium Trucks & Small Buses	1	11	0	1	13	0	1	3	0	4	0	11	2	4	17	2	1	2	3	8	42
% Medium Trucks & Small Buses	1.8	1.9	0	12.5	2.0	0	1.8	6.3	0	3.2	0	2.1	3.8	26.7	2.8	2.9	1.6	2.5	100	3.7	2.6
Heavy Trucks & Full Size Buses	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	1	0	0	1	2
% Heavy Trucks & Full Size Buses	0	0	0	0	0	0	0	0	0	0	0	0.2	0	0	0.2	0	1.6	0	0	0.5	0.1



Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State St & Chambers St
Trenton, Mercer County, NJ
6:30am - 6:30pm AJ S & Kate C
Lat: 40.222784 Long: -74.747285

File Name : State & Chambers
Site Code :
Start Date : 10/14/2015
Page No : 1

Groups Printed- Passenger Vehicles - Medium Trucks & Small Buses - Heavy Trucks & Full Size Buses

Start Time	CR 626 Chambers Street (EB) Southbound					CR 635 East State Street Westbound					CR 626 Chambers Street (WB) Northbound					CR 635 East State Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
06:30 AM	2	26	10	1	39	22	12	3	0	37	8	40	5	0	53	4	12	1	1	18	147
06:45 AM	1	45	22	1	69	14	28	9	1	52	8	63	10	1	82	3	21	0	0	24	227
Total	3	71	32	2	108	36	40	12	1	89	16	103	15	1	135	7	33	1	1	42	374
07:00 AM	0	39	19	1	59	19	29	9	0	57	3	58	6	5	72	5	11	1	0	17	205
07:15 AM	2	55	21	6	84	12	28	1	0	41	5	69	27	4	105	13	12	0	4	29	259
07:30 AM	1	53	19	2	75	15	32	3	1	51	7	109	33	2	151	21	19	1	5	46	323
07:45 AM	2	68	20	1	91	19	56	3	1	79	4	105	54	4	167	12	17	2	7	38	375
Total	5	215	79	10	309	65	145	16	2	228	19	341	120	15	495	51	59	4	16	130	1162
08:00 AM	5	76	38	2	121	18	59	1	0	78	4	113	49	2	168	16	21	3	1	41	408
08:15 AM	5	77	15	2	99	22	55	4	3	84	4	99	56	1	160	18	32	1	1	52	395
08:30 AM	2	76	34	2	114	20	54	9	4	87	4	110	42	1	157	17	21	5	2	45	403
08:45 AM	2	68	21	4	95	23	38	4	0	65	8	95	55	2	160	11	22	3	8	44	364
Total	14	297	108	10	429	83	206	18	7	314	20	417	202	6	645	62	96	12	12	182	1570
09:00 AM	7	73	21	0	101	27	27	5	0	59	7	80	49	2	138	17	27	1	4	49	347
09:15 AM	2	69	14	0	85	14	19	1	1	35	5	63	27	2	97	19	17	6	2	44	261
*** BREAK ***																					
Total	9	142	35	0	186	41	46	6	1	94	12	143	76	4	235	36	44	7	6	93	608
*** BREAK ***																					
10:30 AM	3	58	14	0	75	12	14	1	0	27	9	61	24	4	98	15	18	4	2	39	239
10:45 AM	4	74	21	2	101	8	10	2	1	21	7	67	16	1	91	19	16	2	1	38	251
Total	7	132	35	2	176	20	24	3	1	48	16	128	40	5	189	34	34	6	3	77	490
11:00 AM	3	55	15	1	74	13	8	3	3	27	8	57	10	1	76	17	11	4	3	35	212
11:15 AM	6	51	24	0	81	8	12	4	0	24	8	54	20	2	84	22	15	2	4	43	232
11:30 AM	6	44	29	4	83	4	11	3	1	19	5	70	16	6	97	23	18	4	5	50	249
11:45 AM	0	66	29	0	95	11	6	1	0	18	4	55	23	1	83	27	26	11	3	67	263
Total	15	216	97	5	333	36	37	11	4	88	25	236	69	10	340	89	70	21	15	195	956
12:00 PM	2	73	21	2	98	12	15	3	0	30	4	54	16	1	75	29	19	7	1	56	259
12:15 PM	2	59	20	0	81	9	8	0	1	18	7	60	20	1	88	32	31	5	0	68	255
12:30 PM	5	71	12	0	88	10	13	1	3	27	11	55	14	0	80	22	24	3	4	53	248
12:45 PM	1	58	29	2	90	24	21	5	0	50	7	58	22	3	90	16	24	1	4	45	275
Total	10	261	82	4	357	55	57	9	4	125	29	227	72	5	333	99	98	16	9	222	1037
01:00 PM	4	80	26	0	110	15	23	1	0	39	6	56	11	1	74	19	45	1	0	65	288
01:15 PM	3	51	30	0	84	20	17	5	0	42	8	72	23	0	103	14	24	3	3	44	273
01:30 PM	4	90	30	0	124	8	15	1	0	24	10	63	21	0	94	18	26	2	0	46	288
01:45 PM	4	58	24	0	86	10	20	2	1	33	12	71	20	4	107	22	12	1	2	37	263
Total	15	279	110	0	404	53	75	9	1	138	36	262	75	5	378	73	107	7	5	192	1112
*** BREAK ***																					
03:00 PM	8	90	42	0	140	19	20	3	2	44	8	72	21	8	109	27	35	2	11	75	368
03:15 PM	1	103	33	1	138	20	19	3	1	43	6	87	16	1	110	19	46	4	9	78	369
03:30 PM	4	117	35	1	157	21	15	3	5	44	10	82	17	0	109	35	47	1	5	88	398
03:45 PM	1	111	26	0	138	15	21	3	1	40	6	66	28	7	107	26	46	4	4	80	365
Total	14	421	136	2	573	75	75	12	9	171	30	307	82	16	435	107	174	11	29	321	1500
04:00 PM	2	102	31	0	135	13	13	2	1	29	8	85	17	6	116	45	63	3	9	120	400
04:15 PM	4	108	38	3	153	15	7	4	1	27	7	68	21	7	103	28	58	3	1	90	373
04:30 PM	1	97	43	1	142	19	11	7	0	37	9	72	13	5	99	42	65	4	1	112	390
04:45 PM	5	108	26	0	139	15	18	1	1	35	6	90	23	1	120	40	49	1	1	91	385
Total	12	415	138	4	569	62	49	14	3	128	30	315	74	19	438	155	235	11	12	413	1548
05:00 PM	2	65	38	0	105	19	11	7	3	40	10	75	16	1	102	40	53	4	1	98	345

Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

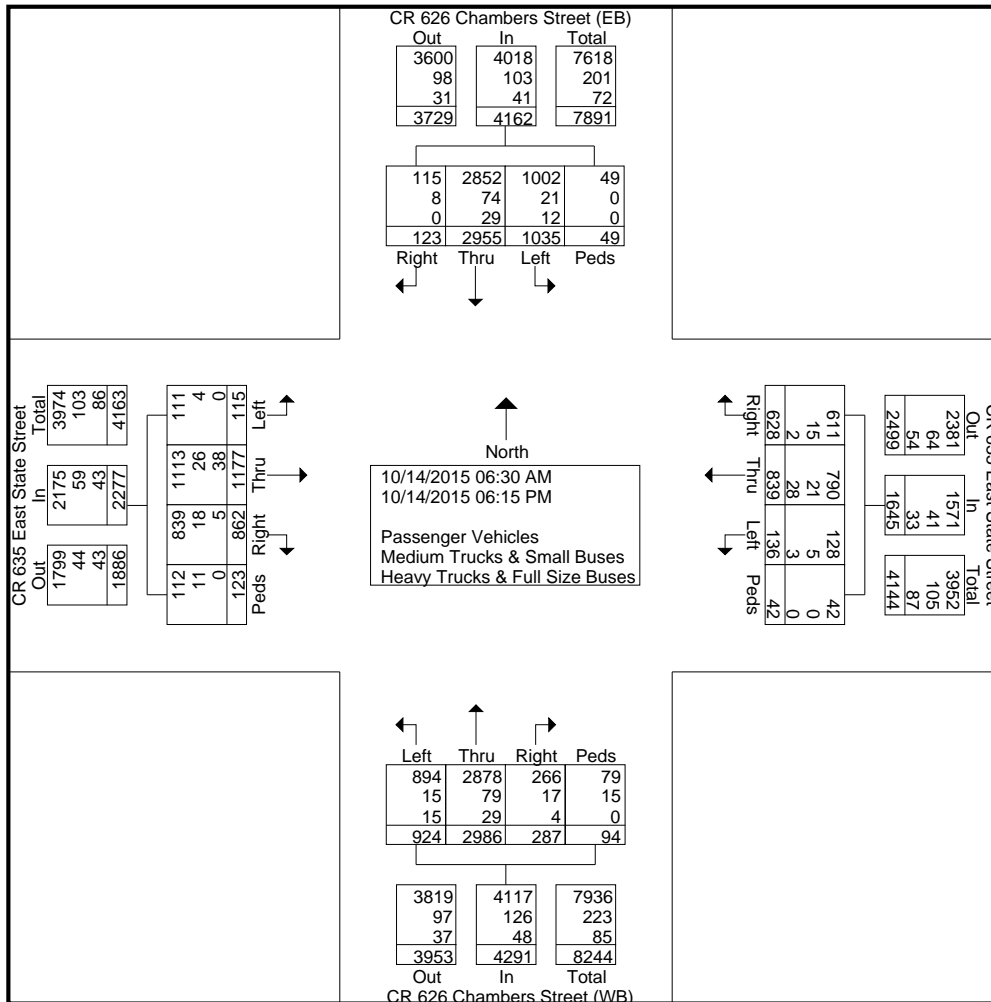
Engineering and Construction Services

East State St & Chambers St
Trenton, Mercer County, NJ
6:30am - 6:30pm AJ S & Kate C
Lat: 40.222784 Long: -74.747285

File Name : State & Chambers
Site Code :
Start Date : 10/14/2015
Page No : 2

Groups Printed- Passenger Vehicles - Medium Trucks & Small Buses - Heavy Trucks & Full Size Buses

Start Time	CR 626 Chambers Street (EB) Southbound					CR 635 East State Street Westbound					CR 626 Chambers Street (WB) Northbound					CR 635 East State Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
05:15 PM	8	115	27	2	152	16	13	4	2	35	6	88	23	2	119	34	49	5	0	88	394
05:30 PM	3	92	30	3	128	16	19	4	1	40	6	106	18	0	130	18	38	1	4	61	359
05:45 PM	2	101	40	2	145	17	7	4	0	28	7	81	20	0	108	18	27	5	0	50	331
Total	15	373	135	7	530	68	50	19	6	143	29	350	77	3	459	110	167	15	5	297	1429
06:00 PM	1	74	24	3	102	19	25	4	2	50	13	74	10	4	101	19	32	2	9	62	315
06:15 PM	3	59	24	0	86	15	10	3	1	29	12	83	12	1	108	20	28	2	1	51	274
Grand Total	123	2955	1035	49	4162	628	839	136	42	1645	287	2986	924	94	4291	862	1177	115	123	2277	12375
Apprch %	3	71	24.9	1.2		38.2	51	8.3	2.6		6.7	69.6	21.5	2.2		37.9	51.7	5.1	5.4		
Total %	1	23.9	8.4	0.4	33.6	5.1	6.8	1.1	0.3	13.3	2.3	24.1	7.5	0.8	34.7	7	9.5	0.9	1	18.4	
Passenger Vehicles	115	2852	1002	49	4018	611	790	128	42	1571	266	2878	894	79	4117	839	1113	111	112	2175	11881
% Passenger Vehicles	93.5	96.5	96.8	100	96.5	97.3	94.2	94.1	100	95.5	92.7	96.4	96.8	84	95.9	97.3	94.6	96.5	91.1	95.5	96
Medium Trucks & Small Buses	8	74	21	0	103	15	21	5	0	41	17	79	15	15	126	18	26	4	11	59	329
% Medium Trucks & Small Buses	6.5	2.5	2	0	2.5	2.4	2.5	3.7	0	2.5	5.9	2.6	1.6	16	2.9	2.1	2.2	3.5	8.9	2.6	2.7
Heavy Trucks & Full Size Buses	0	29	12	0	41	2	28	3	0	33	4	29	15	0	48	5	38	0	0	43	165
% Heavy Trucks & Full Size Buses	0	1	1.2	0	1	0.3	3.3	2.2	0	2	1.4	1	1.6	0	1.1	0.6	3.2	0	0	1.9	1.3



Greenman-Pedersen, Inc.

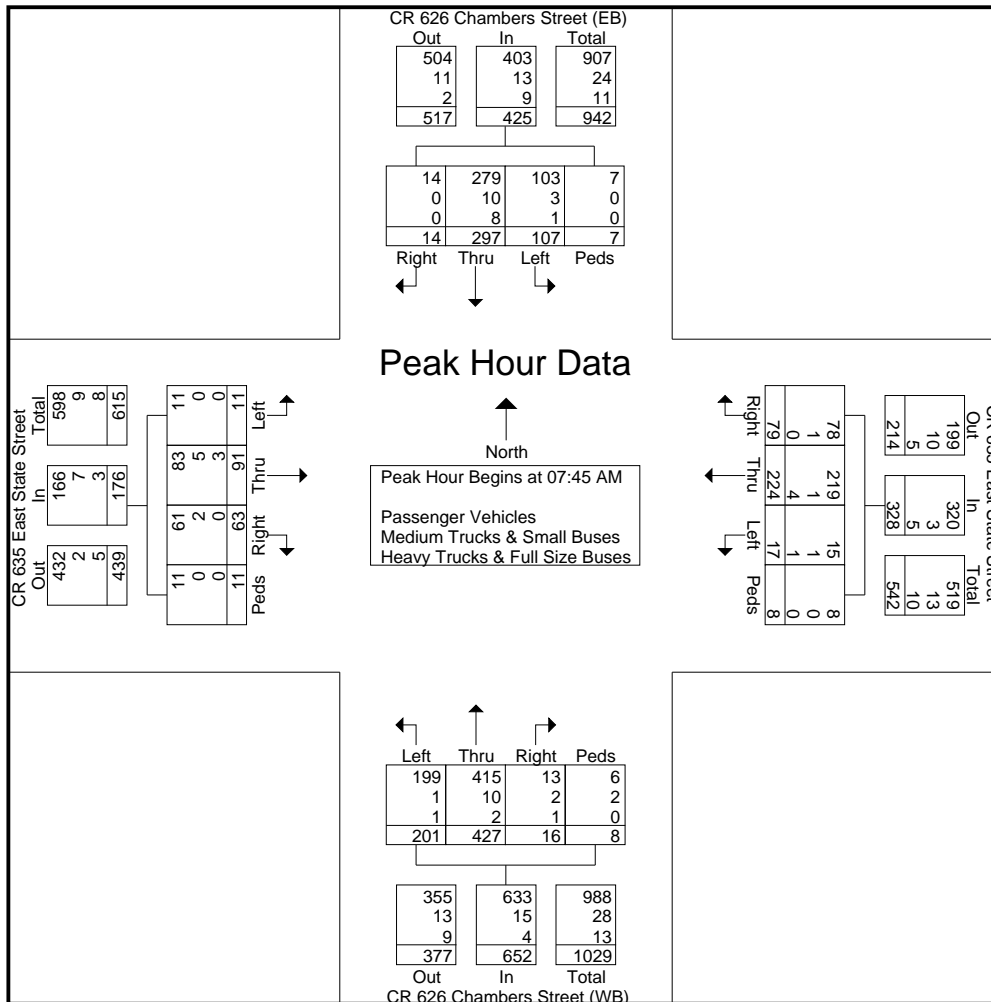
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File Name : State & Chambers
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Start Time	CR 626 Chambers Street (EB) Southbound					CR 635 East State Street Westbound					CR 626 Chambers Street (WB) Northbound					CR 635 East State Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 06:30 AM to 09:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	2	68	20	1	91	19	56	3	1	79	4	105	54	4	167	12	17	2	7	38	375
08:00 AM	5	76	38	2	121	18	59	1	0	78	4	113	49	2	168	16	21	3	1	41	408
08:15 AM	5	77	15	2	99	22	55	4	3	84	4	99	56	1	160	18	32	1	1	52	395
08:30 AM	2	76	34	2	114	20	54	9	4	87	4	110	42	1	157	17	21	5	2	45	403
Total Volume	14	297	107	7	425	79	224	17	8	328	16	427	201	8	652	63	91	11	11	176	1581
% App. Total	3.3	69.9	25.2	1.6		24.1	68.3	5.2	2.4		2.5	65.5	30.8	1.2		35.8	51.7	6.2	6.2		
PHF	.700	.964	.704	.875	.878	.898	.949	.472	.500	.943	1.00	.945	.897	.500	.970	.875	.711	.550	.393	.846	.969
Passenger Vehicles	14	279	103	7	403	78	219	15	8	320	13	415	199	6	633	61	83	11	11	166	1522
% Passenger Vehicles																					
Medium Trucks & Small Buses	0	10	3	0	13	1	1	1	0	3	2	10	1	2	15	2	5	0	0	7	38
% Medium Trucks & Small Buses	0	3.4	2.8	0	3.1	1.3	0.4	5.9	0	0.9	12.5	2.3	0.5	25.0	2.3	3.2	5.5	0	0	4.0	2.4
Heavy Trucks & Full Size Buses	0	8	1	0	9	0	4	1	0	5	1	2	1	0	4	0	3	0	0	3	21
% Heavy Trucks & Full Size Buses	0	2.7	0.9	0	2.1	0	1.8	5.9	0	1.5	6.3	0.5	0.5	0	0.6	0	3.3	0	0	1.7	1.3



Greenman-Pedersen, Inc.

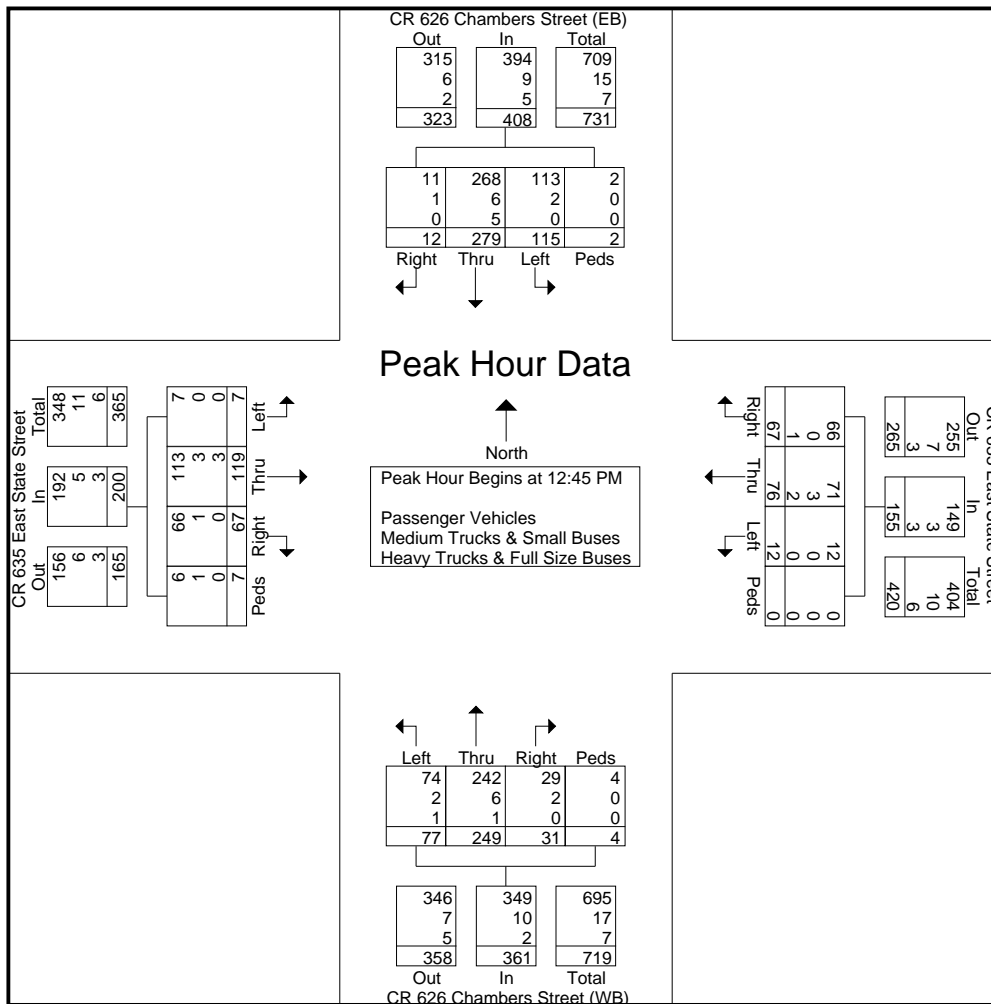
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East State St & Chambers St
Trenton, Mercer County, NJ
6:30am - 6:30pm AJ S & Kate C
Lat: 40.222784 Long: -74.747285

File Name : State & Chambers
Site Code :
Start Date : 10/14/2015
Page No : 4

Start Time	CR 626 Chambers Street (EB) Southbound					CR 635 East State Street Westbound					CR 626 Chambers Street (WB) Northbound					CR 635 East State Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 10:30 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:45 PM																					
12:45 PM	1	58	29	2	90	24	21	5	0	50	7	58	22	3	90	16	24	1	4	45	275
01:00 PM	4	80	26	0	110	15	23	1	0	39	6	56	11	1	74	19	45	1	0	65	288
01:15 PM	3	51	30	0	84	20	17	5	0	42	8	72	23	0	103	14	24	3	3	44	273
01:30 PM	4	90	30	0	124	8	15	1	0	24	10	63	21	0	94	18	26	2	0	46	288
Total Volume	12	279	115	2	408	67	76	12	0	155	31	249	77	4	361	67	119	7	7	200	1124
% App. Total	2.9	68.4	28.2	0.5		43.2	49	7.7	0		8.6	69	21.3	1.1		33.5	59.5	3.5	3.5		
PHF	.750	.775	.958	.250	.823	.698	.826	.600	.000	.775	.775	.865	.837	.333	.876	.882	.661	.583	.438	.769	.976
Passenger Vehicles	11	268	113	2	394	66	71	12	0	149	29	242	74	4	349	66	113	7	6	192	1084
% Passenger Vehicles																					
Medium Trucks & Small Buses	1	6	2	0	9	0	3	0	0	3	2	6	2	0	10	1	3	0	1	5	27
% Medium Trucks & Small Buses	8.3	2.2	1.7	0	2.2	0	3.9	0	0	1.9	6.5	2.4	2.6	0	2.8	1.5	2.5	0	14.3	2.5	2.4
Heavy Trucks & Full Size Buses	0	5	0	0	5	1	2	0	0	3	0	1	1	0	2	0	3	0	0	3	13
% Heavy Trucks & Full Size Buses	0	1.8	0	0	1.2	1.5	2.6	0	0	1.9	0	0.4	1.3	0	0.6	0	2.5	0	0	1.5	1.2



Greenman-Pedersen, Inc.

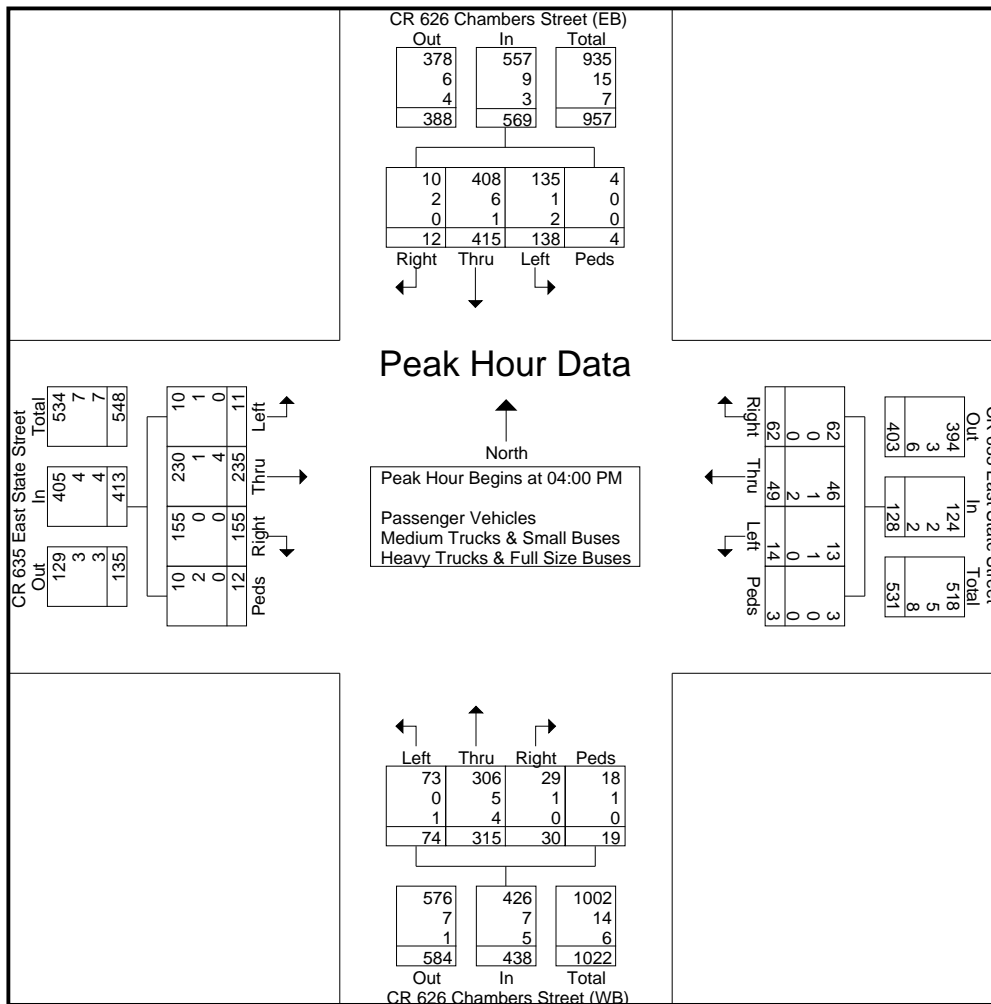
100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State St & Chambers St
Trenton, Mercer County, NJ
6:30am - 6:30pm AJ S & Kate C
Lat: 40.222784 Long: -74.747285

File Name : State & Chambers
Site Code :
Start Date : 10/14/2015
Page No : 5

Start Time	CR 626 Chambers Street (EB) Southbound					CR 635 East State Street Westbound					CR 626 Chambers Street (WB) Northbound					CR 635 East State Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 03:00 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	2	102	31	0	135	13	13	2	1	29	8	85	17	6	116	45	63	3	9	120	400
04:15 PM	4	108	38	3	153	15	7	4	1	27	7	68	21	7	103	28	58	3	1	90	373
04:30 PM	1	97	43	1	142	19	11	7	0	37	9	72	13	5	99	42	65	4	1	112	390
04:45 PM	5	108	26	0	139	15	18	1	1	35	6	90	23	1	120	40	49	1	1	91	385
Total Volume	12	415	138	4	569	62	49	14	3	128	30	315	74	19	438	155	235	11	12	413	1548
% App. Total	2.1	72.9	24.3	0.7		48.4	38.3	10.9	2.3		6.8	71.9	16.9	4.3		37.5	56.9	2.7	2.9		
PHF	.600	.961	.802	.333	.930	.816	.681	.500	.750	.865	.833	.875	.804	.679	.913	.861	.904	.688	.333	.860	.968
Passenger Vehicles	10	408	135	4	557	62	46	13	3	124	29	306	73	18	426	155	230	10	10	405	1512
% Passenger Vehicles																					
Medium Trucks & Small Buses	2	6	1	0	9	0	1	1	0	2	1	5	0	1	7	0	1	1	2	4	22
% Medium Trucks & Small Buses	16.7	1.4	0.7	0	1.6	0	2.0	7.1	0	1.6	3.3	1.6	0	5.3	1.6	0	0.4	9.1	16.7	1.0	1.4
Heavy Trucks & Full Size Buses	0	1	2	0	3	0	2	0	0	2	0	4	1	0	5	0	4	0	0	4	14
% Heavy Trucks & Full Size Buses	0	0.2	1.4	0	0.5	0	4.1	0	0	1.6	0	1.3	1.4	0	1.1	0	1.7	0	0	1.0	0.9



Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State St & Chambers St
Trenton, Mercer County, NJ
6:30am - 6:30pm Sara L
Lat: 40.222784 Long: -74.747285

File Name : State & Chambers
Site Code :
Start Date : 10/29/2015
Page No : 1

Groups Printed- Passenger Vehicles - Medium Trucks & Small Buses - Heavy Trucks & Full Size Buses

Start Time	CR 626 Chambers Street (EB) Southbound					CR 635 East State Street Westbound					CR 626 Chambers Street (WB) Northbound					CR 635 East State Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
06:30 AM	1	21	10	2	34	10	15	2	1	28	5	46	4	1	56	2	11	0	0	13	131
06:45 AM	1	48	19	0	68	16	21	6	0	43	9	68	5	0	82	7	20	0	0	27	220
Total	2	69	29	2	102	26	36	8	1	71	14	114	9	1	138	9	31	0	0	40	351
07:00 AM	1	46	14	1	62	14	25	2	1	42	3	45	10	0	58	1	21	1	1	24	186
07:15 AM	3	44	17	4	68	15	37	4	0	56	6	67	29	1	103	7	18	1	4	30	257
07:30 AM	0	71	14	3	88	24	51	5	2	82	5	92	24	0	121	6	19	3	2	30	321
07:45 AM	5	58	15	0	78	33	64	6	1	104	8	99	44	1	152	7	30	1	1	39	373
Total	9	219	60	8	296	86	177	17	4	284	22	303	107	2	434	21	88	6	8	123	1137
08:00 AM	4	85	28	4	121	32	74	6	2	114	5	98	49	0	152	10	27	1	2	40	427
08:15 AM	4	67	28	2	101	47	73	10	4	134	6	106	51	1	164	9	29	2	2	42	441
08:30 AM	5	90	28	1	124	36	66	4	1	107	6	115	36	0	157	6	18	4	10	38	426
08:45 AM	9	88	27	6	130	37	67	9	0	113	4	113	53	3	173	23	26	4	5	58	474
Total	22	330	111	13	476	152	280	29	7	468	21	432	189	4	646	48	100	11	19	178	1768
09:00 AM	4	58	35	3	100	24	55	7	4	90	4	96	35	5	140	15	29	4	1	49	379
09:15 AM	2	52	31	5	90	15	34	9	2	60	8	73	35	2	118	7	30	4	1	42	310
*** BREAK ***																					
Total	6	110	66	8	190	39	89	16	6	150	12	169	70	7	258	22	59	8	2	91	689
*** BREAK ***																					
10:30 AM	4	58	26	1	89	11	26	10	1	48	7	68	8	1	84	8	21	1	0	30	251
10:45 AM	3	50	18	4	75	16	28	5	2	51	6	54	12	3	75	4	29	2	0	35	236
Total	7	108	44	5	164	27	54	15	3	99	13	122	20	4	159	12	50	3	0	65	487
11:00 AM	3	63	10	1	77	19	15	5	1	40	8	32	8	5	53	9	24	0	3	36	206
11:15 AM	6	49	13	0	68	25	28	8	1	62	10	52	5	2	69	9	20	4	3	36	235
11:30 AM	3	73	20	3	99	12	18	12	4	46	10	54	11	3	78	10	27	2	0	39	262
11:45 AM	4	62	23	3	92	22	20	12	4	58	6	60	12	4	82	8	40	5	1	54	286
Total	16	247	66	7	336	78	81	37	10	206	34	198	36	14	282	36	111	11	7	165	989
12:00 PM	4	72	25	1	102	24	30	10	0	64	4	60	15	0	79	19	39	2	1	61	306
12:15 PM	5	71	24	2	102	17	45	9	0	71	5	43	11	1	60	7	35	2	3	47	280
12:30 PM	2	75	25	0	102	18	26	11	2	57	13	44	17	1	75	10	22	3	0	35	269
12:45 PM	1	71	16	2	90	23	45	6	0	74	5	57	12	2	76	18	28	2	0	48	288
Total	12	289	90	5	396	82	146	36	2	266	27	204	55	4	290	54	124	9	4	191	1143
01:00 PM	1	63	22	0	86	25	35	5	1	66	6	48	8	4	66	11	43	0	0	54	272
01:15 PM	2	63	26	0	91	25	36	8	1	70	6	60	10	2	78	8	32	1	1	42	281
01:30 PM	2	59	15	0	76	22	23	8	2	55	4	57	12	2	75	11	24	1	2	38	244
01:45 PM	4	65	23	1	93	33	30	14	4	81	8	59	12	3	82	9	30	4	3	46	302
Total	9	250	86	1	346	105	124	35	8	272	24	224	42	11	301	39	129	6	6	180	1099
*** BREAK ***																					
03:00 PM	7	96	31	11	145	29	35	11	3	78	10	79	20	10	119	31	54	1	9	95	437
03:15 PM	4	113	39	8	164	35	45	6	5	91	7	93	16	5	121	29	40	5	6	80	456
03:30 PM	3	111	38	1	153	30	49	12	4	95	6	83	16	6	111	13	45	4	4	66	425
03:45 PM	3	101	31	0	135	39	37	9	2	87	12	85	21	4	122	31	54	2	13	100	444
Total	17	421	139	20	597	133	166	38	14	351	35	340	73	25	473	104	193	12	32	341	1762
04:00 PM	2	113	39	4	158	25	33	10	4	72	5	55	11	1	72	29	84	1	0	114	416
04:15 PM	0	123	45	1	169	30	24	4	3	61	8	68	16	0	92	26	69	1	5	101	423
04:30 PM	2	120	33	1	156	33	45	4	4	86	8	64	12	2	86	32	80	3	3	118	446
04:45 PM	6	116	42	0	164	28	36	15	1	80	8	93	8	0	109	26	81	3	8	118	471
Total	10	472	159	6	647	116	138	33	12	299	29	280	47	3	359	113	314	8	16	451	1756
05:00 PM	1	117	43	0	161	27	36	13	4	80	5	68	10	3	86	33	86	5	2	126	453

Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

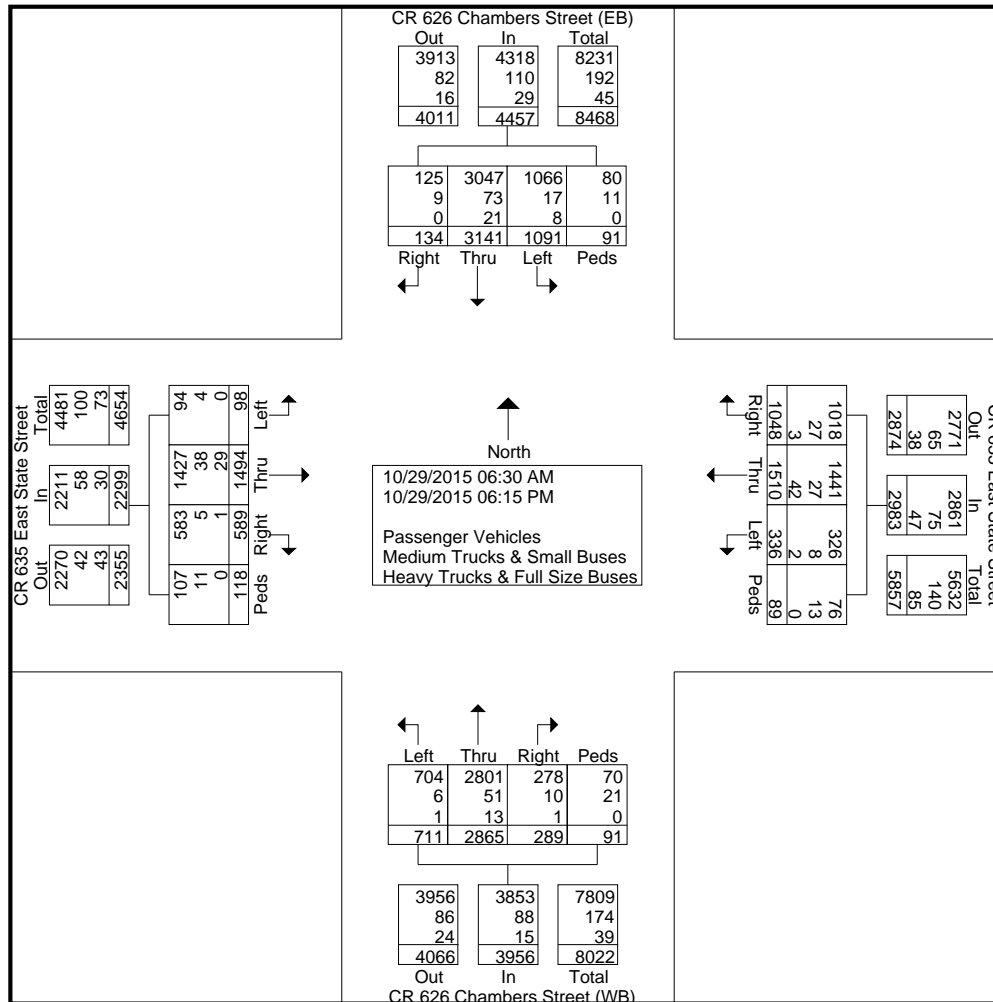
Engineering and Construction Services

East State St & Chambers St
Trenton, Mercer County, NJ
6:30am - 6:30pm Sara L
Lat: 40.222784 Long: -74.747285

File Name : State & Chambers
Site Code :
Start Date : 10/29/2015
Page No : 2

Groups Printed- Passenger Vehicles - Medium Trucks & Small Buses - Heavy Trucks & Full Size Buses

Start Time	CR 626 Chambers Street (EB) Southbound					CR 635 East State Street Westbound					CR 626 Chambers Street (WB) Northbound					CR 635 East State Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
05:15 PM	1	123	52	2	178	21	38	13	1	73	7	78	9	4	98	26	67	3	0	96	445
05:30 PM	9	102	38	5	154	37	43	12	6	98	11	85	16	2	114	21	42	12	2	77	443
05:45 PM	8	101	38	5	152	33	44	13	4	94	20	62	9	6	97	21	43	2	3	69	412
Total	19	443	171	12	645	118	161	51	15	345	43	293	44	15	395	101	238	22	7	368	1753
06:00 PM	2	91	40	2	135	40	34	14	1	89	7	92	7	1	107	18	30	0	14	62	393
06:15 PM	3	92	30	2	127	46	24	7	6	83	8	94	12	0	114	12	27	2	3	44	368
Grand Total	134	3141	1091	91	4457	1048	1510	336	89	2983	289	2865	711	91	3956	589	1494	98	118	2299	13695
Apprch %	3	70.5	24.5	2		35.1	50.6	11.3	3		7.3	72.4	18	2.3		25.6	65	4.3	5.1		
Total %	1	22.9	8	0.7	32.5	7.7	11	2.5	0.6	21.8	2.1	20.9	5.2	0.7	28.9	4.3	10.9	0.7	0.9	16.8	
Passenger Vehicles	125	3047	1066	80	4318	1018	1441	326	76	2861	278	2801	704	70	3853	583	1427	94	107	2211	13243
% Passenger Vehicles	93.3	97	97.7	87.9	96.9	97.1	95.4	97	85.4	95.9	96.2	97.8	99	76.9	97.4	99	95.5	95.9	90.7	96.2	96.7
Medium Trucks & Small Buses	9	73	17	11	110	27	27	8	13	75	10	51	6	21	88	5	38	4	11	58	331
% Medium Trucks & Small Buses	6.7	2.3	1.6	12.1	2.5	2.6	1.8	2.4	14.6	2.5	3.5	1.8	0.8	23.1	2.2	0.8	2.5	4.1	9.3	2.5	2.4
Heavy Trucks & Full Size Buses	0	21	8	0	29	3	42	2	0	47	1	13	1	0	15	1	29	0	0	30	121
% Heavy Trucks & Full Size Buses	0	0.7	0.7	0	0.7	0.3	2.8	0.6	0	1.6	0.3	0.5	0.1	0	0.4	0.2	1.9	0	0	1.3	0.9



Greenman-Pedersen, Inc.

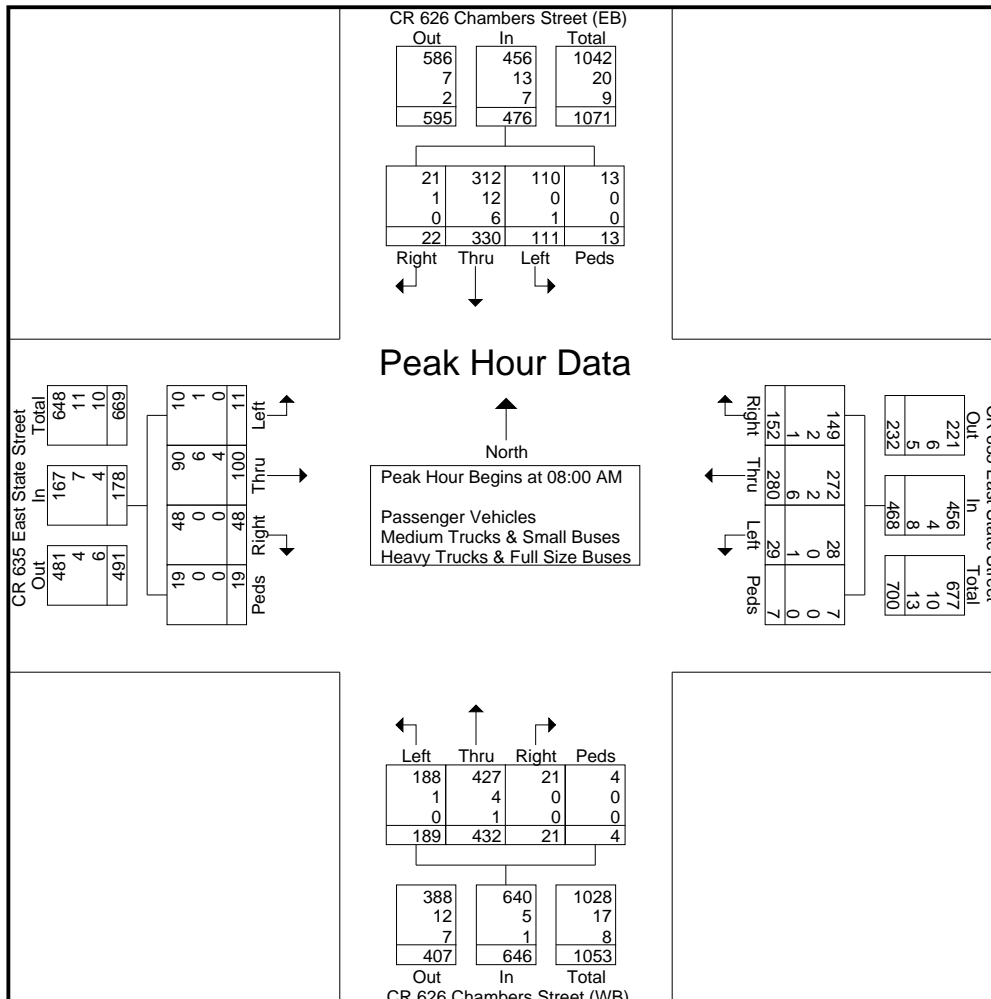
100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State St & Chambers St
Trenton, Mercer County, NJ
6:30am - 6:30pm Sara L
Lat: 40.222784 Long: -74.747285

File Name : State & Chambers
Site Code :
Start Date : 10/29/2015
Page No : 3

Start Time	CR 626 Chambers Street (EB) Southbound					CR 635 East State Street Westbound					CR 626 Chambers Street (WB) Northbound					CR 635 East State Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 06:30 AM to 09:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	4	85	28	4	121	32	74	6	2	114	5	98	49	0	152	10	27	1	2	40	427
08:15 AM	4	67	28	2	101	47	73	10	4	134	6	106	51	1	164	9	29	2	2	42	441
08:30 AM	5	90	28	1	124	36	66	4	1	107	6	115	36	0	157	6	18	4	10	38	426
08:45 AM	9	88	27	6	130	37	67	9	0	113	4	113	53	3	173	23	26	4	5	58	474
Total Volume	22	330	111	13	476	152	280	29	7	468	21	432	189	4	646	48	100	11	19	178	1768
% App. Total	4.6	69.3	23.3	2.7		32.5	59.8	6.2	1.5		3.3	66.9	29.3	0.6		27	56.2	6.2	10.7		
PHF	.611	.917	.991	.542	.915	.809	.946	.725	.438	.873	.875	.939	.892	.333	.934	.522	.862	.688	.475	.767	.932
Passenger Vehicles	21	312	110	13	456	149	272	28	7	456	21	427	188	4	640	48	90	10	19	167	1719
% Passenger Vehicles																					
Medium Trucks & Small Buses	1	12	0	0	13	2	2	0	0	4	0	4	1	0	5	0	6	1	0	7	29
% Medium Trucks & Small Buses	4.5	3.6	0	0	2.7	1.3	0.7	0	0	0.9	0	0.9	0.5	0	0.8	0	6.0	9.1	0	3.9	1.6
Heavy Trucks & Full Size Buses	0	6	1	0	7	1	6	1	0	8	0	1	0	0	1	0	4	0	0	4	20
% Heavy Trucks & Full Size Buses	0	1.8	0.9	0	1.5	0.7	2.1	3.4	0	1.7	0	0.2	0	0	0.2	0	4.0	0	0	2.2	1.1



Greenman-Pedersen, Inc.

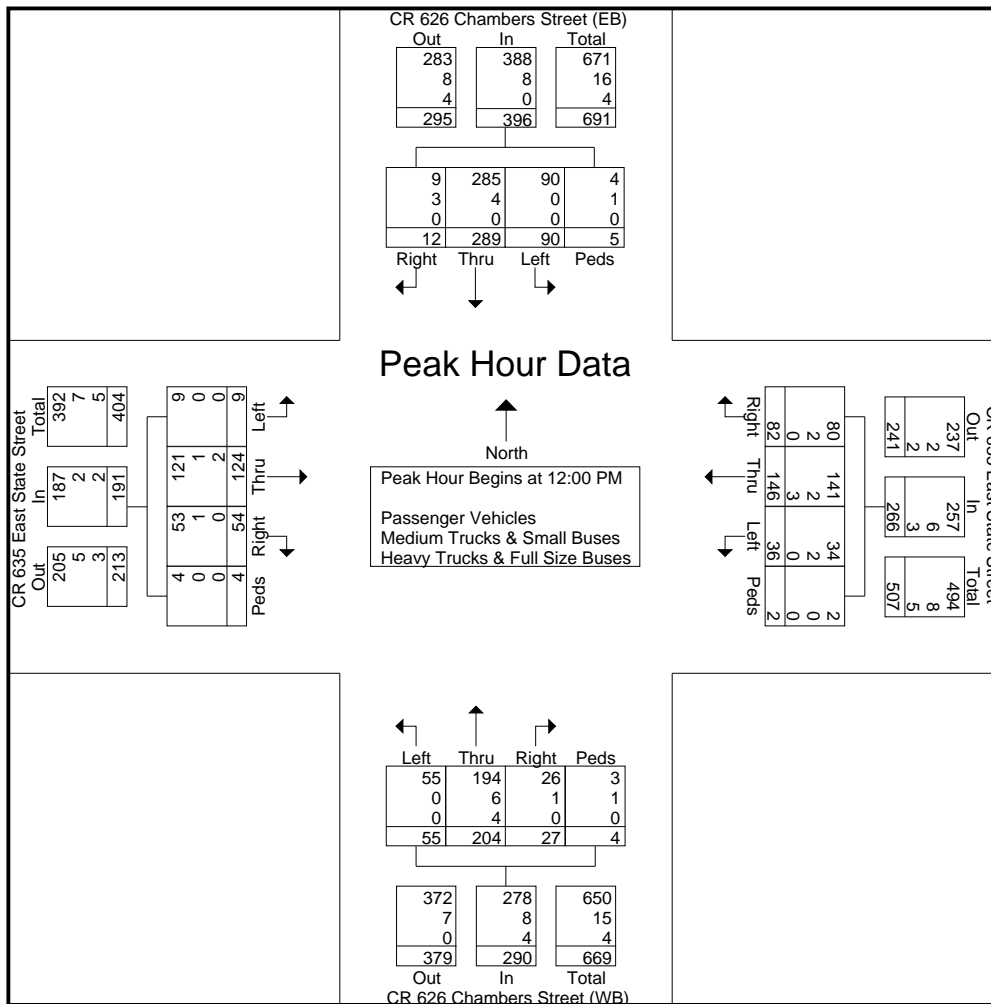
100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State St & Chambers St
Trenton, Mercer County, NJ
6:30am - 6:30pm Sara L
Lat: 40.222784 Long: -74.747285

File Name : State & Chambers
Site Code :
Start Date : 10/29/2015
Page No : 4

Start Time	CR 626 Chambers Street (EB) Southbound					CR 635 East State Street Westbound					CR 626 Chambers Street (WB) Northbound					CR 635 East State Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 10:30 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	4	72	25	1	102	24	30	10	0	64	4	60	15	0	79	19	39	2	1	61	306
12:15 PM	5	71	24	2	102	17	45	9	0	71	5	43	11	1	60	7	35	2	3	47	280
12:30 PM	2	75	25	0	102	18	26	11	2	57	13	44	17	1	75	10	22	3	0	35	269
12:45 PM	1	71	16	2	90	23	45	6	0	74	5	57	12	2	76	18	28	2	0	48	288
Total Volume	12	289	90	5	396	82	146	36	2	266	27	204	55	4	290	54	124	9	4	191	1143
% App. Total	3	73	22.7	1.3		30.8	54.9	13.5	0.8		9.3	70.3	19	1.4		28.3	64.9	4.7	2.1		
PHF	.600	.963	.900	.625	.971	.854	.811	.818	.250	.899	.519	.850	.809	.500	.918	.711	.795	.750	.333	.783	.934
Passenger Vehicles	9	285	90	4	388	80	141	34	2	257	26	194	55	3	278	53	121	9	4	187	1110
% Passenger Vehicles																					
Medium Trucks & Small Buses	3	4	0	1	8	2	2	2	0	6	1	6	0	1	8	1	1	0	0	2	24
% Medium Trucks & Small Buses	25.0	1.4	0	20.0	2.0	2.4	1.4	5.6	0	2.3	3.7	2.9	0	2.8	2.8	1.9	0.8	0	0	1.0	2.1
Heavy Trucks & Full Size Buses	0	0	0	0	0	0	3	0	0	3	0	4	0	0	4	0	2	0	0	2	9
% Heavy Trucks & Full Size Buses	0	0	0	0	0	0	2.1	0	0	1.1	0	2.0	0	0	1.4	0	1.6	0	0	1.0	0.8



Greenman-Pedersen, Inc.

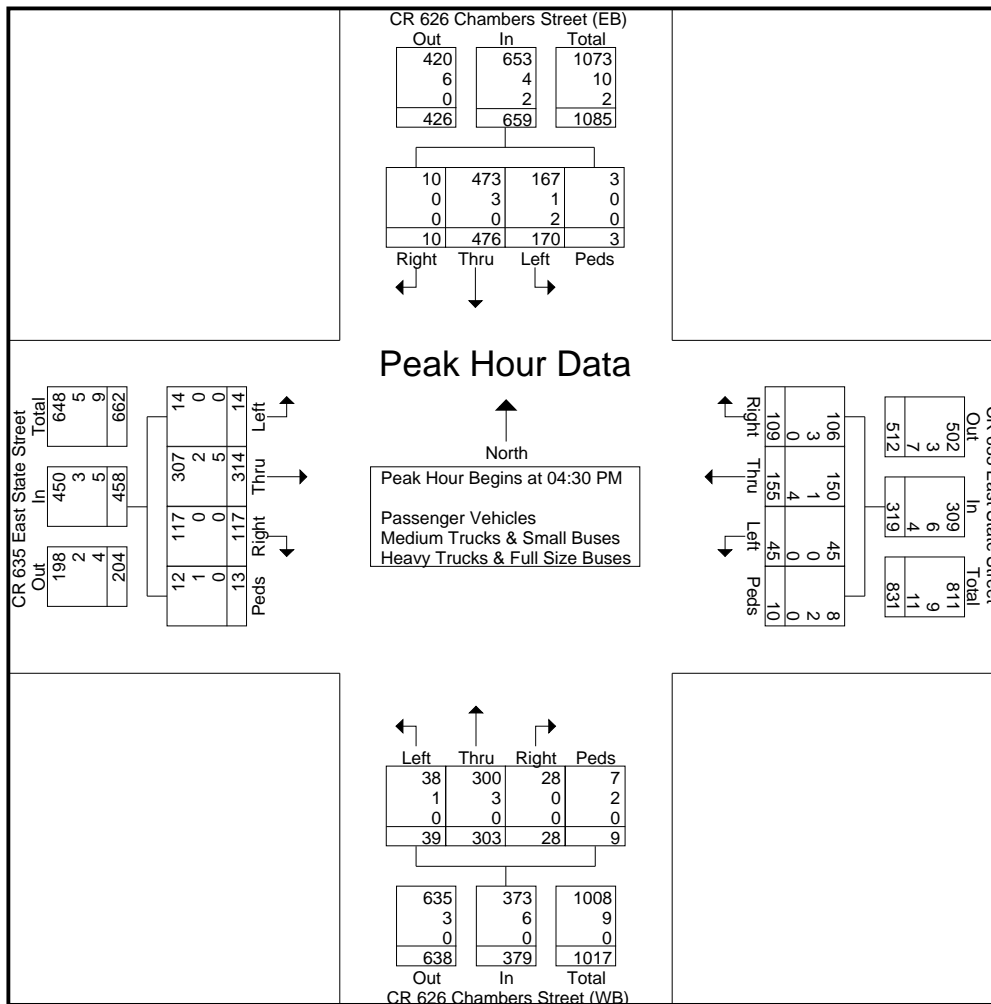
100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State St & Chambers St
Trenton, Mercer County, NJ
6:30am - 6:30pm Sara L
Lat: 40.222784 Long: -74.747285

File Name : State & Chambers
Site Code :
Start Date : 10/29/2015
Page No : 5

Start Time	CR 626 Chambers Street (EB) Southbound					CR 635 East State Street Westbound					CR 626 Chambers Street (WB) Northbound					CR 635 East State Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 03:00 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	2	120	33	1	156	33	45	4	4	86	8	64	12	2	86	32	80	3	3	118	446
04:45 PM	6	116	42	0	164	28	36	15	1	80	8	93	8	0	109	26	81	3	8	118	471
05:00 PM	1	117	43	0	161	27	36	13	4	80	5	68	10	3	86	33	86	5	2	126	453
05:15 PM	1	123	52	2	178	21	38	13	1	73	7	78	9	4	98	26	67	3	0	96	445
Total Volume	10	476	170	3	659	109	155	45	10	319	28	303	39	9	379	117	314	14	13	458	1815
% App. Total	1.5	72.2	25.8	0.5		34.2	48.6	14.1	3.1		7.4	79.9	10.3	2.4		25.5	68.6	3.1	2.8		
PHF	.417	.967	.817	.375	.926	.826	.861	.750	.625	.927	.875	.815	.813	.563	.869	.886	.913	.700	.406	.909	.963
Passenger Vehicles	10	473	167	3	653	106	150	45	8	309	28	300	38	7	373	117	307	14	12	450	1785
% Passenger Vehicles																					
Medium Trucks & Small Buses	0	3	1	0	4	3	1	0	2	6	0	3	1	2	6	0	2	0	1	3	19
% Medium Trucks & Small Buses	0	0.6	0.6	0	0.6	2.8	0.6	0	20.0	1.9	0	1.0	2.6	22.2	1.6	0	0.6	0	7.7	0.7	1.0
Heavy Trucks & Full Size Buses	0	0	2	0	2	0	4	0	0	4	0	0	0	0	0	0	5	0	0	5	11
% Heavy Trucks & Full Size Buses	0	0	1.2	0	0.3	0	2.6	0	0	1.3	0	0	0	0	0	0	1.6	0	0	1.1	0.6



Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State St & Chambers St
Trenton, Mercer County, NJ
11:00am - 2:00pm Sara L
Lat: 40.222784 Long: -74.747285

File Name : State & Chambers-Sat
Site Code :
Start Date : 10/17/2015
Page No : 1

Groups Printed- Passenger Vehicles - Medium Trucks & Small Buses - Heavy Trucks & Full Size Buses

Start Time	CR 626 Chambers Street (EB) Southbound					CR 635 East State Street Westbound					CR 626 Chambers Street (WB) Northbound					CR 635 East State Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
11:00 AM	8	54	25	2	89	21	23	9	2	55	7	57	9	1	74	12	19	2	0	33	251
11:15 AM	2	59	21	0	82	17	24	16	3	60	8	59	9	0	76	8	14	2	0	24	242
11:30 AM	1	70	29	1	101	26	24	16	5	71	12	58	5	1	76	11	17	1	2	31	279
11:45 AM	4	70	21	1	96	20	29	13	5	67	12	48	9	4	73	16	21	2	0	39	275
Total	15	253	96	4	368	84	100	54	15	253	39	222	32	6	299	47	71	7	2	127	1047
12:00 PM	57	34	6	2	99	0	0	0	0	0	2	47	7	2	58	18	4	8	1	31	188
12:15 PM	12	61	46	1	120	31	41	8	4	84	13	23	8	4	48	15	38	4	3	60	312
12:30 PM	4	103	36	1	144	24	32	18	4	78	16	74	7	1	98	16	32	0	2	50	370
12:45 PM	5	86	27	2	120	33	32	9	7	81	16	77	8	3	104	14	45	3	0	62	367
Total	78	284	115	6	483	88	105	35	15	243	47	221	30	10	308	63	119	15	6	203	1237
01:00 PM	3	100	34	0	137	37	22	22	6	87	19	66	7	5	97	10	35	3	0	48	369
01:15 PM	4	79	31	3	117	23	39	9	4	75	8	58	12	3	81	12	35	3	3	53	326
01:30 PM	1	99	25	1	126	25	21	12	3	61	20	60	10	4	94	8	27	1	0	36	317
01:45 PM	2	81	30	0	113	32	45	16	4	97	16	60	9	0	85	13	37	6	2	58	353
Total	10	359	120	4	493	117	127	59	17	320	63	244	38	12	357	43	134	13	5	195	1365
Grand Total	103	896	331	14	1344	289	332	148	47	816	149	687	100	28	964	153	324	35	13	525	3649
Apprch %	7.7	66.7	24.6	1		35.4	40.7	18.1	5.8		15.5	71.3	10.4	2.9		29.1	61.7	6.7	2.5		
Total %	2.8	24.6	9.1	0.4	36.8	7.9	9.1	4.1	1.3	22.4	4.1	18.8	2.7	0.8	26.4	4.2	8.9	1	0.4	14.4	
Passenger Vehicles	102	889	330	12	1333	289	325	148	39	801	148	678	99	23	948	152	317	34	9	512	3594
% Passenger Vehicles																					
Medium Trucks & Small Buses	1	7	1	2	11	0	3	0	8	11	0	8	1	5	14	1	1	0	4	6	42
% Medium Trucks & Small Buses	1	0.8	0.3	14.3	0.8	0	0.9	0	17	1.3	0	1.2	1	17.9	1.5	0.7	0.3	0	30.8	1.1	1.2
Heavy Trucks & Full Size Buses	0	0	0	0	0	0	4	0	0	4	1	1	0	0	2	0	6	1	0	7	13
% Heavy Trucks & Full Size Buses	0	0	0	0	0	0	1.2	0	0	0.5	0.7	0.1	0	0	0.2	0	1.9	2.9	0	1.3	0.4

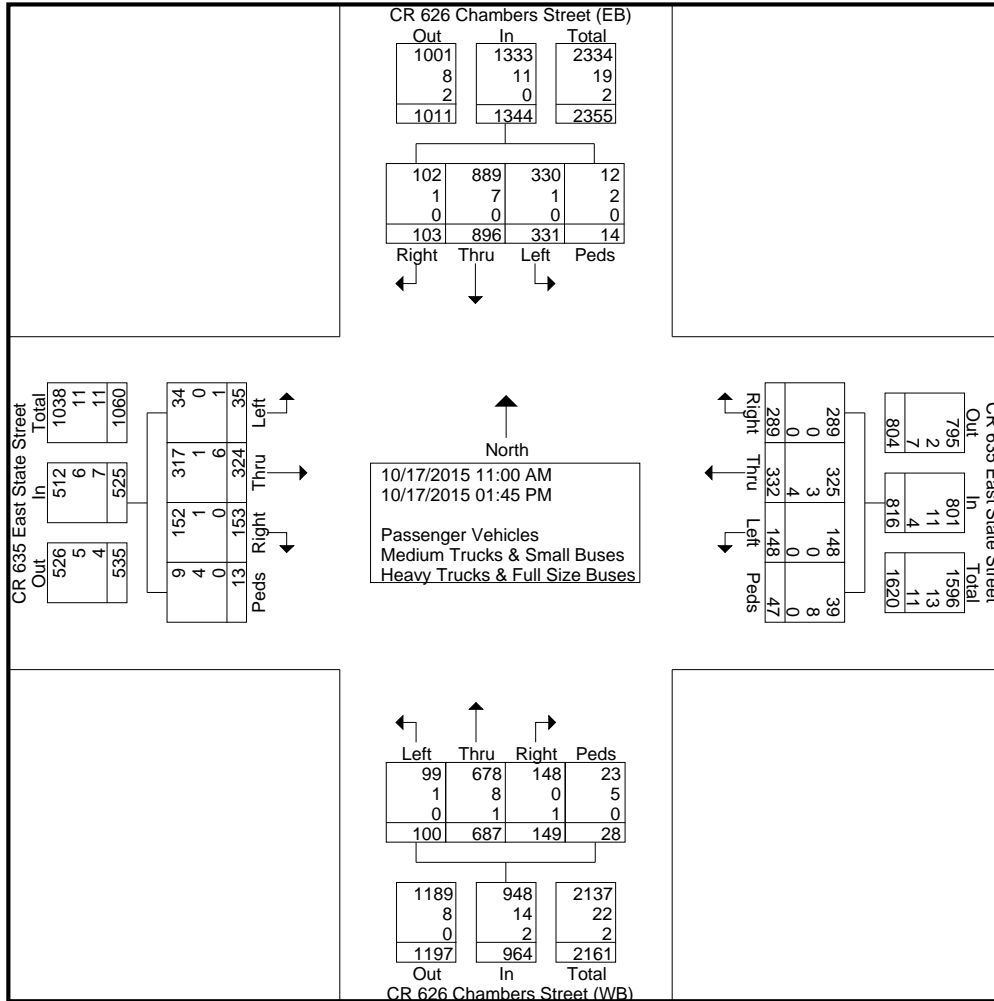
Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State St & Chambers St
Trenton, Mercer County, NJ
11:00am - 2:00pm Sara L
Lat: 40.222784 Long: -74.747285

File Name : State & Chambers-Sat
Site Code :
Start Date : 10/17/2015
Page No : 2



Greenman-Pedersen, Inc.

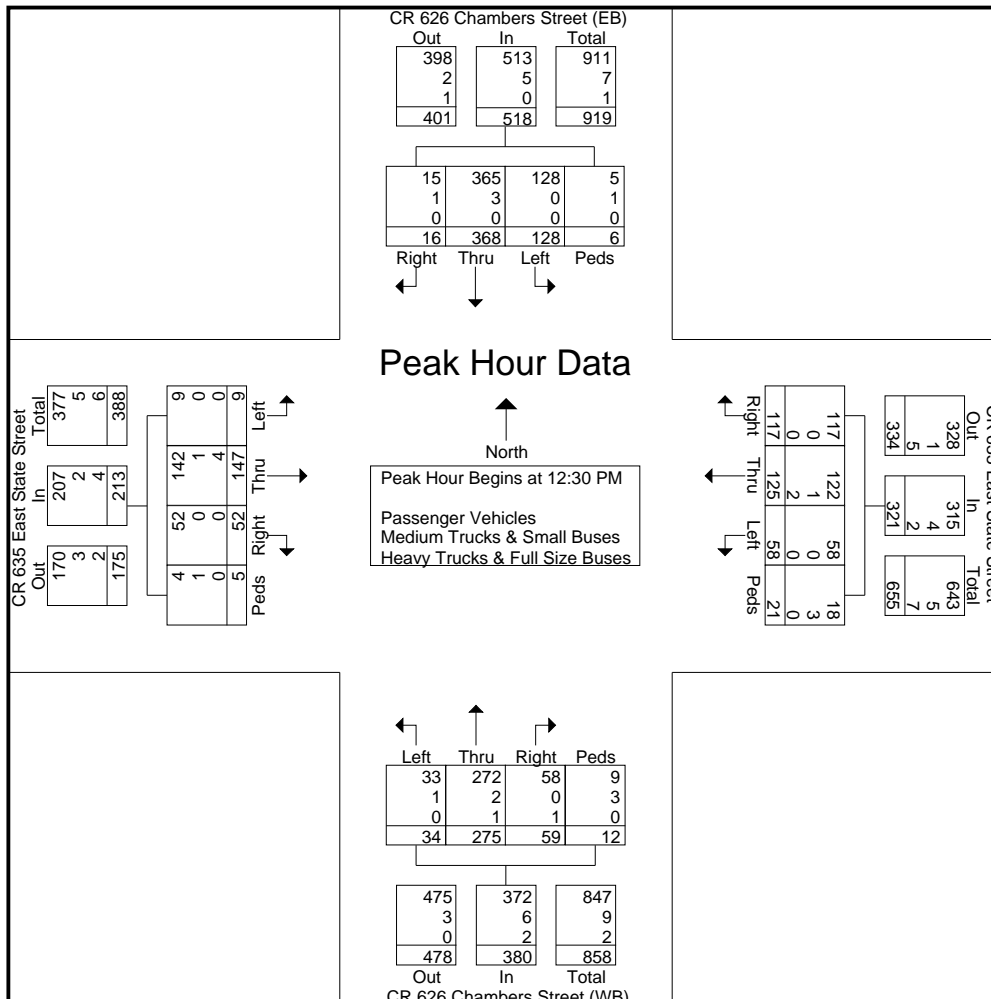
100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State St & Chambers St
Trenton, Mercer County, NJ
11:00am - 2:00pm Sara L
Lat: 40.222784 Long: -74.747285

File Name : State & Chambers-Sat
Site Code :
Start Date : 10/17/2015
Page No : 3

Start Time	CR 626 Chambers Street (EB) Southbound					CR 635 East State Street Westbound					CR 626 Chambers Street (WB) Northbound					CR 635 East State Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:30 PM																					
12:30 PM	4	103	36	1	144	24	32	18	4	78	16	74	7	1	98	16	32	0	2	50	370
12:45 PM	5	86	27	2	120	33	32	9	7	81	16	77	8	3	104	14	45	3	0	62	367
01:00 PM	3	100	34	0	137	37	22	22	6	87	19	66	7	5	97	10	35	3	0	48	369
01:15 PM	4	79	31	3	117	23	39	9	4	75	8	58	12	3	81	12	35	3	3	53	326
Total Volume	16	368	128	6	518	117	125	58	21	321	59	275	34	12	380	52	147	9	5	213	1432
% App. Total	3.1	71	24.7	1.2		36.4	38.9	18.1	6.5		15.5	72.4	8.9	3.2		24.4	69	4.2	2.3		
PHF	.800	.893	.889	.500	.899	.791	.801	.659	.750	.922	.776	.893	.708	.600	.913	.813	.817	.750	.417	.859	.968
Passenger Vehicles	15	365	128	5	513	117	122	58	18	315	58	272	33	9	372	52	142	9	4	207	1407
% Passenger Vehicles																					
Medium Trucks & Small Buses	1	3	0	1	5	0	1	0	3	4	0	2	1	3	6	0	1	0	1	2	17
% Medium Trucks & Small Buses	6.3	0.8	0	16.7	1.0	0	0.8	0	14.3	1.2	0	0.7	2.9	25.0	1.6	0	0.7	0	20.0	0.9	1.2
Heavy Trucks & Full Size Buses	0	0	0	0	0	0	2	0	0	2	1	1	0	0	2	0	4	0	0	4	8
% Heavy Trucks & Full Size Buses	0	0	0	0	0	0	1.6	0	0	0.6	1.7	0.4	0	0	0.5	0	2.7	0	0	1.9	0.6



Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State St & Chambers St
Trenton, Mercer County, NJ
11:00am - 2:00pm Sara L
Lat: 40.222784 Long: -74.747285

File Name : State & Chambers-Sat
Site Code :
Start Date : 11/14/2015
Page No : 1

Groups Printed- Passenger Vehicles - Medium Trucks & Small Buses - Heavy Trucks & Full Size Buses

Start Time	CR 626 Chambers Street (EB) Southbound					CR 635 East State Street Westbound					CR 626 Chambers Street (WB) Northbound					CR 635 East State Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
11:00 AM	3	52	15	0	70	17	37	7	2	63	18	61	8	0	87	16	25	4	0	45	265
11:15 AM	1	72	22	0	95	20	27	14	5	66	11	58	16	0	85	6	26	2	0	34	280
11:30 AM	2	81	12	0	95	25	35	9	0	69	5	55	10	5	75	12	34	3	2	51	290
11:45 AM	6	63	22	2	93	18	24	5	0	47	10	67	14	1	92	5	29	1	0	35	267
Total	12	268	71	2	353	80	123	35	7	245	44	241	48	6	339	39	114	10	2	165	1102
12:00 PM	5	64	20	3	92	18	27	14	3	62	6	51	8	0	65	10	31	1	1	43	262
12:15 PM	2	71	28	1	102	19	19	11	0	49	12	61	15	2	90	9	14	1	2	26	267
12:30 PM	5	92	37	2	136	25	30	14	8	77	16	51	9	4	80	14	31	1	5	51	344
12:45 PM	2	78	27	0	107	20	28	10	1	59	7	62	8	1	78	5	29	3	2	39	283
Total	14	305	112	6	437	82	104	49	12	247	41	225	40	7	313	38	105	6	10	159	1156
01:00 PM	4	87	31	0	122	26	31	18	1	76	12	53	2	0	67	17	31	3	0	51	316
01:15 PM	2	74	23	1	100	22	24	9	1	56	8	68	13	3	92	7	33	1	3	44	292
01:30 PM	2	82	23	3	110	22	24	7	0	53	7	65	5	0	77	6	33	4	1	44	284
01:45 PM	2	61	31	0	94	21	27	11	1	60	7	55	8	1	71	8	32	1	1	42	267
Total	10	304	108	4	426	91	106	45	3	245	34	241	28	4	307	38	129	9	5	181	1159
Grand Total	36	877	291	12	1216	253	333	129	22	737	119	707	116	17	959	115	348	25	17	505	3417
Apprch %	3	72.1	23.9	1		34.3	45.2	17.5	3		12.4	73.7	12.1	1.8		22.8	68.9	5	3.4		
Total %	1.1	25.7	8.5	0.4	35.6	7.4	9.7	3.8	0.6	21.6	3.5	20.7	3.4	0.5	28.1	3.4	10.2	0.7	0.5	14.8	
Passenger Vehicles	35	861	283	11	1190	248	325	129	17	719	118	693	113	14	938	115	332	24	15	486	3333
% Passenger Vehicles																					
Medium Trucks & Small Buses	1	13	7	1	22	5	3	0	5	13	1	12	3	3	19	0	8	1	2	11	65
% Medium Trucks & Small Buses	2.8	1.5	2.4	8.3	1.8	2	0.9	0	22.7	1.8	0.8	1.7	2.6	17.6	2	0	2.3	4	11.8	2.2	1.9
Heavy Trucks & Full Size Buses	0	3	1	0	4	0	5	0	0	5	0	2	0	0	2	0	8	0	0	8	19
% Heavy Trucks & Full Size Buses	0	0.3	0.3	0	0.3	0	1.5	0	0	0.7	0	0.3	0	0	0.2	0	2.3	0	0	1.6	0.6

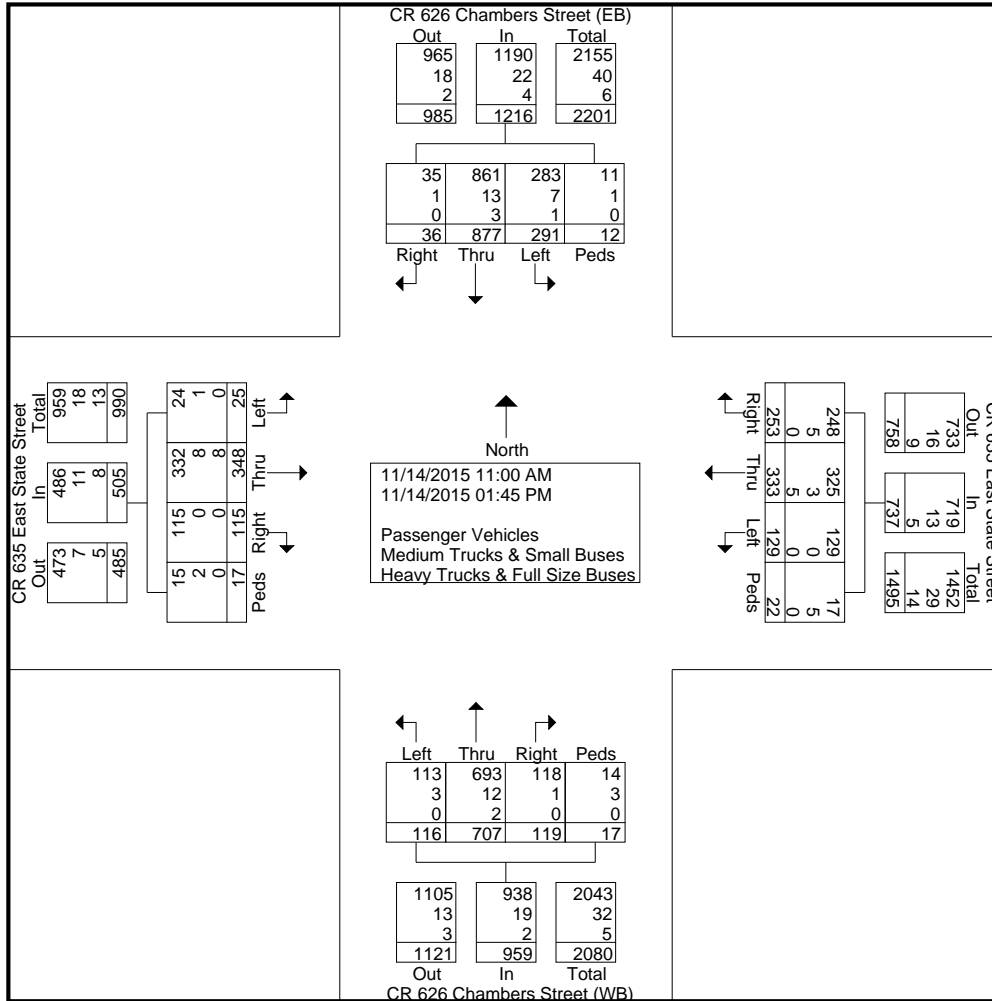
Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State St & Chambers St
Trenton, Mercer County, NJ
11:00am - 2:00pm Sara L
Lat: 40.222784 Long: -74.747285

File Name : State & Chambers-Sat
Site Code :
Start Date : 11/14/2015
Page No : 2



Greenman-Pedersen, Inc.

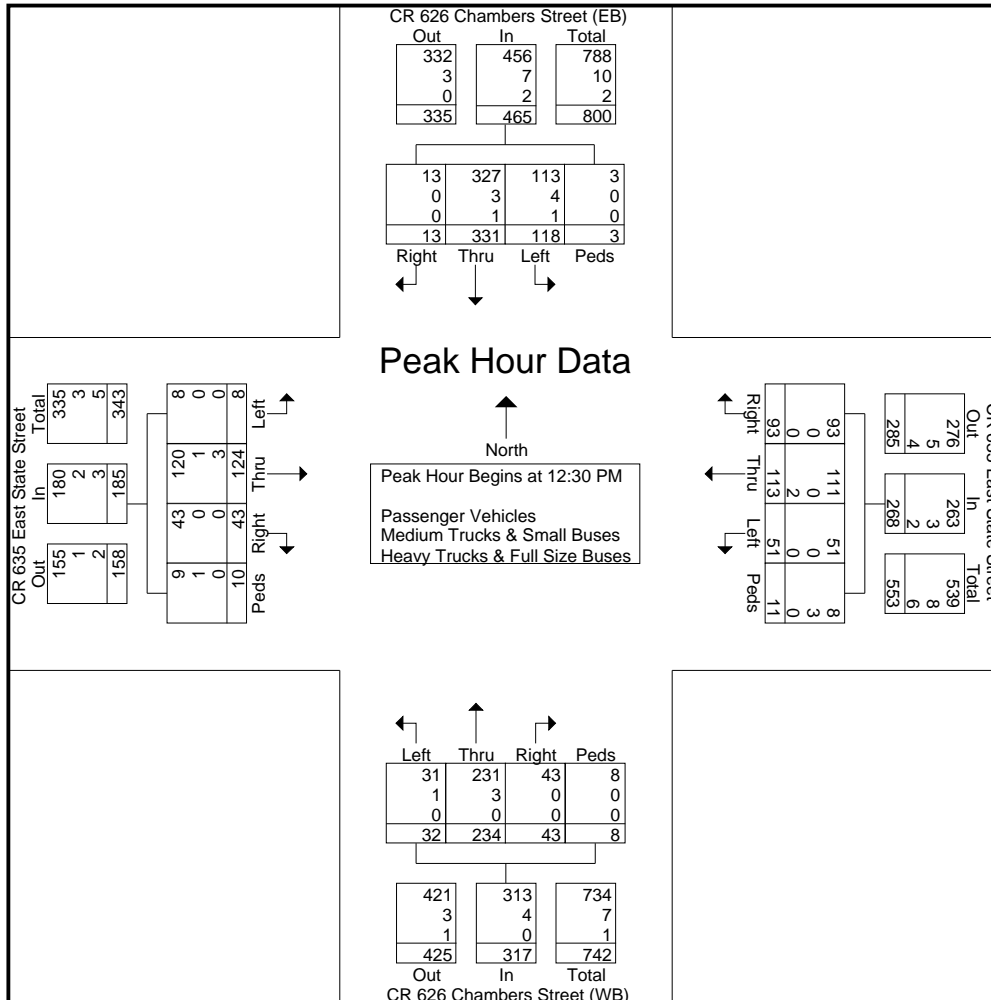
100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State St & Chambers St
Trenton, Mercer County, NJ
11:00am - 2:00pm Sara L
Lat: 40.222784 Long: -74.747285

File Name : State & Chambers-Sat
Site Code :
Start Date : 11/14/2015
Page No : 3

Start Time	CR 626 Chambers Street (EB) Southbound					CR 635 East State Street Westbound					CR 626 Chambers Street (WB) Northbound					CR 635 East State Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:30 PM																					
12:30 PM	5	92	37	2	136	25	30	14	8	77	16	51	9	4	80	14	31	1	5	51	344
12:45 PM	2	78	27	0	107	20	28	10	1	59	7	62	8	1	78	5	29	3	2	39	283
01:00 PM	4	87	31	0	122	26	31	18	1	76	12	53	2	0	67	17	31	3	0	51	316
01:15 PM	2	74	23	1	100	22	24	9	1	56	8	68	13	3	92	7	33	1	3	44	292
Total Volume	13	331	118	3	465	93	113	51	11	268	43	234	32	8	317	43	124	8	10	185	1235
% App. Total	2.8	71.2	25.4	0.6		34.7	42.2	19	4.1		13.6	73.8	10.1	2.5		23.2	67	4.3	5.4		
PHF	.650	.899	.797	.375	.855	.894	.911	.708	.344	.870	.672	.860	.615	.500	.861	.632	.939	.667	.500	.907	.898
Passenger Vehicles	13	327	113	3	456	93	111	51	8	263	43	231	31	8	313	43	120	8	9	180	1212
% Passenger Vehicles																					
Medium Trucks & Small Buses	0	3	4	0	7	0	0	0	3	3	0	3	1	0	4	0	1	0	1	2	16
% Medium Trucks & Small Buses	0	0.9	3.4	0	1.5	0	0	0	27.3	1.1	0	1.3	3.1	0	1.3	0	0.8	0	10.0	1.1	1.3
Heavy Trucks & Full Size Buses	0	1	1	0	2	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	7
% Heavy Trucks & Full Size Buses	0	0.3	0.8	0	0.4	0	1.8	0	0	0.7	0	0	0	0	0	0	2.4	0	0	1.6	0.6



Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State St & Monmouth St
Trenton, Mercer County, NJ
6:30am - 6:30pm Juan G
Lat: 40.221667 Long: -74.749708

File Name : State & Monmouth
Site Code :
Start Date : 10/14/2015
Page No : 1

Groups Printed- Passenger Vehicles - Medium Trucks & Small Buses - Heavy Trucks & Full Size Buses

Start Time	Monmouth Street Southbound					CR 635 East State Street Westbound					Monmouth Street Northbound					CR 635 East State Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
06:30 AM	0	2	0	1	3	1	15	4	1	21	3	8	8	1	20	1	15	0	0	16	60
06:45 AM	1	4	2	1	8	3	28	5	0	36	5	10	12	1	28	4	17	0	1	22	94
Total	1	6	2	2	11	4	43	9	1	57	8	18	20	2	48	5	32	0	1	38	154
07:00 AM	2	5	1	1	9	0	28	4	0	32	1	6	11	0	18	5	17	0	1	23	82
07:15 AM	3	8	0	2	13	1	44	7	1	53	1	14	16	2	33	9	27	1	0	37	136
07:30 AM	2	9	1	5	17	3	60	4	1	68	6	17	28	3	54	9	35	0	1	45	184
07:45 AM	2	19	2	2	25	6	103	1	5	115	3	28	40	2	73	9	29	3	0	41	254
Total	9	41	4	10	64	10	235	16	7	268	11	65	95	7	178	32	108	4	2	146	656
08:00 AM	5	21	4	1	31	4	93	3	3	103	7	40	42	1	90	4	41	2	0	47	271
08:15 AM	5	19	4	2	30	8	119	3	1	131	7	30	47	1	85	12	40	0	0	52	298
08:30 AM	7	20	5	4	36	3	90	1	1	95	11	49	45	1	106	20	35	1	0	56	293
08:45 AM	3	11	3	8	25	3	90	14	0	107	9	23	52	0	84	25	26	1	1	53	269
Total	20	71	16	15	122	18	392	21	5	436	34	142	186	3	365	61	142	4	1	208	1131
09:00 AM	3	13	2	2	20	3	79	7	1	90	4	18	29	5	56	26	50	1	0	77	243
09:15 AM	2	13	2	2	19	4	40	5	0	49	11	6	15	0	32	16	33	3	0	52	152
*** BREAK ***																					
Total	5	26	4	4	39	7	119	12	1	139	15	24	44	5	88	42	83	4	0	129	395
*** BREAK ***																					
10:30 AM	3	8	1	0	12	5	37	2	0	44	6	7	8	4	25	17	29	0	0	46	127
10:45 AM	1	9	1	5	16	4	18	1	0	23	2	11	10	2	25	14	34	1	0	49	113
Total	4	17	2	5	28	9	55	3	0	67	8	18	18	6	50	31	63	1	0	95	240
11:00 AM	1	11	3	3	18	1	20	6	0	27	6	11	13	2	32	19	24	1	2	46	123
11:15 AM	1	9	4	1	15	3	33	2	2	40	3	4	10	2	19	16	34	0	0	50	124
11:30 AM	1	12	3	2	18	1	26	3	1	31	7	5	8	2	22	11	42	3	1	57	128
11:45 AM	1	9	2	2	14	2	29	0	2	33	11	6	8	3	28	25	46	1	0	72	147
Total	4	41	12	8	65	7	108	11	5	131	27	26	39	9	101	71	146	5	3	225	522
12:00 PM	5	17	2	3	27	2	32	3	1	38	6	11	14	2	33	31	50	0	1	82	180
12:15 PM	0	14	0	1	15	0	27	2	1	30	6	11	13	2	32	15	64	0	1	80	157
12:30 PM	2	7	2	0	11	2	22	3	2	29	5	10	13	0	28	25	41	0	0	66	134
12:45 PM	5	13	0	1	19	3	39	3	0	45	2	19	11	2	34	21	48	2	1	72	170
Total	12	51	4	5	72	7	120	11	4	142	19	51	51	6	127	92	203	2	3	300	641
01:00 PM	4	13	4	3	24	5	34	1	0	40	7	8	19	2	36	22	50	1	0	73	173
01:15 PM	3	10	3	2	18	1	40	2	0	43	7	9	13	3	32	23	43	0	5	71	164
01:30 PM	2	15	2	2	21	1	29	5	1	36	7	10	15	2	34	17	36	2	0	55	146
01:45 PM	1	15	3	2	21	3	40	3	1	47	5	8	12	3	28	18	30	1	1	50	146
Total	10	53	12	9	84	10	143	11	2	166	26	35	59	10	130	80	159	4	6	249	629
*** BREAK ***																					
03:00 PM	3	25	3	5	36	8	39	6	5	58	5	22	18	2	47	24	48	1	1	74	215
03:15 PM	2	43	6	1	52	3	31	5	2	41	11	23	13	3	50	19	61	2	1	83	226
03:30 PM	2	45	10	2	59	3	29	6	7	45	5	14	7	1	27	21	59	1	0	81	212
03:45 PM	4	28	5	0	37	6	46	3	0	55	10	16	9	4	39	17	63	2	0	82	213
Total	11	141	24	8	184	20	145	20	14	199	31	75	47	10	163	81	231	6	2	320	866
04:00 PM	3	27	2	5	37	7	25	4	1	37	6	14	20	5	45	53	131	3	0	187	306
04:15 PM	3	28	2	1	34	0	28	7	2	37	5	16	14	5	40	24	74	1	0	99	210
04:30 PM	3	30	4	0	37	1	20	4	1	26	6	15	12	1	34	42	121	1	1	165	262
04:45 PM	8	27	10	0	45	2	30	8	0	40	5	15	15	2	37	37	71	0	0	108	230
Total	17	112	18	6	153	10	103	23	4	140	22	60	61	13	156	156	397	5	1	559	1008
05:00 PM	2	31	6	4	43	5	27	5	4	41	4	21	19	0	44	28	93	3	0	124	252

Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

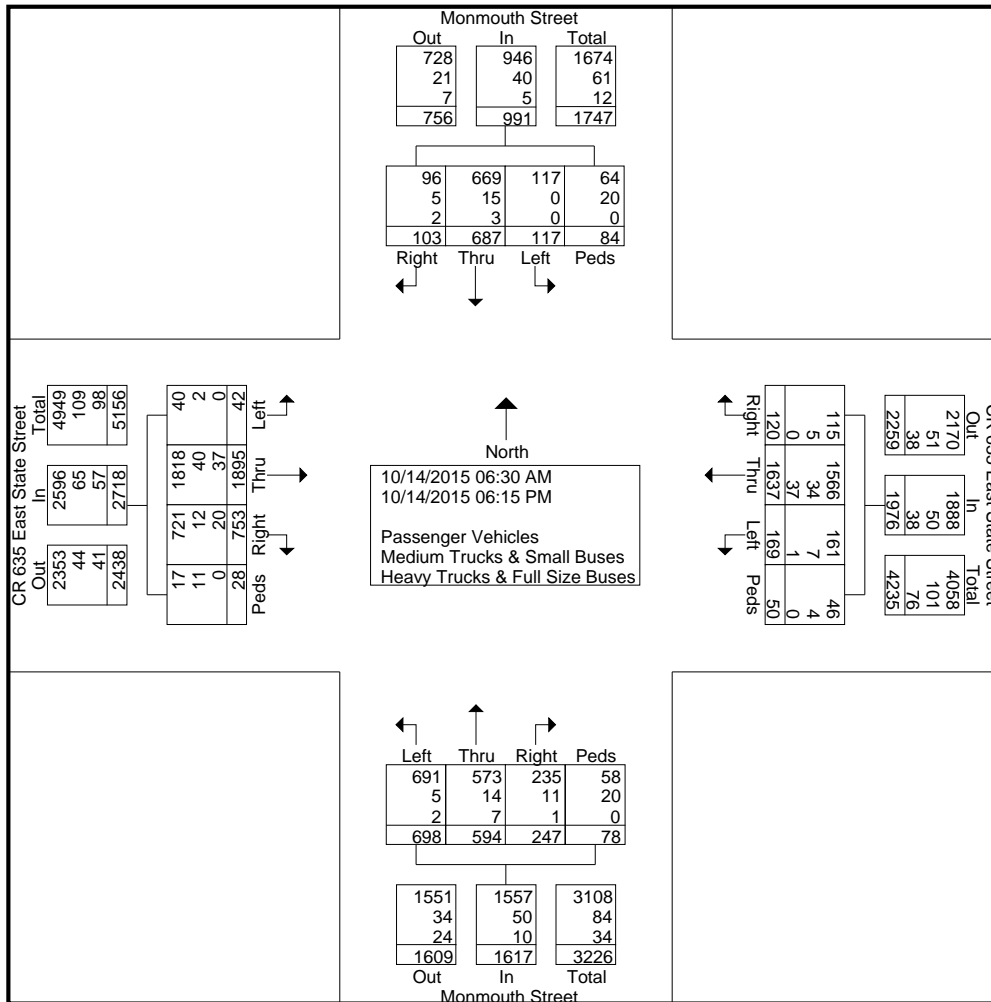
Engineering and Construction Services

East State St & Monmouth St
Trenton, Mercer County, NJ
6:30am - 6:30pm Juan G
Lat: 40.221667 Long: -74.749708

File Name : State & Monmouth
Site Code :
Start Date : 10/14/2015
Page No : 2

Groups Printed- Passenger Vehicles - Medium Trucks & Small Buses - Heavy Trucks & Full Size Buses

Start Time	Monmouth Street Southbound					CR 635 East State Street Westbound					Monmouth Street Northbound					CR 635 East State Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
05:15 PM	1	30	3	0	34	3	35	3	2	43	7	15	10	2	34	11	77	1	5	94	205
05:30 PM	2	17	1	0	20	4	27	6	1	38	4	12	13	2	31	16	49	2	2	69	158
05:45 PM	2	19	3	3	27	4	26	8	0	38	10	16	6	1	33	13	33	0	2	48	146
Total	7	97	13	7	124	16	115	22	7	160	25	64	48	5	142	68	252	6	9	335	761
06:00 PM	1	15	6	4	26	1	34	5	0	40	9	8	13	2	32	12	40	1	0	53	151
06:15 PM	2	16	0	1	19	1	25	5	0	31	12	8	17	0	37	22	39	0	0	61	148
Grand Total	103	687	117	84	991	120	1637	169	50	1976	247	594	698	78	1617	753	1895	42	28	2718	7302
Apprch %	10.4	69.3	11.8	8.5		6.1	82.8	8.6	2.5		15.3	36.7	43.2	4.8		27.7	69.7	1.5	1		
Total %	1.4	9.4	1.6	1.2	13.6	1.6	22.4	2.3	0.7	27.1	3.4	8.1	9.6	1.1	22.1	10.3	26	0.6	0.4	37.2	
Passenger Vehicles	96	669	117	64	946	115	1566	161	46	1888	235	573	691	58	1557	721	1818	40	17	2596	6987
% Passenger Vehicles	93.2	97.4	100	76.2	95.5	95.8	95.7	95.3	92	95.5	95.1	96.5	99	74.4	96.3	95.8	95.9	95.2	60.7	95.5	95.7
Medium Trucks & Small Buses	5	15	0	20	40	5	34	7	4	50	11	14	5	20	50	12	40	2	11	65	205
% Medium Trucks & Small Buses	4.9	2.2	0	23.8	4	4.2	2.1	4.1	8	2.5	4.5	2.4	0.7	25.6	3.1	1.6	2.1	4.8	39.3	2.4	2.8
Heavy Trucks & Full Size Buses	2	3	0	0	5	0	37	1	0	38	1	7	2	0	10	20	37	0	0	57	110
% Heavy Trucks & Full Size Buses	1.9	0.4	0	0	0.5	0	2.3	0.6	0	1.9	0.4	1.2	0.3	0	0.6	2.7	2	0	0	2.1	1.5



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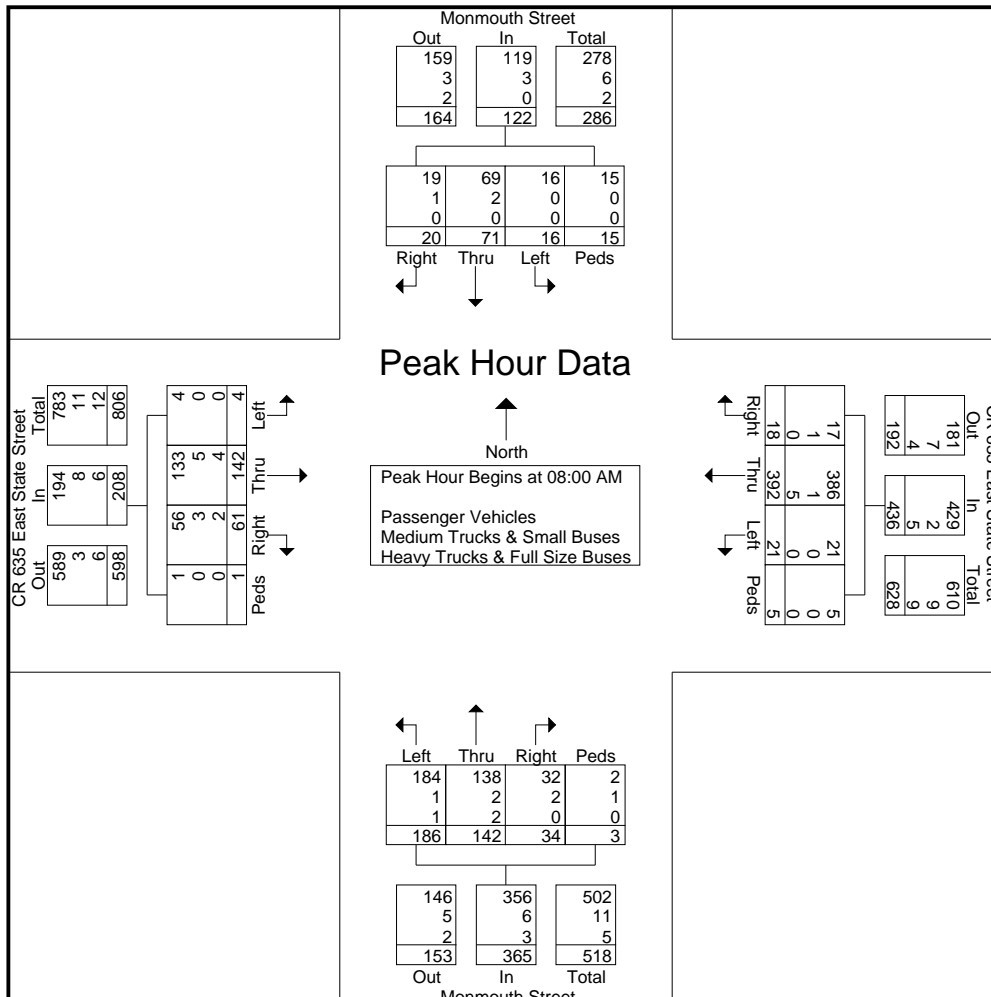
100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State St & Monmouth St
Trenton, Mercer County, NJ
6:30am - 6:30pm Juan G
Lat: 40.221667 Long: -74.749708

File Name : State & Monmouth
Site Code :
Start Date : 10/14/2015
Page No : 3

Start Time	Monmouth Street Southbound					CR 635 East State Street Westbound					Monmouth Street Northbound					CR 635 East State Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 06:30 AM to 09:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	5	21	4	1	31	4	93	3	3	103	7	40	42	1	90	4	41	2	0	47	271
08:15 AM	5	19	4	2	30	8	119	3	1	131	7	30	47	1	85	12	40	0	0	52	298
08:30 AM	7	20	5	4	36	3	90	1	1	95	11	49	45	1	106	20	35	1	0	56	293
08:45 AM	3	11	3	8	25	3	90	14	0	107	9	23	52	0	84	25	26	1	1	53	269
Total Volume	20	71	16	15	122	18	392	21	5	436	34	142	186	3	365	61	142	4	1	208	1131
% App. Total	16.4	58.2	13.1	12.3		4.1	89.9	4.8	1.1		9.3	38.9	51	0.8		29.3	68.3	1.9	0.5		
PHF	.714	.845	.800	.469	.847	.563	.824	.375	.417	.832	.773	.724	.894	.750	.861	.610	.866	.500	.250	.929	.949
Passenger Vehicles	19	69	16	15	119	17	386	21	5	429	32	138	184	2	356	56	133	4	1	194	1098
% Passenger Vehicles																					
Medium Trucks & Small Buses	1	2	0	0	3	1	1	0	0	2	2	2	1	1	6	3	5	0	0	8	19
% Medium Trucks & Small Buses	5.0	2.8	0	0	2.5	5.6	0.3	0	0	0.5	5.9	1.4	0.5	33.3	1.6	4.9	3.5	0	0	3.8	1.7
Heavy Trucks & Full Size Buses	0	0	0	0	0	0	5	0	0	5	0	2	1	0	3	2	4	0	0	6	14
% Heavy Trucks & Full Size Buses	0	0	0	0	0	0	1.3	0	0	1.1	0	1.4	0.5	0	0.8	3.3	2.8	0	0	2.9	1.2



Greenman-Pedersen, Inc.

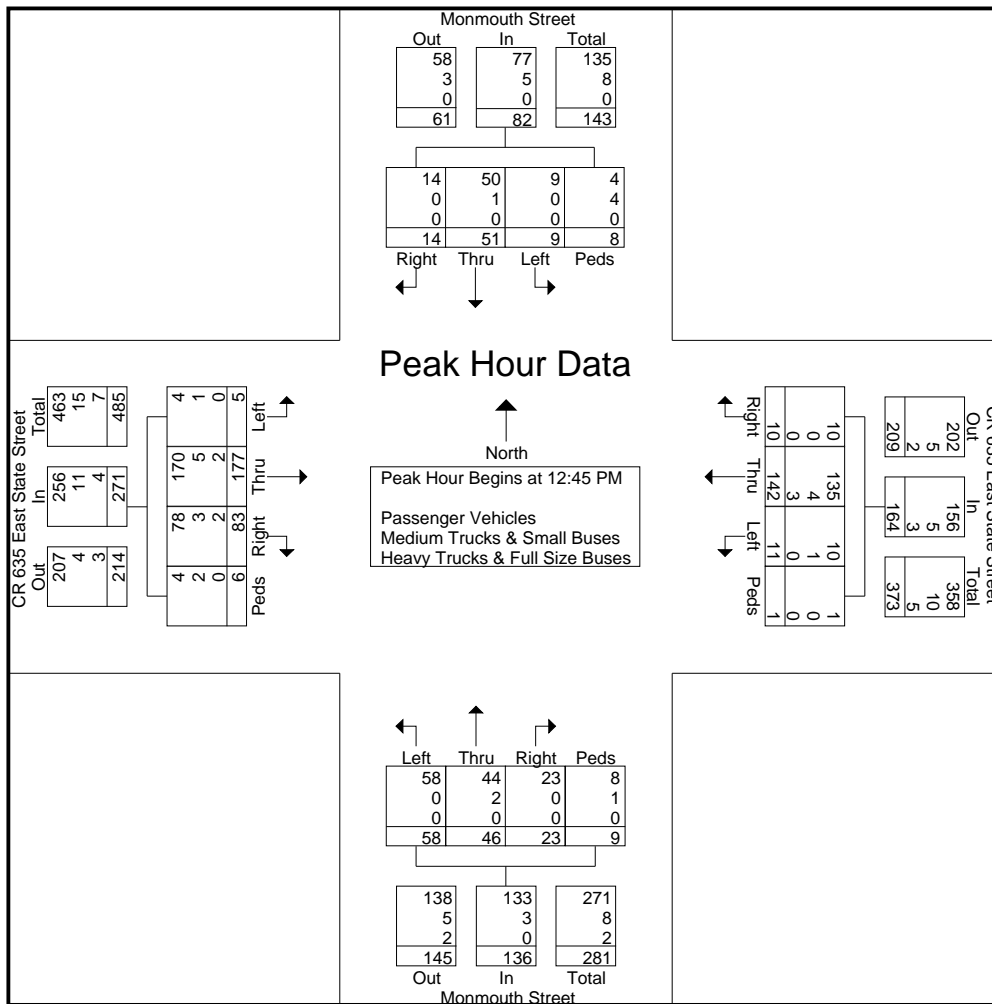
100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State St & Monmouth St
Trenton, Mercer County, NJ
6:30am - 6:30pm Juan G
Lat: 40.221667 Long: -74.749708

File Name : State & Monmouth
Site Code :
Start Date : 10/14/2015
Page No : 4

Start Time	Monmouth Street Southbound					CR 635 East State Street Westbound					Monmouth Street Northbound					CR 635 East State Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 10:30 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:45 PM																					
12:45 PM	5	13	0	1	19	3	39	3	0	45	2	19	11	2	34	21	48	2	1	72	170
01:00 PM	4	13	4	3	24	5	34	1	0	40	7	8	19	2	36	22	50	1	0	73	173
01:15 PM	3	10	3	2	18	1	40	2	0	43	7	9	13	3	32	23	43	0	5	71	164
01:30 PM	2	15	2	2	21	1	29	5	1	36	7	10	15	2	34	17	36	2	0	55	146
Total Volume	14	51	9	8	82	10	142	11	1	164	23	46	58	9	136	83	177	5	6	271	653
% App. Total	17.1	62.2	11	9.8		6.1	86.6	6.7	0.6		16.9	33.8	42.6	6.6		30.6	65.3	1.8	2.2		
PHF	.700	.850	.563	.667	.854	.500	.888	.550	.250	.911	.821	.605	.763	.750	.944	.902	.885	.625	.300	.928	.944
Passenger Vehicles	14	50	9	4	77	10	135	10	1	156	23	44	58	8	133	78	170	4	4	256	622
% Passenger Vehicles																					
Medium Trucks & Small Buses	0	1	0	4	5	0	4	1	0	5	0	2	0	1	3	3	5	1	2	11	24
% Medium Trucks & Small Buses	0	2.0	0	50.0	6.1	0	2.8	9.1	0	3.0	0	4.3	0	11.1	2.2	3.6	2.8	20.0	33.3	4.1	3.7
Heavy Trucks & Full Size Buses	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	2	2	0	0	4	7
% Heavy Trucks & Full Size Buses	0	0	0	0	0	0	2.1	0	0	1.8	0	0	0	0	0	2.4	1.1	0	0	1.5	1.1



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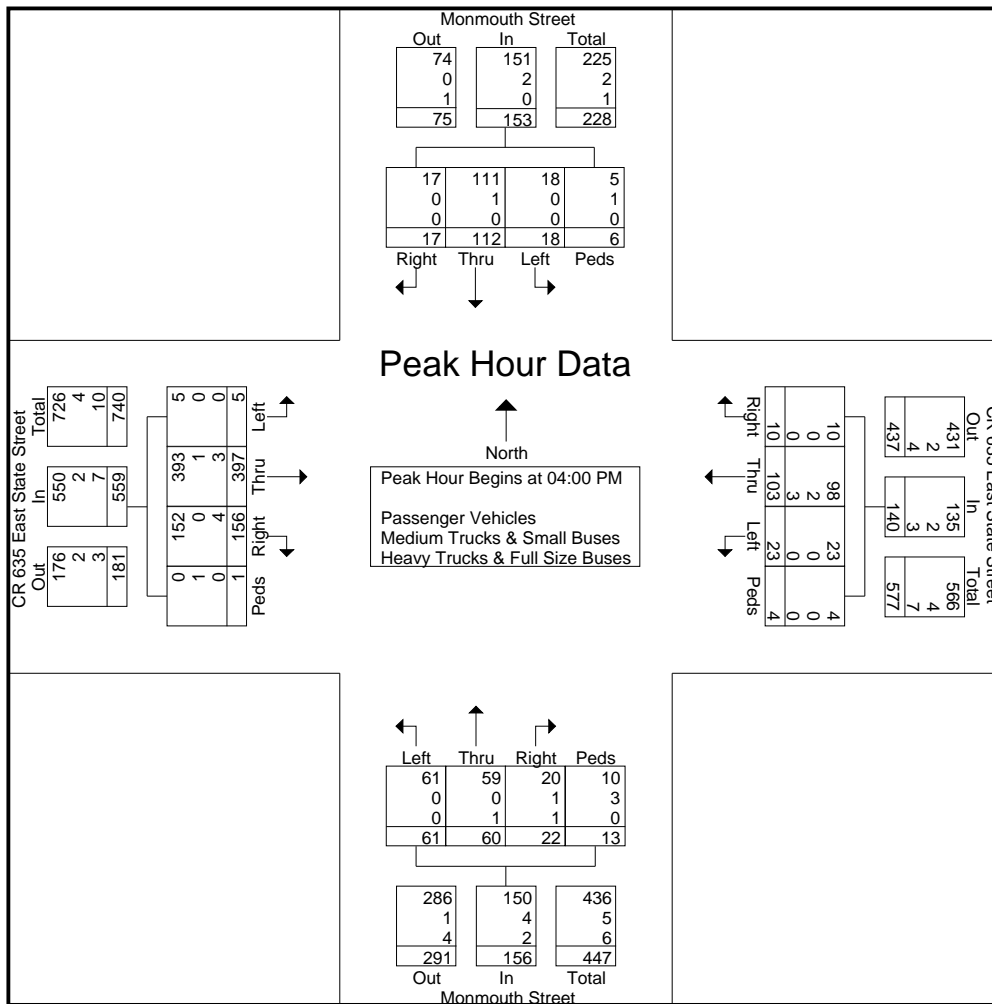
100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State St & Monmouth St
Trenton, Mercer County, NJ
6:30am - 6:30pm Juan G
Lat: 40.221667 Long: -74.749708

File Name : State & Monmouth
Site Code :
Start Date : 10/14/2015
Page No : 5

Start Time	Monmouth Street Southbound					CR 635 East State Street Westbound					Monmouth Street Northbound					CR 635 East State Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 03:00 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	3	27	2	5	37	7	25	4	1	37	6	14	20	5	45	53	131	3	0	187	306
04:15 PM	3	28	2	1	34	0	28	7	2	37	5	16	14	5	40	24	74	1	0	99	210
04:30 PM	3	30	4	0	37	1	20	4	1	26	6	15	12	1	34	42	121	1	1	165	262
04:45 PM	8	27	10	0	45	2	30	8	0	40	5	15	15	2	37	37	71	0	0	108	230
Total Volume	17	112	18	6	153	10	103	23	4	140	22	60	61	13	156	156	397	5	1	559	1008
% App. Total	11.1	73.2	11.8	3.9		7.1	73.6	16.4	2.9		14.1	38.5	39.1	8.3		27.9	71	0.9	0.2		
PHF	.531	.933	.450	.300	.850	.357	.858	.719	.500	.875	.917	.938	.763	.650	.867	.736	.758	.417	.250	.747	.824
Passenger Vehicles	17	111	18	5	151	10	98	23	4	135	20	59	61	10	150	152	393	5	0	550	986
% Passenger Vehicles																					
Medium Trucks & Small Buses	0	1	0	1	2	0	2	0	0	2	1	0	0	3	4	0	1	0	1	2	10
% Medium Trucks & Small Buses	0	0.9	0	16.7	1.3	0	1.9	0	0	1.4	4.5	0	0	23.1	2.6	0	0.3	0	100	0.4	1.0
Heavy Trucks & Full Size Buses	0	0	0	0	0	0	3	0	0	3	1	1	0	0	2	4	3	0	0	7	12
% Heavy Trucks & Full Size Buses	0	0	0	0	0	0	2.9	0	0	2.1	4.5	1.7	0	0	1.3	2.6	0.8	0	0	1.3	1.2



Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State St & Monmouth St
Trenton, Mercer County, NJ
6:30am - 6:30pm Juan G
Lat: 40.221667 Long: -74.749708

File Name : State & Monmouth
Site Code :
Start Date : 10/29/2015
Page No : 1

Groups Printed- Passenger Vehicles - Medium Trucks & Small Buses - Heavy Trucks & Full Size Buses

Start Time	Monmouth Street Southbound					CR 635 East State Street Westbound					Monmouth Street Northbound					CR 635 East State Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
06:30 AM	0	10	2	3	15	1	16	2	1	20	1	6	8	2	17	1	10	2	1	14	66
06:45 AM	0	4	1	0	5	2	22	3	0	27	9	14	10	0	33	3	20	0	0	23	88
Total	0	14	3	3	20	3	38	5	1	47	10	20	18	2	50	4	30	2	1	37	154
07:00 AM	1	7	2	0	10	0	32	3	0	35	0	5	18	0	23	4	20	0	0	24	92
07:15 AM	3	9	0	1	13	2	57	10	0	69	4	8	16	0	28	5	22	0	2	29	139
07:30 AM	2	14	2	3	21	4	53	10	0	67	1	22	27	3	53	8	26	2	1	37	178
07:45 AM	4	12	4	0	20	5	106	3	2	116	7	28	36	3	74	15	29	1	0	45	255
Total	10	42	8	4	64	11	248	26	2	287	12	63	97	6	178	32	97	3	3	135	664
08:00 AM	3	19	2	0	24	5	110	6	4	125	1	44	48	0	93	10	32	0	3	45	287
08:15 AM	1	22	8	0	31	5	115	6	4	130	6	44	51	2	103	7	30	0	1	38	302
08:30 AM	6	26	2	3	37	7	90	7	1	105	8	50	52	0	110	9	22	2	1	34	286
08:45 AM	4	22	8	1	35	5	104	18	1	128	10	36	46	1	93	10	33	2	0	45	301
Total	14	89	20	4	127	22	419	37	10	488	25	174	197	3	399	36	117	4	5	162	1176
09:00 AM	4	21	1	2	28	6	84	5	1	96	4	37	45	1	87	8	32	3	0	43	254
09:15 AM	2	12	4	6	24	2	64	6	2	74	12	13	19	1	45	14	33	0	0	47	190
*** BREAK ***																					
Total	6	33	5	8	52	8	148	11	3	170	16	50	64	2	132	22	65	3	0	90	444
*** BREAK ***																					
10:30 AM	2	10	2	2	16	0	30	9	3	42	4	5	7	2	18	6	26	1	0	33	109
10:45 AM	0	11	3	2	16	0	36	8	1	45	2	10	12	0	24	14	29	0	1	44	129
Total	2	21	5	4	32	0	66	17	4	87	6	15	19	2	42	20	55	1	1	77	238
11:00 AM	2	16	4	3	25	1	23	4	0	28	3	13	7	2	25	7	28	0	0	35	113
11:15 AM	2	15	1	1	19	2	29	6	0	37	3	4	9	2	18	4	28	0	2	34	108
11:30 AM	2	13	2	4	21	0	26	8	0	34	6	13	8	0	27	9	34	0	2	45	127
11:45 AM	2	13	3	1	19	4	22	8	0	34	5	10	6	4	25	7	44	1	0	52	130
Total	8	57	10	9	84	7	100	26	0	133	17	40	30	8	95	27	134	1	4	166	478
12:00 PM	5	7	2	1	15	1	38	7	0	46	4	14	9	1	28	18	57	0	0	75	164
12:15 PM	2	16	5	3	26	3	44	12	2	61	7	13	14	3	37	14	32	0	0	46	170
12:30 PM	3	11	1	3	18	1	40	6	1	48	3	4	5	0	12	12	29	0	0	41	119
12:45 PM	5	8	2	1	16	4	46	4	3	57	5	12	17	2	36	13	42	2	1	58	167
Total	15	42	10	8	75	9	168	29	6	212	19	43	45	6	113	57	160	2	1	220	620
01:00 PM	3	16	1	0	20	3	40	12	5	60	1	8	7	4	20	11	54	2	1	68	168
01:15 PM	4	14	2	0	20	4	45	5	1	55	3	9	14	0	26	10	34	0	0	44	145
01:30 PM	3	14	1	1	19	3	27	8	1	39	9	9	12	4	34	10	29	1	1	41	133
01:45 PM	1	16	3	2	22	4	32	4	0	40	4	6	11	0	21	7	36	1	0	44	127
Total	11	60	7	3	81	14	144	29	7	194	17	32	44	8	101	38	153	4	2	197	573
*** BREAK ***																					
03:00 PM	6	33	6	5	50	4	40	14	3	61	8	34	20	4	66	16	65	2	1	84	261
03:15 PM	4	46	8	1	59	6	47	12	5	70	5	36	10	6	57	27	57	3	0	87	273
03:30 PM	6	49	5	1	61	3	40	19	5	67	4	16	14	4	38	28	50	1	0	79	245
03:45 PM	2	35	8	2	47	2	56	10	1	69	5	15	19	0	39	18	72	1	0	91	246
Total	18	163	27	9	217	15	183	55	14	267	22	101	63	14	200	89	244	7	1	341	1025
04:00 PM	4	38	11	4	57	3	29	8	0	40	8	17	14	2	41	48	100	2	2	152	290
04:15 PM	2	52	4	0	58	1	27	10	7	45	3	15	6	1	25	29	95	1	0	125	253
04:30 PM	3	45	9	0	57	6	35	11	0	52	6	15	14	3	38	52	119	0	0	171	318
04:45 PM	6	41	8	1	56	8	38	11	0	57	11	15	13	1	40	24	85	0	1	110	263
Total	15	176	32	5	228	18	129	40	7	194	28	62	47	7	144	153	399	3	3	558	1124
05:00 PM	2	34	4	0	40	3	39	8	0	50	8	22	19	3	52	34	106	0	0	140	282

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Lebanon, NJ 08833

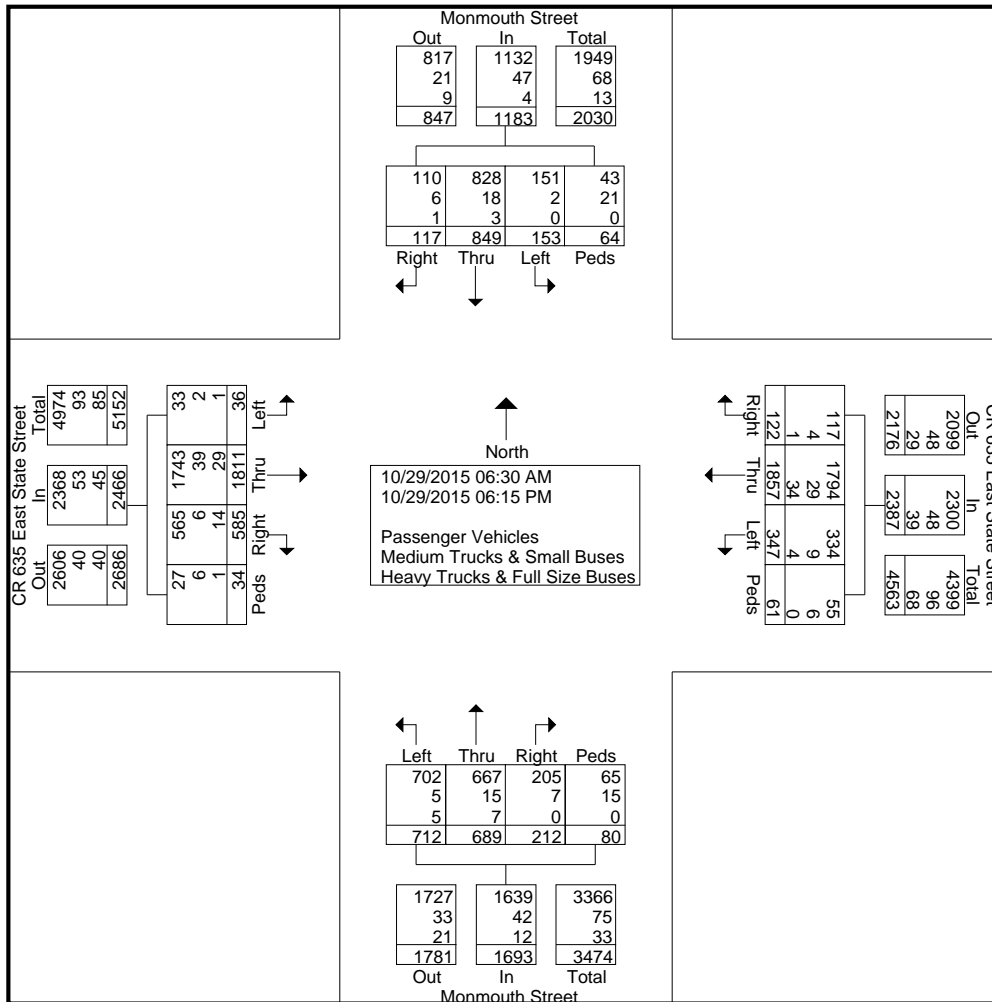
Engineering and Construction Services

East State St & Monmouth St
Trenton, Mercer County, NJ
6:30am - 6:30pm Juan G
Lat: 40.221667 Long: -74.749708

File Name : State & Monmouth
Site Code :
Start Date : 10/29/2015
Page No : 2

Groups Printed- Passenger Vehicles - Medium Trucks & Small Buses - Heavy Trucks & Full Size Buses

Start Time	Monmouth Street Southbound					CR 635 East State Street Westbound					Monmouth Street Northbound					CR 635 East State Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
05:15 PM	4	40	7	2	53	4	31	11	0	46	7	14	13	3	37	25	90	0	1	116	252
05:30 PM	2	23	5	2	32	0	38	22	0	60	12	9	15	4	40	19	49	2	9	79	211
05:45 PM	4	25	6	1	36	3	40	16	4	63	8	18	14	7	47	9	42	0	0	51	197
Total	12	122	22	5	161	10	148	57	4	219	35	63	61	17	176	87	287	2	10	386	942
06:00 PM	4	14	2	0	20	4	36	7	3	50	3	15	9	3	30	13	40	2	0	55	155
06:15 PM	2	16	2	2	22	1	30	8	0	39	2	11	18	2	33	7	30	2	3	42	136
Grand Total	117	849	153	64	1183	122	1857	347	61	2387	212	689	712	80	1693	585	1811	36	34	2466	7729
Apprch %	9.9	71.8	12.9	5.4		5.1	77.8	14.5	2.6		12.5	40.7	42.1	4.7		23.7	73.4	1.5	1.4		
Total %	1.5	11	2	0.8	15.3	1.6	24	4.5	0.8	30.9	2.7	8.9	9.2	1	21.9	7.6	23.4	0.5	0.4	31.9	
Passenger Vehicles	110	828	151	43	1132	117	1794	334	55	2300	205	667	702	65	1639	565	1743	33	27	2368	7439
% Passenger Vehicles	94	97.5	98.7	67.2	95.7	95.9	96.6	96.3	90.2	96.4	96.7	96.8	98.6	81.2	96.8	96.6	96.2	91.7	79.4	96	96.2
Medium Trucks & Small Buses	6	18	2	21	47	4	29	9	6	48	7	15	5	15	42	6	39	2	6	53	190
% Medium Trucks & Small Buses	5.1	2.1	1.3	32.8	4	3.3	1.6	2.6	9.8	2	3.3	2.2	0.7	18.8	2.5	1	2.2	5.6	17.6	2.1	2.5
Heavy Trucks & Full Size Buses	1	3	0	0	4	1	34	4	0	39	0	7	5	0	12	14	29	1	1	45	100
% Heavy Trucks & Full Size Buses	0.9	0.4	0	0	0.3	0.8	1.8	1.2	0	1.6	0	1	0.7	0	0.7	2.4	1.6	2.8	2.9	1.8	1.3



Greenman-Pedersen, Inc.

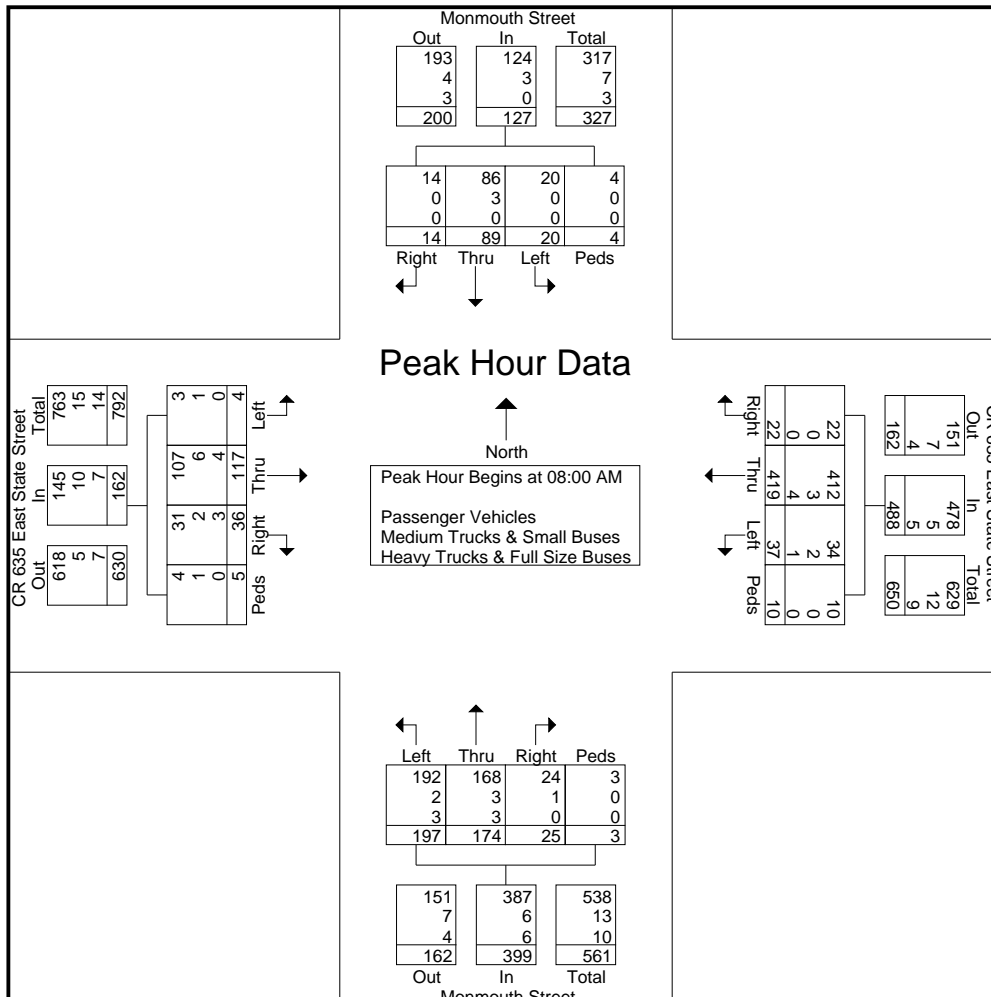
100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State St & Monmouth St
Trenton, Mercer County, NJ
6:30am - 6:30pm Juan G
Lat: 40.221667 Long: -74.749708

File Name : State & Monmouth
Site Code :
Start Date : 10/29/2015
Page No : 3

Start Time	Monmouth Street Southbound					CR 635 East State Street Westbound					Monmouth Street Northbound					CR 635 East State Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 06:30 AM to 09:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	3	19	2	0	24	5	110	6	4	125	1	44	48	0	93	10	32	0	3	45	287
08:15 AM	1	22	8	0	31	5	115	6	4	130	6	44	51	2	103	7	30	0	1	38	302
08:30 AM	6	26	2	3	37	7	90	7	1	105	8	50	52	0	110	9	22	2	1	34	286
08:45 AM	4	22	8	1	35	5	104	18	1	128	10	36	46	1	93	10	33	2	0	45	301
Total Volume	14	89	20	4	127	22	419	37	10	488	25	174	197	3	399	36	117	4	5	162	1176
% App. Total	11	70.1	15.7	3.1		4.5	85.9	7.6	2		6.3	43.6	49.4	0.8		22.2	72.2	2.5	3.1		
PHF	.583	.856	.625	.333	.858	.786	.911	.514	.625	.938	.625	.870	.947	.375	.907	.900	.886	.500	.417	.900	.974
Passenger Vehicles	14	86	20	4	124	22	412	34	10	478	24	168	192	3	387	31	107	3	4	145	1134
% Passenger Vehicles																					
Medium Trucks & Small Buses	0	3	0	0	3	0	3	2	0	5	1	3	2	0	6	2	6	1	1	10	24
% Medium Trucks & Small Buses	0	3.4	0	0	2.4	0	0.7	5.4	0	1.0	4.0	1.7	1.0	0	1.5	5.6	5.1	25.0	20.0	6.2	2.0
Heavy Trucks & Full Size Buses	0	0	0	0	0	0	4	1	0	5	0	3	3	0	6	3	4	0	0	7	18
% Heavy Trucks & Full Size Buses	0	0	0	0	0	0	1.0	2.7	0	1.0	0	1.7	1.5	0	1.5	8.3	3.4	0	0	4.3	1.5



Greenman-Pedersen, Inc.

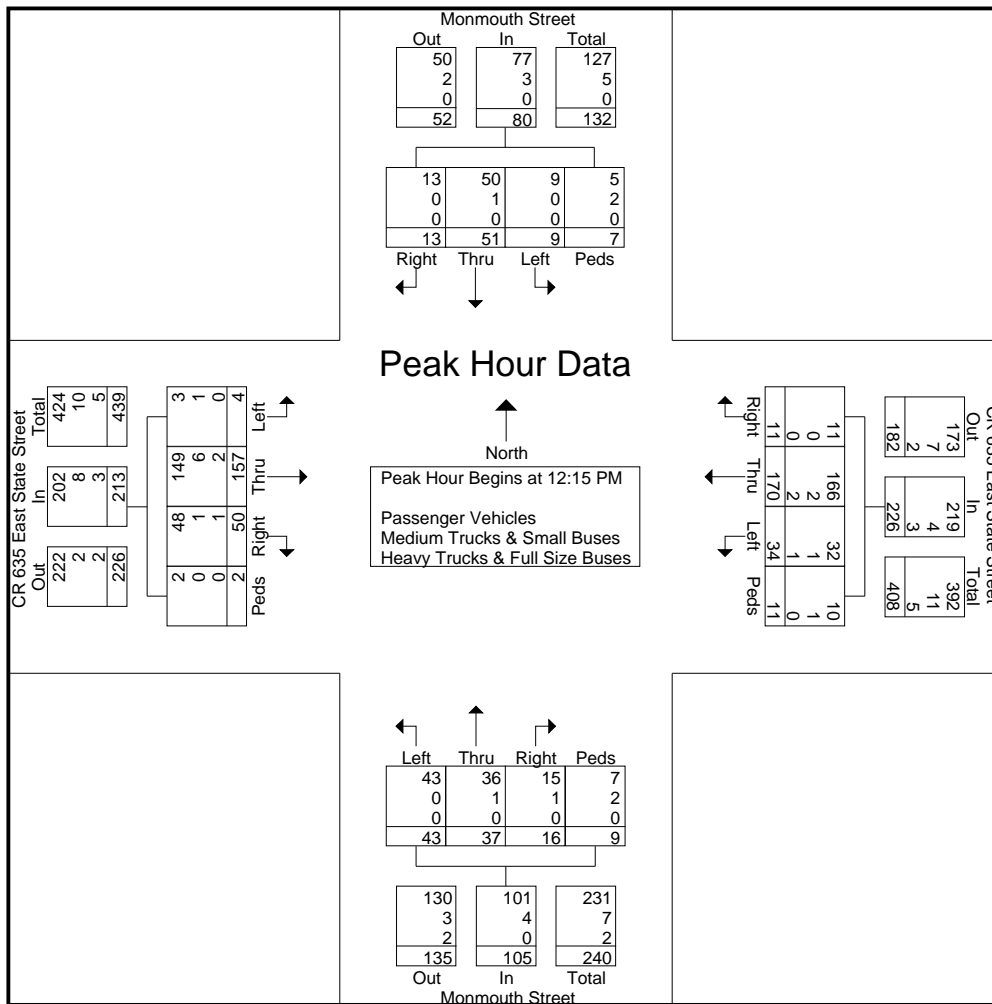
100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State St & Monmouth St
Trenton, Mercer County, NJ
6:30am - 6:30pm Juan G
Lat: 40.221667 Long: -74.749708

File Name : State & Monmouth
Site Code :
Start Date : 10/29/2015
Page No : 4

Start Time	Monmouth Street Southbound					CR 635 East State Street Westbound					Monmouth Street Northbound					CR 635 East State Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 10:30 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:15 PM																					
12:15 PM	2	16	5	3	26	3	44	12	2	61	7	13	14	3	37	14	32	0	0	46	170
12:30 PM	3	11	1	3	18	1	40	6	1	48	3	4	5	0	12	12	29	0	0	41	119
12:45 PM	5	8	2	1	16	4	46	4	3	57	5	12	17	2	36	13	42	2	1	58	167
01:00 PM	3	16	1	0	20	3	40	12	5	60	1	8	7	4	20	11	54	2	1	68	168
Total Volume	13	51	9	7	80	11	170	34	11	226	16	37	43	9	105	50	157	4	2	213	624
% App. Total	16.2	63.8	11.2	8.8		4.9	75.2	15	4.9		15.2	35.2	41	8.6		23.5	73.7	1.9	0.9		
PHF	.650	.797	.450	.583	.769	.688	.924	.708	.550	.926	.571	.712	.632	.563	.709	.893	.727	.500	.500	.783	.918
Passenger Vehicles	13	50	9	5	77	11	166	32	10	219	15	36	43	7	101	48	149	3	2	202	599
% Passenger Vehicles																					
Medium Trucks & Small Buses	0	1	0	2	3	0	2	1	1	4	1	1	0	2	4	1	6	1	0	8	19
% Medium Trucks & Small Buses	0	2.0	0	28.6	3.8	0	1.2	2.9	9.1	1.8	6.3	2.7	0	22.2	3.8	2.0	3.8	25.0	0	3.8	3.0
Heavy Trucks & Full Size Buses	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	1	2	0	0	3	6
% Heavy Trucks & Full Size Buses	0	0	0	0	0	0	1.2	2.9	0	1.3	0	0	0	0	0	2.0	1.3	0	0	1.4	1.0



Greenman-Pedersen, Inc.

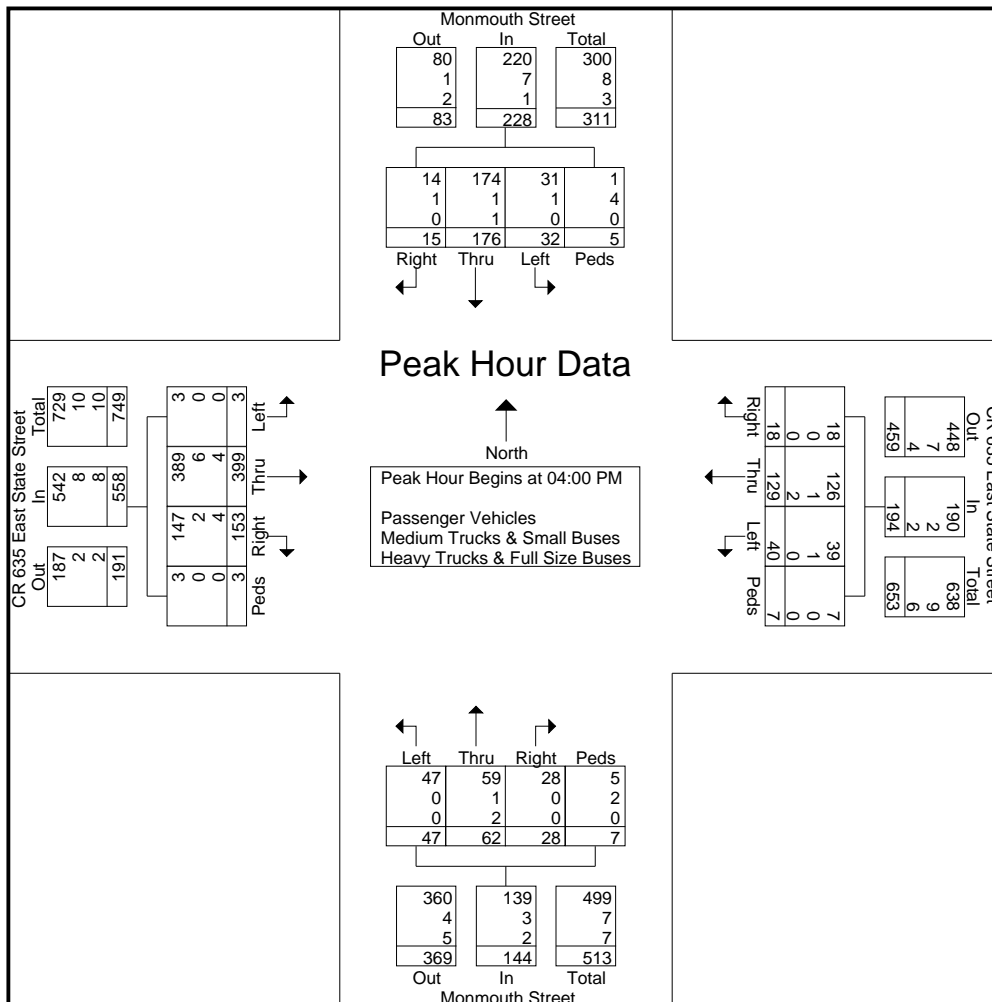
100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State St & Monmouth St
Trenton, Mercer County, NJ
6:30am - 6:30pm Juan G
Lat: 40.221667 Long: -74.749708

File Name : State & Monmouth
Site Code :
Start Date : 10/29/2015
Page No : 5

Start Time	Monmouth Street Southbound					CR 635 East State Street Westbound					Monmouth Street Northbound					CR 635 East State Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 03:00 PM to 06:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	4	38	11	4	57	3	29	8	0	40	8	17	14	2	41	48	100	2	2	152	290
04:15 PM	2	52	4	0	58	1	27	10	7	45	3	15	6	1	25	29	95	1	0	125	253
04:30 PM	3	45	9	0	57	6	35	11	0	52	6	15	14	3	38	52	119	0	0	171	318
04:45 PM	6	41	8	1	56	8	38	11	0	57	11	15	13	1	40	24	85	0	1	110	263
Total Volume	15	176	32	5	228	18	129	40	7	194	28	62	47	7	144	153	399	3	3	558	1124
% App. Total	6.6	77.2	14	2.2		9.3	66.5	20.6	3.6		19.4	43.1	32.6	4.9		27.4	71.5	0.5	0.5		
PHF	.625	.846	.727	.313	.983	.563	.849	.909	.250	.851	.636	.912	.839	.583	.878	.736	.838	.375	.375	.816	.884
Passenger Vehicles	14	174	31	1	220	18	126	39	7	190	28	59	47	5	139	147	389	3	3	542	1091
% Passenger Vehicles																					
Medium Trucks & Small Buses	1	1	1	4	7	0	1	1	0	2	0	1	0	2	3	2	6	0	0	8	20
% Medium Trucks & Small Buses	6.7	0.6	3.1	80.0	3.1	0	0.8	2.5	0	1.0	0	1.6	0	28.6	2.1	1.3	1.5	0	0	1.4	1.8
Heavy Trucks & Full Size Buses	0	1	0	0	1	0	2	0	0	2	0	2	0	0	2	4	4	0	0	8	13
% Heavy Trucks & Full Size Buses	0	0.6	0	0	0.4	0	1.6	0	0	1.0	0	3.2	0	0	1.4	2.6	1.0	0	0	1.4	1.2



Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State St & Monmouth St
Trenton, Mercer County, NJ
11:00am - 2:00pm Juan G
Lat: 40.221667 Long: -74.749708

File Name : State & Monmouth-Sat
Site Code :
Start Date : 10/17/2015
Page No : 1

Groups Printed- Passenger Vehicles - Medium Trucks & Small Buses - Heavy Trucks & Full Size Buses

Start Time	Monmouth Street Southbound					CR 635 East State Street Westbound					Monmouth Street Northbound					CR 635 East State Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
11:00 AM	4	8	3	5	20	1	29	8	0	38	2	9	9	1	21	11	22	0	1	34	113
11:15 AM	2	12	0	0	14	1	25	8	0	34	5	7	13	0	25	5	14	1	0	20	93
11:30 AM	6	12	1	0	19	6	23	3	1	33	4	9	7	3	23	9	26	0	0	35	110
11:45 AM	1	18	1	1	21	0	34	9	2	45	6	8	14	0	28	15	31	0	3	49	143
Total	13	50	5	6	74	8	111	28	3	150	17	33	43	4	97	40	93	1	4	138	459
12:00 PM	3	15	1	0	19	2	9	57	0	68	6	20	24	0	50	10	32	0	0	42	179
12:15 PM	2	12	2	3	19	0	38	28	0	66	11	26	11	0	48	11	41	1	0	53	186
12:30 PM	0	11	3	0	14	2	28	14	2	46	3	8	15	0	26	18	42	1	1	62	148
12:45 PM	3	11	3	2	19	1	29	8	0	38	9	7	13	1	30	11	47	0	2	60	147
Total	8	49	9	5	71	5	104	107	2	218	29	61	63	1	154	50	162	2	3	217	660
01:00 PM	2	7	5	0	14	1	23	10	2	36	7	12	8	1	28	10	40	1	2	53	131
01:15 PM	0	14	2	3	19	3	35	12	1	51	7	7	10	2	26	6	43	0	0	49	145
01:30 PM	1	12	3	1	17	2	23	8	0	33	6	5	7	6	24	18	26	1	0	45	119
01:45 PM	0	15	1	0	16	1	43	8	1	53	10	7	4	0	21	18	42	0	3	63	153
Total	3	48	11	4	66	7	124	38	4	173	30	31	29	9	99	52	151	2	5	210	548
Grand Total	24	147	25	15	211	20	339	173	9	541	76	125	135	14	350	142	406	5	12	565	1667
Apprch %	11.4	69.7	11.8	7.1		3.7	62.7	32	1.7		21.7	35.7	38.6	4		25.1	71.9	0.9	2.1		
Total %	1.4	8.8	1.5	0.9	12.7	1.2	20.3	10.4	0.5	32.5	4.6	7.5	8.1	0.8	21	8.5	24.4	0.3	0.7	33.9	
Passenger Vehicles	24	147	25	12	208	20	330	170	4	524	76	124	134	14	348	139	398	5	10	552	1632
% Passenger Vehicles																					
Medium Trucks & Small Buses	0	0	0	3	3	0	5	3	5	13	0	1	0	0	1	2	4	0	2	8	25
% Medium Trucks & Small Buses	0	0	0	20	1.4	0	1.5	1.7	55.6	2.4	0	0.8	0	0	0.3	1.4	1	0	16.7	1.4	1.5
Heavy Trucks & Full Size Buses	0	0	0	0	0	0	4	0	0	4	0	0	1	0	1	1	4	0	0	5	10
% Heavy Trucks & Full Size Buses	0	0	0	0	0	0	1.2	0	0	0.7	0	0	0.7	0	0.3	0.7	1	0	0	0.9	0.6

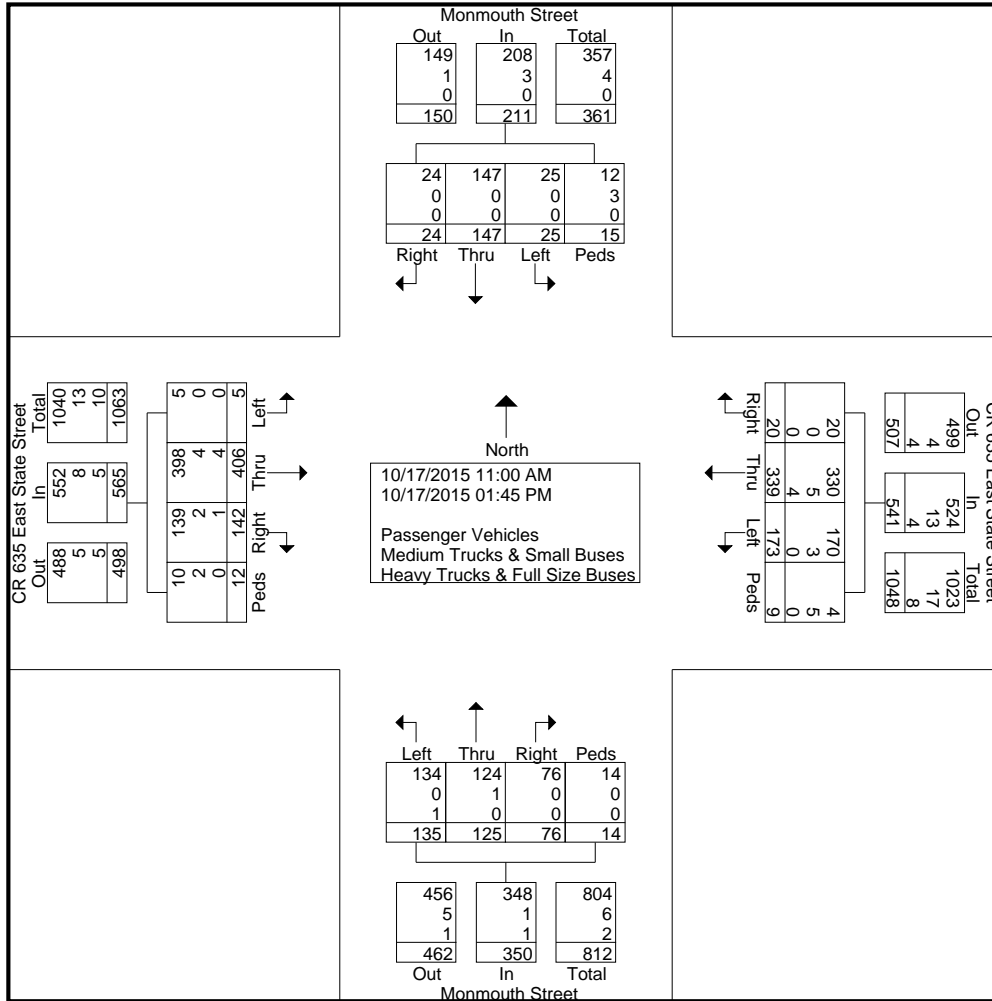
Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State St & Monmouth St
Trenton, Mercer County, NJ
11:00am - 2:00pm Juan G
Lat: 40.221667 Long: -74.749708

File Name : State & Monmouth-Sat
Site Code :
Start Date : 10/17/2015
Page No : 2



Greenman-Pedersen, Inc.

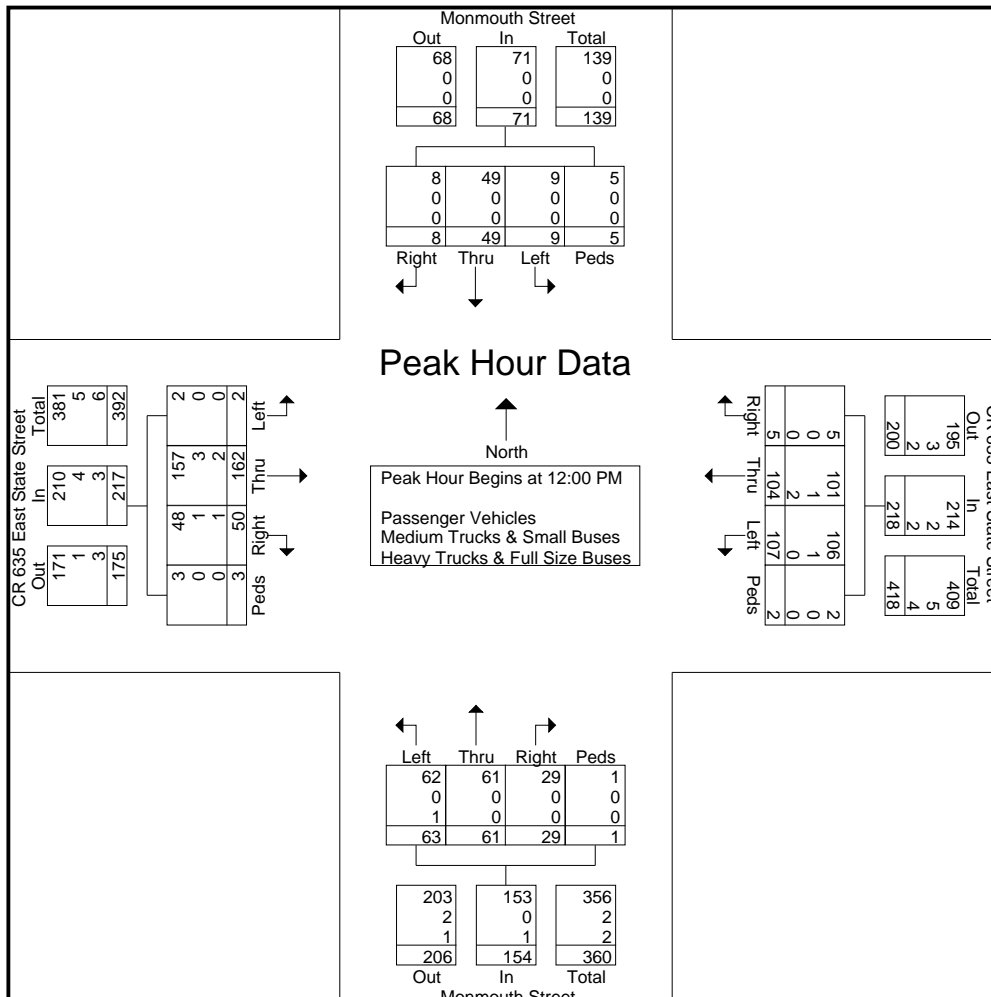
100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State St & Monmouth St
Trenton, Mercer County, NJ
11:00am - 2:00pm Juan G
Lat: 40.221667 Long: -74.749708

File Name : State & Monmouth-Sat
Site Code :
Start Date : 10/17/2015
Page No : 3

Start Time	Monmouth Street Southbound					CR 635 East State Street Westbound					Monmouth Street Northbound					CR 635 East State Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	3	15	1	0	19	2	9	57	0	68	6	20	24	0	50	10	32	0	0	42	179
12:15 PM	2	12	2	3	19	0	38	28	0	66	11	26	11	0	48	11	41	1	0	53	186
12:30 PM	0	11	3	0	14	2	28	14	2	46	3	8	15	0	26	18	42	1	1	62	148
12:45 PM	3	11	3	2	19	1	29	8	0	38	9	7	13	1	30	11	47	0	2	60	147
Total Volume	8	49	9	5	71	5	104	107	2	218	29	61	63	1	154	50	162	2	3	217	660
% App. Total	11.3	69	12.7	7		2.3	47.7	49.1	0.9		18.8	39.6	40.9	0.6		23	74.7	0.9	1.4		
PHF	.667	.817	.750	.417	.934	.625	.684	.469	.250	.801	.659	.587	.656	.250	.770	.694	.862	.500	.375	.875	.887
Passenger Vehicles	8	49	9	5	71	5	101	106	2	214	29	61	62	1	153	48	157	2	3	210	648
% Passenger Vehicles																					
Medium Trucks & Small Buses	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	1	3	0	0	4	6
% Medium Trucks & Small Buses	0	0	0	0	0	0	1.0	0.9	0	0.9	0	0	0	0	0	2.0	1.9	0	0	1.8	0.9
Heavy Trucks & Full Size Buses	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	1	2	0	0	3	6
% Heavy Trucks & Full Size Buses	0	0	0	0	0	0	1.9	0	0	0.9	0	0	1.6	0	0.6	2.0	1.2	0	0	1.4	0.9



Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State St & Monmouth St
Trenton, Mercer County, NJ
11:00am - 2:00pm Sara L
Lat: 40.221667 Long: -74.749708

File Name : State & Monmouth-Sat
Site Code :
Start Date : 11/14/2015
Page No : 1

Groups Printed- Passenger Vehicles - Medium Trucks & Small Buses - Heavy Trucks & Full Size Buses

Start Time	Monmouth Street Southbound					CR 635 East State Street Westbound					Monmouth Street Northbound					CR 635 East State Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
11:00 AM	1	13	5	1	20	3	33	8	1	45	4	10	6	0	20	5	26	1	0	32	117
11:15 AM	3	6	2	0	11	2	34	8	3	47	7	12	10	0	29	2	24	2	0	28	115
11:30 AM	0	10	1	1	12	2	38	7	0	47	6	7	10	3	26	5	35	1	0	41	126
11:45 AM	2	12	3	2	19	3	36	6	0	45	5	8	7	0	20	8	31	0	1	40	124
Total	6	41	11	4	62	10	141	29	4	184	22	37	33	3	95	20	116	4	1	141	482
12:00 PM	0	10	3	1	14	5	27	8	0	40	7	10	10	1	28	14	22	1	0	37	119
12:15 PM	0	14	1	1	16	1	25	10	0	36	4	8	8	2	22	4	21	0	1	26	100
12:30 PM	1	8	2	2	13	2	36	7	0	45	5	8	8	1	22	7	37	1	0	45	125
12:45 PM	1	9	0	0	10	1	38	4	0	43	5	7	7	1	20	7	32	2	0	41	114
Total	2	41	6	4	53	9	126	29	0	164	21	33	33	5	92	32	112	4	1	149	458
01:00 PM	1	10	0	0	11	2	16	11	0	29	3	11	9	0	23	5	47	1	0	53	116
01:15 PM	3	10	4	1	18	2	32	7	0	41	8	8	3	0	19	13	36	2	0	51	129
01:30 PM	1	9	5	2	17	4	18	6	1	29	3	8	8	2	21	9	34	0	1	44	111
01:45 PM	1	8	4	0	13	0	23	12	0	35	4	3	10	6	23	10	29	1	1	41	112
Total	6	37	13	3	59	8	89	36	1	134	18	30	30	8	86	37	146	4	2	189	468
Grand Total	14	119	30	11	174	27	356	94	5	482	61	100	96	16	273	89	374	12	4	479	1408
Apprch %	8	68.4	17.2	6.3		5.6	73.9	19.5	1		22.3	36.6	35.2	5.9		18.6	78.1	2.5	0.8		
Total %	1	8.5	2.1	0.8	12.4	1.9	25.3	6.7	0.4	34.2	4.3	7.1	6.8	1.1	19.4	6.3	26.6	0.9	0.3	34	
Passenger Vehicles	14	119	30	10	173	26	344	93	4	467	58	100	96	14	268	85	359	12	3	459	1367
% Passenger Vehicles																					
Medium Trucks & Small Buses	0	0	0	1	1	1	7	1	1	10	3	0	0	2	5	2	6	0	1	9	25
% Medium Trucks & Small Buses	0	0	0	9.1	0.6	3.7	2	1.1	20	2.1	4.9	0	0	12.5	1.8	2.2	1.6	0	25	1.9	1.8
Heavy Trucks & Full Size Buses	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	2	9	0	0	11	16
% Heavy Trucks & Full Size Buses	0	0	0	0	0	0	1.4	0	0	1	0	0	0	0	0	2.2	2.4	0	0	2.3	1.1

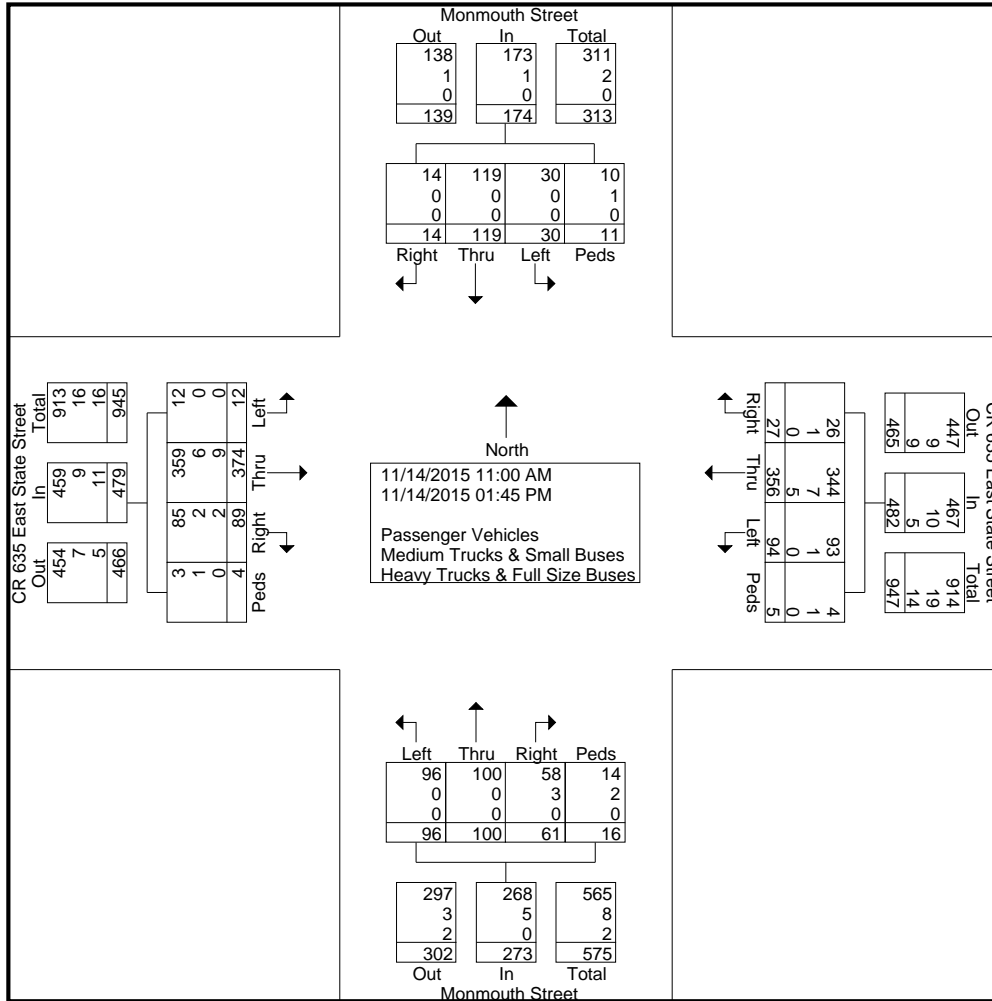
Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State St & Monmouth St
Trenton, Mercer County, NJ
11:00am - 2:00pm Sara L
Lat: 40.221667 Long: -74.749708

File Name : State & Monmouth-Sat
Site Code :
Start Date : 11/14/2015
Page No : 2



Greenman-Pedersen, Inc.

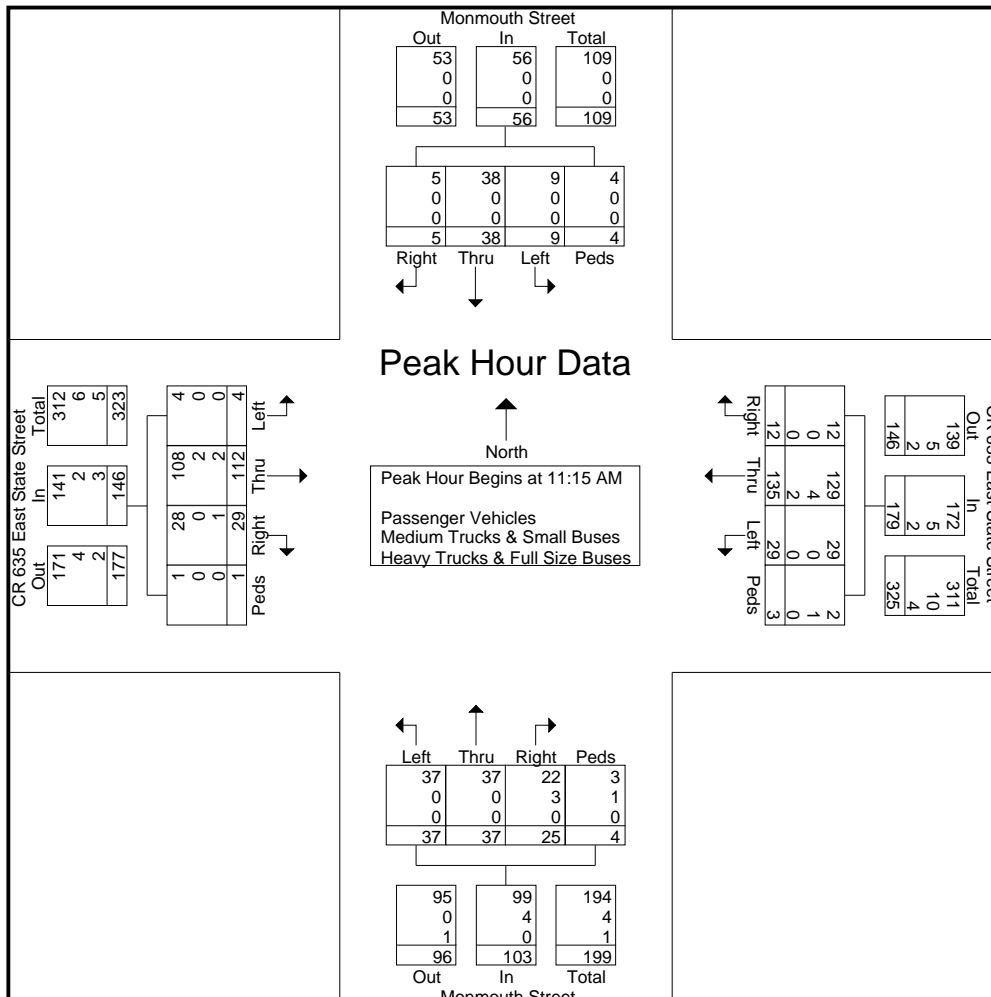
100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State St & Monmouth St
Trenton, Mercer County, NJ
11:00am - 2:00pm Sara L
Lat: 40.221667 Long: -74.749708

File Name : State & Monmouth-Sat
Site Code :
Start Date : 11/14/2015
Page No : 3

Start Time	Monmouth Street Southbound					CR 635 East State Street Westbound					Monmouth Street Northbound					CR 635 East State Street Eastbound					Int. Total
	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 11:15 AM																					
11:15 AM	3	6	2	0	11	2	34	8	3	47	7	12	10	0	29	2	24	2	0	28	115
11:30 AM	0	10	1	1	12	2	38	7	0	47	6	7	10	3	26	5	35	1	0	41	126
11:45 AM	2	12	3	2	19	3	36	6	0	45	5	8	7	0	20	8	31	0	1	40	124
12:00 PM	0	10	3	1	14	5	27	8	0	40	7	10	10	1	28	14	22	1	0	37	119
Total Volume	5	38	9	4	56	12	135	29	3	179	25	37	37	4	103	29	112	4	1	146	484
% App. Total	8.9	67.9	16.1	7.1		6.7	75.4	16.2	1.7		24.3	35.9	35.9	3.9		19.9	76.7	2.7	0.7		
PHF	.417	.792	.750	.500	.737	.600	.888	.906	.250	.952	.893	.771	.925	.333	.888	.518	.800	.500	.250	.890	.960
Passenger Vehicles	5	38	9	4	56	12	129	29	2	172	22	37	37	3	99	28	108	4	1	141	468
% Passenger Vehicles																					
Medium Trucks & Small Buses	0	0	0	0	0	0	4	0	1	5	3	0	0	1	4	0	2	0	0	2	11
% Medium Trucks & Small Buses	0	0	0	0	0	0	3.0	0	33.3	2.8	12.0	0	0	25.0	3.9	0	1.8	0	0	1.4	2.3
Heavy Trucks & Full Size Buses	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	1	2	0	0	3	5
% Heavy Trucks & Full Size Buses	0	0	0	0	0	0	1.5	0	0	1.1	0	0	0	0	0	3.4	1.8	0	0	2.1	1.0



Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State Street & Raul Wallenberg Ave
Trenton, Mercer County, NJ
6:30am - 6:30pm John T
Lat: 40.221507 Long: -74.751849

File Name : State & Wallenberg_Working
Site Code :
Start Date : 10/14/2015
Page No : 2

Groups Printed- Passenger Vehicles - Medium Trucks & Small Buses - Heavy Trucks & Full Sized Buses

Start Time	Wall Street (One Way NB) Southbound						CR 635 East State Street Westbound						Chestnut Street (One Way SEB) Northwest Bound						Raul Wallenberg Avenue Northeast Bound						CR 635 East State Street Eastbound						Int. Total
	Right	Bear Right	Bear Left	Left	Peds	App. Total	Right	Thru	Bear Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Bear Left	Left	Peds	App. Total	Right	Bear Right	Bear Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Thru	Left	Peds	App. Total	
06:00 PM	0	0	0	0	4	4	2	34	7	0	2	45	0	0	0	0	0	0	6	16	1	2	2	27	0	3	37	0	0	40	116
06:15 PM	0	0	0	0	0	0	7	30	3	2	4	46	0	0	0	0	0	0	11	12	3	3	5	34	4	8	49	1	3	65	145
Grand Total	0	0	0	0	65	65	80	1782	374	44	48	2328	0	0	0	0	0	0	297	639	110	188	176	1410	215	244	1967	30	73	2529	6332
Apprch %	0	0	0	0	100		3.4	76.5	16.1	1.9	2.1		0	0	0	0	0		21.1	45.3	7.8	13.3	12.5		8.5	9.6	77.8	1.2	2.9		
Total %	0	0	0	0	1	1	1.3	28.1	5.9	0.7	0.8	36.8	0	0	0	0	0	0	4.7	10.1	1.7	3	2.8	22.3	3.4	3.9	31.1	0.5	1.2	39.9	
Passenger Vehicles																															
% Passenger Vehicles	0	0	0	0	73.8	73.8	92.5	97.3	90.4	84.1	72.9	95.2	0	0	0	0	0	0	97	89.5	94.5	97.9	77.3	91.1	77.2	98	97.6	100	94.5	95.8	94.3
Medium Trucks & Small Buses	0	0	0	0	17	17	3	41	6	5	13	68	0	0	0	0	0	0	3	22	6	4	40	75	3	3	37	0	4	47	207
% Medium Trucks & Small Buses	0	0	0	0	26.2	26.2	3.8	2.3	1.6	11.4	27.1	2.9	0	0	0	0	0	0	1	3.4	5.5	2.1	22.7	5.3	1.4	1.2	1.9	0	5.5	1.9	3.3
Heavy Trucks & Full Sized Buses	0	0	0	0	0	0	3	8	30	2	0	43	0	0	0	0	0	0	6	45	0	0	0	51	46	2	10	0	0	58	152
% Heavy Trucks & Full Sized Buses	0	0	0	0	0	0	3.8	0.4	8	4.5	0	1.8	0	0	0	0	0	0	2	7	0	0	0	3.6	21.4	0.8	0.5	0	0	2.3	2.4

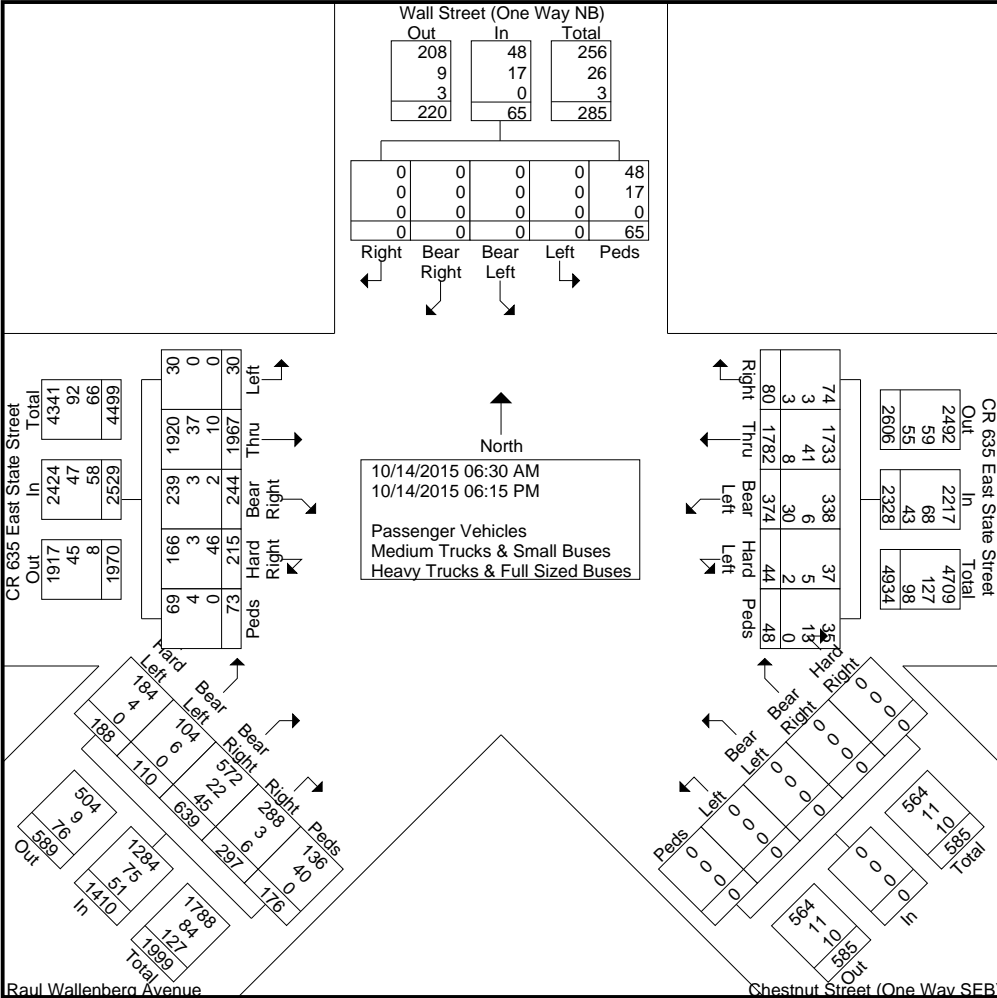
Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State Street & Raul Wallenberg Ave
Trenton, Mercer County, NJ
6:30am - 6:30pm John T
Lat: 40.221507 Long: -74.751849

File Name : State & Wallenberg_Working
Site Code :
Start Date : 10/14/2015
Page No : 3



Raul Wallenberg Avenue Chestnut Street (One Way SEB)

Greenman-Pedersen, Inc.

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Engineering and Construction Services

East State Street & Raul Wallenberg Ave
Trenton, Mercer County, NJ
6:30am - 6:30pm John T
Lat: 40.221507 Long: -74.751849

File Name : State & Wallenberg_Working
Site Code :
Start Date : 10/14/2015
Page No : 4

Start Time	Wall Street (One Way NB) Southbound						CR 635 East State Street Westbound						Chestnut Street (One Way SEB) Northwest Bound						Raul Wallenberg Avenue Northeast Bound						CR 635 East State Street Eastbound						Int. Total	
	Right	Bear Right	Bear Left	Left	Peds	App. Total	Right	Thru	Bear Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Bear Left	Left	Peds	App. Total	Right	Bear Right	Bear Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Thru	Left	Peds	App. Total		
Peak Hour Analysis From 06:30 AM to 09:15 AM - Peak 1 of 1																																
Peak Hour for Entire Intersection Begins at 08:00 AM																																
08:00 AM	0	0	0	0	0	0	2	110	32	0	4	148	0	0	0	0	0	0	6	12	2	4	7	31	9	9	29	0	0	47	226	
08:15 AM	0	0	0	0	0	0	0	110	37	1	1	149	0	0	0	0	0	0	1	15	2	12	3	33	11	5	31	0	0	47	229	
08:30 AM	0	0	0	0	4	4	2	103	20	0	3	128	0	0	0	0	0	0	0	13	4	2	1	20	5	3	39	1	3	51	203	
08:45 AM	0	0	0	0	7	7	1	105	35	0	1	142	0	0	0	0	0	0	1	11	2	4	7	25	10	0	41	0	1	52	226	
Total Volume	0	0	0	0	11	11	5	428	124	1	9	567	0	0	0	0	0	0	8	51	10	22	18	109	35	17	140	1	4	197	884	
% App. Total	0	0	0	0	100		0.9	75.5	21.9	0.2	1.6		0	0	0	0	0		7.3	46.8	9.2	20.2	16.5		17.8	8.6	71.1	0.5	2			
PHF	.000	.000	.000	.000	.393	.393	.625	.973	.838	.250	.563	.951	.000	.000	.000	.000	.000	.000	.333	.850	.625	.458	.643	.826	.795	.472	.854	.250	.333	.947	.965	
Passenger Vehicles	0	0	0	0	11	11	4	420	119	0	9	552	0	0	0	0	0	0	7	42	8	21	16	94	33	17	132	1	4	187	844	
% Passenger Vehicles	0	0	0	0	100	100	80.	98.	96.	0	100	97.4	0	0	0	0	0	0	87.	82.	80.	95.	88.	86.2	94.	100	94.	100	100	94.9	95.5	
Medium Trucks & Small Buses	0	0	0	0	0	0	0	6	2	1	0	9	0	0	0	0	0	0	1	4	2	1	2	10	0	0	7	0	0	7	26	
% Medium Trucks & Small Buses	0	0	0	0	0	0	0	1.4	1.6	100	0	1.6	0	0	0	0	0	0	12.	7.8	20.	4.5	11.	9.2	0	0	5.0	0	0	3.6	2.9	
Heavy Trucks & Full Sized Buses	0	0	0	0	0	0	1	2	3	0	0	6	0	0	0	0	0	0	0	5	0	0	0	5	2	0	1	0	0	3	14	
% Heavy Trucks & Full Sized Buses	0	0	0	0	0	0	20.	0.5	2.4	0	0	1.1	0	0	0	0	0	0	0	9.8	0	0	0	4.6	5.7	0	0.7	0	0	1.5	1.6	

Greenman-Pedersen, Inc.

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Lebanon, NJ 08833

Engineering and Construction Services

East State Street & Raul Wallenberg Ave
Trenton, Mercer County, NJ
6:30am - 6:30pm John T
Lat: 40.221507 Long: -74.751849

File Name : State & Wallenberg_Working
Site Code :
Start Date : 10/14/2015
Page No : 6

Start Time	Wall Street (One Way NB) Southbound						CR 635 East State Street Westbound						Chestnut Street (One Way SEB) Northwest Bound						Raul Wallenberg Avenue Northeast Bound						CR 635 East State Street Eastbound						Int. Total
	Right	Bear Right	Bear Left	Left	Peds	App. Total	Right	Thru	Bear Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Bear Left	Left	Peds	App. Total	Right	Bear Right	Bear Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 10:30 AM to 01:45 PM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 12:45 PM																															
12:45 PM	0	0	0	0	1	1	3	37	7	0	0	47	0	0	0	0	0	0	4	20	1	2	3	30	7	2	56	0	2	67	145
01:00 PM	0	0	0	0	1	1	1	31	13	3	0	48	0	0	0	0	0	0	1	15	5	5	9	35	7	0	52	0	2	61	145
01:15 PM	0	0	0	0	1	1	2	38	12	4	1	57	0	0	0	0	0	0	4	11	1	4	2	22	6	1	52	2	0	61	141
01:30 PM	0	0	0	0	4	4	3	32	9	0	1	45	0	0	0	0	0	0	1	13	3	1	6	24	7	2	39	1	4	53	126
Total Volume	0	0	0	0	7	7	9	138	41	7	2	197	0	0	0	0	0	0	10	59	10	12	20	111	27	5	199	3	8	242	557
% App. Total	0	0	0	0	100		4.6	70.1	20.8	3.6	1		0	0	0	0	0		9	53.2	9	10.8	18		11.2	2.1	82.2	1.2	3.3		
PHF	.000	.000	.000	.000	.438	.438	.750	.908	.788	.438	.500	.864	.000	.000	.000	.000	.000	.000	.625	.738	.500	.600	.556	.793	.964	.625	.888	.375	.500	.903	.960
Passenger Vehicles	0	0	0	0	4	4	9	133	39	7	2	190	0	0	0	0	0	0	10	51	9	11	18	99	25	5	194	3	7	234	527
% Passenger Vehicles	0	0	0	0	57.1	57.1	100	96.4	95.1	100	100	96.4	0	0	0	0	0	0	100	86.4	90.0	91.0	90.0	89.2	92.6	100	97.5	100	87.5	96.7	94.6
Medium Trucks & Small Buses	0	0	0	0	3	3	0	4	0	0	0	4	0	0	0	0	0	0	0	4	1	1	2	8	0	0	5	0	1	6	21
% Medium Trucks & Small Buses	0	0	0	0	42.9	42.9	0	2.9	0	0	0	2.0	0	0	0	0	0	0	0	6.8	10.0	8.3	10.0	7.2	0	0	2.5	0	12.5	2.5	3.8
Heavy Trucks & Full Sized Buses	0	0	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	0	0	4	0	0	0	4	2	0	0	0	0	2	9
% Heavy Trucks & Full Sized Buses	0	0	0	0	0	0	0	0.7	4.9	0	0	1.5	0	0	0	0	0	0	0	6.8	0	0	0	3.6	7.4	0	0	0	0	0.8	1.6

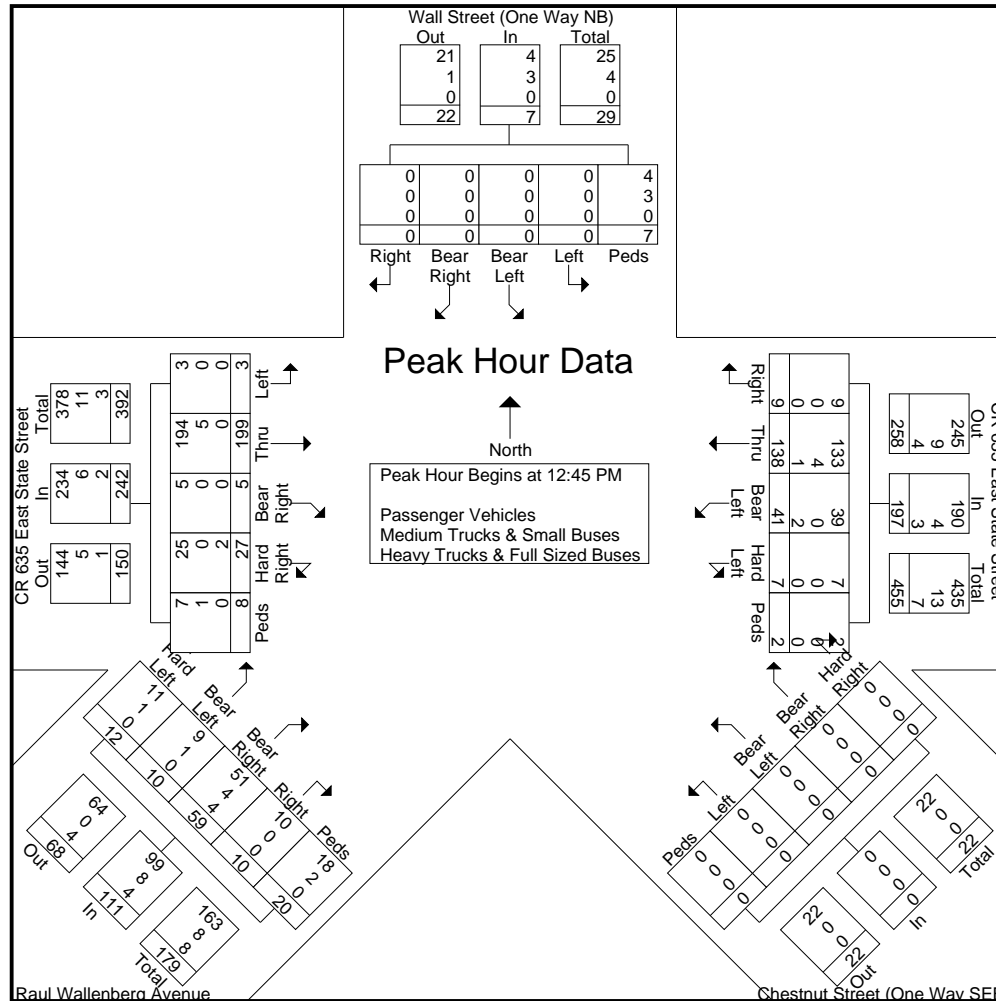
Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State Street & Raul Wallenberg Ave
Trenton, Mercer County, NJ
6:30am - 6:30pm John T
Lat: 40.221507 Long: -74.751849

File Name : State & Wallenberg_Working
Site Code :
Start Date : 10/14/2015
Page No : 7



Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State Street & Raul Wallenberg Ave
Trenton, Mercer County, NJ
6:30am - 6:30pm John T
Lat: 40.221507 Long: -74.751849

File Name : State & Wallenberg_Working
Site Code :
Start Date : 10/14/2015
Page No : 8

Start Time	Wall Street (One Way NB) Southbound						CR 635 East State Street Westbound						Chestnut Street (One Way SEB) Northwest Bound						Raul Wallenberg Avenue Northeast Bound						CR 635 East State Street Eastbound						Int. Total	
	Right	Bear Right	Bear Left	Left	Peds	App. Total	Right	Thru	Bear Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Bear Left	Left	Peds	App. Total	Right	Bear Right	Bear Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Thru	Left	Peds	App. Total		
Peak Hour Analysis From 03:00 PM to 06:15 PM - Peak 1 of 1																																
Peak Hour for Entire Intersection Begins at 04:00 PM																																
04:00 PM	0	0	0	0	4	4	2	48	2	3	0	55	0	0	0	0	0	0	51	53	6	17	11	138	10	23	126	0	1	160	357	
04:15 PM	0	0	0	0	0	0	2	35	9	0	3	49	0	0	0	0	0	0	35	23	3	16	3	80	4	19	74	1	1	99	228	
04:30 PM	0	0	0	0	0	0	0	28	6	1	1	36	0	0	0	0	0	0	19	30	2	7	5	63	7	26	135	5	1	174	273	
04:45 PM	0	0	0	0	1	1	6	36	4	1	2	49	0	0	0	0	0	0	22	16	6	13	2	59	4	16	79	0	1	100	209	
Total Volume	0	0	0	0	5	5	10	147	21	5	6	189	0	0	0	0	0	0	127	122	17	53	21	340	25	84	414	6	4	533	1067	
% App. Total	0	0	0	0	100		5.3	77.8	11.1	2.6	3.2		0	0	0	0	0		37.4	35.9	5	15.6	6.2		4.7	15.8	77.7	1.1	0.8			
PHF	.000	.000	.000	.000	.313	.313	.417	.766	.583	.417	.500	.859	.000	.000	.000	.000	.000	.000	.623	.575	.708	.779	.477	.616	.625	.808	.767	.300	1.0	.766	.747	
Passenger Vehicles	0	0	0	0	3	3	10	144	18	5	2	179	0	0	0	0	0	0	126	116	17	53	17	329	17	84	412	6	4	523	1034	
% Passenger Vehicles	0	0	0	0	60.	60.0	100	98.	85.	100	33.	94.7	0	0	0	0	0	0	99.	95.	100	100	81.	96.8	68.	100	99.	100	100	98.1	96.9	
Medium Trucks & Small Buses	0	0	0	0	2	2	0	3	0	0	4	7	0	0	0	0	0	0	0	1	0	0	4	5	0	0	0	0	0	0	14	
% Medium Trucks & Small Buses	0	0	0	0	40.	40.0	0	2.0	0	0	66.	3.7	0	0	0	0	0	0	0	0.8	0	0	19.	1.5	0	0	0	0	0	0	1.3	
Heavy Trucks & Full Sized Buses	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	1	5	0	0	0	6	8	0	2	0	0	10	19	
% Heavy Trucks & Full Sized Buses	0	0	0	0	0	0	0	0	14.	0	0	1.6	0	0	0	0	0	0	0.8	4.1	0	0	0	1.8	32.	0	0.5	0	0	1.9	1.8	

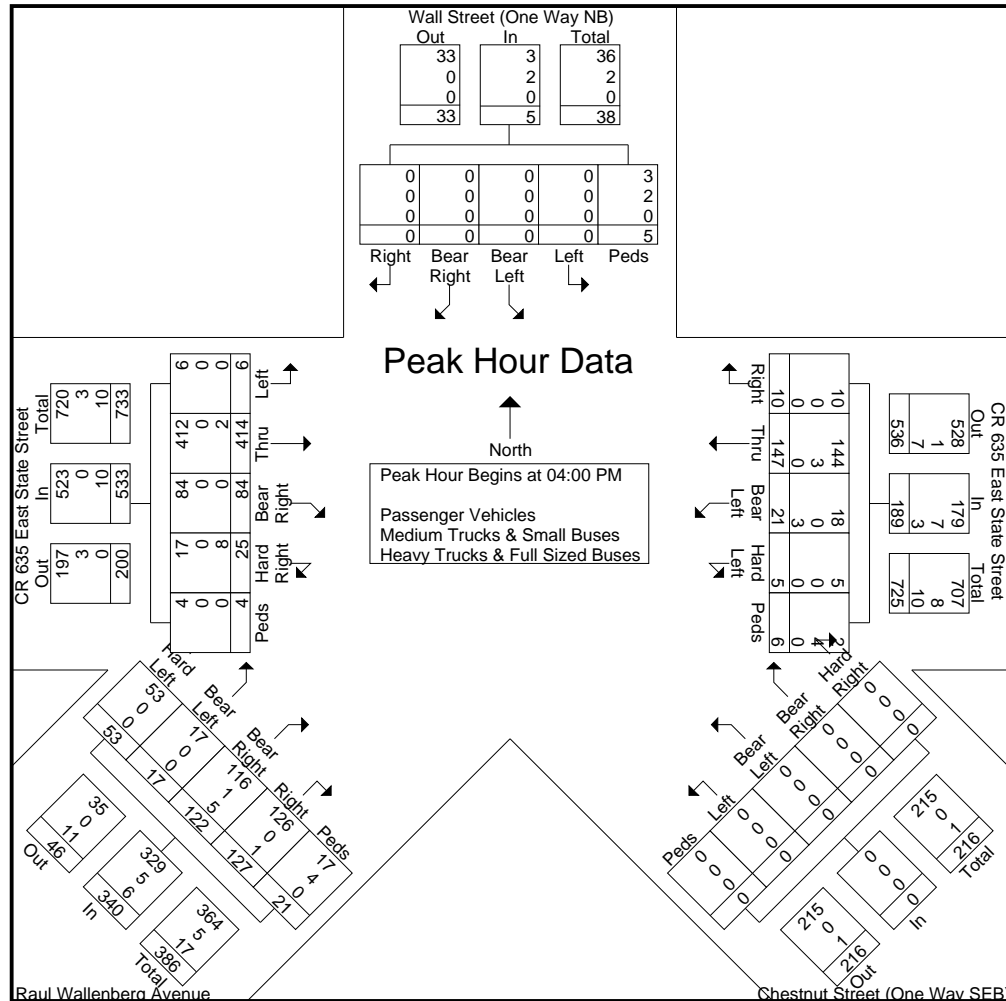
Greenman-Pedersen, Inc.

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Engineering and Construction Services

East State Street & Raul Wallenberg Ave
Trenton, Mercer County, NJ
6:30am - 6:30pm John T
Lat: 40.221507 Long: -74.751849

File Name : State & Wallenberg_Working
Site Code :
Start Date : 10/14/2015
Page No : 9



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Engineering and Construction Services

East State Street & Raul Wallenberg Ave
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Lat: 40.221507 Long: -74.751849

File Name : State & Wallenberg
Site Code :
Start Date : 10/29/2015
Page No : 2

Groups Printed- Passenger Vehicles - Medium Trucks & Small Buses - Heavy Trucks & Full Sized Buses

Start Time	Wall Street (One Way NB) Southbound						CR 635 East State Street Westbound						Chestnut Street (One Way SEB) Northwest Bound						Raul Wallenberg Avenue Northeast Bound						CR 635 East State Street Eastbound						Int. Total
	Right	Bear Right	Bear Left	Left	Peds	App. Total	Right	Thru	Bear Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Bear Left	Left	Peds	App. Total	Right	Bear Right	Bear Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Thru	Left	Peds	App. Total	
06:00 PM	0	0	0	0	1	1	3	32	9	1	0	45	0	0	0	0	0	0	8	12	0	4	3	27	2	6	39	0	1	48	121
06:15 PM	0	0	0	0	1	1	3	38	8	2	0	51	0	0	0	0	0	0	8	13	3	2	3	29	5	4	31	1	1	42	123
Grand Total	0	0	0	0	85	85	107	1990	444	57	43	2641	0	0	0	0	0	0	365	534	83	147	155	1284	179	365	1851	22	58	2475	6485
Approch %	0	0	0	0	100		4.1	75.4	16.8	2.2	1.6		0	0	0	0	0		28.4	41.6	6.5	11.4	12.1		7.2	14.7	74.8	0.9	2.3		
Total %	0	0	0	0	1.3	1.3	1.6	30.7	6.8	0.9	0.7	40.7	0	0	0	0	0	0	5.6	8.2	1.3	2.3	2.4	19.8	2.8	5.6	28.5	0.3	0.9	38.2	
Passenger Vehicles																															
% Passenger Vehicles	0	0	0	0	75.3	75.3	94.4	98.1	90.5	94.7	83.7	96.4	0	0	0	0	0	0	97	89.7	97.6	100	81.9	92.5	69.8	97.5	97.5	100	89.7	95.4	94.9
Medium Trucks & Small Buses	0	0	0	0	21	21	4	31	13	2	7	57	0	0	0	0	0	0	0	17	2	0	28	47	6	7	39	0	6	58	183
% Medium Trucks & Small Buses	0	0	0	0	24.7	24.7	3.7	1.6	2.9	3.5	16.3	2.2	0	0	0	0	0	0	0	3.2	2.4	0	18.1	3.7	3.4	1.9	2.1	0	10.3	2.3	2.8
Heavy Trucks & Full Sized Buses	0	0	0	0	0	0	2	7	29	1	0	39	0	0	0	0	0	0	11	38	0	0	0	49	48	2	7	0	0	57	145
% Heavy Trucks & Full Sized Buses	0	0	0	0	0	0	1.9	0.4	6.5	1.8	0	1.5	0	0	0	0	0	0	3	7.1	0	0	0	3.8	26.8	0.5	0.4	0	0	2.3	2.2

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Lat: 40.221507 Long: -74.751849

File Name : State & Wallenberg
Site Code :
Start Date : 10/29/2015
Page No : 4

Start Time	Wall Street (One Way NB) Southbound						CR 635 East State Street Westbound						Chestnut Street (One Way SEB) Northwest Bound						Raul Wallenberg Avenue Northeast Bound						CR 635 East State Street Eastbound						Int. Total	
	Right	Bear Right	Bear Left	Left	Peds	App. Total	Right	Thru	Bear Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Bear Left	Left	Peds	App. Total	Right	Bear Right	Bear Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Thru	Left	Peds	App. Total		
Peak Hour Analysis From 06:30 AM to 09:15 AM - Peak 1 of 1																																
Peak Hour for Entire Intersection Begins at 08:00 AM																																
08:00 AM	0	0	0	0	0	0	2	132	31	0	3	168	0	0	0	0	0	0	7	7	3	4	5	26	3	8	32	0	9	52	246	
08:15 AM	0	0	0	0	4	4	3	122	31	0	0	156	0	0	0	0	0	0	5	8	3	3	4	23	7	11	28	0	0	46	229	
08:30 AM	0	0	0	0	3	3	2	120	33	0	1	156	0	0	0	0	0	0	7	5	3	7	4	26	9	6	28	1	1	45	230	
08:45 AM	0	0	0	0	1	1	3	114	30	1	2	150	0	0	0	0	0	0	4	8	3	4	3	22	6	4	35	0	0	45	218	
Total Volume	0	0	0	0	8	8	10	488	125	1	6	630	0	0	0	0	0	0	23	28	12	18	16	97	25	29	123	1	10	188	923	
% App. Total	0	0	0	0	100		1.6	77.5	19.8	0.2	1		0	0	0	0	0		23.7	28.9	12.4	18.6	16.5		13.3	15.4	65.4	0.5	5.3			
PHF	.000	.000	.000	.000	.500	.500	.833	.924	.947	.250	.500	.938	.000	.000	.000	.000	.000	.000	.821	.875	1.0	.643	.800	.933	.694	.659	.879	.250	.278	.904	.938	
Passenger Vehicles	0	0	0	0	7	7	9	478	121	1	4	613	0	0	0	0	0	0	22	21	11	18	16	88	20	29	113	1	9	172	880	
% Passenger Vehicles	0	0	0	0	87.5	87.5	90.	98.	96.	100	66.	97.3	0	0	0	0	0	0	95.	75.	91.	100	100	90.7	80.	100	91.	100	90.	91.5	95.3	
Medium Trucks & Small Buses	0	0	0	0	1	1	0	7	2	0	2	11	0	0	0	0	0	0	0	3	1	0	0	4	0	0	8	0	1	9	25	
% Medium Trucks & Small Buses	0	0	0	0	12.5	12.5	0	1.4	1.6	0	33.	1.7	0	0	0	0	0	0	0	10.	8.3	0	0	4.1	0	0	6.5	0	10.	4.8	2.7	
Heavy Trucks & Full Sized Buses	0	0	0	0	0	0	1	3	2	0	0	6	0	0	0	0	0	0	1	4	0	0	0	5	5	0	2	0	0	7	18	
% Heavy Trucks & Full Sized Buses	0	0	0	0	0	0	10.	0.6	1.6	0	0	1.0	0	0	0	0	0	0	4.3	14.	0	0	0	5.2	20.	0	1.6	0	0	3.7	2.0	

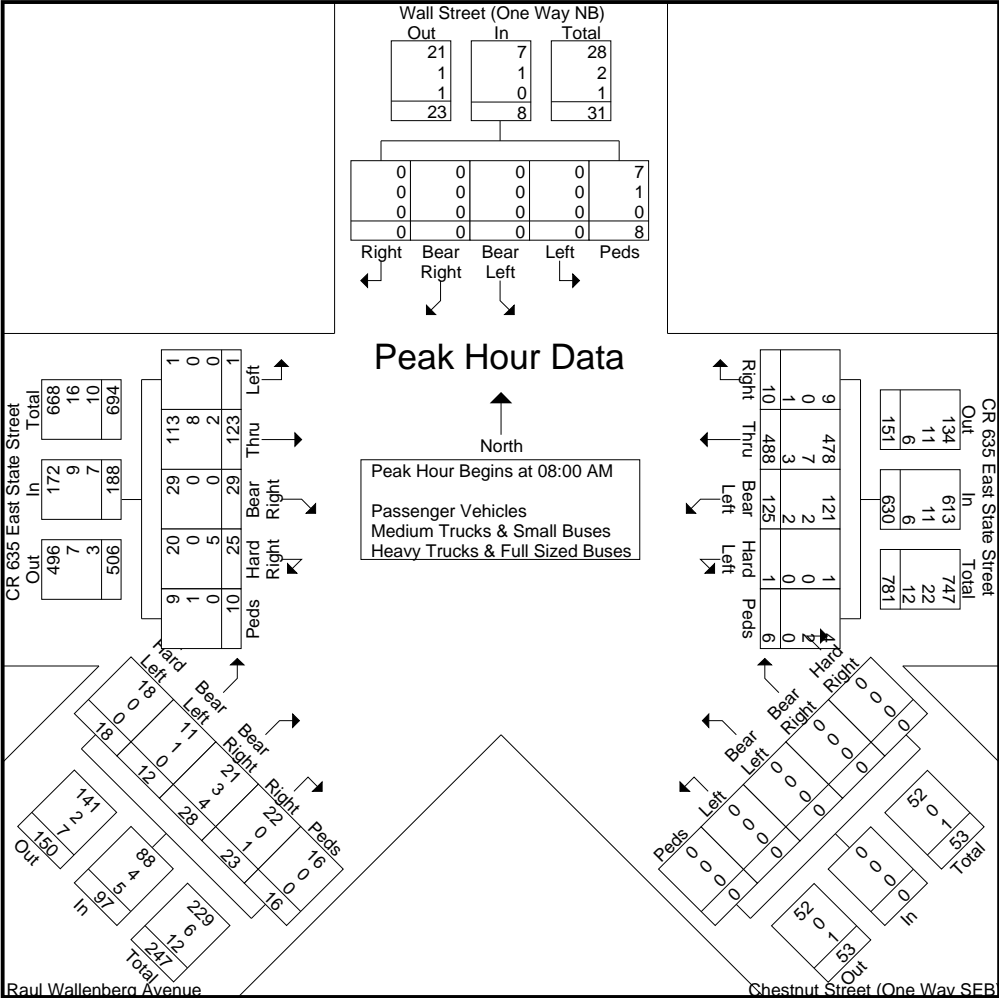
Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State Street & Raul Wallenberg Ave
Trenton, Mercer County, NJ
6:30am - 6:30pm John T
Lat: 40.221507 Long: -74.751849

File Name : State & Wallenberg
Site Code :
Start Date : 10/29/2015
Page No : 5



Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State Street & Raul Wallenberg Ave
Trenton, Mercer County, NJ
6:30am - 6:30pm John T
Lat: 40.221507 Long: -74.751849

File Name : State & Wallenberg
Site Code :
Start Date : 10/29/2015
Page No : 6

Start Time	Wall Street (One Way NB) Southbound						CR 635 East State Street Westbound						Chestnut Street (One Way SEB) Northwest Bound						Raul Wallenberg Avenue Northeast Bound						CR 635 East State Street Eastbound						Int. Total	
	Right	Bear Right	Bear Left	Left	Peds	App. Total	Right	Thru	Bear Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Bear Left	Left	Peds	App. Total	Right	Bear Right	Bear Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Thru	Left	Peds	App. Total		
Peak Hour Analysis From 10:30 AM to 01:45 PM - Peak 1 of 1																																
Peak Hour for Entire Intersection Begins at 12:00 PM																																
12:00 PM	0	0	0	0	4	4	3	36	5	1	1	46	0	0	0	0	0	0	8	13	3	4	3	31	5	14	61	2	0	82	163	
12:15 PM	0	0	0	0	6	6	2	43	11	1	1	58	0	0	0	0	0	0	5	4	2	3	2	16	4	3	41	0	2	50	130	
12:30 PM	0	0	0	0	1	1	2	34	5	3	0	44	0	0	0	0	0	0	6	6	2	2	6	22	6	8	31	0	0	45	112	
12:45 PM	0	0	0	0	2	2	4	52	5	0	0	61	0	0	0	0	0	0	8	11	2	2	3	26	5	6	44	0	3	58	147	
Total Volume	0	0	0	0	13	13	11	165	26	5	2	209	0	0	0	0	0	0	27	34	9	11	14	95	20	31	177	2	5	235	552	
% App. Total	0	0	0	0	100		5.3	78.9	12.4	2.4	1		0	0	0	0	0		28.4	35.8	9.5	11.6	14.7		8.5	13.2	75.3	0.9	2.1			
PHF	.000	.000	.000	.000	.542	.542	.688	.793	.591	.417	.500	.857	.000	.000	.000	.000	.000	.000	.844	.654	.750	.688	.583	.766	.833	.554	.725	.250	.417	.716	.847	
Passenger Vehicles	0	0	0	0	11	11	10	163	24	5	2	204	0	0	0	0	0	0	27	30	9	11	11	88	15	31	174	2	3	225	528	
% Passenger Vehicles	0	0	0	0	84.6	84.6	90.9	98.8	92.3	100	100	97.6	0	0	0	0	0	0	100	88.2	100	100	78.6	92.6	75.0	100	98.3	100	60.0	95.7	95.7	
Medium Trucks & Small Buses	0	0	0	0	2	2	1	2	0	0	0	3	0	0	0	0	0	0	0	1	0	0	3	4	2	0	2	0	2	6	15	
% Medium Trucks & Small Buses	0	0	0	0	15.4	15.4	9.1	1.2	0	0	0	1.4	0	0	0	0	0	0	0	2.9	0	0	21.4	4.2	10.0	0	1.1	0	40.0	2.6	2.7	
Heavy Trucks & Full Sized Buses	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	3	0	0	0	3	3	0	1	0	0	4	9	
% Heavy Trucks & Full Sized Buses	0	0	0	0	0	0	0	0	7.7	0	0	1.0	0	0	0	0	0	0	0	8.8	0	0	0	3.2	15.0	0	0.6	0	0	1.7	1.6	

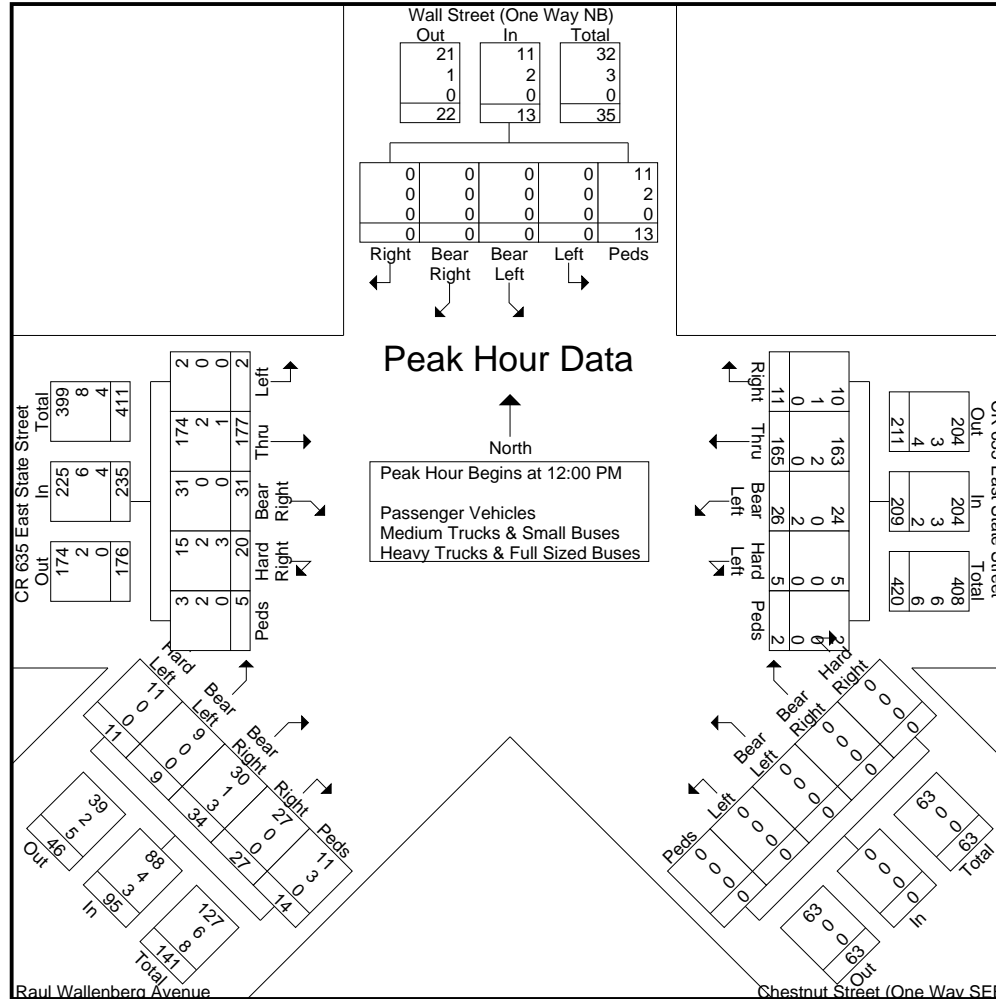
Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State Street & Raul Wallenberg Ave
Trenton, Mercer County, NJ
6:30am - 6:30pm John T
Lat: 40.221507 Long: -74.751849

File Name : State & Wallenberg
Site Code :
Start Date : 10/29/2015
Page No : 7



Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State Street & Raul Wallenberg Ave
Trenton, Mercer County, NJ
6:30am - 6:30pm John T
Lat: 40.221507 Long: -74.751849

File Name : State & Wallenberg
Site Code :
Start Date : 10/29/2015
Page No : 8

Start Time	Wall Street (One Way NB) Southbound						CR 635 East State Street Westbound						Chestnut Street (One Way SEB) Northwest Bound						Raul Wallenberg Avenue Northeast Bound						CR 635 East State Street Eastbound						Int. Total
	Right	Bear Right	Bear Left	Left	Peds	App. Total	Right	Thru	Bear Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Bear Left	Left	Peds	App. Total	Right	Bear Right	Bear Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Thru	Left	Peds	App. Total	
Peak Hour Analysis From 03:00 PM to 06:15 PM - Peak 1 of 1																															
Peak Hour for Entire Intersection Begins at 04:00 PM																															
04:00 PM	0	0	0	0	5	5	0	43	4	1	1	49	0	0	0	0	0	0	37	45	3	13	4	102	8	18	104	0	0	130	286
04:15 PM	0	0	0	0	0	0	0	23	9	2	4	38	0	0	0	0	0	0	30	28	5	9	7	79	8	20	94	0	1	123	240
04:30 PM	0	0	0	0	2	2	3	35	11	2	1	52	0	0	0	0	0	0	18	27	7	12	3	67	10	30	142	0	3	185	306
04:45 PM	0	0	0	0	1	1	4	45	4	2	1	56	0	0	0	0	0	0	25	19	5	5	3	57	4	16	86	2	2	110	224
Total Volume	0	0	0	0	8	8	7	146	28	7	7	195	0	0	0	0	0	0	110	119	20	39	17	305	30	84	426	2	6	548	1056
% App. Total	0	0	0	0	100		3.6	74.9	14.4	3.6	3.6		0	0	0	0	0		36.1	39	6.6	12.8	5.6		5.5	15.3	77.7	0.4	1.1		
PHF	.000	.000	.000	.000	.400	.400	.438	.811	.636	.875	.438	.871	.000	.000	.000	.000	.000	.000	.743	.661	.714	.750	.607	.748	.750	.700	.750	.250	.500	.741	.863
Passenger Vehicles	0	0	0	0	3	3	7	143	25	7	4	186	0	0	0	0	0	0	110	112	20	39	13	294	20	82	418	2	3	525	1008
% Passenger Vehicles	0	0	0	0	37.5	37.5	100	97.	89.		57.	95.4	0	0	0	0	0	0	100	94.	100	100	76.	96.4	66.	97.	98.	100	50.	95.8	95.5
Medium Trucks & Small Buses	0	0	0	0	5	5	0	3	1	0	3	7	0	0	0	0	0	0	0	1	0	0	4	5	2	1	6	0	3	12	29
% Medium Trucks & Small Buses	0	0	0	0	62.5	62.5	0	2.1	3.6	0	42.9	3.6	0	0	0	0	0	0	0	0.8	0	0	23.5	1.6	6.7	1.2	1.4	0	50.0	2.2	2.7
Heavy Trucks & Full Sized Buses	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	6	0	0	0	6	8	1	2	0	0	11	19
% Heavy Trucks & Full Sized Buses	0	0	0	0	0	0	0	0	7.1	0	0	1.0	0	0	0	0	0	0	0	5.0	0	0	0	2.0	26.7	1.2	0.5	0	0	2.0	1.8

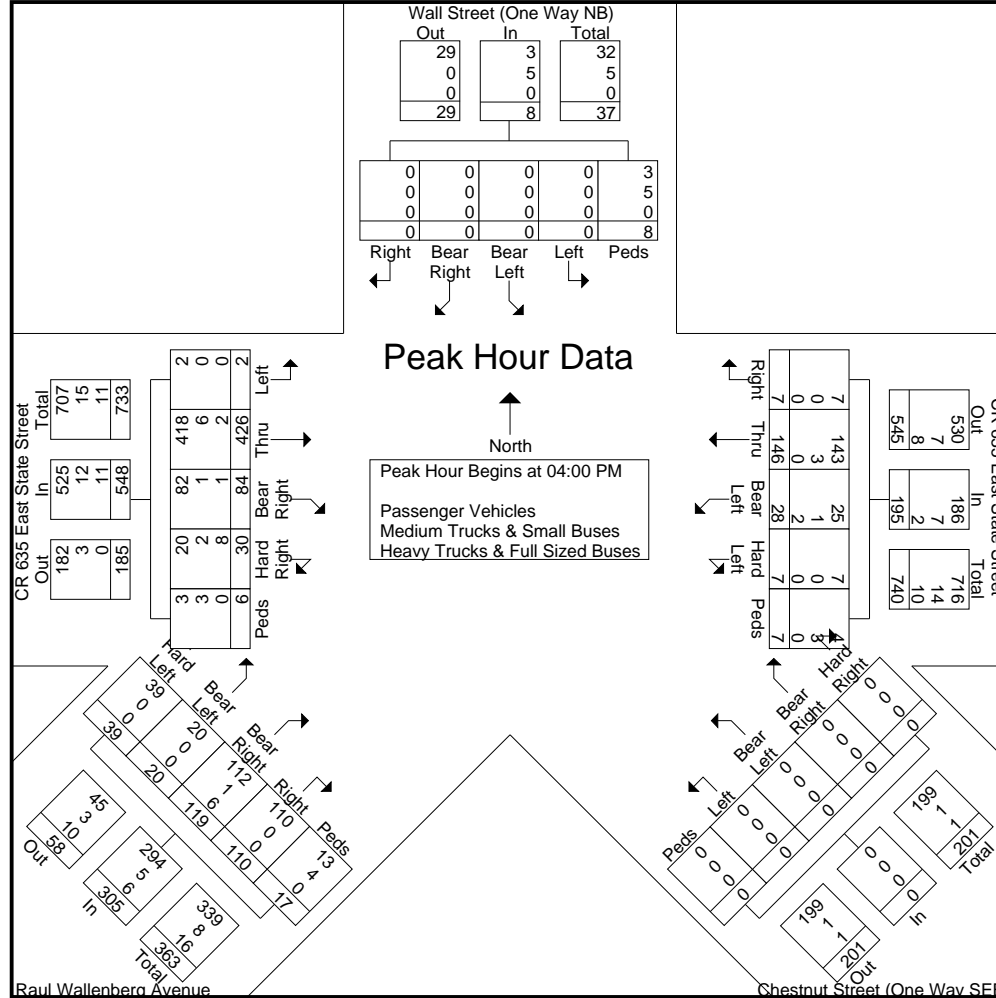
Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State Street & Raul Wallenberg Ave
Trenton, Mercer County, NJ
6:30am - 6:30pm John T
Lat: 40.221507 Long: -74.751849

File Name : State & Wallenberg
Site Code :
Start Date : 10/29/2015
Page No : 9



Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State Street & Raul Wallenberg Ave
Trenton, Mercer County, NJ
11:00am - 2:00pm John T
Lat: 40.221507 Long: -74.751849

File Name : State & Wallenberg-Sat
Site Code :
Start Date : 10/17/2015
Page No : 1

Groups Printed- Passenger Vehicles - Medium Trucks & Small Buses - Heavy Trucks & Full Sized Buses

Start Time	Wall Street (One Way NB) Southbound						CR 635 East State Street Westbound						Chestnut Street (One Way SEB) Northwest Bound						Raul Wallenberg Avenue Northeast Bound						CR 635 East State Street Eastbound						Int. Total
	Right	Bear Right	Bear Left	Left	Peds	App. Total	Right	Thru	Bear Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Bear Left	Left	Peds	App. Total	Right	Bear Right	Bear Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Thru	Left	Peds	App. Total	
11:00 AM	0	0	0	0	3	3	4	31	6	1	0	42	0	0	0	0	0	0	10	6	2	0	2	20	2	5	28	1	0	36	101
11:15 AM	0	0	0	0	0	0	2	31	3	2	0	38	0	0	0	0	0	0	9	5	2	3	3	22	4	5	13	0	2	24	84
11:30 AM	0	0	0	0	0	0	6	24	6	2	2	40	0	0	0	0	0	0	4	3	0	1	4	12	2	9	28	0	3	42	94
11:45 AM	0	0	0	0	0	0	1	38	6	2	1	48	0	0	0	0	0	0	5	6	1	3	2	17	1	2	39	1	0	43	108
Total	0	0	0	0	3	3	13	124	21	7	3	168	0	0	0	0	0	0	28	20	5	7	11	71	9	21	108	2	5	145	387
12:00 PM	0	0	0	0	0	0	0	29	1	4	2	36	0	0	0	0	0	0	8	13	2	1	0	24	2	5	32	0	3	42	102
12:15 PM	0	0	0	0	3	3	5	38	6	2	0	51	0	0	0	0	0	0	6	8	2	1	4	21	1	6	45	1	3	56	131
12:30 PM	0	0	0	0	0	0	0	45	2	0	3	50	0	0	0	0	0	0	5	9	0	2	1	17	0	6	52	0	2	60	127
12:45 PM	0	0	0	0	0	0	3	31	5	0	0	39	0	0	0	0	0	0	8	13	1	6	3	31	3	11	46	0	0	60	130
Total	0	0	0	0	3	3	8	143	14	6	5	176	0	0	0	0	0	0	27	43	5	10	8	93	6	28	175	1	8	218	490
01:00 PM	0	0	0	0	0	0	1	31	2	0	0	34	0	0	0	0	0	0	4	12	0	5	4	25	0	8	38	0	2	48	107
01:15 PM	0	0	0	0	2	2	2	38	5	1	0	46	0	0	0	0	0	0	6	12	2	4	4	28	1	10	36	0	0	47	123
01:30 PM	0	0	0	0	1	1	1	25	4	0	0	30	0	0	0	0	0	0	7	7	1	4	9	28	0	7	34	2	1	44	103
01:45 PM	0	0	0	0	0	0	1	38	8	0	0	47	0	0	0	0	0	0	7	9	0	6	1	23	3	7	51	0	2	63	133
Total	0	0	0	0	3	3	5	132	19	1	0	157	0	0	0	0	0	0	24	40	3	19	18	104	4	32	159	2	5	202	466
Grand Total	0	0	0	0	9	9	26	399	54	14	8	501	0	0	0	0	0	0	79	103	13	36	37	268	19	81	442	5	18	565	1343
Apprch %	0	0	0	0	100		5.2	79.6	10.8	2.8	1.6		0	0	0	0	0		29.5	38.4	4.9	13.4	13.8		3.4	14.3	78.2	0.9	3.2		
Total %	0	0	0	0	0.7	0.7	1.9	29.7	4	1	0.6	37.3	0	0	0	0	0		5.9	7.7	1	2.7	2.8	20	1.4	6	32.9	0.4	1.3	42.1	
Passenger Vehicles																															
% Passenger Vehicles	0	0	0	0	77.8	77.8	100	99	88.9	100	87.5	97.8	0	0	0	0	0	0	98.7	91.3	100	97.2	83.8	93.7	73.7	100	98.9	100	88.9	97.9	96.9
Medium Trucks & Small Buses	0	0	0	0	2	2	0	3	2	0	1	6	0	0	0	0	0	0	0	3	0	1	6	10	0	0	5	0	2	7	25
% Medium Trucks & Small Buses	0	0	0	0	22.2	22.2	0	0.8	3.7	0	12.5	1.2	0	0	0	0	0	0	0	2.9	0	2.8	16.2	3.7	0	0	1.1	0	11.1	1.2	1.9
Heavy Trucks & Full Sized Buses	0	0	0	0	0	0	0	1	4	0	0	5	0	0	0	0	0	0	1	6	0	0	0	7	5	0	0	0	0	5	17
% Heavy Trucks & Full Sized Buses	0	0	0	0	0	0	0	0.3	7.4	0	0	1	0	0	0	0	0	0	1.3	5.8	0	0	0	2.6	26.3	0	0	0	0	0.9	1.3

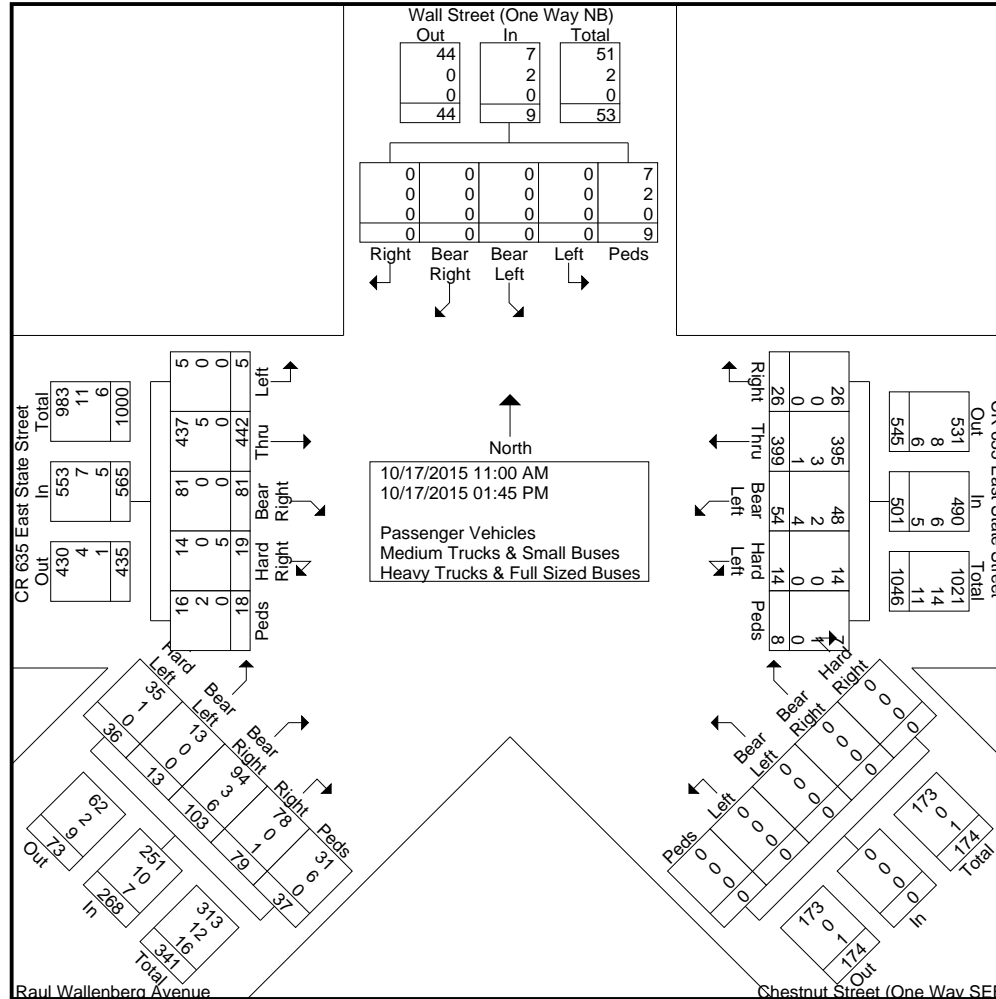
Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State Street & Raul Wallenberg Ave
Trenton, Mercer County, NJ
11:00am - 2:00pm John T
Lat: 40.221507 Long: -74.751849

File Name : State & Wallenberg-Sat
Site Code :
Start Date : 10/17/2015
Page No : 2



Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State Street & Raul Wallenberg Ave
Trenton, Mercer County, NJ
11:00am - 2:00pm John T
Lat: 40.221507 Long: -74.751849

File Name : State & Wallenberg-Sat
Site Code :
Start Date : 10/17/2015
Page No : 3

Start Time	Wall Street (One Way NB) Southbound						CR 635 East State Street Westbound						Chestnut Street (One Way SEB) Northwest Bound						Raul Wallenberg Avenue Northeast Bound						CR 635 East State Street Eastbound						Int. Total	
	Right	Bear Right	Bear Left	Left	Peds	App. Total	Right	Thru	Bear Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Bear Left	Left	Peds	App. Total	Right	Bear Right	Bear Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Thru	Left	Peds	App. Total		
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																																
Peak Hour for Entire Intersection Begins at 12:15 PM																																
12:15 PM	0	0	0	0	3	3	5	38	6	2	0	51	0	0	0	0	0	0	6	8	2	1	4	21	1	6	45	1	3	56	131	
12:30 PM	0	0	0	0	0	0	0	45	2	0	3	50	0	0	0	0	0	0	5	9	0	2	1	17	0	6	52	0	2	60	127	
12:45 PM	0	0	0	0	0	0	3	31	5	0	0	39	0	0	0	0	0	0	8	13	1	6	3	31	3	11	46	0	0	60	130	
01:00 PM	0	0	0	0	0	0	1	31	2	0	0	34	0	0	0	0	0	0	4	12	0	5	4	25	0	8	38	0	2	48	107	
Total Volume	0	0	0	0	3	3	9	145	15	2	3	174	0	0	0	0	0	0	23	42	3	14	12	94	4	31	181	1	7	224	495	
% App. Total	0	0	0	0	100		5.2	83.3	8.6	1.1	1.7		0	0	0	0	0		24.5	44.7	3.2	14.9	12.8		1.8	13.8	80.8	0.4	3.1			
PHF	.000	.000	.000	.000	.250	.250	.450	.806	.625	.250	.250	.853	.000	.000	.000	.000	.000	.000	.719	.808	.375	.583	.750	.758	.333	.705	.870	.250	.583	.933	.945	
Passenger Vehicles	0	0	0	0	3	3	9	142	14	2	3	170	0	0	0	0	0	0	23	38	3	14	11	89	3	31	178	1	7	220	482	
% Passenger Vehicles	0	0	0	0	100	100	100	97.9	93.3	100	100	97.7	0	0	0	0	0	0	100	90.5	100	100	91.7	94.7	75.0	100	98.3	100	100	98.2	97.4	
Medium Trucks & Small Buses	0	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	2	0	0	1	3	0	0	3	0	0	3	8	
% Medium Trucks & Small Buses	0	0	0	0	0	0	0	1.4	0	0	0	1.1	0	0	0	0	0	0	0	4.8	0	0	8.3	3.2	0	0	1.7	0	0	1.3	1.6	
Heavy Trucks & Full Sized Buses	0	0	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	0	0	2	0	0	0	2	1	0	0	0	0	1	5	
% Heavy Trucks & Full Sized Buses	0	0	0	0	0	0	0	0.7	6.7	0	0	1.1	0	0	0	0	0	0	0	4.8	0	0	0	2.1	25.0	0	0	0	0	0.4	1.0	

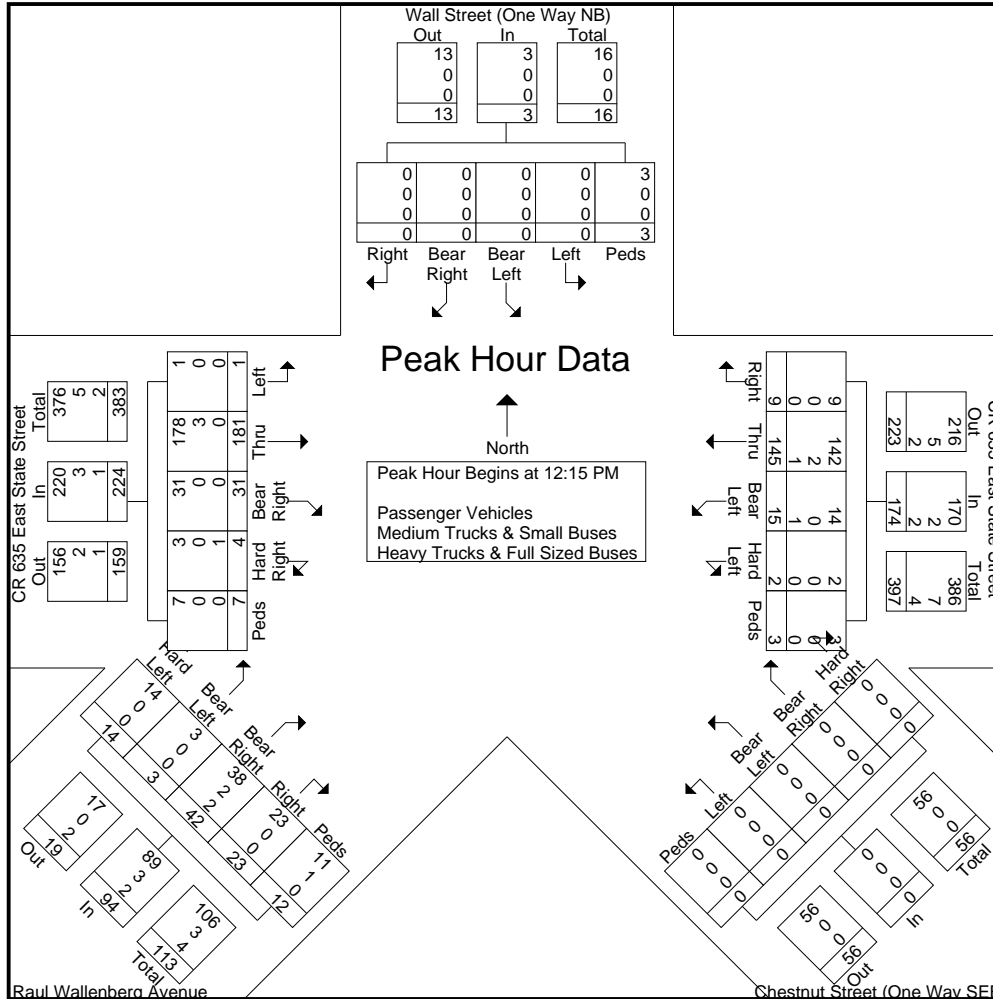
Greenman-Pedersen, Inc.

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Engineering and Construction Services

East State Street & Raul Wallenberg Ave
Trenton, Mercer County, NJ
11:00am - 2:00pm John T
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File Name : State & Wallenberg-Sat
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Engineering and Construction Services

East State Street & Raul Wallenberg Ave
Trenton, Mercer County, NJ
11:00am - 2:00pm Luke H
Lat: 40.221507 Long: -74.751849

File Name : State & Wallenberg-Sat
Site Code :
Start Date : 11/14/2015
Page No : 1

Groups Printed- Passenger Vehicles - Medium Trucks & Small Buses - Heavy Trucks & Full Sized Buses

Start Time	Wall Street (One Way NB) Southbound						CR 635 East State Street Westbound						Chestnut Street (One Way SEB) Northwest Bound						Raul Wallenberg Avenue Northeast Bound						CR 635 East State Street Eastbound						Int. Total
	Right	Bear Right	Bear Left	Left	Peds	App. Total	Right	Thru	Bear Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Bear Left	Left	Peds	App. Total	Right	Bear Right	Bear Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Thru	Left	Peds	App. Total	
11:00 AM	0	0	0	0	2	2	3	30	4	1	0	38	0	0	0	0	0	0	2	8	4	4	2	20	2	4	25	0	0	31	91
11:15 AM	0	0	0	0	0	0	4	31	8	2	1	46	0	0	0	0	0	0	2	11	0	3	0	16	4	3	18	0	0	25	87
11:30 AM	0	0	0	0	1	1	4	37	9	1	0	51	0	0	0	0	0	0	8	6	1	0	4	19	1	2	36	1	4	44	115
11:45 AM	0	0	0	0	3	3	3	35	7	3	1	49	0	0	0	0	0	0	3	9	1	5	5	23	3	4	30	0	0	37	112
Total	0	0	0	0	6	6	14	133	28	7	2	184	0	0	0	0	0	0	15	34	6	12	11	78	10	13	109	1	4	137	405
12:00 PM	0	0	0	0	1	1	0	34	5	2	1	42	0	0	0	0	0	0	7	4	1	2	1	15	0	7	34	0	1	42	100
12:15 PM	0	0	0	0	1	1	0	33	0	2	0	35	0	0	0	0	0	0	6	4	1	2	2	15	0	4	21	0	0	25	76
12:30 PM	0	0	0	0	2	2	1	36	10	0	0	47	0	0	0	0	0	0	6	10	3	2	4	25	1	9	34	0	2	46	120
12:45 PM	0	0	0	0	0	0	2	32	3	1	1	39	0	0	0	0	0	0	3	4	0	7	2	16	1	8	36	0	2	47	102
Total	0	0	0	0	4	4	3	135	18	5	2	163	0	0	0	0	0	0	22	22	5	13	9	71	2	28	125	0	5	160	398
01:00 PM	0	0	0	0	1	1	1	24	2	1	1	29	0	0	0	0	0	0	3	11	2	8	0	24	3	5	42	1	0	51	105
01:15 PM	0	0	0	0	0	0	1	31	2	1	1	36	0	0	0	0	0	0	1	14	1	3	1	20	0	2	37	0	0	39	95
01:30 PM	0	0	0	0	1	1	2	21	5	0	1	29	0	0	0	0	0	0	5	6	0	2	7	20	2	3	37	0	1	43	93
01:45 PM	0	0	0	0	4	4	0	29	3	0	0	32	0	0	0	0	0	0	5	11	1	4	8	29	3	3	30	0	5	41	106
Total	0	0	0	0	6	6	4	105	12	2	3	126	0	0	0	0	0	0	14	42	4	17	16	93	8	13	146	1	6	174	399
Grand Total	0	0	0	0	16	16	21	373	58	14	7	473	0	0	0	0	0	0	51	98	15	42	36	242	20	54	380	2	15	471	1202
Apprch %	0	0	0	0	100		4.4	78.9	12.3	3	1.5		0	0	0	0	0		21.1	40.5	6.2	17.4	14.9		4.2	11.5	80.7	0.4	3.2		
Total %	0	0	0	0	1.3	1.3	1.7	31	4.8	1.2	0.6	39.4	0	0	0	0	0	0	4.2	8.2	1.2	3.5	3	20.1	1.7	4.5	31.6	0.2	1.2	39.2	
Passenger Vehicles																															
% Passenger Vehicles	0	0	0	0	87.5	87.5	100	99.5	91.4	92.9	71.4	97.9	0	0	0	0	0	0	98	88.8	100	97.6	77.8	91.3	75	100	98.2	100	86.7	97	96.1
Medium Trucks & Small Buses	0	0	0	0	2	2	0	1	1	1	2	5	0	0	0	0	0	0	0	4	0	1	8	13	0	0	7	0	2	9	29
% Medium Trucks & Small Buses	0	0	0	0	12.5	12.5	0	0.3	1.7	7.1	28.6	1.1	0	0	0	0	0	0	0	4.1	0	2.4	22.2	5.4	0	0	1.8	0	13.3	1.9	2.4
Heavy Trucks & Full Sized Buses	0	0	0	0	0	0	0	1	4	0	0	5	0	0	0	0	0	0	1	7	0	0	0	8	5	0	0	0	0	5	18
% Heavy Trucks & Full Sized Buses	0	0	0	0	0	0	0	0.3	6.9	0	0	1.1	0	0	0	0	0	0	2	7.1	0	0	0	3.3	25	0	0	0	0	1.1	1.5

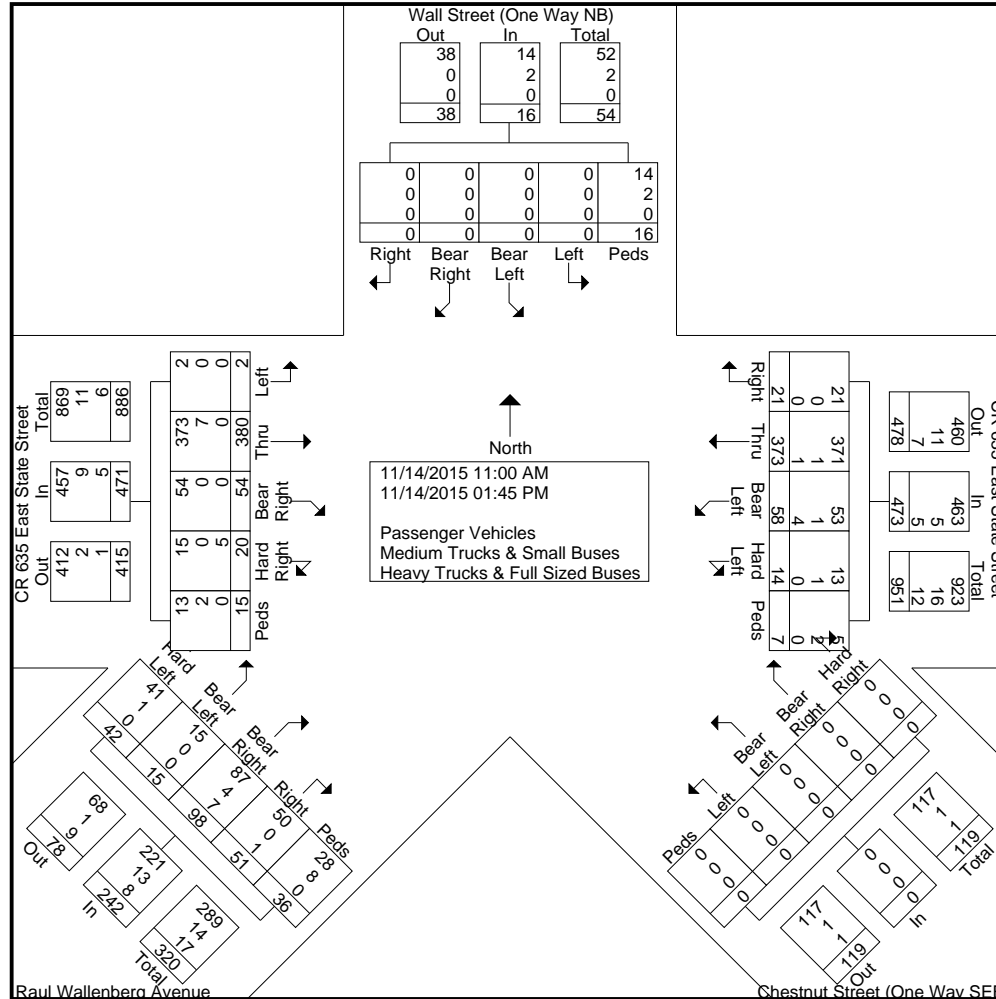
Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State Street & Raul Wallenberg Ave
Trenton, Mercer County, NJ
11:00am - 2:00pm Luke H
Lat: 40.221507 Long: -74.751849

File Name : State & Wallenberg-Sat
Site Code :
Start Date : 11/14/2015
Page No : 2



Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State Street & Raul Wallenberg Ave
Trenton, Mercer County, NJ
11:00am - 2:00pm Luke H
Lat: 40.221507 Long: -74.751849

File Name : State & Wallenberg-Sat
Site Code :
Start Date : 11/14/2015
Page No : 3

Start Time	Wall Street (One Way NB) Southbound						CR 635 East State Street Westbound						Chestnut Street (One Way SEB) Northwest Bound						Raul Wallenberg Avenue Northeast Bound						CR 635 East State Street Eastbound						Int. Total	
	Right	Bear Right	Bear Left	Left	Peds	App. Total	Right	Thru	Bear Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Bear Left	Left	Peds	App. Total	Right	Bear Right	Bear Left	Hard Left	Peds	App. Total	Hard Right	Bear Right	Thru	Left	Peds	App. Total		
Peak Hour Analysis From 11:00 AM to 01:45 PM - Peak 1 of 1																																
Peak Hour for Entire Intersection Begins at 12:30 PM																																
12:30 PM	0	0	0	0	2	2	1	36	10	0	0	47	0	0	0	0	0	0	6	10	3	2	4	25	1	9	34	0	2	46	120	
12:45 PM	0	0	0	0	0	0	2	32	3	1	1	39	0	0	0	0	0	0	3	4	0	7	2	16	1	8	36	0	2	47	102	
01:00 PM	0	0	0	0	1	1	1	24	2	1	1	29	0	0	0	0	0	0	3	11	2	8	0	24	3	5	42	1	0	51	105	
01:15 PM	0	0	0	0	0	0	1	31	2	1	1	36	0	0	0	0	0	0	1	14	1	3	1	20	0	2	37	0	0	39	95	
Total Volume	0	0	0	0	3	3	5	123	17	3	3	151	0	0	0	0	0	0	13	39	6	20	7	85	5	24	149	1	4	183	422	
% App. Total	0	0	0	0	100		3.3	81.5	11.3	2	2		0	0	0	0	0		15.3	45.9	7.1	23.5	8.2		2.7	13.1	81.4	0.5	2.2			
PHF	.000	.000	.000	.000	.375	.375	.625	.854	.425	.750	.750	.803	.000	.000	.000	.000	.000	.000	.542	.696	.500	.625	.438	.850	.417	.667	.887	.250	.500	.897	.879	
Passenger Vehicles	0	0	0	0	3	3	5	122	15	3	1	146	0	0	0	0	0	0	13	35	6	19	6	79	3	24	147	1	3	178	406	
% Passenger Vehicles	0	0	0	0	100	100	100	99.	88.	100	33.	96.7	0	0	0	0	0	0	100	89.	100	95.	85.	92.9	60.	100	98.	100	75.	97.3	96.2	
Medium Trucks & Small Buses	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	1	0	1	1	3	0	0	2	0	1	3	8	
% Medium Trucks & Small Buses	0	0	0	0	0	0	0	0	0	0	66.	1.3	0	0	0	0	0	0	0	2.6	0	5.0	14.	3.5	0	0	1.3	0	25.	1.6	1.9	
Heavy Trucks & Full Sized Buses	0	0	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	0	0	3	0	0	0	3	2	0	0	0	0	2	8	
% Heavy Trucks & Full Sized Buses	0	0	0	0	0	0	0	0.8	11.	0	0	2.0	0	0	0	0	0	0	0	7.7	0	0	0	3.5	40.	0	0	0	0	1.1	1.9	

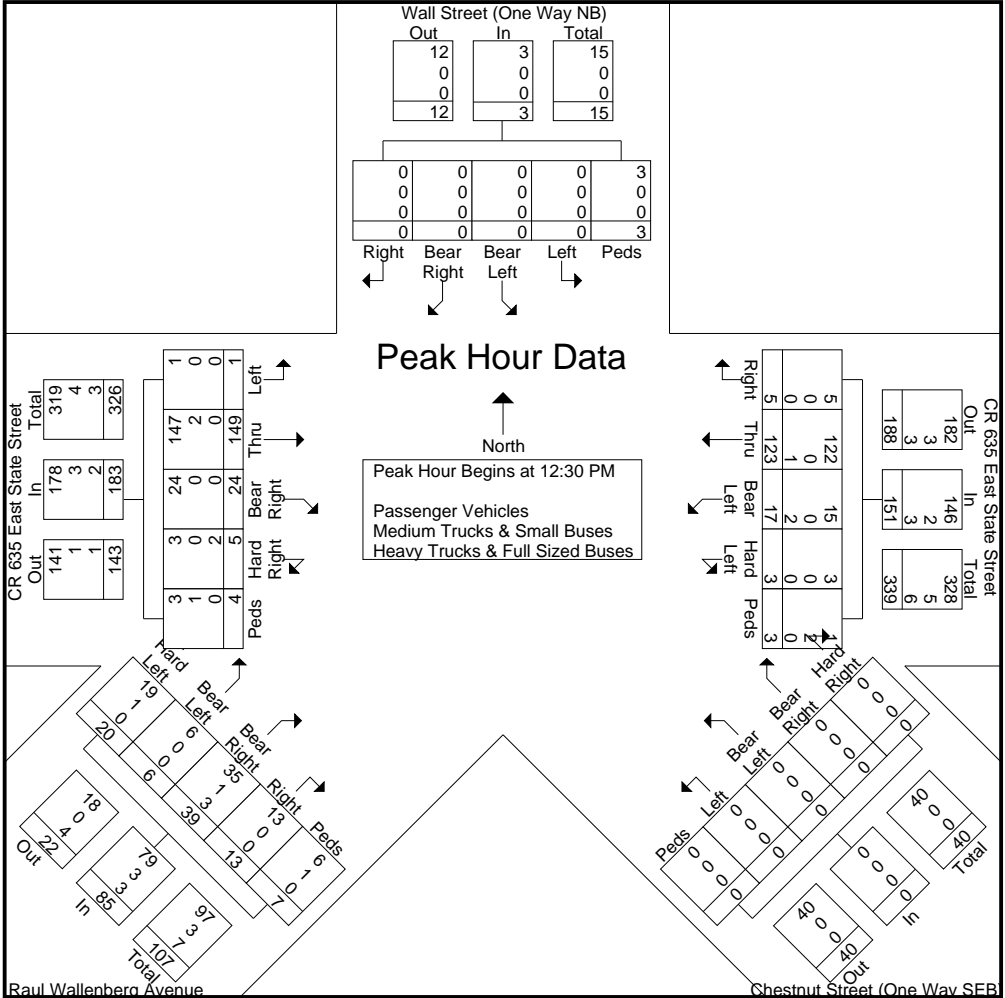
Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

East State Street & Raul Wallenberg Ave
Trenton, Mercer County, NJ
11:00am - 2:00pm Luke H
Lat: 40.221507 Long: -74.751849

File Name : State & Wallenberg-Sat
Site Code :
Start Date : 11/14/2015
Page No : 4



Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

Site Code: A
Lincoln Avenue
Bet Seward Ave & East State St
Latitude: 40' 13.4687 North
Longitude: -75' 15.0320 West
Date Start: 12-Oct-15

Start Time	12-Oct-15 Mon	EB		Hour Totals		WB		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		*	80			*	109				
12:15		*	103			*	77				
12:30		*	87			*	89				
12:45		*	75	0	345	*	88	0	363	0	708
01:00		*	100			*	98				
01:15		*	74			*	85				
01:30		*	86			*	92				
01:45		*	85	0	345	*	87	0	362	0	707
02:00		*	87			*	99				
02:15		*	98			*	104				
02:30		*	100			*	97				
02:45		*	70	0	355	*	113	0	413	0	768
03:00		*	94			*	125				
03:15		*	93			*	133				
03:30		*	97			*	103				
03:45		*	99	0	383	*	103	0	464	0	847
04:00		*	112			*	76				
04:15		*	112			*	93				
04:30		*	121			*	98				
04:45		*	107	0	452	*	128	0	395	0	847
05:00		*	109			*	91				
05:15		*	106			*	125				
05:30		*	109			*	108				
05:45		*	100	0	424	*	99	0	423	0	847
06:00		*	98			*	106				
06:15		*	95			*	86				
06:30		*	85			*	118				
06:45		*	59	0	337	*	116	0	426	0	763
07:00		*	86			*	97				
07:15		*	75			*	88				
07:30		*	72			*	80				
07:45		*	65	0	298	*	67	0	332	0	630
08:00		*	54			*	74				
08:15		*	74			*	56				
08:30		*	63			*	51				
08:45		*	61	0	252	*	64	0	245	0	497
09:00		*	52			*	54				
09:15		*	78			*	49				
09:30		*	61			*	51				
09:45		*	60	0	251	*	52	0	206	0	457
10:00		*	41			*	43				
10:15		*	44			*	50				
10:30		*	35			*	40				
10:45		*	36	0	156	*	31	0	164	0	320
11:00		*	37			*	22				
11:15		*	38			*	32				
11:30		28	25			27	24				
11:45		87	28	115	128	72	17	99	95	214	223
Total		115	3726			99	3888			214	7614
Percent		3.0%	97.0%			2.5%	97.5%			2.7%	97.3%

Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

Site Code: A
Lincoln Avenue
Bet Seward Ave & East State St
Latitude: 40' 13.4687 North
Longitude: -75' 15.0320 West
Date Start: 12-Oct-15

Start Time	13-Oct-15 Tue	EB		Hour Totals		WB		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		17	92			20	89				
12:15		16	74			13	114				
12:30		12	75			19	104				
12:45		12	99	57	340	8	98	60	405	117	745
01:00		13	89			8	111				
01:15		11	41			14	68				
01:30		11	0			6	0				
01:45		5	0	40	130	10	0	38	179	78	309
02:00		10	0			4	0				
02:15		5	0			11	0				
02:30		8	0			5	0				
02:45		10	0	33	0	5	0	25	0	58	0
03:00		8	0			7	0				
03:15		3	0			6	0				
03:30		4	0			3	0				
03:45		2	0	17	0	4	0	20	0	37	0
04:00		7	0			5	0				
04:15		9	0			7	0				
04:30		10	0			3	0				
04:45		7	0	33	0	17	0	32	0	65	0
05:00		15	0			15	0				
05:15		18	0			23	0				
05:30		21	0			16	0				
05:45		26	0	80	0	43	0	97	0	177	0
06:00		32	0			41	0				
06:15		28	0			47	0				
06:30		45	0			64	0				
06:45		67	0	172	0	75	0	227	0	399	0
07:00		39	0			79	0				
07:15		74	0			93	0				
07:30		77	0			140	0				
07:45		86	0	276	0	161	0	473	0	749	0
08:00		117	0			154	0				
08:15		91	0			158	0				
08:30		99	0			160	0				
08:45		84	0	391	0	160	0	632	0	1023	0
09:00		99	0			133	0				
09:15		56	0			77	0				
09:30		65	0			102	0				
09:45		92	0	312	0	87	0	399	0	711	0
10:00		70	0			91	0				
10:15		62	0			78	0				
10:30		62	0			108	0				
10:45		81	0	275	0	80	0	357	0	632	0
11:00		91	0			68	0				
11:15		58	0			87	0				
11:30		78	0			82	0				
11:45		75	0	302	0	113	0	350	0	652	0
Total		1988	470			2710	584			4698	1054
Percent		80.9%	19.1%			82.3%	17.7%			81.7%	18.3%

Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

Site Code: A
Lincoln Avenue
Bet Seward Ave & East State St
Latitude: 40' 13.4687 North
Longitude: -75' 15.0320 West
Date Start: 12-Oct-15

Start Time	14-Oct-15 Wed	EB		Hour Totals		WB		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		0	102			0	94				
12:15		0	86			0	85				
12:30		0	84			0	89				
12:45		0	88	0	360	0	89	0	357	0	717
01:00		0	100			0	109				
01:15		0	78			0	101				
01:30		0	118			0	97				
01:45		0	94	0	390	0	86	0	393	0	783
02:00		0	80			0	140				
02:15		0	95			0	106				
02:30		0	102			0	134				
02:45		0	116	0	393	0	127	0	507	0	900
03:00		0	117			0	119				
03:15		0	92			0	164				
03:30		0	163			0	122				
03:45		0	127	0	499	0	113	0	518	0	1017
04:00		0	129			0	124				
04:15		0	132			0	113				
04:30		0	121			0	153				
04:45		0	135	0	517	0	122	0	512	0	1029
05:00		0	143			0	105				
05:15		0	156			0	123				
05:30		0	137			0	109				
05:45		0	139	0	575	0	126	0	463	0	1038
06:00		17	119			21	92				
06:15		35	102			54	116				
06:30		30	102			70	84				
06:45		59	93	141	416	108	122	253	414	394	830
07:00		58	96			82	107				
07:15		70	87			96	73				
07:30		75	74			123	70				
07:45		79	76	282	333	153	70	454	320	736	653
08:00		123	80			121	73				
08:15		93	88			151	67				
08:30		109	53			142	43				
08:45		116	81	441	302	160	57	574	240	1015	542
09:00		113	66			105	49				
09:15		82	69			109	38				
09:30		83	47			77	57				
09:45		71	63	349	245	93	35	384	179	733	424
10:00		42	58			91	40				
10:15		75	60			72	50				
10:30		76	51			91	35				
10:45		101	38	294	207	80	37	334	162	628	369
11:00		81	37			91	28				
11:15		67	26			76	17				
11:30		72	30			98	23				
11:45		71	29	291	122	110	25	375	93	666	215
Total		1798	4359			2374	4158			4172	8517
Percent		29.2%	70.8%			36.3%	63.7%			32.9%	67.1%

Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301

Lebanon, NJ 08833

Engineering and Construction Services

Site Code: A
Lincoln Avenue
Bet Seward Ave & East State St
Latitude: 40' 13.4687 North
Longitude: -75' 15.0320 West
Date Start: 12-Oct-15

Start Time	15-Oct-15 Thu	EB		Hour Totals		WB		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		29	95			27	36				
12:15		28	76			23	43				
12:30		14	99			18	44				
12:45		6	91	77	361	19	52	87	175	164	536
01:00		10	79			3	42				
01:15		8	84			8	49				
01:30		13	106			5	34				
01:45		5	95	36	364	5	51	21	176	57	540
02:00		3	106			6	48				
02:15		6	108			6	36				
02:30		11	111			3	62				
02:45		3	124	23	449	4	52	19	198	42	647
03:00		12	131			6	68				
03:15		6	157			8	55				
03:30		2	156			5	90				
03:45		2	131	22	575	1	63	20	276	42	851
04:00		7	149			8	70				
04:15		4	142			3	68				
04:30		4	150			7	59				
04:45		9	119	24	560	5	87	23	284	47	844
05:00		11	146			9	60				
05:15		11	133			18	69				
05:30		24	141			20	76				
05:45		36	136	82	556	32	66	79	271	161	827
06:00		21	106			34	63				
06:15		40	89			51	66				
06:30		42	126			58	48				
06:45		57	83	160	404	98	64	241	241	401	645
07:00		58	107			71	43				
07:15		68	108			98	46				
07:30		71	79			142	54				
07:45		91	81	288	375	141	45	452	188	740	563
08:00		96	93			144	36				
08:15		115	84			127	33				
08:30		115	59			146	35				
08:45		127	57	453	293	109	31	526	135	979	428
09:00		110	59			88	27				
09:15		69	51			96	25				
09:30		59	53			80	24				
09:45		81	56	319	219	91	38	355	114	674	333
10:00		73	53			82	36				
10:15		65	58			60	58				
10:30		73	43			51	43				
10:45		78	43	289	197	74	39	267	176	556	373
11:00		73	39			38	27				
11:15		58	42			45	36				
11:30		79	32			28	28				
11:45		79	26	289	139	38	22	149	113	438	252
Total		2062	4492			2239	2347			4301	6839
Percent		31.5%	68.5%			48.8%	51.2%			38.6%	61.4%

Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

Site Code: A
Lincoln Avenue
Bet Seward Ave & East State St
Latitude: 40' 13.4687 North
Longitude: -75' 15.0320 West
Date Start: 12-Oct-15

Start Time	16-Oct-15 Fri	EB		Hour Totals		WB		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		32	*			17	*				
12:15		24	*			21	*				
12:30		19	*			19	*				
12:45		19	*	94	0	14	*	71	0	165	0
01:00		9	*			17	*				
01:15		18	*			19	*				
01:30		19	*			8	*				
01:45		15	*	61	0	12	*	56	0	117	0
02:00		11	*			12	*				
02:15		11	*			10	*				
02:30		11	*			13	*				
02:45		10	*	43	0	6	*	41	0	84	0
03:00		4	*			5	*				
03:15		8	*			7	*				
03:30		5	*			6	*				
03:45		3	*	20	0	2	*	20	0	40	0
04:00		9	*			7	*				
04:15		5	*			5	*				
04:30		10	*			10	*				
04:45		8	*	32	0	8	*	30	0	62	0
05:00		13	*			9	*				
05:15		12	*			21	*				
05:30		19	*			25	*				
05:45		32	*	76	0	34	*	89	0	165	0
06:00		23	*			40	*				
06:15		38	*			45	*				
06:30		48	*			58	*				
06:45		52	*	161	0	81	*	224	0	385	0
07:00		70	*			62	*				
07:15		84	*			93	*				
07:30		83	*			114	*				
07:45		69	*	306	0	140	*	409	0	715	0
08:00		108	*			145	*				
08:15		110	*			156	*				
08:30		112	*			121	*				
08:45		98	*	428	0	122	*	544	0	972	0
09:00		93	*			106	*				
09:15		72	*			89	*				
09:30		*	*	*	*	*	*	*	*	*	*
09:45		*	*	*	*	*	*	*	*	*	*
10:00		*	*	*	*	*	*	*	*	*	*
10:15		*	*	*	*	*	*	*	*	*	*
10:30		*	*	*	*	*	*	*	*	*	*
10:45		*	*	*	*	*	*	*	*	*	*
11:00		*	*	*	*	*	*	*	*	*	*
11:15		*	*	*	*	*	*	*	*	*	*
11:30		*	*	*	*	*	*	*	*	*	*
11:45		*	*	*	*	*	*	*	*	*	*
Total		1386	0			1679	0			2705	0
Percent		100.0%	0.0%			100.0%	0.0%			100.0%	0.0%
Grand Total		7349	13047			9101	10977			16090	24024
Percent		36.0%	64.0%			45.3%	54.7%			40.1%	59.9%
ADT		ADT 10,421				AADT 10,421					

Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

Site Code: B
CR 635 East State Street
Bet Monmouth St & Lincoln Ave
Latitude: 40' 13.3399 North
Longitude: -75' 15.1030 West
Date Start: 12-Oct-15

Start Time	12-Oct-15		Morning		AM Total	Afternoon - Evening				PM Total
	EB Tube 1	EB Tube 2	WB Tube 1	WB Tube 2		EB Tube 1	EB Tube 2	WB Tube 1	WB Tube 2	
12:00	*	*	*	*	*	30	29	24	24	107
12:15	*	*	*	*	*	36	36	49	50	171
12:30	*	*	*	*	*	45	47	39	39	170
12:45	*	*	*	*	*	37	37	33	33	140
01:00	*	*	*	*	*	38	37	34	34	143
01:15	*	*	*	*	*	37	36	34	34	141
01:30	*	*	*	*	*	38	37	18	17	110
01:45	*	*	*	*	*	38	39	49	47	173
02:00	*	*	*	*	*	44	44	41	41	170
02:15	*	*	*	*	*	32	32	50	50	164
02:30	*	*	*	*	*	36	36	41	41	154
02:45	*	*	*	*	*	28	28	39	39	134
03:00	*	*	*	*	*	36	36	40	40	152
03:15	*	*	*	*	*	45	44	47	48	184
03:30	*	*	*	*	*	45	45	55	54	199
03:45	*	*	*	*	*	38	38	51	50	177
04:00	*	*	*	*	*	51	51	12	35	149
04:15	*	*	*	*	*	58	57	46	60	221
04:30	*	*	*	*	*	31	43	46	46	166
04:45	*	*	*	*	*	22	45	47	47	161
05:00	*	*	*	*	*	39	39	50	51	179
05:15	*	*	*	*	*	46	46	45	44	181
05:30	*	*	*	*	*	38	39	40	40	157
05:45	*	*	*	*	*	32	32	37	39	140
06:00	*	*	*	*	*	50	51	32	30	163
06:15	*	*	*	*	*	35	36	41	42	154
06:30	*	*	*	*	*	46	46	28	28	148
06:45	*	*	*	*	*	29	29	42	42	142
07:00	*	*	*	*	*	47	47	52	52	198
07:15	*	*	*	*	*	21	21	49	49	140
07:30	*	*	*	*	*	30	30	19	20	99
07:45	*	*	*	*	*	32	32	26	26	116
08:00	*	*	*	*	*	17	17	26	26	86
08:15	*	*	*	*	*	13	13	19	19	64
08:30	*	*	*	*	*	17	17	18	18	70
08:45	*	*	*	*	*	21	21	22	23	87
09:00	*	*	*	*	*	18	18	17	16	69
09:15	*	*	*	*	*	23	23	16	16	78
09:30	*	*	*	*	*	21	21	12	12	66
09:45	*	*	*	*	*	15	15	16	16	62
10:00	*	*	*	*	*	14	14	20	20	68
10:15	*	*	*	*	*	7	7	28	28	70
10:30	*	*	*	*	*	22	21	17	17	77
10:45	*	*	*	*	*	8	8	15	15	46
11:00	*	*	*	*	*	7	7	7	6	27
11:15	*	*	*	*	*	6	6	13	13	38
11:30	*	*	*	*	*	5	5	11	11	32
11:45	0	0	0	0	0	4	4	7	7	22
Total	0	0	0	0	0	1428	1462	1520	1555	5965
Percent	0.0%	0.0%	0.0%	0.0%		23.9%	24.5%	25.5%	26.1%	

Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

Site Code: B
CR 635 East State Street
Bet Monmouth St & Lincoln Ave
Latitude: 40' 13.3399 North
Longitude: -75' 15.1030 West
Date Start: 12-Oct-15

Start Time	13-Oct-15		Morning		AM	Afternoon - Evening				PM
	EB Tube 1	EB Tube 2	WB Tube 1	WB Tube 2	Total	EB Tube 1	EB Tube 2	WB Tube 1	WB Tube 2	Total
12:00	5	5	6	6	22	64	64	40	40	208
12:15	8	9	13	14	44	64	63	47	47	221
12:30	4	4	6	6	20	50	50	59	61	220
12:45	4	4	6	6	20	51	51	56	55	213
01:00	2	2	8	8	20	80	80	73	75	308
01:15	3	3	5	5	16	59	59	47	46	211
01:30	6	6	3	3	18	48	48	54	54	204
01:45	5	5	7	7	24	63	63	70	70	266
02:00	3	3	5	5	16	42	42	68	67	219
02:15	2	2	1	1	6	49	49	66	65	229
02:30	2	2	2	2	8	50	50	51	52	203
02:45	1	1	6	6	14	56	56	60	60	232
03:00	1	1	0	0	2	65	64	53	53	235
03:15	1	1	2	2	6	69	69	50	51	239
03:30	3	3	1	1	8	78	78	74	73	303
03:45	1	1	1	1	4	82	81	63	64	290
04:00	2	2	0	0	4	116	117	66	67	366
04:15	3	3	2	2	10	103	101	64	64	332
04:30	4	3	4	4	15	133	131	42	42	348
04:45	3	3	5	5	16	106	103	49	49	307
05:00	4	4	4	4	16	99	99	55	55	308
05:15	11	11	7	7	36	80	80	57	57	274
05:30	15	15	12	12	54	73	74	53	53	253
05:45	17	17	15	15	64	41	40	52	52	185
06:00	9	9	8	8	34	60	61	49	48	218
06:15	19	19	24	24	86	45	46	40	39	170
06:30	17	17	21	21	76	42	41	39	39	161
06:45	27	28	30	30	115	35	35	42	1	113
07:00	13	13	31	31	88	30	30	25	4	89
07:15	28	27	58	58	171	35	35	37	1	108
07:30	40	40	70	70	220	33	33	40	1	107
07:45	43	43	123	123	332	23	23	36	0	82
08:00	42	43	127	127	339	27	27	15	1	70
08:15	55	54	136	136	381	20	20	27	0	67
08:30	37	37	132	132	338	17	17	17	1	52
08:45	38	38	106	106	288	22	21	15	0	58
09:00	57	57	106	106	326	23	23	14	0	60
09:15	44	44	76	76	240	25	24	16	0	65
09:30	49	50	47	46	192	34	34	11	0	79
09:45	45	45	47	47	184	17	17	16	0	50
10:00	36	36	46	45	163	16	16	12	0	44
10:15	51	53	48	48	200	13	13	20	0	46
10:30	38	38	40	41	157	15	15	17	2	49
10:45	38	39	54	54	185	8	8	9	0	25
11:00	26	25	36	36	123	11	11	13	1	36
11:15	39	40	32	32	143	11	11	10	0	32
11:30	53	52	34	34	173	12	12	9	0	33
11:45	50	51	39	40	180	9	9	3	0	21
Total	1004	1008	1592	1593	5197	2304	2294	1901	1510	8009
Percent	19.3%	19.4%	30.6%	30.7%		28.8%	28.6%	23.7%	18.9%	

Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

Site Code: B
CR 635 East State Street
Bet Monmouth St & Lincoln Ave
Latitude: 40' 13.3399 North
Longitude: -75' 15.1030 West
Date Start: 12-Oct-15

Start Time	14-Oct-15		Morning		AM	Afternoon - Evening				PM
	EB Tube 1	EB Tube 2	WB Tube 1	WB Tube 2	Total	EB Tube 1	EB Tube 2	WB Tube 1	WB Tube 2	Total
12:00	7	7	7	0	21	64	64	0	41	169
12:15	5	5	6	0	16	67	67	0	38	172
12:30	9	9	6	0	24	50	50	19	31	150
12:45	3	3	5	0	11	51	51	42	42	186
01:00	5	5	5	0	15	62	62	43	43	210
01:15	7	7	2	0	16	53	53	43	44	193
01:30	5	5	4	0	14	51	50	34	36	171
01:45	5	5	2	0	12	38	38	47	47	170
02:00	5	5	7	0	17	46	47	48	48	189
02:15	2	2	2	0	6	53	53	42	42	190
02:30	3	3	2	0	8	42	40	42	42	166
02:45	2	2	0	0	4	81	81	51	52	265
03:00	5	5	4	0	14	63	51	53	54	221
03:15	1	1	2	0	4	76	75	43	43	237
03:30	2	2	2	0	6	77	78	48	50	253
03:45	0	0	2	0	2	82	80	55	55	272
04:00	4	4	1	0	9	121	123	40	40	324
04:15	2	2	3	0	7	84	83	30	30	227
04:30	1	2	5	0	8	123	122	25	25	295
04:45	5	5	5	0	15	91	91	43	43	268
05:00	7	7	4	0	18	105	105	35	36	281
05:15	9	9	8	1	27	86	85	43	43	257
05:30	18	18	5	0	41	64	64	42	42	212
05:45	21	21	27	9	78	48	48	38	39	173
06:00	6	6	15	15	42	57	57	40	40	194
06:15	15	15	16	16	62	54	54	38	39	185
06:30	17	17	19	19	72	41	40	28	28	137
06:45	26	26	33	34	119	33	33	33	33	132
07:00	20	21	35	35	111	39	39	20	20	118
07:15	29	29	54	54	166	39	39	24	24	126
07:30	41	41	64	64	210	30	30	17	17	94
07:45	33	33	109	109	284	21	22	17	17	77
08:00	46	46	105	105	302	44	42	12	12	110
08:15	56	55	133	133	377	28	26	20	20	94
08:30	50	50	88	88	276	19	19	19	19	76
08:45	52	51	106	106	315	27	27	18	18	90
09:00	65	66	93	93	317	33	33	16	16	98
09:15	48	48	60	61	217	19	19	12	12	62
09:30	39	40	47	47	173	16	16	19	19	70
09:45	45	44	39	41	169	15	15	8	9	47
10:00	38	38	44	45	165	24	24	11	11	70
10:15	47	47	40	40	174	12	13	14	14	53
10:30	41	41	47	47	176	13	13	13	13	52
10:45	40	40	23	23	126	13	13	5	5	36
11:00	34	33	7	27	101	9	9	6	6	30
11:15	39	40	0	41	120	10	10	9	9	38
11:30	49	49	0	37	135	14	14	6	6	40
11:45	63	62	0	34	159	9	9	2	2	22
Total	1072	1072	1293	1324	4761	2297	2277	1313	1415	7302
Percent	22.5%	22.5%	27.2%	27.8%		31.5%	31.2%	18.0%	19.4%	

Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

Site Code: B
CR 635 East State Street
Bet Monmouth St & Lincoln Ave
Latitude: 40' 13.3399 North
Longitude: -75' 15.1030 West
Date Start: 12-Oct-15

Start Time	15-Oct-15		Morning		AM	Afternoon - Evening				PM
	EB Tube 1	EB Tube 2	WB Tube 1	WB Tube 2	Total	EB Tube 1	EB Tube 2	WB Tube 1	WB Tube 2	Total
12:00	5	5	5	5	20	62	62	52	53	229
12:15	6	6	1	1	14	36	36	54	54	180
12:30	7	7	2	2	18	46	45	62	63	216
12:45	5	5	1	1	12	58	59	73	73	263
01:00	4	4	2	2	12	60	59	57	56	232
01:15	4	4	1	1	10	23	63	49	49	184
01:30	5	5	1	1	12	0	64	81	81	226
01:45	3	3	3	3	12	0	48	65	67	180
02:00	0	0	2	2	4	0	45	72	72	189
02:15	3	3	0	0	6	0	53	76	76	205
02:30	1	1	1	1	4	0	68	70	71	209
02:45	2	2	2	2	8	0	73	76	76	225
03:00	1	1	0	0	2	0	76	72	73	221
03:15	3	3	1	1	8	0	65	87	87	239
03:30	1	1	2	2	6	0	79	111	112	302
03:45	3	3	1	1	8	0	74	98	98	270
04:00	3	3	0	0	6	0	122	102	102	326
04:15	3	3	1	1	8	0	105	107	109	321
04:30	2	2	2	2	8	0	120	82	82	284
04:45	5	5	5	6	21	0	96	87	87	270
05:00	5	5	5	4	19	0	112	112	112	336
05:15	9	9	5	6	29	0	84	112	112	308
05:30	9	9	5	5	28	0	69	111	113	293
05:45	17	17	9	9	52	0	75	103	103	281
06:00	11	11	10	9	41	0	72	95	95	262
06:15	12	12	11	11	46	0	64	77	77	218
06:30	17	17	21	21	76	0	49	90	91	230
06:45	29	29	23	23	104	0	56	76	77	209
07:00	24	24	37	37	122	0	41	90	91	222
07:15	23	23	45	45	136	0	40	54	54	148
07:30	50	50	60	61	221	0	42	55	55	152
07:45	44	44	93	93	274	0	46	70	71	187
08:00	39	39	116	116	310	0	34	56	56	146
08:15	52	52	116	116	336	0	33	50	50	133
08:30	42	42	91	90	265	0	25	65	65	155
08:45	55	55	108	110	328	0	21	35	35	91
09:00	62	61	69	69	261	0	28	53	53	134
09:15	41	42	52	53	188	0	26	35	35	96
09:30	36	36	34	33	139	0	23	45	45	113
09:45	36	36	37	39	148	0	25	20	20	65
10:00	31	31	38	38	138	0	22	19	19	60
10:15	31	32	28	28	119	0	21	28	29	78
10:30	44	44	34	34	156	0	21	16	17	54
10:45	37	38	30	31	136	0	12	17	17	46
11:00	41	40	48	49	178	0	15	11	11	37
11:15	49	50	35	35	169	0	9	15	15	39
11:30	49	49	49	50	197	0	6	11	11	28
11:45	53	53	65	64	235	0	10	8	8	26
Total	1014	1016	1307	1313	4650	285	2493	3062	3078	8918
Percent	21.8%	21.8%	28.1%	28.2%		3.2%	28.0%	34.3%	34.5%	

Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

Site Code: B
CR 635 East State Street
Bet Monmouth St & Lincoln Ave
Latitude: 40' 13.3399 North
Longitude: -75' 15.1030 West
Date Start: 12-Oct-15

Start Time	16-Oct-15		Morning		AM Total	Afternoon - Evening				PM Total
	EB Tube 1	EB Tube 2	WB Tube 1	WB Tube 2		EB Tube 1	EB Tube 2	WB Tube 1	WB Tube 2	
12:00	0	6	4	4	14	*	*	*	*	*
12:15	0	4	7	7	18	*	*	*	*	*
12:30	0	5	5	4	14	*	*	*	*	*
12:45	0	4	7	7	18	*	*	*	*	*
01:00	0	9	5	5	19	*	*	*	*	*
01:15	0	6	5	5	16	*	*	*	*	*
01:30	0	4	2	2	8	*	*	*	*	*
01:45	0	0	3	3	6	*	*	*	*	*
02:00	0	1	8	8	17	*	*	*	*	*
02:15	0	7	5	5	17	*	*	*	*	*
02:30	0	5	0	0	5	*	*	*	*	*
02:45	0	1	2	2	5	*	*	*	*	*
03:00	0	4	1	1	6	*	*	*	*	*
03:15	0	1	1	1	3	*	*	*	*	*
03:30	0	5	4	4	13	*	*	*	*	*
03:45	0	1	3	3	7	*	*	*	*	*
04:00	0	7	8	8	23	*	*	*	*	*
04:15	0	2	3	3	8	*	*	*	*	*
04:30	0	8	5	5	18	*	*	*	*	*
04:45	0	1	2	2	5	*	*	*	*	*
05:00	0	6	5	5	16	*	*	*	*	*
05:15	0	10	8	8	26	*	*	*	*	*
05:30	0	18	9	9	36	*	*	*	*	*
05:45	0	11	16	16	43	*	*	*	*	*
06:00	0	17	14	14	45	*	*	*	*	*
06:15	0	14	19	19	52	*	*	*	*	*
06:30	0	22	22	22	66	*	*	*	*	*
06:45	0	24	21	21	66	*	*	*	*	*
07:00	0	14	39	39	92	*	*	*	*	*
07:15	0	33	50	50	133	*	*	*	*	*
07:30	0	40	60	60	160	*	*	*	*	*
07:45	0	44	95	95	234	*	*	*	*	*
08:00	0	39	126	126	291	*	*	*	*	*
08:15	0	72	120	120	312	*	*	*	*	*
08:30	0	68	124	125	317	*	*	*	*	*
08:45	0	55	121	123	299	*	*	*	*	*
09:00	0	60	88	88	236	*	*	*	*	*
09:15	0	42	53	53	148	*	*	*	*	*
09:30	0	38	46	48	132	*	*	*	*	*
09:45	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*
10:15	*	*	*	*	*	*	*	*	*	*
10:30	*	*	*	*	*	*	*	*	*	*
10:45	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*
11:15	*	*	*	*	*	*	*	*	*	*
11:30	*	*	*	*	*	*	*	*	*	*
11:45	*	*	*	*	*	*	*	*	*	*
Total	0	708	1116	1120	2944	0	0	0	0	0
Percent	0.0%	24.0%	37.9%	38.0%		0.0%	0.0%	0.0%	0.0%	
Grand Total	3090	3804	5308	5350	17552	6314	8526	7796	7558	30194
Percent	17.6%	21.7%	30.2%	30.5%		20.9%	28.2%	25.8%	25.0%	

ADT

ADT 6,658

AADT 6,658

Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

Site Code: C
North Clinton Avenue
Bet Monmouth St & Lincoln Ave
Latitude: 40' 13.4725 North
Longitude: -75' 14.7733 West
Date Start: 12-Oct-15

Start Time	12-Oct-15 Mon	NB		Hour Totals		SB		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		*	*			*	*				
12:15		*	23			*	19				
12:30		*	29			*	14				
12:45		*	38	0	90	*	17	0	50	0	140
01:00		*	32			*	24				
01:15		*	35			*	23				
01:30		*	33			*	15				
01:45		*	36	0	136	*	12	0	74	0	210
02:00		*	27			*	16				
02:15		*	36			*	22				
02:30		*	33			*	29				
02:45		*	32	0	128	*	20	0	87	0	215
03:00		*	24			*	27				
03:15		*	37			*	23				
03:30		*	36			*	37				
03:45		*	30	0	127	*	27	0	114	0	241
04:00		*	38			*	19				
04:15		*	38			*	10				
04:30		*	22			*	14				
04:45		*	32	0	130	*	34	0	77	0	207
05:00		*	31			*	25				
05:15		*	28			*	24				
05:30		*	49			*	17				
05:45		*	39	0	147	*	23	0	89	0	236
06:00		*	34			*	24				
06:15		*	40			*	22				
06:30		*	21			*	23				
06:45		*	28	0	123	*	22	0	91	0	214
07:00		*	22			*	20				
07:15		*	23			*	18				
07:30		*	30			*	17				
07:45		*	24	0	99	*	21	0	76	0	175
08:00		*	16			*	11				
08:15		*	20			*	13				
08:30		*	18			*	12				
08:45		*	17	0	71	*	6	0	42	0	113
09:00		*	19			*	6				
09:15		*	25			*	7				
09:30		*	18			*	9				
09:45		*	14	0	76	*	9	0	31	0	107
10:00		*	12			*	4				
10:15		*	9			*	10				
10:30		*	10			*	4				
10:45		*	10	0	41	*	6	0	24	0	65
11:00		*	6			*	2				
11:15		*	8			*	6				
11:30		*	10			*	5				
11:45		*	12	0	36	*	5	0	18	0	54
Total		0	1204			0	773			0	1977
Percent		0.0%	100.0%			0.0%	100.0%			0.0%	100.0%

Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

Site Code: C
North Clinton Avenue
Bet Monmouth St & Lincoln Ave
Latitude: 40' 13.4725 North
Longitude: -75' 14.7733 West
Date Start: 12-Oct-15

Start Time	13-Oct-15 Tue	NB		Hour Totals		SB		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		8	40			3	26				
12:15		4	48			0	29				
12:30		3	35			3	27				
12:45		3	44	18	167	3	28	9	110	27	277
01:00		3	44			1	36				
01:15		3	37			2	24				
01:30		1	37			4	27				
01:45		6	44	13	162	0	29	7	116	20	278
02:00		1	32			1	35				
02:15		1	42			0	32				
02:30		4	46			2	21				
02:45		1	60	7	180	1	46	4	134	11	314
03:00		1	71			0	30				
03:15		3	78			1	52				
03:30		3	79			1	46				
03:45		2	72	9	300	1	42	3	170	12	470
04:00		2	100			0	24				
04:15		3	77			1	46				
04:30		2	68			0	57				
04:45		0	63	7	308	1	47	2	174	9	482
05:00		2	79			3	31				
05:15		3	47			1	23				
05:30		2	55			7	43				
05:45		15	47	22	228	2	29	13	126	35	354
06:00		12	57			5	30				
06:15		11	41			7	12				
06:30		17	49			13	30				
06:45		27	41	67	188	17	21	42	93	109	281
07:00		21	33			12	15				
07:15		38	19			11	25				
07:30		51	21			21	26				
07:45		50	26	160	99	40	19	84	85	244	184
08:00		72	29			52	14				
08:15		84	19			66	17				
08:30		84	12			60	14				
08:45		67	10	307	70	57	9	235	54	542	124
09:00		58	30			33	15				
09:15		43	46			41	19				
09:30		44	26			34	10				
09:45		55	15	200	117	32	7	140	51	340	168
10:00		44	6			28	9				
10:15		36	18			28	4				
10:30		40	16			24	12				
10:45		52	16	172	56	18	4	98	29	270	85
11:00		41	10			31	6				
11:15		35	3			33	2				
11:30		37	10			24	4				
11:45		51	4	164	27	32	3	120	15	284	42
Total		1146	1902			757	1157			1903	3059
Percent		37.6%	62.4%			39.6%	60.4%			38.4%	61.6%

Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

Site Code: C
North Clinton Avenue
Bet Monmouth St & Lincoln Ave
Latitude: 40' 13.4725 North
Longitude: -75' 14.7733 West
Date Start: 12-Oct-15

Start Time	14-Oct-15 Wed	NB		Hour Totals		SB		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		7	51			3	33				
12:15		2	43			2	22				
12:30		1	47			4	33				
12:45		3	64	13	205	3	34	12	122	25	327
01:00		1	52			2	41				
01:15		5	52			3	23				
01:30		2	38			3	25				
01:45		3	39	11	181	3	40	11	129	22	310
02:00		4	36			4	26				
02:15		2	46			1	27				
02:30		2	50			1	31				
02:45		3	53	11	185	2	43	8	127	19	312
03:00		3	75			0	41				
03:15		2	85			1	56				
03:30		5	57			2	52				
03:45		1	58	11	275	0	35	3	184	14	459
04:00		3	110			0	33				
04:15		1	64			0	42				
04:30		1	68			5	49				
04:45		5	66	10	308	1	43	6	167	16	475
05:00		1	70			4	47				
05:15		7	73			3	30				
05:30		7	50			5	22				
05:45		7	52	22	245	11	33	23	132	45	377
06:00		15	40			4	25				
06:15		14	36			7	24				
06:30		19	34			6	22				
06:45		33	27	81	137	16	14	33	85	114	222
07:00		20	36			13	15				
07:15		36	32			22	19				
07:30		44	20			22	13				
07:45		55	29	155	117	37	9	94	56	249	173
08:00		77	22			45	11				
08:15		76	19			67	12				
08:30		96	23			68	13				
08:45		68	26	317	90	56	10	236	46	553	136
09:00		45	16			46	11				
09:15		49	16			37	5				
09:30		38	12			26	7				
09:45		28	8	160	52	27	7	136	30	296	82
10:00		31	31			24	6				
10:15		31	14			25	3				
10:30		49	10			26	11				
10:45		44	8	155	63	24	5	99	25	254	88
11:00		37	13			34	7				
11:15		43	8			28	0				
11:30		37	5			26	6				
11:45		46	12	163	38	21	5	109	18	272	56
Total		1109	1896			770	1121			1879	3017
Percent		36.9%	63.1%			40.7%	59.3%			38.4%	61.6%

Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

Site Code: C
North Clinton Avenue
Bet Monmouth St & Lincoln Ave
Latitude: 40' 13.4725 North
Longitude: -75' 14.7733 West
Date Start: 12-Oct-15

Start Time	15-Oct-15 Thu	NB		Hour Totals		SB		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		4	68			4	21				
12:15		7	78			1	34				
12:30		10	66			1	33				
12:45		3	57	24	269	1	40	7	128	31	397
01:00		2	74			4	40				
01:15		5	52			3	29				
01:30		4	73			0	22				
01:45		1	62	12	261	0	34	7	125	19	386
02:00		3	71			3	24				
02:15		0	70			0	38				
02:30		0	76			0	38				
02:45		4	81	7	298	1	49	4	149	11	447
03:00		1	25			1	11				
03:15		2	94			1	37				
03:30		6	100			1	52				
03:45		0	85	9	304	0	30	3	130	12	434
04:00		2	117			0	27				
04:15		2	105			0	61				
04:30		3	88			0	46				
04:45		5	99	12	409	1	42	1	176	13	585
05:00		4	77			4	48				
05:15		5	94			2	37				
05:30		4	81			6	32				
05:45		10	61	23	313	3	39	15	156	38	469
06:00		13	64			9	31				
06:15		10	63			10	34				
06:30		19	55			7	22				
06:45		22	51	64	233	12	22	38	109	102	342
07:00		17	49			13	25				
07:15		40	40			16	15				
07:30		27	31			27	17				
07:45		58	36	142	156	27	29	83	86	225	242
08:00		77	47			51	18				
08:15		64	24			58	15				
08:30		91	32			74	16				
08:45		57	32	289	135	56	9	239	58	528	193
09:00		44	24			37	20				
09:15		32	30			33	8				
09:30		31	24			23	6				
09:45		40	22	147	100	29	9	122	43	269	143
10:00		45	17			21	10				
10:15		45	15			16	11				
10:30		52	16			32	6				
10:45		48	17	190	65	29	6	98	33	288	98
11:00		55	9			30	8				
11:15		52	12			26	7				
11:30		71	11			28	4				
11:45		61	9	239	41	30	4	114	23	353	64
Total		1158	2584			731	1216			1889	3800
Percent		30.9%	69.1%			37.5%	62.5%			33.2%	66.8%

Greenman-Pedersen, Inc.

100 Corporate Drive, Suite 301
Lebanon, NJ 08833

Engineering and Construction Services

Site Code: C
North Clinton Avenue
Bet Monmouth St & Lincoln Ave
Latitude: 40' 13.4725 North
Longitude: -75' 14.7733 West
Date Start: 12-Oct-15

Start Time	16-Oct-15 Fri	NB		Hour Totals		SB		Hour Totals		Combined Totals	
		Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon	Morning	Afternoon
12:00		10	*			4	*				
12:15		6	*			5	*				
12:30		9	*			5	*				
12:45		6	*	31	0	4	*	18	0	49	0
01:00		4	*			2	*				
01:15		7	*			6	*				
01:30		6	*			4	*				
01:45		5	*	22	0	0	*	12	0	34	0
02:00		6	*			1	*				
02:15		1	*			0	*				
02:30		5	*			0	*				
02:45		0	*	12	0	2	*	3	0	15	0
03:00		1	*			2	*				
03:15		1	*			3	*				
03:30		1	*			0	*				
03:45		1	*	4	0	0	*	5	0	9	0
04:00		4	*			0	*				
04:15		4	*			1	*				
04:30		4	*			3	*				
04:45		0	*	12	0	3	*	7	0	19	0
05:00		1	*			5	*				
05:15		3	*			3	*				
05:30		7	*			4	*				
05:45		8	*	19	0	4	*	16	0	35	0
06:00		17	*			5	*				
06:15		19	*			8	*				
06:30		19	*			17	*				
06:45		26	*	81	0	16	*	46	0	127	0
07:00		22	*			9	*				
07:15		36	*			18	*				
07:30		45	*			22	*				
07:45		55	*	158	0	37	*	86	0	244	0
08:00		71	*			54	*				
08:15		76	*			56	*				
08:30		83	*			62	*				
08:45		65	*	295	0	70	*	242	0	537	0
09:00		49	*			32	*				
09:15		41	*			30	*				
09:30		33	*			35	*				
09:45		37	*	160	0	20	*	117	0	277	0
10:00		*	*	*	*	*	*	*	*	*	*
10:15		*	*	*	*	*	*	*	*	*	*
10:30		*	*	*	*	*	*	*	*	*	*
10:45		*	*	*	*	*	*	*	*	*	*
11:00		*	*	*	*	*	*	*	*	*	*
11:15		*	*	*	*	*	*	*	*	*	*
11:30		*	*	*	*	*	*	*	*	*	*
11:45		*	*	*	*	*	*	*	*	*	*
Total		794	0			552	0			1346	0
Percent		100.0%	0.0%			100.0%	0.0%			100.0%	0.0%
Grand Total		4207	7586			2810	4267			7017	11853
Percent		35.7%	64.3%			39.7%	60.3%			37.2%	62.8%
ADT		ADT 4,881				AADT 4,881					

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL MONITORING

COUNTY: Mercer
MUNICIPALITY: Trenton City

INTERSECTION: North-South Street & East-West Street
STREETS: S Clinton Ave & E State St
SR/SEG/OFF: 11111547_/0.34 sr/seg/off

DATE: 5/15/2014
DAY: Thursday
WEATHER: FAIR

FILE NUMBER: 109067
TIME PERIOD: AM

AM INTERVAL COUNTS

STARTING TIME	S Clinton Ave				L	2-SOUTHBOUND				L	E State St				L	4-WESTBOUND			N-S TOTAL	E-W TOTAL	TOTAL
	L	1-NORTHBOUND		TOTAL		S	R	TOTAL	S		R	TOTAL	S	R		TOTAL	S	R			
7:00 7:15	18	10	2	30	2	7	1	10	3	27	21	51	1	21	2	24	40	75	115		
7:15 7:30	29	20	0	49	4	20	6	30	6	27	23	56	2	48	2	52	79	108	187		
7:30 7:45	32	20	4	56	5	22	6	33	4	47	36	87	2	55	0	57	89	144	233		
7:45 8:00	31	31	10	72	2	26	4	32	6	28	32	66	4	78	13	95	104	161	265		
8:00 8:15	41	33	5	79	10	44	6	60	7	56	38	101	4	111	6	121	139	222	361		
8:15 8:30	35	40	8	83	11	42	13	66	10	44	35	89	2	102	5	109	149	198	347		
8:30 8:45	34	36	7	77	18	60	9	87	8	67	31	106	4	91	10	105	164	211	375		
8:45 9:00	40	36	9	85	14	43	8	65	9	43	39	91	8	100	7	115	150	206	356		
TOTALS	260	226	45	531	66	264	53	383	53	339	255	647	27	606	45	678	914	1325	2239		
P.H. am																					
P.H. pm																					

HOURLY VOLUMES

STARTING TIME	S Clinton Ave				L	2-SOUTHBOUND				L	E State St				L	4-WESTBOUND			N-S TOTAL	E-W TOTAL	TOTAL
	L	1-NORTHBOUND		TOTAL		S	R	TOTAL	S		R	TOTAL	S	R		TOTAL	S	R			
7:00 8:00	110	81	16	207	13	75	17	105	19	129	112	260	9	202	17	228	312	488	800		
8:00 9:00	150	145	29	324	53	189	36	278	34	210	143	387	18	404	28	450	602	837	1439		
TOTALS	260	226	45	531	66	264	53	383	53	339	255	647	27	606	45	678	914	1325	2239		

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL MONITORING

COUNTY: Mercer
MUNICIPALITY: Trenton City

INTERSECTION: North-South Street & East-West Street
STREETS: S Clinton Ave E State St
SR/SEG/OFF: 1111547_/0.34 sr/seg/off

DATE: 5/15/2014
DAY: Thursday
WEATHER: FAIR

FILE NUMBER: 109067
TIME PERIOD: MID

AM INTERVAL COUNTS

STARTING TIME	S Clinton Ave				L	E State St				L	4-WESTBOUND			N-S TOTAL	E-W TOTAL	TOTAL			
	1-NORTHBOUND	2-SOUTHBOUND				3-EASTBOUND	4-WESTBOUND												
	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL
11:00 11:15	24	16	5	45	4	22	13	39	12	32	25	69	1	43	3	47	84	116	200
11:15 11:30	18	16	2	36	1	30	15	46	11	36	31	78	1	46	1	48	82	126	208
11:30 11:45	33	13	1	47	3	41	12	56	8	39	27	74	4	32	1	37	103	111	214
11:45 12:00	23	25	5	53	8	22	14	44	12	32	33	77	6	31	3	40	97	117	214
12:00 12:15	25	17	5	47	3	24	9	36	8	50	27	85	3	40	5	48	83	133	216
12:15 12:30	18	23	6	47	6	21	6	33	13	40	31	84	7	35	6	48	80	132	212
12:30 12:45	20	18	6	44	7	21	13	41	14	42	33	89	2	35	3	40	85	129	214
12:45 1:00	24	23	8	55	9	26	4	39	13	37	32	82	3	40	2	45	94	127	221
TOTALS	185	151	38	374	41	207	86	334	91	308	239	638	27	302	24	353	708	991	1699
P.H. am																			
P.H. pm																			

HOURLY VOLUMES

STARTING TIME	S Clinton Ave				L	E State St				L	4-WESTBOUND			N-S TOTAL	E-W TOTAL	TOTAL			
	1-NORTHBOUND	2-SOUTHBOUND				3-EASTBOUND	4-WESTBOUND												
	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL
11:00 12:00	98	70	13	181	16	115	54	185	43	139	116	298	12	152	8	172	366	470	836
12:00 1:00	87	81	25	193	25	92	32	149	48	169	123	340	15	150	16	181	342	521	863
TOTALS	185	151	38	374	41	207	86	334	91	308	239	638	27	302	24	353	708	991	1699

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL MONITORING

COUNTY: Mercer
MUNICIPALITY: Trenton City
INTERSECTION: North-South Street & East-West Street
STREETS: S Clinton Ave E State St
SR/SEG/OFF: 11111547_/0.34 sr/seg/off
DATE: 5/15/2014
DAY: Thursday
WEATHER: FAIR
FILE NUMBER: 109067
TIME PERIOD: PM

PM INTERVAL COUNTS

STARTING TIME	S Clinton Ave				E State St				L	N-S				E-W		TOTAL			
	1-NORTHBOUND				2-SOUTHBOUND					3-EASTBOUND				4-WESTBOUND					
	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL
3:00 3:15	41	31	6	78	7	45	11	63	8	71	35	114	6	42	7	55	141	169	310
3:15 3:30	25	32	5	62	12	60	17	89	20	63	32	115	3	53	9	65	151	180	331
3:30 3:45	39	17	5	61	15	45	16	76	16	53	31	100	3	71	1	75	137	175	312
3:45 4:00	39	34	3	76	8	47	14	69	18	59	45	122	4	36	1	41	145	163	308
4:00 4:15	29	33	7	69	16	43	25	84	4	84	36	124	6	55	3	64	153	188	341
4:15 4:30	32	27	6	65	14	45	17	76	7	93	41	141	4	73	7	84	141	225	366
4:30 4:45	34	31	1	66	7	49	24	80	14	114	28	156	14	67	5	86	146	242	388
4:45 5:00	29	24	2	55	14	47	14	75	8	112	47	167	8	68	3	79	130	246	376
5:00 5:15	30	23	5	58	17	41	11	69	10	84	34	128	6	59	3	68	127	196	323
5:15 5:30	37	25	4	66	11	60	9	80	9	76	38	123	2	42	7	51	146	174	320
5:30 5:45	44	15	1	60	8	34	10	52	5	62	35	102	1	38	2	41	112	143	255
5:45 6:00	31	20	6	57	2	41	8	51	5	40	33	78	9	39	3	51	108	129	237
TOTALS P.H. am P.H. pm	410	312	51	773	131	557	176	864	124	911	435	1470	66	643	51	760	1637	2230	3867

HOURLY VOLUMES

STARTING TIME	S Clinton Ave				E State St				L	N-S				E-W		TOTAL			
	1-NORTHBOUND				2-SOUTHBOUND					3-EASTBOUND				4-WESTBOUND					
	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL
3:00 4:00	144	114	19	277	42	197	58	297	62	246	143	451	16	202	18	236	574	687	1261
4:00 5:00	124	115	16	255	51	184	80	315	33	403	152	588	32	263	18	313	570	901	1471
5:00 6:00	142	83	16	241	38	176	38	252	29	262	140	431	18	178	15	211	493	642	1135
TOTALS	410	312	51	773	131	557	176	864	124	911	435	1470	66	643	51	760	1637	2230	3867

DELAWARE VALLEY REGIONAL PLANNING COMISSION

OFFICE OF TRAVEL MONITORING

COUNTY Mercer
 MUNICIPALITY Trenton City

DATE: #####
 DAY: Tuesday

OBSERVER: SB
 WEATHER: Fair
 MACHINE: _____

INTERSECTION 1 CR 635 E State St West 4 Chestnut Ave
2 Wall St 5 Raoul Wallenberg Ave
3 CR 635 E State St East

AM INTERVAL VEHICLE COUNTS

TIME PERIOD	1				2				3				4				5			
	2	3	4	5	3	4	5	1	4	5	1	2	5	1	2	3	1	2	3	4
7:00-7:15	0	14	5	4	0	0	0	0	0	6	32	0	0	0	0	0	1	2	9	14
7:15-7:30	0	20	5	2	0	0	0	0	0	8	42	0	0	0	0	0	0	4	12	8
7:30-7:45	0	30	6	5	0	0	0	0	1	17	70	4	0	0	0	0	4	2	11	5
7:45-8:00	0	24	6	9	0	0	0	0	1	26	99	5	0	0	0	0	3	2	8	5
8:00-8:15	0	38	10	7	0	0	0	0	0	21	89	2	0	0	0	0	6	1	12	6
8:15-8:30	0	30	8	10	0	0	0	0	3	21	115	5	0	0	0	0	3	1	8	8
8:30-8:45	2	40	5	5	0	0	0	0	0	22	103	6	0	0	0	0	9	2	7	2
8:45-9:00	0	38	5	2	0	0	0	0	0	24	105	4	0	0	0	0	3	5	11	9
TOTAL	2	234	50	44	0	0	0	0	5	145	655	26	0	0	0	0	29	19	78	57

DELAWARE VALLEY REGIONAL PLANNING COMISSION

OFFICE OF TRAVEL MONITORING

DATE: 6/24/2014

OBSERVER: SB

DAY: Tuesday

WEATHER: Fair

MACHINE: _____

COUNTY Mercer

MUNICIPALITY Trenton City

MID INTERVAL VEHICLE COUNTS

INTERSECTION 1 CR 635 E State St West 4 Chestnut Ave
2 Wall St 5 Raoul Wallenberg Ave
3 CR 635 E State St East

TIME PERIOD	1				2				3				4				5			
	2	3	4	5	3	4	5	1	4	5	1	2	5	1	2	3	1	2	3	4
11:00-11:15	1	32	6	5	0	0	0	0	1	9	27	1	0	0	0	0	4	1	7	7
11:15-11:30	1	22	7	5	0	0	0	0	0	7	44	1	0	0	0	0	6	1	10	10
11:30-11:45	0	38	6	3	0	0	0	0	3	4	55	3	0	0	0	0	4	2	11	6
11:45-12:00	0	11	2	1	0	0	0	0	2	11	39	2	0	0	0	0	2	7	7	6
12:00-12:15	1	51	7	2	0	0	0	0	0	3	41	2	0	0	0	0	4	1	13	12
12:15-12:30	1	43	8	6	0	0	0	0	0	8	32	3	0	0	0	0	0	2	4	3
12:30-12:45	1	31	7	3	0	0	0	0	1	3	37	4	0	0	0	0	4	2	9	7
12:45-1:00	0	41	6	9	0	0	0	0	2	5	35	2	0	0	0	0	2	3	13	4
TOTAL	5	269	49	34	0	0	0	0	9	50	310	18	0	0	0	0	26	19	74	55

DELAWARE VALLEY REGIONAL PLANNING COMISSION

OFFICE OF TRAVEL MONITORING

COUNTY Mercer
MUNICIPALITY Trenton City

DATE: #####
DAY: Tuesday

OBSERVER: SB
WEATHER: Fair
MACHINE:

INTERSECTION 1 CR 635 E State St West 4 Chestnut Ave
 2 Wall St 5 Raoul Wallenberg Ave
 3 CR 635 E State St East

PM INTERVAL VEHICLE COUNTS

TIME PERIOD	1				2				3				4				5			
	2	3	4	5	3	4	5	1	4	5	1	2	5	1	2	3	1	2	3	4
4:00-4:15	3	103	22	9	0	0	0	0	0	9	34	1	0	0	0	0	6	10	37	39
4:15-4:30	0	95	15	5	0	0	0	0	2	4	44	3	0	0	0	0	15	1	26	19
4:30-4:45	0	117	22	6	0	0	0	0	1	7	36	4	0	0	0	0	5	4	33	31
4:45-5:00	1	97	14	2	0	0	0	0	3	6	40	2	0	0	0	0	5	4	28	18
5:00-5:15	0	110	8	3	0	0	0	0	0	12	48	5	0	0	0	0	9	3	30	23
5:15-5:30	0	60	12	3	0	0	0	0	2	2	34	6	0	0	0	0	5	5	10	20
5:30-5:45	1	51	6	3	0	0	0	0	1	4	35	3	0	0	0	0	1	2	9	9
5:45-6:00	0	47	8	4	0	0	0	0	1	4	41	2	0	0	0	0	2	2	20	7
TOTAL	5	680	107	35	0	0	0	0	10	48	312	26	0	0	0	0	48	31	193	166

COMMENTS _____

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL MONITORING

COUNTY: Mercer
MUNICIPALITY: Trenton City

INTERSECTION: North-South Street & East-West Street
STREETS: CR 622 - South Olden Ave CR 635 - East State Street
SR/SEG/OFF: 11000622_/2.92 sr/seg/off

DATE: 3/18/2014
DAY: Tuesday
WEATHER: FAIR

FILE NUMBER: 109146
TIME PERIOD: AM

AM INTERVAL COUNTS

STARTING TIME	CR 622 - South Olden Ave								CR 635 - East State Street								N-S TOTAL	E-W TOTAL	TOTAL
	1-NORTHBOUND				2-SOUTHBOUND				3-EASTBOUND				4-WESTBOUND						
	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL			
7:00 7:15	5	105	8	118	12	64	8	84	23	20	6	49	6	27	28	61	202	110	312
7:15 7:30	6	106	3	115	11	82	12	105	21	26	4	51	0	41	28	69	220	120	340
7:30 7:45	10	134	4	148	14	92	14	120	37	35	8	80	2	45	25	72	268	152	420
7:45 8:00	15	121	4	140	16	112	25	153	33	24	2	59	4	74	53	131	293	190	483
8:00 8:15	15	121	8	144	13	104	32	149	43	28	7	73	7	68	58	133	293	206	499
8:15 8:30	14	145	7	166	13	111	16	140	53	28	10	91	4	73	51	128	306	219	525
8:30 8:45	15	157	1	173	13	93	21	127	48	31	11	90	6	71	36	113	300	203	503
8:45 9:00	11	143	2	156	13	85	18	116	38	31	11	80	7	61	54	122	272	202	474
TOTALS P.H. am P.H. pm	91	1032	37	1160	105	743	146	994	296	223	54	573	36	460	333	829	2154	1402	3556

HOURLY VOLUMES

STARTING TIME	CR 622 - South Olden Ave								CR 635 - East State Street								N-S TOTAL	E-W TOTAL	TOTAL
	1-NORTHBOUND				2-SOUTHBOUND				3-EASTBOUND				4-WESTBOUND						
	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL			
7:00 8:00	36	466	19	521	53	350	59	462	114	105	20	239	12	187	134	333	983	572	1555
8:00 9:00	55	566	18	639	52	393	87	532	182	118	34	334	24	273	199	496	1171	830	2001
TOTALS	91	1032	37	1160	105	743	146	994	296	223	54	573	36	460	333	829	2154	1402	3556

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL MONITORING

COUNTY: Mercer
MUNICIPALITY: Trenton City

INTERSECTION: North-South Street & East-West Street
STREETS: CR 622 - South Olden Ave CR 635 - East State Street
SR/SEG/OFF: 11000622_/2.92 sr/seg/off

DATE: 3/18/2014
DAY: Tuesday
WEATHER: FAIR

FILE NUMBER: 109146
TIME PERIOD: MID

AM INTERVAL COUNTS

STARTING TIME	CR 622 - South Olden Ave				CR 635 - East State Street				L	3-EASTBOUND			4-WESTBOUND			N-S TOTAL	E-W TOTAL	TOTAL	
	1-NORTHBOUND		2-SOUTHBOUND		3-EASTBOUND		4-WESTBOUND			S	R	TOTAL	L	S	R				TOTAL
	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL
11:00 11:15	5	82	6	93	14	95	11	120	38	21	14	73	9	34	33	76	213	149	362
11:15 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 12:45	12	91	8	111	20	117	25	162	28	33	6	67	4	28	33	65	273	132	405
12:45 1:00	7	100	3	110	12	110	23	145	30	35	18	83	7	28	33	68	255	151	406
TOTALS	24	273	17	314	46	322	59	427	96	89	38	223	20	90	99	209	741	432	1173
P.H. am																			
P.H. pm																			

HOURLY VOLUMES

STARTING TIME	CR 622 - South Olden Ave				CR 635 - East State Street				L	3-EASTBOUND			4-WESTBOUND			N-S TOTAL	E-W TOTAL	TOTAL	
	1-NORTHBOUND		2-SOUTHBOUND		3-EASTBOUND		4-WESTBOUND			S	R	TOTAL	L	S	R				TOTAL
	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	TOTAL	TOTAL	TOTAL
11:00 12:00	5	82	6	93	14	95	11	120	38	21	14	73	9	34	33	76	213	149	362
12:00 1:00	19	191	11	221	32	227	48	307	58	68	24	150	11	56	66	133	528	283	811
TOTALS	24	273	17	314	46	322	59	427	96	89	38	223	20	90	99	209	741	432	1173

DELAWARE VALLEY REGIONAL PLANNING COMMISSION
OFFICE OF TRAVEL MONITORING

COUNTY: Mercer
MUNICIPALITY: Trenton City

INTERSECTION: North-South Street & East-West Street
STREETS: CR 622 - South Olden Ave CR 635 - East State Street
SR/SEG/OFF: 11000622_/2.92 sr/seg/off

DATE: 3/18/2014
DAY: Tuesday
WEATHER: FAIR

FILE NUMBER: 109146
TIME PERIOD: PM

PM INTERVAL COUNTS

STARTING TIME	CR 622 - South Olden Ave								CR 635 - East State Street								N-S TOTAL	E-W TOTAL	TOTAL
	1-NORTHBOUND				2-SOUTHBOUND				3-EASTBOUND				4-WESTBOUND						
	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL			
4:00 4:15	7	122	6	135	13	112	21	146	43	57	13	113	12	39	52	103	281	216	497
4:15 4:30	11	109	5	125	16	123	20	159	42	58	17	117	10	51	51	112	284	229	513
4:30 4:45	6	127	5	138	11	117	30	158	46	53	18	117	12	31	39	82	296	199	495
4:45 5:00	4	107	3	114	26	108	30	164	44	85	17	146	7	39	49	95	278	241	519
5:00 5:15	9	123	8	140	18	125	22	165	40	78	23	141	10	36	51	97	305	238	543
5:15 5:30	13	90	4	107	19	121	27	167	33	57	23	113	7	41	53	101	274	214	488
5:30 5:45	9	103	6	118	14	124	25	163	33	40	24	97	9	35	40	84	281	181	462
5:45 6:00	10	122	5	137	14	126	21	161	39	46	14	99	5	46	42	93	298	192	490
TOTALS P.H. am P.H. pm	69	903	42	1014	131	956	196	1283	320	474	149	943	72	318	377	767	2297	1710	4007

HOURLY VOLUMES

STARTING TIME	CR 622 - South Olden Ave								CR 635 - East State Street								N-S TOTAL	E-W TOTAL	TOTAL
	1-NORTHBOUND				2-SOUTHBOUND				3-EASTBOUND				4-WESTBOUND						
	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL	L	S	R	TOTAL			
4:00 5:00	28	465	19	512	66	460	101	627	175	253	65	493	41	160	191	392	1139	885	2024
5:00 6:00	41	438	23	502	65	496	95	656	145	221	84	450	31	158	186	375	1158	825	1983
TOTALS	69	903	42	1014	131	956	196	1283	320	474	149	943	72	318	377	767	2297	1710	4007



New Jersey Department of Transportation

Daily Volume from 04/18/2012 through 04/20/2012

Site Names: 5-5-634, , Lincoln Ave-.16, 11111542__, Trenton City
 County: MERCER
 Funct. Class: Urban Minor Arterial
 Location: Bet S Clinton Ave and CO 635

Seasonal Factor Group: REGION 6
 Daily Factor Group: REGION 6
 Axle Factor Group: REGION 6
 Growth Factor Group:

	Sun 04/15/2012			Mon 04/16/2012			Tue 04/17/2012			Wed 04/18/2012			Thu 04/19/2012			Fri 04/20/2012			Sat 04/21/2012		
	ROAD	W	E	ROAD	W	E	ROAD	W	E	ROAD	W	E	ROAD	W	E	ROAD	W	E	ROAD	W	E
00:00													146	59	87	169	84	85			
01:00													90	48	42	117	57	60			
02:00													56	23	33	95	47	48			
03:00													29	15	14	43	20	23			
04:00													40	20	20	48	26	22			
05:00													124	71	53	128	74	54			
06:00													327	197	130	303	183	120			
07:00													586	323	263	623	342	281			
08:00													973	502	471	998	549	449			
09:00													606	312	294	624	302	322			
10:00									471	178	293	484	236	248	560	265	295				
11:00									539	222	317	584	261	323	634	300	334				
12:00									690	326	364	624	289	335							
13:00									625	306	319	660	294	366							
14:00									713	313	400	748	345	403							
15:00									969	410	559	940	442	498							
16:00									986	381	605	958	383	575							
17:00									924	408	516	948	394	554							
18:00									701	323	378	779	387	392							
19:00									606	299	307	617	306	311							
20:00									522	226	296	593	265	328							
21:00									400	179	221	458	237	221							
22:00									299	126	173	389	182	207							
23:00									220	94	126	275	111	164							
Volume									8,665	3,791	4,874	12,034	5,702	6,332	3,708	1,949	1,759				
AM Peak Vol												973	502	471	998	549	449				
AM Peak Fct												1.00	1.00	1.00	1.00	1.00	1.00				
AM Peak Hr												8:00	8:00	8:00	8:00	8:00	8:00				
PM Peak Vol									986	410	605	958	442	575							
PM Peak Fct									1.00	1.00	1.00	1.00	1.00	1.00							
PM Peak Hr									16:00	15:00	16:00	16:00	15:00	16:00							
Seasonal Fct									0.969	0.969	0.969	0.969	0.969	0.969	0.969	0.969	0.969				
Daily Fct									1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000				
Axle Fct									0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500	0.500				
Pulse Fct									2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000				

New Jersey Department of Transportation

Daily Volume from 09/23/2013 through 09/25/2013

Site Names: 5-6-367, , Wall St-.14, 11111548__, Trenton City
 County: MERCER
 Funct. Urban Collector
 Location: Bet State St and Clinton Ave

Seasonal Factor Group: RG3_FC17
 Daily Factor Group: RG3_FC17
 Axle Factor Group: RG3_FC17
 Growth Factor Group:

	Sun 09/22/2013			Mon 09/23/2013			Tue 09/24/2013			Wed 09/25/2013			Thu 09/26/2013			Fri 09/27/2013			Sat 09/28/2013			
	ROAD	S	N	ROAD	S	N	ROAD	S	N	ROAD	S	N	ROAD	S	N	ROAD	S	N	ROAD	S	N	
00:00							0		0	2		2										
01:00							0		0	0		0										
02:00							1		1	0		0										
03:00							2		2	2		2										
04:00							1		1	2		2										
05:00							3		3	3		3										
06:00							7		7	8		8										
07:00							25		25	22		22										
08:00							27		27	24		24										
09:00							30		30	20		20										
10:00							18		18	14		14										
11:00							25		25	29		29										
12:00				21		21	22		22													
13:00				27		27	20		20													
14:00				23		23	29		29													
15:00				31		31	20		20													
16:00				31		31	23		23													
17:00				27		27	26		26													
18:00				26		26	23		23													
19:00				24		24	39		39													
20:00				22		22	17		17													
21:00				16		16	7		7													
22:00				6		6	5		5													
23:00				3		3	10		10													
Volume				257		257	380		380	126		126										
AM Peak Vol							31		31	31		31										
AM Peak Fct							0.78		0.78	0.71		0.71										
AM Peak Hr							7:30		7:30	8:15		8:15										
PM Peak Vol				34		34	40		40													
PM Peak Fct				0.85		0.85	0.71		0.71													
PM Peak Hr				15:30		15:30	18:45		18:45													
Seasonal Fct				0.981		0.981	0.981		0.981	0.981		0.981										
Daily Fct				1.000		1.000	1.000		1.000	1.000		1.000										
Axle Fct				0.493		0.493	0.493		0.493	0.493		0.493										
Pulse Fct				2.000		2.000	2.000		2.000	2.000		2.000										

New Jersey Department of Transportation

Daily Volume from 09/29/2014 through 10/01/2014

Site Names: 111111, , SOUTH OLDEN AVE-2.99, 11000622__, Trenton City
 County: MERCER
 Funct. Class: Urban Minor Arterial
 Location: BET WARD AVE PARKER AVE

Seasonal Factor Group: RG3_FC16
 Daily Factor Group: RG3_FC16
 Axle Factor Group: RG3_FC16
 Growth Factor Group:

	Sun 09/28/2014			Mon 09/29/2014			Tue 09/30/2014			Wed 10/01/2014			Thu 10/02/2014			Fri 10/03/2014			Sat 10/04/2014		
	ROAD	S	N	ROAD	S	N	ROAD	S	N	ROAD	S	N	ROAD	S	N	ROAD	S	N	ROAD	S	N
00:00							167	105	62	193	117	76									
01:00							100	60	40	103	63	40									
02:00							62	33	29	83	40	43									
03:00							75	32	43	71	32	39									
04:00							106	42	64	139	55	84									
05:00							314	125	189	320	139	181									
06:00							798	248	550	766	242	524									
07:00							1,176	498	678	1,202	502	700									
08:00							1,241	514	727	1,230	483	747									
09:00							1,124	525	599	1,144	529	615									
10:00							1,085	566	519	1,134	576	558									
11:00							1,031	510	521	1,096	555	541									
12:00							1,182	645	537	1,200	626	574									
13:00				1,177	607	570	1,187	608	579												
14:00				1,259	683	576	1,280	672	608												
15:00				1,389	769	620	1,396	721	675												
16:00				1,394	726	668	1,376	763	613												
17:00				1,322	692	630	1,387	749	638												
18:00				1,116	588	528	1,282	651	631												
19:00				961	534	427	1,051	588	463												
20:00				765	444	321	794	441	353												
21:00				554	330	224	603	364	239												
22:00				486	259	227	508	284	224												
23:00				299	187	112	338	197	141												
Volume				10,722	5,819	4,903	19,663	9,941	9,722	8,681	3,959	4,722									
AM Peak Vol							1,306	566	768	1,282	598	758									
AM Peak Fct							0.91	0.93	0.96	0.95	0.97	0.96									
AM Peak Hr							7:45	10:00	7:45	7:30	10:15	7:30									
PM Peak Vol							1,437	776	676												
PM Peak Fct							0.94	0.94	0.94												
PM Peak Hr							15:45	15:45	15:30												
Seasonal Fct				0.985	0.985	0.985	0.985	0.985	0.985	1.012	1.012	1.012									
Daily Fct				1.035	1.035	1.035	0.946	0.946	0.946	0.937	0.937	0.937									
Axle Fct				0.489	0.489	0.489	0.489	0.489	0.489	0.489	0.489	0.489									
Pulse Fct				2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000									

New Jersey Department of Transportation

Daily Volume from 07/06/2011 through 07/08/2011

Site Names: 111121, , EAST STATE ST-.52, 11000635 __, Trenton City
 County: MERCER
 Funct. Urban Minor Arterial
 Location: BET CO 626 CHAMBERS ST HAMPTON AVE

Seasonal Factor Type: 2 Urban Other Roadways
 Daily Factor Type: 2 Urban Other Roadways
 Axle Factor Type: 16
 Growth Factor Type:

	Sun 07/03/2011			Mon 07/04/2011			Tue 07/05/2011			Wed 07/06/2011			Thu 07/07/2011			Fri 07/08/2011			Sat 07/09/2011		
	ROAD	W	E	ROAD	W	E	ROAD	W	E	ROAD	W	E	ROAD	W	E	ROAD	W	E	ROAD	W	E
00:00													126	60	66	141	64	77			
01:00													62	33	29	74	31	43			
02:00													52	23	29	74	30	44			
03:00													26	10	16	39	20	19			
04:00													40	23	17	41	23	18			
05:00													90	57	33	86	43	43			
06:00													206	101	105	177	98	79			
07:00													353	198	155	356	205	151			
08:00													547	334	213	559	316	243			
09:00													385	203	182	402	220	182			
10:00													373	195	178	332	166	166			
11:00										390	182	208	382	182	200						
12:00										471	205	266	465	236	229						
13:00										474	220	254	499	272	227						
14:00										548	261	287	476	238	238						
15:00										538	274	264	536	248	288						
16:00										736	266	470	717	249	468						
17:00										605	267	338	622	285	337						
18:00										447	251	196	439	207	232						
19:00										382	184	198	411	199	212						
20:00										339	169	170	379	195	184						
21:00										315	171	144	334	184	150						
22:00										274	134	140	266	124	142						
23:00										193	105	88	198	101	97						
Volume										5,712	2,689	3,023	7,984	3,957	4,027	2,281	1,216	1,065			
AM Peak Vol													547	334	217						
AM Peak Fct													0.84	0.91	0.76						
AM Peak Hr													8:00	8:00	8:15						
PM Peak Vol										736	297	470	731	285	468						
PM Peak Fct										0.96	0.82	0.97	0.95	0.89	0.94						
PM Peak Hr										16:00	17:15	16:00	16:15	17:00	16:00						
Seasonal Fct										0.979	0.979	0.979	0.979	0.979	0.979	0.979	0.979	0.979			
Daily Fct										0.935	0.935	0.935	0.911	0.911	0.911	0.921	0.921	0.921			
Axle Fct										0.488	0.488	0.488	0.488	0.488	0.488	0.488	0.488	0.488			
Pulse Fct										2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000			

New Jersey Department of Transportation

Daily Volume from 07/22/2011 through 07/29/2011

Site Names: CP11501, , EAST STATE ST-.27, 11000635__, Trenton City
 County: MERCER
 Funct. Urban Collector
 Location: AT BRIDGE OVER AMTRAK BET CHESTNUT AVE MONMOUTH ST

Seasonal Factor Type:
 Daily Factor Type:
 Axle Factor Type: 17
 Growth Factor Type:

	Sun 07/17/2011			Mon 07/18/2011			Tue 07/19/2011			Wed 07/20/2011			Thu 07/21/2011			Fri 07/22/2011			Sat 07/23/2011		
	ROAD	W	E	ROAD	W	E	ROAD	W	E	ROAD	W	E	ROAD	W	E	ROAD	W	E	ROAD	W	E
00:00																			109	37	72
01:00																			79	36	43
02:00																			63	40	23
03:00																			34	21	13
04:00																			19	10	9
05:00																			23	8	15
06:00																			64	38	26
07:00																			115	67	48
08:00																			185	100	85
09:00																			219	128	91
10:00																328	154	174	242	131	111
11:00																334	141	193	293	142	151
12:00																411	186	225	276	126	150
13:00																425	199	226	269	130	139
14:00																382	184	198	249	107	142
15:00																457	206	251	243	112	131
16:00																565	185	380	230	120	110
17:00																395	157	238	254	116	138
18:00																301	156	145	250	120	130
19:00																296	164	132	296	173	123
20:00																253	127	126	242	126	116
21:00																205	101	104	201	79	122
22:00																219	90	129	197	82	115
23:00																166	75	91	157	77	80
Volume																4,737	2,125	2,612	4,309	2,126	2,183
AM Peak Vol																			295	156	151
AM Peak Fct																			0.96	0.85	0.88
AM Peak Hr																			10:45	10:45	11:00
PM Peak Vol																569	206	380	296	177	154
PM Peak Fct																0.87	0.94	0.80	0.83	0.79	0.79
PM Peak Hr																15:45	15:00	16:00	19:00	19:15	12:15
Seasonal Fct																1.000	1.000	1.000	1.000	1.000	1.000
Daily Fct																1.000	1.000	1.000	1.000	1.000	1.000
Axle Fct																0.489	0.489	0.489	0.489	0.489	0.489
Pulse Fct																2.000	2.000	2.000	2.000	2.000	2.000

New Jersey Department of Transportation

Daily Volume from 07/22/2011 through 07/29/2011

Site Names: CP11501, , EAST STATE ST-.27, 11000635__, Trenton City
 County: MERCER
 Funct. Urban Collector
 Location: AT BRIDGE OVER AMTRAK BET CHESTNUT AVE MONMOUTH ST

Seasonal Factor Type:
 Daily Factor Type:
 Axle Factor Type: 17
 Growth Factor Type:

	Sun 07/24/2011			Mon 07/25/2011			Tue 07/26/2011			Wed 07/27/2011			Thu 07/28/2011			Fri 07/29/2011			Sat 07/30/2011		
	ROAD	W	E	ROAD	W	E	ROAD	W	E	ROAD	W	E	ROAD	W	E	ROAD	W	E	ROAD	W	E
00:00	101	47	54	72	32	40	60	34	26	53	15	38	73	36	37	60	22	38			
01:00	73	43	30	35	14	21	34	19	15	43	22	21	41	17	24	49	27	22			
02:00	55	36	19	31	18	13	17	12	5	30	15	15	29	15	14	46	26	20			
03:00	45	20	25	27	11	16	20	7	13	21	14	7	25	7	18	28	14	14			
04:00	24	11	13	25	10	15	18	8	10	30	17	13	23	11	12	26	10	16			
05:00	22	10	12	59	33	26	46	33	13	49	33	16	62	35	27	37	22	15			
06:00	40	26	14	151	91	60	140	99	41	148	89	59	147	92	55	169	116	53			
07:00	95	48	47	339	242	97	342	271	71	355	261	94	335	250	85	342	243	99			
08:00	98	58	40	558	393	165	537	432	105	596	433	163	603	431	172	605	448	157			
09:00	144	82	62	382	216	166	343	233	110	358	206	152	328	200	128	379	227	152			
10:00	197	125	72	328	170	158	363	238	125	333	171	162	316	161	155	325	158	167			
11:00	227	114	113	315	161	154	354	229	125	363	180	183	315	164	151	392	190	202			
12:00	215	98	117	321	194	127	387	231	156	442	221	221	371	173	198	448	229	219			
13:00	240	100	140	337	206	131	368	239	129	409	211	198	375	190	185	421	214	207			
14:00	225	110	115	323	212	111	354	208	146	398	209	189	372	188	184	393	189	204			
15:00	199	89	110	302	173	129	412	189	223	432	204	228	430	191	239	460	216	244			
16:00	247	141	106	434	191	243	672	229	443	653	192	461	725	245	480						
17:00	257	161	96	365	175	190	477	162	315	494	172	322	497	177	320						
18:00	193	98	95	247	160	87	298	142	156	288	122	166	337	163	174						
19:00	185	92	93	190	125	65	268	157	111	250	132	118	282	157	125						
20:00	225	104	121	134	100	34	242	119	123	228	111	117	240	133	107						
21:00	162	78	84	122	70	52	229	119	110	199	96	103	252	140	112						
22:00	156	64	92	121	67	54	178	77	101	160	74	86	196	100	96						
23:00	95	37	58	88	47	41	103	50	53	101	51	50	97	58	39						
Volume	3,520	1,792	1,728	5,306	3,111	2,195	6,262	3,537	2,725	6,433	3,251	3,182	6,471	3,334	3,137	4,180	2,351	1,829			
AM Peak Vol	234	142	113	580	419	171	575	466	126	599	436	183	603	445	172	605	448	202			
AM Peak Fct	0.78	0.91	0.79	0.85	0.81	0.86	0.95	0.91	0.88	0.92	0.93	0.64	0.88	0.90	0.88	0.98	0.92	0.82			
AM Peak Hr	10:30	10:15	11:00	7:45	7:45	9:30	7:45	7:45	10:45	7:45	7:45	11:00	8:00	7:45	8:00	8:00	8:00	11:00			
PM Peak Vol	260	167	140	448	225	264	672	255	443	653	234	461	725	245	497						
PM Peak Fct	0.80	0.73	0.70	0.81	0.94	0.71	0.91	0.77	0.87	0.88	0.85	0.82	0.81	0.88	0.80						
PM Peak Hr	17:15	17:15	13:00	16:30	13:30	16:30	16:00	12:15	16:00	16:00	12:15	16:00	16:00	16:00	15:45						
Seasonal Fct	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000			
Daily Fct	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000			
Axle Fct	0.489	0.489	0.489	0.489	0.489	0.489	0.489	0.489	0.489	0.489	0.489	0.489	0.489	0.489	0.489	0.489	0.489	0.489			
Pulse Fct	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000			

New Jersey Department of Transportation

Daily Volume from 08/10/2011 through 08/15/2011

Site Names: CP11502, , MONMOUTH ST-.33, 11111544__, Trenton City

County: MERCER

Funct: Urban Collector

Location: AT BRIDGE OVER AMTRAK JUST WEST OF EAST STATE STREET

Seasonal Factor Type:

Daily Factor Type:

Axle Factor Type: 17

Growth Factor Type:

	Sun 08/07/2011			Mon 08/08/2011			Tue 08/09/2011			Wed 08/10/2011			Thu 08/11/2011			Fri 08/12/2011			Sat 08/13/2011		
	ROAD	W	E	ROAD	W	E	ROAD	W	E	ROAD	W	E	ROAD	W	E	ROAD	W	E	ROAD	W	E
00:00													30	12	18	36	13	23	31	13	18
01:00													16	6	10	22	6	16	25	7	18
02:00													10	4	6	25	7	18	23	5	18
03:00													18	3	15	12	4	8	14	2	12
04:00													10	6	4	10	3	7	9	3	6
05:00													21	9	12	19	8	11	14	3	11
06:00													48	23	25	53	23	30	17	5	12
07:00													145	94	51	95	53	42	40	26	14
08:00									228	149	79	186	108	78	128	57	71	59	25	34	
09:00									162	71	91	170	95	75	98	41	57	81	28	53	
10:00									143	84	59	102	46	56	100	32	68	75	30	45	
11:00									173	97	76	112	44	68	105	39	66	100	25	75	
12:00									189	99	90	130	55	75	119	43	76	79	31	48	
13:00									203	110	93	108	46	62	121	54	67	90	26	64	
14:00									157	72	85	113	39	74	151	45	106	104	44	60	
15:00									148	59	89	145	59	86	130	43	87	99	46	53	
16:00									181	52	129	196	41	155	178	56	122	78	29	49	
17:00									129	28	101	144	57	87	164	59	105	108	36	72	
18:00									132	43	89	123	44	79	120	50	70	96	37	59	
19:00									116	43	73	88	28	60	121	43	78	107	38	69	
20:00									106	38	68	94	26	68	105	34	71	70	28	42	
21:00									86	29	57	71	16	55	93	27	66	64	27	37	
22:00									73	29	44	73	24	49	61	15	46	59	17	42	
23:00									49	16	33	60	14	46	55	20	35	53	16	37	
Volume									2,275	1,019	1,256	2,213	899	1,314	2,121	775	1,346	1,495	547	948	
AM Peak Vol													225	134	92	135	67	72	101	31	75
AM Peak Fct													0.76	0.62	0.72	0.84	0.73	0.90	0.84	0.86	0.85
AM Peak Hr													7:45	7:30	7:45	7:45	7:45	8:30	10:45	8:15	11:00
PM Peak Vol									211	113	129	196	59	155	186	64	122	114	46	81	
PM Peak Fct									0.85	0.76	0.87	0.88	0.78	0.90	0.89	0.76	0.78	0.89	0.77	0.88	
PM Peak Hr									12:30	12:15	16:00	16:00	15:00	16:00	16:15	16:15	16:00	18:45	15:00	18:45	
Seasonal Fct									1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Daily Fct									1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
Axle Fct									0.489	0.489	0.489	0.489	0.489	0.489	0.489	0.489	0.489	0.489	0.489	0.489	
Pulse Fct									2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	2.000	

New Jersey Department of Transportation

Daily Volume from 08/10/2011 through 08/15/2011

Site Names: CP11502, , MONMOUTH ST-33, 11111544__, Trenton City
 County: MERCER
 Funct. Urban Collector
 Location: AT BRIDGE OVER AMTRAK JUST WEST OF EAST STATE STREET

Seasonal Factor Type:
 Daily Factor Type:
 Axle Factor Type: 17
 Growth Factor Type:

	Sun 08/14/2011			Mon 08/15/2011			Tue 08/16/2011			Wed 08/17/2011			Thu 08/18/2011			Fri 08/19/2011			Sat 08/20/2011		
	ROAD	W	E	ROAD	W	E	ROAD	W	E	ROAD	W	E	ROAD	W	E	ROAD	W	E	ROAD	W	E
00:00	29	10	19	10	0	10															
01:00	31	10	21	17	5	12															
02:00	20	5	15	8	1	7															
03:00	9	2	7	4	1	3															
04:00	3	1	2	10	6	4															
05:00	7	3	4	13	3	10															
06:00	12	7	5	46	15	31															
07:00	28	2	26	139	78	61															
08:00	21	7	14																		
09:00	38	17	21																		
10:00	67	23	44																		
11:00	77	23	54																		
12:00	89	27	62																		
13:00	90	25	65																		
14:00	91	15	76																		
15:00	78	7	71																		
16:00	80	18	62																		
17:00	115	37	78																		
18:00	81	21	60																		
19:00	95	27	68																		
20:00	69	12	57																		
21:00	50	16	34																		
22:00	38	9	29																		
23:00	39	12	27																		
Volume	1,257	336	921	247	109	138															
AM Peak Vol	84	27	57																		
AM Peak Fct	0.70	0.68	0.65																		
AM Peak Hr	10:45	10:45	10:45																		
PM Peak Vol	115	37	81																		
PM Peak Fct	0.78	0.71	0.68																		
PM Peak Hr	17:00	16:30	17:15																		
Seasonal Fct	1.000	1.000	1.000	1.000	1.000	1.000															
Daily Fct	1.000	1.000	1.000	1.000	1.000	1.000															
Axle Fct	0.489	0.489	0.489	0.489	0.489	0.489															
Pulse Fct	2.000	2.000	2.000	2.000	2.000	2.000															

New Jersey Department of Transportation

Daily Volume from 07/26/2011 through 08/01/2011

Site Names: CP11503, , CHESTNUT ST-.04, 11111537__, Trenton City
 County: MERCER
 Funct. Urban Collector
 Location: AT BRIDGE OVER AMTRAK BET PAUL WALLENBERG AVE WALNUT ST

Seasonal Factor Type: 2 Urban Other Roadways
 Daily Factor Type: 2 Urban Other Roadways
 Axle Factor Type: 17
 Growth Factor Type: 2 Urban Other Roadways

	Sun 07/24/2011			Mon 07/25/2011			Tue 07/26/2011			Wed 07/27/2011			Thu 07/28/2011			Fri 07/29/2011			Sat 07/30/2011		
	ROAD	S	N	ROAD	S	N	ROAD	S	N	ROAD	S	N	ROAD	S	N	ROAD	S	N	ROAD	S	N
00:00										25	25		25	25		28	28		26	26	
01:00										9	9		14	14		9	9		25	25	
02:00										13	13		5	5		12	12		18	18	
03:00										9	9		12	12		15	15		5	5	
04:00										16	16		13	13		16	16		6	6	
05:00										32	32		38	38		29	29		13	13	
06:00										44	44		39	39		41	41		14	14	
07:00										57	57		52	52		59	59		23	23	
08:00										61	61		62	62		59	59		26	26	
09:00										59	59		57	57		56	56		25	25	
10:00										53	53		44	44		57	57		42	42	
11:00										48	48		57	57		50	50		37	37	
12:00										66	66		45	45		69	69		55	55	
13:00										61	61		57	57		69	69		43	43	
14:00										64	64		55	55		54	54		42	42	
15:00							74	74		86	86		79	79		81	81		51	51	
16:00							169	169		192	192		190	190		131	131		40	40	
17:00							77	77		87	87		83	83		108	108		52	52	
18:00							47	47		51	51		75	75		59	59		36	36	
19:00							52	52		50	50		53	53		63	63		39	39	
20:00							30	30		51	51		39	39		49	49		38	38	
21:00							37	37		34	34		31	31		36	36		42	42	
22:00							26	26		34	34		36	36		42	42		41	41	
23:00							35	35		24	24		23	23		31	31		23	23	
Volume							547	547		1,226	1,226		1,184	1,184		1,223	1,223		762	762	
AM Peak Vol										67	67		62	62		66	66		42	42	
AM Peak Fct										0.76	0.76		0.78	0.78		0.75	0.75		0.88	0.88	
AM Peak Hr										9:30	9:30		8:00	8:00		7:15	7:15		9:45	9:45	
PM Peak Vol										192	192		190	190		131	131		56	56	
PM Peak Fct										0.84	0.84		0.75	0.75		0.80	0.80		0.74	0.74	
PM Peak Hr										16:00	16:00		16:00	16:00		16:00	16:00		16:45	16:45	
Seasonal Fct							0.979	0.979		0.979	0.979		0.979	0.979		0.979	0.979		0.979	0.979	
Daily Fct							0.956	0.956		0.935	0.935		0.911	0.911		0.921	0.921		1.191	1.191	
Axle Fct							0.489	0.489		0.489	0.489		0.489	0.489		0.489	0.489		0.489	0.489	
Pulse Fct							2.000	2.000		2.000	2.000		2.000	2.000		2.000	2.000		2.000	2.000	

New Jersey Department of Transportation

Daily Volume from 07/26/2011 through 08/01/2011

Site Names: CP11503, , CHESTNUT ST-.04, 11111537__, Trenton City
 County: MERCER
 Funct. Urban Collector
 Location: AT BRIDGE OVER AMTRAK BET PAUL WALLENBERG AVE WALNUT ST

Seasonal Factor Type: 2 Urban Other Roadways
 Daily Factor Type: 2 Urban Other Roadways
 Axle Factor Type: 17
 Growth Factor Type: 2 Urban Other Roadways

	Sun 07/31/2011			Mon 08/01/2011			Tue 08/02/2011			Wed 08/03/2011			Thu 08/04/2011			Fri 08/05/2011			Sat 08/06/2011			
	ROAD	S	N	ROAD	S	N	ROAD	S	N	ROAD	S	N	ROAD	S	N	ROAD	S	N	ROAD	S	N	
00:00	25	25		25	25																	
01:00	23	23		19	19																	
02:00	15	15		11	11																	
03:00	9	9		10	10																	
04:00	6	6		17	17																	
05:00	20	20		35	35																	
06:00	8	8		42	42																	
07:00	11	11		62	62																	
08:00	10	10		49	49																	
09:00	20	20																				
10:00	33	33																				
11:00	29	29																				
12:00	34	34																				
13:00	40	40																				
14:00	32	32																				
15:00	49	49																				
16:00	37	37																				
17:00	40	40																				
18:00	33	33																				
19:00	41	41																				
20:00	39	39																				
21:00	40	40																				
22:00	25	25																				
23:00	24	24																				
Volume	643	643		270	270																	
AM Peak Vol	33	33																				
AM Peak Fct	0.83	0.83																				
AM Peak Hr	9:45	9:45																				
PM Peak Vol	49	49																				
PM Peak Fct	0.77	0.77																				
PM Peak Hr	15:00	15:00																				
Seasonal Fct	0.979	0.979		0.962	0.962																	
Daily Fct	1.389	1.389		0.960	0.960																	
Axle Fct	0.489	0.489		0.489	0.489																	
Pulse Fct	2.000	2.000		2.000	2.000																	



GPI Job No. 2015684.00

Made By: JMD

Date: 3/16/2016

Checked By:

Date:

DVRPC Lincoln Avenue Bridge Replacement LCD Study

DVRPC Provided Forecasts				
Roadways	Average Annual Percent Growth			
	2015 - 2025	2025 - 2035	2035 - 2040	2015 - 2040
Monmouth St., Wall St., Chestnut Ave., Raoul Wallenburg Ave.	0.14%	0.53%	0.35%	0.34%
N. Clinton Ave., E. State St., Lincoln Ave., N. Olden Ave.	0.25%	0.14%	0.09%	0.17%

Appendix F

Aerial Plan and Digital Images



STR. NO. 1100-055

MARTIN HOUSE

CR 635

FREEMAN LANE

CHAMBERS STREET

WALNUT AVENUE

CHURCH

E. STATE STREET

MONMOUTH STREET

LINCOLN AVENUE

LINCOLN SUPPLY

SEWARD AVE

N. CLINTON STREET

RUSH CROSSING

MODEL AVE

ASSUNPINK CREEK

NORTHEAST CORRIDOR (NEC)

ASSUNPINK CREEK

 SIGNALIZED INTERSECTION

**LINCOLN AVENUE
BRIDGE REPLACEMENT
LOCAL CONCEPT DEVELOPMENT**

CITY OF TRENTON
MERCER COUNTY

PROJECT LOCATION MAP



GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

N.T.S.



Figure 1 – Underside of sidewalk, showing 10 existing conduits



Figure 2 – Underside of sidewalk, showing 10 existing conduits



Figure 3 – Underside of sidewalk, showing 10 existing conduits



Figure 4 – Underside of sidewalk, showing 10 existing conduits



Figure 5 – Underside of sidewalk, showing 10 existing conduits



Figure 6 – Inactive NJ Transit Tracks, looking north



Figure 7 – Inactive Rail Equipment



Figure 8 – Inactive Rail Equipment



Figure 9 – Underside of south side sidewalk, looking west showing 10 existing telephone conduits



Figure 10 – Underside of sidewalk, showing 10 existing conduits



Figure 11 – Underside of sidewalk, showing 10 existing conduits



Figure 12 – Inactive NJ Transit Station Platform, looking south



Figure 13 – Piers 1-5 and Inactive NJ Transit Station Platform, looking east



Figure 14 – Assunpink Creek, looking north



Figure 15 – Pier 7, showing concrete condition and exposed rebar



Figure 16 – Pier 7, looking south at Assunpink Creek

Lincoln Avenue Bridge Replacement, Local Concept Development



Figure 17 – Pier 7, looking west at Western Abutment



Figure 18 – Lincoln Avenue near Creekview Drive, looking southeast

Lincoln Avenue Bridge Replacement, Local Concept Development



Figure 19 – Lincoln Avenue at Creekview Drive, looking south



Figure 20 – Lincoln Avenue at Creekview Drive, looking south at Rush Crossing

Lincoln Avenue Bridge Replacement, Local Concept Development



Figure 21 – Lincoln Avenue at Creekview Drive



Figure 22 – Lincoln Avenue, looking southeast

Lincoln Avenue Bridge Replacement, Local Concept Development



Figure 23 – Lincoln Avenue near Creekview Drive, looking northwest



Figure 24 – Lincoln Avenue near Creekview Drive, looking northwest



Figure 25 – Existing Gas Main Attached to North Side of Structure



Figure 26 – Existing Gas Main Attached to North Side of Structure



Figure 27 – Assunpink Creek, looking north



Figure 28 – Assunpink Creek USGS Station and Headwall, looking northeast

Lincoln Avenue Bridge Replacement, Local Concept Development



Figure 29 – Assunpink Creek USGS Station and Headwall, looking northeast



Figure 30 – Lincoln Avenue, looking southeast

Lincoln Avenue Bridge Replacement, Local Concept Development



Figure 31 – Existing Gas Main Attached to North Side of Structure, looking southeast



Figure 32 – Existing Gas Main Attached to North Side of Structure, looking northwest

Lincoln Avenue Bridge Replacement, Local Concept Development



Figure 33 – Missing Sidewalk and Exposed Rebar (Typical)



Figure 34 – Northeast Corridor (NEC), Catenary Lines and Transmission Lines, looking north

Lincoln Avenue Bridge Replacement, Local Concept Development



Figure 35 – NEC and Catenary Lines, looking northwest



Figure 36 – Existing Plate on Sidewalk



Figure 37 – Bridge Plaque along Lincoln Avenue westbound approach



Figure 38 – Railing and Parking Lot of Martin House

Lincoln Avenue Bridge Replacement, Local Concept Development



Figure 39 – Lincoln Avenue near E. State Street and Martin House, looking northwest



Figure 40 – Northwest quadrant of Lincoln Avenue and E. State Street, looking south showing curb ramps



Figure 41 – Lincoln Avenue near E. State Street and CYO E. State Street Center, looking northwest



Figure 42 – CYO E. State Street Center Sign



Figure 43 – Lincoln Avenue near E. State Street and CYO E. State Street Center, looking northwest with queues



Figure 44 – Southwest quadrant of Lincoln Avenue and E. State Street, showing junction box

Lincoln Avenue Bridge Replacement, Local Concept Development



Figure 45 – Southwest quadrant of Lincoln Avenue and E. State Street, looking northwest showing sidewalk



Figure 46 – Lincoln Avenue near E. State Street, showing junction box in sidewalk by CYO E. State Street Center

Lincoln Avenue Bridge Replacement, Local Concept Development



Figure 47 – Lincoln Avenue near E. State Street, showing junction box in sidewalk by CYO E. State Street Center



Figure 48 – Lincoln Avenue, looking north at Martin House

Lincoln Avenue Bridge Replacement, Local Concept Development



Figure 49 – Lincoln Avenue, looking northwest at sidewalk on south side of bridge



Figure 50 – South Side of Bridge, looking west at existing fencing behind CYO E. State Street Center



Figure 51 – Existing Corrugated Metal Pipe near Eastern Abutment



Figure 52 – NEC tracks looking south



Figure 53 – Existing Parapet along Bridge (Typical)



Figure 54 – Existing Light Fixture on Bridge (Typical)



Figure 55 – Existing Meter Cabinet along Lincoln Avenue near Creekview Drive



Figure 56 – Existing Blocked Drainage on Bridge (Typical)



Figure 57 – Trenton City Leaf Compost Facility northern limits at Lincoln Avenue



Figure 58 – Trenton City Leaf Compost Facility northern limits at Lincoln Avenue

Lincoln Avenue Bridge Replacement, Local Concept Development



Figure 59 – Assunpink Creek, looking south showing concrete in waterway



Figure 60 – Lincoln Avenue, looking southeast showing sidewalk on south side



Figure 61 – Assunpink Creek and Western Abutment, looking south



Figure 62 – Manhole in Sidewalk on South Side near Creekview Drive

Lincoln Avenue Bridge Replacement, Local Concept Development



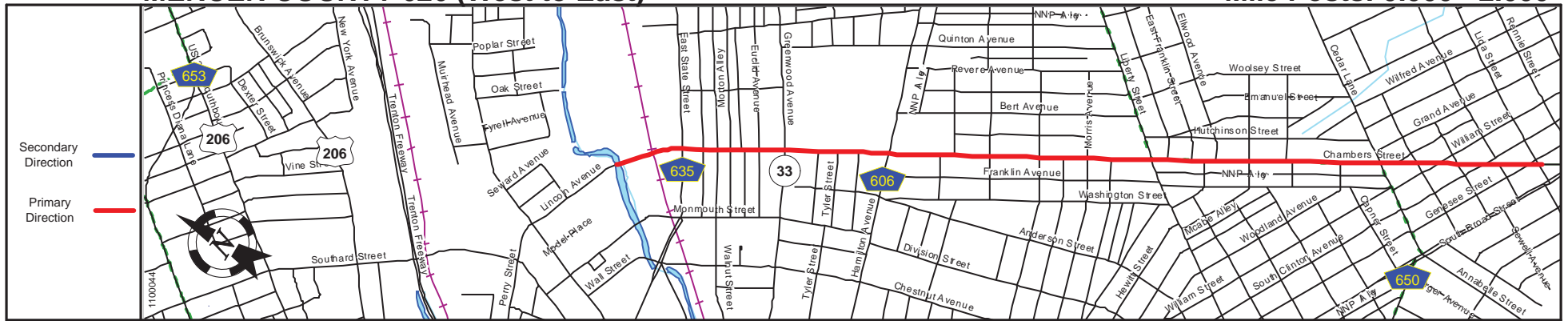
Figure 63 – Lincoln Avenue at Creekview Drive, looking southeast

Appendix G

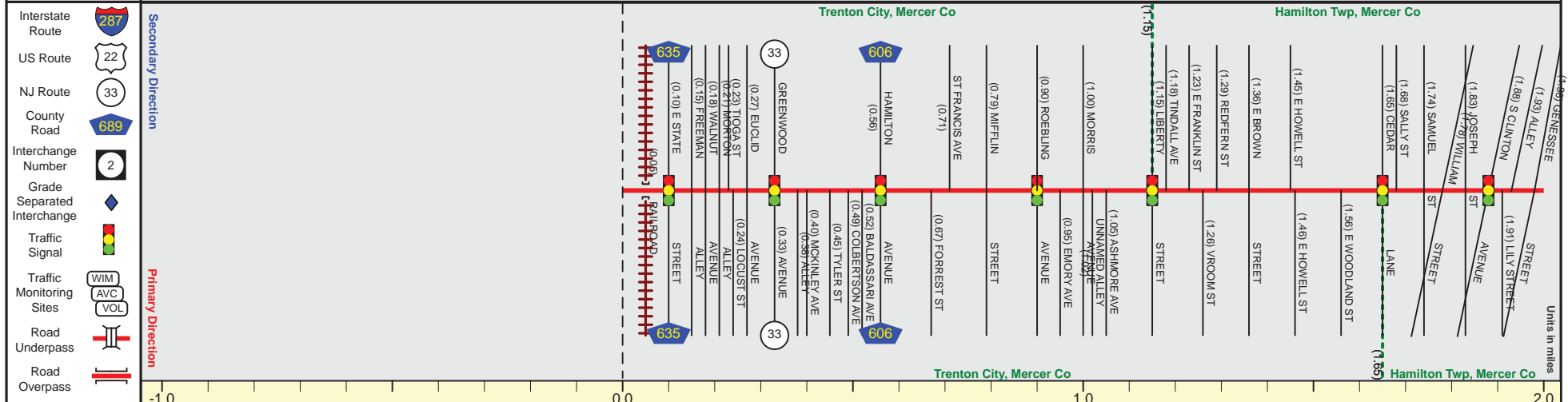
NJDOT Straight Line Diagrams

MERCER COUNTY 626 (West to East)

Mile Posts: 0.000 - 2.000



Pavement	
Shoulder	
Number of Lanes	
Speed Limit	
Street Name	



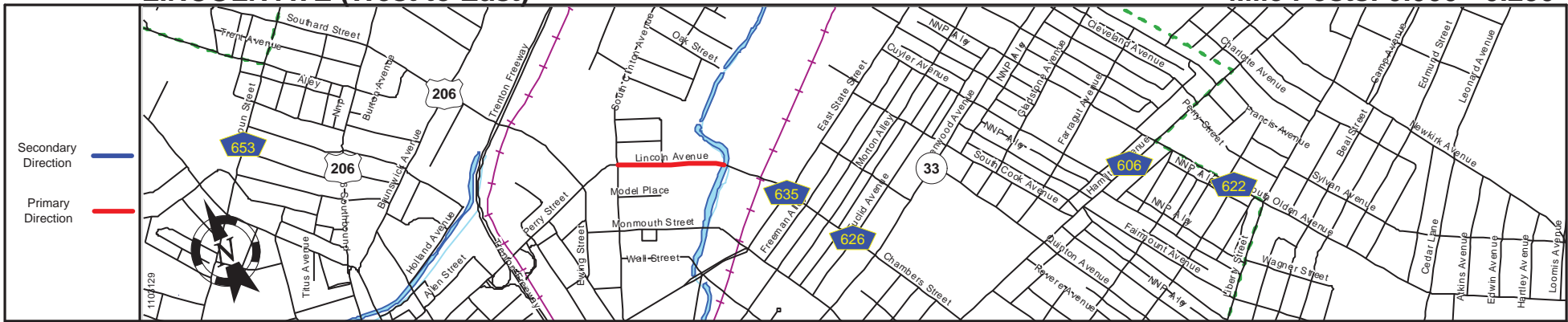
Street Name	Chambers Street
Jurisdiction	County
Functional Class	Urban Minor Arterial
Federal Aid - NHS Sy	STP
Control Section	
Speed Limit	NOT POSTED + 25
Number of Lanes	2
Med. Type	None
Med. Width	0
Pavement	26
Shoulder	0
Traffic Volume	11,498 (2011) 6,832 (2014)
Traffic Sta. ID	11132 11115
Structure No.	
Enlarged Views	

SRI = 11000626

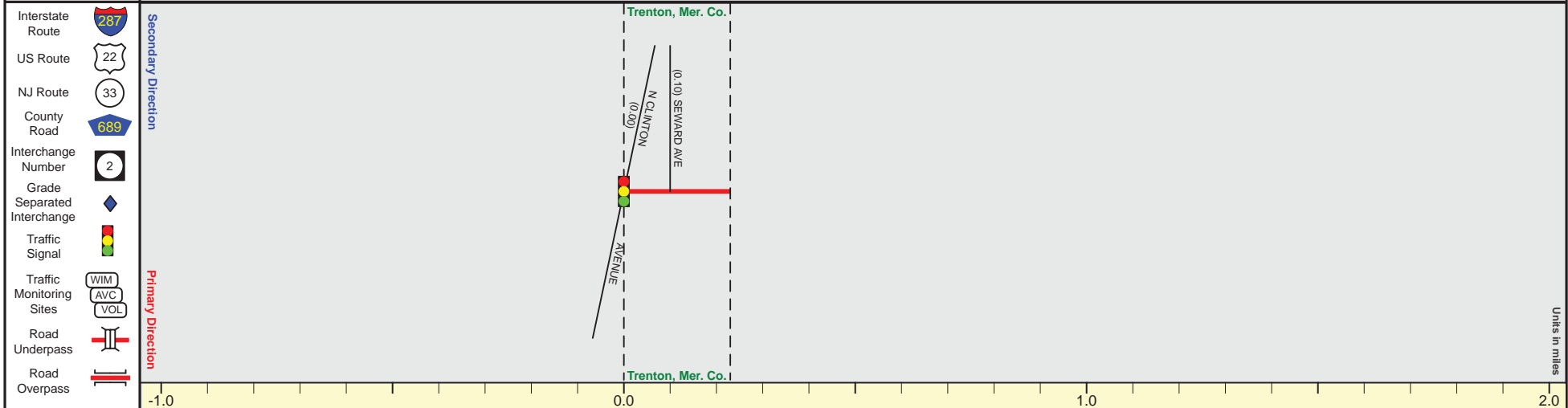
Date last inventoried: May 2011

LINCOLN AVE (West to East)

Mile Posts: 0.000 - 0.230



Pavement	
Shoulder	
Number of Lanes	
Speed Limit	
Street Name	



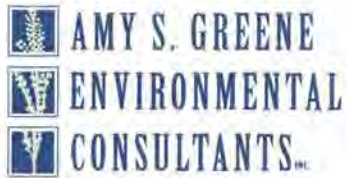
Street Name	Lincoln Avenue
Jurisdiction	Municipal
Functional Class	Urban Minor Arterial
Federal Aid - NHS Sy	STP
Control Section	
Speed Limit	NOT POSTED
Number of Lanes	2
Med. Type	None
Med. Width	0
Pavement	30
Shoulder	0
Traffic Volume	11,604,(2012)
Traffic Sta. ID	5-5,634
Structure No.	
Enlarged Views	

SRI = 11111542

Date last inventoried: May 2011

Appendix H

Environmental Screening



Environmental Screening Report

For

Delaware Valley Regional Planning Commission
Lincoln Avenue Bridge Replacement
Local Concept Development Study
City of Trenton
Mercer County, NJ

August 2016

PREPARED FOR:

Greenman-Pedersen, Inc.
100 Corporate Drive, Suite 301
Lebanon, NJ 08833

PREPARED BY:

Amy S. Greene Environmental Consultants, Inc.
4 Walter E. Foran Blvd; Suite 209
Flemington, NJ 08822

ASGECI #3913

TABLE OF CONTENTS

	<u>Page</u>
1.0 INTRODUCTION	1
2.0 IDENTIFICATION OF ENVIRONMENTAL RESOURCES	2
2.1 Wetlands, Wetland Transition Areas and State Open Waters	2
2.2 Flood Hazard Areas and Riparian Zones	3
2.3 Endangered and Threatened Species	3
2.4 Section 4(f) Recreational Properties	3
2.5 Hazardous Waste Screening	3
2.6 Noise and Air Quality	4
2.7 Socioeconomics and Environmental Justice	4
2.8 Cultural Resources	4
3.0 PERMITS AND APPROVALS	6

APPENDIX A: Site Maps

APPENDIX B: Documentation

APPENDIX C: Initiation of Section 106 Consultation, RGA Cultural Resource Consultants

APPENDIX D: Resume of Preparer

1.0 INTRODUCTION

The study area for which this Environmental Screening Report (ESR) has been prepared is located along the Lincoln Avenue right-of-way in the City of Trenton, Mercer County, New Jersey. The project limits for the ESR extend approximately from the Lincoln Avenue intersection with North Clinton Avenue to the west, and its intersection with (refer to County Road Map and USGS Topographic Map in Appendix A).

The Lincoln Avenue Bridge (Structure No. 1100-055) carries Lincoln Avenue (CR 626) over the Amtrak Northeast Corridor (NEC) rail line, an abandoned rail yard, and Assunpink Creek. The structure was built in 1931 (reconstructed in 1965) and comprised of 8 simple spans, each consisting of riveted steel through-girders with steel floor-beams and a concrete deck. Lincoln Avenue is a two lane, urban minor arterial with no posted speed limit. The existing roadway cross section consists of two 18-foot wide lanes with no shoulders. On the structure, 6-foot 2-inch wide sidewalks are present between the through-girders and concrete parapets. Lincoln Avenue serves as an important connector across the aforementioned physical barriers and is the first crossing outside of the central business district of Trenton City. Adjacent land use is a mix of residential and commercial areas.

The Delaware Valley Regional Planning Commission on behalf of Mercer County initiated Local Concept Development for Structure No. 1100-055 due to findings of the June 2013 bridge inspection report. The structure was rated 'serious' primarily due to the condition of the superstructure, which suffers from severely rusted steel throughout and large areas of spalled and delaminated concrete on the deck. The Federal Highway Administration's Structure Inventory and Appraisal sheet gives the structurally deficient bridge a Sufficiency Rating of 46.1, therefore it is recommended to replace the structure. Replacement of the structure will also afford an opportunity to improve existing geometric deficiencies and traffic safety of the surrounding area.

The following ESR presents the findings of a study completed by Amy S. Greene Environmental Consultants, Inc. (ASGECI) within the project study area. This study included the review of existing, available information and mappings for the project study area and a field investigation to characterized the project study area and also determine the presence and general extent of wetland and waters within the study area and its immediate vicinity; the field investigation was performed in November and December 2015.

2.0 IDENTIFICATION OF ENVIRONMENTAL RESOURCES

2.1 Wetlands, Wetland Transition Areas and State Open Waters

The New Jersey Department of Environmental Protection (NJDEP) Geographic Information System (GIS) database indicates the presence of a watercourse and wetlands within the project study area (see Wetlands and Streams Map in Appendix A). The identified watercourse is listed as the Assunpink Creek and crosses the approximate center of the project study area. Assunpink Creek is a State Open Water and is classified by the NJ Surface Water Quality Standards as a freshwater, non-trout water (FW2-NT). Wetlands were also identified by the NJDEP mapping and are shown in association Creek.

Based on a preliminary field investigation performed by ASGECI in November and December 2015, the Assunpink Creek stream channel and associated wetland areas were observed within the project study area. However, it is noted that the field-observed wetlands on the western edge of the Creek were located further to the north on the stream channel than depicted by the NJDEP mapping of this area. It is also noted that only a visual observation of the wetland areas was performed during the field investigation due to the controlled nature of the properties on which the wetlands are located and the inability of ASGECI to access these properties. The location of the additional field-observed wetland is also shown on the Wetlands and Streams Map in Appendix A. The wetland areas identified during the field investigation and associated with Assunpink Creek are characterized as forested wetlands. From the visual observation, these wetlands appeared to be dominated by tree species including American sycamore (*Platanus occidentalis*), cottonwood (*Populus deltoides*), and red maple (*Acer rubrum*). The character of the sub-canopy within the forested wetlands was not readily determined during the preliminary field investigation. Direct evidence of hydric soils and wetland hydrology in these forested wetlands was not observed due to the aforementioned access issue. In addition, a wetland swale was visually identified from the Lincoln Avenue Bridge structure and is located to the north of the Bridge just east of the Amtrak NEC train tracks. This wetland swale was dominated by common reed (*Phragmites australis*). The wetland swale exhibited ponding during the field investigation, but the direct observation of hydric soils was not possible due to site access issues. Please note that for an exact location and extent of the wetlands within the study areas a detailed wetland delineation would need to be performed and a Regulatory Line Verification Letter of Interpretation would need to be obtained from the New Jersey Department of Environmental Protection Division of Land Use Regulation.

Wetlands are classified according to their resource value as determined by the NJ Freshwater Wetlands Protection Act rules. Wetlands associated with trout-production waters or documented habitat for certain endangered or threatened species, are classified as exceptional resource value wetlands and subject to 150-ft transition areas. Ordinary resource value wetlands are ditches, swales, and certain isolated wetlands and are not subject to transition areas. All other wetlands are intermediate resource value, which are subject to 50-ft transition areas.

The wetlands identified within the study area for the project are associated with the Assunpink Creek, which is classified in this area as freshwater, non-trout waters (FW2-NT) by the NJDEP Surface Water Quality Standards, so the wetlands within the project study area are not associated with trout-production waters. In addition, the NJDEP Landscape Project (Version 3.1) does not indicate the presence of any endangered or threatened species habitat within the project study area. Therefore, it is expected that the forested wetlands identified in association with the Assunpink Creek stream channel would be classified as intermediate resource value and subject to 50-ft transition areas. In addition, it is expected that the wetland swale located along the eastern edge of the NJ Transit tracks would be

classified as ordinary resource value and not subject to any wetland transition area. The classification of wetland resource value is subject to review and verification by the NJDEP.

2.2 Flood Hazard Areas and Riparian Zones

The analysis for the presence of flood hazard areas within the project study area was performed through a review of available Preliminary Digital Flood Insurance Rate Map Database mapping prepared by the Federal Emergency Management Agency (FEMA) and the mapping of delineated flood hazard areas as prepared by the NJDEP. Both the FEMA and NJDEP mappings indicate the presence of flood hazard areas within the project study area in association with the Assunpink Creek stream channel; the FEMA mapping indicates the extent of the mapped 100-yr floodplain within the project area and the NJDEP mapping indicates the limits of the flood fringe and floodway for the Assunpink Creek (see the Flood Hazard Area Map in Appendix A).

The Assunpink Creek and its associated flood hazard areas are regulated under the NJ Flood Hazard Area Control Act Rules. Additionally, the Assunpink Creek stream channel is subject to a regulated riparian zone the width of which is based upon the presence of certain environmental resources. Based upon available information, ASGECI has preliminarily determined that the riparian zone for the Assunpink Creek should be 50 foot from the top-of-bank of the stream channel. The locations of the anticipated riparian zones are depicted on the Wetlands & Streams Maps contained in Appendix A.

2.3 Endangered and Threatened Species

As indicated under Section 2.1 above, the NJDEP Landscape Project (Version 3.1) does not indicate the presence of any endangered or threatened species habitat within the project study area. In addition, a US Fish and Wildlife Service Information, Planning and Conservation (IPaC) Report for the subject site was generated for the subject site on December 8 2015 (see Appendix B). The IPaC report does not list the presence of any species on the Endangered Species Act List within the project study areas. Therefore, the proposed project is not anticipated to have an adverse impact on any State or Federally listed threatened or endangered species or their habitat.

2.4 Section 4(f) Recreational Properties

Review of the Municipal Owned Green Acres Parcels identified on the NJDEP Green Acres Program Recreational and Open Space Inventory (ROSI) database has identified a listed Green Acres property within the project study area. This Green Acres property as identified on the ROSI database is known as the Monmouth Field (Assunpink Greenway) property, which is owned by the City of Trenton (see Section 4(f) Recreational Land Map in Appendix A). Any taking or use of this land would require approval of the NJDEP Commissioner and the NJ State House Commission.

2.5 Hazardous Waste Screening

A preliminary study to assess the potential for the presence of hazardous waste was performed for the project study area. NJDEP GIS coverage was analyzed for the presence of Known Contaminated Sites and Groundwater Contamination Areas within the study area. Per the GIS mapping the project study area has not been identified as containing any Known Contaminated Sites or Groundwater Contamination Areas (see Hazardous Waste Sites Map in Appendix A).

Site reconnaissance of the project study area was conducted in November and December of 2015 to visually identify the presence of any potential contaminated sites within the study area. A single site of concern was visually observed within the project study area limits and is identified as JR Auto Repairs located on the northern side of Lincoln Avenue near its intersection North Clinton Avenue (see Land Use Map for the location of this establishment). No actual evidence of contamination was observed at this location, but its potential as a contaminated site was identified given the nature of auto repair and the fluids and products utilized in this type of work.

2.6 Noise and Air Quality

The NJDEP Land Use GIS coverage and the site investigation performed in November and December 2015 confirm the presence of receptors sensitive to noise and air quality within the study area. These include educational, religious, residential, and services areas located along the alignment of Lincoln Avenue both to the east and west of the Lincoln Avenue Bridge crossing (see Land Use Map in Appendix A for the locations of these sensitive receptors). As project development progresses, a detailed, quantified analysis of potential impacts to air and noise quality resulting from project implementation may need to be performed to assess potential impacts to sensitive receptors within the project study area. However, it is anticipated that impacts associated with changes in air and noise quality would be nominal if the proposed Bridge and roadway maintain the same number of travel lanes following project implementation.

2.7 Socioeconomics and Environmental Justice

The project study area is located in the City of Trenton to the east of the downtown section of the City. The study area consists of a mixture of commercial, educational, municipal, religious, residential, services, transportation uses, and vacant land (see Land Use Map in Appendix A). The project area is contained within the neighborhoods of Trenton City known as East Trenton, Miller/Wall, and Wilbur. These sections are identified as containing large low income and minority populations. The selected alternative will replace a structurally deficient bridge with a new bridge structure. The new Bridge and associated roadway improvements will improve access along Lincoln Avenue which serves as an important connector across the Amtrak NEC rail line, an abandoned rail yard, and Assunpink Creek, and is the first crossing outside of the central business district of Trenton City. The new bridge will also be a safer structure and provide sidewalks and road shoulders thereby improving the overall safety of the area. Assuming that the project will not result in the taking of or any significant impact to commercial, educational, municipal, religious, or residential properties it is unlikely that the proposed project will result in any environmental justice concerns.

2.8 Cultural Resources

In a letter dated August 18, 2016, RGA, Inc. prepared an Initiation of Section 106 Consultation for the Lincoln Avenue Bridge (attached under Appendix C). Designed by H. Kersey and built in 1932, Structure No. 1100-055 (Mercer County Bridge #140.9) carries Lincoln Avenue over Amtrak's electrified Northeast Corridor, the Assunpink Creek, and a defunct branch line and siding. The Pennsylvania Railroad, New York to Philadelphia Historic District (the Northeast Corridor) was determined eligible for the National Register of Historic Places (NRHP) (SHPO Opinion: 10/2/2002); the Lincoln Avenue Bridge may potentially be a contributing resource to the historic district. Consulting and interested parties have been identified in order to begin the Section 106 consultation process.

The Area of Potential Effects (APE) for both Archaeology and Architecture has been delineated. The APE-Archeology encompasses any area of land disturbance required for obtaining permits or for the successful completion of the project. Two archeological resources were previously identified south of the Lincoln Avenue Bridge as being eligible for listing on the NRHP (sites 28-Me-364 and 28-Me-365). Site 28-Me-364 is a domestic historic site and site 28-Me-365 includes a secondary deposit of Greenwood pottery underlain by intact prehistoric resources. The boundaries of the APE- Architecture encompass all of the APE-Archaeology. The APE-Architecture also includes the Lincoln Avenue Bridge, a portion of the NRHP-eligible Pennsylvania Railroad, New York to Philadelphia Historic District, a portion of Trenton's Chambersburg neighborhood (part of the 000 block of Chambers Street and parts of the 700 and 800 blocks of East State Street), and part of the 100 block of Lincoln Avenue on the north end of the bridge. Aside from the historic district, the APE-Architecture contains no architectural resources that have been determined eligible for or listed on the NRHP.

3.0 PERMITS AND APPROVALS

This section identifies potential environmental permits and approvals that may be required for the project as identified by the environmental screening as detailed in Section 2 above. The following permits and authorizations may be required prior to implementation of the proposed activities including, but not limited to, the following:

Agency	Approval	Statutory Authority
NJDEP Division of Land Use Regulation	Freshwater Wetlands General Permit and Transition Area Waiver	New Jersey Freshwater Wetlands Protection Act
NJDEP Division of Land Use Regulation	Flood Hazard Area Permit	New Jersey Flood Hazard Area Control Act
NJDEP Green Acres Program	NJ State House Commission for Easement/Use of Section 4(f) Properties	Green Acres Program Rules

The NJDEP has jurisdiction over wetlands, wetland transition areas and State open waters located within the project study area; therefore, permits for activities in these regulated areas may be required under the regulatory framework of the Freshwater Wetlands Protection Act Rules.

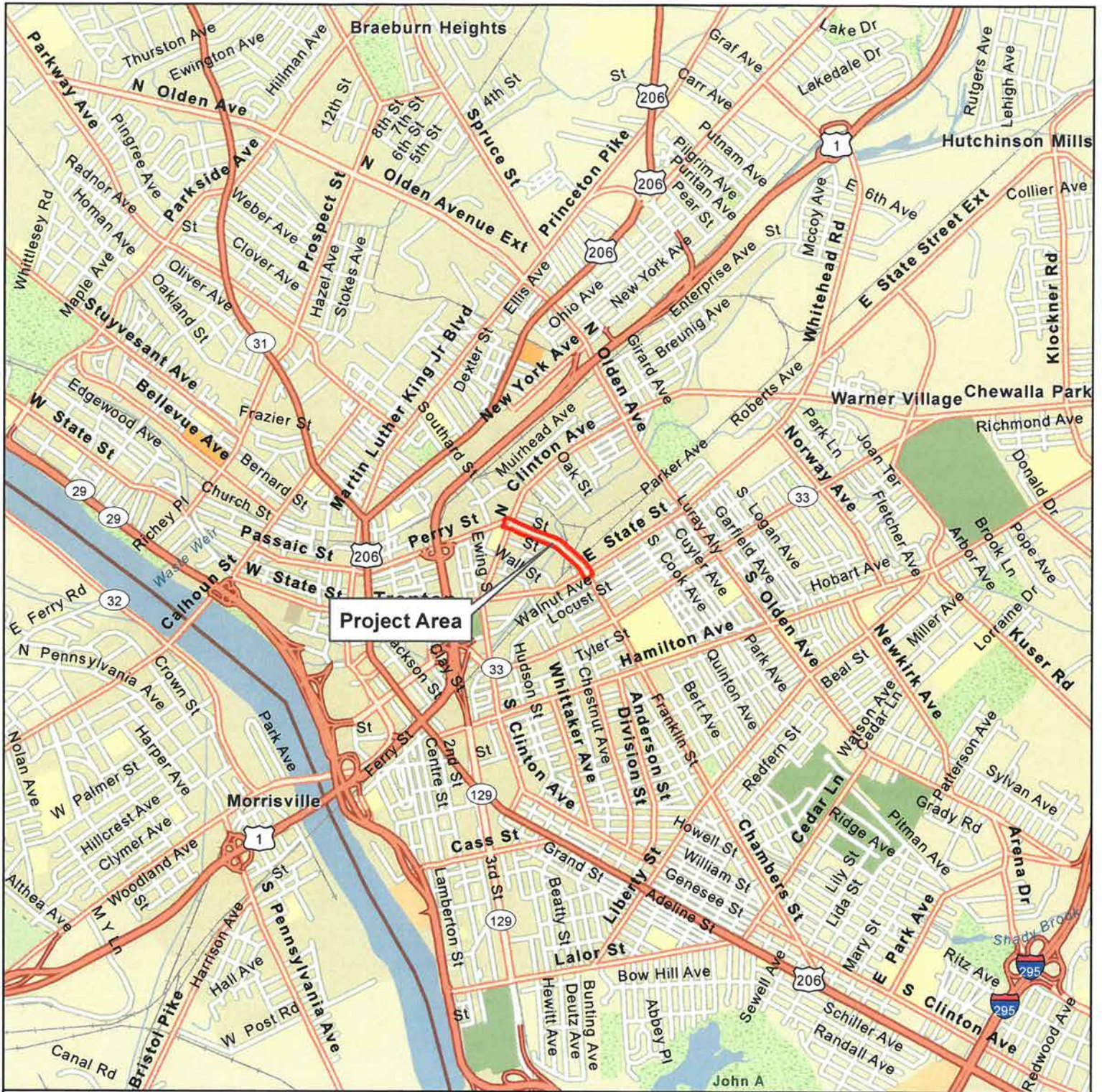
The Assunpink Creek stream channel and associated flood hazard areas and riparian zones have been identified within the project study area. Activities within the flood hazard areas and any clearing, cutting or removal of vegetation in riparian zones would require authorization by the NJDEP under the Flood Hazard Area Control Act Rules.

A City-owned Green Acres property has been identified within the project study area. Any taking or use of this land would require approval of the NJDEP Commissioner and the NJ State House Commission.

When a conceptual design and footprint of disturbance have been developed for the proposed project, pre-application conferences with the regulatory agencies would be recommended to accurately identify jurisdictional boundaries and necessary permits/approvals.

APPENDIX A – Site Maps

County Road Map
USGS Topographic Map
Wetland & Streams Map
Flood Hazard Area Map
Landscape Project Map
Section 4(f) Recreational Land Map
Potentially Contaminated Sites Map
Land Use Area Map



Project Area

Legend

 Project Area



Project Area

County Road Map

Lincoln Avenue Bridge Replacement
City of Trenton
Mercer County, New Jersey

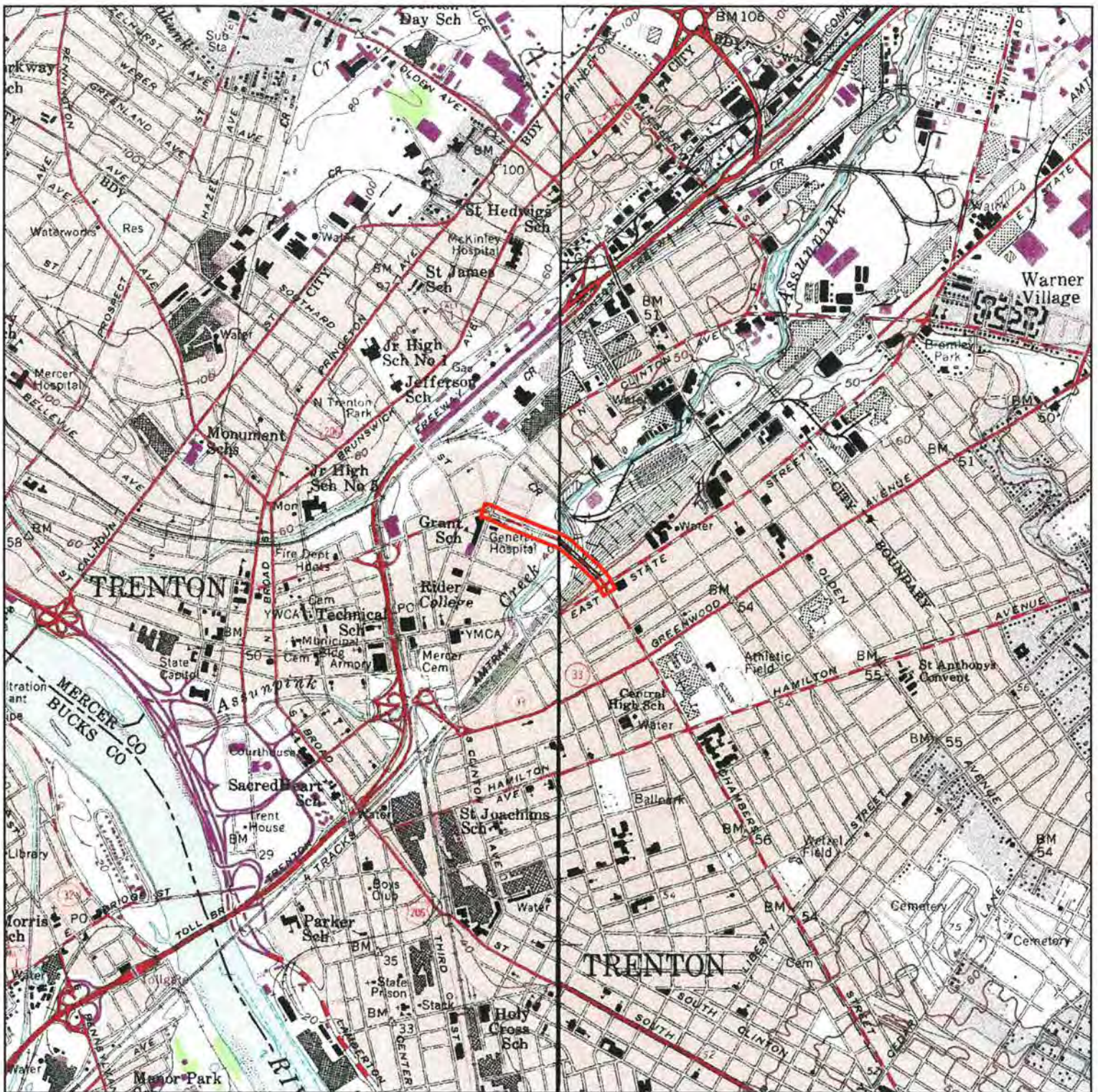
ASGECI Project # 3913

Source:
ESRI Street Map North America, Tele Atlas North America, Inc.,
published by ESRI® Data & Maps, Redlands, California, 2010.



3,000
Feet

 AMY S. GREENE
ENVIRONMENTAL
CONSULTANTS.



Legend

 Project Area

New Jersey State Plane Coordinates in NAD83 for the approximate center of site -
 North: 506,766' // East: 422,302'

Latitude and Longitude Coordinates in NAD83 for the approximate center of site -
 N: 40° 13' 27.97" / W: 74° 45' 00.25"

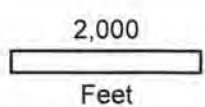


USGS Topographic Map

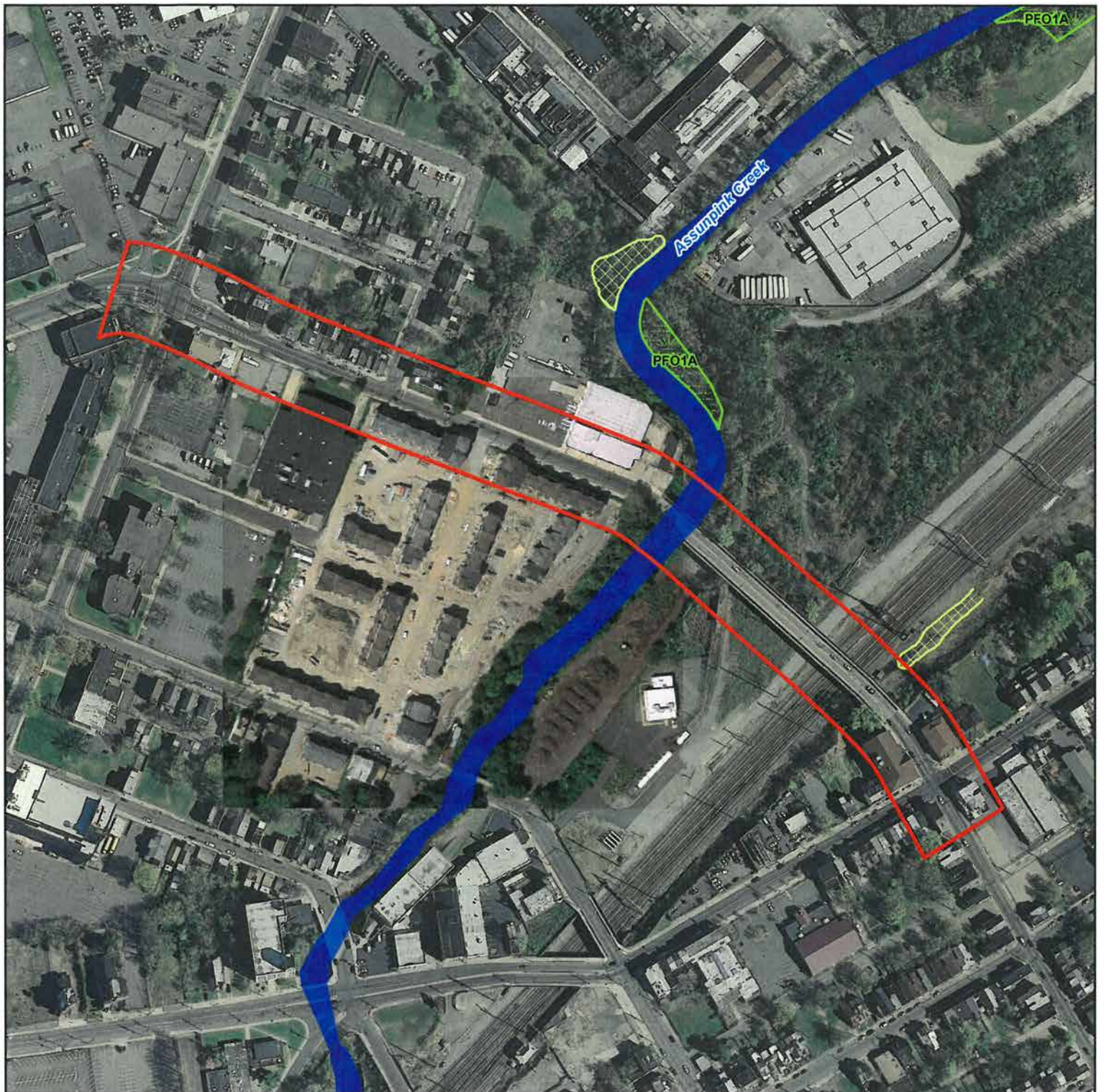
Lincoln Avenue Bridge Replacement
 City of Trenton
 Mercer County, New Jersey

ASGECI Project # 3913

Source
 Collarless / Seamless Bit-Mapped 7.5 Minute Color Topographic Images of New Jersey, United States Geological Survey (USGS), Digital Raster Graphic (DRG) Topographic Series Map, Trenton East NJ/PA, and Trenton West PA/NJ Quadrangles, USGS, Reston, Va., January 9, 1996, distributed by Digital Data Services, Inc., Lakewood, CO.



**AMY S. GREENE
 ENVIRONMENTAL
 CONSULTANTS.**



Legend

-  Project Area
-  Streams and Water Quality
-  NJDEP Freshwater Wetlands (Field Verified)
-  Additional Wetlands Field Observed by ASGECI

WETLAND CLASSIFICATIONS:

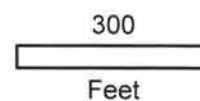
PFO1A - Paustrine, Forested, Broad-leaved Deciduous, Temporarily Flooded Sources:

NJDEP Wetlands of New Jersey by County 1986, New Jersey Department of Environmental Protection (NJDEP), Office of Information Resources Management, Bureau of Geographic Information and Analysis, NJDEP, Trenton, November 1999.
 NJDEP Surface Water Quality Standards of New Jersey, NJ Department of Environmental Protection (NJDEP), Water Monitoring & Standards (WMS), Bureau of Freshwater and Biological Monitoring (BFBM), Trenton, NJ, December 2010.
 New Jersey 2012 - 2013 High Resolution Orthophotography, NAD83 NJ State Plane Feet, MrSID Tiles, State of New Jersey - Office of Information Technology (NJGIT), Office of Geographic Information Systems (OGIS), Trenton, NJ, March 2013.
 This (map/publication/report) was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not State-authorized.

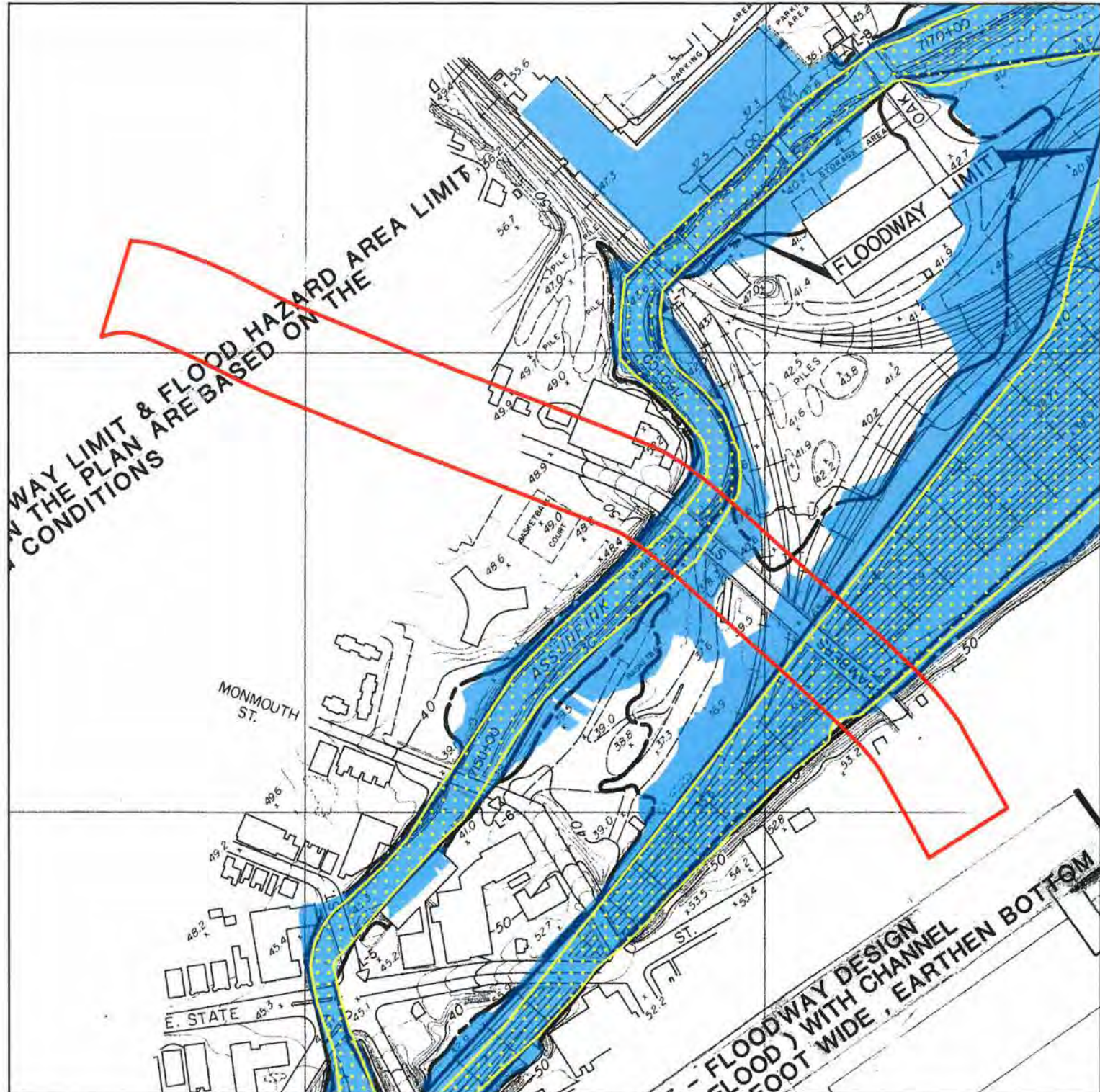
Wetland & Streams Map

Lincoln Avenue Bridge Replacement
 City of Trenton
 Mercer County, New Jersey




ASGECI Project # 3913



 **AMY S. GREENE
 ENVIRONMENTAL
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Legend

-  Project Area
-  100-year FEMA Floodplain
-  Floodway

NJDEP Flood Hazard Area Legend:

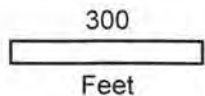


Flood Hazard Area Map

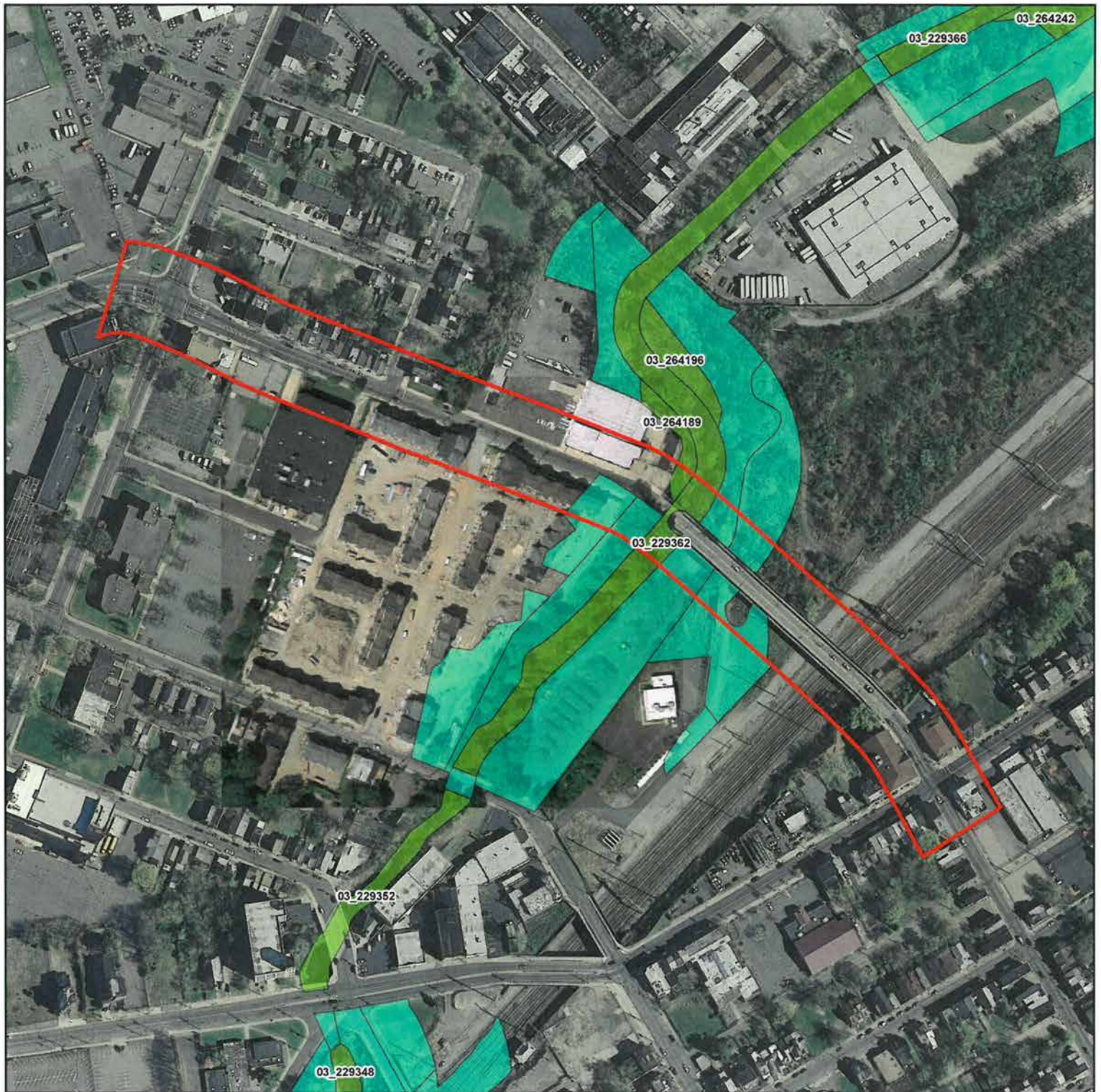
Lincoln Avenue Bridge Replacement
 City of Trenton
 Mercer County, New Jersey

ASGECI Project # 3913




Sources:
 Preliminary Digital Flood Insurance Rate Map (DFIRM) Database, Mercer County, New Jersey, Federal Emergency Management Agency, vector digital data, Federal Insurance and Mitigation Administration, Washington, DC, June 2013.
 Delineation of Floodway and Flood Hazard Area of Assunpink Creek, Mercer County, New Jersey, Plate A-1,
 New Jersey Department of Environmental Protection, Division of Water Resources, Bureau of Floodplain Management,
 prepared by U.S. Department of Agriculture Soil Conservation Service, A.D.R. Associates Inc., Pennsauken, NJ



**AMY S. GREENE
 ENVIRONMENTAL
 CONSULTANTS.**



Legend

-  Project Area
-  Rank 1 Habitat
-  Rank 2 Habitat

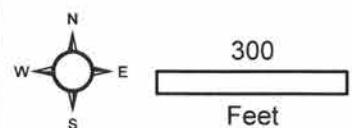
SPECIES LIST:
 03_229362 & 03_264189 - Great Blue Heron (Foraging)

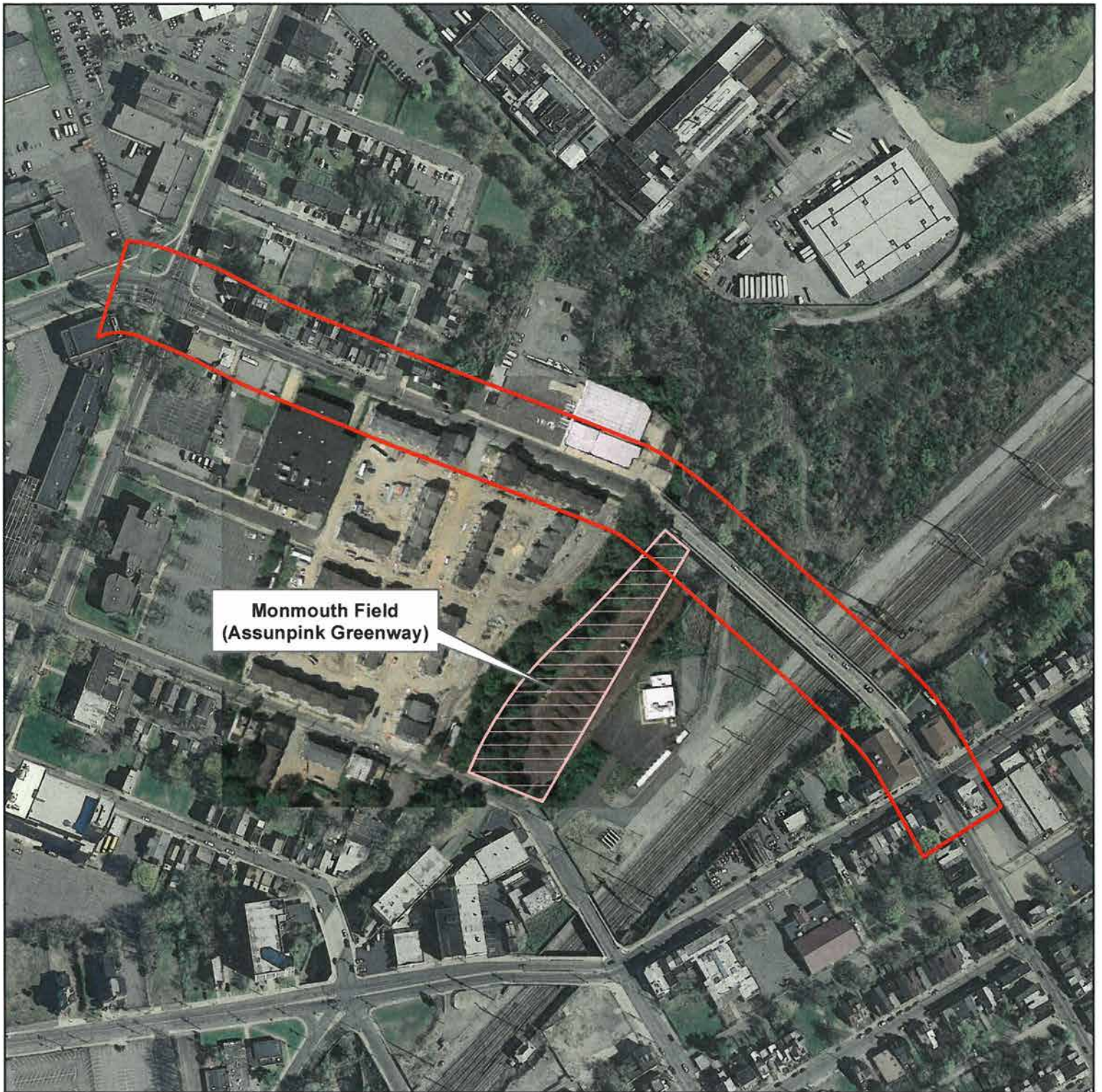
Sources:
 NJDEP Species Based Habitat by Landscape Region (Version 3.1), NJ Department of Environmental Protection, Division of Fish and Wildlife, Endangered Non-Game Species Program, NJ Division of Fish and Wildlife, Trenton, NJ, February 2012.
 New Jersey 2012 - 2013 High Resolution Orthophotography, NAD83 NJ State Plane Feet, MrSID Tiles, State of New Jersey - Office of Information Technology (NJGIT), Office of Geographic Information Systems (OGIS), Trenton, NJ, March 2013.
 This (map/publication/report) was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not State-authorized.

Landscape Project Map

Lincoln Avenue Bridge Replacement
 City of Trenton
 Mercer County, New Jersey

ASGECI Project # 3913





**Monmouth Field
(Assumpink Greenway)**

Legend

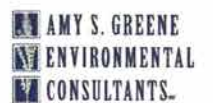
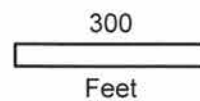
-  Project Area
-  On-site Green Acres

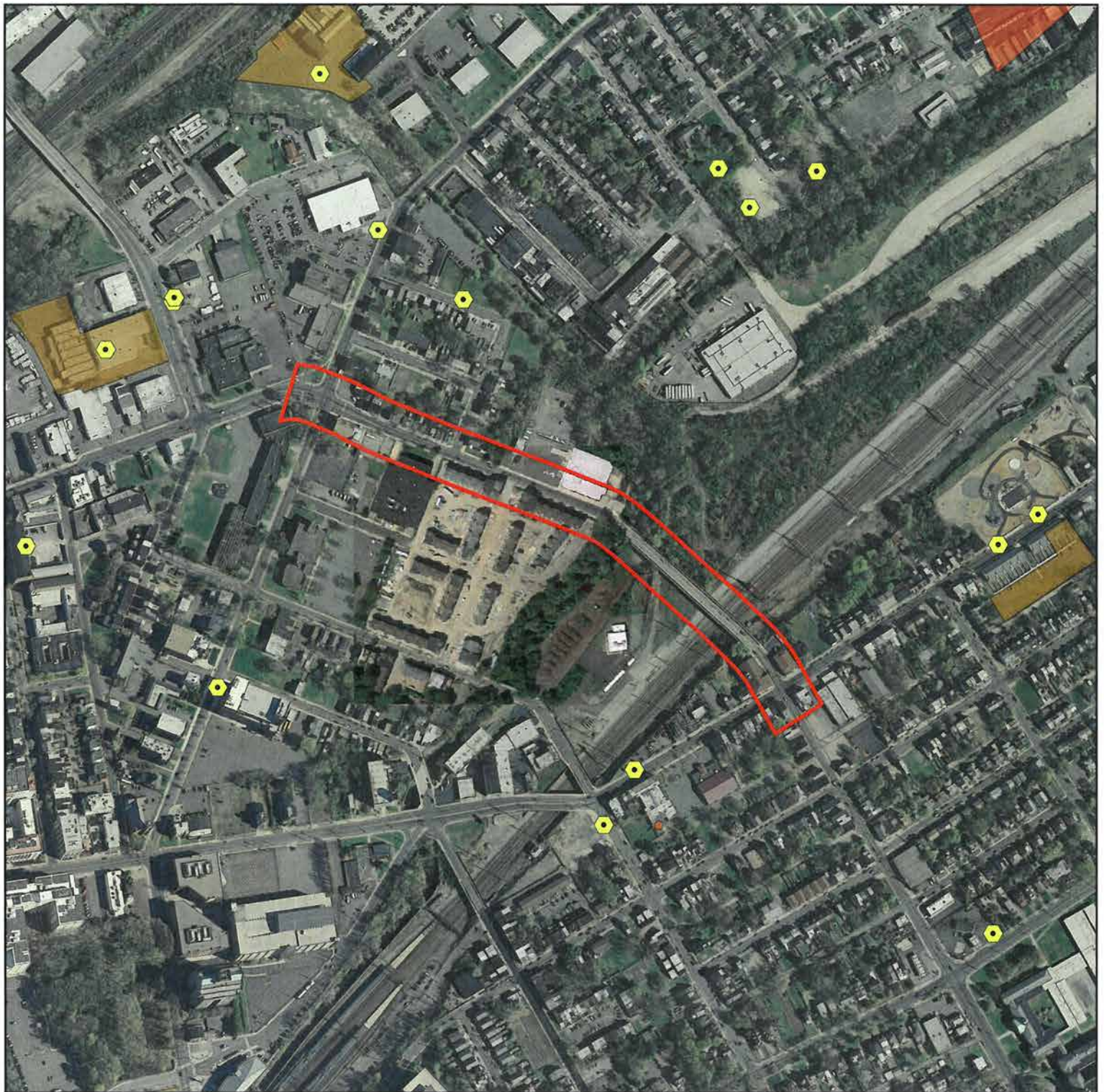
Sources:
 Identified Green Acres Parcels listed on the Recreation & Open Space Inventory (ROSI) database (last updated June 2014) maintained by the NJDEP Green Acres Program and extracted from State of New Jersey Composite of Parcels Data, New Jersey Office of Information Technology, Office of Geographic Information Systems, Trenton, NJ, September 2013.
 New Jersey 2012 - 2013 High Resolution Orthophotography, NAD83 NJ State Plane Feet, MrSID Tiles, State of New Jersey - Office of Information Technology (NJGIT), Office of Geographic Information Systems (OGIS), Trenton, NJ, March 2013.
 This (map/publication/report) was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not State-authorized.

Section 4(f) Recreational Land Map





Lincoln Avenue Bridge Replacement
 City of Trenton
 Mercer County, New Jersey

ASGECI Project # 3913





Legend

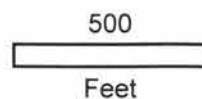
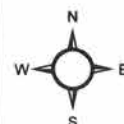
-  Project Area
-  Known Contaminated Site
-  Deed Notice Extent
-  Classification Exception Areas-Well Restriction Areas

Sources:
 NJDEP Known Contaminated Site List for New Jersey [May 2014], Deed Notice Extent in New Jersey [September 2014], and NJDEP Classification Exception Areas / Well Restriction Areas Polygon Maps for New Jersey [November 2015], Department of Environmental Protection (NJDEP), Site Remediation Program (SRP), Division of Enforcement, Technical & Financial Support, Enforcement & Information Support Element, Bureau of Information Systems (BIS), Trenton, NJ. New Jersey 2012 - 2013 High Resolution Orthophotography, NAD83 NJ State Plane Feet, MrSID Tiles, State of New Jersey - Office of Information Technology (NJGIT), Office of Geographic Information Systems (OGIS), Trenton, NJ, March 2013. This (map/publication/report) was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not State-authorized.

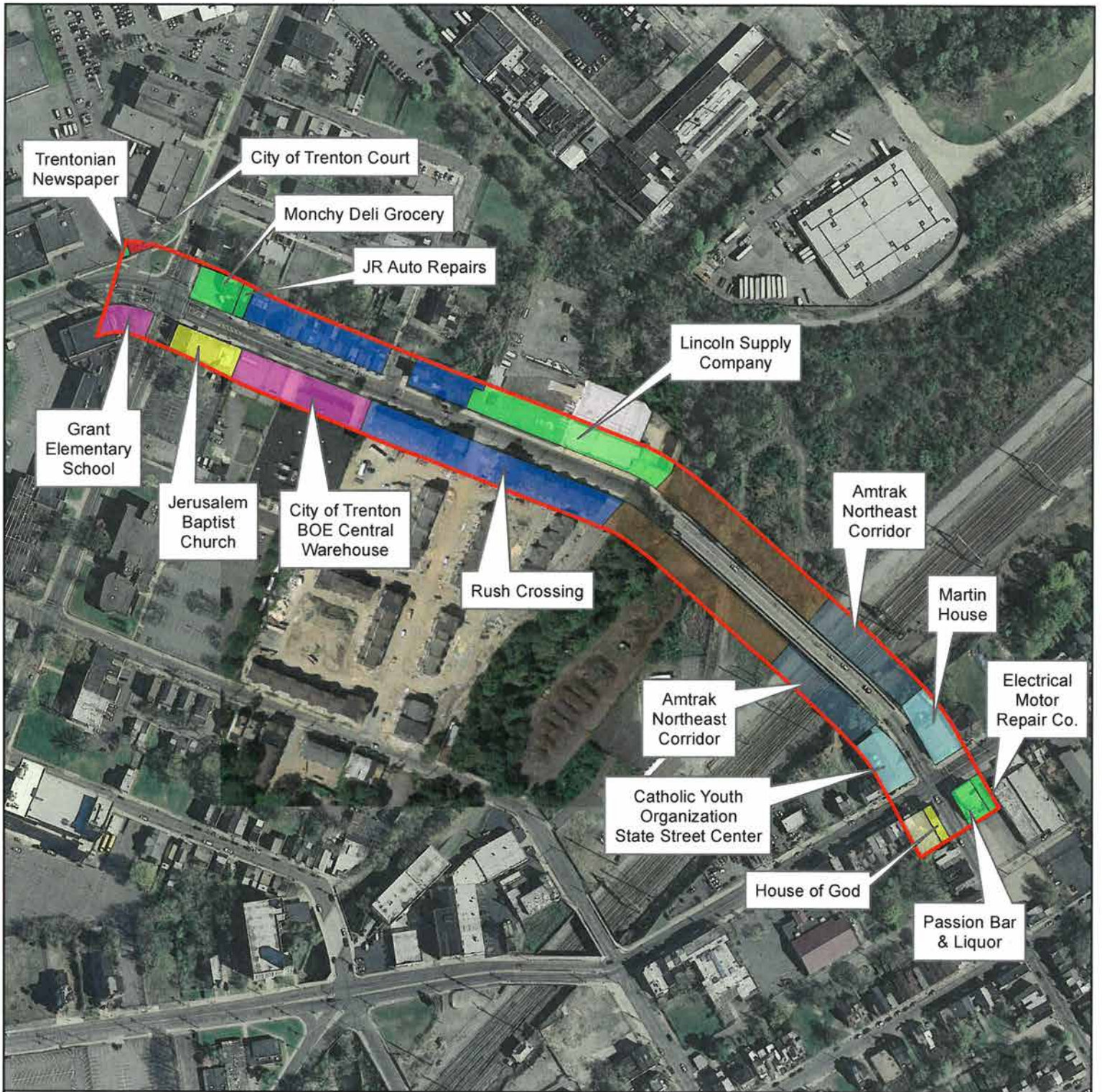
Potentially Contaminated Sites Map

Lincoln Avenue Bridge Replacement
 City of Trenton
 Mercer County, New Jersey

ASGECI Project # 3913



**AMY S. GREENE
 ENVIRONMENTAL
 CONSULTANTS**



Legend

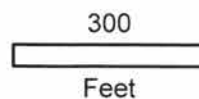
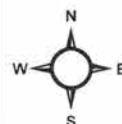
-  Project Area
-  Commercial
-  Residential
-  Educational
-  Residential / Commercial
-  Municipal
-  Services
-  Railroad
-  Vacant Land
-  Religious

Sources:
 Land Use provided by Amy S. Greene Environmental Consultants Inc. based on aerial photographic interpretation and field investigations performed in November and December 2015
 New Jersey 2012 - 2013 High Resolution Orthophotography, NAD83 NJ State Plane Feet, MrSID Tiles, State of New Jersey - Office of Information Technology (NJGIT), Office of Geographic Information Systems (OGIS), Trenton, NJ, March 2013.
 This (map/publication/report) was developed using New Jersey Department of Environmental Protection Geographic Information System digital data, but this secondary product has not been verified by NJDEP and is not State-authorized.

Land Use Area Map

Lincoln Avenue Bridge Replacement
 City of Trenton
 Mercer County, New Jersey

ASGECI Project # 3913



APPENDIX B – Documentation

- USFWS IPaC Report, dated December 8, 2015

Lincoln Avenue Bridge Replacement

IPaC Trust Resource Report

Generated December 08, 2015 09:17 AM MST

This report is for informational purposes only and should not be used for planning or analyzing project-level impacts. For projects that require FWS review, please return to this project on the IPaC website and request an official species list from the Regulatory Documents page.



US Fish & Wildlife Service

IPaC Trust Resource Report



Project Description

NAME

Lincoln Avenue Bridge Replacement

PROJECT CODE

LW6AU-KNORF-HIZGR-IDC6S-KQBKUY

LOCATION

Mercer County, New Jersey

DESCRIPTION

City of Trenton

Mercer County, NJ

ASGECI #3913



U.S. Fish & Wildlife Contact Information

Species in this report are managed by:

New Jersey Ecological Services Field Office

927 North Main Street, Building D

Pleasantville, NJ 08232-1454

(609) 646-9310

Endangered Species

Proposed, candidate, threatened, and endangered species that are managed by the [Endangered Species Program](#) and should be considered as part of an effect analysis for this project.

This unofficial species list is for informational purposes only and does not fulfill the requirements under [Section 7](#) of the Endangered Species Act, which states that Federal agencies are required to "request of the Secretary of Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action." This requirement applies to projects which are conducted, permitted or licensed by any Federal agency.

A letter from the local office and a species list which fulfills this requirement can be obtained by returning to this project on the IPaC website and requesting an official species list on the [Regulatory Documents](#) page.

There are no endangered species identified for this project area

Critical Habitats

Potential effects to critical habitat(s) within the project area must be analyzed along with the endangered species themselves.

There is no critical habitat within this project area

Migratory Birds

Birds are protected by the [Migratory Bird Treaty Act](#) and the [Bald and Golden Eagle Protection Act](#).

Any activity which results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service (1). There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

You are responsible for complying with the appropriate regulations for the protection of birds as part of this project. This involves analyzing potential impacts and implementing appropriate conservation measures for all project activities.

<p>American Oystercatcher <i>Haematopus palliatus</i> Year-round https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0G8</p>	Bird of conservation concern
<p>American Bittern <i>Botaurus lentiginosus</i> Season: Breeding https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0F3</p>	Bird of conservation concern
<p>Bald Eagle <i>Haliaeetus leucocephalus</i> Year-round https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B008</p>	Bird of conservation concern
<p>Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i> Season: Breeding https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HI</p>	Bird of conservation concern
<p>Blue-winged Warbler <i>Vermivora pinus</i> Season: Breeding</p>	Bird of conservation concern
<p>Canada Warbler <i>Wilsonia canadensis</i> Season: Breeding</p>	Bird of conservation concern
<p>Fox Sparrow <i>Passerella iliaca</i> Season: Wintering</p>	Bird of conservation concern
<p>Gull-billed Tern <i>Gelochelidon nitotica</i> Season: Breeding https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0JV</p>	Bird of conservation concern
<p>Kentucky Warbler <i>Oporornis formosus</i> Season: Breeding</p>	Bird of conservation concern
<p>Least Bittern <i>Ixobrychus exilis</i> Season: Breeding</p>	Bird of conservation concern
<p>Loggerhead Shrike <i>Lanius ludovicianus</i> Year-round https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FY</p>	Bird of conservation concern
<p>Peregrine Falcon <i>Falco peregrinus</i> Season: Wintering https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FU</p>	Bird of conservation concern

Pied-billed Grebe <i>Podilymbus podiceps</i> Year-round	Bird of conservation concern
Prairie Warbler <i>Dendroica discolor</i> Season: Breeding	Bird of conservation concern
Purple Sandpiper <i>Calidris maritima</i> Season: Wintering	Bird of conservation concern
Red Knot <i>Calidris canutus rufa</i> Season: Wintering https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0DM	Bird of conservation concern
Rusty Blackbird <i>Euphagus carolinus</i> Season: Wintering	Bird of conservation concern
Short-eared Owl <i>Asio flammeus</i> Season: Wintering https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HD	Bird of conservation concern
Snowy Egret <i>Egretta thula</i> Season: Breeding	Bird of conservation concern
Upland Sandpiper <i>Bartramia longicauda</i> Season: Breeding https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HC	Bird of conservation concern
Willow Flycatcher <i>Empidonax traillii</i> Season: Breeding https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0F6	Bird of conservation concern
Wood Thrush <i>Hylocichla mustelina</i> Season: Breeding	Bird of conservation concern
Worm Eating Warbler <i>Helmitheros vermivorum</i> Season: Breeding	Bird of conservation concern

Refuges

Any activity proposed on [National Wildlife Refuge](#) lands must undergo a 'Compatibility Determination' conducted by the Refuge. If your project overlaps or otherwise impacts a Refuge, please contact that Refuge to discuss the authorization process.

There are no refuges within this project area

Wetlands

Impacts to [NWI wetlands](#) and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes.

Project proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate [U.S. Army Corps of Engineers District](#).

DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Wetland data is unavailable at this time.

**APPENDIX C – Initiation of Section 106 Consultation
RGA Cultural Resource Consultants, dated August 18, 2016**



CULTURAL
RESOURCE
CONSULTANTS

HEADQUARTERS

259 Prospect Plains Road | Building D | Cranbury, New Jersey 08512 | 609-655-0692

August 18, 2016

Ms. Kate Marcopul
Acting Administrator and Deputy State Historic Preservation Officer
Mail Code 501-04B
NJDEP-Historic Preservation Office
5 Station Plaza
501 East State Street
Trenton, New Jersey 08625-0420

RE: Initiation of Section 106 Consultation, Replacement of Lincoln Avenue Bridge (Mercer County Bridge #140.9; NJ Structure #1100-055) over the Northeast Corridor Line and the Assunpink Creek, City of Trenton, Mercer County, New Jersey.

Dear Ms. Marcopul:

On behalf of Mercer County, the Delaware Valley Regional Planning Commission (DVRPC) is preparing a concept development study for the replacement of the above-referenced bridge. The DVRPC is proposing to replace the bridge with a new structure and to complete related work to the north and south approaches. A Preferred Plan or Preliminary Preferred Alternative had not been developed at the time of this letter. The purpose of this letter is to delineate the project's Area of Potential Effects (APE) and to identify consulting and interested parties, including local and regional historic preservation organizations and historical societies. These activities are completed as part of the Section 106 consultation process among the New Jersey Department of Transportation (NJDOT), the Federal Highway Administration (FHWA) and the New Jersey Historic Preservation Office (NJHPO). As delineated in the March 5, 2015 project scoping letter, it is assumed that the NJDOT will consult with federally recognized tribes.

The Lincoln Avenue Bridge (Structure #1100-055) is a partially encased, eight-span through-girder structure with floor beams. Designed by H. Kersey, County Bridge Engineer and built by Parker and Graham, Inc., the bridge was constructed in 1932. It carries Lincoln Avenue, a two-lane road, in a residential/industrial section of Trenton (see Figure 1). Structure #1100-055 crosses over six active tracks of Amtrak's electrified Northeast Corridor, a defunct branch line, an abandoned multi-track siding northeast of the bridge, and the Assunpink Creek (see Figure 2). The right-of-way was developed in the 1860s by the Camden & Amboy Railroad. According to the New Jersey Historic Bridge Survey (A.G. Lichtenstein & Associates, Inc. 1994), the bridge is not considered "technologically innovative." The bridge may however, contribute to the Pennsylvania Railroad, New York to Philadelphia Historic District (SHPO Opinion: 10/2/2002) which has been determined eligible for listing on the National Register of Historic Places (NRHP).

The Area of Potential Effects for Archaeology (APE-Archaeology) includes the areas that will be directly impacted by associated below ground disturbances. The APE-Archaeology includes the projected limits of disturbance for the proposed repairs and improvements (see Figure 3, boundary marked in red). The APE-Archaeology encompasses any area of land disturbance required for obtaining permits or for successful completion of the project. Local disturbances include, but are not limited to, areas subject to evaluation or deep grading, wetlands mitigations sites, and construction

ADDITIONAL OFFICES | Florida | Pennsylvania | Maryland | Ohio

ON THE WEB | www.rgaincorporated.com | mail@rgaincorporated.com

DBE/WBE/SBE CERTIFIED

Replacement of Lincoln Avenue Bridge (Structure #1100-055)
APE Definition Letter
August 18, 2016
Page 2

staging areas or borrow areas opened expressly for the project. A cultural resources investigation for the Trenton Amtrak bridges project identified two archeological resources (sites 28-Me-364 and 28-Me-365) south of the Lincoln Avenue Bridge. Site 28-Me-364 is a domestic historic site and site 28-Me-365 includes a secondary deposit of Greenwood pottery underlain by intact prehistoric resources. Both sites were determined eligible for listing on the NRHP.

The Area of Potential Effects for Historic Architecture (APE-Architecture, see Figure 3, boundary marked in yellow) includes the geographic area in which the project may directly or indirectly cause changes in the character or use of properties that could potentially be considered historically significant. The APE-Architecture has been delineated using current tax parcel data to denote the survey boundary, so that the contents of each parcel may be fully identified, documented, and evaluated (see Figure 4). The boundaries of the APE-Architecture encompass all of the APE-Archaeology and were delineated based on any significant direct or visual effects that the proposed undertaking may have on nearby architectural resources. A project reconnaissance was completed on December 11, 2015 to delineate the APE-Architecture. The APE-Architecture includes the Lincoln Avenue Bridge, a portion of the NRHP-eligible Pennsylvania Railroad, New York to Philadelphia Historic District (SHPO Opinion: 10/2/2002), a portion of Trenton's Chambersburg neighborhood, part of the 000 block of Chambers Street, parts of the 700 and 800 blocks of East State Street, and part of the 100 block of Lincoln Avenue on the north end of the bridge (see Figures 2, 4, and 5; see Plates 1-20).

Regarding historic architectural resources, the NRHP-eligible Pennsylvania Railroad, New York to Philadelphia Historic District contains several visible resources associated with a former railroad siding and branch line beneath the Lincoln Avenue Bridge and on land adjacent to both sides of the bridge. There are no other historic architectural resources (individual or district) that have previously been determined eligible for or listed on the NRHP within the APE-Architecture.

The APEs with photo plate locations and directions are shown on Figure 5 in the Attachments.

If you have any questions or comments regarding this APE report, please contact me at 609-655-0692 x 326 (office) or 610-585-3598 (cell).

Sincerely,



Robert J. Wise, Jr.
Principal Historic Preservation Planner

Attachments

cc: JR Griffies, Delaware Valley Regional Planning Commission

**Replacement of Lincoln Avenue Bridge (Mercer County Bridge #140.9;
NJ Structure #1100-055), over the Northeast Corridor Line and the Assunpink Creek,
City of Trenton, Mercer County, New Jersey**

_____ I concur that the APE, description of efforts to involve the public, and the list of consulting and interested parties are appropriate.

_____ I do not concur for the following reasons:

Kate Marcopul
Deputy State Historic Preservation Officer

Date

ATTACHMENTS

PUBLIC PARTICIPATION PLAN

PUBLIC PARTICIPATION PLAN

Soliciting the views of the public and those groups/individuals with interests in historic preservation is a valued part of the Section 106 process. A Public Participation Plan has been developed to involve the public and interested parties in the identification and evaluation of historic properties that might be affected by the project. The Public Participation Plan for the replacement of the Mercer County Bridge #140.9 (NJ Structure #1100-055) over the Northeast Corridor line and the Assunpink Creek includes the following:

A letter notifying and soliciting input on the identification of historic resources in the APEs will be sent to local preservation groups/individuals with an identified interest in preservation (see attached list). A copy of and responses to the letter will be attached to the final cultural resources documentation.

Community involvement will be coordinated with the requirements of the National Environmental Policy Act (NEPA). A public meeting(s) with stakeholders in the Chambersburg neighborhood and immediate neighborhood on the north side of the bridge as well as the City of Trenton will be held to describe the project and solicit input. A full public information center will be held and notification of time, place, and content of the meeting will be sent to property owners, officials, and interested parties. Documentation of the notification and response to the public meetings will become part of the final cultural resources documentation.

The cultural resources documentation will be circulated to the appropriate consulting parties: Mercer County Engineering, the City of Trenton, FHWA, NJDOT, DVRPC, and NJHPO (see attached list). No other consulting parties have been identified at this time.

The cultural resources documentation will be sent to local preservation groups/individuals with an identified interest in historic preservation (see attached list). Responses to the report will be attached to the final cultural resources documentation.

This Public Participation Plan is considered commensurate with the Scope of Work, defined at this time as the Replacement of Lincoln Avenue Bridge (Mercer County Bridge #140.9; NJ Structure #1100-055) over the Northeast Corridor line, and the Assunpink Creek, City of Trenton, Mercer County, New Jersey.

CONSULTING AND INTERESTED PARTIES

CONSULTING AND INTERESTED PARTIES

List of Consulting Parties

FHWA
NJDOT
DVRPC
NJHPO
County of Mercer, NJ
City of Trenton, NJ

Identified Local Historic Preservation Groups/Local Individuals with an Identified Interest in Preservation

Ms. Carol Rogers
Chair
Trenton Landmarks Commission for Historic Preservation
319 East State Street
Trenton, NJ 08608

Damon Tvaryanas
President
Trenton Historical Society
P.O. Box 1112
Trenton, NJ 08606

Mr. Scot D. Pannepacker, CPS/ABV
President
Preservation New Jersey
P.O. Box 7815
West Trenton, NJ 08628

Frank T. Reilly, President
United Railroad Historical Society of New Jersey
c/o 460 Elm Street
Stirling, NJ 07980

Jim Mackin, President
Roebling Chapter
Society for Industrial Archeology
370 Riverside Drive, Apt. 2B
New York, NY 10025

Ilene Bailey Grossman
Archeological Society of New Jersey
36 East Palmer Street
Morrisville, PA 19067

FIGURES

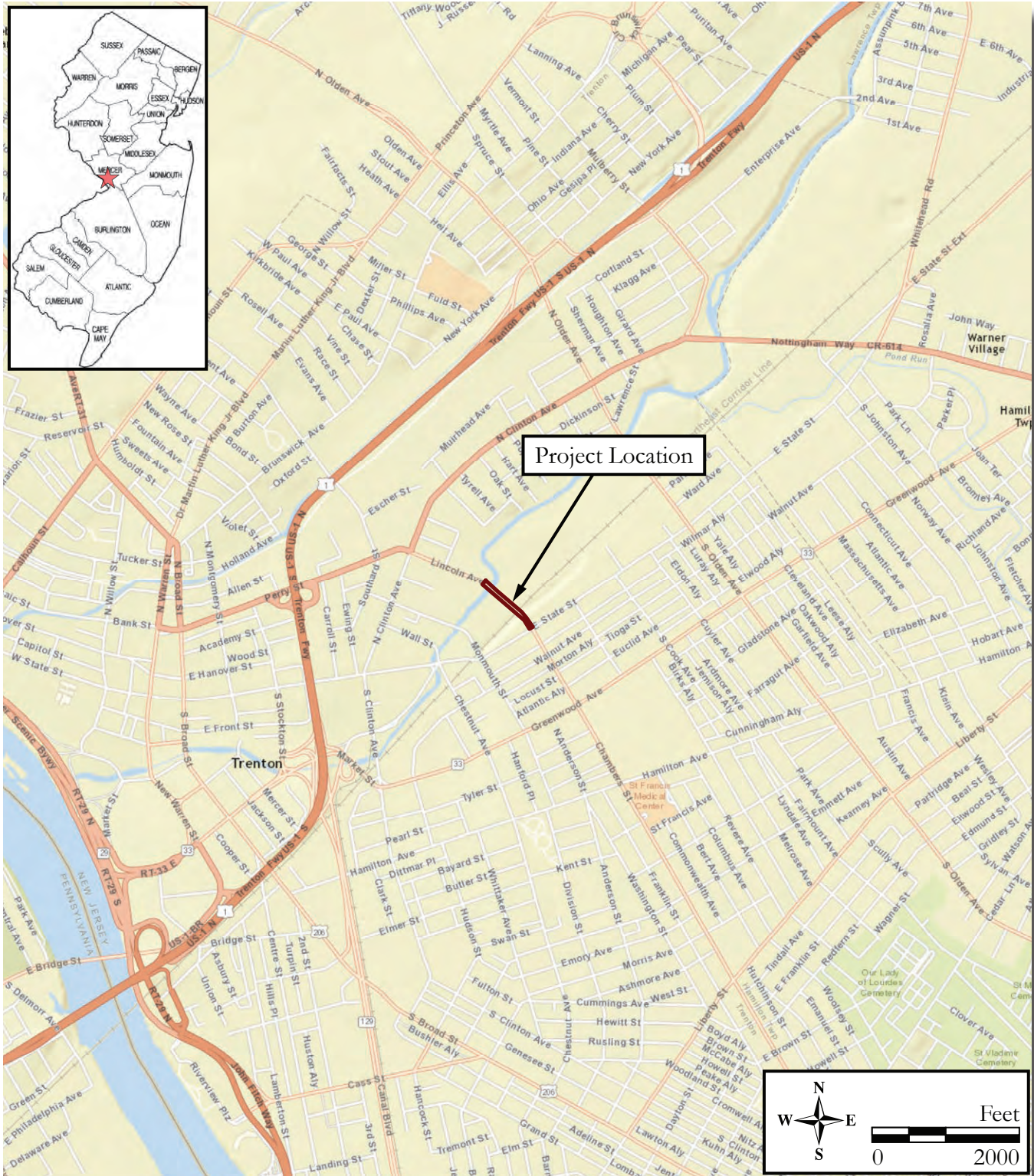


Figure 1: Project Location Map (World Street Map, ESRI 2016).

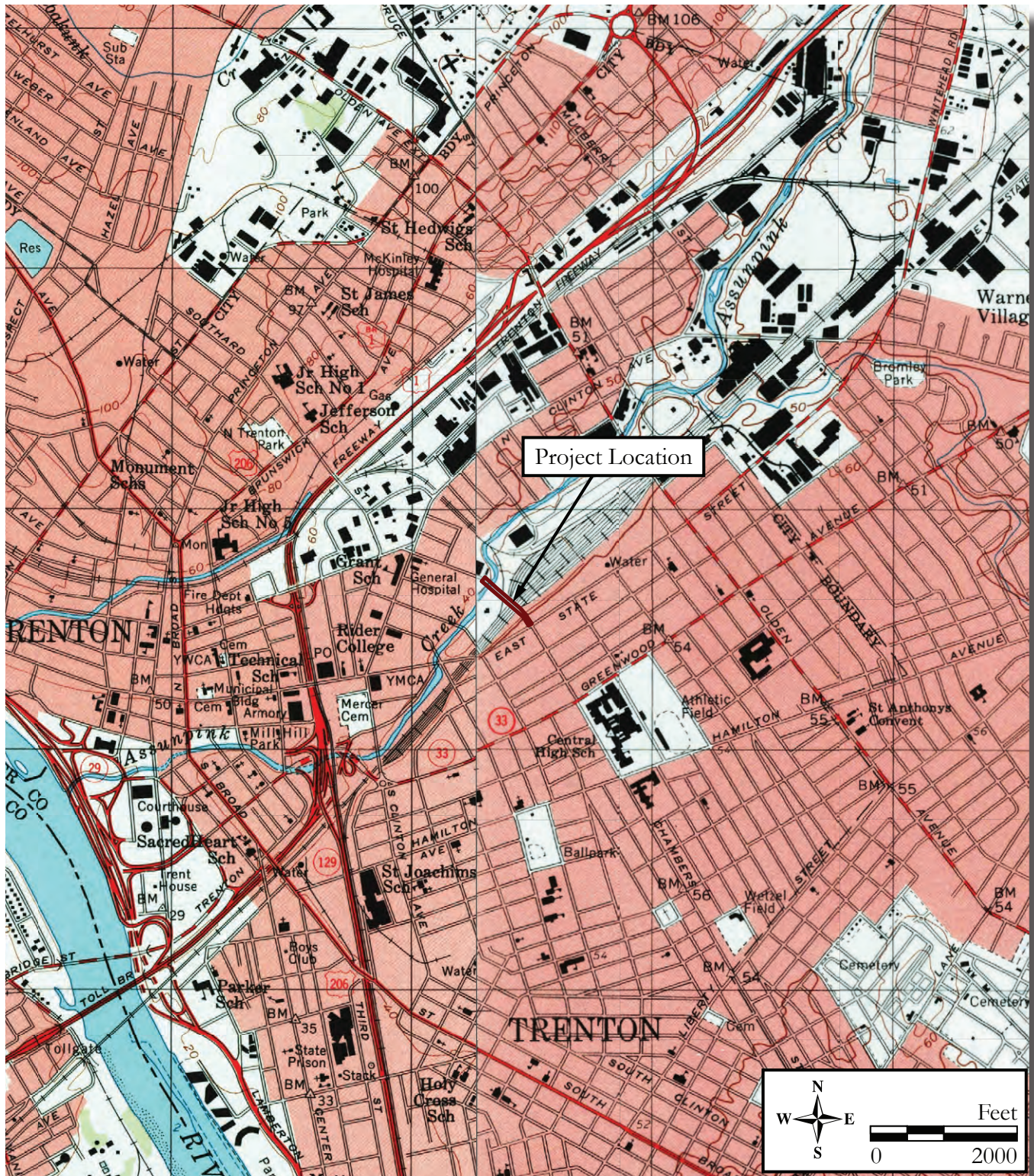


Figure 2: U.S.G.S. Map
(from 1995 U.S.G.S. 7.5' Quadrangles: Trenton West, NJ-PA and Trenton East, NJ-PA)



Figure 3: Aerial Map depicting the APE-Architecture, the APE-Archeology, and resources listed/eligible for the National Register of Historic Places (from NJGIS Digital Orthographic Imagery, 2015).

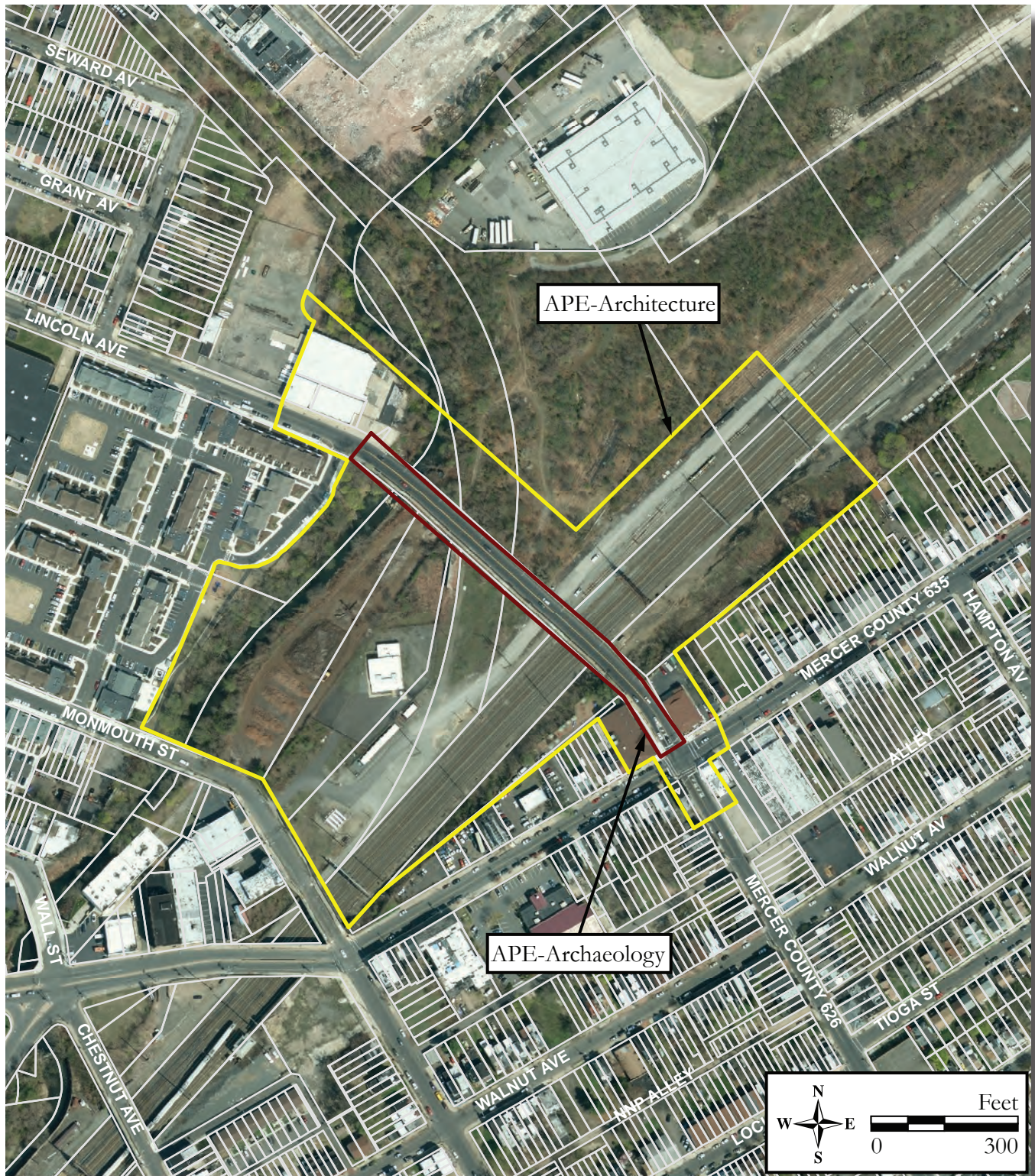


Figure 4: Tax Map of a section of the City of Trenton depicting the APE-Architecture and the APE-Archeology (from NJGIS Digital Orthographic Imagery, 2015).



Figure 5: Map of existing conditions with photo locations and directions (from NJGIS Digital Orthographic Imagery, 2015).

PLATES



Plate 1: Lincoln Avenue Bridge (north end).

Photo view: Southeast

Photographer: Robert Wise

Date: December, 11, 2015



Plate 2: Lincoln Avenue Bridge (north end), east side walkway.

Photo view: Southeast

Photographer: Robert Wise

Date: December, 11, 2015



Plate 3: Lincoln Avenue Bridge, west side walkway and road bed.

Photo view: Southeast

Photographer: Robert Wise

Date: December, 11, 2015



Plate 4: Lincoln Avenue Bridge (south end), plaque.

Photo view: Northwest

Photographer: Robert Wise

Date: December, 11, 2015



Plate 5: Lincoln Avenue Bridge (south end), west side walkway and road bed.

Photo view: Northwest

Photographer: Robert Wise

Date: December, 11, 2015



Plate 6: Lincoln Avenue Bridge, with North East Corridor tracks at right.

Photo view: Northeast

Photographer: Robert Wise

Date: December, 11, 2015



Plate 7: Lincoln Avenue Bridge, detail of the west parapet and example of pier.

Photo view: East

Photographer: Robert Wise

Date: December, 11, 2015



Plate 8: Lincoln Avenue Bridge, beneath bridge, detail of the girder span and stringers.

Photo view: Southeast

Photographer: Robert Wise

Date: December, 11, 2015



Plate 9: Lincoln Avenue Bridge, from rear of the 700 block of East State Street.

Photo view: North

Photographer: Robert Wise

Date: December, 11, 2015



Plate 10: Lincoln Avenue Bridge, siding element, beneath/west of the bridge, showing platform on spur line.

Photo view: South

Photographer: Robert Wise

Date: December, 11, 2015



Plate 11: Lincoln Avenue Bridge, Northeast Corridor with bridge in background.

Photo view: Northeast

Photographer: Robert Wise

Date: December, 11, 2015



Plate 12: Lincoln Avenue Bridge, west parapet with debris pile west of bridge.

Photo view: Southeast

Photographer: Robert Wise

Date: December, 11, 2015



Plate 13: Lincoln Avenue Bridge, terrain and Northeast Corridor tracks in foreground, northeast of bridge.

Photo view: North

Photographer: Robert Wise

Date: December, 11, 2015



Plate 14: Lincoln Avenue Bridge, new housing on Lincoln Avenue, north end of bridge.

Photo view: West

Photographer: Robert Wise

Date: December, 11, 2015



Plate 15: Lincoln Avenue Bridge, commercial building on Lincoln Avenue, north end of bridge.

Photo view: Northwest

Photographer: Robert Wise

Date: December, 11, 2015



Plate 16: Lincoln Avenue Bridge, Chambersburg neighborhood, bridge (far left), 800 block East State Street (right).

Photo view: Northwest

Photographer: Robert Wise

Date: December, 11, 2015



Plate 17: Lincoln Avenue Bridge, Chambersburg neighborhood, 800 block of East State Street at Chambers Street (far right).

Photo view: Southeast

Photographer: Robert Wise

Date: December, 11, 2015



Plate 18: Lincoln Avenue Bridge, Chambersburg neighborhood, Chambers Street (left), 700 block of East State Street (right).

Photo view: Southwest

Photographer: Robert Wise

Date: December, 11, 2015



Plate 19: Lincoln Avenue Bridge, Chambersburg neighborhood, 700 block East State Street, south side.

Photo view: East

Photographer: Robert Wise

Date: December, 11, 2015



Plate 20: Lincoln Avenue Bridge, Chambersburg neighborhood, 700 block East State Street, north side.

Photo view: West

Photographer: Robert Wise

Date: December, 11, 2015

APPENDIX D – Resume of Preparer

Years of Experience: 26

Education

- ⇒ M.F.A. Visual Art, Bennington College, 2002
- ⇒ B.S. Environmental Science, East Stroudsburg University, Stroudsburg, PA, 1984

Training

- ⇒ Wetland Training Institute, Wetland Delineation Certification, 1990;
- ⇒ Rutgers University, NJDEP Endangered and Nongame Species Program Landscape Project Training, 2005;
- ⇒ Cook College, College of Continuing Professional Education Seminars, Rutgers – New Jersey Agricultural Experiment Station, Office of Continuing Professional Education:
 - Vegetation Identification for Wetland Delineation – South September 2011;
 - NJ Wetland Mitigation Planning Hydrologic Budget Manual Training, NJ Coastal Permit Seminar, 1993;
 - Hydric Soils of NJ, 1991;
 - Wetland Identification, 1990;
 - Geology and Hydrogeology of NJ Coastal Plains, 1989;
 - NJ Freshwater Wetlands Permit Seminar, 1989;
 - Geology and Hydrogeology of Northern New Jersey, 1988;
 - New Flood Hazard Area Control Act Rules, November 2008;
 - Vegetation Identification for Wetland Delineation – South, September 2011
- ⇒ NJ Wetlands Manual Training Workshop, August 2008,
- ⇒ NJ Transit Operators / Contractors Safety Orientation, 2005;
- ⇒ MTA Metro-North Railroad Roadway Worker Procedures for Conductor Flags/Contract Employees, 2004.

KEY QUALIFICATIONS

Mr. Macholdt has extensive experience in management and performance of environmental studies including wetland delineation, wetland and other environmental permitting, wetland mitigation design, endangered and threatened species surveys, habitat restoration and environmental impact assessment. Mr. Macholdt has prepared successful State and Federal environmental permit applications for many bridge replacement and other transportation projects throughout New Jersey including NJDEP Freshwater and Coastal Wetlands Permits; Wetland Transition Area Waivers; Flood Hazard Area Permits; Waterfront Development Permits; and USACE Section 10/404 wetland permits. Mr. Macholdt is experienced in interaction and consultation with regulatory and resource protection agencies including NJDEP, USACE, USFWS, NMFS, NPS, and others.

RELEVANT EXPERIENCE

Route 46 and Hollywood Avenue Road Improvements, Fairfield Township, Essex County, NJ. New Jersey Department of Transportation/Arora & Associates. Project Manager responsible for the performance of a wetland delineation and the preparation of successful NJDEP permit applications for a Freshwater Wetlands General Permit No. 10B, Flood Hazard Area Verification and a Flood Hazard Area Individual Permit. The permits granted permission to place fill and construct a retaining wall, within the floodplain of the Passaic River, in connection with roadway improvements along Route 46, in the vicinity of the intersection with Hollywood Avenue (CR 625). The Permit authorized the total disturbance of Freshwater Wetlands and Wetland Transition Areas under the Freshwater Wetlands General Permit #10B. The approval also contained the verification of the Passaic River flood hazard area boundary.

Newburgh Road Bridge #140-196 over Musconetcong River, Washington Township, Morris County and Mansfield Township, Warren County, NJ. Morris County Engineers/Cherry, Weber & Associates. Project Manager for bridge replacement and improvements to the approach roadways. Mr. Macholdt performed a detailed wetland delineation, environmental review of project alternatives and preparation of the Ecology and Permits sections of the *National Environmental Policy Act* (NEPA) Categorical Exclusion Documentation (CED) with input from the Cherry, Weber and Associates team. A Phase I Bog Turtle Habitat Survey was performed. Also prepared successful applications for NJDEP Freshwater Wetlands General Permit No. 10A for minor roadway crossings and a Flood Hazard Area Individual Permit.

Chesterfield/Sykesville Road Bridge over Blacks Creek Replacement, Chesterfield Township, Burlington County, NJ. NJDOT/Arora & Associates, PC. Project Manager responsible for the performance of a detailed delineation of wetlands and open waters within the project limits and documentation of findings. Prepared successful applications for NJDEP Freshwater Wetlands General Permits #7 for ditches; FWW GP #10A for very

minor road crossings; and FWW GP #11 for the construction of a proposed stormwater outfall in the wetland transition area of the project. Also prepared a successful application for a NJDEP Flood Hazard Area to authorize the bridge replacement and activities in the flood hazard area of Blacks Creek.

Route 120 and Paterson Plank Road Reconstruction, Borough of East Rutherford, Bergen County, NJ. NJDOT/Earth Tech, Inc. (now AECOM). Amy S. Greene Environmental Consultants, Inc. was contracted to identify environmentally sensitive areas and permit requirements, assist with project planning, prepare sections of the Environmental Impact Statement and prepare environmental permit applications. The project area is in the Meadowlands and therefore is under the jurisdiction of both the US Army Corps of Engineers (USACE) and the NJ Department of Environmental Protection (NJDEP). Mr. Macholdt was the Project Manager responsible for the performance of a wetland delineation of the project area and preparation of successful applications for a NJDEP Flood Hazard Area Permit and a USACE Jurisdictional Determination and Section 404 Wetlands Nationwide Permit #14.

Route 183 over New Jersey Transit and Netcong Circle Reconstruction, Borough of Netcong, Morris County, NJ. NJDOT/Taylor Wiseman and Taylor. Project Manager for this replacement of the Route 183 bridge structure over a NJ Transit rail line. The project also included the slight realignment of US Route 46 to the west of the Netcong Circle. Proposed activities also included measures to stabilize a badly eroded drainage channel located within the project limits. Mr. Macholdt performed a delineation of wetlands and open waters within the project area. Potential environmental constraints and applicable environmental permit requirements for the project were identified and environmental documentation was prepared. He performed consultation and coordination with multiple State and Federal agencies, including the New Jersey Natural Heritage Program, the U.S. Fish and Wildlife Service, and the NJDEP Division of Land Use Regulation, was performed. Successful applications for NJDEP Freshwater Wetlands General Permits #7, #10A and #11 and a Flood Hazard Area Control Act (FHA) Individual Permit were prepared and submitted for NJDEP approval. As part of the FHA Permit application, a search for suitable riparian zone compensation sites was performed and documented.

Replacement of Route 27 Bridge Crossing of Abandoned Conrail South Plainfield Branch, Metuchen Borough, Middlesex County, NJ. NJDOT. Project Manager responsible for performance of a detailed wetland delineation and the preparation of successful applications for a NJDEP Freshwater Wetland General Permit #7 for ditches and #10A for very minor road crossings for replacement of the bridge structure and appurtenant features. Also performed tree inventory for NJ Green Acres Program compliance. This project has been constructed.

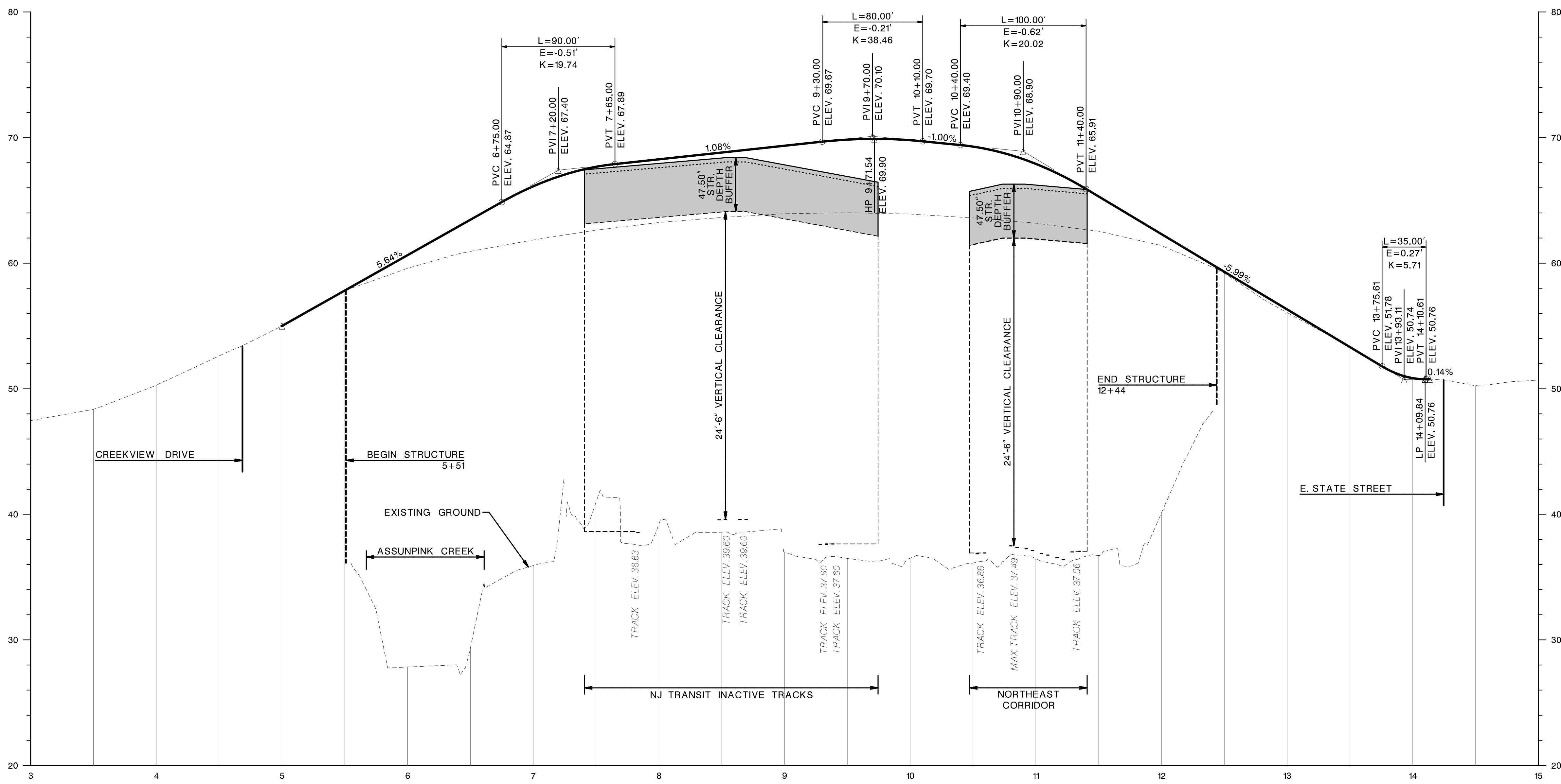
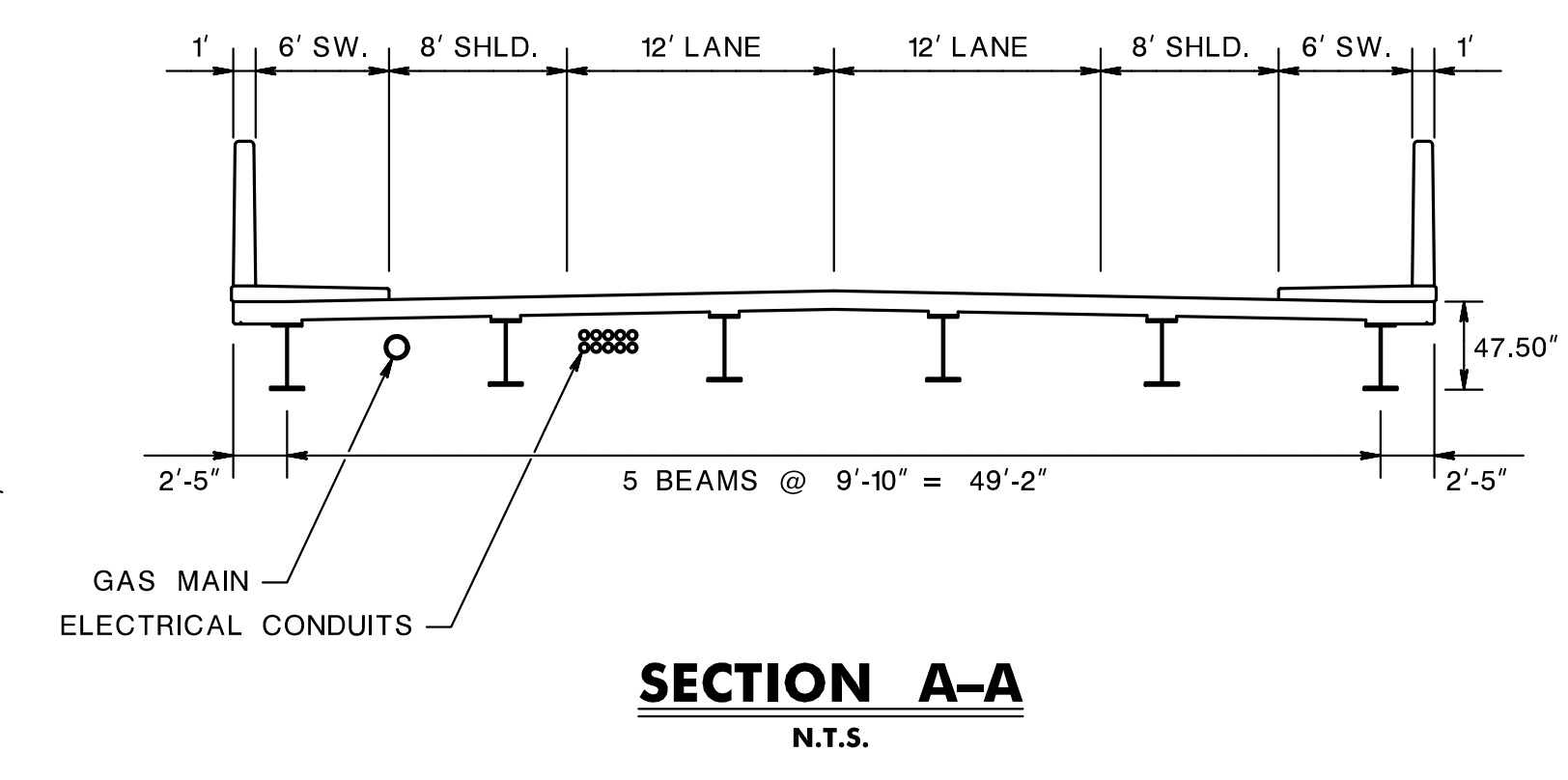
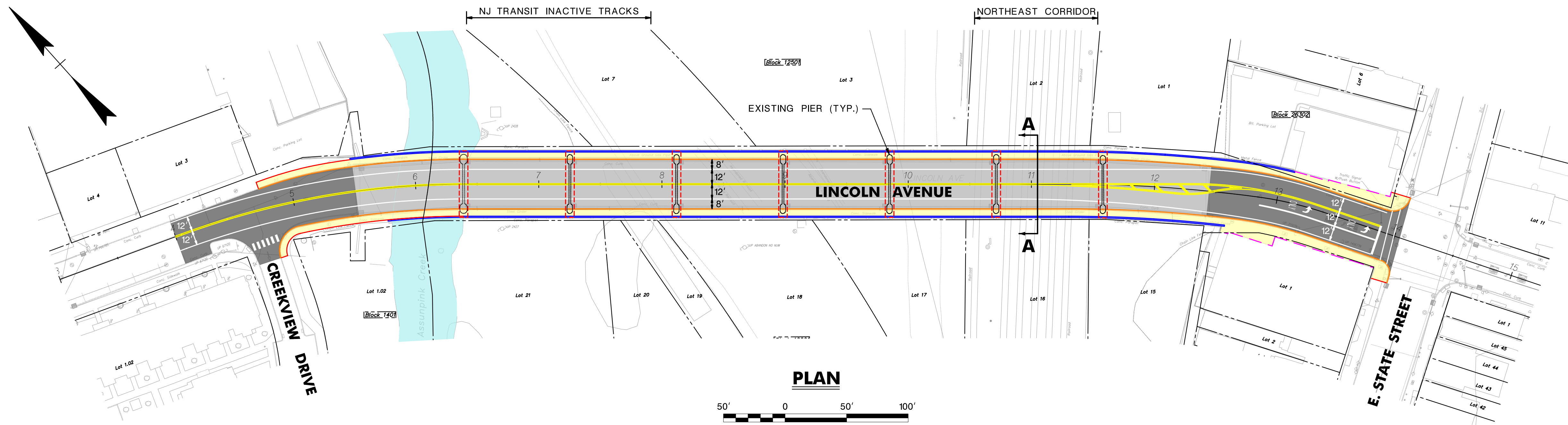
Miller Road Reconstruction and Culvert Replacement/Lakewood Township, Ocean County, NJ. Ocean County Engineering Department. Project Manager responsible for performance of a field investigation and detailed delineation of wetlands and the preparation of NJDEP permit applications. The permits required for this roadway reconstruction and culvert replacement project include a Freshwater Wetlands General Permit #10A for a minor road crossing, and a Flood Hazard Area Individual Permit to authorize culvert replacement in a stream and associated activities within the flood hazard area and riparian zone.

Monmouth County Bridge MA-14 Reconstruction / Keyport Borough and Aberdeen Township, Monmouth County, New Jersey. Monmouth County and Greenman-Pedersen, Inc. Project Manager responsible for the delineation and documentation of wetlands and State open waters along Monmouth County Bridge MA-14. Wetlands were identified and delineated utilizing the routine methodology outlined in the *Federal Manual for Identifying and Delineating Jurisdictional Wetlands (1989)*, as required by the NJDEP, and in the *1987 U.S. Army Corps of Engineers (USACE) Manual for Delineating Jurisdictional Wetlands Atlantic and Gulf Coastal Plain Supplement*, as required by the USACE. Also responsible for a field assessment of Essential Fish Habitat pursuant to US Army Corps and National Marine Fisheries Service requirements. The field investigation included a qualitative analysis of fish and shellfish species, substrate, salinity, and wetlands.



Appendix I

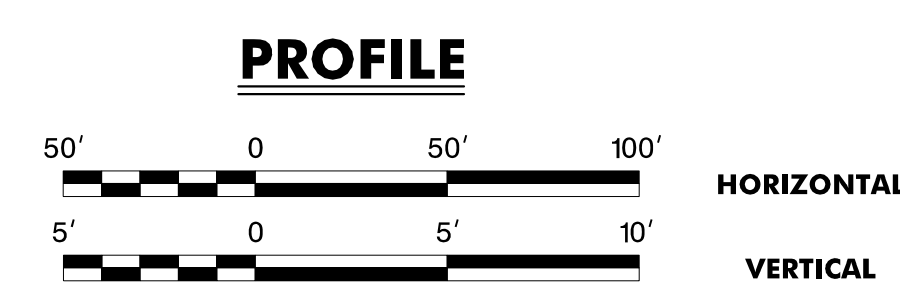
Alternatives



- NOTES:**
1. MAINTAIN EXISTING HORIZONTAL ALIGNMENT.
 2. INCREASE VERTICAL PROFILE TO MEET 24'-6" VERTICAL CLEARANCE.
 3. REPLACE PIERS AT THEIR EXISTING LOCATION.
 4. REPLACE DECK AND SUPERSTRUCTURE USING STEEL GIRDERS.

LEGEND

---	EXISTING ROW	---	PROPOSED PARAPET
---	PROPOSED EASEMENT	---	PROPOSED PIER
---	PROPOSED CURB	---	PROPOSED BRIDGE DECK
---	PROPOSED PAVEMENT	---	PROPOSED SIDEWALK



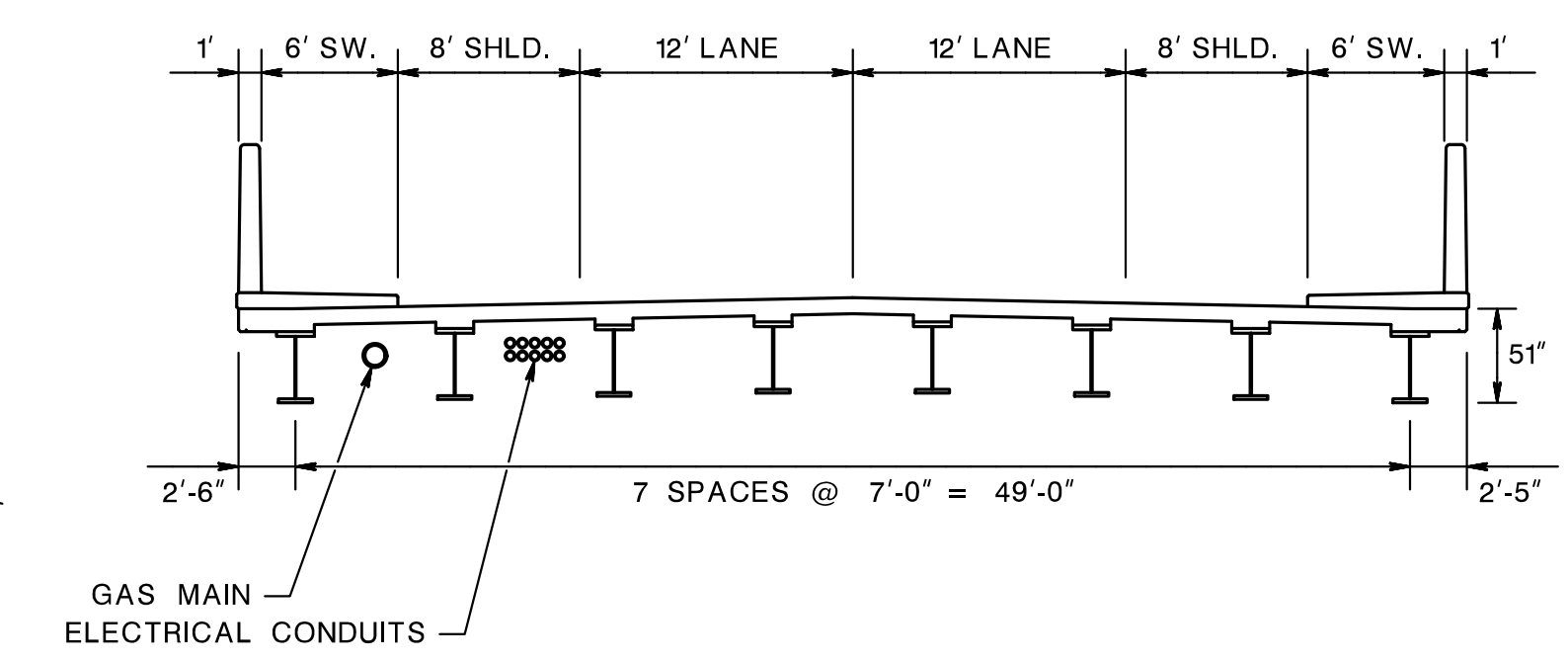
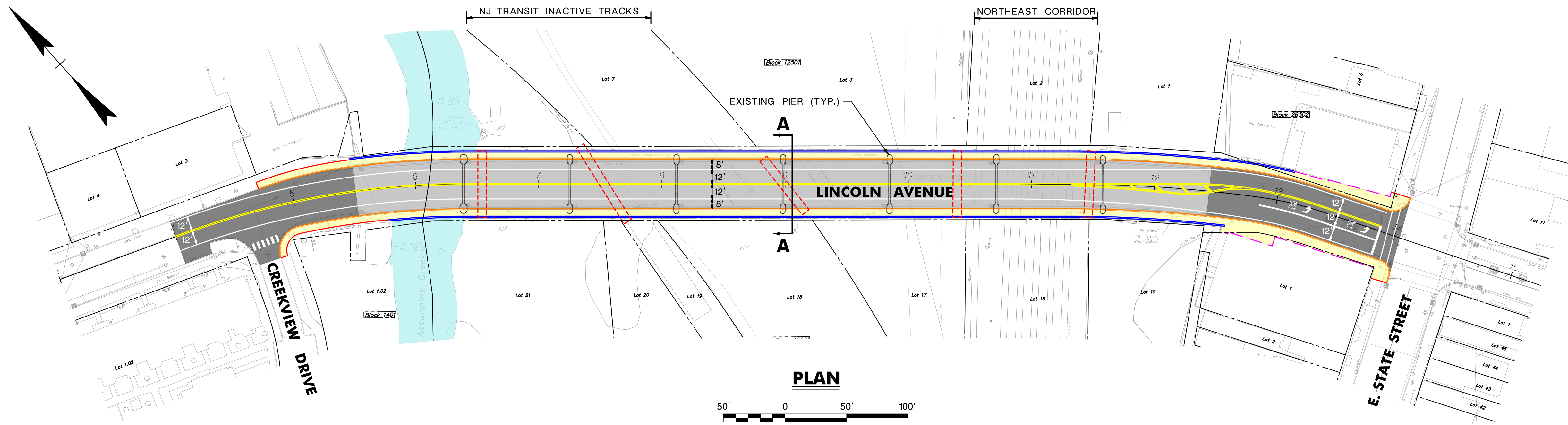
**LINCOLN AVENUE
BRIDGE REPLACEMENT
LOCAL CONCEPT DEVELOPMENT**

CITY OF TRENTON
MERCER COUNTY

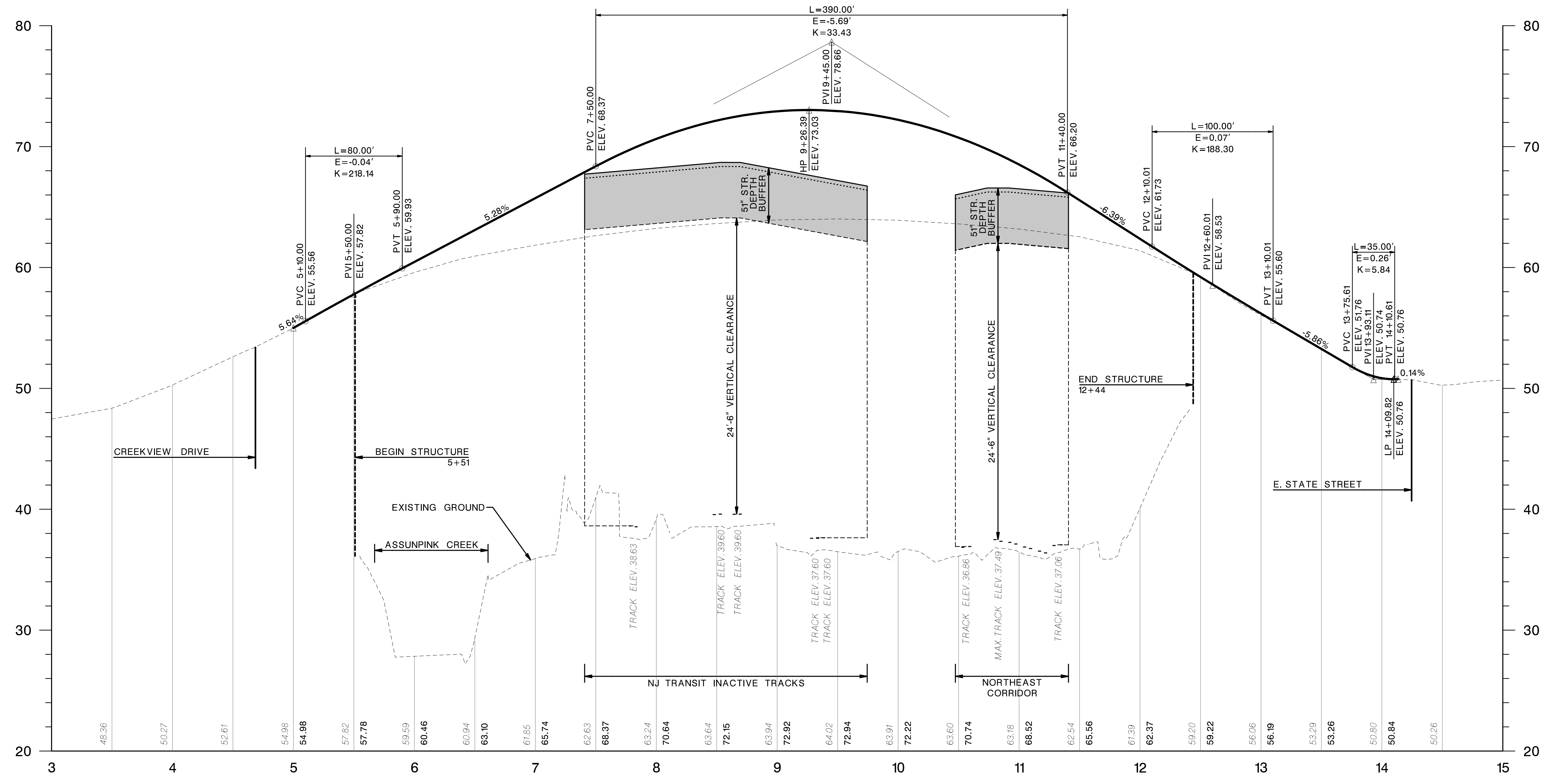
ALTERNATIVE 2

GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

SEPTEMBER 2016



SECTION A-A
N.T.S.



NOTES:

1. MAINTAIN EXISTING HORIZONTAL ALIGNMENT.
2. INCREASE VERTICAL PROFILE TO MEET 24'-6" VERTICAL CLEARANCE.
3. REPLACE SUBSTRUCTURE, DECK, AND SUPERSTRUCTURE USING STEEL GIRDERS.

LEGEND

- EXISTING ROW
- PROPOSED EASEMENT
- PROPOSED CURB
- PROPOSED PAVEMENT
- PROPOSED PARAPET
- PROPOSED PIER
- PROPOSED BRIDGE DECK
- PROPOSED SIDEWALK

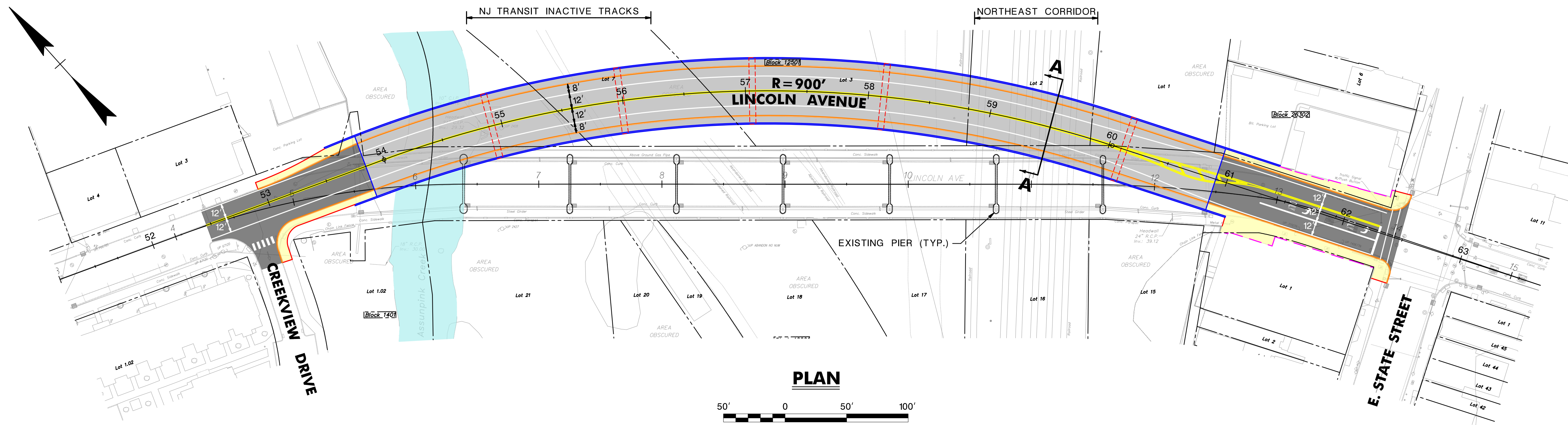
**LINCOLN AVENUE
BRIDGE REPLACEMENT
LOCAL CONCEPT DEVELOPMENT**

CITY OF TRENTON
MERCER COUNTY

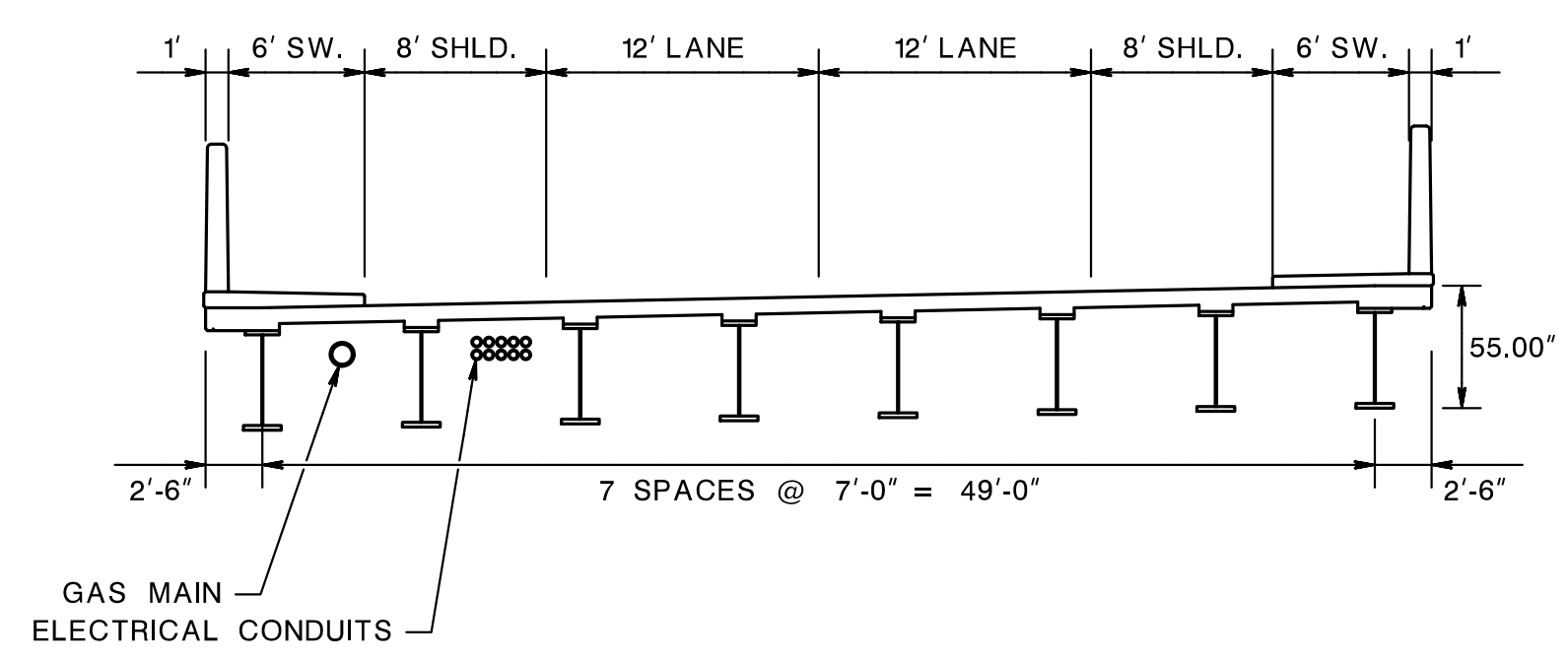
ALTERNATIVE 5



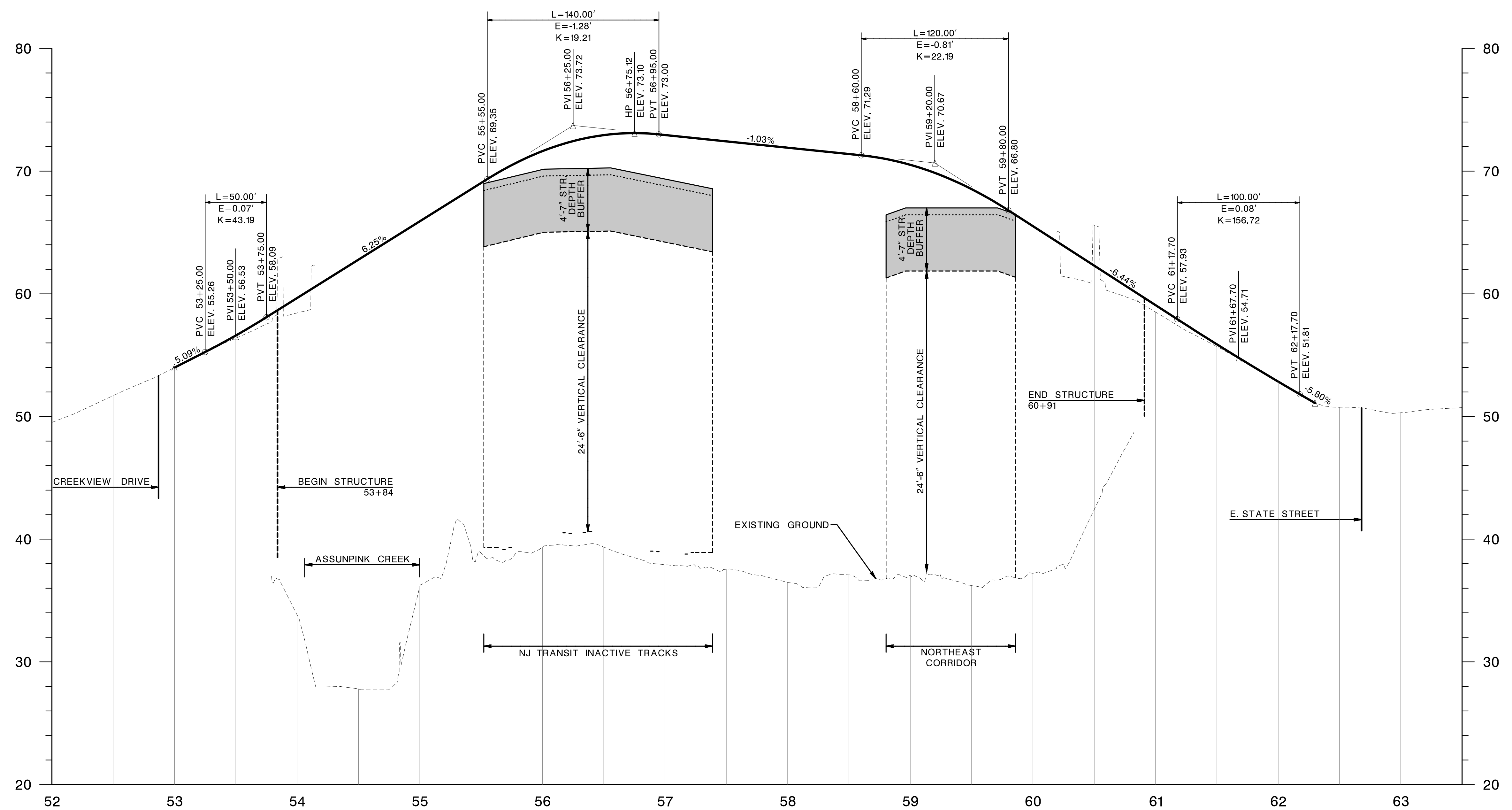
GPI Greenman-Pedersen, Inc.
Engineering and Construction Services



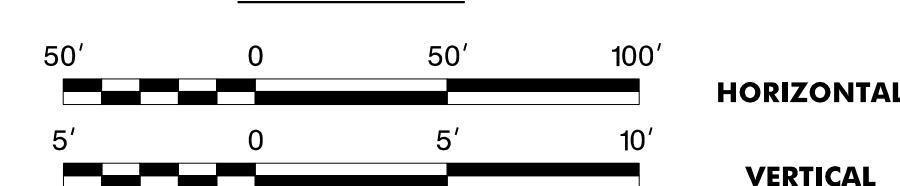
PLAN



SECTION A-A
N.T.S.



PROFILE



NOTES:

1. REALIGN HORIZONTAL ALIGNMENT WITH 900' RADIUS.
2. INCREASE VERTICAL PROFILE TO MEET 24'-6" VERTICAL CLEARANCE.
3. REPLACE SUBSTRUCTURE, DECK, AND SUPERSTRUCTURE USING MINIMUM DEPTH STEEL GIRDERS.
4. R.O.W. ACQUISITION REQUIRED OVER NJ TRANSIT AND AMTRAK PROPERTIES.

LEGEND

- EXISTING ROW
- PROPOSED EASEMENT
- PROPOSED CURB
- PROPOSED PAVEMENT
- PROPOSED PARAPET
- PROPOSED PIER
- PROPOSED BRIDGE DECK
- PROPOSED SIDEWALK

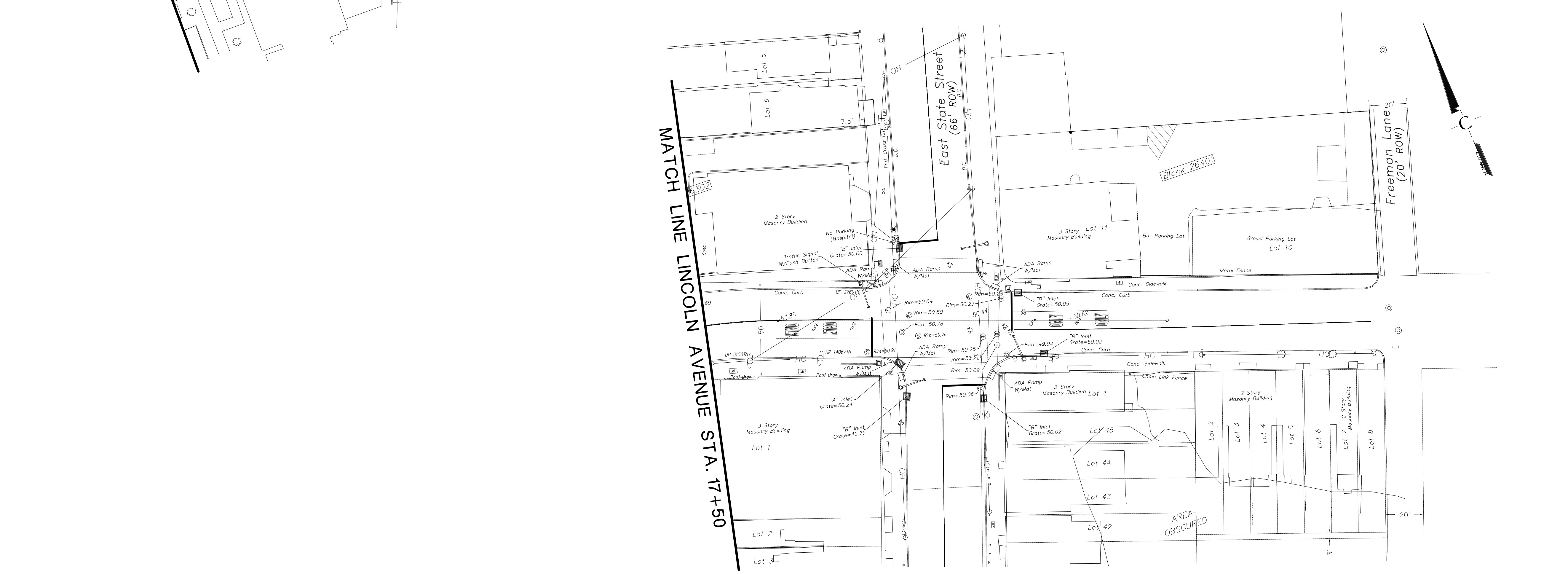
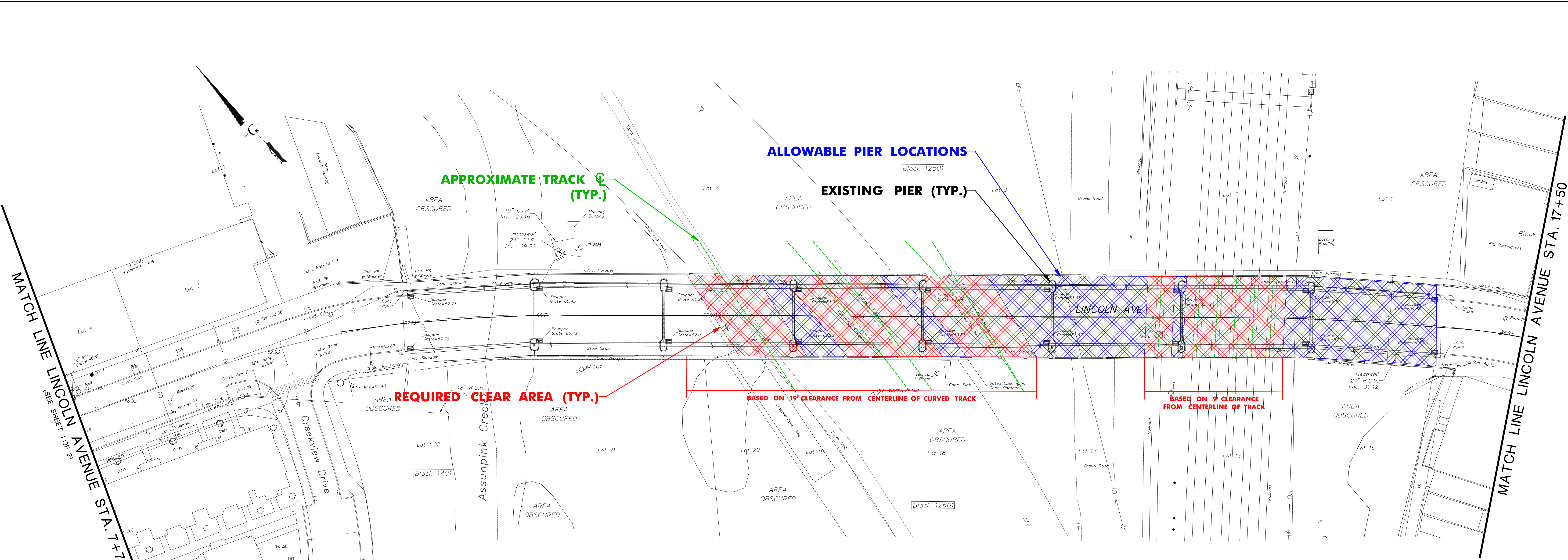
**LINCOLN AVENUE
BRIDGE REPLACEMENT
LOCAL CONCEPT DEVELOPMENT**

CITY OF TRENTON
MERCER COUNTY

ALTERNATIVE 6



GPI Greenman-Pedersen, Inc.
Engineering and Construction Services



**LINCOLN AVENUE
BRIDGE REPLACEMENT
LOCAL CONCEPT DEVELOPMENT**

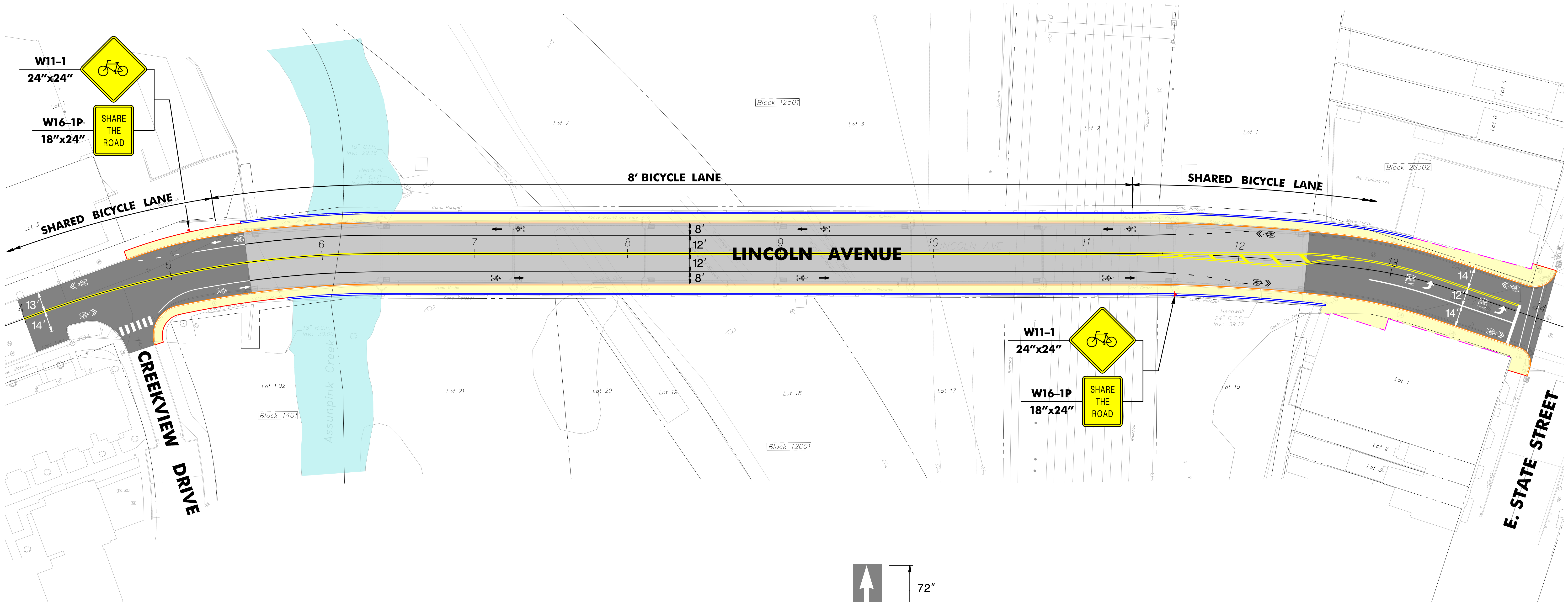
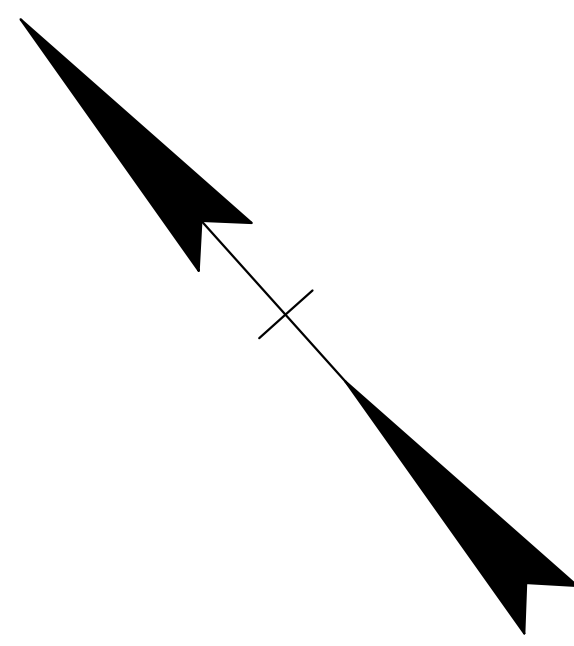
CITY OF TRENTON
MERCER COUNTY

ALLOWABLE PIER LOCATIONS

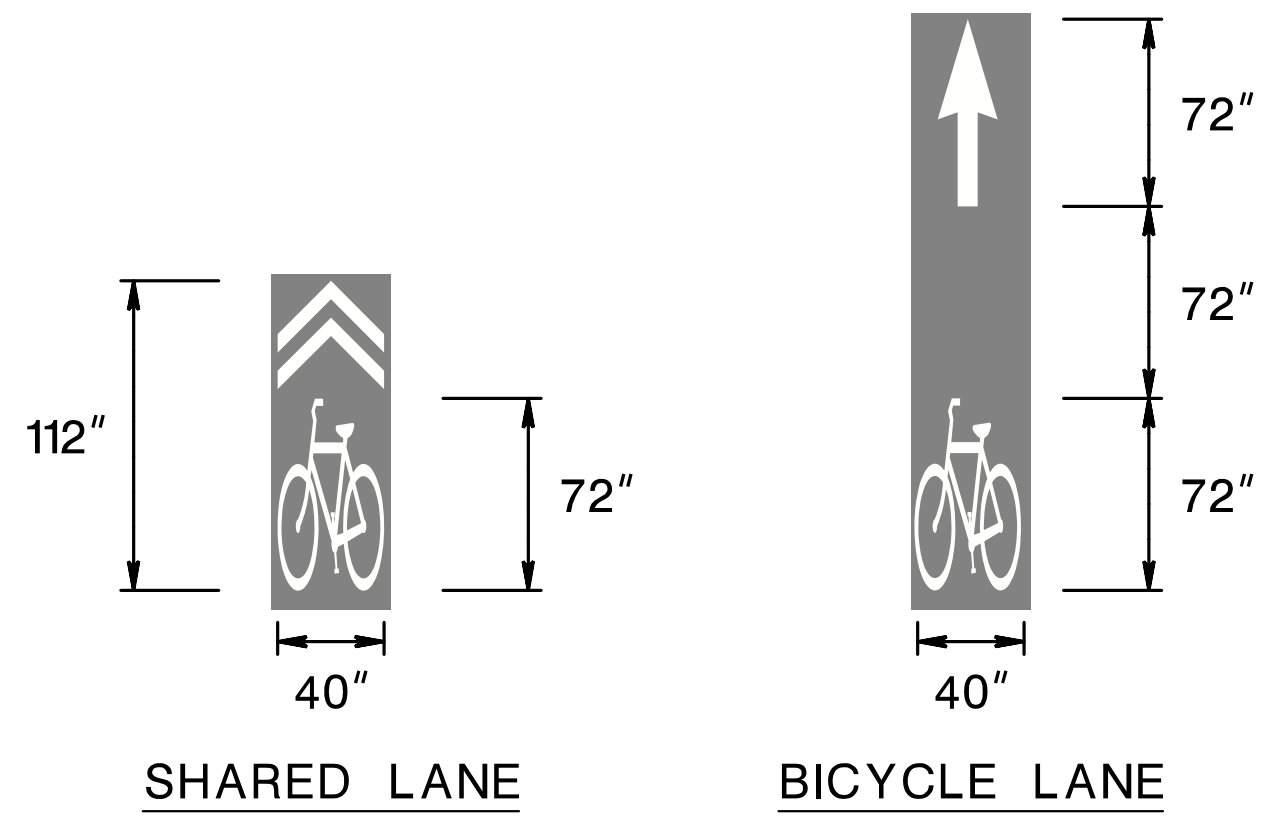
GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

30' 0 30' 60'

2
2



NOTE:
STANDARD BICYCLE LANE AS PER FIGURE 26 OF THE DOWNTOWN TRENTON BICYCLE & PEDESTRIAN PLAN, WHERE FEASIBLE.



BICYCLE PAVEMENT MARKINGS

- LEGEND**
- EXISTING ROW
 - - - PROPOSED EASEMENT
 - PROPOSED CURB
 - PROPOSED PAVEMENT
 - PROPOSED PARAPET
 - PROPOSED BRIDGE DECK
 - PROPOSED SIDEWALK

**LINCOLN AVENUE
BRIDGE REPLACEMENT
LOCAL CONCEPT DEVELOPMENT**

CITY OF TRENTON
MERCER COUNTY

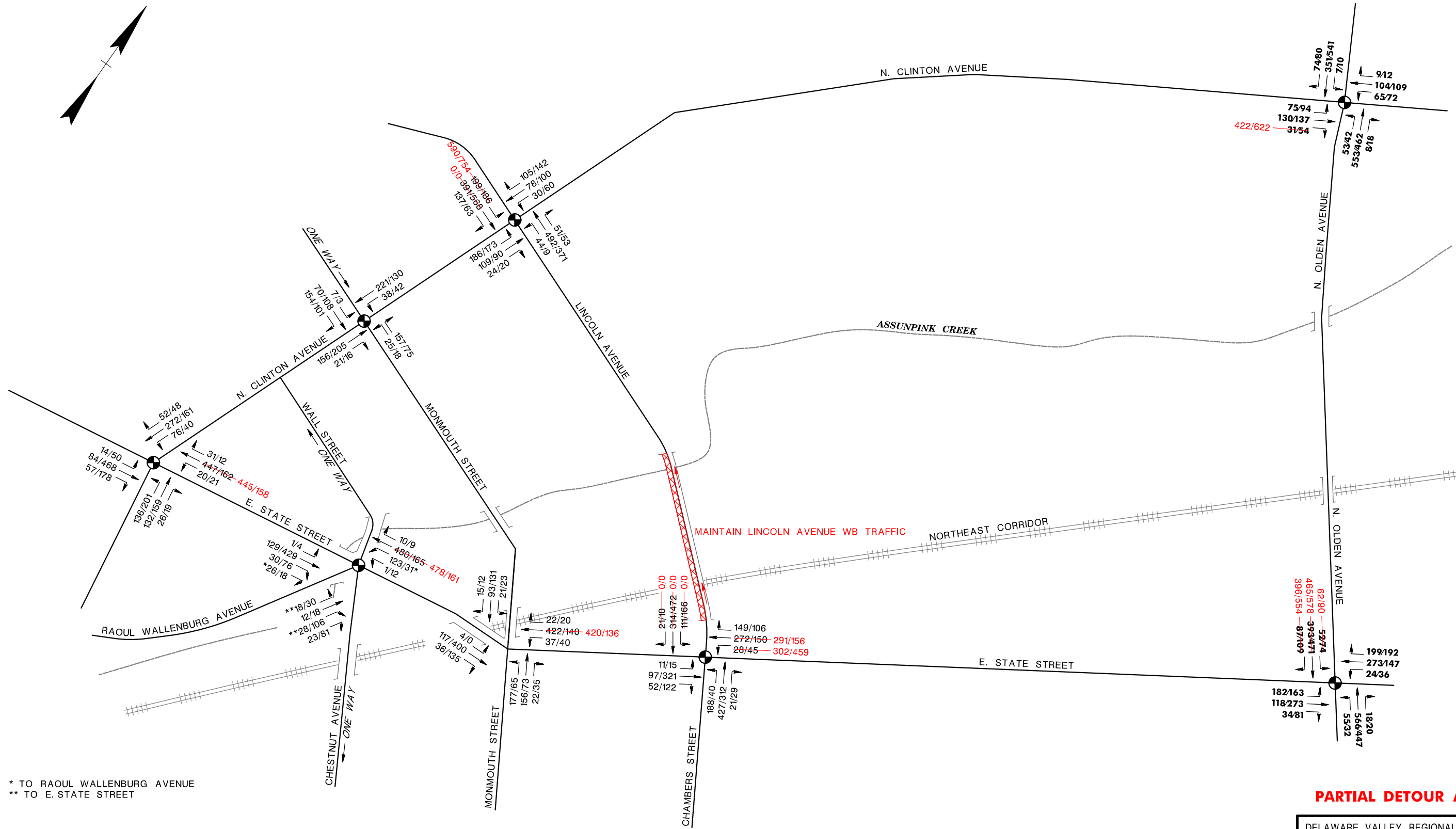
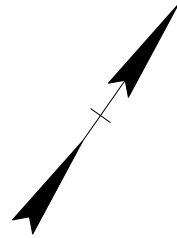
BICYCLE LANE STRIPING ALTERNATIVE

GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

30' 0 30' 60'

SEPT 2016

PEAK HOURS:
 AM: 8:00 - 9:00
 PM: 4:30 - 5:30



* TO RAOUL WALLENBURG AVENUE
 ** TO E. STATE STREET

NOTE:
 PEAK HOUR VOLUMES AT THE INTERSECTIONS OF N. OLDEN AVENUE AND N. CLINTON AVENUE AND N. OLDEN AVENUE E. STATE STREET WERE NOT BALANCED DUE TO THEIR DISTANCE FROM THE PROJECT LOCATION.

LEGEND

- SIGNALIZED INTERSECTION
- AM/PM PEAK HOURS (BALANCED)
- AM/PM PEAK HOURS (UNBALANCED)
- AM/PM PEAK HOURS (DETOUR VOLUMES)
- ▨ ROAD CLOSURE

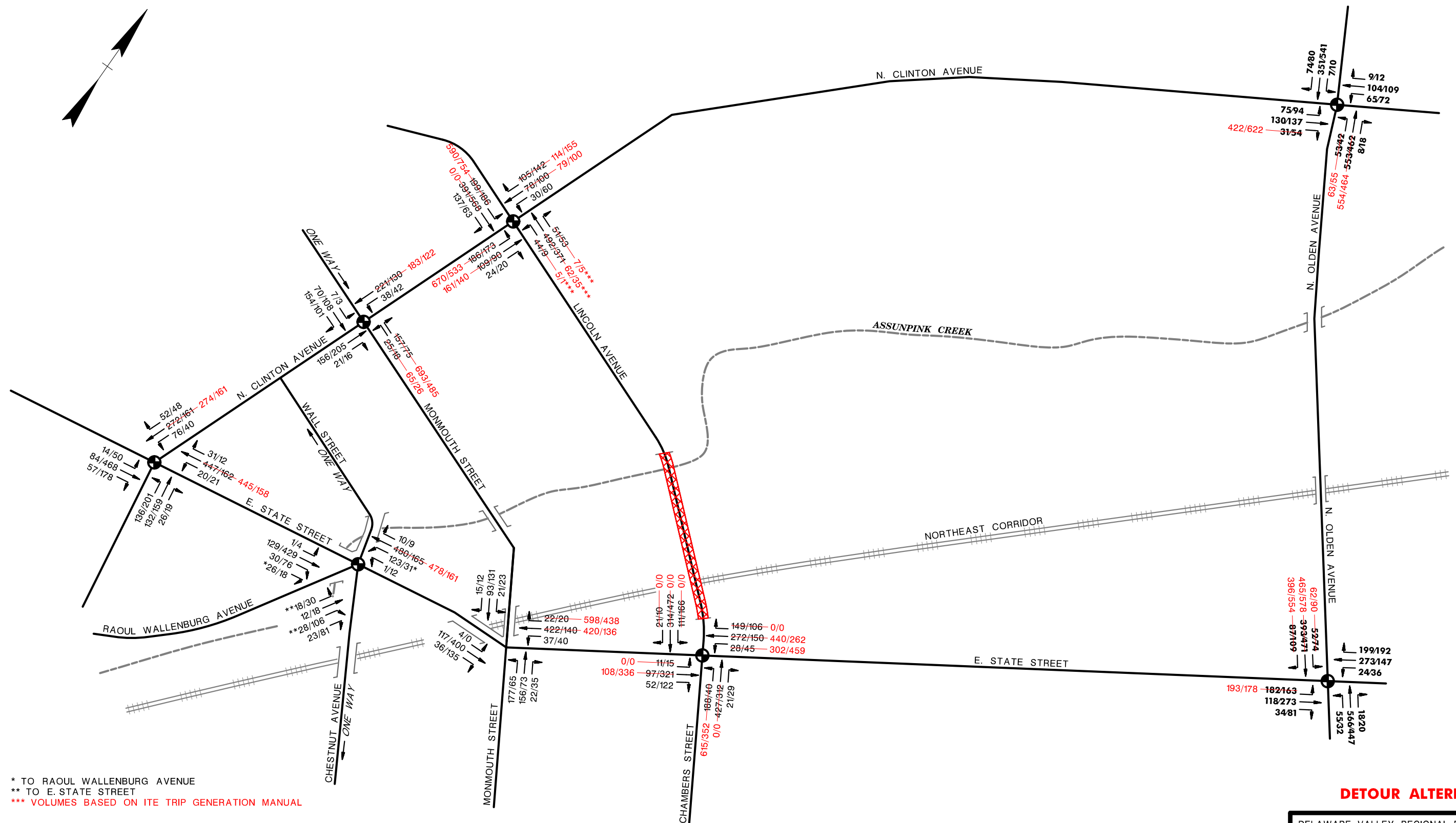
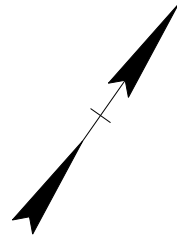
PARTIAL DETOUR ALTERNATIVE 1

DELAWARE VALLEY REGIONAL PLANNING COMMISSION

**BALANCED DETOUR VOLUMES
 AM/PM PEAK HOUR**

LINCOLN AVENUE BRIDGE REPLACEMENT
 FLOW DIAGRAM
 TRENTON CITY
 MERCER COUNTY

PEAK HOURS:
 AM: 8:00 - 9:00
 PM: 4:30 - 5:30



* TO RAOUL WALLENBURG AVENUE
 ** TO E. STATE STREET
 *** VOLUMES BASED ON ITE TRIP GENERATION MANUAL

NOTE:
 PEAK HOUR VOLUMES AT THE INTERSECTIONS OF N. OLDEN AVENUE AND N. CLINTON AVENUE AND N. OLDEN AVENUE E. STATE STREET WERE NOT BALANCED DUE TO THEIR DISTANCE FROM THE PROJECT LOCATION.

LEGEND




- SIGNALIZED INTERSECTION
- AM/PM PEAK HOURS (BALANCED)
- AM/PM PEAK HOURS (UNBALANCED)
- AM/PM PEAK HOURS (DETOUR VOLUMES)
- ▨ ROAD CLOSURE

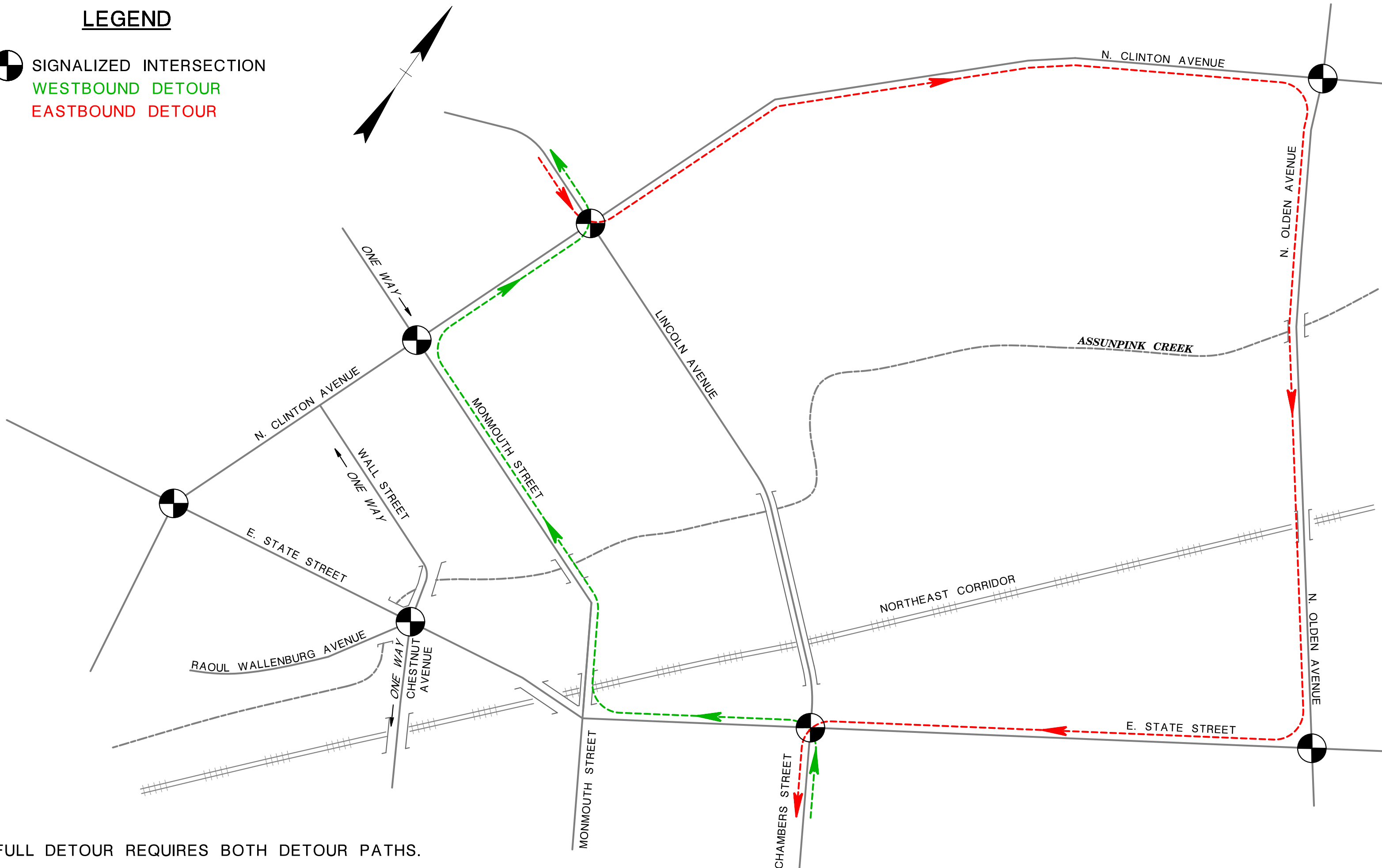
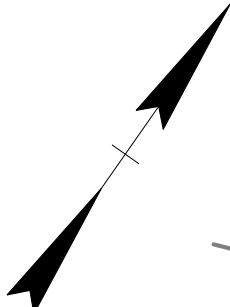
DETOUR ALTERNATIVE 2
 DELAWARE VALLEY REGIONAL PLANNING COMMISSION

**BALANCED DETOUR VOLUMES
 AM/PM PEAK HOUR**

LINCOLN AVENUE BRIDGE REPLACEMENT
 FLOW DIAGRAM
 TRENTON CITY
 MERCER COUNTY

LEGEND

-  SIGNALIZED INTERSECTION
-  WESTBOUND DETOUR
-  EASTBOUND DETOUR



FULL DETOUR REQUIRES BOTH DETOUR PATHS.
PARTIAL DETOUR REQUIRES EASTBOUND DETOUR ONLY.

LEGEND

SIGNALIZED INTERSECTION

LEVEL OF SERVICE A - C

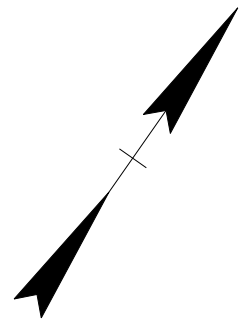
LEVEL OF SERVICE D

LEVEL OF SERVICE E

LEVEL OF SERVICE F

(M) MITIGATED DETOUR LOS

DETOUR MITIGATION FEATURES



	AM LOS DELAY	PM LOS DELAY
EXISTING	A 9.3	B 10.0
PARTIAL	A 10.0	A 9.9
PARTIAL (M)	B 16.6	B 15.3
FULL	B 18.1	B 11.1
FULL (M)	B 13.1	C 23.3

	AM LOS DELAY	PM LOS DELAY
EXISTING	B 18.0	B 19.9
PARTIAL	C 30.0	F 90.3
PARTIAL (M)	C 21.5	D 46.5
FULL	C 31.6	F 89.2
FULL (M)	C 21.3	D 50.7

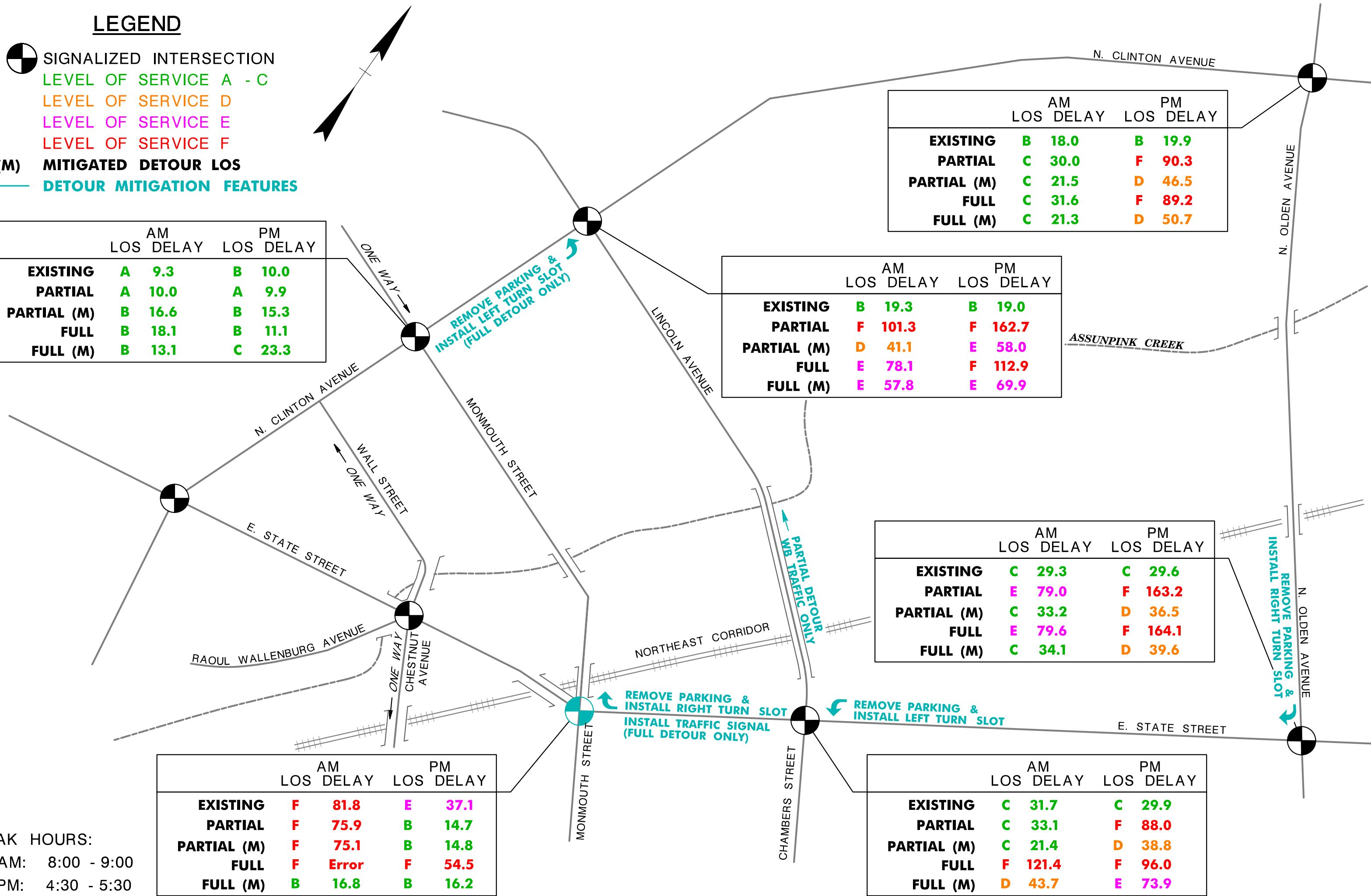
	AM LOS DELAY	PM LOS DELAY
EXISTING	B 19.3	B 19.0
PARTIAL	F 101.3	F 162.7
PARTIAL (M)	D 41.1	E 58.0
FULL	E 78.1	F 112.9
FULL (M)	E 57.8	E 69.9

	AM LOS DELAY	PM LOS DELAY
EXISTING	C 29.3	C 29.6
PARTIAL	E 79.0	F 163.2
PARTIAL (M)	C 33.2	D 36.5
FULL	E 79.6	F 164.1
FULL (M)	C 34.1	D 39.6

	AM LOS DELAY	PM LOS DELAY
EXISTING	F 81.8	E 37.1
PARTIAL	F 75.9	B 14.7
PARTIAL (M)	F 75.1	B 14.8
FULL	F Error	F 54.5
FULL (M)	B 16.8	B 16.2

	AM LOS DELAY	PM LOS DELAY
EXISTING	C 31.7	C 29.9
PARTIAL	C 33.1	F 88.0
PARTIAL (M)	C 21.4	D 38.8
FULL	F 121.4	F 96.0
FULL (M)	D 43.7	E 73.9

PEAK HOURS:
 AM: 8:00 - 9:00
 PM: 4:30 - 5:30



Appendix J

Public Communications

Meeting Minutes

Memorandum of Meeting

To: File

From: Julia Steponanko, GPI

Date: April 14, 2016

Project Name: Delaware Valley Regional Planning Commission (DVRPC)/Mercer County
Lincoln Avenue Bridge Replacement Local Concept Development Study
City of Trenton, Mercer County

Project Number: 2015684.00

Subject: Local Officials Meeting

Copy: Attendees

A meeting was held with Trenton City representatives for the above referenced project at 10:30 AM on Monday, April 4, 2016 at City Hall, 319 E. State Street, Trenton. Those in attendance were as follows:

<u>Attendee</u>	<u>Bureau / Company</u>	<u>Phone</u>
Sean Semple	Trenton City Department of Public Works	609 989-3115
Hoggarth Stephen	Trenton City Department of Public Works	609 989-3615
Greg Sandusky	Mercer County Engineer	609 989-6600
Basit Muzaffar	Mercer County Engineering	609 989-6641
George Fallat	Mercer County Engineering	609 989-6642
Bernie Boerchers	Greenman-Pedersen, Inc. (GPI)	908 236-9001
Christopher Marra	GPI	908 236-9001
Julia Steponanko	GPI	908 236-9001

The purpose of this meeting was to introduce the project, confirm the project need, and solicit comments, requirements, and/or concerns. After self-introductions, Mr. Muzaffar provided a brief project history. Mr. Boerchers then presented the project purpose, existing conditions and preliminary concepts. The following summarizes the questions and comments made during the meeting:

1. Mr. Boerchers stated that this project is following the NJDOT delivery process, which is approved by FHWA. He added that the project is currently in Concept Development (CD) and that the subsequent phases are Preliminary Engineering, Final Design and Construction.
2. Mr. Muzaffar stated that the County performed short-term fixes on the structure, including covering a deck hole with a steel plate and constructing an asphalt overlay across the structure until it could be replaced.

3. The attendees noted that Amtrak's minimum vertical underclearance for bridges over electrified tracks is 24'-3" and that the same may result in steep grades approaching E. State Street. Mr. Sandusky noted that other recently replaced structures had lower clearances than the minimum and the same can be proposed for this bridge if it is not feasible to meet the minimum.
4. The attendees discussed options to replace the entire structure or to replace the deck and superstructure only, as well as a preliminary concept that would widen the structure to provide standard lanes, shoulders and sidewalk as well as the potential for realignment of the structure to address sight distance. Mr. Muzaffar noted that an alternative with the least interaction with Amtrak is preferred by the County.
5. Mr. Sandusky stated that this bridge has heavy pedestrian traffic and the County prefers a temporary pedestrian bridge be installed during construction. The attendees noted that temporary easements might be required for the same if a portion of the existing bridge cannot be used temporarily.
6. Mr. Boerchers noted that construction would likely require full closure of the bridge due to its type and a vehicular detour would be required. He added that GPI would analyze the proposed detour route(s) and develop temporary timing directives. Mr. Semple stated that many of the traffic signals have older equipment that may not be able to handle certain changes.
7. The attendees noted that constructability and public outreach would be key to this project. Maintaining service along the North East Corridor (NEC), clearances above and below the electric and catenary lines and pedestrian access will require careful coordination.
8. Mr. Semple inquired about the anticipated construction duration. Mr. Muzaffar stated that while it is still too early in the processes to determine the same, as a preferred alternative is not selected, it is estimated that construction would take two years.
9. Mr. Semple noted that a resident along Monmouth Street complained about dust from the demolition of the old Trenton High School. Mr. Boerchers stated that dust issues could be covered as part of the public outreach.
10. The attendees noted that a Public Information Center would be conducted as part of CD. Mr. Sandusky inquired if there were any community groups or other languages spoken. Mr. Semple stated that English and Spanish are the primary languages. The attendees noted that interpreters would be required. The City agreed to identify locations for a Public Information Center.

Action Items:

- GPI will continue development of alternatives based on the discussions at this meeting.
- Trenton City will determine a suitable location for a Public Information Center.

This memorandum of record is believed to be an accurate record of the discussions at this meeting. If any of the attendees disagree with the documented discussion, please contact Julia Steponanko at (908) 236-9001 within 5 days of receipt of minutes. If no comments are received, then this memorandum will be considered a true and accurate record of this meeting.

Memorandum of Meeting

To: File

From: Christopher Marra, GPI

Date: October 4, 2016

Project Name: Delaware Valley Regional Planning Commission (DVRPC)/Mercer County
Lincoln Avenue Bridge Replacement Local Concept Development Study
City of Trenton, Mercer County

Project Number: 2015684.00

Subject: Working Meeting

Copy: Attendees

A meeting was held with Mercer County for the above referenced project at 10:00 AM on Wednesday, September 21, 2016 at the Mercer County Engineering Offices. Those in attendance were as follows:

<u>Attendee</u>	<u>Bureau / Company</u>	<u>Phone</u>
Gregory Sandusky	Mercer County Engineering	609 989-6629
Basit Muzaffar	Mercer County Engineering	609 989-6641
John Coscia, Jr.	DVRPC	215 238-2859
Sean Semple	City of Trenton	609 989-3115
Wally Onitiri	City of Trenton	609 989-3151
Bernie Boerchers	Greenman-Pedersen, Inc. (GPI)	908 236-9001
Julia Steponanko	GPI	908 236-9001
William Farrow	GPI	908 236-9001
Richard Schroeder	GPI	908 236-9001
Christopher Marra	GPI	908 236-9001

The purpose of this meeting was to review and discuss the various structural, geometrical, and utility alternatives developed to date for this project. The following summarizes the questions and comments made during the meeting:

1. Mr. Sandusky stated that the proposed bridge should be designed as a signature structure with aesthetic features or treatments which complement the area. Mr. Muzaffar stated that a cable-stayed or suspension bridge should be considered given the long span length. Mr. Farrow stated that a full height cable-stayed or suspension bridge is not likely feasible due to the 138 Kv feeder lines which run overhead along the Northeast Corridor. He added, however, that a minimum depth cable-stayed bridge could be a consideration.

2. Mr. Sandusky stated that pedestrian access must be maintained along Lincoln Avenue throughout the entire duration of construction. Mr. Boerchers stated that GPI's preferred staging method would maintain pedestrian access as well as one lane of traffic in the westbound direction throughout construction. Mr. Farrow stated that maintaining a single lane of traffic would not significantly complicate the project as opposed to maintaining only pedestrian access.
3. Mr. Muzaffar inquired if the pronounced crown section along E. State Street could be reduced as part of the bridge replacement. Mr. Boerchers stated that resurfacing will likely be required along each approach roadway due to impacts from staging and construction, and that adjustments to the intersection grading could be made as part of the resurfacing work.
4. Mr. Boerchers stated that the proposed drainage design would not require scuppers on structure as the addition of shoulders on structure would be sufficient to accommodate the calculated spread. He added that stormwater would be conveyed along the gutter lines to either side of the structure to the existing inlets located immediately off the structure in all four corners. He added that an existing 36-inch corrugated metal pipe located under the Amtrak tracks is in poor condition and may require lining or replacement. The attendees agreed that the drainage impacts should be kept to a minimum so as to avoid triggering any additional permitting.
5. Mr. Sandusky stated that replacement of the Lincoln Avenue Bridge must be coordinated with the replacement of the Monmouth Street, E. State Street, and Chestnut Avenue Bridges over the Northeast Corridor. Mr. Boerchers stated that GPI would follow up with NJDOT regarding the specifics of those bridge replacement projects.
6. Mr. Sandusky inquired if bicycle lanes could be provided along Lincoln Avenue within the project limits. Mr. Marra stated that the cross section provided along the bridge features eight-foot wide shoulders which could be striped or used as bicycle lanes; however the cross section tapers down to meet the existing roadway section at both ends which are not wide enough for a bicycle lane. Mr. Sandusky requested that GPI be provided with the Bikeway Master Plan for Trenton.
7. Mr. Farrow stated that an advantage to micro-piles over drilled shaft or driven piles would be the potential opportunity to construct the proposed foundations without impacting the existing structure. Mr. Muzaffar stated that any construction which could be completed off-line would be a significant benefit to the overall project duration. Mr. Sandusky stated that during Preliminary Engineering, borings should be taken at every pier location so as to best determine the soil types and identify any potential conflicts with abandoned underground foundations or facilities.
8. Mr. Coscia, Jr. inquired if the increased sidewalk grade on some of the alternatives would be in conflict with current ADA requirements. Mr. Boerchers stated that according to PROWAG where pedestrian routes are contained within a street right-of-way, the grade of the pedestrian route shall not exceed the grade of the adjacent street. He noted, however, that PROWAG has not yet been fully adopted and that the NJDOT uses ADAAG, which is intended for building design, and specifies a 5% maximum slope which exceeds the existing and proposed grade of the adjacent street. The attendees agreed that an NJDOT ADA Subject Matter Expert (SME) should be consulted at the NJDOT SME meeting regarding the allowable sidewalk grade.

9. The attendees agreed that a Public Information Center should be held as soon as possible after the NJDOT SME meeting. A tentative date of November 10th, 2016 was selected. Mr. Semple stated that he would investigate a proper location for the meeting to be held.
10. The attendees agreed that Alternative No. 5 is the preferred alternative based on it meeting the minimum required 75-year design life, correction of substandard horizontal and vertical clearances with Amtrak and NJ Transit tracks, and minimal ROW impacts.

Action Items:

- GPI will investigate the feasibility of a minimum depth cable-stayed bridge design.
- GPI will request that an ADA SME be invited to the NJDOT SME meeting.
- The City of Trenton will begin preparations for a Public Information Center on November 10th, 2016.

This memorandum of record is believed to be an accurate record of the discussions at this meeting. If any of the attendees disagree with the documented discussion, please contact Christopher Marra at (908) 236-9001 within 5 days of receipt of minutes. If no comments are received, then this memorandum will be considered a true and accurate record of this meeting.

Memorandum of Meeting

To: File

From: Christopher Marra, GPI

Date: November 23, 2016

Project Name: Delaware Valley Regional Planning Commission (DVRPC)/Mercer County
Lincoln Avenue Bridge Replacement Local Concept Development Study
City of Trenton, Mercer County

Project Number: 2015684.00

Subject: Public Information Center

Copy: Presenters

A Public Information Center was held for the above referenced project at 6:00 PM on Wednesday, November 9, 2016 at the Catholic Youth Organization located at 794 East State Street in Trenton, NJ. Presenters in attendance were as follows:

<u>Attendee</u>	<u>Bureau / Company</u>	<u>Phone</u>
Gregory Sandusky	Mercer County Engineering	609 989-6629
Basit Muzaffar	Mercer County Engineering	609 989-6641
Bernie Boerchers	Greenman-Pedersen, Inc. (GPI)	908 236-9001
Andres Gomez	GPI	908 236-9001
Julia Steponanko	GPI	908 236-9001
Christopher Marra	GPI	908 236-9001

Local residents and business owners who attended the PIC are listed on the attached sign-in sheet.

The purpose of this meeting was to present the project to the local residents and solicit comments and/or concerns. After self-introductions, Mr. Sandusky, Mr. Muzaffar, and Mr. Boerchers presented the project history, existing conditions and the Preliminary Preferred Alternative (PPA).

The following input was received during the PIC:

1. A local resident inquired if a barrier or railing could be installed to separate the sidewalk area from vehicles similar to the existing structure. Mr. Boerchers stated that the existing separation is not meant to protect pedestrians, but rather a result of the through-girder structure design. He added that construction of guide rail or barrier between the shoulder and sidewalk may result in a higher crash rate since the barrier and any associated protection devices are located within the clear zone. Mr. Sandusky stated that the proposed bridge will feature standard width shoulders and sidewalks which will provide additional separation between vehicular and pedestrian traffic.

2. A local resident noted that several tree branches overhang into the path of pedestrians utilizing the sidewalks near both ends of the structure. Mr. Sandusky stated that he will contact County maintenance to address this issue.
3. A local resident stated that a large gap exists in the parapet along the southerly side of the bridge which is not properly protected and should be filled in. Mr. Muzaffar stated that the County will investigate installation of a secure railing or fence to ensure the gap is inaccessible to pedestrians.
4. A local resident stated that luminaires along the existing bridge may not be functioning. Mr. Sandusky stated that the County would investigate and repair any lights that are out. *Subsequent to the PIC, it was determined that all existing lighting fixtures were operational.*
5. A local resident inquired if something could be done to keep queued vehicles from blocking the driveway located along E. State Street southbound in the northwest quadrant of the intersection with Lincoln Avenue. Mr. Boerchers stated that “Do Not Block the Driveway” signing could be a potential solution.
6. A local resident inquired about the project schedule. Mr. Boerchers stated that the project was still in the Concept Development phase and, if approved would need to advance through Preliminary Engineering and Final Design before heading out to Construction. He estimated that it could take approximately 4 years to get to construction and that the construction duration would be between two and three years.
7. A local resident noted that the “LEFT TURN SIGNAL” sign mounted to the traffic signal mast arm in the south quadrant of the intersection of Lincoln Avenue and E. State Street is faded and not clearly visible. Mr. Sandusky replied that the County would evaluate the condition of the sign and replace as necessary.
8. Local residents expressed concern over the curb ramps at the intersection of Lincoln Avenue and E. State Street, noting that the existing design results in tripping hazards when navigating the sidewalk. The County stated that they would investigate the same.
9. Local residents also expressed concern over flooding at the aforementioned intersection, noting that the eastern portion of the intersection is still under water during heavy rains. Mr. Sandusky replied that the County cleaned and repaired the drainage pipe from the western side of the intersection to the Amtrak property. The County stated that they would investigate the drainage on the eastern side.
10. Mr. Sandusky stated that the proposed bridge will not only be a functional long term investment in the infrastructure, but the County intends to provide an aesthetically pleasing entrance to the City. The attendees agreed that the stone block style parapet fascia depicted in the architectural treatment examples was preferred over the more modern transparent or semi-transparent acrylic barrier designs. They also suggested that the design should be consistent with the recently completed Rush Crossing development. Mr. Sandusky added that the architectural representations on the display boards might vary from the final outcome depending on comments received during the design process.

Action Items:

- Mercer County will investigate maintenance of the overhanging tree branches, non-functioning lighting standards, gap in the parapet, and the condition of the sign mounted to the traffic signal.

This memorandum of record is believed to be an accurate record of the discussions at this meeting. If any of the attendees disagree with the documented discussion, please contact Christopher Marra at (908) 236-9001 within 5 days of receipt of minutes. If no comments are received, then this memorandum will be considered a true and accurate record of this meeting.

PUBLIC INFORMATION CENTER MEETING
LINCOLN AVENUE BRIDGE REPLACEMENT PROJECT

SIGN-IN SHEET

NOVEMBER 8, 2016

1. Mymie (Annie) Hodges -
2. Melba Queen SR
3. Myrtle Queen
4. Pearlleen Waters
5. Amir Black
6. Karen Lwart
7. Betty Downing
8. Verlina Myrtle Jackson
9. DAVID C. PARRIS
10. Barbara Thompson
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____



Public Information Center Meeting Notice

Lincoln Avenue Bridge Replacement Project

Trenton City, Mercer County



Mercer County, in cooperation with the Delaware Valley Regional Planning Commission (DVRPC) and Trenton City, will be hosting a Public Information Center to inform local residents, officials, the business community and the general public regarding the proposed Lincoln Avenue Bridge Replacement Project located within Trenton City. The purpose of the Public Information Center is to provide the public with an opportunity to review exhibits of the proposed improvements, ask questions and provide comments/suggestions to the Project Team regarding the project.

This meeting is being conducted in conformance with Federal and State regulations. The public is encouraged to attend the open house format meeting and provide comments on the project. Property owners of rental units are advised that tenants are invited and encouraged to participate.

Date: Wednesday, November 9, 2016

Time: 6:00 p.m. – 8:00 p.m.

Place: Catholic Youth Organization (CYO) East State Street Center

794 East State Street, Trenton, NJ 08609

This meeting is open to all members of the public.



Project Information



Lincoln Avenue Bridge Replacement Project Trenton City, Mercer County

Mercer County, in cooperation with the Delaware Valley Regional Planning Commission (DVRPC), is conducting a Local Concept Development Study to replace the Lincoln Avenue Bridge over Amtrak Northeast Corridor (NEC) rail line, an inactive rail yard, and Assunpink Creek.

Project Background

Lincoln Avenue serves as an important connector across the aforementioned physical barriers and is the first crossing outside of the central business district of Trenton City. The structure, which was built in 1931 and reconstructed in 1965, was rated ‘serious’, or 3 on a 0 to 9 scale, with 9 being excellent condition and 0 being failed condition/closed facility. Despite its rating of 3, the bridge is still safe for travel. The rating is primarily due to the condition of the superstructure, which suffers from severely rusted steel throughout and large areas of spalled and delaminated concrete on the deck. The County performed short-term fixes on the structure including lighting, deck repairs and an asphalt overlay until the structure could be replaced.

Proposed Improvements

- Complete replacement of the structure to extend the life of the bridge, correct deficiencies, and meet current design requirements;
- The structure will be replaced with steel multi-girders (structure depth of 51” and maximum girder spacing of 7’);
- The vertical profile and pier locations will be revised to provide the required horizontal and vertical clearance over the railroad tracks;
- Standard 12-foot wide lanes, 8-foot wide shoulders, which can be used by bicyclists and as a standard bicycle lane, and 6-foot wide sidewalks for pedestrians on structure;
- Architectural treatments, such as stone facing, veneer or form liners; galvanized and powder coated steel; aesthetic parapet or railing treatments; colored concrete; decorative lighting; etc. are also being considered.

No roadway widening is proposed. Easement agreements will be required for work that is performed outside of the existing right-of-way, such as grading and sidewalk repairs necessary to meet ADA compliance.

The new structure will be constructed in two (2) main stages. Pedestrian access will be maintained at this crossing during construction. One lane for the westbound direction of Lincoln Avenue will also be maintained for vehicular traffic, while the eastbound direction will be detoured along Olden Avenue and/or Monmouth Street.

Estimated Schedule

- | | |
|---|--------------------------|
| • Local Concept Development complete | Spring 2017 |
| • Design complete / federal authorization | Winter 2019 |
| • Construction | Spring 2020 |
| • Estimated construction duration | 28 months
(2-½ years) |

Contact Information

Basit (Sunny) A. Muzaffar, P.E.
 Supervising Engineer, Highways & Bridges
 Mercer County Division of Engineering
 640 South Broad Street, Trenton, NJ 08650
bmuzaffar@mercercounty.org



Aviso de reunión sobre Información al Público
Proyecto de reemplazo del puente de Lincoln Avenue
Ciudad de Trenton, condado de Mercer



El condado de Mercer, en cooperación con la Comisión Regional del Valle de Delaware (DVRPC) y la ciudad de Trenton, acogerá al público sobre la reunión de Información para el público para informar a los residentes, los oficiales, la comunidad empresarial y el público general sobre el Proyecto de reemplazo del puente de Lincoln Avenue en la ciudad de Trenton. El propósito de esta reunión es para brindar al público una oportunidad de revisar las exposiciones de las mejoras propuestas, hacer preguntas y brindar comentarios/sugerencias al Equipo del Proyecto relacionado a este proyecto.

Esta reunión se realizará conforme a las reglamentaciones federales y estatales. Se invita al público a asistir a las reuniones abiertas para brindar comentarios acerca del proyecto. Se avisa a los propietarios de unidades de alquiler que los inquilinos están invitados a participar.

Fecha: Miércoles 9 de Noviembre de 2016

Hora: De 6:00 p. m. a 8:00 p. m.

**Lugar: Catholic Youth Organization (CYO, Organización de la Juventud Católica) East State Street Center (Centro de East State Street)
794 East State Street, Trenton, NJ 08609**

Esta reunión está abierta a todos los miembros del público.



Información del proyecto



Proyecto de reemplazo del puente de Lincoln Avenue Ciudad de Trenton, condado de Mercer

El condado de Mercer, en cooperación con la Comisión Regional del Valle de Delaware (DVRPC), está llevando a cabo un Estudio de Desarrollo de Concepto Local para reemplazar el puente de Lincoln Avenue ubicado sobre la línea ferroviaria del Corredor Noreste de Amtrak (NEC), un patio ferroviario inactivo, y Assumpink Creek.

Antecedentes del proyecto

Lincoln Avenue es una conexión importante entre las barreras físicas mencionadas anteriormente y es el primer cruce ubicado fuera del distrito comercial central de la ciudad de Trenton. Esta estructura, que fue construida en 1931 y reconstruida en 1965, fue clasificada como "en estado grave", el equivalente a un puntaje de 3 en una escala de 0 a 9, donde el 9 equivale a condiciones óptimas y el 0 a condiciones de fallo/puente cerrado. A pesar de haber obtenido un puntaje de 3 en la calificación, todavía es seguro transitar por el puente. La calificación se debe principalmente a la condición de la superestructura, que tiene componentes de acero gravemente oxidados y áreas de concreto desprendidas y deslaminadas en el tablero. El condado realizó reparaciones de corto plazo en la estructura, entre las que se incluyeron la iluminación, reparaciones en el tablero y una nueva capa de asfalto hasta que se pudiera reemplazar la estructura.

Mejoras propuestas

- Reemplazo total de la estructura para extender la vida estructural del puente, corrección de deficiencias y cumplimiento de los requisitos de diseño actuales.
- La estructura se reemplazará con vigas múltiples de acero (profundidad de estructura de 1,29 m [51 in] y separación máxima entre vigas de 2,13 m [7 ft]).
- El perfil vertical y las ubicaciones de los pilares se revisarán para producir las distancias horizontal y vertical requeridas sobre las vías del ferrocarril.
- Carriles estándar de 3,65 m (12 ft) de ancho, arcenes de 2,43 m (8 ft) de ancho, que pueden ser utilizados por ciclistas y como carril estándar para bicicletas, y aceras de 1,82 m (6 ft) de ancho para peatones que transiten por la estructura.
- Los tratamientos arquitectónicos, como revestimientos de piedra, enchapados o recubrimientos, acero galvanizado o con revestimiento en polvo, tratamientos estéticos en el parapeto o en las barandillas, concreto coloreado, iluminación decorativa, etc. también se están tomando en cuenta.

No se han propuesto ampliaciones en los carriles. Se requerirán contratos de servidumbre para los trabajos que se realicen fuera del derecho de vía existente, como los trabajos de nivelación y las reparaciones de aceras, necesarios para asegurar el cumplimiento de la Ley para Personas con Incapacidades (ADA).

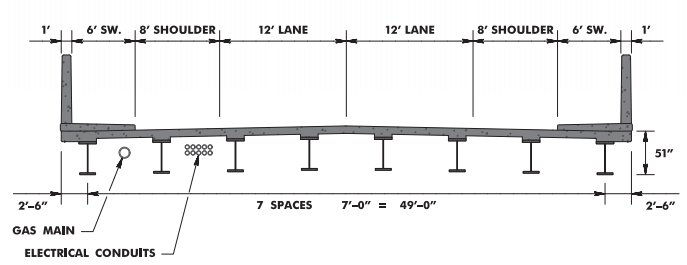
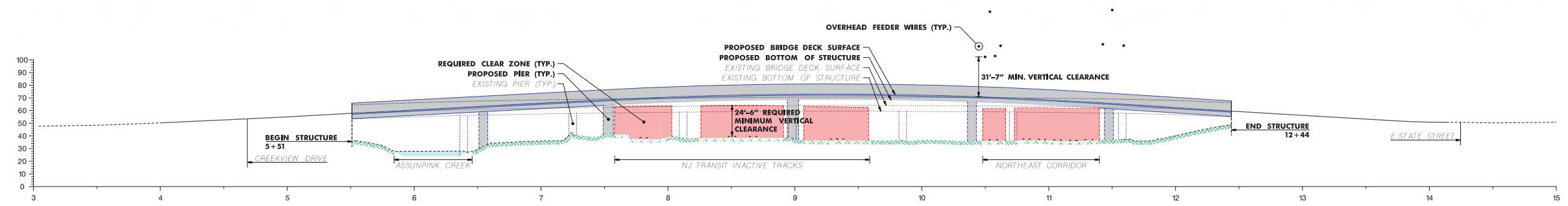
La nueva estructura se construirá en dos (2) etapas principales. El acceso a los peatones se mantendrá en este cruce durante la construcción. Se mantendrá un carril hacia el oeste de Lincoln Avenue para el tránsito vehicular, mientras que la dirección hacia el este se desviará hacia Olden Avenue y/o hacia Monmouth Street.

Cronograma estimativo

- | | |
|---|-------------------------------------|
| • Finalización del Desarrollo de Concepto Local | Primavera de 2017 |
| • Finalización del diseño/autorización federal | Invierno de 2019 |
| • Construcción | Primavera de 2020 |
| • Duración aproximada de la construcción | 28 meses
(2- $\frac{1}{3}$ años) |

Información de contacto

Basit (Sunny) A. Muzaffar, P.E.
Ingeniero supervisor, autopistas y puentes
División de Ingeniería del Condado de Mercer
640 South Broad Street, Trenton, NJ 08650
bmuzaffar@mercercounty.org



- NOTES:**
1. MAINTAIN EXISTING HORIZONTAL ALIGNMENT.
 2. INCREASE VERTICAL PROFILE TO MEET 24'-6" VERTICAL CLEARANCE OVER TRACKS.
 3. REPLACE SUBSTRUCTURE, DECK, AND SUPERSTRUCTURE USING STEEL GIRDERS.

LEGEND

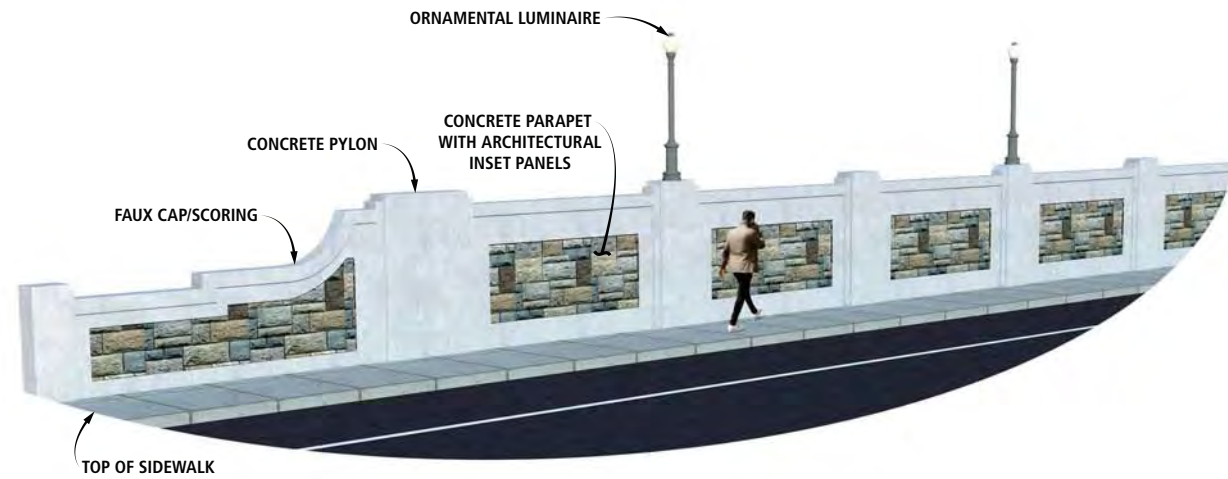
	EXISTING ROW		PROPOSED STRUCTURE
	EXISTING STRUCTURE		PROPOSED PIER
	PROPOSED EASEMENT		PROPOSED BRIDGE DECK
	PROPOSED CURB		PROPOSED SIDEWALK
	PROPOSED PAVEMENT		REQUIRED CLEAR AREA

PRELIMINARY

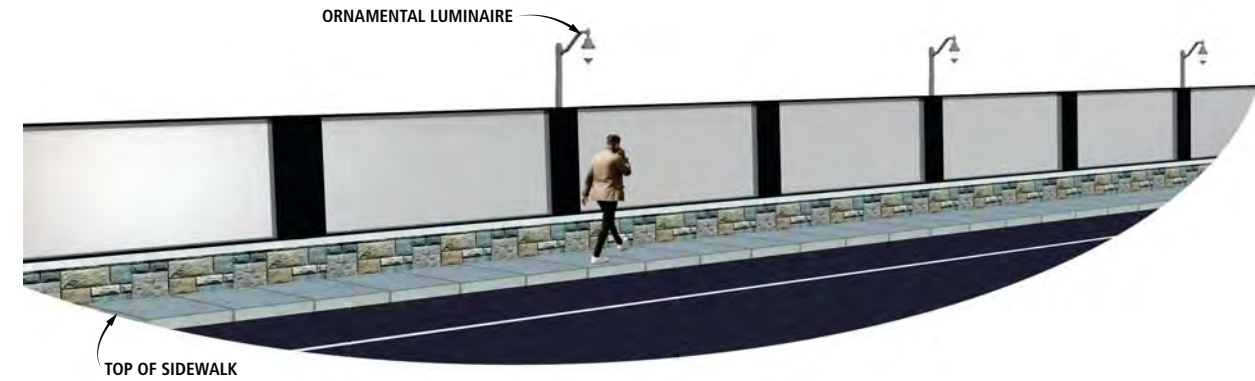


LINCOLN AVENUE BRIDGE REPLACEMENT PROJECT: LOCAL CONCEPT DEVELOPMENT
PRELIMINARY PREFERRED ALTERNATIVE
 City of Trenton, Mercer County

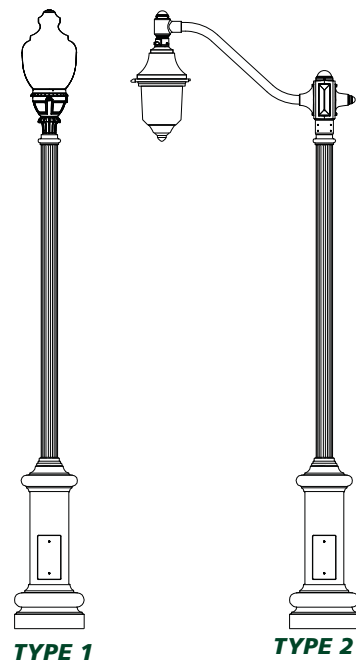




PROPOSED BRIDGE PARAPET ARCHITECTURAL TREATMENT



PROPOSED ACRYLITE BRIDGE PARAPET ARCHITECTURAL TREATMENT



LUMINAIRES



PROPOSED PIER WITH ARCHITECTURAL TREATMENT



SANDSTONE COLOR LIMESTONE COLOR



MULTI-COLOR

CONCRETE AESTHETIC TREATMENTS

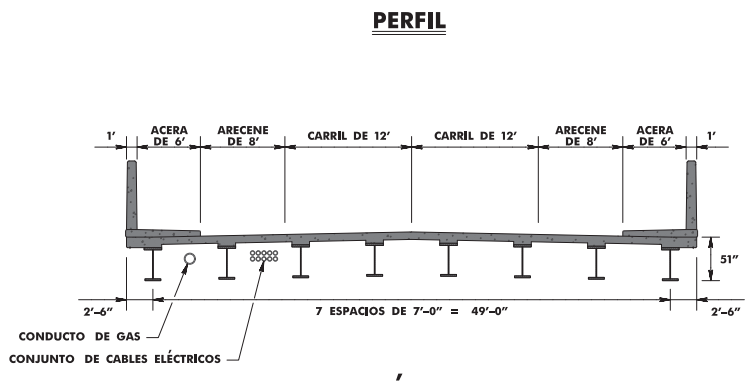
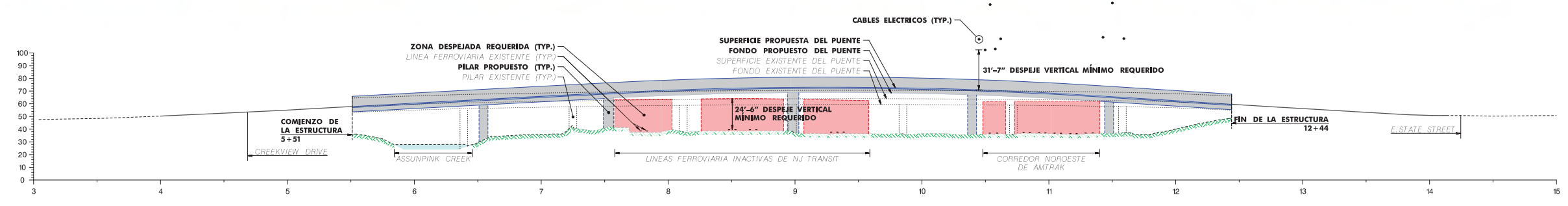


LINCOLN AVENUE BRIDGE REPLACEMENT PROJECT: LOCAL CONCEPT DEVELOPMENT

ARCHITECTURAL TREATMENTS

City of Trenton, Mercer County





- NOTAS:**
- MANTENER LA ALINEACIÓN HORIZONTAL EXISTENTE.
 - INCREMENTAR EL PERFIL VERTICAL PARA CONCIDIR CON EL DESPEJE VERTICAL DE 24'-6" POR ENCIMA DE LAS LINEAS FERROVIARIA.
 - REEMPLAZAR ESTRUCTURA INFERIOR CUBIERTA, Y SUPERESTRUCTURA USANDO VIGAS DE ACERO.

LEYENDA

	HILERA EXISTENTE		ESTRUCTURA PROPUUESTA
	ESTRUCTURA EXISTENTE		PILAR PROPUUESTO
	FACILITACIÓN PROPUUESTA		SUPERFICIE PROPUUESTA DEL PUENTE
	BORDILLO PROPUUESTO		ACERA PROPUUESTA
	PAVIMENTACIÓN PROPUUESTA		AREA DESPEJADA REQUERIDA

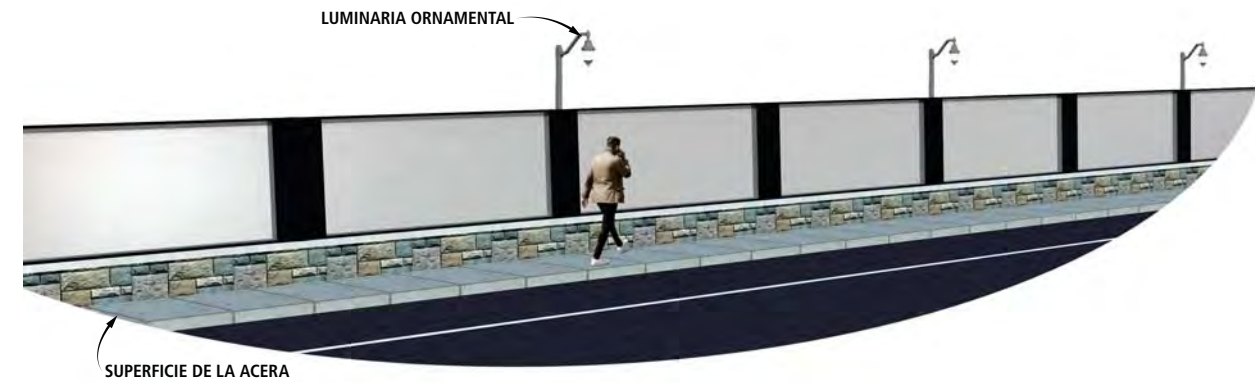
PRELIMINAR

**PROYECTO DE REEMPLAZO DEL PUENTE DE LA AVENIDA LINCOLN:
DESARROLLO DEL CONCEPTO LOCAL
ALTERNATIVA PRELIMINAR PREFERIDA
CIUDAD DE TRENTON
CONDADO DE MERCER**

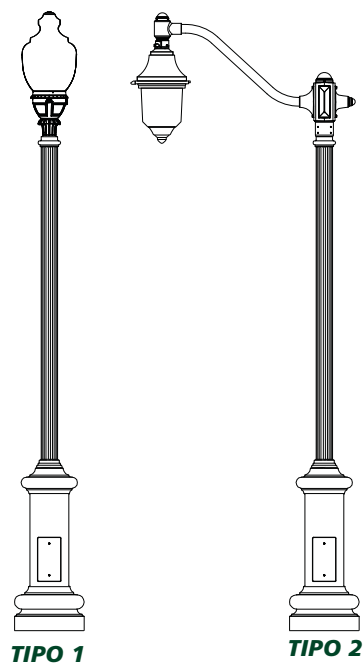




**TRATAMIENTO ARQUITECTÓNICO
PROPUESTO PARA EL PARAPETO DEL PUENTE**



**TRATAMIENTO ARQUITECTÓNICO DE ACRYLITE
PROPUESTO PARA EL PARAPETO DEL PUENTE**



LUMINARIA



**PILAR CON TRATAMIENTO
ARQUITECTÓNICO PROPUESTO**



COLOR PIEDRA ARENISCA



COLOR PIEDRA CALIZA



MULTI-COLOR

TRATAMIENTOS ESTÉTICOS DEL CONCRETO



**PROYECTO DE REEMPLAZO DEL PUENTE DE LA AVENIDA LINCOLN: DESARROLLO DEL CONCEPTO LOCAL
TRATAMIENTOS ARQUITECTÓNICOS**

Ciudad de Trenton, Condado de Mercer



Email

From: [Boerchers, Bernard](#)
To: [Muzaffar, Basit](#)
Cc: [Steponanko, Julia](#); [Marra, Christopher](#)
Subject: RE: Lincoln Avenue Bridge Reconstruction Tonight's meeting
Date: Thursday, November 10, 2016 1:45:16 PM

Hi Sunny,

I guess you don't need a reply from me on this anymore. I apologize as I did not get back into the office until after 11:00 AM.

Thanks,
Bernie

From: Muzaffar, Basit [mailto:bmuzaffar@mercercounty.org]
Sent: Thursday, November 10, 2016 9:57 AM
To: Pearleen Waters <bcht40@gmail.com>
Cc: 'Verlina Reynolds' <verlinarey@gmail.com>; Markley, Chris <cmarkley@mercercounty.org>; 'Anthony Santora' <asantora@trentonnj.org>; eparrey@trentonpolice.net; 'Marge Caldwell-Wilson' <marge1515@verizon.net>; Carabelli Jr., Anthony <acarabellijr@mercercounty.org>; Frisby, Samuel <sfrisby@mercercounty.org>; Walter, Lucylle <lwalter@mercercounty.org>; Colavita, Pasquale <pcolavita@mercercounty.org>; jbergstrom@envsci.rutgers.edu; pkasabach@njfuture.org; rdonaldson@cyomercer.org; 'Alfonso, Armando' <armando.alfonso@dep.nj.gov>; 'Ishiya Hayes' <ihayes@tesu.edu>; 'Ishiya Hayes' <ihayes@tesc.edu>; 'Better Community Housing Information' <bchtinfo@gmail.com>; 'Angeline Dean' <angeline@thecitizenscampaign.org>; Sandusky, Greg <gsandusky@mercercounty.org>; Boerchers, Bernard <bboerchers@gpinet.com>; ssemple@trentonnj.org
Subject: RE: Lincoln Avenue Bridge Reconstruction Tonight's meeting

Good Morning Ms. Pearleen

Thank you for coming out to the P.I.C. last night and meeting with us. Even though you were provided with the answers last night, I wanted to give these answers as a matter of record. **Response in red, highlighted in yellow:**

Questions: 1. **Who owns the bridge?** It is bridge No. 140.9, built 1932 by Mercer County; Parker & Graham, Inc. Contractors Allwood, NJ

Response: Mercer County

2. **Who is the contractor to rebuild this bridge?** If not yet determined, who are the prospective contractors and has the county or city accepted bids for the building of the bridge?

Response: That will be determined after the final design is done and the project is bid

3. How will **flooding at the intersection** of East State and Chambers Streets / Lincoln Ave bridge (storm water management) be addressed?

Response: As discussed last night, the drainage issue on the Lincoln Avenue side was addressed last year. The blockage under the bridge was removed. The County maintenance forces will look in to

jetting the Chambers Street side in the next few weeks.

As for drainage of the new bridge, all drainage from the bridge will be directed to the underside as it is done now and then discharged into the stream.

4. What will be the design of the new sidewalks to address the “trip safety” construction that currently exists to create the handicap ramp installation on the sidewalk?

Response: The sidewalks on the bridge will be 6’ wide with a 6” high curb. As for the trip safety question, that utility box needs to be adjusted. We will work with the appropriate utility authority to resolve this issue along with the signing issue.

Another question that was raised last night was about the lighting on the bridge. As of 4: 00 am this morning, all lights were functional on the bridge.

Hopefully I have answered all your questions. If you need any more information, please feel free to reach out to me. I am heading out to the bridge now to look at the fence and tree issues that were raised last night and hope to resolve them in the next few week.

Yours truly,

Basit A. Muzaffar, PE
Supervising Engineer, Highway & Bridges
DOT&I Mercer County
Division of Engineering
640 South Broad Street, Trenton, NJ 08650-0068
609-989-6641 Direct
609-989-8295 Fax
609-439-5003 Office Mobile

From: Pearleen Waters [<mailto:bcht40@gmail.com>]
Sent: Wednesday, November 09, 2016 4:53 PM
To: Muzaffar, Basit
Cc: 'Verlina Reynolds'; Markley, Chris; 'Anthony Santora'; eparrey@trentonpolice.net; 'Marge Caldwell-Wilson'; Carabelli Jr., Anthony; Frisby, Samuel; Walter, Lucylle; Colavita, Pasquale; jbergstrom@envsci.rutgers.edu; pkasabach@njfuture.org; rdonaldson@cyomercer.org; 'Alfonso, Armando'; 'Ishiya Hayes'; 'Ishiya Hayes'; 'Better Community Housing Information'; 'Angeline Dean'
Subject: Lincoln Avenue Bridge Reconstruction Tonight's meeting
Importance: High

Good Day Mr. Basit

It is well.

Hope all is well with you and your work.

I am Pearleen Waters, resident of Trenton and Executive Director of Better Community Housing of Trenton, Inc. property owner of 802 East State Street, Trenton; Wilbur Section. I am contacting you

in regard to tonight's meeting about the reconstruction of the Lincoln Avenue bridge. I have some questions and observations I would like to be addressed tonight and therefore am writing to you.

Questions: 1. **Who owns the bridge?** It is bridge No. 140.9, built 1932 by Mercer County; Parker & Graham, Inc. Contractors Allwood, NJ

2. **Who is the contractor to rebuild this bridge?** If not yet determined, who are the prospective contractors and has the county or city accepted bids for the building of the bridge?

3. How will **flooding at the intersection** of East State and Chambers Streets / Lincoln Ave bridge (storm water management) be addressed?

4. What will be **the design of the new sidewalks** to address the "trip safety" construction that currently exists **to create the handicap ramp installation** on the sidewalk?

Please note the questions and comments to the proposed improvements are attached and highlighted in yellow with background information.

Thank you.

Have a marvelous day.

Sincerely,

Pearleen Waters

Executive Director
Better Community Housing of Trenton, Inc.
802 East State Street
PO Box 298
Trenton, NJ 08602
(609) 989-0271
Fax (609) 989-4991
www.BCHTrenton.org



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From: [Muzaffar, Basit](#)
To: [Sandusky, Greg](#)
Cc: [Boerchers, Bernard](#); [Gomez, Andres](#); [Marra, Christopher](#); [Steponanko, Julia](#)
Subject: RE: Lincoln Avenue Bridge - PIC Meeting Minutes
Date: Wednesday, November 23, 2016 2:14:52 PM
Attachments: image001.png
Minutes 11-09-16 PIC_bm.docx

Greg

Here are the updated minutes. The trees were trimmed and drainage cleared by the County. The fence will be repaired next week.

Basit A. Muzaffar, PE
Supervising Engineer, Highway & Bridges
DOT&I Mercer County
Division of Engineering
640 South Broad Street, Trenton, NJ 08650-0068
609-989-6641 Direct
609-989-8295 Fax
609-439-5003 Office Mobile

From: Steponanko, Julia [mailto:jsteponanko@gpinet.com]
Sent: Wednesday, November 23, 2016 2:06 PM
To: Muzaffar, Basit; Sandusky, Greg
Cc: Boerchers, Bernard; Gomez, Andres; Marra, Christopher
Subject: RE: Lincoln Avenue Bridge - PIC Meeting Minutes

Hi Sunny,

Please replace the previously sent minutes with the attached. We added a note regarding the flooding at E. State Street and Lincoln Avenue. I apologize for any confusion.

Thanks,



Julia Steponanko, P.E.
908.236.9001 - ext. 5064
An Equal Opportunity Employer

From: Marra, Christopher
Sent: Wednesday, November 23, 2016 1:13 PM
To: bmuzaffar@mercercounty.org; gsandusky@mercercounty.org
Cc: Boerchers, Bernard <bboerchers@gpinet.com>; Steponanko, Julia <jsteponanko@gpinet.com>; Gomez, Andres <agomez@gpinet.com>
Subject: Lincoln Avenue Bridge - PIC Meeting Minutes

Hi Sunny,

Please find attached meeting minutes for the Lincoln Avenue Bridge Public Information Center. Let me know if you have any questions or comments.

Thank you,

Christopher A. Marra, P.E.

Design Engineer

100 Corporate Drive, Suite 301, Lebanon, NJ 08833

908.236.9001 – ext. 5041 | f 908.236.9669

cmarra@gpinet.com | www.gpinet.com



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Appendix K

NJDOT Communications

Meeting Minutes

Memorandum of Meeting

To: File

From: Julia Steponanko, GPI

Date: October 7, 2016

Project Name: Delaware Valley Regional Planning Commission (DVRPC)/Mercer County
Lincoln Avenue Bridge Replacement Local Concept Development Study
City of Trenton, Mercer County

Project Number: 2015684.00

Subject: NJDOT Subject Matter Expert (SME) Meeting

Copy: Attendees

A meeting was held with NJDOT SMEs for the above referenced project at 1:00 PM on Monday, October 3, 2016 in Conference Room 3227S of the NJDOT M&O Building. Those in attendance were as follows:

<u>Attendee</u>	<u>Bureau / Company</u>	<u>Phone</u>
Gregory Sandusky	Mercer County Engineering	609 989-6629
Basit Muzaffar	Mercer County Engineering	609 989-6641
John Coscia, Jr.	DVRPC	215 238-2859
Dhruv Patel	NJDOT – Local Aid	609 530-2826
Richard Nusser	NJDOT – Local Aid	732 625-4294
John Campi	NJDOT – Division of Project Management	609 530-5689
John Riggi	NJDOT – BEPR*	609 530-2827
Sean Warren	NJDOT – BEPR*	609 530-5428
Mark Hauske	NJDOT – Capital Program Support (CPS)	609 530-5278
Gaurang Patel	NJDOT – Value Solutions	609 530-4849
Al Virgilio	NJDOT – Structures	609-530-5594
Kamalavathany Ravishankar	NJDOT – Geotechnical Engineering	609 530-8136
MD Safdur Rahman	NJDOT – Geotechnical Engineering	609 530-2351
Mario Sazo	NJDOT – Geotechnical Engineering	609 530-2388
Vince Martorana	NJDOT – Utilities	609 530-3768
Jaime Oplinger	NJDOT – Bureau of Traffic Engineering (BTE)	609 530-3854
Noor A. Shah	NJDOT – Construction Management	609 530-6462
Ronald Sabale	NJDOT – Construction Management	609 530-4859
Bernie Boerchers	Greenman-Pedersen, Inc. (GPI)	908 236-9001
William Farrow	GPI	908 236-9001
Valerie Hrabal	GPI	908 236-9001

* Bureau of Environmental Program Resources

<u>Attendee</u>	<u>Bureau / Company</u>	<u>Phone</u>
Christopher Marra	GPI	908 236-9001
Richard Schroeder	GPI	908 236-9001
Julia Steponanko	GPI	908 236-9001

The purpose of this meeting was to present the project to the NJDOT SMEs, review and discuss the various structural, geometrical, and utility alternatives developed to date, and to solicit comments, requirements, and/or concerns. After self-introductions, Mr. Boerchers, Mr. Farrow, Ms. Hrabal and Mr. Schroeder presented the project history, existing conditions and alternatives via a presentation. The following summarizes the questions and comments made during the meeting:

1. Mr. Boerchers stated that the nearby NJDOT Trenton Amtrak Bridges Project, which includes the E. State Street, Monmouth Street and Chestnut Street Bridges, is currently on a similar design schedule as the Lincoln Avenue Bridge Replacement Project and noted that these projects would need to be coordinated as they advance to subsequent phases, **since each proposes a detour route that uses the other project's roadways.** Mr. Campi, the NJDOT Project Manager for the Trenton Amtrak Bridges Project concurred that coordination would be beneficial so as to minimize impacts to the community and avoid potential conflicts and inconsistencies.
2. Ms. Hrabal stated that the project will require NJDEP Freshwater Wetlands General Permits and an NJDEP Flood Hazard Individual Permit as well as SESC Certification and possibly an NJPDES RFA for 5g3 construction stormwater permit (if the project results in one acre or more of total disturbance). The project will need to comply with the NJDEP Flood Hazard Area Control Act (FHACA) no net rise in flood elevation standards. She also noted that NJDEP is currently developing a new model of the Assumpink Creek and that the current FEMA delineation of floodway may not be accurate. Based on her conversation with Dr. Kunal Patel of NJDEP, he anticipates working on the new model this fall. She noted that GPI deferred performing hydraulic modeling during Concept Development rather than duplicate NJDEP's modeling effort. The model should be available from NJDEP by the time the project reaches Preliminary Engineering.
3. Ms. Hrabal also stated that there will be numerous timing restrictions imposed upon any in-water construction that must be accounted for in the construction schedule. Based on her preliminary assessment she noted that no in-water work would be permitted except in September and October. She added that once cofferdams are in-place, work can continue behind them during the in-water restriction periods. The timing restrictions will be further assessed in Preliminary Engineering.
4. Mr. Schroeder gave an overview of the utilities that would be impacted by the project. Most notable are the bridge mounted gas main and electrical conduits, which are both "critical feeds" for the City of Trenton, and have opposing seasonal restrictions for disconnection with the interruption of gas and electric transmission restricted during the winter and summer months, respectively. Mr. Schroeder then discussed the potential impacts to the 30" water main that runs through a portion of the existing bridge foundations and south abutment. It was agreed by the attendees that a permanent relocation of the affected portion of the main was preferred over a temporary bypass. Mr. Schroeder also noted that potential impacts to the "combined" sewer lines on the north side of the bridge would need to

be further investigated during Preliminary Engineering. He added that the existing USGS station located in the northwest quadrant of the bridge would be impacted by Alternative No. 6 but not by Alternative Nos. 2 and 5.

5. Mr. Schroeder then discussed the condition of the 36" CMP drainage pipe that runs within an existing easement from the south abutment, under the Amtrak and NJ Transit ROW, and empties into the Assunpink Creek. He noted that the cover on the pipe is shallow, and that the pipe is in poor condition. GPI's current recommendation is to line the pipe, as opposed to replacement, which would have to be further assessed and discussed with Amtrak and NJ Transit during Preliminary Engineering.
6. Mr. Farrow discussed the potential foundation options for the proposed structure including drilled shafts, driven piles and micropiles and noted that limited existing geotechnical information is available for this project. Mr. Muzaffar stated that drilled shafts are not desirable based on the County's past experience. Ms. Ravishankar added that drilled shafts may be preferable in an urban environment, especially given the proximity of the Rush Crossing Apartments to the project site, since the installation of the same is significantly quieter than driving piles. Mr. Farrow stated that micropiles may be a preferred option since they could potentially be installed around the existing foundations with the existing structure in place thus reducing the duration of any detours. Subsequent to the formal meeting, Ms. Ravishankar indicated that either drilled shafts or micropiles would be an acceptable alternative for the NJDOT.
7. Mr. Sandusky stated that the Lincoln Avenue Bridge will be a signature piece for the City and that aesthetics is an extremely important element to both the City and the County. Mr. Muzaffar added that any architectural features should pay tribute to historic Trenton. The attendees noted that the Lincoln Avenue Bridge Replacement Project and the Trenton Amtrak Bridges Project would likely require SHPO coordination on aesthetic treatments since the Northeast Corridor (NEC) is part of the NRHP-eligible Pennsylvania Railroad, New York to Philadelphia Historic District. It was also suggested that both projects should share similar aesthetics for uniformity.
8. Mr. Virgilio stated that the use of a temporary strong-back system to maintain part of the existing structure for pedestrian traffic during construction would probably not be as cost effective as using a temporary bridge. Mr. Farrow stated that the use of a strong-back system would also allow for one lane of vehicular traffic to be maintained during construction and would significantly simplify the relocation of the existing bridge mounted utilities. He added that a full vehicular closure of the bridge would have significantly greater impacts on the nearby urban street system and emergency services response times.
9. The attendees agreed that construction over and adjacent to the Amtrak tracks may have a significant impact on the project schedule. Mr. Farrow stated that once the temporary train sheds/shields are erected to protect the trains and tracks, construction could progress with limited Amtrak restrictions.
10. Mr. Martorana stated that PSE&G may have proposed transmission facilities in the area of the Lincoln Avenue Bridge Replacement Project and recommended that PSE&G be re-contacted to verify any planned or proposed facilities within the project area. Mr. Martorana will provide the appropriate PSE&G contact information to the County and GPI.

11. It was inquired whether Trenton City emergency services was in agreement with the proposed construction staging and detour given the proximity of the police station to the project site. Mr. Boerchers stated that the County and GPI met with City officials twice, and while no emergency services representatives were present, it was not brought up as an issue. He added that GPI would request that the City officials contact their emergency services representatives to obtain their feedback on the proposed construction staging and detour.
12. It was inquired whether a contractor staging area was identified for this project. Mr. Boerchers stated that a site was not identified to date, but noted that the City's compost property between Monmouth Street and Lincoln Avenue appears to be the only open area in the vicinity of the project. However, there were several businesses with large lots in the area that could be approached by the Contractor for use during construction.
13. The SMEs concurred with Alternative No. 5 as the Preliminary Preferred Alternative (PPA).

Action Items:

- GPI will contact PSE&G regarding any proposed transmission facilities in the project area.
- Mercer County/GPI will schedule the Public Information Center.

This memorandum of record is believed to be an accurate record of the discussions at this meeting. If any of the attendees disagree with the documented discussion, please contact Julia Steponanko at (908) 236-9001 within 5 days of receipt of minutes. If no comments are received, then this memorandum will be considered a true and accurate record of this meeting.

Project: Lincoln Avenue DVRPC / Mercer County Page: 1 of
 Date: 10/3/16 Time: 1:00pm Location: NJDOT MOB Conf. Rm 3227S

Attendance

Name	Representing	Phone	Email
Bernie Boerchers	GPI	908-236-9001	bboerchers@gpinet.com
Julia Steponanko	GPI	" "	jsteponanko@gpinet.com
Christopher Marra	GPZ	" "	Cmarra@gpinet.com
Valerie Hrabal	GPI	" "	vhrabal@gpinet.com
William C Farrow	GPI	" "	wfarrow@gpinet.com
Rich Schroeder	"	" "	r.schroeder@gpinet.com
Dhruv Patel	NJDOT / Local Aid	609-530-2826	dhruv.patel@dot.nj.gov
John Riggi	NJDOT / BEPR	609-530-2827	John.Riggi@dot.nj.gov
SEAN WARREN	NJDOT / BEPR	609-530-5428	sean.warren@dot.nj.gov
GAURANG PATEL	NJDOT / VAZUE SOLUTIONS	609-530-4849	GAURANG.PATEL@DOT.NJ.GOV
JOHN COSCIA	DVRPC	215-238-2859	JCOSCIAJR@DVRPC.ORG
MARK HAUSKE	NJDOT / CPS	609-530-5278	MARK.HAUSKE@DOT.NJ.GOV
kamalavathany Ravishanker	NJDOT / Geotech	609-530-8136	kamalavathany.Ravishanker@dot.nj.gov
MD SAIDUR RAHMAN	NJDOT / Geotech	609-530-2351	Mdsaidur.Rahman@dot.nj.gov

Project: Lincoln Avenue DVRPC / Mercer County Page: 2 of
 Date: 10/3/16 Time: 1:00pm Location: NJDOT MOB Conf. Rm 322TS

Attendance

Name	Representing	Phone	Email
Mario Sazo	NJDOT/Geotech	609-530-2388	Mario.Sazo@dot.nj.gov
Richard Nusser	NJDOT LocalAid D3	732-625-4294	richard.nusser@dot.nj.gov
VINCE MARTORANA	DOT UTILITY NJDOT	609 530-3768	VINCE.MARTORANA@DOT.NJ.GOV
Jaime Oplinger	Traffic Eng.	609-530-3854	jaime.oplinger@dot.nj.gov
NOOR A. SHAH	NJDOT CONST. MGMT.	609 530-6462	NOOR.SHAH@ -
RONALD SABALE	DOT CONSTRUCTION MANAGEMENT	(609) 530-4859	Ronald.Sabale@dot.nj.gov
John Campi	NJDOT	609 530 5689	john.campi@dot.nj.gov
GREG SANDUSKY	MERCER COUNTY	(609) 989-6600	gsandusky@mercercounty.org



Lincoln Avenue Bridge Replacement LCD

Date: October 3, 2016

Time: 1:00 PM

Location: NJDOT MOB Building, 1035 Parkway Avenue, Trenton, NJ

I. Project Information

- Project Location
- Project Background
- Purpose & Need
- Site History

II. Existing Conditions

- Structural Information & Deficiencies
- Geotechnical/Foundation
- Roadway Information & Deficiencies
- Railroad Operations
- Drainage/Environmental
- Utilities

III. Alternatives Development

- Considerations
- Structures
- Structures & Geometrics
- Foundations

IV. Alternatives for Further Study

- Alternative No. 2
- Alternative No. 5
- Alternative No. 6

V. Alternative Impacts

- Structures
- Geometrics
- Railroad Operations
- Utilities
- ROW/Access
- Bike/Ped
- Drainage/Stormwater Management
- Permits

VI. Construction Staging

- Detour Route
- Detour Route LOS
- Duration

VII. Construction Cost Estimates

VIII. Alternative Analysis Summary

IX. Project Schedule / Next Steps

X. Questions / Comments

PROJECT FACT SHEET

The DVRPC on behalf of Mercer County initiated Local Concept Development for Structure No. 1100-055/Mercer County Bridge No. 140.9, which carries Lincoln Avenue (CR 626) over the Amtrak Northeast Corridor (NEC) rail line, an inactive rail yard, and Assunpink Creek, in Trenton City.

Problem Statement: The overall purpose of this project is to replace Structure No. 1100-055, while addressing geometric deficiencies and traffic safety of the surrounding area. The structure was rated ‘serious’ primarily due to the condition of the superstructure, which suffers from severely rusted steel throughout and large areas of spalled and delaminated concrete on the deck. The County performed short-term fixes on the structure including lighting, deck repairs and an asphalt overlay until the structure could be replaced. Local Concept Development was initiated to develop and evaluate various alternatives and to select a Preliminary Preferred Alternative (PPA).

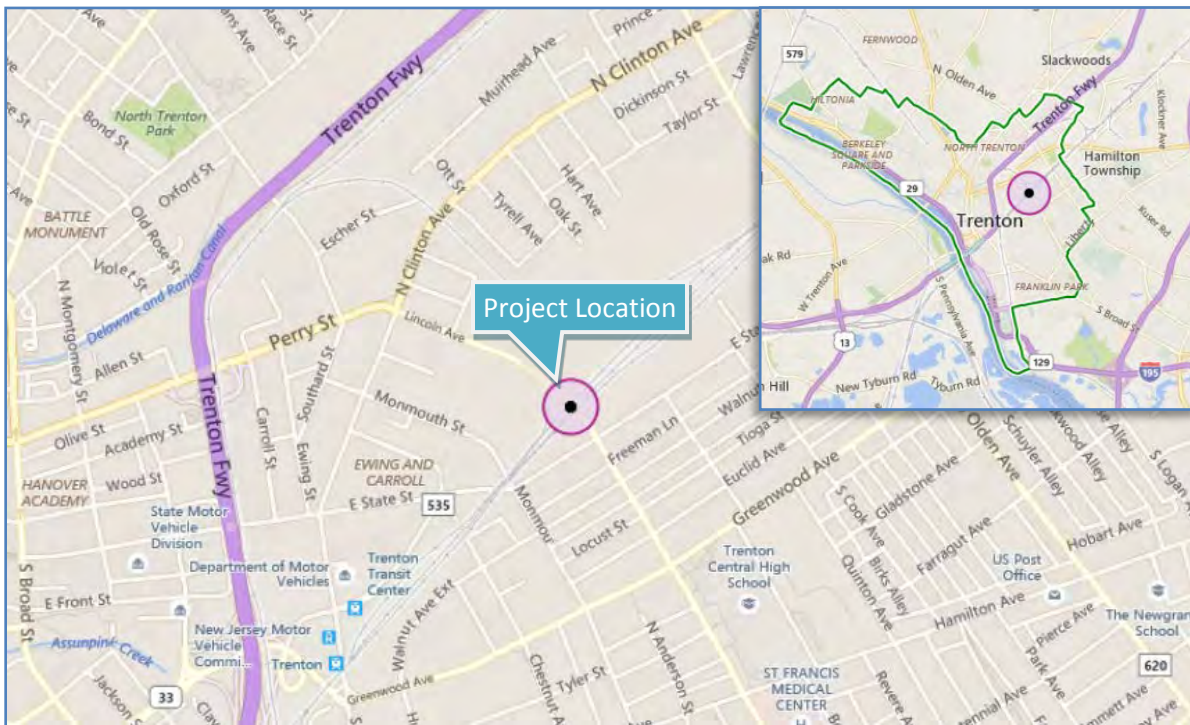


Figure 1 – Project Location

Existing Conditions: Lincoln Avenue is a two lane, urban minor arterial with no posted speed limit. The existing roadway cross section consists of two 18-foot wide lanes with no shoulders. On the structure, 6-foot 2-inch wide sidewalks are present between the through-girders and concrete parapets. Lincoln Avenue serves as an important connector across the aforementioned physical barriers and is the first crossing outside of the central business district of Trenton City. Adjacent land use is a mix of residential and commercial areas. Roadway deficiencies identified within the project limits include vertical stopping sight distance, obstructions within the clear zone and shoulder width.

Structural Inventory & Deficiencies: Structure No. 1100-055 is comprised of 8 simple spans, each consisting of riveted steel through-girders with steel floorbeams and a concrete deck. The structure was built in 1931 and reconstructed in 1965. It is 687 feet long and 40 feet wide. The bridge is fracture critical due to its non-redundant construction (through girder) and is not scour critical.



PROJECT FACT SHEET

Based on the June 2013 inspection, the superstructure is rated 3-Serious due to the exposed moderately to severely rusted steel in the girders and floorbeams at the areas of missing encasement. As a result, the deck is rated 4-Poor with large areas of spalled and delaminated concrete with exposed rusted rebar. The substructure is in fair condition (rated 5) due to wide vertical cracks, large spalls and delaminated concrete with exposed rusted rebar, and loose coping. This bridge has a sufficiency rating of 46.2.

Railroad Operations: The NEC rail line runs from Washington, D.C. to Boston and is used by Amtrak, NJ Transit and freight trains within NJ. Four electrified tracks with overhead catenary lines are present under the structure. The NEC rail line is in the NJ Register as an eligible historic district (Pennsylvania RR, NY to Philadelphia, ID#4568). NJ Transit also has an inactive line that it wants to maintain for future use.

Crash Analysis: GPI obtained crash data for Lincoln Avenue (CR 626) for the three-year period from January 2011 through December 2013 from NJDOT as summarized below. The crashes were primarily located at or near the intersection of Lincoln Avenue and East State Street (CR 635). Of the 19 crashes there were 6 with minor injuries, or 32%.

MP	Total Crashes	Overrepresented Crash Types (Crash Count)			
0.00 – 0.10	19	Same direction rear end	(7)	At signalized intersection	(13)
		Same direction side swipe	(4)	Wet surface	(4)
		Left/U turn	(1)	Ice	(2)
		Encroachment	(1)	Night	(7)
		Pedacycle	(1)	Dusk	(1)

Existing Traffic Volumes: GPI performed classified manual turning movement counts and Automatic Traffic Recorder (ATR) counts in October and November 2015. The data indicates an average 2-way weekday ADT of 10,110 across the structure.

Environmental: The Assunpink Creek is designated as FW2-NT and the Riparian Zone is 50 feet from top of bank. The Creek runs from east to west between the west abutment of the bridge and Pier 7. The area underneath the bridge is designated by FEMA and NJDEP as a flood hazard area. The Creek has most recently been subject to a flood of record during Hurricane Irene on August 28, 2011, and which caused a complete shutdown of Amtrak service between Philadelphia and New York.

Drainage: Currently, the bridge has 18 small rectangular roadway drainage scuppers with two scuppers located at each abutment and pier as well as 18 small diameter scuppers for sidewalk drainage. These scuppers were originally designed to “air drop” stormwater through the bridge deck onto the flood plain below. However, most roadway and sidewalk scuppers do not appear to be functional and therefore the bridge drains overland to the abutments and then overland to the existing drainage system consisting of stormwater inlets at low points off the bridge. On the east side of the bridge, the existing drainage system conveys runoff through a 24” RCP which discharges into a scour hole located approximately 45’ east of the railroad tracks and 10’ south of the bridge. The scour hole also picks up runoff travelling parallel to the railroad. Runoff then travels through a 36” deteriorated CMP that is approximately 550’ in length and discharges to the Assunpink Creek. Instead of replacing the 36” CMP, the deteriorated pipe will be lined in order to reduce impacts to the railroad property. Drainage pipes and structures on the west end of the bridge appear to be in adequate condition at this stage of the project.



PROJECT FACT SHEET

Alternatives Development: The alternatives developed for this project were evaluated separately by structures, geometrics, utilities and staging. These were then summarized into nine (9) alternatives as described below. Given the project constraints, three (3) alternatives (Nos. 2, 5 and 6) were selected for further study are shown in the included plans.

Rehabilitation

Alternative No. 1 – This alternative proposes bridge rehabilitation to extend the useful life of the structure. It requires a complete deck replacement, removal of concrete encasement on existing members, significant strengthening/repair of the existing steel members, structural steel painting, and substructure repairs. The rehabilitation of a structure with this age and in this condition is not typically ideal; however, it causes far fewer impacts to the railroad and utilities than the other build alternatives. The option also has less environmental and ROW challenges, which will help to compress the overall project duration. Additionally, rehabilitation does not require raising the profile over the NEC because vertical and lateral clearances will match the existing structure.

Superstructure Replacement

Replacing the superstructure offers the opportunity to replace the components of the structure in the most critical condition (deck, girders, floorbeams, and bearings), while retaining the elements in fair to good condition (substructure) with some repair/modifications. These alternatives also allow for standard 12-foot wide lanes, 8-foot wide shoulders, which can be used by bicyclists, and 6-foot wide sidewalks for pedestrians. While the roadway remains on its existing horizontal alignment, superstructure replacement allows the bridge to meet the required clearances from NEC and NJ Transit’s inactive line.

Alternative No. 2 – Replace the existing deck and superstructure using steel multi-girders with a structure depth of 47.5 inches and girder spacing of 9’-10”.

Alternative No. 2A – Similar to No. 2 except with a structure depth of 35.5 inches and girder spacing of 7 feet.

Alternative No. 3 – Replace the existing deck and superstructure using concrete bulb tees. The structure depth would be 55.5 inches with tee spacing of 7 feet.

Alternative No. 3A – Replace the existing deck and superstructure using concrete adjacent box beams. The structure depth would be 55 inches with 4-foot wide beams. Three locations would have space between beams for utilities.

Complete Replacement

The complete replacement of the structure will extend the life of the bridge, correct deficiencies, and meet current design requirements. However, it also creates the most impacts and requires the most coordination with utilities, railroads, and agencies. Substructure alternatives considered for complete replacement include driven piles, drilled shafts and micropiles as shown in the included Foundation Alternative Matrix. The foundation will be designed and constructed such that it will not impact the performance of the railroad or tracks.

Alternative No. 4 – Replace the entire structure using concrete bulb tees that would have a structure depth of 73.5 inches and tee spacing of 7 feet.

Alternative No. 5 – Replace the entire structure using steel multi-girders with a structure depth of 51 inches and maximum girder spacing of 7 feet.



PROJECT FACT SHEET

Alternative No. 5A – Replace the entire structure using steel multi-girders with a structure depth of 48 inches and girder spacing of 7 feet.

Alternative No. 6 – Replace the entire structure using steel multi-girders on a new alignment with a 900-foot radius. The structure depth would be 57.25 inches with a girder spacing of 7 feet.

Roadway and Geometrics: Alternative Nos. 2 – 5A propose to maintain the existing horizontal alignment, whereas Alternative No. 6 proposes a new alignment with a 900-foot radius. All alternatives assume the vertical profile can be revised to provide the NJDOT standard 24'-6" vertical clearance. This correlates to the Geometric Alternative Matrix Alternative Nos. G1 and G2, respectively. Geometric options also considered in the matrix include maintain the existing clearance or better, but less than required (Alternative Nos. G3 and G4). Anticipated Controlling Substandard Design Elements (CSDEs) to remain include stopping sight distance on vertical curves and shoulder widths near the signalized intersection of E. State Street (CR 635).

Drainage/Environmental: Alternative No. 6 exceeds the one-acre total disturbance and would trigger only the water quantity and recharge components of the NJDEP Stormwater Management Rules (SWM). The remaining alternatives stay within the SWM thresholds. Since stormwater is not permitted to "air drop" onto railroad property, scuppers cannot be proposed over these locations and the bridge must drain overland to the abutments and either 1) be allowed to air-drop or 2) continue to drain overland to stormwater inlets at the low points off the bridge. The existing scuppers appear to be non-functional and therefore, all inlets and points of discharge analyzed will receive similar volumes in the proposed condition.

It is anticipated that this project will require a Flood Hazard Area Individual Permit due to the pier and abutment work within the floodway and flood hazard area of the Assunpink Creek. A Freshwater Wetlands General Permit, stormwater construction permit and Green Acres involvement may also be required (Assunpink Greenway).

Utilities: The existing structure currently carries ten 4-inch conduits and a 16-inch equivalent gas main. In addition, an existing 30-inch cast iron water main is located under the structure (through the foundation). Several options were considered for relocation, support or shielding as shown in the Utility Alternative Matrix. The goal is to minimize or avoid multiple relocations and long-term disruptions to existing services.

Staging/Constructability: Full or partial closure of the bridge with a vehicular detour, possible through the use of a temporary bridge, were evaluated as shown in the Staging Alternative Matrix. A suitable detour route for pedestrians are limited, and may be an adverse effect to the community. Therefore, at a minimum, pedestrian access will be maintained at this crossing. Based on the capacity analyses performed using Synchro, each of the proposed detour alternatives result in a significant increase in delay and queue lengths for many approaches and/or movements during various peak hours in comparison with the existing conditions without substantial mitigation. However, the partial closure has better Level of Service (LOS) over a full closure without mitigation along the detour route.

Other Considerations: Bridge replacement alternatives to be studied include Accelerated Bridge Construction (ABC) methods using prefabricated bridge elements to minimize the overall construction schedule and impacts. Access to the site below the bridge, some of which is Amtrak property, to construct the foundation will be a key element. Other issues to address include working in proximity to 138 kV power lines. The goal is to minimize or avoid disruptions to the NEC while considering future needs. Architectural treatments, such as stone facing, veneer or form liners; galvanized and powder coated steel; aesthetic parapet or railing treatments; colored concrete; decorative lighting; etc. are also being considered.

Trenton Amtrak Bridges

UPC #993620

Current Phase	Preliminary Engineering
County(s)	Mercer
Municipality(s)	Trenton
Legislative District	15
Congressional District	12
Date prepared or updated	September 30, 2016
ERM & phone #	Thomas C. Saylor , Jr. (609) 530 - 2739
PM & phone #	John Campi (609) 530 - 5689
Office of Community Relations Mgr & phone #	Kimberley Nance (609) 530 - 2110

Project Purpose and Need

The primary need to be addressed by this project is the failing condition of the bridges. Some geometric and traffic operation deficiencies have been identified.

Project Description

The two bridge replacement concept includes the following construction:

East State Street and Monmouth Street Bridges

- Demolish existing superstructures
- Remove existing piers to tops of crash walls
- Construct stub abutments behind existing abutments
- Rehabilitate existing masonry abutments and wing walls.
- Replace superstructures with single-span, ABC deck girder systems

Chestnut Avenue Bridge

- Demolish existing superstructure
- Remove existing piers to tops of crash walls
- Repair remaining abutment walls
- Secure railroad ROW with fence or barriers

Other Structures

- Construct up to six retaining/wing walls along approaches to minimize impacts to adjoining properties.

Railroad

- Remove Amtrak's catenaries from the bridges, construct up to six new catenary structures and reprofile electric traction.

Roadway

Reconstruct roadway approaches to meet the raised bridge deck elevations. The maximum limits of roadway reconstruction will be as follows:

- East State Street from the Wall/Chestnut/Wallenburg intersection to approximately 370 feet east of the Monmouth Street intersection
- Monmouth Street from the East State Street intersection to approximately 320 feet north of the Monmouth Street Bridge
- Remove Chestnut Avenue between East State/Wallenburg intersection and Thompson Street

Four design exceptions will be required:

- Vertical railroad underclearance of 20'-6" for both bridges (2)
- Vertical curves (1 sag & 1 crest) on Monmouth Street (2)

There are opportunities to correct existing CSDEs such as:

- Superelevation on East State Street
- Stopping sight distance on VC East State Street and Monmouth Street
- Stopping sight distance at non-signalized intersection - East State Street/Monmouth Street
- Bridge widths

The feasibility for correcting these CSDEs without increasing the project scope will be studied.

Designer/Contractor

Designer: Arora and Associates, PC

Project Schedule

PE authorization was obtained in June 2016; however, all work is on hold due the TTF hold. The designer is ready to commence PE when funding is approved and mod is executed. A schedule for PE will be set at that time.

Project Costs

Design

Preliminary Engineering: \$758,629.85

Final Design: TBD

Summary of Costs (2016 dollars)	Construction	
	E. State Street and Monmouth Street Replacement, Chestnut Avenue Removal	Catenary Work
Construction Estimate	\$19,578,560	\$847,000
Contingencies	\$ 1,960,000	\$130,000
Amtrak Force Account	\$14,000,000	\$2,580,000
Construction Engineering	\$ 2,630,000	\$400,000
Right of Way	\$ 1,710,000	\$0
CO Contingencies	\$ 500,000	\$50,000
Utilities	\$ 1,460,000	\$0
Total	\$41,838,560	\$4,007,000

Total construction cost = \$45,845,560

Major project risks or issues

Community Support

The Department has had discussions with the City of Trenton to gain support for the two bridge concept. Continued coordination with City officials during design is necessary to maintain that support particularly if City officials are replaced.

Right-of-Way

Slope easements, temporary construction easements and temporary site mitigation parcels will be required along East State Street and Monmouth Street for the project. Six total takes will be required in the southeast quadrant of the East State/Monmouth intersection because the anticipated profile changes will make the existing buildings inaccessible.

Environmental Considerations

A new CED and a new memorandum of agreement with SHPO are required. Raising the roadways will affect the front of the R.C. Maxwell Company Building and the W.H. Tatler Decorating Company Building, which are eligible for listing on the National Historic Register. Also, Section 4(f) documentation is required for the bridges due to the adverse effect on the Pennsylvania Railroad (New York to Philadelphia) Historic District.

During extreme storm events, the Assunpink Creek overtops its banks and flows south along the rail lines. The bridges span the stream's floodplain and floodway. One catenary structure foundation will be within the floodway, and the bridge reconstruction work will be above the flood hazard design flood elevation. Construction within the floodplain must comply with NJDEP Flood Hazard Area Rules. A permit application including a hydrologic and hydraulic analysis will be prepared and submitted to NJDEP to obtain the required permits in Final Design.

Railroad Agreement

All three bridges span Amtrak's Northeast Corridor, which carries rail traffic for Amtrak, NJTransit and SEPTA. In 2012, Amtrak agreed that the minimum railroad underclearance shall be 20'-6" for the replacement superstructures. NJDOT will negotiate a Railroad Construction Agreement with Amtrak during Final Design that includes the following:

- Removal of catenary wires from the bridges
- Construction of up to six new catenary structures and reprofiling of catenary wires
- Approval of bridge reconstruction including temporary shielding
- Flagmen and protection during design and construction
- Electrification improvements may be included in a separate advance construction contract to be completed before the bridges are replaced.

Traffic Impacts/Mitigation strategies

Stage 1:

- Close Chestnut Avenue between Raoul Wallenberg Avenue and Thompson Street
- Demolish the Chestnut Avenue Bridge. (Alternatively, this work may be done simultaneously with stage 2 and 3.)
- Remove paved roadway approaches and restore disturbed area

Stage 2:

- Close East State Street EB traffic and detour it via S. Clinton Avenue, Greenwood Avenue (Route 33) and Chambers Street
- Maintain East State Street WB traffic on the existing East State Street Bridge
- Demolish and reconstruct the first phase of the East State Street Bridge
- Construct roadway approaches on EB side of East State Street

Stage 3:

- Keep East State Street EB closed and maintain detour on S. Clinton Avenue, Greenwood Avenue (Route 33) and Chambers Street
- Close Monmouth Street Bridge
- Shift East State Street WB lane to south side of East State Street
- Demolish and reconstruct Monmouth Street Bridge and second phase of East State Street Bridge
- Complete roadway approaches on East State Street and Monmouth Street
- Upon completion of this phase, reopen Monmouth Street and East State Street in both directions and remove detour

FY 2016-2025 STATEWIDE TRANSPORTATION IMPROVEMENT PROGRAM
New Jersey Department of Transportation Project Descriptions
(\$ millions)

Trenton Amtrak Bridges

DBNUM: 99362 / UPC: 993620

The three orphan bridges, carrying Chestnut Ave., E. State Street and Monmouth St. over Amtrak, are in poor condition. All three bridges are structurally deficient and functionally obsolete. The bridges and approach roadways feature various substandard design elements, including substandard vertical and horizontal clearances, intersection sight distances and unprotected bridge girders. NJDOT is working with The City of Trenton on a revised concept to replace the E. State St. Bridge and remove the Chestnut Ave. and Monmouth St. Bridges. A new connector road proposed with the concept maintains all current turning movements. The single bridge option is a viable plan, given the construction cost estimate of approximately \$35M. Replacement of the three existing bridges presents funding issues, given constraints of the MPO.

This project is multi-year funded. Total construction funding needed is expected to be \$20,000,000.

COUNTY: Mercer

LEGISLATIVE DISTRICT: 15

MUNICIPALITY: Trenton City

SPONSOR: NJDOT

MILEPOST(S): N/A

STRUCTURE NO.: 1149163, 1149164, 1149165

FINANCIAL PLAN REQUIREMENT:

AIR QUALITY CODE (NON-EXEMPT/EXEMPT): S19 (Exempt)

ASSET MANAGEMENT CATEGORY: Infrastructure Preservation (Bridge Assets: Railroad Overhead Bridges)

MPO	Phase	Fund	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	Total
DVRPC	CON	STP-STU				\$4.000	\$4.000	\$4.000	\$4.000	\$4.000			\$20.000

Memorandum of Meeting

To: File

From: Bernie Boerchers, GPI

Date: June 12, 2017

Project Name: Delaware Valley Regional Planning Commission (DVRPC)/Mercer County
Lincoln Avenue Bridge Replacement Local Concept Development Study
City of Trenton, Mercer County

Project Number: 2015684.00

Subject: NJDOT Subject Matter Expert (SME) Field Meeting

Copy: Attendees

A meeting was held with NJDOT SMEs for the above referenced project at 10:00 AM on Wednesday, June 7, 2017 at the project site. Those in attendance were as follows:

<u>Attendee</u>	<u>Bureau / Company</u>	<u>Phone</u>
Basit Muzaffar	Mercer County Engineering	609 989-6641
Dhruv Patel	NJDOT – Local Aid	609 530-2826
Kyle Skala	NJDOT – Local Aid	732 625-4283
Arun Kumar	NJDOT – Local Aid	732 625-4295
Sean Warren	NJDOT – BEPR*	609 530-5428
John Riggi	NJDOT – BEPR*	609 530-2827
Bernie Boerchers	Greenman-Pedersen, Inc. (GPI)	908 236-9001
Valerie Hrabal	GPI	908 236-9001
Bill Macholdt	Amy S. Greene Environmental Consultants, Inc.	908 788-9676

* Bureau of Environmental Program Resources

The purpose of this meeting was to confirm the anticipated National Environmental Policy Act (NEPA) document for the subject project.

After self-introductions, Mr. Muzaffar and Mr. Boerchers very briefly described the proposed improvements and project status. They noted that the proposed bridge would be constructed on the existing alignment in two major stages with the eastbound vehicular traffic being detoured in the first stage. Pedestrian traffic would be maintained at all times. They added that staged construction not only minimizes impacts on the nearby urban street system and emergency services response times but also simplifies utility relocations.

The following summarizes the questions and comments made during the meeting:

1. Mr. Boerchers stated that the project is nearing the completion of the Concept Development phase and that obtaining concurrence from NJDOT BEPR on the anticipated environmental document, which is a Categorical Exclusion (CED), was one of the few remaining activities. He provided Mr. Warren with a sample Request for Concurrence of Anticipated Environmental Document memorandum. Mr. Warren requested that GPI prepare a request memorandum specific to this project for his signature to which Mr. Boerchers agreed.
2. It was noted that the nearby NJDOT Trenton Amtrak Bridges Project, which includes the E. State Street, Monmouth Street and Chestnut Street Bridges, may be on a similar design schedule as the Lincoln Avenue Bridge Replacement Project and that these projects would need to be coordinated as they advance to subsequent phases especially with regards to detours and traffic impacts. It was also noted that Mr. Campi is the NJDOT Project Manager for the Trenton Amtrak Bridges Project. Mr. Boerchers stated that the only the eastbound traffic is to be detoured for the replacement of the Lincoln Avenue Bridge and that the detoured traffic would be directed over the N. Olden Avenue Bridge which is not one of the three bridges in the Trenton Amtrak Bridges Project. He added that these projects would be coordinated through all phases of design and construction.
3. Ms. Hrabal and Mr. Macholdt briefly discussed that the project will require NJDEP Freshwater Wetlands General Permits and an NJDEP Flood Hazard Individual Permit; Ms. Hrabal also discussed the need for SESC Certification.
4. Ms. Hrabal stated that the project will need to comply with the NJDEP Flood Hazard Area Control Act (FHACA) no net rise in flood elevation standards. She also noted that NJDEP is currently developing a new model of the Assunpink Creek and that the current FEMA delineation of floodway may not be accurate. Based on a recent conversation with NJDEP, it is anticipated that the new model will not be complete for another year. She noted that GPI deferred performing hydraulic modeling during Concept Development rather than duplicate NJDEP's modeling effort. It is anticipated that the model should be available from NJDEP before or during the course of Preliminary Engineering.
5. Mr. Muzaffar stated that he will be advancing the Final Design activities for the geotechnical subsurface exploration program and H&H analysis into Preliminary Engineering given that the project footprint has already been established in Concept Development.
6. Mr. Riggi stated that he would reach out to RGA, Inc. regarding their coordination to date with SHPO including their letter to SHPO dated August 18, 2016. The contact at RGA, Inc. for this project is Mr. Robert J. Wise, Jr. Mr. Riggi will copy Mr. Patel of NJDOT Local Aid, Mr. Muzaffar of the County and Mr. Boerchers of GPI on all correspondence.
7. Mr. Warren inquired if the PPA is ADA compliant to which Mr. Boerchers stated that it is.
8. Mr. Warren inquired if there will be adequate stopping sight distance along Lincoln Avenue of the traffic signal at the intersection of Lincoln Avenue and E. State Street given the increase in elevation between the existing and proposed profiles. Mr. Boerchers stated that the proposed profile meets or exceeds AASHTO requirements for stopping sight distance, but could not recall if the minimum signal visibility distances per the MUTCD had been confirmed for the PPA. He stated that GPI would confirm full MUTCD signal visibility compliance.

9. Mr. Muzaffar stated that the traffic signal at the intersection of Lincoln Avenue and East State Street needs to be replaced given that the sidewalk at the intersection will be brought into ADA compliance thus impacting the signal pole and pushbutton placement and due to the potential impacts to the traffic signal as required for interim use during construction.

Action Items:

- GPI will prepare and submit a Request for Concurrence of Anticipated Environmental Document memorandum to NJDOP BEPR.
- GPI will confirm full MUTCD signal visibility compliance.

This memorandum of record is believed to be an accurate record of the discussions at this meeting. If any of the attendees disagree with the documented discussion, please contact Bernie Boerchers at (908) 236-9001 within 5 days of receipt of minutes. If no comments are received, then this memorandum will be considered a true and accurate record of this meeting.

Memorandums & Letters

July 14, 2017

Mr. Dhruv Patel
New Jersey Department of Transportation
Local Aid – District 3
1035 Parkway Avenue, PO Box 600
Trenton, New Jersey 08625

Re: Draft Concept Development Report
Delaware Valley Regional Planning Commission (DVRPC)/Mercer County
Lincoln Avenue Bridge Replacement Local Concept Development Study
City of Trenton, Mercer County

Subject: Comment Resolution Summary
NJDOT Report Comments received May 2, 2017

Dear Mr. Patel:

The following is our comment resolution summary (CRS) for NJDOT comments for the above referenced project report. Each comment is repeated below in italicized type with our corresponding disposition or resolution immediately following.

Geotechnical Engineering

1. *In local concept Development report, pp. 36, the Consultant stated that there is no evidence for scour problem. In the vicinity of Assunpink creek, the designs for foundations of abutment and the piers should be considered for scour. Since the bridge is a new bridge, according to FHWA, the scour analyses should be performed. Based on the scour depth, the foundation should be design.*

Currently no model of the Assunpink Creek is available. However, a new model of the Assunpink Creek is being developed by NJDEP which should be available within the next year. As such, hydraulic and scour analyses of the structure has been deferred to Preliminary Engineering.

2. *In this report, pp. 36, the Consultant mentioned that the rock is expected to be at about 60 feet below the ground surfaces. However, when we look the existing soil borings in Trenton area, some borings shows that the bed rock is about 20 to 25 feet below the ground surface. Therefore, type of foundation should be considered with the shallow rock during the selection of foundation.*

A subsurface exploration program will be performed during Preliminary Engineering at which time rock depth will be determined and the foundation type selected. At this point, however, we are not anticipating the use of a shallow foundation due to the anticipated depth of rock and existing underground obstructions.

3. *If Alternative system 5 is selected, the following are our concerns:*

- (a) The two proposed piers are inside of NJ Transit inactive tracks area. The designer needs to consider alternative foundations system instead of pile foundation system for these piers.*
- (b) The two proposed piers are very close to Northeast Corridor. The designer needs to consider alternative foundations system instead of pile foundation system for these piers.*
- (c) Proposed foundation systems for two proposed piers closer to NJ Transit inactive tracks may conflict with the existing piers foundation systems (one pier foundation system is conflicted with the existing foundation system based on the plan). One proposed pier foundation system closer to Northeast corridor may conflict with the existing pier foundation systems. One pier closer to Assunpink creek may conflict with existing foundation system.*

The proposed pier locations for Alternative 5 have been selected based on providing an efficient span arrangement while maintaining the required clearance from the adjacent tracks. Due to the proximity of the tracks, a deep foundation would be advantageous to avoid the installation of temporary sheeting and excavation within the railroads property. In addition, test pits will be required to locate the exact extents of the existing foundations. Based on as-built information that was obtained during Concept Development we have located the piers to avoid such potential conflicts. We are anticipating a pile foundation at this point, but as noted the final foundation design will be selected during Preliminary Engineering subsequent to the subsurface exploration program.

4. *If the Alternative system 6 is selected the following are our concerns:*

- (a) One pier is inside of NJ Transit inactive tracks and one pier is very close to this track. The designer needs to select alternative foundations system instead of pile foundation system for these piers.*
- (b) One pier is very close to Northeast Corridor. The designer needs to consider alternative foundations system instead of pile foundation system for this pier.*
- (c) Proposed foundation system for one pier closer to Northeast corridor may conflict with the existing pier foundation system.*

Please refer to the Response to Geotechnical Comment #3.

5. *Over hang utilities may conflict with proposed foundation system. Foundation system can be selected accordingly if the utilities are not relocated.*

We have coordinated the foundation locations with the utility information that we received to date and have reasonable confidence that the locations shown will avoid the existing utilities that are to remain. The project will require the relocation of some utilities.

Value Solutions; Geometrics: Gaurang Patel 609-530-4849 / Walid Jawawdeh 609-530-4309

According to the Reasonable Assurance within the CD Report, it appears that the only controlling substandard design elements (CSDE) will be:

- *Shoulder width, less than 8' (within the transition areas – outside of the bridge)*
- *Stopping Sight Distance – sag vertical curve in the vicinity of E. State St.*

All other substandard conditions that may be identified during plan development should be documented in accordance with Mercer County's policies and procedures.

Mercer County provided reasonable assurance for the CSDE identified during Concept Development on March 22, 2017. A copy of the reasonable assurance will be included in the final Concept Development Report. As noted, any additional CSDEs that may be identified during Preliminary Engineering or Final Design will be documented in accordance with Mercer County's policies and procedures.

Roadside Design and ADA Compliance: Contact Hung Tang; 530.5635

No comment

Construction Management Unit

We have reviewed the draft CD report for the above referenced project. We concur with the PPA by reviewing all the appendices and the comprehensive in-depth CD Study including all the major construction milestones. We agree with the staging and temporary lane closures with prior approval from the traffic operations unit. Next submission should follow all the latest BDC's, CES estimating, Primavera Schedule and latest Special Provisions with applicable attachments related to Local Aid guidelines.

Future submissions in subsequent project phases will follow all the latest NJDOT BDCs, guidelines, standards and specifications.

Should you have any questions please do not hesitate to contact me.

Sincerely,

Greenman-Pedersen, Inc.



Bernard J. Boerchers, P.E., P.T.O.E.
Project Manager / Senior Vice President

MERCER COUNTY DIVISION OF ENGINEERING

MEMORANDUM

TO: Lauralee Rappleye, Project Manager
NJDOT Bureau of Environmental Program Resources (BEPR)

FROM: Basit A. Muzaffar, PE
Mercer County Supervising Engineer, Highway & Bridges

DATE: June 7, 2017

PHONE: 609-989-6641

SUBJECT: **Request for Concurrence of Anticipated Environmental Document**
Lincoln Avenue Bridge Replacement
City of Trenton, Mercer County
Concept Development (CD)

Mercer County is requesting your input for the anticipated environmental document for the above subject project. The County is in the process of finalizing CD and would like to obtain your comments, which are an integral part to the successful completion of this project. The following information may be helpful to you.

Project Need

The overall purpose of this project is to replace Structure No. 1100-055. The structure was rated 'serious' primarily due to the condition of the superstructure, which suffers from severely rusted steel throughout and large areas of spalled and delaminated concrete on the deck. The County performed short-term fixes on the structure including lighting, deck repairs and an asphalt overlay until the structure could be replaced. Local Concept Development was initiated to develop and evaluate various alternatives and to select a Preliminary Preferred Alternative (PPA).

Preliminary Preferred Alternative (PPA)

The PPA consists of the following improvements:

- Full replacement of the existing substructure and superstructure structure using steel multi-girders on the existing horizontal alignment.
- Increase vertical profile to meet the minimum 24'-6" vertical under-clearance over Amtrak tracks and inactive NJ Transit tracks.
- Proposed cross section provides a 12-foot wide lane, 8-foot wide shoulder, and 6-foot wide sidewalk in each direction.
- Relocation of a 20"x8" gas main located on structure, 10-4" electrical conduits located on structure, and a subsurface 30" cast iron water main located along and under the existing structure.

- Maintain pedestrian and westbound traffic during construction.

The PPA will provide a minimum 75-year design life, improve the vertical clearance over the existing tracks, provide a standard roadway cross section, and improve the general aesthetics of the area.

Environmental: The PPA stays within the SWM thresholds. Since stormwater is not permitted to “air drop” onto railroad property, scuppers cannot be proposed over these locations and the bridge must drain overland to the abutments and either 1) be allowed to air-drop or 2) continue to drain overland to stormwater inlets at the low points off the bridge. The existing scuppers appear to be non-functional and therefore, all inlets and points of discharge analyzed will receive similar volumes in the proposed condition.

It is anticipated that this project will require a Flood Hazard Area Individual Permit due to the pier and abutment work within the floodway and flood hazard area of the Assunpink Creek. A Freshwater Wetlands General Permit, stormwater construction permit and Green Acres involvement may also be required (Assunpink Greenway).

Right of Way Requirements

No ROW impacts are anticipated.

Environmental Screening Summary

Amy S. Greene Environmental Consultants prepared an environmental screening for this project in August 2016. Potential environmental constraints identified within the Screening are outlined below. A copy of the Screening is included with this memorandum.

1. Sensitive receptors, such as educational, religious, residential and service areas, were identified within the project limits.
2. The NEC rail line is listed in the NJ Register with a SHPO opinion of eligibility for a historic district (Pennsylvania RR, NY to Philadelphia, ID#4568). The rail line has a period of significance between 1835 and 1963. No additional historic properties or districts were identified within the project limits.
3. The population within the study area is predominately African American, with populations of Hispanic/Latino and White dispersed throughout. Large portions of the population speak Spanish. All of the tracts in the study area are below the poverty line.
4. The Monmouth Field (Assunpink Greenway) property was identified as Green Acres encumbered and owned by Trenton City. The property is bounded by Lincoln Avenue, Monmouth Street, and the Rush Crossing Development.
5. This project does not lie within the Highlands or Pinelands boundaries.
6. Forested wetlands were identified along a portion of the Assunpink Creek. Field investigation also identified a wetlands swale along the east side of the NEC north of Lincoln Avenue. It is anticipated that the forested wetlands would be subject to a 50-foot transition area whereas the swale would not have an associated transition area.
7. It is not anticipated that this project will impact ½ acre or more of forested land. Therefore, replanting in accordance with the NJ No Net Loss Reforestation Act is not required.

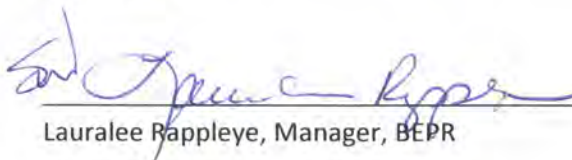
8. The Assunpink Creek has a FEMA mapped 100-year floodplain. It is anticipated that the creek also has an associated 50-foot riparian zone from the stream channel top-of-bank.
9. This project is located within the USEPA-designated Coastal Plain Sole Source Aquifer.
10. No State or Federally listed threatened or endangered species, or their habitats, were identified within the project limits.
11. No C1 waters were identified within the project limits. The Assunpink Creek is classified as freshwater, non-trout (FW2-NT).
12. No vernal habitats were identified within the project limits.
13. It is not anticipated that the project will result in new impervious area greater than ¼ acre or over one acre of total land disturbance. Therefore, compliance with the NJDEP Stormwater Management Rules (SWM) will not be required.
14. No known contaminated sites were identified within the project limits. Field observation noted that JR Auto Repairs, located along the north side of Lincoln Avenue near N. Clinton Avenue, may be a potential contaminated site.
15. The Screening identified the following permits/coordination may be required for this project:
 - Freshwater Wetlands GP
 - Stormwater Construction GP (RFA)
 - Flood Hazard Area Individual Permit
 - Section 4(f)

Anticipated Environmental Document

This project does not individually or cumulatively have a significant environmental effect. In addition, the Environmental Screening did not identify any "fatal flaws" that would prohibit the advancement of this project. The probable National Environmental Policy Act (NEPA) document classification is anticipated to be a Categorical Exclusion (CED).

Please find attached the PPA, project aerial, and environmental screening for your information and review. The anticipated construction cost estimate is \$38.5 million. If you need additional information, please contact me at 609-989-6641. We would appreciate your response by **June 30, 2017**.

Concurrence:



Lauralee Rappleye, Manager, BEPR



Date

Attachments

- C: Sean Warren, NJDOT BEPR
- Bernie Boerchers, GPI

Email

From: [Abitz, Robert](#)
To: [Marra, Christopher](#); [Boerchers, Bernard](#)
Cc: [Vijayakumar, Amutha](#)
Subject: RE: Request for Reasonable Assurance - DVRPC Lincoln Avenue Bridge Replacement Project
Date: Thursday, January 05, 2017 10:53:42 AM
Attachments: image001.png

Chris/Bernie,

As we discussed this morning... In my opinion, because this is a DVRPC lead project, involving a county road, I don't believe that NJDOT will have a roll in the Design Exception approval. The county has jurisdiction, so they should approve any substandard elements. It's my understanding that because there is federal funding, the formal Design Exception process should be followed, however my office does not need to see it.

I hope that helps.

Robert Abitz, Jr.
NJ Dept. of Transportation
Design Standards/Value Solutions Unit
609.530.5515

From: Marra, Christopher [mailto:cmarra@gpinet.com]
Sent: Wednesday, January 04, 2017 1:38 PM
To: Abitz, Robert
Cc: Vijayakumar, Amutha
Subject: RE: Request for Reasonable Assurance - DVRPC Lincoln Avenue Bridge Replacement Project

Hi Bob,

The bridge is under the jurisdiction of Mercer County and is being advanced through the Delaware Valley Regional Planning Commission's Local Capital Project Delivery Program, which is consistent with the Project Delivery Process implemented by NJDOT. The design and construction will be federally funded. It is not NHS.

Thank you,



An Equal Opportunity Employer

Christopher Marra, P.E.
+1 (908) 236-9001

From: Abitz, Robert [mailto:robert.abitz@dot.nj.gov]
Sent: Wednesday, January 04, 2017 1:16 PM
To: Marra, Christopher <cmarra@gpinet.com>

Cc: Vijayakumar, Amutha <Amutha.Vijayakumar@dot.nj.gov>

Subject: RE: Request for Reasonable Assurance - DVRPC Lincoln Avenue Bridge Replacement Project

Chris,

I may have been mistakenly thinking that this was an Orphan bridge.

Who has jurisdiction of this bridge?

Is there federal funding for design – construction?

Its not NHS – correct?

Approval of Substandard design elements may fall on the County or the City.

Please refer to Section 5.3, pg 4 of our Design Exception Manual (attached) for information regarding CSDE's and State Aid projects.

From: Marra, Christopher [<mailto:cmarra@gpinet.com>]

Sent: Wednesday, December 21, 2016 9:17 AM

To: Abitz, Robert

Cc: bmuzaffar@mercercounty.org; gsandusky@mercercounty.org; Boerchers, Bernard; Steponanko, Julia; Kumar, Arun

Subject: Request for Reasonable Assurance - DVRPC Lincoln Avenue Bridge Replacement Project

Hi Bob,

We are working with the Delaware Valley Regional Planning Commission and Mercer County on the subject project and are nearing completion of Local Concept Development. Please find attached Request for Reasonable Assurance, PPA Plan, and Design Exception Crash Request for your review.

I know we typically do not send this information directly so please let me know if we need to have the project sponsor submit this instead.

Thank you,



Christopher Marra, P.E.

Engineer

100 Corporate Drive, Suite 301, Lebanon, NJ 08833

+1 (908) 236-9001

cmarra@gpinet.com | www.gpinet.com



An Equal Opportunity Employer

This communication and any attachments are intended only for the use of the individual or entity named as the addressee. It may contain information which is privileged and/or confidential under applicable law. If you are not the intended recipient or such recipient's

From: [Campi, John](#)
To: [Boerchers, Bernard](#)
Cc: bmuzaffar@mercercounty.org; [Patel, Dhruv](#); [Steponanko, Julia](#); [Farrow, William](#); [Wright, Michael \(Arora\)](#)
Subject: RE: NJDOT Trenton Amtrak Bridges Project
Date: Monday, June 12, 2017 8:35:59 AM
Attachments: image001.png
image002.png
image003.png
image004.png
image005.png
image006.png


We are replacing E. State Street and Monmouth Street Bridges. Chestnut Street Bridge will be removed.

Mike, can you please send the concept to Bernie and those needing it? Also, please provide a draft of the detour plan. Thanks.

From: Boerchers, Bernard [mailto:bboerchers@gpinet.com]
Sent: Monday, June 12, 2017 8:26 AM
To: Campi, John
Cc: bmuzaffar@mercercounty.org; Patel, Dhruv; Steponanko, Julia; Farrow, William; Wright, Michael (Arora)
Subject: RE: NJDOT Trenton Amtrak Bridges Project

Thanks John! Does your project still include all three bridges? Would it be possible to get a copy of the detour plan for each bridge?

Thanks again,
Bernie

 Bernard Boerchers, P.E., PTOE
d +1 (908) 287-2661
An Equal Opportunity Employer

From: Campi, John [mailto:John.Campi@dot.nj.gov]
Sent: Monday, June 12, 2017 7:39 AM
To: Boerchers, Bernard <bboerchers@gpinet.com>
Cc: bmuzaffar@mercercounty.org; Patel, Dhruv <Dhruv.Patel@dot.nj.gov>; Steponanko, Julia <jsteponanko@gpinet.com>; Farrow, William <wfarrow@gpinet.com>; Wright, Michael (Arora) <mwright@arorapc.com>
Subject: RE: NJDOT Trenton Amtrak Bridges Project

We are in PE and expect to conclude the current phase of work 11/29/18.

From: Boerchers, Bernard [mailto:bboerchers@gpinet.com]
Sent: Sunday, June 11, 2017 10:56 AM
To: Campi, John
Cc: bmuzaffar@mercercounty.org; Patel, Dhruv; Steponanko, Julia; Farrow, William
Subject: NJDOT Trenton Amtrak Bridges Project

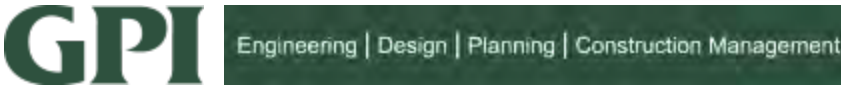
Hi John,

We are nearing completion of the CD phase for the Lincoln Avenue Bridge Replacement Project with the County and DVRPC. Can you please provide me with the status of the NJDOT Trenton Amtrak Bridges Project, which I believe includes the E. State Street, Monmouth Street and Chestnut Street Bridges?

Thank you,
Bernie

Bernard Boerchers, P.E., PTOE
Senior Vice President / Director of Traffic Engineering

100 Corporate Drive, Suite 301, Lebanon, NJ 08833
o +1 (908) 236-9001 | d +1 (908) 287-2661
bboerchers@gpinet.com | www.gpinet.com



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From: [Mike Wright](#)
To: [Boerchers, Bernard](#)
Cc: bmuzaffar@mercercounty.org; [Patel, Dhruv](#); [Steponanko, Julia](#); [Farrow, William](#); [Campi, John](#); [Adele C. Roscioli](#)
Subject: RE: NJDOT Trenton Amtrak Bridges Project
Date: Monday, June 12, 2017 8:56:19 AM
Attachments: image001.png
image002.png
image003.png
image004.png
image005.png
image006.png
1413-Display04_2-bridge_concept.pdf

All.

The two bridge concept plan is attached.

We don't have plans drawn for the detour route yet. We anticipate that the staging and detour routes will be as follows:

Anticipated Construction Staging and MPT

- Stage 1:
 - Close Chestnut Avenue between Raoul Wallenberg Avenue and Thompson Street
 - Demolish the Chestnut Avenue Bridge. (Alternatively, this work may be done simultaneously with stage 2 and 3.)
 - Remove paved roadway approaches and restore disturbed area
- Stage 2:
 - Close East State Street EB traffic and detour it via S. Clinton Avenue, Greenwood Avenue (Route 33) and Chambers Street
 - Maintain East State Street WB traffic on the existing East State Street Bridge
 - Demolish and reconstruct the first phase of the East State Street Bridge
 - Construct roadway approaches on EB side of East State Street
- Stage 3:
 - Keep East State Street EB closed and maintain detour on S. Clinton Avenue, Greenwood Avenue (Route 33) and Chambers Street
 - Close Monmouth Street Bridge
 - Shift East State Street WB lane to south side of East State Street
 - Demolish and reconstruct Monmouth Street Bridge and second phase of East State Street Bridge
 - Complete roadway approaches on East State Street and Monmouth Street
 - Upon completion of this phase, reopen Monmouth Street and East State Street in both directions and remove detour

Michael G. Wright, PE, PP, PMP, Project Manager

ARORA and ASSOCIATES, PC

1200 Lenox Drive, Suite 200, Lawrenceville, NJ 08648

Office: 609-482-2677 | Cell: 609-915-4265 | Fax: 609-844-9799

www.arorapc.com

From: Campi, John [mailto:John.Campi@dot.nj.gov]
Sent: Monday, June 12, 2017 8:36 AM
To: 'Boerchers, Bernard' <bboerchers@gpinet.com>
Cc: bmuzaffar@mercercounty.org; Patel, Dhruv <Dhruv.Patel@dot.nj.gov>; Steponanko, Julia <jsteponanko@gpinet.com>; Farrow, William <wfarrow@gpinet.com>; Mike Wright <mwright@arorapc.com>
Subject: RE: NJDOT Trenton Amtrak Bridges Project

We are replacing E. State Street and Monmouth Street Bridges. Chestnut Street Bridge will be removed.

Mike, can you please send the concept to Bernie and those needing it? Also, please provide a draft of the detour plan. Thanks.

From: Boerchers, Bernard [mailto:bboerchers@gpinet.com]
Sent: Monday, June 12, 2017 8:26 AM
To: Campi, John
Cc: bmuzaffar@mercercounty.org; Patel, Dhruv; Steponanko, Julia; Farrow, William; Wright, Michael (Arora)
Subject: RE: NJDOT Trenton Amtrak Bridges Project

Thanks John! Does your project still include all three bridges? Would it be possible to get a copy of the detour plan for each bridge?

Thanks again,
Bernie



Bernard Boerchers, P.E., PTOE
d +1 (908) 287-2661
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From: Campi, John [mailto:John.Campi@dot.nj.gov]
Sent: Monday, June 12, 2017 7:39 AM
To: Boerchers, Bernard <bboerchers@gpinet.com>
Cc: bmuzaffar@mercercounty.org; Patel, Dhruv <Dhruv.Patel@dot.nj.gov>; Steponanko, Julia <jsteponanko@gpinet.com>; Farrow, William <wfarrow@gpinet.com>; Wright, Michael (Arora) <mwright@arorapc.com>
Subject: RE: NJDOT Trenton Amtrak Bridges Project

We are in PE and expect to conclude the current phase of work 11/29/18.

From: Boerchers, Bernard [mailto:bboerchers@gpinet.com]

Sent: Sunday, June 11, 2017 10:56 AM

To: Campi, John

Cc: bmuzaffar@mercercounty.org; Patel, Dhruv; Steponanko, Julia; Farrow, William

Subject: NJDOT Trenton Amtrak Bridges Project

Hi John,

We are nearing completion of the CD phase for the Lincoln Avenue Bridge Replacement Project with the County and DVRPC. Can you please provide me with the status of the NJDOT Trenton Amtrak Bridges Project, which I believe includes the E. State Street, Monmouth Street and Chestnut Street Bridges?

Thank you,

Bernie

Bernard Boerchers, P.E., PTOE

Senior Vice President / Director of Traffic Engineering

100 Corporate Drive, Suite 301, Lebanon, NJ 08833

o +1 (908) 236-9001 | d +1 (908) 287-2661

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--

Mike Wright , PE,PP,PMP |Senior Vice President | ARORA and ASSOCIATES, P.C.

1200 Lenox Drive Suite 200, Lawrenceville, NJ 08648

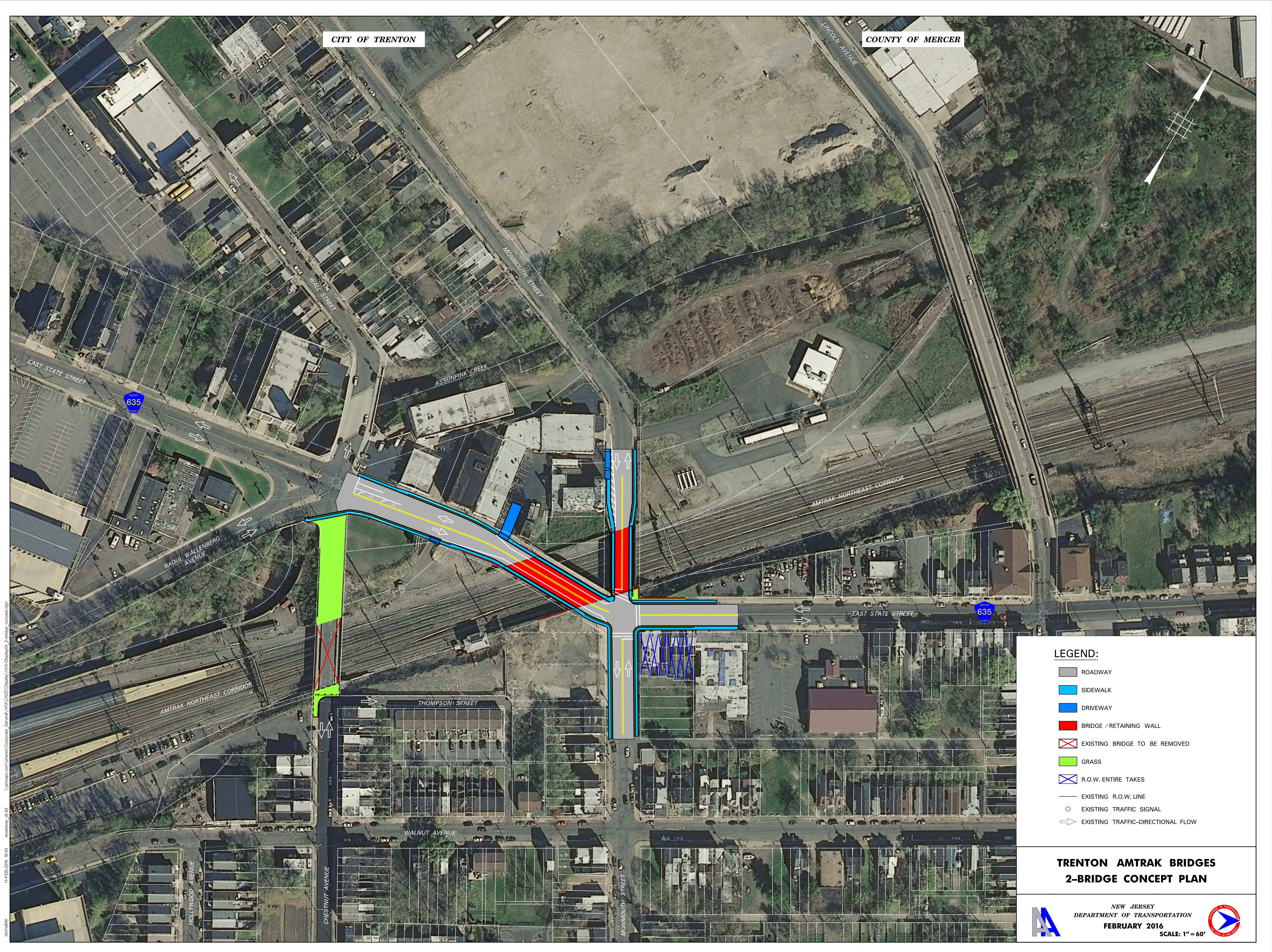
Main: [609-844-1111](tel:609-844-1111) | Direct: [609-482-2677](tel:609-482-2677) | [609-915-4265](tel:609-915-4265)

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CITY OF TRENTON

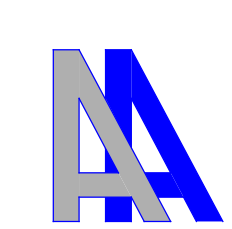
COUNTY OF MERCER



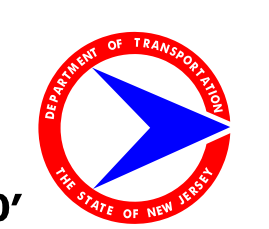
LEGEND:

-  ROADWAY
-  SIDEWALK
-  DRIVEWAY
-  BRIDGE / RETAINING WALL
-  EXISTING BRIDGE TO BE REMOVED
-  GRASS
-  R.O.W. ENTIRE TAKES
-  EXISTING R.O.W. LINE
-  EXISTING TRAFFIC SIGNAL
-  EXISTING TRAFFIC-DIRECTIONAL FLOW

**TRENTON AMTRAK BRIDGES
2-BRIDGE CONCEPT PLAN**



NEW JERSEY
DEPARTMENT OF TRANSPORTATION
FEBRUARY 2016



SCALE: 1" = 60'

11-FEB-2016 16:43
enrsway.d.rfl
\\laranc.com\lancas\Corporate_General\1430\CADD\Drawings\1432-Drawings\2-bridge_concept.dwg

Federal Highway Administration (FHWA)

Correspondence & Report Approval

From: [Boerchers, Bernard](#)
To: [John Coscia](#)
Cc: [Steponanko, Julia](#)
Subject: Re: Lincoln Ave (CR 626) over Amtrak Local CD Report
Date: Thursday, October 26, 2017 3:57:33 PM

Hi John

Will do

Thanks
Bernie

Sent from my iPhone

On Oct 26, 2017, at 9:30 AM, John Coscia <jcosciajr@dvrpc.org> wrote:

Bernie,

Please address the comments from FHWA below regarding the LCD report for Lincoln Ave.

Thanks,

John

----- Forwarded message -----

From: Skala, Kyle <Kyle.Skala@dot.nj.gov>

Date: Thu, Oct 26, 2017 at 9:26 AM

Subject: FW: Lincoln Ave (CR 626) over Amtrak Local CD Report

To: John Coscia <jcosciajr@dvrpc.org>

Cc: "Kumar, Arun" <Arun.Kumar@dot.nj.gov>

John,

Please address the comments below for Nunzio Merla of FHWA regarding the CD Report for Lincoln Avenue Bridge Replacement.

Thanks,

Kyle Skala

NJDOT – Local Aid, Dist. 3

[1035 Parkway Avenue](#)

[Trenton, NJ 08625](#)

[732-625-4283](#)

From: Berryman, Thomas
Sent: Thursday, October 26, 2017 9:23 AM
To: Merla, Nunzio (FHWA) <Nunzio.Merla@dot.gov>
Cc: Skala, Kyle <Kyle.Skala@dot.nj.gov>; Kumar, Arun <Arun.Kumar@dot.nj.gov>
Subject: RE: Lincoln Ave (CR 626) over Amtrak Local CD Report

Thanks Nunzio, I copied them with my reply.

From: Merla, Nunzio (FHWA) [<mailto:Nunzio.Merla@dot.gov>]
Sent: Thursday, October 26, 2017 9:21 AM
To: Berryman, Thomas <thomas.berryman@dot.nj.gov>
Subject: Lincoln Ave (CR 626) over Amtrak Local CD Report

Tom, please forward to Arun/Kyle. I do not have their emails.

We have reviewed the CD report for the subject project and offer the following:

- 1) Note that in accordance with Moving Ahead for Progress in the 21st Century (MAP-21), Authorization Act, Value Engineering Analysis in accordance with 23 CFR 627 is required to be performed for Projects on the National Highway System (NHS) receiving Federal assistance with an estimated total cost of \$50,000,000 or more and Bridge projects on the NHS receiving Federal assistance with an estimated total cost of \$40,000,000 or more. In this case the bridge is not located on the NHS, however based on the project's scope, we suggest the County consider including a VE analysis moving forward.
- 2) Section VI Q 3) on P. 22, Confirm that full ADA compliance will be

included in the design throughout the project limits and at tie in locations including intersections.

- 3) Section VII.A on page 23 of the report was incomplete.
- 4) Section VII.A states that the project will be state funded. Is any federal funding anticipated?
- 5) Appendix V was referenced. The report did not include this appendix.
- 6) The project is not in the current STIP. The project must be in the STIP in order to progress to the next phase of work.

Please feel free to contact me if you would like to discuss. Thank you.

Nunzio C. Merla, P.E.

Senior Transportation Engineering Coordinator

FHWA - NJ Division

[840 Bear Tavern Road, Suite 202](#)

[West Trenton, NJ 08628](#)

Phone: [609-637-4233](tel:609-637-4233)

Fax: [609-538-4919](tel:609-538-4919)

Nunzio.Merla@dot.gov



--

John J. Coscia Jr.
Manager, Office of Project Implementation
Delaware Valley Regional Planning Commission
190 N. Independence Mall West

November 12, 2017

John J. Coscia, Jr.

Project Manager

Delaware Valley Regional Planning Commission (DVRPC)

190 N. Independence Mall West, 8th Floor

Philadelphia, PA 19106-1520

RE: Lincoln Avenue (County Route 626) Bridge Replacement
Local Concept Development (LCD)
City of Trenton, Mercer County
DVRPC Project Number 15-62-100

Subject: Comment Resolution Summary
FHWA Draft LCD Report Comments dated October 26, 2017

Dear Mr. Coscia:

The following is our comment resolution summary for FHWA's comments provided to you via email on October 26, 2017 regarding the draft LCD Report for the above referenced project. The comments are provided with the corresponding disposition or resolution immediately following in italicized type.

- 1) Note that in accordance with Moving Ahead for Progress in the 21st Century (MAP-21), Authorization Act, Value Engineering Analysis in accordance with 23 CFR 627 is required to be performed for Projects on the National Highway System (NHS) receiving Federal assistance with an estimated total cost of \$50,000,000 or more and Bridge projects on the NHS receiving Federal assistance with an estimated total cost of \$40,000,000 or more. In this case the bridge is not located on the NHS, however based on the project's scope, we suggest the County consider including a VE analysis moving forward.

A Value Engineering Analysis will be considered as part of Preliminary Engineering in coordination with Mercer County and NJDOT Local Aid.

- 2) Section VI Q 3) on P. 22, Confirm that full ADA compliance will be included in the design throughout the project limits and at tie in locations including intersections.

ADA compliance will be included in the project to the maximum extent feasible and following current design standards. Please note that ADA compliance was considered throughout the LCD phase. It is anticipated that in addition to the bridge proper the signalized intersection of E. State Street and Lincoln Avenue will be upgraded to meet ADA standards including the construction of ADA compliant curb ramps and the installation of ADA accessible pushbuttons.

- 3) Section VII.A on page 23 of the report was incomplete.

Since the IRC meeting was not held until October 23, 2017, this section was incomplete at the time the draft LCD report was submitted. Thus, certain text was highlighted with the intent to verify or change the same after the IRC meeting.

- 4) Section VII.A states that the project will be state funded. Is any federal funding anticipated?

See response to Comment 3. The highlighted text will be updated for the final LCD report. According to the draft FY 2018-2027 STIP, Demonstration Funds are anticipated.

- 5) Appendix V was referenced. The report did not include this appendix.

Appendix V, Interagency Review Committee Communications, was not included since communications were conducted subsequent to the draft LCD report submission. The IRC meeting was held on October 23, 2017, and information from the same will be added to the appendix of the final LCD report.

- 6) The project is not in the current STIP. The project must be in the STIP in order to progress to the next phase of work.

Please note that this project is included in the draft FY 2018-2027 STIP.

Should you have any questions please do not hesitate to contact me.

Sincerely,
Greenman-Pedersen, Inc.



Bernard J. Boerchers, P.E., P.T.O.E.
Project Manager / Senior Vice President


Cc: Gregory Sandusky, P.E., P.L.S., Mercer County Engineer
Basit Muzaffar, P.E., Mercer County Engineering
File - 2015684.00

From: [Boerchers, Bernard](#)
To: [John Coscia](#); [Basit Muzaffar](#)
Cc: [Steponanko, Julia](#); [Farrow, William](#)
Subject: RE: FW: Lincoln Avenue (CR 626) over Amtrak Local CD Report Response
Date: Wednesday, December 06, 2017 12:19:27 PM
Attachments: image002.png

Hi John,

We will make revise and resubmit the report as requested. Do you know if they want hardcopies, and if so, how many?

Thanks,
Bernie

 **Bernard Boerchers, P.E., PTOE**
d +1 (908) 287-2661
An Equal Opportunity Employer

From: John Coscia [mailto:jcosciajr@dvrpc.org]
Sent: Wednesday, December 6, 2017 11:55 AM
To: Boerchers, Bernard <bboerchers@gpinet.com>; Basit Muzaffar <bmuzaffar@mercercounty.org>
Subject: Fwd: FW: Lincoln Avenue (CR 626) over Amtrak Local CD Report Response

Bernie,

Please see E-mail below from FHWA regarding revising the report and resubmitting.

Thanks,

John

----- Forwarded message -----

From: **Kumar, Arun** <Arun.Kumar@dot.nj.gov>
Date: Wed, Dec 6, 2017 at 11:47 AM
Subject: FW: Lincoln Avenue (CR 626) over Amtrak Local CD Report Response
To: John Coscia <jcosciajr@dvrpc.org>
Cc: "Skala, Kyle" <Kyle.Skala@dot.nj.gov>

FYI

From: Merla, Nunzio (FHWA) [mailto:Nunzio.Merla@dot.gov]
Sent: Wednesday, December 06, 2017 11:28 AM
To: Skala, Kyle <Kyle.Skala@dot.nj.gov>
Cc: Kumar, Arun <Arun.Kumar@dot.nj.gov>
Subject: RE: Lincoln Avenue (CR 626) over Amtrak Local CD Report Response

Kyle,

Please revise the report with the noted changes and resubmit. Regarding Comment #6, please note, funding for the next phase of work will not be authorized until approval of the 2018-2027 STIP. Thank you.

Nunzio C. Merla, P.E.

Senior Transportation Engineering Coordinator
FHWA - NJ Division
[840 Bear Tavern Road, Suite 202](#)
[West Trenton, NJ 08628](#)

Phone: [609-637-4233](tel:609-637-4233)
Fax: [609-538-4919](tel:609-538-4919)
Nunzio.Merla@dot.gov



From: Skala, Kyle [<mailto:Kyle.Skala@dot.nj.gov>]
Sent: Tuesday, December 05, 2017 10:08 AM
To: Merla, Nunzio (FHWA) <Nunzio.Merla@dot.gov>
Cc: Kumar, Arun <Arun.Kumar@dot.nj.gov>
Subject: Lincoln Avenue (CR 626) over Amtrak Local CD Report Response

Nunzio,

Please see the attached response from GPI regarding the comments that were issued on October 26, 2017 for the above referenced project.

Please let me know if you need any additional information.

Thanks,

Kyle Skala
NJDOT – Local Aid, Dist. 3
[1035 Parkway Avenue](#)
[Trenton, NJ 08625](#)
[732-625-4283](tel:732-625-4283)

--

John J. Coscia Jr.
Manager, Office of Project Implementation
Delaware Valley Regional Planning Commission 190
N. Independence Mall West
Philadelphia, PA 19106-1520
(215) 238-2859

Appendix L

Construction Cost Estimate

GREENMAN-PEDERSEN, INC.

100 Corporate Drive, Suite 301
 Lebanon, NJ 08833
 (908) 236-9001

Job Lincoln Avenue Bridge Replacement
 Sheet No. 1 of 1
 Calculated By C. Marra Date 9/12/2016
 Checked By 0 Date 1/0/1900
 Scale Project No.: 2015684

Alternative 2

Item No.	Description	Quantity	Unit	Price	Amount
158003M	CAUTION FENCE	500	LF	\$ 5.00	\$ 2,500.00
158009M	HEAVY DUTY SILT FENCE, ORANGE	500	LF	\$ 10.00	\$ 5,000.00
158030M	INLET FILTER TYPE 2, 2' X 4'	5	U	\$ 150.00	\$ 750.00
601120P	12" REINFORCED CONCRETE PIPE	250	LF	\$ 100.00	\$ 25,000.00
602012M	INLET, TYPE B	5	U	\$ 5,000.00	\$ 25,000.00
602054M	MANHOLE, 4' DIAMETER	4	U	\$ 6,000.00	\$ 24,000.00
603100M	RIPRAP STONE SCOUR PROTECTION (D50=6")	8	CY	\$ 275.00	\$ 2,200.00
MMD025M	SLIP LINING	550	LF	\$ 300.00	\$ 165,000.00
Drainage Sub-Total:					\$ 249,450.00
202021P	REMOVAL OF PAVEMENT	431	SY	\$ 35.00	\$ 15,085.00
301006P	SUBBASE	57	CY	\$ 55.00	\$ 3,135.00
302042P	DENSE-GRADED AGGREGATE BASE COURSE, 8" THICK	257	SY	\$ 10.00	\$ 2,570.00
401009P	HMA MILLING, 3" OR LESS	4,555	SY	\$ 5.00	\$ 22,775.00
401057M	HOT MIX ASPHALT 12.5 H 64 SURFACE COURSE	554	T	\$ 80.00	\$ 44,320.00
401087M	HOT MIX ASPHALT 19 H 64 INTERMEDIATE COURSE	44	T	\$ 90.00	\$ 3,960.00
401102M	HOT MIX ASPHALT 37.5 M 64 BASE COURSE	74	T	\$ 100.00	\$ 7,400.00
607021P	9" X 18" CONCRETE VERTICAL CURB	502	LF	\$ 28.15	\$ 14,131.30
610003M	TRAFFIC STRIPES, LONG LIFE, EPOXY RESIN 4"	8,626	LF	\$ 1.00	\$ 8,626.00
610009M	TRAFFIC MARKINGS, THERMOPLASTIC RPM	646	SF	\$ 5.00	\$ 3,230.00
		25	U	\$ 25.00	\$ 625.00
610024M	REMOVAL OF RPM	25	U	\$ 5.00	\$ 125.00
Roadway Sub-Total:					\$ 125,982.30
Structural Sub-Total:					\$ 14,750,000.00
Water Utility Relocation Sub-Total:					\$ 481,625.00
MPT Sub-Total (5% of Combined Sub-Totals):					\$ 780,352.87
Construction Total:					\$ 16,387,410.17
25% Contingency:					\$ 4,096,852.54
Estimated Cost:					\$ 20,484,262.71

Lincoln Avenue Bridge Replacement

Trenton

DVRPC

LUMP SUM ITEMS

Cost Estimate Subtotal (from Trns-port)	\$20,484,263
--	---------------------

151003M PERFORMANCE BOND AND PAYMENT BOND

Project Cost (Mil.)	Class 1, 2, 6		Class 3, 4, 7		Class 5		Choice	Amount
	North	South	North	South	North	South	Class 1 North	\$152,000
Less than 1.0	7,500	6,500	9,000	8,000	5,000	5,500		
1.0 to 5.0	27,000	24,500	25,000	20,000	15,000	15,000		
5.0 to 10.0	50,000	48,000	42,500	35,000	20,000	25,000		
10.0 to 20.0	105,000	75,000	70,000	65,000	40,000	35,000		
20.0 to 30.0	152,000	120,000	200,000					
30.0 to 40.0	200,000	175,000	255,000					
40.0+	500,000	350,000	265,000					

161003P FINAL CLEANUP

Project Cost (Mil.)	Class 1, 2, 6		Class 3, 4, 7		Class 5		Choice	Amount
	North	South	North	South	North	South	Class 1 North	\$20,000
Less than 1.0	5,000	5,000	4,000	4,000	5,000	5,000		
1.0 to 5.0	7,500	7,500	5,000	5,000	7,500	7,500		
5.0 to 10.0	15,000	15,000	10,000	10,000	8,000	8,000		
10.0 to 20.0	17,500	17,500	12,500	12,500	10,000	10,000		
20.0 to 30.0	20,000	20,000	15,000	15,000				
30.0 to 40.0	22,000	22,000	20,000	20,000				
40.0+	35,000	35,000	25,000	25,000				

157003M CONSTRUCTION LAYOUT

Project Cost (Mil.)	Class 1, 2, 6		Class 3, 4, 7		Class 5		Choice	Amount
	North	South	North	South	North	South	Class 1 North	\$450,000
Less than 1.0	17,500	27,500	25,000	25,000	20,000	15,000		
1.0 to 5.0	45,000	50,000	40,000	35,000	25,000	20,000		
5.0 to 10.0	165,000	155,000	50,000	40,000	30,000	25,000		
10.0 to 20.0	300,000	250,000	100,000	50,000	35,000	30,000		
20.0 to 30.0	450,000	425,000	550,000					
30.0 to 40.0	500,000	450,000	650,000					
40.0+	750,000	750,000	750,000					

152003P OWNER'S & CONTRACTORS PROTECTIVE LIABILITY INSURANCE

Project Cost (Mil.)	Class 1, 2, 6		Class 3, 4, 7		Class 5		Choice	Amount
	North	South	North	South	North	South	Class 1 North	\$50,000
	Less than 1.0	5,000	5,000	5,000	3,500	5,000	5,000	
1.0 to 5.0	10,000	9,000	6,000	6,000	10,000	10,000		
5.0 to 10.0	17,500	13,500	10,000	10,000	12,500	12,500		
10.0 to 20.0	30,000	20,000	15,000	20,000	15,000	15,000		
20.0 to 30.0	50,000	30,000	40,000					
30.0 to 40.0	55,000	35,000	50,000					
40.0+	100,000	70,000	60,000					

153003P PROGRESS SCHEDULE

Project Cost (Mil.)	Class 1, 2, 6		Class 3, 4, 7		Class 5		Choice	Amount
	North	South	North	South	North	South	Class 1 North	\$50,000
	Less than 1.0	5,000	5,000	5,000	5,000	5,000	5,000	
1.0 to 5.0	10,000	10,000	7,500	7,500	6,000	6,000		
5.0 to 10.0	20,000	20,000	10,000	10,000	7,500	7,500		
10.0 to 20.0	30,000	30,000	15,000	15,000				
20.0 to 30.0	50,000	50,000	20,000	20,000				
30.0 to 40.0	55,000	55,000	30,000	30,000				
40.0+	60,000	60,000	35,000	35,000				

154003P MOBILIZATION (Percent)

Project Cost (Mil.)	Class 1, 2, 6		Class 3, 4, 7		Class 5		Choice	Amount
	North	South	North	South	North	South	Class 1 North	\$2,867,797
	Less than 1.0	10	10	10	10	10	10	
1.0 to 5.0	10	10	10	10	10	10		
5.0 to 10.0	12	12	12	12	12	12		
10.0 to 20.0	12	12	12	12				
20.0 to 30.0	14	14	14	14				
30.0 to 40.0	14	14	14	14				
40.0+	15	15	15	15				

201003P CLEARING SITE

Project Cost (Mil.)	Class 1, 2, 6		Class 3, 4, 7		Class 5		Choice	Amount
	North	South	North	South	North	South	Class 1 North	\$300,000
	Less than 1.0	20,000	20,000	25,000	25,000	10,000	10,000	
1.0 to 5.0	40,000	40,000	30,000	30,000	15,000	15,000		
5.0 to 10.0	110,000	110,000	50,000	75,000	20,000	20,000		
10.0 to 20.0	275,000	275,000	60,000	80,000				
20.0 to 30.0	300,000	300,000	200,000	200,000				
30.0 to 40.0	325,000	325,000	300,000	300,000				
40.0+	500,000	500,000	500,000	500,000				

Lump Sum Item Total	\$3,889,797
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Cost Estimate Total	\$24,374,059
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Cost Estimate Summary

Lincoln Avenue Bridge Replacement
Trenton
DVRPC

Alternative 2

CLASSIFICATION NO. 2 - RECONSTRUCTION, WIDENING AND DUALIZATION

CONTINGENCIES & ESCALATION

		Y	
Y = Number of Years until midpoint of construction duration plus number of years until construction start. If midpoint is less than 2 years from the date of this estimate, no escalation is required. Maximum value = 10%		3.00	
\$24,374,059	1.020		1.04
Project Total (Trns-port)	Contingencies (1 + C)	$1 + [0.01 (Y+1) (Y-2)]$	
Construction Cost Estimate		=	\$25,856,002

Project Cost (Mil.)	Contingencies (C)	Average Construction Duration in Years
0-10	3.0%	1
10-20	2.5%	2
20-50	2.0%	3

CONSTRUCTION ENGINEERING (CE)

Project Cost (Mil.)	Percent of Construction Cost
Less than 1.0	31.10%
1.0 to 5.0	20.30%
5.0 to 10.0	16.20%
10.0 & above	12.20%
CONSTRUCTION ENGINEERING AMOUNT	= \$3,154,432

CONSTRUCTION CHANGE ORDER CONTINGENCIES

Total Federal Participating Items in Millions of \$	Construction Change Order Contingency Amount
\$0 to 0.1	\$6,000
0.1 to 0.5	\$25,000
0.5 to 5.0	\$25,000 + 4% of amount in excess of \$500,000
5.0 to 10.0	\$205,000 + 3% of amount in excess of \$5,000,000
10.0 to 15.0	\$355,000 + 2% of amount in excess of \$10,000,000
15.0 and above	\$500,000

For State Funded Projects, Contingencies for Change orders = 0

CHANGE ORDER CONTINGENCY AMOUNT	=	\$500,000
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UTILITIES RELOCATIONS BY COMPANIES/OWNERS

\$25,856,002	0.12	
Construction Cost for Initial Estimate	Use percent or utilities detailed estimate (for Urban use 0.12, Rural 0.055 or + Estimate)	
UTILITIES RELOCATION COST	=	Water Main Only

If there are no utility relocations on the project indicate "No Utilities" in the box above.

RIGHT OF WAY COST	=	Not Included
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If there is no ROW cost on the project indicate "No ROW" the box

SUMMARY

Construction Cost Estimate	\$25,856,002
Construction Engineering (CE)	\$3,154,432
Construction Change Order Contingencies	\$500,000
Utilities Relocation Cost	Water Main Only
Total Construction Cost	\$29,510,435
Right of Way Cost	Not Included

GREENMAN-PEDERSEN, INC.

100 Corporate Drive, Suite 301
 Lebanon, NJ 08833
 (908) 236-9001

Job Lincoln Avenue Bridge Replacement
 Sheet No. 1 of 1
 Calculated By C. Marra Date 9/12/2016
 Checked By 0 Date 1/0/1900
 Scale Project No.: 2015684

Alternative 5

Item No.	Description	Quantity	Unit	Price	Amount
158003M	CAUTION FENCE	500	LF	\$ 5.00	\$ 2,500.00
158009M	HEAVY DUTY SILT FENCE, ORANGE	500	LF	\$ 10.00	\$ 5,000.00
158030M	INLET FILTER TYPE 2, 2' X 4'	5	U	\$ 150.00	\$ 750.00
601120P	12" REINFORCED CONCRETE PIPE	250	LF	\$ 100.00	\$ 25,000.00
602012M	INLET, TYPE B	5	U	\$ 5,000.00	\$ 25,000.00
602054M	MANHOLE, 4' DIAMETER	4	U	\$ 6,000.00	\$ 24,000.00
603100M	RIPRAP STONE SCOUR PROTECTION (D50=6")	8	CY	\$ 275.00	\$ 2,200.00
MMD025M	SLIP LINING	550	LF	\$ 300.00	\$ 165,000.00
Drainage Sub-Total:					\$ 249,450.00
202021P	REMOVAL OF PAVEMENT	431	SY	\$ 35.00	\$ 15,085.00
301006P	SUBBASE	57	CY	\$ 55.00	\$ 3,135.00
302042P	DENSE-GRADED AGGREGATE BASE COURSE, 8" THICK	257	SY	\$ 10.00	\$ 2,570.00
401009P	HMA MILLING, 3" OR LESS	4,555	SY	\$ 5.00	\$ 22,775.00
401057M	HOT MIX ASPHALT 12.5 H 64 SURFACE COURSE	554	T	\$ 80.00	\$ 44,320.00
401087M	HOT MIX ASPHALT 19 H 64 INTERMEDIATE COURSE	44	T	\$ 90.00	\$ 3,960.00
401102M	HOT MIX ASPHALT 37.5 M 64 BASE COURSE	74	T	\$ 100.00	\$ 7,400.00
607021P	9" X 18" CONCRETE VERTICAL CURB	502	LF	\$ 28.15	\$ 14,131.30
610003M	TRAFFIC STRIPES, LONG LIFE, EPOXY RESIN 4"	8,626	LF	\$ 1.00	\$ 8,626.00
610009M	TRAFFIC MARKINGS, THERMOPLASTIC RPM	646	SF	\$ 5.00	\$ 3,230.00
		25	U	\$ 25.00	\$ 625.00
610024M	REMOVAL OF RPM	25	U	\$ 5.00	\$ 125.00
Roadway Sub-Total:					\$ 125,982.30
Structural Sub-Total:					\$ 19,910,000.00
Water Utility Relocation Sub-Total:					\$ 481,625.00
MPT Sub-Total (5% of Combined Sub-Totals):					\$ 1,038,352.87
Construction Total:					\$ 21,805,410.17
25% Contingency:					\$ 5,451,352.54
Estimated Cost:					\$ 27,256,762.71

Lincoln Avenue Bridge Replacement

Trenton

DVRPC

LUMP SUM ITEMS

Cost Estimate Subtotal (from Trns-port)	\$27,256,763
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151003M PERFORMANCE BOND AND PAYMENT BOND

Project Cost (Mil.)	Class 1, 2, 6		Class 3, 4, 7		Class 5		Choice	Amount
	North	South	North	South	North	South	Class 1 North	\$152,000
Less than 1.0	7,500	6,500	9,000	8,000	5,000	5,500		
1.0 to 5.0	27,000	24,500	25,000	20,000	15,000	15,000		
5.0 to 10.0	50,000	48,000	42,500	35,000	20,000	25,000		
10.0 to 20.0	105,000	75,000	70,000	65,000	40,000	35,000		
20.0 to 30.0	152,000	120,000	200,000					
30.0 to 40.0	200,000	175,000	255,000					
40.0+	500,000	350,000	265,000					

161003P FINAL CLEANUP

Project Cost (Mil.)	Class 1, 2, 6		Class 3, 4, 7		Class 5		Choice	Amount
	North	South	North	South	North	South	Class 1 North	\$20,000
Less than 1.0	5,000	5,000	4,000	4,000	5,000	5,000		
1.0 to 5.0	7,500	7,500	5,000	5,000	7,500	7,500		
5.0 to 10.0	15,000	15,000	10,000	10,000	8,000	8,000		
10.0 to 20.0	17,500	17,500	12,500	12,500	10,000	10,000		
20.0 to 30.0	20,000	20,000	15,000	15,000				
30.0 to 40.0	22,000	22,000	20,000	20,000				
40.0+	35,000	35,000	25,000	25,000				

157003M CONSTRUCTION LAYOUT

Project Cost (Mil.)	Class 1, 2, 6		Class 3, 4, 7		Class 5		Choice	Amount
	North	South	North	South	North	South	Class 1 North	\$450,000
Less than 1.0	17,500	27,500	25,000	25,000	20,000	15,000		
1.0 to 5.0	45,000	50,000	40,000	35,000	25,000	20,000		
5.0 to 10.0	165,000	155,000	50,000	40,000	30,000	25,000		
10.0 to 20.0	300,000	250,000	100,000	50,000	35,000	30,000		
20.0 to 30.0	450,000	425,000	550,000					
30.0 to 40.0	500,000	450,000	650,000					
40.0+	750,000	750,000	750,000					

152003P OWNER'S & CONTRACTORS PROTECTIVE LIABILITY INSURANCE

							Choice	Amount
Project Cost (Mil.)	Class 1, 2, 6		Class 3, 4, 7		Class 5		Class 1 North	\$50,000
	North	South	North	South	North	South		
Less than 1.0	5,000	5,000	5,000	3,500	5,000	5,000		
1.0 to 5.0	10,000	9,000	6,000	6,000	10,000	10,000		
5.0 to 10.0	17,500	13,500	10,000	10,000	12,500	12,500		
10.0 to 20.0	30,000	20,000	15,000	20,000	15,000	15,000		
20.0 to 30.0	50,000	30,000	40,000					
30.0 to 40.0	55,000	35,000	50,000					
40.0+	100,000	70,000	60,000					

153003P PROGRESS SCHEDULE

							Choice	Amount
Project Cost (Mil.)	Class 1, 2, 6		Class 3, 4, 7		Class 5		Class 1 North	\$50,000
	North	South	North	South	North	South		
Less than 1.0	5,000	5,000	5,000	5,000	5,000	5,000		
1.0 to 5.0	10,000	10,000	7,500	7,500	6,000	6,000		
5.0 to 10.0	20,000	20,000	10,000	10,000	7,500	7,500		
10.0 to 20.0	30,000	30,000	15,000	15,000				
20.0 to 30.0	50,000	50,000	20,000	20,000				
30.0 to 40.0	55,000	55,000	30,000	30,000				
40.0+	60,000	60,000	35,000	35,000				

154003P MOBILIZATION (Percent)

							Choice	Amount
Project Cost (Mil.)	Class 1, 2, 6		Class 3, 4, 7		Class 5		Class 1 North	\$3,815,947
	North	South	North	South	North	South		
Less than 1.0	10	10	10	10	10	10		
1.0 to 5.0	10	10	10	10	10	10		
5.0 to 10.0	12	12	12	12	12	12		
10.0 to 20.0	12	12	12	12				
20.0 to 30.0	14	14	14	14				
30.0 to 40.0	14	14	14	14				
40.0+	15	15	15	15				

201003P CLEARING SITE

							Choice	Amount
Project Cost (Mil.)	Class 1, 2, 6		Class 3, 4, 7		Class 5		Class 1 North	\$300,000
	North	South	North	South	North	South		
Less than 1.0	20,000	20,000	25,000	25,000	10,000	10,000		
1.0 to 5.0	40,000	40,000	30,000	30,000	15,000	15,000		
5.0 to 10.0	110,000	110,000	50,000	75,000	20,000	20,000		
10.0 to 20.0	275,000	275,000	60,000	80,000				
20.0 to 30.0	300,000	300,000	200,000	200,000				
30.0 to 40.0	325,000	325,000	300,000	300,000				
40.0+	500,000	500,000	500,000	500,000				

Lump Sum Item Total	\$4,837,947
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Cost Estimate Total	\$32,094,709
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Cost Estimate Summary

Lincoln Avenue Bridge Replacement
Trenton
DVRPC

Alternative 5

CLASSIFICATION NO. 2 - RECONSTRUCTION, WIDENING AND DUALIZATION

CONTINGENCIES & ESCALATION

		Y	
Y = Number of Years until midpoint of construction duration plus number of years until construction start. If midpoint is less than 2 years from the date of this estimate, no escalation is required. Maximum value = 10%		3.00	
\$32,094,709	1.020	1.04	
Project Total (Trns-port)	Contingencies (1 + C)	1 + [0.01 (Y+1) (Y-2)]	
Construction Cost Estimate		=	\$34,046,068

Project Cost (Mil.)	Contingencies (C)	Average Construction Duration in Years
0-10	3.0%	1
10-20	2.5%	2
20-50	2.0%	3

CONSTRUCTION ENGINEERING (CE)

Project Cost (Mil.)	Percent of Construction Cost
Less than 1.0	31.10%
1.0 to 5.0	20.30%
5.0 to 10.0	16.20%
10.0 & above	12.20%
CONSTRUCTION ENGINEERING AMOUNT	= \$4,153,620

CONSTRUCTION CHANGE ORDER CONTINGENCIES

Total Federal Participating Items in Millions of \$	Construction Change Order Contingency Amount
\$0 to 0.1	\$6,000
0.1 to 0.5	\$25,000
0.5 to 5.0	\$25,000 + 4% of amount in excess of \$500,000
5.0 to 10.0	\$205,000 + 3% of amount in excess of \$5,000,000
10.0 to 15.0	\$355,000 + 2% of amount in excess of \$10,000,000
15.0 and above	\$500,000

For State Funded Projects, Contingencies for Change orders = 0

CHANGE ORDER CONTINGENCY AMOUNT	=	\$500,000
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UTILITIES RELOCATIONS BY COMPANIES/OWNERS

\$34,046,068	0.12	
Construction Cost for Initial Estimate	Use percent or utilities detailed estimate (for Urban use 0.12, Rural 0.055 or + Estimate)	
UTILITIES RELOCATION COST	=	Water Main Only

If there are no utility relocations on the project indicate "No Utilities" in the box above.

RIGHT OF WAY COST	=	Not Included
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If there is no ROW cost on the project indicate "No ROW" the box

SUMMARY

Construction Cost Estimate	\$34,046,068
Construction Engineering (CE)	\$4,153,620
Construction Change Order Contingencies	\$500,000
Utilities Relocation Cost	Water Main Only
Total Construction Cost	\$38,699,688
Right of Way Cost	Not Included

GREENMAN-PEDERSEN, INC.

100 Corporate Drive, Suite 301
 Lebanon, NJ 08833
 (908) 236-9001

Job	Lincoln Avenue Bridge Replacement		
Sheet No.	1	of	1
Calculated By	C. Marra	Date	9/12/2016
Checked By	0	Date	1/0/1900
Scale	Project No.: 2015684		

Alternative 5

Item No.	Description	Quantity	Unit	Price	Amount
158003M	CAUTION FENCE	500	LF	\$ 5.00	\$ 2,500.00
158009M	HEAVY DUTY SILT FENCE, ORANGE	500	LF	\$ 10.00	\$ 5,000.00
158030M	INLET FILTER TYPE 2, 2' X 4'	5	U	\$ 150.00	\$ 750.00
601120P	12" REINFORCED CONCRETE PIPE	250	LF	\$ 100.00	\$ 25,000.00
602012M	INLET, TYPE B	5	U	\$ 5,000.00	\$ 25,000.00
602054M	MANHOLE, 4' DIAMETER	4	U	\$ 6,000.00	\$ 24,000.00
603100M	RIPRAP STONE SCOUR PROTECTION (D50=6")	8	CY	\$ 275.00	\$ 2,200.00
MMD025M	SLIP LINING	550	LF	\$ 300.00	\$ 165,000.00
Drainage Sub-Total:					\$ 249,450.00
202021P	REMOVAL OF PAVEMENT	431	SY	\$ 35.00	\$ 15,085.00
301006P	SUBBASE	57	CY	\$ 55.00	\$ 3,135.00
302042P	DENSE-GRADED AGGREGATE BASE COURSE, 8" THICK	257	SY	\$ 10.00	\$ 2,570.00
401009P	HMA MILLING, 3" OR LESS	4,555	SY	\$ 5.00	\$ 22,775.00
401057M	HOT MIX ASPHALT 12.5 H 64 SURFACE COURSE	554	T	\$ 80.00	\$ 44,320.00
401087M	HOT MIX ASPHALT 19 H 64 INTERMEDIATE COURSE	44	T	\$ 90.00	\$ 3,960.00
401102M	HOT MIX ASPHALT 37.5 M 64 BASE COURSE	74	T	\$ 100.00	\$ 7,400.00
607021P	9" X 18" CONCRETE VERTICAL CURB	502	LF	\$ 28.15	\$ 14,131.30
610003M	TRAFFIC STRIPES, LONG LIFE, EPOXY RESIN 4"	8,626	LF	\$ 1.00	\$ 8,626.00
610009M	TRAFFIC MARKINGS, THERMOPLASTIC	646	SF	\$ 5.00	\$ 3,230.00
	RPM	25	U	\$ 25.00	\$ 625.00
610024M	REMOVAL OF RPM	25	U	\$ 5.00	\$ 125.00
Roadway Sub-Total:					\$ 125,982.30
Structural Sub-Total:					\$ 19,750,000.00
Water Utility Relocation Sub-Total:					\$ 481,625.00
MPT Sub-Total (5% of Combined Sub-Totals):					\$ 1,030,352.87
Construction Total:					\$ 21,637,410.17
25% Contingency:					\$ 5,409,352.54
Estimated Cost:					\$ 27,046,762.71

Lincoln Avenue Bridge Replacement

Trenton

DVRPC

LUMP SUM ITEMS

Cost Estimate Subtotal (from Trns-port)	\$27,046,763
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151003M PERFORMANCE BOND AND PAYMENT BOND

Project Cost (Mil.)	Class 1, 2, 6		Class 3, 4, 7		Class 5		Choice	Amount
	North	South	North	South	North	South	Class 1 North	\$152,000
Less than 1.0	7,500	6,500	9,000	8,000	5,000	5,500		
1.0 to 5.0	27,000	24,500	25,000	20,000	15,000	15,000		
5.0 to 10.0	50,000	48,000	42,500	35,000	20,000	25,000		
10.0 to 20.0	105,000	75,000	70,000	65,000	40,000	35,000		
20.0 to 30.0	152,000	120,000	200,000					
30.0 to 40.0	200,000	175,000	255,000					
40.0+	500,000	350,000	265,000					

161003P FINAL CLEANUP

Project Cost (Mil.)	Class 1, 2, 6		Class 3, 4, 7		Class 5		Choice	Amount
	North	South	North	South	North	South	Class 1 North	\$20,000
Less than 1.0	5,000	5,000	4,000	4,000	5,000	5,000		
1.0 to 5.0	7,500	7,500	5,000	5,000	7,500	7,500		
5.0 to 10.0	15,000	15,000	10,000	10,000	8,000	8,000		
10.0 to 20.0	17,500	17,500	12,500	12,500	10,000	10,000		
20.0 to 30.0	20,000	20,000	15,000	15,000				
30.0 to 40.0	22,000	22,000	20,000	20,000				
40.0+	35,000	35,000	25,000	25,000				

157003M CONSTRUCTION LAYOUT

Project Cost (Mil.)	Class 1, 2, 6		Class 3, 4, 7		Class 5		Choice	Amount
	North	South	North	South	North	South	Class 1 North	\$450,000
Less than 1.0	17,500	27,500	25,000	25,000	20,000	15,000		
1.0 to 5.0	45,000	50,000	40,000	35,000	25,000	20,000		
5.0 to 10.0	165,000	155,000	50,000	40,000	30,000	25,000		
10.0 to 20.0	300,000	250,000	100,000	50,000	35,000	30,000		
20.0 to 30.0	450,000	425,000	550,000					
30.0 to 40.0	500,000	450,000	650,000					
40.0+	750,000	750,000	750,000					

152003P OWNER'S & CONTRACTORS PROTECTIVE LIABILITY INSURANCE

Project Cost (Mil.)	Class 1, 2, 6		Class 3, 4, 7		Class 5		Choice	Amount
	North	South	North	South	North	South	Class 1 North	\$50,000
	Less than 1.0	5,000	5,000	5,000	3,500	5,000	5,000	
1.0 to 5.0	10,000	9,000	6,000	6,000	10,000	10,000		
5.0 to 10.0	17,500	13,500	10,000	10,000	12,500	12,500		
10.0 to 20.0	30,000	20,000	15,000	20,000	15,000	15,000		
20.0 to 30.0	50,000	30,000	40,000					
30.0 to 40.0	55,000	35,000	50,000					
40.0+	100,000	70,000	60,000					

153003P PROGRESS SCHEDULE

Project Cost (Mil.)	Class 1, 2, 6		Class 3, 4, 7		Class 5		Choice	Amount
	North	South	North	South	North	South	Class 1 North	\$50,000
	Less than 1.0	5,000	5,000	5,000	5,000	5,000	5,000	
1.0 to 5.0	10,000	10,000	7,500	7,500	6,000	6,000		
5.0 to 10.0	20,000	20,000	10,000	10,000	7,500	7,500		
10.0 to 20.0	30,000	30,000	15,000	15,000				
20.0 to 30.0	50,000	50,000	20,000	20,000				
30.0 to 40.0	55,000	55,000	30,000	30,000				
40.0+	60,000	60,000	35,000	35,000				

154003P MOBILIZATION (Percent)

Project Cost (Mil.)	Class 1, 2, 6		Class 3, 4, 7		Class 5		Choice	Amount
	North	South	North	South	North	South	Class 1 North	\$3,786,547
	Less than 1.0	10	10	10	10	10	10	
1.0 to 5.0	10	10	10	10	10	10		
5.0 to 10.0	12	12	12	12	12	12		
10.0 to 20.0	12	12	12	12				
20.0 to 30.0	14	14	14	14				
30.0 to 40.0	14	14	14	14				
40.0+	15	15	15	15				

201003P CLEARING SITE

Project Cost (Mil.)	Class 1, 2, 6		Class 3, 4, 7		Class 5		Choice	Amount
	North	South	North	South	North	South	Class 1 North	\$300,000
	Less than 1.0	20,000	20,000	25,000	25,000	10,000	10,000	
1.0 to 5.0	40,000	40,000	30,000	30,000	15,000	15,000		
5.0 to 10.0	110,000	110,000	50,000	75,000	20,000	20,000		
10.0 to 20.0	275,000	275,000	60,000	80,000				
20.0 to 30.0	300,000	300,000	200,000	200,000				
30.0 to 40.0	325,000	325,000	300,000	300,000				
40.0+	500,000	500,000	500,000	500,000				

Lump Sum Item Total	\$4,808,547
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Cost Estimate Total	\$31,855,309
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Cost Estimate Summary

Lincoln Avenue Bridge Replacement
Trenton
DVRPC

Alternative 5

CLASSIFICATION NO. 2 - RECONSTRUCTION, WIDENING AND DUALIZATION

CONTINGENCIES & ESCALATION

		Y	
Y = Number of Years until midpoint of construction duration plus number of years until construction start. If midpoint is less than 2 years from the date of this estimate, no escalation is required. Maximum value = 10%		3.00	
\$31,855,309	1.020	1.04	
Project Total (Trns-port)	Contingencies (1 + C)	1 + [0.01 (Y+1) (Y-2)]	
Construction Cost Estimate		=	\$33,792,112

Project Cost (Mil.)	Contingencies (C)	Average Construction Duration in Years
0-10	3.0%	1
10-20	2.5%	2
20-50	2.0%	3

CONSTRUCTION ENGINEERING (CE)

Project Cost (Mil.)	Percent of Construction Cost
Less than 1.0	31.10%
1.0 to 5.0	20.30%
5.0 to 10.0	16.20%
10.0 & above	12.20%
CONSTRUCTION ENGINEERING AMOUNT	= \$4,122,638

CONSTRUCTION CHANGE ORDER CONTINGENCIES

Total Federal Participating Items in Millions of \$	Construction Change Order Contingency Amount
\$0 to 0.1	\$6,000
0.1 to 0.5	\$25,000
0.5 to 5.0	\$25,000 + 4% of amount in excess of \$500,000
5.0 to 10.0	\$205,000 + 3% of amount in excess of \$5,000,000
10.0 to 15.0	\$355,000 + 2% of amount in excess of \$10,000,000
15.0 and above	\$500,000

For State Funded Projects, Contingencies for Change orders = 0

CHANGE ORDER CONTINGENCY AMOUNT	=	\$500,000
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UTILITIES RELOCATIONS BY COMPANIES/OWNERS

\$33,792,112	0.12	
Construction Cost for Initial Estimate	Use percent or utilities detailed estimate (for Urban use 0.12, Rural 0.055 or + Estimate)	
UTILITIES RELOCATION COST	=	Water Main Only

If there are no utility relocations on the project indicate "No Utilities" in the box above.

RIGHT OF WAY COST	=	Not Included
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If there is no ROW cost on the project indicate "No ROW" the box

SUMMARY

Construction Cost Estimate	\$33,792,112
Construction Engineering (CE)	\$4,122,638
Construction Change Order Contingencies	\$500,000
Utilities Relocation Cost	Water Main Only
Total Construction Cost	\$38,414,750
Right of Way Cost	Not Included

GREENMAN-PEDERSEN, INC.

100 Corporate Drive, Suite 301
 Lebanon, NJ 08833
 (908) 236-9001

Job Lincoln Avenue Bridge Replacement
 Sheet No. 1 of 1
 Calculated By C. Marra Date 9/12/2016
 Checked By 0 Date 1/0/1900
 Scale Project No.: 2015684

Alternative 5

Item No.	Description	Quantity	Unit	Price	Amount
158003M	CAUTION FENCE	500	LF	\$ 5.00	\$ 2,500.00
158009M	HEAVY DUTY SILT FENCE, ORANGE	500	LF	\$ 10.00	\$ 5,000.00
158030M	INLET FILTER TYPE 2, 2' X 4'	5	U	\$ 150.00	\$ 750.00
601120P	12" REINFORCED CONCRETE PIPE	250	LF	\$ 100.00	\$ 25,000.00
602012M	INLET, TYPE B	5	U	\$ 5,000.00	\$ 25,000.00
602054M	MANHOLE, 4' DIAMETER	4	U	\$ 6,000.00	\$ 24,000.00
603100M	RIPRAP STONE SCOUR PROTECTION (D50=6")	8	CY	\$ 275.00	\$ 2,200.00
MMD025M	SLIP LINING	550	LF	\$ 300.00	\$ 165,000.00
Drainage Sub-Total:					\$ 249,450.00
202021P	REMOVAL OF PAVEMENT	431	SY	\$ 35.00	\$ 15,085.00
301006P	SUBBASE	57	CY	\$ 55.00	\$ 3,135.00
302042P	DENSE-GRADED AGGREGATE BASE COURSE, 8" THICK	257	SY	\$ 10.00	\$ 2,570.00
401009P	HMA MILLING, 3" OR LESS	4,555	SY	\$ 5.00	\$ 22,775.00
401057M	HOT MIX ASPHALT 12.5 H 64 SURFACE COURSE	554	T	\$ 80.00	\$ 44,320.00
401087M	HOT MIX ASPHALT 19 H 64 INTERMEDIATE COURSE	44	T	\$ 90.00	\$ 3,960.00
401102M	HOT MIX ASPHALT 37.5 M 64 BASE COURSE	74	T	\$ 100.00	\$ 7,400.00
607021P	9" X 18" CONCRETE VERTICAL CURB	502	LF	\$ 28.15	\$ 14,131.30
610003M	TRAFFIC STRIPES, LONG LIFE, EPOXY RESIN 4"	8,626	LF	\$ 1.00	\$ 8,626.00
610009M	TRAFFIC MARKINGS, THERMOPLASTIC	646	SF	\$ 5.00	\$ 3,230.00
	RPM	25	U	\$ 25.00	\$ 625.00
610024M	REMOVAL OF RPM	25	U	\$ 5.00	\$ 125.00
Roadway Sub-Total:					\$ 125,982.30
Structural Sub-Total:					\$ 22,557,500.00
Water Utility Relocation Sub-Total:					\$ 481,625.00
MPT Sub-Total (5% of Combined Sub-Totals):					\$ 1,170,727.87
Construction Total:					\$ 24,585,285.17
25% Contingency:					\$ 6,146,321.29
Estimated Cost:					\$ 30,731,606.46

Lincoln Avenue Bridge Replacement

Trenton

DVRPC

LUMP SUM ITEMS

Cost Estimate Subtotal (from Trns-port)	\$30,731,606
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151003M PERFORMANCE BOND AND PAYMENT BOND

Project Cost (Mil.)	Class 1, 2, 6		Class 3, 4, 7		Class 5		Choice	Amount
	North	South	North	South	North	South	Class 1 North	\$200,000
Less than 1.0	7,500	6,500	9,000	8,000	5,000	5,500		
1.0 to 5.0	27,000	24,500	25,000	20,000	15,000	15,000		
5.0 to 10.0	50,000	48,000	42,500	35,000	20,000	25,000		
10.0 to 20.0	105,000	75,000	70,000	65,000	40,000	35,000		
20.0 to 30.0	152,000	120,000	200,000					
30.0 to 40.0	200,000	175,000	255,000					
40.0+	500,000	350,000	265,000					

161003P FINAL CLEANUP

Project Cost (Mil.)	Class 1, 2, 6		Class 3, 4, 7		Class 5		Choice	Amount
	North	South	North	South	North	South	Class 1 North	\$22,000
Less than 1.0	5,000	5,000	4,000	4,000	5,000	5,000		
1.0 to 5.0	7,500	7,500	5,000	5,000	7,500	7,500		
5.0 to 10.0	15,000	15,000	10,000	10,000	8,000	8,000		
10.0 to 20.0	17,500	17,500	12,500	12,500	10,000	10,000		
20.0 to 30.0	20,000	20,000	15,000	15,000				
30.0 to 40.0	22,000	22,000	20,000	20,000				
40.0+	35,000	35,000	25,000	25,000				

157003M CONSTRUCTION LAYOUT

Project Cost (Mil.)	Class 1, 2, 6		Class 3, 4, 7		Class 5		Choice	Amount
	North	South	North	South	North	South	Class 1 North	\$500,000
Less than 1.0	17,500	27,500	25,000	25,000	20,000	15,000		
1.0 to 5.0	45,000	50,000	40,000	35,000	25,000	20,000		
5.0 to 10.0	165,000	155,000	50,000	40,000	30,000	25,000		
10.0 to 20.0	300,000	250,000	100,000	50,000	35,000	30,000		
20.0 to 30.0	450,000	425,000	550,000					
30.0 to 40.0	500,000	450,000	650,000					
40.0+	750,000	750,000	750,000					

152003P OWNER'S & CONTRACTORS PROTECTIVE LIABILITY INSURANCE

Project Cost (Mil.)	Class 1, 2, 6		Class 3, 4, 7		Class 5		Choice	Amount
	North	South	North	South	North	South	Class 1 North	\$55,000
	Less than 1.0	5,000	5,000	5,000	3,500	5,000	5,000	
1.0 to 5.0	10,000	9,000	6,000	6,000	10,000	10,000		
5.0 to 10.0	17,500	13,500	10,000	10,000	12,500	12,500		
10.0 to 20.0	30,000	20,000	15,000	20,000	15,000	15,000		
20.0 to 30.0	50,000	30,000	40,000					
30.0 to 40.0	55,000	35,000	50,000					
40.0+	100,000	70,000	60,000					

153003P PROGRESS SCHEDULE

Project Cost (Mil.)	Class 1, 2, 6		Class 3, 4, 7		Class 5		Choice	Amount
	North	South	North	South	North	South	Class 1 North	\$55,000
	Less than 1.0	5,000	5,000	5,000	5,000	5,000	5,000	
1.0 to 5.0	10,000	10,000	7,500	7,500	6,000	6,000		
5.0 to 10.0	20,000	20,000	10,000	10,000	7,500	7,500		
10.0 to 20.0	30,000	30,000	15,000	15,000				
20.0 to 30.0	50,000	50,000	20,000	20,000				
30.0 to 40.0	55,000	55,000	30,000	30,000				
40.0+	60,000	60,000	35,000	35,000				

154003P MOBILIZATION (Percent)

Project Cost (Mil.)	Class 1, 2, 6		Class 3, 4, 7		Class 5		Choice	Amount
	North	South	North	South	North	South	Class 1 North	\$4,302,425
	Less than 1.0	10	10	10	10	10	10	
1.0 to 5.0	10	10	10	10	10	10		
5.0 to 10.0	12	12	12	12	12	12		
10.0 to 20.0	12	12	12	12				
20.0 to 30.0	14	14	14	14				
30.0 to 40.0	14	14	14	14				
40.0+	15	15	15	15				

201003P CLEARING SITE

Project Cost (Mil.)	Class 1, 2, 6		Class 3, 4, 7		Class 5		Choice	Amount
	North	South	North	South	North	South	Class 1 North	\$325,000
	Less than 1.0	20,000	20,000	25,000	25,000	10,000	10,000	
1.0 to 5.0	40,000	40,000	30,000	30,000	15,000	15,000		
5.0 to 10.0	110,000	110,000	50,000	75,000	20,000	20,000		
10.0 to 20.0	275,000	275,000	60,000	80,000				
20.0 to 30.0	300,000	300,000	200,000	200,000				
30.0 to 40.0	325,000	325,000	300,000	300,000				
40.0+	500,000	500,000	500,000	500,000				

Lump Sum Item Total	\$5,459,425
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Cost Estimate Total	\$36,191,031
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Cost Estimate Summary

Lincoln Avenue Bridge Replacement
Trenton
DVRPC

Alternative 5

CLASSIFICATION NO. 2 - RECONSTRUCTION, WIDENING AND DUALIZATION

CONTINGENCIES & ESCALATION

		Y	
Y = Number of Years until midpoint of construction duration plus number of years until construction start. If midpoint is less than 2 years from the date of this estimate, no escalation is required. Maximum value = 10%		3.00	
\$36,191,031	1.020	1.04	
Project Total (Trns-port)	Contingencies (1 + C)	1 + [0.01 (Y+1) (Y-2)]	
Construction Cost Estimate		=	\$38,391,446

Project Cost (Mil.)	Contingencies (C)	Average Construction Duration in Years
0-10	3.0%	1
10-20	2.5%	2
20-50	2.0%	3

CONSTRUCTION ENGINEERING (CE)

Project Cost (Mil.)	Percent of Construction Cost
Less than 1.0	31.10%
1.0 to 5.0	20.30%
5.0 to 10.0	16.20%
10.0 & above	12.20%
CONSTRUCTION ENGINEERING AMOUNT	= \$4,683,756

CONSTRUCTION CHANGE ORDER CONTINGENCIES

Total Federal Participating Items in Millions of \$	Construction Change Order Contingency Amount
\$0 to 0.1	\$6,000
0.1 to 0.5	\$25,000
0.5 to 5.0	\$25,000 + 4% of amount in excess of \$500,000
5.0 to 10.0	\$205,000 + 3% of amount in excess of \$5,000,000
10.0 to 15.0	\$355,000 + 2% of amount in excess of \$10,000,000
15.0 and above	\$500,000

For State Funded Projects, Contingencies for Change orders = 0

CHANGE ORDER CONTINGENCY AMOUNT	=	\$500,000
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UTILITIES RELOCATIONS BY COMPANIES/OWNERS

\$38,391,446	0.12	
Construction Cost for Initial Estimate	Use percent or utilities detailed estimate (for Urban use 0.12, Rural 0.055 or + Estimate)	
UTILITIES RELOCATION COST	=	Water Main Only

If there are no utility relocations on the project indicate "No Utilities" in the box above.

RIGHT OF WAY COST	=	Not Included
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If there is no ROW cost on the project indicate "No ROW" the box

SUMMARY

Construction Cost Estimate	\$38,391,446
Construction Engineering (CE)	\$4,683,756
Construction Change Order Contingencies	\$500,000
Utilities Relocation Cost	Water Main Only
Total Construction Cost	\$43,575,202
Right of Way Cost	Not Included

GREENMAN-PEDERSEN, INC.

100 Corporate Drive, Suite 301
 Lebanon, NJ 08833
 (908) 236-9001

Job Lincoln Avenue Bridge Replacement
 Sheet No. 1 of 1
 Calculated By C. Marra Date 9/12/2016
 Checked By 0 Date 1/0/1900
 Scale Project No.: 2015684

Alternative 6

Item No.	Description	Quantity	Unit	Price	Amount
158003M	CAUTION FENCE	500	LF	\$ 5.00	\$ 2,500.00
158009M	HEAVY DUTY SILT FENCE, ORANGE	500	LF	\$ 10.00	\$ 5,000.00
158030M	INLET FILTER TYPE 2, 2' X 4'	5	U	\$ 150.00	\$ 750.00
601120P	12" REINFORCED CONCRETE PIPE	250	LF	\$ 100.00	\$ 25,000.00
602012M	INLET, TYPE B	5	U	\$ 5,000.00	\$ 25,000.00
602054M	MANHOLE, 4' DIAMETER	4	U	\$ 6,000.00	\$ 24,000.00
603100M	RIPRAP STONE SCOUR PROTECTION (D50=6")	8	CY	\$ 275.00	\$ 2,200.00
MMD025M	SLIP LINING	550	LF	\$ 300.00	\$ 165,000.00
Drainage Sub-Total:					\$ 249,450.00
202021P	REMOVAL OF PAVEMENT	169	SY	\$ 35.00	\$ 5,915.00
301006P	SUBBASE	56	CY	\$ 55.00	\$ 3,080.00
302042P	DENSE-GRADED AGGREGATE BASE COURSE, 8" THICK	251	SY	\$ 10.00	\$ 2,510.00
401009P	HMA MILLING, 3" OR LESS	4,386	SY	\$ 5.00	\$ 21,930.00
401057M	HOT MIX ASPHALT 12.5 H 64 SURFACE COURSE	533	T	\$ 80.00	\$ 42,640.00
401087M	HOT MIX ASPHALT 19 H 64 INTERMEDIATE COURSE	43	T	\$ 90.00	\$ 3,870.00
401102M	HOT MIX ASPHALT 37.5 M 64 BASE COURSE	72	T	\$ 100.00	\$ 7,200.00
607021P	9" X 18" CONCRETE VERTICAL CURB	538	LF	\$ 28.15	\$ 15,144.70
610003M	TRAFFIC STRIPES, LONG LIFE, EPOXY RESIN 4"	8,599	LF	\$ 1.00	\$ 8,599.00
610009M	TRAFFIC MARKINGS, THERMOPLASTIC RPM	642	SF	\$ 5.00	\$ 3,210.00
		25	U	\$ 25.00	\$ 625.00
610024M	REMOVAL OF RPM	25	U	\$ 5.00	\$ 125.00
Roadway Sub-Total:					\$ 114,848.70
Structural Sub-Total:					\$ 22,200,000.00
Water Utility Relocation Sub-Total:					\$ 481,625.00
MPT Sub-Total (5% of Combined Sub-Totals):					\$ 1,152,296.19
Construction Total:					\$ 24,198,219.89
25% Contingency:					\$ 6,049,554.97
Estimated Cost:					\$ 30,247,774.86

Lincoln Avenue Bridge Replacement

Trenton

DVRPC

LUMP SUM ITEMS

Cost Estimate Subtotal (from Trns-port)	\$30,247,775
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151003M PERFORMANCE BOND AND PAYMENT BOND

Project Cost (Mil.)	Class 1, 2, 6		Class 3, 4, 7		Class 5		Choice	Amount
	North	South	North	South	North	South	Class 1 North	\$200,000
	Less than 1.0	7,500	6,500	9,000	8,000	5,000	5,500	
1.0 to 5.0	27,000	24,500	25,000	20,000	15,000	15,000		
5.0 to 10.0	50,000	48,000	42,500	35,000	20,000	25,000		
10.0 to 20.0	105,000	75,000	70,000	65,000	40,000	35,000		
20.0 to 30.0	152,000	120,000	200,000					
30.0 to 40.0	200,000	175,000	255,000					
40.0+	500,000	350,000	265,000					

161003P FINAL CLEANUP

Project Cost (Mil.)	Class 1, 2, 6		Class 3, 4, 7		Class 5		Choice	Amount
	North	South	North	South	North	South	Class 1 North	\$22,000
	Less than 1.0	5,000	5,000	4,000	4,000	5,000	5,000	
1.0 to 5.0	7,500	7,500	5,000	5,000	7,500	7,500		
5.0 to 10.0	15,000	15,000	10,000	10,000	8,000	8,000		
10.0 to 20.0	17,500	17,500	12,500	12,500	10,000	10,000		
20.0 to 30.0	20,000	20,000	15,000	15,000				
30.0 to 40.0	22,000	22,000	20,000	20,000				
40.0+	35,000	35,000	25,000	25,000				

157003M CONSTRUCTION LAYOUT

Project Cost (Mil.)	Class 1, 2, 6		Class 3, 4, 7		Class 5		Choice	Amount
	North	South	North	South	North	South	Class 1 North	\$500,000
	Less than 1.0	17,500	27,500	25,000	25,000	20,000	15,000	
1.0 to 5.0	45,000	50,000	40,000	35,000	25,000	20,000		
5.0 to 10.0	165,000	155,000	50,000	40,000	30,000	25,000		
10.0 to 20.0	300,000	250,000	100,000	50,000	35,000	30,000		
20.0 to 30.0	450,000	425,000	550,000					
30.0 to 40.0	500,000	450,000	650,000					
40.0+	750,000	750,000	750,000					

152003P OWNER'S & CONTRACTORS PROTECTIVE LIABILITY INSURANCE

							Choice	Amount
Project Cost (Mil.)	Class 1, 2, 6		Class 3, 4, 7		Class 5		Class 1 North	\$55,000
	North	South	North	South	North	South		
Less than 1.0	5,000	5,000	5,000	3,500	5,000	5,000		
1.0 to 5.0	10,000	9,000	6,000	6,000	10,000	10,000		
5.0 to 10.0	17,500	13,500	10,000	10,000	12,500	12,500		
10.0 to 20.0	30,000	20,000	15,000	20,000	15,000	15,000		
20.0 to 30.0	50,000	30,000	40,000					
30.0 to 40.0	55,000	35,000	50,000					
40.0+	100,000	70,000	60,000					

153003P PROGRESS SCHEDULE

							Choice	Amount
Project Cost (Mil.)	Class 1, 2, 6		Class 3, 4, 7		Class 5		Class 1 North	\$55,000
	North	South	North	South	North	South		
Less than 1.0	5,000	5,000	5,000	5,000	5,000	5,000		
1.0 to 5.0	10,000	10,000	7,500	7,500	6,000	6,000		
5.0 to 10.0	20,000	20,000	10,000	10,000	7,500	7,500		
10.0 to 20.0	30,000	30,000	15,000	15,000				
20.0 to 30.0	50,000	50,000	20,000	20,000				
30.0 to 40.0	55,000	55,000	30,000	30,000				
40.0+	60,000	60,000	35,000	35,000				

154003P MOBILIZATION (Percent)

							Choice	Amount
Project Cost (Mil.)	Class 1, 2, 6		Class 3, 4, 7		Class 5		Class 1 North	\$4,234,688
	North	South	North	South	North	South		
Less than 1.0	10	10	10	10	10	10		
1.0 to 5.0	10	10	10	10	10	10		
5.0 to 10.0	12	12	12	12	12	12		
10.0 to 20.0	12	12	12	12				
20.0 to 30.0	14	14	14	14				
30.0 to 40.0	14	14	14	14				
40.0+	15	15	15	15				

201003P CLEARING SITE

							Choice	Amount
Project Cost (Mil.)	Class 1, 2, 6		Class 3, 4, 7		Class 5		Class 1 North	\$325,000
	North	South	North	South	North	South		
Less than 1.0	20,000	20,000	25,000	25,000	10,000	10,000		
1.0 to 5.0	40,000	40,000	30,000	30,000	15,000	15,000		
5.0 to 10.0	110,000	110,000	50,000	75,000	20,000	20,000		
10.0 to 20.0	275,000	275,000	60,000	80,000				
20.0 to 30.0	300,000	300,000	200,000	200,000				
30.0 to 40.0	325,000	325,000	300,000	300,000				
40.0+	500,000	500,000	500,000	500,000				

Lump Sum Item Total	\$5,391,688
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Cost Estimate Total	\$35,639,463
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Cost Estimate Summary

Lincoln Avenue Bridge Replacement
Trenton
DVRPC

Alternative 6

CLASSIFICATION NO. 2 - RECONSTRUCTION, WIDENING AND DUALIZATION

CONTINGENCIES & ESCALATION

		Y	
Y = Number of Years until midpoint of construction duration plus number of years until construction start. If midpoint is less than 2 years from the date of this estimate, no escalation is required. Maximum value = 10%		3.00	
\$35,639,463	1.020	1.04	
Project Total (Trns-port)	Contingencies (1 + C)	1 + [0.01 (Y+1) (Y-2)]	
Construction Cost Estimate		=	\$37,806,343

Project Cost (Mil.)	Contingencies (C)	Average Construction Duration in Years
0-10	3.0%	1
10-20	2.5%	2
20-50	2.0%	3

CONSTRUCTION ENGINEERING (CE)

Project Cost (Mil.)	Percent of Construction Cost
Less than 1.0	31.10%
1.0 to 5.0	20.30%
5.0 to 10.0	16.20%
10.0 & above	12.20%
CONSTRUCTION ENGINEERING AMOUNT	= \$4,612,374

CONSTRUCTION CHANGE ORDER CONTINGENCIES

Total Federal Participating Items in Millions of \$	Construction Change Order Contingency Amount
\$0 to 0.1	\$6,000
0.1 to 0.5	\$25,000
0.5 to 5.0	\$25,000 + 4% of amount in excess of \$500,000
5.0 to 10.0	\$205,000 + 3% of amount in excess of \$5,000,000
10.0 to 15.0	\$355,000 + 2% of amount in excess of \$10,000,000
15.0 and above	\$500,000

For State Funded Projects, Contingencies for Change orders = 0

CHANGE ORDER CONTINGENCY AMOUNT	=	\$500,000
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UTILITIES RELOCATIONS BY COMPANIES/OWNERS

\$37,806,343	0.12
Construction Cost for Initial Estimate	Use percent or utilities detailed estimate (for Urban use 0.12, Rural 0.055 or + Estimate)

UTILITIES RELOCATION COST	=	Water Main Only
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If there are no utility relocations on the project indicate "No Utilities" in the box above.

RIGHT OF WAY COST	=	Not Included
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If there is no ROW cost on the project indicate "No ROW" the box

SUMMARY

Construction Cost Estimate	\$37,806,343
Construction Engineering (CE)	\$4,612,374
Construction Change Order Contingencies	\$500,000
Utilities Relocation Cost	Water Main Only
Total Construction Cost	\$42,918,717
Right of Way Cost	Not Included

Appendix M

Alternatives Matrix

ALTERNATIVES ANALYSIS MATRIX
Structural Alternatives

ALT.	ALTERNATIVE DESCRIPTION ¹	MEETS PURPOSE	VERTICAL CLEARANCE	VERTICAL GRADE (E. STATE ST)	NUMBER OF SPANS	DECK AREA (SF)	NUMBER OF GIRDERS	STRUCTURE DEPTH	GIRDER SPACING	ESTIMATED CONSTRUCTION COST ²	ADVANTAGES	DISADVANTAGES ³
1	Bridge rehabilitation	No	20'-9"	5.92%	8	38,500	2	-	40'-0"	\$8,470,000	<ul style="list-style-type: none"> • Low initial project cost. • Minimizes duration of traffic impacts. • Minimizes impact to Amtrak Operations. 	<ul style="list-style-type: none"> • Many bridge elements will not meet 75-year design life. • Increased future maintenance needs. • Existing substandard vertical clearance maintained.
2	Maintain existing alignment and existing substructure; replace deck and superstructure using steel; reinforce existing piers	Yes	24'-6"	5.99%	8	37,200	6	47.50"	9'-10"	\$14,750,000	<ul style="list-style-type: none"> • Minimizes duration of traffic impacts by re-use of substructure. 	<ul style="list-style-type: none"> • Requires extensive rehabilitation of substructure. • Existing piers do not meet required horizontal clearance from tracks (Amtrak & NJ Transit). • Some bridge elements will not meet 75-year design life.
2A	Maintain existing alignment and existing substructure; replace deck and superstructure using steel, minimum depth	Yes	24'-6"	5.92%	8	37,200	8	35.50"	7'-0"	\$14,945,000	<ul style="list-style-type: none"> • Minimizes the duration of traffic impacts by re-use of substructure. 	<ul style="list-style-type: none"> • Requires extensive rehabilitation of substructure. • Structure Steel Girders do not meet optional AASHTO Deflection Criteria. • Existing piers do not meet required horizontal clearance from tracks (Amtrak & NJ Transit). • Some bridge elements will not meet 75-year design life.
3	Maintain existing alignment and existing substructure; replace deck and superstructure using concrete bulb-tees	Yes	24'-6"	6.71%	8	37,200	8	55.50"	7'-0"	\$13,085,000	<ul style="list-style-type: none"> • Minimizes duration of traffic impacts by re-use of substructure. 	<ul style="list-style-type: none"> • Requires extensive rehabilitation of substructure. • Existing piers do not meet required horizontal clearance from tracks (Amtrak & NJ Transit). • Vertical profile increase exceeds 6.5%. • Some bridge elements will not meet 75-year design life.
3A	Maintain existing alignment and existing substructure; replace deck and superstructure using concrete adjacent box beams	Yes	24'-6"	6.67%	8	37,200	12	55.00"	4'-0"	\$13,085,000	<ul style="list-style-type: none"> • Minimizes duration of traffic impacts by re-use of substructure. 	<ul style="list-style-type: none"> • Requires extensive rehabilitation of substructure. • Existing piers do not meet required horizontal clearance from tracks (Amtrak & NJ Transit). • Vertical profile increase exceeds 6.5%. • Some bridge elements will not meet 75-year design life. • Constant cross-slope required over the bridge.
4	Maintain existing alignment; replace entire structure with concrete bulb-tees	Yes	24'-6"	7.97%	6	37,400	8	73.50"	7'-0"	\$19,910,000	<ul style="list-style-type: none"> • All bridge elements will have a 75-year design life. 	<ul style="list-style-type: none"> • Thickest structure depth. • Largest vertical profile increase.
5	Maintain existing alignment; replace entire structure with steel; construct 5 new piers	Yes	24'-6"	6.39%	6	37,100	8	51.00"	7'-0"	\$19,750,000	<ul style="list-style-type: none"> • All bridge elements will have a 75-year design life. • Proposed piers meet required horizontal clearance from tracks (Amtrak & NJ Transit). • Substructure/part of superstructure can be constructed before demolition. 	<ul style="list-style-type: none"> • Some skewed piers.
5A	Maintain existing alignment; replace entire structure with steel, minimum depth	Yes	24'-6"	6.18%	5	37,100	8	48.00"	7'-0"	\$22,557,500	<ul style="list-style-type: none"> • All bridge elements will have a 75-year design life. • Proposed piers will provide improved horizontal clearance from tracks. 	<ul style="list-style-type: none"> • Structure Steel Girders do not meet optional AASHTO Deflection Criteria
6	New alignment with 900-ft radius; replace entire structure with steel; construct 5 new piers	Yes	24'-6"	6.44%	6	38,100	8	55.00"	7'-0"	\$22,200,000	<ul style="list-style-type: none"> • Minimizes duration of detour by constructing part of new bridge offline. • All bridge elements will have a 75-year design life. 	<ul style="list-style-type: none"> • Significant ROW impacts. • Track elevations increase going north, therefore proposed grades must also increase
No-Build	No-Build	No	-	-	-	-	-	-	-	\$0	<ul style="list-style-type: none"> • No cost 	<ul style="list-style-type: none"> • Does not address the project purpose & need.

¹ See Utility Alternative Matrix for utility impacts

² Cost does not include ROW

³ Bold indicates main disadvantages of each alternative

ALTERNATIVES ANALYSIS MATRIX
Structural Foundations Alternatives

ALT.	ALTERNATIVE ¹	MEETS PURPOSE	DESCRIPTION	ESTIMATED CONSTRUCTION COST ²	ADVANTAGES	DISADVANTAGES
F1	Driven Piles	Yes	Utilizes steel piles, either h-pile or pipe piles, driven to bedrock. It is anticipated that the depth of bedrock ranges from 50-60 feet below the groundline. A reinforced concrete pile cap would be utilized to transfer the loading from the substructure elements to the foundation.	Low - Medium	<ul style="list-style-type: none"> Meets the project purpose & need. Conventional construction element. 	<ul style="list-style-type: none"> Existing elements are sensitive to the vibration encountered during installation. Large size equipment needed to install. Piles would need to be battered to resist lateral loading.
F2	Drilled Shafts	Yes	Large diameter drilled excavation that is concrete-filled and reinforced with reinforcement steel. The shaft typically would be socketed into rock to provide lateral and tensile capacity. A reinforced concrete pile cap could be used or the drilled shafts could extend to the bottom of the substructure elements.	Medium	<ul style="list-style-type: none"> Meets the project purpose & need. Small-Medium size footprint. Foundation elements can resist uplift by be socketed into rock. 	<ul style="list-style-type: none"> Existing elements are sensitive to the vibration encountered during installation. Large size equipment needed to install. Demonstration shaft needs to be performed to verify capacity.
F3	Microipiles	Yes	Small-diameter drilled and grouted circular pile that is reinforced with a high-strength steel element. The diameter for a micropile is typically less than 12" in diameter and develops its strength from the bond between the grout/ground along the length of the pile. The micropile may be socketed into competent rock to provide additional capacity. A reinforced concrete pile cap would be utilized to transfer the loading from the substructure elements to the foundation.	Medium - High	<ul style="list-style-type: none"> Meets the project purpose & need. Medium size footprint. Foundation elements can resist uplift by be socketed into rock. Can be installed in close proximity to existing foundation elements. Smaller equipment required for installation. 	<ul style="list-style-type: none"> More expensive than traditional foundation elements. Requires specialty subcontractor. Demonstration pile needs to be performed to verify capacity.
No-Build	No-Build	No		None	<ul style="list-style-type: none"> No cost 	<ul style="list-style-type: none"> Does not address the project purpose & need.

¹ See Utility Alternative Matrix for utility impacts

² Cost does not include ROW

ALTERNATIVES ANALYSIS MATRIX
Geometric Alternatives

ALT.	ALTERNATIVE DESCRIPTION ¹	MEETS PURPOSE	RIGHT OF WAY IMPACTS				ACCESS IMPACTS				DESIGN EXCEPTION	COMMUNITY IMPACTS (ENV. JUSTICE)	ENVIRONMENTAL & HISTORIC IMPACTS	STORMWATER MANAGEMENT	ESTIMATED CONSTRUCTION COST ²	ADVANTAGES	DISADVANTAGES
			# Parcels	Block	Lot	Taking Area ± F - Full (Ac) P - Partial (Ac) B - Bridge (Ac)	# Dwys	REV.	MOD.	ADJ.							
G1	Maintain existing alignment Cross section: 12-ft lane, 8-ft shoulder and 6-ft sidewalk in each direction Profile: meet 24'-6" NJDOT required clearance	Yes	0	-	-	N/A	1	-	-	1	Yes	None identified	None identified	Net increase impervious < ¼ ac; Disturbance < 1 ac Compliance not required	Medium	<ul style="list-style-type: none"> Improves existing cross section. Does not require additional bridge easements / ROW. Meets Amtrak minimum vertical clearance. Allows for use of existing substructure. 	<ul style="list-style-type: none"> Maintains undesirable broken-back horizontal curves. Increases the vertical grade along the eastern part of the bridge. Will require full detour of the bridge during the majority of construction. Does not allow off-line construction of proposed structure.
G2	New alignment with 900-ft radius Cross section: 12-ft lane, 8-ft shoulder and 6-ft sidewalk in each direction Profile: meet 24'-6" NJDOT required clearance	Yes	6	1604 12501 12501 12501 12501 26302	1 1 2 3 7 7	P: 0.003 B: 0.053 B: 0.114 B: 0.291 B: 0.172 B: 0.002/P: 0.006	1	-	-	1	Yes	None identified	None identified	Net increase impervious < ¼ ac; Disturbance < 1 ac Compliance not required	Medium	<ul style="list-style-type: none"> Improves existing cross section. Meets Amtrak minimum vertical clearance. Replaces undesirable broken-back curves with single 900' radius curve. Allows for off-line construction of the majority of the structure. 	<ul style="list-style-type: none"> Increases the vertical grade along the eastern part of the bridge. Requires significant bridge easements / ROW.
G3	Maintain existing alignment Cross section: 12-ft lane, 8-ft shoulder and 6-ft sidewalk in each direction Profile: maintain existing or better (but less than required)	Yes	0	-	-	N/A	1	-	-	1	Yes	None identified	None identified	Net increase impervious < ¼ ac; Disturbance < 1 ac Compliance not required	Medium	<ul style="list-style-type: none"> Improves existing cross section. Does not require additional bridge easements / ROW. Allows for use of existing substructure. 	<ul style="list-style-type: none"> Maintains undesirable broken-back horizontal curves. Maintains substandard vertical clearance. Will require full detour of the bridge during the majority of construction. Does not allow off-line construction of proposed structure.
G4	New alignment with 900-ft radius Cross section: 12-ft lane, 8-ft shoulder and 6-ft sidewalk in each direction Profile: maintain existing or better (but less than required)	Yes	6	1604 12501 12501 12501 12501 26302	1 1 2 3 7 7	P: 0.003 B: 0.053 B: 0.114 B: 0.291 B: 0.172 B: 0.002/P: 0.006	1	-	-	1	Yes	None identified	None identified	Net increase impervious < ¼ ac; Disturbance < 1 ac Compliance not required	Medium	<ul style="list-style-type: none"> Improves existing cross section. Replaces undesirable broken-back curves with single 900' radius curve. Allows for off-line construction of the majority of the structure. 	<ul style="list-style-type: none"> Requires significant bridge easements / ROW. Maintains substandard vertical clearance.
No-Build	No-Build	No	None	--	--	--	N/A	--	--	--	N/A	None	None	None	None	<ul style="list-style-type: none"> No cost 	<ul style="list-style-type: none"> Does not address the project purpose & need.

¹ See Utility Alternative Matrix for utility impacts

² Cost does not include ROW

ALTERNATIVES ANALYSIS MATRIX
Utility Relocation Alternatives

ALT.	ALTERNATIVE DESCRIPTION ¹	MEETS PURPOSE	ALTERNATIVE COMPATABILITY			UTILITY IMPACTS	TEMPORARY RELOCATIONS REQUIRED	ADDITIONAL ROW IMPACTS ANTICIPATED	ESTIMATED CONSTRUCTION COST ¹	ADVANTAGES	DISADVANTAGES
			GEOMETRICS	STRUCTURAL ²	CONSTRUCTION STAGING						
U1	Temporarily Shield "in-place" (Excludes Water Main)	Yes	Not compatible with any	Fully compatible with Alt. #1 (only)	Not compatible with any	PSE&G Gas Main PSE&G Elect. Conduits	No	N/A	Low	<ul style="list-style-type: none"> Limited construction cost to County. No cost to Utilities. No impacts to Utility services. Limited impact to construction schedule. 	<ul style="list-style-type: none"> Future bridge maint. may be hindered by current utility locations/configurations. Utility companies may desire to repair/upgrade their facilities in conjunction with the project (which would negate some of the advantages).
U2	Temporarily Support "in-place" (Excludes Water Main)	Yes	Not compatible with any	Fully compatible with Alt. #1 (only). Possibly required for all other Structural Alt's (in addition to relocation onto new structure).	Not compatible with any	PSE&G Gas Main PSE&G Elect. Conduits	No	N/A	Low	<p>Structural Alt. #1</p> <ul style="list-style-type: none"> Limited construction cost to County. No cost to Utilities. No impacts to Utility services. Limited impact to construction schedule. 	<p>Structural Alt. #1</p> <ul style="list-style-type: none"> Future bridge maint. may be hindered by current utility locations/configurations. Utility companies may desire to repair/upgrade their facilities in conjunction with the project (which would negate some of the advantages).
										<p>All other Structural Alt's</p> <ul style="list-style-type: none"> Removes need for Temporary Relocations. Limits impacts to Utility services (for double moves). Limits possible cost to the County (for double moves). Limits impact to construction schedule (for double moves). 	<p>All other Structural Alt's</p> <ul style="list-style-type: none"> Same as listed for Structural Alt. #1 Additional cost to County for Temporary Support. Bridge demo/construction staging will need to be modified to facilitate Temporary Support (possibly extending construction schedule). Utilities may still need to be relocated.
U3	Relocate all utilities underground	Yes	Compatible with all	Fully compatible with all	Compatible with all	PSE&G Gas Main PSE&G Elect. Conduits (Structural Alt's # 4,5, & 6 may also include impacts to Water Main)	No	Yes	Low (relocation costs anticipated to be responsibility of Utility Companies except water Main)	<ul style="list-style-type: none"> Removes need for Temporary Relocations and Support. Will simplify future bridge maint. (no utilities on bridge structure). Least impact to construction schedule (relocations can be completed prior to start of bridge demo./construction work). 	<ul style="list-style-type: none"> Additional ROW, Env. Permits, and coordination with Amtrak would be required. Most costly to Utility Companies. Future access for maint. by Utilities will be limited.
U4	Relocate utilities onto new structure (Excludes Water Main)	Yes	Compatible with all	Fully compatible with all (not required for Alt. #1)	Compatible with all	PSE&G Gas Main PSE&G Elect. Conduits	Possibly	No	Medium (bridge design will need to accommodate utility relocations)	<ul style="list-style-type: none"> No additional ROW, Env. Permits, and coordination with Amtrak would be required. Less costly to Utility Companies than relocations underground. Future access for maint. by Utilities will be maintained. 	<ul style="list-style-type: none"> Temporary relocations may be required. Construction schedule would be impacted by need to transfer Utilities to new bridge structure. Future bridge maint. may be hindered by proposed utility locations/configurations.
No-Build	No-Build	No	N/A	N/A	N/A	N/A	N/A	N/A	None	<ul style="list-style-type: none"> No cost 	<ul style="list-style-type: none"> Future bridge maint. may be hindered by current utility locations/configurations.

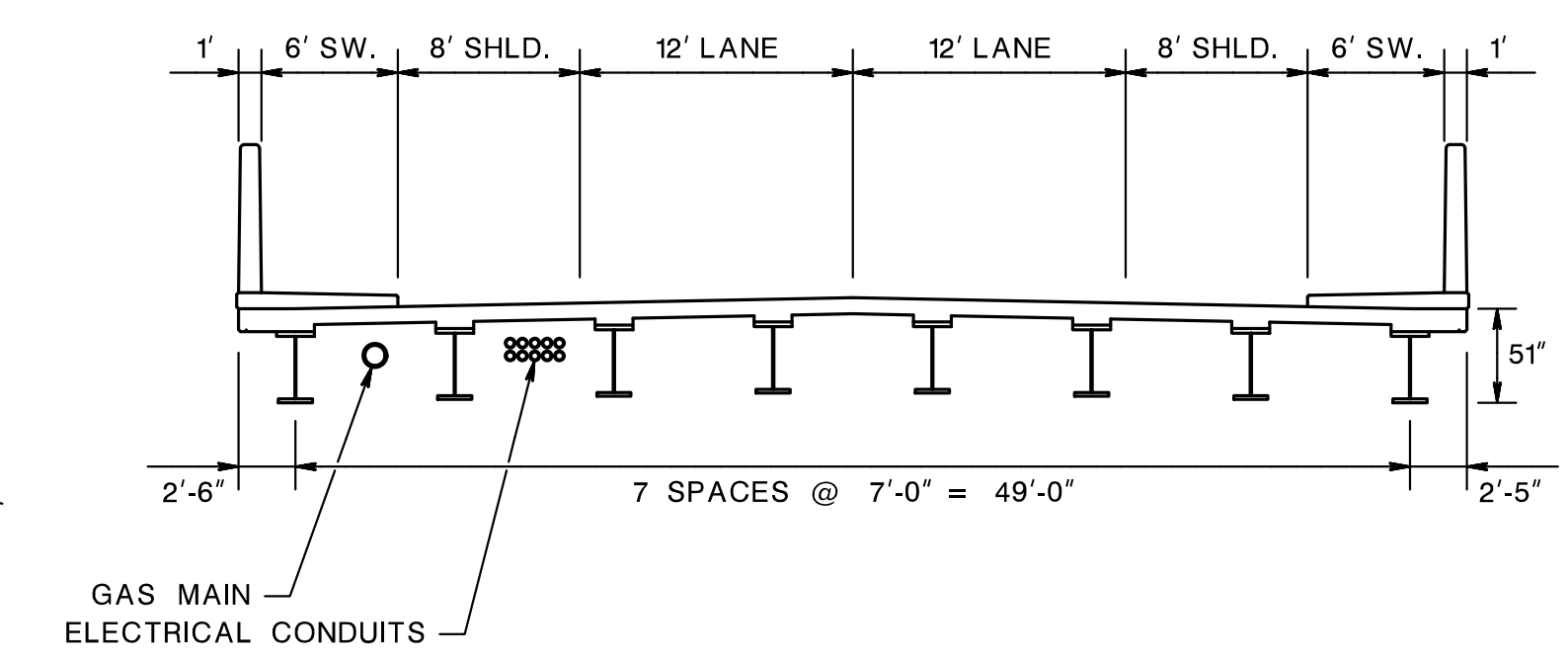
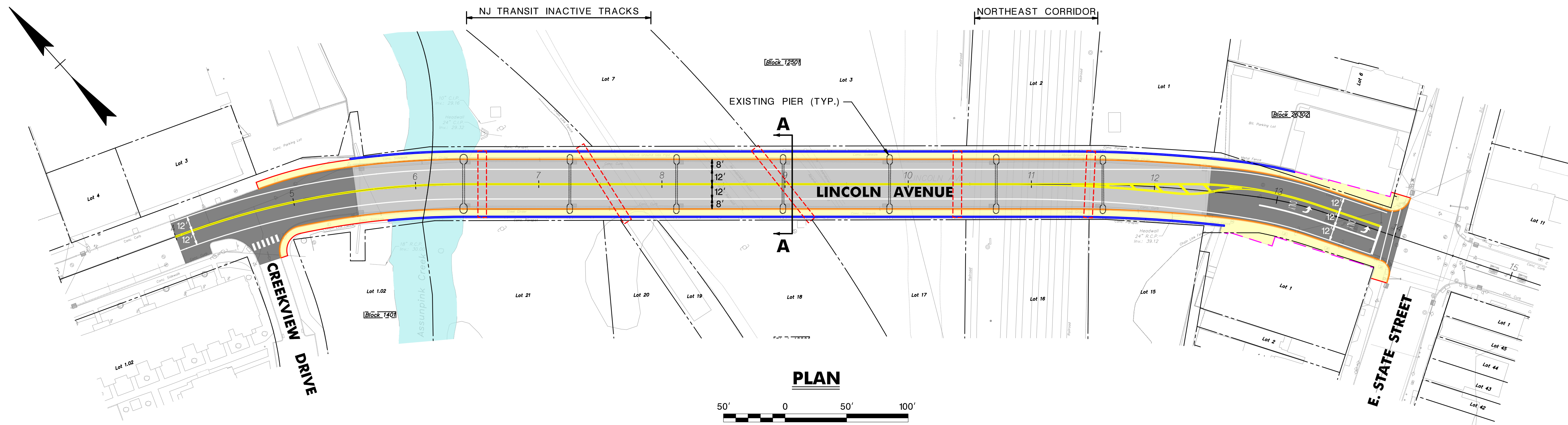
¹ Cost does not include ROW

ALTERNATIVES ANALYSIS MATRIX
Construction Staging Alternatives

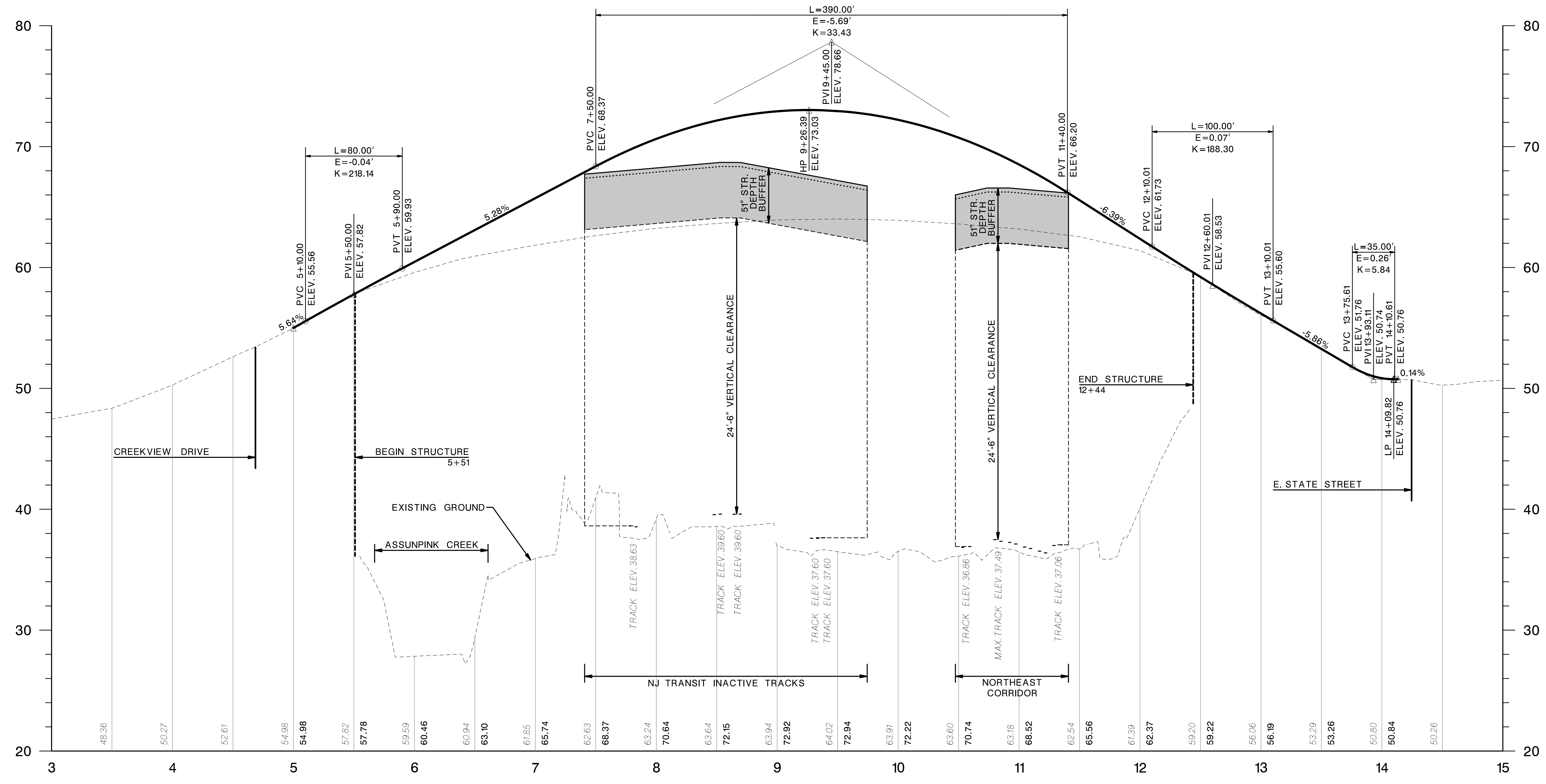
ALT.	ALTERNATIVE DESCRIPTION	DETOUR ROUTE	REQUIRED MITIGATION	DETOUR INTERSECTION LOS & DELAY (AM/PM)	ADVANTAGES	DISADVANTAGES
S1A	Maintain westbound vehicular traffic Construct mitigation along detour route Maintain pedestrians on structure	Divert Lincoln Avenue eastbound traffic to N. Clinton Avenue northbound, N. Olden Avenue eastbound, and E. State Street westbound. Maintain Lincoln Avenue westbound traffic on existing and proposed structure during construction. Maintain pedestrians along Lincoln Avenue.	<ul style="list-style-type: none"> • Modify existing structure to maintain single lane and pedestrian traffic. • Add 300 ft left turn lane along E. State Street westbound at Lincoln Avenue. • Add 400 ft right turn lane along N. Olden Avenue southbound at E. State Street. 	<p>E. State Street / Lincoln Avenue (C-21.4 / D-38.8) E. State Street / Monmouth Street (F-75.1 / B-14.8) E. State Street / N. Olden Avenue (C-33.2 / D-36.5) N. Clinton Avenue / Lincoln Avenue (D-41.1 / E-58.0) N. Clinton Avenue / Monmouth Street (B-16.6 / B-15.3) N. Clinton Avenue / N. Olden Avenue (C-21.5 / D-46.5)</p>	<ul style="list-style-type: none"> • Provides improved LOS along detour route. • Maintains pedestrian access along Lincoln Avenue. • Requires only one detour route for Lincoln Avenue eastbound traffic. 	<ul style="list-style-type: none"> • Requires mitigation to various intersections along the detour route. • Requires modification of existing structure to maintain one lane of traffic during construction.
S1B	Maintain westbound vehicular traffic Maintain pedestrians on structure	Divert Lincoln Avenue eastbound traffic to N. Clinton Avenue northbound, N. Olden Avenue eastbound, and E. State Street westbound. Maintain Lincoln Avenue westbound traffic on existing and proposed structure during construction. Maintain pedestrians along Lincoln Avenue.	<ul style="list-style-type: none"> • Modify existing structure to maintain single lane and pedestrian traffic. 	<p>E. State Street / Lincoln Avenue (C-33.1 / F-88.0) E. State Street / Monmouth Street (F-75.9 / B-14.7) E. State Street / N. Olden Avenue (E-79.0 / F-163.2) N. Clinton Avenue / Lincoln Avenue (F-101.3 / F-162.7) N. Clinton Avenue / Monmouth Street (A-10.0 / A-9.9) N. Clinton Avenue / N. Olden Avenue (C-30.0 / F-90.3)</p>	<ul style="list-style-type: none"> • Maintains pedestrian access along Lincoln Avenue. • Requires only one detour route for Lincoln Avenue eastbound traffic. • Does not require mitigation to various intersections along the detour route. 	<ul style="list-style-type: none"> • Poor LOS along detour route. • Requires modification of existing structure to maintain one lane of traffic during construction.
S2A	Full vehicular closure and detour Construct mitigation along detour routes Maintain pedestrians on temporary bridge	Divert Lincoln Avenue eastbound traffic to N. Clinton Avenue northbound, N. Olden Avenue eastbound, and E. State Street southbound. Divert Lincoln Avenue westbound traffic to E. State Street westbound, Monmouth Street westbound, and N. Clinton Avenue northbound. Maintain pedestrians along Lincoln Avenue via temporary structure.	<ul style="list-style-type: none"> • Construct temporary pedestrian structure along Lincoln Avenue. • Signalize intersection of E. State Street and Monmouth Street. • Add 200 ft right turn lane along E. State Street westbound at Monmouth Street. • Add 300 ft left turn lane along E. State Street westbound at Lincoln Avenue. • Add 400 ft right turn lane along N. Olden Avenue southbound at E. State Street. • Add 200 ft left turn lane along N. Clinton Avenue northbound at Lincoln Avenue. 	<p>E. State Street / Lincoln Avenue (D-43.7 / E-73.9) E. State Street / Monmouth Street (B-16.8 / B-16.2) E. State Street / N. Olden Avenue (C-34.1 / D-39.6) N. Clinton Avenue / Lincoln Avenue (E-57.8 / E-69.9) N. Clinton Avenue / Monmouth Street (B-13.1 / C-23.3) N. Clinton Avenue / N. Olden Avenue (C-21.3 / D-50.7)</p>	<ul style="list-style-type: none"> • Provides improved LOS along detour routes. • Maintains pedestrian access along Lincoln Avenue. • Does not require modification of existing structure. 	<ul style="list-style-type: none"> • Requires mitigation to various intersections along the detour route. • Requires full detour route for Lincoln Avenue traffic.
S2B	Full vehicular closure and detour Maintain pedestrians on temporary bridge	Divert Lincoln Avenue eastbound traffic to N. Clinton Avenue northbound, N. Olden Avenue eastbound, and E. State Street southbound. Divert Lincoln Avenue westbound traffic to E. State Street westbound, Monmouth Street westbound, and N. Clinton Avenue northbound. Maintain pedestrians along Lincoln Avenue via temporary structure.	<ul style="list-style-type: none"> • Construct temporary pedestrian structure along Lincoln Avenue. 	<p>E. State Street / Lincoln Avenue (F-121.4 / F-96.0) E. State Street / Monmouth Street (F / F-54.5) E. State Street / N. Olden Avenue (E-79.6 / F-164.1) N. Clinton Avenue / Lincoln Avenue (E-78.1 / F112.9) N. Clinton Avenue / Monmouth Street (B-18.1 / B-11.1) N. Clinton Avenue / N. Olden Avenue (C-31.6 / F-89.2)</p>	<ul style="list-style-type: none"> • Maintains pedestrian access along Lincoln Avenue. • Does not require mitigation to various intersections along the detour route. • Does not require modification of existing structure. 	<ul style="list-style-type: none"> • Requires full detour route for Lincoln Avenue traffic. • Poor LOS along detour route.
S3A	Full vehicular and pedestrian closure and detour Construct mitigation along detour routes	Divert Lincoln Avenue eastbound traffic to N. Clinton Avenue northbound, N. Olden Avenue eastbound, and E. State Street southbound. Divert Lincoln Avenue westbound traffic to E. State Street westbound, Monmouth Street westbound, and N. Clinton Avenue northbound. Divert pedestrians to Monmouth Street bridge.	<ul style="list-style-type: none"> • Signalize intersection of E. State Street and Monmouth Street. • Add 200 ft right turn lane along E. State Street westbound at Monmouth Street. • Add 300 ft left turn lane along E. State Street westbound at Lincoln Avenue. • Add 400 ft right turn lane along N. Olden Avenue southbound at E. State Street. • Add 200 ft left turn lane along N. Clinton Avenue northbound at Lincoln Avenue. 	<p>E. State Street / Lincoln Avenue (D-43.7 / E-73.9) E. State Street / Monmouth Street (B-16.8 / B-16.2) E. State Street / N. Olden Avenue (C-34.1 / D-39.6) N. Clinton Avenue / Lincoln Avenue (E-57.8 / E-69.9) N. Clinton Avenue / Monmouth Street (B-13.1 / C-23.3) N. Clinton Avenue / N. Olden Avenue (C-21.3 / D-50.7)</p>	<ul style="list-style-type: none"> • Provides improved LOS along detour routes. • Does not require modification of existing structure. 	<ul style="list-style-type: none"> • Requires mitigation to various intersections along the detour route. • Requires full detour route for Lincoln Avenue traffic and pedestrians.
S3B	Full vehicular and pedestrian closure and detour	Divert Lincoln Avenue eastbound traffic to N. Clinton Avenue northbound, N. Olden Avenue eastbound, and E. State Street southbound. Divert Lincoln Avenue westbound traffic to E. State Street westbound, Monmouth Street westbound, and N. Clinton Avenue northbound. Divert pedestrians to Monmouth Street bridge.	<ul style="list-style-type: none"> • No mitigation 	<p>E. State Street / Lincoln Avenue (F-121.4 / F-96.0) E. State Street / Monmouth Street (F / F-54.5) E. State Street / N. Olden Avenue (E-79.6 / F-164.1) N. Clinton Avenue / Lincoln Avenue (E-78.1 / F112.9) N. Clinton Avenue / Monmouth Street (B-18.1 / B-11.1) N. Clinton Avenue / N. Olden Avenue (C-31.6 / F-89.2)</p>	<ul style="list-style-type: none"> • Does not require mitigation to various intersections along the detour route. • Does not require modification of existing structure. 	<ul style="list-style-type: none"> • Requires full detour route for Lincoln Avenue traffic and pedestrians. • Poor LOS along detour route.
No-Build	No-Build	N/A	N/A	N/A	N/A	N/A

Appendix N

Preliminary Preferred Alternative (PPA)



SECTION A-A
N.T.S.



NOTES:

1. MAINTAIN EXISTING HORIZONTAL ALIGNMENT.
2. INCREASE VERTICAL PROFILE TO MEET 24'-6" VERTICAL CLEARANCE.
3. REPLACE SUBSTRUCTURE, DECK, AND SUPERSTRUCTURE USING STEEL GIRDERS.

LEGEND

- EXISTING ROW
- PROPOSED EASEMENT
- PROPOSED CURB
- PROPOSED PAVEMENT
- PROPOSED PARAPET
- PROPOSED PIER
- PROPOSED BRIDGE DECK
- PROPOSED SIDEWALK

**LINCOLN AVENUE
BRIDGE REPLACEMENT
LOCAL CONCEPT DEVELOPMENT**

CITY OF TRENTON
MERCER COUNTY

PRELIMINARY PREFERRED ALTERNATIVE





DETOUR PATH L.O.S. (AMPM)	
① N. CLINTON AVENUE & LINCOLN AVENUE:	D / E
② N. CLINTON AVENUE & N. OLDEN AVENUE:	C / D
③ E. STATE STREET & N. OLDEN AVENUE:	C / D
④ E. STATE STREET & LINCOLN AVENUE:	C / D

*L.O.S. BASED ON GEOMETRIC AND TRAFFIC SIGNAL TIMING IMPROVEMENTS AT INTERSECTIONS ALONG THE LINCOLN AVENUE WESTBOUND DETOUR PATH.

**LINCOLN AVENUE
BRIDGE REPLACEMENT
LOCAL CONCEPT DEVELOPMENT**

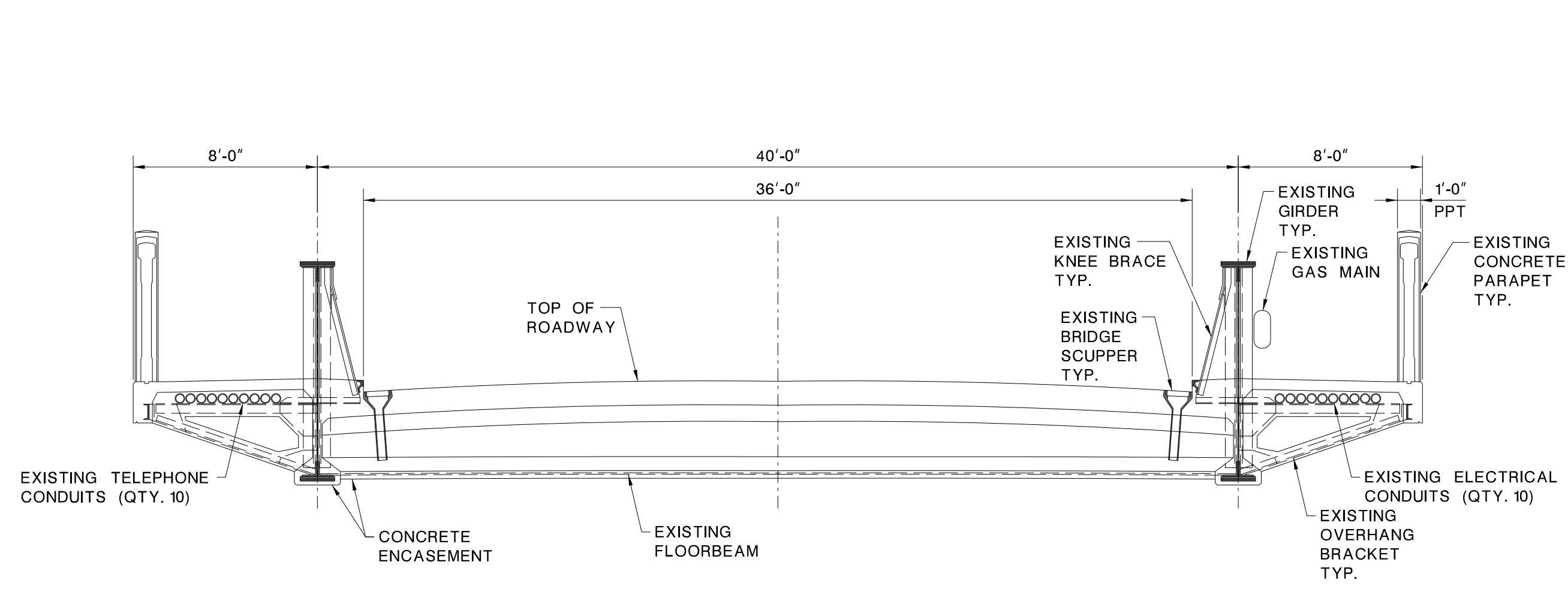
CITY OF TRENTON
MERCER COUNTY

DETOUR PLAN

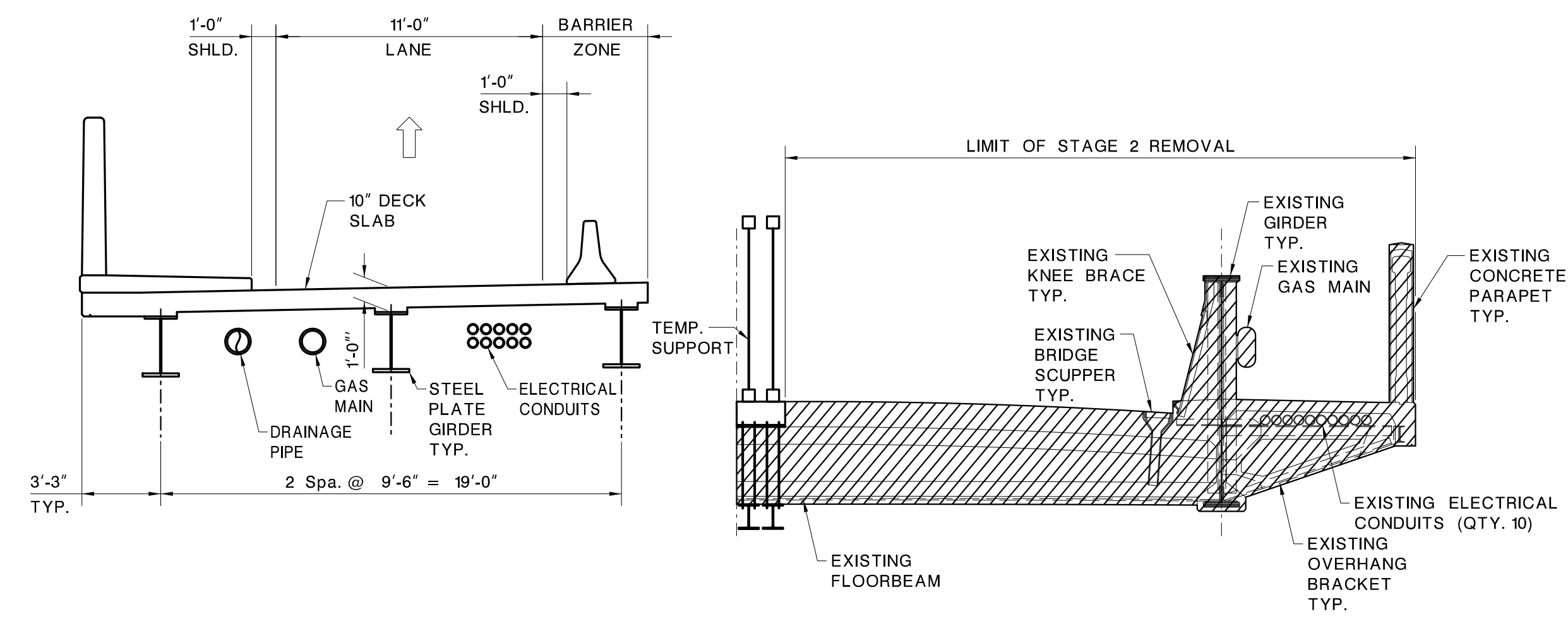


GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

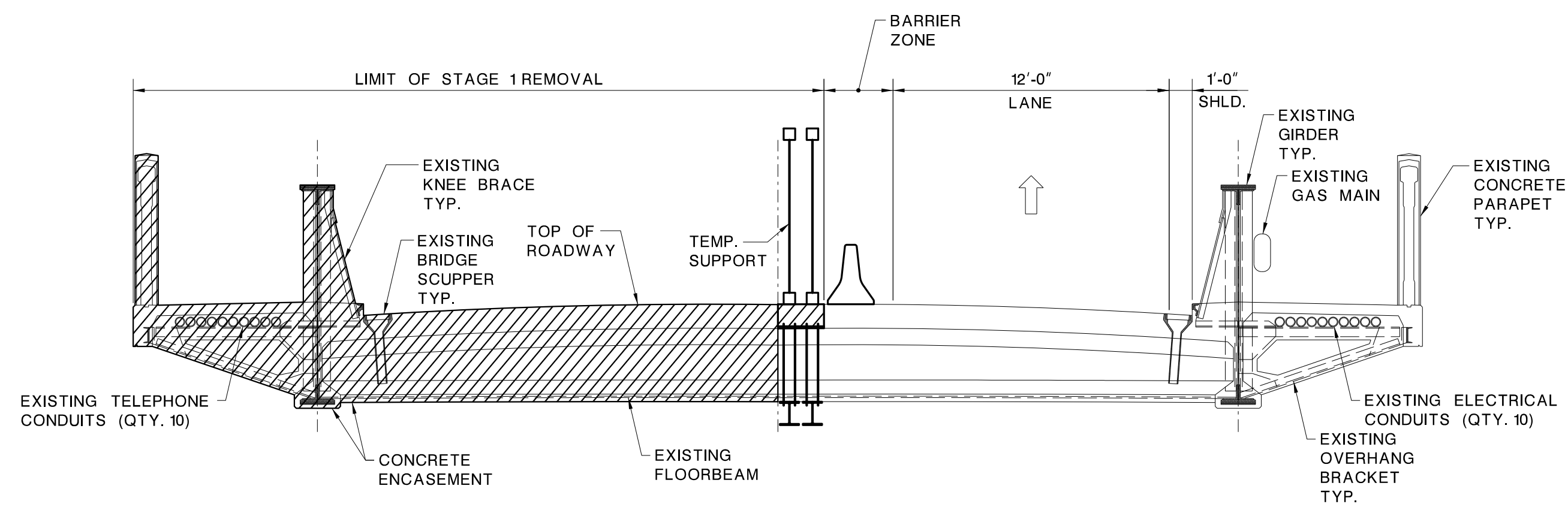
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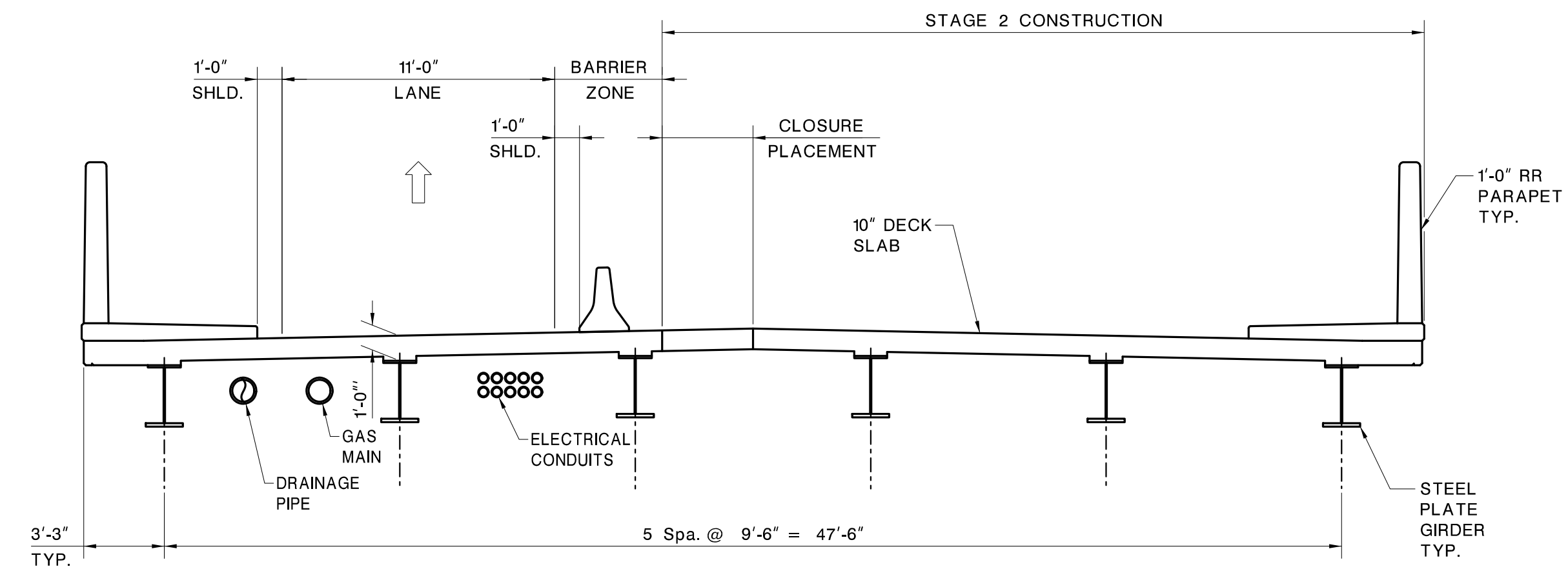
EXISTING



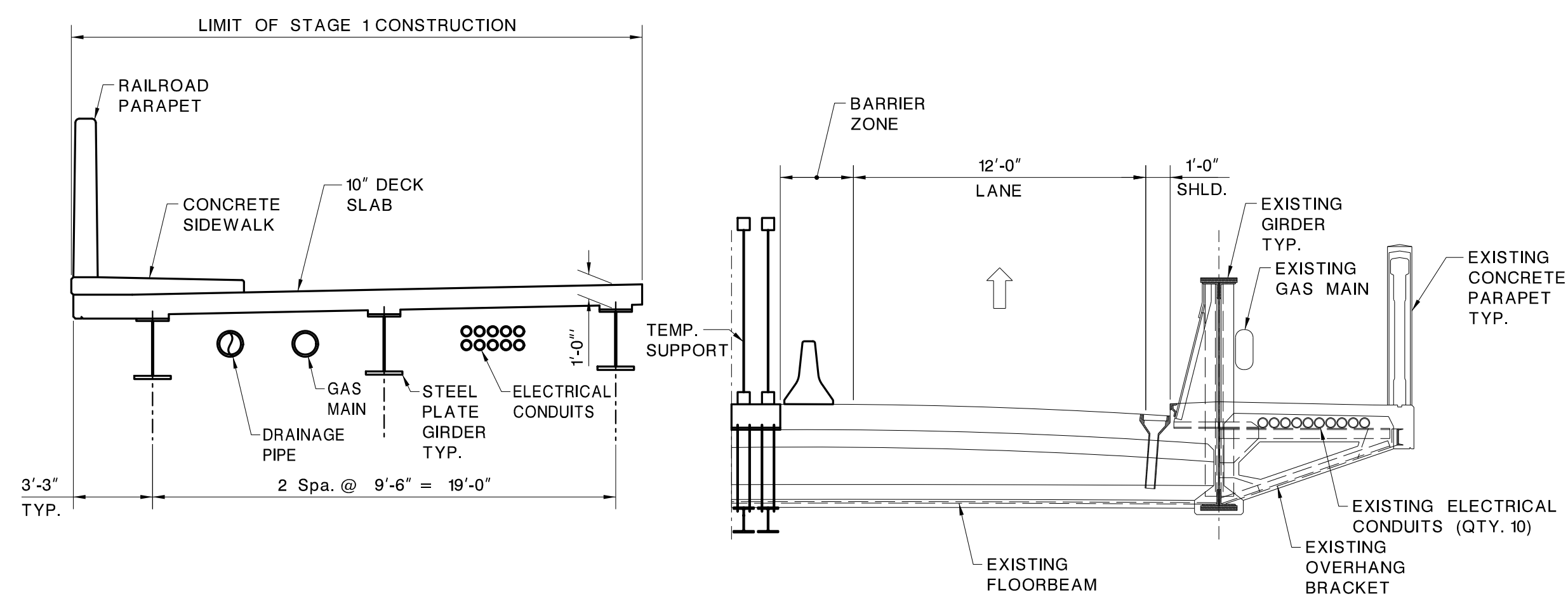
STAGE 2 - DEMOLITION



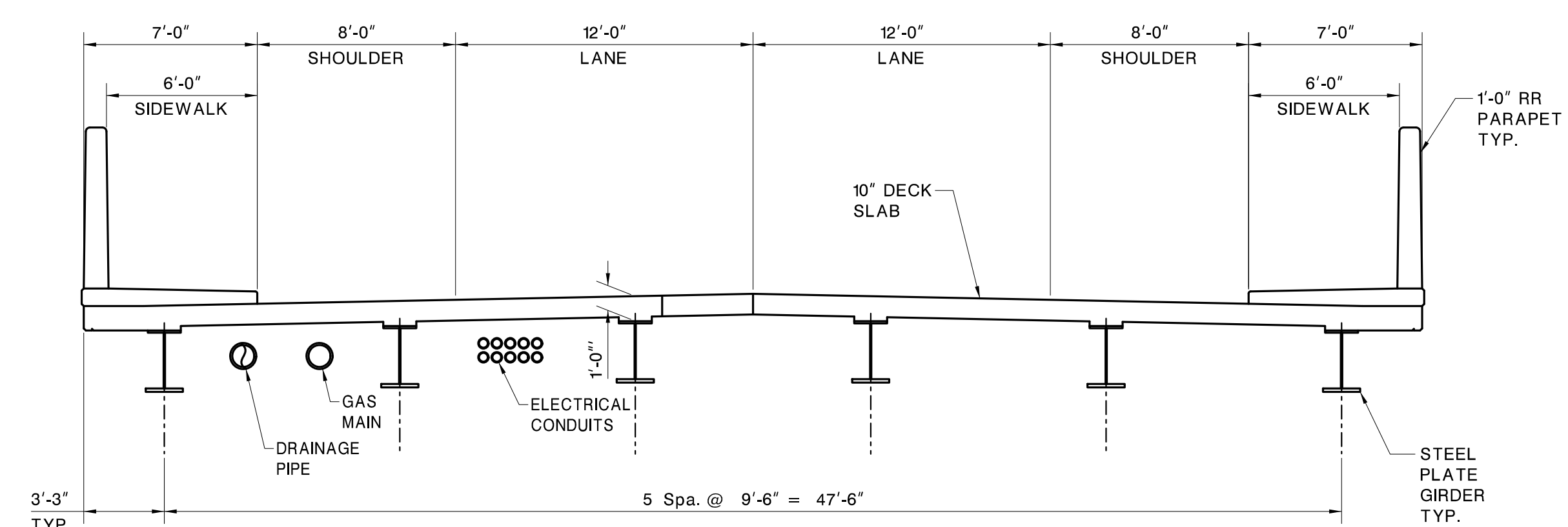
STAGE 1 - DEMOLITION



STAGE 2 - CONSTRUCTION



STAGE 1 - CONSTRUCTION



PROPOSED

**LINCOLN AVENUE
BRIDGE REPLACEMENT
LOCAL CONCEPT DEVELOPMENT**

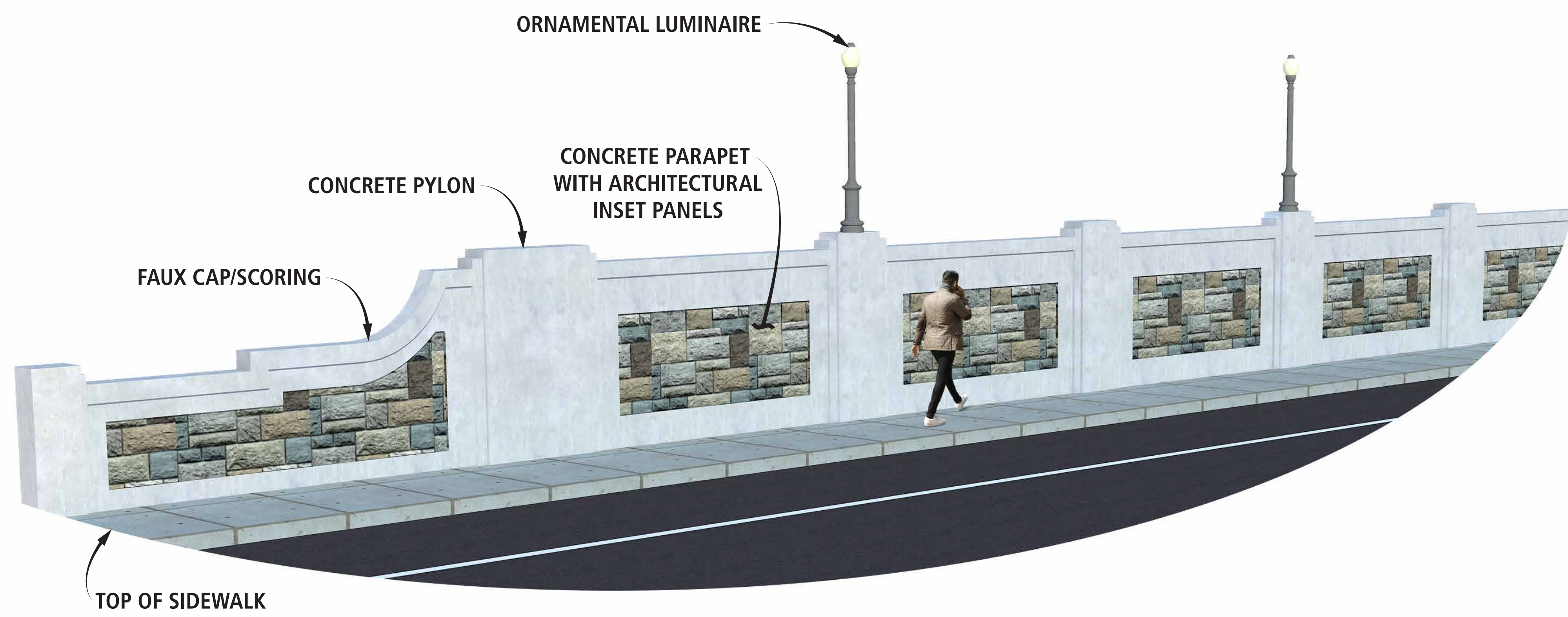
**CITY OF TRENTON
MERCER COUNTY**

SK-100



GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

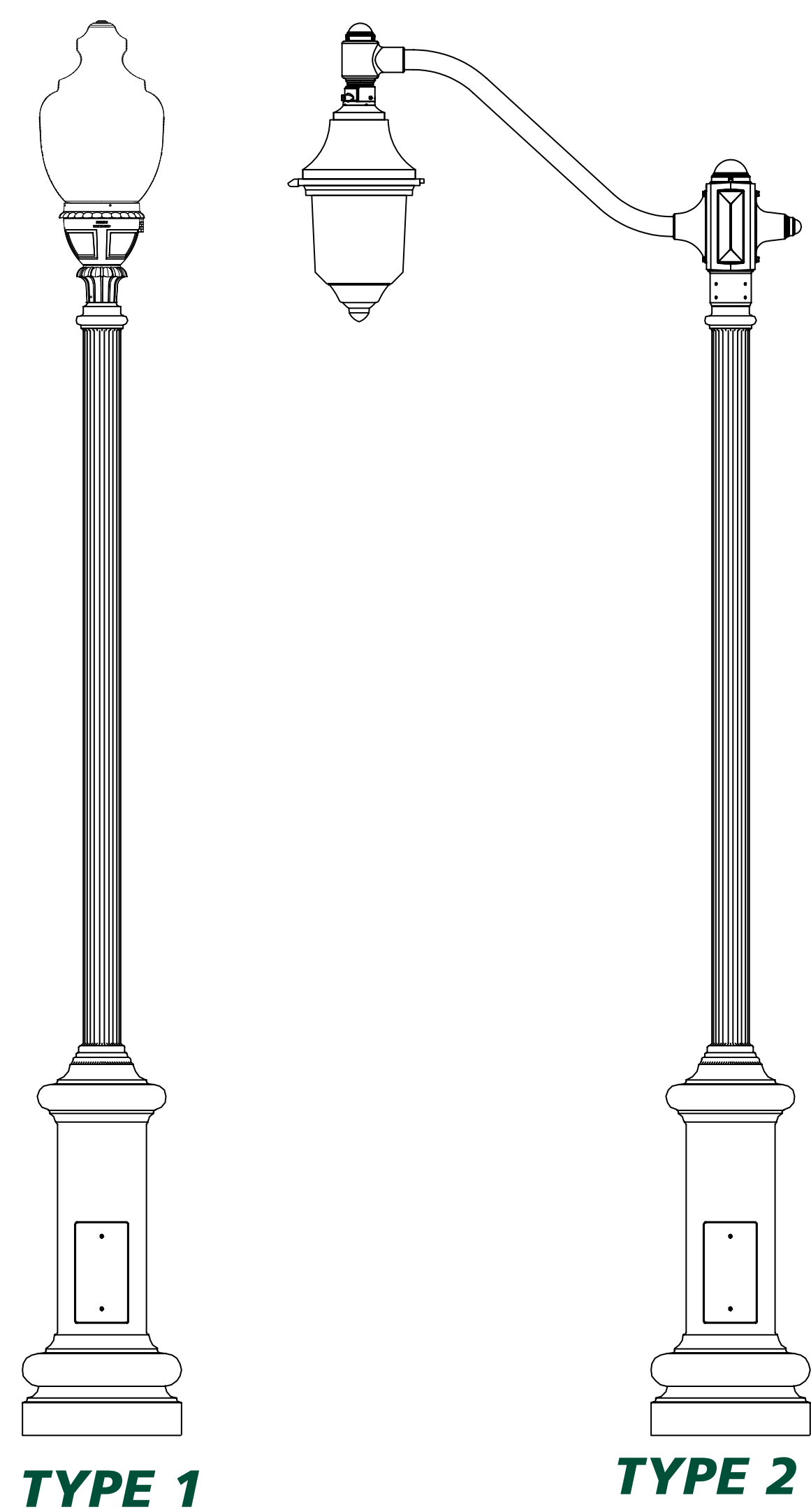




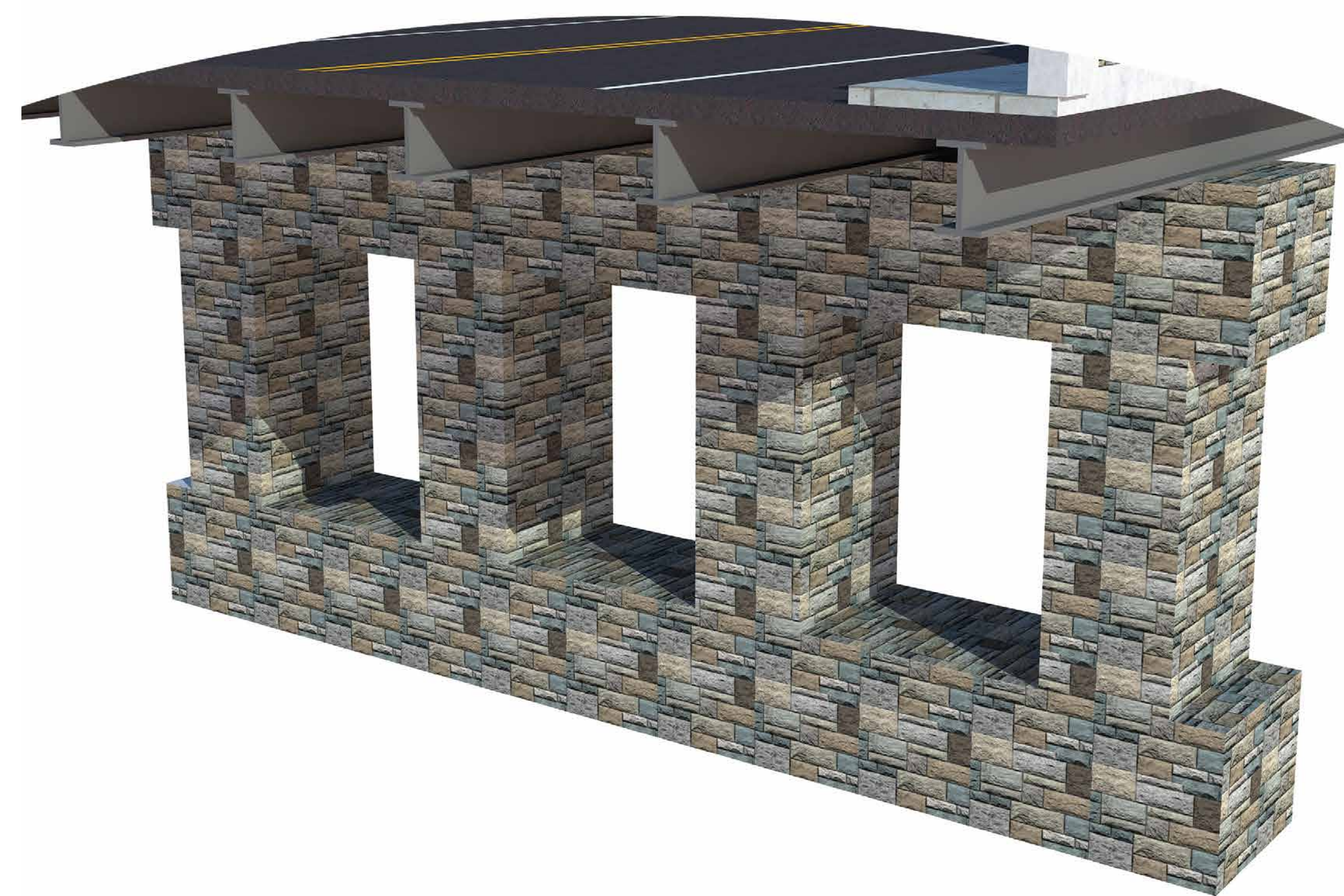
PROPOSED BRIDGE PARAPET ARCHITECTURAL TREATMENT



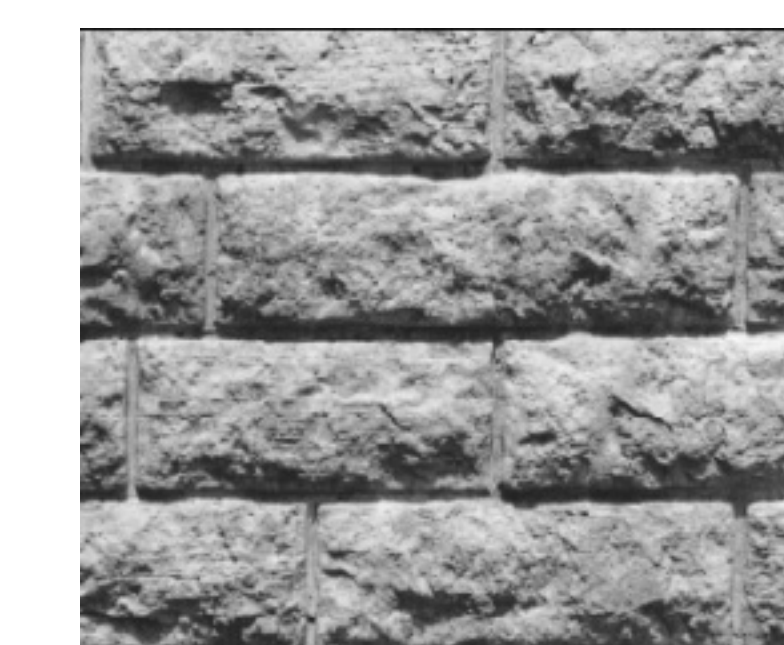
PROPOSED ACRYLITE BRIDGE PARAPET ARCHITECTURAL TREATMENT



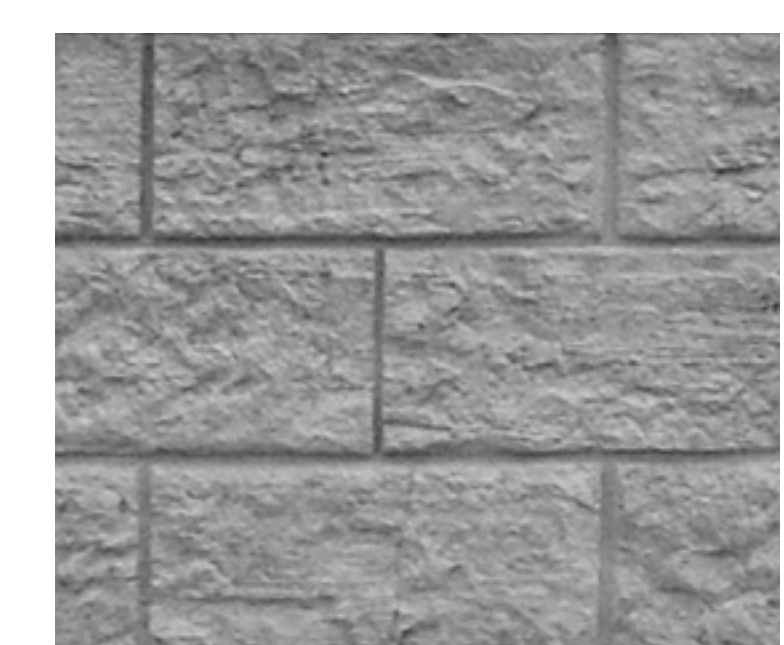
LUMINAIRES



PROPOSED PIER WITH ARCHITECTURAL TREATMENT



SANDSTONE COLOR



LIMESTONE COLOR



MULTI-COLOR

CONCRETE AESTHETIC TREATMENTS



LINCOLN AVENUE BRIDGE REPLACEMENT PROJECT: LOCAL CONCEPT DEVELOPMENT ARCHITECTURAL TREATMENTS

City of Trenton, Mercer County



Cost Estimate Summary

Lincoln Avenue Bridge Replacement
Trenton
DVRPC

Alternative 5

CLASSIFICATION NO. 2 - RECONSTRUCTION, WIDENING AND DUALIZATION

CONTINGENCIES & ESCALATION

		Y	
Y = Number of Years until midpoint of construction duration plus number of years until construction start. If midpoint is less than 2 years from the date of this estimate, no escalation is required. Maximum value = 10%		3.00	
\$32,154,559	1.020	1.04	
Project Total (Trns-port)		Contingencies (1 + C) 1 + [0.01 (Y+1) (Y-2)]	
Construction Cost Estimate		=	\$34,109,557

Project Cost (Mil.)	Contingencies (C)	Average Construction Duration in Years
0-10	3.0%	1
10-20	2.5%	2
20-50	2.0%	3

CONSTRUCTION ENGINEERING (CE)

Project Cost (Mil.)	Percent of Construction Cost
Less than 1.0	31.10%
1.0 to 5.0	20.30%
5.0 to 10.0	16.20%
10.0 & above	12.20%
CONSTRUCTION ENGINEERING AMOUNT	= \$4,161,366

CONSTRUCTION CHANGE ORDER CONTINGENCIES

Total Federal Participating Items in Millions of \$	Construction Change Order Contingency Amount
\$0 to 0.1	\$6,000
0.1 to 0.5	\$25,000
0.5 to 5.0	\$25,000 + 4% of amount in excess of \$500,000
5.0 to 10.0	\$205,000 + 3% of amount in excess of \$5,000,000
10.0 to 15.0	\$355,000 + 2% of amount in excess of \$10,000,000
15.0 and above	\$500,000

For State Funded Projects, Contingencies for Change orders = 0

CHANGE ORDER CONTINGENCY AMOUNT	=	\$500,000
--	---	------------------

UTILITIES RELOCATIONS BY COMPANIES/OWNERS

\$34,109,557	0.12	
Construction Cost for Initial Estimate	Use percent or utilities detailed estimate (for Urban use 0.12, Rural 0.055 or + Estimate)	
UTILITIES RELOCATION COST	=	Water Main Only

If there are no utility relocations on the project indicate "No Utilities" in the box above.

AMTRAK CATENARY RELOCATION COST	=	\$2,568,750
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Catenary Design	\$122,500
Catenary Construction (includes Construction Engineering)	\$1,671,250
Force Account	\$775,000

RIGHT OF WAY COST	=	Not Included
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If there is no ROW cost on the project indicate "No ROW" the box

SUMMARY

Construction Cost Estimate	\$34,109,557
Construction Engineering (CE)	\$4,161,366
Construction Change Order Contingencies	\$500,000
Utilities Relocation Cost (included in construction cost)	Water Main Only
Amtrak Catenary Relocation Cost	\$2,568,750
Total Construction Cost	\$41,339,673
Right of Way Cost	Not Included

Appendix O

Risk Register Utility Risk Assessment Plan (URAP)



NJDOT RISK MANAGEMENT

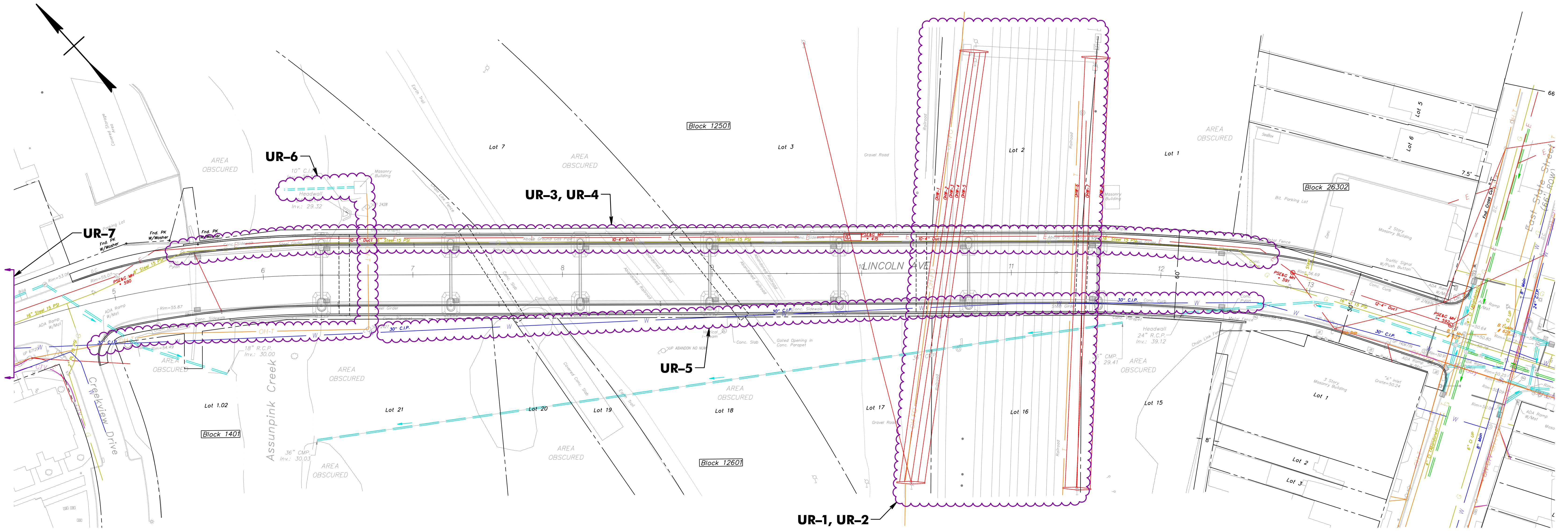
PROJECT RISK REGISTER

DRAFT

Project Manager:	Basit Muzaffar, Mercer County Engineering	Municipality(ies):	Trenton City
Designer:	Greenman-Pedersen, Inc.	County(ies):	Mercer
NJDOT Project Job No.:	N/A	Initial Register Date:	1/24/2017
NJDOT UPC #:	N/A	Last Register Update:	1/24/2017

Project Name:	Lincoln Avenue Bridge Replacement, Local Concept Development
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Risk Rank & ID		Risk Statement & Category			Risk Analysis Matrix						Risk Response Strategy & Response Planning				
Risk Rank	Unique ID #	Risk Statement	Risk Category		Risk Probability	Risk Impact		Schedule Score	Cost Score	Final Score	Risk Response Strategy	Risk Response Action Plan	Final Risk Owner	Action Plan Status	Risk Last Updated
			Initial Risk Owner	Risk May Occur In		Schedule	Cost								
1	1	As a result of uncertain quantities and unit costs during CD (and PE), variations to the cost estimate may occur which would lead to a lack of available funding.	Project Management	Preliminary Engineering	5 - Very High	4 - Moderate	4 - Moderate	20	20	40	Mitigate Threat	Development of the cost estimate using the CCEG and Trns-port, along with updates during each project phase, should help reduce quantity and unit cost uncertainty.	Designer and County	Plan To Be Developed	
6	2	As a result of the potential for soil and/or groundwater contamination from surrounding properties, regulated material disposal and/or remediation may occur, which would lead to schedule and cost increases.	Environmental	Final Design	2 - Low	4 - Moderate	4 - Moderate	8	8	16	Mitigate Threat	Subsurface exploration should occur in PE to identify soil types, ground water conditions, general geology and utilities of the project site.	Designer and County	Plan To Be Developed	
9	3	As a result of Amtrak and/or NJ Transit disagreements on proposed site access, coordination and the railroad agreement, delays or changes to the project may occur, which would lead to schedule and cost increases.	Access	Final Design	3 - Moderate	2 - Low	2 - Low	6	6	12	Mitigate Threat	Stakeholders should continue to be involved in the PE phase of the project so that and access changes can occur more smoothly in FD.	County	Plan To Be Developed	
2	4	As a result of utility relocations taking longer than anticipated (not as sheduled or in a timely manner), impacts to construction staging and traffic control may occur which would lead to additional costs and delay.	Construction	Construction	3 - Moderate	7 - High	4 - Moderate	21	12	33	Accept Threat	Advance utility relocations are not feasible; however, the construction staging should seek to minimize or avoid multiple relocations and long-term disruptions to existing services.	Contractor and Designer	Plan To Be Developed	
11	5	As a result of construction, unacceptable congestion/queuing may occur along the detour/ construction areas, which would lead to late TCP changes.	Project Management	Construction	2 - Low	2 - Low	2 - Low	4	4	8	Avoid Threat	A TMP will be developed in PE to analyze the TCP and detours, identify potential congestion areas and mitigation measures. These measures will be implemented and monitored during construction.	Designer	Plan To Be Developed	
14	6	As a result of weather or backlogs, delays obtaining supplemental field survey, borings, test pits, etc. may occur, which would lead to schedule delays.	Survey	Preliminary Engineering	2 - Low	2 - Low	1 - Very Low	4	2	6	Accept Threat	The schedule should be developed such that any ground survey, borings, test pits, etc. are performed concurrently in the spring. Include a schedule contingency to account for unanticipated weather delays, such as snow or heavy rains.	Designer and County	Plan To Be Developed	
6	7	As a result of structure's condition, difficulties locating and/or removing the existing foundations (masonry and concrete) may occur, which would lead to schedule delays.	Structural	Construction	2 - Low	4 - Moderate	4 - Moderate	8	8	16	Mitigate Threat	Require that a demolition plan be submitted by the contractor detailing how removal will be accomplished. The schedule should account for any delays associated with foundation removal.	Contractor and County	Plan To Be Developed	



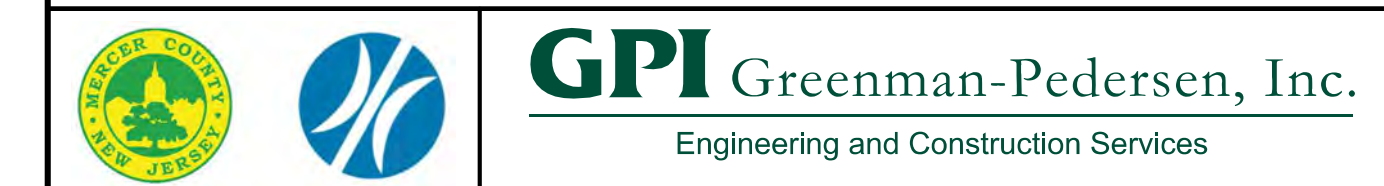
LEGEND

- EXISTING ROW
- PROPOSED FEATURES
- EXISTING UTILITY POLE
- E EXISTING ELECTRIC
- G EXISTING GAS
- W EXISTING WATER
- T EXISTING TELEPHONE
- OH-T EXISTING OVERHEAD TELEPHONE
- CTV EXISTING CABLE TELEVISION
- OH-FO EXISTING FIBER-OPTIC
- EXISTING DRAINAGE
- EXISTING SEWER
- UTILITY RISK AREAS

**LINCOLN AVENUE
BRIDGE REPLACEMENT
LOCAL CONCEPT DEVELOPMENT**

CITY OF TRENTON
MERCER COUNTY

UTILITY RISK ASSESSMENT PLAN



UTILITY RISKS

DIRECT UTILITY RISKS (UTILITY DESIGN CONSTRAINTS)

1. LOADING IMPOSED ON UTILITIES FROM PERMANENT OR TEMPORARY (STAGED) ROADWAY AND BRIDGE CONSTRUCTION AFFECTING DEPTH OF BURY.
2. HIGH VOLTAGE PROXIMITY CLEARANCE REQUIREMENTS DURING CONSTRUCTION.
3. CONSTRUCTION OPERATIONS CONFLICTING WITH AMTRAK FACILITIES.
4. SEASONAL RESTRICTIONS REQUIRED BY UTILITY OWNERS FOR SHUT DOWNS AND INTERRUPTION OF SERVICE.
5. IMPACTS TO EXISTING COMBINED SEWER/DRAINAGE FACILITIES MAY RESULT IN ADDITIONAL PERMITTING.

INDIRECT UTILITY RISKS (UTILITY DESIGN CONSIDERATIONS)

1. AGE OF THE UTILITY MAY RENDER IT SENSITIVE TO IMPACTS FROM ADJACENT CONSTRUCTION ACTIVITIES SUCH AS EQUIPMENT TRAFFIC/OPERATION, COMPACTION, VIBRATION, AND EXCAVATION.
2. TEMPORARY REDUCED DEPTH OF BURY EXPOSING EXISTING UNDERGROUND UTILITIES TO CONSTRUCTION TRAFFIC AND OPERATIONS.
3. VIBRATION OUTSIDE THE IMMEDIATE CONSTRUCTION AREA COULD DAMAGE EXISTING FACILITIES.
4. PLACEMENT OF UTILITY RELOCATIONS MAY REQUIRE ACCOMMODATION OR ROW EASEMENTS.

PERMITS

- PERMITS RELATED TO UTILITIES
1. ROAD OPENING PERMITS
 2. RIGHT OF ENTRY PERMITS (AMTRAK & NJ TRANSIT)
- SPECIAL PERMITS (AS A RESULT OF MODIFIED UTILITIES)
1. POSSIBLE EASEMENT REQUIRED FOR WATER MAIN RELOCATION

UTILITY RISK AREAS

UR-1	AERIAL AND SUBSURFACE UTILITIES WITHIN AMTRAK ROW.
UR-2	AERIAL CATENARY AND FEEDER LINES CROSSING OVER PROPOSED BRIDGE. HVPA CONSIDERATIONS.
UR-3	20"x8" STEEL GAS MAIN LOCATED ALONG EXISTING BRIDGE REQUIRES RELOCATION DURING BRIDGE REPLACEMENT.
UR-4	ELECTRICAL DUCT (10-4" CONDUITS) LOCATED ALONG EXISTING BRIDGE REQUIRES RELOCATION DURING BRIDGE REPLACEMENT.
UR-5	30" CAST IRON PIPE WATER MAIN REQUIRES RELOCATION PRIOR TO BRIDGE REPLACEMENT.
UR-6	USGS STREAM GAUGE STATION AND O.H. TELEPHONE SERVICE LOCATED ADJACENT TO EXISTING BRIDGE.
UR-7	COMBINED SEWER/DRAINAGE FACILITIES LOCATED WEST OF THE EXISTING STRUCTURE.

ACTION ITEMS FOR NEXT PROJECT DELIVERY STAGE

1. PERFORM SUBSURFACE UTILITY EXPLORATION (SUE) ON EXISTING 30" CAST IRON WATER MAIN.
2. PERFORM SUE ON EXISTING COMBINED SEWER/DRAINAGE TO VERIFY CONNECTIONS AND LOCATE POSSIBLE OUTFALLS.
3. EVALUATE UNDERGROUND UTILITY CONFLICTS USING RESULTS OF SUE.

Appendix P

Complete Streets Checklist

NJDOT Complete Streets Checklist

Background

The New Jersey Department of Transportation's Complete Streets Policy promotes a "comprehensive, integrated, connected multi-modal network by providing connections to bicycling and walking trip generators such as employment, education, residential, recreational and public facilities, as well as retail and transit centers." The policy calls for the establishment of a checklist to address pedestrian, bicyclist and transit accommodations "with the presumption that they shall be included in each project unless supporting documentation against inclusion is provided and found to be justifiable."

Complete Streets Checklist

The following checklist is an accompaniment to NJDOT's Complete Streets Policy and has been developed to assist Project Managers and designers develop proposed alternatives in adherence to the policy. Being in compliance with the policy means that Project Managers and designers plan for, design, and construct all transportation projects to provide appropriate accommodation for bicyclists, pedestrians, and transit users on New Jersey's roadways, in addition to those provided for motorists. It includes people of all ages and abilities. The checklist applies to all NJDOT projects that undergo the Capital Project Delivery (CPD) Process and is intended for use on projects during the earliest stages of the Concept Development or Preliminary Engineering Phase so that any pedestrian or bicycle considerations are included in the project budget. The Project Manager is responsible for completing the checklist and must work with the Designer to ensure that the checklist has been completed prior to advancement of a project to Final Design.

Using the Complete Streets Checklist

The Complete Streets Checklist is a tool to be used by Project Managers and designers throughout Concept Development and Preliminary Engineering to ensure that all developed alternatives reflect compliance with the Policy. When completing the checklist, a brief description is required for each "**Item to be Addressed**" as a means to document that the item has been considered and can include supporting documentation.

NJDOT Complete Streets Checklist

CONCEPT DEVELOPMENT CHECKLIST

Instructions:

For each box checked, please provide a brief description for how the item is addressed, not addressed or not applicable and include documentation to support your answer.

Item to be Addressed	Checklist Consideration	YES	NO	N/A	Required Description
<i>Existing Bicycle, Pedestrian and Transit Accommodations</i>	Are there accommodations for bicyclists, pedestrians (including ADA compliance) and transit users included on or crossing the current facility? Examples include (but are not limited to): Sidewalks, public seating, bike racks, and transit shelters	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sidewalk is provided on both sides of the Lincoln Ave bridge that ties into a larger sidewalk network along surrounding roadways.
<i>Existing Bicycle and Pedestrian Operations</i>	Has the existing bicycle and pedestrian suitability or level of service on the current transportation facility been identified?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Existing facilities are suitable for bike/ped service.
	Have the bicycle and pedestrian conditions within the study area, including pedestrian and/or bicyclist treatments, volumes, important connections and lighting been identified?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Lincoln Ave serves as a major east-west connector for all transportation types
	Do bicyclists/pedestrians regularly use the transportation facility for commuting or recreation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Field observations indicate they are present.
	Are there physical or perceived impediments to bicyclist or pedestrian use of the transportation facility?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Recent design of ADA curb ramps at Lincoln Ave and E. State St. resulted in curb obstacles around existing traffic signal equipment. Residents identified it as a trip hazard.
	Is there a higher than normal incidence of bicyclist/pedestrian crashes within the study area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No bike/ped crashes identified in crash data
	Have the existing volumes of pedestrian and/or bicyclist crossing activity at intersections	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Bike/ped volumes not collected, but field

NJDOT Complete Streets Checklist

Item to be Addressed	Checklist Consideration	YES	NO	N/A	Required Description
	including midblock and nighttime crossing been collected/provided?				observations indicate they are present.
<i>Existing Transit Operations</i>	Are there existing transit facilities within the study area, including bus and train stops/stations?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Passengers board/exit NJ Transit buses at stops located near Lincoln Ave intersections with S. Clinton Ave and E. State St. Trenton Train Station is approximately 0.5 miles southwest of the project.
	Is the transportation facility on a transit route?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Buses were not identified as using Lincoln Ave
	Is the transportation facility within two miles of "park and ride" or "kiss and go" lots?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No park and ride lots.
	Are there existing or proposed bicycle racks, shelters, or parking available at these lots or transit stations? Are there bike racks on buses that travel along the facility?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	N/A
<i>Existing Motor Vehicle Operations</i>	Are there existing concerns within the study area, regarding motor vehicle safety, traffic volumes/congestion or access?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	None
<i>Existing Truck/Freight Operations</i>	Are there existing concerns within the study area, regarding truck/freight safety, volumes, or access?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	None
<i>Existing Access and Mobility</i>	Are there any existing access or mobility considerations, including ADA compliance?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ADA curb ramps at Lincoln Ave and E. State St.
	Are there any schools, hospitals, senior care facilities, educational buildings, community centers, residences or businesses of persons with disabilities within or proximate to the study area?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Catholic Youth Organization center at Lincoln Ave and E. State St. 214-unit apartment/townhome Rush Crossing complex southwest of bridge. Grant Elementary and Trenton High School

NJDOT Complete Streets Checklist

Item to be Addressed	Checklist Consideration	YES	NO	N/A	Required Description
					west and east of bridge, respectively.
<i>Land Usage</i>	Have you identified the predominant land uses and densities within the study area, including any historic districts or special zoning districts?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Adjacent land use is predominately commercial and residential. This area is high-density.
	Is the transportation facility in a high-density land use area that has pedestrian/bicycle/motor vehicle and transit traffic?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	See above.
<i>Major Sites</i>	Have you identified the major sites, destinations, and trip generators within or proximate to the study area, including prominent landmarks, employment centers, recreation, commercial, cultural and civic institutions, and public spaces?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Lincoln Supply provides plumbing pipes, valves, and fittings and is located along Lincoln Avenue immediately northeast of Structure No. 1100-055. To the southeast, a liquor store, barber shop, and Electrical Motor Repair Company are all located along E. State Street.
<i>Existing Streetscape</i>	Are there existing street trees, planters, buffer strips, or other environmental enhancements such as drainage swales within the study area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No environmental enhancements present
<i>Existing Plans</i>	Are there any comprehensive planning documents that address bicyclist, pedestrian or transit user conditions within or proximate to the study area? Examples include (but are not limited to): <ul style="list-style-type: none"> • SRTS Travel Plans • Municipal or County Master or Redevelopment Plan • Local, County and Statewide Bicycle and Pedestrian Plans • Sidewalk Inventories • MPO Transportation Plan • NJDOT Designated Transit Village 	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DVRPC and Trenton City developed a Downtown Trenton Bicycle and Pedestrian Plan dated June 2016. It recommends a bike lane along Lincoln Ave.

NJDOT Complete Streets Checklist

PROJECT MANAGER SIGN-OFF

Statement of Compliance	YES	NO	If NO, Please Describe Why (refer to Exemptions Clause)
The Preliminary Preferred Alternative (PPA) accommodates bicyclists and pedestrians as set forth in the New Jersey Department of Transportation's Complete Streets Policy.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	

Appendix Q

County Communications

Meeting Minutes

Memorandum of Meeting

To: File

From: Julia Steponanko, GPI

Date: August 4, 2015

Project Name: Delaware Valley Regional Planning Commission (DVRPC)/Mercer County
Lincoln Avenue Bridge Replacement Local Concept Development Study
City of Trenton, Mercer County

Project Number: 2015684.00

Subject: Kick Off Meeting

Copy: Attendees

A kick off meeting was held for the above referenced project at 10:00 AM on Wednesday, July 29, 2015 at the Mercer County Engineer's Office. Those in attendance were as follows:

<u>Attendee</u>	<u>Bureau / Company</u>	<u>Phone</u>
John Coscia, Jr.	DVRPC	215 238-2859
Gregory Sandusky	Mercer County Engineering	609 989-6629
Basit Muzaffar	Mercer County Engineering	609 989-6641
Matthew Lawson	Mercer County Planning	609 989-6551
Bernie Boerchers	Greenman-Pedersen, Inc. (GPI)	908 236-9001
Brain Mausert	GPI	908 236-9001
Lenny Lembersky	GPI	908 236-9001
Julia Steponanko	GPI	908 236-9001

It is noted that Mr. Lawson participated in only a portion of the meeting.

The purpose of this meeting was to introduce the project, confirm the project need, and solicit comments, requirements, and/or concerns. The following summarizes the questions and comments made during the meeting:

1. Mr. Sandusky stated that the County performed short-term fixes on the structure including lighting, deck repairs and an asphalt overlay until the structure could be replaced. Priority repairs were also needed, which required coordination with Amtrak. Those still remained due to excessive and unreasonable requirements imposed by Amtrak.
2. Mr. Boerchers noted that the schedule would need to be reset to reflect the executed contract dated July 13, 2015.

3. The attendees agreed that Mr. Muzaffar will be the primary contact for this project. Mr. Sandusky, Mr. Coscia and Arun Kumar of NJDOT Local Aid should be included in all correspondence.
4. Mr. Sandusky stated that Trenton Central High School, located on Chambers Street, is currently closed and is expected to be demolished and rebuilt by the State School Development Authority. Mr. Lawson stated that he will request additional details, including a timeframe, from the City. Since the school's closure affects and current traffic counts, Mr. Sandusky stated that the County will provide historic counts to assess future traffic volumes.
5. Ms. Boerchers stated that a Synchro model will be used to analyze the existing conditions, construction staging alternatives and future conditions. A simplified gravity model for trip distribution will be used in lieu of a travel demand model due to the size of the project area. This can also account for high school traffic that would not be collected in current count data.
6. Mr. Sandusky stated that this bridge has heavy pedestrian traffic and the County prefers a temporary pedestrian bridge be installed during construction.
7. Mr. Sandusky requested that GPI investigate Green Acres encumbered properties/parcels within the project limits.
8. Survey and mapping process will be conducted either by Low Altitude Mapping, Lidar or Conventional Ground methods. Survey equipment should be watched or secured in the field. It was discussed that there is localized flooding at the intersection at the east approach. Profile tie in points will be a key issue as they must not create significant impact on adjacent properties.
9. The attendees agreed to establish monthly conference calls based on GPI's monthly progress report, which will be provided in advance. Mr. Boerchers stated that GPI typically provides one with each invoice. Mr. Sandusky stated that the County will be reviewing invoices more thoroughly and will not consider the project complete until NJDOT approval is received.
10. Mr. Coscia stated that invoices should be submitted to DVRPC. Mr. Boerchers requested a sample format. It was noted by Mr. Coscia that David Wagner at GPI is currently working with DVRPC and Mr. Wagner's invoices could serve as a sample for the project.
11. Mr. Sandusky requested in-person meetings prior to any local officials or public meetings. He added that Trenton City buy-in is critical to successful project completion and the County would want a resolution of support from the City Council.
12. The attendees concurred that the Public Information Center (PIC) should be held in an amicable location near the project site, such as at the Catholic Youth Organization (CYO) East State Street Center, and should be an informal one-on-one format at display boards. It was also agreed that the County will work with the City to determine the appropriate notification perimeter and GPI will investigate alternate meeting spaces for the PIC. It was discussed that Mr. Muzaffar will be the public's contact. DVRPC was agreeable to this and did not want to have public contact.

13. It is anticipated that project information will be posted to the County website by County staff. Information posted will be very simple and documented as “concept development” and will be noted as being very preliminary.
14. The attendees agreed that GPI would post scheduled public meetings to area newspapers (in English and Spanish) after County approval of the announcement. The County also stated that project information can be posted to their website, but a project-specific social media account is not required.
15. Mr. Muzaffar stated that the County is interested in all utility correspondence, including the utility log GPI uses to track the same. The County will be copied on all correspondence with the utilities and will be provided a copy of GPI’s Utility correspondence log for their information and use.
16. Mr. Sandusky stated that there are three nearby bridges also scheduled for reconstruction through NJDOT. Mr. Coscia recalled that the NJDOT PM for these projects might be John Campi; however, GPI will confirm the same.
17. It was noted that while the County prefers direct negotiations with property owners for right-of-way acquisitions or easements, however the ROW process for this project must abide by federal guidelines.

Action Items:

- GPI will rebaseline the project schedule for a start date of July 13, 2015.
- Mercer County will provide historic counts due to the high school’s closure.
- Mercer County will obtain details from Trenton City on the high school reconstruction.
- GPI will investigate Green Acres encumbered properties/parcels within the project limits.
- County will determine the appropriate notification perimeter with input from the City.
- GPI will investigate alternate meeting spaces for the PIC.
- GPI will confirm the NJDOT PM for the three nearby bridges scheduled for reconstruction.
- GPI will investigate the most appropriate way to conduct survey and mapping including consideration of Low Altitude Mapping and Lidar scans.

This memorandum of record is believed to be an accurate record of the discussions at this meeting. If any of the attendees disagree with the documented discussion, please contact Julia Steponanko at (908) 236-9001 within 5 days of receipt of minutes. If no comments are received, then this memorandum will be considered a true and accurate record of this meeting.

Memorandum of Meeting

To: File

From: Christopher Marra, GPI

Date: June 30, 2016

Project Name: Delaware Valley Regional Planning Commission (DVRPC)/Mercer County
Lincoln Avenue Bridge Replacement Local Concept Development Study
City of Trenton, Mercer County

Project Number: 2015684.00

Subject: Working Meeting

Copy: Attendees

A meeting was held with Mercer County for the above referenced project at 10:00 AM on Friday, June 3, 2016 at the Mercer County Engineering Offices. Those in attendance were as follows:

<u>Attendee</u>	<u>Bureau / Company</u>	<u>Phone</u>
Basit Muzaffar	Mercer County Engineering	609 989-6641
Bernie Boerchers	Greenman-Pedersen, Inc. (GPI)	908 236-9001
William Farrow	GPI	908 236-9001
Richard Schroeder	GPI	908 236-9001
Christopher Marra	GPI	908 236-9001
Julia Steponanko	GPI	908 236-9001

The purpose of this meeting was to introduce and discuss the various structural, geometrical, and utility alternatives developed to date for this project. The following summarizes the questions and comments made during the meeting:

1. It was agreed that Alternative 1, which consists of deck replacement and structural repairs, but would not meet the 75-year design life, would not likely be selected as the preferred alternative. Mr. Farrow stated that Alternatives 2, 2A, 3, and 3A may or may not meet the 75-year design life due to the condition of the piers, which will need to be assessed via testing. Mr. Farrow added that rehabilitation of the piers would likely require a shorter construction duration as opposed to replacement. Mr. Muzaffar stated that County does not prefer concrete and does not want adjacent box beams used. Alternatives 5 and 6 were discussed. Mr. Muzaffar asked for an additional alternative, 5A, to be added. This alternative would be similar used the same span arrangement of 5 but minimize the structure depth.
2. Mr. Muzaffar stated that the greatest difficulty for construction will likely be the bridge span over the Amtrak tracks and inquired if the construction duration over this section could be reduced. Mr.

Farrow stated that construction could be performed during off-peak hours, which in coordination with Amtrak, could reduce impacts to the rail line.

3. Mr. Farrow stated that the existing catenary lines would need to be re-profiled once removed from the structure, which may require construction of a new catenary structure.
4. Mr. Boerchers stated that GPI would request Churchill to survey the electrical overhead leader lines.
5. Mr. Farrow discussed the foundation options including drilled shafts, pile and minipiles. Mr. Muzaffar stated that drilled shafts are not a desirable proposed foundation alternative. Issues with construction access and construction durations in relation to the foundation elements were discussed. It was agreed that a separate matrix for various structural foundation alternatives be created.
6. Mr. Muzaffar asked for GPI to look in to traffic coatings for the proposed concrete deck and stated that galvanized steel reinforcement rebar shall be used as opposed to epoxy-coated rebar.
7. Mr. Marra stated that under the standard vertical clearance and thickest proposed structural depth (Alternative 5), the approaching grade from the intersection of Lincoln Avenue and E. State Street would be 8%. However, the grade could be reduced by utilizing thinner proposed structural depths and/or reduced vertical clearances. Mr. Muzaffar stated that a maximum grade of 6.5% would be acceptable, and inquired if a reduced structural depth could be utilized over the Amtrak span, in conjunction with a standard structural depth for the remainder of the bridge. Mr. Farrow stated that a thinner structure with a reduced beam spacing could be utilized but recommended strengthening said span as deflection could result in noticeable vibration that would be uncomfortable for pedestrians.
8. Mr. Muzaffar inquired if the horizontal realignment (Alternative 6) would offer any additional benefits other than the ability for offline construction. Mr. Farrow stated that a temporary pedestrian bridge could be maintained using the existing structure during detour stages, or the existing substructure piers could be utilized with a temporary pedestrian bridge structure. Mr. Boerchers noted that temporary structures cannot be in place longer than 6 months in order for them to be considered temporary. Mr. Muzaffar stated that the proximity of pedestrians to a live construction zone could be a concern during construction, particularly during heavy lifting over the structure. Mr. Muzaffar inquired as to the anticipated ROW costs for the realignment alternative. Mr. Boerchers stated that GPI does not typically develop cost estimates.
9. Mr. Muzaffar stated that architectural treatments such as tinted concrete or textured piers and/or parapets could be utilized to improve overall aesthetics of the area if desired.
10. Mr. Schroeder stated that since this was a County project, utility companies would be generally required to pay for their own relocations, but may expect compensation if temporary relocations were required. However, Federal funding guidelines would require utility companies to be compensated for impacts to existing facilities that were located outside of the existing County ROW and/or in existing easements.

11. Mr. Schroeder stated that PSE&G Electric currently has ten 4-inch conduits on the bridge structure (three of which are empty), and it assumed that they would want to re-install all ten. Several of the existing conduits are in poor condition with exposed wiring that may require repairs prior to the start of bridge demolition/construction operations (an audible “buzzing” noise can be heard from the wires).
12. Mr. Schroeder stated that PSE&G Gas has an “oddly configured” 16” gas main on the bridge which would need to be re-installed.
13. Mr. Schroeder stated that Verizon currently has no facilities on the bridge structure, but may request to have four conduits installed on the proposed bridge for future use (to be installed at their own cost).
14. Mr. Schroeder stated that an existing 30-inch cast iron water main is located under the structure (through the foundation) and the Amtrak ROW that will likely require replacement. Due to its age and material, there is a greater risk of damage to the water main from construction activities. Mr. Muzaffar agreed that relocation of the water main is possible and that often the work is completed by the Contractor using materials provided by the water utility authority.
15. Mr. Schroeder stated that the realigned horizontal alignment of Alternative 6 would impact the existing USGS gauge station located in the northern corner of the project location.
16. Several other telecommunication companies have facilities in the Amtrak ROW, but are all mounted to the existing Amtrak catenary towers or located underground in the Amtrak conduit system.
17. Mr. Muzaffar agreed that test holes on the existing water main and feeder pipes for the USGS station should be performed during PE to better determine the extent of the anticipated impacts. Mr. Schroeder stated that the cost for the test holes could be eligible for reimbursement based on current Federal funding guidelines.
18. Mr. Muzaffar inquired as to the vertical clearance of adjacent structures along the Northeast Corridor (NEC). Ms. Steponanko stated that GPI would reach out to NJDOT to ascertain that information.

Action Items:

- GPI will request Churchill to survey the elevation and location of overhead electrical leader lines.
- GPI will develop a foundation alternatives matrix in preparation for an NJDOT core group meeting.
- GPI will add alternative 5A to the structures alternative matrix.
- GPI will follow up with NJDOT regarding the vertical clearance of adjacent structures along the NEC.

This memorandum of record is believed to be an accurate record of the discussions at this meeting. If any of the attendees disagree with the documented discussion, please contact Christopher Marra at (908) 236-9001 within 5 days of receipt of minutes. If no comments are received, then this memorandum will be considered a true and accurate record of this meeting.

Memorandums & Letters

GREENMAN-PEDERSEN, INC.

MEMORANDUM

TO: Basit Muzaffar
Mercer County DOT & Division of Engineering

FROM: Bernie Boerchers
Greenman-Pedersen, Inc. (GPI)

DATE: January 5, 2017

PHONE: 908 236-9001

SUBJECT: **Request for Reasonable Assurance of Design Exception Approval**
1. Stopping Sight Distance (SSD) on Vertical Curves
2. Shoulder Width
Lincoln Avenue Bridge Replacement
City of Trenton, Mercer County
Local Concept Development (LCD)

GPI is requesting reasonable assurance of approval for design exceptions for the subject project. The request is for the two above listed Controlling Substandard Design Elements (CSDEs) along Lincoln Avenue/CR 626, herein referred to as only Lincoln Avenue. This memo indicates the existing geometrics along said roadway within the project limits based on available as-built plans and the minimum requirements of and *AASHTO: A Policy on Geometric Design of Highways and Streets* (AASHTO).

Project Need

The overall purpose of this project is to replace Structure No. 1100-055. The structure was rated 'serious' primarily due to the condition of the superstructure, which suffers from severely rusted steel throughout and large areas of spalled and delaminated concrete on the deck. The County performed short-term fixes on the structure including lighting, deck repairs and an asphalt overlay until the structure could be replaced. Local Concept Development was initiated to develop and evaluate various alternatives and to select a Preliminary Preferred Alternative (PPA).

Preliminary Preferred Alternative (PPA)

The PPA consists of the following improvements:

- Full replacement of the existing substructure and superstructure structure using steel multi-girders on the existing horizontal alignment.
- Increase vertical profile to meet the minimum 24'-6" vertical under-clearance over Amtrak tracks and inactive NJ Transit tracks.

- Proposed cross section provides a 12-foot wide lane, 8-foot wide shoulder, and 6-foot wide sidewalk in each direction.
- Relocation of a 20"x8" gas main located on structure, 10-4" electrical conduits located on structure, and a subsurface 30" cast iron water main located along and under the existing structure.
- Maintain pedestrian and westbound traffic during construction.

The PPA will provide a minimum 75-year design life, improve the vertical clearance over the existing tracks, provide a standard roadway cross section, and improve the general aesthetics of the area.

Crash Analysis

In December 2015, the NJDOT Bureau of Transportation Data and Safety (BTDS) prepared a crash analysis Lincoln Avenue from milepost 0.09 to 0.35 and Lincoln Avenue (CR 626) from milepost 0.00 to 0.10 for the three-year period from January 2011 through December 2013. A total of 19 crashes occurred along this section over the aforementioned period. The most prevalent crash types were same direction-rear end, same direction-side swipe, at signalized intersection, night, and wet surface.

A Design Exception Crash Analysis was also prepared by BTDS in September 2016 for the three-year period between 2012 and 2014. A copy of the same is included with this memorandum.

1. CSDE - Stopping Sight Distance on Vertical Curves

The table below indicates the existing substandard vertical stopping sight distance along Lincoln Avenue within the project limits based on available as-built plans along with the minimum requirements as per *AASHTO*.

Table 1 - Substandard Vertical Stopping Sight Distance

Location No.	PVI Location Station (Milepost)	Type of Curve	A (%)		Length (ft)		S (ft)			V _{CALC} (mph)	V _{POST} /V _{DES} (mph)
			Exist.	Prop.	Exist.	Prop.	Exist.	Prop.	Std.		
CSDE 1	Lincoln Avenue (CR 626) 13+80.61 – 14+05.61 (0.09 – 0.10)	Sag	6.06	6.00	25	35	64	72	200	< 25	25/30

• Proposed Safety Measures

The proposed improvements within the project limits include new striping, pavement markings, raised pavement markers and improved signing.

• Crash Analysis

Indicator crash types consist of nighttime crashes for sag vertical curves. According to the DE crash analysis no indicator crashes occurred within the limits of CSDE 1.

• Impact(s)

CSDE 1 is located along Lincoln Avenue at its intersection with E. State Street. In order to bring the vertical alignment into conformance, the length of the vertical sag curve would need to be extended by approximately 200 feet and pavement raised by approximately two feet at the PVI. Raising the roadway

by this extent at the intersection of Lincoln Avenue and E. State Street would result in significant impacts to the adjacent properties and likely necessitate full ROW takings and demolition of existing buildings. *Due to the lack of indicator crashes, it is our opinion that maintaining the existing substandard design values will not result in degrading the relative safety of the roadway.*

2. CSDE – Shoulder Width

The following table indicates the existing substandard shoulder widths along Lincoln Avenue based on available as-built plans along with the minimum requirements as per AASHTO.

Table 2 - Substandard Shoulder Width

Location Number	Location, Direction Station (Milepost)	Shoulder Type	Existing Width (ft)	Proposed Width (ft)	Standard Width (ft)
CSDE 2	Lincoln Avenue 4+67.49 - 5+34.50 (0.19 - 0.20)	Outside	0	0	8
CSDE 3	Lincoln Ave (CR 626) 10+83.74 - 14+24.12 (0.04 - 0.10)	Outside	0	0	8

- **Proposed Safety Measures**

The proposed improvements within the project limits include new striping, pavement markings, raised pavement markers, lighting upgrades and signing.

- **Crash Analysis**

Indicator crash types consist of fixed object, struck parked vehicle, and overturned vehicle. According to the DE crash analysis, two indicator crashes occurred within the limits of CSDE 2 however the same direction-rear end crashes are not overrepresented when compared to the 2014 Municipal Road System Average Crash Value. No indicator crashes occurred within the limits of CSDE 3.

- **Impact(s)**

While the proposed bridge will feature a cross section which provides standard 8-foot wide shoulders within a majority of the project limits, both ends of the project must tie into the existing cross section. On the western project limit of Lincoln Avenue, the existing roadway section consists of a 13-foot wide northbound lane, a 14-foot wide southbound lane, and no striped shoulders. Correction of CSDE 2 would require widening outside of the project limits and extending the impacted area further west along Lincoln Avenue. At the eastern project limit, Lincoln Avenue approaches E. State Street and features one lane in each direction and a left turn slot. In order to provide an improved roadway cross section for vehicular and bicycle use, minor widening was incorporated into the PPA so that 14-foot wide through lanes could be provided at the intersection of E. State Street. Due to the adjacent buildings, widening to provide standard eight-foot wide shoulders is not feasible without removal of the existing sidewalks or full ROW takings and demolition of the adjacent buildings.

Based on the lack of overrepresentation of indicator crashes for CSDE 2 and the lack of any indicator crashes for CSDE 3, *maintaining the existing substandard design values will not result in degrading the relative safety of the roadway.*

Please find attached the PPA and DE crash analysis for your information and review. If you need additional information, please contact me at 908 236-9001. We would appreciate your response by **February 6, 2017**.

Thank you.

Attachments



State of New Jersey

DEPARTMENT OF TRANSPORTATION
P.O. Box 600
Trenton, New Jersey 08625-0600

CHRIS CHRISTIE
Governor

RICHARD T. HAMMER
Acting Commissioner

KIM GUADAGNO
Lt. Governor

September 7, 2016

Basit Muzaffar
Mercer County Engineering Department
103 College Road East
1st Floor
Princeton, NJ 08540

RE: Design Exception Crash Analysis
County Route 626 MP 0.00 to 0.10/Lincoln Avenue MP 0.19 to 0.35
Trenton City, Mercer County

As requested by your office on August 3, 2016, crash data was analyzed for the subject location. Crash data used is for the years 2012 to 2014. The following is a summary of this data and you will also find attached the crash detail sheets used for this analysis.

Controlling Substandard Design Elements

Lincoln Avenue

Substandard Cross Slope (below minimum) – Indicator Crash Type: Wet Surface

MP 0.19 to 0.35 No indicator crashes at this location.

Substandard Outside Shoulder – Indicator Crash Types: Fixed Object, Struck Parked Vehicle, and Overturned Vehicle

MP 0.19 to 0.35 2 – Same Direction Rear End Crashes (11.11%)
18 – Total Crashes

Conclusion

Same Direction Rear End crashes are not overrepresented when compared with the 2014 Municipal Road System Average Crash Value (15.09%).

County Route 626

Substandard Sag Vertical Curve – Indicator Crash Type: Nighttime

MP 0.09 to 0.10 N/B No indicator crashes at this location.

Substandard Cross Slope (below minimum) – Indicator Crash Type: Wet Surface

MP 0.00 to 0.10 No indicator crashes at this location.

Substandard Lane Widths – Indicator Crash Types: Head – On, Same Direction Side Swipe, and Struck Parked Vehicle

MP 0.00 to 0.10 2 – Same Direction Side Swipe Crashes (14.29%)
14 – Total Crashes

Conclusion

Same Direction Side Swipe crashes are overrepresented when compared with the 2014 State Highway Average Crash Value (12.15%), but their annual frequency is not greater than the two per year amount considered statistically significant. Therefore, it is our opinion that the occurrence of the indicator crashes may be considered random and not necessarily related to the substandard element.

Substandard Outside Shoulder – Indicator Crash Types: Fixed Object, Struck Parked Vehicle, and Overturned Vehicle

MP 0.00 to 0.10 No indicator crashes at this location.

If there are any further questions, please contact Mr. Thomas Zim of this office at (609) 530-4123.

Very truly yours,



Pavan Sheth
Project Engineer, Bureau of Transportation Data and Safety

PS:TZ

Mail Log No. 133-16

LINCOLN AVE
TRENTON
YEAR 2012-2014

	YEAR	CO	MUN	DLN	ACC_DATE	CASE_NUMBER	LOCATION	LOC_DIR	
F.O. SDR	2012	11	11	12100153	5/27/2012	12006030	LINCOLN AVE	W	- TIRE FELL OFF
	2012	11	11	12100138	5/29/2012	12006089	LINCOLN AVE	DRY E	- PULLED OVER FOR AMBULANCE
	2013	11	11	13141829	4/27/2013	13004334	LINCOLN AVE	N	- PARKING LOT
SDR	2013	11	11	13502716	5/9/2013	13004850	LINCOLN AVE	DRY	
SDR	2013	11	11	13502705	5/10/2013	13004907	LINCOLN AVE	DRY E	- DRIVER INATTENTION
F.O.	2014	11	11	14217901	6/19/2014	14006474	LINCOLN AVE	E	- DRIVER INATTENTION
PARKED	2013	11	11	13501595	6/24/2013	13006713	LINCOLN AVE	E	- TRUCK TURNING
F.O.	2013	11	11	13502048	5/17/2013	13005162	LINCOLN AVE	W	- MANHOLE (AREA UNDER CURBSTR)
BACKING	2013	11	11	13305754	9/5/2013	13009854	LINCOLN AVE	S	
SDR	2013	11	11	13305808	9/28/2013	13010856	LINCOLN AVE	E	- FOOT CAME OFF BRAKE
F.O.	2013	11	11	13309559	10/19/2013	13011719	LINCOLN AVE	W	- VEHICLE
SDR	2013	11	11	13306158	11/2/2013	13012276	LINCOLN AVE	DRY S	
F.O. SDR	2013	11	11	13308328	12/8/2013	13013780	LINCOLN AVE	SNOW E	
HEAD ON	2014	11	11	14217388	5/31/2014	14005613	LINCOLN AVE	DRY	
SDR	2014	11	11	14239422	7/3/2014	14007126	LINCOLN AVE	DRY	
	2014	11	11	14239542	7/25/2014	14008056	LINCOLN AVE	S	
F.O.	2014	11	11	14304180	10/28/2014	14011731	LINCOLN AVE	W	- TIRE ISSUE
SDS	2014	11	11	14329885	11/1/2014	14011902	LINCOLN AVE	WET	- CARELESS DRIVING
SDR	2014	11	11	14330042	11/20/2014	14012544	LINCOLN AVE	DRY W	- METAL GRATE (SLID)
SDS	2014	11	11	14330056	11/27/2014	14012836	LINCOLN AVE	DRY	

ON ROUTE 626
MILEPOST 0.000 TO 0.100
01/01/2012 TO 12/31/2014

ROAD SYS	COLLISION TYPE	VEHICLE 1 DIR TRAV	VEHICLE 2 DIR TRAV	WEA	LITE	DATE	DOW	TIME	VEH 1 CONTRIB CIRCUMSTANCES	VEH 2 CONTRIB CIRCUMSTANCES	NO. KILL	NO. INJURED	NO. ACC
COUNTY ROAD 13304050	SAME DIR-REAR	MP 000.08	NEAR CR 635 / E STATE ST			09/12/13	THR	09:17	NONE-DRIVER/CYC	MERCER DRI INATTENTION	0	0	2
COUNTY ROAD 13127766	SAME DIR-REAR	MP 000.10	NEAR CR 635 / E STATE ST			01/21/13	MON	20:35	RD SURF CNDTION	MERCER RD SURF CNDTION	0	0	1
COUNTY ROAD 12045560	PEDALCYCLIST	MP 000.10	AT CR 635 / E STATE ST			01/25/12	WED	13:40	FAIL TO YLD ROW	MERCER	0	0	1
12056875	SAME DIR-SIDE	N - SUV-LEFT TURN	N - SUV-PASSING			04/05/12	THR	20:19	NONE-DRIVER/CYC	DRI INATTENTION	0	0	0
12127647	SAME DIR-SIDE	N - PASS-STOP-REAR	N - OTHER-GOING STRT			06/20/12	WED	11:47	NONE-DRIVER/CYC	NONE-DRIVER/CYC	0	0	0
12167572	SAME DIR-REAR	N - PASS-STOP-REAR	N - SUV-START REAR			08/03/12	FRI	07:58	NONE-DRIVER/CYC	DRI INATTENTION	0	0	0
12237308	LEFT/U TURN	N - PASS-GOING STRT	S - PASS-LEFT TURN			11/01/12	THR	21:43	DISOBEYED TCD	DISOBEYED TCD	0	0	0
12249905	ENCROACHMENT	S - UNKN-GOING STRT	S - UNKN-GOING STRT			01/23/12	FRI	17:32	DRI INATTENTION	DRI INATTENTION	0	0	0
13502698	SAME DIR-REAR	S - UNKN-GOING STRT	S - UNKN-GOING STRT			01/29/13	TUE	16:09	NONE-DRIVER/CYC	NONE-DRIVER/CYC	0	0	0
13502019	FIXED OBJECT	S - UNKN-GOING STRT	S - UNKN-GOING STRT			05/10/13	FRI	23:27	RD SURF CNDTION	DRI INATTENTION	0	0	0
13308251	RIGHT ANGLE	S - UNKN-GOING STRT	S - UNKN-GOING STRT			12/17/13	THR	21:24	NONE-DRIVER/CYC	UNSAFE SPEED	0	0	0
13308212	SAME DIR-SIDE	N - PASS-STOP-REAR	N - PASS-GOING STRT			12/12/13	TUE	17:11	NONE-DRIVER/CYC	DRI INATTENTION	0	0	0
13304164	FIXED OBJECT	N - PASS-STOP-REAR	N - PASS-GOING STRT			07/29/13	WED	00:40	NONE-DRIVER/CYC	DRI INATTENTION	0	0	0
14239429	SAME DIR-REAR	N - PASS-GOING STRT	N - PASS-STOP-REAR			07/02/14	WED	16:06	DRI INATTENTION	NONE-DRIVER/CYC	0	0	0
14259670	RIGHT ANGLE	W - PASS-GOING STRT	N - PASS-GOING STRT			08/12/14	TUE	10:10	NONE-DRIVER/CYC	NONE-DRIVER/CYC	0	0	0

LANE WIDTH

SAS - N/S DIRECTION ONLY

Email

From: [Sandusky, Greg](#)
To: [Boerchers, Bernard](#)
Cc: [Muzaffar, Basit](#)
Subject: FW: Bikeway Master Plan
Date: Wednesday, September 21, 2016 2:25:27 PM
Attachments: Pages from Downtown Trenton Bike-Ped Plan 2016.pdf

Bernie,

Here's that info regarding the City's bike-ped plans.

Greg

From: Lawson, Matthew
Sent: Wednesday, September 21, 2016 1:43 PM
To: Sandusky, Greg
Cc: Muzaffar, Basit
Subject: RE: Bikeway Master Plan

The new Downtown Trenton bike-ped plan includes 'standard bike lanes' on Lincoln Avenue both sides. See attached, from <http://www.trentonnj.org/documents/Downtown%20Trenton%20Bike-Ped%20Plan%202016.pdf>

From: Sandusky, Greg
Sent: Wednesday, September 21, 2016 12:56 PM
To: Lawson, Matthew
Cc: Muzaffar, Basit
Subject: Bikeway Master Plan

Matt,

Had a meeting regarding the Lincoln Avenue bridge replacement project and they plan on providing 8' shoulders over the bridge and then transitioning to meet existing which is going to be abrupt at East State Street. Is anything shown on the bikeway master plan for this area of Lincoln Avenue bridge?

Gregory Sandusky, P.E., P.L.S.
Mercer County Engineer
640 South Broad Street
Trenton, NJ 08650-0068
(609) 989-6600
(609) 989-8295 Fax
gsandusky@mercercounty.org

This message has been scanned for malware by Websense. www.websense.com

FIGURE 26: Recommended On-Road Bicycle Network



Sources: NJDOT, DVRPC, Mercer County, City of Trenton

Appendix R

Preliminary Engineering Public Action Plan



Mercer County
Lincoln Avenue Bridge Replacement
City of Trenton, Mercer County
Local Preliminary Engineering

PURPOSE

Project History: The Delaware Valley Regional Planning Commission on behalf of Mercer County initiated Local Concept Development for Structure No. 1100-055, which carries Lincoln Avenue (County Route 626) over the Northeast Corner rail line, an abandoned rail yard, and Assunpink Creek. Based on the June 2013 inspection report, the bridge was rated ‘serious’ primarily due to the condition of the superstructure, which suffers from severely rusted steel throughout and large areas of spalled and delaminated concrete on the deck. The SI&A sheet gives the structurally deficient bridge a Sufficiency Rating of 46.1, therefore it is recommended to replace the structure.

Upon selection of a Preliminary Preferred Alternative (PPA), the project was advanced to Preliminary Engineering (PE). The PPA proposes to widen and restripe Berkshire Valley Road southbound at Route 15 southbound to consist of dual left turn lanes and a through lane; and provide 12-foot wide inside lanes and 15-foot wide outside lanes along Berkshire Valley Road between Route 15 northbound and southbound. It also proposes to revise the signal timing to provide protected left turn phases for Berkshire Valley Road; modify access to the restaurant, gas station, and mill in conformance with Access Code; replace the broken back curves with compound curves along Berkshire Valley Road and eliminate the ‘S’ curve along the north approach; and provide pedestrian accommodations at the intersection. Right-of-way is required from the restaurant and mill. Utility impacts are anticipated to be minor.

PAP Goals: Public participation is required to achieve community “ownership” in the proposed project and therefore it is a critical element in the successful implementation of the NJDOT transportation program. The PAP goals consist of the following:

- Promote an on-going public partnership to ensure that the transportation benefits are considered within the context of the communities directly impacted by the project.
- Ensure early, frequent and continuous consultation with the public by committing to public notification of the affected parties, citizen input in the identification of the solutions and dedication to make the public’s input meaningful.
- Assist in building public support for both agreement on the project need and the identification of possible solutions along with the selection of the PPA.
- Identify early in the process any potential “fatal flaws” that would prevent the advancement of the project or its ability to adequately address the identified need(s).

The PAP document is intended to establish a public involvement process that is dynamic in nature so that it can evolve with the progress of the project, from Concept Development through to, and including Construction.

COMMUNITY PROFILE / ENVIRONMENTAL JUSTICE



GPI has prepared a Community Profile. The intent of the profile was to identify the surrounding community demographics. The Community Profile does not make any conclusions about the environmental justice issues; rather it serves to alert the project team of the presence of protected populations within the project area using the Environmental Justice minority and low-income definitions. This evaluation determined that the population within the study area is predominantly Black and Hispanic and 34% speak Spanish. In addition, 24-43% of the population is below the poverty level. Based on the Profile, a more detailed impact analysis to evaluate potential Environmental Justice issues is not anticipated since no adverse and or disproportionate impacts to these groups were identified. Every effort will be made to inform and include these groups in the planning process.

PAP IMPLEMENTATION

The Lincoln Avenue Bridge Replacement project is currently in Local Preliminary Engineering (LPE). Although the PAP is organized by the project phase, it will be implemented in such a manner that the public views the project as one seamless process. The PAP is organized by project phase to allow for its integration with the engineering effort to facilitate the schedule of contingent activities. The project phases are as follows:

- Local Concept Development
- Local Preliminary Engineering
- Final Design
- Construction

Local Concept Development: The LCD phase for this project included the collection, review and analysis of background data and existing physical features; the development of alternatives; and the selection of the PPA. A PAP was prepared and submitted during the CD phase in February 2016. The CD phase was completed in February 2017 and consisted of the following public involvement activities:

1. Developed and maintained a contact/ mailing list of key project stakeholders.
2. Identified and developed communication methods based on the results of the Community Profile and input from the DVRPC and Mercer County. Developed visualization techniques, such as display boards, site photographs and traffic simulations prior to meetings to be utilized, where appropriate, to illustrate various concepts. Prepared handouts/fact sheets for distribution for each meeting summarizing the project status, various alternatives and eventually the PPA.
3. Held a stakeholder meeting with Amtrak on February 17, 2016 to introduce the project; and to request concerns/comments, requirements, guidelines, potential problems and/or additional issues. Minutes of the meeting were prepared and distributed for comment.
4. Coordinated with DVRPC and Mercer County to schedule Local Officials Meetings. Held meetings with Trenton City on the following dates to introduce the project and present initial alternatives; and to request concerns/comments, potential problems and/or additional issues from identified local stakeholders and interest groups. Minutes of each meeting were prepared and distributed to the attendees for comment.
 - April 4, 2016
 - September 21, 2016



5. Coordinated with DVRPC, Mercer County and NJDOT Local Aid to schedule an NJDOT Core Group composed of relevant Subject Matter Experts (SME). Held a meeting on October 3, 2016 to introduce the project and present initial alternatives; and to request concerns/comments, requirements, guidelines, potential problems and/or additional issues from the SMEs. The SMEs concurred with the PPA selected by Mercer County. Minutes of the meetings were prepared and distributed to the attendees for comment.
6. Held a Public Information Center (PIC) on November 9, 2016 to solicit public input and comments with regard to the project need and conceptual solutions. Notices, handouts and presentation material were provided in English and Spanish. An interpreter was also present. Minutes of the meeting were prepared and distributed for comment.
7. Requested Trenton City's acceptance and a Resolution of Support for the respective PPA. Failure to obtain a Resolution of Support does not necessarily preclude the advancement of the project if significant safety issues have been identified during the scoping process.
8. Reassessed the PIAP to ensure that the identified strategies still adequately address the public involvement effort given current project circumstances.

Local Preliminary Engineering: Once the project is transferred, the Project Manager will review and revise the PAP, as necessary. The PPA will be further developed into the Approved Project Plan (APP) and the contract documents necessary to obtain the required environmental document and permits will be completed during these phases.

Public involvement activities that may be undertaken during LPE are as follows:

1. Update the contact/mailing list of key project stakeholders developed in LCD.
2. Prepare a PAP to identify critical points for public involvement during LPE and the objectives for each point.
3. Coordinate efforts with Amtrak and NJ Transit through the railroad agreement prepared in LCD and executed in LPE. Hold meetings to present the project APP; and to request concerns/comments, requirements, guidelines, potential problems and/or additional issues. Minutes of the meetings will be prepared and distributed to the attendees for comment.
4. Coordinate efforts with cooperating agencies to get environmental approvals for the APP, if deemed necessary. The approved Environmental Document will be based on technical studies conducted by the consultant and/or environmental teams within the NJDOT Bureau of Landscape Architecture and Environmental Solutions. Documentation of support from each outside agency will be obtained and placed on file and in the PE Report.
5. Coordinate with DVRPC and Mercer County to schedule a PIC through coordination with the local governing bodies. Prepare the mailing list, PIC handout and presentation material in English and Spanish. The mailing list will include residents within a prescribed distance to the project limits, neighborhood associations, civic and cultural groups, environmental organizations, associations of low income, minority, elderly, and disabled constituents, etc. as a means of distributing information



to concerned citizens or groups. Communication methods will also include notices on County and City websites, in local newspapers, availability of interpreters, etc.

6. Hold the PIC in 2018 to allow the public to view the APP in its current status; and solicit public input and comments with regard to the project need and conceptual solutions on architectural treatments. Formal community consensus may lead to some adjustments to the APP. In the end, local representatives will be asked to submit a Resolution of Support endorsing the project, if formal support was not obtained during the CD Phase. Minutes of the meeting will be prepared and distributed for comment.
7. Reassess the PAP to ensure the identified strategies still adequately address the public involvement effort for this project.

Final Design and Construction: The Project Manager will review and revise the PAP, as necessary. The contract documents necessary to obtain the required permits and to bid the project for construction will be completed during Final Design. It is important to work closely with local officials and the business community during construction to ensure the least impact on traffic and business caused by construction.

The following steps in the PAP will be important during Final Design and Construction of the project:

1. Hold a PIC during Final Design to allow the public to view the APP in its current status.
2. Conduct pre-construction conferences and/or information centers to ensure maximum support for the construction schedule and minimal disruption to the community.
3. Utilize various agencies' websites to provide relevant information such as contact information, construction schedule, expected delays/lane closures, construction progress and to solicit feedback. Notifying the public about traffic patterns and potential delays will be important during construction to facilitate the formation of positive public perception towards both the project and Mercer County.
4. Review feedback provided by the public to determine if improvements can be instituted to construction activities.

PAP DELIVERABLES

Meeting Minutes: Minutes will be prepared of all public involvement meetings. The minutes will be comprehensive and include an action item list. The minutes will be completed within five (5) business days of the meeting and distributed to all of the attendees.

Project Fact Sheet: A Project Fact Sheet will be prepared and distributed at all meetings with local officials. The Project Fact Sheet will include a brief project history, project issues, project location map, and proposed alternatives. The Project Fact Sheet will be updated as the project progresses to reflect the most up-to-date project information available.

Display Boards: Display boards will be utilized to illustrate existing conditions and the proposed improvements to the local officials, key stakeholders and the public. Project display boards may include project aerials, a project process display, project deficiency display, alternatives displays and a PPA display. The display boards will also be converted to .pdf files where possible so that they may be displayed via a projector, when appropriate.



KEY PROJECT STAKEHOLDERS

The following is a list of the key stakeholders identified to date for this project *as of January 2017*:

Mercer County

640 South Broad Street, P.O. Box 8068, Trenton, NJ 08650-0068

- County Executive Brian M. Hughes

Board of Chosen Freeholders

- Freeholder Pasquale Colavita, Jr. – Chair
- Freeholder Lucylle R. S. Walter – Vice Chair
- Freeholder Ann M. Cannon
- Freeholder Samuel T. Frisby
- Freeholder John A. Cimino
- Freeholder Andrew Koontz
- Freeholder Anthony Verrelli

Department of Engineering

- Gregory Sandusky, P.E., P.L.S., County Engineer
- Basit (Sunny) Muzaffar, P.E., Supervising Engineer, Bridges
- George A. Fallat, P.E., Traffic Engineer

City of Trenton

319 East State Street, Trenton, NJ 08608

- Mayor Eric E. Jackson
- Council President Zachary Chester
- Council Vice President Verlina Reynolds-Jackson
- Councilwoman Marge Caldwell-Wilson
- Councilman George Muschal
- Councilman-At-Large Duncan W. Harrison Jr.
- Councilman-At-Large Alex Bethea
- Councilwoman-At-Large Phyllis Holly-Ward
- Terry McEwen – Business Administrator
- Merkle Cherry – Public Works Director, Acting
- Sean Semple – Public Works Assistant Director
- Hoggarth Stephen – Principal Engineer
- Jeffrey Wilkerson, PP, AICP – Principal Planner
- Diana Rogers – Acting Director of Housing & Economic Development
- Qareeb Bashir – Director of Fire & Emergency Services
- Ernest Parrey, Jr. – Director of Police
- Joseph McIntyre – General Superintendent, Trenton Water & Sewer Utility

**Amtrak**

Eli Charchar, Project Manager II

Amtrak Engineering I&C, 30th Street Station, Box 64

2955 Market Street, Philadelphia, PA. 19104

NJ Transit (Railroad)

Joseph M. Haddad, Manager of Right of Way

One Penn Plaza East, 2nd Floor, Newark, NJ 07105-2246

NJDOT

1035 Parkway Avenue, PO Box 600, Trenton, NJ 08625-0600

Division of Local Aid & Economic Development, District 3

- Arun Kumar
- Dhruv Patel

SEPTA

1234 Market Street, 4th Floor, Philadelphia, PA 19107

Stakeholders may be added throughout the project process as pertinent individuals/groups become evident.

Appendix S

Preliminary Engineering Scope Statement



NJDOT Scope Statement

Preliminary Engineering

Lincoln Avenue Bridge Replacement

Purpose: The Preliminary Engineering Scope Statement lists the proposed project’s deliverables and the activities required to create those deliverables. The scope statement also provides a common understanding of the proposed project’s scope to stakeholders, subject matter experts, and the designer and lists the proposed project’s major objectives. It enables the Project Manager to perform more detailed planning, it helps guide the design team’s work during execution, and provides the baseline for evaluating whether change requests or additional work are contained within or outside the proposed project’s boundaries.

Notes: The intent of the Preliminary Engineering (PE) Scope Statement is to provide useful project information to designers who are interested in becoming the designer of record for PE and possibly Final Design and Construction for this project. In addition, it will be used to solicit a man-hour estimate and cost proposal. The PE Scope Statement identifies the key elements of PE that are necessary to advance the proposed project to the Final Design (FD) Phase.

The PE Scope Statement is developed by the Division of Project Management (DPM) Project Manager and the Concept Development (CD) Designer near the conclusion of CD, prior to requesting the services of a designer to perform PE. The Scope of Work section is approved by the appropriate Subject Matter Experts (SME).

Section 1 of the document focuses on Proposed Project Identification Information and CD data including the location and description. Section 2 of the document specifies the Scope of Work for PE.

PROPOSED PROJECT IDENTIFICATION INFORMATION

PROPOSED PROJECT SPECIFICS

Proposed Project Name	Limits
<u>Lincoln Avenue Bridge Replacement</u>	<u>CR 626 MP 0.00 - 0.10, Lincoln Avenue MP 0.19 - 0.35</u>
NJDOT Project Manager	NJDOT Executive Regional Manager
_____	_____
Counties	Municipalities
<u>Mercer</u> <u>Select County 2</u> <u>Select County 3</u>	<u>Trenton City</u> _____
UPC Number	_____
DB Number	_____
Legislative District(s)	<u>15</u> _____
Congressional District (s)	<u>12</u> _____
Route	<u>CR 626, Lincoln Avenue</u>
Start Milepost	<u>CR 626 (0.00), Lincoln Avenue (0.19)</u>
End Milepost	<u>CR 626 (0.10), Lincoln Avenue (0.35)</u>
Alternate Route	_____
Alternate Start Milepost	_____
Alternate End Milepost	_____
STIP Information	_____
Structure Numbers	<u>1100-055</u>
Project Classification:	<u>2 - Reconstruction, Widening Dualization</u>
MPO	_____

Lincoln Avenue Bridge Replacement



NJDOT Scope Statement

Preliminary Engineering

PROPOSED PROJECT ESTIMATE

List the Proposed Project estimates for each category from Concept Development.

Project Item:	CD Phase Estimated Amount
ROW	
Utility Relocation	\$ 482,000.00 (water main only)
Construction	\$26,828,000.00 (excl. water main)
Construction Engineering	\$ 4,162,000.00
Contingencies	\$ 9,686,000.00 (incl. Amtrak Catenary \$2,568,750)
Total	\$41,340,000.00

CONCEPT DEVELOPMENT INFORMATION

Date of Concept Development Report:	<u>Feb 2017</u>	Date of Federal Approval of CD Report:	<u>Dec 2017</u>
Date of CPC decision to advance project to PE:	<u>IRC decision Nov 2017</u>		
CD Designer:	<u>Greenman-Pedersen, Inc.</u>		
PE to be Completed by (check one):	<input type="checkbox"/> In-House <input checked="" type="checkbox"/> Consultant		

Purpose and Need: The overall purpose of this project is to replace Structure No. 1100-055, which carries Lincoln Avenue (CR 626) over the Amtrak Northeast Corridor (NEC) rail line, an abandoned rail yard, and Assunpink Creek, to provide a low maintenance long-term solution, eliminate structural deficiency, limit construction impacts to the community and incorporate operational, safety and pedestrian access to the bridge.

Structural Deficiencies: Structure No. 1100-055 is comprised of eight simple spans, each consisting of riveted steel through-girders with steel floorbeams and a concrete deck. The structure was built in 1931 and reconstructed in 1965. It is 687 feet long and 40 feet wide. The bridge is fracture critical due to its non-redundant construction (through girder) and is not scour critical.

Based on the June 2013 inspection, the superstructure is in serious condition due to the exposed moderately to severely rusted steel in the girders and floorbeams at the areas of missing encasement. As a result, the deck is also in poor condition with large areas of spalled and delaminated concrete with exposed rusted rebar. The substructure is in fair condition due to wide vertical cracks, large spalls and delaminated concrete with exposed rusted rebar, and loose coping. This bridge has a sufficiency rating of 46.1.

Geometric Deficiencies: Substandard stopping sight distance on vertical curves and shoulder width were identified as a Controlling Substandard Design Elements (CSDE) within the study limits during Concept Development. In addition, the clear zone is obstructed by the through girder, which results in reduced horizontal stopping sight distance.

Description of Preliminary Preferred Alternative: Complete replacement of Structure No. 1100-055 along the existing horizontal alignment while improving the vertical alignment

Project Goals and Objectives: It is the goal of this project to replace the structure while minimizing environmental, quality of life, access, right of way and utility impacts. It is anticipated that improvements will not further degrade the CSDEs within the project limits. Any proposed improvements must consider impacts to emergency services, pedestrian traffic, Amtrak operations

Lincoln Avenue Bridge Replacement



NJDOT Scope Statement

Preliminary Engineering

and the commuter routes during construction. In addition, any changes to the roadway profile will consider the impacts to adjacent intersections.

PRELIMINARY ENGINEERING INFORMATION (to be filled in upon selection of a designer)

PE Designer:	<u>TBD</u>	
FMIS Contract ID Number (e.g., 89 00766):	_____	Funding Source: _____
Agreement Number (e.g., 2001PM03):	_____	



Preliminary Engineering

PRELIMINARY ENGINEERING DELIVERABLES

3.1 Preliminary Engineering Initiation	<input checked="" type="checkbox"/> Utility Agreement	<input type="checkbox"/> Environmental Assessment
<input type="checkbox"/> Kickoff Meeting Minutes	<input checked="" type="checkbox"/> Subsurface Utility Engineering Test Pit Report	<input type="checkbox"/> Finding of No Significant Impact (FONSI)
3.2 Roadway Engineering	<input checked="" type="checkbox"/> Updated Base Plans (With Identified Conflicts)	<input type="checkbox"/> Environmental Commitments/Plan Sheets
<input type="checkbox"/> Control Survey Report	<input checked="" type="checkbox"/> Railroad Diagnostic Team Meeting Memo of Record	<input type="checkbox"/> Historic Sites Council Concurrence
<input type="checkbox"/> Topographic Survey	3.6 Quality Management	3.9 Preliminary Engineering Report
<input type="checkbox"/> Base Maps	<input checked="" type="checkbox"/> PE Quality Management Certification	<input checked="" type="checkbox"/> Approved Project Plan
<input checked="" type="checkbox"/> Preliminary Drainage Design Report	3.7 Communications	<input checked="" type="checkbox"/> Construction Cost Estimate
<input type="checkbox"/> Traffic Engineering Facility Location	<input checked="" type="checkbox"/> Design Communications Report	<input checked="" type="checkbox"/> Design Exception Report
<input type="checkbox"/> Constructability and Maintenance Review Comments	3.8 Environmental Documents	<input checked="" type="checkbox"/> Final Design Scope Statement
<input type="checkbox"/> Preliminary ITS Facility Design Plans	<i>Technical Environmental Studies</i>	<input checked="" type="checkbox"/> Updated Project Management Plan
<input checked="" type="checkbox"/> Updated Preliminary Detour and Construction Staging Plans	<input type="checkbox"/> Air Study	<input type="checkbox"/> Project Management Plan (Major Projects)
<input checked="" type="checkbox"/> Preliminary Roadway Plans	<input type="checkbox"/> Noise Study	<input type="checkbox"/> Alternatives Analysis Report
<input checked="" type="checkbox"/> Pavement Design Data	<input type="checkbox"/> Ecology Study	<input type="checkbox"/> Core Group Meeting Minutes
<input checked="" type="checkbox"/> Pavement Recommendation	<input type="checkbox"/> Hazardous Waste Study	<input checked="" type="checkbox"/> Final Design Public Involvement Action Plan
<input checked="" type="checkbox"/> Lighting Warrant Analysis Report	<input type="checkbox"/> Socio-Economic Study	<input type="checkbox"/> Complete Streets Checklist
<input type="checkbox"/> Initial Deforestation/ Reforestation Plan	<input checked="" type="checkbox"/> Cultural Resources Study	3.10 Contracts
<input checked="" type="checkbox"/> Preliminary Construction Schedule	<i>Section 4(f)</i>	<i>Final Design Addendum</i>
3.3 Structural Engineering	<input type="checkbox"/> Individual Section 4(f) Evaluation	<input checked="" type="checkbox"/> Final Design Designer Fee Proposal
<input checked="" type="checkbox"/> Structural Design Recommendation Summary	<input type="checkbox"/> Programmatic Section 4(f) Evaluation	
<input checked="" type="checkbox"/> Preliminary Geotechnical Engineering Report	<input checked="" type="checkbox"/> De Minimis Section 4(f) Evaluation	<input checked="" type="checkbox"/> Final Invoice
3.4 Right of Way and Access	<input type="checkbox"/> Net Benefit Section 4(f) Evaluation	<i>Final Design Independent Cost Estimate</i>
<input checked="" type="checkbox"/> Project Access Plan		<input checked="" type="checkbox"/> Summary Independent Cost Estimate Report
<input checked="" type="checkbox"/> Access Impact Summary	<input type="checkbox"/> Executive Order 215 (E.O. 215) Document	
<input checked="" type="checkbox"/> Right of Way Report		<input checked="" type="checkbox"/> Final Design Schedule
<input checked="" type="checkbox"/> Right of Way Impact Plan	<input type="checkbox"/> Environmental Impact Statement	<input checked="" type="checkbox"/> Final Design Budget
<input checked="" type="checkbox"/> Initial Right of Way Estimate	<input type="checkbox"/> Record of Decision (ROD)	<input checked="" type="checkbox"/> Notice of Authorization
3.5 Utility Engineering		3.11 Preliminary Engineering Approvals
<input checked="" type="checkbox"/> Utility Base Plans	<input checked="" type="checkbox"/> Categorical Exclusion Document	<input checked="" type="checkbox"/> Capital Program Screening Committee Recommendation
<input checked="" type="checkbox"/> Utility Letter No. 2	<input type="checkbox"/> Certified Categorical Exclusion Document	<input checked="" type="checkbox"/> Capital Program Committee Approval
<input type="checkbox"/> Utility Engineering Funding Authorization		<input checked="" type="checkbox"/> FHWA Approval



Preliminary Engineering

SUMMARY OF COMMITMENTS

List any commitments made to the public, local officials or other government agencies:

Project Commitment	Unit Requesting the Commitment	Unit Fulfilling Commitment	Special Needs

List any anticipated commitments that may be made:



Preliminary Engineering

APPROVAL		
Name	Title	Date Approved
	Manager Bureau of Landscape Architecture and Environmental Solutions	
	Project Manager Division of Project Management	
	Executive Regional Manager Division of Project Management	
	Director Division of Project Management	





Preliminary Engineering

PRELIMINARY ENGINEERING SCOPE OF WORK

Table of Contents

Page

Right of Way.....	8
Access	10
Drainage Management	11
Regional Maintenance	11
Hydrology and Hydraulics	11
Landscape	13
Environmental.....	15
Risk & Value Engineering	24
Utilities	25
Jurisdiction.....	27
Geometrics & Roadway	28
Design Exceptions	31
Pavement.....	32
Structures	33
Geotechnical	36
Survey	37
Railroads.....	39
Construction.....	40
Traffic Signal and Safety Engineering.....	41
Electrical	43
Traffic Operations and Intelligent Transportation System (ITS) Engineering.....	44
Commuter Mobility	45
Technical and Administrative Activities.....	46
Summary of Approvals	49

NOTE: The PE Designer will perform the tasks associated with PE as so marked, in preparation for Final Design. The Project Manager will review and negotiate the proposal, execute the Agreement and instruct the designer to begin work. The Project Manager will direct the proposed project through PE.



Right of Way

Activity No.	Activity Name	Execute	Responsible Unit	Comments
3110	Prepare ROW Report	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Designer	
3115	Initiate ROW Impact Plan	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Designer	
3120	Hold ROW Kickoff Meeting	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> ROW <input type="checkbox"/> DPM <input checked="" type="checkbox"/> Designer	
3125	Prepare Initial ROW Estimate	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> ROW <input type="checkbox"/> DPM	

Total Number of Parcels: 2

1. Fee Parcel /Easements

Number of fee parcels (partial):	0	Number of fee parcels (entire):	0	Number of residential relocations:	0
Number of permanent easements (E parcels):	0	Number of temporary easements:	2	Number of commercial relocations:	0

2. List any known or potential environmental problems or issues that may impact Right of Way processes or decisions (cross reference with the Environmental section of the Scope Statement document: None)
3. List any environmentally sensitive parcels (ESPs), underground storage tanks, freshwater wetlands: None
4. Identify Riparian Parcels (currently flowed), Easements and/or Green Acres Diversions by contacting NJDEP for any Right of Way to be acquired: None
5. Identify parcels that can be eliminated by design change modifications and attempts to mitigate damages suffered by the remaining properties. None
6. Decision to expand parcel for further use or contingency. _____
7. List the number of Non Real Estate Engineering (NRE) parcels. _____
8. List any commitments and conditions made to the public or to private property owners that may impact Right of Way processes or decisions: _____
9. Green Acres mitigation method: Dollar Reimbursement Property Replacement



ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include number and type of parcels, known environmental problems, riparian parcels, public commitments, etc.

Temporary easements required for Block 12601 Lot 1 and Block 26302 Lot 7 for replacement of sidewalk along Lincoln Avenue between the bridge and E. State Street.



Access

Activity No.	Activity Name	Execute	Responsible Unit	Comments
3105	Prepare Project Access Plan and Access Impact Summary	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> DPM <input checked="" type="checkbox"/> Designer <input checked="" type="checkbox"/> OAD	

Number of Adjustments:	1	Number of Modifications:	0	Number of Revocations:	0
-------------------------------	---	---------------------------------	---	-------------------------------	---

1. Note any pending agreements or access applications within the proposed project limits: _____
2. Are proposed left turn lanes in compliance with the Access Level? Yes No
3. Is the proposed Typical Section of the roadway in compliance with the Highway Access Code? Yes No
4. Total No. of Driveways impacted: 1
5. Any commercial properties with access modifications and/or Revocations that have potential impacts to site parking slots, circulations and operation of business? Yes No
If yes, provide details of impact with Block and Lot Nos. _____
6. Any commercial properties that will require necessary assistance in the establishment of the alternative access (as per NJAC 16:47-4.33)? Yes No
If yes, provide details of assistance with Block and Lot Nos. _____
7. Any commercial properties that will require the preparation of an Access Impact Assistance (AIA) report? Yes No
If yes, provide Block and Lot Nos. _____

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include number of driveways impacted, pending agreements or major access permit applications, driveway modifications causing circulation issues, alternative access issues, Access Impact Assistance issues, etc.

The Lincoln Supply Company driveway will be impacted during construction however it is anticipated that access to the property will be maintained.



**Drainage Management
Regional Maintenance
Hydrology and Hydraulics**

Activity No.	Activity Name	Execute	Responsible Unit	Comments
3085	Prepare Preliminary Drainage Design	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> DPM <input checked="" type="checkbox"/> Designer	

Drainage Management

1. Identify all existing drainage deficiencies as per the Drainage Management System: _____

Regional Maintenance

2. Identify all existing drainage deficiencies (undersized system, excessive spread into travel lanes, insufficient inlets, flooding at low points, etc.): _____

Hydrology and Hydraulics

3. List proposed improvements including outfalls (especially tidal): _____

4. Is compliance with Stormwater Management rules triggered (> 1/4 acre new impervious surface, or 1 acre disturbance)? Yes No

5. Identify all NJDEP permits required: Flood Hazard Area individual permit, Freshwater Wetlands general permit, Stormwater construction general permit

6. List proposed structural Best Management Practices (BMP) (e.g., Bioretention System, Constructed Wetlands, extended detention basins, infiltration system, wet ponds, porous pavement): _____

7. List proposed nonstructural BMP (e.g., Vegetation and Landscaping, Minimize Site Disturbance, Impervious Area Management, and Time of Concentration Modifications): _____

8. Identify drainage outflow owner: _____ Will property rights need to be acquired? Yes No



Preliminary Engineering

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include drainage deficiencies, new/improved outfalls, storm water management rules, permits, Best Management Practices (structural and non-structural), easements/right-of-way, etc.

The PPA stays within the SWM thresholds. Since stormwater is not permitted to "air drop" onto railroad property, scuppers cannot be proposed over these locations and the bridge must drain overland to the abutments and either 1) be allowed to air-drop or 2) continue to drain overland to stormwater inlets at the low points off the bridge. The existing scuppers appear to be non-functional and therefore, all inlets and points of discharge analyzed will receive similar volumes in the proposed condition.

It is anticipated that this project will require a Flood Hazard Area Individual Permit due to the pier and abutment work within the floodway and flood hazard area of the Assunpink Creek. A Freshwater Wetlands General Permit, stormwater construction permit and Green Acres involvement may also be required (Assunpink Greenway).



Landscape

Activity No.	Activity Name	Execute	Responsible Unit	Comments
3010	Determine and Calculate Deforested Areas	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer	

1. List any landscape architecture related commitments such as:

a. Wetland or Riparian Mitigation Planting:	
b. Historic Site commitments	
c. Vegetative Screens or Buffers	
d. Noise Barrier Aesthetics:	
e. Architectural Treatments on Bridge Retaining Walls:	
f. Tree Removal Mitigation:	
g. Urban Design Work (paving, streetscapes, etc.):	
h. Aesthetic plantings:	
i. Existing tree preservation and protection:	
j. Reforestation Application:	

2. Anticipated visualization work for in-house and public information meetings:

a. Rendered Plans:	
b. 2D computer generated before & after photographs:	
c. 3D computer generated mode:	



ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include screens or buffers, aesthetic plantings, mitigation plantings, reforestation, etc.



Environmental

Activity No.	Activity Name	Execute	Responsible Unit	Comments
3300	Initiate Cultural Resources (Section 106) Process	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> BLAES <input type="checkbox"/> Designer	NEC rail line
3305	Conduct CR Survey	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input checked="" type="checkbox"/> Designer	
3310	Prepare CR Survey Report	<input checked="" type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input checked="" type="checkbox"/> Designer	
3315	Review CR Survey Report	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> BLAES	
3320	Address Comments on CR Survey Report	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> BLAES <input checked="" type="checkbox"/> Designer	
3325	Approve CR Survey Report	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> BLAES	
3330	Obtain SHPO Concurrence (No Resources, No Effect, No Adverse Effect)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> BLAES <input checked="" type="checkbox"/> SHPO	
3335	Prepare Draft MOA (Adverse Effect Only)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer	
3340	Obtain SHPO Concurrence (No Adverse Effect with Conditions or Adverse Effect)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> SHPO	
3345	Obtain FHWA Approval of CR Survey Report	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> FHWA <input type="checkbox"/> BLAES	
3350	Prepare Adverse Effect Documentation & Submit to FHWA (Adverse Effect Only)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES	
3355	FHWA Sends Adverse Effect Documentation to ACHP	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> FHWA	
3360	ACHP Reviews and Accepts or Declines Participation	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> ACHP	
3365	Resolve Adverse Effects	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> FHWA	
3370	Circulate MOA for Comment	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES	



Preliminary Engineering

3375	Prepare Final MOA	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES	
3380	Execute the MOA	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> DPM <input type="checkbox"/> FHWA <input type="checkbox"/> ACHP <input type="checkbox"/> SHPO	
3390	Submit Historic Sites Council Application	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer <input type="checkbox"/> SHPO	
3395	Present to Historic Sites Council	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Historic Sites Council	
3400	Inform Jurisdictional Agency Regarding Programmatic Section 4(f) Impacts	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES	
3405	Receive Concurrence Regarding Programmatic Section 4(f) Impacts	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Jurisdictional Agencies	
3410	Prepare Programmatic Section 4(f) Evaluation	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input checked="" type="checkbox"/> BLAES <input type="checkbox"/> Designer	
3420	Prepare De Minimis Section 4(f) Evaluation	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> BLAES <input type="checkbox"/> Designer	Monmouth Field (Assunpink Greenway)
3425	Prepare Programmatic Net Benefit Section 4(f) Evaluation	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer	
3430	NJDOT Reviews Programmatic Section 4(f) Evaluation	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES	
3435	Revise Programmatic Section 4(f) Evaluation (NJDOT Comments)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer	
3440	FHWA Reviews Programmatic Section 4(f) Evaluation	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> FHWA	
3445	Revise Programmatic Section 4(f) Evaluation (FHWA Comments)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer <input type="checkbox"/> FHWA	
3450	FHWA Approves Programmatic Section 4(f) Evaluation	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> FHWA	
3460	Inform Jurisdictional Agency Regarding Draft Individual Section 4(f) Impacts	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES	



Preliminary Engineering

3465	Receive Concurrence Regarding Draft Individual Section 4(f) Impacts	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Jurisdictional Agencies	
3470	Prepare Draft Individual Section 4(f) Evaluation	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer	
3475	NJDOT Reviews Draft Individual Section 4(f) Evaluation	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES	
3480	Revise Draft Individual Section 4(f) Evaluation (NJDOT Comments)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer	
3485	FHWA Reviews and Comments on Draft Individual Section 4(f) Evaluation	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> FHWA	
3490	Revise Draft Individual Section 4(f) Evaluation (FHWA Comments)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer <input type="checkbox"/> FHWA	
3495	Conduct Draft Individual Section 4(f) Legal Sufficiency Review	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer <input type="checkbox"/> FHWA	
3500	Circulate Draft Individual Section 4(f) Evaluation	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer	
3505	Prepare Final Individual Section 4(f) Evaluation	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer	
3510	FHWA Approves Final Individual Section 4(f) Evaluation	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> FHWA	
3520	Inform Green Acres Program and Local Officials	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES	
3525	Receive Concurrence on Green Acres Impacts	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Green Acres Prog. <input type="checkbox"/> Local Officials	
3530	Hold Green Acres Pre-Application Meeting	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer	
3535	Negotiate Green Acres Compensation	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer <input type="checkbox"/> Green Acres Prog. <input type="checkbox"/> Local Officials <input type="checkbox"/> ROW Tech. Support	
3540	Identify Alternatives (EA Only)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> DPM <input type="checkbox"/> Designer	

Lincoln Avenue Bridge Replacement



Preliminary Engineering

3545	Prepare EA or EA/4(f)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Designer	
3550	NJDOT Reviews EA	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES	
3555	Revise EA (NJDOT Comments)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Designer	
3560	FHWA Reviews EA	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> FHWA	
3565	Revise EA (FHWA Comments)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer	
3570	FHWA Approves EA	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> FHWA	
3575	Conduct Draft Individual Section 4(f) Legal Sufficiency Review (EA)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer <input type="checkbox"/> FHWA	
3580	Circulate EA	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer	
3585	Hold EA Public Hearing and Comment Period	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer <input type="checkbox"/> CCR	
3590	Address EA Comments	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer <input type="checkbox"/> FHWA	
3595	Submit FONSI Request Package	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES	
3600	FHWA Approves Final Individual Section 4(f) (EA)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> FHWA	
3605	FHWA Reviews and Issues FONSI	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> FHWA	
3610	Publish Notice of FONSI Availability	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer <input type="checkbox"/> CCR	
3620	Publish Notice of Intent in Federal Register (EIS Only)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> FHWA	
3625	Invite Cooperating Agencies (EIS Only)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> FHWA	
3630	Hold NEPA Scope Meeting (EIS Only)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> DPM <input type="checkbox"/> Designer <input type="checkbox"/> FHWA	



Preliminary Engineering

3635	Prepare Alternatives Analysis Report	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> DPM <input type="checkbox"/> Designer	
3640	Prepare DEIS or DEIS/4(f)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Designer	
3645	NJDOT Reviews DEIS	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES	
3650	Revise DEIS (NJDOT Comments)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Designer	
3655	FHWA Reviews DEIS	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> FHWA	
3660	Revise DEIS (FHWA Comments)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer	
3665	FHWA Approves DEIS to Circulate	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> FHWA	
3670	Publish Notice of Availability in Federal Register (DEIS)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> EPA	
3675	Circulate DEIS	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer	
3680	Hold EIS Public Hearing and Comment Period	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> CCR <input type="checkbox"/> Designer	
3685	Address Public and Agency Comments	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer	
3690	Select Final Alternative	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> DPM <input type="checkbox"/> FHWA <input type="checkbox"/> SME's	
3215	Present to Capital Program Screening Committee	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> DPM	
3220	Capital Program Committee Approves Final Alternative	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> DPM <input type="checkbox"/> CPC	
3700	Prepare and Submit FEIS	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer	
3705	FHWA Reviews and Comments on FEIS	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> FHWA	
3710	Address FEIS Comments	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer	
3715	FHWA Reviews FEIS for Legal Sufficiency and Approval	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer <input type="checkbox"/> FHWA	



Preliminary Engineering

3720	Publish EIS Notice of Availability in Newspaper	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> CCR	
3725	Publish FEIS Notice in Federal Register	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> EPA	
3730	FHWA Publishes ROD in Federal Register	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> FHWA	
3735	Circulate FEIS	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer	
3740	Conduct Air Quality Study	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer	
3745	Prepare Air Quality TES	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer	
3750	NJDOT Reviews Air Quality TES	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES	
3755	Address Air Quality TES Comments	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer	
3760	Approve Air Quality TES	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> FHWA <input type="checkbox"/> BLAES	
3765	Conduct Ecology Study	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer	
3770	Prepare Ecology TES	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer	
3775	NJDOT Reviews Ecology TES	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES	
3780	Address Ecology TES Comments	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer	
3785	Approve Ecology TES	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES	
3790	Conduct Socio-Economic Study	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer	
3795	Prepare Socio-Economic TES	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer	
3800	NJDOT Reviews Socio-Economic TES	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES	
3805	Address Socio-Economic TES Comments	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer	
3810	Approve Socio-Economic TES	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES	



Preliminary Engineering

3815	Conduct Noise Study	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer	
3820	Prepare Noise TES	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer	
3825	NJDOT Reviews Noise TES	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES	
3830	Address Noise TES Comments	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer	
3835	Approve Noise TES	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> FHWA	
3840	Conduct Hazardous Waste Study	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer	
3845	Prepare Hazardous Waste TES	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer	
3850	NJDOT Reviews Hazardous Waste TES	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES	
3855	Address Hazardous Waste TES Comments	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer	
3860	Approve Hazardous Waste TES	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES	
3865	Hold Public Information Center	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> CCR <input checked="" type="checkbox"/> Designer <input type="checkbox"/> DPM	Mercer County
3870	Prepare CED	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> BLAES <input checked="" type="checkbox"/> Designer	
3875	NJDOT Reviews and Approves CED	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> BLAES	
3880	Initiate Environmental Technical Studies	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES	
3890	Prepare Certified Categorical Exclusion (CCED) Document	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES	
3900	Review and Approve Certified Categorical Exclusion Document (CCED)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES	
3910	Prepare Draft EO 215 Document	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer	
3920	NJDOT Reviews Draft EO 215 Document	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES	
3925	Revise Draft EO 215 Document (NJDOT Comments)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES	

Lincoln Avenue Bridge Replacement



NJDOT Scope Statement

Preliminary Engineering

			<input type="checkbox"/> Designer	
3930	NJDEP Reviews EO 215 Document	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> NJDEP	
3940	Address NJDEP Comments and Prepare Final EO 215 Document	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> BLAES <input type="checkbox"/> Designer	
3945	NJDEP Approves EO 215 Document	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> NJDEP	

Anticipated Environmental Document: CCED CED EA EIS EO 215

Total Number of Permits: 3

- List any environmental impacts and/or issues: _____
- List any environmental commitments (made in approved environmental documents, through Memoranda of Agreement with environmental agencies, other commitments made to the public, local officials or other government agencies such as 4f, Section 106 (historic architecture, archaeology), air, noise, hazardous waste and ecology: _____
- Check the environmental clearances or permits required on the project:

Federal

- | | | |
|---|---|--|
| <input type="checkbox"/> U.S. Coast Guard (Bridge) | <input type="checkbox"/> USACOE Section 10 (Navigable Waters) | <input type="checkbox"/> USDOA Forms AS-1006 |
| <input type="checkbox"/> USACOE Section 404 (Individual/Nationwide) discharge of fill | <input type="checkbox"/> USACOE Section 9 (Dam or Dike) | <input type="checkbox"/> Section 7 Endangered Species Consultation |
| | <input type="checkbox"/> National (or State) Wild & Scenic Rivers | <input type="checkbox"/> NMFS Essential Fish Habitat Study |

State

- | | | | |
|---|---|---|---|
| <input type="checkbox"/> CAFRA | <input type="checkbox"/> Hazardous Waste Site Investigation (SI/RI) | <input type="checkbox"/> NJDEP Tidal Wetlands | <input type="checkbox"/> NJDEP Pollutant Discharge |
| <input type="checkbox"/> NJDEP Water Lowering | <input type="checkbox"/> HazWaste Remedial Action Work plan | <input type="checkbox"/> NJDEP Waterfront Development | <input checked="" type="checkbox"/> NJDEP Flood Hazard Area |
| <input type="checkbox"/> NJDEP Riparian | <input type="checkbox"/> NJDEP Sanitary Facilities | <input checked="" type="checkbox"/> NJDEP Freshwater Wetlands | <input type="checkbox"/> NJDEP Water Quality Certificate |
| | | <input checked="" type="checkbox"/> NJDEP NJPDES Stormwater Construction GP (RFA) | |

Other

- | | | |
|--|--|---|
| <input type="checkbox"/> Delaware River Basin Commission | <input type="checkbox"/> Hackensack Meadowlands Commission | <input type="checkbox"/> Highlands Commission |
| <input type="checkbox"/> Delaware & Raritan Canal Commission | <input type="checkbox"/> Pinelands Commission | <input type="checkbox"/> State Agriculture Development Commission |



ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include a list of the anticipated NEPA document, type of permits anticipated, anticipated environmental impacts and environmental commitments made in CD if any, etc.

It is anticipated that Final Design Activity 4360, Delineate Wetlands will be advanced to PE to identify impacts resulting from the PPA.



Risk & Value Engineering

Activity No.	Activity Name	Execute	Responsible Unit	Comments
	Risk Assessment	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Designer	Risk Register & URAP

Total Estimated Cost including Construction, ROW and Utilities: \$1-10 million \$10-20 million \$20-\$40 million >\$40 million
 Value Engineering Analysis Performed? Yes No
 Risk Analysis to be Performed? Yes No

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include Value Engineering Analysis, Risk Analysis, and Cost information

The risk management efforts conducted in CD consisted of development of a Risk Register and the Utility Risk Assessment Plan (URAP).



Preliminary Engineering

Utilities

Activity No.	Activity Name	Execute	Responsible Unit	Comments
3035	Prepare Utility Base Plans	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Designer	
3040	Establish Utility Engineering Funding	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> DPM <input type="checkbox"/> Designer <input type="checkbox"/> Program Coord.	
3045	Send Letter No. 2 and Plans to Utility Company	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> DPM <input checked="" type="checkbox"/> Designer <input checked="" type="checkbox"/> Utility Co.	
3050	Prepare Utility Agreement	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> DPM <input checked="" type="checkbox"/> Designer	
3055	Update Base Plans and Identify Conflicts	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> DPM <input checked="" type="checkbox"/> Designer <input checked="" type="checkbox"/> Utility Co.	
3060	Execute Utility Agreement	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> DPM <input checked="" type="checkbox"/> Utility Co. <input checked="" type="checkbox"/> DAG	
3080	Conduct Subsurface Utility Engineering (SUE)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> DPM <input checked="" type="checkbox"/> Designer <input checked="" type="checkbox"/> SUE Contractor <input checked="" type="checkbox"/> Utility Co.	
3985	Update Utility Risk Assessment Plan	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> DPM <input checked="" type="checkbox"/> Designer	

Total Number of Utility Companies: 11

Utility Type	Utility Company	Size (Units of Measure)	Location (aerial/underground)
Gas	PSE&G	20"x8" Pipe	Underground & On Structure
Electric	PSE&G	Volts	Aerial, Underground & On Structure
Cable	Comcast	Pairs/ Strands	Underground
Telephone	Verizon	Pairs/ Strands	Aerial & Underground
Water	Trenton Water	30" Cast Iron Pipe	Underground
Sewer	Trenton Sewer	Pipe	Underground
Fiber-Optic (non-Department)	AT&T		Underground
Other:	Fiber: Zayo		Underground
Other:	Amtrak: Catenary Lines		Aerial
Other:	Amtrak: Feeder Lines	138kV	Aerial
Other:	USGS Stream Gauge Station		Building adjacent to structure



Preliminary Engineering

1. Identify if the Utility Discover and Verification requires sub-surface utility exploration: _____
2. Is a SUE (Subsurface Utility Engineering) Consultant required? Yes No
3. Identify Potential Conflicts: PSE&G gas and electric will require relocation during replacement of the bridge. Due to its location within the substructure of 3 piers, it is anticipated that the 30" CIP water line will be relocated outside the area of the existing/proposed structure in order to reduce the potential for impacts or damage caused by construction activities.
4. Identify Temporary Relocations that are needed during construction: No temporary relocations are anticipated.
5. Number of poles? _____
6. Number of guy wires on existing poles? _____
7. Are there cell towers or substations? _____
8. Can utility relocations be avoided or performed in advance of the project? Relocation of the water line should be performed prior to replacement of the structure.
9. Can utility design/construction be performed by designer/contractor? _____
10. Can ROW needed for utilities be identified? Easements required for relocation of the water line in Amtrak & NJ Transit property.

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include location of cell towers, location/presence of fiber optic lines, etc.



Jurisdiction

Activity No.	Activity Name	Execute	Responsible Unit	Comments
		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		

Total Number of Maps: _____ Total Number of Agreements: _____

Are there streetscape or esthetic items intended for this project? Yes No

If yes, has a resolution of support been acquired for jurisdictional assignment? Yes No NA

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include the anticipated number of maps and agreements, presence of streetscape or aesthetic treatments, local approval of such, etc.

No jurisdictional changes are anticipated.



Geometrics & Roadway

Activity No.	Activity Name	Execute	Responsible Unit	Comments
3030	Prepare Horizontal & Vertical Geometry	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> DPM <input checked="" type="checkbox"/> Designer	
3070	Prepare Preliminary Roadway Plans	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> DPM <input checked="" type="checkbox"/> Designer <input checked="" type="checkbox"/> SME's	
3135	Prepare Construction Cost Estimate	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> DPM <input checked="" type="checkbox"/> Designer	
3165	Finalize Project Plan	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> DPM <input checked="" type="checkbox"/> Designer	

Construction Plans/Estimated Number of Sheets

Roadway and Bridges

- | | | |
|--|---|--|
| <u>1</u> Key Map | <u>4</u> Grades | <u>1</u> Method of Cross Sections |
| <u>1</u> Estimate-Distribution of Quantities | <u>20</u> Traffic Control and Staging Plans | <u>4</u> Cross Sections |
| <u>2</u> Typical Sections | <u>2</u> Traffic Control Plans | <u>1</u> Alternate Retaining Wall System |
| <u>1</u> Plan Sheet Index | <u>0</u> ITS Plans | <u>1</u> Estimate of Quantities – Bridge |
| <u>5</u> Construction Plans | <u>1</u> Electrical Details | <u>1</u> Earthwork Summary |
| <u>4</u> Environmental Plans | <u>1</u> Traffic Signal Plans | <u>1</u> Earthwork Chart Sheet |
| <u>3</u> Profiles | <u>4</u> Highway Lighting Plans | <u>5</u> Non-standard Roadway Construction Details |
| <u>2</u> Ties | <u>2</u> Landscape Plans | <u>5</u> Non-standard Bridge Construction Details |
| | <u>4</u> Traffic Signing and Striping Plans | <u>4</u> Drainage Plans |

Right of Way Documents

- | | | |
|------------------------------------|---------------------------|--------------------------------------|
| _____ Entire Tract Map | _____ Tabulation Sheets | _____ Individual Property Maps (IPM) |
| _____ General Property Parcel Maps | _____ Parcel Descriptions | _____ Alignment Sheets |

Other Documents

- | | | |
|--|------------------------------------|--|
| _____ Jurisdictional Maps | <u>12</u> Utility Agreements Plans | <u>3</u> Railroad Crossing Element Plans |
| <u>1</u> Project Specific Specifications | | |

Are there any additional documents? Yes No

Lincoln Avenue Bridge Replacement



Preliminary Engineering

Please identify any additional documents: Design Exception Report

1. Existing Roadway(s):

	Roadway No. 1	Roadway No. 2	Roadway No. 3	Roadway No. 4
Roadway Name:	Lincoln Avenue (CR 626)	Lincoln Avenue		
Posted Speed(s):	Not Posted	Not Posted		
Highway Classification:	Urban Minor Arterial	Urban Minor Arterial		
Significance (local or regional):	Local	Local		
No. of Interchanges:	0	0		
Traffic Volumes:	11,498 (2011)	11,604 (2012)		
Design Speeds:	30	30		
Development Class:	Urban	Urban		
No. of Traffic Signals:	1	0		
No. of Intersections:	1	1		

2. Typical Section(s):

	Typical Section No. 1	Typical Section No. 2	Typical Section No. 3	Typical Section No. 4
Right of Way width:	60 ft	60 ft		
Number of Lanes:	2	2		
Lane width & cross slope:	18 ft (parabolic)	18 ft (parabolic)		
Shoulder width & cross slope:	N/A	N/A		
Median width:	N/A	N/A		
Sidewalk/border width:	6 ft	6 ft		
Median description and the overall roadway width:	N/A	N/A		

3. Intersection/Interchange (describe the existing intersection and/or interchanges including turning and auxiliary lanes.): _____



Preliminary Engineering

4. Existing Deficiencies (provide an overview of the existing deficiencies. *Geometric*: Substandard horizontal and vertical sight distance, insufficient sight triangle, substandard vertical clearance, substandard or no shoulders, acceleration/deceleration lanes, etc. *Safety Issues*: check crash data for indicators of specific problems. Substandard/nonexistent guiderail, attenuators, pavement condition, skid resistance, median, etc. Note on substandard guiderail: the project limits should be extended to include upgrading any existing substandard guiderail run that extends beyond the proposed work limits as required by the Design Manual.): Existing CSDE's include SSD on vertical curve along Lincoln Avenue at the intersection of E. State Street, substandard cross slope along the structure, substandard lane widths along Lincoln Avenue at the intersection of E. State Street, shoulder widths throughout, and vertical clearance over the Amtrak and inactive NJ Transit tracks. Existing through-girders exist within the clear zone and limit horizontal sight distance along the broken back curves.

5. Proposed Improvements (provide a brief narrative of the proposed improvements and how they address the identified deficiencies. Note changes to be made to profiles, alignment, guiderail, and typical section): Full replacement of the existing substructure and superstructure using steel multi-girders on the existing horizontal alignment. Increase the vertical profile to meet the minimum 24'-6" vertical under-clearance over Amtrak and inactive NJ Transit tracks. Provide cross section with standard 12-foot wide lane, 8-foot wide shoulder, and 6-foot wide sidewalk in each direction will provide standard lane and shoulder widths as well as standard cross slopes along the proposed structure. Minor widening along Lincoln Avenue in approach to E. State Street to provide standard 12-foot wide lanes.

6. Bicycle/Pedestrian Compatible? Yes No

If no, please explain: The existing project area is pedestrian compatible and will remain compatible throughout construction and in the proposed final condition. Where standard width shoulders are present, bicycle lane markings will be provided, however at both project end limits "sharrows" and "share the road" signing will be necessary as the travel lane will need to accommodate both vehicles and bicycles it is not feasible to widen the roadway enough to provide a standard width shoulder or bicycle lane.

7. List any commitments made to the public, local officials or other government agencies: Public commitments: Lighting to be maintained for pedestrians and vehicles. Architectural treatments to be provided to increase structure aesthetics.

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include a discussion of substandard design elements, design exceptions, and perhaps a quick description of the proposed geometry if it is unusual, commitments made to the community, etc.



Design Exceptions

Activity No.	Activity Name	Execute	Responsible Unit	Comments
3150	Prepare Design Exception Report	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> DPM <input checked="" type="checkbox"/> Designer <input checked="" type="checkbox"/> QMS <input type="checkbox"/> State Trans. Engr. <input type="checkbox"/> FHWA	Mercer County

1. Design Exception(s):

- a. Is a Design Exception required? Yes No
- b. List substandard features that are to remain and require Design Exception: SSD on vertical curve and shoulder width
- c. Has the Design Exception Crash Analysis been received from the Bureau of Safety Programs? Yes No
- d. Has the Design Exception Crash Data for each controlling substandard design element been requested from the Bureau of Safety Programs? Yes No
- e. Has FHWA provided preliminary concurrence on the Design Exceptions decisions (a) and (b) above? Yes No
- f. Has Value Solutions provided Reasonable Assurance on the Design Exceptions decisions (a) and (b) above? Yes No

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include evidence of subsurface drainage issues, settlement problems, stability problems, etc.

The remaining CSDE features exist at the end limits of the project and cannot feasibly be corrected without significant impacts to adjacent buildings and properties and extension of project limits.



Preliminary Engineering

Pavement

Activity No.	Activity Name	Execute	Responsible Unit	Comments
3960	Obtain Pavement Design Data	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> DPM <input type="checkbox"/> Designer	Mercer County
3970	Collect Existing Pavement and Subgrade Soil Information	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Pvmt. Design Unit <input type="checkbox"/> Designer	
3975	Conduct Pavement Testing Program	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Pvmt. Design Unit <input type="checkbox"/> Designer	
3995	Preform Pavement Lifecycle Cost Analysis	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Pvmt. Design Unit <input type="checkbox"/> Designer	
3980	Prepare Pavement Recommendation	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Pvmt. Design Unit <input type="checkbox"/> Designer	Mercer County

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include evidence of subsurface drainage issues, settlement problems, stability problems, etc.

It is anticipated that Mercer County will provide the designer with a proposed pavement design.



Preliminary Engineering

Structures

Activity No.	Activity Name	Execute	Responsible Unit	Comments
3100	Prepare Structural Design Recommendation Summary	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Designer <input type="checkbox"/> SME's	

Total Number of New Bridges:	0	Total Number of New Spans:	0
Total Number of Rehab Bridges:	0	Total Number of Rehab Spans:	0
Total Number of Replacement Bridges:	1	Total Number of Replacement Spans:	6

1. Condition of existing bridge(s):

	Bridge No. 1	Bridge No. 2	Bridge No. 3	Bridge No. 4
a. NJDOT Structure Number:	1100-055			
b. Year Built:	1931			
c. Date/type of any major modifications:	1965 (Reconstruction)			
d. Type & material of superstructure:	Steel through-girder, steel floorbeams, concrete piers, deck & parapets			
e. Type and material of substructure:	Concrete piles			
f. Feature that is spanned:	Amtrak & inactive NJ Transit tracks, Assunpink Creek			
g. Type of roadway it carries:	Urban Minor Arterial			
h. Vertical Clearance of structure if it spans a roadway or railroad:	20'-9"			
i. Number of Spans:	8			
j. Length of Structure:	687 feet			
k. Width of Structure:	56 feet			
l. Horizontal Clearance of the pier/abutment with respect to the riding lane:	N/A			

Lincoln Avenue Bridge Replacement



Preliminary Engineering

	Bridge No. 1	Bridge No. 2	Bridge No. 3	Bridge No. 4
m. Typical Section (number of lanes, width and cross slope and width of each sidewalk):	Two 18-foot wide travel lanes with a 6-inch parabolic cross slope, two 6-foot wide sidewalks			
n. Parapet railing Type:	Concrete			
o. Identify the structural deficiencies:	Severely corroded steel, large spalled / delaminated concrete			
p. Bridges over waterways (Identify scouring evaluation, bridge opening capacity, and frequency of storm):	Structure is not scour critical			

2. Proposed Bridge(s)/Bridge Improvements:

	Bridge No. 1	Bridge No. 2	Bridge No. 3	Bridge No. 4
a. Number of spans:	6			
b. Identify the type of maintenance of traffic that will be used (staging or detour):	Staging with a one-way detour			
c. Identify the changes to the typical section of the existing structure:	Two 12-foot wide lanes with 1.5% cross slope, two 8-foot wide shoulders with 2% cross slope, and two 6-foot wide sidewalks			
d. Vertical Clearance of structure if it spans a roadway or railroad:	24'-6" over Amtrak and inactive NJ Transit tracks			
e. Length of Structure:	687 feet			
f. Width of Structure:	54 feet			
g. Horizontal Clearance of the pier/abutment with respect to the riding lane:	N/A			
h. Typical Section (number of lanes, width and cross slope and width of each sidewalk):	Two 12-foot wide lanes with 1.5% cross slope, two 8-foot wide shoulders with 2% cross slope, and two 6-foot wide sidewalks			

Lincoln Avenue Bridge Replacement



Preliminary Engineering

	Bridge No. 1	Bridge No. 2	Bridge No. 3	Bridge No. 4
i. Parapet railing Type:	Concrete			
j. Identify the structural deficiencies:	N/A			
k. Coast Guard Permit Required:	No			

3. Are the minimum vertical clearance requirements over waterways, roadways, railroads met? Yes No

a. If no, please explain? _____

4. List other substandard features of proposed bridge: _____

5. Other Existing Structure(s):

a. Identify existing minor structures (Noise barriers, Retaining Walls (cast in place or alternate system), Gabions, High Tower Lighting foundations, Pre-cast Culverts, Culvert extensions, Type and number of Overhead Sign Structures): A retaining wall exists along the northerly side of Lincoln Avenue separating the roadway and sidewalk from the parking area of Block 26302 Lot 7 as it approaches the bridge.

b. Specify type and number of each substandard feature: _____

6. Proposed Other Structure(s):

	Structure No. 1	Structure No. 2	Structure No. 3	Structure No. 4
a. Identify changes in the existing minor structure that are being improved:				
b. List substandard features to be included in the design exception:				
c. Length:				
d. Width:				
e. Number of spans/units:				

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include scour, unusual existing or proposed structural elements, clearances, substandard elements, design exceptions, etc.



Preliminary Engineering

Geotechnical

Activity No.	Activity Name	Execute	Responsible Unit	Comments
3095	Prepare Preliminary Geotechnical Engineering Report	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Geotechnical Engineering Unit <input type="checkbox"/> DPM <input checked="" type="checkbox"/> Designer	

1. Is there evidence of subsurface drainage problems? No
2. Is there evidence of settlement problems? No
3. Is there evidence of stability problems? No
4. Is there evidence of scour problems? No
5. Are there existing soil-borings within the project limits? No
6. Are there rock slopes/cuts located within the project limits? No
 - a. Are the rock cuts listed in the Rockfall Hazard Rating System? _____
 - b. Do catchment areas need to be cleaned or modified? _____
 - c. Are there apparent safety problems with protruding rock, sight lines, rock-fall and substandard existing mitigation measures? _____
7. Alternate site exploration (test pits)? _____

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include rock slope issues, soil borings, scour, unusual existing or proposed structural elements, clearances, etc.

Soil borings for the proposed substructure design and geotechnical design will be performed during Preliminary Engineering. Therefore, it is anticipated that Final Design Activities 4300, Develop Subsurface Exploration Program; 4305, Gather Subsurface Information; 4315, Complete Final Bridge Analysis; and 4320, Conduct Geotechnical Foundation, Roadway and Rock Slope Design will be advanced to PE. The subsurface soil condition is expected to be a 20 to 25 feet of loose to medium sand intermixed with gravels underlain by 15 to 20 feet of soft to medium consistency residual cohesive soils and decomposed rock. The bed rock is expected at about 60 feet below the ground surface.



Survey

Activity No.	Activity Name	Execute	Responsible Unit	Comments
3015	Prepare Control Survey Report	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> DPM <input type="checkbox"/> Designer <input type="checkbox"/> Geodetic Survey	
3020	Conduct Topographic Survey	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Designer <input type="checkbox"/> Geodetic Survey	
3025	Prepare Base Maps	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> DPM <input type="checkbox"/> Designer <input type="checkbox"/> Geodetic Survey <input type="checkbox"/> CADD Support	

1. Identify available mapping information (aerial/conventional methods): aerial and conventional methods
2. How were the existing and proposed baselines established? Existing baseline is best fit to the centerline of the roadway
3. How were the existing and proposed ROW lines established? title research, deeds, tax maps, property monuments
4. How was the horizontal and vertical control established; and which existing monumentation was used? _____
5. Is project in Tidal area? Yes No
 If yes, then current mean high water elevation must be established in tidal water areas under Tideland Bureau jurisdiction. _____
6. Has NJDOT Regional Survey office been contacted regarding existing Control, and as-built plans within the project? No
7. Compliance with MAP filing law required? Yes No
8. Has NJDOT Geodetic Survey been contacted regarding existing control within the project? Yes No
9. Does Primary Control exist within the project limits or immediately adjacent to the project? Yes No
 If yes, what year was control established in? 2015
 If no, will primary control be required? _____
10. Will plans be developed from aerial photogrammetry or as-built plans and conventional survey? Aerial photogrammetry
11. Geodetic Survey Services will be provided by: In-House Consultant



Preliminary Engineering

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include base mapping obtained in CD, tidal issues, compliance with MAP filing laws, geodetic control issues, etc.

Survey was developed in the Concept Development phase by Churchill Consulting Engineers. It is anticipated that Final Design Activity 4215, Conduct Supplemental Surveys will be advanced to PE to coincide with the proposed geotechnical design and wetland delineation.



Preliminary Engineering

Railroads

Activity No.	Activity Name	Execute	Responsible Unit	Comments
3075	Hold Diagnostic Team Meeting	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Railroad Eng. & Safety Unit <input type="checkbox"/> DPM <input checked="" type="checkbox"/> Designer	Mercer County (To include 30% and 60% submission to Amtrak per FD Activity 4110)

Railroads Affected Amtrak NJ Transit Select RR Line 3 _____

1. **Grade Crossings Affected?** Yes No
 - a. **How many?** _____
2. **Is there sufficient overhead structure clearance?** Yes No
3. **Diagnostic Team Meeting Required:** Yes No
4. **Diagnostic Team Meeting Held:** _____ (DATE)

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include presence of at-grade crossings, overhead structure clearances, diagnostic team meetings, etc.

Close coordination with Amtrak and NJ Transit is required for development of the proposed staging, construction schedule, and determination of any impacts to existing railroad operations or equipment. In addition, relocation of existing catenary lines off of the structure will likely require reprofiling and may require new catenary structures. The proposed structure will meet all horizontal and vertical clearances.

During PE, a Design Phase Agreement with Amtrak will be established to review plans, perform inspections, prepare estimates for subsequent phases and attend meetings. Preliminary roadway and bridge plans will be prepared and submitted to Amtrak as a 30% and 60% submission as required in FD Activity 4110 (to be advanced to PE). Included within the submission is a proposed construction sequence for railroad work that will minimize impacts to existing facilities.



Preliminary Engineering

Construction

Activity No.	Activity Name	Execute	Responsible Unit	Comments
3130	Update Preliminary Detour and Construction Staging Plans	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Designer <input type="checkbox"/> TSSE <input checked="" type="checkbox"/> SME's	
3145	Conduct Constructability and Maintenance Review	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> DPM <input checked="" type="checkbox"/> Designer <input checked="" type="checkbox"/> Const. Mgmt.	

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include commitments made to local officials or other agencies, staging details, detour discussion, schedule constraints, utility conflicts, etc.

The bridge replacement would be constructed in the following preliminary sequence:
Pre-Stage 1 - Remove all catenary connections from the existing bridge and perform any required catenary reprofiling.

Stage 1 - Lincoln Avenue eastbound traffic will be detoured to N. Clinton Avenue northbound, N. Olden Avenue eastbound, and E. State Street southbound back to Lincoln Avenue. Maintain Lincoln Avenue westbound vehicular traffic and all pedestrian traffic on the northern side of the structure. Construct temporary supports in preparation for demolition of the southern side of the structure. Demolish and construct the southern side of the structure and relocate the on-structure gas main and electric conduits as well as the subsurface water main.

Stage 2 - Shift the Lincoln Avenue westbound traffic and pedestrian traffic to the newly constructed southern side of the structure. Demolish and construct the northern side of the structure.



Traffic Signal and Safety Engineering

Activity No.	Activity Name	Execute	Responsible Unit	Comments
3090	Determine Traffic Engineering Facility Locations	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> TSSE <input checked="" type="checkbox"/> Designer	

Number of New Traffic Signals:	0	Number of Revised Traffic Signals:	0
New overhead signs and sign structures	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Revised overhead signs and sign structures	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
New Guide Signs	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Revised Guide Signs	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Number of Roundabouts:	0	Emergency signal pre-emption	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Revised Highway Lighting	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Temporary Lighting "for staging and diversion roadways"	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Raised Pavement Markers	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		

- Maintenance of Traffic: (What type of maintenance of traffic will be used during construction, i.e. staging, detour, permanent lane closures, or diversion road): Staging and partial detour
- Identify the number and location of temporary traffic signal(s) required during Staging or Detours: Revised timings required for the following intersections: Lincoln Avenue and E. State Street, Lincoln Avenue and N. Clinton Avenue, N. Clinton Avenue and N. Olden Avenue, and N. Olden Avenue and E. State Street.
- Is there an adequate corner ROW cutout for signal equipment installation? Yes No
- Identify if a new or revised traffic signal agreement is required: None
- Identify overhead utility conflicts for traffic signals to be identified and resolved: _____



Preliminary Engineering

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include discussion of need for temporary signals, right-of-way constraints (related to traffic signal equipment), utility conflicts, etc.

It is anticipated that the existing lighting fixtures located along Lincoln Avenue will be replaced by decorative lighting for pedestrian and roadway illumination.

In order to improve operations while the Lincoln Avenue eastbound detour is in place, revised traffic signal timings are required at the following intersections: Lincoln Avenue and E. State Street, Lincoln Avenue and N. Clinton Avenue, N. Clinton Avenue and N. Olden Avenue, and N. Olden Avenue and E. State Street.



Preliminary Engineering

Electrical

Activity No.	Activity Name	Execute	Responsible Unit	Comments
		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		

1. Do any elements of this project scope require additional planned maintenance activities that would necessitate an increase in personnel or equipment resources? Yes No

If yes, provide details: _____

2. Do any elements of this project scope include new roadway/electrical appurtenances that would require specialized training, equipment or materials to properly maintain the item (e.g., Vortech drainage chamber, ornamental lighting, and brick pavers)? Yes No

If yes, provide details: Ornamental or decorative lighting fixtures are preferred for use in roadway and pedestrian lighting on the proposed structure.

3. Does this project scope include or overlap sections of roadway that are simultaneously being planned or scheduled for Operations maintenance/construction activities? Yes No

If yes, provide details: _____

4. Should consideration be given to canceling or postponing the Operations activity? Yes No

If yes, provide details: _____

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include elements of the design that will necessitate an increase in maintenance personnel or equipment, conflicting or overlapping projects with Operations, etc.



Traffic Operations and Intelligent Transportation System (ITS) Engineering

Activity No.	Activity Name	Execute	Responsible Unit	Comments
3065	Prepare Preliminary ITS Facility Design	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> Designer <input type="checkbox"/> ITS <input type="checkbox"/> Traffic Ops	

1. Project scope complies with the requirements of the latest ITS Investment Strategy and ITS Architecture? Yes No

2. Traffic Operations (North/ South) has been consulted for needs and impacts? Yes No

Identify needs and impacts. _____

3. Transportation Data Development has been consulted for needs and impacts? Yes No

Identify needs and impacts. _____

4. Project limits have been visually inspected for the existing ITS facilities? Yes No

5. Check if the project includes the construction or relocation of any of the following Intelligent Transportation System (ITS) facilities:

- | | | |
|--|---|---|
| <input type="checkbox"/> Controlled Traffic Signal Systems (CTSS) | <input type="checkbox"/> Dynamic Message Signs (DMS) | <input type="checkbox"/> Traffic Detection systems |
| <input type="checkbox"/> Weigh-in-Motion (WIM) | <input type="checkbox"/> Roadway Weather Information Systems (RWIS) | <input type="checkbox"/> Fiber Optic Conduit and/or Cable |
| <input type="checkbox"/> Closed Circuit TV Cameras (CCTV) | <input type="checkbox"/> Highway Advisory Radio (HAR) | <input type="checkbox"/> Bridge Sensors |
| <input type="checkbox"/> Traffic Volume Stations | <input type="checkbox"/> In-Road Sensors | |
| <input type="checkbox"/> Electrical or Communication Installations for the above systems | | |
| <input type="checkbox"/> Other ITS Devices: _____ | | |

6. Check if real time work zone ITS Systems are to be deployed during construction:

- | | | |
|--|---|--|
| <input type="checkbox"/> Travel Time | <input type="checkbox"/> Queue Detection | <input type="checkbox"/> Dynamic Merge |
| <input type="checkbox"/> Traffic Cameras | <input type="checkbox"/> Variable Speed Limit or Advisory | <input type="checkbox"/> Other _____ |

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include compliance with latest ITS Investment Strategy and Architecture, consultation with Traffic Ops during CD, etc.

No ITS facilities are proposed and there are no existing facilities that would be impacted by construction.



Commuter Mobility

Activity No.	Activity Name	Execute	Responsible Unit	Comments
	Complete Streets	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Mercer County	

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.

Examples of information for this section include bicycle and pedestrian compatibility, Complete Streets compliance, presence of bus stops, interruption of pedestrian accommodations during construction, ADA issues, etc.

Sidewalks exist and will be retained along both sides of Lincoln Avenue throughout the project limits. Shoulders with widths of 8 feet or more which can accommodate bicyclists are proposed along the majority of the project limits except for the eastern and western limits of the project. The cross section of the western project limit consists of two 13 foot wide lanes and no shoulders. The proposed cross section of the eastern project limit consists two 14-foot wide shared vehicular/bicycle lanes and a 12-foot wide left turn lane for the intersection of Lincoln Avenue and E. State Street.



Preliminary Engineering

Technical and Administrative Activities

Activity No.	Activity Name	Execute	Responsible Unit	Comments
3005	Initiate Preliminary Engineering	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> DPM <input checked="" type="checkbox"/> Designer	DPM=Mercer County (typ)
3160	Prepare Draft Preliminary Engineering Report	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> DPM <input checked="" type="checkbox"/> Designer	Mercer County
3170	Prepare Final Design Scope Statement	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> SME's <input checked="" type="checkbox"/> DPM <input checked="" type="checkbox"/> Designer	Mercer County
3175	Complete Preliminary Engineering Quality Certification	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Designer	
3180	Update Project Management Plan	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> DPM	Mercer County
3185	Prepare FD Public Involvement Action Plan	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> DPM <input checked="" type="checkbox"/> Designer <input checked="" type="checkbox"/> CCR	
3195	Prepare Project Management Plan (Major Projects)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> DPM <input type="checkbox"/> Designer	
3200	FHWA Approves Draft Project Management Plan (Major Projects)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> DPM <input type="checkbox"/> Designer <input type="checkbox"/> FHWA	
3205	NJDOT Reviews Draft Preliminary Engineering Report	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> DPM <input checked="" type="checkbox"/> SME's <input type="checkbox"/> Designer	Mercer County
3210	FHWA Reviews and Approves Preliminary Engineering Report	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<input type="checkbox"/> DPM <input type="checkbox"/> Designer <input type="checkbox"/> FHWA	
3225	Assess Designer	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> DPM	Mercer County
3230	Develop FD Designer Fee Proposal	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> Designer	
3235	Develop FD Independent Cost Estimate	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> DPM <input type="checkbox"/> OSBM	Mercer County
3240	Create FD Schedule	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> DPM <input type="checkbox"/> OSBM	Mercer County
3245	Negotiate FD Addendum	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> DPM <input checked="" type="checkbox"/> Designer <input type="checkbox"/> OSBM	Mercer County



Preliminary Engineering

3250	Approve FD Schedule	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> DPM <input type="checkbox"/> OSBM	DPM=Mercer County (typ)
3255	Develop FD Budget	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> DPM <input type="checkbox"/> OSBM	Mercer County
3260	Finalize FD Budget	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> DPM	Mercer County
3265	Approve FD Budget	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> DPM <input checked="" type="checkbox"/> OSBM	Mercer County/DVRPC
3270	Authorize Final Design	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> DPM <input type="checkbox"/> CIPD	Mercer County/DVRPC
3275	Execute FD Addendum	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> DPM <input type="checkbox"/> Designer	Mercer County/DVRPC
3285	Complete PE Closeout	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input checked="" type="checkbox"/> DPM	Mercer County/DVRPC

1. Have the objectives of the Public Involvement Action Plan (PIAP) been satisfied? Yes No

2. Number of Local Workshop Meetings conducted in CD: 0

3. Public Information Centers conducted in CD (number of meetings, location & dates): 1 PIC held on 11/9/2016 at the Catholic Youth Organization located at 794 East State Street in Trenton, NJ.

4. Number of Officials Briefings conducted in Concept Development: 1 - A local officials meeting was held on 4/4/2016

5. List Issues, Commitments or Concerns: _____

6. Is the mailing list up to date? Yes No

7. Are the Displays adequate to reuse in PE: Yes No

8. Resolution of Support Number: _____

Resolution of Support Date: _____

9. Other Coordination:

a. List additional organizations (Historic Society, Chamber of Commerce, Board of Education, Fire Company's etc.) or authorities (NJ Transit, NJ Turnpike, NJ Highway Authority, Port Authority, etc.) that have interest in the project: Amtrak, NJ Transit

b. Proposed Formal Public Involvement Program (estimate number of Official Briefings and Public Info Centers/Meetings/Hearings): 1 Officials Briefing, 1 PIC

c. If additional displays are required, provide the specifics (number, scale, special graphics 3D, simulations, models, etc): _____

d. If a mailing list is required, provide the approximate number of property owners: 32

Who is responsible for putting the mailing list together and providing mail labels? Consultant? In-house Design Other (Specify) _____

e. If handouts are required (provide the specifics, number, size, color or black and white, mapping, etc): _____



Preliminary Engineering

f. List special needs (i.e. Community Involvement Sub-Consultant, Facility Needs, Interpreter, Website, etc.): Interpreter for Spanish speaking residents

g. Traffic Staging: How many lanes of traffic need to be maintained? 1 westbound lane is to be maintained throughout construction while eastbound traffic will be detoured.

What will be the available working hours? Lane closure hours not provided to date

Can the project duration be significantly reduced by reducing the number of stages? No

Can detours be used? Yes

h. Schedule - Identify scheduling constraints (environmental, seasonal construction limitations, community). Utility relocations for electric and gas have seasonal constraints for the summer and winter seasons, respectively.

What is the optimum period to start construction? Spring

i. Is the scope focused on replacement or rehabilitation of road/bridge? Bridge replacement

Is condition likely to change/deteriorate between scoping and construction? No

ADDITIONAL INPUT

This section has been provided for the CD designer and the functional units to state any assumptions, to clarify and customize standard activities, and to add important information. Please be clear and concise. Provide your unit's contact person and number.



Preliminary Engineering

Summary of Approvals

SME Unit	Manager	Approval	SME Involved	Remarks
Right of Way				
Access				
Drainage Management				
Regional Maintenance				
Hydrology and Hydraulics				
Landscape				
Environmental				
Risk & Value Engineering				
Utilities				
Jurisdiction				
Geometrics & Roadway				
Pavement				
Structures				
Geotechnical				
Survey				
Railroads				
Construction				



Preliminary Engineering

Traffic Signal Design				
Electrical				
Traffic Operations & ITS				
Commuter Mobility				

Appendix T

Amtrak/NJ Transit Coordination

Meeting Minutes

Memorandum of Meeting

To: File

From: Julia Steponanko, GPI

Date: March 10, 2016

Project Name: Delaware Valley Regional Planning Commission (DVRPC)/Mercer County
Lincoln Avenue Bridge Replacement Local Concept Development Study
City of Trenton, Mercer County

Project Number: 2015684.00

Subject: Amtrak Meeting

Copy: Attendees

A meeting was held with Amtrak representatives for the above referenced project at 10:30 AM on Wednesday, February 17, 2016 at Amtrak's Office in the 30th Street Station, Philadelphia. Those in attendance were as follows:

<u>Attendee</u>	<u>Bureau / Company</u>	<u>Phone</u>
Earl Watson, III	Amtrak Engineering Department	215 349-1393
Eli Charchar	Amtrak Engineering I&C	215 349-4971
Basit Muzaffar	Mercer County Engineering	609 989-6641
Bernie Boerchers	Greenman-Pedersen, Inc. (GPI)	908 236-9001
William Farrow	GPI	908 236-9001
Richard Schroeder	GPI	908 236-9001
Julia Steponanko	GPI	908 236-9001

The purpose of this meeting was to introduce the project, confirm the project need, and solicit comments, requirements, and/or concerns. After self-introductions, Mr. Boerchers presented the project history, existing conditions and preliminary concepts. The following summarizes the questions and comments made during the meeting:

1. Mr. Boerchers stated that this project is following the NJDOT delivery process, which is approved by FHWA. He added that the project is currently in Concept Development and that the subsequent phases are Preliminary Engineering, Final Design and Construction. Mr. Boerchers also noted that plans are approximately 30 and 60 percent complete in Concept Development and Preliminary Engineering, respectively.
2. Mr. Muzaffar stated that the County performed short-term fixes on the structure, including covering a deck hole with a steel plate and constructing an asphalt overlay across the structure until it could be replaced.

3. The attendees noted that the part of the existing catenary lines are attached to the structure. Mr. Watson stated that current practice is not to attach the catenary lines to the structure.
4. Mr. Schroeder inquired if the County and GPI should be aware of any utilities on Amtrak property. Mr. Watson stated that Amtrak does not have as-built plans of any existing utilities; however, their right of way department may have information on lease agreements. Mr. Boerchers noted that supplemental survey can be conducted in the next phase to identify impacted utilities.
5. The attendees noted that Mr. Charchar and Mr. Boerchers will be the point of contact for Amtrak and GPI, respectively. Requests for information, such as Amtrak's current standards and requirements, should be sent to Mr. Charchar.
6. Mr. Watson stated that an agreement between the County and Amtrak must be established for Amtrak to review any design level plans and should be started 6 to 9 months in advance. He added that Amtrak would provide qualified firms for the overhead catenary design and construction. Mr. Muzaffar stated that the County would begin the agreement in the next phase since it is not currently budgeted. He added that he would have to discuss with DVRPC regarding the same. Mr. Muzaffar requested that a draft be established in this phase so that Amtrak could provide an estimated cost. Mr. Watson stated that the agreement between Amtrak and the agency paying the monies was the norm. Since Mercer County was not paying for the project, this issue needed further research. Mr. Watson stated that he would look into it.
7. Mr. Muzaffar inquired if Amtrak has a need for any pier lighting. Mr. Charchar and Mr. Watson stated that Amtrak would investigate the need for the same.
8. It was inquired what Amtrak's minimum vertical underclearance is for bridges over electrified tracks. Mr. Farrow noted the NJDOT requires a minimum of 24'-6" clearance. Mr. Charchar and Mr. Watson stated that the current standard is 24'-3" and that a design exception from Amtrak would be required if the proposed structure cannot meet the same.
9. Mr. Muzaffar noted that architectural treatments may be required by SHPO since the NEC is a historic district. He inquired if Amtrak has any additional requirements, to which Mr. Charchar and Mr. Watson stated that Amtrak does not.
10. Mr. Charchar noted that there is a signal bungalow near one of the existing piers that must be protected during construction.
11. The attendees discussed a preliminary concept that would widen the structure to provide standard lanes, shoulders and sidewalk as well as the potential for realignment of the structure to address sight distance. Mr. Charchar inquired if the County has an aerial easement for the structure over Amtrak property. He added that widening or realigning the structure may require additional easements if the same extends outside of the existing one. Mr. Muzaffar stated that the County would check their records and requested that Amtrak do the same.
12. Mr. Muzaffar stated that this bridge has heavy pedestrian traffic and the County prefers a temporary pedestrian bridge be installed during construction. The attendees noted that temporary easements might be required for the same if a portion of the existing bridge cannot be used temporarily.

13. The attendees discussed options to replace the entire structure or to replace the deck and superstructure only. Mr. Charchar inquired about pier locations, if any, for a complete replacement. Mr. Farrow stated that a pier would likely be placed between the main four tracks and the yard track as the span is too long to avoid the use of piers.
14. The attendees noted that constructability will be key to this project. Maintaining service along the NEC, clearances above and below the electric and catenary lines and work performed by Amtrak contractors on this and other projects will require careful coordination.
15. Mr. Boerchers stated that the anticipated construction date is the summer of 2020.

Action Items:

- GPI will prepare a request for information regarding Amtrak's current standards and existing facilities within their ROW.
- Mercer County and GPI will investigate the aerial easements on record for this structure.
- GPI will prepare an outline of anticipated coordination and plan review with Amtrak to prepare the agreement between the County and Amtrak for subsequent project phases.

This memorandum of record is believed to be an accurate record of the discussions at this meeting. If any of the attendees disagree with the documented discussion, please contact Julia Steponanko at (908) 236-9001 within 5 days of receipt of minutes. If no comments are received, then this memorandum will be considered a true and accurate record of this meeting.



Lincoln Avenue Bridge Replacement Local Concept Development



Attendance

Meeting: Amtrak Location: 30th St Station, Philadelphia Date: 2/17/16 Time: 10:30 am

Name	Representing	Phone	Email
Bernie Boerchers	GPI	908 236 9001	bboerchers@gpinet.com
Rich Schroeder	GPI	"	rschroeder@gpinet.com
William C Farrow	GPI	"	wfarrow@gpinet.com
BASIT A. MUZAFFAR	MERCER COUNTY	609-989-6641	bmuzaffar@mercercounty.org
EARL WATSON	AMTRAK	215.349.1393	watsone@amtrak.com
ELI CHARCHAR	AMTRAK	215 349-4971	ELI.CHARCHAR@AMTRAK.COM
Bernie Boerchers	GPI		
Julia Steponanko	GPI	908-236-9001	jsteponanko@gpinet.com

Memorandums & Letters

GPI Greenman - Pedersen, Inc.

Engineering and Construction Services

March 10, 2016

Eli Charchar
Project Manager II
Amtrak Engineering I&C
30th Street Station, Box 64
2955 Market Street
Philadelphia, PA 19104

VIA EMAIL

RE: Delaware Valley Regional Planning Commission (DVRPC) – Local Concept Development
Lincoln Avenue (County Route 626) Bridge Replacement
City of Trenton, Mercer County
Project Number 15-62-100
Request for Information

Dear Mr. Charchar:

It was a pleasure meeting you and Mr. Watson on February 17, 2016 and we appreciate Amtrak's support on this project. As you are aware, DVRPC on behalf of Mercer County has engaged Greenman-Pedersen, Inc. (GPI) to perform a Local Concept Development Study for the replacement of Structure No. 1100-055 (Mercer County No. 140.9), which carries Lincoln Avenue over the Amtrak Northeast Corridor Rail Line, an abandoned rail yard, and the Assunpink Creek in the City of Trenton, Mercer County New Jersey. In addition to the replacement of Structure No. 1100-055, the project will include improvements to address operational and safety deficiencies at the approaches to the structure.

As discussed at the February 17 meeting, you identified Amtrak standards that this project will need to consider, such as clearances, catenary lines, easements, and drainage. Kindly provide said information that would be helpful in our design process. Also, please provide any information that you might have concerning utility companies that are tenants on/in your property within the project limits (approximately 100 feet of Structure No. 1100-055).

We respectfully request a reply by April 11, 2016. Should you have any questions or concerns about this project or our request, please contact me at 908-236-9001 or bboerchers@gpinet.com.

Sincerely,

Greenman-Pedersen, Inc.



Bernard J. Boerchers, P.E., P.T.O.E.
Senior Project Manager / Vice President

cc: John J. Coscia Jr., DVRPC Manager
Gregory Sandusky, P.E., P.L.S., Mercer County Engineer
Basit Muzaffar, P.E., Mercer County Engineering
File - 2015684.00

GPI Greenman - Pedersen, Inc.

Engineering and Construction Services

March 16, 2017

Mr. Eli Charchar
Project Manager II
Amtrak Engineering I&C
30th Street Station, 4S-027, Box 64
2955 Market Street
Philadelphia, PA 19104

[VIA EMAIL](#)

RE: Delaware Valley Regional Planning Commission (DVRPC) – Local Concept Development
Lincoln Avenue (CR 626) Bridge over AMTRAK
Bridge Replacement
Trenton City, Mercer County
Project Number 15-62-100
GPI Project No. 2015684.00
Request for Information to Estimate Amtrak Design Funding

Dear Mr. Charchar:

As you are aware, the DVRPC on behalf of Mercer County has engaged Greenman-Pedersen, Inc. (GPI) to perform a Local Concept Development Study for the replacement of Structure No. 1100-055 (Mercer County No. 140.9), which carries Lincoln Avenue over the Amtrak Northeast Corridor Rail Line, an abandoned rail yard, and the Assunpink Creek in the City of Trenton, Mercer County New Jersey.

As per your request, we are supplying the following information for your review so that you can provide an estimate that is required to set up the agreement with the DVRPC and Mercer County for Amtrak support of the design phases of this project:

- Project Background: Structure No. 1100-055 is comprised of eight (8) simple spans, each consisting of riveted steel through-girders with steel floorbeams and a concrete deck. The structure was built in 1931 and reconstructed in 1965. It is 687 feet long and 40 feet wide. The bridge is fracture critical due to its non-redundant construction (through girder) and is not scour critical. The structure was rated 'serious' primarily due to the condition of the superstructure, which suffers from severely rusted steel in the girders and floorbeams at the areas of missing encasement. The deck is also in poor condition with large areas of spalled and delaminated concrete with exposed rusted rebar. The substructure is in fair condition due to wide vertical cracks, large spalls and delaminated concrete with exposed rusted rebar, and loose coping. This bridge has a sufficiency rating of 46.1. The County performed short-term fixes on the structure including lighting, deck repairs and an asphalt overlay until the structure could be replaced.

A draft Local Concept Development study was completed for Mercer County (report dated February 2017), and a recommendation has been made to progress this project to Preliminary Engineering.

- Existing Conditions (Ownership/Operations/Maintenance): Lincoln Avenue (CR 626) and Structure 1100-055 (Mercer County No. 140.9) is owned/operated/maintained by Mercer County.
- Preliminary Scope Statement: The current anticipated Scope of Work for this project includes complete replacement of the bridge along its existing horizontal alignment to extend the life of the bridge, correct deficiencies, and meet current design requirements. The proposed new bridge consists of six (6) spans with a cast-in-place reinforced concrete deck supported by structural steel welded plate girders. The structure would have a depth of 51 inches and maximum girder spacing of 7 feet. The new superstructure would be supported by cast-in-place reinforced concrete piers and full height abutments founded on deep foundations. The vertical profile and pier locations will be revised to provide the required horizontal and vertical clearance over the Amtrak and NJ Transit railroad tracks. The cross section consists of a 12-foot lane, 8-foot shoulder and 6-foot sidewalk along each direction of Lincoln Avenue. An eight (8) foot tall parapet for railroad protection would be used at each fascia to protect the railroad properties below. Approach slabs and highway lighting will be provided. It is anticipated that the proposed bridge will drain overland to the abutments and either be allowed to air-drop or continue to drain overland to stormwater inlets at the low points off the bridge.

The project scope will also include the relocation of the four catenary lines and several fiber optic cables which are attached to the existing bridge structure. It is anticipated that these relocations will require the replacement of two catenary support towers and re-profiling of the associated catenary lines. An existing 30" water main that runs parallel to the bridge structure (and through the Amtrak ROW) will also be impacted by the proposed bridge construction, and may require relocation.

- Scope Definition (Detailed narrative of overall project): GPI is currently at the end of Concept Development with the intent of the County to progress into Preliminary Engineering in mid-2017, followed by Final Design and Construction. At this time, the County has yet to select a designer for the aforementioned project phases. Therefore, there is no additional information available concerning the proposed project beyond what is provided above/below. Additional information will be provided to Amtrak in conjunction with the subsequent project phases once the design has been sufficiently advanced.
- Project Deliverables/Services: The items anticipated in the County Scope of Work during Preliminary Engineering and Final Design that will require direct coordination/support from Amtrak includes survey (laser scanning and traditional field survey); field walk/inspection of existing bridge span over Amtrak ROW, piers, and eastern abutment; soil borings, utility test pits, and substructure concrete core sampling; and a wetland survey by an environmental Subconsultant. No environmental testing is anticipated within the Amtrak ROW. Based on this information, it is anticipated that there will be approximately 20 working days of design activities that will need to be performed within the Amtrak ROW.

The County, its consultant and their subcontractors will coordinate directly with Amtrak to obtain the required Permits and Clearances required for personnel to enter Amtrak ROW; provide required insurance; obtain required training; and set up a Force Account to obtain any Amtrak supplied escort and flagging support that will be required to perform the work needed for the design this project.

Coordination and payment for permits and escort/flagger support required for Construction will be performed/provided by the Contractor performing the work.

The County will require design review support for the preliminary plans developed during Preliminary Engineering and the Final Design 30%, 60%, and 100% Railroad submissions that will be made for this project. It is anticipated that two (2) formal meetings with Amtrak will be required in Final Design to resolve any comments that may be produced by Amtrak's review of the 60%, and 100% Railroad submissions.

GPI previously requested, and Amtrak provided, standards that this project will need to consider, such as clearances, catenary lines, and easements, as well as utility companies that are tenants on/in your property within the project limits. As the project progresses, the County may request additional information regarding standards and utilities.

- Preliminary Drawings: See attached drawing showing existing conditions (i.e. existing bridge and roadway features, property lines, property Lot/Block/ownership, and known easements) along with the anticipated work limits and proposed improvements (Preliminary Preferred Alternative).
- Preliminary Drawings (showing details of proposed construction excavation): Excavation is anticipated in the areas of existing and proposed pier footings as shown on the proposed improvement plan (based on the current Scope of Work), and in the area of the relocated catenary support towers and 30" water main (exact locations TBD). Based on this information, we anticipate that approximately 550 C.Y. of excavation will be required for construction.
- Preliminary Project Cost: Based on the Local Concept Development Report, the estimated Construction Cost is estimated at \$39.5 Million.
- Project Funding & Mechanism: The Design for and Construction of this project will be performed directly for/with DVRPC and Mercer County using NJDOT Local Aid Funding. Payment for Amtrak support for the design phase of this project will be made by DVRPC via a Force Account, which will be set up based on the design funding amount that you will be providing. The DVRPC will add additional funding to this account to cover any additional costs that would be incurred by Amtrak for engineering/review/inspection support during the construction stage of the project.

Funding for permits and escort/flagger support required for design and construction will be provided as described above (under "Project Deliverables/Services").

- Preliminary Project Schedule: The Concept Development Phase for this project is nearing completion and the next phase, Preliminary Engineering, is currently anticipated to begin in mid-2017 (approximately one year in duration). Based on this information, the Final Design Phase and Construction should begin in 2018 and 2020, respectively. Construction is anticipated to take two years to complete.
- (Potential) Issues/Impacts: Coordination will be required with Amtrak during design and construction for the removal of the catenary lines from the existing bridge, construction of new catenary towers, protection of the catenary that run over and under the bridge during demolition/construction of the

portion of the bridge directly over the Amtrak rail lines, and any demolition/construction that may be required to substructure and superstructure elements within the Amtrak ROW.

Should you require any additional information or need to discuss anything further, please contact me at 908-236-9001 or bboerchers@gpinet.com.

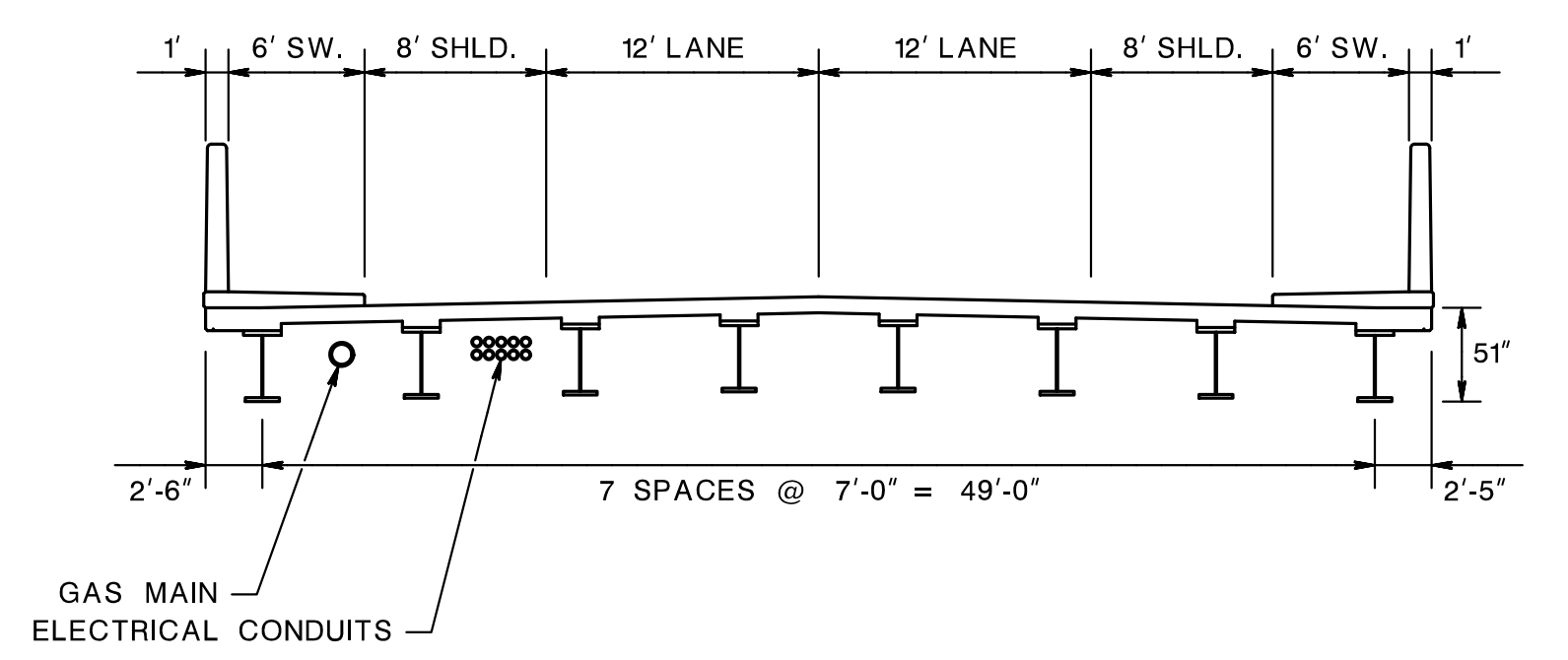
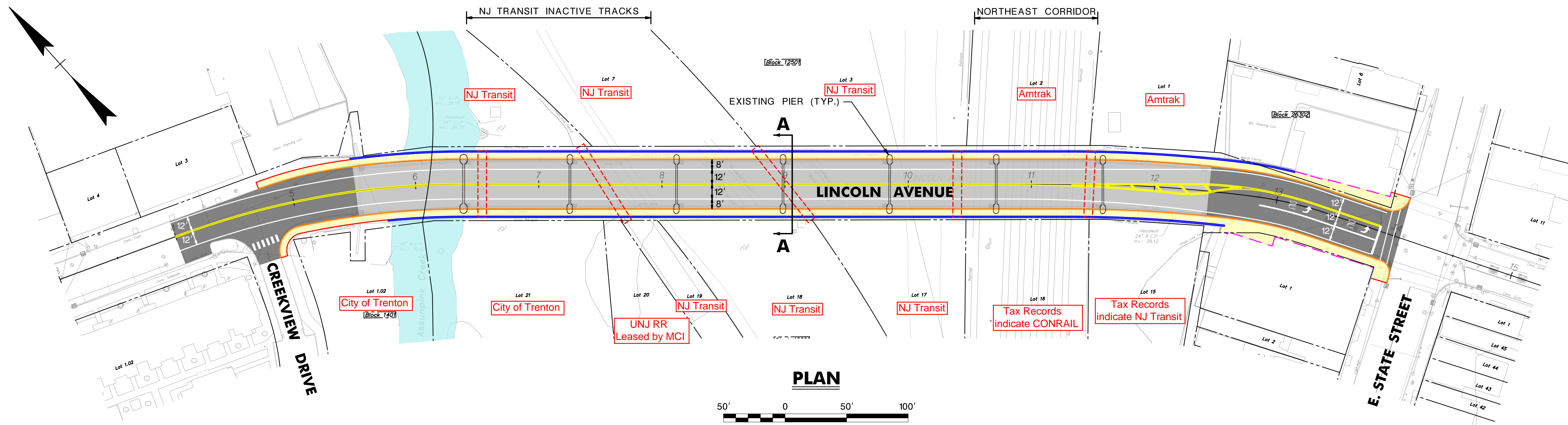
Sincerely,
GREENMAN-PEDERSEN, INC.



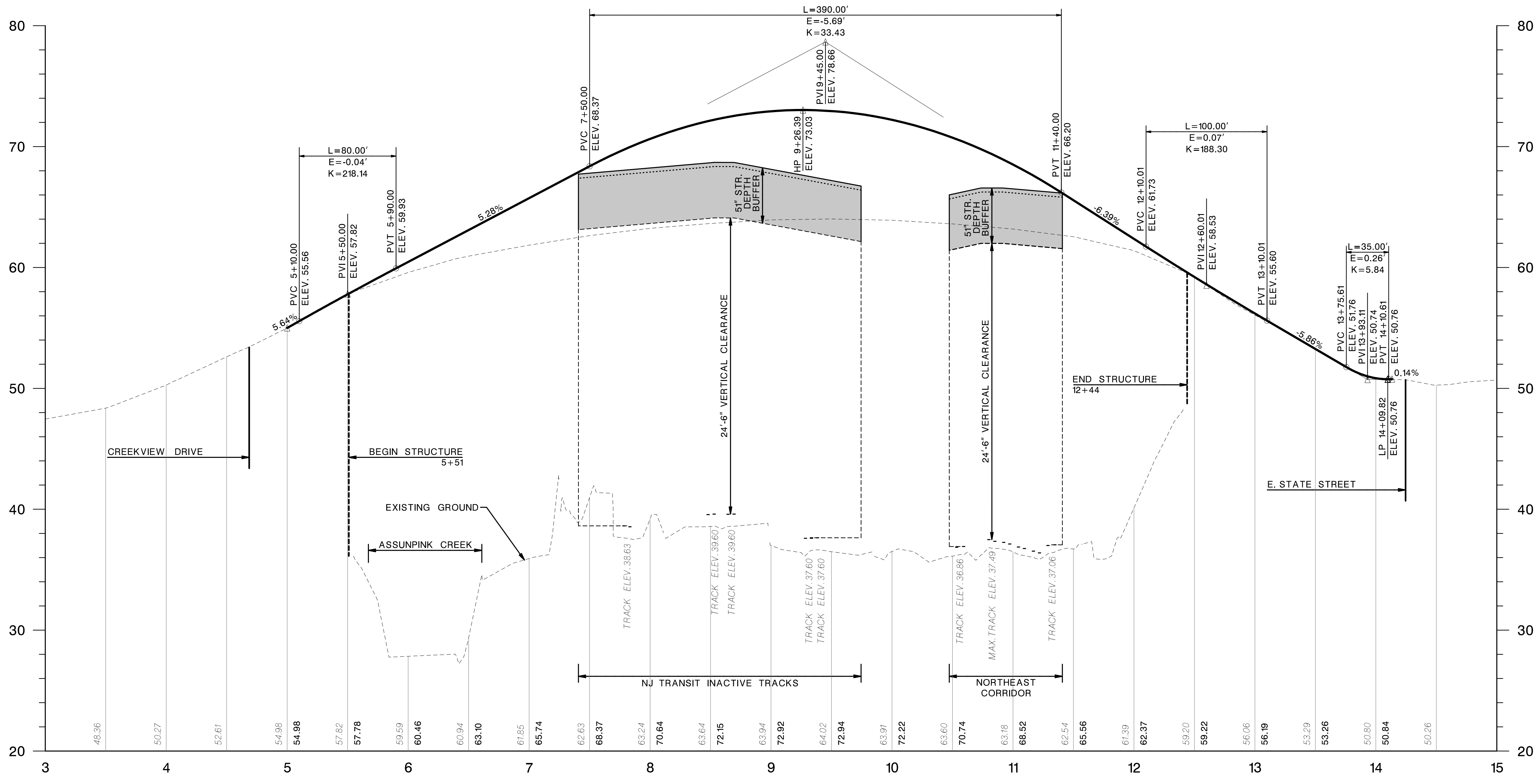
Bernard J. Boerchers, P.E., P.T.O.E.
Senior Project Manager / Vice President

Enclosures

Cc: John J. Coscia Jr., DVRPC Manager
Gregory Sandusky, P.E., P.L.S., Mercer County Engineer
Basit Muzaffar, P.E., Mercer County Engineering
File 2015684.00



SECTION A-A
N.T.S.



NOTES:

1. MAINTAIN EXISTING HORIZONTAL ALIGNMENT.
2. INCREASE VERTICAL PROFILE TO MEET 24'-6" VERTICAL CLEARANCE.
3. REPLACE SUBSTRUCTURE, DECK, AND SUPERSTRUCTURE USING STEEL GIRDERS.

LEGEND

- EXISTING ROW
- PROPOSED EASEMENT
- PROPOSED CURB
- PROPOSED PAVEMENT
- PROPOSED PARAPET
- PROPOSED PIER
- PROPOSED BRIDGE DECK
- PROPOSED SIDEWALK

**LINCOLN AVENUE
BRIDGE REPLACEMENT
LOCAL CONCEPT DEVELOPMENT**

CITY OF TRENTON
MERCER COUNTY

PRELIMINARY PREFERRED ALTERNATIVE



GPI Greenman-Pedersen, Inc.
Engineering and Construction Services

**DESIGN PHASE AGREEMENT
BETWEEN
NATIONAL RAILROAD PASSENGER CORPORATION AND
MERCER COUNTY
FOR THE DESIGN OF LINCOLN AVENUE BRIDGE REPLACEMENT**

This Design Phase Agreement (“Agreement”) effective this ____ day of _____, 2017, is made by and between National Railroad Passenger Corporation, a corporation organized under 49 U.S.C. §24101 *et seq* and the laws of the District of Columbia, with its principal place of business located at 60 Massachusetts Avenue, N.E., Washington, DC 20002 (“Amtrak”) and the County of Mercer (“County”) (hereinafter collectively referred to as the “Parties” or in the singular as “Party,” as the context requires).

WHEREAS, Amtrak operates intercity passenger rail service over certain railroad right-of-way which extends between Washington, DC and Boston, MA (known as the “Northeast Corridor”); and

WHEREAS, County is the owner of the Lincoln Avenue overhead bridge (“Bridge”), which carries Lincoln Avenue over the Northeast Corridor at mile post 56.24 in Trenton, New Jersey; and

WHEREAS, County desires to replace the Bridge (“Project”); and

WHEREAS, due to the proximity of the Project to Amtrak’s property and operations, County desires input from Amtrak on the potential impact of the Project on Amtrak’s property and operations; and

WHEREAS, construction of the Project will require County and its contractors to enter onto, over, under and/or adjacent to Amtrak’s property, will require various assistance from Amtrak and may require alterations to Amtrak’s facilities; and

WHEREAS, all work arising out of or connected with the Project must be closely and safely integrated with Amtrak’s operations so as not to impede or interfere with said safe operations; and

WHEREAS, County has requested that Amtrak perform various services as set forth herein during the design phase of the Project; and

WHEREAS, Amtrak is willing to perform certain services as set forth herein; and

WHEREAS, County is responsible for funding the entire cost of the Project, including the cost of Amtrak’s services to be provided in connection with the Project; and

WHEREAS, the Parties have agreed to set forth in detail the work, material and labor for the services to be performed by Amtrak during the design phase of the Project, and the costs thereof; and

WHEREAS, the Parties have agreed to set forth in detail the work, material and labor for the services to be performed by Amtrak during the design phase of the Project, and the costs thereof; and

WHEREAS, the Parties agree to carry out their responsibilities in connection with the design phase of the Project in accordance with the terms and conditions set forth herein.

NOW, THEREFORE, for good and valuable consideration each to the other in hand paid, the receipt and sufficiency of which is hereby acknowledged, and for and in consideration of the promises and the mutual covenants herein contained, and with the intent to be legally bound hereby, the Parties agree as follows:

1. **Recitals.**

The recitals set forth above in the WHEREAS clauses of this Agreement are incorporated by reference into the terms of this Agreement as if set forth fully herein.

2. **Services to be Performed by Amtrak.**

Amtrak agrees to perform (or have performed by third parties) the following services so as to facilitate progression of the design phase of the Project by County: (a) review County's or its contractor's plans, drawings, specifications and schedules ("Documents") for impact on Amtrak's property and/or operations; (b) perform inspection services, as required; (c) (perform services required for the protection of railroad traffic, such as flagging, controlled power outages and/or track outages, as may be necessary; (d) prepare estimates of Amtrak's costs for services to be performed by Amtrak during the design and construction phases of the Project; (e) attend meetings; (f) perform environmental reviews, if necessary; and (g) perform such additional related services as set forth herein or as may be agreed to by the Parties. These services are hereinafter collectively referred to as the "Services".

3. **Cost Estimate.**

An estimate of Amtrak's costs in support of the design phase of the Project is attached hereto as Exhibit A. The provision of an estimate does not, however, limit County's obligation to reimburse Amtrak for all costs actually incurred by Amtrak in connection with the design phase of the Project.

4. **Billable Costs.**

(a) County agrees to reimburse Amtrak for all costs incurred by Amtrak in connection with the design phase of the Project. Such costs shall include, but not be limited to, the following:

(i) Direct labor and management costs for all assigned Amtrak employees for actual hours worked while performing Services under this Agreement, including but not limited to: any adjustments, allowances and arbitrary hours (e.g., time paid for hours not worked) in accordance with the then current existing labor agreements; travel costs; overnight accommodations (including boarding and lodging); travel time and mandatory rest time as the result of performing work hereunder; and Amtrak's overhead rates, as set forth in Exhibit B hereof ("Overhead Schedule").

(ii) Costs for all materials and supplies required for performance of the Services. Any materials and supplies issued from Amtrak's inventory shall be charged at Amtrak's inventory cost in effect at the time the material or supplies are issued, plus any actual shipping/transportation costs and shipping/transportation cost additives. Any materials and supplies which are procured by

Amtrak, but which are not issued from Amtrak's inventory, shall be charged at Amtrak's actual cost incurred. Material handling and General and Administrative (G&A) overhead rates as set forth in the Overhead Schedule will be added to the cost of all materials and supplies.

(iii) Costs for all third party contract services and for any related additional insurance. Costs will be billed at actual cost incurred, plus the G&A overhead rates as set forth in the Overhead Schedule.

(iv) Costs for equipment, vehicles, work trains, wire trains, rolling stock and any other such items which are leased by Amtrak and required for performance of the Services shall be charged at the actual cost of the lease, plus the G&A overhead rates as set forth in the Overhead Schedule.

(v) For Amtrak-owned equipment, vehicles, work trains and rolling stock, reimbursement shall be at the rates published in "Amtrak Rental Rates for Railroad Equipment", as amended periodically, plus the G&A overhead rates as set forth in the Overhead Schedule. For Amtrak-owned equipment, vehicles, work trains, wire trains and rolling stock not specifically itemized therein, reimbursement shall be based on a comparable market rate, plus the G&A overhead rates as set forth in the Overhead Schedule. Vehicles/equipment obtained through a General Services Administration (GSA) Schedule shall be construed as Amtrak-owned.

(vi) Mobilization and demobilization costs and the cost of training of Amtrak employees to the extent required for the Project. Amtrak shall be reimbursed for the actual costs, plus the applicable overhead rates as set forth in the Overhead Schedule.

(vii) Retroactive wage and benefit costs (i.e., adjustments made subsequent to performance of the Services) which shall be reimbursed based on the actual cost, plus all associated current overhead rates as set forth in the Overhead Schedule. County's obligation to reimburse Amtrak for such retroactive costs shall survive termination of this Agreement.

(viii) Other actual costs not included in any other provision of this Agreement, necessary to effectively perform Services under this Agreement shall be charged at actual costs, plus Amtrak's overhead rates as set forth in the Overhead Schedule.

(b) The overhead rates referred to herein are computed in accordance with Amtrak's accounting policies and procedures. These rates are updated periodically by Amtrak and will be made available to County, upon request. The applicable billable overhead rates shall be the rates in effect (i) at the time of performance with respect to Services performed by Amtrak forces, and (ii) as of the date Amtrak receives the invoice from its contractors with respect to services provided by Amtrak contractors.

5. **Payments.**

(a) Prior to initiation of any Services by Amtrak, County shall remit payment to Amtrak in the amount of \$ 73,656, which represents thirty percent (30%) of the amount

of Amtrak's cost estimate for the design phase of the Project. The deposit shall be held by Amtrak until the costs incurred by Amtrak reach eighty percent (80%) of the cost estimate at which time each subsequent invoice shall be credited against the deposit. If and when the balance of the deposit has been reduced to \$0, each subsequent invoice shall be paid by County, as provided in paragraph (c) below. If, during the course of the design phase of the Project, the cost estimate needs to be increased, County shall remit an additional amount to Amtrak representing the amount by which the estimate was increased. Upon completion of the design phase of the Project, Amtrak shall return to County (upon its request) any portion of the advance deposit (if any) that has not been expended by Amtrak, provided that County has paid all prior invoices.

(b) As the Project progresses, Amtrak will issue monthly statements that shall include Amtrak's Summary Invoice Page followed by the Billing Substantiation Report. The Billing Substantiation Report will include the Labor Cost Report which lists the hours, payroll amounts, and dates and names of agreement-covered employees who provided services in support of the Project. Amtrak shall also provide copies of material invoices, third party service invoices, a report of materials issued from inventory, railroad equipment utilization pricing statement and a statement of other costs and charges. Amtrak will not be required to provide an independent field verification voucher to substantiate costs.

(c) Payments of Amtrak invoices are due within thirty (30) days of receipt of invoice by County. Payments not made by County by the due date shall be subject to an interest charge of one and one-half percent (1.5%) per month. Payments shall be made in full without deduction, setoff or counterclaim. Nonpayment of invoices pursuant to the terms of this Agreement shall constitute a material breach of the Agreement and, in addition to any other right or remedy to which Amtrak may be entitled as a result of such breach, Amtrak may elect to cease any and all performance under this Agreement. County will be responsible for any and all costs incurred by Amtrak as a result of County's breach, including, without limitation, collection costs and attorneys' fees.

(d) If County objects to any charges identified on a monthly statement, it shall notify Amtrak of its objection in writing within thirty (30) days of receipt of said statement. Within thirty (30) days thereafter, Amtrak will provide County with additional documentation and/or explanation as required, to support the accuracy of the charges. The objection shall be considered resolved unless County provides additional written objection within thirty (30) days of receipt of such additional documentation and/or explanation from Amtrak. If Amtrak finds an adjustment is due, Amtrak will issue a credit memo in the amount of the adjustment. If, after reviewing the additional information provided by County, the billing dispute is still not resolved, either Party may pursue any right or remedy as specified in this Agreement.

6. **Schedule.**

(a) Amtrak and County agree to cooperate and to require their respective contractor(s) to cooperate so as to coordinate their respective schedules in an effort to not delay the Project. However, County acknowledges that Amtrak has workforce and other resource constraints and other work commitments and demands, that only limited track outages are available, and that these outages must be shared and/or rationed among all potential projects (including other Amtrak, state, municipal, commuter and third party projects) in

the vicinity of the Project area. These restrictions may prevent Amtrak from performing the Services according to County's schedule and may prevent County from gaining access to Amtrak's property according to such schedule.

(b) Amtrak and County agree that the continuity and on-time performance of Amtrak rail service during all phases of the Project is of primary importance. Amtrak will not be expected to disrupt the operations of any trains or grant track outages that disrupt train operations in furtherance of this Project. All County activities with the potential to disrupt train operations shall be subject to Amtrak review and approval.

(b) In no event shall Amtrak be liable for any costs or damages or other consequences attributable to Project delays of any sort.

7. **Review of Documents.**

(a) County shall submit all Documents relating to the Project to Amtrak for its review and approval. County agrees to incorporate into the construction plans for the Project all Amtrak comments pertaining to matters that may impact Amtrak's operations and/or property. County agrees that Amtrak shall have a minimum of thirty (30) working days to review any Documents presented for Amtrak's review.

(b) Any review of such Documents by Amtrak shall be for the purpose of examining the general arrangement, design and details of the Project for potential impact on Amtrak's operations and/or property. No review, correction or approval of Documents by Amtrak shall relieve County and its officers, directors, employees, agents, servants, contractors, subcontractors, design professionals or any other person acting for or by permission of County (collectively referred to hereafter as "County Parties") from the entire responsibility for errors or omissions in such Documents or for the adequacy thereof. Amtrak assumes no responsibility for and makes no representations or warranties, express or implied, as to the design, workmanship or adequacy of the Documents or the Project.

8. **Permit to Enter.**

If entry on, over or under Amtrak's right-of-way or other property is required for purposes of this Project by County or its contractors, County agrees that the entity seeking entry must notify Amtrak at least twenty-one (21) days in advance and must execute the then-current version of Amtrak's "Temporary Permit to Enter Upon Property" form prior to any such entry. A copy of the current version of such form is attached hereto and incorporated herein as Exhibit C.

9. **Safety and Security Requirements.**

(a) County shall require that when any work is being done on, over, under or adjacent to Amtrak's right-of-way by anyone other than Amtrak forces, all operations affecting Amtrak property, facilities or the safe and uninterrupted operation of its trains shall be carried out in accordance with the then-current version of Amtrak's "Specifications Regarding Safety and Protection of Railroad Traffic and Property," the current version of which is attached to the Temporary Permit to Enter Upon Property as Attachment A. Compliance with such specifications shall be at no cost to Amtrak.

(b) County shall, at its sole cost, comply with all Amtrak security requirements while

performing work in connection with this Project.

10. **Risk of Liability; Indemnification.**

(a) **County's Obligations.** County hereby releases and agrees to defend, indemnify and hold harmless Amtrak and any other affected railroad, as well as their respective officers, directors, employees, agents, successors, assigns and subsidiaries (collectively "the Indemnified Parties"), irrespective of negligence or fault on the part of the Indemnified Parties, from and against any and all losses and liabilities, penalties, fines, forfeitures, demands, claims, causes of action, suits, costs (including cost of defense and attorneys' fees), which any of the Indemnified Parties may hereafter incur, be responsible for, or pay as a result of either or both of the following:

(i) injury, death, disease, or occupational disease to any person (excluding only employees of Amtrak to the extent Amtrak has coverage under the force account insurance maintained by Amtrak as described in Section 11(d) of this Agreement, and only to the limits of ten million dollars (\$10,000,000)), and/or

(ii) damage (including environmental contamination and loss of use) to or loss of any property, including property of Amtrak,

arising out of, or in any degree directly or indirectly caused by or resulting from activities of, or work performed by Amtrak and/or the County Parties and/or arising out of any act or omission of Amtrak and/or the County Parties related to, or in connection with this Agreement, including without limitation, any failure of County to perform or comply with any of County's obligations hereunder. The foregoing obligation shall not be limited by the existence of any insurance policy or by any limitation on the amount or type of damages, compensation, or benefits payable by or for County or any contractor, or subcontractor, and shall survive termination of this Agreement for any reason.

(b) **County's Contractors' Obligations.** If any of County's contractors' work is to be performed on, over or under Amtrak property, it will be necessary for such contractors to execute Amtrak's "Temporary Permit to Enter Upon Property" form, as set forth in Section 8 of this Agreement. The permit contains the relevant indemnification obligations. County shall ensure that such contractors execute the permit.

(c) **County's Design Contractors' Obligations.** County agrees to have its contractors who perform design or engineering functions in support of the Project execute a copy of the certificate attached hereto as Exhibit D and return the certificate to Amtrak at the address listed in Section 16 hereof. (Contractors who perform design or engineering functions are referred to as "consultants" in Exhibit D.) This certificate contains the relevant indemnification obligations. Amtrak will not review the Documents until it has received an executed copy of such certificate. The additional indemnification obligations of County's contractors who enter on, above or below Amtrak's property are set forth in the Temporary Permit to Enter Upon Property as provided in Sections 8 and 10(b) above.

11. **Insurance**

(a) County shall provide and maintain in effect during the course of the design phase of the Project, at its sole cost and expense, the insurance coverage specified below. County shall submit to Amtrak certificates of insurance evidencing the required insurance, prior to commencement of Operations. As used in this Section 11(a), "Operations" shall mean activities or work performed by or on behalf of State on, under or over Amtrak property. In addition, County

agrees to provide certified copies of the insurance policies for the required insurance within thirty (30) days of Amtrak's written request. All insurance shall be procured from insurers authorized to do business in the jurisdiction(s) where the Operations are to be performed. The insurance shall provide for thirty (30) days prior written notice to Amtrak in the event coverage is substantially changed, canceled or non-renewed. All insurance shall remain in force until all Operations are satisfactorily completed (unless otherwise noted below), all County and County contractors and subcontractors personnel and equipment have been removed from Amtrak's property, and any work has been formally accepted. County may provide for the insurance coverages with such deductibles or retained amounts as Amtrak may approve from time to time, except, however, that County shall, at its sole expense, pay for all claims and damages which fall within such deductible or retained amount on the same basis as if there were full commercial insurance in force in compliance with these requirements. County will provide the following insurance prior to entering on, under or over Amtrak property:

(i) **Workers' Compensation Insurance** complying with the requirements of the statutes of the jurisdiction(s) in which the Operations will be performed, covering all employees of County. Employer's Liability coverage with limits of not less than **one million (\$1,000,000)** each accident or illness shall be included. A waiver of subrogation in favor of Amtrak and its subsidiaries and their respective agents, officers, directors and employees is required. In the event the Operations are to be performed on, over, or adjacent to navigable waterways, a U.S. Longshoremen and Harbor Workers' Compensation Act Endorsement and Outer Continental Lands Act Endorsement are required.

(ii) **Commercial General Liability (CGL) Insurance** covering liability of County with respect to all operations to be performed and all obligations assumed by County under the terms of the Agreement. Products-completed operations, independent contractors and contractual liability coverages are to be included, with the contractual exclusion related to construction/demolition activity within fifty (50) feet of the railroad deleted and no exclusions for Explosion/Collapse/Underground (X-C-U) applicable or added. Coverage for punitive damages is also required to be included. The policy shall name National Railroad Passenger Corporation and, as appropriate, CUSCO or WTC, and all commuter agencies and railroads that operate over the property or tracks at issue as additional insureds with respect to the operations to be performed. In addition, the policy shall include an ISO endorsement Form CG 24 17 10 01 or its equivalent providing contractual liability coverage for railroads listed as additional insureds. Coverage for such additional insureds shall be primary and non-contributory with respect to any other insurance the additional insureds may carry. Claims made policies are not acceptable.

Coverage under this policy shall have limits of liability of not less than **twenty five million dollars (\$25,000,000)** each occurrence, combined single limit, for bodily injury (including disease or death), personal injury and property damage (including loss of use) liability. Such coverage may be provided by a combination of a primary CGL policy and a following form excess or umbrella liability policy.

The insurance required in this paragraph may be provided using an Owner Controlled Insurance Program or Contractor Controlled Insurance Program.

- (iii) **Automobile Liability Insurance** covering the liability of County arising out of the use of any vehicles which bear, or are required to bear, license plates according to the laws of the jurisdiction in which they are to be operated, and which are not covered under County's CGL insurance. The policy shall name National Railroad Passenger Corporation and, as appropriate CUSCO or WTC, and all commuter agencies and railroads that operate over the property or tracks at issue as additional insureds with respect to the operations to be performed. Coverage under this policy shall have limits of liability of not less than **one million dollars (\$1,000,000)** each occurrence, combined single limit, for bodily injury (including disease or death), personal injury and property damage (including loss of use) liability.
- (b) County's Contractor's Insurance. County shall ensure that all of its contractors provide and maintain in effect during the course of the design phase of the Project, at no cost to Amtrak, insurance as specified in Attachment B of the Temporary Permit to Enter Upon Property or County may, at its option, provide the insurance coverage for any or all of County's contractors, meeting the requirements of Attachment B, provided the evidence of insurance submitted by County to Amtrak so stipulates. County shall require all of County's contractors to provide Amtrak with a certificate of insurance evidencing the insurance coverage required hereunder.
- (c) Additional Insurance for County's Contractors who Perform Design or Engineering Functions. County shall require its contractors who perform design or engineering functions to provide and maintain in effect during the Project professional liability insurance as set forth in Exhibit D hereof. Such contractors shall provide Amtrak with a certificate of insurance evidencing the insurance coverage required hereunder. Amtrak will not progress the Services until it has received such certificates.
- (d) Amtrak's Insurance. In the event that Amtrak performs any force account work hereunder, Amtrak shall maintain in effect, during the period of performance under this Agreement, force account insurance issued to Amtrak and covering liabilities for bodily injury, including death and property damage, imposed upon Amtrak with respect to the Services to be performed pursuant to this Agreement. The limits of liability shall not be less than ten million dollars (\$10,000,000) per occurrence. The cost of this force account insurance is reflected in Exhibit A hereof. Amtrak reserves the right to self-insure for this coverage.

12. **Environmental Matters.**

- (a) County (and its contractors and agents) shall not disturb the soil or perform any environmental or geotechnical testing on the Amtrak Right-of-Way, Amtrak Easement Area or any other Amtrak property for any reason without (i) notifying Amtrak of its desire to do so; (ii) discussing the nature and extent of the proposed soil disturbance or testing with the Amtrak Environmental and Sustainability Group; (iii) presenting a

proposed testing and sample collection and analysis plan to Amtrak for its review and approval; (iv) obtaining the express permission of Amtrak to conduct the agreed-to soil disturbance or testing; and (v) indicating if any such test results require either notification or submission to a federal, state or local regulatory agency. Amtrak shall have the right, but not the obligation, to be present at any and all such soil disturbance or testing activities and to take split samples.

(b) County shall immediately provide Amtrak with a copy of the test results at no cost to Amtrak.

(c) Any contractor engaged by County to perform such soil disturbance or testing shall execute Amtrak's Temporary Permit to Enter Upon Property before performing any such activities.

(d) County, its contractors and agents shall comply with all applicable federal, state, and local laws, regulations, ordinances, and orders concerning the environment and/or waste generation and disposal, including without limitation all requirements under that certain Brownfield Cleanup Agreement with the New York State Department of Environmental Conservation. At all times, they shall employ Best Management Practices (BMPs) in connection with the performance of their work. As used herein, the term "BMPs" means effective, practical, structural and/or nonstructural methods which prevent and/or reduce the movement of sediment, nutrients, pesticides and other pollutants from the land to surface and/or ground water, and/or which otherwise protect air, soil and water quality from potential adverse effects.

(e) If the soil disturbance or the environmental or geotechnical tests performed in connection with this Project (whether performed during the design or construction phase of the Project) indicate contamination of Amtrak property (or property adjoining Amtrak property) at levels requiring reporting, further investigation, testing, monitoring and/or remediation ("Environmental Activities"), all such Environmental Activities shall be at the sole cost and expense of County, regardless of the extent thereof, and regardless of whether any action of County (or its contractors or agents) caused or contributed to the contamination or condition.

(f) County shall promptly inform Amtrak of all communications with any governmental authority relating to any such Environmental Activities, and Amtrak shall be invited to attend any relevant meetings. County shall provide Amtrak with all plans and/or submissions for any such Environmental Activities and Amtrak shall have the right to approve such plans and/or submissions prior to their implementation. County will promptly provide Amtrak with a copy of any waste manifests, and such waste manifests shall in no event identify Amtrak as a generator. Amtrak reserves the right to require County to provide to Amtrak a copy of the results of any further tests conducted by or for County on any such wastes. Amtrak also reserves the right to review and approve the disposal site for any such wastes. County (and its contractors and agents) shall dispose of all waste and contamination using their own EPA generator number(s). In no event shall Amtrak be identified as the generator. County will promptly provide Amtrak with a copy of any waste manifests.

(g) Amtrak retains the right to alter, suspend, cancel or otherwise modify County's work schedule pending the resolution of any of the above environmental issues. Amtrak shall not be held responsible for any claims related to any such changes in County's

schedules, including without limitation, claims related to damages resulting from any such delays or cancellations.

(h) Amtrak may notify County of any known or suspected noncompliance with the foregoing provisions and the action to be taken. County shall, after receipt of such notice, promptly take corrective action in accordance with all applicable federal, state and local requirements. If County fails or refuses to comply promptly, Amtrak may issue an order stopping all or part of the Project work until satisfactory corrective action has been taken. In addition, Amtrak may immediately undertake necessary corrective actions; the cost and expense of all such actions shall be borne by County. No claims by County for reimbursement related to costs and expenses charged to County for corrective actions undertaken by Amtrak, nor time lost due to any such orders, shall be made the subject of a claim for excess costs or damages by County.

(i) The foregoing environmental obligations shall survive termination of this Agreement.

13. **Compliance with Laws and Standards; Permits, Licenses, Approvals.**

(a) County and its contractors shall perform all work hereunder in compliance with all federal, state and local laws, regulations and requirements including, but not limited to, the Americans with Disabilities Act of 1990.

(b) County and its contractors shall perform all work in accordance with Amtrak's standards, including but not limited to, the following:

(i) Engineering Practice 3014 (Maintenance and Protection of Railroad Traffic during Contractor Operations);

(ii) Engineering Practice 3014-01141A (Safety and Protection of Railroad Traffic and Property);

(iii) Engineering Specification No. 150 Stormwater Management Policy;

(iv) Engineering Practice 3005 Pipeline Occupancy-Specification 02081A;

(v) Engineering Practice 3014-02261A (Requirements for Temporary Sheeting and Shoring to Support Amtrak Tracks);

(vi) Engineering Practice 3016 (Storm Water Drainage and Discharge from Adjacent Property onto Amtrak Right-of-Way);

(vii) Amtrak Engineering Practices Section 01520A - Requirements for Temporary Protection Shields for Demolition and Construction of Overhead Bridges and Other Structures;

(viii) Amtrak Engineering Practices Section 01142A (Submission Documentation required for Amtrak Review and Approval of Plans for Bridge Erection, Demolition and other Crane/Hoisting Operations Over Railroad Right-of-Way);

- (ix) Amtrak Engineering Practices 3006 - Design and Construction Criteria for Overhead Bridges;
- (x) Amtrak Standard Track Plans - Drawings No. 70050.0001.08 and 70050.002.08 – Minimum Roadway Clearances;
- (xi) Amtrak Standard Structures Plan - Curved Protective Fence Dwg. No. SP3002;
- (xii) Amtrak Specification – AED-1 Procedures and Design Criteria to be Employed by Electrification Consultants Engaged in the Design of Electrification Facilities on the National Railroad Passenger Corporation;
- (xiii) Amtrak Specification – AED-2 Catenary Structure Loading, Design Criteria, and Standards for Use on the Northeast Corridor and Keystone Branch;
- (xiv) Amtrak ET Standard – Electrified Territory O.H. Bridges - Typical Protection Barrier ET-1446-D Pages 1 & 2;
- (xv) Amtrak ET Standard - Electrified Territory O.H. Bridges - Temporary Protection Shield & Barriers ET-1147-D; and
- (xvi) AREMA Pier Protection: Minimum Crash Wall Requirements.

These standards, copies of which have been provided to County, shall be incorporated into any specifications for the Project.

(c) County shall secure and pay for all permits, fees, licenses, easements, approvals, or inspections which may be required in connection with the Project.

14. **Qualifications of County and its Contractors.**

(a) County and its contractors shall ensure that all employees, contractors, subcontractors, and agents possess the experience, knowledge and character necessary to qualify them individually for the particular duties they perform.

(b) With respect to Electric Traction (ET) and Communications and Signals (C&S) design, Amtrak will provide a list of those contractors pre-qualified by Amtrak to perform ET and C&S design work affecting Amtrak property. County shall furnish for Amtrak’s review resumes of individuals who will be performing these design functions. Amtrak reserves the right to reject resumes that do not support Amtrak’s qualification requirements.

15. **Non Performance of Construction Activities.**

Following completion of all design phase activities as described herein, County and Amtrak may, subject to their mutual agreement, enter into a construction phase agreement setting forth their roles and responsibilities during the construction phase of the Project. Neither County nor its contractors shall perform any construction activities related to the Project affecting Amtrak’s operations or its property until: (a) a

construction phase agreement has been fully executed, (b) Amtrak has approved the Documents, (c) the advance deposit for the construction phase of the Project has been received by Amtrak, (d) Amtrak's forces are available to support the Project, (e) a Temporary Permit to Enter Upon Property has been executed, (f) all required insurance certificates have been provided, (g) all real estate agreements (including, but not limited to, any licenses, permanent or temporary easements) required by Amtrak have been fully executed, and (h) Amtrak has given its authorization to proceed with construction as it relates to and/or affects Amtrak's operations or property.

16. **Notices.**

Any request, demand, authorization, direction, notice, consent, waiver, or other document provided or permitted by this Agreement to be made, given or furnished to the other Party shall be in writing and shall be delivered by hand or by certified mail, return receipt requested or by overnight delivery service, in an envelope addressed as follows:

If to County:

If to Amtrak:
National Railroad Passenger Corporation
30th Street Station
2955 Market Streets
Philadelphia, PA 19104
Attn: Chief Engineer

17. **Dispute Resolution.**

In the event that good faith negotiation and agreement of both Parties does not resolve a claim or dispute, either Party may pursue any right or remedy available to it by law or may propose a method of alternative dispute resolution. Arbitration of a dispute may be agreed upon by the Parties; however, neither Party will be required to submit to arbitration.

18. **Labor Rights.**

This Agreement shall not require Amtrak to contravene the provisions of its labor agreements. In the event of a conflict or inconsistency between this Agreement and such labor agreements, the labor agreements shall control as to such provisions. Any delay in the progress of the Project relating to such conflict or inconsistency shall not create any liability for or additional cost to Amtrak.

19. **County's Representations and Warranties.**

County represents and warrants that it has the authority to enter into this Agreement and that the execution and delivery of this Agreement by County and the performance by County of its obligations to be performed hereunder have been duly authorized by all necessary and appropriate corporate or other action. The foregoing representations and warranties shall survive termination of this Agreement.

20. **Entire Agreement.**

This Agreement constitutes the entire agreement between the Parties as to scope and subject matter. All prior discussions and understandings concerning such scope and subject matter are superseded by this Agreement. This Agreement or any part hereof may not be changed, amended or modified, except by written agreement of the Parties.

County hereby represents and warrants to Amtrak that there are no Project funding related requirements, whether federal, state, county or local, that apply to Amtrak, except as follows: _____. County shall indemnify, defend and hold harmless the Indemnified Parties (as defined in Section 10 above), irrespective of negligence or fault on the part of the Indemnified Parties, from and against any and all losses, liabilities, penalties, fines, forfeitures, demands, claims, causes of action, suits, costs (including cost of defense and attorneys fees), which any of the Indemnified Parties may incur, be responsible for, or pay as a result of the breach of the foregoing representation and warranty. In addition, County shall be responsible for performing any and all Project funding related requirements that apply to Amtrak and are not expressly set forth in this Agreement, even if those requirements would be read into this Agreement by applicable law, regulation, rule of construction or by operation of law.

In the event of a conflict between any prior agreements or documents and the terms of this Agreement, the terms of this Agreement shall take precedence for purposes of the Project and the Services to be performed hereunder.

21. **Successors and Assigns.**

Except as otherwise provided by this Agreement, this Agreement shall inure to the benefit of and be binding upon the successors and assigns of the Parties hereto, except that neither Party shall assign or transfer this Agreement or any of its rights or obligations hereunder to any person, firm, or corporation without obtaining the prior written consent of the other Party, which consent shall not be unreasonably withheld.

22. **Miscellaneous.**

(a) No failure on the part of either Party to exercise, and no delay in exercising, any right, power or remedy hereunder shall operate as a waiver thereof, nor shall any single or partial exercise thereof preclude any other or further exercise thereof or the exercise of any other right, power or remedy. The remedies of the Parties provided herein are cumulative and not exclusive of any remedies provided for by law.

(b) Nothing in this Agreement shall be deemed to create any right in any person not a Party hereto other than permitted successors and assigns of a Party hereto, and this Agreement shall not be construed in any respect to be a contract in whole or in part for the benefit of a third party except as aforesaid.

(c) If any provision of this Agreement shall be determined to be invalid, illegal or unenforceable in any respect, such determination shall not affect any other provision hereof.

(d) The headings contained in this Agreement are for convenience only and shall not be interpreted to limit, control, or affect the meaning or construction of the provisions of this Agreement. This Agreement shall be deemed to have been jointly prepared by the Parties. This Agreement has been negotiated by the Parties and their respective counsel and shall

be interpreted fairly in accordance with its terms and without any strict construction in favor of or against either Party.

(e) This Agreement shall be governed by and construed under the laws of the District of Columbia, excluding that portion of District of Columbia law relating to the application of laws of another jurisdiction. Each Party agrees that all legal proceedings in connection with any dispute arising under or relating to this Agreement shall be brought in the United States District Court for the District of Columbia. County hereby accepts the jurisdiction of the United States District Court for the District of Columbia and agrees to accept service of process as if it were personally served within the District of Columbia.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed by their proper officials, pursuant to due and legal action authorizing the same to be done, as of the day and year first above written.

NATIONAL RAILROAD PASSENGER CORPORATION

By: _____

Name: _____

Title: President and Chief Executive Officer

COUNTY OF MERCER

By: _____

Name: _____

Title: _____

ATTACHMENT B
INSURANCE REQUIREMENTS for Mercer County Bridge Design Phase
NATIONAL RAILROAD PASSENGER CORPORATION (AMTRAK)
CHICAGO UNION STATION COMPANY (CUSCO)
WASHINGTON TERMINAL COMPANY (WTC)
Revised as of April 18, 2017

DEFINITIONS

In these Insurance Requirements, "Railroad" or "Amtrak" shall mean National Railroad Passenger Corporation and, as appropriate, its subsidiaries Chicago Union Station Company ("CUSCO") and Washington Terminal Company ("WTC"). "Contractor" shall mean the party identified as "Permittee" in the Temporary Permit to Enter Upon Property Agreement or the party with whom Amtrak has contracted in another agreement (e.g., Preliminary Engineering Agreement, Design Phase Agreement, Construction Phase Agreement or Force Account Agreement), as well as its officers, employees, agents, servants, contractors, subcontractors, or any other person acting for or by permission of Contractor. "Operations" shall mean activities of or work performed by Contractor. "Agreement" shall mean the Temporary Permit to Enter Upon Property Agreement or other such agreement, as applicable.

INSURANCE

Contractor shall procure and maintain, at its sole cost and expense, the types of insurance specified below. Contractor shall evidence such coverage by submitting to Amtrak the original Railroad Protective Liability Policy and certificates of insurance evidencing the other required insurance, prior to commencement of Operations. In addition, Contractor agrees to provide certified copies of the insurance policies for the required insurance within 30 days of Amtrak's written request. All insurance shall be procured from insurers authorized to do business in the jurisdiction(s) where the Operations are to be performed. Contractor shall require all subcontractors to carry the insurance required herein or Contractor may, at its option, provide the coverage for any or all subcontractors, provided the evidence of insurance submitted by Contractor to Amtrak so stipulates. The insurance shall provide for thirty (30) days prior written notice to Amtrak in the event coverage is substantially changed, canceled or non-renewed. All insurance shall remain in force until all Operations are satisfactorily completed (unless otherwise noted below), all Contractor personnel and equipment have been removed from Railroad property, and any work has been formally accepted. Contractor may provide for the insurance coverages with such deductibles or retained amounts as Amtrak may approve from time to time, except, however, that Contractor shall, at its sole expense, pay for all claims and damages which fall within such deductible or retained amount on the same basis as if there were full commercial insurance in force in compliance with these requirements. Contractor's failure to comply with the insurance requirements set forth herein shall constitute a violation of the Agreement.

1. **Workers' Compensation Insurance** complying with the requirements of the statutes of the jurisdiction(s) in which the Operations will be performed, covering all employees of Contractor. Employer's Liability coverage with limits of not less than \$1 million each accident or illness shall be included.

In the event the Operations are to be performed on, over, or adjacent to navigable waterways, a U.S. Longshoremen and Harbor Workers' Compensation Act Endorsement and Outer Continental Lands Act Endorsement are required.

2. **Commercial General Liability (CGL) Insurance** covering liability of Contractor with respect to all operations to be performed and all obligations assumed by Contractor under the terms of the Agreement. Products-completed operations, independent contractors and contractual liability coverages are to be included, with the contractual exclusion related to construction/demolition

activity within fifty (50) feet of the railroad deleted and no exclusions for Explosion/Collapse/Underground (X-C-U) applicable or added.

The policy shall name National Railroad Passenger Corporation and, as appropriate CUSCO or WTC, and all commuter agencies and railroads that operate over the property or tracks at issue as additional insureds with respect to the operations to be performed. In addition, the policy shall include an ISO endorsement Form CG 24 17 10 01 or its equivalent providing contractual liability coverage for railroads listed as additional insureds. Coverage for such additional insureds shall be primary and non-contributory with respect to any other insurance the additional insureds may carry.

Coverage under this policy shall have limits of liability of not less than **\$10** million each occurrence, combined single limit, for bodily injury (including disease or death), personal injury and property damage (including loss of use) liability. Such coverage may be provided by a combination of a primary CGL policy and a following form excess or umbrella liability policy.

3. **Automobile Liability Insurance** covering the liability of Contractor arising out of the use of any vehicles which bear, or are required to bear, license plates according to the laws of the jurisdiction in which they are to be operated, and which are not covered under Contractor's CGL insurance. The policy shall name National Railroad Passenger Corporation and, as appropriate CUSCO or WTC, and all commuter agencies and railroads that operate over the property or tracks at issue as additional insureds with respect to the operations to be performed. Coverage under this policy shall have limits of liability of not less than **\$1** million each occurrence, combined single limit, for bodily injury (including disease or death), personal injury and property damage (including loss of use) liability.

In the event Contractor or any subcontractor will be transporting and/or disposing of any hazardous material or waste off of the jobsite, a MCS-90 Endorsement is to be added to this policy and the limits of liability are to be increased to **\$5** million each occurrence.

4. **Railroad Protective Liability (RRP) Insurance** covering the Operations performed by Contractor or any subcontractor within fifty (50) feet vertically or horizontally of railroad tracks. The current ISO Occurrence Form (claims-made forms are unacceptable) in the name of National Railroad Passenger Corporation (and as appropriate CUSCO or WTC, and all commuter agencies and railroads that operate over the property or tracks at issue) shall have limits of liability of not less than **\$2** million each occurrence, combined single limit, for Coverages A and B, for losses arising out of injury to or death of all persons, and for physical loss or damage to or destruction of property, including the loss of use thereof. A **\$6** million annual aggregate shall apply. Additionally, Policy Endorsement CG 28 31 - Pollution Exclusion Amendment, is required to be endorsed onto the policy. Further, "Physical Damage to Property" as defined in the policy is to be deleted and replaced by the following endorsement:

"It is agreed that 'Physical Damage to Property' means direct and accidental loss of or damage to all property owned by any named insured and all property in any named insured's care, custody and control."

The original RRP Liability Insurance Policy must be submitted to Amtrak prior to commencement of Operations.

5. **All Risk Property Insurance** covering damage to or loss of all remaining personal property of Contractor, its contractors and subcontractors used during Operations including, but not limited to, tools, equipment, construction trailers and their contents and temporary scaffolding at the project site, whether owned, leased, rented or borrowed for the full replacement cost value. Insurance policies of Contractor, its contractors and subcontractors, covering tools, equipment

and other personal property will include a waiver of subrogation and any other rights of recovery in favor of Amtrak and Contractor.

6. **Contractor's Pollution Liability Insurance** covering the liability of Contractor arising out of any sudden and/or non-sudden pollution or impairment of the environment, including clean-up costs and defense, that arise from the Operations of Contractor, with National Railroad Passenger Corporation and, as appropriate CUSCO or WTC, and all commuter agencies and railroads that operate over the property or tracks at issue named as additional insureds. Coverage under this policy shall have limits of liability of not less than \$2 million each occurrence. The coverage shall be maintained during the term of the project, and for at least two (2) years following Amtrak's acceptance of the completion of all Operations to be performed.
7. **Pollution Legal Liability Insurance** is required if any hazardous material or waste is to be transported or disposed of off of the jobsite. Contractor, its subcontractor or transporter, as well as the disposal site operator, shall maintain this insurance. Contractor shall designate the disposal site, and must provide a certificate of insurance from the disposal facility to Amtrak. The policy shall name National Railroad Passenger Corporation and, as appropriate CUSCO or WTC, and all commuter agencies and railroads that operate over the property or tracks at issue as additional insureds, with limits of liability of not less than \$2 million per claim.

Further, any additional insurance coverages, permits, licenses and other forms of documentation required by the United States Department of Transportation, the Environmental Protection Agency and/or related state and local laws, rules and regulations shall be obtained by Contractor.

8. **Professional Liability Insurance** covering the liability of Contractor for any and all errors or omissions committed by Contractor in the performance of the Operations, regardless of the type of damages. The coverage shall be maintained during the term of the Operations, and for at least three (3) years following completion thereof. The policy shall have a retroactive date that precedes any design work on the project and shall have limits of liability of not less than \$2 million per claim and \$2 million in the annual aggregate.

If Contractor is not performing professional design or engineering services, Contractor may elect to satisfy this requirement through the addition of endorsement CG2279 "Incidental Professional Liability" to its CGL policy.

9. **Waiver of Subrogation** As to all insurance policies required herein, Contractor waives all rights of recovery, and its insurers must waive all rights of subrogation of damages against Amtrak and, as appropriate, CUSCO and WTC, and their agents, officers, directors, and employees. The waiver must be stated on the certificate of insurance.
10. **Punitive Damages** Unless prohibited by law, no liability insurance policies required above shall contain an exclusion for punitive or exemplary damages.
11. **Claims-Made Insurance** If any liability insurance specified above shall be provided on a claims-made basis then, in addition to coverage requirements above, such policy shall provide that:
 - a. The retroactive date shall coincide with or precede Contractor's start of Operations (including subsequent policies purchased as renewals or replacements);
 - b. The policy shall allow for the reporting of circumstances or incidents that might give rise to future claims;

- c. Contractor will use its best efforts to maintain similar insurance under the same terms and conditions that describe each type of policy listed above (e.g., CGL, Professional Liability) for at least three (3) years following completion of the Operations; and
 - d. If insurance is terminated for any reason, Contractor will purchase an extended reporting provision of at least six (6) years to report claims arising from Operations.
12. **Evidence of Insurance** Contractor shall furnish evidence of insurance as specified above at least fifteen (15) days prior to commencing Operations. Prior to the cancellation, renewal, or expiration of any insurance policy specified above, Contractor shall furnish evidence of insurance replacing the cancelled or expired policies. THESE DOCUMENTS SHALL INCLUDE A DESCRIPTION OF THE PROJECT AND THE LOCATION ALONG THE RAILROAD RIGHT-OF-WAY (typically given by milepost designation) IN ORDER TO FACILITATE PROCESSING. The fifteen (15) day advance notice of coverage may be waived by Amtrak in situations where such waiver will benefit Amtrak, but under no circumstances will Contractor begin Operations without providing satisfactory evidence of insurance as approved by Amtrak. Such evidence of insurance coverage shall be sent to:

Director I&C Projects
National Railroad Passenger Corporation
30th Street Station, Mail Box 64
Philadelphia, PA 19104-2817

DESIGN PHASE COST ESTIMATE
TRENTON, NJ, LINCOLN AVENUE OH BRIDGE MP 56.24
MERCER COUNTY - BRIDGE REPLACEMENT PROJECT

NATIONAL RAILROAD PASSENGER CORPORATION
OFFICE OF THE CHIEF ENGINEER
Date: 03/17/17

By: E. Charchar/H. Mulleavey

ENGINEERING DESIGN REVIEW COST:				
Project Initiation and Development:				
Meeting and Plan Reviews	24	MD	\$1,200	\$28,800
Force Account Estimate Preparation	2	MD	\$1,200	\$2,400
Communication and Signals:				
Meeting and Plan Reviews	10	MD	\$1,200	\$12,000
Clearances:				
Meeting and Plan Reviews	8	MD	\$1,200	\$9,600
Structural:				
Meeting and Plan Reviews	16	MD	\$1,200	\$19,200
Track:				
Meeting and Plan Reviews	10	MD	\$1,200	\$12,000
ET:				
Meeting and Plan Reviews	22	MD	\$1,200	\$26,400
Division:				
Meeting and Plan Reviews	8	MD	\$1,200	\$9,600
Site Inspections	2	MD	\$1,200	\$2,400
Force Account Estimate Preparation	1	MD	\$1,200	\$1,200
PROTECTIVE SERVICES FOR EXISTING CONDITIONS VERIFICATION				
2-ET Class 'A' Lineman	40	MD	\$950	\$38,000
Track Foreman	20	MD	\$1,050	\$21,000
2-Track Watchman	40	MD	\$950	\$38,000
ET line Truck	20	Day	\$65	\$1,300
Track Watchman Pickup Truck	20	Day	\$65	\$1,300
SUB TOTAL				\$223,200
CONTINGENCY @ 10%				\$22,320
TOTAL				\$245,520

The estimate is based on the Richard H. Schroeder's (GPI) email to Eli Charchar (Amtrak) dated 03/16/2017 for Amtrak's review of the Preliminary, 30, 60, and 100% design submission packages, and for providing field protection services for an estimated 20 days for site survey and data collection. Note if additional time is required the site design phase activities the estimate will require revision. The actual number of engineering review man-days is contingent upon the number and complexity of the design submittals throughout the design phase of the project. The above rates are current and include fully allocated additives for vacation and paid holidays, force account insurance, employee benefits and overhead. Overhead rates will change annually, effective with expenses incurred January 1st each year, and fringe benefit rates are subject to change quarterly. This is only an estimate. Final billing will be based on the actual labor, material, and equipment costs incurred.

NATIONAL RAILROAD PASSENGER CORPORATION
OVERHEAD ADDITIVES FOR USE WITH Delaware Valley Regional Planning Commission (DVRPC)
DESIGN PHASE AGREEMENT
Lincoln Avenue (CR 626) Bridge Replacement, Trenton City, Mercer County NJ
EFFECTIVE JANUARY 1, 2017

Exhibit B

LOCATION	SYSTEM OVERHEAD	DIVISION OVERHEAD	VACATION & HOLIDAY	FORCE ACCT INS	Avg FY2017		G&A	S/T	O/T	MATERIAL HANDLING ADDITIVE	MATERIAL HANDLING COMPOSITE
					FRINGE BENEFITS	FRINGE BENEFITS		LABOR COMPOSITE	LABOR COMPOSITE		
NEW YORK DIVISION											
NON-EXEMPT LABOR	21.94%	32.21%	17.00%	16.00%	54.04%	19.87%	5.81%	155.20%	119.05%	7.91%	14.18%
EXEMPT LABOR	21.05%	11.59%	12.70%	n/a	15.86%		5.81%	70.56%	n/a	7.91%	14.18%

EXHIBIT C

NATIONAL RAILROAD PASSENGER CORPORATION
TEMPORARY PERMIT TO ENTER UPON PROPERTY
C.E.-17 (REVISED 2/1/14)

Date:
File: E-47-
Internal Order:
WBS Element:

ATTN:

1. TEMPORARY PERMISSION. Temporary permission is hereby granted to _____ (hereinafter called "Permittee"), to enter property owned and/or controlled by the National Railroad Passenger Corporation (hereinafter called "Railroad"), for the purpose of _____ at _____, State of _____, under the terms and conditions set forth below.

2. LOCATION AND ACCESS. (Give map reference, description or both)

(hereinafter called "Property").

3. INDEMNIFICATION. Permittee shall defend, indemnify and hold harmless Railroad, its officers, directors, employees, agents, servants, successors, assigns and subsidiaries, irrespective of their negligence or fault, from and against any and all losses and liabilities, penalties, fines, forfeitures, demands, claims, causes of action, suits, costs and expenses (including cost of defense and attorneys' fees), which any or all of them may hereafter incur, be responsible for, or pay as a result of injury, death, disease, or occupational disease to any person, and for damage (including environmental contamination and loss of use) to or loss of any property, including property of Railroad, arising out of or in any degree directly or indirectly caused by or resulting from activities of or work performed by Permittee, its officers, employees, agents, servants, contractors, subcontractors, or any other person acting for or by permission of Permittee. The foregoing obligation shall not be limited by the existence of any insurance policy or by any limitation on the amount or type of damages, compensation, or benefits payable by or for Permittee or any contractor or subcontractor, and shall survive the termination of this Temporary Permit for any reason. As used in this paragraph, the term "Railroad" also includes all commuter agencies and other railroads with rights to operate over Railroad property, and their respective officers, directors, employees, agents, servants, successors, assigns and subsidiaries.

4. CONSIDERATION FOR PREPARATION OF TEMPORARY PERMIT. Permittee will pay to Railroad the sum of One Thousand Dollars (\$1,000.00) as compensation for the preparation of this Temporary Permit. This fee is to be delivered to Railroad at the address set forth in paragraph 17 hereof.

5. STARTING OF USE OF PROPERTY. Permittee shall notify Railroad's Deputy Chief Engineer-Construction, or his designee, at least ten (10) days in advance before entering upon, or starting any work on, the Property. No entry upon or use of the Property will be permitted until a fully executed copy of this Temporary Permit is returned to Railroad, and specific permission to enter upon the Property is received by Permittee from Railroad's Senior Manager Engineering. (See paragraph 17 for contact information.)

6. RAILROAD OPERATIONS. All activities performed by or on behalf of Permittee shall be performed so as not to interfere with Railroad's operations or with any of Railroad's facilities. In no event shall personnel, equipment or material cross a track or tracks without special advance permission from Railroad's Deputy Chief Engineer-Construction or his designee. If, in the opinion of Railroad's Deputy Chief Engineer-Construction or his designee, conditions warrant at any time, Railroad will provide flag service and/or other protection at the sole cost and expense of Permittee, and Permittee agrees to pay to Railroad the full cost and expense therefor.

EXHIBIT C

7. CLEARANCES. All equipment and material of Permittee shall be kept at all times not less than fifteen (15) feet from the centerline of the outside track, unless specifically otherwise authorized in writing by Railroad's Deputy Chief Engineer-Construction or his designee. Permittee shall conduct all operations so that no part of any equipment shall foul an operated track; transmission, communication or signal line; or any other structure or facility of Railroad.

8. RESTORATION OF PREMISES. Upon completion of its work, Permittee shall, at the option of Railroad, (a) leave the Property in a condition satisfactory to Railroad, or (b) restore the Property to its original condition. This may include, without limitation, the restoration of any fences removed or damaged by Permittee.

9. TERM OF TEMPORARY PERMIT. This Temporary Permit shall commence on the date Railroad receives a fully executed copy of this Temporary Permit pursuant to paragraph 17 hereof and shall extend until the end of the period Railroad determines is necessary for Permittee to accomplish the purpose set forth in paragraph 1 hereof; provided, however, Railroad reserves the right to revoke this Temporary Permit at any time, and in no event shall this Temporary Permit extend beyond _____, 20___. Under no circumstances shall this Temporary Permit be construed as granting to Permittee any right, title or interest of any kind in any property of Railroad.

10. PROTECTION. All work on, over, under, within or adjacent to the Property shall be performed in accordance with the document entitled "SPECIFICATIONS REGARDING SAFETY AND PROTECTION OF RAILROAD TRAFFIC AND PROPERTY," a copy of which is attached hereto as Attachment A and incorporated herein by reference.

11. INSURANCE. Before Permittee commences any work on, over, under, within or adjacent to the Property, Permittee and its contractors (unless Permittee opts to provide the required coverage for them), shall furnish to Railroad's Senior Manager Engineering, evidence of the insurance coverages specified in the document entitled "INSURANCE REQUIREMENTS - NATIONAL RAILROAD PASSENGER CORPORATION," a copy of which is attached hereto as Attachment B and incorporated herein by reference.

12. SAFETY ORIENTATION CLASS. No person may enter within twenty-five (25) feet of the Property until he/she has attended Railroad's Safety Orientation Class, as noted in paragraph 12 of Attachment A.

13. COMPLIANCE BY CONTRACTORS. Permittee shall take all steps necessary to ensure that its contractors and subcontractors comply with the terms and conditions of this Temporary Permit.

14. SUPPORT SERVICES; COSTS; PAYMENTS. Railroad shall not be responsible for any costs incurred by Permittee in relation to any matter whatsoever. Permittee is required to reimburse Railroad for all costs incurred by Railroad in relation to this Temporary Permit. Without limiting the foregoing, Permittee is required to reimburse Railroad for all costs incurred by Railroad in connection with the review of any plans, drawings or other submissions made by Permittee.

Railroad's costs, expenses and labor charges will be billed to Permittee at Railroad's standard force account rates. Except as specified in paragraphs 1 and 4 hereof, all payments due from Permittee to Railroad under this Temporary Permit shall be due and payable within thirty (30) days from the date of invoice. Permittee shall have no right to set off against any payment due under this Temporary Permit any sums which Permittee may believe are due to it from Railroad for any reason whatsoever. In the event that Permittee shall fail to pay, when due, any amount payable by it under this Temporary Permit, Permittee shall also pay to Railroad, together with such overdue payment, interest on the overdue amount at an annual rate of six (6) percentage points over and above the rate published from time to time by *The Wall Street Journal* as the prime commercial lending rate (or the highest rate allowed by law, if less than the foregoing), calculated from the date the payment was due until paid. All payments due from

EXHIBIT C

Permittee to Railroad hereunder shall be: (a) made by check drawn from currently available funds; (b) deemed made only upon receipt by Railroad of collected funds; (c) made payable to National Railroad Passenger Corporation; and (d) delivered to the National Railroad Passenger Corporation, 23615 Network Place, Chicago, IL 60673-1236. (However, the permit fee referenced in paragraph 4 hereof and the Railroad Protective Liability premium referenced in Attachment B, if applicable, shall be delivered to Railroad at the address set forth in paragraph 17 hereof.) All payment obligations of Permittee under this Temporary Permit shall survive the termination or expiration of this Temporary Permit.

15. ENVIRONMENTAL AND GEOTECHNICAL TESTS AND STUDIES. Permittee shall not perform any environmental or geotechnical tests or studies (e.g., air, soil or water sampling) unless specifically identified and authorized in paragraph 1 of this Temporary Permit. If any such tests or studies are performed, Permittee shall promptly furnish to Railroad, at no cost, a copy of the results including any reports or analyses obtained or compiled. Except as may be required by applicable law or as authorized by Railroad in writing, Permittee shall not disclose the results of any such tests or studies to anyone other than Railroad or Permittee's client. Failure to comply with the provisions of this clause shall result in immediate termination of this Temporary Permit and forfeiture of all compensation paid Railroad therefor.

16. SEVERABILITY. If any provision of this Temporary Permit is found to be unlawful, invalid or unenforceable, that provision shall be deemed deleted without prejudice to the lawfulness, validity and enforceability of the remainder of the Temporary Permit.

EXHIBIT C

17. ACCEPTANCE. To confirm acceptance of this Temporary Permit, one fully executed copy must be returned to: Senior Manager Engineering, National Railroad Passenger Corporation, 30th Street Station, 2955 Market Street, Mail Box 64, Philadelphia, PA 19104 (215/349-1750). The second copy may be retained for your file.

NATIONAL RAILROAD PASSENGER CORPORATION

By: _____
Deputy Chief Engineer - Construction

Date: _____

AGREED TO AND ACCEPTED:

By: _____
(signature)

Title: _____
Must be an Owner/Partner or
duly authorized representative

Date: _____

EXHIBIT C

ATTACHMENT A

Temporary Permit to Enter Upon Property

**SPECIFICATIONS REGARDING SAFETY
AND PROTECTION OF RAILROAD TRAFFIC AND PROPERTY (Revised 10/1/12)**

National Railroad Passenger Corporation (Railroad)

In the following Specifications, "Railroad" shall mean National Railroad Passenger Corporation; "Chief Engineer" shall mean Railroad's Chief Engineer or his/her duly authorized representative; "Permittee" shall mean the party so identified in the Temporary Permit to Enter Upon Property; and "Contractor" shall mean the entity retained by the Permittee or the entity with whom Railroad has contracted in a Preliminary Engineering Agreement, Design Phase Agreement, Construction Phase Agreement, Force Account Agreement, or other such agreement, as applicable. Reference to "Permittee/Contractor" includes both the Permittee and the Contractor.

(1) Pre-Entry Meeting: Before entry of Permittee/Contractor onto Railroad's property, a pre-entry meeting shall be held at which time Permittee/Contractor shall submit for written approval of the Chief Engineer, plans, computations, a Site Specific Safety Work Plan and site-specific work plans that include a detailed description of proposed methods for accomplishing the work and protecting railroad traffic. Any such written approval shall not relieve Permittee/Contractor of its complete responsibility for the adequacy and safety of its operations.

(2) Rules, Regulations and Requirements: Railroad traffic shall be maintained at all times with safety and continuity, and Permittee/Contractor shall conduct its operations in compliance with all rules, regulations, and requirements of Railroad (including these Specifications) with respect to any work performed on, over, under, within or adjacent to Railroad's property. Permittee /Contractor shall be responsible for acquainting itself with such rules, regulations and requirements. Any violation of Railroad's safety rules, regulations, or requirements shall be grounds for the immediate suspension of Permittee/Contractor work, and the re-training of all personnel, at Permittee's/Contractor's expense.

(3) Maintenance of Safe Conditions: If tracks or other property of Railroad are endangered during the work, Permittee/Contractor shall immediately take such steps as may be directed by Railroad to restore safe conditions, and upon failure of Permittee/Contractor to immediately carry out such direction, Railroad may take whatever steps are reasonably necessary to restore safe conditions. All costs and expenses of restoring safe conditions, and of repairing any damage to Railroad's trains, tracks, right-of-way or other property caused by the operations of Permittee/Contractor, shall be paid by Permittee.

(4) Protection in General: Permittee/Contractor shall consult with the Chief Engineer to determine the type and extent of protection required to ensure safety and continuity of railroad traffic. Any Inspectors, Track Foremen, Track Watchmen, Flagmen, Signalmen, Electric Traction Linemen, or other employees deemed necessary by Railroad, at its sole discretion, for protective services shall be obtained from Railroad by Permittee/Contractor. The cost of same shall be paid directly to Railroad by Permittee/Contractor. The provision of such employees by Railroad, and any other precautionary measures taken by Railroad, shall not relieve Permittee/Contractor from its complete responsibility for the adequacy and safety of its operations.

(5) Protection for Work Near Electrified Track or Wire: Whenever work is performed in the vicinity of electrified tracks and/or high voltage wires, particular care must be exercised, and Railroad's requirements regarding clearance to be maintained between equipment and tracks and/or energized wires, and otherwise regarding work in the vicinity of electrified tracks, must be strictly observed. No employees or equipment will be permitted to work near overhead wires, except when protected by a Class A employee of Railroad. Permittee/Contractor must supply an adequate length of grounding cable (4/0

EXHIBIT C

copper with approved clamps) for each piece of equipment working near or adjacent to any overhead wire.

(6) Fouling of Track or Wire: No work will be permitted within twenty-five (25) feet of the centerline of track or the energized wire or have potential of getting within twenty-five (25) feet of track wire without the approval of the Chief Engineer. Permittee/Contractor shall conduct its work so that no part of any equipment or material shall foul an active track or overhead wire without the written permission of the Chief Engineer. When Permittee /Contractor desires to foul an active track, it must provide the Chief Engineer with its site-specific work plan a minimum of twenty-one (21) working days in advance, so that, if approved, arrangements may be made for proper protection of Railroad. Any equipment shall be considered to be fouling a track or overhead wire when located (a) within fifteen (15) feet from the centerline of the track or within fifteen (15) feet from the wire, or (b) in such a position that failure of same, with or without a load, would bring it within fifteen (15) feet from the centerline of the track or within fifteen (15) feet from the wire and requires the presence of the proper Railroad protection personnel.

If acceptable to the Chief Engineer, a safety barrier (approved temporary fence or barricade) may be installed at fifteen (15) feet from centerline of track or overhead wire to afford the Permittee/Contractor with a work area that is not considered fouling. Nevertheless, protection personnel may be required at the discretion of the Chief Engineer.

(7) Track Outages: Permittee/Contractor shall verify the time and schedule of track outages from Railroad before scheduling any of its work on, over, under, within, or adjacent to Railroad's right-of-way. Railroad does not guarantee the availability of any track outage at any particular time. Permittee/Contractor shall schedule all work to be performed in such a manner as not to interfere with Railroad operations. Permittee/Contractor shall use all necessary care and precaution to avoid accidents, delay or interference with Railroad's trains or other property.

(8) Demolition: During any demolition, Permittee/Contractor must provide horizontal and vertical shields, designed by a Professional Engineer registered in the state in which the work takes place. These shields shall be designed in accordance with Railroad's specifications and approved by Railroad, so as to prevent any debris from falling onto Railroad's right-of-way or other property. A grounded temporary vertical protective barrier must be provided if an existing vertical protective barrier is removed during demolition. In addition, if any openings are left in an existing bridge deck, a protective fence must be erected at both ends of the bridge to prohibit unauthorized persons from entering onto the bridge.

Ballasted track structure shall be kept free of all construction and demolition debris.

(9) Equipment Condition: All equipment to be used in the vicinity of operating tracks shall be in "certified" first-class condition so as to prevent failures that might cause delay to trains or damage to Railroad's property. No equipment shall be placed or put into operation near or adjacent to operating tracks without first obtaining permission from the Chief Engineer. Under no circumstances shall any equipment or materials be placed or stored within twenty-five (25) feet from the centerline of an outside track, except as approved by Railroad in accordance with Permittee's/Contractor's Site Specific Safety Work Plan. To ensure compliance with this requirement, Permittee/Contractor must establish a twenty-five (25) foot foul line prior to the start of work by either driving stakes, taping off or erecting a temporary fence, or providing an alternate method as approved by the Chief Engineer. Permittee/Contractor will be issued warning stickers which must be placed in the operating cabs of all equipment as a constant reminder of the twenty-five (25) foot clearance envelope.

(10) Storage of Materials and Equipment: No material or equipment shall be stored on Railroad's property without first having obtained permission from the Chief Engineer. Any such storage will be on the condition that Railroad will not be liable for loss of or damage to such materials or equipment from any cause.

EXHIBIT C

If permission is granted for the storage of compressed gas cylinders on Railroad property, they shall be stored a minimum of 25 feet from the nearest track in an approved lockable enclosure. The enclosure shall be locked when the Permittee/Contractor is not on the project site.

(11) Condition of Railroad's Property: Permittee/Contractor shall keep Railroad's property clear of all refuse and debris from its operations. Upon completion of the work, Permittee/Contractor shall remove from Railroad's property all machinery, equipment, surplus materials, falsework, rubbish, temporary structures, and other property of Permittee/Contractor and shall leave Railroad's property in a condition satisfactory to the Chief Engineer.

(12) Safety Training: All individuals, including representatives and employees of Permittee/Contractor, before entering onto Railroad's property and before coming within twenty-five (25) feet of the centerline of the track or energized wire must first attend Railroad's Contractor Orientation Computer Based Training Class. The Contractor Orientation Class will be provided electronically @www.amtrakcontractor.com. Upon successful completion of the course and test, the individual taking the course will receive a temporary certificate without a photo that is valid for three weeks. The individual must upload a photo of himself/herself that will be embedded in the permanent ID card. The photo ID will be mailed to the individual's home address and must be worn/displayed while on Railroad property. Training is valid for one calendar year. All costs of complying with Railroad's safety training shall be at the sole expense of Permittee/Contractor. Permittee /Contractor shall appoint a qualified person as its Safety Representative. The Safety Representative shall continuously ensure that all individuals comply with Railroad's safety requirements. All safety training records must be maintained with the Permittee's/Contractor's site specific work plan.

(13) No Charges to Railroad: It is expressly understood that neither these Specifications, nor any document to which they are attached, include any work for which Railroad is to be billed by Permittee/Contractor, unless Railroad makes a specific written request that such work be performed at Railroad's expense.

EXHIBIT C

ATTACHMENT B INSURANCE REQUIREMENTS NATIONAL RAILROAD PASSENGER CORPORATION (AMTRAK) CHICAGO UNION STATION COMPANY (CUSCO) WASHINGTON TERMINAL COMPANY (WTC)

Trenton, NJ, OH Br. 56.24, Design for Replacement of Lincoln Avenue Bridge
Revised as of April 18, 2017

DEFINITIONS

In these Insurance Requirements, "Railroad" or "Amtrak" shall mean National Railroad Passenger Corporation and, as appropriate, its subsidiaries Chicago Union Station Company ("CUSCO") and Washington Terminal Company ("WTC"). "Contractor" shall mean the party identified as "Permittee" in the Temporary Permit to Enter Upon Property Agreement or the party with whom Amtrak has contracted in another agreement (e.g., Preliminary Engineering Agreement, Design Phase Agreement, Construction Phase Agreement or Force Account Agreement), as well as its officers, employees, agents, servants, contractors, subcontractors, or any other person acting for or by permission of Contractor. "Operations" shall mean activities of or work performed by Contractor. "Agreement" shall mean the Temporary Permit to Enter Upon Property Agreement or other such agreement, as applicable.

INSURANCE

Contractor shall procure and maintain, at its sole cost and expense, the types of insurance specified below. Contractor shall evidence such coverage by submitting to Amtrak the original Railroad Protective Liability Policy and certificates of insurance evidencing the other required insurance, prior to commencement of Operations. In addition, Contractor agrees to provide certified copies of the insurance policies for the required insurance within 30 days of Amtrak's written request. All insurance shall be procured from insurers authorized to do business in the jurisdiction(s) where the Operations are to be performed. Contractor shall require all subcontractors to carry the insurance required herein or Contractor may, at its option, provide the coverage for any or all subcontractors, provided the evidence of insurance submitted by Contractor to Amtrak so stipulates. The insurance shall provide for thirty (30) days prior written notice to Amtrak in the event coverage is substantially changed, canceled or non-renewed. All insurance shall remain in force until all Operations are satisfactorily completed (unless otherwise noted below), all Contractor personnel and equipment have been removed from Railroad property, and any work has been formally accepted. Contractor may provide for the insurance coverages with such deductibles or retained amounts as Amtrak may approve from time to time, except, however, that Contractor shall, at its sole expense, pay for all claims and damages which fall within such deductible or retained amount on the same basis as if there were full commercial insurance in force in compliance with these requirements. Contractor's failure to comply with the insurance requirements set forth herein shall constitute a violation of the Agreement.

1. **Workers' Compensation Insurance** complying with the requirements of the statutes of the jurisdiction(s) in which the Operations will be performed, covering all employees of Contractor. Employer's Liability coverage with limits of not less than \$1 million each accident or illness shall be included.

In the event the Operations are to be performed on, over, or adjacent to navigable waterways, a U.S. Longshoremen and Harbor Workers' Compensation Act Endorsement and Outer Continental Lands Act Endorsement are required.

2. **Commercial General Liability (CGL) Insurance** covering liability of Contractor with respect to all operations to be performed and all obligations assumed by Contractor under the terms of the Agreement. Products-completed operations, independent contractors and contractual liability

EXHIBIT C

coverages are to be included, with the contractual exclusion related to construction/demolition activity within fifty (50) feet of the railroad deleted and no exclusions for Explosion/Collapse/Underground (X-C-U) applicable or added.

The policy shall name National Railroad Passenger Corporation and, as appropriate CUSCO or WTC, and all commuter agencies and railroads that operate over the property or tracks at issue as additional insureds with respect to the operations to be performed. In addition, the policy shall include an ISO endorsement Form CG 24 17 10 01 or its equivalent providing contractual liability coverage for railroads listed as additional insureds. Coverage for such additional insureds shall be primary and non-contributory with respect to any other insurance the additional insureds may carry.

Coverage under this policy shall have limits of liability of not less than **\$10** million each occurrence, combined single limit, for bodily injury (including disease or death), personal injury and property damage (including loss of use) liability. Such coverage may be provided by a combination of a primary CGL policy and a following form excess or umbrella liability policy.

3. **Automobile Liability Insurance** covering the liability of Contractor arising out of the use of any vehicles which bear, or are required to bear, license plates according to the laws of the jurisdiction in which they are to be operated, and which are not covered under Contractor's CGL insurance. The policy shall name National Railroad Passenger Corporation and, as appropriate CUSCO or WTC, and all commuter agencies and railroads that operate over the property or tracks at issue as additional insureds with respect to the operations to be performed. Coverage under this policy shall have limits of liability of not less than **\$1** million each occurrence, combined single limit, for bodily injury (including disease or death), personal injury and property damage (including loss of use) liability.

In the event Contractor or any subcontractor will be transporting and/or disposing of any hazardous material or waste off of the jobsite, a MCS-90 Endorsement is to be added to this policy and the limits of liability are to be increased to **\$5** million each occurrence.

4. **Railroad Protective Liability (RRP) Insurance** covering the Operations performed by Contractor or any subcontractor within fifty (50) feet vertically or horizontally of railroad tracks. The current ISO Occurrence Form (claims-made forms are unacceptable) in the name of National Railroad Passenger Corporation (and as appropriate CUSCO or WTC, and all commuter agencies and railroads that operate over the property or tracks at issue) shall have limits of liability of not less than **\$2** million each occurrence, combined single limit, for Coverages A and B, for losses arising out of injury to or death of all persons, and for physical loss or damage to or destruction of property, including the loss of use thereof. A **\$6** million annual aggregate shall apply. Additionally, Policy Endorsement CG 28 31 - Pollution Exclusion Amendment, is required to be endorsed onto the policy. Further, "Physical Damage to Property" as defined in the policy is to be deleted and replaced by the following endorsement:

"It is agreed that 'Physical Damage to Property' means direct and accidental loss of or damage to all property owned by any named insured and all property in any named insured's care, custody and control."

The original RRP Liability Insurance Policy must be submitted to Amtrak prior to commencement of Operations.

5. **All Risk Property Insurance** covering damage to or loss of all remaining personal property of Contractor, its contractors and subcontractors used during Operations including, but not limited to, tools, equipment, construction trailers and their contents and temporary scaffolding at the project site, whether owned, leased, rented or borrowed for the full replacement cost value.

EXHIBIT C

Insurance policies of Contractor, its contractors and subcontractors, covering tools, equipment and other personal property will include a waiver of subrogation and any other rights of recovery in favor of Amtrak and Contractor.

6. **Contractor's Pollution Liability Insurance** covering the liability of Contractor arising out of any sudden and/or non-sudden pollution or impairment of the environment, including clean-up costs and defense, that arise from the Operations of Contractor, with National Railroad Passenger Corporation and, as appropriate CUSCO or WTC, and all commuter agencies and railroads that operate over the property or tracks at issue named as additional insureds. Coverage under this policy shall have limits of liability of not less than \$2 million each occurrence. The coverage shall be maintained during the term of the project, and for at least two (2) years following Amtrak's acceptance of the completion of all Operations to be performed.
7. **Pollution Legal Liability Insurance** is required if any hazardous material or waste is to be transported or disposed of off of the jobsite. Contractor, its subcontractor or transporter, as well as the disposal site operator, shall maintain this insurance. Contractor shall designate the disposal site, and must provide a certificate of insurance from the disposal facility to Amtrak. The policy shall name National Railroad Passenger Corporation and, as appropriate CUSCO or WTC, and all commuter agencies and railroads that operate over the property or tracks at issue as additional insureds, with limits of liability of not less than \$2 million per claim.

Further, any additional insurance coverages, permits, licenses and other forms of documentation required by the United States Department of Transportation, the Environmental Protection Agency and/or related state and local laws, rules and regulations shall be obtained by Contractor.

8. **Professional Liability Insurance** covering the liability of Contractor for any and all errors or omissions committed by Contractor in the performance of the Operations, regardless of the type of damages. The coverage shall be maintained during the term of the Operations, and for at least three (3) years following completion thereof. The policy shall have a retroactive date that precedes any design work on the project and shall have limits of liability of not less than \$2 million per claim and \$2 million in the annual aggregate.

If Contractor is not performing professional design or engineering services, Contractor may elect to satisfy this requirement through the addition of endorsement CG2279 "Incidental Professional Liability" to its CGL policy.

9. **Waiver of Subrogation** As to all insurance policies required herein, Contractor waives all rights of recovery, and its insurers must waive all rights of subrogation of damages against Amtrak and, as appropriate, CUSCO and WTC, and their agents, officers, directors, and employees. The waiver must be stated on the certificate of insurance.
10. **Punitive Damages** Unless prohibited by law, no liability insurance policies required above shall contain an exclusion for punitive or exemplary damages.
11. **Claims-Made Insurance** If any liability insurance specified above shall be provided on a claims-made basis then, in addition to coverage requirements above, such policy shall provide that:
 - a. The retroactive date shall coincide with or precede Contractor's start of Operations (including subsequent policies purchased as renewals or replacements);
 - b. The policy shall allow for the reporting of circumstances or incidents that might give rise to future claims;

EXHIBIT C

- c. Contractor will use its best efforts to maintain similar insurance under the same terms and conditions that describe each type of policy listed above (e.g., CGL, Professional Liability) for at least three (3) years following completion of the Operations; and
 - d. If insurance is terminated for any reason, Contractor will purchase an extended reporting provision of at least six (6) years to report claims arising from Operations.
12. **Evidence of Insurance** Contractor shall furnish evidence of insurance as specified above at least fifteen (15) days prior to commencing Operations. Prior to the cancellation, renewal, or expiration of any insurance policy specified above, Contractor shall furnish evidence of insurance replacing the cancelled or expired policies. THESE DOCUMENTS SHALL INCLUDE A DESCRIPTION OF THE PROJECT AND THE LOCATION ALONG THE RAILROAD RIGHT-OF-WAY (typically given by milepost designation) IN ORDER TO FACILITATE PROCESSING. The fifteen (15) day advance notice of coverage may be waived by Amtrak in situations where such waiver will benefit Amtrak, but under no circumstances will Contractor begin Operations without providing satisfactory evidence of insurance as approved by Amtrak. Such evidence of insurance coverage shall be sent to:

Senior Manager Engineering
National Railroad Passenger Corporation
30th Street Station, Mail Box 64
2955 Market Street
Philadelphia, PA 19104-2817

This Certificate is to be executed by an authorized representative of a consultant performing design or engineering services in support of the project described herein. Amtrak will not review plans, drawings or specifications until this Certificate is executed and returned to Amtrak.

EXHIBIT D

CERTIFICATE BY _____ [insert name of consultant] TO NATIONAL RAILROAD PASSENGER CORPORATION

This Certificate ("Certificate") effective this ____ day of _____, 2017, is made by _____ [insert name of entity], a _____ [insert type of entity (e.g., corporation/partnership/limited liability company) and County of incorporation or formation – for example, a Delaware limited liability company] with its principal offices located at _____ [insert location] ("Consultant") to National Railroad Passenger Corporation, a District of Columbia corporation with its principal offices located at 60 Massachusetts Avenue, N.E., Washington, DC, 20002 ("Amtrak").

WHEREAS, the County of Mercer ("County") desires to replace the Lincoln Avenue overhead bridge which carries Lincoln Avenue over the Northeast Corridor in Trenton, New Jersey ("Bridge") at Mile Post 56.24 in Trenton, New Jersey ("the Project"); and

WHEREAS, the tracks of Railroad are located below the grade of the Bridge; and

WHEREAS, due to the location of the Project relative to Amtrak property and the potential impact of the Project on Amtrak's property and/or operations, the Project work may not proceed without Amtrak's prior review and approval of the plans, drawings and specifications; and

WHEREAS, County has retained the services of Consultant to provide engineering and/or design services in support of the Project; and

WHEREAS, in order to advance the Project, Consultant desires Amtrak's review and approval of its plans, drawings, and specifications; and

WHEREAS, Consultant agrees that protection of Amtrak's property and operations is a paramount public safety concern.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, and for and in consideration of the covenants and agreements contained herein, intending to be legally bound, Consultant hereby represents, acknowledges, and agrees as follows:

1. **Recitals.** The recitals set forth above in the WHEREAS clauses are incorporated into the terms of this Certificate as if fully set forth herein.
2. **Consideration for Execution of this Certificate.** In consideration, *inter alia*, for Amtrak reviewing the plans, drawings, and specifications which are needed for Consultant to perform its obligations under Consultant's agreement with County, Consultant hereby executes this Certificate.
3. **Indemnification.** Consultant hereby releases and agrees to defend, indemnify and hold harmless Amtrak and any other affected railroad, as well as their respective officers, directors, employees, agents, successors, assigns, and subsidiaries (collectively "the Indemnified Parties"), from and against any and all losses, liabilities, claims, demands, fines, suits, and costs (including cost of defense and attorneys' fees) which any of the Indemnified Parties may hereafter incur, be responsible for, or pay as a result of negligent errors or omissions in Consultant's work and/or in the work of its officers, directors, employees, agents, subconsultants, successors, assigns, subsidiaries, and any other persons acting for or by permission of Consultant relating to the design and/or engineering services Consultant is providing for County in support of the Project. The foregoing obligation shall not be limited by the existence of any

insurance policy or by any limitation on the amount or type of damages, compensation, or benefits payable by or for Consultant or its subconsultants or agents, and shall survive the termination of the agreement between Amtrak and County.

4. Insurance. Consultant agrees to procure and maintain in effect professional liability insurance covering the liability of Consultant for all negligent errors or omissions committed by Consultant, its officers, directors, employees, agents, subconsultants, successors, assigns, and subsidiaries, and any other persons acting for or by permission of Consultant in the performance of any design and/or engineering services in support of the Project. The insurance shall be maintained during the term of Consultant's agreement with County and for at least three years following completion of all services to be performed by Consultant in support of the Project. The insurance shall have limits of liability of not less than two million dollars (\$2,000,000) per claim and two million dollars (\$2,000,000) in the annual aggregate.

Prior to Amtrak reviewing any plans, drawings, and specifications, Consultant shall provide to Amtrak an insurance certificate reflecting that Consultant has the insurance as stated above. At least one (1) time every year thereafter, Consultant shall provide to Amtrak an updated insurance certificate reflecting that Consultant has the insurance as stated above.

5. Review of Documents. Any review of Consultant's plans, drawings, and specifications by Amtrak shall be for the purpose of examining the general arrangement, design and details of the Project for potential impact on Amtrak's property and operations. Amtrak assumes no responsibility for, and makes no representations or warranties, express or implied, as to the design, condition, workmanship and/or adequacy of the plans, drawings, and specifications.

6. Permit to Enter. Nothing herein is intended to grant Consultant the right to enter upon the right-of-way or other property of Amtrak. If entry onto, above, or below Amtrak's right-of-way or other property is required for purposes of this Project by Consultant, Consultant must execute the then-current version of Amtrak's "Temporary Permit to Enter Upon Property".

7. Governing Law. This Certificate shall be governed by and construed under the laws of the District of Columbia. All legal proceedings in connection with any dispute arising under or relating to this Certificate shall be brought in the United States District Court for the District of Columbia.

IN WITNESS WHEREOF, the undersigned, intending to be legally bound hereby, has executed this Certificate.

Consultant

By: _____

Name: _____

Title: _____

Date: _____

Email

From: Schroeder, Richard
To: JHaddad@njtransit.com
Cc: Boerchers, Bernard; Steponanko, Julia; Farrow, William; ["bmuzaffar@mercercounty.org"](mailto:bmuzaffar@mercercounty.org); ["jcosciajr@dvrpc.org"](mailto:jcosciajr@dvrpc.org); ["Sandusky, Greg"](mailto:Sandusky, Greg)
Subject: RE: DVRPC/Mercer County - Lincoln Avenue Bridge Replacement, Local CD Study - NJ Transit
Date: Monday, August 29, 2016 12:26:28 PM
Attachments: image009.png
image010.png
image014.png
NJDOT Design Criteria for Bridges over RR.pdf
image001.png

Joe:

I am sending you this E-mail to document the phone conversation that we had on Friday, and to provide further results of our investigation regarding clearances from the "existing" NJ Transit lines.

As per our discussion:

- It was verified that NJDOT design standard was acceptable design criteria for vertical & horizontal track clearances (PDF copy attached).
- It was clarified that NJ Transit would like to maintain/obtain the vertical & horizontal track clearances from all 3 sets of old tracks (including the line which ran along the old platform).
- It was clarified that improvements to the existing horizontal clearances will only be addressed if the PPA included replacement of entire bridge.

As per your request, we have taken another look at the proposed "Concept Design" and offer the following:

- Minimum vertical clearances will be obtained no matter which PPA is selected.
- All minimum horizontal clearances can be most likely be met by re-spacing and/or "skewing" the bridge foundations (if the PPA includes a full bridge replacement). Exact clearances cannot be calculated until the PPA has been selected and the design has progressed further.

Please review the above and let me know if you have any corrections or need any further clarifications.

Thank you,



Richard H. Schroeder III
908-236-9001 Ext. 5059
An Equal Opportunity Employer

From: JHaddad@njtransit.com [mailto:JHaddad@njtransit.com]
Sent: Thursday, August 11, 2016 3:28 PM
To: Schroeder, Richard <rschroeder@gpinet.com>
Subject: RE: DVRPC/Mercer County - Lincoln Avenue Bridge Replacement, Local CD Study - NJ Transit

The lateral clearance as it exist is too tight and not practicable could we have these two piers

surrounding the tracks to be skewed

From: Schroeder, Richard [<mailto:rschroeder@gpinet.com>]
Sent: Thursday, August 11, 2016 1:09 PM
To: Haddad, Joseph M. (CROPJMH1)
Cc: Boerchers, Bernard; Steponanko, Julia; Farrow, William; 'bmuzaffar@mercercounty.org'; 'jcosciajr@dvrpc.org'; 'Sandusky, Greg'
Subject: RE: DVRPC/Mercer County - Lincoln Avenue Bridge Replacement, Local CD Study - NJ Transit

Joe:

Please see the attached plan for the lateral clearances from the existing tracks.

Please confirm if NJ Transit desires to maintain existing clearances for all of the existing tracks, and the “path” adjacent to the concrete platform (rails previously removed).

Thank you,



Richard H. Schroeder III
908-236-9001 Ext. 5059
An Equal Opportunity Employer

From: JHaddad@njtransit.com [<mailto:JHaddad@njtransit.com>]
Sent: Monday, August 08, 2016 9:29 AM
To: Schroeder, Richard <rschroeder@gpinet.com>
Subject: RE: DVRPC/Mercer County - Lincoln Avenue Bridge Replacement, Local CD Study - NJ Transit

From: Schroeder, Richard [<mailto:rschroeder@gpinet.com>]
Sent: Thursday, August 04, 2016 3:46 PM
To: Haddad, Joseph M. (CROPJMH1)
Cc: Boerchers, Bernard; Steponanko, Julia; Farrow, William; 'bmuzaffar@mercercounty.org'; 'jcosciajr@dvrpc.org'; 'Sandusky, Greg'
Subject: RE: DVRPC/Mercer County - Lincoln Avenue Bridge Replacement, Local CD Study - NJ Transit

Joe:

Thank you for calling me yesterday to discuss this issue.

As per our discussion, GPI has the following understanding:

- NJ Transit does own each the properties under/adjacent to the Lincoln Avenue bridge as shown on the Tax Maps that I sent you in the previous E-mail.
- NJ Transit would classify the old rail lines as being "inactive", and are keeping their options “open” for future plans to use these lines.
- Based on this, NJ Transit will need to be listed as a “stakeholder” for the project.
- NJ Transit will require that the bridge be designed to meet their standard vertical & horizontal track clearance requirements (very similar to Amtrak).
- The extent of the future plans are unknown, so the clearance requirements would be based on the “existing” tracks.

Please review the above and let me know if you have any corrections or additions.

- Also, I have attached a PDF copy of a plan that shows the location of the remnants of the old tracks and station that our surveyor located under the existing bridge (clouded in red)... Please indicate which of these tracks/paths NJ Transit would expect the County to design around.
- What is the Lateral clearance on the existing tracks .
- Could we keep both tracks in place and design the bridge around

Lastly, we had been told that SEPTA was in the process of acquiring some of the NJ Transit properties to construct an extension/yard for their use. Please let us know if there is any more information concerning this issue; and if so, what potential impacts it could have on the design for the new bridge.

- Under investigation

Thank you,



Richard H. Schroeder III
908-236-9001 Ext. 5059
An Equal Opportunity Employer

From: Schroeder, Richard

Sent: Monday, July 25, 2016 3:44 PM

To: 'JHaddad@njtransit.com' <JHaddad@njtransit.com>

Cc: Boerchers, Bernard <bboerchers@gpinet.com>; Steponanko, Julia <jsteponanko@gpinet.com>; Farrow, William <wfarrow@gpinet.com>; 'bmuzaffar@mercercounty.org' <bmuzaffar@mercercounty.org>; 'jcosciajr@dvrpc.org' <jcosciajr@dvrpc.org>; 'Sandusky, Greg' <gsandusky@mercercounty.org>

Subject: RE: DVRPC/Mercer County - Lincoln Avenue Bridge Replacement, Local CD Study - NJ Transit

Joe:

As per our discussion, please find attached a PDF copy of the Tax Maps that include the properties on both sides of the existing bridge structure that have been labeled to reflect the current property owners (based on on-line tax records).

Please review the attached and provide concurrence or correction for the lots that are indicated as being owned by NJ Transit. If owned by NJ Transit, please also provide the current status ("abandoned" or "inactive") of the old rail "spur" that runs through the property (Block 12601, Lots 17, 18 & 19; and Block 12501, Lots 3, 4 & 7), and if there would any height/setback constraints that would need to be considered for the portion of the proposed bridge structure that passes over these properties.

Note: We are already in coordination with Amtrak concerning the design criteria that will need to be followed for the portion of the bridge that passes over their ROW.

We appreciate your continued assistance with the design of this project.

Please don't hesitate to contact me directly if you have any questions concerning this request.

Sincerely,



Richard H. Schroeder III
908-236-9001 Ext. 5059
An Equal Opportunity Employer

From: Schroeder, Richard

Sent: Monday, July 18, 2016 3:06 PM

To: 'JHaddad@njtransit.com' <JHaddad@njtransit.com>

Cc: Boerchers, Bernard <bboerchers@gpinet.com>; Steponanko, Julia <jsteponanko@gpinet.com>; Farrow, William <wfarrow@gpinet.com>; 'bmuzaffar@mercercounty.org' <bmuzaffar@mercercounty.org>; 'jcosciajr@dvrpc.org' <jcosciajr@dvrpc.org>; 'Sandusky, Greg' <gsandusky@mercercounty.org>

Subject: DVRPC/Mercer County - Lincoln Avenue Bridge Replacement, Local CD Study - NJ Transit

Joe:

As discussed, we are performing a Local Concept Development Study for the replacement of bridge Structure No. 1100-055 (Mercer County No. 140.9), which carries Lincoln Avenue over the Amtrak Northeast Corridor Rail Line and the Assunpink Creek in Trenton, New Jersey (Site Location Map attached). As part of our ongoing coordination, I am contacting you to verify that you are the correct POC to discuss potential impacts to NJ Transit properties due to the proposed bridge demolition/construction operations.

We appreciate your help with this matter.

Please contact to discuss this further once you have had a chance to review the attached PDF and your records.

Thank you,



Richard H. Schroeder III
Project Manager

100 Corporate Drive, Suite 301, Lebanon, NJ 08833
p 908-236-9001 Ext. 5059 | d 908-236-9669 | c 610-217-6830
rschroeder@gpinet.com | www.gpinet.com



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From: [Sopper, Sheila Mary](#)
To: [Forrest, Chris](#); [Pardini, Joanna C](#); [Edwards, Glenn](#); [Keene, Krista](#); [Hart, Virginia](#); [McCloskey, Maureen](#)
Cc: [Schroeder, Richard](#); [Boerchers, Bernard](#); [Steponanko, Julia](#); gsandusky@mercercounty.org; [Charchar, Eli](#)
Subject: FW: DVRPC/Mercer County - Lincoln Avenue Bridge Replacement, Local CD Study - Request for Information (Amtrak)
Date: Thursday, July 07, 2016 10:55:59 AM
Attachments: image008.png
Lincoln Avenue Bridge Replacement - Site Location Map.pdf

All

Please review email below and attachment hereto.

Amtrak cannot provide copies of our agreements with external clients, due to the proprietary nature of the contracts, and since Amtrak was created from numerous bankrupt railroads in the 1970's; [we cannot guarantee that we have records of all such occupations on our property.](#)

Please provide any information that you have available concerning the location of such occupations, the type of facility, the owner of such occupancies and any plans, maps or "as built" that may be forwarded on to Mr. Schroeder.

Chris- As regards internal and external telecommunications facilities

Joanna- As regards Amtrak's Electric Traction facilities

Glenn- As regards Amtrak's Communication & Signal facilities

Krista- As regards external Pipe & Wire Agreements

Virginia- As regards any real estate leases, sales or easements , and Amtrak's Valuation Maps at this location

Maureen- As regards any pertinent plans, drawings or "as built" in your records

If you need further information in order to comply, please contact Mr. Schroeder directly.

Your assistance is appreciated.

Regards,

Sheila

Sheila Mary Sopper
Director, Real Estate Development & Operations
National Railroad Passenger Corporation

From: Schroeder, Richard [mailto:rschroeder@gpinet.com]
Sent: Thursday, June 23, 2016 2:23 PM
To: Sopper, Sheila Mary <SopperS@amtrak.com>
Cc: Boerchers, Bernard <bboerchers@gpinet.com>; Steponanko, Julia <jsteponanko@gpinet.com>; Farrow, William <wfarrow@gpinet.com>; 'bmuzaffar@mercercounty.org' <bmuzaffar@mercercounty.org>; 'jcosciajr@dvrpc.org' <jcosciajr@dvrpc.org>; 'Sandusky, Greg'

<gsandusky@mercercounty.org>; Charchar, Eli <Eli.Charchar@amtrak.com>

Subject: DVRPC/Mercer County - Lincoln Avenue Bridge Replacement, Local CD Study - Request for Information (Amtrak)

Sheila:

As discussed, we are performing a Local Concept Development Study for the replacement of bridge Structure No. 1100-055 (Mercer County No. 140.9), which carries Lincoln Avenue over the Amtrak Northeast Corridor Rail Line in Trenton, New Jersey (Site Location Map attached). As part t of our ongoing coordination with Amtrak, Mr. Eli Charchar instructed us to contact you directly concerning our requests for property/real-estate related information.

In light of this, we request that you please provide any information that you might have concerning utility companies, or other companies/entities, that are tenants on/in your property within the project limits (and extending approximately 200 feet in each direction from the existing bridge structure). It would most helpful if you could supply copies any agreements, plans, or As-Built's that describe or show the location of these facilities (including the Amtrak conduit and catenary system they are supported by). This information will be used to accurately reflect their location and configuration on our plans, and identify any potential conflicts that could occur with the proposed construction.

We appreciate your help with this matter.

Please don't hesitate to contact me if you require anything else from me, or have any questions.

Sincerely,



Richard H. Schroeder III

Project Manager

100 Corporate Drive, Suite 301, Lebanon, NJ 08833
p 908-236-9001 Ext. 5059 | d 908-236-9669 | c 610-217- 6830
rschroeder@gpinet.com www.gpinet.com



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From: [Charchar, Eli](#)
To: [Boerchers, Bernard](#)
Cc: bmuzaffar@mercercounty.org; [Steponanko, Julia](#); [Farrow, William](#); [Schroeder, Richard](#)
Subject: RE: Lincoln Avenue (County Route 626) Bridge Replacement - Concept Development
Date: Friday, March 11, 2016 9:36:06 AM
Attachments: Lincoln Avenue Amtrak RFI Letter 03-10-16.pdf
ET-1447-D OH Bridge Shield.pdf
EP3014_02261A Temp Sheeting_Rev3.pdf
70050G.pdf
EP3014_01142A hoisting_Rev1.pdf
AED-1 Rev1106.pdf
EP3014_01520 Temp Shields for Demo and Const. OH Br.pdf
EP3006 Design and Construction Criteria for OH Bridges.pdf
Design Exception Procedure - General.pdf
ET Qualified Consultants 2015.pdf

In response to your March 10, 2016 letter, I am attaching the following documents that I believe are helpful in guiding your design process:

EP 3006 - Design and Construction Criteria for Overhead Bridges;
Standard Plan 70050G - Minimum roadway Clearances;
ET-1447-D - Temporary Protection Shield and Barriers for bridges over electrified territories;
AED-1 - Procedures for ET consultants;
EP-3014 02261A - Temporary sheeting/support of excavation;
EP-3014 01142A – Hoisting/crane Requirements;
EP-3014 01520 - Temporary shielding for demolition and construction;
Design Exception Procedure; and
List of qualified ET Consultants.

Please note that any property/real-estate related enquiries should be requested from Amtrak's Real-Estate Department by contacting Sheila Sopper at 215 349-1959.

As explained in our February 17, 2016 meeting, a design and a construction phase agreement will be required for Amtrak's services such as plan reviews and approvals, and force account services to protect Amtrak's operations, property, and interests relative to this project.

Before Amtrak will allow this or any similar project to proceed, we must first review and approve the proposed design plans to determine whether they adequately protect Amtrak's operations and property. Also, Amtrak will closely monitor the construction of the project. This will require the execution of the construction phase agreement to allow Amtrak to review and approve the contractor's plans, and provide protection services during the construction operations. To start the agreement process, please provide the information outlined below:

- Project Background
- Existing Conditions (Ownership/Operations/Maintenance)
- Preliminary Scope Statement ("Agency is proposing to make accessibility improvements...")
- Scope Definition (Detailed narrative of overall project).
- Project Deliverables / Services (Work anticipated by sponsor -design, submittals, soil borings, environmental testing, etc., ; services anticipated from Amtrak -design reviews, meetings, flagging protection, etc.)
- Preliminary Drawing showing the proposed improvements, the limits of work and the

property lines/ownership/leases/easements relative to Amtrak property/facilities.

- Preliminary Drawing showing details of proposed construction excavation, if applicable. As a minimum, information must be provided to include volumes (CY) of resulting excavation and dimensions (FT).
- Preliminary Project Cost (including construction)
- Project Funding & Mechanism (100% Sponsor, etc. / Reimbursement, Advanced Payment, etc.)
- Preliminary Project Schedule (Estimated Mon./Year - Duration)
- (Potential) Issues/Impacts – Additional Requirements

If you have any questions please let me know.

Regards,

Eli Charchar
Project Manager II
Amtrak Engineering I&C
30th Street Station, Box 64
2955 Market Street
Philadelphia, PA. 19104

Phone: 215 349-4971

From: Boerchers, Bernard [mailto:bboerchers@gpinet.com]

Sent: Thursday, March 10, 2016 2:15 PM

To: Charchar, Eli <Eli.Charchar@amtrak.com>

Cc: bmuzaffar@mercercounty.org; Steponanko, Julia <jsteponanko@gpinet.com>; Farrow, William <wfarrow@gpinet.com>; Schroeder, Richard <rschroeder@gpinet.com>

Subject: Lincoln Avenue (County Route 626) Bridge Replacement - Concept Development

Mr. Charchar,

Please find attached our letter requesting Amtrak's applicable standards and utility information for the subject project as discussed at our meeting on February 17, 2016. Should you have any additional information that you feel would be helpful in the analysis and design of this project, please forward the same to me as it would also be greatly appreciated.

Should you have any questions please do not hesitate to contact me.

Thank you,
Bernie

Bernard J. Boerchers, P.E., P.T.O.E.

Vice President, Senior Project Manager

100 Corporate Drive, Suite 301, Lebanon, NJ 08833
908.236.9001 ext. 5008 | d 908.287.2661 | f 908.236.9669
email@gpinet.com | www.gpinet.com



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From: [Watson, Earl](#)
To: [Boerchers, Bernard](#)
Cc: [Farrow, William](#); "bmuzaffar@mercercounty.org"; [Steponanko, Julia](#); "jcosciajr@dvrpc.org"; [Marra, Christopher](#); [Potts, Thomas](#); [Charchar, Eli](#); [Richter, James S.](#); [Rago, Joseph](#); [Sopper, Sheila Mary](#); [Savarese, James M](#); [Mulleavey, Harold](#)
Subject: RE: Trenton, NJ, Lincoln Ave OH Bridge 56.24 Bridge Replacement Local CD
Date: Tuesday, January 19, 2016 3:24:19 PM
Attachments: image001.png

Bernie:

Thank you for your emails and request to initiate the subject Mercer County (MC) overhead highway bridge replacement project over Amtrak's Northeast Corridor in Trenton, NJ.

Before Amtrak will allow this or any similar project to proceed, we must first review and approve MC's proposed design plans to determine whether the plans adequately protect Amtrak's operations and property. Also, Amtrak will closely monitor the construction of the project. This will require the execution of at least two agreements; (i) a design phase agreement to allow Amtrak to review and approve MC's plans, and (ii) a construction phase force account agreement covering Amtrak's services and the cost of construction and/or protection services. Also, any proposed occupation of Amtrak property beyond any existing rights will require a License or other applicable real estate agreement. You may contact Sheila Sopper, Director Real Estate, at 215-349-1959 or SopperS@amtrak.com regarding Amtrak's real estate requirements. Please provide the information outlined below to help us initiate the project.

- Project Background
- Existing Conditions (Ownership/Operations/Maintenance)
- Preliminary Scope Statement ("Agency is proposing to make accessibility improvements...")
- Scope Definition (Detailed narrative of overall project).
- Project Deliverables / Services (Work anticipated by sponsor -design, submittals, soil borings, environmental testing, etc., ; services anticipated from Amtrak -design reviews, meetings, flagging protection, etc.)
- Preliminary Drawing showing the proposed improvements, the limits of work and the property lines/ownership/leases/easements.
- Preliminary Drawing showing details of proposed construction excavation, if applicable. As a minimum, information must be provided to include volumes (CY) of resulting excavation and dimensions (FT).
- Preliminary Project Cost (including construction)
- Project Funding & Mechanism (100% Sponsor, etc. / Reimbursement, Advanced Payment, etc.)
- Preliminary Project Schedule (Estimated Mon./Year - Duration)
- (Potential) Issues/Impacts – Additional Requirements

Eli Charchar of my office will be your point-of-contact to initiate this project with Amtrak. Please provide an agenda and potential meeting dates/times for a kick-off meeting, and contact Eli Charchar, Project Manager II, at 215-349-4971 or Eli.Charchar@amtrak.com if you have any questions.

Regards,

Earl Watson III

Senior Manager Engineering
National Railroad Passenger Corporation
Engineering Department
30th Street Station, 4S-027, Mail Box 64
2955 Market Street
Philadelphia, PA 19104

Phone 215-349-1393, Fax 215-349-4373

watsone@amtrak.com

From: Boerchers, Bernard [mailto:bboerchers@gpinet.com]

Sent: Tuesday, January 19, 2016 2:11 PM

To: Watson, Earl <WatsonE@amtrak.com>

Cc: Farrow, William <wfarrow@gpinet.com>; 'bmuzaffar@mercercounty.org' <bmuzaffar@mercercounty.org>; Steponanko, Julia <jsteponanko@gpinet.com>; 'jcosciajr@dvrpc.org' <jcosciajr@dvrpc.org>; Richter, James S. <RichteJ@amtrak.com>; Marra, Christopher <cmarra@gpinet.com>; Potts, Thomas <tpotts@gpinet.com>

Subject: RE: Lincoln Ave Bridge Replacement Local CD

Mr. Watson,

I am trying to find a contact with Amtrak through which I can arrange a meeting to discuss the subject project which is currently in the Concept Development phase with Mercer County and the DVRPC. Mr. Muzaffar of Mercer County provided me with your email address. As you can see in the email below which provides additional information regarding the subject project, I reached out to Mr. Richter who I believe may have already talked to you about the subject project. If you could kindly confirm that you will be the contact for Amtrak on this project or, if not, please provide me with the contact information of someone at Amtrak I need to contact to arrange a meeting it would be greatly appreciated.

Thank you,
Bernie



Bernard J. Boerchers, P.E., P.T.O.E.
Vice President, Senior Project Manager

Greenman-Pedersen, Inc.
Engineering and Construction Services

100 Corporate Drive, Suite 301, Lebanon, NJ 08833
908.236.9001 – 5008 | f 908.236.9669
bboerchers@gpinet.com | www.gpinet.com

From: Boerchers, Bernard
Sent: Wednesday, January 06, 2016 5:21 PM
To: 'richtej@amtrak.com' <richtej@amtrak.com>
Cc: Farrow, William <wfarrow@gpinet.com>; bmuzaffar@mercercounty.org; Steponanko, Julia <jsteponanko@gpinet.com>; 'jcosciajr@dvrpc.org' <jcosciajr@dvrpc.org>
Subject: Lincoln Ave Bridge Replacement Local CD

Good afternoon Mr. Richter,

GPI has been retained by Mercer County and DVRPC to perform Local Concept Development (LCD) for the complete replacement of Structure No. 1100-055, (Mercer County #140.9), which carries Lincoln Avenue (CR 626) over the Northeast Corridor and the Assunpink Creek in the City of Trenton. The bridge, built in 1931, is an 8-span riveted, concrete-encased, steel through-girder. The overall condition of the bridge was rated serious (Rating of 3, Sufficiency Rating of 46.2) primarily due to the condition of its superstructure. As you might expect, early input on this project from Amtrak is vital. We would like to arrange a kickoff meeting with Amtrak to discuss all concerns and constraints along with potential conceptual solutions. Bill Farrow of our office provided me with your email as he worked with you on a previous project. If you are not the proper contact for this project could you please provide me the name, number and email address of the individual at Amtrak that I need to contact to begin coordination of this project?

Thank you for your anticipated assistance.
Bernie



Bernard J. Boerchers, P.E., P.T.O.E.
Vice President, Senior Project Manager

Greenman-Pedersen, Inc.
Engineering and Construction Services

100 Corporate Drive, Suite 301, Lebanon, NJ 08833
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bboerchers@gpinet.com | www.gpinet.com

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Appendix U

Utilities

Utility Conflict Matrix

Utility	Utility Company		Have On-site Utilities	On Bridge Structure	In Bridge Approaches	Under Bridge Structure	Anticipated Conflict
Electric	PSE&G Electric		Yes (Underground & Overhead)	Yes	Yes (Underground)	No	On Bridge and in Approaches
Gas	PSE&G Gas		Yes (Underground)	Yes	Yes	No	On Bridge and in Approaches
Telephone	Verizon - NJ		Yes (Underground & Overhead)	No	No	Yes (overhead service wire to USGS)	Possible Overhead Services (may install spare conduits on new bridge)
Cable	Comcast Cable		Yes (Underground & Overhead)	No	No	No	None Anticipated
Water	Trenton Water Works		Yes (Underground)	No	Yes	Yes	Under Bridge and in Approaches
Sewer	Trenton Sewer Utility		Yes (Underground)	No	No	No	None Anticipated (requires further investigation)
Steam	Veolia Energy Trenton (District Energy)		No	N/A	N/A	N/A	N/A
Fiber	AT&T	AT&T (Core)	No	N/A	N/A	N/A	N/A
		AT&T Local/Teleport Communications	Yes (Overhead)	No	No	No	None Anticipated
Fiber	Zayo		Yes (Overhead)	No	No	Yes (Overhead on Catenary Towers)	Overhead on Catenary Towers
Fiber	Sunesys (Crown Castle)		No (x2)	N/A	N/A	N/A	N/A
Fiber	Level 3		Yes (Underground - Tenant with CenturyLink)	No	No	Yes (Underground)	Tenant In other conduit
Fiber	Lighttower (Fibertech)		Yes (Underground - Lease from CenturyLink)	No	No	Yes (Underground)	Lease In other conduit
Fiber	MCI		Yes (Underground - Tenant in Amtrak Conduits)	No	No	Yes (Underground)	Tenant In other conduit
Fiber	CenturyLink		Yes (Underground - Tenant in Amtrak Conduits)	No	No	Yes (Underground)	Tenant In other conduit
Fiber	Sprint		No	N/A	N/A	N/A	N/A
Other	Amtrak		Yes	No	No	Overhead & Underground	Catenary Towers (conduits require further investigation)
Other	NJ Transit		No (Retain rights for future use)	No	No	Proposed future use	None (maintain/ improve clearances)
Other	USGS (Stream Gauge Station)		Yes (Underground & Above-ground)	No	No	Yes	Possible

PLANS AND ADDITIONAL CONTACT INFORMATION ON THE CD PROVIDED WITH THIS REPORT.

Memorandums & Letters



at&t Media Engineering
175 West Main Street
Freehold, New Jersey 07728

Mr. Richard H. Schroeder III
Project Manager
Greenman – Pedersen, Inc.
100 Corporate Drive, Suite 301
Lebanon, New Jersey 08833

Re: Delaware Valley Regional Planning Commission – Local Concept Development Study
Lincoln Avenue Bridge Replacement
City of Trenton, Mercer County
Project Number 15-62-100
Initial Utility Contact Letter – Fiber Optic Facilities

Dear Mr. Schroeder:

Teleport Communications America, LLC is returning the filled out questionnaire and a marked set of Utility Verification Plans. Teleport currently has a 432 pair aerial fiber optic cable and a 96 pair aerial fiber optic cable within the project limits. The location of these fiber optic cables are marked on the enclosed Utility Verification Plans.

If you have any questions, comments or concerns, please contact me.

Regards,

Gary Stevenson
JoeMax Telecom LLC

Cc: Carlo Verdi III
File

RECEIVED MAR 29 2016

Page 2
Lincoln Avenue Bridge Replacement
Initial Contact Letter - Teleport Communications (AT&T Local)

- We DO HAVE existing facilities within the project limits.
- We DO NOT HAVE existing facilities within the project limits.
- We HAVE PROPOSED facilities planned within the project limits.
- Owner Engineer to be contacted is:

Name GARY STEVENSON
Company JOE MAX TELECOM LLC
Title OSP ENGINEER
Address 281 BLOWERTOWN ROAD, SUITE 201
WOODLAND PARK, NJ 07424

Tel: 609-310-0628
Fax: _____
E-mail: GSTEVENSON@JOEMAXTELECOM.COM

The following companies are tenants on/in our facilities within the project limits:

Should you have any questions or concerns about this project or our request, please contact me at 908-236-9001 or rschroeder@gpinet.com.

Thank you for your cooperation in this matter.

Sincerely,
GREENMAN-PEDERSEN, INC.



Richard H. Schroeder III
Project Manager

Enclosures

Cc: John J. Coscia Jr., DVRPC Manager
Gregory Sandusky, P.E., P.L.S., Mercer County Engineer
Bernard J. Boerchers, P.E., P.T.O.E, GPI Project Manager
File - 2015684.00

GPI

Page 2

Lincoln Avenue Bridge Replacement
Initial Contact Letter - AT&T Core

- We DO HAVE existing facilities within the project limits.
- We DO NOT HAVE existing facilities within the project limits.
- We HAVE PROPOSED facilities planned within the project limits.
- Owner Engineer to be contacted is:

Name: Louis Marello
 Company: AT&T Core
 Title: Senior Technician Network Services
 Address: 50 Patricia Drive
Flanders, NJ 07836
 Tel: 914-397-3744 Cell: 914-671-5330
 Email: lmarello@att.com

Contact: Steve Cumberland tel: 267-767-7124 efax: 863-582-9907
 Email: scumberland@att.com

The following companies are tenants on/in our facilities within the project limits:

N/A

Should you have any questions or concerns about this project or our request, please contact me at 908-236-9001 or rschroeder@gpinet.com.

Thank you for your cooperation in this matter.

Sincerely,
GREENMAN-PEDERSEN, INC.

Richard H. Schroeder III
Project Manager

Enclosures

Cc: John J. Coscia Jr., DVRPC Manager
 Gregory Sandusky, P.E., P.L.S., Mercer County Engineer
 Bernard J. Boerchers, P.E., P.T.O.E, GPI Project Manager
 File - 2015684.00

- We DO HAVE existing facilities within the project limits.
- We DO NOT HAVE existing facilities within the project limits.
- We HAVE PROPOSED facilities planned within the project limits.
- Owner Engineer to be contacted is:


Name David Vega
Company Centurylink
Title Lead Engineer
Address 6800 Jericho Tpk
Suite 107W
Syosset NY 11791
Tel: 516-712-3041
Fax: _____
E-mail: David.Vega@centurylink.com

- The following companies are tenants on/in our facilities within the project limits:

Should you have any questions or concerns about this project or our request, please contact me at 908-236-9001 or rschroeder@gpinet.com.

Thank you for your cooperation in this matter.

Sincerely,
GREENMAN-PEDERSEN, INC.


Richard H. Schroeder III
Project Manager

RECEIVED MAR 30 2016

Enclosures

Cc: John J. Coscia Jr., DVRPC Manager
Gregory Sandusky, P.E., P.L.S., Mercer County Engineer
Bernard J. Boerchers, P.E., P.T.O.E, GPI Project Manager
File - 2015684.00



Page 2
Lincoln Avenue Bridge Replacement
Initial Contact Letter – Comcast Cable

Comcast Cable
90 Lake Dr.
East Windsor, NJ 08520
~~Office: 609-301-0110~~
Mobile: 732-552-9569
sheryl_miranda@cable.comcast.com

- We DO HAVE existing facilities within the project l
- We DO NOT HAVE existing facilities within the project limits.
- We HAVE PROPOSED facilities planned within the project limits.
- Owner Engineer to be contacted is:


Name SHERYL MIRANDA
 Company COMCAST
 Title CONSTRUCTION COORDINATOR
 Address 90 LAKE DR
EAST WINDSOR NJ
08520
 Tel: 732-552-9569
 Fax:
 E-mail: sheryl_miranda@cable.comcast.com

The following companies are tenants on/in our facilities within the project limits:

Should you have any questions or concerns about this project or our request, please contact me at 908-236-9001 or rschroeder@gpinet.com.

Thank you for your cooperation in this matter.

Sincerely,
GREENMAN-PEDERSEN, INC.


Richard H. Schroeder III
Project Manager

Enclosures

Cc: John J. Coscia Jr., DVRPC Manager
Gregory Sandusky, P.E., P.L.S., Mercer County Engineer
Bernard J. Boerchers, P.E., P.T.O.E, GPI Project Manager
File - 2015684.00

Page 2
Lincoln Avenue Bridge Replacement
Initial Contact Letter - Lighttower

- We DO HAVE existing facilities within the project limits.
- We DO NOT HAVE existing facilities within the project limits.
- We HAVE PROPOSED facilities planned within the project limits.
- Owner Engineer to be contacted is:

*WE LEASE FIBERS
FROM QUEST*

Name _____
Company QUEST COMMUNICATIONS
Title _____
Address _____

Tel: _____
Fax: _____
E-mail: _____

- The following companies are tenants on/in our facilities within the project limits:

Should you have any questions or concerns about this project or our request, please contact me at 908-236-9001 or rschroeder@gpinet.com.

Thank you for your cooperation in this matter.

Sincerely,
GREENMAN-PEDERSEN, INC.

R.H. Schroeder III
Richard H. Schroeder III
Project Manager

Enclosures

Cc: Steve Drake, Lighttower - Director
John J. Coscia Jr., DVRPC Manager
Gregory Sandusky, P.E., P.L.S., Mercer County Engineer
Bernard J. Boerchers, P.E., P.T.O.E, GPI Project Manager
File - 2015684.00

Page 2
Lincoln Avenue Bridge Replacement
Initial Contact Letter - Verizon Services

- We DO HAVE existing facilities within the project limits. *IN AMTRAK CONDUIT*
- We DO NOT HAVE existing facilities within the project limits.
- We HAVE PROPOSED facilities planned within the project limits.
- Owner Engineer to be contacted is:

Name JOHN ALESSANDRINI
Company VERIZON BUSINESS
Title ENGINEER
Address 630 CLARK AVE
14th OF PRUSSIA, PA 19406


Tel: 610-517-8456
Fax: -
E-mail: JOHN.ALESSANDRINI@VERIZON.COM

- The following companies are tenants on/in our facilities within the project limits:

Should you have any questions or concerns about this project or our request, please contact me at 908-236-9001 or rschroeder@gpinet.com.

Thank you for your cooperation in this matter.

Sincerely,
GREENMAN-PEDERSEN, INC.


Richard H. Schroeder III
Project Manager

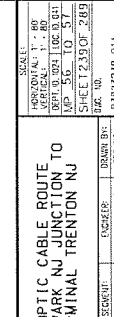
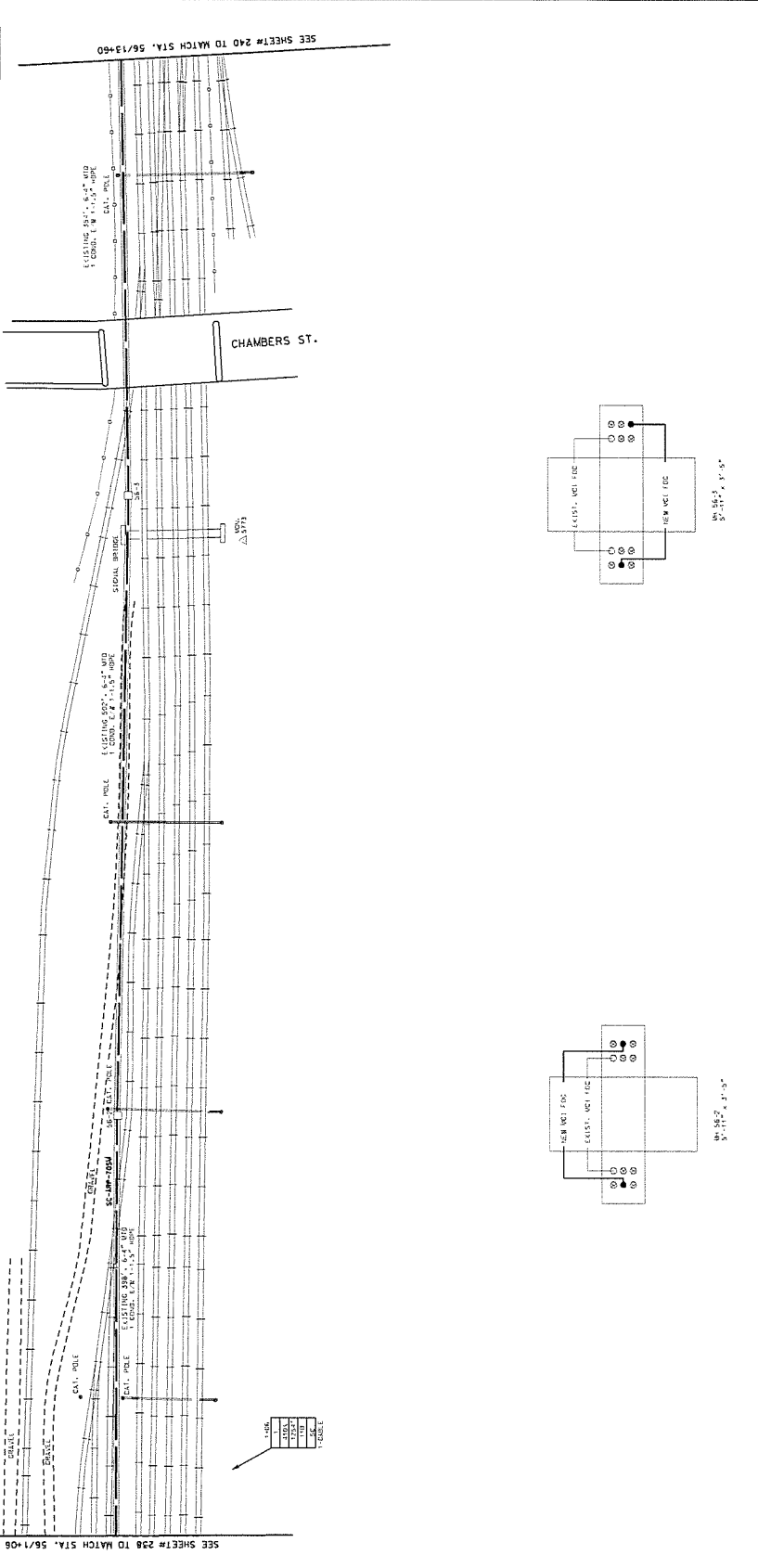
Enclosures

Cc: John J. Coscia Jr., DVRPC Manager
Gregory Sandusky, P.E., P.L.S., Mercer County Engineer
Bernard J. Boerchers, P.E., P.T.O.E, GPI Project Manager
File - 2015684.00

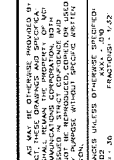


TO NEWARK NJ PENN STATION JUNCTION
 TO MCI TERMINAL TRENTON NJ

SPAN: B
 1254' R
 REEL # Z-08075



NO 98-2
 5'-11\"/>



NO 98-3
 5'-11\"/>

SEE SHEET# 228 TO MATCH STA. 56/1+06
 SEE SHEET# 240 TO MATCH STA. 56/13+60

DATE	DESCRIPTION	INITIAL
09/98	UPDATE	CH

REVISIONS	MATERIAL LIST	QUANTITY	MATERIAL LIST	QUANTITY
	CABLE	1254'	UH 1" x 2' x 4'	
	2" BSP		WIP 2" W/BR	25
	4" SPL I I BSP		R2R ASPHALT	50
	4" SPL I I P/C		BUP. CA. WARS.	
	1" x 3" IND.		6" CODE BOHE	
	2" SHPS		1/2" DUNE	

SCALE:	HORIZONTAL: 1" = 80'
VERTICAL: 1" = 10'	
TITLE:	FIBER OPTIC CABLE ROUTE FROM NEWARK NJ JUNCTION TO MCI TERMINAL TRENTON NJ
DESIGNER:	JOY ROBINSON
DATE:	6-9-95
PROJECT:	00331
CONTRACT NO.:	1254 LF
RAILROAD:	1254 LF
DATE:	6-9-95

CONTRACT NO. 1254 LF
 RAILROAD 1254 LF
 DATE 6-9-95

MAP FOOTAGE SURVEY DATE
 1254 LF 6-9-95

TELECOMMUNICATIONS CORPORATION
 LIGHTWAVE SYSTEMS

TO NEWARK NJ PENN STATION JUNCTION

MERCER COUNTY, NJ

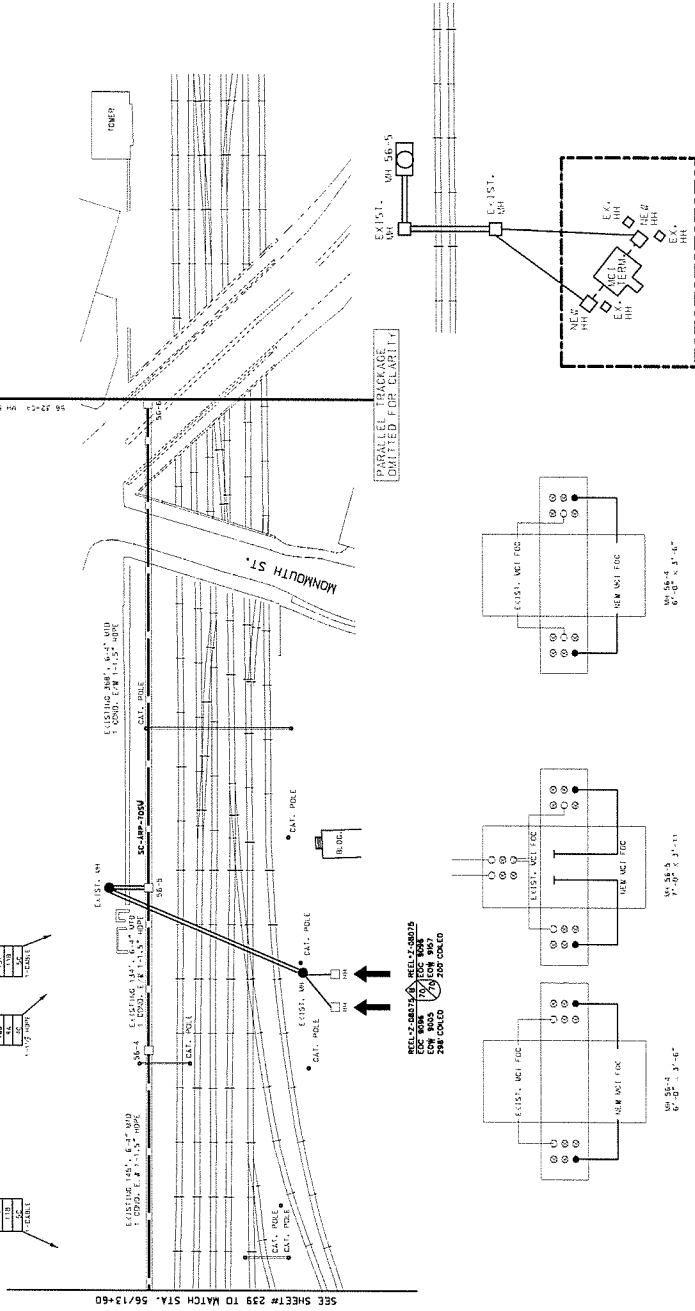
TO MCI TERMINAL TRENTON NJ

SPAN 951' R
 REEL #Z-08075

SPAN 951' R
 REEL #Z-08075

SEE SHEET #26 OF 180
 TRENTON TO
 PHILADELPHIA

SEE SHEET #29 TO MATCH STA. 56+13+60
 MONMOUTH ST.



DATE	REVISIONS	MATERIAL LIST	QUANTITY	MATERIAL LIST	QUANTITY
01/11/11	ISSUE FOR PERMIT	CABLE	13111'	NEW 2'-5" x 4'-2" 5'	2
01/11/11	ISSUE FOR PERMIT	CONCRETE	2	2" ASPHALT	2
01/11/11	ISSUE FOR PERMIT	PVC	2	5" CURB BODIES	2
01/11/11	ISSUE FOR PERMIT	PIPE	2	1 1/2" HDPE	766

MCI
 TELECOMMUNICATIONS CORPORATION
 LIGHT-WAVE SYSTEMS

MAP FOOTAGE
 SURVEY LF
 RAILROAD LF

DATE
 6-9-95

PROJECT: 018824
 SPAN: B
 TRACKS: 2
 DRAWN BY: ANDY PORESDOR
 CHECKED BY: DCS, INC.

TITLE: F FIBER OPTIC CABLE ROUTE FROM NEWARK NJ JUNCTION TO MCI TERMINAL TRENTON NJ

SCALE: AS SHOWN
 SHEET NO. 26 OF 180
 SHEET 26 OF 180

Page 2
Lincoln Avenue Bridge Replacement
Initial Contact Letter – PSE&G Electric

- We DO HAVE existing facilities within the project limits.
- We DO NOT HAVE existing facilities within the project limits.
- We HAVE PROPOSED facilities planned within the project limits.
- Owner Engineer to be contacted is:

Name ARMANDO ROSARIO
Company PSEG - ELECTRIC
Title ENGINEERING SUPERVISOR
Address 300 NEW ALBANY RD.
MOORESTOWN NJ 08057


Tel: 856-778-6814
Fax: 856-231-4530
E-mail: ARMANDO.ROSARIO@PSEG.COM

- The following companies are tenants on/in our facilities within the project limits:

Should you have any questions or concerns about this project or our request, please contact me at 908-236-9001 or rschroeder@gpinet.com.

Thank you for your cooperation in this matter.

Sincerely,
GREENMAN-PEDERSEN, INC.


Richard H. Schroeder III
Project Manager

Enclosures

Cc: John J. Coscia Jr., DVRPC Manager
Gregory Sandusky, P.E., P.L.S., Mercer County Engineer
Bernard J. Boerchers, P.E., P.T.O.E, GPI Project Manager
File - 2015684.00



Page 2
Lincoln Avenue Bridge Replacement
Initial Contact Letter – PSE&G Gas

- We DO HAVE existing facilities within the project li
- We DO NOT HAVE existing facilities within the project limits.
- We HAVE PROPOSED facilities planned within the project limits.
- Owner Engineer to be contacted is:

Name Dennis Gunn
Company PSE&G
Title Distribution Supervisor
Address _____

Tel: 609-239-2405
Fax: _____
E-mail: _____

The following companies are tenants on/in our facilities within the project limits:

Should you have any questions or concerns about this project or our request, please contact me at 908-236-9001 or rschroeder@gpinet.com.

Thank you for your cooperation in this matter.

Sincerely,
GREENMAN-PEDERSEN, INC.

Richard H. Schroeder III
Project Manager

Enclosures

Cc: John J. Coscia Jr., DVRPC Manager
Gregory Sandusky, P.E., P.L.S., Mercer County Engineer
Bernard J. Boerchers, P.E., P.T.O.E, GPI Project Manager
File - 2015684.00

Page 2
Lincoln Avenue Bridge Replacement
Initial Contact Letter - Veolia Energy

- We DO HAVE existing facilities within the project limits.
- We DO NOT HAVE existing facilities within the project limits.
- We HAVE PROPOSED facilities planned within the project limits.
- Owner Engineer to be contacted is:

Name _____
Company _____
Title _____
Address _____

Tel: _____
Fax: _____
E-mail: _____

The following companies are tenants on/in our facilities within the project limits:

Should you have any questions or concerns about this project or our request, please contact me at 908-236-9001 or rschroeder@gpinet.com.

Thank you for your cooperation in this matter.

Sincerely,
GREENMAN-PEDERSEN, INC.



Richard H. Schroeder III
Project Manager

Enclosures

Cc: John J. Coscia Jr., DVRPC Manager
Gregory Sandusky, P.E., P.L.S., Mercer County Engineer
Bernard J. Boerchers, P.E., P.T.O.E, GPI Project Manager
File - 2015684.00

Page 2
Lincoln Avenue Bridge Replacement
Initial Contact Letter - Verizon

- We DO HAVE existing facilities within the project limits.
- We DO NOT HAVE existing facilities within the project limits.
- We HAVE PROPOSED facilities planned within the project limits.
- Owner Engineer to be contacted is:

Name	_____
Company	_____
Title	_____
Address	_____

Tel:	_____
Fax:	_____
E-mail:	_____

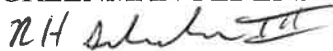
Danial Arnold
Network Engineer for Verizon - NJ
175 West Main Street
Freehold, New Jersey 07728
Cell: (732) 357-3051
daniel.arnold@verizon.com

- The following companies are tenants on/in our facilities within the project limits:

Should you have any questions or concerns about this project or our request, please contact me at 908-236-9001 or rschroeder@gpinet.com.

Thank you for your cooperation in this matter.

Sincerely,
GREENMAN-PEDERSEN, INC.



Richard H. Schroeder III
Project Manager

Enclosures

Cc: John J. Coscia Jr., DVRPC Manager
Gregory Sandusky, P.E., P.L.S., Mercer County Engineer
Bernard J. Boerchers, P.E., P.T.O.E, GPI Project Manager
File - 2015684.00



Page 2

Lincoln Avenue Bridge Replacement
Initial Contact Letter - Zayo

We DO HAVE existing facilities within the project limits.

We DO NOT HAVE existing facilities within the project limits.

We HAVE PROPOSED facilities planned within the project limits.

Owner Engineer to be contacted is:

Name Richard Heys
 Company Zcom Group, LLC
 Title Sr. Proj Mgr
 Address 102 Dorsa Ave
Livingston NJ 07039


 Tel: 973 287 4004
 Fax: _____
 E-mail: rheys@zcomgroup.com

The following companies are tenants on/in our facilities within the project limits:

Should you have any questions or concerns about this project or our request, please contact me at 908-236-9001 or rschroeder@gpinet.com.

Thank you for your cooperation in this matter.

Sincerely,
GREENMAN-PEDERSEN, INC.


 Richard H. Schroeder III
 Project Manager

Enclosures

Cc: Jim Jacobsen, Zayo OSP Project Manager
 John J. Coscia Jr., DVRPC Manager
 Gregory Sandusky, P.E., P.L.S., Mercer County Engineer
 Bernard J. Boerchers, P.E., P.T.O.E, GPI Project Manager
 File - 2015684.00

Page 2

Lincoln Avenue Bridge Replacement
Initial Contact Letter - USGS

- We DO HAVE existing facilities within the project limits.
- We DO NOT HAVE existing facilities within the project limits.
- We HAVE PROPOSED facilities planned within the project limits.
- Owner Engineer to be contacted is:

Name:
Company:
Title:
Address:



Jason C. Shvanda
Supervisory Hydrologist

U.S. Department of the Interior
U.S. Geological Survey

New Jersey
Water Science Center

3450 Princeton Pike
Lawrenceville NJ 08848

Tel:
Fax:
E-mail:

jshvanda@usgs.gov
<http://nj.usgs.gov>

809-771-3991
809-771-3815 FAX

Should you have any questions or concerns about this project or our request, please contact me at 908-236-9001 or rschroeder@gpinct.com.

Thank you for your cooperation in this matter.

Sincerely,
GREENMAN-PEDERSEN, INC.

Richard H. Schroeder III
Project Manager

Enclosures

Cc: John J. Coscia Jr., DVRPC Manager
Gregory Sandusky, P.E., P.L.S., Mercer County Engineer
Bernard J. Boerchers, P.E., P.T.O.E, GPI Project Manager
File - 2015684.00

Page 2
Lincoln Avenue Bridge Replacement
Initial Contact Letter - Trenton (Sewer)

- We DO HAVE existing facilities within the project limits.
 We DO NOT HAVE existing facilities within the project limits.
 We HAVE PROPOSED facilities planned within the project limits.
 Owner Engineer to be contacted is:

*Sanitary & Storm
Sewers*

Name Joe McIntyre
Company Trenton Sewer Utility
Title General Superintendent, Water & Sewer
Address 1502 Lambert Road
Trenton NJ 08611

Tel: _____
Fax: _____
E-mail: jmcintyre@trentonnj.org

The following companies are tenants on/in our facilities within the project limits:

Should you have any questions or concerns about this project or our request, please contact me at 908-236-9001 or rschroeder@gpinet.com.

Thank you for your cooperation in this matter.

Sincerely,
GREENMAN-PEDERSEN, INC.



Richard H. Schroeder III
Project Manager

Enclosures

Cc: John J. Coscia Jr., DVRPC Manager
Gregory Sandusky, P.E., P.L.S., Mercer County Engineer
Bernard J. Boerchers, P.E., P.T.O.E, GPI Project Manager
File - 2015684.00

Page 2
Lincoln Avenue Bridge Replacement
Initial Contact Letter - Trenton (Water)

- We DO HAVE existing facilities within the project limits.
- We DO NOT HAVE existing facilities within the project limits.
- We HAVE PROPOSED facilities planned within the project limits.
- Owner Engineer to be contacted is:

Name DHARM N. YADAV, P.E.
Company TRENTON WATER WORKS
Title PRINCIPAL ENGINEER
Address 333 COURTLAND STREET
TRENTON, NJ 08638


Tel: 609-989-3212
Fax: 609-989-3441
E-mail: dyadav@trentonnj.org

- The following companies are tenants on/in our facilities within the project limits:

Should you have any questions or concerns about this project or our request, please contact me at 908-236-9001 or rschroeder@gpinet.com.

Thank you for your cooperation in this matter.

Sincerely,
GREENMAN-PEDERSEN, INC.


Richard H. Schroeder III
Project Manager

Enclosures

Cc: John J. Coscia Jr., DVRPC Manager
Gregory Sandusky, P.E., P.L.S., Mercer County Engineer
Bernard J. Boerchers, P.E., P.T.O.E, GPI Project Manager
File - 2015684.00

To: Joseph McIntyre
From: Michael L. Altland, PE
Date: August 26, 2016
Project # 306883
Page 1
CC: D. Patel, J. White
Subject: **Trenton Water Works – Lincoln Ave, Chambers St.
Bridge Study Trenton, NJ
Fire Flow and Tank Analysis**

Introduction

The existing 30-inch diameter main that runs along Lincoln Avenue and Chambers Street is an important transmission main that serves the South Trenton and West Hamilton area. It is our understanding that the main will be taken out of service as part of a NJDOT project to replace the bridge over the Amtrak Northeast Corridor Right-of-Way. There is a concern that if the main is taken out of service during construction, there would be a significant impact to the distribution system.

A Trenton Water Works request, Mott MacDonald performed water distribution modeling analysis using Trenton’s existing hydraulic model. This analysis evaluated if the existing distribution system could deliver sufficient flows during a maximum day diurnal demand scenario if the 30-inch main was out of service.

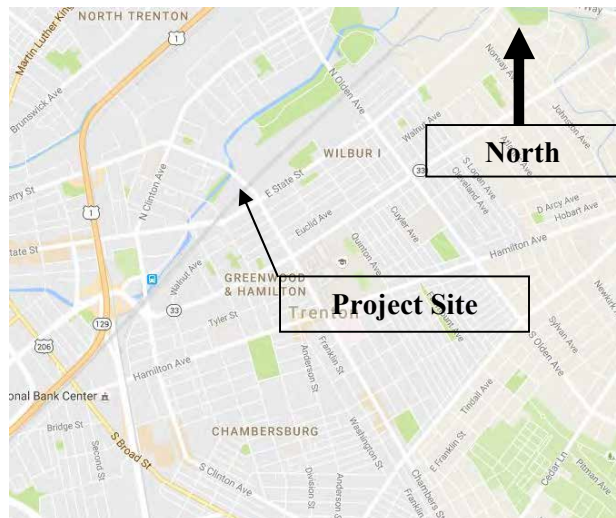


Figure 1 – Site Vicinity Map

To Joseph McIntyre
Date August 26, 2016
Page 2

Methodx

Mott MacDonald conducted hydraulic modeling tests to analyze the impact the removal of the 30-inch water main would have on TWW's system. Tank levels and available fire flows during a peak day 24-hour Extended Period Simulation were recorded with and without the 30-inch main in service. The attached color coded plates of available fire flows (Appendix A) show that without the main, available fire flows in the area of Chambers Street are slightly less than existing conditions. The plates show the improvement in available fire flow with a temporary 12-inch or 16-inch main illustrate the level of improvement that temporary mains can provide.

Under normal conditions, the Mercerville, Lawrence, and Whitehorse tanks are full or close to full during much of the day. The attached tank level plots in Appendix B show that where the 30-inch main is off, the tank levels drop significantly, and do not recover during the day. Essentially, the tanks are making up for the flow that the 30-inch main and normally carries. The plots show that the tank levels (and the local pressures) can be maintained with a temporary main.

Recommendation

At a minimum, a temporary 16-inch distribution main should be provided to maintain flows and tank levels when the 30-inch main is out of service.

Alternatively, a replacement 30-inch main could be constructed outside the limits of the bridge construction disturbance that would allow for a permanent solution to the bridge attachment issues.

We would be happy to meet with you to review this memo and the NJDOT Bridge Replacement Plans to further develop alternative methods of maintaining flows during the bridge reconstruction.

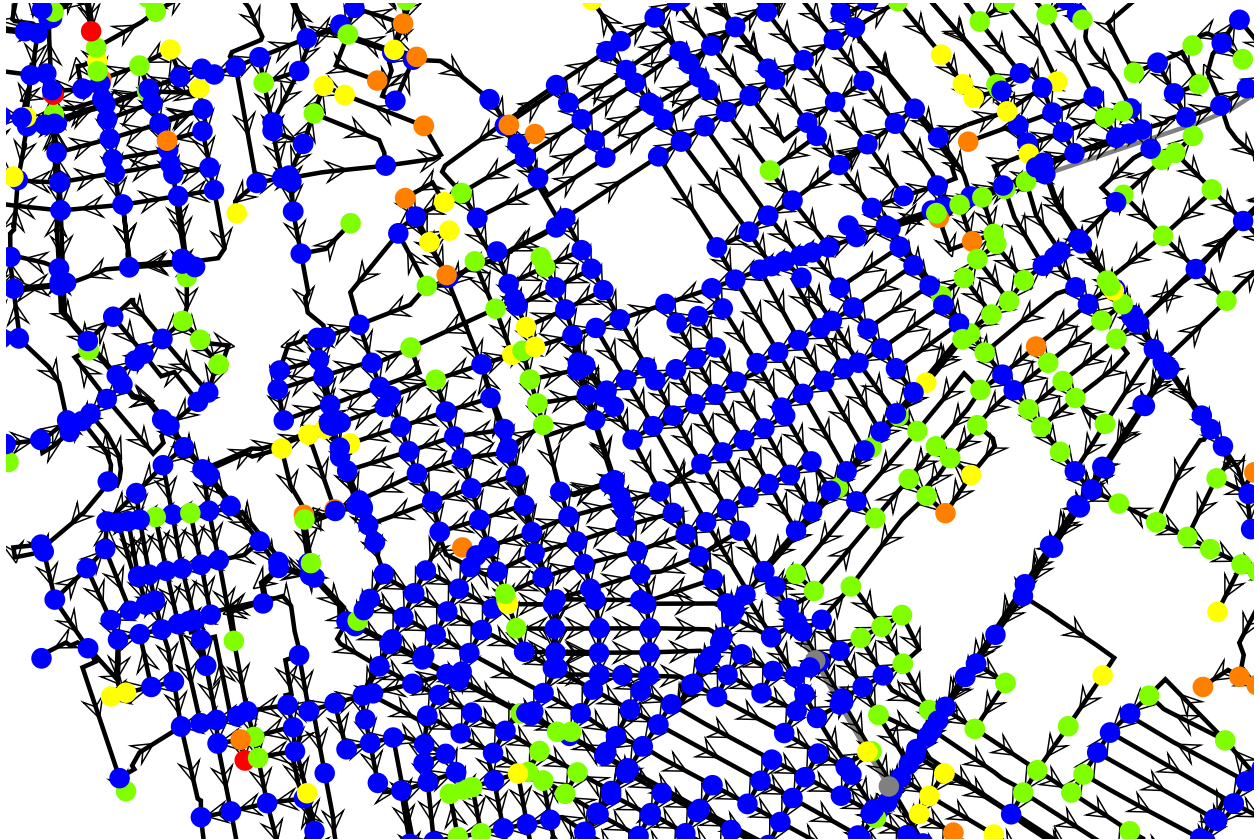
To Joseph McIntyre
Date August 26, 2016
Page 3

Appendices A and B are attached hereto.

APPENDIX A

Fire Flow Maps

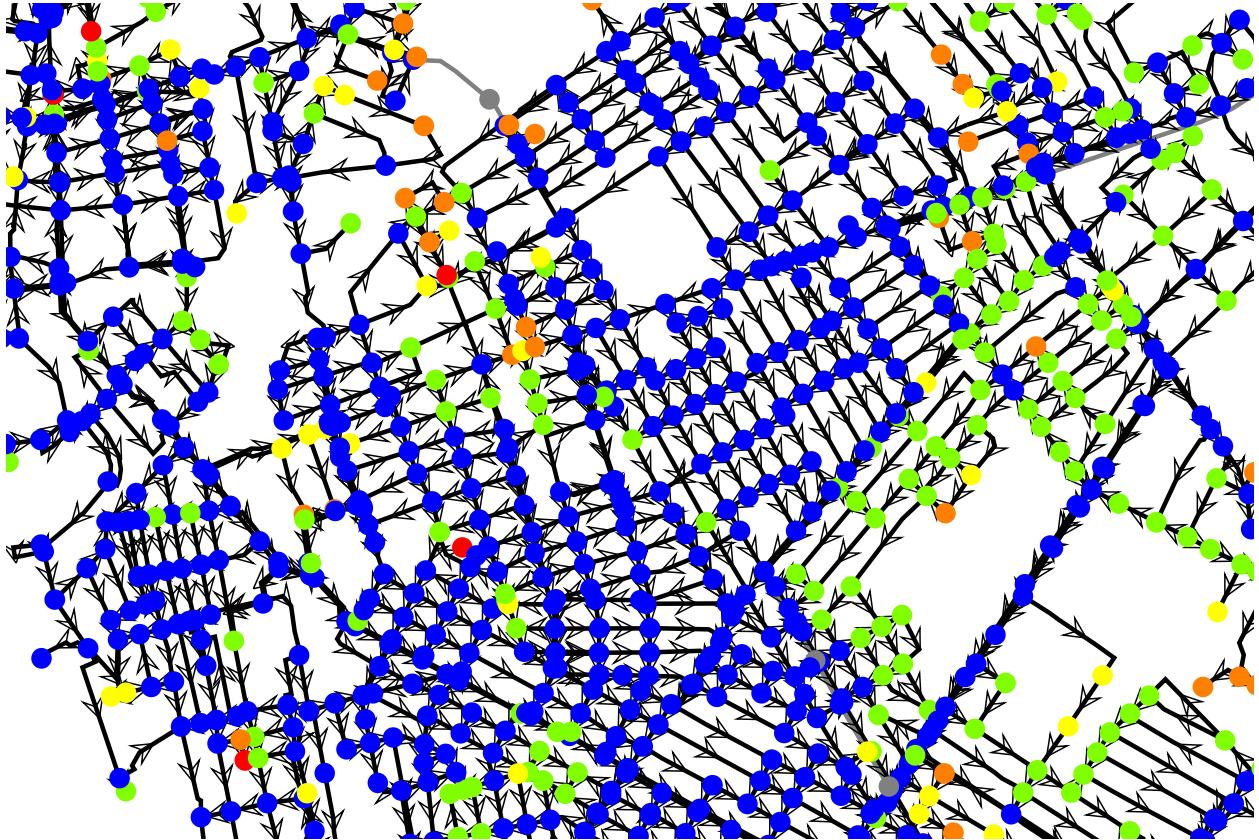
Active Scenario: 2013 Max Day Fire Flow



Color Coding Legend
Junction: Fire Flow (Available) (gpm)

- <= 500
- <= 1,000
- <= 1,500
- <= 2,500
- <= 6,000

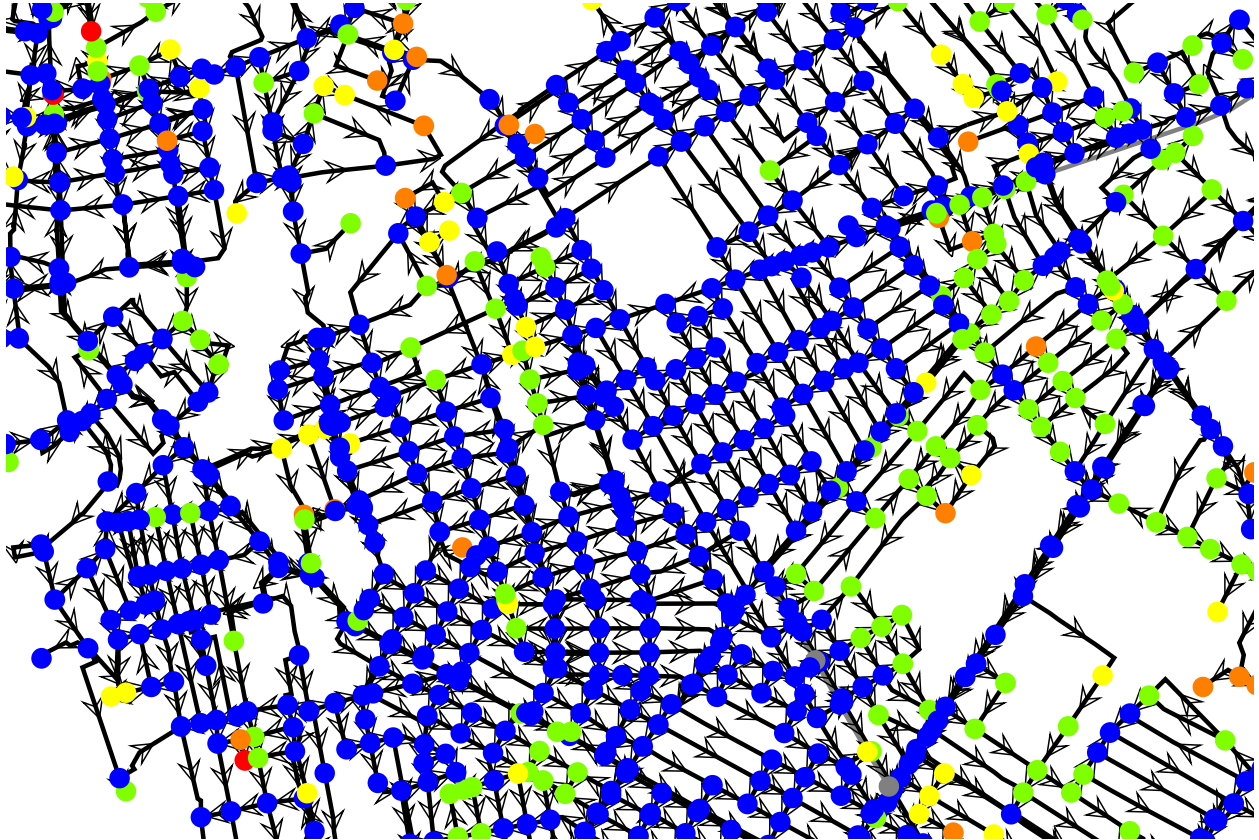
Active Scenario: 2013 Max Day Fire Flow 08.01.2016 Lincoln Ave Closed



Color Coding Legend
Junction: Fire Flow (Available) (gpm)

- ≤ 500
- ≤ 1,000
- ≤ 1,500
- ≤ 2,500
- ≤ 6,000

Active Scenario: 2013 Max Day Fire Flow 08.02.2016 Temporary 12"



Color Coding Legend
Junction: Fire Flow (Available) (gpm)

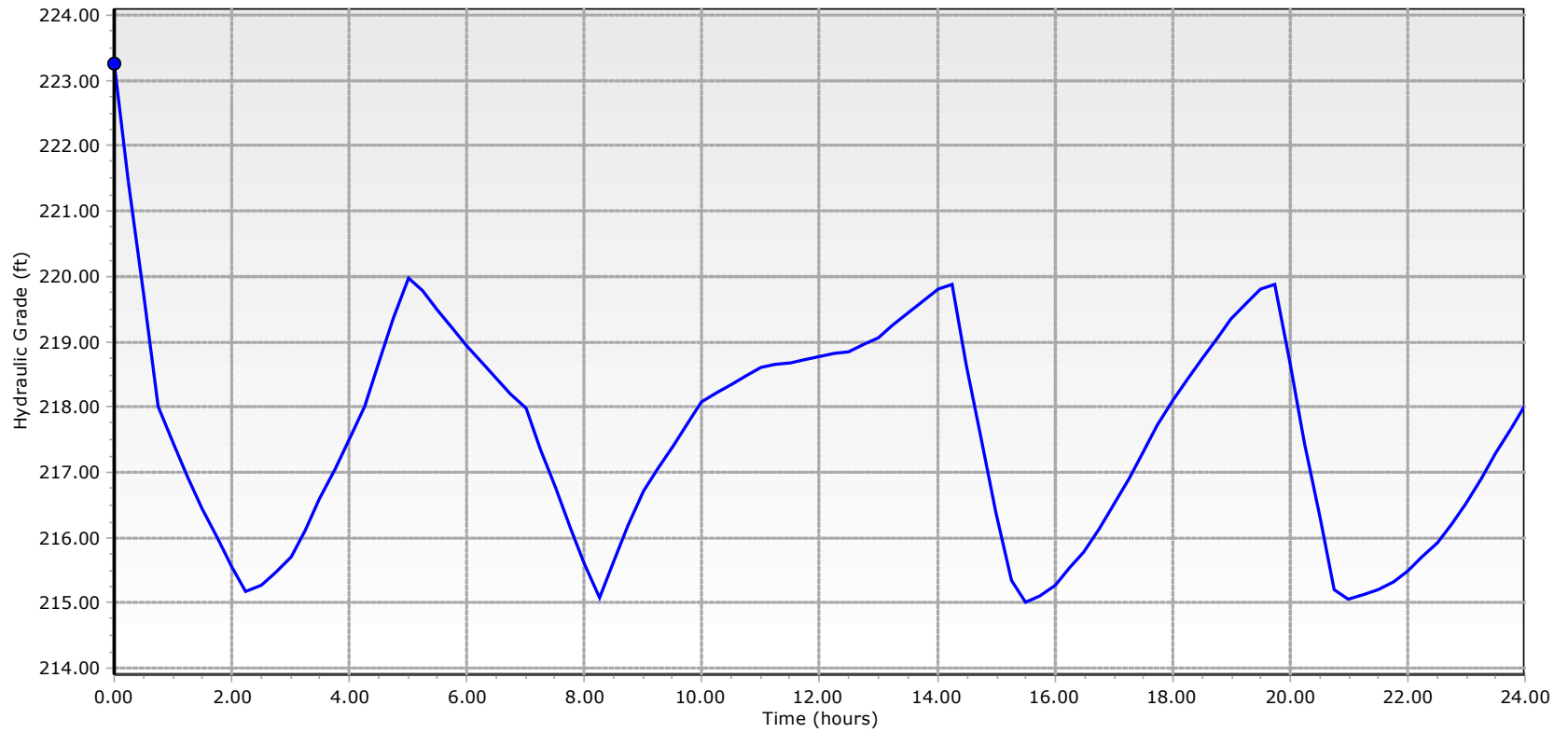
- <= 500
- <= 1,000
- <= 1,500
- <= 2,500
- <= 6,000



APPENDIX B

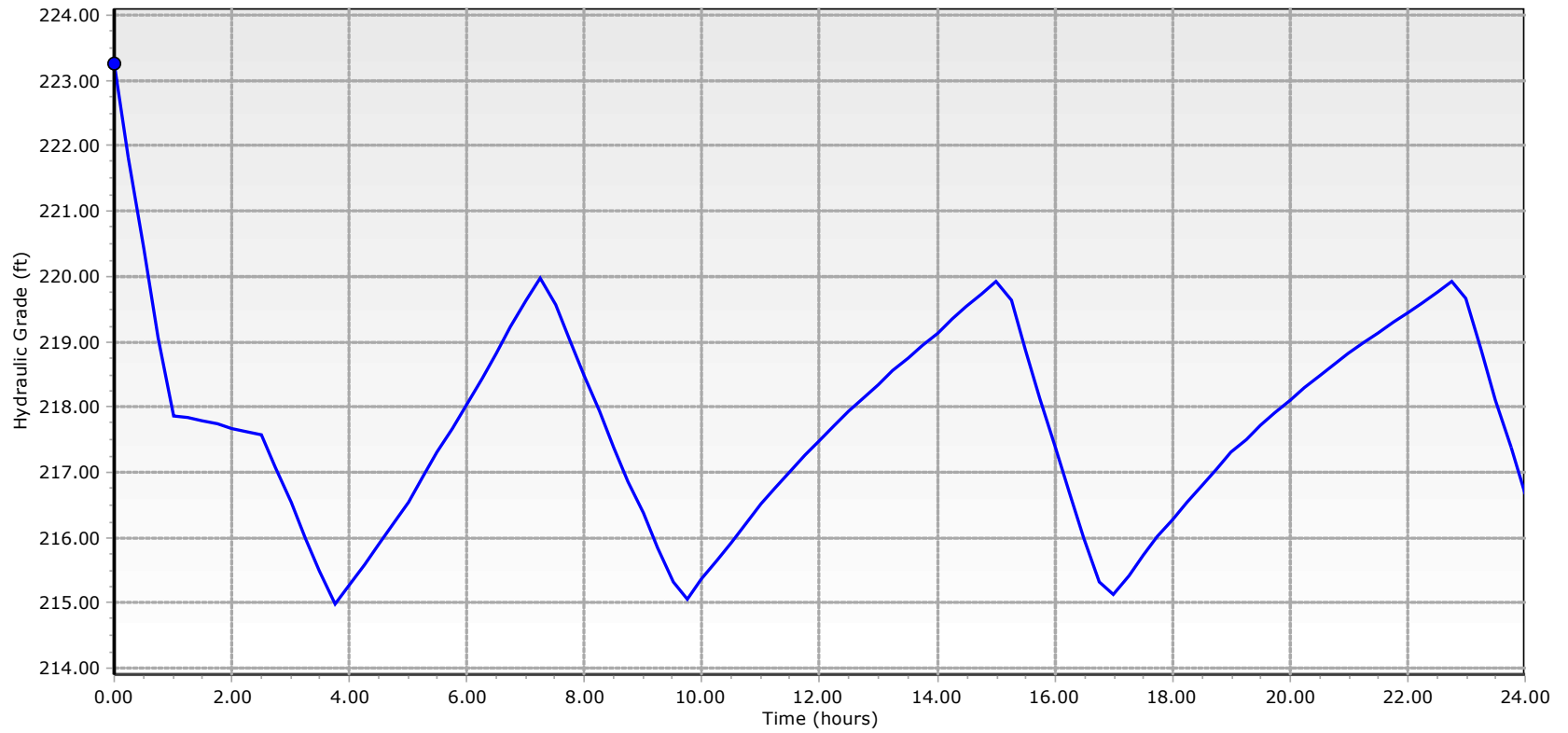
Tank Levels

Ewing Tank (Max Day 24-hour EPS, existing condition)



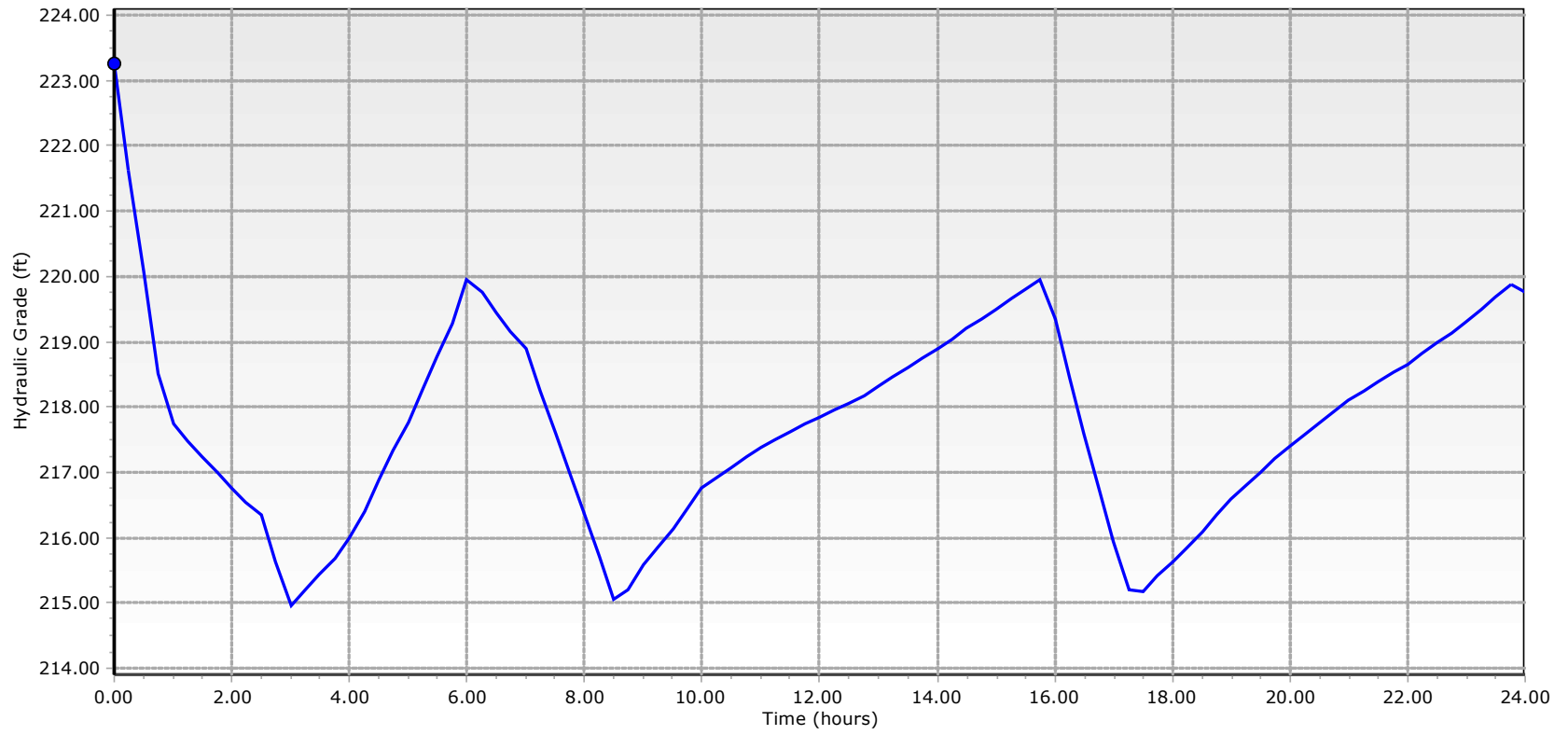
Ewing Tank - 2013 Max Day 07.20.2016 - Hydraulic Grade

Ewing Tank (Max Day 24-hour EPS, Lincoln Ave 30" Main closed)



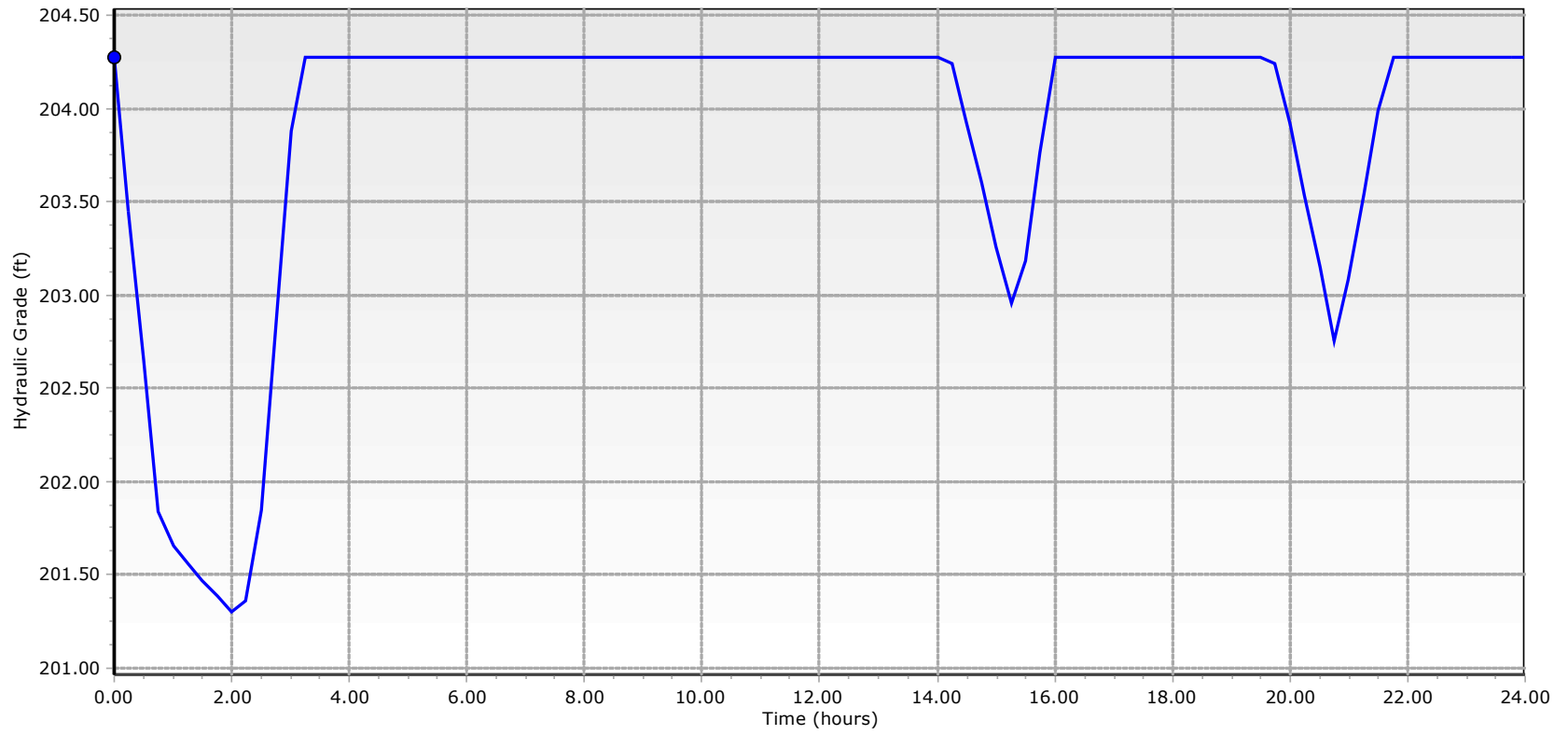
Ewing Tank - 2013 Max Day 07.20.2016 Lincoln Ave Closed - Hydraulic Grade

Ewing Tank (Max Day 24-hour EPS, 12" main)



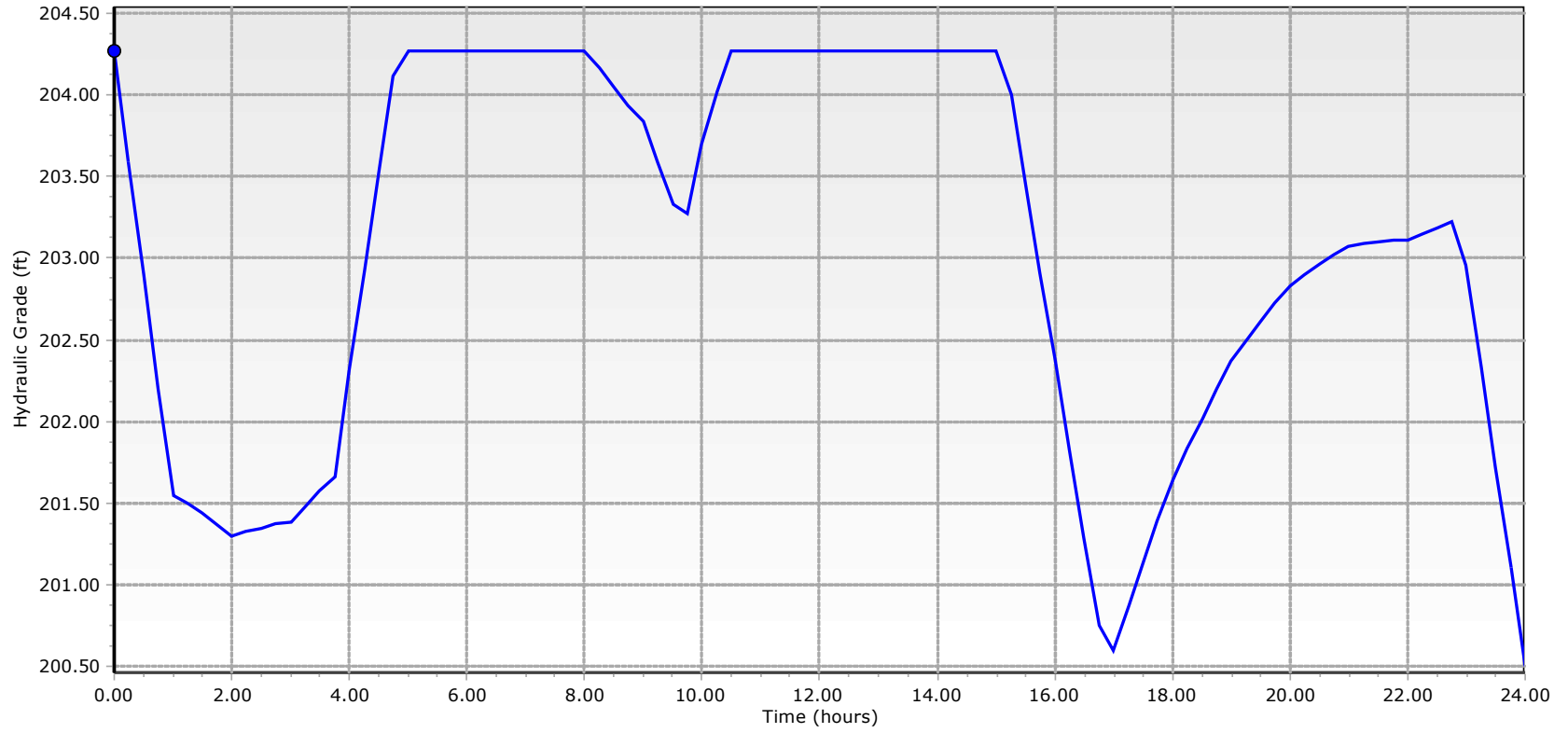
Ewing Tank - 2013 Max Day 08.02.2016 Temporary 12" - Hydraulic Grade

Lawrence Tank (Max Day 24-hour EPS, existing condition)



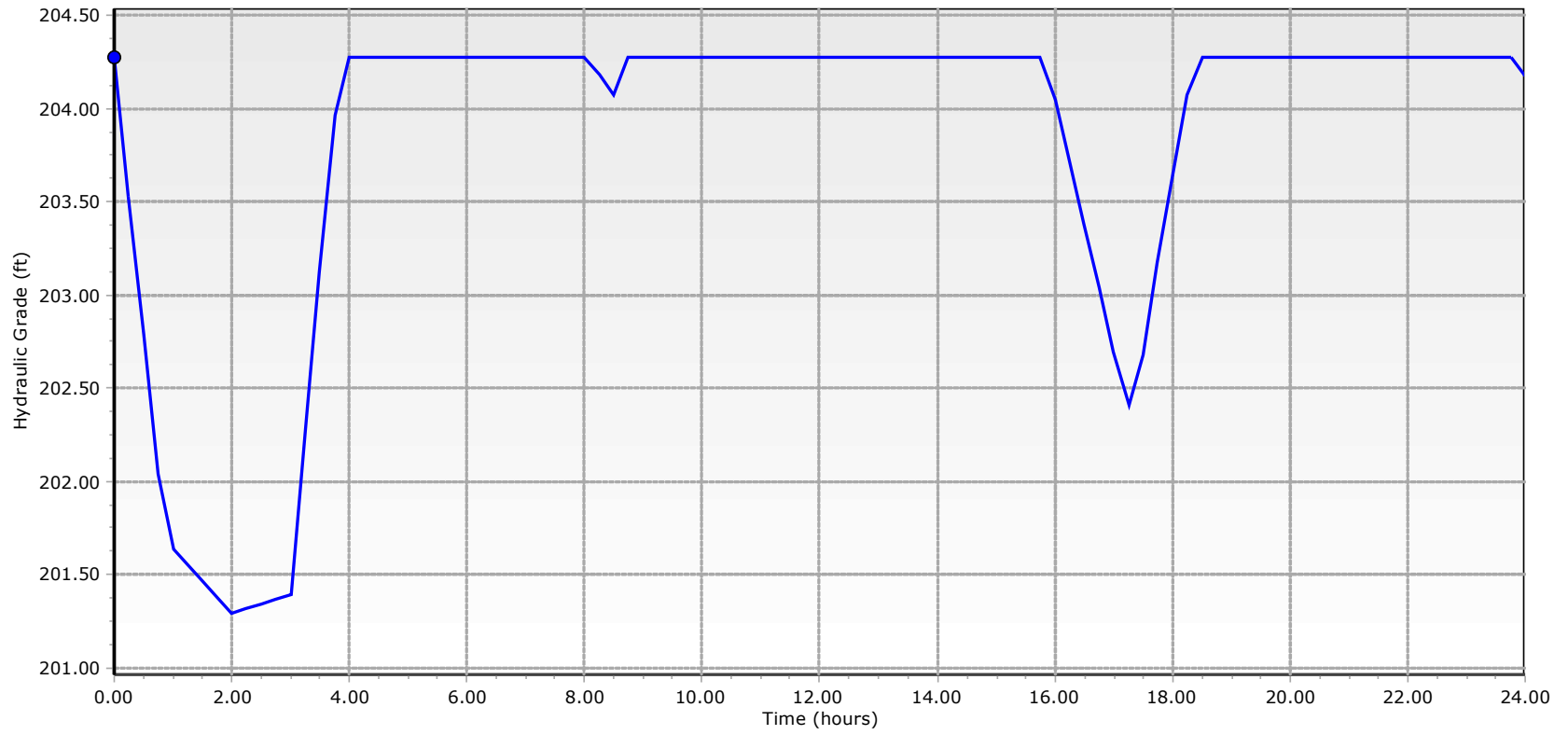
Lawrence Tank - 2013 Max Day 07.20.2016 - Hydraulic Grade

Lawrence Tank (Max Day 24-hour EPS, Lincoln Ave 30" Main closed)



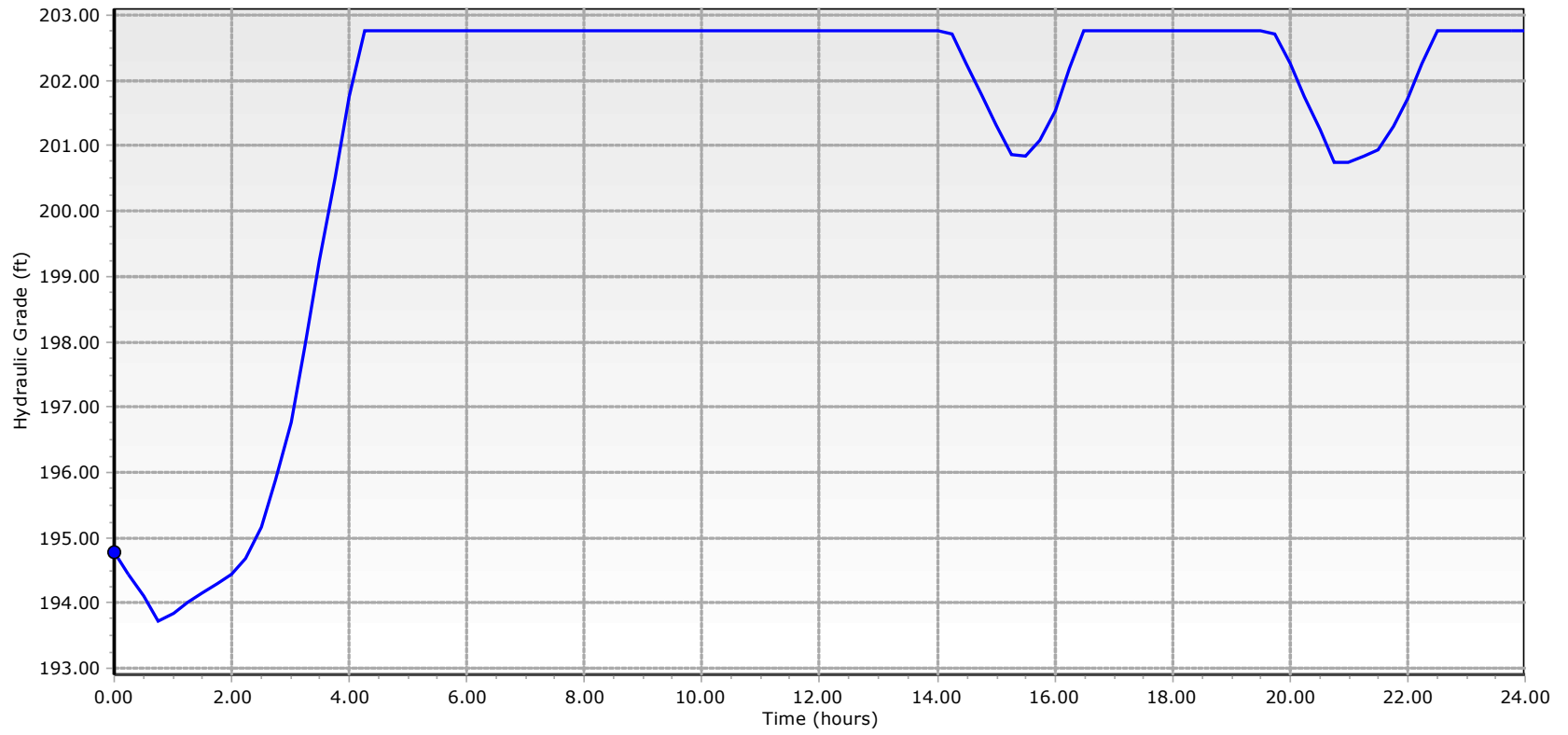
Lawrence Tank - 2013 Max Day 07.20.2016 Lincoln Ave Closed - Hydraulic Grade

Lawrence Tank (Max Day 24-hour EPS, 12" main)



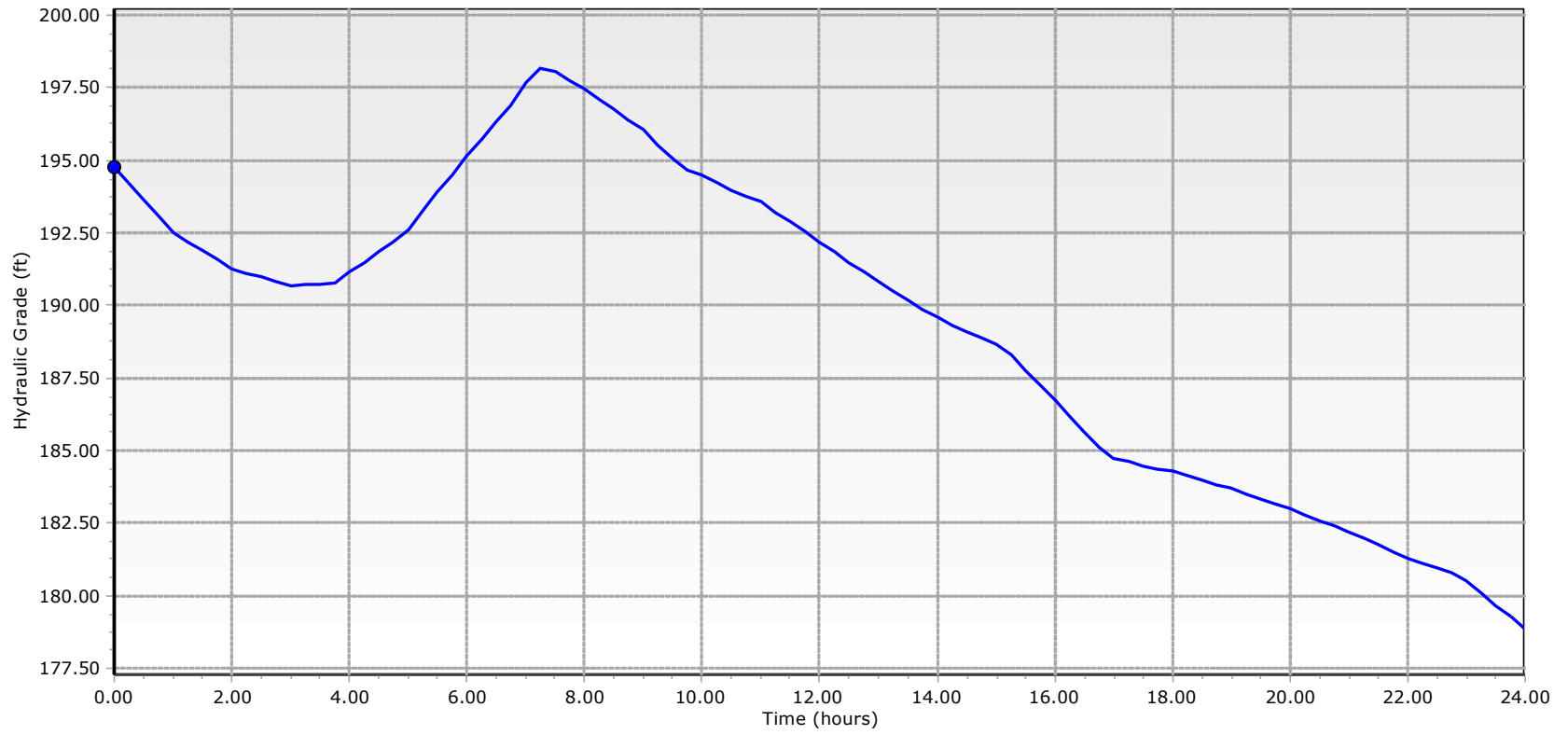
Lawrence Tank - 2013 Max Day 08.02.2016 Temporary 12" - Hydraulic Grade

Mercerville Tank (Max Day 24-hour EPS, existing condition)



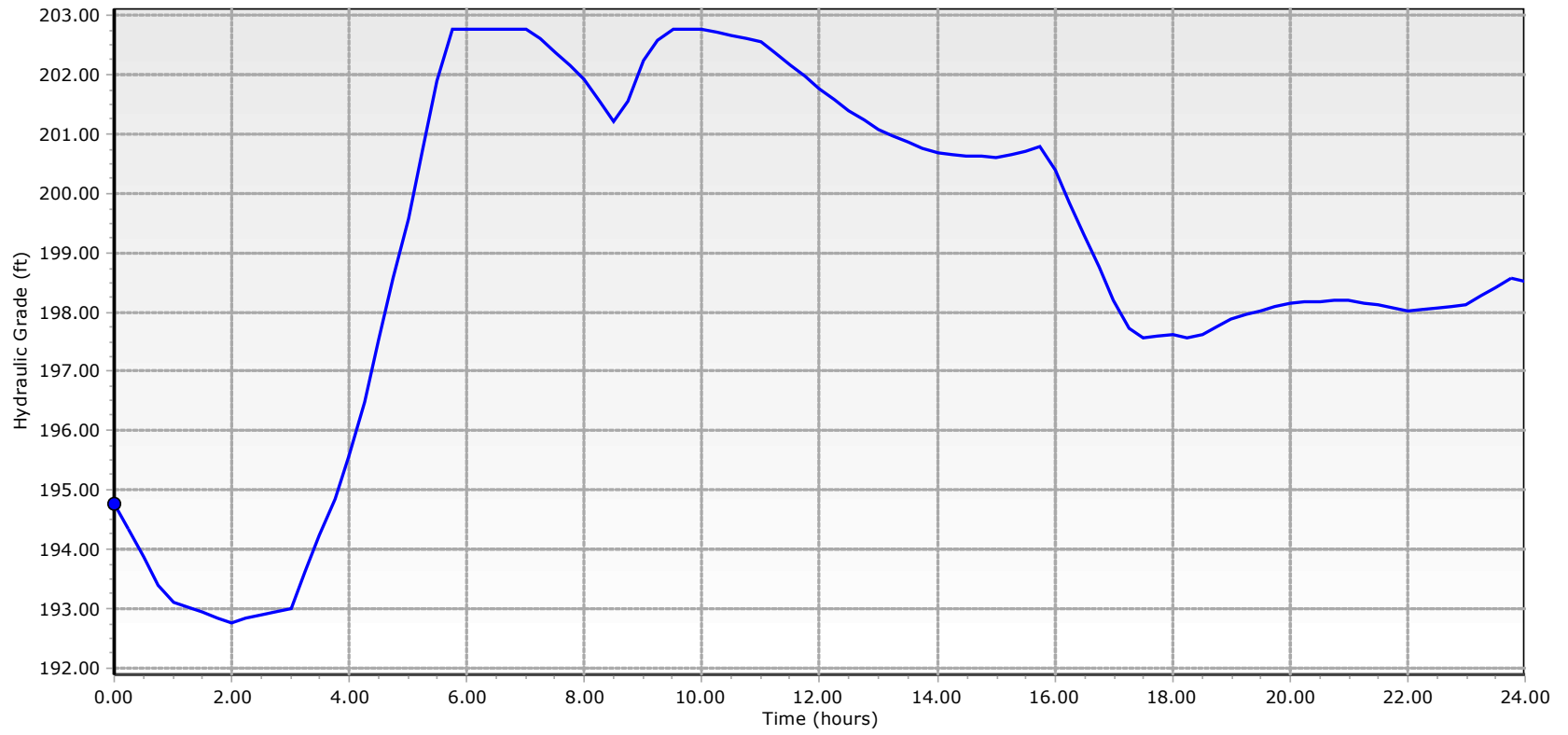
Mercerville Tank - 2013 Max Day 07.20.2016 - Hydraulic Grade

Mercerville Tank (Max Day 24-hour EPS, Lincoln Ave 30" Main closed)



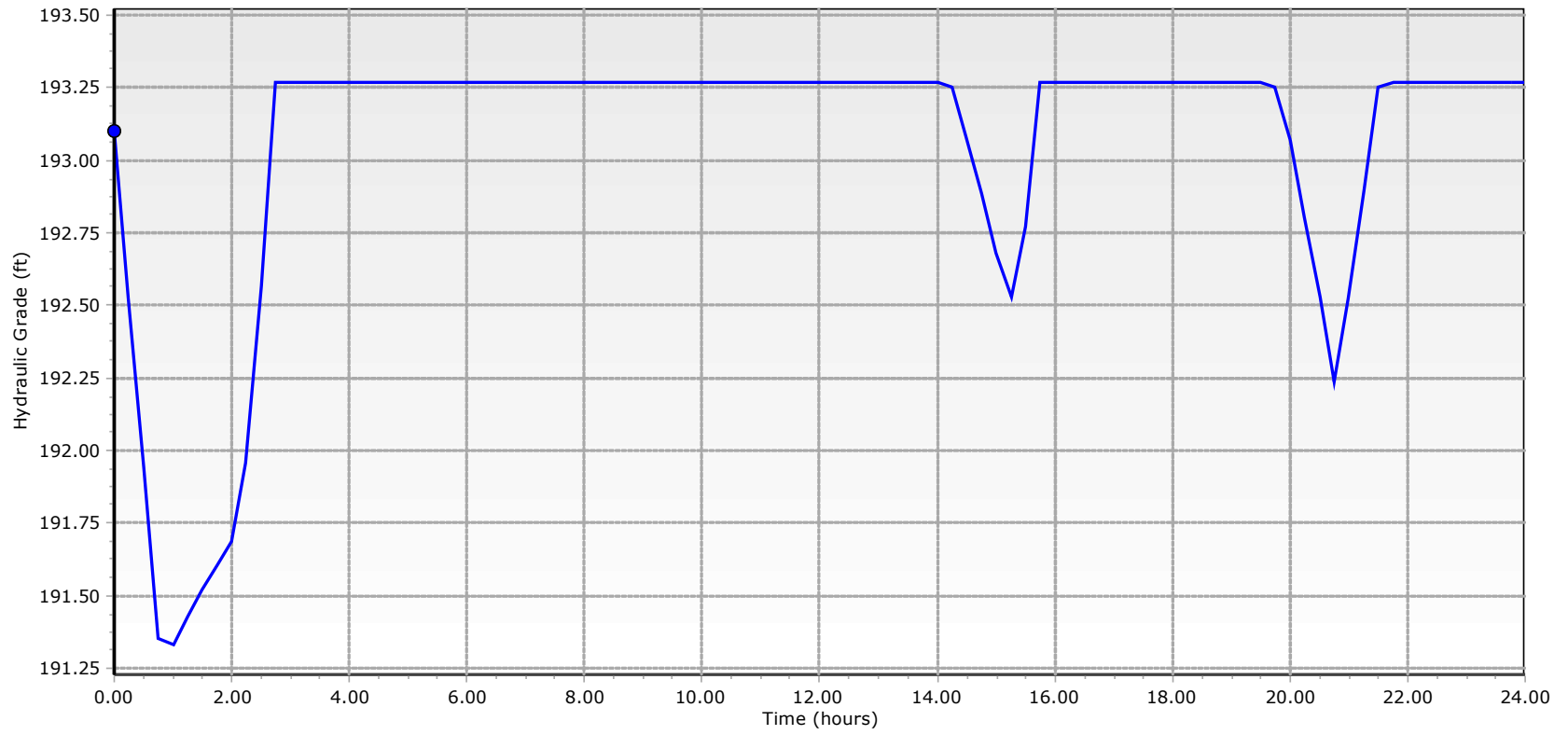
Mercerville Tank - 2013 Max Day 07.20.2016 Lincoln Ave Closed - Hydraulic Grade

Mercerville Tank (Max Day 24-hour EPS, 12" main)



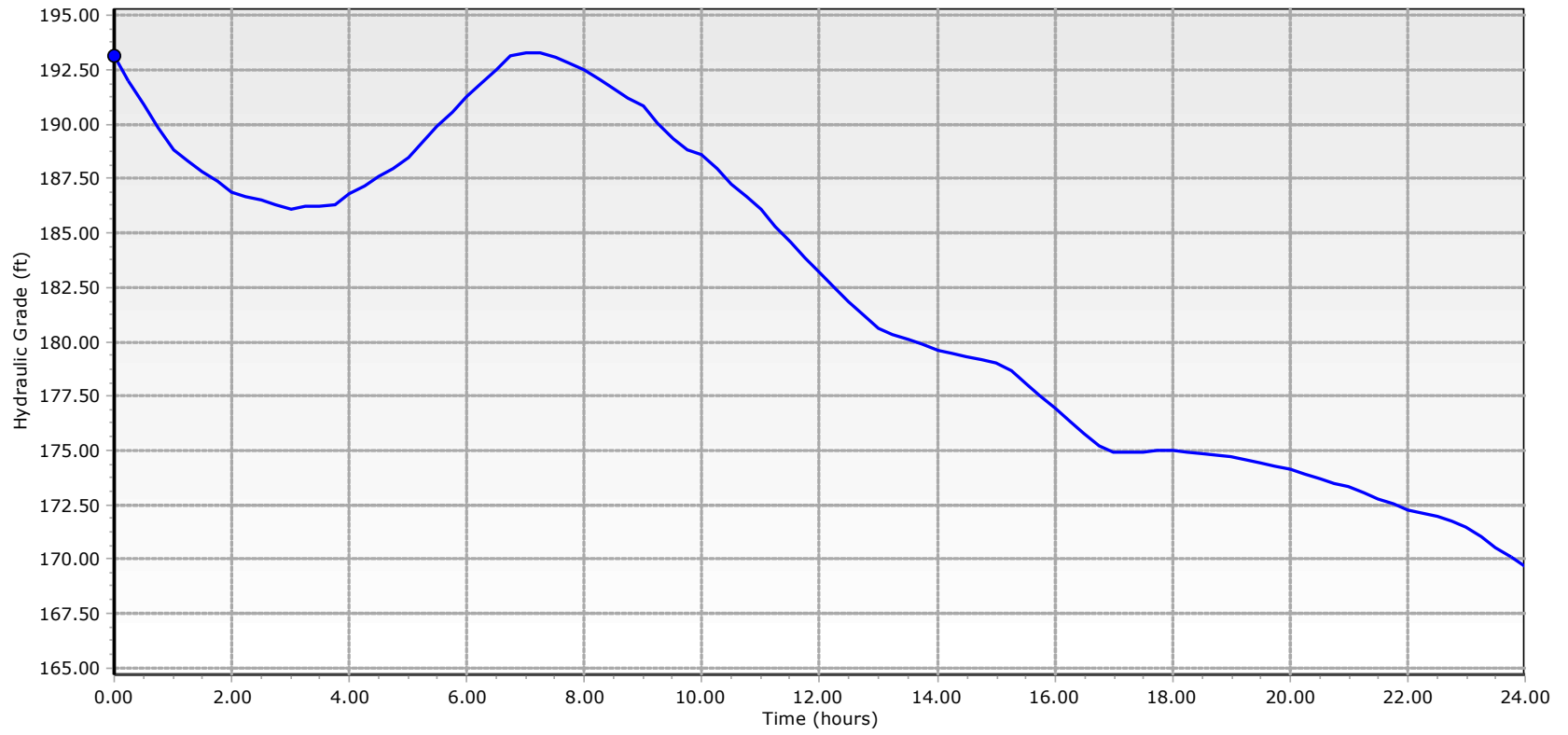
Mercerville Tank - 2013 Max Day 08.02.2016 Temporary 12" - Hydraulic Grade

Whitehorse Tank (Max Day 24-hour EPS, existing condition)



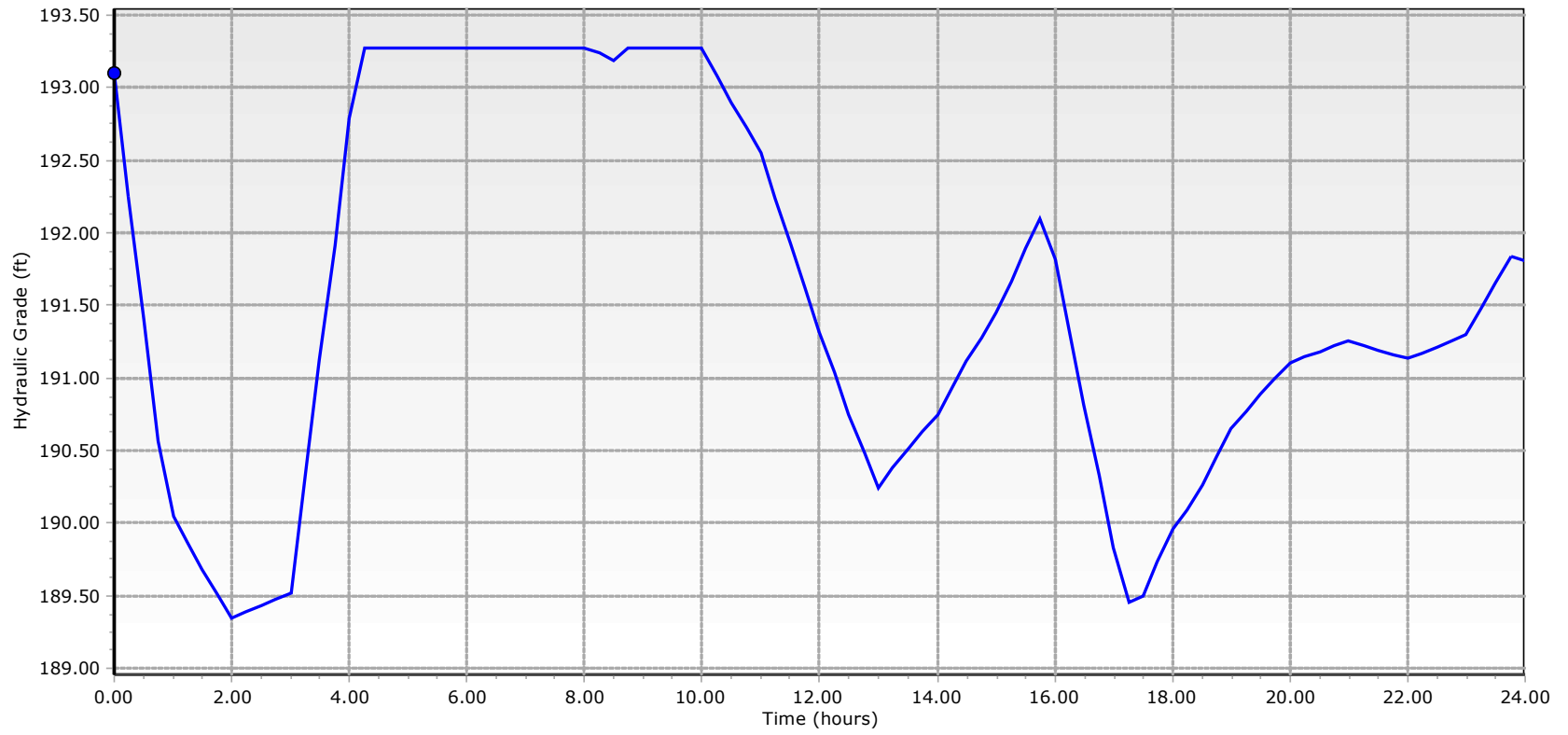
Whitehorse - 2013 Max Day 07.20.2016 - Hydraulic Grade

Whitehorse Tank (Max Day 24-hour EPS, Lincoln Ave 30" Main closed)



Whitehorse - 2013 Max Day 07.20.2016 Lincoln Ave Closed - Hydraulic Grade

Whitehorse Tank (Max Day 24-hour EPS, 12" main)



Whitehorse - 2013 Max Day 08.02.2016 Temporary 12" - Hydraulic Grade

Email

From: [Fredericks, Jonathan](#)
To: [Schroeder, Richard](#)
Cc: [Boerchers, Bernard](#); [Marra, Christopher](#); [Steponanko, Julia](#); [Farrow, William](#)
Subject: RE: DVRPC/Mercer County - Lincoln Avenue Bridge Replacement, Local CD Study - PSE&G 69Kv
Date: Thursday, October 27, 2016 5:50:42 PM
Attachments: image004.png

Richard,

I can only answer for my department that handles the 69kv Projects throughout the state. I cannot answer that for certain for PSE&G as a whole.

But I do believe that our Route 1 crossing on Mulberry St spurred the conversation that lead you to Carolyn Baynes and our group.

Our new project only impacts State St at Nottingham Way.

Please let me know if you have any further questions.

Thank you,

Jonathan Fredericks

Engineering Technician
Delivery, Projects and Construction
Public Service Electric & Gas
300 New Albany Rd
Moorestown, NJ 08057
Cell: 609-760-6140
jonathan.fredericks@pseg.com



From: Schroeder, Richard [mailto:rschroeder@gpinet.com]
Sent: Thursday, October 27, 2016 3:23 PM
To: Fredericks, Jonathan
Cc: Boerchers, Bernard; Marra, Christopher; Steponanko, Julia; Farrow, William
Subject: DVRPC/Mercer County - Lincoln Avenue Bridge Replacement, Local CD Study - PSE&G 69Kv

Email sent from outside of PSEG. Use caution before using links/attachments.

John:

As per our discussion, please find attached a Site Location Map that shows the limits for the Lincoln Avenue Bridge Replacement project.

Please confirm that PSE&G has no proposed facilities in this area (including along the RR ROW that passes under the bridge).

Thank you,



Richard H. Schroeder III

Project Manager

100 Corporate Drive, Suite 301, Lebanon, NJ 08833
p 908-236-9001 Ext. 5059 | f 908-236-9669 | c 610-217- 6830

rschroeder@gpinet.com | www.gpinet.com



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Appendix V

Interagency Review Committee Communications



State of New Jersey

DEPARTMENT OF TRANSPORTATION
1035 Parkway Avenue
MOB 3rd Floor
Trenton, New Jersey 08625

CHRIS CHRISTIE
Governor

RICHARD T. HAMMER
Commissioner

KIM GUADAGNO
Lt. Governor

November 22, 2017

John Coscia, Jr.
Manager, Office of Project Implementation
Delaware Valley Regional Planning Commission
190 N. Independence Mall-West, 8th Floor
Philadelphia, PA 19106-1520

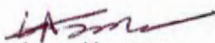
Re: Interagency Review Committee (IRC) Approval
Lincoln Avenue (CR 626) Bridge Replacement
City of Trenton, Mercer County

Dear Mr. Coscia:

Enclosed is an original copy of the conditional approval for the above captioned Local Concept Development project in the City of Trenton, Mercer County. This approval is pending the review and approval of the draft LCD report dated July 2017 by FHWA and the submission of the Final LCD report.

Should you have any questions regarding the above, please contact Kyle Skala at (732) 625-4283.

Sincerely,


Arun Kumar
Supervising Engineer
Local Aid District 3

Enclosures

**NEW JERSEY DEPARTMENT OF TRANSPORTATION
MEMORANDUM**

TO: John Coscia, Jr.
Manager, Office of Project Implementation
Delaware Valley Regional Planning Commission

FROM: Arun Kumar
Supervising Engineer
Local Aid – District 3

DATE: October 24, 2017

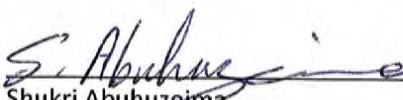
PHONE: (732) 625-4295

SUBJECT: **Interagency Review Committee (IRC) Approval
Lincoln Avenue (CR 626) Bridge Replacement
City of Trenton, Mercer County**

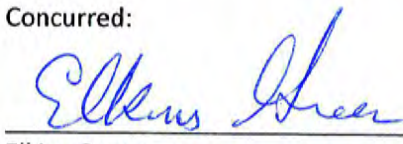
The Interagency Review Committee (IRC) for the above mentioned project has been conditionally approved for advancement to Preliminary Engineering pending the review and approval of the draft LCD report dated July 2017 by FHWA

Enclosures


Recommended:

 10/26/2017
Shukri Abuhuzema
Supervising Engineer
Local Aid & Economic Development

Concurred:

 10/27/17
Elkins Green
Director
Environmental Resources

Approved:

 11/3/17
Michael Russo
Assistant Commissioner
Capital Investment, Planning, and Grant Administration



Lincoln Avenue Bridge Replacement LCD

Date: October 23, 2017

Time: 1:00 PM

Location: NJDOT MOB Building, 1035 Parkway Avenue, Trenton, NJ

I. Project Information

- Lincoln Avenue (County Route 626) Bridge Replacement
- DBNUM: D1710; UPC: 173920
- Trenton City, Mercer County
- CR 626 MP 0.05

II. Structure Description

State Structure No. 1100-055 (Mercer County Structure No. 140.9), which carries Lincoln Avenue (CR 626) over the Amtrak Northeast Corridor (NEC) rail line, an inactive NJ Transit rail yard and the Assunpink Creek.

Based on the 15th Cycle Bridge Re-Evaluation Report completed in June 2013, the subject structure has a sufficiency rating of 46.2. It was built in 1931 and reconstructed in 1965 and is rated ‘serious’, or 3 on a 0 to 9 scale, with 9 being excellent condition and 0 being failed condition/closed facility. Despite its rating of 3, the bridge is still safe for travel. The rating is primarily due to the condition of the superstructure, which suffers from severely rusted steel throughout and large areas of spalled and delaminated concrete on the deck. The County has performed short-term fixes on the structure including lighting, deck repairs and an asphalt overlay.

III. Project Status

End of Concept Development

IV. Estimated Project Cost

Project Delivery Phase	Anticipated Start Date (Fiscal Year)	Estimate
Preliminary Engineering	January 2018 (FY 2018)	\$1,250,000
Final Design	March 2019 (FY 2019)	\$2,500,000
Construction	April 2021 (FY 2021)	\$41,000,500

V. Project Description

This project will replace Structure No. 1100-055 and will include the following proposed improvements:

1. Complete replacement of the structure to extend the life of the bridge, correct deficiencies, and meet current design requirements;
2. The structure will be replaced with steel multi-girders (structure depth of 51” and maximum girder spacing of 7’);
3. The vertical profile and pier locations will be revised to provide the required horizontal and vertical clearance over the railroad tracks;

Lincoln Avenue Bridge Replacement LCD

- 4. Standard 12-foot wide lanes, 8-foot wide shoulders, which can be used by bicyclists, and 6-foot wide sidewalks for pedestrians on structure;
- 5. Architectural treatments, such as stone facing, veneer or form liners; galvanized and powder coated steel; aesthetic parapet or railing treatments; colored concrete; decorative lighting; etc. are also being considered.

No roadway widening is proposed. Easement agreements will be required for work that is performed outside of the existing right-of-way, such as grading and sidewalk repairs necessary to meet ADA compliance. Lincoln Avenue serves as an important connector across the aforementioned physical barriers and is the first crossing outside of the central business district of Trenton City.

VI. Recommendation

It is recommended to advance this project to Local Preliminary Engineering.

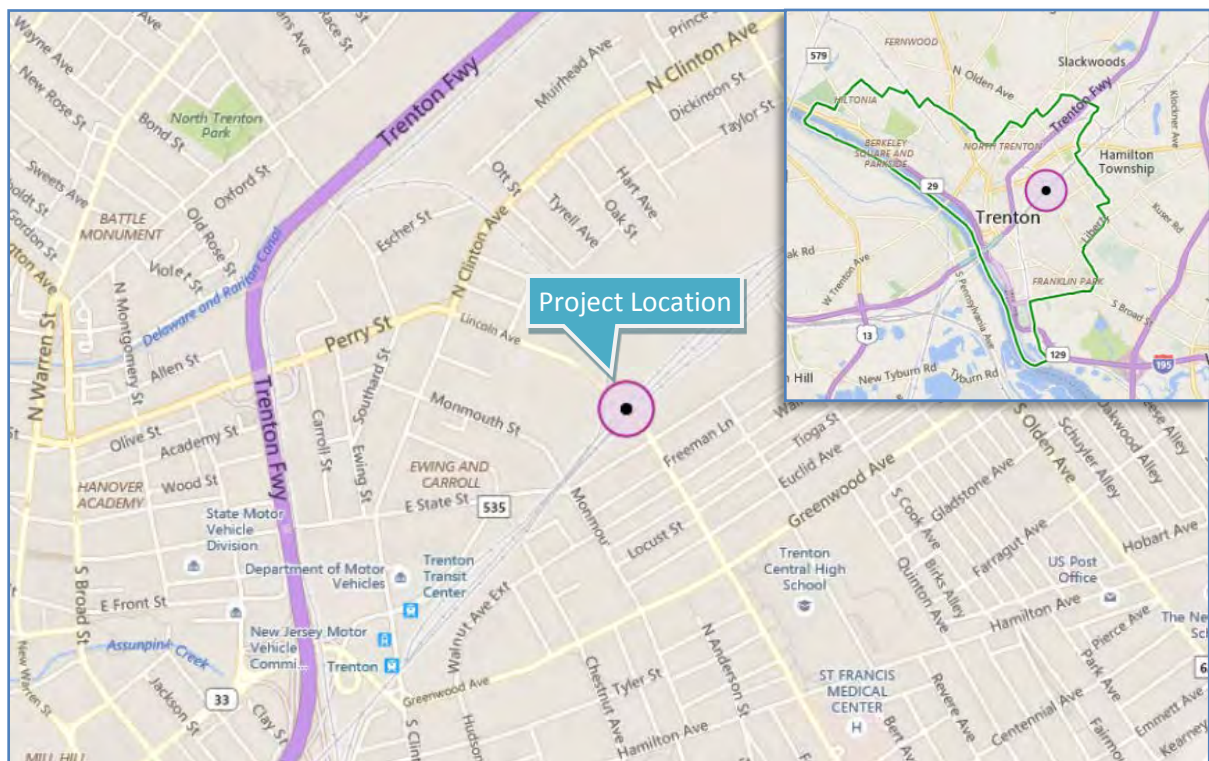


Figure 1 – Project Location

Lincoln Avenue Bridge Replacement Local Concept Development

Trenton City, Mercer County





The Lincoln Avenue Bridge Replacement Project is located in the City of Trenton, Mercer County. The bridge is denoted as Structure No. 1100-055 (County No. 140.9), and it carries Lincoln Avenue over the Amtrak NEC and the Assunpink Creek,

It is also located immediately north of the NJDOT Trenton Amtrak Bridges Project as noted in the 2016-2025 STIP (UPC#993620). The NJDOT Project, which is currently in the Preliminary Engineering (PE) Phase includes the replacement of the two bridges carrying E. State Street and Monmouth Street over Amtrak and the removal of the bridge carrying Chestnut Avenue over Amtrak. The three orphan bridges, carrying Chestnut Ave., E. State St. and Monmouth St. over Amtrak, are in poor condition. All three bridges are structurally deficient and functionally obsolete. The bridges and approach roadways feature various substandard design elements, including substandard vertical and horizontal clearances, intersection sight distances and unprotected bridge girders. The two projects will be coordinated through their respective remaining phases.

Purpose & Need

- Purpose is to rehabilitate or replace Str. No. 1100-055 (County No. 140.9)
- Rated **3-Serious** due to condition of superstructure (June 2013 Inspection)
 - Deck rating: 4-Poor
 - Superstructure rating: 3-Serious
 - Substructure rating: 5-Fair
- Sufficiency Rating of **46.2**



The overall purpose of this project is to rehabilitate or replace Structure No. 1100-055, to provide a low maintenance long-term solution which eliminates all existing structural deficiencies; incorporates operational, safety and pedestrian access improvements to the bridge and the approach roadways; and minimizes impacts to the adjoining community and environment.

Mercer County performed short-term fixes on the structure, including covering a deck hole with a steel plate and constructing an asphalt overlay.

Bridge Needs: Based on the 15th Cycle Bridge Re-Evaluation Report completed in June 2013, the superstructure for Structure No. 1100-055 is in serious condition due to the exposed, moderately to severely rusted steel in the girders and floorbeams at the areas of missing encasement. As a result, the deck is also in poor condition with large areas of spalled and delaminated concrete with exposed rusted rebar. The substructure is in fair condition due to wide vertical cracks, large spalls and delaminated concrete with exposed rusted rebar, and loose coping. This bridge has a sufficiency rating of 46.2.

Roadway Needs: Substandard stopping sight distance on vertical curves, shoulder width, cross slope and vertical clearance were identified as Controlling Substandard Design Elements (CSDEs) within the study limits during Concept Development. In addition, the clear zone is obstructed by the through girders which results in deficient horizontal stopping sight distance.

Existing Conditions (Structure No. 1100-055)

Structural Information & Deficiencies

- Carries Lincoln Avenue over Amtrak NEC and Assunpink Creek
- Built in 1931
- Reconstructed in 1965
- Comprised of 8 simple spans
- Steel through-girders (fracture critical)
- Steel floorbeams and concrete deck
- Severely corroded steel
- Large areas spalled / delaminated concrete



Structure No. 1100-055 was originally built in 1931 and reconstructed in 1965. The current structure replaced the previous timber and then steel truss bridge on a similar alignment. It is 687 feet long, 56 feet wide out-to-out and 36 feet wide curb-to-curb. The existing minimum vertical clearance is 20'-9" to top of track; less than the required minimum clearance of 24'-3" (Amtrak) and 24'-6" (NJDOT). The bridge is not scour critical.

Overall Condition: Based on the June 2013 inspection, the overall condition of the structure is serious due to the condition of the superstructure.

The **Deck** is in poor condition due to the large areas of spalled and delaminated concrete with exposed rusted rebar. The underside of the deck exhibits areas of heavy efflorescence along the centerline joint; spall areas with exposed rusted rebar on some spans; and areas of checkerboard cracking throughout all spans. It is estimated that 45% of the total deck area is chloride contaminated.

The **Superstructure** is in serious condition due to the exposed, moderately to severely rusted girder and floorbeam steel at areas of missing encasement. The exposed areas of the web plates and bottom flanges at the through girders exhibit severe rust and section loss at random locations on all spans. In addition, multiple knee braces exhibit through holes up to 1" by 3" at the sidewalk level.

The **Substructure** is in fair condition due to wide vertical cracks in the abutment breastwalls and backwalls. There are large spalls and delaminated concrete with exposed rusted rebar in the east abutment breastwall; pier crashwalls; pier columns and caps; wingwalls; and loose coping of the southwest wingwall.

The fracture critical through girders exhibit moderate to severe rust in the exposed web plates and bottom flanges with section losses as noted above.

Existing Conditions

Roadway Information & Deficiencies



- 2 lane, urban minor arterial
- Not posted (25 mph)
- 18' lanes, no shoulders (CSDE), 6' sidewalk
- Roadway/pedestrian lighting
- Broken back horizontal curves
- CSDE: Vertical sight distance (E. State St)
- CSDE: Vertical underclearance
- Clear zone (14-16') with obstructions
- 33 crashes from 2011-2013
- Primarily rear-end crashes at E. State St

List of Controlling Substandard Design Elements (CSDE)

Vertical stopping sight distance

Shoulder width

Cross slope

Vertical underclearance

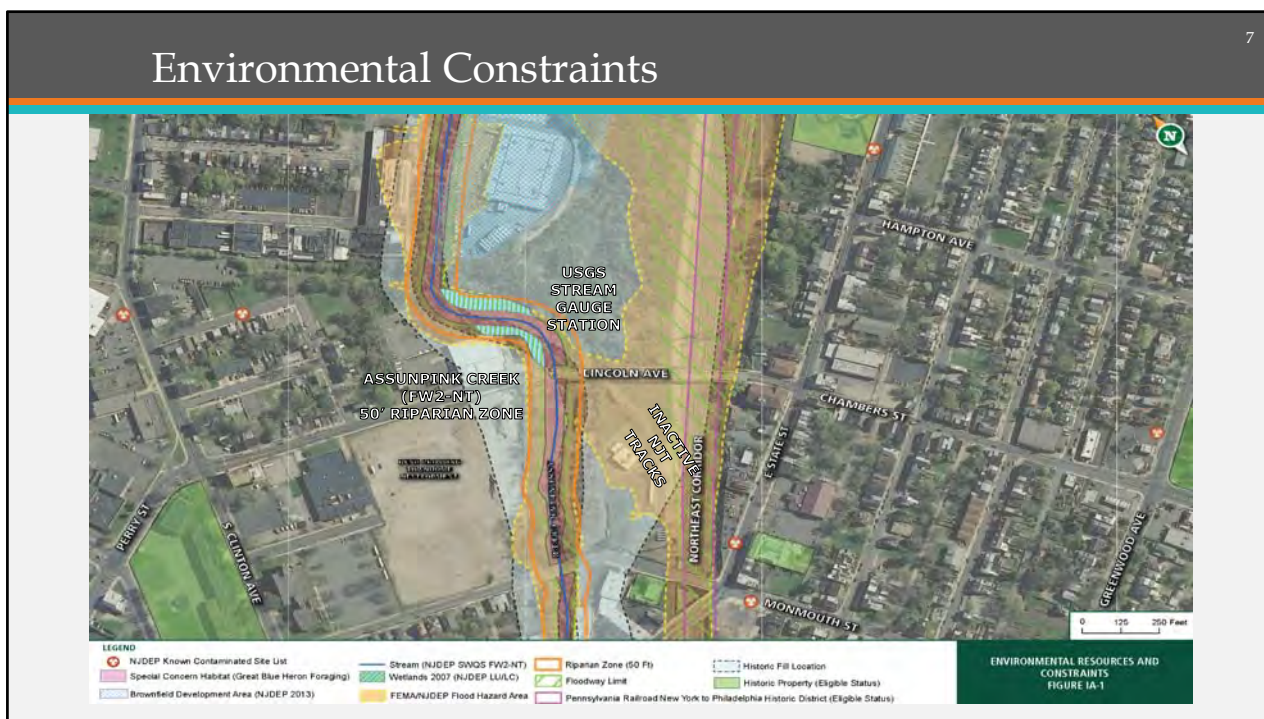
Existing Conditions

Railroad Operations

- Amtrak Northeast Corridor (NEC)
 - Amtrak
 - NJ Transit
 - Freight
- 5 mainline and 1 siding electrified tracks
- Overhead catenary lines and feeder cables
- Inactive NJ Transit tracks and old platform



The NEC rail line runs from Washington, D.C. to Boston and is used by Amtrak, NJ Transit and freight trains within NJ. Five (5) mainline and one (1) siding electrified tracks with overhead catenary lines are present under the structure. The NEC rail line is on the NJ Register as an eligible historic district (Pennsylvania RR, NY to Philadelphia, ID#4568). The rail line has a period of significance between 1835 and 1963. Between the Assunpink Creek and the NEC, NJ Transit owns four inactive rail lines, catenary structures, and a concrete platform.



The anticipated NEPA document for this project is a **Categorical Exclusion Document (CED)**. NJDOT concurrence on the same was received July 18, 2017.

Socioeconomics: The population within the study area is predominately African American, with Hispanic/Latino and White dispersed throughout. Large portions of the population speak Spanish. The study area is below the poverty line.

Section 4(f) Properties: The Monmouth Field (Assunpink Greenway) property was identified as Green Acres encumbered and owned by the City of Trenton.

Wetlands: Forested wetlands were identified along a portion of the Assunpink Creek (50-foot transition area). A wetlands swale was also identified along the east side of the NEC north of Lincoln Avenue (no transition area).

Floodplain: The Assunpink Creek, a freshwater, non-trout (FW2-NT) waterway, has a FEMA mapped 100-year floodplain. It is anticipated that the creek has a 50-foot riparian zone from the stream channel top-of-bank.

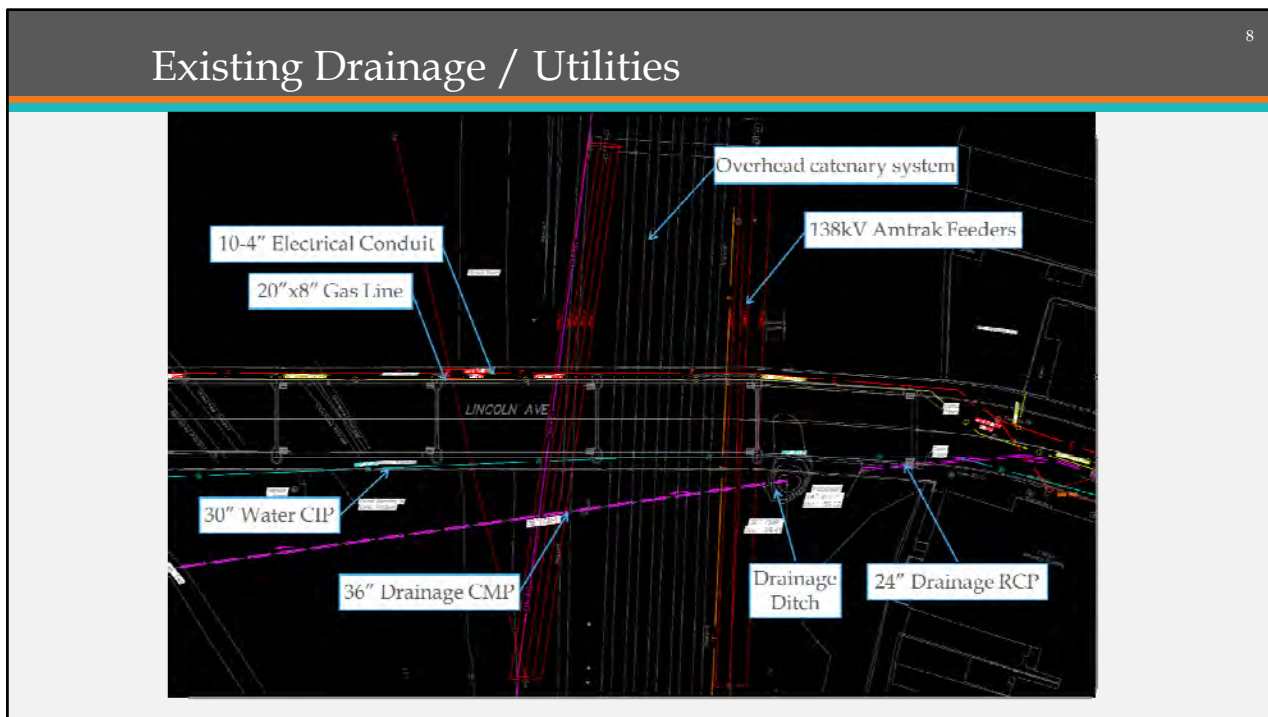
Threatened/Endangered Species: None identified within the project limits.

Stormwater: Compliance with the NJDEP SWM Rules not required.

Hazardous Waste: No known contaminated sites were identified within the project limits. Field observation noted that JR Auto Repairs, located along the north side of Lincoln Avenue near N. Clinton Avenue, may be a potential contaminated site.

Anticipated Environmental Permits or Approvals: Freshwater Wetlands GP, Stormwater Construction GP (RFA), Flood Hazard Area Individual Permit, Section 4(f).

Noise and Air Quality: Sensitive receptors, such as educational, religious, residential and service areas, were identified within the project limits.



The existing structure currently carries ten (10) 4-inch electrical conduits and a 16-inch equivalent gas main. In addition, an existing 30-inch cast iron water main is located under the structure (through the foundation). Of additional note, 138 kV power lines are located above the bridge, catenary lines are attached to the bottom of the bridge, and a USGS stream gauge station is located adjacent to the Assunpink Creek and Pier 6.

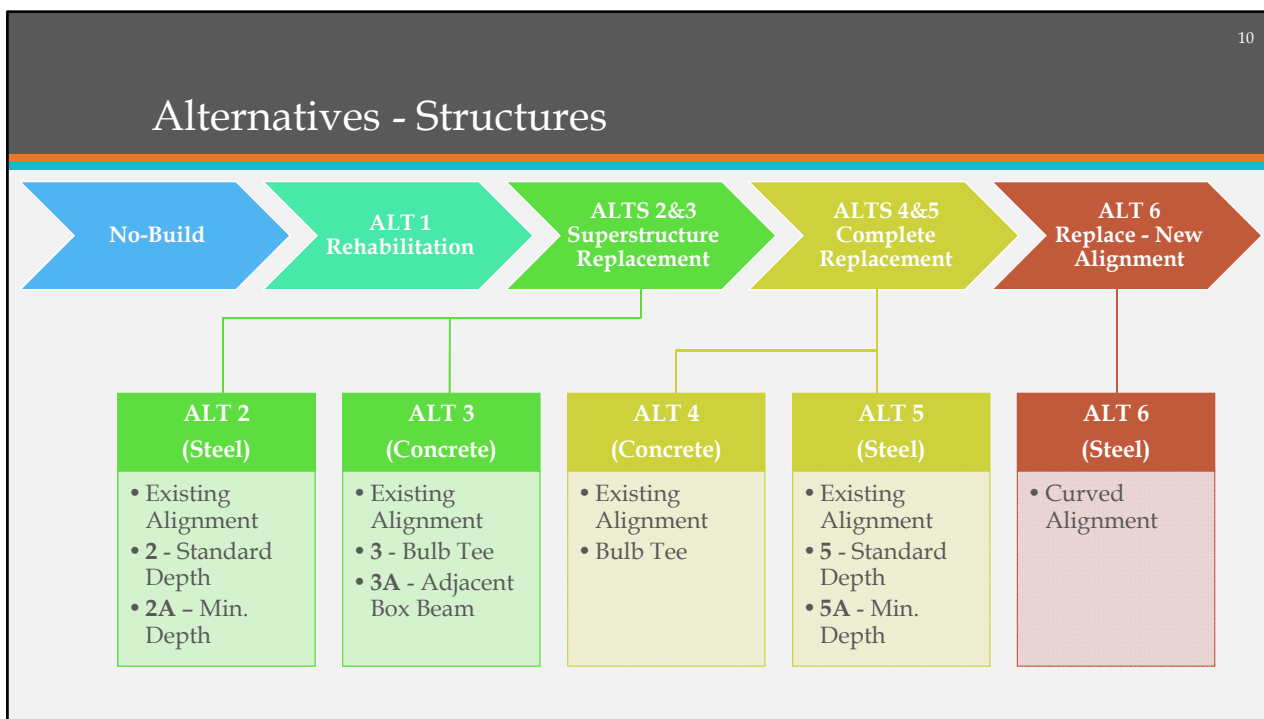
Alternatives Development - Considerations

- ✓ Provide required vertical and horizontal clearances from tracks
- ✓ Elimination of through-girder type / fracture critical
- ✓ Potential underground obstructions
- ✓ Provide standard 12' lanes, 8' shoulders and 6' sidewalks
- ✓ Remove / relocate / shield clear zone obstructions
- ✓ Proximity to 138 kV feeder lines
- ✓ Utility accommodations
- ✓ Maintain pedestrian access during construction
- ✓ Identify and evaluate potential detours
- ✓ Minimize or avoid railroad operation disruptions
- ✓ Rehabilitation vs. replacement
- ✓ Use existing substructure vs. replace entire structure
- ✓ Maintain existing alignment vs. new alignment
- ✓ No Build

For Slides 9 & 10

No Build: This alternative considers that no proposed improvements are implemented within the project limits. It is intended that this alternative serve as a reference for comparison to each of the other proposed alternatives. Given the existing poor condition of the structure, this alternative does not address the project's Purpose and Need.

Bridge Rehabilitation: For the bridge rehabilitation alternative, Alt 1, full restoration of the existing bridge including the superstructure and substructure was evaluated. This option requires a complete deck replacement, removal of concrete encasement on existing members, significant strengthening/repair of the existing steel members, structural steel painting, and substructure repairs. The rehabilitation of a structure with this age and in this condition is not typically ideal; however, rehabilitation causes far fewer impacts to the railroad and utilities than the other build alternatives. The option also has less environmental and right of way challenges which would compress the overall project duration. Additionally, rehabilitation would not require the raising of the roadway profile over the NEC because vertical and lateral clearances would match that of the existing structure. However, based on the age and the existing condition of the structure, rehabilitation of the existing bridge was not deemed reasonable by the key stakeholders during Concept Development; therefore, it was not advanced for further consideration.



Superstructure Replacement: Given the unknowns of the existing foundation underground location and condition, and since this is the third bridge on this site and second set of piers within same general footprint, superstructure replacement alone, **Alts 2 and 3**, may not provide a 75-year service life for all bridge elements.

- Alternative No. 2 proposes a multi-girder steel beam structure;
- Alternative No. 2A proposes a minimum depth multi-girder steel beam structure;
- Alternative No. 3 proposes a concrete bulb-tee structure;
- Alternative No. 3A proposes a concrete box beam structure.

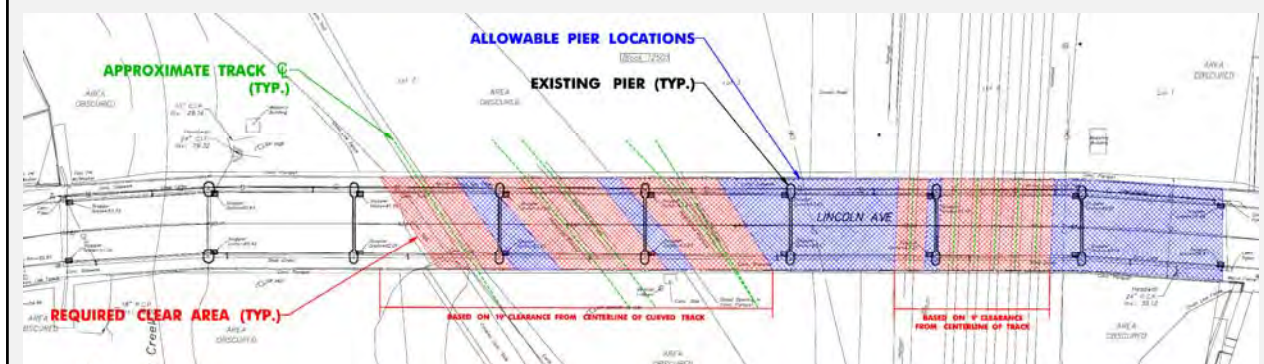
Complete Replacement: The complete replacement of the structure, **Alts 4 and 5**, offers the best opportunity to extend the life of the bridge, correct deficiencies, and meet current design requirements such as minimum vertical clearances; however, it also creates more impacts than the no-build and superstructure replacement alternatives, including more coordination with utilities, railroads, and stakeholders. Complete replacement also provides the potential for various construction staging options and advanced construction techniques. Complete replacement alternatives considered on the existing alignment include:

- Alternative No. 4 proposes a concrete bulb-tee structure;
- Alternative No. 5 proposes a multi-girder steel beam structure;
- Alternative No. 5A proposes a minimum depth multi-girder steel beam structure.

New Alignment: A new alignment provides the opportunity for full or partial offline construction which would reduce impacts to all road users. However, the new alignment alternative, **Alt 6**, has additional environmental, socioeconomic and right of way impacts that would occur as a result of realigning the roadway.

Based on input from the key stakeholders **Alts 2, 5 and 6** were advanced for further consideration.

Alternatives - Geometrics



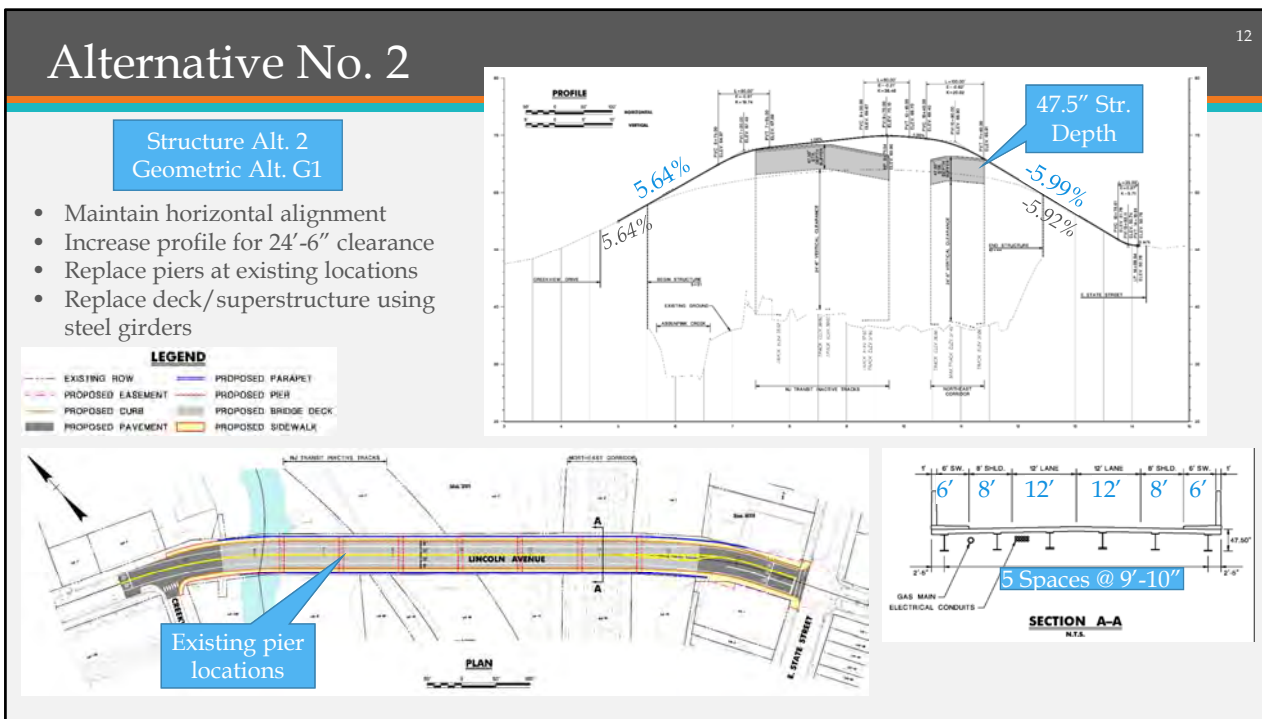
Required rail line clear areas under the bridge for the complete replacement alternatives with new pier locations was evaluated using the above plan.

- Red:** required clear area from existing tracks
- Blue:** areas where proposed piers are allowed
- Black:** existing features
- Green:** approximate centerline of existing track

All complete replacement structure cross sections consist of a 12' lane, 8' shoulder and 6' sidewalk along each direction of Lincoln Avenue, per AASHTO. Alt 6 is the only alternative that did not follow the existing alignment and instead proposes a new alignment with a 900' radius.

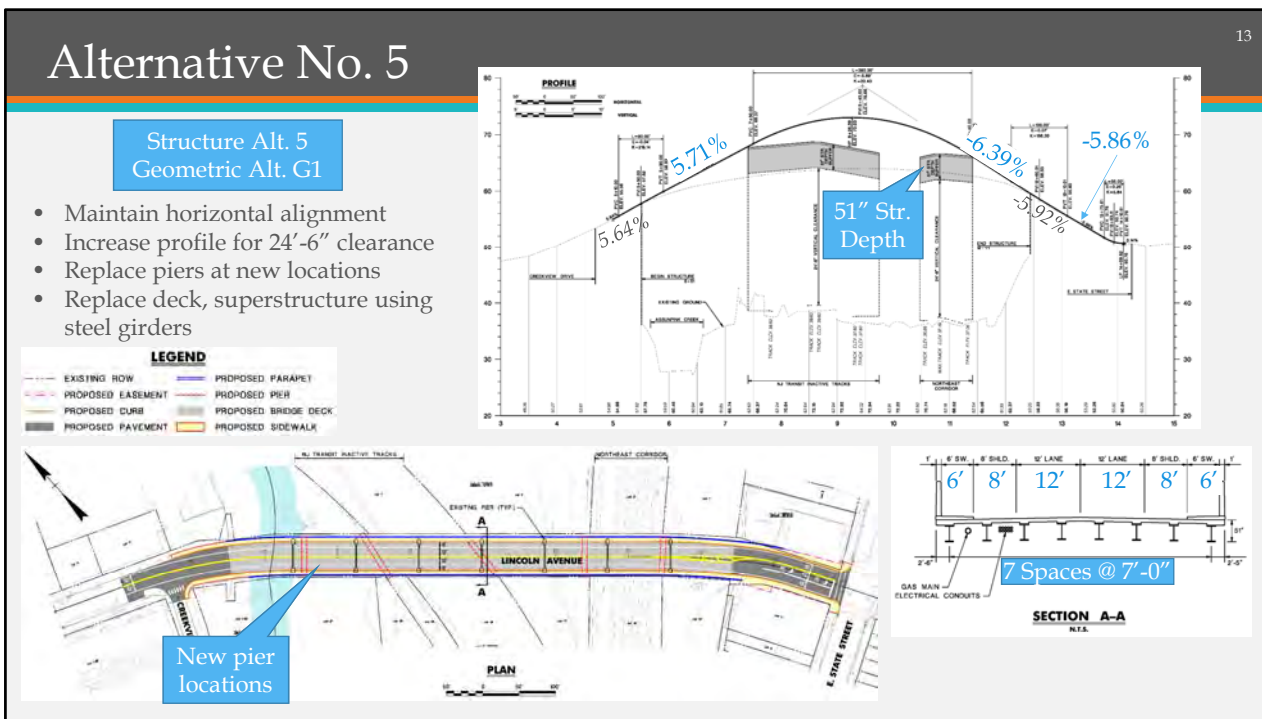
The following geometric alternatives were considered.

- **Alternative G1** proposes to maintain the existing horizontal alignment and provides the standard 24'-6" vertical clearance over Amtrak/NJ Transit rail lines.
- **Alternative G2** proposes a new alignment, consisting of a horizontal curve with a 900' radius, and standard 24'-6" vertical clearance over the rail lines.
- **Alternative G3** proposes to maintain the existing horizontal alignment and either meet or exceed the existing 20'-9" vertical clearance, but not meet the required minimum 24'-3" (Amtrak) or 24'-6" (NJDOT).
- **Alternative G4** proposes a new alignment, consisting of a horizontal curve with a 900' radius, and either meet or exceed the existing 20'-9" vertical clearance, but not meet the required minimum 24'-3" (Amtrak) or 24'-6" (NJDOT).



Alternative No. 2, Superstructure Replacement: Replacement of the deck and superstructure only on the existing alignment with a multi-girder steel beam structure. The structure depth would be 47.5 inches. Coupled with an increase in the vertical profile, Alt 2 would meet the required vertical track clearance requirements, but not the required horizontal track clearance requirements.

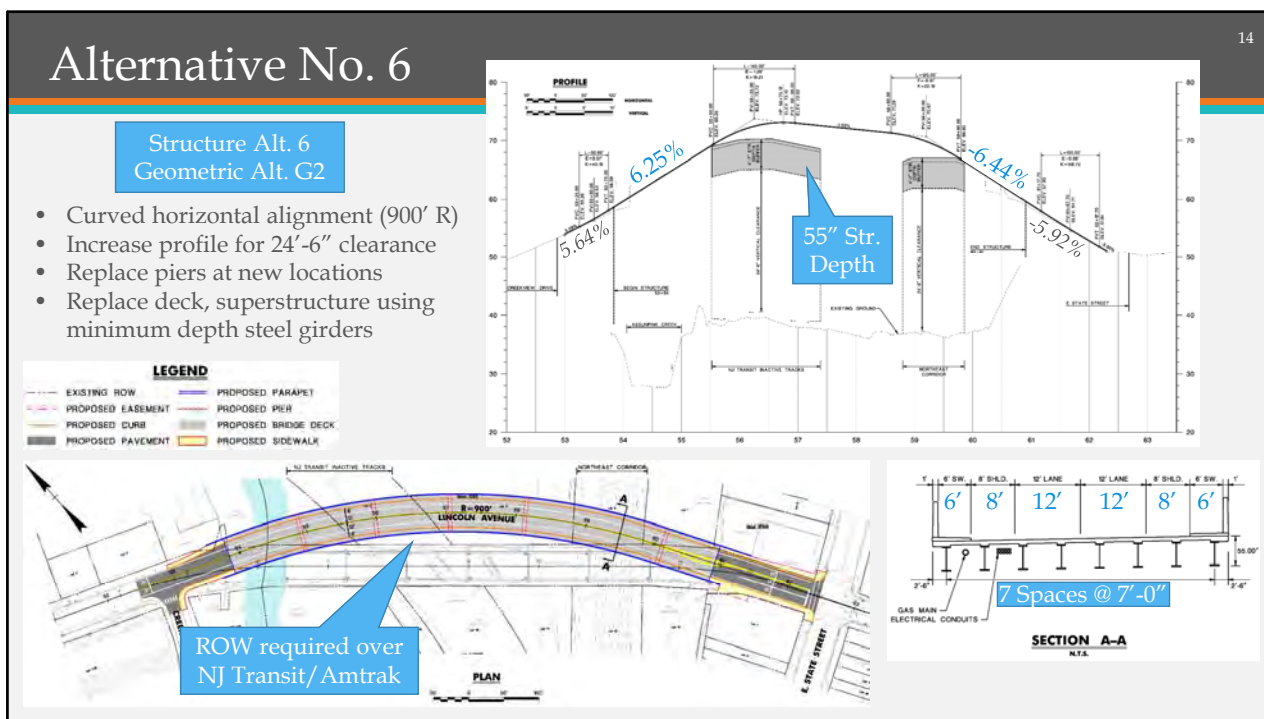
Given the unknowns of the existing foundation, superstructure replacement may not provide a 75-year service life for all bridge elements. It was determined that this alternative does not completely address the project's Purpose and Need.



Alternative No. 5, Complete Replacement: This alternative consists of the replacement of the entire structure along the existing alignment. The new bridge would consist of six (6) spans with a cast-in-place reinforced concrete deck and 51 inch deep multi-girder steel beam structure supported by cast-in-place reinforced concrete piers (new locations) and full height abutments on deep foundations.

The new bridge coupled with an increase in the vertical profile and new foundation locations would meet the required horizontal and vertical track clearance requirements.

This alternative was ultimately advanced as the PPA.



Alternative No. 6, Complete Replacement: This alternative is similar to Alternative No. 5 except that it proposes a new horizontal alignment along Lincoln Avenue, replacing the existing broken back curves with a single 900-foot radius curve. This would allow the majority of the structure to be constructed off-line and minimize staging impacts to all road users. The new bridge would be a six (6) span bridge with a cast-in-place reinforced concrete deck supported by structural steel welded plate girders. The new superstructure would be supported by cast-in-place reinforced concrete piers and full height abutments founded on deep foundations. The new bridge coupled with an increase in the vertical profile and new foundation locations would meet the required horizontal and vertical track clearance requirements.

However, additional environmental, socioeconomic and right of way impacts would occur as a result of realigning the roadway.

Alternatives – Foundations

Driven Piles

- Conventional method
- Battered piles to resist lateral loading
- May conflict with existing piles and substructure
- Relatively inexpensive

Drilled Shafts

- May be socketed into rock to resist uplift and lateral forces
- Generally more expensive than driven piles

Micropiles

- Can resist uplift forces by being socketed into rock
- Can be installed close to existing foundation
- Typically more expensive than conventional methods
- Requires specialty subcontractor

The subsurface soil condition is expected to be a 20 to 25 feet of loose to medium sand intermixed with gravels underlain by 15 to 20 feet of soft to medium consistency residual cohesive soils and decomposed rock. Bedrock is expected at about 60 feet below the ground surface. Based on our preliminary understanding of the existing subsurface soils, a shallow foundation scheme doesn't appear to be feasible.

The construction of a deep foundation scheme is viable for the expected soil condition where the bedrock can be utilized for end bearing to reduce settlements and liquefaction problems. Special vibration monitoring would be required at all stages of construction to avoid possible settlements, distortions and soil stability near the tracks, roadway embankments and existing facilities. The settlement and lateral deflection could be an issue for the foundation excavation near the tracks. Braced supported excavation would be required.

Alternative Impacts

ROW/ Access	Utilities	Drainage/SWM	Rail Operations
<ul style="list-style-type: none"> Alts 2 and 5: temporary easements to reconstruct approach sidewalk Alt. 6: ROW over Amtrak; changes to access for Lincoln Supply Potential need to reconstruct retaining wall in NE quadrant 	<ul style="list-style-type: none"> On-structure utilities can be relocated during Stage 1 Temporary 16" water main bypass or relocate 30" main 15' of calculated "working room" proximity to 138 kV power 	<ul style="list-style-type: none"> Only Alt 6 triggers SWM Bridge drainage routed off railroad property Reline/replace 36" CMP No change to conveyance system 	<ul style="list-style-type: none"> Catenary lines to be removed from structure (by Amtrak approved company) Coordination with Amtrak

Structural Alternatives 2 and 5 propose to maintain the existing horizontal alignment, therefore no right of way takings are anticipated. Temporary construction easements would be required for any sidewalk repairs abutting the CYO East State Street Center and the Martin House.

The new alignment proposed in Structural Alternative 6 results in additional right of way impacts compared to the other alternatives. Right of way would be required from Amtrak to cross over the NEC at a location north of the current crossing.

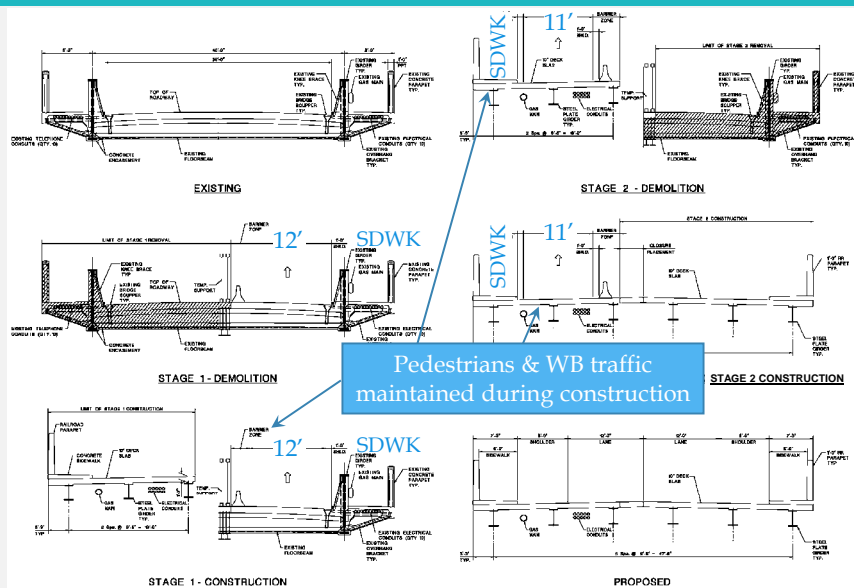
For all alternatives, it is anticipated that the water main will be relocated outside the area of the existing and proposed foundations prior to construction. The electrical conduits and gas main will be relocated onto the new structure during Stage 1 of construction.

Structural Alternatives 2 and 5 stay within the SWM thresholds; however Structural Alternative 6 exceeds them and would require compliance with the NJDEP SWM Rules. Since stormwater is not permitted to "air drop" onto railroad property, scuppers cannot be proposed over these locations and the bridge must drain overland to the abutments and either 1) be allowed to air-drop or 2) continue to drain overland to stormwater inlets at the low points off the bridge.

For all alternatives, it is anticipated that this project will require a Flood Hazard Area Individual Permit due to the pier and abutment work within the floodway and flood hazard area of the Assunpink Creek. A Freshwater Wetlands General Permit, stormwater construction permit and Green Acres involvement may also be required (Assunpink Greenway).

Alternative No. S1A

17



The new structure will be constructed in two (2) main stages in the sequence shown. Pedestrian access will be maintained across the bridge during construction at all times. One lane for the westbound direction of Lincoln Avenue will also be maintained for vehicular traffic, while the eastbound direction will be detoured along North Clinton Avenue northbound, North Olden Avenue eastbound and East State Street southbound. Traffic mitigation improvements, consisting of extended turn slots and signal optimization, along the detour route may be implemented during construction. The anticipated construction duration is 28 months.

Construction Cost Estimates

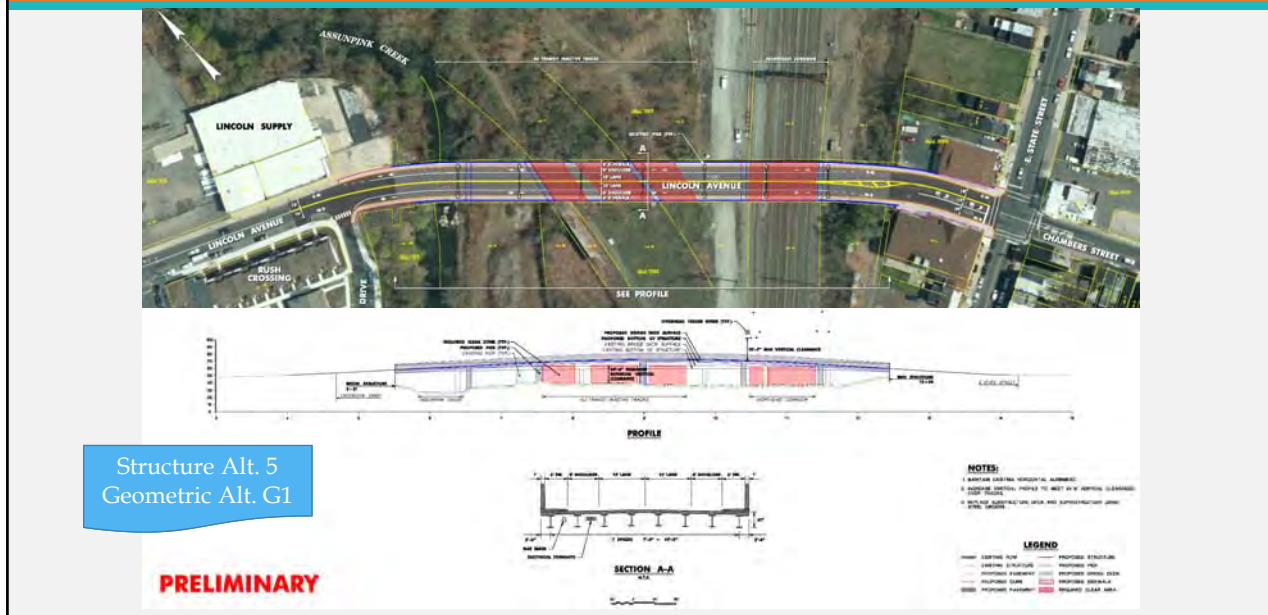
Estimate	Alternative 2	Alternative 5	Alternative 6
Roadway	\$ 126,000	\$ 126,000	\$ 115,000
Drainage	\$ 250,000	\$ 250,000	\$ 250,000
Structures	\$ 14,750,000	\$ 19,750,000	\$ 22,200,000
Utilities (Water Main Relocation)	\$ 482,000	\$ 482,000	\$ 482,000
MPT	\$ 781,000	\$ 1,031,000	\$ 1,153,000
Construction Contingency/ Amtrak	\$ 4,097,000	\$ 5,410,000	\$ 6,050,000
Subtotal	\$ 20,495,000	\$ 27,047,000	\$ 30,248,000
Lump Sum, CE, Change Orders & Escalation	\$9,016,000	\$ 11,368,000	\$ 12,672,000
Total Cost Estimate¹	\$ 29,511,000	\$38,415,000	\$ 42,920,000

1 - Does not include R.O.W. or catenary relocation costs

The construction cost estimate for each alternative listed, which includes geometrics and roadway, construction, lump sum items, contingencies and construction engineering, is summarized on this slide.

Preliminary Preferred Alternative (PPA)

19



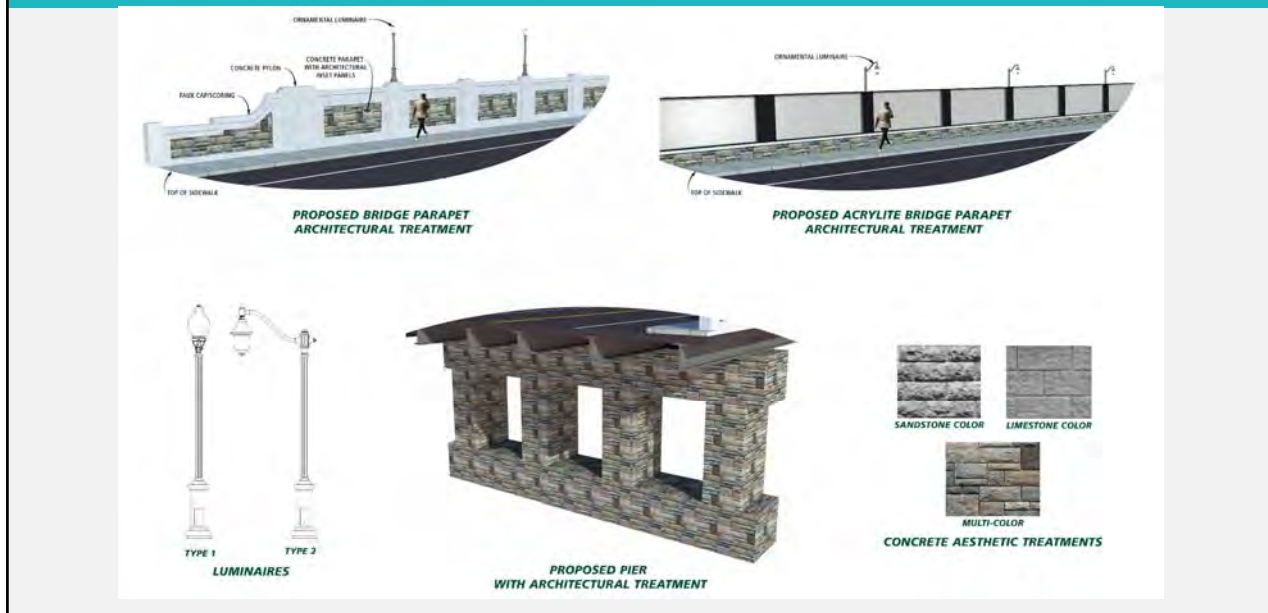
The Preliminary Preferred Alternative (PPA) is based on Structural Alternative No. 5 and Geometric Alternative No. G1; input received from Mercer County, the City of Trenton, NJDOT Subject Matter Experts and the public; and further investigations performed as a part of this study.

- Alternative No. 5: complete structure replacement / exceeds minimum required horizontal clearance between piers and tracks
- Geometric Alternative No. G1: exceeds minimum required vertical clearance to tracks
- Foundation Alternative: Micropiles
- Utilities: Relocate once
- Construction Staging: Partial Detour
- Architectural Treatments
- Sidewalk and shoulder for pedestrians/bicyclists (Temporary construction easements would be required for any sidewalk repairs abutting the CYO East State Street Center and the Martin House.)
- Maintains pedestrian access during construction
- Accommodate Downtown Trenton Bike/Ped Plan
- FWW, FHA, Green Acres, SESC

The total construction cost estimate of the PPA, including construction staging, is approximately **\$38.5M** based on Classification No. 2 - Reconstruction, Widening and Dualization of the NJDOT Trns•port Construction Cost Estimating Guide, as amended.

PPA Architectural Treatments (Examples)

20



Architectural treatments, such as stone facing, veneer or form liners; galvanized and powder coated steel; aesthetic parapet or railing treatments; colored concrete; decorative lighting; etc. are also being considered. Two examples were developed during CD for the November 9, 2016 Public Information Center (PIC). One proposed a concrete parapet with decorative inset panels while the other proposed an acrylic parapet with a decorative base. Ornamental lighting was proposed for both. The PIC attendees preferred the concrete parapet example. Architectural treatments will be modified and/or refined as the project progresses.



Questions / Comments

THANK YOU!

The following are the anticipated start dates and estimated funding needs for the subsequent stages of this project:

Project Delivery Phase	Anticipated Start Date (Fiscal Year)	Estimate
Concept Development	<i>Complete Summer 2017</i>	\$471,220
Preliminary Engineering	October 2017 (FY 2017)	\$1,250,000
Final Design	March 2019 (FY 2019)	\$2,500,000
Construction	April 2021 (FY 2021)	\$41,000,500