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LOCAL CONCEPT DEVELOPMENT REPORT

HUNTER STREET BRIDGE OVER CONRAIL

JUNE 2019
WOODBURY CITY,
GLOUCESTER COUNTY, NJ

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I. Introduction

A. Foreword

This report documents the results of the Local Concept Development (LCD) Study for the Hunter Street Bridge over Conrail located in Woodbury City, Gloucester County, New Jersey.

This project is being advanced under the Local Capital Project Delivery (LCPD) Program. This program is consistent with the Project Delivery Process implemented in 2011 by the New Jersey Department of Transportation (NJDOT) in cooperation with federal agencies. This process is used to evaluate, plan, design, and construct transportation improvement projects.

B. Original and Successor Projects

The last inspection report available prior to the start of this LCD Study was performed on June 26, 2014 (Cycle No. 17). This report found the bridge to be structurally deficient due to the poor condition of the deck and functionally obsolete due to the substandard deck geometry and vertical under-clearance. A special inspection performed on October 16, 2017, as part of this study made similar conclusions.

C. Data Reviewed

Various sources of information were consulted for use in evaluating the study limits, which includes the following:

- Bridge Re-Evaluation Survey Report – Structure No. 0802I14, Hunter Street over Conrail, Woodbury City, Gloucester County, NJ, Special Inspection (October 16, 2017)
- As-Built Plans of Hunter Street Bridge, Structure No. 2-I-14, Woodbury, NJ (Date Unknown)
- Structural Steel Shop Drawings for Hunter Street Bridge, Structure No. 2-I-14, Woodbury, NJ (Date Unknown)
- As-Built Plans of Proposed Improvements to County Bridge 2-I-14 on Hunter Street over Conrail, City of Woodbury, Gloucester County, NJ (February 1988)
- Repair Plan and Specifications for Hunter Street Bridge, Structure No. 2-I-14, Woodbury, NJ (2018)
- City of Woodbury Tax Map (March 2012)

Copies of the as-built plans are provided in ***Appendix C*** and a copy of the tax map is provided in ***Appendix D.***

D. Design Standards

The existing design features of Hunter Street in the vicinity of the project study area were reviewed for conformance with the *NJDOT Roadway Design Manual*, *AASHTO A Policy on Geometric Design of Highways and Streets, NJDOT Bicycle Compatible Roadways and Bikeways Planning and Design Guidelines* and *NJDOT Pedestrian Compatible Planning and Design Guidelines*.

The following design standards were used to develop the project alternatives:

- NJDOT Design Manual – Roadway
- NJDOT Design Manual for Bridges and Structures

- NJDOT Standard Specifications for Road and Bridge Construction (2007)
- AASHTO Policy on the Geometric Design of Streets and Highways (Green Book)
- AASHTO Guide for the Planning, Design, and Operation of Pedestrian Facilities
- AASHTO Guide for the Planning, Design, and Operation of Bicycle Facilities
- AASHTO Highway Safety Manual
- FHWA Manual on Uniform Traffic Control Devices (MUTCD)

E. Characteristics of the Roadways and Surrounding Area

Hunter Street is a local municipal roadway, extending eastward from Broad Street (Route 45), over the Conrail Railroad tracks and terminating at Cooper Street. In the vicinity of the Conrail Bridge, land uses include residential homes, business properties and the Gloucester County Justice Complex. The area is also included within the Newton Historic District and the Woodbury Historic District. Hunter Street has an approximate cartway width of 30 feet approaching the bridge, narrowing to 20 feet across the structure. The posted speed limit of Hunter Street is 25 MPH and on-street parking is permitted along the eastbound side of the roadway. Sidewalks are present along both sides of Hunter Street across the bridge and in the vicinity of the structure.

Adjacent to the structure, Laurel Street intersects Hunter Street at an existing four-way stop-controlled intersection immediately to the east of the existing bridge. To the west of the bridge, driveways for Homestead Title Agency and the Powell, Birchmeier & Powell Law Office are located within approximately 30 feet of the bridge. A photograph log is included in ***Appendix G***.

F. Concept Development Scope Statement

Activities associated with conducting data collection, developing the project purpose and need statement, performing an alternatives analysis, selecting the Preliminary Preferred Alternative and preparing this concept development report were completed for the Hunter Street Bridge over Conrail Local Concept Development project phase in accordance with the Local Concept Development Delivery Process.

G. CD Public Involvement Action Plan

The Public Involvement Action Plan (PIAP) was developed to promote an on-going public partnership and to ensure that the project and transportation benefits are considered within the context of the local communities affected by the project. The PIAP process was developed to encourage active involvement of the public in identifying the problem definition and building public support for the development of a preferred alternative. A copy of the PIAP is provided in ***Appendix R.*** Details of the PIAP, which was developed at the onset of the Local Concept Development process, are summarized below. The PIAP process is dynamic and will continue to be updated and modified, as needed, as the project moves into subsequent phases.

<u>PIAP Goals</u>

Public involvement is necessary to ensure community "ownership" of a project. The PIAP goals of the project include:

- Provide effective education and communication as to the goals of the Local Concept Development study to local officials, community stakeholders and the general public.

- Obtain input regarding short-term and long-term community improvement visions.
- 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.
- Work with local officials and community stakeholders in identifying "fatal flaws" which would prevent adequately addressing the transportation problem.
- Obtain input from local officials, community stakeholders and the public in the development of conceptual alternatives which meet the needs of the community and satisfactorily address the purpose and need statement.
- Obtain input from local officials, community stakeholders and the general public to identify the preliminary preferred alternative.

II. Purpose and Need

A. Project Purpose

The purpose of this project is to address the deficiencies of the Hunter Street Bridge over Conrail and to enhance the safety of the traveling public on the Hunter Street Bridge.

B. Bridge Needs

The overall condition of the structure is fair due to the condition of the superstructure and substructure and the low inventory ratings. The structure is classified as structurally deficient due to the poor condition of the deck. The structure is functionally obsolete due to the substandard deck geometry and vertical under-clearance.

The latest inspection report dated October 16, 2017, found the deck to be in poor condition due to wide intermittent transverse and longitudinal cracks, and fine to medium random cracks throughout the top of the slab. Additionally, there are large spalls with exposed corroded and broken steel rebar with different degrees of section loss in floor beam bay 5 from the west, with several areas of incipient spalls and shallow spalls with exposed rusted rebar in several bays on the underside of the slab.

The superstructure is in fair condition due to the concrete encasement, typically exhibiting medium to wide cracks with efflorescence on the bottom flanges. In addition, other contributing conditions are loose and missing encasement on floor beams FB4 and FB7 with exposed rusted steel bottom flanges with no significant section loss and severe corrosion with 100% section loss to the lateral bracing members.

The substructure is in fair condition due to large spalls, areas of delaminated concrete and wide cracks.

C. Maintenance Needs

The latest inspection report does not recommend any emergency/priority repairs. The inspection report does not recommend any specific maintenance repairs; however, it does recommend that the owner remedy the defects listed in the field notes.

D. Roadway Needs

The existing bridge through girders obstruct sight distance at the intersection of Hunter Street and Laurel Street. For a stop-controlled intersection with 30 MPH design speed, the NJDOT standard sight distance is 335 feet for left-turn and 290 feet for right-turn/cross movements. The Hunter Street westbound approach has substandard intersection sight distance for both movements. The Laurel Street northbound and southbound approaches have substandard left-turn and right-turn/cross sight distances, respectively.

E. Goals and Objectives

The Preliminary Preferred Alternative will be developed to satisfy as many goals and objectives as possible. The goals and objectives of the project are identified below:

- Upgrade the bridge and approach roadways to meet current NJDOT and/or AASHTO standards for bridges and roadways.
- Correct the controlling substandard design elements along the bridge and approach roadways where feasible.
- Minimize environmental, social and economic impacts.
- Minimize disruptions to traffic operations during construction.
- Maintain access to adjacent properties at all times during construction.
- Minimize the use of detours; if detours are required, utilize the state and county roadway network to the greatest extent feasible.
- Provide pedestrian and bicycle compatibility on the approach roadways.

III. Existing Inventory and Condition

An analysis of existing conditions was conducted along Hunter Street, with a focus on the surrounding areas of the Hunter Street over Conrail Bridge.

A. Existing Bridge Inventory and Condition

Structure No. 0802I14 carries Hunter Street over Conrail Railroad. The structure was constructed in 1914 and later rehabilitated in 1989. The latest inspection report found the bridge to be structurally deficient due to the poor condition of the deck and functionally obsolete due to the substandard deck geometry and vertical under-clearance. The structure has a sufficiency rating of 48.2 out of 100. The overall length of the bridge is 92’-6” and the width is 32’-0” from center to center of the through girders. The overall condition of the structure is fair due to the condition of the superstructure and substructure, and the low inventory ratings.

The latest inspection report dated October 16, 2017, found the deck to be in poor condition due to wide intermittent transverse and longitudinal cracks, and fine to medium random cracks throughout the top of the slab. Additionally, there are large spalls with exposed corroded and broken steel rebar with different degrees of section loss in floor beam bay 5 from the west, with several areas of incipient spalls and shallow spalls with exposed rusted rebar in several bays on the underside of the slab.

The superstructure is in fair condition due to the concrete encasement, typically exhibiting medium to wide cracks with efflorescence on the bottom flanges. In addition, other

contributing conditions are loose and missing encasement on floor beams FB4 and FB7 with exposed rusted steel bottom flanges with no significant section loss, and severe corrosion with 100% section loss to the lateral bracing members.
The substructure is in fair condition due to large spalls, areas of delaminated concrete and wide cracks. The approach roadway is in satisfactory condition due to settlement (up to 2"), and wide cracks in concrete slabs reflected in the asphalt overlay.

B. Maintenance Issues

Gloucester County did not note any particular maintenance issues with the bridge.

C. Existing Roadway Inventory and Condition

1. Posted and Design Speeds

Within the project limits, the posted speed limit of Hunter Street is 25 MPH (Design Speed = 30 MPH).

2. Passing Sight Distance

Within the project limits, Hunter Street consists of a two-lane cartway with permitted on-street parking along the eastbound side of the roadway. Centerline striping is not provided along Hunter Street to delineate passing/no-passing zones. Based on field observations, vehicle passing is not permitted in the vicinity of the bridge.

3. Stopping Sight Distance on Horizontal Curves

Based on field observations, it was determined that there are no horizontal curves near the bridge. Therefore, there are no stopping sight distance deficiencies on horizontal curves within the project limits.

4. Sight Distance at Non-Signalized Intersections

Section 6.3.3, Figure 6-A of the *NJDOT Roadway Design Manual* specifies the sight distance at non-signalized intersections. The existing bridge through girders obstruct sight distance at the intersection of Hunter Street and Laurel Street. For a stop-controlled intersection with 30 MPH design speed, the NJDOT standard sight distance is 335 feet for left-turn and 290 feet for right-turn/cross movements. The Hunter Street westbound approach has substandard intersection sight distance for both movements. The Laurel Street northbound and southbound approaches have substandard left-turn and right-turn/cross sight distances, respectively.

5. Superelevation

Based on field observations, it was determined that there are no superelevated horizontal curves near the bridge. Therefore, there are no superelevation deficiencies within the project limits.

6. Curve Radii for Horizontal Curves

Based on field observations, it was determined that there are no horizontal curves near the bridge. Therefore, there are no horizontal curve radius deficiencies within the project limits.

7. Vertical Alignment

a) Grade Rates

Section 4.4.4 of the *NJDOT Roadway Design Manual* specifies that the minimum grade rate for land service highways with a curbed or bermed section is 0.3%. Table 4-8 specifies that the maximum grade rate for urban land service highways with Design Speed = 30 MPH is 8% in level terrain. Based on review of as-built drawings for the Hunter Street Bridge, the profile grade exceeds the maximum at 8.87% along the east end of the bridge. However, this does not present an issue since the maximum profile grade is adjacent to the four-way stop-controlled intersection with Laurel Street.

b) Vertical Curves

Section 4.4.5, Figure 4-I and Figure 4-J of the *NJDOT Roadway Design Manual* specifies the minimum required length of vertical curves. The minimum length of vertical curve with Design Speed = 30 MPH and algebraic difference in tangent grades = 7.2% is 136.8 feet. Based on review of as-built drawings for the Hunter Street Bridge, the vertical curve length on the bridge does not meet the minimum at 20 feet. However, this does not present an issue since the vertical curve is adjacent to the four-way stop-controlled intersection with Laurel Street.

8. Existing Pavement

a) Surface Type

No information was given about the surface type of the road. Based on field observations, it was determined the surface is bituminous pavement.

b) Cross Slopes

Section 5.2.2 of the *NJDOT Roadway Design Manual* specifies the minimum cross slope for concrete pavement and hot mix asphalt pavement should be 1.5%. Cross slopes are not indicated on the as-built drawings for the Hunter Street Bridge, however, from field observations it appears that there are no cross slope deficiencies within the project limits.

c) Lane Widths

Section 5.3 of the *NJDOT Roadway Design Manual* specifies lane widths of 12 feet are desirable on land service highways and lane widths of 11 feet in urban areas are acceptable. Based on review of as-built drawings for the Hunter Street Bridge, the lane widths do not meet the minimum at 10 feet on the bridge. Based on field observations and survey data, it was determined that there are no deficiencies with the lane widths on the approach roadways.

d) Roadside or Border

Section 5.5.2 of the *NJDOT Roadway Design Manual* specifies a border width would typically range from 10 feet to 15 feet on land service highways. Hunter Street has a border width of approximately 10 feet on each side.

e) Curbs

Vertical curb with approximate 4 inch reveal is present along both sides of Hunter Street within the project limits.

f) Sidewalks

Hunter Street has continuous sidewalk on both sides of the roadway within the project limits. The existing sidewalks on the bridge are 4'-4" wide. Section 5.7.3 of the *NJDOT Roadway Design Manual* specifies sidewalk width of 5 feet is desirable and 4 feet is minimum when separated by a buffer strip. Where no buffer strip is provided, the desirable width of sidewalk should be 7 feet and 6 feet is the minimum. Many curb ramps throughout the study area appear to be noncompliant with respect to ADA design requirements (i.e. missing detectable warning surfaces, noncompliant slopes, etc.).

9. Lighting

Roadway lighting is present along Hunter Street within the project limits utilizing utility pole mounted "cobra-head" style luminaires.

10. Land Use

Land uses along Hunter Street include a mixture of residential, commercial and governmental uses. The predominant land use within the project limits is residential single/multi-family homes.

11. Roadside Barriers

Guide rail is not present along the Hunter Street approaches to the Conrail Railroad bridge.

12. Access

To the west of the bridge, driveways for Homestead Title Agency and the Powell, Birchmeier & Powell Law Office are located within approximately 30 feet of the bridge.

13. Landscaping

The landscaping in the project area mainly consists of maintained grass, shrubs and trees.

14. Pedestrian/Bicycle Compatibility

The Hunter Street Bridge over Conrail was reviewed with respect to the *NJDOT Bicycle Compatible Roadways and Bikeways Planning and Design Guidelines* and *NJDOT Pedestrian Compatible Planning and Design Guidelines.*

Based on the collected traffic count data within the project limits, the 2018 AADT volume on the Hunter Street Bridge is 1,905 vehicles per day. Based on the NJDOT guidelines, a shared 14-foot wide lane is sufficient to accommodate bicyclists along Hunter Street at the posted speed limit. The bridge is not bicycle compatible since the lane widths are only 10 feet.

In urban areas, it is desirable to provide sidewalks for pedestrian use. Continuous sidewalk is provided along Hunter Street.

15. Concurrent Projects

The Route 45, Bridge over Woodbury Creek project, located in Woodbury City is currently in

the Preliminary Engineering phase of the project. The project will replace the existing bridge with a precast concrete beam structure. The project is approximately 0.4 mile away from the Hunter Street Bridge over Conrail.

D. Existing Utilities

During the plan reviews and field observations, existing overhead and underground utilities were noted at various locations. Utility companies were contacted regarding existing facilities within the project limits. The following table documents utility companies which maintain facilities within the area. Copies of the utility correspondence is provided in ***Appendix O.***

Table 1: Utility Contacts

Utility	Owner	Contact	Phone Number
Electric	PSE&G Electric	Len Pannucci	908-412-2228
Gas	PSE&G Gas	Len Pannucci	908-412-2228
Telephone	Verizon	Thomas Reber	856-306-8606
Specific facility information not available at this time	Woodbury Department of Public Works	Paul Breier	856-589-1400
Cable	Comcast	Tim Mills	856-694-6016
Railroad	Conrail	Vincent Milano	856-231-2049
Fiber Optic	AT&T CORE	Steve Cumberland	267-767-7124

E. Summary of Existing Deficiencies

Existing deficiencies for the Hunter Street Bridge over Conrail were identified based on a review of the available plans and reports, as well as information obtained through field observations.

- The bridge is structurally deficient due to the poor condition of the deck.
- Sidewalks on the bridge are 4’-4” wide but the minimum sidewalk width requirement is 6’-0” without a buffer.

F. List of Substandard Design Elements

Based on our preliminary review of the available as-built plans and field observations, the following controlling substandard design elements (CSDEs) were identified:

<u>Sight Distance at Non-Signalized Intersection</u>

The existing bridge through girders obstruct sight distance at the intersection of Hunter Street and Laurel Street. For a stop-controlled intersection with 30 MPH design speed, the NJDOT

standard sight distance is 335 feet for left-turn and 290 feet for right-turn/cross movements. The Hunter Street westbound approach has substandard intersection sight distance for both movements. The Laurel Street northbound and southbound approaches have substandard left-turn and right-turn/cross sight distances, respectively.

Bridge Width

The existing bridge curb-to-curb width is 20 feet (10-foot wide lane in each direction). This is substandard to the AASHTO minimum required traveled way of 24 feet for local roads.

Bridge Vertical Clearance

The actual minimum bridge vertical under-clearance from the bottom of both through girders to the top of the east rail is 17'-11", which is substandard to the NJDOT criteria of 23'-0".

IV. Traffic and Crash Summary

A. Traffic Operations

The roadways comprising the study area for this LCD study include the Hunter Street corridor through Woodbury as well as county and municipal roads, which may be utilized for detours during the construction of Hunter Street Bridge over Conrail. The following study intersections were evaluated under existing and future conditions to assess the traffic impacts of the proposed project:

- Evergreen Avenue & Cooper Street
- Broad Street & Cooper Street
- Broad Street & Hunter Street
- Evergreen Avenue & Hunter Street

B. Traffic Data

In order to identify the amount of traffic along the roadways within the study area, manual turning movement traffic counts were conducted at each of the study intersections. These manual turning movement traffic counts were conducted on a typical weekday while school was in session on Tuesday, September 12, 2017; Wednesday, September 13, 2017 and Thursday, September 14, 2017. To reflect the peak traffic conditions of the roadway, the counts were performed during the morning peak period (7:00 AM-9:15 AM) and afternoon peak period (2:30 PM-6:00 PM). The detailed turning movement traffic count data is provided in ***Appendix F.***

In addition to the intersection turning movement counts, two-way automatic traffic recorder (ATR) counts were conducted at the approach of Hunter Street Bridge over Conrail. The ATR counts were conducted for a period of four continuous days, between January 29, 2018 and February 1, 2018.

The ATR counts were utilized to identify time-of-day and daily traffic volume variation along the study roadways. Based on the collected ATR data, the AM and PM peak hours of the study area were identified as 8:00 AM to 9:00 AM and from 4:00 PM to 5:00 PM. A summary of the existing AM and PM peak hour traffic volumes and the detailed ATR count data is provided in ***Appendix F***.

C. Traffic Analysis

1. Existing Conditions

Level of Service (LOS) analyses were conducted for existing year 2017 using Synchro/SimTraffic Version 8 software. LOS results for the study intersections within the project limits are shown in the table below.

Table 2: 2017 Existing Levels of Service

Intersection	Approach/Movement	AM Peak Hour LOS and Delay *(sec)*	PM Peak Hour LOS and Delay *(sec)*
Signalized			
Route 45 & Cooper Street	***Overall LOS***	***C (34.5)***	***E (55.3)***
	NB (LT, TH/R)	C (31.7)	C (32.4)
	SB (LT, TH/R)	C (24.2)	E (51.0)
	EB (LT, TH/R)	D (40.6)	F (95.1)
	WB (LT, TH/R)	D (49.7)	D (47.3)
Route 45 & Hunter Street	***Overall LOS***	***B (12.9)***	***B (15.6)***
	WB (LT/RT)	D (44.6)	D (47.8)
	SB (LT, TH)	A (5.1)	A (7.6)
	NB (TH/ RT)	B (16.8)	B (13.6)
Cooper Street & Evergreen Avenue	***Overall LOS***	***C (23.4)***	***D (39.2)***
	NB (LT, TH,R)	C (21.8)	C (25.5)
	SB (LT, TH, R)	C (21.2)	D (41.5)
	EB (LT, TH/R)	C (28.0)	D (48.7)
	WB (LT, TH/R)	C (24.2)	D (41.3)
Hunter Street & Evergreen Avenue	***Overall LOS***	***B (11.0)***	***B (11.0)***
	NB (LT/TH/RT)	A (8.3)	A (6.3)
	SB (LT/TH/RT)	B (10.2)	A (7.9)
	EB (LT/TH/RT)	B (11.7)	B (14.2)
	WB (LT/TH/RT)	C (25.7)	C (23.8)

Route 45 & Cooper Street – This intersection is influenced by heavy congestion from trucks, buses and student traffic to school. This intersection currently operates at an overall LOS C and E, respectively, during the AM and PM peak hours. The northbound and southbound Route 45 left-turn and through/right-turn movements function at a LOS B and LOS C, respectively, during study AM peak hours. The eastbound Cooper Street left-turn and through/right-turn movements function at a LOS C and LOS D, respectively, during study AM peak hours. The westbound Cooper Street left-turn and through/right-turn movements

function at a LOS C and LOS E, respectively, during study AM peak hours. Northbound left turns function at LOS B while through and right turns operate at LOS C during PM peak hours. The southbound Route 45 left-turn and through/right-turn movements function at a LOS B and LOS D, respectively, during study PM peak hours. The eastbound Cooper Street left-turn and through/right-turn movements function at a LOS C and LOS F, respectively, during study PM peak hours. The westbound Cooper Street left-turn and through/right-turn movements function at a LOS C and LOS D, respectively, during study PM peak hours.

2. Future No Build Conditions

Existing Year 2017 traffic volumes were utilized to forecast 2022 Build Year and 2042 Design Year traffic volumes through the study area.

Traffic volumes within the study area are expected to increase as a result of general employment growth of the surrounding communities. The Delaware Valley Regional Planning Commission (DVRPC) publishes population and employment growth projections for municipalities throughout the region. As such, percentages were assigned to the surrounding communities based on their anticipated impact to the study area to calculate how their anticipated growth will affect Hunter Street. Those annual background growth rate (ABGR) projections are summarized in Table 3.

Table 3: Growth Rate Data

Municipality	2015 Population Estimate	2040 Population Estimate	Growth (2015-2040)	Percent Impact to Study Area	Project Area Growth
Woodbury City	9289	9783	5.3%	25%	1.3%
Woodbury Heights	1887	2002	6.1%	20%	1.2%
W. Deptford Twp.	13690	17107	25.0%	20%	5.0%
Westville Boro.	1784	2075	16.3%	10%	1.6%
Bellmawr Boro.	4855	4867	0.2%	2%	0.0%
Runnemede Boro.	3101	3072	-0.9%	2%	0.0%
Deptford Twp.	14845	17692	19.2%	15%	2.9%
Wenonah Boro.	520	599	15.2%	2%	0.3%
National Park Boro.	430	477	10.9%	2%	0.2%
Mantua Twp.	5333	7792	46.1%	1%	0.5%
East Greenwich Twp.	2593	3121	20.4%	1%	0.2%
				Total:	**13.2%**
				Annual Background Growth Rate:	***0.50%***

Population growth forecasts along Hunter Street indicate an increase of 13.2 % between years 2015 and 2040. This corresponds to an ABGR of 0.50%.

This ABGR was applied to the 2017 existing condition traffic volumes in order to project the 2022 No-Build traffic volumes. Capacity analyses were prepared for each of the study intersections under 2022 and 2042 No-Build conditions. Those intersection-operating conditions are summarized in Table 4.

Table 4: 2022 & 2042 No-Build Levels of Service

Intersection	Approach/Movement	2022 No-Build		2042 No-Build	
		AM Peak Hour LOS and Delay *(sec)*	PM Peak Hour LOS and Delay *(sec)*	AM Peak Hour LOS and Delay *(sec)*	PM Peak Hour LOS and Delay *(sec)*
Signalized					
Route 45 & Cooper Street	***Overall LOS***	***D (35.9)***	***E (58.6)***	***D (45.9)***	***F (85.2)***
	NB (LT, TH/R)	C (33.6)	C (27.6)	D (48.7)	C (32.3)
	SB (LT, TH/R)	C (25.2)	E (56.6)	C (33.5)	F (86.8)
	EB (LT, TH/R)	D (41.8)	F (102.7)	D (48.8)	F (138.1)
	WB (LT, TH/R)	D (51.5)	D (49.6)	E (58.7)	F (90.6)
Route 45 & Hunter Street	***Overall LOS***	***B (15.4)***	***B (15.4)***	***C (24.0)***	***B (17.0)***
	WB (LT, RT)	D (44.7)	D (47.9)	C (34.0)	D (49.6)
	SB (LT, TH)	A (4.6)	A (8.7)	A (8.1)	B (10.3)
	NB (LT, RT)	C (20.9)	B (14.6)	D (45.0)	B (16.1)
Cooper Street & Evergreen Avenue	***Overall LOS***	***C (25.4)***	***E (60.0)***	***C (27.4)***	***E (78.2)***
	NB (LT, TH,R)	C (24.1)	B (16.4)	C (27.4)	C (23.6)
	SB (LT, TH, R)	C (23.0)	E (73.8)	C (25.4)	F (117.5)
	EB (LT, TH/R)	C (28.0)	D (49.7)	C (29.7)	E (64.5)
	WB (LT, TH/R)	C (26.7)	E (70.5)	C (27.3)	F (92.7)
Hunter Street & Evergreen Avenue	***Overall LOS***	***B (11.1)***	***B (15.4)***	***B (12.9)***	***C (28.1)***
	NB (LT/TH/RT)	A (8.2)	B (17.6)	A (9.5)	C (38.8)
	SB (LT/TH/RT)	A (10.5)	A (8.3)	B (12.9)	B (10.6)
	EB (LT/TH/RT)	B (11.6)	B (14.1)	B (11.6)	B (14.1)
	WB (LT/TH/RT)	C (26.2)	C (24.2)	C (27.6)	C (26.2)

Under 2022 and 2042 No-Build conditions, the signalized intersection of Route 45 and Copper Street will function at an overall LOS D during the AM peak hour and at an LOS E and LOS F during the PM peak hour for 2022 and 2042 No-Build. The signalized intersection of Route 45 and Hunter Street will function at an overall LOS B and LOS C during the AM peak hour and at an overall LOS B during the PM peak hour. The signalized intersection of Cooper Street and Evergreen Avenue will function at an overall LOS C during the AM peak hour and at an overall LOS E during the PM peak hour. The signalized intersection of Hunter Street and Evergreen

Avenue will function at an overall LOS B during the AM peak hour and at an overall LOS B and LOS C during the PM peak hour for 2022 and 2042, respectively.

D. Crash Data Analysis and Crash Diagram

A crash analysis was completed for Hunter Street (from west of Euclid Street to east of North Maple Street). Also analyzed was Cooper Street (from west of Euclid Street to east of North Maple Street) because it is a possible detour route. Crashes were analyzed to ensure the at-grade railroad crossing was not an existing problem and could handle the additional volume. Police crash reports were obtained from the Woodbury Police Department for the years 2014 to 2016. Crash diagrams were prepared for all three years from the available data for each of the major roadways in the project area. The crash diagrams can be found in ***Appendix E.***

Table 5 below summarizes the results of the crash analysis and identifies crash types which are overrepresented based on statewide averages.

Table 5: Crash Data

Location	Total Crashes	Overrepresented Crash Types (Number of Crashes)
Euclid Street and Cooper Street	5	Right-End (2), Struck Parked Vehicle (1), Right-Angle (2)
Railroad Avenue and Cooper Street	4	Right Angle (1), Rear-End (1), Backing (1), Side-Swipe (1)
Green Avenue and Cooper Street	3	Right Angle (2), Side-Swipe (1)
N. Maple Street and Cooper Street	5	Right Angle (1), Rear-End (1), Fixed Object (1), Struck Parked Vehicle (1), Left-Turn/U-Turn (1)
Euclid Street and Hunter Street	2	Side-Swipe (1), Struck Parked Vehicle (1)
N. Maple Street and Hunter Street	1	Backing (1)

Along Cooper Street through the project limits, 17 crashes were reported between 2015 and 2017. Only three (3) crashes were reported on Hunter Street in the vicinity of the bridge, and none were attributed to substandard roadway features.

Eighteen (18) total crashes were reported along the 0.12 mile segment of Cooper Street between Euclid Street and North Maple Street. Stopped traffic on Cooper Street was reported as a contributing factor in most of the crashes. Rear-end crashes (6) represented 33% of the total for the roadway. Although there were no pedestrian crashes, one (1) rear-end crash was attributed to a pedestrian suddenly entering the marked crosswalk at Laurel Street.

V. Social, Economic and Environmental Screening

An Environmental Screening was completed by McCormick Taylor on November 21, 2018. A copy can be found in ***Appendix I.*** Below is a summary:

A. Community Outreach

A Public Involvement Action Plan (PIAP) was developed for the project to obtain input from local officials, key stakeholders, businesses and the public, which included holding a local officials briefing and public information center during the LCD study phase.

Local Officials Briefing

A Local Officials Briefing has not been held at this time. A meeting was held between the Gloucester County Engineer and Woodbury City officials on April 24, 2018 to discuss the project purpose and needs statement and the condition of the bridge. A summary of the meeting is provided in ***Appendix K.***

Public Information Center

A Public Information Center has not been held at this time.

B. Noise and Air Quality

The Hunter Street Bridge over Conrail connects extensive residential areas with the downtown commercial area to the west of the bridge. The project area is highly developed and includes multiple residential properties within 300 feet of the project, as well as the Gloucester County Justice Complex.

The project need includes addressing the substandard under-clearance over the railroad and providing for a bridge cartway that meets current design standards. No additional travel lanes are proposed and the project will not result in an increase in vehicle operating speeds or roadway capacity. The project will not result in a substantial change to the horizontal alignment of the roadway; however, a replacement alternative would likely require a substantial change to the vertical geometry of the bridge and thus the approach roadways.

The project is located in an attainment area for CO, PM 2.5, and PM 10, according to the USEPA. This project type (safety improvements, widening narrow pavements, and bridge reconstruction with no new travel lanes) is listed in Table 2 of the Transportation Conformity Rule, and thus is exempt from the conformity requirements of the Clean Air Act (as amended).

The project qualifies as a Type III project per the NJDOT *Traffic Noise Management Policy* and is not anticipated to result in significant noise-related impacts. Therefore, a noise study is not required.

Standard measures for the abatement of temporary construction noise and air quality impacts (e.g., dust, emissions) should be included in the project's final plans and specifications.

C. Socioeconomics

Community Facilities and Services

A route for mobile public services (e.g., buses, emergency medical services, etc.) would be impacted in the short-term due to closure of the Hunter Street Bridge for construction or in the long-term due to permanent closure and removal of the bridge. Temporary detours for local traffic will be necessary during construction. However, surrounding roadways that would be used for the detours are larger than Hunter Street and can accommodate the temporary higher traffic flows. The surrounding roadways can also accommodate traffic from Hunter Street in the long-term for permanent closure of the bridge.

Safety Issues/Concerns

Existing safety issues include substandard under-clearance of the Hunter Street Bridge over the railroad. In addition, the bridge cartway is narrower than the approach roadways on both sides, which creates a "choke point" and the existing concrete-encased through girders create substandard sight distances posing safety concerns for both motorists and pedestrians.

Socioeconomic Impacts

The bridge serves to connect a residential area of Woodbury with the downtown commercial area. The bridge also serves as an access point for the Gloucester County Justice Complex. The bridge provides a frequent pedestrian passage for children walking to Woodbury Junior/Senior High School (west of bridge) and Evergreen Avenue Elementary School (east of bridge). The nearest pedestrian/bike/automobile crossing of the railroad is an at-grade railroad crossing on Cooper Street, which could pose increased safety concerns for pedestrians, especially children, elderly, disabled persons and cyclists. Since the bridge removal alternative could isolate parts of the residential community, the project will consider maintaining the existing bridge for non-motor vehicle use.

Environmental Justice

The US EPA EJSCREEN reported that 33% of the population (13,344) within a mile radius of the project site identified as a minority. Persons identifying as black and Hispanic made up 21% and 9% of the population, respectively. Persons age 65+ make up 15% of the community. Approximately 8% of the population are considered to have limited English proficiency.

All disadvantaged populations should be provided with opportunities during public outreach efforts for meaningful input on the project Purpose and Need, the development of project alternatives, and the assessment of socioeconomic and environmental impacts.

Context Sensitive Solutions / Aesthetic Enhancements

The project should consider aesthetic enhancements to replicate or restore the "quilt" murals along the interior of the bridge through girders. Since the bridge is considered a contributing element to the Woodbury Historic District, certain architectural characteristics may need to be replicated in the design of a new or rehabilitated bridge.

D. Cultural Resources

To support Concept Development, a Cultural Resources Screening was completed by subconsultant RGA, Inc. on February 5, 2018.

The subject bridge is located within two historic districts: The Newton Historic District (listed in NJ Register of Historic Places [NJRHP] on February 19, 1988) and the Woodbury Historic District (Eligible for the National Register of Historic Places (NRHP) per SHPO Opinion on July 13, 1983).

The 1914 bridge is not individually eligible for the NRHP per the NJDOT Historic Bridge Survey (HBS). However, the HBS indicates that the bridge would be a contributing resource to the Woodbury Historic District since it was constructed during the period of significance (ca. 1715-1941) of the proposed historic district and contributes to the historic character of the surrounding historic properties. The HBS does not mention the Newton Historic District.

In addition to the above, there are other previously unevaluated properties 50 years or older in the anticipated Area of Potential Effect, including the railroad line itself.

Regarding Archaeology, no old foundations/building rubble are apparent in the project's anticipated Area of Potential Effect. A review of the NJSM site files indicated that there are no known archaeological sites located within the project area. A review of the NJHPO's ArcGIS Explorer indicates that the project area does not fall within an archaeological site grid. The project area is considered to have low potential for archaeological resources.

Upon project advancement to the PE Phase, Section 106 Consultation with SHPO should be initiated and completed, including a formal cultural resources survey to re-evaluate the bridge's potential historic significance, both as an individual structure (as compared to the current inventory of similar bridges in the County), as well as the bridge's potential historic significance as a contributing element to the two historic districts in which it is located. In addition, since the bridge occurs in the Newton Historic District (listed in NJRHP), the Preferred Alternative should be evaluated to determine if an Encroachment might occur and an application for project authorization should be submitted to SHPO.

E. Section 4(f) Properties

The project may qualify for a *Programmatic Section 4(f) Evaluation for Use of Historic Bridges*, which applies to the "use" of certain historic bridge structures to be replaced or rehabilitated with Federal (FHWA) funds. Per the FHWA *Section 4(f) Policy Paper* (7/20/12), this programmatic Section 4(f) evaluation may be applied to any historic bridge, either contributing to a historic district or individually eligible for the NRHP. However, this programmatic Section 4(f) evaluation would be limited to bridge replacement or rehabilitation only.

If the project requires the "use" (i.e., ROW fee takes, permanent easements, or adverse temporary easements or proximity impacts) of surrounding historic properties, and results in No Adverse Effect via Section 106/SHPO consultation, a Section 4(f) *de minimis* Impact Determination would likely be applicable.

If the project results in an Adverse Effect to surrounding historic properties, an Individual Section 4(f) Evaluation may be required.

F. Wetlands

There are degraded ditches along the east side of the railroad tracks that contain some hydrophytic vegetation (e.g., *Phragmites*), but soils are substantially disturbed with no hydric soil indicators present and hydrology is limited to ponding from stormwater runoff. Per the 1989 Federal Manual, these areas are likely not regulated wetlands.

G. Waterways, Flood Hazard Areas, and Riparian Zones

There are no waterways, flood hazard areas, or riparian zones in the project area.

H. Sole Source Aquifer

The project area lies above the NJ Coastal Plain Sole Source Aquifer. Based on the limited project scope, no impacts to groundwater resources are anticipated.

I. Threatened/Endangered Species

Based on field observations, NJ GeoWeb Landscape Project, and USFWS IPaC System data, there are no T&E species/habitat in the project area.

J. Category 1 Waters

There are no Category 1 waters present in the HUC 14 subwatersheds associated with the project area.

K. Vernal Pools

There are no vernal pools located within the project area.

L. Drainage and Stormwater Management

There are two drainage pipes visible in the block retaining wall on the west side of the railroad tracks, which lead up the western slope to inlets on either side of the extreme western bridge approach roadway. The pipe on the southwest side is visibly non-functional due to collapsed terracotta pipe in an eroded area further up the slope. In any case, these drainage features do not discharge to any streams or wetlands and the project will likely not require any NJDEP permits.

Impacts to existing drainage systems will be minimal. There will be no increase in runoff to the drainage system that discharges to the railroad ROW. The bridge is not at a low point in the roadway profile and most runoff is collected before the bridge; thus, the spread of stormwater into the travel lanes on the bridge will be minimal.

Compliance with the NJDEP Stormwater Management Rules (NJAC 7:8) is not anticipated since the project will result in less than one acre of disturbance and less than one-quarter acre of new impervious surface.

M. Soil Erosion and Sediment Control

If the project disturbs over 5,000 square feet, it will require Soil Erosion and Sediment Control Plan Certification by the County Soil Conservation District.

N. Acid Soils

The Woodbury Formation (Kwb) underlies the project area, which is associated with potential acid-producing soils. During geotechnical investigations, soils should be tested for marcasite and pyrite, as well as pH, to determine if acid soils are, in fact, present. If so, the management and disposal of acid soils will be a consideration during SESC Plan certification with the County Soil Conservation District.

O. Hazardous Waste

A limited Hazardous Waste Screening did not identify any known or suspected hazardous waste sites, active or abandoned industries, service stations, or repair shops within the project area. However, the railroad bedding and train discharges creates the potential for involvement with contaminated materials.

P. Anticipated Environmental Permits or Approvals

The project will not require environmental permits, pending verification of non-wetland conditions.

Q. Environmental Summary with Probable NEPA Document Required

- The project area is located in two historic districts, the Newton Historic District and Woodbury Historic District. The Hunter Street Bridge over Conrail is not individually eligible for the NRHP; however, it is considered a contributing element to the Woodbury Historic District.
- Bridge rehabilitation or replacement alternatives would qualify for a Programmatic Section 4(f); and "use" of other historic properties should qualify for a Section 4(f) *de minimis* impact determination.
- The project might disturb over 5,000 square feet and require Soil Erosion and Sediment Control Plan Certification by the County Soil Conservation District.
- Bridge rehabilitation or replacement alternatives should explore Context Sensitive Solutions regarding the painted murals on the interior of the bridge and the historic architecture context of the bridge.
- The bridge alternatives should carefully consider socioeconomic impacts including potential isolation of residential areas from nearby commercial areas of Woodbury, as well as temporary impacts to the community during construction.
- There is potential for involvement with contaminated or regulated material associated with the railroad bedding materials.

<u>NEPA Document</u>

The project should qualify for a NEPA Categorical Exclusion, 23 CFR 771.117 (c)28 - Bridge rehabilitation, reconstruction, or replacement. However, if the full replacement alternative were to be selected, this would require substantial elevation of the bridge, which would cause substantial ROW impacts/displacements along the bridge approaches. These factors, including potential significant public controversy on environmental grounds, could elevate the NEPA document to an EA.

VI. Evaluation of Conceptual Alternatives

The focus of this project was to develop conceptual improvement plans which would address the purpose and need, while maintaining balance between minimizing the environmental impacts, providing preferred design elements, considering the overall cost effectiveness and addressing the needs of the community. Several conceptual improvements were developed through the alternatives analysis process and evaluated against the purpose and need statement in order to most effectively accomplish the objectives of the project. Specific impact criteria were evaluated for each alternative in order to identify a Preliminary Preferred Alternative. Alternative plans are provided in ***Appendix J.***

A. Bridge Repair versus Bridge Replacement

When considering various options of what could be done to remediate the poor condition of the Hunter Street Bridge, repair of the structure was among the options considered. Repair of the structure would have minimal impacts to the surrounding community and extend the service life of the structure. The structure would still maintain substandard sidewalk width and the controlling substandard design elements identified in Section III.F would remain.

B. Temporary Bridge Location and Widening Constraints

A temporary bridge was considered for the full bridge replacement alternative. It was quickly eliminated from further consideration since a temporary bridge would require unnecessary right-of-way acquisition and environmental impacts, while a detour route is available.

C. Conceptual Alternatives

Alternative 1: No-Build

A no-build alternative was considered to evaluate the consequences of leaving the structure in its current state. This alternative requires continuous maintenance as the bridge will continue to deteriorate, resulting in weight restrictions, traffic disruptions, and ultimately, closure of the bridge. This alternative does not meet the project purpose and need.

Alternative 2: Permanently Close Bridge to Traffic and Demolish Bridge

Alternative 2 was developed to evaluate demolition of the bridge and close Hunter Street at the railroad crossing. This alternative would require permanent vehicular and pedestrian traffic detours around the Hunter Street Bridge. The nearest railroad crossing is an at-grade crossing on Cooper Street. Alternatives and detour plans are provided in ***Appendix J.*** Stakeholders will not support this alternative due to the disruptions to vehicular and pedestrian traffic in the area.

Alternative 3A: Repair Bridge

Alternative 3A was developed to evaluate repairing the existing bridge to remove the structurally deficient classification and prolong the service life of the structure. The bridge would maintain its functionally obsolete classification since the substandard deck geometry and vertical under-clearance would remain. The bridge would likely be closed to vehicular traffic while repairs are performed. Pedestrian traffic could be maintained on the bridge during construction by closing one sidewalk at a time. The latest inspection report (see ***Appendix B***) identified the bridge as structurally deficient due to the poor condition of the

deck. Therefore, performing concrete deck repairs would remove the structurally deficient classification of the structure. In addition, the following repairs would extend the service life of the structure:

- Remove concrete encasement around floor beams and stringers to reduce dead load.
- Perform structural steel repairs on exposed floor beams, stringers and lateral bracing members as required.
- Clean and paint exposed floor beams, stringers and lateral bracing members.
- Replace deck joints.
- Perform concrete abutments repairs.
- Repoint abutment masonry mortar.
- Repair storm sewer pipe near bridge.
- Mill and pave approach roadway.

Alternative 3B: Repair Bridge for Pedestrian and Emergency Vehicle Use Only

Alternative 3B was developed to evaluate repairing the existing bridge to remove the structurally deficient classification and keep the bridge open to pedestrians and emergency vehicles only. The bridge would maintain its functionally obsolete classification since the substandard vertical under-clearance would remain. The substandard deck geometry would no longer contribute to the functionally obsolete classification because public vehicular traffic would no longer use the bridge. Pedestrian traffic could be maintained on the bridge during construction by closing one sidewalk at a time. The same repairs from Alternative 3A are anticipated for this alternative. In addition, removable/collapsible bollards would be installed at each approach roadway only allowing emergency vehicles to use the bridge. Stakeholders will not support this alternative due to the disruptions to vehicular traffic in the area.

Alternative 4: Full Bridge Replacement

Alternative 4 was developed to evaluate full bridge replacement and eliminating the existing controlling substandard design elements. Coordination with Conrail revealed that they would require 23’-0” vertical under-clearance for a new bridge. A copy of the Conrail coordination meeting minutes are provided in ***Appendix O.***

Conrail is also replacing its bridge over Red Bank Avenue, which is just north of the Hunter Street Bridge. Conrail is raising their bridge and track profile for that project to increase the vertical under-clearance to the road below. The raise in track profile will run off towards Hunter Street and eliminates the potential to lower the track at Hunter Street.

The only option to provide 23’-0” vertical under-clearance at the Hunter Street Bridge is to raise the roadway profile by approximately 9 feet. This would accommodate a new beam-slab type bridge superstructure. Approximately 26 properties would be affected by roadway embankment construction due to the roadway profile raise. Several of these properties would likely have to be acquired since access would be cut off and the existing buildings would be demolished. Hunter Street intersections at Euclid Street, Laurel Street, North Maple Street and Holroyd Place would also be impacted. Stakeholders will not support this alternative due to significant impacts to the surrounding community.

D. Traffic Analysis

Traffic analyses for a detour route were conducted utilizing Synchro/SimTraffic software. This detour would reroute the traffic from Hunter Street onto Cooper Street. Traffic flow diagrams were prepared for the detour plan in ***Appendix J.*** Levels of services are provided in the table below for the 2022 and 2042 detour.

Table 6: Detour Levels of Service

Intersection	Approach/Movement	2022 Detour		2042 Detour	
		AM Peak Hour LOS and Delay *(sec)*	PM Peak Hour LOS and Delay *(sec)*	AM Peak Hour LOS and Delay *(sec)*	PM Peak Hour LOS and Delay *(sec)*
Signalized					
Route 45 & Cooper Street	***Overall LOS***	***D (50.0)***	***F (81.7)***	***E (58.6)***	***F (128.7)***
	NB (LT, TH/R)	D (37.1)	C (29.8)	D (44.1)	D (36.9)
	SB (LT, TH/R)	C (26.2)	F (92.8)	C (31.3)	F (177.1)
	EB (LT, TH/R)	D (41.7)	F (107.3)	F (87.9)	F (142.1)
	WB (LT, TH/R)	F (111.2)	F (95.4)	F (88.5)	F (129.1)
Route 45 & Hunter Street	***Overall LOS***	***C (18.3)***	***C (30.8)***	***C (30.9)***	***D (39.1)***
	WB (LT, RT)	D (38.9)	F (105.4)	D (44.3)	F (139.1)
	SB (LT, TH)	A (5.3)	A (11.8)	A (6.3)	B (13.9)
	NB (LT, RT)	C (25.5)	B (14.1)	D (45.3)	B (17.2)
Cooper Street & Evergreen Avenue	***Overall LOS***	***C (24.8)***	***E (59.2)***	***C (28.0)***	***F (81.3)***
	NB (LT, TH,R)	C (22.5)	C (23.9)	C (26.9)	C (25.6)
	SB (LT, TH, R)	C (21.0)	F (80.6)	C (24.0)	F (122.3)
	EB (LT, TH/R)	C (32.1)	D (51.5)	C (34.2)	E (70.9)
	WB (LT, TH/R)	C (24.9)	E (72.3)	C (27.9)	F (92.7)
Hunter Street & Evergreen Avenue	***Overall LOS***	***B (11.5)***	***B (14.4)***	***B (13.1)***	***C (23.6)***
	NB (LT/TH/RT)	A (8.4)	B (15.9)	A (9.3)	C (30.8)
	SB (LT/TH/RT)	B (10.5)	A (8.2)	B (12.8)	B (10.4)
	EB (LT/TH/RT)	B (16.3)	B (17.5)	B (16.7)	B (17.4)
	WB (LT/TH/RT)	C (27.7)	C (23.7)	C (29.2)	C (25.8)

Under 2022 and 2042 detour conditions, the signalized intersection of Route 45 and Cooper Street will function at an overall LOS D and LOS E during the AM peak hour and at a LOS F during the PM peak hour. The signalized intersection of Route 45 and Hunter Street will function at an overall LOS C during the AM peak hour and at an overall LOS C and LOS D during the PM peak hour. The signalized intersection of Cooper Street and Evergreen Avenue will function at an overall LOS C during the AM peak hour and at an overall LOS E and LOS F during the PM peak hour.

The 2022 and 2042 detour analysis was also analyzed with mitigation. This mitigation included timing changes for some of the existing signals. Levels of services are provided in the table below for the 2022 and 2042 detour.

Table 7: Detour with Mitigation Levels of Service

Intersection	Approach/Movement	2022 Detour w/ Mitigation		2042 Detour w/ Mitigation	
		AM Peak Hour LOS and Delay *(sec)*	PM Peak Hour LOS and Delay *(sec)*	AM Peak Hour LOS and Delay *(sec)*	PM Peak Hour LOS and Delay *(sec)*
Signalized					
Route 45 & Cooper Street	***Overall LOS***	***D (41.0)***	***E (56.2)***	***D (53.3)***	***E (79.1)***
	NB (LT, TH/R)	D (36.0)	D (52.3)	D (48.9)	F (80.0)
	SB (LT, TH/R)	B (19.5)	D (38.1)	C (22.7)	D (53.5)
	EB (LT, TH/R)	D (46.9)	F (86.5)	E (56.9)	F (118.6)
	WB (LT, TH/R)	E (72.8)	E (64.7)	F (99.3)	F (87.1)
Route 45 & Hunter Street	***Overall LOS***	***C (21.6)***	***C (25.8)***	***C (30.0)***	***C (31.6)***
	WB (LT, RT)	C (29.0)	D (38.6)	D (44.1)	D (37.8)
	SB (LT, TH)	A (5.7)	C (21.5)	A (6.3)	C (29.3)
	NB (LT, RT)	C (31.6)	C (23.9)	D (43.8)	C (31.1)
Cooper Street & Evergreen Avenue	***Overall LOS***	***C (26.2)***	***E (61.4)***	***C (29.4)***	***E (78.4)***
	NB (LT, TH,R)	C (22.4)	C (20.6)	C (24.6)	C (21.8)
	SB (LT, TH, R)	C (20.1)	D (50.8)	C (22.4)	E (76.6)
	EB (LT, TH/R)	C (34.3)	F (108.6)	D (40.5)	F (153.0)
	WB (LT, TH/R)	C (28.6)	E (74.0)	C (31.7)	E (64.6)
Hunter Street & Evergreen Avenue	***Overall LOS***	***B (11.5)***	***B (14.4)***	***B (13.1)***	***C (23.6)***
	NB (LT/TH/RT)	A (8.4)	B (15.9)	A (9.3)	C (30.8)
	SB (LT/TH/RT)	B (10.5)	A (8.2)	B (12.8)	B (10.4)
	EB (LT/TH/RT)	B (16.3)	B (17.5)	B (16.7)	B (17.4)
	WB (LT/TH/RT)	C (27.7)	C (23.7)	C (29.2)	C (25.8)

The 2022 and 2042 detour with mitigation conditions show the signalized intersection of Route 45 and Cooper Street will function at an overall LOS D during the AM peak hour and at a LOS E during the PM peak hour for 2022 and 2042. The signalized intersection of Route 45 and Hunter Street will function at an overall LOS C during the AM and PM peak hours. The signalized intersection of Cooper Street and Evergreen Avenue will function at an overall LOS C during the AM peak hour and at an overall LOS E during the PM peak hours. The signalized intersection of Hunter Street and Evergreen Avenue timing did not change, therefore, the levels of service remained the same as the detour without mitigation.

The detour will increase delays and queues at all the signals but it is consistent with typical detoured traffic operations.

E. Hydrology & Hydraulics Analysis

Not applicable due to an absence of stream crossing within the project area.

F. Right-of-Way Impacts and Review

Alternatives 1, 2, 3A and 3B are not anticipated to have right-of-way impacts. Alternative 4 will affect approximately 26 properties due to the roadway profile raise. Several of these properties would likely have to be total acquisitions since access would be cut off and the existing buildings would be demolished.

G. Utility Impacts

Alternative 1: No-Build

Utilities would not be affected with the No-Build alternative.

Alternative 2: Permanently Close Bridge to Traffic and Demolish

Existing aerial electric utilities along the west side of the railroad property will require temporary shutdown or temporary relocation due to the use of cranes for bridge demolition activities. Existing aerial electric and telephone utilities along Laurel Street will also require temporary shutdown or temporary relocation due to crane use. Two 3 ½" telephone conduits in the bridge sidewalk and an 8 ½" steel gas main attached to the north side of the bridge will need to be permanently relocated prior to demolition.

Alternative 3A: Repair Bridge

Two 3 ½" telephone conduits in the bridge sidewalk and the 8 ½" steel gas main attached to the north side of the bridge will need to be protected during bridge repair work. No utility relocations are anticipated for this alternative.

Alternative 3B: Repair Bridge for Pedestrian and Emergency Vehicle Use Only

Two 3 ½" telephone conduits in the bridge sidewalk and the 8 ½" steel gas main attached to the north side of the bridge will need to be protected during bridge repair work. No utility relocations are anticipated for this alternative. Bollards will need to be installed at locations that do not conflict with underground telephone conduits.

Alternative 4: Full Bridge Replacement

All existing aerial and underground utilities except the fiber optic along the railroad will be affected during construction for Alternative 4. Utilities will need to be permanently relocated due to raising of the Hunter Street profile and crane use.

H. ITS Facilities

There are no existing ITS facilities along Hunter Street within the project area. No new ITS facilities are proposed.

I. Access Impacts and Review

There are no access impacts anticipated with Alternatives 1, 2, 3A or 3B. Alternative 4 will affect access to approximately 26 properties due to the roadway profile raise. Most of these properties would likely be total right-of-way acquisitions.

J. Constructability, Staging and Detours

All alternatives except the No-Build alternative will require a detour to accommodate short-term or permanent closure of the bridge. The detour will redirect traffic via Route 45, Cooper Street and Evergreen Avenue. Traffic flow diagrams were prepared for the detour and are located in ***Appendix J.*** Insufficient existing bridge width and structure type preclude staged construction for Alternatives 3A or 4. Pedestrian traffic could be maintained on the bridge during construction for Alternatives 3A and 3B by closing one sidewalk at a time.

K. Controlling Substandard Design Elements

Controlling substandard design elements (CSDEs) will remain for Alternatives 1, 3A and 3B. Vertical under-clearance would be the only CSDE remaining for Alternative 3B since public vehicular traffic would no longer use the bridge. All CSDEs would be eliminated for Alternative 2 since they only pertain to the presence of the existing bridge. All CSDEs would be corrected under Alternative 4.

L. Railroad Coordination

All alternatives except the No-Build alternative will require work above existing railroad tracks. Work over the railroad will require coordination with Conrail. Track protection will likely be required during construction, as well as flaggers.

M. Construction Cost Estimate

A preliminary construction cost estimate was prepared for each of the alternatives and are summarized in the table below. Detailed cost estimates for the alternatives are provided in ***Appendix M*.**

Table 8: Cost Estimate Summary

Alternative	ROW Acquisition Cost	Utility Relocation Cost	Construction Cost	Construction Engineering	Contingency	Total Cost
Alternative 1	$0	$0	$0	$0	$0	$0
Alternative 2	$0	$1,350,000	$396,139	$48,329	$59,421	$1,854,000
Alternative 3A	$0	$0	$624,525	$76,826	$94,459	$796,000
Alternative 3B	$0	$0	$634,925	$76,826	$94,459	$807,000
Alternative 4	$5,000,000	$3,000,000	$3,467,872	$610,346	$143,700	$12,222,000

N. Life Cycle Cost Analysis

Alternatives 3A and 3B have the lowest life cycle cost related to period bridge maintenance cost when compared to the No-Build alternative, assuming a remaining service life of 25 years. This difference is due to the fact that repairs are being performed immediately on the existing bridge for Alternatives 3A and 3B. Alternative 4 has the highest life cycle cost since a new bridge would have a longer service life of 75 years, hence, more maintenance intervals.

O. Alternatives Matrix

An alternatives comparison matrix for the conceptual alternatives can be found in ***Appendix N.***

P. Preliminary Preferred Alternative (PPA)

Alternative 3A (Repair Bridge) is the recommended PPA. This alternative includes repairing the existing bridge to remove the structurally deficient classification and prolong the service life of the structure. The bridge would maintain its functionally obsolete classification since the substandard deck geometry and vertical under-clearance would remain.

Alternative 1 was eliminated from further consideration since it does not address the project purpose and need. Alternative 2 was eliminated from further consideration since it would not be supported by stakeholders. Alternative 3B was eliminated from further consideration since the scope of work is basically identical to the PPA, but it restricts the public's vehicular use of the bridge and would not be supported by stakeholders. Alternative 4 was eliminated from further consideration since there would be significant impacts to the surrounding community and would not be supported by stakeholders.

VII. Concept Development Recommendation

A. Delaware Valley Regional Planning Commission (DVRPC) Approval of Report

DVRPC approved this report.

B. Gloucester County Approval of Report

Gloucester County approved this report.

C. NJDOT Local Aid and Environmental Resources Approval of Report

NJDOT Local Aid and Environmental Resources sent a letter to Gloucester County indicating that they agree with the PPA recommendation and an Interagency Review Committee Meeting is not required. A copy of this letter can be found in ***Appendix L.***

Appendix A

Project Fact Sheet

Hunter Street over Conrail Bridge
Project Fact Sheet

Project Location

The Hunter Street Bridge over Conrail is located in Woodbury City, Gloucester County, NJ.

Project Limits

The structure is located along Hunter Street approximately 2/10 mile east of Broad Street (NJ Route 45). The study limits for this project are limited to the bridge location.

Problem Statement

The Hunter Street over Conrail Bridge (Bridge No. 0802I14) is a single span concrete-encased steel through girder and floor beam structure with a cast-in-place concrete deck. The bridge is structurally deficient due to the poor condition of the deck. The bridge is also functionally obsolete due to the substandard deck geometry and vertical under clearance. This data is based on the latest Bridge Re-evaluation Survey Report (special inspection), dated October 16, 2017.

Project Purpose

The purpose of this project is to address the deficiencies of the Hunter Street over Conrail Bridge and to enhance the safety of the traveling public on the Hunter Street Bridge.

Project Need

The overall condition of the structure is fair due to the condition of the superstructure and substructure and the low inventory ratings. The structure is classified as structurally deficient due to the poor condition of the deck. The structure is functionally obsolete due to the substandard deck geometry and vertical underclearance.

The latest inspection report dated October 16, 2017, found the deck to be in poor condition due to wide intermittent transverse and longitudinal cracks, and fine to medium random cracks throughout the top of the slab. Additionally, there are large spalls with exposed corroded and broken steel rebar with different degrees of section loss in floor beam bay 5 from the west, with several areas of incipient spalls and shallow spalls with exposed rusted rebar in several bays on the underside of the slab.

The superstructure is in fair condition due to the concrete encasement, typically exhibiting medium to wide cracks with efflorescence on the bottom flanges. In addition, other contributing conditions are loose and missing encasement on floor beams FB4 and FB7 with exposed rusted steel bottom flanges with no significant section loss, and severe corrosion with 100% section loss to the lateral bracing members.

The substructure is in fair condition due to large spalls, areas of delaminated concrete and wide cracks.

Goals and Objectives

The goals and objectives of the project are identified below. The Preliminary Preferred Alternative will be developed to satisfy as many goals and objectives as possible.

- Upgrade the bridge and approach roadways to meet current NJDOT and/or AASHTO standards for bridges and roadways.

- Correct the controlling substandard design elements along the bridge and approach roadways where feasible.
- Minimize environmental, social and economic impacts.
- Minimize disruptions to traffic operations during construction.
- Maintain access to adjacent properties at all times during construction.
- Minimize the use of detours; if detours are required, utilize the state and county roadway network to the greatest extent feasible.
- Provide pedestrian and bicycle compatibility to the approach roadways.

Existing Conditions

Within the project limits, Hunter Street is a two-lane roadway with no shoulders. This section of the roadway runs east-west though a residential and commercial community.

The left and right bridge sidewalks are 4'-4" and 4'-5" wide, respectively, which are substandard to AASHTO criteria (5' min. required; AASHTO 13.7.1.1). The 20' curb-to-curb width on the bridge only allows for two 10 foot wide lanes with no shoulders, which is undesirable per AASHTO criteria (see *Bridge Width* under CSDE). The approach roadways are approximately 30 feet wide curb-to-curb plus sidewalks. With the roadway width on the bridge being narrower than the approach roadway on both sides, a "choke point" is created, which also poses safety concerns for both motorists and pedestrians. The minimum bridge under clearance from the bottom of both through girders to the top of the east rail is 17'-11", which is also substandard based on NJDOT criteria.

The SI&A Sheet from the latest inspection report indicates that this structure has been given a sufficiency rating of 48.2 and is classified as "Structurally Deficient" due to the poor condition of the deck.

Controlling Substandard Design Elements

Controlling Substandard Design Elements (CSDEs) along the existing roadways within the study limits are summarized below.

Sight Distance at Non Signalized Intersection

The existing bridge through girders obstruct sight distance at the intersection of Hunter St and Laurel St. For a stop-controlled intersection with 30mph design speed, the NJDOT standard sight distance is 335' for left-turn and 290' for right-turn/cross movements. The Hunter St Westbound approach has substandard intersection sight distance for both movements. The Laurel St Northbound and Southbound approaches have substandard left-turn and right-turn/cross sight distances, respectively.

Bridge Width

The Existing bridge curb-to-curb width is 20'. This is substandard to the AASHTO (T.5-5) minimum required traveled way of 24' for local roads (V_{deg} = 30 mph, ADT_{deg} = 2147 veh/day).

Bridge Vertical Under Clearance

Actual minimum bridge under clearance from the bottom of both through girders to the top of the east rail is 17'-11", which is substandard to the NJDOT criteria of 23'-0".

Crash Analysis

Crash reports for years 2014-2016 were collected and analyzed to determine if any contributing factors exist in the project area and to identify any crash patterns along the potential detour route (Cooper Street). Only three (3) crashes were reported on Hunter Street in the vicinity of the bridge, and none were attributed to substandard roadway features.

Eighteen (18) total crashes were reported along the 0.12 mile segment of Cooper Street between Euclid Street and N. Maple Street. Stopped traffic on Cooper Street was reported as a contributing factor in most of the crashes. Rear-end crashes (6) represented 33% of the total for the roadway. Although there were no pedestrian crashes, one (1) rear-end crash was attributed to a pedestrian suddenly entering the marked crosswalk at Laurel Street.

Traffic Analysis

Automatic Traffic Recorder (ATR) counts were performed by McCormick Taylor in January 2018. The 2018 AADT volume on the Hunter Street Bridge is 1,905 vehicles per day.

ATR counts indicate that the AM Peak Hour volume is 195 vehicles per hour, with a directional distribution of 34% EB/66% WB. The PM Peak Hour volume is 261 vehicles per hour, with a directional distribution is 75% EB/25% WB.

Environmental Screening Summary

The project area is located in two historic districts, the Newton Historic District and Woodbury Historic District. The Hunter Street Bridge over Conrail is not individually eligible for the National Register of Historic Places; however, it is considered a contributing element to the Woodbury Historic District.

Bridge rehabilitation or replacement alternatives would qualify for a Programmatic Section 4(f); and any potential "use" of other historic properties should qualify for a Section 4(f) *de minimis* impact determination.

The project will disturb over 5,000 SF and will require Soil Erosion and Sediment Control Plan Certification by the Gloucester County Soil Conservation District.

Bridge rehabilitation or replacement alternatives should explore Context Sensitive Solutions regarding the painted murals on the interior of the bridge and the historic architecture context of the bridge.

The bridge alternatives should carefully consider socioeconomic impacts including potential isolation of residential areas from nearby commercial areas of Woodbury, as well as temporary impacts to the community during construction.

There is potential for involvement with contaminated or regulated material associated with the railroad bedding materials.

Conceptual Staging Alternatives

Staged construction is unlikely to be feasible. The existing through-girder configuration, limited 20 foot roadway width and no structural support members under the sidewalks make staged construction difficult. Staging a though-girder system requires temporary support along the cut line to support the bridge when one of the through-girders is removed. Also, there are no structural support members to support the live load under the

sidewalk to utilize as part of a temporary lane. Traffic cannot be shifted to provide enough width for traffic and pedestrians along with temporary traffic control devices on the bridge. Therefore, it is anticipated that any work on this bridge would be done under full detour.

Utility Risk Assessment

During the plan reviews and field observations, existing overhead and underground utilities were noted at various locations. The utility companies were contacted regarding existing facilities within the study limits. Further investigation will need to be conducted as this project progresses to identify the exact locations. The following companies operate within the project limits:

- Verizon-NJ, Inc.
- PSE&G Electric
- PSE&G Gas
- Comcast Cable
- Woodbury Department of Public Works
- Conrail
- AT&T CORE– Fiber Optic

Utilities located within the project limits are summarized in the table below.

Utility Company	Contact Person	Address	Telephone No.	Facilities
Verizon-NJ, Inc.	Thomas Reber	10 Tansboro Road Berlin, NJ 08009	856-306-8606	Specific facility information not available at this time.
PSE&G Electric	Len Pannucci	4000 Hadley Road South Plainfield, NJ 07080	908-412-2228	Primary and secondary lines along west side of Conrail right-of-way. Aerial facilities at Hunter Street/Laurel Street intersection.
PSE&G Gas	Len Pannucci	4000 Hadley Road South Plainfield, NJ 07080	908-412-2228	12” cast iron line on bridge, 12” steel line on Hunter Street west of bridge, 8” cast iron line on Hunter Street east of bridge, 12” cast iron line on Laurel Street south of bridge, 2” plastic on Laurel Street north of bridge, 4” cast iron on Euclid Street south of Hunter Street.
Comcast Cable	Tim Mills	1846 N.W. Boulevard Vineland, NJ 08360	856-694-6016	Specific facility information not available at this time.
Woodbury Department of Public Works	Paul Breier	Federici & Akin, P.A. Consulting Engineers 307 Greentree Road Sewell, NJ 08080	856-589-1400	Specific facility information not available at this time.
Conrail	Vincent Milano	1000 Howard Boulevard Mount Laurel, NJ 08054	856-231-2049	Railroad under bridge.
AT&T CORE	Steve Cumberland	AT&T Core 50 Patricia Drive Flanders, NJ 07836	267-767-7124	Cable on Conrail ROW, below the Hunter St. Bridge, not on the Hunter St. Bridge

Appendix B

Bridge Re-evaluation Survey Report (latest cycle)

COUNTY OF GLOUCESTER

OFFICE OF THE COUNTY ENGINEER
1200 NORTH DELSEA DRIVE
CLAYTON, NEW JERSEY 08312-1000

BRIDGE RE-EVALUATION SURVEY REPORT

STRUCTURE NO. 0802I14
HUNTER STREET
OVER
CONRAIL
WOODBURY CITY
GLOUCESTER COUNTY

SPECIAL INSPECTION

October 16, 2017

Prepared By

SJH Engineering P.C.

3700 Route 27, Suite 201
Princeton, NJ 08540

TABLE OF CONTENTS

N.J.D.O.T. - STRUCTURAL EVALUATION AND BRIDGE MANAGEMENT
BRIDGE RE-EVALUATION SURVEY REPORT

CYCLE NO. N/A

STRUCTURAL DATA:

Bridge No.:	0802I14	Year Built:	1914	Widened/Rehab:	1989
Route No.:	9008	Length:	93.0'	Width (Item 52):	28.67' 34.17'
Mile Point:	0.000	Date of this Evaluation:		10/16/2017	
		By:	SJH Engineering, P.C.		
		Date of Previous Evaluation:		6/26/2014	
Structure Type:	Single span concrete encased riveted steel plate through girder and floor beam bridge	By:	Johnson, Mirmiran & Thompson, Inc.		
		Date of FCM/Pin & Hanger Inspection:		10/16/2017	
		Special Equipment Used:		None	

WORK DONE: Bituminous concrete patch placed adjacent to header at the west approach **(Photo 17)**.

OVERALL PHYSICAL CONDITION: Fair due to the superstructure and substructure condition.

OVERALL CONDITION (ITEM 67): Fair due to the superstore and substructure, and the low Inventory Ratings

Inspection Team Leader: Maulikkumar Patel, P.E. **Initials:** MP

Certifying Engineer: S. Jayakumaran, Ph.D., P.E.

N.J. P.E. Number: NJ 24GE04007600

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

Signature: S. Jayakumaran

Date: 11/6/17

Seal

CONCLUSIONS AND RECOMMENDATIONS:

The overall condition of the structure is fair due to the condition of the superstructure and substructure, and the low Inventory Ratings.

The deck is in poor condition due to wide intermittent transverse and longitudinal cracks, and fine to medium random cracks throughout the top of the slab. Additionally, there are large spalls with exposed corrded and broken steel rebar with different degree of section loss in floor beam bay 5 from the west, with several areas of incipient spalls and shallow spalls with exposed rusted rebar in several bays on the underside of the slab **(Photos 06 and 09)**.

The superstructure is in fair condition due to the concrete encasement typically exhibiting medium to wide cracks with efflorescence on the bottom flanges, loose and missing encasement on floor beams FB4 and FB7 with exposed rusted steel bottom flanges with no significant section loss, and severe corrosion with 100% section loss to the lateral bracing members **(Photos 05, 09 and 10)**.

The substructure is in fair condition due to large spalls, areas of delaminated concrete and wide cracks **(Photos 12 thru 16)**.

The approach roadway is in satisfactory condition due to settlement (up to 2”), and wide cracks in concrete slabs reflected in the asphalt overlay **(Photos 07 and 08)**.

Since the previous inspection the condition of the structure has generally remained the same. There has been a slight increase in spall depth on the underside of deck in floorbeam bay 5 from the west.

The bridge is riveted steel through girder structure and is fracture critical as well as internally redundant.

There is minor section loss to the bottom flange plates of the floor beams FB4 and FB7. The section loss was not considered in the previous rating calculations. The section losses are not significant enough to warrant recalculation of the load ratings.

The bridge is Structurally Deficient due to the poor condition of the deck, and Functionally Obsolete due to the substandard deck geometry (Item 68 = 2) and vertical underclearance (Item 69 = 2). Therefore we recommend the following remedial action: **Bridge Replacement.**

a.	Demolition: Lump Sum		$ 100,000
b.	New Bridge (Includes two 6’ sidewalks and 1’ parapets):		
	100 LF x 58’ = 5800 SF @ $286/SF		$ 1,658,800
c.	Approach Roadway work (including drainage):		
	100 LF x 2 approaches = 200 LF @ $1030/LF		$ 206,000
d.	MPT (±20% of a, b, and c)		$ 393,000
		Subtotal	$ 2,357,800
e.	Preliminary Engineering (±15%)		$ 353,700
		Total	$ 2,711,500
		Say	**$ 2,712,000**

The new roadway width will yield a deck geometry rating of 7. Costs are from the NJDOT “Cost Guide for Bridge Repairs 2003” and increased 3% per year.

We recommend that the following Emergency/Priority repairs be made to retard further deterioration, preserve the structural integrity of the bridge, improve safety, and extend its useful life:

None

While no maintenance repairs are recommended as set forth by this report, the owner should remedy defects listed in the field notes.

The 1995 New Jersey historic bridge data recommends the bridge be registered as historic.

Monitor the top and underside of the deck slab in the areas of large spalls during the next regular inspection.

Structure No.: 0802114 Route: 9008 Cycle No.: 17
Name: HUNTER STREET OVER CONRAIL Insp. Date: 6/26/2014

1 - STRUCTURAL DATA

IDENTIFICATION

8 Structure No.: 0802114 *M82 County Bridge No.:* *M83 Municipal Bridge No.:*

(AB) Name: HUNTER STREET OVER CONRAIL

1 State Code:

(1A) State Code 34 - New Jersey

(1B) Region Code 2 - Region 2 - New York/New Jersey

2 Highway Agency District: DISTRICT 03 (SOUTH)

4 Place Code: 82120 - Woodbury

3 County Code: 015 - GLOUCESTER COUNTY

(A) Town: 0822 - Woodbury City

5A Inventory Route (On/Under): 1: Route carried "on" the structure

9 Location: 2/10 MI EAST OF RT 45

5B Inventory Route Signing Prefix: 5 - CITY STREET

5C Level of Service: 1 - MAINLINE **0- None**

11 Mile Point: 0.000

5D Inventory Route Number: 0 **00000**

(AA) Inventory Route: 9008 - Gloucester County

5E Directional Suffix: 0 - NOT APPLICABLE

(FV) Inventory Route Milepoint:

6 Features Intersected: RAILROAD -CONRAIL

(AC) Non-Inventory Feature: RR: Roadway and/or railroad over railroad

(AD) Adm. Juris. Non-Inv Feature: -1

7 Facility Carried by Structure: HUNTER STREET

(AE) Alternate Agency: -1
Not Applicable

16 Latitude: 395019.2

(AF) Alternate Structure Number:

17 Longitude: 750855.8

98 Border Bridge Code:

M84 Latitude (Degrees): 39.83867

(98AA) State Code:

M85 Longitude (Degrees): 75.14883

(98AB) Region Code 1

(98B) % Resp.: -2

99 Border Bridge Structure Number:

M142 GPS Location: **Southeast corner**

CLASSIFICATION

21 Maintenance Responsibility: 02 - County Highway Agency

26 Func. Class. of Inv. Route: 19 - Urban - Local

M94 Maint. Resp.:

37 Historical Significance: 2 - Eligible for National Register

22 Owner: 02 - County Highway Agency

M91 On/Off System: 0: Off-System Structure

M93 Owner:

M96 Comments Ownership:

M95 Ownership Resolved:

101 Parallel Structure Designation: N - No parallel structure

(HB) Orphan Bridge: N

103 Temporary Struct. Designation:

(BP) Bridge Demolition: N

104 Highway System of Inv. Route: 0 - Structure/Route is NOT on NHS

(CP) Federal Report: _ - Included in reports to FHWA

112 NBIS Bridge Length: Yes

(CR) Off-Route Bridge: N

Agency Admin. Area: -1

(FX) Federal Error Cannot be Corrected: N

Structure No.: 0802114 Route: 9008 Cycle No.: 17
Name: HUNTER STREET OVER CONRAIL Insp. Date: 6/26/2014

STRUCTURE TYPE AND MATERIAL

43A Main Span Material: 3 - Steel
43B Main Span Design: 03 - Girder and Floorbeam System
44A Approach Span Material:
44B Approach Span Design:
45 Number of Main Spans: 1
46 Number of Approach Spans: 0
(AJ) Type of Slope Protection: _
(AK) Type of Abutment: 10: Combination
(AL) Type of Pier: _
(AT) Special Material 1: _
(AT) Special Material 2: _
(AU) Additional Structure Type 1: F: Non-redundant Construction
(AU) Additional Structure Type 2: _
Fracture Critical Details: A - 1 or 2 steel girder system

M143 Structure Type Primary:
M144 Structure Type Secondary:
M97 Struct. Mat. Type Desc:

107 Deck Structure Type: 1 - Concrete Cast-in-Place
108A Wearing Surface: 1 - Monolithic Concrete (concurrently placed with structural deck)
108B Membrane: 0 - None
108C Deck Protection: 0 - None

(AV) Widened Structure Type:
1st Widened Material: _
1st Widened Design: _
2nd Widened Material: _
2nd Widened Design: _

AGE AND SERVICE

27 Year Built: 1914
28A Lanes On Structure: 2
28B Lanes Under Structure: 0

106 Year Reconstructed: 1989
42A Type of Service On: 5 - Highway-pedestrian
42B Type of Service Under: 2 - Railroad

GEOMETRIC DATA

32 Approach Roadway Width (w/ shoulders): 30.000 ft
33 Bridge Median: 0 - No median
34 Skew: 0 deg
35 Structure Flared: 0 - No flare
M98 Str. is Standalone or Connected:

M99 Length of Portion Included: ft
M101 Total Structure Opening: ft²
M145 Design Vertical Inside Opening: ft
M146 Available Vertical Inside - South or West End: ft
M147 Available Vertical Inside - North or East End: ft

48 Length of Maximum Span: 90 ft
49 Structure Length: 93 ft
M141 Effective CoMBIS Width: ft
50A Left Curb/Sidewalk Width: 4.3 ft
50B Right Curb/Sidewalk Width: 4.3 ft
51 Bridge Roadway Width, Curb-to-Curb: 20.0 ft
52 Deck Width, Out-to-Out: 28.7 ft
(AM) Depth of Fill over Structure: 0.0 ft
Total length: 93.00 ft
Deck Area: 2647.92 ft²

NAVIGATION DATA

38 Navigation Control: N - Not applicable, no waterway
111 Pier/Abutment Protection: 1 - Navigation protection not required

39 Navigation Vertical Clearance: 0 ft
40 Navigation Horizontal Clearance: 0 ft
116 Min. Nav. Vertical Clearance under Lift Bridge: ft
(AP) Fender System: _

UTILITIES AND APPURTENANCES

(HA) Bridge Noise Barrier:

Type of Material 1: _
Type of Material 2: _
Barrier Height 1: 0.00 ft
Barrier Height 2: 0.00 ft

(AQ) Utilities:

Utilities 1: G: Gas Main
Utilities 2: _
Utilities 3: _
Utilities 4: _

Sign Structures:

(GS) Overhead Sign Structure:
(GT) Cantilever Sign Structure:

(GU) Fascia Mounted Sign Structure:

RAILROAD

(BC) USRA Code: 9909
(BE) Rail Milepost: 516.981

(BD1) Rail On: 0
(BD2) Rail Under: 1

TEMPORARY STRUCTURES

(GV) Bridge: N
(GW) Shoring: N
(GZ) Cond. Desc.: -1

(GY) Measures: N
(GX) Repairs: N

Structure No.: 0802114 Route: 9008 Cycle No.: 17
Name: HUNTER STRRET OVER CONRAIL Insp. Date: 6/26/2014

2 - LOAD RATING AND POSTING

NBI Load Ratings:

31 Design Load: 0 - Unknown
65 Inventory Rating Method: 1 - Load Factor (LF)

66 Inventory Rating: 22.0 tons
63 Operating Rating Method: 1 - Load Factor (LF)

64 Operating Rating: 38.0 tons
Rating Date

Type	Inventory		Operating	
H15:	(BQ)	12	(CA)	21
HS20:	(BR)	22	(CB)	38
3:	(BS)	17.6	(CC)	31
NJ3S2:	(BT)	29	(CD)	49
3-3:	(BU)	36	(CE)	60
Military:	(BV)	0.0	(CF)	
HL93:	( )		( )	

Alternate Load Ratings:

Alt. Design Load:
Alt. Inventory Rating Method: -1
Alt. Inventory Rating: -1 tons
Alt. Operating Rating Method: -1
Alt. Operating Rating: -1 tons
Alt. Rating Date

Type	Inventory	Operating
H15:	( )	( )
HS20:	( )	( )
3:	( )	( )
NJ3S2:	( )	( )
3-3:	( )	( )
Military:	( )	( )
HL93:	( )	( )

41 Posting Status: A - Open
70 Posting: 5 - Equal to or above legal loads
(CG1) Posted Load Type:
(CG2) Posted Load Limit: tons
(AI) Speed Limit Posting: mph
Load Rating Review Recommended: ☐

(BK) Overstress %:
(CH1) Load Rating/Posting Combo: L: Load Factor Rating
(CH2) Load Rating/Posting Combo: tons
(AN) Plans Available: Y
Load Rating Engineer:

Posting	Inventory	Operating
Truck 1:	-1	-1
Truck 2:	-1	-1
Truck 3:	-1	-1

Structure No.: 0802014 Route: 9008 Cycle No.: 17
Name: HUNTER STREET OVER CONRAIL Insp. Date: 6/26/2014

3A - INSPECTION INFORMATION

APPRAISAL ITEMS

Structurally Deficient/Functionally Obsolete: SD

Sufficiency Rating: 48.2

67 Structural Evaluation: 5 - Somewhat better than minimum

68 Deck Geometry: 2 - Intolerable - high priority of replacement

69 Underclearances, Vertical & Horizontal: 2 - Intolerable - high priority of replacement

70 Bridge Posting: 5 - Equal to or above legal loads

71 Waterway Adequacy: N - Not Applicable

72 Approach Roadway Alignment: 6 - Equal to present minimum criteria

EXISTING BRIDGE CONDITION

58 Deck: 4 - Poor Condition (advanced deterioration)

(BA) Approach Roadway Condition: 6: Satisfactory Condition - more significant defects such as large spalls, severe settlements (1" to 2") or major collision damage to guide rails. Moderate amounts of slope embankment erosion.

59 Superstructure: 5 - Fair Condition (minor section loss)

60 Substructure: 5 - Fair Condition (minor section loss)

61 Channel/Channel Protection: N - Not Applicable

62 Culvert: N - Not Applicable

113 Scour Critical Bridge: N - Not over waterway

63 Operating Rating Method: 1 - Load Factor (LF)

64 Operating Rating: 38.0 tons

65 Inventory Rating Method: 1 - Load Factor (LF)

66 Inventory Rating: 22.0 tons

CONDITION REMARKS

Deck Distress/Unrepaired Spalls: -1 ft²

(BF) Deck:

1. R: Spalled under deck
2. B: More than 5% spalls
3. S: Exposed rebars
4. P: Deck seepage
5. A: Medium to wide cracks

(BG) Superstructure:

1. A: Mod/severe rusting
2. C: Loss of section
3. D: Encasement deterioration
4.
5.

(BH) Substructure:

1. O: Moderate spalling
2. R: Deteriorated pointing
3. C: Medium/wide cracks
4.
5.

(BI) Channel:

1. _
2

(BJ) Culvert:

1. _
2

HIGHWAY SAFETY/FENCING

36A Bridge Rail: 0 - Does not meet acceptable standards/safety

36B Transition: N - NA/Safety feature not required

36C Approach Rail: N - NA/Safety feature not required

36D End Treatments: N - NA/Safety feature not required

(AG) Type of Bridge Rail: 17: Encased Thru-Girder type

(AH) Height of Bridge Rail: 5.17 ft

(AQ) Chain Link Fence Height: ft

(FN) Fencing Warranted: NO - Conditions DO NOT warrant chain link

(FO) Pedestrian Traffic Fencing Status: N: Not applicable or fencing is not

(FP) Fencing Improvement Cost: $ 0

SCOUR EVALUATION

*113 Scour Critical Bridge: N - Not over waterway

(FA) FHWA Scour Category:

(FB) Date of Stage 1 Scour Eval.: 1/1/1901

(FC) Stage 1 Scour Eval. Consultant:

(FD) Stage 1 Scour Eval. Prioritization Category:

_ - Not Applicable

(FE) Stage 1 Scour Eval. Sufficiency Rating:

(FG) Stage 2 Scour Eval. Consultant: -1

(FH) Scour Critical Elements: -1

Structure No.: 0802114 Route: 9008 Cycle No.: 17
Name: HUNTER STREET OVER CONRAIL Insp. Date: 6/26/2014

SCOUR COUNTERMEASURES

(FJ) Scour Countermeasures Cost: $

(FK) Scour Countermeasures Installed/Type:

1. _
2. _
3. _

(FL) Scour Monitoring Required/Type: _

(FI) Recommended Scour Countermeasures:

PROPOSED IMPROVEMENTS

75A Type of Work: 31 - Replacement - Load/Geometry

75B Work To Be Done By: 1 - Work to be done by contract

76 Length of Structure Improvement: 100 ft

(BO) Owner's Maintenance Cost: $ 0000

94 Bridge Improvement Cost: $ 1612500 1658800

95 Roadway Improvement Cost: $ 200000 206000

96 Total Project Cost: $ 2639250 2712000

97 Year of Improvement Cost Estimate: 2014 2017

Structure No.: 0802114 Route: 9008 Cycle No.: 17

Name: HUNTER STREET OVER CONRAIL Insp. Date: 6/26/2014

3B - INSPECTION INFORMATION

INSPECTION DATES

Inspection Report Author: Petre, John **Maulikkumar Patel**

Primary Type of Inspection: Regular Inspection

Previous Cycle Inspection Date: 8/29/2012**6/26/2014**

90 Inspection Date: 6/26/2014 **10/16/2017**

91 Inspection Frequency (in months): 24

Next Inspection Date: 6/26/2016 **10/16/2019**

Pontis Element Inspection Date: 6/26/2014 **10/16/2017**

Pontis Element Frequency (in months): 24

Next Pontis Element Inspection Due: 06/26/2016 **10/16/2019**

(AW) Date of Mechanical/Electrical inspection: 1/1/1901

(AW1) Mechanical Insp. Type:

(AW2) Electrical Insp. Type:

(AW3) Traffic Safety Insp. Type:

(AW4) Mechanical Insp. Date:

(AW5) Electrical Insp. Date:

(AW6) Traffic Safety Insp. Date:

(AW7) Movable Bridge Type:

(AX) Date of Deck Condition Survey: 1/1/1901

M132 Confined Space Entry:

M105 Description of Inspection Type:

93A FC Inspection Date: 6/26/2014 **10/16/2017**

92A FC Inspection Frequency (in months): 24

Next FC Inspection Date: 06/26/2016 **10/16/2019**

93B UW Inspection Date: 1/1/1901

92B UW Inspection Frequency (in months): -1

Next UW Inspection Date: 01/01/1901

UW Inspected By:

93C SI Date: 1/1/1901

92C SI Frequency (in months): -1

Next SI Date: 01/01/1901

(AR) Special Equipment: _

(AR) Special Equipment: _

(AR) Special Equipment: _

Special Inspection By:

(AS) Special Testing Type:

(AS) Special Testing Type:

(AS) Special Testing Type:

(AY) Date of Special Testing:
1/1/1901

PAINT CONDITIONS AND DATE

(GD) Fascia Beam:

(GE) Fascia Bottom Flange: 00: 100% Rust

(GF) Interior Beam:

(GH) Interior Bottom Flange: 00: 100% Rust

(GI) Beam Ends:

(GJ) Connections:

(GK) Bracings: 00: 100% Rust

(GL) Bearings: 03: 16 - 33% Rust

(GM) Substructure:

(GN) Above Deck Superstructure:

(GO) Railings/Fence:

(GA) Is Painting Required? Yes: Parts of the structure require painting

(GB) Environment: 01: Rural or Industrial, Mild Exposure

(GC) Date of Current Paint Inspection: 06/26/2014 **10/16/2017**

(GR) Date of Last Painting: 1/1/1901

(GP) Remarks 1: Exposed steel is coded

(GQ) Remarks 2:

(AZ) FATIGUE DETAIL

N

Location 1: 20 - Other detail
02 - Floorbeam

Location 2: 20 - Other detail
01 - Stringer

Location 3: _

Structure No.: 0802114 Route: 9008 Cycle No.: 17
Name: HUNTER STREET OVER CONRAIL Insp. Date: 6/26/2014

IN-DEPTH FRACTURE CRITICAL/PIN-HANGER

(FY) Special FCM Insp. Required: ☐
(FZ) Special P/H Insp. Required: ☐
(FQ) Latest In-Depth FC/ Pin-Hanger Inspection Date: 1/1/1901
(FQ1) Special FCM Insp. Date:
(FQ2) Special P/H Insp. Date:

(FS) FCM's Inspected:
(FT) Combo In-Depth Fracture Critical/Pin-Hanger Inspection:

(FR) Consultant:
(FR1) Special FCM Insp. Consultant:
(FR2) Special P/H Insp. Consultant:

CYCLE DATA

(P1) Group Number: 08C2
(P2) Work Spec Number:
(CI) Cycle Number: 17
(CJ) Inspection Type: S
(CM) Current Consultant: J07 - Johnson, Mirm & Thom
(CO) Previous Consultant: J07 - Johnson, Mirm & Thom
M87 Contract/State Agreement No.: 2012B1875D
Agreement Modification Number:
Contract ID: 1350805
Contract Date: 07/01/2014

(BM) Federal Job Number:
(BN) State Job Number:
(P3) NTP Date:
Funding Category:
(P4) State Project Manager: Ayodele Oshilaja
(PS) State Assistant PM:
County Project Manager:
M130 Project Name:

S 14 - SJH Engineering, PC

STRUCTURE STATUS

Bridge Status: **Active**
Bridge Lifecycle Phase:
Data Last Updated: **10/16/2017**

Structure No.: 0802114 Route: 9008 Cycle No.: 17
Name: HUNTER STREET OVER CONRAIL Insp. Date: 6/26/2014

4A - ROADWAY DATA

ROADWAY IDENTIFICATION

Roadway Name: HUNTER ST

Bridge ID/Structure Number: 0802114

Roadway SRI:

NBI Roadway?: 1

5A Position of Route (On/Under): 1: Route carried "on" the structure

5B Route Signing Prefix: 5 - CITY STREET

5C Level of Service: 1 - MAINLINE

5D Route Number: 0

5E Directional Suffix: 0 - NOT APPLICABLE

HIGHWAY NETWORKS AND SERVICE CLASSIFICATION

11 Milepoint: 0.000

12 Base Highway Network: Inventory Route is not on the Base Network

13A LRS inventory Route:

13B Subroute Number:

13R Ramp Code:

20 Toll Facility: 3 - On free road. The structure is toll-free and carries a toll-free highway.

26 Functional Classification: 19 - Urban - Local

100 STRAHNET Highway Designation: 0 - Not a STRAHNET route

102 Traffic Direction: 2 - 2-way traffic

104 NHS System: 0 - Structure/Route is NOT on NHS

105 Federal Lands Highways:
0 - Not Applicable

110 Designated Truck Highway Network: Inventory route not on network

School Bus: ☐ Transit Route: ☐ Emergency Route: ☐

TRAFFIC DATA

28 Number of Lanes: ON 2 UNDER 0

Number of Medians: 0

Roadway Speed Limit: 25 mph

19 Bypass/Detour Length: 1 miles

Detour Speed: 25 mph

(FM) Incidents Reported:

Accident Count: Rate:

ADT Class: ADT Class 3

29 ADT Total: 3318 **3418**

30 Year of ADT: 2014 **2017**

114 Future ADT: 3981 **4170**

115 Year of Future ADT: 2034 **2037**

109 Truck ADT (%): 1

(FW) Estimated ADT: Y

VERTICAL AND HORIZONTAL CLEARANCES

10 Vertical Clearance:	99.99 ft	32 Approach Roadway Width:	30.000 ft
53 Minimum Vertical Clearance over Bridge:	99.99 ft	47 Inventory Route, Total Horizontal Clearance:	20.0 ft
54A Minimum Vertical Underclearance Ref.:	R - Railroad beneath structure	51 Bridge Roadway Width, Curb-to-Curb:	20.0 ft
54B Minimum Vertical Underclearance:	18.00 ft	55A Minimum Lateral Underclearance Ref:	R - Railroad beneath structure
(DJ) Minimum Vertical Underclearance (including shoulders):	0.00 ft	55B Minimum Lateral Underclearance on Right:	9.1 ft
		56 Minimum Lateral Underclearance on Left:	0.0 ft

NJDOT BRIDGE ELEMENT LEVEL INSPECTION FORM

Structure No.: 0802I14 By: Sanjay Parmar Date: 10/30/2017

Str. Unit No. /Elem. /Comp.	Env.	Element Description	Unit	Total Quantity	CS1	CS2	CS3	CS4	Defect #
		Spans(s): One (1)							
DECKS/ SLABS (INCLUDING WEARING SURFACE, PROTECTIVE COATING/SYSTEMS)									
12	3	Reinforced Concrete Deck	Sq.ft.	2648	2322	197	70	59	
		1080 Spall/Delam./Patched		62	0	62	0	0	1080
		Exposed rebar		59	0	0	0	59	1090
		Efflorescence		5	0	5	0	0	1120
		Cracking		200	0	130	70	0	1130
802	3	Concrete Curb/Sidewalk	ft.	186	180	4	0	2	
		Spall/Delam./Patched		2	0	0	0	2	1080
		Cracking		4	0	4	0	0	1130
BRIDGE RAILINGS AND SOUND BARRIER WALL (None)									

NJDOT BRIDGE ELEMENT LEVEL INSPECTION FORM

Structure No.: 0802814 By: Sanjay Parmar Date: 10/30/2017

Str. Unit No. /Elem. /Comp.	Env.	Element Description	Unit	Total Quantity	CS1	CS2	CS3	CS4	Defect #
		Spans(s): One (1)							
JOINTS									
302	3	Compression Joint Seal	ft.	57	17	22	18	0	
		Seal Adhesion		5	0	5	0	0	2320
		Seal Damage		8	0	0	8	0	2330
		Adjacent Deck or Header		10	0	0	10	0	2360
		Damage		17	0	17	0	0	7000
APPROACH SLABS									
321	3	Reinforced Conc. Appro. Slab	sq. ft.	700	689	0	11	0	
		Spall		4	0	0	4	0	1080
		Cracking		7	0	0	7	0	1130

NJDOT BRIDGE ELEMENT LEVEL INSPECTION FORM

Structure No.: 0802314 By: Sanjay Parmar Date: 10/30/2017

Str. Unit No. /Elem. /Comp.	Env.	Element Description	Unit	Total Quantity	CS1	CS2	CS3	CS4	Defect #
		Spans(s): One (1)							
SUPERSTRUCTURE (INCLUDING PROTECTIVE COATING/SYSTEMS)									
107	3	Steel, Open Girder/Beam	ft.	186	183	3	0	0	
		Corrosion		3	0	3	0	0	1000
891	3	Concrete Encasement	ft.	186	140	37	9	0	
		Spall		6	0	2	4	0	1080
		Cracking		40	0	35	5	0	1130
113	3	Steel, Stringer	ft.	558	558	0	0	0	
152	3	Steel, Floor Beam	ft.	256	239	17	0	0	
		Corrosion		17	0	17	0	0	1000
891	3	Concrete Encasement	ft.	256	34	5	217	0	
		Spall / Delam.		22	0	5	17	0	1080
		Cracking		200	0	0	200	0	1130
BEARINGS									
311	3	Movable Bearing	Ea.	2	0	2	0	0	
		Corrosion		2	0	2	0	0	1000
313	3	Fixed Bearing	Ea.	2	0	2	0	0	
		Corrosion		2	0	2	0	0	1000
316	3	Other Bearing	Ea.	12	11	1	0	0	
		Loss of bearing area		1	0	1	0	0	2240

NJDOT BRIDGE ELEMENT LEVEL INSPECTION FORM

Structure No.: 0802814 By: Sanjay Parmar Date: 10/30/2017

Str. Unit No. /Elem. /Comp.	Env.	Element Description	Unit	Total Quantity	CS1	CS2	CS3	CS4	Defect #
		Spans(s): One (1)							
SUBSTRUCTURE (INCLUDING PROTECTIVE COATING/SYSTEMS)									
215	3	R. Conc. Abutment	ft.	57	18	27	12	0	
		Spall/Delam.		33	0	26	7	0	1080
		Cracking		6	0	1	5	0	1130
217	3	Masonry Abutment	ft.	57	15	0	42	0	
		Mortar breakdown		42	0	0	42	0	1610
842	3	R. Conc. Wingwall	ft.	6	6	0	0	0	
844	3	Masonry Wingwall	ft.	22	1	9	2	10	
		Mortar breakdown		9	0	9	0	0	1610
		Split/Spall		10	0	0	0	10	1620
		Displacement		2	0	0	2	0	1640
CULVERTS (INCLUDING PROTECTIVE COATING/SYSTEMS)									

Structure No.: 0802I14 Route: 9008 Cycle No.: N/A
Name: Hunter Street over CONRAIL Insp. Date: 10/16/2017

LOAD RATING SUMMARY SHEET (LRSS)

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

Project Information:

Group: 08C2 Agreement No.: 2012BI875D Contract ID: 13-50805 Agree/Mod No.: 01

Rating Information:

Method: LRFR: No LFR: Yes ASR: No Other (Specify): N/A

Rating Date: 1992 Computer Software Used: None Version: N/A

Load Testing: No Cycle when Rating Performed: 6 Design Load: Other

Structure Information:

Plans Available? Yes Contract Designation:

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

Section Losses? Yes Considered in Rating? No Item 59 Cond.: 5

For LRFR Use Only:

Dynamic Load Allowance: N/A Condition Factor: N/A System Factor: N/A

ADTT (one direction): N/A Resistance Factor: N/A FCM: N/A

Load Rating Engineer (LRE):

Name: N/A Firm: N/A Initial: N/A

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

Name: N/A N.J. P.E. No.: N/A

Firm: N/A Initial:

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 and Seal if Rating Performed in this Cycle

N/A
Sign

Date

Structure No.:	0802I14	Route:	9008	Cycle No.:	N/A
Name:	Hunter Street over CONRAIL			Insp. Date:	10/16/2017

LOAD RATING SUMMARY SHEET (LRSS) (*cont.*)

Rating Comments:

The ratings were computed in accordance with the FHWA directive dated November 1993, AASHTO Manual for Bridge Evaluation 2011, as modified by the NJDOT Highway Bridge Load Rating Manual and Section 43 of the NJDOT Design Manual, Bridges and Structures are as follows:

The inventory ratings are low since the structure was originally designed for a lesser load than current standards.

The load factor operating ratings are above the vehicle weight; therefore load posting of the bridge is not required.

Allowable Stresses (Psi)

Material	Compressive Strength f'c	Tensile Strength	Yield	Inventory	Operating
Concrete	3,000	-	-	1,200	1,650
Structural Steel	-	-	30,000	16,500	22,500

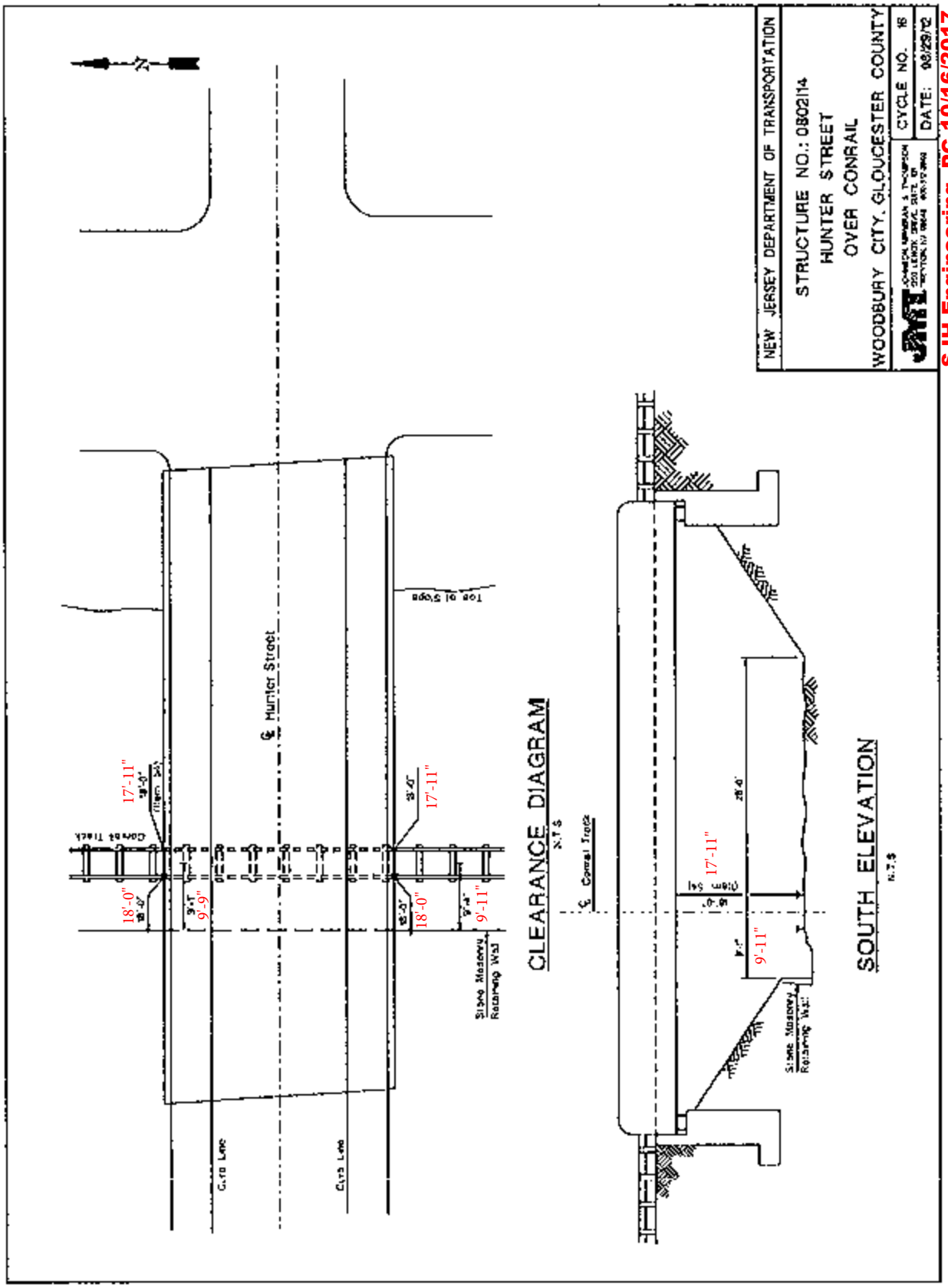
Member	Truck Type (Tons)		Rating (Tons) / Rating Factor							
			LFD				LRFR			
			As-Built		As-Insp.		As-Built		As-Insp.	
			Inv.	Op.	Inv.	Op.	Inv.	Op.	Inv.	Op.
Floor Beam Item 59 = 5	H15	(15T)	12	21	12	21	---	---	---	---
	HL-93	(NL)	---	---	---	---	---	---	---	---
	HS-20	(36T)	22	38	22	38	---	---	---	---
	3	(25T)	18	31	18	31	---	---	---	---
	3S2	(40T)	29	49	29	49	---	---	---	---
	3-3	(40T)	36	60	36	60	---	---	---	---
	SU4	(27T)	---	---	---	---	---	---	---	---
	SU5	(31T)	---	---	---	---	---	---	---	---
	SU6	(35T)	---	---	---	---	---	---	---	---
	SU7	(39T)	---	---	---	---	---	---	---	---

(NL) = Notional Load

Structure No.: 0802114 Route: 9008 Cycle No.: 17

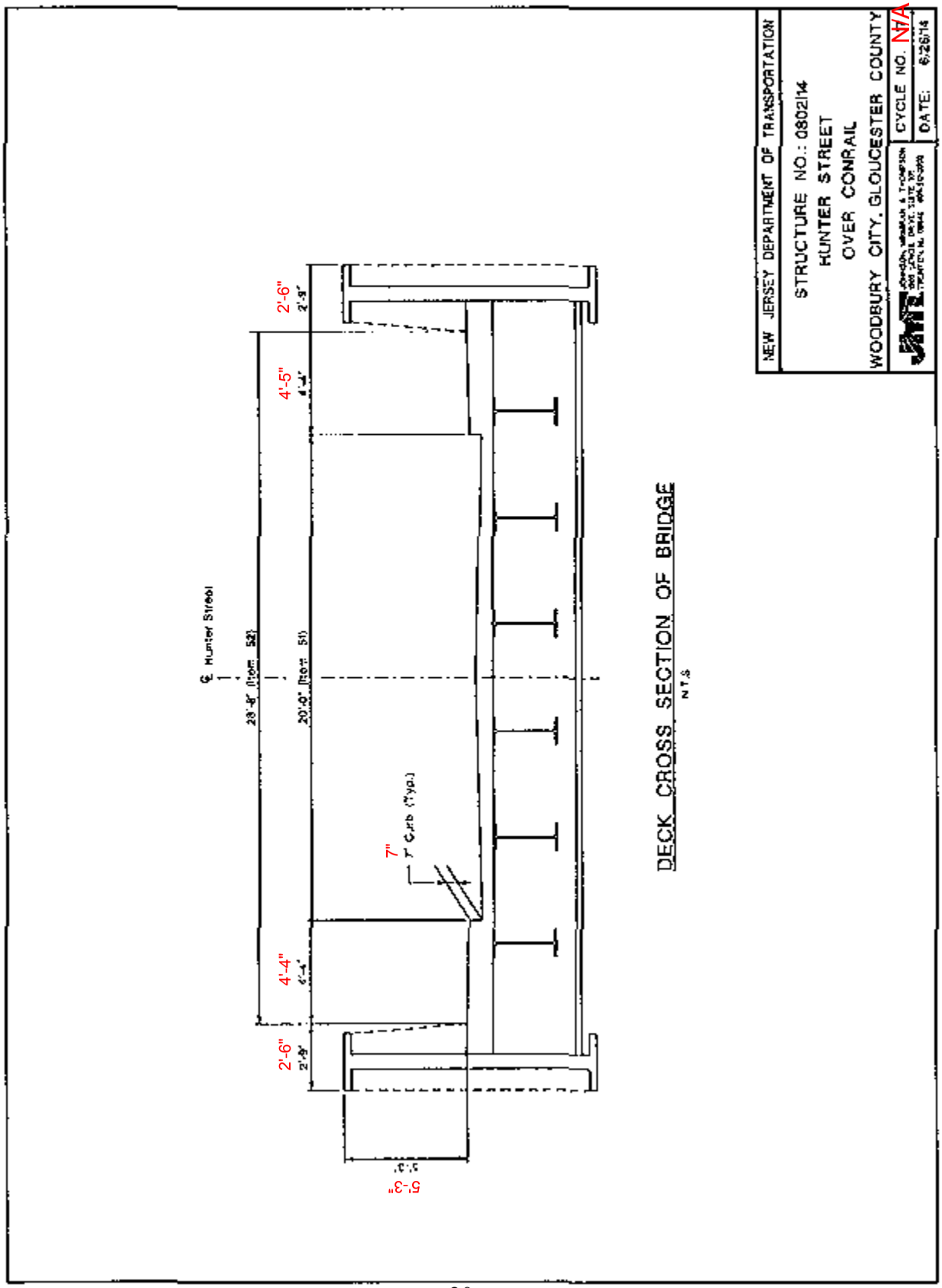
Name: Hunter Street over CONRAIL Insp. Date: 6/26/2014

10/16/2017



Structure No.: 0802-114 Route: 9008 Cycle No.: 17 N/A

Name: Hunter Street over Conrail Insp. Date: 6/26/2014 10/16/2017



Structure No.:	0802I14	Route:	9008	Cycle No.:	N/A
Name:	Hunter Street over CONRAIL			Insp. Date:	10/16/2017

Photo No: 01

Location:	South elevation, looking north.
Description:	General view. Note: Flagman was present during inspection.

Photo No: 02

Location:	North elevation, looking south.
Description:	General View.

Photo No: 03

Location:	West approach, looking east.
Description:	General roadway view. Note the settlement and wide cracks in the slabs and reflected in asphalt overlay.

Photo No: 04

Location:	East approach, looking west.
Description:	General roadway view.

Structure No.:	0802I14	Route:	9008	Cycle No.:	N/A
Name:	Hunter Street over CONRAIL			Insp. Date:	10/16/2017

Photo No: 05

Location:	Superstructure and underside of deck, looking west.
Description:	General view. Note the exposed rusted floor beam bottom flange and lateral bracings. Also note wide cracks with efflorescence on the concrete encasement.

Photo No: 06

Location:	Top of the deck, looking southwest.
Description:	Wide intermittent transverse and longitudinal cracks. Note fine and medium random cracks throughout.

Structure No.:	0802I14	Route:	9008	Cycle No.:	N/A
Name:	Hunter Street over CONRAIL			Insp. Date:	10/16/2017

Photo No: 07

Location:	East abutment deck joint, looking south.
Description:	Large edge spall on concrete header in eastbound lane. Note deteriorated sealer material throughout. Also note a large spall at the east end of the south sidewalk near thru girder.

Photo No: 08

Location:	West approach roadway, looking southeast.
Description:	Settlement (up to ½") and potholes. Note wide random cracks and moderate raveling throughout in bituminous overlay.

Structure No.:	0802I14	Route:	9008	Cycle No.:	N/A
Name:	Hunter Street over CONRAIL			Insp. Date:	10/16/2017

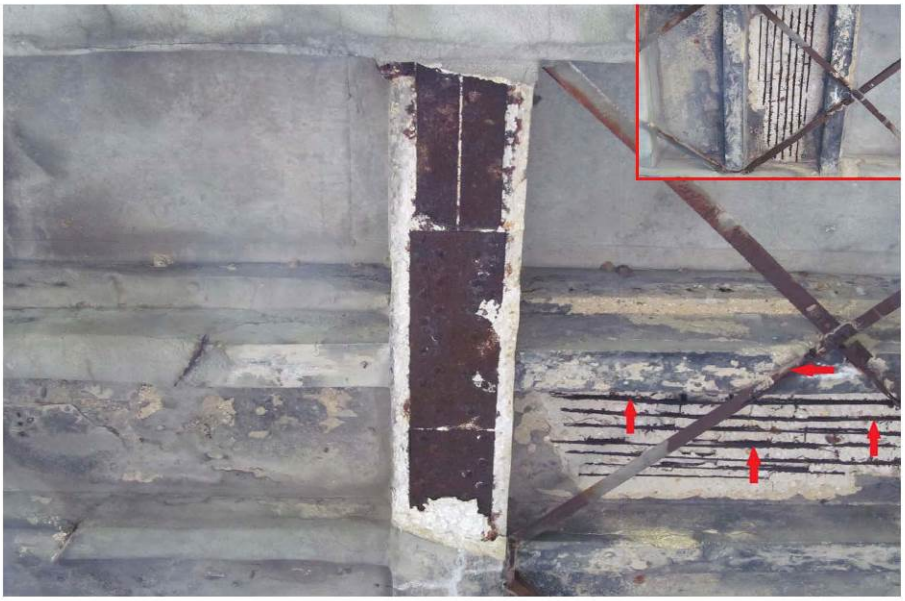


Photo No: 09

Location:	Underside of the deck slab, floorbeam Bay 4 from the west, looking north and up.
Description:	A large spall (27 SF x 4”D) with exposed corroded rebars on underside of deck. Note the corroded and broken lateral bracing. Also note spalled encasement of floorbeam with exposed rusted bottom flange.

Photo No: 10

Location:	South fascia thru girder, looking northeast.
Description:	Spall (3 SF x 1.5”D) with exposed rusted bottom flange and adjacent wide crack.

Photo No: 11

Location:	Underside of superstructure, floor beam FB8, looking south.
Description:	Typical medium to wide longitudinal crack on bottom side of concrete encasement.

Photo No: 12

Location:	East abutment, south end, looking east.
Description:	Large spall (10 SF x 2” D) with adjacent cracking and unsound concrete in the bridge seat and breastwall. Note the light rust on bearing elements with accumulation of debris over the masonry plate.

Photo No: 13

Location:	West abutment, south end, looking west.
Description:	A large spall (8 SF x up to 6" D) at top of the breastwall below Stringer 6.

Photo No: 14

Location:	Northeast approach roadway embankment, wingwall/retaining wall, looking southeast.
Description:	Missing stones and cracked/deteriorated pointing with moderate erosion adjacent to wingwall.

Photo No: 15

Location:	Northwest retaining wall, looking northwest.
Description:	Loose, missing and displaced stones with a broken and missing cap stone.

Photo No: 16

Location:	West abutment, looking northwest.
Description:	Typical paint vandalism throughout the wall (typical at east abutment). Note deteriorated and missing mortar on bottom half of the wall throughout.

Structure No.:	0802I14	Route:	9008	Cycle No.:	N/A
Name:	Hunter Street over CONRAIL			Insp. Date:	10/16/2017

Photo No: 17

Location:	West abutment deck joint, looking south.
Description:	Work Done: Bituminous concrete patch placed adjacent to header on west approach. Note up to ½" vertical misalignment of steel armor angles.

Structure No.: 0802I14 Route: 9008 Cycle No.: N/A
Name: Hunter Street over CONRAIL Insp. Date: 10/16/2017

NEW JERSEY DEPARTMENT OF TRANSPORTATION
STRUCTURAL EVALUATION AND BRIDGE MANAGEMENT
FIELD NOTES
GLOUCESTER COUNTY

Inspectors: Sanjay Parmar Name: Hunter Street over CONRAIL
Crew Chief: Maulik Patel, P.E.
Temperature: 60ºF Weather: Sunny
Special Equipment Used: None

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			
@ Southeast corner			
N	**39°**	**50′ 19.20″**	**Lat.**
W	**75°**	**08′ 55.80″**	**Long.**

GENERAL

Type of Bridge: Single span concrete encased riveted steel plate through girder and floor beam bridge

Year Built: 1914 Year of Widening / Major Repairs: 1989

No. of Lanes: On 2 Under Railroad (Track)

Vertical Clearances: Over Deck (Item 53): Unlimited

Minimum Under (Item 54): 17’-11” from bottom of both through girders to the top of east rail.

Maximum Under (Item 10): N/A

Horizontal Underclearance: Total Horizontal Clearance: N/A

Right: 9’-4” from centerline of the tracks to the west stone masonry retaining wall at the north fascia.

Left: N/A

Overall Physical Condition of Structure: Fair due to the superstructure and substructure condition.

Structure No.: 0802I14 Route: 9008 Cycle No.: N/A
Name: Hunter Street over CONRAIL Insp. Date: 10/16/2017

DECK

SI&A Item 58 Condition Rating: **4**

SPAN # Single

RATING	COMPONENT	REMARKS
6	Top of Deck (Reinforced Concrete)	Wide intermittent transverse and longitudinal cracks spaced over 8' (70 LF total), also fine and medium random cracks throughout spaced at 3' (130 LF) **(Photo 06).**
4	Underside of Deck (Reinforced Concrete) 8" Thick	Floorbeam bay 5: Large spall (approx. 27 SF x up to 2" D) with exposed corroded (5 broken bars) between Stringers S1 and S2; Spall (8'x2'x2" D) with exposed rebars (3 broken bars) between Stringers S5 and S6. **(Photo 09)**. Floorbeam bay 2: Spall with exposed corroded rebar (3 SF x 1" D) between Stringers S2 and S3; Spall with exposed rebar (2 SF) between Stringers S5 and S6. Floorbeam bay 3: Spall with exposed corroded rebar (6'x2') between Stringers 1 and 2; 4-6"ϕ spalls between Stringers S5and S6. Several areas of incipient (80 SF) and shallow spalls with exposed corroded rebars (10 SF) in Floorbeam bays 6 and 7.
N	Median	None
7	Curbs 7" (R.C.)	South: Medium vertical crack (1 LF) extending from sidewalk. North: No significant defects.
7	Sidewalk (R.C.)	South: Large spall at the east end near thru girder (3 SF x 6"D) **(Photo 07)**; Medium transverse and diagonal cracks in sidewalk panels #1 & #3 from west (Total 4 LF). North: No significant defects.
N	Parapets/Balustrades	None
N	Railings/Fencing	None
6	Deck Joints/Filler Material (Armored Compression Seal)	East: Deteriorated sealer material (8 LF) **(Photo 07).** West: Minor settlement up to ½" H vertical misalignment of steel armor angles **(Photo 17)**.
N	Drain and Scuppers	None
N	Light Stands	None
7	Utilities	9" O.D. gas main at north fascia.
6	Header (R.C.)	East: Large edge spall (10 SF x 2"D) on header at center of roadway **(Photo 07).**

Additional Remarks:

Structure No.: 0802I14 Route: 9008 Cycle No.: N/A
Name: Hunter Street over CONRAIL Insp. Date: 10/16/2017

APPROACHES

SI&A Item BA Rating: **6**

SI&A Item 72 Rating: **6**

APPROACH: West

RATING	COMPONENT	REMARKS
6	Approach Pavement (Bituminous Concrete)	West: Work Done – Bituminous concrete patch placed adjacent to west header (36 SF) **(Photo 17)**. Longitudinal potholes (up to 2" deep), wide cracks (100 LF total). Also settlement (up to ½"), 20' west of the structure **(Photo 08)**.
N	Approach Shoulder	None
7	Curbs (R.C.)	No significant defects.
7	Sidewalk (R.C. and flagstone)	No significant defects.
N	Guide Rail Condition	None
	Approach Roadway Vertical and Horizontal Alignment	Vertical: Slight downgrade slope onto the structure. Horizontal: Tangent Roadway Speed: 25 MPH
7	Approach Roadway Embankment	North: Flat; light vegetation (private property). South: Steep slope; well vegetated; stable.
7	Utilities	Drainage inlets (Type B) at both sides; telephone manhole in roadway. Gas valve at northwest sidewalk area.
6	Others – Masonry retaining wall	Northwest: Loose, missing (1 LF) and displaced (2 LF) stones with broken and missing cap stone (3 LF) **(Photo 15)**. Southwest: Missing pointing throughout (4 LF) **(Typical Photo 14)**.

Additional Remarks:

Structure No.: 0802I14 Route: 9008 Cycle No.: N/A
Name: Hunter Street over CONRAIL Insp. Date: 10/16/2017

APPROACHES

SI&A Item BA Rating: **6**

SI&A Item 72 Rating: **6**

APPROACH: East

RATING	COMPONENT	REMARKS
6	Approach Pavement (Bituminous Concrete)	Settlement up to 2" at the header and wide map cracking (20 LF), wide longitudinal crack above slabs reflected in asphalt overlay (30 LF) **(Typical Photo 07)**.
N	Approach Shoulder	None
7	Curbs (Concrete)	No significant defects.
7	Sidewalk (R.C.) north only	No significant defects.
N	Guide Rail Condition	None
	Approach Roadway Vertical and Horizontal Alignment	Vertical: Moderate upgrade slope towards structure with intersection at end of bridge. Horizontal: Tangent Roadway Speed: 25 MPH
5	Approach Roadway Embankment	North: Moderate to steep slope; Moderate erosion adjacent to the wingwall (3 CY) **(Photo 14)**. South: Steep slope; light vegetation; stable.
7	Utilities	Sewer and telephone manholes and 3 water valves in roadway. Gas valve at northwest sidewalk area. Aerial wires across the roadway.
N	Others – Masonry retaining wall	None

Additional Remarks:

Structure No.:	0802I14	Route:	9008	Cycle No.:	N/A
Name:	Hunter Street over CONRAIL			Insp. Date:	10/16/2017

SUPERSTRUCTURE

SI&A Item 59 Condition Rating: **5**

SPAN # Single

RATING	COMPONENT	REMARKS
5	Through Girders (Concrete encased riveted steel plates) (North and South)	North: Fine longitudinal and transverse cracks with efflorescence (10 LF) in bottom flange encasement; Hairline transverse cracks in top flange encasement spaced at 12" for full length. South: Spall (3 SF x 1.5"D) with exposed rusted bottom flange and medium (35 LF) to wide (5 LF) cracks in bottom flange encasement full length **(Photo 10)**; Fine horizontal crack full length in top flange encasement.
	Floorbeams (Concrete encased riveted steel plates) FB1 to FB8 Numbered West to East	All Floorbeams: The concrete encasement typically exhibits wide (1/8") longitudinal cracks with efflorescence to the bottom flange (200 LF) and 1/8" to 1" horizontal cracks to the east and west faces at both ends **(Photo 11)**. Floorbeam 4: Missing encasement (8 LF) at south end (not over the track) with exposed moderately rusted steel bottom flange with no significant section loss. Floorbeam 7: Missing encasement (9 LF) at south end with exposed moderately rusted steel bottom flange with no significant section loss **(Photos 05 and 09).**
	Stringers (Concrete encased riveted steel plates) S1 to S6 Numbered South to North	Stringers: Several stringers exhibit medium to wide (1/8") longitudinal cracks with efflorescence to the concrete encasement along the bottom flange (100 LF). Stringer S6: Moderate to severe scaling in underside of concrete encasement (4 LF). Stringer S1: Full length moderate scaling on bottom side of encasement between floorbeam bays 6 and 7 (8 LF)**.**
4	Lateral Bracing (Steel)	The bracing steel angles exhibit severe rust with areas of 100% section loss below S1 and S6 in floorbeam bay 5. Two (2) bracing angles removed and/or missing entirely in floorbeam bays 3, 4, and 6 **(Photo 09).**
6	Bearing @ Girders (Steel)	West: Expansion East: Fixed Spot rust through paint on all elements with an accumulation of debris on the base plates. Areas of laminar corrosion on vertical stiffeners (1 SF each). Deteriorated anchor bolt nut at northeast **(Photo 12).**
	Deflection and Vibration	Not noticeable.
N	Others – Stringer plate bearing	Not visible, encased.

Additional Remarks: Graffiti noted on concrete encasement of stringers in floorbeam bay 7.

FATIGUEDETAILS

Estimated percentage of large trucks in ADT = 1 %

Category	Detail Description and Location
D	Riveted connections at the girders and floorbeams (No detail available)

Structure No.:	0802I14	Route:	9008	Cycle No.:	N/A
Name:	Hunter Street over CONRAIL			Insp. Date:	10/16/2017

PAINT INSPECTION

*Environment: 1

Date of Last Painting: None (Encased)

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

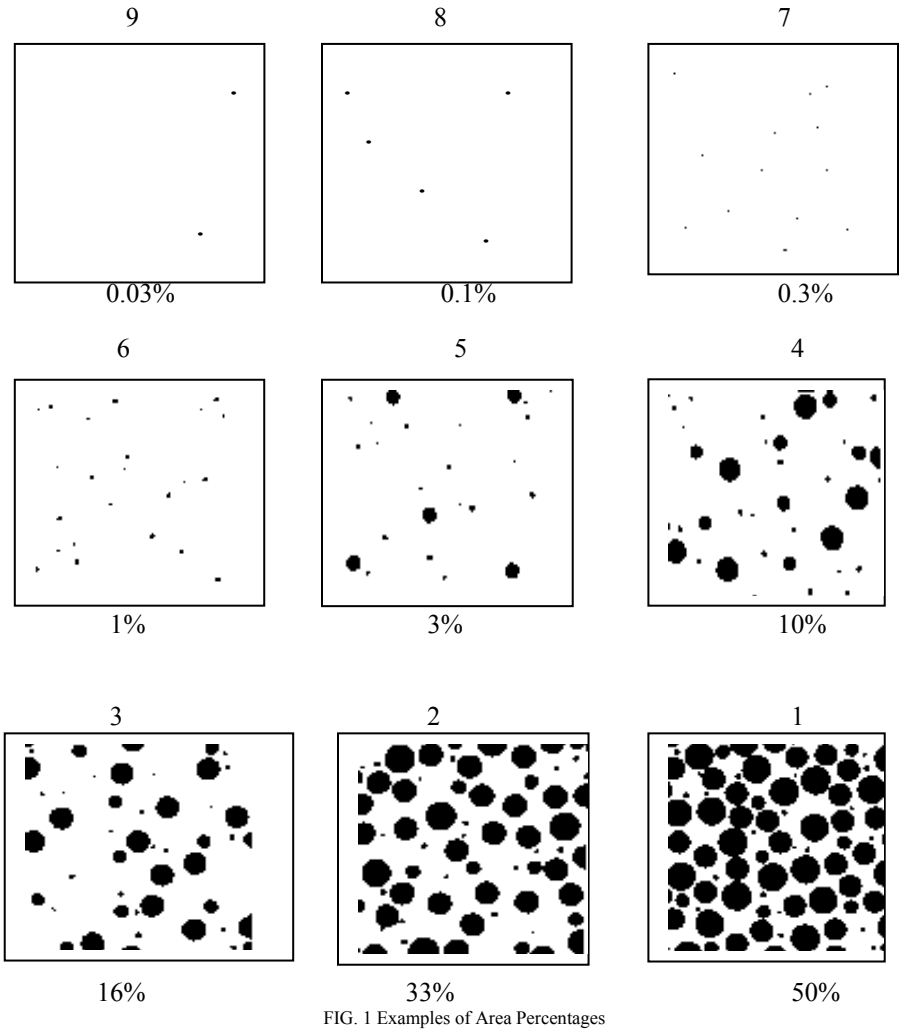


FIG. 1 Examples of Area Percentages

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:		Fascia Bottom Flange:	00	Beams Ends:	
Interior Beam:		Interior Bottom Flange:	00	Connections:	
Bracing:	00	Substructure:		Railings/Fence:	
Bearings:	03	Above Deck Superstructure			

Remarks 1:

Remarks 2:

Structure No.: 0802I14 Route: 9008 Cycle No.: N/A
Name: Hunter Street over CONRAIL Insp. Date: 10/16/2017

SUBSTRUCTURE

SI&A Item 60 Condition Rating: **5**

ABUTMENT West

RATING	COMPONENT	REMARKS
5	Breastwall (Concrete and Stone Masonry)	Stone masonry: Deteriorated and missing mortar on bottom half (50 SF) at 22 LF **(Photo 16).** Concrete wall: Large spall (5'L x 6"H x 2"D) at 2 LF in concrete cap at top below stringer S6; Large spall (8 SF x up to 6" deep) extending into the bridge seat at the south end **(Photo 13)**; Incipient spall (2 SF) at bridge seat with medium to wide diagonal cracks (3 LF) at the north end **(Typical Photo 12)**.
7	Backwall (Concrete)	Not visible behind deck haunch.
7	Bridge Seat (Concrete)	No significant defects.
6	Wingwalls / Retaining Walls (R.C. at South & Stone Masonry at North)	Southwest: Misssing and deteriorated mortar (4 LF) throughout. Northwest: Loose, missing and displaced stones (2 LF) with a broken and missing cap stone (4 LF) **(Photo 15).**
7	Embankment / Earth	No significant defects.
N	Others	Paint vandalism throughout on breastwall **(Photo 16).**

Additional Remarks:

ABUTMENT East

RATING	COMPONENT	REMARKS
5	Breastwall (Concrete and Stone Masonry)	Stone masonry: Missing mortar on bottom half (50 SF) at 20 LF **(Typical Photo 16).** Concrete wall: Fine to wide horizontal and random cracking with delaminated concrete throughout (90 SF) at 20 LF; Large spall (4 SF x 2"D) with adjacent cracking and unsound concrete (10 SF) at the south end near the southeast bearing **(Photo 12)**.
7	Backwall (Concrete)	Not visible behind deck haunch.
7	Bridge Seat (Concrete)	No significant defects.
5	Wingwalls (Stone masonry)	NE: Missing stones (6 SF) with cracked/deteriorated pointing (2 LF) **(Photo 14)**. SE: Missing stones (2 SF) and pointing (3 LF) throughout **(Typical Photo 14)**.
7	Embankment / Earth	No significant defects.
N	Others	Paint vandalism throughout on breastwall **(Typical Photo 16).**

Additional Remarks:

HIGHWAY SAFETY

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

RATING		COMPONENT	REMARKS
0		Bridge Railing	Substandard 5'-3" high (minimum) concrete encased through girder with snag potential.
N	N	Transition to Bridge Railing	Urban area: Intersection at east end of bridge; No guide rails.
	0	Curb / Sidewalk Terminations	The curbs and sidewalks are exposed at the east approach.
N		Approach Guide Rails	None – Urban area.
N		Approach Guide Rail End Terminals	None – Urban area.

DECK GEOMETRY

SI&A Item 68 Rating: **2**

COMPONENT	REMARKS
Bridge Cross Section	The approach roadway widths are wider than the bridge roadway width (See roadway cross section on the next page).
Adequacy of Lane / Shoulder Widths	2 lanes, two-way traffic (Table 2A) Curb-to-curb = 20.0' Estimated ADT = 3,418 (2017)
Vertical Clearance over Deck	Unlimited

*Posting for Load / Speed / Clearance Restrictions	None

Structure No.:	0802I14	Route:	9008	Cycle No.:	N/A
Name:	Hunter Street over CONRAIL			Insp. Date:	10/16/2017

CLEARANCES

FEATURE ON STRUCTURE: Hunter Street SI&A SHEET 1

Minimum Vertical Clearance (SI&A Item 10)	99.9’
Total Horizontal Clearances (SI&A Item 47)	20.0’

CONTROLLING UNDERCLEARANCE DATA:	
Minimum Vertical Underclearance (SI&A Item 54)	17’-11” from bottom of both through girders to top of east rail track.
Minimum Vertical Underclearance (incl. shoulders) (SI&A Item DJ)	0.0’
Lateral Right (SI&A Item 55)	9’-9" from centerline of the tracks to the west stone masonry retaining wall at the north fascia.
Lateral Left (SI&A Item 56)	0.0’

Structure No.:	0802I14	Route:	9008	Cycle No.:	N/A
Name:	Hunter Street over CONRAIL			Insp. Date:	10/16/2017

CHAIN LINK FENCE

Coding of SI&A Item FN:	**N**
Coding of SI&A Item FO:	**N**
Coding of SI&A Item FP (in thousands):	**$0**

Warranted (Per Design Manual Section 23): Yes

If Yes: (#) Description:

Current Status of Fence & Sidewalk:	Left Side	Right Side
a. Fence:	No	No
b. Sidewalk Width:	4.3 FT	4.3 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: None

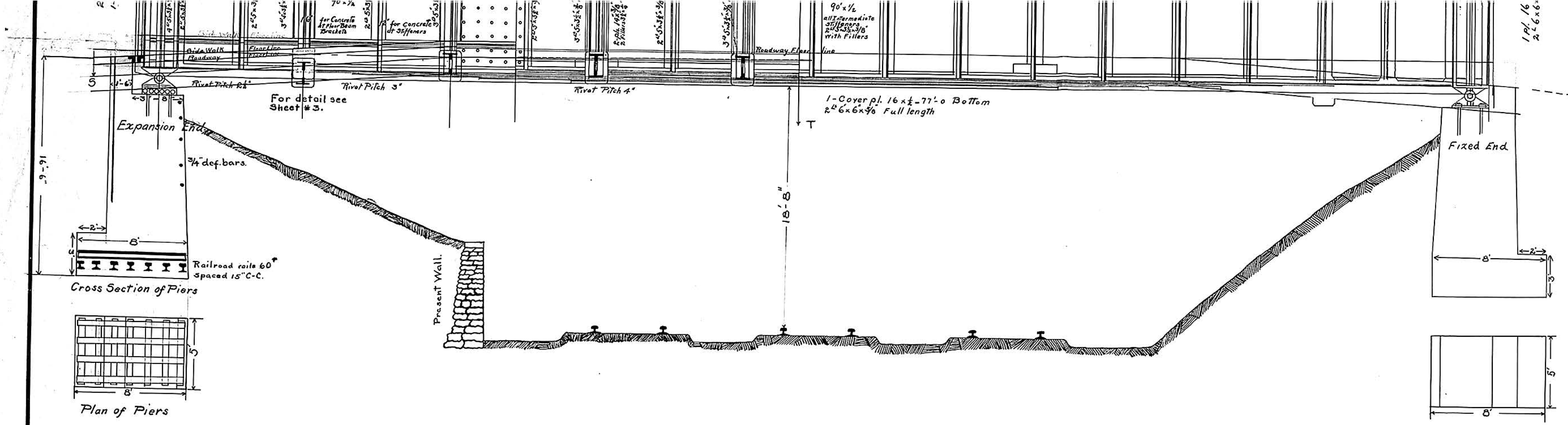
Estimated Cost: $0

WORK DONE HISTORICAL DATA

CYCLE NO.	YEAR	WORK DONE SUMMARY
N/A	2017	Bituminous concrete patch placed adjacent to header at the west approach.
18	2016	None
17	2014	None
16	2012	None
15	2010	New bituminous concrete patched area in west approach roadway; new 'STOP' sign at the NE and SE corners of the structure (roadway intersection).
14	2008	None

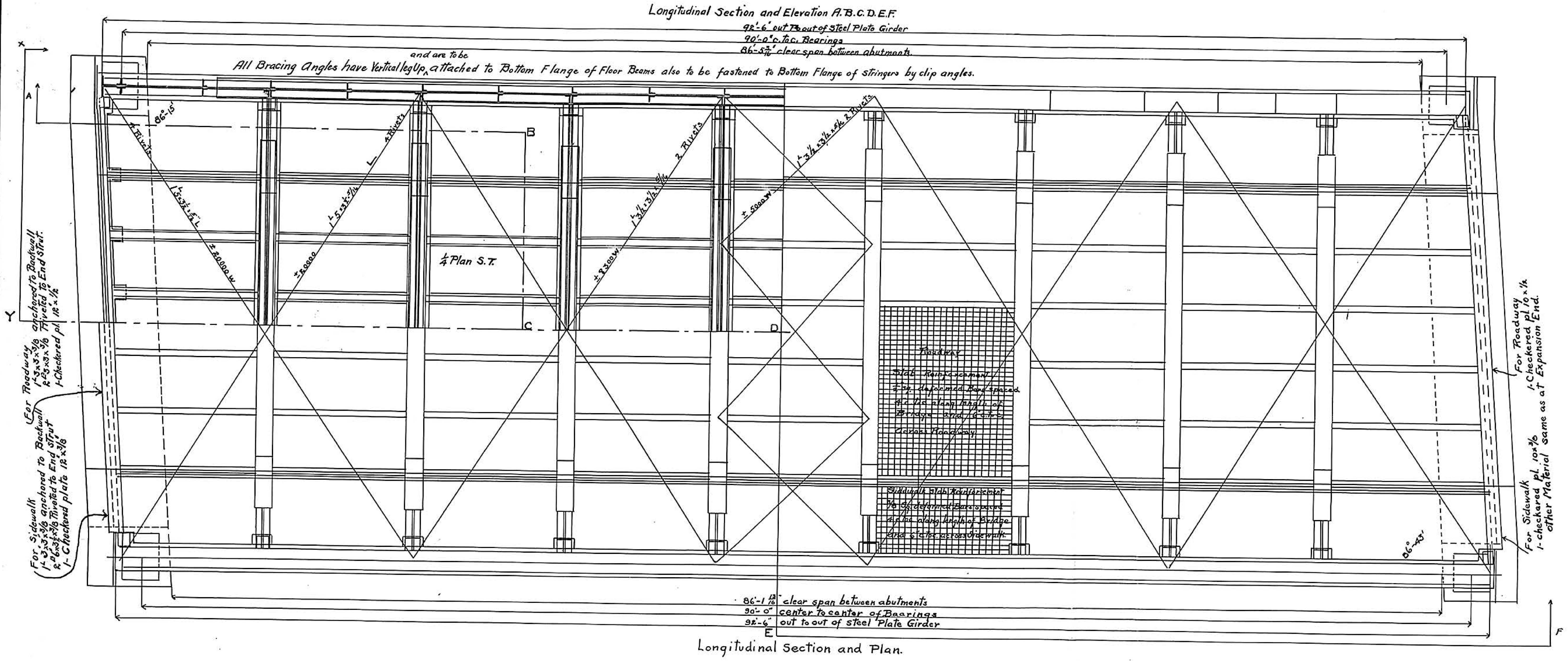
Appendix C

As-Built Plans



2-I-14
HUNTER STREET BRIDGE
WOODBURY N.J.

Longitudinal Section and Elevation A.B.C.D.E.F.



Longitudinal Section and Plan.

Main Girders 32'-0" center to center of Girders - 90'-0" center to center of Bearings
Assumed Dead load on Bridge
On Roadway 200# per Sq. ft. = 4000# per lineal foot of Bridge
" Sidewalks 164# " " " = 2000# " " " "
2-Plate Girders 7'-6" deep. 1200# " " " "
Concrete Casing for Girders 2000# " " " "
Total 9200# " " " "
or 4600# " " " Girder

End Shear		Bending Moment	
d =	207000	d =	4 660000'#
c.l. =	33300	c.l. =	706000'#
u.l. =	61500	u.l. =	1 329000'#
i =	23700	i =	509000'#
Total =	325500	Total =	7,204000'#

Web area Req'd. = 32.6 □"
Web. pl. 90" x ½ = 45.0 □"
End Stiffeners 2L 6x6x5/8
Each End 6L 5x3½x3/8
Intermediate Stiffeners } 17 pair L 5x3½x3/8
Bearing Fixed End
325500 ÷ 400 = 814 □"
Make shoe. 30" x 28"
Roller End
Rollers Reqd 325500 ÷ 2400 = 136 lin. in. 4" Rollers.

Flange stress = B.M. ÷ 7.54 = 956000#
" Area = 956000 ÷ 16000 = 59.7 □"

Flange Section { 1/8 of Web = 5.6 □" net; 2L 6x6x5/8 = 14.2 gr. = 11.7"; 6 pls. 16x½ = 48.0 " = 42.0 "; 77', 71', 63' 59.3; 55', 45', + 32' long }

Floor Beams Spaced 10.3' about center to center - 32'-0" span center to center of Girders.
Assumed Dead load Roadway 200# per. Sq. ft. Sidewalk 164# per Sq. ft.

End Shear		Bending Moment	
d	30800	d =	257200'#
c.l.	18200	c.l.	175000'#
u.l.	7800	u.l.	53500'#
i	6500	i	57100'#
Total	63300	Total	542800'#

Web Area Req'd. = 6.33 □"
Web Section 18 x 7/16 = 7.86
End Riv. Pitch = (9190 x 11.5)/62300 = 1.67"

Flange Stress 542800 ÷ 1.50 = 362000
" Area 362000 ÷ 16000 = 22.6 □"
1/8 web. 1.0 □" net
2L 6x6x½ = 11.5 gr. = 9.5 "
2 pls. 14x½ - 14.0 " = 12.0 "
22.5 "

Roadway Stringers spaced 4'-0" c. to c. - 10.3' about span.
assumed Dead Load = 139# per □'

End Shear		Bending Moment	
d =	2900	d =	7400 #
c.l.	12900	c.l. =	32200
i	3200	i =	8100
Total	19000	Total	47700

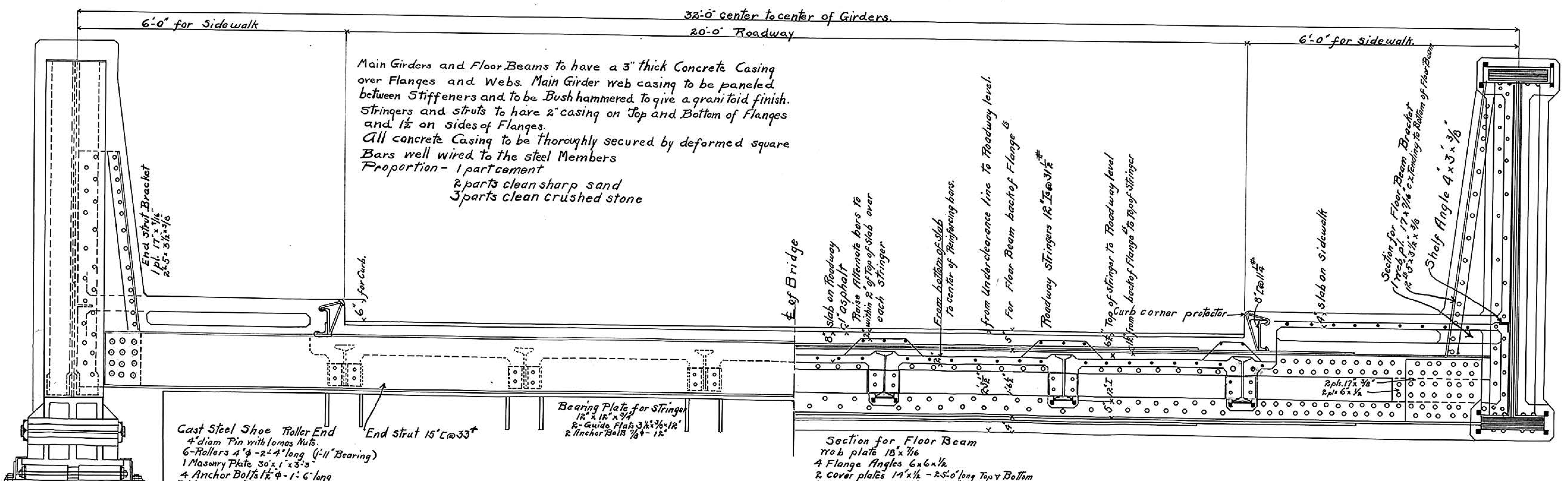
Use 12" I @ 31½# per ft. good for 48000#

Sidewalk Stringer 10.3' span carries Curb and End of 6'-0" sidewalk
Assumed Dead Load = 88# per Sq. ft.

End Shear		Bending Moment	
d =	1400	d =	3500'#
u.l. =	1600	u.l. =	4000'#
i =	400	i =	1000'#
Total -	3400	Total	8500'#

Assumed Live Load
Concentrated One 25 Ton Truck - Body 12' x 17'
2-axles 10'-0" c. to c. Wheels 5'-0" Gauge
Uniform Load 100# per Square foot over both Roadway and Sidewalk except for Area covered by Body of Truck

Wind Load assumed at 900# per lin. ft. of Bridge. 300# of which is Moving.



Main Girders and Floor Beams to have a 3" thick Concrete Casing over Flanges and Webs. Main Girder web casing to be paneled between Stiffeners and to be Bush hammered to give a granitoid finish. Stringers and struts to have 2" casing on Top and Bottom of Flanges and 1½" on sides of Flanges.
All concrete Casing to be thoroughly secured by deformed square Bars well wired to the steel Members
Proportion - 1 part cement
2 parts clean sharp sand
3 parts clean crushed stone

Cast Steel Shoe Roller End
4" diam Pin with lomas Nuts.
6-Rollers 4" φ - 2'-4" long (1'-11" Bearing)
1 Masonry Plate 30" x 1" x 3'-3"
4 Anchor Bolts 1½" φ - 1'-6" long
Dirt Guard 2L 6x4x3/8 - 2'-6"
2L 5x3½x3/8 - 2'-6"

Fixed End
Cast steel Shoe 30" x 28"
4" diam. pin with lomas Nuts.
4 - Anchor Bolts 1½" φ - 1'-6" long

Section for Floor Beam
Web plate 18" x 7/16
4 Flange Angles 6x6x½
2 cover plates 14" x ½ - 25'-0" long Top & Bottom
2 " " 14 x ½ - 18'-0" " "

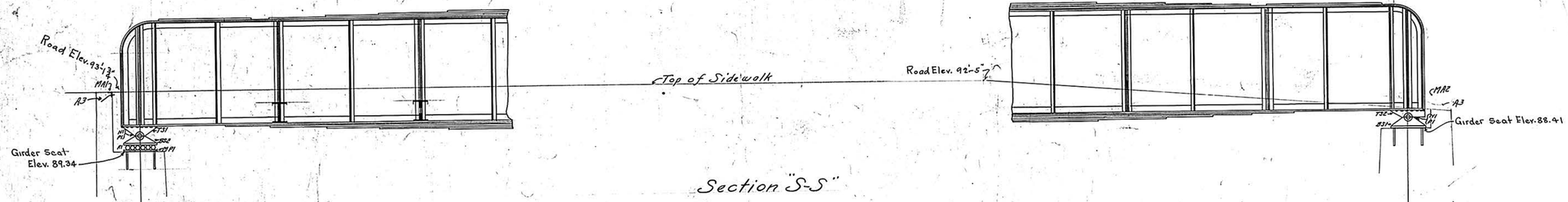
Cross Section and End Elevation X.Y. D.E
Scale ¾" = 1 Ft.

Rivets assumed 7/8" φ
Material Bridge Steel Am. Soc. for Testing Materials Spec. 1909

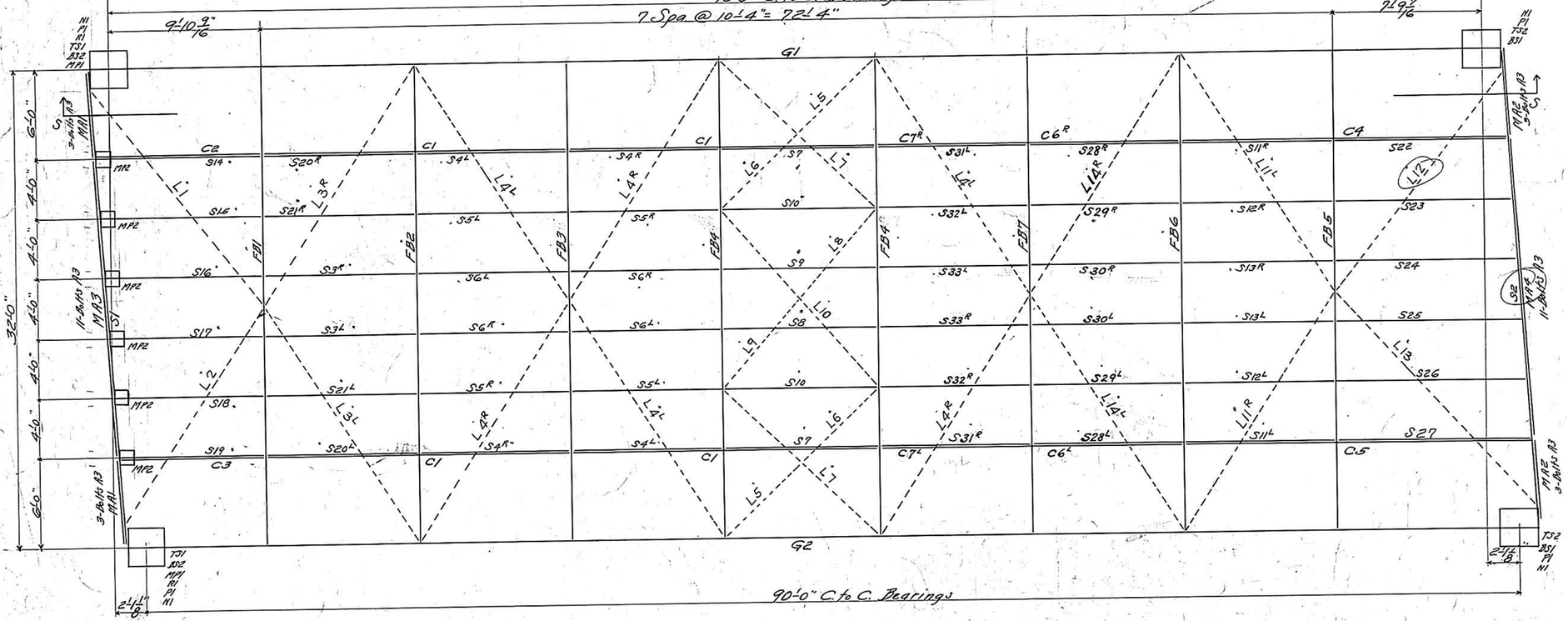
+ denotes Tension
— " Compression
d " Stress due to dead load
c.l. " " " Concentrated live load
u.l. " " " Uniform " "
i " " " impact = 25% of live load
w " " " Wind

Wm. C. Cattell
County Engineer.
SHEET #1.
B-140216

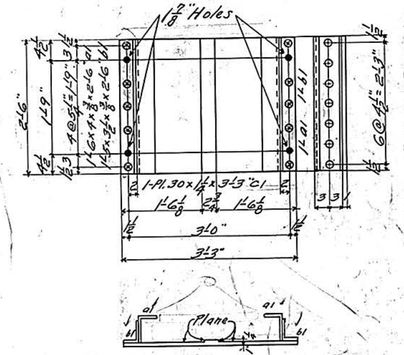
200 934



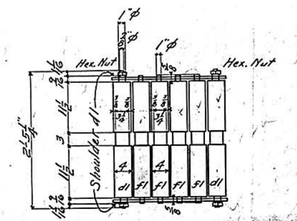
Section "S-S"



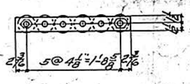
Plan



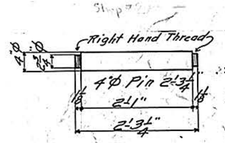
2-Masonry Plates MP1



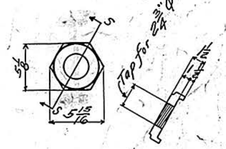
2-Rollers 4"ø x 2'-5 1/2"
4- " 4"ø x 2'-3 1/2"
2- Bars 3 x 1/2 x 2'-1"
4-Hex. Nuts 2/8"ø



2-Roller Nests - P1



4-Pins - P1



8-Lomas Nuts - N1

2-1-14
Erection Diagram

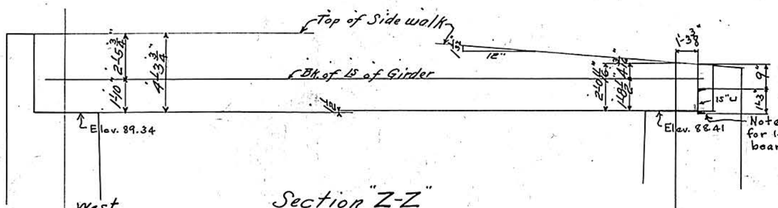
RIVETS:
PUNCH HOLES
REAM
MILLING
PAINT

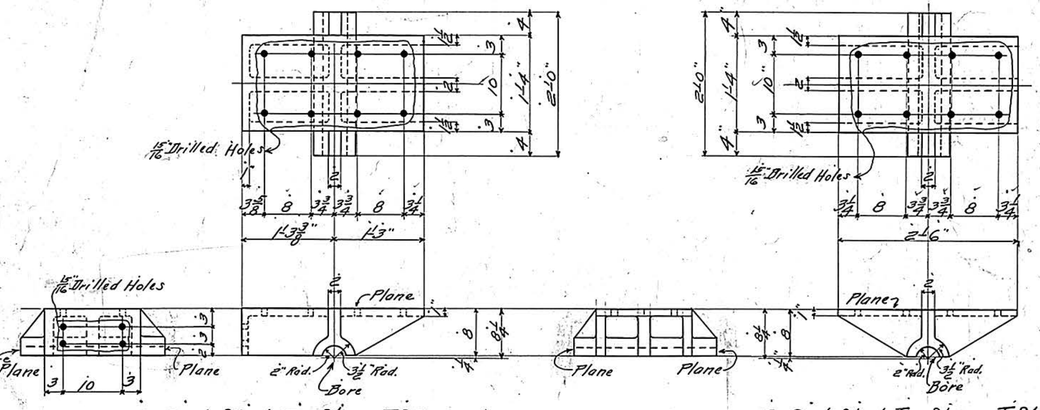
CONT. NO. 4568
Hunter Street Bridge
Woodbury, N.J.
%. Suburban Contracting Co.
McCLINTIC-MARSHALL
CONSTRUCTION CO.
POTTSTOWN, PA.
MADE BY J.M.T. 1/14
TRACED BY J.M.T. 2/14
CHECKED BY
SHEET 1

DRAWING # 200934
LDS GC ENG 50500087

200 934

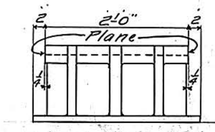
200934

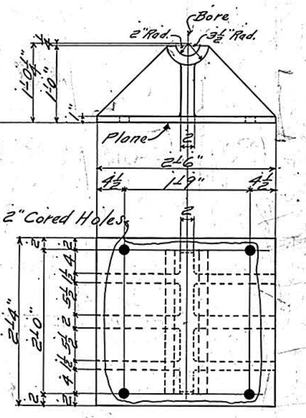




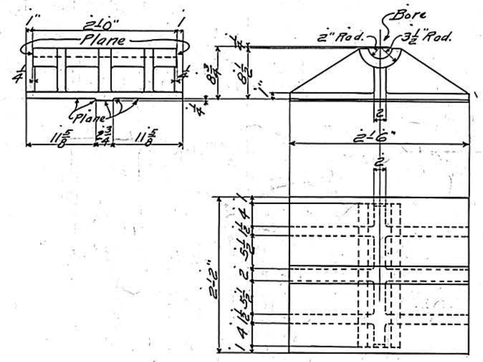
2-Cast Steel Top Shoes TS2

2-Cast Steel Top Shoes TS1

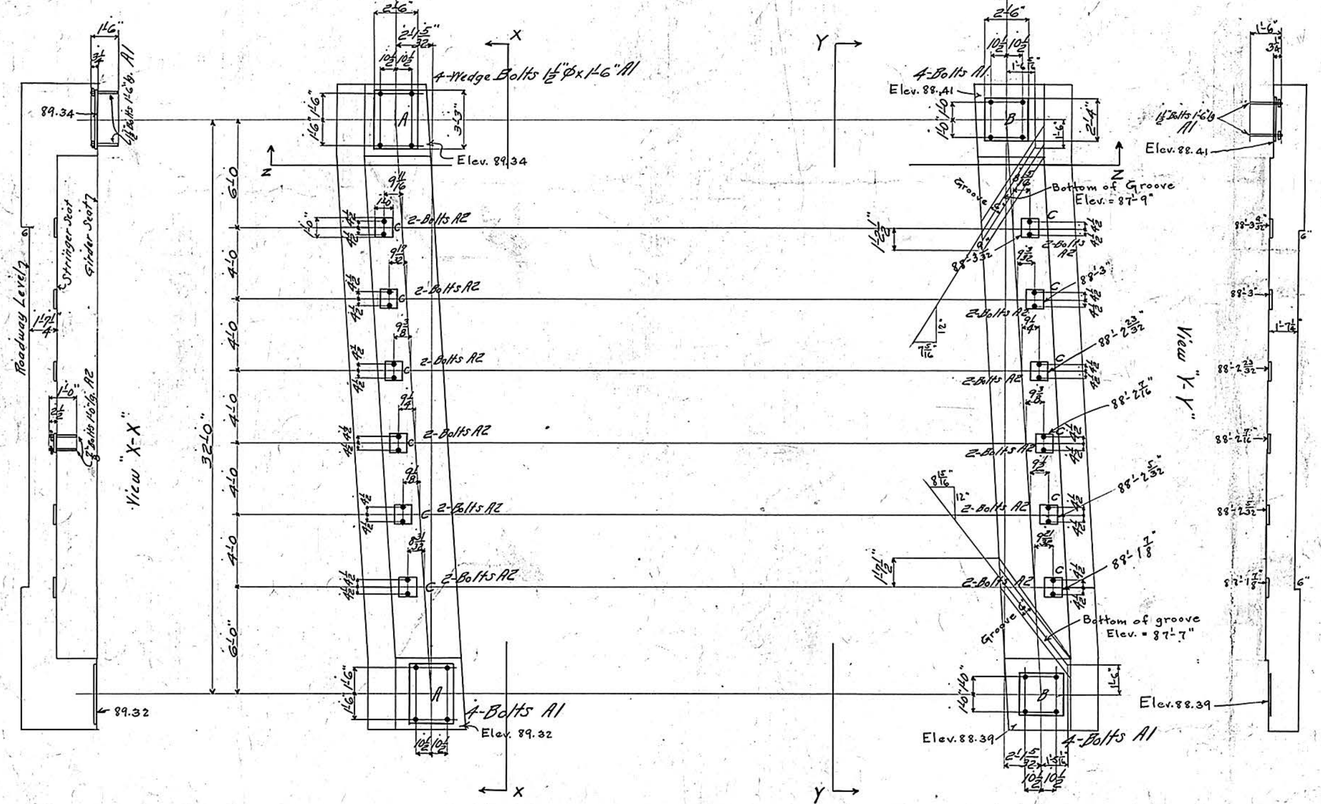




2-Cast Steel Bottom Shoes BS1



2-Cast Steel Bottom Shoes BS2



All Planed Surfaces to receive a coat of White Lead and Tallow

RIVETS:
PUNCH HOLES
REAM
MILLING:
PAINT:

DRAWING # 200934
LDS GC ENG 50500087

2-I-14

Steel Castings
Anchor Bolt Plan.

CONT. NO. 4568
Hunter Street Bridge
Woodbury, N.J.
% Suburban Contracting Co.
McCLINTIC-MARSHALL
CONSTRUCTION CO.
POTTSTOWN, PA.

MADE BY J.M.T.
TRACED BY J.M.T.
CHECKED BY W.R.B.-15

SHEET 2 of

Rev. 10/31/14

200934

200934

1-Cov. Pl.-16×½×77'-0"

Punching same as Bottom Flange

92'-6" B to B Ls

1-Fill-16×⅜×5'-0"-aj3

1-Spl. Pl.-16×⅜×2'-6"-w3

2 Ls-6×6×⅝×84'-0"

2 Fills on Web

1-Web Pl.-89½×½×31'-9¼"

G1

2 Pls.-8×⅝×3'-2"-v3

2 Pls.-v3

1-Cov. Pl.-16×½×77'-0"

1-Cov. Pl.-16×½×71'-0"-bb3

1-Cov. Pl.-16×½×63'-0"-bb3

1-Cov. Pl.-16×½×55'-0"-bc3

2 Ls-6×6×⅝×92'-6"

1-Cov. Pl.-16×½×46'-0"-bd3

1-Cov. Pl.-16×½×32'-0"-bf3

Open holes for G2

Open holes for G2

1 Fill-5×½×1'-11"-af3 for G1 shop bolted Rivets for G2

1 Fill-5×½×0'-11"-av3 shop bolted for G1 Rivets for G2

1-Web Pl.-89½×½×31'-9¼"

G2

Same as G1 except as shown

Floor Beam Conn.

RIVETS: ⅞ φ PUNCH HOLES 15/16 φ
REAM none
MILLING: as noted
PAINT: none

1-GIRDER-G1.
1 " G2.

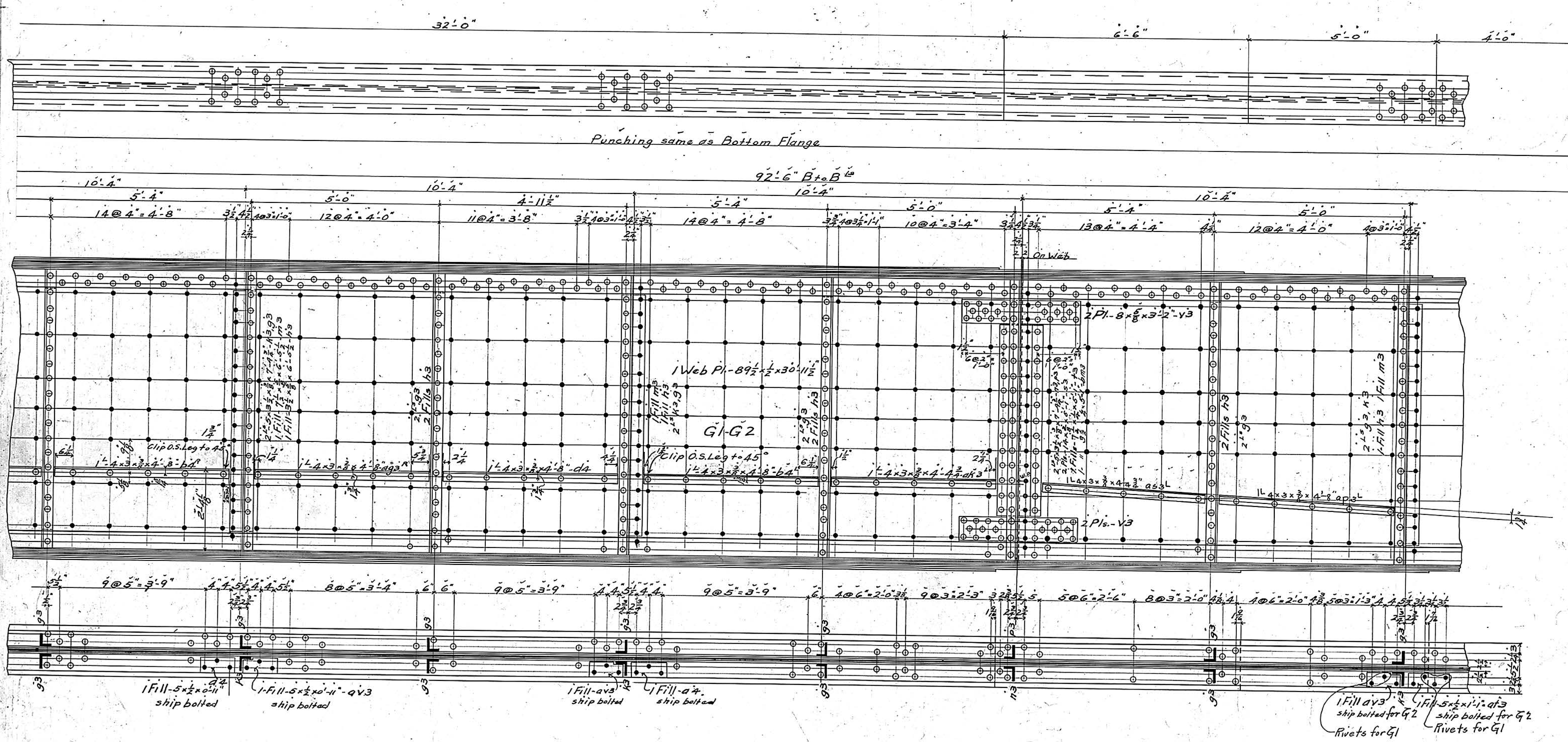
For remainder of girders see drawings 4 & 5.

2-I-14

CONT. NO. 4568
Hunter Street Bridge
Woodbury, N.J.
To Suburban Contracting Co.
McCLINTIC-MARSHALL
CONSTRUCTION CO.
POTTSTOWN, PA.
MADE BY J.M.T.-15
TRACED BY M.B.T.-12½42 SHEET 3 of
CHECKED BY C.P.H.-9

200934

200934



32'-0"
6'-6"
5'-0"
4'-0"
Punching same as Bottom Flange
92'-6" B to B
10'-4"
5'-4"
5'-0"
4'-11½"
14@4" = 4'-8"
12@4" = 4'-0"
11@4" = 3'-8"
10@4" = 3'-4"
13@4" = 4'-4"
On Web
2 Pl.-8×⅝×3'-2"-v3
1 Web Pl.-89½×½×30'-11½"
G1-G2
Clip O.S. Leg to 45°
1L-4×3×⅜×4'-8"-b4
1L-4×3×⅜×4'-8"-ag3
1L-4×3×⅜×4'-8"-d4
1L-4×3×⅜×4'-8"-b4
1L-4×3×⅜×4'-4¾"-ak3
1L 4×3×⅜×4'-4¾" as3
1L 4×3×⅜×4'-8" ap3
2 Pls.-v3
2 Fills h3
1 Fill m3
1 Fill h3
9@5" = 3'-9"
8@5" = 3'-4"
4@6" = 2'-0"
9@3" = 2'-3"
5@6" = 2'-6"
8@3" = 2'-0"
5@3" = 1'-3"
1 Fill-5×½×0'-11" ship bolted
1-Fill-5×½×0'-11"-av3 ship bolted
1 Fill-av3 ship bolted
1 Fill-a4 ship bolted
1 Fill av3 ship bolted for G2
Rivets for G1
1 Fill-5×½×1'-1"-at3 ship bolted for G2
Rivets for G1

This sheet to be used with sheets #3 & #5

RIVETS: ⅞" φ
PUNCH HOLES 15/16"
REAM none
MILLING: as noted
PAINT: none

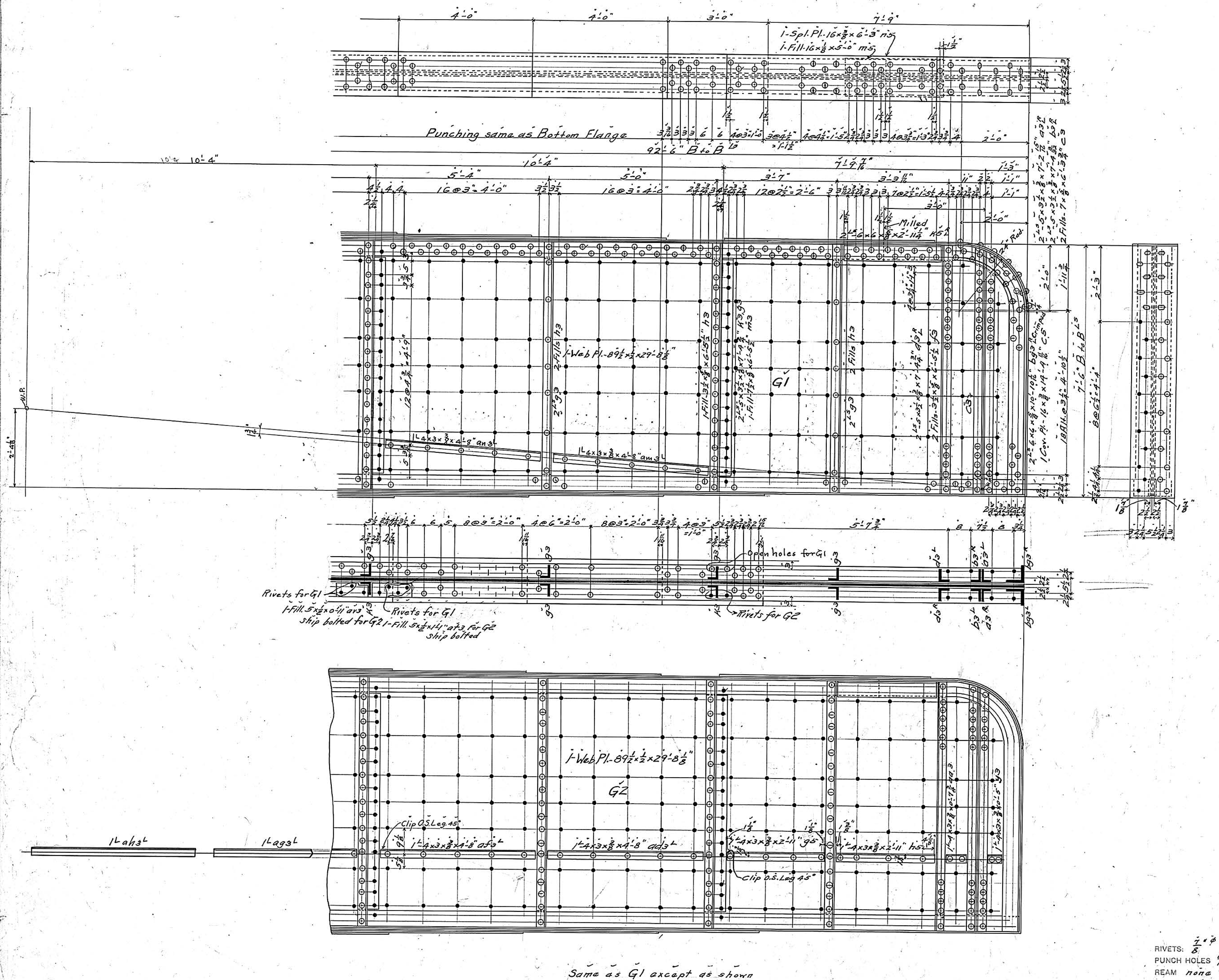
2-I-14

CONT. NO. 4568
Hunter Street Bridge
Woodbury, N.J.
c/o Suburban Contracting Co.

McCLINTIC-MARSHALL
CONSTRUCTION CO.
POTTSTOWN, PA.

MADE BY J.M.T.-9/4
TRACED BY M.B.T.-8/4, 3/7
CHECKED BY [illegible]
SHEET 4 of 5

200934



Same as G1 except as shown

This sheet to be used with sheets #3 & #4

2-I-14

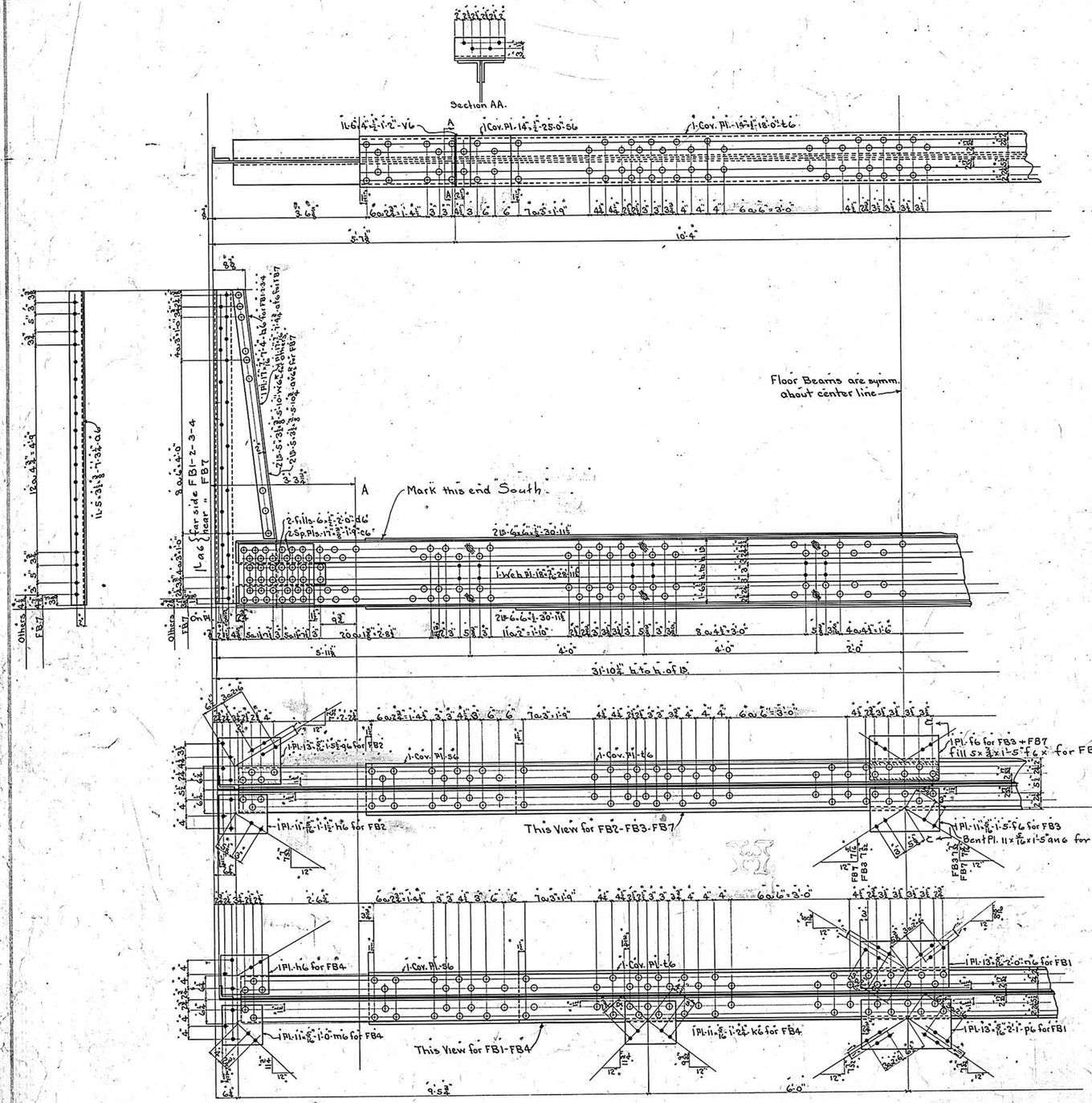
RIVETS: 7/8" φ
PUNCH HOLES 15/16" φ
REAM none
MILLING: as noted
PAINT: none

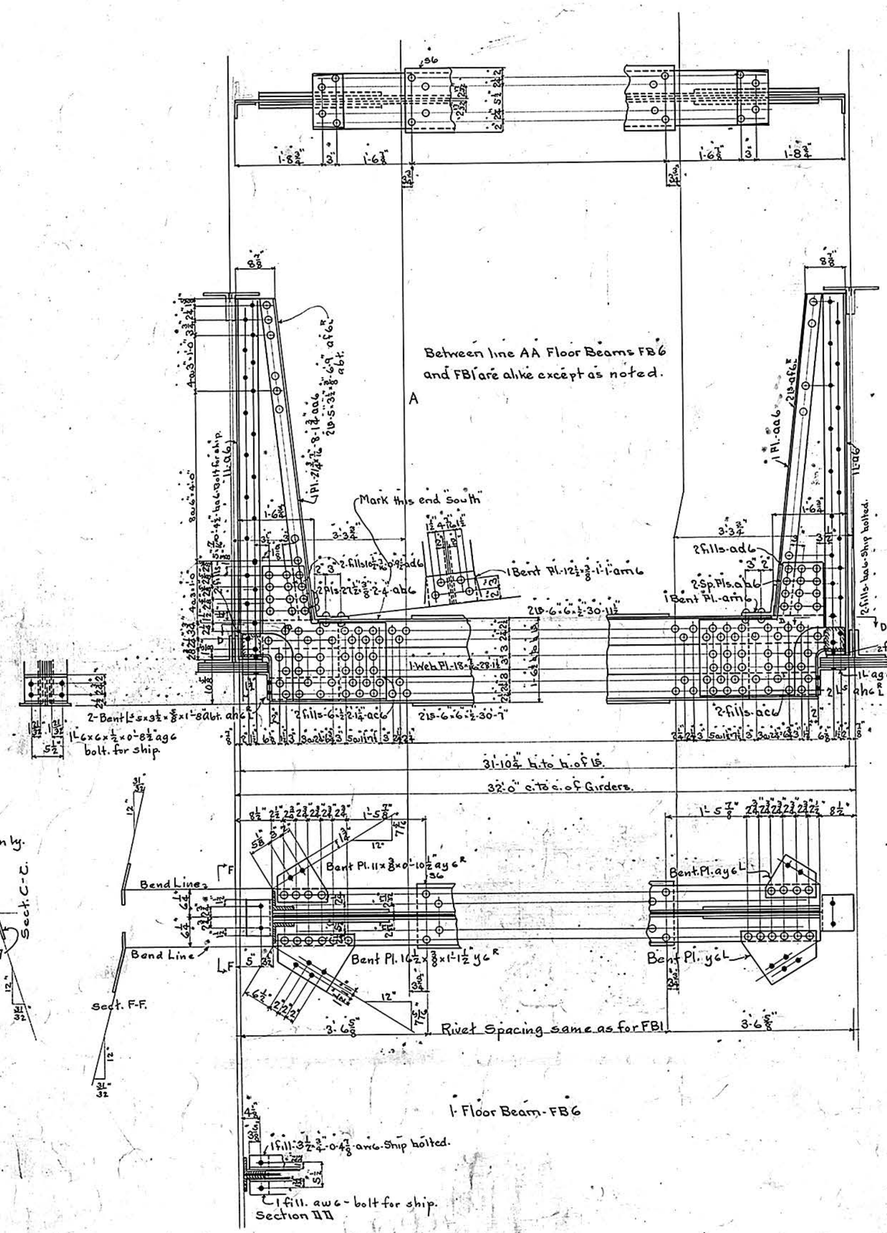
DRAWING # 200934
LDS GC ENG 50500087

CONT. NO. 4568
Hunter Street Bridge
Woodbury, N.J.
c/o Suburban Contracting Co.
McCLINTIC-MARSHALL
CONSTRUCTION CO.
POTTSTOWN, PA.
MADE BY J.M.T. 8 1/4+1
TRACED BY M.B.T. 6 3/4, 1
CHECKED BY E.T.J. 6
SHEET 5 of

200 934

200934





RIVETS: 7/8"ø
PUNCH HOLES 15/16"ø
REAM None
MILLING: None
PAINT: None

DRAWING # 200934
LDS GC ENG 50500087

2-I-14

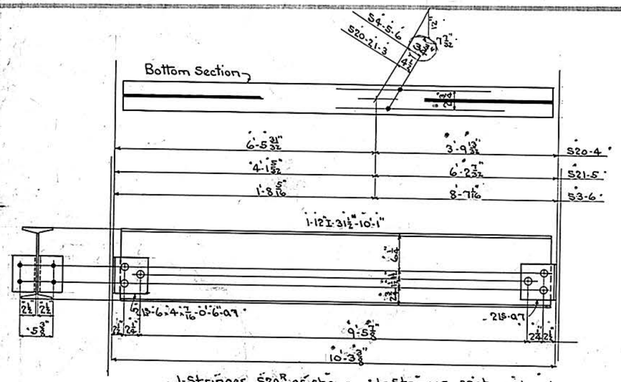
CONT. NO. 4568
HUNTER STREET BRIDGE
WOODBURY, N.J.
% Suburban Contracting Co.
McCLINTIC-MARSHALL
CONSTRUCTION CO.
POTTSTOWN, PA.

MADE BY W.R.B.
TRACED BY W.R.B.
CHECKED BY J.M.A.B

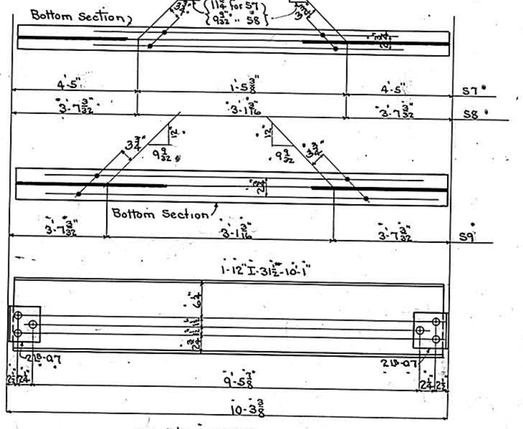
SHEET 6

200 934

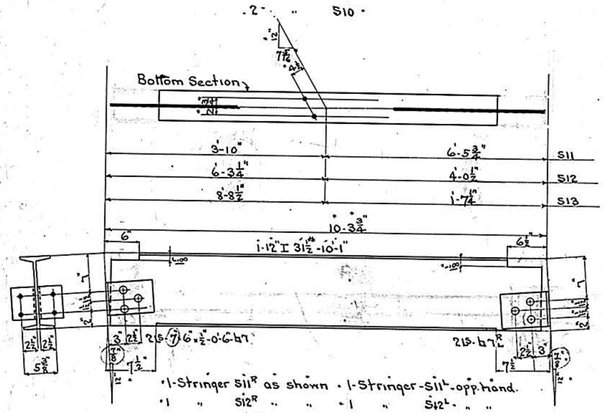
200934



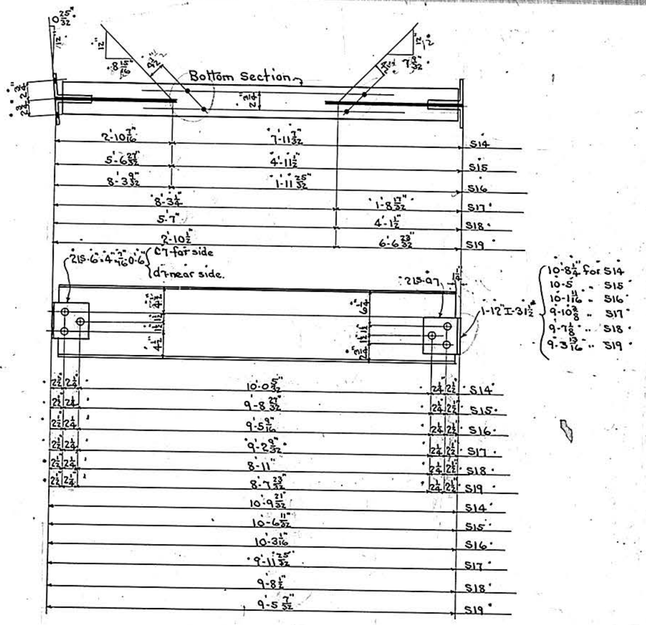
1-Stringer S20R as shown · 1-Stringer S20L-opp.hand.
1- " S21R " " · 1- " S21L " "
1- " S3R " " · 1- " S3L " "
2- " S4R " " · 2- " S4L " "
2- " S5R " " · 2- " S5L " "
2- " S6R " " · 2- " S6L " "



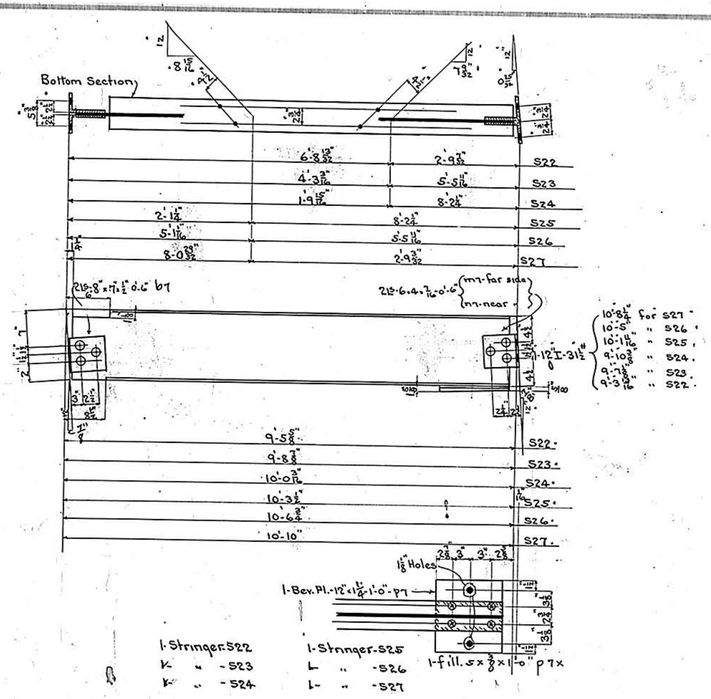
2-Stringer-S7
1- " S8
1- " S9
2- " S10



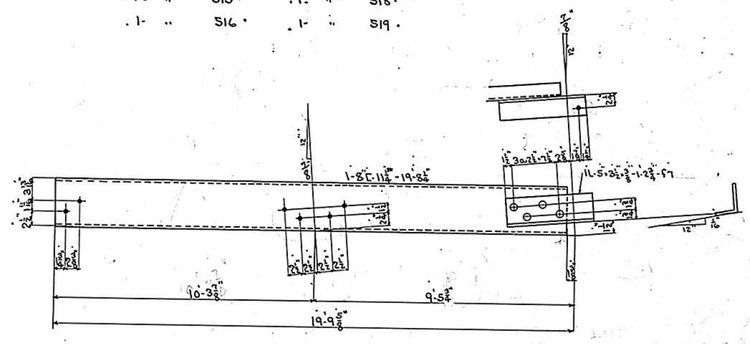
1-Stringer S11R as shown · 1-Stringer-S11L-opp.hand.
1 " S12R " " · 1 " S12L " "
1 " S13R " " · 1 " S13L " "



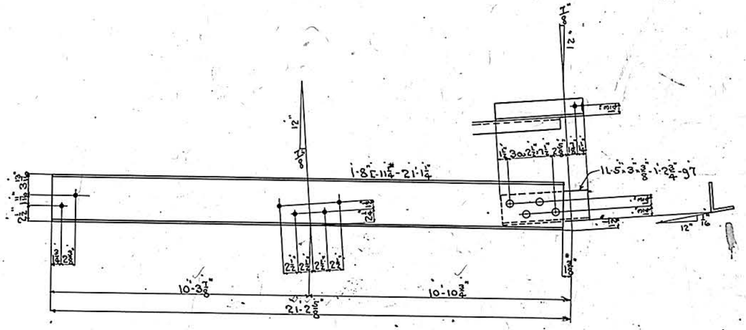
1-Stringer-S14 · 1-Stringer S17
1- " S15 · 1- " S18
1- " S16 · 1- " S19



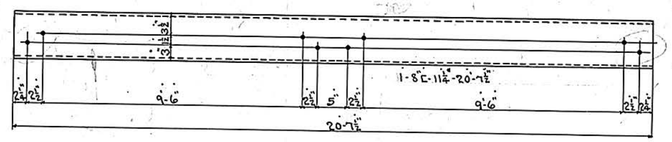
1-Stringer-S22 · 1-Stringer-S25
1- " -S23 · 1- " -S26
1- " -S24 · 1- " -S27



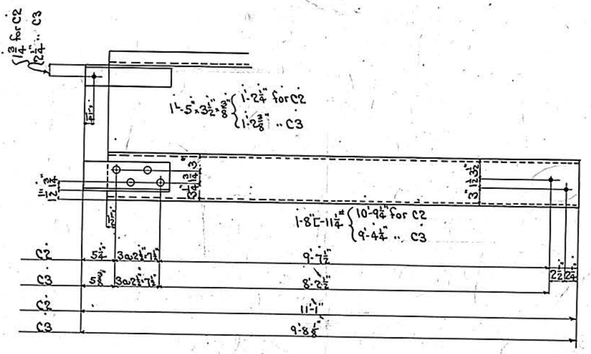
1-Curb Channel-C4



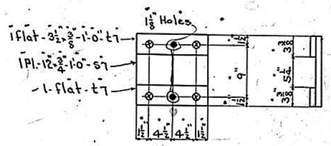
1-Curb Channel-C5



4-Curb Channels-C1



1-Curb Channel-C2 as shown
1- " " C3-opp.hand to sketch.



6-Masonry Plates-MP2

RIVETS: 7/8
PUNCH HOLES 15/16
REAM - None
MILLING: None
PAINT: None.

2-I-14

CONT. NO. 4568
HUNTER STREET BRIDGE
WOODBURY, N.J.
% Suburban Contracting Co.
McCLINTIC-MARSHALL
CONSTRUCTION CO.
POTTSTOWN, PA.
MADE BY W.R.B. 35
TRACED BY W.R.B.
CHECKED BY [illegible]
SHEET 7

DRAWING # 200934
LDS GC ENG 50500087


200934
1-Checkered Pl. 12×3/8×4'-8 5/16 a8
1-Checkered Pl. 12×1/2×20'-1 5/16 b8
1-Checkered Pl. 12×3/8×4'-8 5/16 c8
8@6"=4'-0"
38@6"=19'-0"
30'-7 7/8
2Ls 5×3 1/2×3/8×3'-1 7/8" w8R, y8R
1-Pl. 19×7/16×5'-4 1/2 g8
8@6 1/2"=4'-4"
11@4 3/4"=4'-4 1/4"
2Ls 6×3 1/2×3/8×4'-7 1/4" d8R
a8
39@6"=19'-6"
2Ls 3 1/2×2 1/2×3/8×20'-0 1/2" f8
b8
3/4" Rivets on this line
1 ⊔ 15×33#×30'-7"
5'-3 11/16"
4'-0 1/8"
4'-0"
2Ls 6×3 1/2×3/8×4'-7 1/4" d8L
c8
2Ls w8L, y8L
1-Pl. 19×7/16×5'-4 1/2" h8
1-End Strut - S1
1-L 3×3×3/8×4'-7 1/4"
13/16 holes
2'-0"
4'-7 1/4"
2- Masonry Angles-MA1
2- Masonry Angles-MA2-
1-L 3×3×3/8×20'-0 1/2"
10@1'-11 1/2"=19'-7"
20'-0 1/2"
13/16" Holes on this angle
1- Masonry Angle MA3
1- Masonry Angle MA4
1-Checkered Pl. 10×3/8×4'-8 3/16" n8
1-Checkered Pl. 10×1/2×20'-1 13/16" p8
1-Checkered Pl. 10×3/8×4'-8 3/16" s8
8@6"=4'-0"
38 @ 6"=19'-0"
30'-7 7/8"
2Ls 5×3 1/2×3/8×5'-10 11/16" o08, o08
1-Pl. 19×7/16×7'-1 1/16" t8
8@6 1/2"=4'-4"
11@4 3/4"=4'-4 1/4"
1L d8R
1L 6×3 1/2×3/8×4'-7 1/4" k8R
Section "C-C"
Section "D-D"
39 @ 6"=19'-6"
1L f8
1L 3 1/2×2 1/2×3/8×20'-0 1/2" m8
3/4" Rivets on this Line
1L 15"×33#×30'-7"
2Ls d8L, k8L
2Ls 5×3 1/2×3/8×6'-0 1/4" o c8, o d8
1-Pl. 19×7/16×6'-10 1/4" v8
Section "B-B"
Section "A-A"
1-End Strut- S2

RIVETS: 7/8" diam. except as noted
PUNCH HOLES 15/16" diam. " "
REAM None
MILLING: None
PAINT: None

DRAWING # 200934
LDS GC ENG 50500087

2-I-14
Apron Plates, Masonry Angles

CONT. NO. 4568
HUNTER STREET BRIDGE
WOODBURY - N.J.
% Suburban Contracting Co.
McCLINTIC-MARSHALL
CONSTRUCTION CO.
POTTSTOWN, PA.

MADE BY J.M.T.
TRACED BY J.M.T. 14 1/2 R.C.R. 4 1/2
CHECKED BY N.R.B. 9 1/2
SHEET 8 OF

200934

1	Lateral	L1
1	"	L2
1	"	L3R as shown
1	"	L3L opp. hand
3	"	L4R as shown
3	"	L4L opp hand
2	"	L5
2	"	L6
2	"	L7
1	"	L8
1	"	L9
1	"	L10
1	"	L11R as shown
1	"	L11L opp. hand
1	"	L12
1	"	L13

RIVETS: ⅞ dia.
PUNCH HOLES 15/16 dia.
REAM None.
MILLING None
PAINT: None.

2-I-14

CONT. NO. 4568
Hunter St. Bridge,
Woodbury, N.J.
% Suburban Contracting Co.
McCLINTIC-MARSHALL
CONSTRUCTION CO.
POTTSTOWN, PA.
MADE BY W.L.B. 3-13-14
TRACED BY W.L.B
CHECKED BY J.M.T. & SHEET 9 of

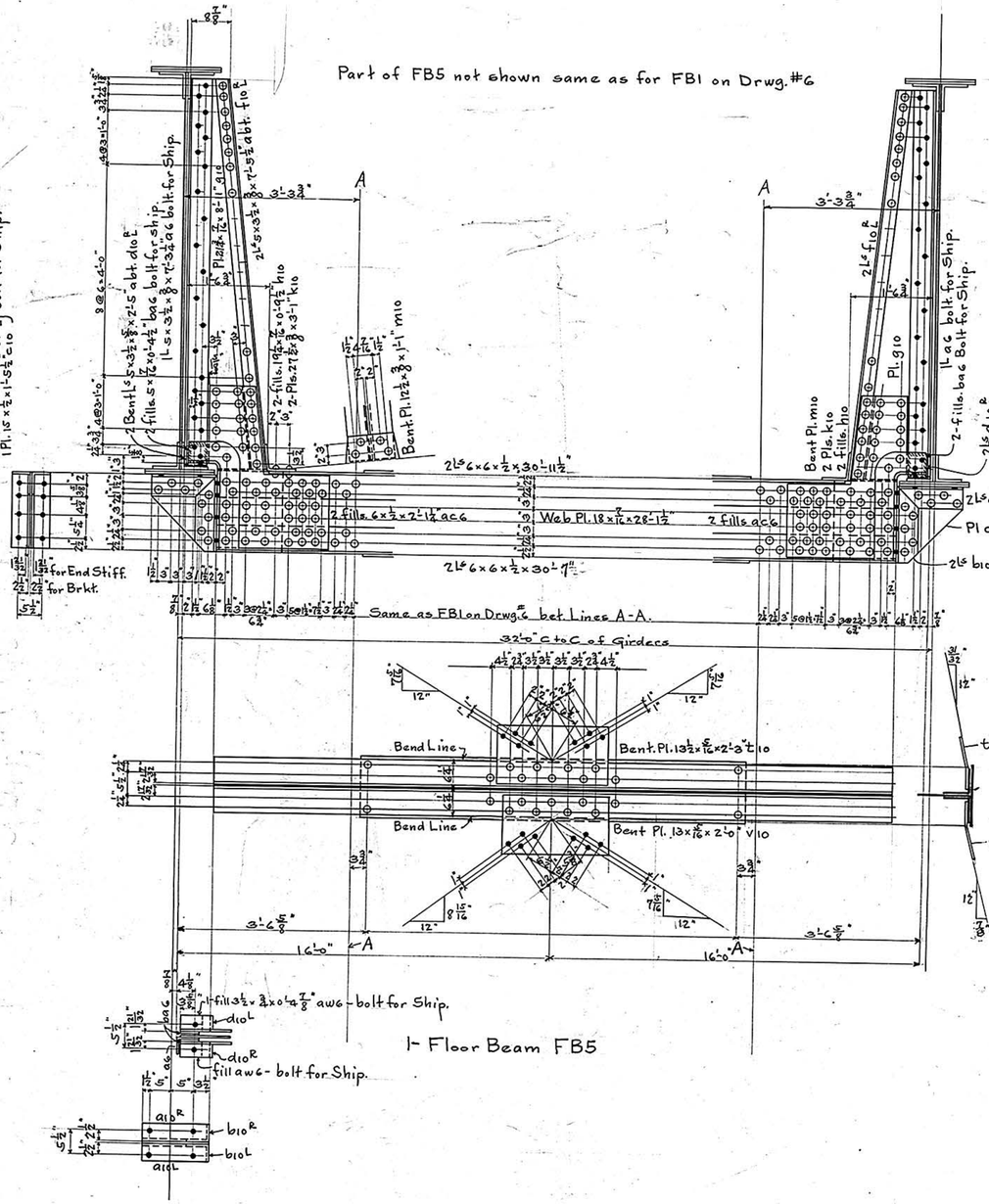
DRAWING # 200934
LDS GC ENG 50500087

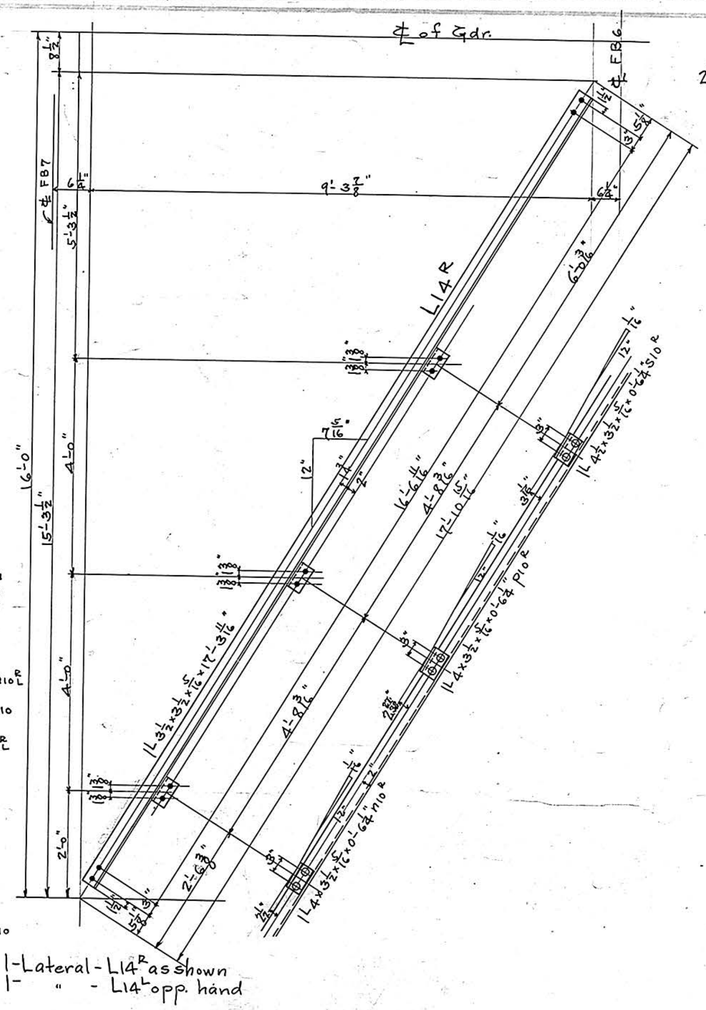
Rev. 4/5/14 a1

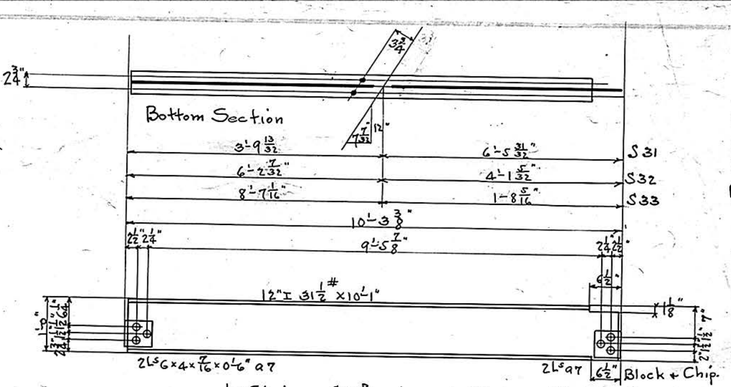
200 934

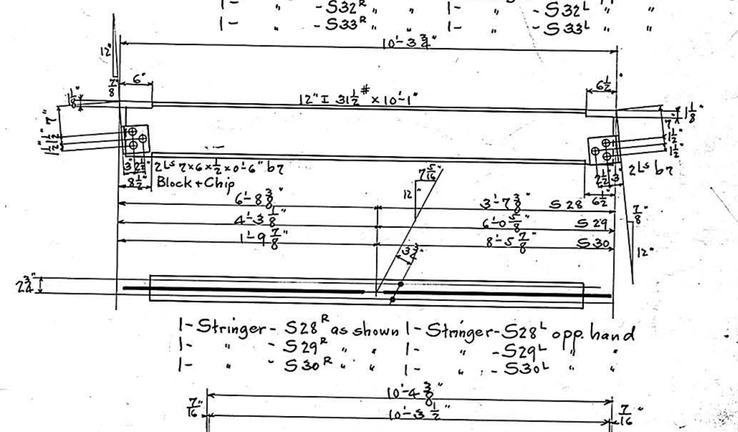
200934

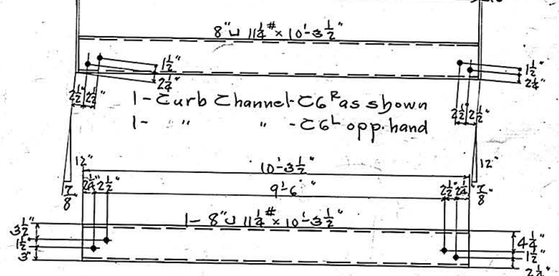
Part of FB5 not shown same as for FB1 on Drwg. #6











2-I-14

CONT. NO. 4568
Hunter St. Bridge
Woodbury, N.J.
℄ Suburban Contracting Co.
McCLINTIC-MARSHALL
CONSTRUCTION CO.
POTTSTOWN, PA.

MADE BY: Fox
TRACED BY:
CHECKED BY:

SHEET 10

RIVETS 7/8" ø
PUNCH HOLES 15/16" ø
REAM
MILLING
PAINT

DRAWING # 200934
LDS GC ENG 50500087

PUBLIC UTILITIES
PUBLIC SERVICE ELECTRIC & GAS CO. (GAS & ELEC.) 307 FELLOWSHIP ROAD MOORESTOWN, N.J. 08057 PHONE : 609 - 848 - 9356
NEW JERSEY BELL TELEPHONE 713 MARSHA AVENUE WILLIAMSTOWN, N.J. 08094 PHONE : 609 - 728 - 9989
STORER CABLE COMMUNICATIONS 304 SOUTH BROAD STREET WOODBURY, N.J. 08096 PHONE : 609 - 853 - 0700
CITY OF WOODBURY WATER DEPT. 33 DELEWARE STREET WOODBURY, N.J. 08096 PHONE : 609 - 845 - 1300
UNDERGROUND LOCATING SERVICE PHONE : 1 - 800 - 272 - 1000

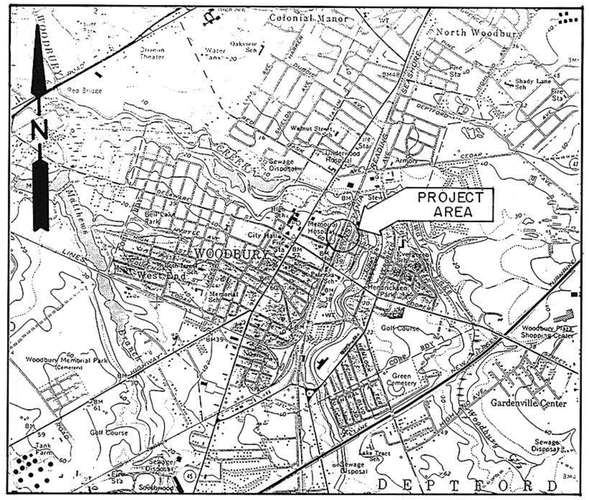
COUNTY OF GLOUCESTER
ENGINEERING DEPARTMENT
PROPOSED IMPROVMENTS TO
COUNTY BRIDGE 2 - I - 14
ON HUNTER STREET
OVER CONRAIL

CITY OF WOODBURY
GLOUCESTER COUNTY, NEW JERSEY
SPECIFICATION NO. : EN GRG. 87 - 13A-2 DATE : FEBRUARY, 1988

INDEX OF SHEETS	
SH. NO.	DESCRIPTION
1.	TITLE SHEET
2.	PLAN, ELEVATION, AND CROSS SECTION
3 - 4	BRIDGE DETAILS
5	MAINTENANCE OF TRAFFIC
6 - 7	CONSTRUCTION DETAILS

ESTIMATE OF QUANTITY

ITEM	DESCRIPTION	UNIT	QUANTITY
1.	PERFORMANCE BOND	L.S.	LUMP SUM
2.	PAYMENT BOND	L.S.	LUMP SUM
3.	MAINTENANCE AND PROTECTION OF TRAFFIC	L.S.	LUMP SUM
4.	DEMOLITION OF SIDEWALKS AND CURBS ON BRIDGE	L.S.	LUMP SUM
5.	REPAIR OF CONCRETE DECK, TYPE B	S.F.	1700
2 6.	EMBANKMENT EROSION RESTORATION (if and where directed)	TON	44
7.	REPAIR OF CONCRETE DECK, TYPE C	S.F.	150
8.	CONCRETE IN SUPERSTRUCTURE, SIDEWALKS	C.Y.	24
9.	CONCRETE IN SUBSTRUCTURE, ABUTMENT WALLS	C.Y.	5
10.	CONCRETE ENCASEMENT OF STRUCTURAL STEEL - FORMED & C.I.P.	S.F.	600
11.	EPOXY BONDING COAT	S.F.	3100
12.			
13.	PNEUMATICALLY APPLIED MORTAR	S.F.	800
14.	REINFORCEMENT STEEL IN STRUCTURE	LBS.	2710
15.	REINFORCEMENT STEEL IN STRUCTURE, EPOXY COATED	LBS.	2050
16.	REINFORCING MESH AND BOLTS (FOR ITEMS #10 & #13)	LBS.	1000
17.	PRESSURE INJECTION	L.F.	375
18.			
19.	STRUCTURAL STEEL DECK JOINTS	L.S.	LUMP SUM
20.	4" x 4 3/4" PREFORMED ELASTOMERIC JOINT SEALER	L.F.	32
21.	1 3/4" x 2" PREFORMED ELASTOMERIC JOINT SEALER	L.F.	32
22.	TRAFFIC STRIPES	L.F.	96



KEY MAP

1 1/2 0 1 MILE

SCALE

BY ORDER OF
THE GLOUCESTER COUNTY
BOARD OF CHOSEN FREEHOLDERS

Paul J. Truscott — 5/14/87
PAUL J. TRUSCOTT, P.E. — DATE
COUNTY ENGINEER

Francis A. McDevitt — 5-14-87
FRANCIS A. MC DEVITT — DATE
DIRECTOR OF PUBLIC WORKS

John R. Maier — 5/14/87
JOHN R. MAIER — DATE
FREEHOLDER DIRECTOR

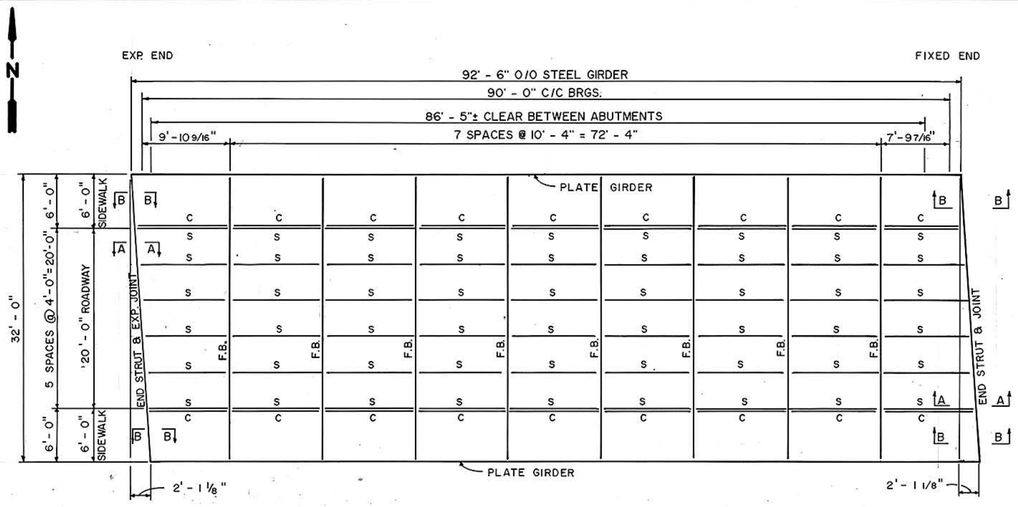
NOTE:
BEFORE STARTING WORK, THE CONTRACTOR WILL NOTIFY ALL UTILITY COMPANIES AND OTHER INTERESTED PARTIES OF THE SCHEDULE AND STARTING DATE. DETOURS MUST BE PLANNED AND MARKED BY THE CONTRACTOR, AND THE UTILITIES PROTECTED AS REQUIRED BY THE UTILITY COMPANIES.

"STANDARD SPECIFICATION OF 1983 WITH AMENDMENTS THERETO TO GOVERN"

DRAWING # 201937
LDS GC ENG 50200028

COUNTY OF GLOUCESTER
ENGINEERING DEPARTMENT
N. DELSEA DR.
CLAYTON, N.J. 08312

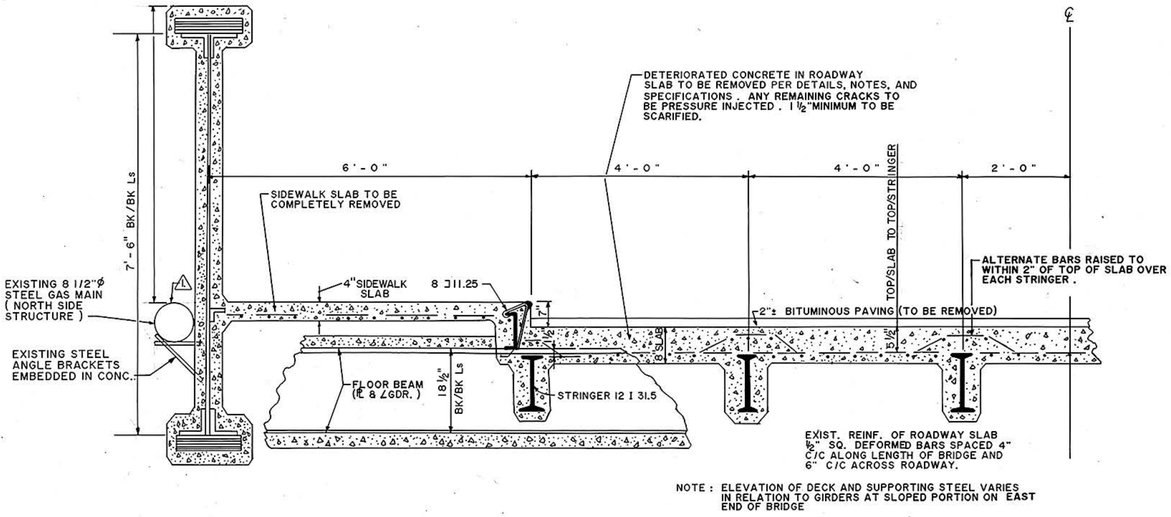
REVISIONS		DATE : MAY, 1987		
NO.	DATE			
1.	02 - 01 - 88	DWG. NO. 201937	SCALE : AS NOTED	DESIGNED BY : P.J.T.
2	02 - 16 - 88	SHEET 1 OF 7	DRAWN BY : E.T.R.	CHECKED BY :



NOTES : C DESIGNATES CURB CHANNEL
F.B. DESIGNATES FLOOR BEAMS 18" ℄ GDR.
S DESIGNATES STRINGERS 12 I 31.5
ALL PLATE GIRDERS, FLOOR BEAMS, AND STRINGERS ARE ENCASED IN CONCRETE.

PLAN

SCALE: 1/8" = 1' - 0"



NOTE : ELEVATION OF DECK AND SUPPORTING STEEL VARIES IN RELATION TO GIRDERS AT SLOPED PORTION ON EAST END OF BRIDGE

EXISTING DECK CONSTRUCTION (HALF SECTION)

SCALE : 3/4 " = 1 ' - 0 "

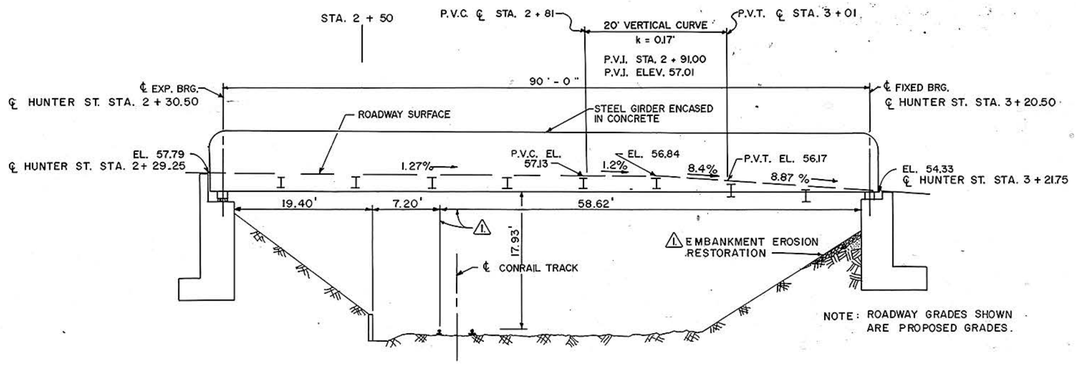
BAR LIST

S1	#4	322	5' - 9"	St
S2	#3	154	10' - 0"	St
S3	#3	42	9' - 6"	St
S4	#3	6	10' - 7"	St
S5	#3	6	10' - 9"	St
S6	#3	6	10' - 7"	St
S7	#3	4	10' - 6"	St
S8	#3	6	10' - 5"	St
S9	#3	6	8' - 5"	St
S10	#3	6	8' - 9"	St
S11	#3	6	8' - 10"	St
S12	#3	4	8' - 11"	St
S13	#3	6	9' - 0"	St

ROADWAY SLAB THICKNESS (PROPOSED)

	THICKNESS	TOP/SLAB ABOVE STRINGER
STA. 2 + 29± TO STA. 2 + 81	10"	7½"
STA. 2 + 81 TO STA. 2 + 91	VARIES 10" TO 8¾"	VARIES 7 ½" TO 6 ¼"
STA. 2 + 91 TO STA. 3 + 01	VARIES 8¾" TO 10"	VARIES 6 ¼" TO 7 ½"
STA. 3 + 01 TO STA. 3 + 22	10"	7½"

NOTE : ADDITIONAL UNSCHEDULED REINF. STEEL MAY BE REQUIRED TO REPLACE ROADWAY REFORCING WHICH IS DETERMINED.



NOTE: ROADWAY GRADES SHOWN ARE PROPOSED GRADES.

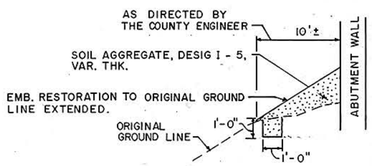
ELEVATION LOOKING NORTH

SCALE : 1' = 10'

– BENCH MARKS –

B.M. # 9 BOX CUT ON HIGH POINT NORTHWEST CORNER OF SIDEWALK SQUARE AT SOUTHWEST CORNER, HUNTER & N. MAPLE STS., ELEV. = 38.02

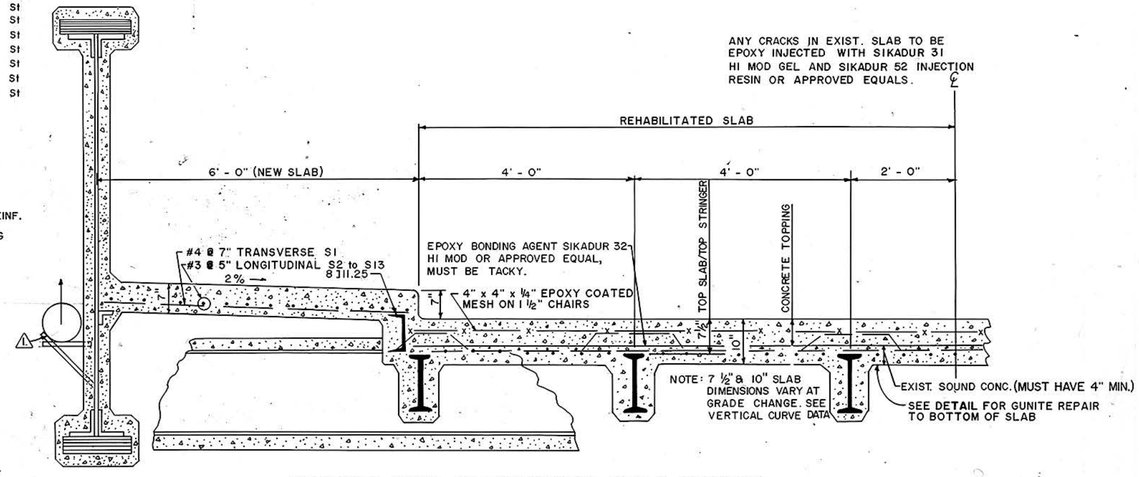
B.M. # 3 BOX CUT AT PC AT BEGINNING OF CURB RADIUS SOUTHWEST CORNER OF HUNTER & EUCLID STS. ELEV. = 65.07



⚠ EMBANKMENT EROSION RESTORATION DETAIL

N.T.S.

⚠ NOTE : NEW JERSEY BELL TELEPHONE HAS ACTIVE LINES IN THE SIDEWALK AREA OF STRUCTURE. CONDUIT SIZE AND EXACT LOCATION UNKNOWN. N.J. BELL WILL BE RESPONSIBLE FOR ANY RELOCATION OR REPLACEMENT AS MAY BE REQUIRED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING THE CONDUIT IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS.



PROPOSED DECK CONSTRUCTION (HALF SECTION)

SCALE : 3/4" = 1' - 0"

NOTES:

1. WHERE TOP STEEL BOND BETWEEN EXISTING CONCRETE AND REINFORCEMENT STEEL HAS BEEN DESTROYED OR WHERE MORE THAN 1/2 THE DIAMETER OF THE STEEL IS EXPOSED, ONE INCH OF CONCRETE REMOVAL AROUND THE BAR IS REQUIRED.
2. ⚠ IF DETERIORATED CONCRETE IS 4" OR MORE, MAKE FULL DEPTH REPAIR, TYPE C . A SHIELD MUST BE PROVIDED BY CHIPPING THE CONCRETE AND PLACING A SHEILD ON TOP OF THE LOWER FLANGES, WHERE FULL DECK REPAIR IS REQUIRED. CHIPPED AREAS OF CONCRETE FOR SHIELD SHALL BE COMPLETELY REPAIRED.
3. NEW REBARS SHALL BE PLACED TO SUPPLEMENT EXISTING REINFORCEMENT WHEN EXISTING BAR HAS LOST 25% OR MORE OF THE ORIGINAL CROSS SECTIONAL AREA, OR IS BROKEN. LAP 30 DIAMETERS EACH SIDE AND WIRE TOGETHER. IF ALTERNATE RAISED BARS REQUIRE REPLACEMENT IN THE RAISED PORTION, USE FLAT TOP BARS EXTENDING ACROSS THE ADJACENT SPANS.
4. SURFACE TO BE WATER AND AIR BLASTED TO COMPLETELY REMOVE ALL FOREIGN MATTER AFTER MESH IS IN PLACE AND PRIOR TO SPRAYING OF EPOXY BONDING AGENT.

DRAWING # 201937
LDS GC ENG 50200028

REVISIONS	
NO.	DATE
⚠	02 - 16 - 88

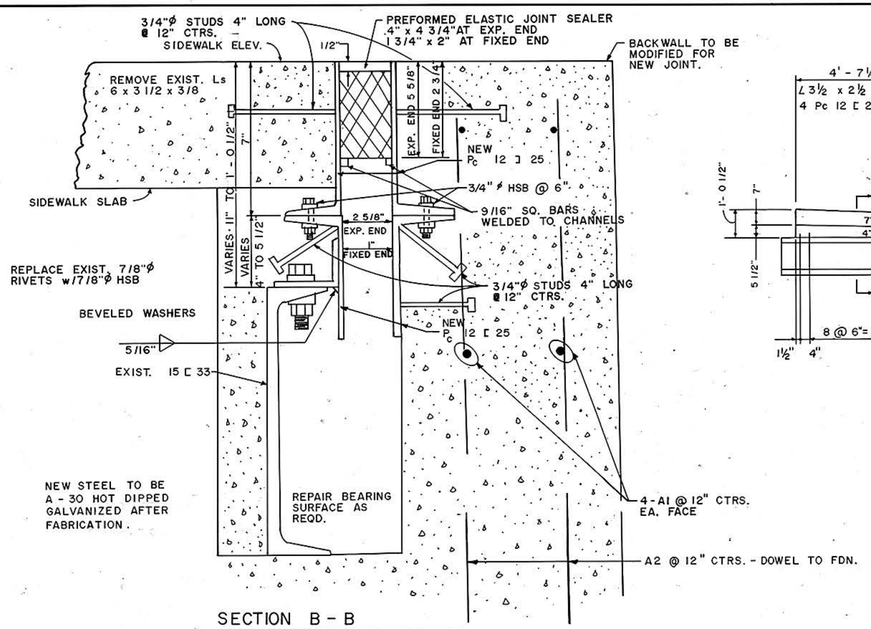
PROPOSED IMPROVEMENTS TO COUNTY BRIDGE 2 - I -14 ON HUNTER STREET OVER CONRAIL
CITY OF WOODBURY
GLOUCESTER COUNTY NEW JERSEY

PLAN, ELEVATION & CROSS SECTION

DWG. NO. 201937 | SCALE : AS - SHOWN | DESIGNED BY: P.J.T. | CHECKED BY:
DATE : MAY, 1987 | SHEET 2 OF 7 | DRAWN BY: E.T.R

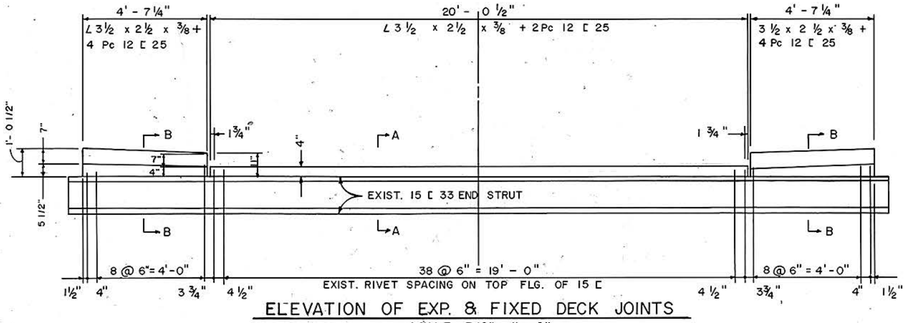
COUNTY OF GLOUCESTER
ENGINEERING DEPARTMENT
N. DELSEA DRIVE
CLAYTON, N.J. 08312

PAUL J. TRUSCOTT, P.E. # 12919
COUNTY ENGINEER



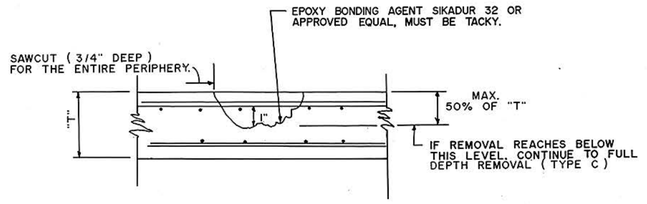
SECTION B – B

SIDEWALK JOINTS AT ENDS OF BRIDGE

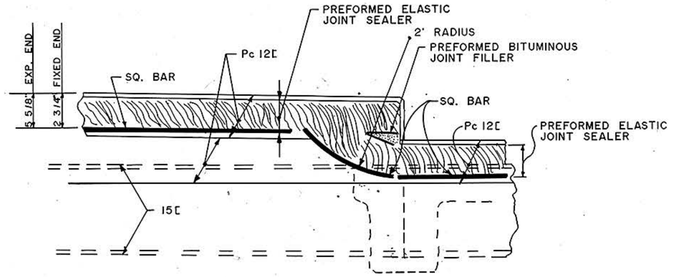


ELEVATION OF EXP. & FIXED DECK JOINTS

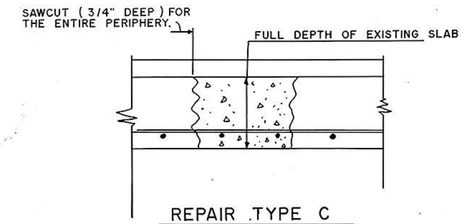
SCALE : 3/8" = 1' - 0"



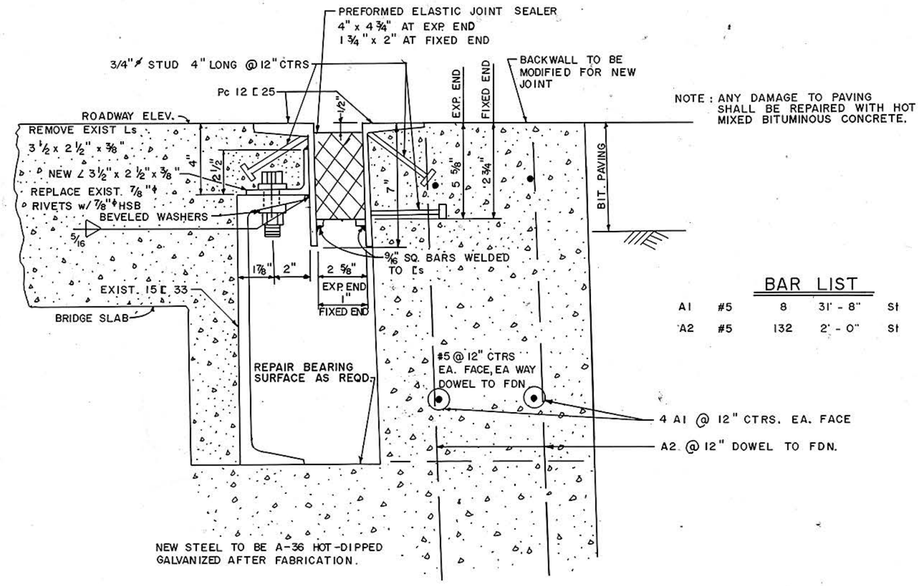
REPAIR TYPE B



DETAIL OF JOINT AT SIDEWALK



REPAIR TYPE C



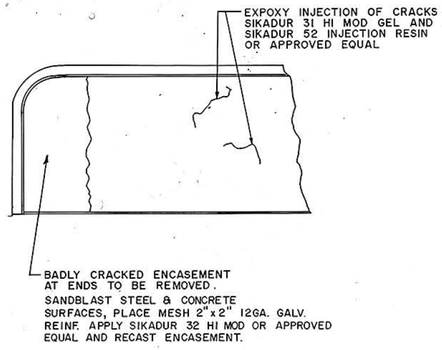
BAR LIST

A1	#5	8	31' - 8"	SI
A2	#5	132	2' - 0"	SI

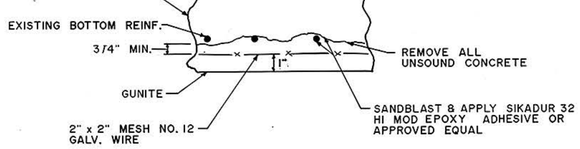
SECTION A – A

DECK JOINTS FOR ROADWAY

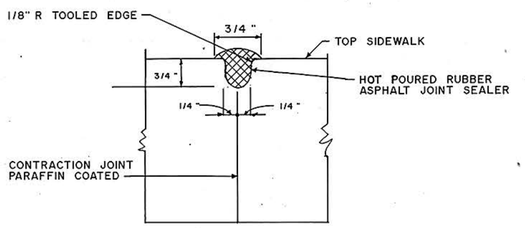
SCALE : 3" =1'-0"



GIRDER ENCASEMENT REPAIRS TO UPPER PORTION OF GIRDER

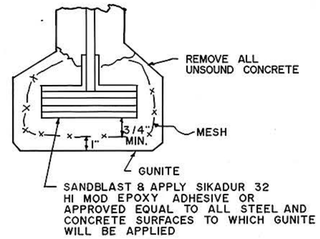


DETAIL OF GUNITE REPAIR TO BOTTOM OF ROADWAY SLAB



CONTRACTION JOINT DETAIL – SIDEWALK

LOCATE AT EACH FLOOR BEAM



GUNITE REPAIR TO GIRDER BOTTOM

DRAWING # 201937
LDS GC ENG 50200028

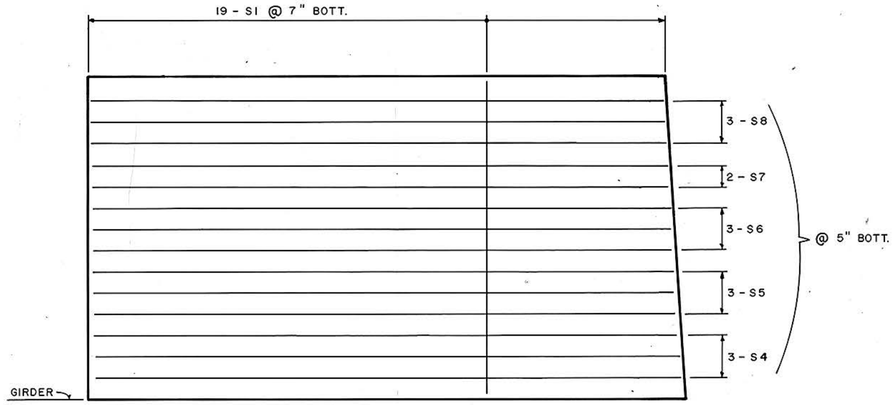
PROPOSED IMPROVEMENTS TO COUNTY BRIDGE 2 - 1 -14
ON HUNTER STREET
OVER CONRAIL
CITY OF WOODBURY
GLOUCESTER COUNTY NEW JERSEY

BRIDGE DETAILS

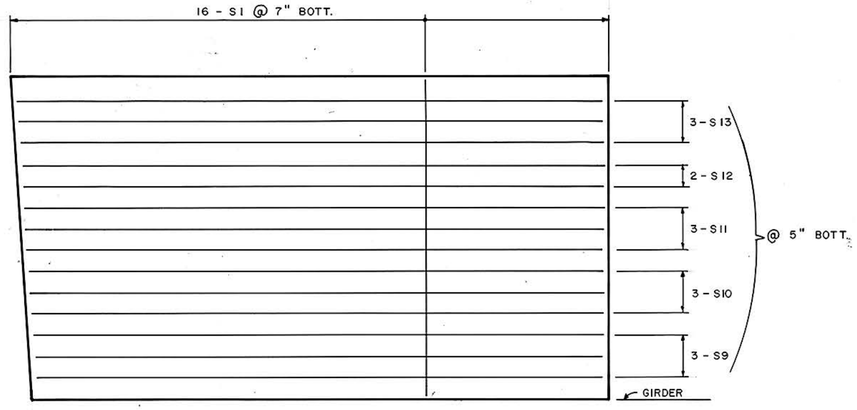
DWG. NO.: 201937	SCALE: AS SHOWN	DESIGNED BY: P.J.T.	CHECKED BY:
DATE: MAY, 1987	SHEET 3 OF 7	DRAWN BY: E.T.R.	

COUNTY OF GLOUCESTER
ENGINEERING DEPARTMENT
N. DELSEA DRIVE
CLAYTON , N.J. 08312

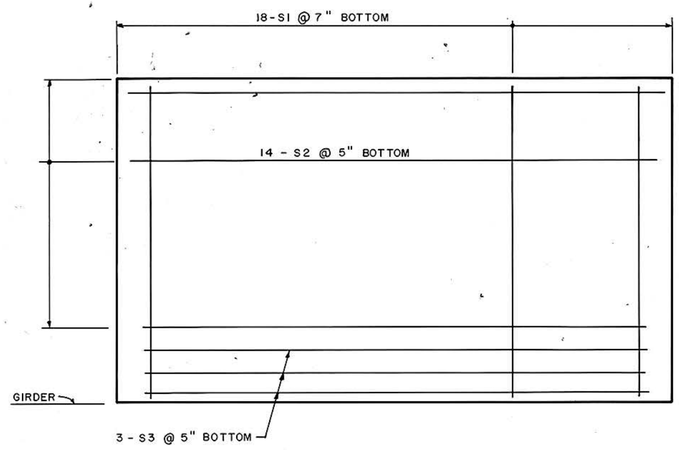
PAUL J. TRUSCOTT, P.E. # 12919
COUNTY ENGINEER



NORTHWEST AND SOUTHEAST CORNER PANELS
SOUTHEAST - AS SHOWN
NORTHWEST - OPPOSITE
2 - REQD.
N.T.S.



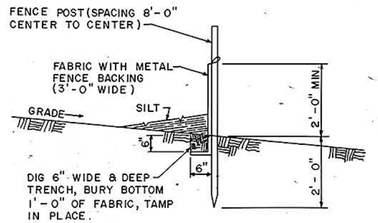
NORTHEAST AND SOUTHWEST CORNER PANELS
SOUTHWEST - AS SHOWN
NORTHEAST - OPPOSITE
2 - REQD.
N.T.S.



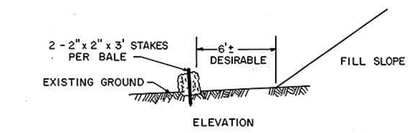
TYPICAL SIDEWALK PANEL 6'-0" x 10'-4"
14 REQD.
N.T.S.

⚠ SILT BARRIER FENCE CONSTRUCTION

1. FENCE POST SHALL BE SPACED 8 FEET CENTER TO CENTER OR CLOSER. THEY SHALL EXTEND AT LEAST 2 FEET INTO THE GROUND. THEY SHALL EXTEND AT LEAST 2 FEET ABOVE GROUND.
2. A METAL FENCE WITH 6 INCH OR SMALLER OPENINGS AND AT LEAST 2 FEET HIGH SHALL BE FASTENED TO THE FENCE POSTS.
3. A FILTER FABRIC, RECOMMENDED FOR SUCH USE BY THE MANUFACTURER, SHALL BE FASTENED TO THE METAL FENCE. THE FILTER FABRIC AND FENCE SHALL BE BURIED AT LEAST 6 INCHES DEEP IN THE GROUND. THE FILTER FABRIC SHALL EXTEND AT LEAST 2 FEET ABOVE THE GROUND.

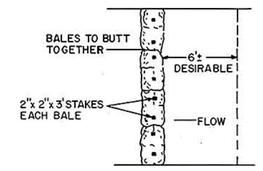


⚠ SILT BARRIER FENCE DETAIL
N.T.S.



ELEVATION

NOTE EMBED BALES 4 TO 6 INCHES



PLAN

NOTE: TO BE USED WHERE THE EXISTING GROUND SLOPES AWAY FROM THE HIGHWAY EMBANKMENT.

⚠ BALED HAY OR STRAW EROSION CHECKS
NTS

DRAWING # 201937
LDS GC ENG 50200028

REVISIONS	
NO.	DATE
⚠	02 - 16 - 88

PROPOSED IMPROVEMENTS TO
COUNTY BRIDGE 2-I-14
ON HUNTER STREET
OVER CONRAIL
CITY OF WOODBURY
GLOUCESTER COUNTY NEW JERSEY

BRIDGE DETAILS

DWG. NO. = 201937 | SCALE: AS SHOWN | DESIGNED BY P.J.T. | CHECKED BY
DATE = MAY, 1987 | SHEET 4 OF 7 | DRAWN BY: E.T.R. |

COUNTY OF GLOUCESTER
ENGINEERING DEPARTMENT
N. DELSEA DR.
CLAYTON, NJ. 08312

PAUL J. TRUSCOTT, PE. # 12919
COUNTY ENGINEER

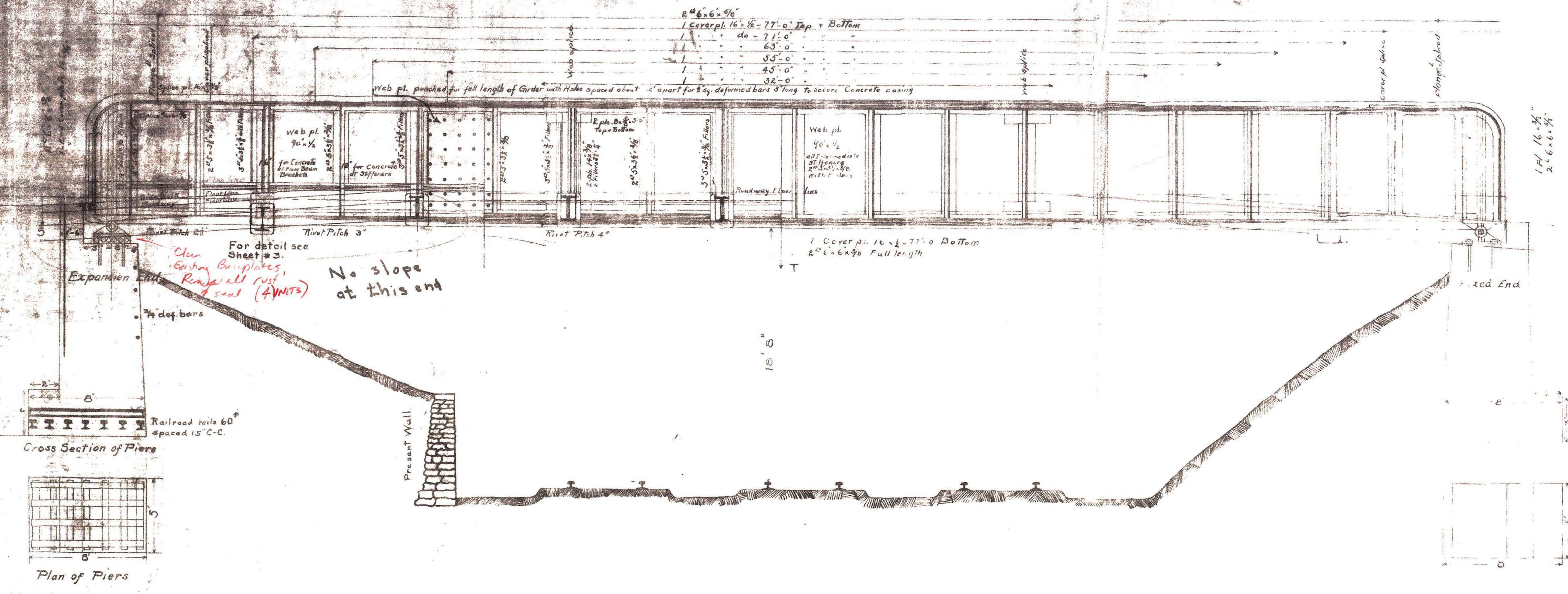
200 99

200997

2-1-14

HUNTER STREET BRIDGE

WOODBURY N.J.



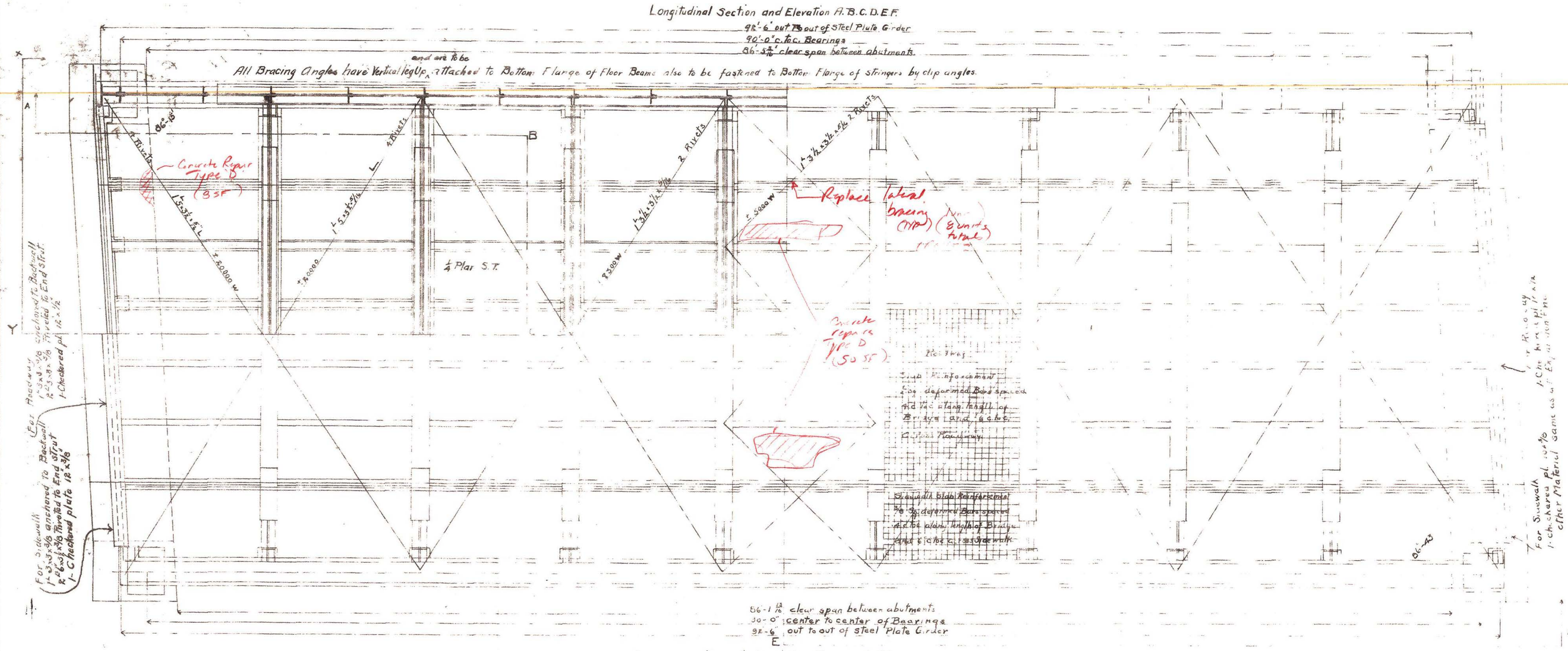
Longitudinal Section and Elevation A.B.C.D.E.F.

92'-6" out to out of Steel Plate Girder

90'-0" c. to c. Bearings

86'-5 3/16" clear span between abutments.

All Bracing Angles have Vertical leg Up, and are to be attached to Bottom Flange of Floor Beams also to be fastened to Bottom Flange of Stringers by clip angles.

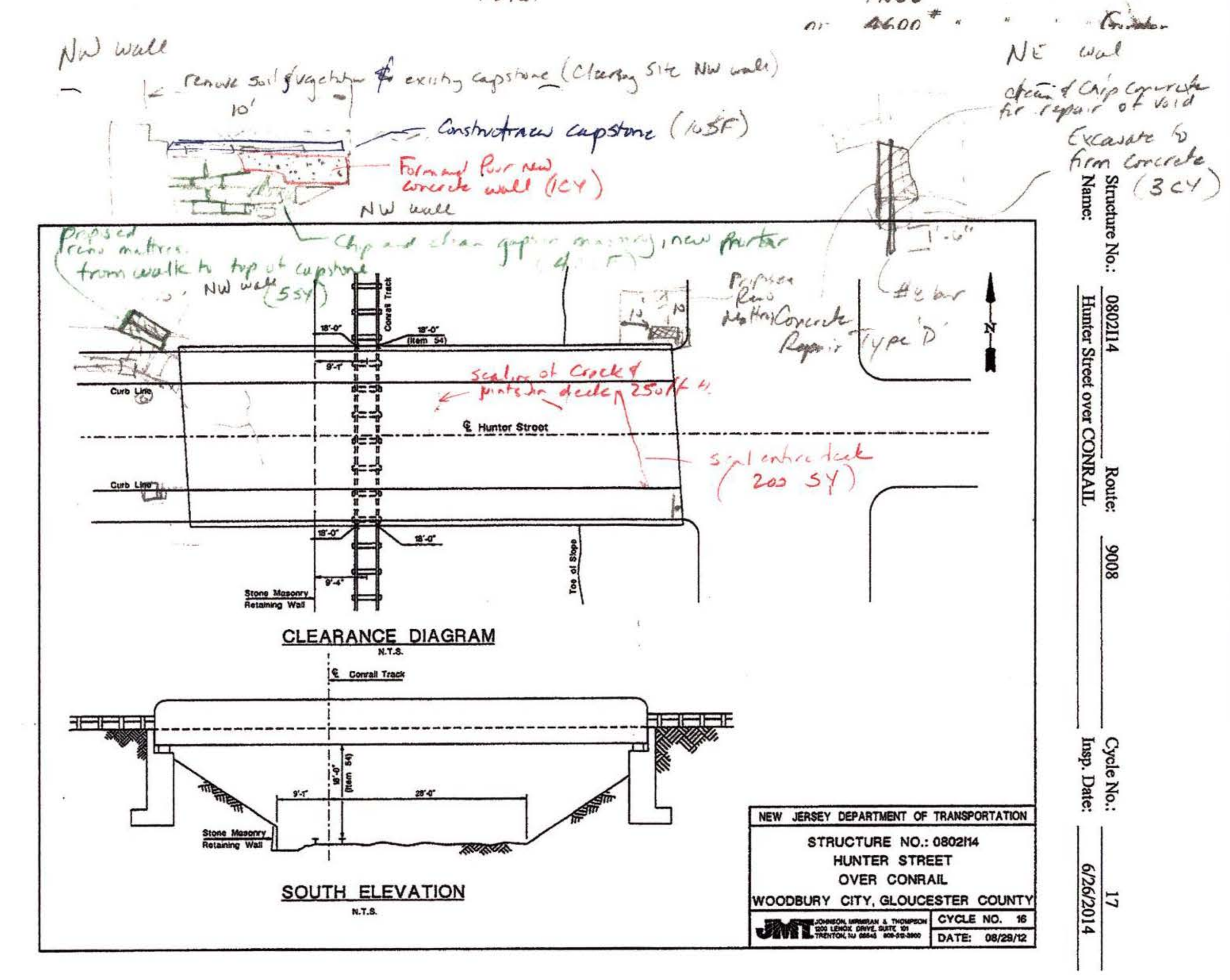


Longitudinal Section and Plan.

Main Girders 32'-0" center to center of Girders - 90'-0" center to center of Bearings

Assumed Dead load on Bridge

On Roadway	200# per Sq. ft.	= 4000#	per lineal foot of Bridge
" Sidewalks	164# "	2000#	"
2-Plate Girders 7'-6" deep		1200#	"
Concrete Casing for Girders		2000#	"
Total		9200#	"
		or 4600#	" Girder



End Shear		Bending Moment	
d	2400	d	7400#
c.l	12900	c.l.	32200
i	3200	i	8100
Total	19000	Total	47700

Use 12" I @ 31 1/2# per ft. good for 48000#

Sidewalk Stringer 10.3' span carries Curb and End of 6'-0" sidewalk

Assumed Dead Load = 88# per Sq. ft.

End Shear		Bending Moment	
d	1400	d	3500#
u.l	1600	u.l	4000#
i	400	i	1000#
Total	3400	Total	8500#

Assumed Live Load

Concentrated — One 25 Ton Truck - Body 12' x 17'; 2-axles 10'-0" c. to c. Wheels 5'-0" Gauge

Uniform Load — 100# per Square foot over both Roadway and Sidewalk except for area covered by Body of Truck

Wind Load assumed at 900# per lin. ft. of Bridge. 300# of which is Moving.

32'-0" center to center of Girders.

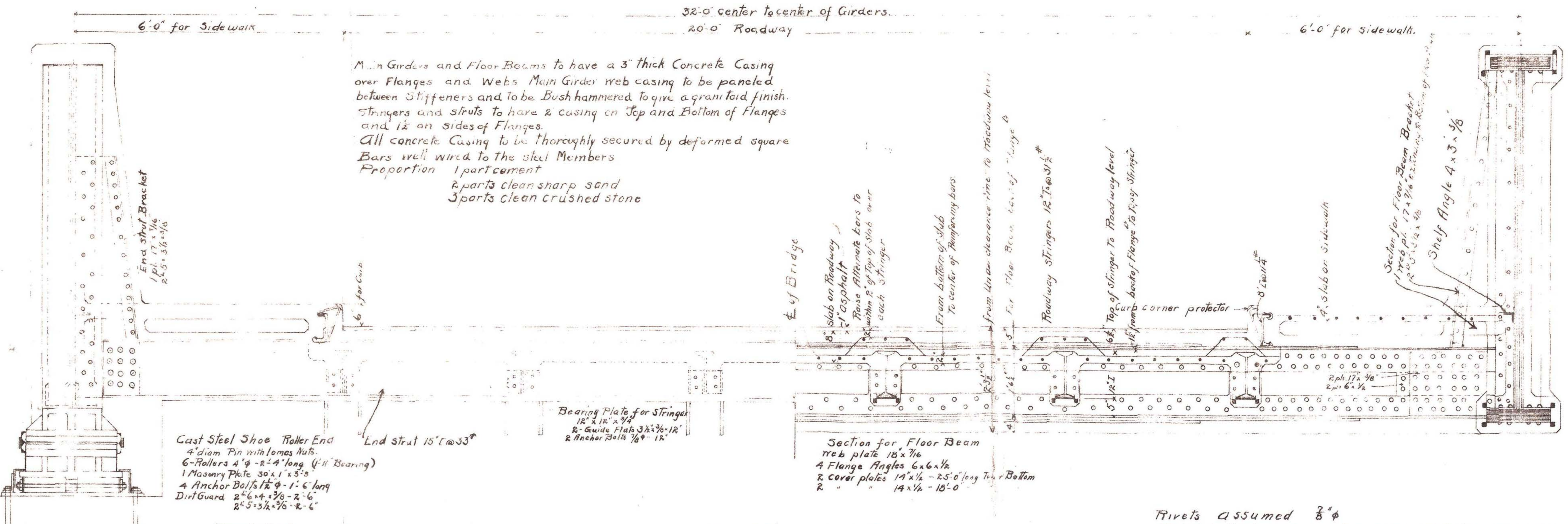
20'-0" Roadway

6'-0" for Sidewalk

Main Girders and Floor Beams to have a 3" thick Concrete Casing over Flanges and Webs. Main Girder web casing to be paneled between Stiffeners and to be Bush hammered to give a granitoid finish. Stringers and struts to have 2" casing on Top and Bottom of Flanges and 1 1/2" on sides of Flanges.

All concrete Casing to be thoroughly secured by deformed square Bars well wired to the steel Members

Proportion: 1 part cement; 2 parts clean sharp sand; 3 parts clean crushed stone



Cast Steel Shoe Roller End
- 4" diam Pin with lomas Nuts.
- 6-Rollers 4" φ - 2'-4" long (1'-11" Bearing)
- 1 Masonry Plate 30x1"x3'-5"
- 4 Anchor Bolts 1 1/2" φ - 1'-6" long
- Dirt Guard 2L 6x4x3/8 - 2'-6"; 2L 5x3 1/2x3/8 - 2'-6"

Fixed End
Cast steel Shoe 30x25
- 4" diam. pin with lomas Nuts.
- 4-Anchor Bolts 1 1/2" φ - 1'-6" long

Section for Floor Beam
- Web plate 18"x7/16
- 4 Flange Angles 6x6x1/2
- 2 Cover plates 14"x1/2 - 25'-0" long Top & Bottom
- 2 " " 14x1/2 - 18'-0"

Cross Section and End Elevation X.Y. D.E
Scale 3/4" - 1 Ft.

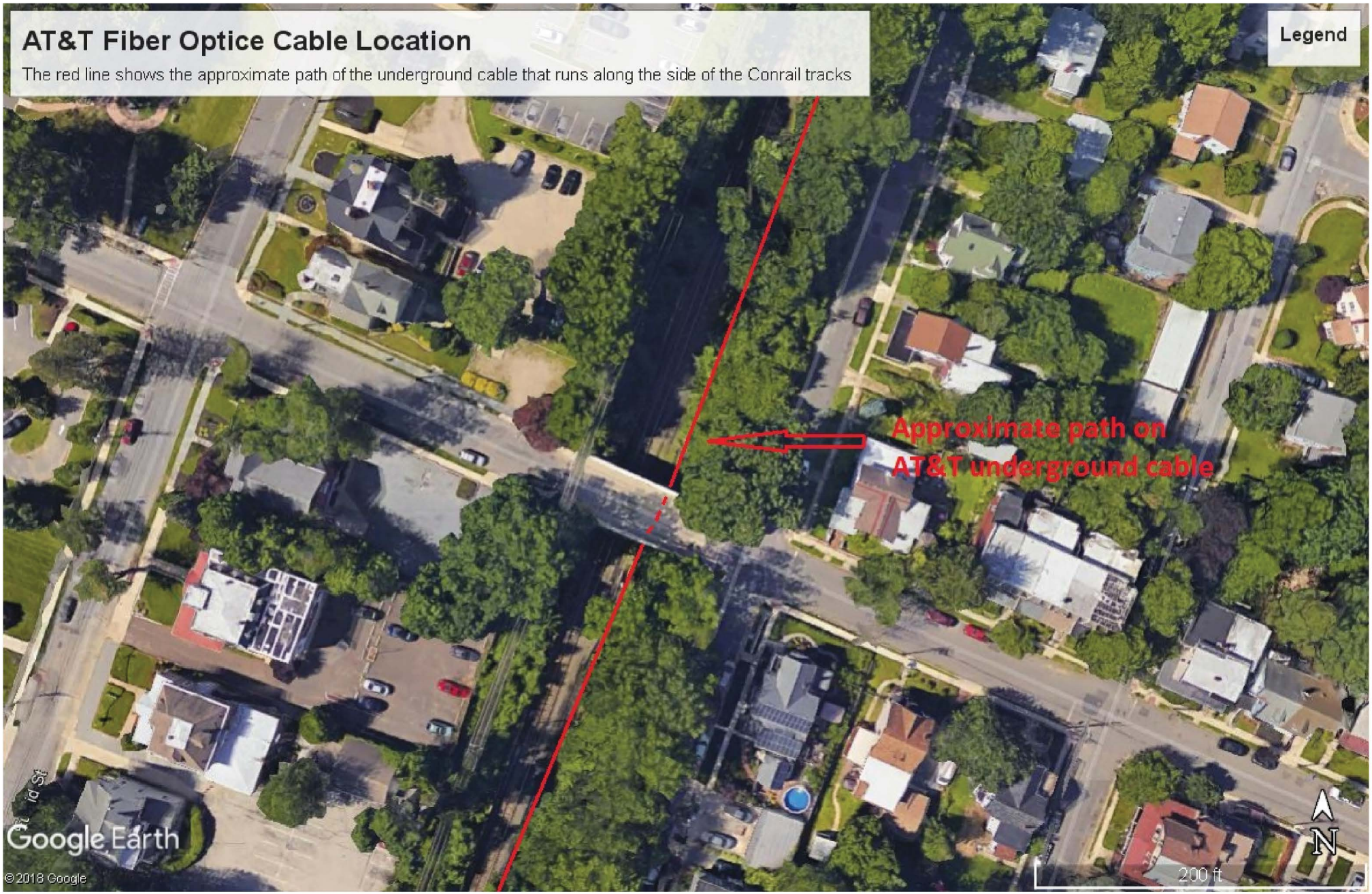
Rivets assumed 7/8" φ

Material Bridge Steel Am. Soc. for Testing Materials Spec. 1909

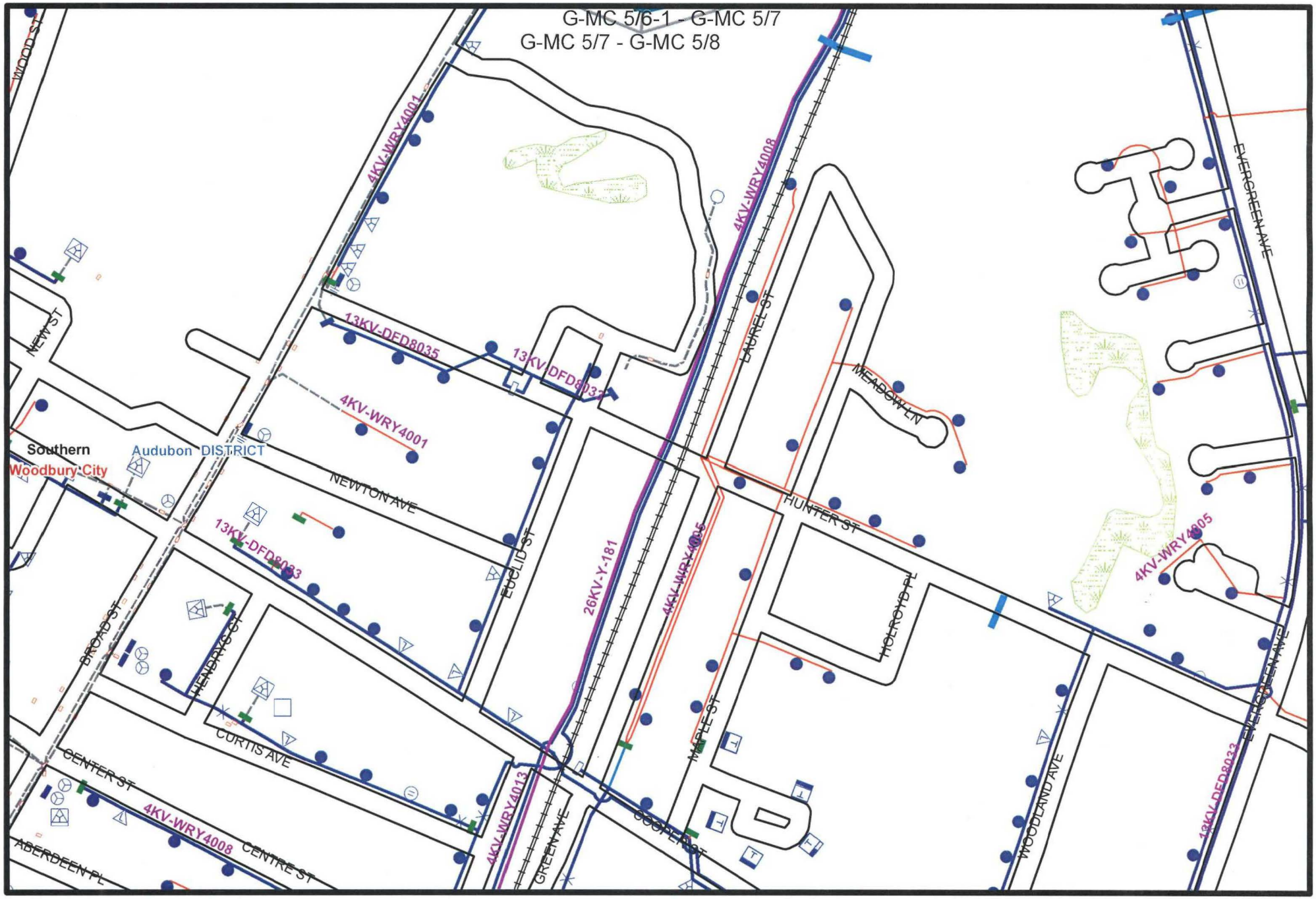
+	denotes	Tension
—	"	Compression
d	"	Stress due to dead load
c.l.	"	" " Concentrated live load
u.l.	"	" " Uniform " "
i	"	" " impact - 25% of live load
w	"	" " Wind

Wm. C. Cattell
County Engineer.
SHEET # 1.
B-140216

DRAWING #
LDS GC ENG 10501040


AT&T Fiber Optice Cable Location
The red line shows the approximate path of the underground cable that runs along the side of the Conrail tracks
Legend
Approximate path on
AT&T underground cable
Google Earth
© 2018 Google
200 ft
N

DVRPC-Hunter Street Bridge over Conrail, Woodbury (Electric)



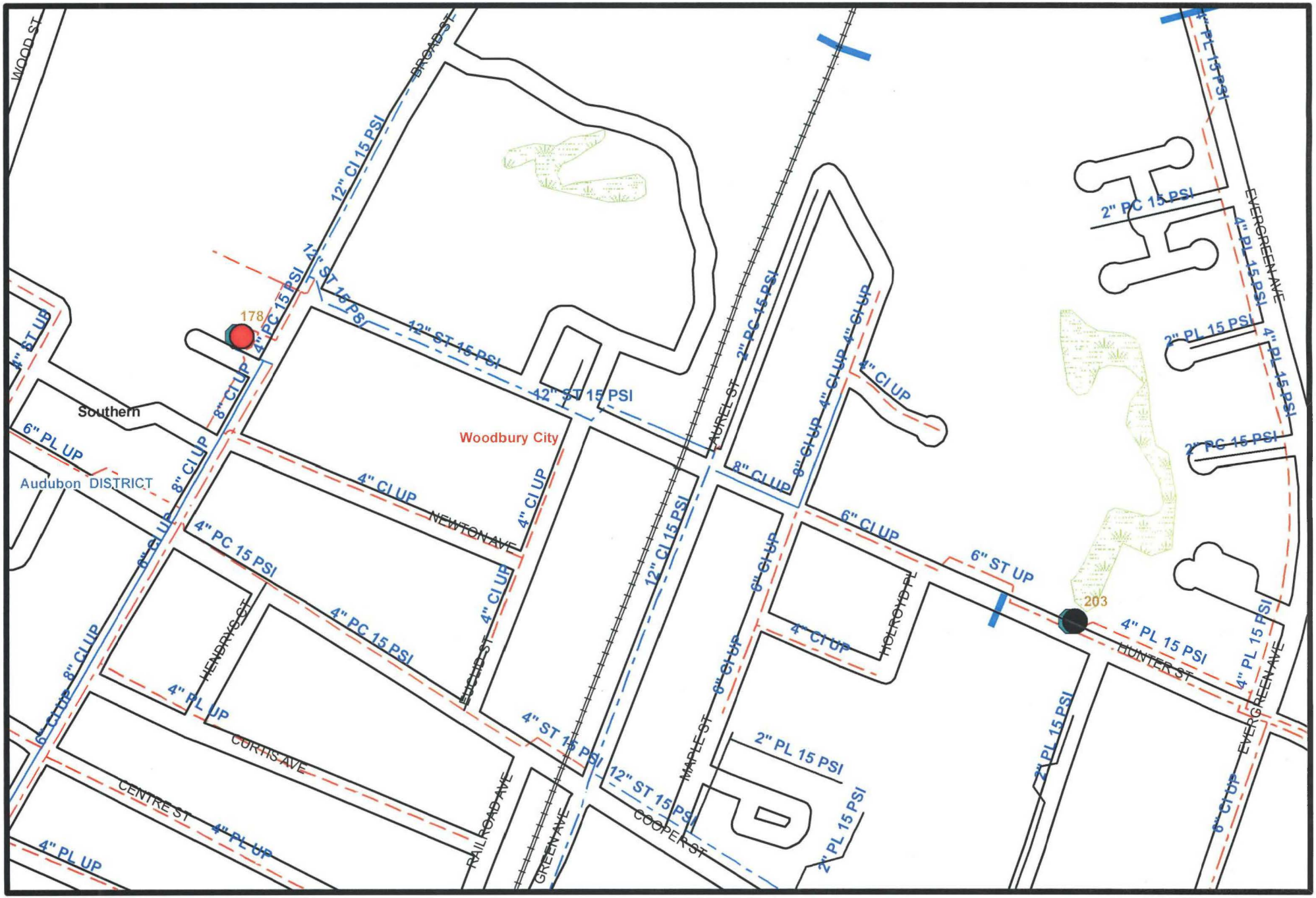
PSE&G
Delivery Projects & Construction
4000 Hadley Road
South Plainfield, NJ 07080

9/5/2017

0 140 280 560 840 1,120 Feet

N
W E
S

DVRPC-Hunter Street Bridge over Conrail, Woodbury (Gas)



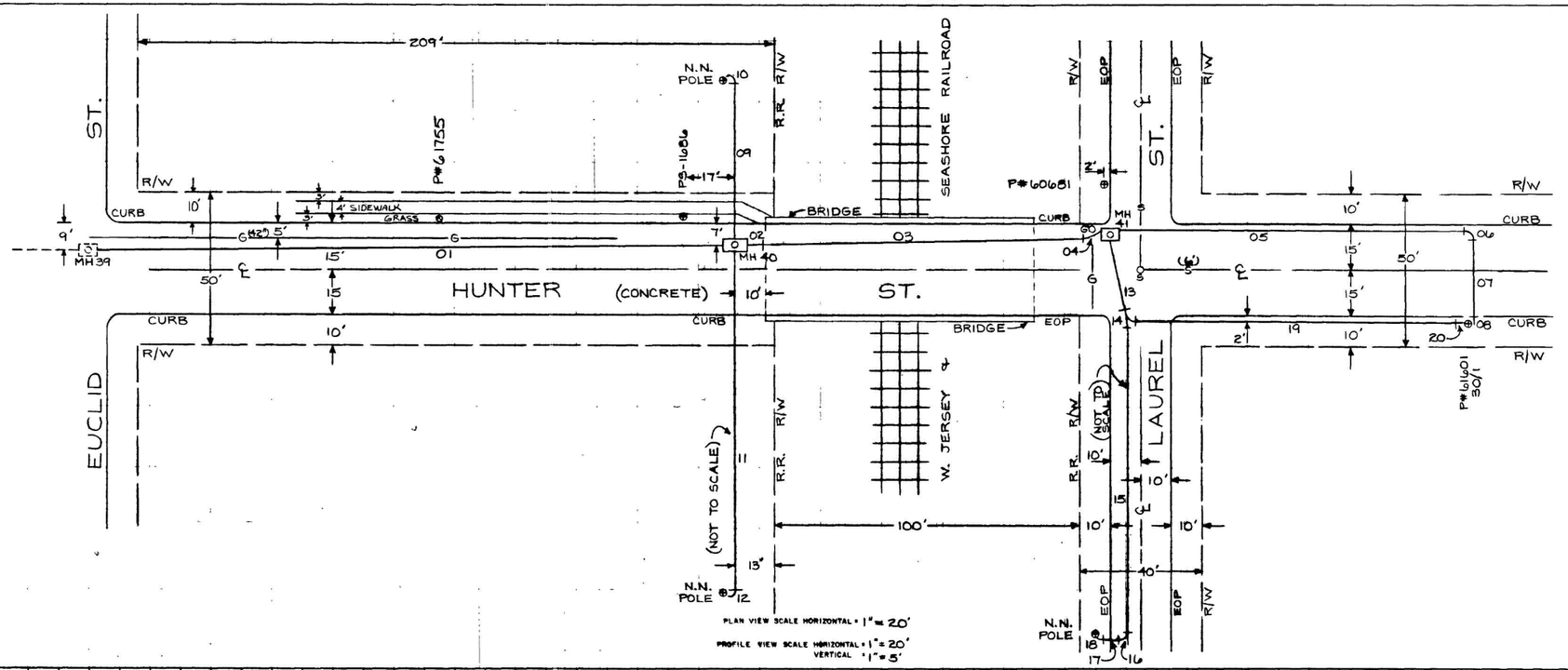
PSEG Delivery Projects & Construction
4000 Hadley Road
South Plainfield, NJ 07080

9/5/2017

0 140 280 560 840 1,120 Feet

N
W E
S

N-934 A
(1/76)



CONDUIT SUMMARY

ACC'T	SEC	LENGTH	TOTAL DUCTS	TYPE OF DUCT NO	TYPE OF DUCT SIZE	TYPE OF DUCT KIND	% EQUITY	DATE	ORDER NO	REMARKS
4C	16	5'	2	1	3½"	CWD SPLIT	100	1907	—	
	17	5'	1	1		CWD		8/40	—	
	18	2.5'	1	1	2¼"	CIB		1907	—	
	19	105'	1	1	3½"	CWD		1929	—	
	20	2.5'	1	1	2¼"	CIB			—	

CONDUIT SUMMARY

ACC'T	SEC	LENGTH	TOTAL DUCTS	TYPE OF DUCT NO	TYPE OF DUCT SIZE	TYPE OF DUCT KIND	% EQUITY	DATE	ORDER NO	REMARKS
4C	01	205'	2	2	3½"	CWD	100	4/10	—	
	02	5'	4	4		IRON PIPE			—	
	03	105'	2	2		IRON PIPE			—	
	04	6'	4	4		IRON PIPE			—	
	05	114'	1	1		CWD		1907	—	
	06	5'	1	1		CIB			—	
	07	25'	1	1		CWD			—	
	08	5'	1	1		CIB			—	
	09	51.3'	1	1		CWD			—	
	10	2.5'	1	1	2¼"	CIB			—	
	11	175.6'	1	1	3½"	CWD			—	
	12	2.5'	1	1	2¼"	CIB			—	
	13	23.1'	2	2	3½"	CWD			—	
	14	5'	2	1		CWD SPLIT			—	
	15	139.4'	2	2		CWD			—	

MANHOLE SUMMARY

ACC'T	M H	SIZE	TYPE	LENGTH	WIDTH	HEAD ROOM	EQUITY	DATE PLACED	ORDER NO	REMARKS
4C	40	S		7'10"	3'6"	4'11"	100	4/10	—	
4C	41	S		5'10"	3'4"	4'10"	100	4/10	—	

LOCATION OF SUBSURFACE STRUCTURES SHOWN ON DRAWING IS A GUIDE ONLY. THE TELEPHONE CO ACCEPTS NO LIABILITY FOR ERRORS OR OMISSIONS

REPORT ANY CHANGES FROM COVER SHOWN IF UNKNOWN OBSTRUCTIONS ARE ENCOUNTERED REQUIRING APPRECIABLE CHANGE IN GRADE CALL TELEPHONE CO ENGINEER BEFORE LAYING CONDUIT.

NOTIFY ALL OTHER UTILITY COMPANIES INVOLVED IN AREA BEFORE STARTING TO DIG.

* WORK AUTHORIZED ON THIS PRINT

SYMBOLS

- G – GAS PIPE
- PO – PRIVATE OWNED CONDUIT
- W – WATER PIPE
- E – ELECTRIC CONDUIT
- R/W–RIGHT-OF-WAY LINE
- P/L–PROPERTY LINE
- CATV–COMMUNITY ANTENNA TV
- S – SEWER PIPE
- M – MUNICIPAL CONDUIT
- ○ – TREE
- ○ – TELEPHONE POLE
- + – ELECTRIC POLE
- ⊕ – JOINT POLE
- ⊂⊃ – MANHOLE & CONDUIT
- ⊏⊐ OR ⊏⊐ COVER
- ⊠ – FIRE HYDRANT
- W-W – WALL-TO-WALL
- C-C – CENTER-TO-CENTER
- C.B. – CATCH BASIN
- T – TRAFFIC LIGHT POLE

CWD – CREOSOTED WOOD DUCT
MTD – MULTIPLE TILE DUCT
CEM – CEMENT CONDUIT (TRANSITE)
MCD – MULTIPLE CEMENT DUCT
P.D. – PLASTIC DUCT
FB.D. – FIBER DUCT
S.P. – SEWER PIPE CONDUIT
STL – STEEL PIPE CONDUIT
C.I.B. – CAST IRON BEND
PB – PLASTIC BEND
△ – TRAFFIC CONTROL PEDESTAL

NEW JERSEY BELL TELEPHONE COMPANY 12-9-91 CM

R/W	ASSOCIATE WITH	PERMIT #	ORDER # EST.	PRINT #
PREPARED BY / TEL #	DATE DUE	STREET: HUNTER STREET		NORTH ARROW
APPROVALS	RELEASED / REVISED	FROM: MH 39	TO: MH 41	
DISTRICT: WMSTN	DIST #: 35000	CO EXCHANGE AREA: WOODBURY	MUNICIPALITY: WOODBURY CITY	TO # 860

Appendix D

Tax Maps

REVISIONS				
DATE	BY	LIC.NO	BLOCK	LOT
08/2012	CHARLES A. ATKINSON-PLS	33994	147	11
01/2015	CHARLES A. ATKINSON-PLS	33994	147	30,31.01

* THIS SHEET HAS BEEN DRAWN USING COMPUTER AIDED DRAFTING/ DESIGN (CAD/D) AND COORDINATE GEOMETRY (COGO).

* INDICATE AREA INCLUDED OR NOT INCLUDED UNDER CONDOMINIUM UNITS. WORD "TOTAL" INDICATES TOTAL AREA OF CONDOMINIUM DEVELOPMENT, WORK "C.E." INDICATES AREAS OUTSIDE OF CONDOMINIUM UNITS, SUCH AS PARKING AREA, DRIVEWAYS, ETC., COMMON ELEMENTS WITHOUT AREA UNDER STRUCTURES OF UNIT HOLDERS.

TAX MAP
CITY OF WOODBURY

GLOUCESTER COUNTY — NEW JERSEY
SCALE: 1" = 50' — DATE: MARCH 2012

CHARLES A. ATKINSON

LICENSED LAND SURVEYOR
NEW JERSEY LICENSE NO. 33994
850 SO. WHITE HORSE PIKE
HAMMONTON, NEW JERSEY 08037
COA# 24GA27973300

TO SHOW CONDITIONS AS OF JANUARY 2017

THIS MAP WAS FORMALLY CERTIFIED BY THE DIVISION OF TAXATION ON SEPTEMBER 23, 2013, SIGNED BY SUE DAVISON, CTA AND ASSIGNED SERIAL NUMBER 1026

BLOCK 147		
LOT 1		
LOT NO.	FLOOR	SQ. FT.
C0001	1st	1213
C0002	2nd	1442
C0003	Twn Hse	1241
C0004	2nd	1442
C0005	1st	1193
C0006	2 Story	1193
C0007	2nd	1494
C0008	Twn Hse	1241
C0009	2nd	1442
C0010	2 Story	1193
C0011	2 Story	1193
C0012	1st	1442
C0013	Twn Hse	1241
C0014	2nd	1442
C0015	2 Story	1193
C0016	Twn Hse	1241
C0017	2nd	1494
C0018	Twn Hse	1241
C0019	2nd	1494
C0020	2 Story	1213
C0021	2 Story	1193
C0022	2nd	1494
C0023	Twn Hse	1241
C0024	2nd	1494
C0025	2 Story	1193
C0026	2 Story	1427
C0027	2nd	1728
C0028	Twn Hse	1241
C0029	2nd	1494
C0030	2 Story	1193
C0031	1st	1193
C0032	2nd	1494
C0033	1st	1193
C0034	2nd	1494
C0035	1st	1193
C0036	2nd	1494
C0037	Twn Hse	1241
C0038	2nd	1494
C0039	1st	1193

SHEET 29 — SHEET 40 — SHEET 46 — SHEET 45 — SHEET 28 — SHEET 37 — SHEET 38

BLOCK LIMIT — MATCH LINE — HUNTER ST — HOLROYD PL — LAKE CHESTER'S BRANCH — NORTH WOODLAND AVE — NEWTON AVE — EUCLID ST — CONRAIL (formerly P.R.S.L.) MILLVILLE BRANCH CLASS I — LAUREL ST — MAPLE ST — COOPER ST — RAILROAD AVE — GREEN AVE — LAKE DR

145 — 146 — 147 — 147.01 — 901

5 6.13 Ac± (TOTAL)

1 CHURCH EXEMPT — 2 CHURCH EXEMPT

1 2.49 Ac± TOTAL — 35' UTILITY ESMT — 15' STORM DRAINAGE ESMT

11 0.68 Ac — 28 4.82 Ac CITY EXEMPT

TAX MAP
CITY OF WOODBURY

GLOUCESTER COUNTY
SCALE: 1" = 50'

NEW JERSEY
DATE: MARCH 2012

CHARLES A. ATKINSON
LICENSED LAND SURVEYOR
NEW JERSEY LICENSE NO. 33994
850 SO. WHITE HORSE PIKE
HAMMONTON, NEW JERSEY 08037
CO/A# 24GA27973300

TO SHOW CONDITIONS AS OF JANUARY 2017

THIS MAP WAS FORMALLY CERTIFIED BY THE DIVISION OF TAXATION ON SEPTEMBER 23, 2013, SIGNED BY SUE DAVISON, CTA AND ASSIGNED SERIAL NUMBER 1026

REVISIONS				
DATE	BY	LIC. NO	BLOCK	LOT

* THIS SHEET HAS BEEN DRAWN USING COMPUTER AIDED DRAFTING/ DESIGN (CAD/D) AND COORDINATE GEOMETRY (COGO).

SHEET 29

SHEET 30

SHEET 39

SHEET 41

SHEET 46

SHEET 47

LAUREL ST

MAPLE ST

HUNTER ST

MEADOW LA

UNNAMED

NORTH EVERGREEN AVE

CONRAIL (formerly P.R.S.L.) MILLVILLE BRANCH

901

148.01

148.02

162

1.02
4.11 Ac±
TOTAL
WOODBURY OAKWOOD URBAN RENEWAK PRES.
EXEMPT

23.01
12.72 Ac±
TOTAL
CITY OF WOODBURY EXEMPT

11.04
CITY OF WOODBURY EXEMPT

11.05
CITY OF WOODBURY EXEMPT

11.06
CITY OF WOODBURY EXEMPT

23
CITY OF WOODBURY EXEMPT

24
CITY OF WOODBURY EXEMPT

CLASS I

CLASS II
4
1.09 Ac±
(TOTAL)

5
6.13 Ac±
(TOTAL)

SHEET 19

SHEET 20

FEDERAL ST

NORTH BROAD ST (N.J.S.H. ROUTE 45)

SHEET 28

NEWTON AVE

HUNTER ST

SHEET 30

EUCLID ST

EUCLID ST (VACATED VARIED WIDTH)

SHEET 39

SHEET 40

BLOCK LIMIT

120

121

1 GLOUCESTER COUNTY HISTORICAL SOCIETY EXEMPT

2 GLOUCESTER COUNTY HISTORICAL SOCIETY EXEMPT

4 2.33 Ac WOODBURY FRIENDS EXEMPT

HOPPER BURYING GROUND FRIENDS MEETING HOUSE AND CEMETERY

6.01 CITY EXEMPT

6.02

7 CITY EXEMPT

7.01 1.19 Ac± CITY EXEMPT

8.01

10.01

10.02 CITY EXEMPT

10.03 3.20 Ac± CITY EXEMPT

C0001 1.67 Ac± TOTAL COUNTY EXEMPT

C0002 0.59 Ac± TOTAL COUNTY EXEMPT

C0003 0.05 Ac± TOTAL COUNTY EXEMPT

C0004 0.03 Ac± TOTAL COUNTY EXEMPT

C0005 0.03 Ac± TOTAL COUNTY EXEMPT

1 9.20 Ac COUNTY EXEMPT

10.06

11

12

12.01

13

14

15

17

17.01

18

19

19.01

20

21 GLOUCESTER COUNTY IMPROVEMENT AUTH. EXEMPT

UNIT A PARKING 1

UNIT A PARKING 2

UNIT A PARKING 3

* THIS SHEET HAS BEEN DRAWN USING COMPUTER AIDED DRAFTING/ DESIGN (CAD/D) AND COORDINATE GEOMETRY (COGO).

REVISIONS

DATE	BY	LIC.NO	BLOCK	LOT
06/2014	CHARLES A. ATKINSON-PLS	33994	121	1

THIS MAP WAS FORMALLY CERTIFIED BY THE DIVISION OF TAXATION ON SEPTEMBER 23, 2013, SIGNED BY SUE DAVISON, CTA AND ASSIGNED SERIAL NUMBER 1026

TAX MAP
CITY OF WOODBURY

GLOUCESTER COUNTY NEW JERSEY

SCALE: 1" = 50' DATE: MARCH 2012

CHARLES A. ATKINSON

LICENSED LAND SURVEYOR
NEW JERSEY LICENSE NO. 33994
850 SO. WHITE HORSE PIKE
HAMMONTON, NEW JERSEY 08037
COA# 24GA27973300

TO SHOW CONDITIONS AS OF JANUARY 2017

Appendix E

Crash Diagrams

CITY OF WOODBURY

COUNTY OF GLOUCESTER

Conrail R.R.

Laurel Street

N. Maple Street

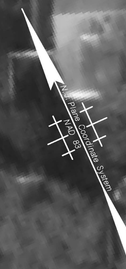
Hunter Street

Hunter Street

Euclid Street

Laurel Street

N. Maple Street



CRASH LEGEND

- PROPERTY DAMAGE
- INJURY
- FATALITY
- RIGHT-ANGLE
- REAR-END
- BACKING
- SIDE-SWIPE
- FIXED OBJECT
- STRUCK PARKED VEHICLE
- LEFT-TURN / U-TURN

GLOUCESTER COUNTY, NEW JERSEY
DELAWARE VALLEY REGIONAL PLANNING COMMISSION

CRASH DIAGRAM

HUNTER STREET BRIDGE OVER CONRAIL
LOCAL CONCEPT DEVELOPMENT STUDY

CITY OF WOODBURY

30' 20' 10' 0 30' 60'
SCALE IN FEET
1" = 30'

McCORMICK TAYLOR

SEPTEMBER 2017

CITY OF WOODBURY

COUNTY OF GLOUCESTER

Euclid Street
MP 1.07

Conrail R.R.
MP 1.13

Laurel Street
MP 1.14

N. Maple Street
MP 1.18

Cooper Street

Westbound
(To NJ 43)

Eastbound

Westbound

Eastbound
(To Evergreen Ave)

Railroad Avenue
MP 1.10

Green Avenue
MP 1.14

CRASH LEGEND

- PROPERTY DAMAGE
- INJURY
- FATALITY
- RIGHT-ANGLE
- REAR-END
- BACKING
- SIDE-SWIPE
- FIXED OBJECT
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GLOUCESTER COUNTY, NEW JERSEY
DELAWARE VALLEY REGIONAL PLANNING COMMISSION

CRASH DIAGRAM

HUNTER STREET BRIDGE OVER CONRAIL
LOCAL CONCEPT DEVELOPMENT STUDY

CITY OF WOODBURY

30' 20' 10' 0 30' 60'
SCALE IN FEET
1" = 30'

McCORMICK TAYLOR

SEPTEMBER 2017

Appendix F

Traffic Counts

ATR Counts

McCormick Taylor
700 East Gate Drive, Suite 201
Mount Laurel, NJ 08054

Site Code: 31941
Station ID: Hunter St
Just west of existing RR Bridge
City of Woodbury, Gloucester Co, NJ

Start	29-Jan-18		Tue		Wed		Thu		Fri		Sat		Sun		Week Average	
Time	Eastbound	Westbou	Eastboun	Westbou	Eastboun	Westbou	Eastboun	Westbou	Eastboun	Westbou	Eastboun	Westbou	Eastboun	Westbou	Eastboun	Westbou
12:00 AM	*	*	5	8	3	2	4	4	*	*	*	*	*	*	4	5
01:00	*	*	0	0	4	2	0	2	*	*	*	*	*	*	1	1
02:00	*	*	0	1	2	2	4	3	*	*	*	*	*	*	2	2
03:00	*	*	0	0	1	0	0	0	*	*	*	*	*	*	0	0
04:00	*	*	2	3	0	2	0	1	*	*	*	*	*	*	1	2
05:00	*	*	5	10	2	5	5	8	*	*	*	*	*	*	4	8
06:00	*	*	5	9	3	10	10	17	*	*	*	*	*	*	6	12
07:00	*	*	39	113	38	88	21	65	*	*	*	*	*	*	33	89
08:00	*	*	**90**	**137**	43	**119**	36	**116**	*	*	*	*	*	*	**56**	**124**
09:00	*	*	46	40	38	44	**69**	52	*	*	*	*	*	*	51	45
10:00	*	*	42	21	**68**	34	56	33	*	*	*	*	*	*	55	29
11:00	*	*	35	25	55	31	56	48	*	*	*	*	*	*	49	35
12:00 PM	*	*	69	46	110	54	**93**	64	*	*	*	*	*	*	91	55
01:00	*	*	73	66	78	**80**	88	**65**	*	*	*	*	*	*	80	**70**
02:00	*	*	80	**67**	79	76	38	36	*	*	*	*	*	*	66	60
03:00	*	*	70	54	93	63	*	*	*	*	*	*	*	*	82	58
04:00	*	*	**203**	50	**189**	79	*	*	*	*	*	*	*	*	**196**	64
05:00	**41**	20	87	35	105	38	*	*	*	*	*	*	*	*	78	31
06:00	16	**21**	42	21	41	23	*	*	*	*	*	*	*	*	33	22
07:00	23	17	26	27	22	20	*	*	*	*	*	*	*	*	24	21
08:00	11	7	15	12	11	9	*	*	*	*	*	*	*	*	12	9
09:00	11	11	19	9	18	16	*	*	*	*	*	*	*	*	16	12
10:00	11	2	9	4	10	7	*	*	*	*	*	*	*	*	10	4
11:00	4	3	2	5	7	3	*	*	*	*	*	*	*	*	4	4
Lane	117	81	964	763	1020	807	480	514	0	0	0	0	0	0	954	762
Day	198		1727		1827		994		0		0		0		1716	
AM Peak	-	-	08:00	08:00	10:00	08:00	09:00	08:00	-	-	-	-	-	-	08:00	08:00
Vol.	-	-	90	137	68	119	69	116	-	-	-	-	-	-	56	124
PM Peak	17:00	18:00	16:00	14:00	16:00	13:00	12:00	13:00	-	-	-	-	-	-	16:00	13:00
Vol.	41	21	203	67	189	80	93	65	-	-	-	-	-	-	196	70

Comb. Total	198	1727	1827	994	0	0	0	1716

ADT ADT 1,705 AADT 1,705

McCormick Taylor
700 East Gate Drive, Suite 201
Mount Laurel, NJ 08054

Site Code: 31941
Station ID: Hunter St
Just West of RR Bridge
City of Woodbury, Gloucester Co, NJ

Eastbound, Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
01/29/18	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
01:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
02:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
03:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
04:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
05:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
06:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
07:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
08:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
09:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
10:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
11:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
12 PM	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
13:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
14:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
15:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	3	30	12	0	2	0	0	0	0	0	0	0	0	14	61
18:00	1	28	8	0	0	0	0	0	0	0	0	0	0	0	37
19:00	2	29	5	0	1	0	0	0	0	0	0	0	0	3	40
20:00	3	12	2	0	0	0	0	0	0	0	0	0	0	1	18
21:00	2	14	5	0	0	0	0	0	0	0	0	0	0	1	22
22:00	1	8	1	0	1	0	0	0	0	0	0	0	0	2	13
23:00	1	5	0	0	0	0	0	0	0	0	0	0	0	1	7
Total	13	126	33	0	4	0	0	0	0	0	0	0	0	22	198
Percent	6.6%	63.6%	16.7%	0.0%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	11.1%	
AM Peak															
Vol.															
PM Peak	17:00	17:00	17:00		17:00									17:00	
Vol.	3	30	12		2									14	

McCormick Taylor
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Site Code: 31941
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Eastbound, Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
01/30/18	2	5	5	0	0	0	0	0	0	0	0	0	0	1	13
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	2	2	0	1	0	0	0	0	0	0	0	0	0	5
05:00	1	10	2	0	1	0	0	0	0	0	0	0	0	1	15
06:00	1	7	4	0	1	0	0	0	0	0	0	0	0	1	14
07:00	2	100	26	2	2	1	0	1	0	0	0	0	0	18	152
08:00	10	136	35	2	6	2	0	0	0	0	0	0	0	36	227
09:00	7	40	14	0	0	1	0	0	0	0	0	0	0	24	86
10:00	9	29	5	0	3	1	0	0	0	0	0	0	0	16	63
11:00	7	29	6	0	0	1	0	0	0	0	0	0	0	17	60
12 PM	21	49	10	1	3	3	0	1	0	0	0	0	0	27	115
13:00	5	69	22	2	6	0	0	0	0	0	0	0	0	35	139
14:00	21	76	12	0	3	3	0	0	0	0	0	0	0	32	147
15:00	16	67	11	1	1	0	0	0	0	0	0	0	0	28	124
16:00	36	105	23	0	6	4	0	0	0	0	0	0	0	79	253
17:00	8	79	12	0	3	0	0	0	0	0	0	0	0	20	122
18:00	7	33	12	0	1	0	0	0	0	0	0	0	0	10	63
19:00	2	37	7	0	0	0	0	0	0	0	0	0	0	7	53
20:00	1	17	1	0	5	0	0	0	0	0	0	0	0	3	27
21:00	4	17	3	0	2	0	0	0	0	0	0	0	0	2	28
22:00	2	8	1	0	1	0	0	0	0	0	0	0	0	1	13
23:00	0	3	1	0	0	0	0	0	0	0	0	0	0	3	7
Total	162	919	214	8	45	16	0	2	0	0	0	0	0	361	1727
Percent	9.4%	53.2%	12.4%	0.5%	2.6%	0.9%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	20.9%	
AM Peak	08:00	08:00	08:00	07:00	08:00	08:00		07:00						08:00	
Vol.	10	136	35	2	6	2		1						36	
PM Peak	16:00	16:00	16:00	13:00	13:00	16:00		12:00						16:00	
Vol.	36	105	23	2	6	4		1						79	

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Eastbound, Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
01/31/18	0	3	2	0	0	0	0	0	0	0	0	0	0	0	5
01:00	0	5	0	0	0	0	0	0	0	0	0	0	0	1	6
02:00	1	2	1	0	0	0	0	0	0	0	0	0	0	0	4
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:00	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
05:00	0	4	3	0	0	0	0	0	0	0	0	0	0	0	7
06:00	0	10	1	0	0	0	0	0	0	0	0	0	0	2	13
07:00	3	85	20	2	3	0	0	0	0	0	0	0	0	13	126
08:00	7	112	20	3	6	0	0	0	0	0	0	0	0	14	162
09:00	6	51	8	0	4	1	0	0	0	0	0	0	0	12	82
10:00	11	44	9	0	1	1	0	0	0	0	0	0	0	36	102
11:00	22	38	6	0	3	1	0	0	0	0	0	0	0	16	86
12 PM	23	76	17	1	7	3	0	0	0	0	0	0	0	37	164
13:00	15	82	17	1	3	2	0	0	0	0	0	0	0	38	158
14:00	24	81	19	1	0	4	0	0	0	0	0	0	0	26	155
15:00	18	84	16	1	4	1	0	0	0	0	0	0	0	32	156
16:00	42	105	17	0	2	4	0	0	0	0	0	0	0	98	268
17:00	23	71	16	0	2	0	0	0	0	0	0	0	0	31	143
18:00	2	42	7	2	2	0	0	0	0	0	0	0	0	9	64
19:00	0	28	9	0	3	0	0	0	0	0	0	0	0	2	42
20:00	1	10	4	0	0	0	0	0	0	0	0	0	0	5	20
21:00	1	26	1	2	1	0	0	0	0	0	0	0	0	3	34
22:00	0	11	2	0	0	0	0	0	0	0	0	0	0	4	17
23:00	1	4	4	0	0	0	0	0	0	0	0	0	0	1	10
Total	200	976	200	13	41	17	0	0	0	0	0	0	0	380	1827
Percent	10.9%	53.4%	10.9%	0.7%	2.2%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	20.8%	
AM Peak	11:00	08:00	07:00	08:00	08:00	09:00								10:00	
Vol.	22	112	20	3	6	1								36	
PM Peak	16:00	16:00	14:00	18:00	12:00	14:00								16:00	
Vol.	42	105	19	2	7	4								98	

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Eastbound, Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
02/01/18	0	5	1	0	1	0	0	0	0	0	0	0	0	1	8
01:00	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
02:00	0	4	2	0	0	0	0	0	0	0	0	0	0	1	7
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00	1	11	1	0	0	0	0	0	0	0	0	0	0	0	13
06:00	1	19	2	0	0	1	0	0	0	0	0	0	0	4	27
07:00	0	67	11	2	2	0	0	0	0	0	0	0	0	4	86
08:00	9	111	15	1	3	0	0	0	0	0	0	0	0	13	152
09:00	19	51	12	1	0	3	0	0	0	0	0	0	0	35	121
10:00	13	45	5	1	1	1	0	0	0	0	0	0	0	23	89
11:00	13	54	13	0	4	2	0	0	0	0	0	0	0	18	104
12 PM	22	79	17	1	3	2	0	0	0	0	0	0	0	33	157
13:00	17	84	16	1	2	0	0	0	0	0	0	0	0	33	153
14:00	9	29	4	0	1	0	0	0	0	0	0	0	0	31	74
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
17:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
18:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
19:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
20:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
21:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
22:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
23:00	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total	104	561	100	7	17	9	0	0	0	0	0	0	0	196	994
Percent	10.5%	56.4%	10.1%	0.7%	1.7%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	19.7%	
AM Peak	09:00	08:00	08:00	07:00	11:00	09:00								09:00	
Vol.	19	111	15	2	4	3								35	
PM Peak	12:00	13:00	12:00	12:00	12:00	12:00								12:00	
Vol.	22	84	17	1	3	2								33	
Grand Total	479	2582	547	28	107	42	0	2	0	0	0	0	0	959	4746
Percent	10.1%	54.4%	11.5%	0.6%	2.3%	0.9%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	20.2%	

Turning Movement Counts

McCormick Taylor

700 East Gate Drive, Suite 201
Mount Laurel, NJ 08054
www.mccormicktaylor.com

N/S Route: Broad St
E/W Route: Cooper St
City of Woodbury, Gloucester Co, NJ
Wednesday/Cloudy/AT&NP

File Name : 06_07_broad_cooper
Site Code : 00000007
Start Date : 9/13/2017
Page No : 1

Groups Printed- Cars - Light Trucks - Heavy Trucks

	Broad St Southbound					Cooper St Westbound					Broad St Northbound					Cooper St 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
07:00 AM	10	54	4	1	69	8	66	22	0	96	9	156	5	0	170	4	58	28	4	94	429
07:15 AM	20	83	5	11	119	2	69	16	3	90	7	160	17	0	184	7	58	26	12	103	496
07:30 AM	20	92	8	17	137	6	72	9	1	88	11	146	18	9	184	9	64	27	12	112	521
07:45 AM	16	89	18	10	133	6	70	22	2	100	12	151	12	2	177	4	65	39	8	116	526
Total	66	318	35	39	458	22	277	69	6	374	39	613	52	11	715	24	245	120	36	425	1972
08:00 AM	16	120	13	3	152	8	56	18	5	87	9	158	9	1	177	2	55	36	3	96	512
08:15 AM	24	96	12	1	133	7	65	20	1	93	10	145	9	7	171	3	62	47	2	114	511
08:30 AM	22	134	4	5	165	8	69	14	4	95	20	142	13	0	175	10	75	40	0	125	560
08:45 AM	20	134	19	5	178	7	67	24	1	99	15	129	11	3	158	10	75	18	4	107	542
Total	82	484	48	14	628	30	257	76	11	374	54	574	42	11	681	25	267	141	9	442	2125
*** BREAK ***																					
02:30 PM	21	115	17	11	164	9	54	27	6	96	18	126	24	2	170	12	64	26	23	125	555
02:45 PM	20	124	14	12	170	12	48	16	9	85	18	135	22	11	186	1	78	51	19	149	590
Total	41	239	31	23	334	21	102	43	15	181	36	261	46	13	356	13	142	77	42	274	1145
03:00 PM	19	96	16	2	133	20	58	27	8	113	23	107	13	4	147	3	68	33	9	113	506
03:15 PM	28	134	11	8	181	8	65	25	4	102	28	121	14	7	170	5	62	19	14	100	553
03:30 PM	28	138	10	10	186	20	54	19	10	103	23	120	18	5	166	3	66	15	15	99	554
03:45 PM	27	100	9	8	144	8	69	25	3	105	23	109	18	3	153	4	74	20	8	106	508
Total	102	468	46	28	644	56	246	96	25	423	97	457	63	19	636	15	270	87	46	418	2121
04:00 PM	23	119	10	3	155	4	66	31	2	103	20	99	11	3	133	11	72	30	7	120	511
04:15 PM	27	139	7	3	176	9	73	24	6	112	17	125	15	5	162	6	81	20	10	117	567
04:30 PM	24	148	6	21	199	9	57	30	8	104	25	111	11	2	149	1	88	57	7	153	605
04:45 PM	31	158	13	1	203	20	62	25	1	108	14	143	12	1	170	5	95	44	0	144	625
Total	105	564	36	28	733	42	258	110	17	427	76	478	49	11	614	23	336	151	24	534	2308
05:00 PM	31	114	7	1	153	15	61	30	10	116	19	134	24	7	184	6	91	42	5	144	597
05:15 PM	23	134	25	4	186	11	71	25	5	112	29	124	9	0	162	6	74	24	15	119	579
05:30 PM	25	144	9	0	178	9	64	32	8	113	16	129	14	2	161	8	89	30	7	134	586
05:45 PM	24	116	10	1	151	7	50	10	1	68	24	117	14	2	157	11	78	30	4	123	499
Total	103	508	51	6	668	42	246	97	24	409	88	504	61	11	664	31	332	126	31	520	2261
Grand Total	499	2581	247	138	3465	213	1386	491	98	2188	390	2887	313	76	3666	131	1592	702	188	2613	11932
Apprch %	14.4	74.5	7.1	4		9.7	63.3	22.4	4.5		10.6	78.8	8.5	2.1		5	60.9	26.9	7.2		
Total %	4.2	21.6	2.1	1.2	29	1.8	11.6	4.1	0.8	18.3	3.3	24.2	2.6	0.6	30.7	1.1	13.3	5.9	1.6	21.9	
Cars	478	2477	233	136	3324	211	1336	483	98	2128	382	2833	302	76	3593	122	1531	681	188	2522	11567
% Cars	95.8	96	94.3	98.6	95.9	99.1	96.4	98.4	100	97.3	97.9	98.1	96.5	100	98	93.1	96.2	97	100	96.5	96.9
Light Trucks	6	49	8	2	65	0	35	3	0	38	5	30	8	0	43	4	27	12	0	43	189
% Light Trucks	1.2	1.9	3.2	1.4	1.9	0	2.5	0.6	0	1.7	1.3	1	2.6	0	1.2	3.1	1.7	1.7	0	1.6	1.6
Heavy Trucks	15	55	6	0	76	2	15	5	0	22	3	24	3	0	30	5	34	9	0	48	176
% Heavy Trucks	3	2.1	2.4	0	2.2	0.9	1.1	1	0	1	0.8	0.8	1	0	0.8	3.8	2.1	1.3	0	1.8	1.5

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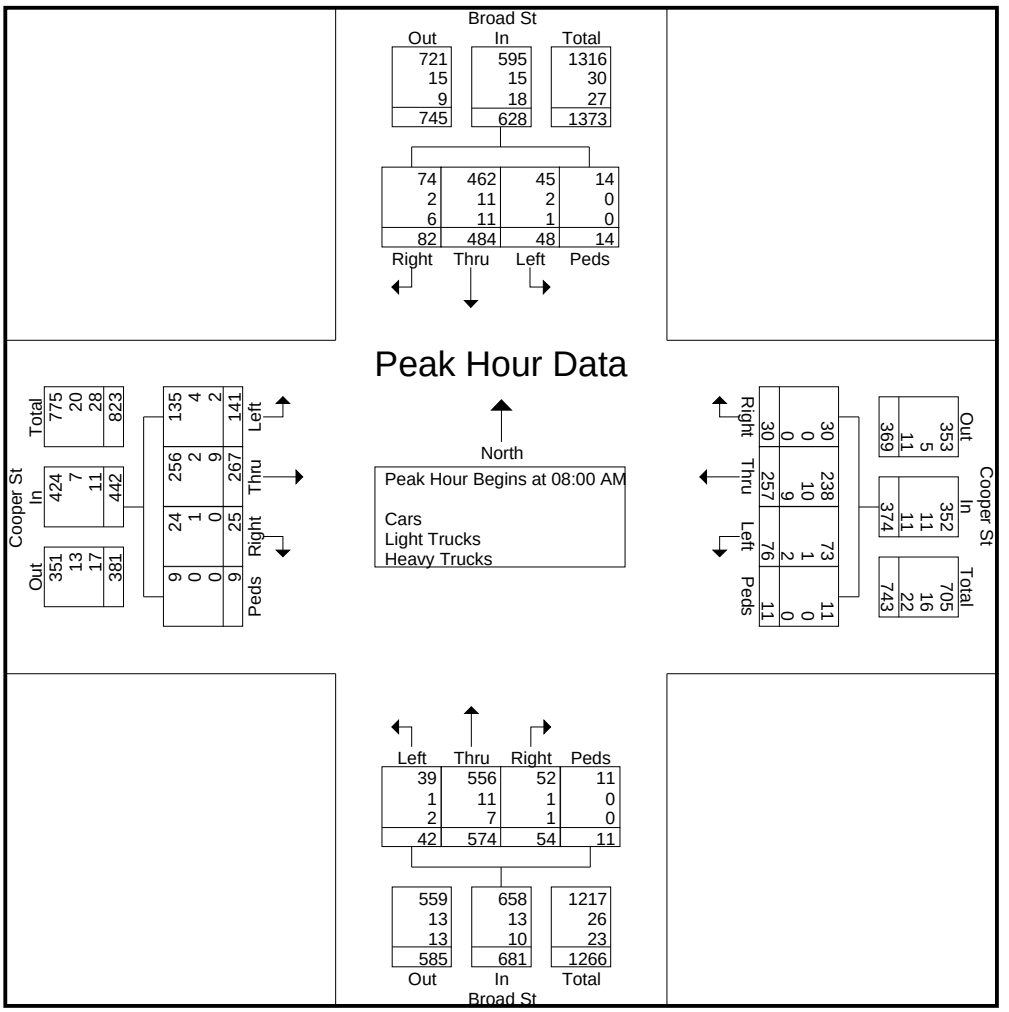
N/S Route: Broad St
E/W Route: Cooper St
City of Woodbury, Gloucester Co, NJ
Wednesday/Cloudy/AT&NP

File Name : 06_07_broad_cooper
Site Code : 00000007
Start Date : 9/13/2017
Page No : 2

	Broad St Southbound					Cooper St Westbound					Broad St Northbound					Cooper St 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 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	16	120	13	3	152	**8**	56	18	**5**	87	9	**158**	9	1	**177**	2	55	36	3	96	512
08:15 AM	**24**	96	12	1	133	7	65	20	1	93	10	145	9	**7**	171	3	62	**47**	2	114	511
08:30 AM	22	**134**	4	**5**	165	8	**69**	14	4	95	**20**	142	**13**	0	175	**10**	**75**	40	0	**125**	**560**
08:45 AM	20	134	**19**	5	**178**	7	67	**24**	1	**99**	15	129	11	3	158	10	75	18	**4**	107	542
Total Volume	82	484	48	14	628	30	257	76	11	374	54	574	42	11	681	25	267	141	9	442	2125
% App. Total	13.1	77.1	7.6	2.2		8	68.7	20.3	2.9		7.9	84.3	6.2	1.6		5.7	60.4	31.9	2		
PHF	.854	.903	.632	.700	.882	.938	.931	.792	.550	.944	.675	.908	.808	.393	.962	.625	.890	.750	.563	.884	.949
Cars	74	462	45	14	595	30	238	73	11	352	52	556	39	11	658	24	256	135	9	424	2029
% Cars	90.2	95.5	93.8	100	94.7	100	92.6	96.1	100	94.1	96.3	96.9	92.9	100	96.6	96.0	95.9	95.7	100	95.9	95.5
Light Trucks																					
% Light Trucks	2.4	2.3	4.2	0	2.4	0	3.9	1.3	0	2.9	1.9	1.9	2.4	0	1.9	4.0	0.7	2.8	0	1.6	2.2
Heavy Trucks	6	11	1	0	18	0	9	2	0	11	1	7	2	0	10	0	9	2	0	11	50
% Heavy Trucks	7.3	2.3	2.1	0	2.9	0	3.5	2.6	0	2.9	1.9	1.2	4.8	0	1.5	0	3.4	1.4	0	2.5	2.4



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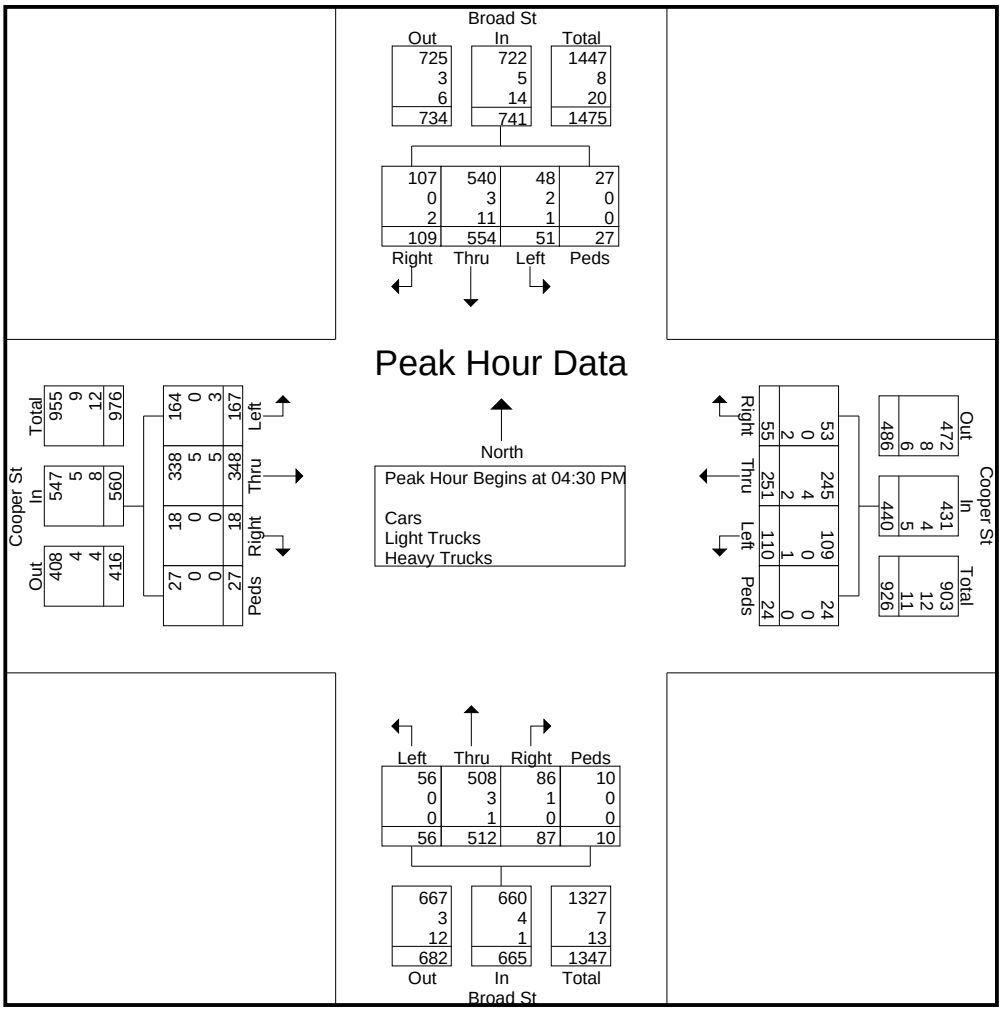
N/S Route: Broad St
E/W Route: Cooper St
City of Woodbury, Gloucester Co, NJ
Wednesday/Cloudy/AT&NP

File Name : 06_07_broad_cooper
Site Code : 00000007
Start Date : 9/13/2017
Page No : 3

	Broad St Southbound					Cooper St Westbound					Broad St Northbound					Cooper St 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 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
04:30 PM	24	148	6	**21**	199	9	57	**30**	8	104	25	111	11	2	149	1	88	**57**	7	**153**	605
04:45 PM	**31**	**158**	13	1	**203**	**20**	62	25	1	108	14	**143**	12	1	170	5	**95**	44	0	144	**625**
05:00 PM	31	114	7	1	153	15	61	30	**10**	**116**	19	134	**24**	**7**	**184**	**6**	91	42	5	144	597
05:15 PM	23	134	**25**	4	186	11	**71**	25	5	112	**29**	124	9	0	162	6	74	24	**15**	119	579
Total Volume	109	554	51	27	741	55	251	110	24	440	87	512	56	10	665	18	348	167	27	560	2406
% App. Total	14.7	74.8	6.9	3.6		12.5	57	25	5.5		13.1	77	8.4	1.5		3.2	62.1	29.8	4.8		
PHF	.879	.877	.510	.321	.913	.688	.884	.917	.600	.948	.750	.895	.583	.357	.904	.750	.916	.732	.450	.915	.962
Cars	107	540	48	27	722	53	245	109	24	431	86	508	56	10	660	18	338	164	27	547	2360
% Cars	98.2	97.5	94.1	100	97.4	96.4	97.6	99.1	100	98.0	98.9	99.2	100	100	99.2	100	97.1	98.2	100	97.7	98.1
Light Trucks																					
% Light Trucks	0	0.5	3.9	0	0.7	0	1.6	0	0	0.9	1.1	0.6	0	0	0.6	0	1.4	0	0	0.9	0.7
Heavy Trucks	2	11	1	0	14	2	2	1	0	5	0	1	0	0	1	0	5	3	0	8	28
% Heavy Trucks	1.8	2.0	2.0	0	1.9	3.6	0.8	0.9	0	1.1	0	0.2	0	0	0.2	0	1.4	1.8	0	1.4	1.2



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N/S Route: Broad St
E/W Route: Hunter St
City of Woodbury, Gloucester Co, NJ
Tues/Sunny/LT&NP

File Name : 01_02_Broad_Hunter
Site Code : 00000002
Start Date : 9/12/2017

Groups Printed- Cars - Light Trucks - Heavy Trucks

	Hunter St Southbound				Hunter St Westbound				Hunter St Northbound				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
07:00 AM	0	0	1	1	9	1	2	12	3	207	0	210	223
07:15 AM	85	6	0	91	11	6	3	20	7	195	25	227	338
07:30 AM	159	7	0	166	5	10	4	19	9	198	15	222	407
07:45 AM	150	11	0	161	15	4	9	28	18	202	10	230	419
Total	394	24	1	419	40	21	18	79	37	802	50	889	1387
08:00 AM	115	20	0	135	10	2	7	19	23	187	0	210	364
08:15 AM	121	32	0	153	15	7	14	36	31	152	1	184	373
08:30 AM	111	23	0	134	15	4	5	24	43	152	2	197	355
08:45 AM	150	27	0	177	14	3	13	30	29	166	3	198	405
Total	497	102	0	599	54	16	39	109	126	657	6	789	1497
09:00 AM	143	14	0	157	0	0	0	0	0	0	0	0	157
*** BREAK ***													
Total	143	14	0	157	0	0	0	0	0	0	0	0	157
*** BREAK ***													
02:30 PM	132	18	16	166	20	14	10	44	10	102	18	130	340
02:45 PM	162	14	14	190	23	12	15	50	16	144	48	208	448
Total	294	32	30	356	43	26	25	94	26	246	66	338	788
03:00 PM	151	18	6	175	12	13	18	43	6	137	15	158	376
03:15 PM	151	19	4	174	12	17	13	42	11	158	13	182	398
03:30 PM	153	29	8	190	18	19	6	43	13	122	13	148	381
03:45 PM	138	4	4	146	17	18	4	39	12	136	4	152	337
Total	593	70	22	685	59	67	41	167	42	553	45	640	1492
04:00 PM	164	13	11	188	17	16	13	46	15	135	12	162	396
04:15 PM	161	3	11	175	19	11	7	37	2	148	7	157	369
04:30 PM	156	6	11	173	28	26	19	73	3	159	16	178	424
04:45 PM	154	17	18	189	16	13	18	47	3	126	18	147	383
Total	635	39	51	725	80	66	57	203	23	568	53	644	1572
05:00 PM	164	16	5	185	17	11	5	33	5	157	6	168	386
05:15 PM	145	9	4	158	9	9	3	21	0	133	4	137	316
05:30 PM	159	10	8	177	13	3	11	27	6	146	8	160	364
05:45 PM	176	11	6	193	6	4	8	18	5	110	5	120	331
Total	644	46	23	713	45	27	27	99	16	546	23	585	1397
Grand Total	3200	327	127	3654	321	223	207	751	270	3372	243	3885	8290
Apprch %	87.6	8.9	3.5		42.7	29.7	27.6		6.9	86.8	6.3		
Total %	38.6	3.9	1.5	44.1	3.9	2.7	2.5	9.1	3.3	40.7	2.9	46.9	
Cars	3200	327	127	3654	317	222	207	746	265	3221	243	3729	8129
% Cars	100	100	100	100	98.8	99.6	100	99.3	98.1	95.5	100	96	98.1
Light Trucks	0	0	0	0	2	1	0	3	4	80	0	84	87
% Light Trucks	0	0	0	0	0.6	0.4	0	0.4	1.5	2.4	0	2.2	1
Heavy Trucks	0	0	0	0	2	0	0	2	1	71	0	72	74
% Heavy Trucks	0	0	0	0	0.6	0	0	0.3	0.4	2.1	0	1.9	0.9

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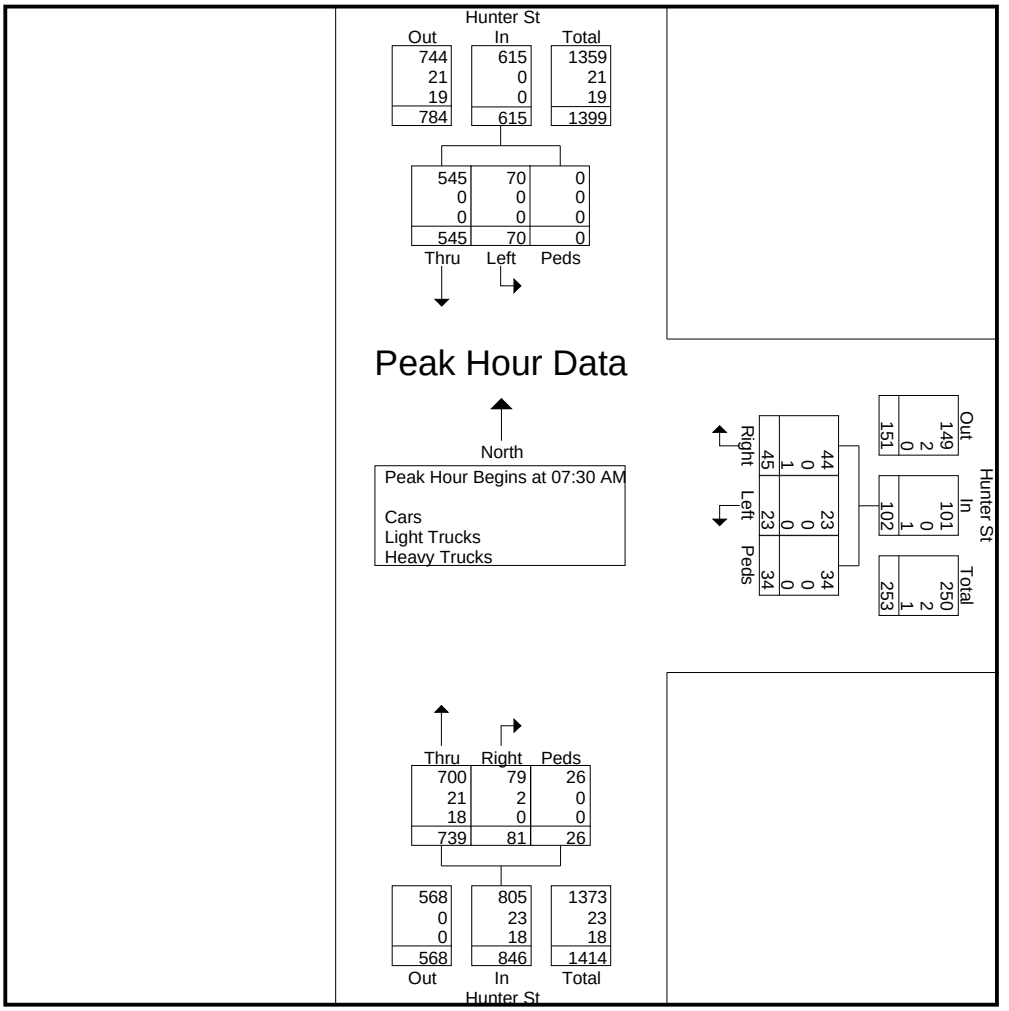
N/S Route: Broad St
E/W Route: Hunter St
City of Woodbury, Gloucester Co, NJ
Tues/Sunny/LT&NP

File Name : 01_02_Broad_Hunter
Site Code : 00000002
Start Date : 9/12/2017

	Hunter St Southbound				Hunter St Westbound				Hunter St Northbound				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 07:30 AM													
07:30 AM	**159**	7	0	**166**	5	**10**	4	19	9	198	**15**	222	407
07:45 AM	150	11	0	161	**15**	4	9	28	18	**202**	10	**230**	**419**
08:00 AM	115	20	0	135	10	2	7	19	23	187	0	210	364
08:15 AM	121	**32**	0	153	15	7	**14**	**36**	**31**	152	1	184	373
Total Volume	545	70	0	615	45	23	34	102	81	739	26	846	1563
% App. Total	88.6	11.4	0		44.1	22.5	33.3		9.6	87.4	3.1		
PHF	.857	.547	.000	.926	.750	.575	.607	.708	.653	.915	.433	.920	.933
Cars	545	70	0	615	44	23	34	101	79	700	26	805	1521
% Cars	100	100	0	100	97.8	100	100	99.0	97.5	94.7	100	95.2	97.3
Light Trucks	0	0	0	0	0	0	0	0	2	21	0	23	23
% Light Trucks	0	0	0	0	0	0	0	0	2.5	2.8	0	2.7	1.5
Heavy Trucks	0	0	0	0	1	0	0	1	0	18	0	18	19
% Heavy Trucks	0	0	0	0	2.2	0	0	1.0	0	2.4	0	2.1	1.2



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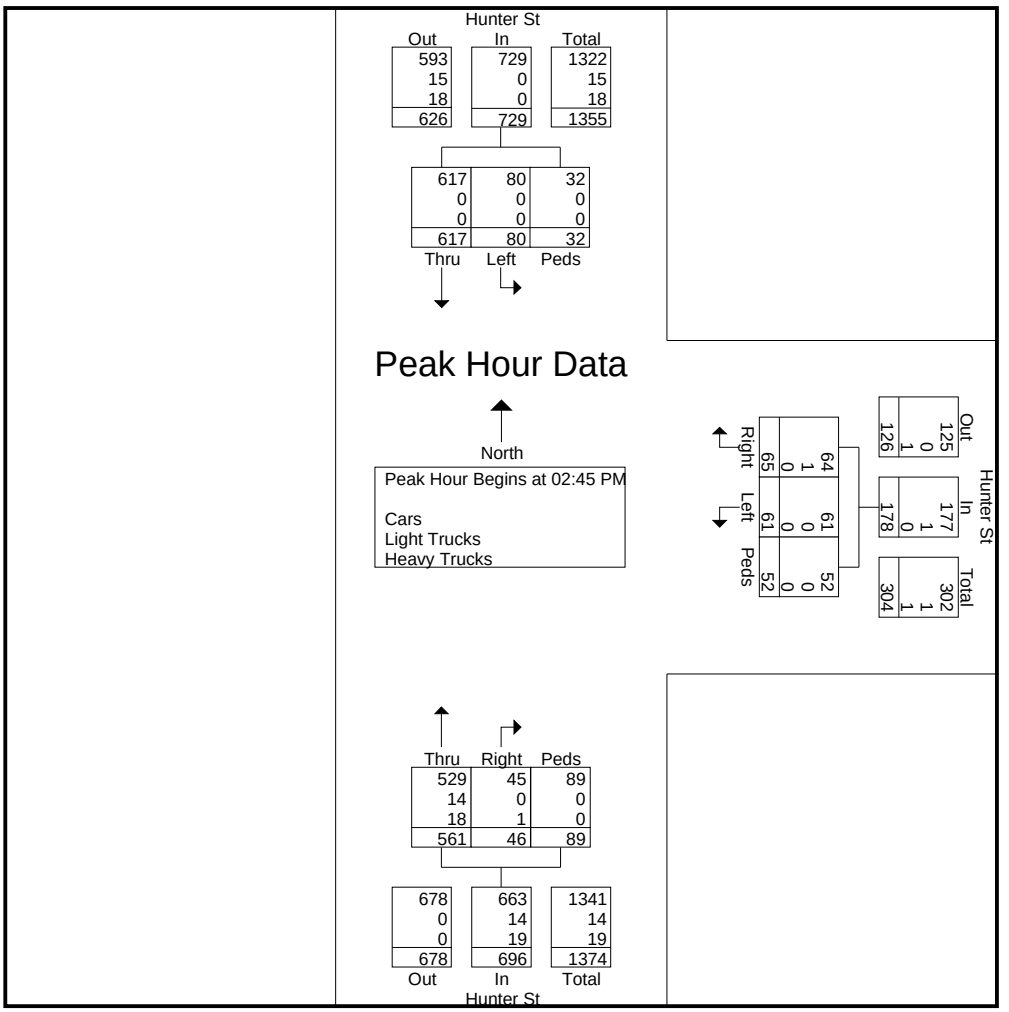
N/S Route: Broad St
E/W Route: Hunter St
City of Woodbury, Gloucester Co, NJ
Tues/Sunny/LT&NP

File Name : 01_02_Broad_Hunter
Site Code : 00000002
Start Date : 9/12/2017

	Hunter St Southbound				Hunter St Westbound				Hunter St Northbound				
Start Time	Thru	Left	Peds	App. Total	Right	Left	Peds	App. Total	Right	Thru	Peds	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1													
Peak Hour for Entire Intersection Begins at 02:45 PM													
02:45 PM	**162**	14	**14**	**190**	**23**	12	15	**50**	**16**	144	**48**	**208**	**448**
03:00 PM	151	18	6	175	12	13	**18**	43	6	137	15	158	376
03:15 PM	151	19	4	174	12	17	13	42	11	**158**	13	182	398
03:30 PM	153	**29**	8	190	18	**19**	6	43	13	122	13	148	381
Total Volume	617	80	32	729	65	61	52	178	46	561	89	696	1603
% App. Total	84.6	11	4.4		36.5	34.3	29.2		6.6	80.6	12.8		
PHF	.952	.690	.571	.959	.707	.803	.722	.890	.719	.888	.464	.837	.895
Cars	617	80	32	729	64	61	52	177	45	529	89	663	1569
% Cars	100	100	100	100	98.5	100	100	99.4	97.8	94.3	100	95.3	97.9
Light Trucks	0	0	0	0	1	0	0	1	0	14	0	14	15
% Light Trucks	0	0	0	0	1.5	0	0	0.6	0	2.5	0	2.0	0.9
Heavy Trucks	0	0	0	0	0	0	0	0	1	18	0	19	19
% Heavy Trucks	0	0	0	0	0	0	0	0	2.2	3.2	0	2.7	1.2



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N/S Route: Evergreen Ave
E/W Route: Cooper St
City of Woodbury, Gloucester Co, NJ
Thurs/Cloudy/AT&AK

File Name : 03_04_evergreen_cooper
Site Code : 00000004
Start Date : 9/14/2017

Groups Printed- Cars - Light Trucks - Heavy Trucks

	Evergreen Ave Southbound					Cooper St Westbound					Evergreen Ave Northbound					Cooper St 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
07:00 AM	5	35	2	0	42	10	80	17	0	107	29	140	8	1	178	10	55	2	0	67	394
07:15 AM	3	107	7	0	117	10	118	16	2	146	31	140	10	0	181	8	68	7	1	84	528
07:30 AM	6	88	3	0	97	8	103	43	1	155	25	123	1	0	149	8	84	2	0	94	495
07:45 AM	7	58	10	0	75	19	100	41	0	160	26	135	13	0	174	8	62	10	0	80	489
Total	21	288	22	0	331	47	401	117	3	568	111	538	32	1	682	34	269	21	1	325	1906
08:00 AM	6	58	4	0	68	24	118	23	0	165	27	128	10	1	166	3	67	7	0	77	476
08:15 AM	13	90	7	0	110	23	118	36	2	179	25	125	17	2	169	3	69	15	3	90	548
08:30 AM	7	87	14	2	110	19	125	30	2	176	31	121	12	0	164	9	69	12	1	91	541
08:45 AM	9	76	14	1	100	22	93	27	0	142	36	77	18	0	131	8	52	9	1	70	443
Total	35	311	39	3	388	88	454	116	4	662	119	451	57	3	630	23	257	43	5	328	2008
*** BREAK ***																					
02:30 PM	5	51	7	0	63	5	57	11	0	73	13	27	6	1	47	3	44	4	2	53	236
02:45 PM	5	125	17	1	148	30	90	56	5	181	46	114	10	0	170	6	101	14	0	121	620
Total	10	176	24	1	211	35	147	67	5	254	59	141	16	1	217	9	145	18	2	174	856
03:00 PM	7	112	12	2	133	20	93	45	4	162	59	98	9	0	166	6	94	6	0	106	567
03:15 PM	6	138	20	0	164	32	98	54	6	190	47	101	8	1	157	6	114	8	0	128	639
03:30 PM	9	125	26	0	160	12	102	40	0	154	54	102	9	0	165	4	96	1	0	101	580
03:45 PM	7	136	15	0	158	19	115	43	0	177	45	75	6	0	126	11	138	7	0	156	617
Total	29	511	73	2	615	83	408	182	10	683	205	376	32	1	614	27	442	22	0	491	2403
04:00 PM	6	148	18	0	172	17	102	50	1	170	44	99	5	0	148	7	141	4	0	152	642
04:15 PM	1	154	23	0	178	9	115	56	1	181	62	101	10	0	173	6	141	6	0	153	685
04:30 PM	4	153	14	1	172	10	84	54	0	148	48	100	4	1	153	8	150	8	3	169	642
04:45 PM	2	121	19	0	142	18	93	60	0	171	49	72	6	0	127	7	127	4	0	138	578
Total	13	576	74	1	664	54	394	220	2	670	203	372	25	1	601	28	559	22	3	612	2547
05:00 PM	9	157	21	1	188	9	90	32	0	131	57	99	7	0	163	8	106	3	0	117	599
05:15 PM	8	138	15	0	161	19	118	49	0	186	68	98	10	1	177	5	140	5	0	150	674
05:30 PM	1	140	13	0	154	8	90	58	0	156	54	91	8	0	153	6	158	3	1	168	631
05:45 PM	2	144	13	1	160	14	105	49	1	169	48	98	6	0	152	2	113	10	2	127	608
Total	20	579	62	2	663	50	403	188	1	642	227	386	31	1	645	21	517	21	3	562	2512
Grand Total	128	2441	294	9	2872	357	2207	890	25	3479	924	2264	193	8	3389	142	2189	147	14	2492	12232
Apprch %	4.5	85	10.2	0.3		10.3	63.4	25.6	0.7		27.3	66.8	5.7	0.2		5.7	87.8	5.9	0.6		
Total %	1	20	2.4	0.1	23.5	2.9	18	7.3	0.2	28.4	7.6	18.5	1.6	0.1	27.7	1.2	17.9	1.2	0.1	20.4	
Cars	120	2358	289	9	2776	353	2158	877	25	3413	911	2227	191	8	3337	133	2107	142	14	2396	11922
% Cars	93.8	96.6	98.3	100	96.7	98.9	97.8	98.5	100	98.1	98.6	98.4	99	100	98.5	93.7	96.3	96.6	100	96.1	97.5
Light Trucks	6	41	3	0	50	3	28	8	0	39	11	23	0	0	34	6	45	3	0	54	177
% Light Trucks	4.7	1.7	1	0	1.7	0.8	1.3	0.9	0	1.1	1.2	1	0	0	1	4.2	2.1	2	0	2.2	1.4
Heavy Trucks	2	42	2	0	46	1	21	5	0	27	2	14	2	0	18	3	37	2	0	42	133
% Heavy Trucks	1.6	1.7	0.7	0	1.6	0.3	1	0.6	0	0.8	0.2	0.6	1	0	0.5	2.1	1.7	1.4	0	1.7	1.1

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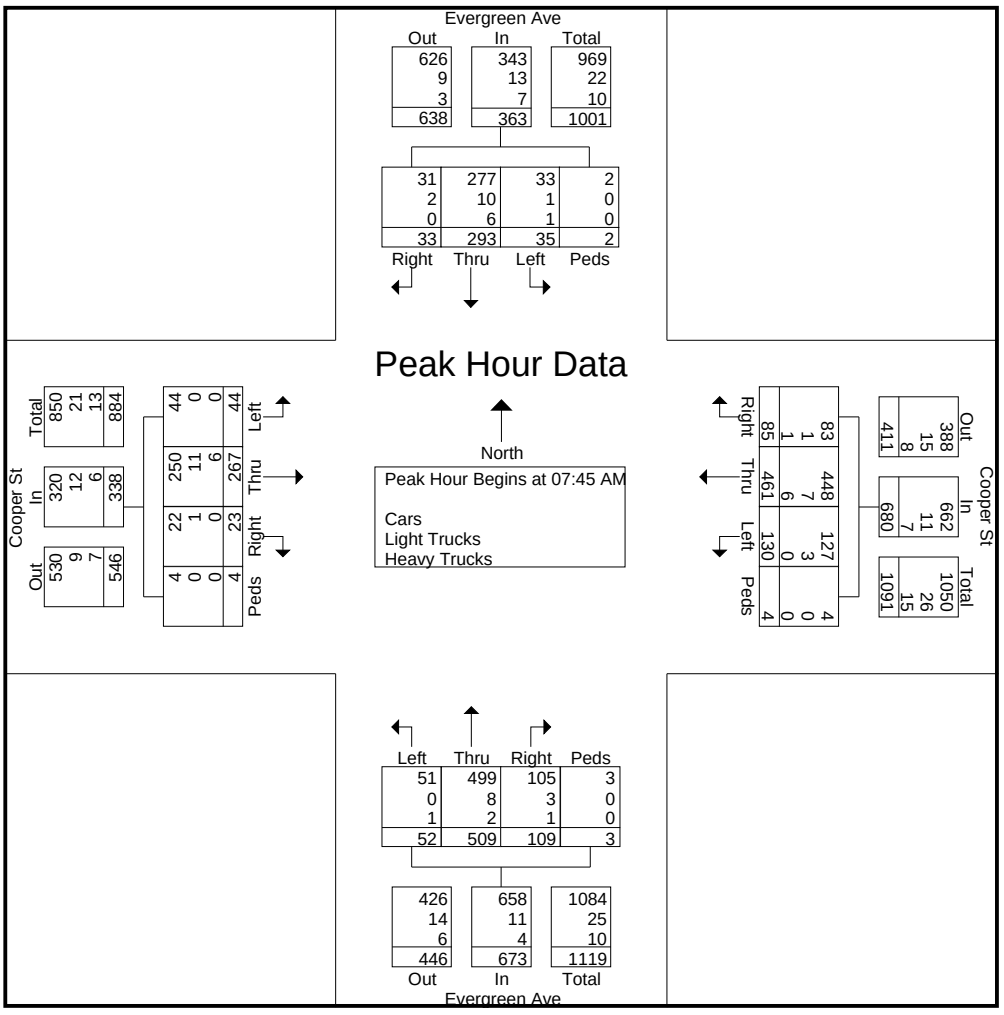
E/W Route: Cooper St
City of Woodbury, Gloucester Co, NJ
Thurs/Cloudy/AT&AK

File Name : 03_04_evergreen_cooper
Site Code : 00000004
Start Date : 9/14/2017
Page No : 2

	Evergreen Ave Southbound					Cooper St Westbound					Evergreen Ave Northbound					Cooper St 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 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	7	58	10	0	75	19	100	**41**	0	160	26	**135**	13	0	**174**	8	62	10	0	80	489
08:00 AM	6	58	4	0	68	**24**	118	23	0	165	27	128	10	1	166	3	67	7	0	77	476
08:15 AM	**13**	**90**	7	0	**110**	23	118	36	**2**	**179**	25	125	**17**	**2**	169	3	**69**	**15**	**3**	90	**548**
08:30 AM	7	87	**14**	**2**	110	19	**125**	30	2	176	**31**	121	12	0	164	**9**	69	12	1	**91**	541
Total Volume	33	293	35	2	363	85	461	130	4	680	109	509	52	3	673	23	267	44	4	338	2054
% App. Total	9.1	80.7	9.6	0.6		12.5	67.8	19.1	0.6		16.2	75.6	7.7	0.4		6.8	79	13	1.2		
PHF	.635	.814	.625	.250	.825	.885	.922	.793	.500	.950	.879	.943	.765	.375	.967	.639	.967	.733	.333	.929	.937
Cars	31	277	33	2	343	83	448	127	4	662	105	499	51	3	658	22	250	44	4	320	1983
% Cars	93.9	94.5	94.3	100	94.5	97.6	97.2	97.7	100	97.4	96.3	98.0	98.1	100	97.8	95.7	93.6	100	100	94.7	96.5
Light Trucks																					
% Light Trucks	6.1	3.4	2.9	0	3.6	1.2	1.5	2.3	0	1.6	2.8	1.6	0	0	1.6	4.3	4.1	0	0	3.6	2.3
Heavy Trucks	0	6	1	0	7	1	6	0	0	7	1	2	1	0	4	0	6	0	0	6	24
% Heavy Trucks	0	2.0	2.9	0	1.9	1.2	1.3	0	0	1.0	0.9	0.4	1.9	0	0.6	0	2.2	0	0	1.8	1.2



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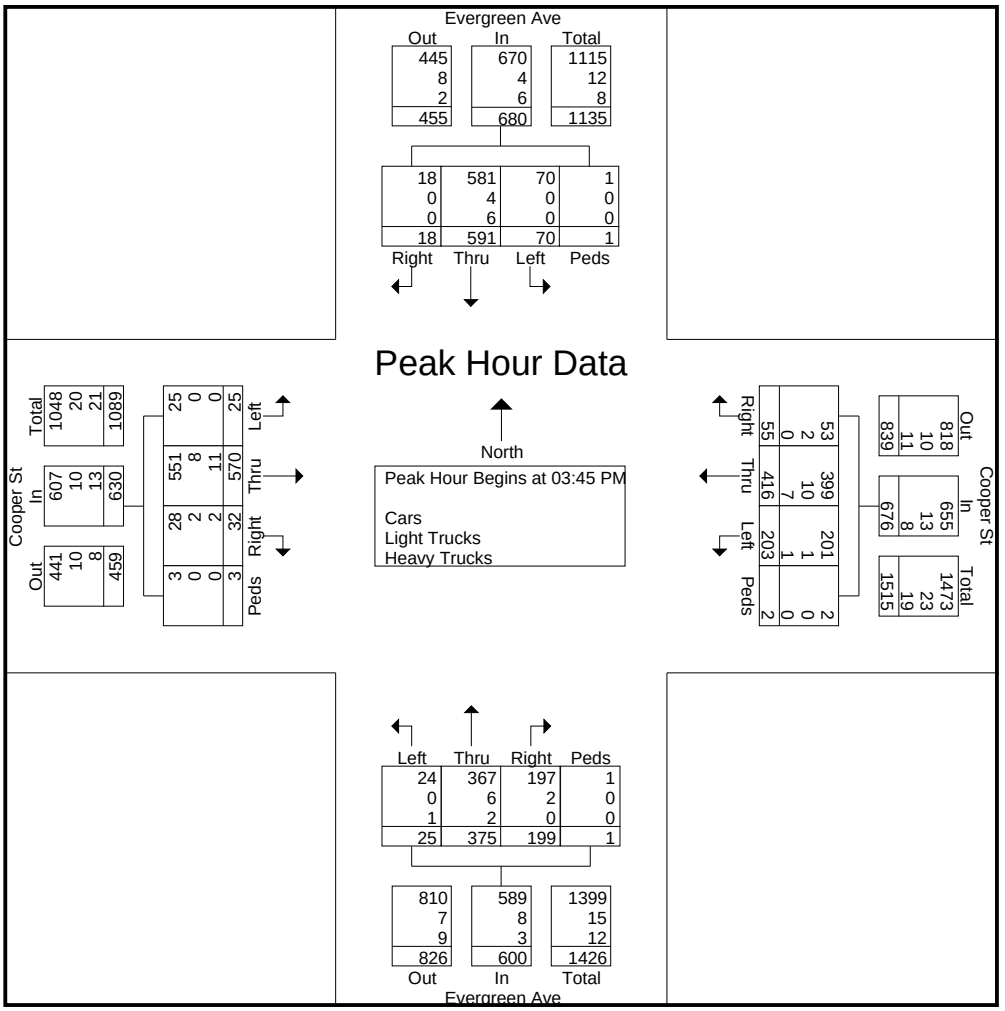
File Name : 03_04_evergreen_cooper
Site Code : 00000004
Start Date : 9/14/2017

	Evergreen Ave Southbound					Cooper St Westbound					Evergreen Ave Northbound					Cooper St 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 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:45 PM																					
03:45 PM	**7**	136	15	0	158	**19**	**115**	43	0	177	45	75	6	0	126	**11**	138	7	0	156	617
04:00 PM	6	148	18	0	172	17	102	50	**1**	170	44	99	5	0	148	7	141	4	0	152	642
04:15 PM	1	**154**	**23**	0	**178**	9	115	**56**	1	**181**	**62**	**101**	**10**	0	**173**	6	141	6	0	153	**685**
04:30 PM	4	153	14	**1**	172	10	84	54	0	148	48	100	4	**1**	153	8	**150**	**8**	**3**	**169**	642
Total Volume	18	591	70	1	680	55	416	203	2	676	199	375	25	1	600	32	570	25	3	630	2586
% App. Total	2.6	86.9	10.3	0.1		8.1	61.5	30	0.3		33.2	62.5	4.2	0.2		5.1	90.5	4	0.5		
PHF	.643	.959	.761	.250	.955	.724	.904	.906	.500	.934	.802	.928	.625	.250	.867	.727	.950	.781	.250	.932	.944
Cars	18	581	70	1	670	53	399	201	2	655	197	367	24	1	589	28	551	25	3	607	2521
% Cars	100	98.3	100	100	98.5	96.4	95.9	99.0	100	96.9	99.0	97.9	96.0	100	98.2	87.5	96.7	100	100	96.3	97.5
Light Trucks																					
% Light Trucks	0	0.7	0	0	0.6	3.6	2.4	0.5	0	1.9	1.0	1.6	0	0	1.3	6.3	1.4	0	0	1.6	1.4
Heavy Trucks	0	6	0	0	6	0	7	1	0	8	0	2	1	0	3	2	11	0	0	13	30
% Heavy Trucks	0	1.0	0	0	0.9	0	1.7	0.5	0	1.2	0	0.5	4.0	0	0.5	6.3	1.9	0	0	2.1	1.2



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N/S Route: Evergreen Ave
E/W Route: Hunter St
City of Woodbury, Gloucester Co, NJ
Wed/Cloudy/AK

File Name : 05_evergreen_hunter
Site Code : 00000005
Start Date : 9/13/2017
Page No : 1

Groups Printed- Cars - Light Trucks - Heavy Trucks

	Evergreen Ave Southbound					Hunter St Westbound					Evergreen Ave Northbound					Hunter St 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
07:00 AM	2	108	0	0	110	1	4	6	0	11	4	26	0	0	30	8	1	0	0	9	160
07:15 AM	0	176	10	0	186	0	1	17	0	18	10	91	1	0	102	8	3	1	0	12	318
07:30 AM	2	151	3	0	156	3	3	14	0	20	7	110	3	1	121	7	6	0	0	13	310
07:45 AM	2	152	1	0	155	1	1	19	1	22	15	74	3	0	92	12	4	0	1	17	286
Total	6	587	14	0	607	5	9	56	1	71	36	301	7	1	345	35	14	1	1	51	1074
08:00 AM	0	144	4	0	148	0	0	11	1	12	8	61	3	5	77	21	6	0	0	27	264
08:15 AM	2	171	2	0	175	0	4	28	2	34	14	69	3	34	120	7	6	0	0	13	342
08:30 AM	1	140	2	0	143	1	2	20	2	25	19	113	2	29	163	12	5	6	0	23	354
08:45 AM	2	100	3	0	105	3	1	6	0	10	13	88	2	5	108	6	2	0	0	8	231
Total	5	555	11	0	571	4	7	65	5	81	54	331	10	73	468	46	19	6	0	71	1191
*** BREAK ***																					
02:30 PM	1	93	2	0	96	4	12	23	1	40	6	116	3	9	134	5	1	1	4	11	281
02:45 PM	1	128	1	4	134	5	7	23	3	38	11	103	6	18	138	3	2	3	2	10	320
Total	2	221	3	4	230	9	19	46	4	78	17	219	9	27	272	8	3	4	6	21	601
03:00 PM	0	105	2	0	107	2	0	13	1	16	19	111	0	45	175	4	7	5	0	16	314
03:15 PM	0	120	2	0	122	4	0	12	2	18	14	151	5	0	170	5	3	1	0	9	319
03:30 PM	0	102	1	1	104	8	3	6	2	19	20	140	5	0	165	7	2	2	1	12	300
03:45 PM	0	108	1	0	109	1	3	10	0	14	12	147	6	2	167	5	2	0	0	7	297
Total	0	435	6	1	442	15	6	41	5	67	65	549	16	47	677	21	14	8	1	44	1230
04:00 PM	1	103	3	0	107	5	3	11	0	19	22	145	9	0	176	1	3	2	0	6	308
04:15 PM	2	109	3	0	114	6	3	13	1	23	15	127	5	3	150	4	1	2	0	7	294
04:30 PM	0	110	5	2	117	10	5	26	5	46	17	150	3	0	170	2	2	1	2	7	340
04:45 PM	2	91	2	0	95	8	1	15	0	24	12	137	4	0	153	6	0	1	0	7	279
Total	5	413	13	2	433	29	12	65	6	112	66	559	21	3	649	13	6	6	2	27	1221
05:00 PM	1	115	1	1	118	6	5	16	0	27	11	151	8	0	170	7	3	2	0	12	327
05:15 PM	1	101	1	0	103	5	2	22	0	29	14	154	6	0	174	4	1	1	0	6	312
05:30 PM	0	100	1	0	101	5	3	12	0	20	19	133	0	0	152	3	6	3	3	15	288
05:45 PM	0	127	1	0	128	6	0	18	0	24	21	169	6	2	198	3	1	3	0	7	357
Total	2	443	4	1	450	22	10	68	0	100	65	607	20	2	694	17	11	9	3	40	1284
Grand Total	20	2654	51	8	2733	84	63	341	21	509	303	2566	83	153	3105	140	67	34	13	254	6601
Apprch %	0.7	97.1	1.9	0.3		16.5	12.4	67	4.1		9.8	82.6	2.7	4.9		55.1	26.4	13.4	5.1		
Total %	0.3	40.2	0.8	0.1	41.4	1.3	1	5.2	0.3	7.7	4.6	38.9	1.3	2.3	47	2.1	1	0.5	0.2	3.8	
Cars	18	2544	50	8	2620	83	62	335	21	501	301	2481	83	153	3018	138	67	33	13	251	6390
% Cars	90	95.9	98	100	95.9	98.8	98.4	98.2	100	98.4	99.3	96.7	100	100	97.2	98.6	100	97.1	100	98.8	96.8
Light Trucks	2	50	1	0	53	1	1	6	0	8	2	43	0	0	45	1	0	1	0	2	108
% Light Trucks	10	1.9	2	0	1.9	1.2	1.6	1.8	0	1.6	0.7	1.7	0	0	1.4	0.7	0	2.9	0	0.8	1.6
Heavy Trucks	0	60	0	0	60	0	0	0	0	0	0	42	0	0	42	1	0	0	0	1	103
% Heavy Trucks	0	2.3	0	0	2.2	0	0	0	0	0	0	1.6	0	0	1.4	0.7	0	0	0	0.4	1.6

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N/S Route: Evergreen Ave
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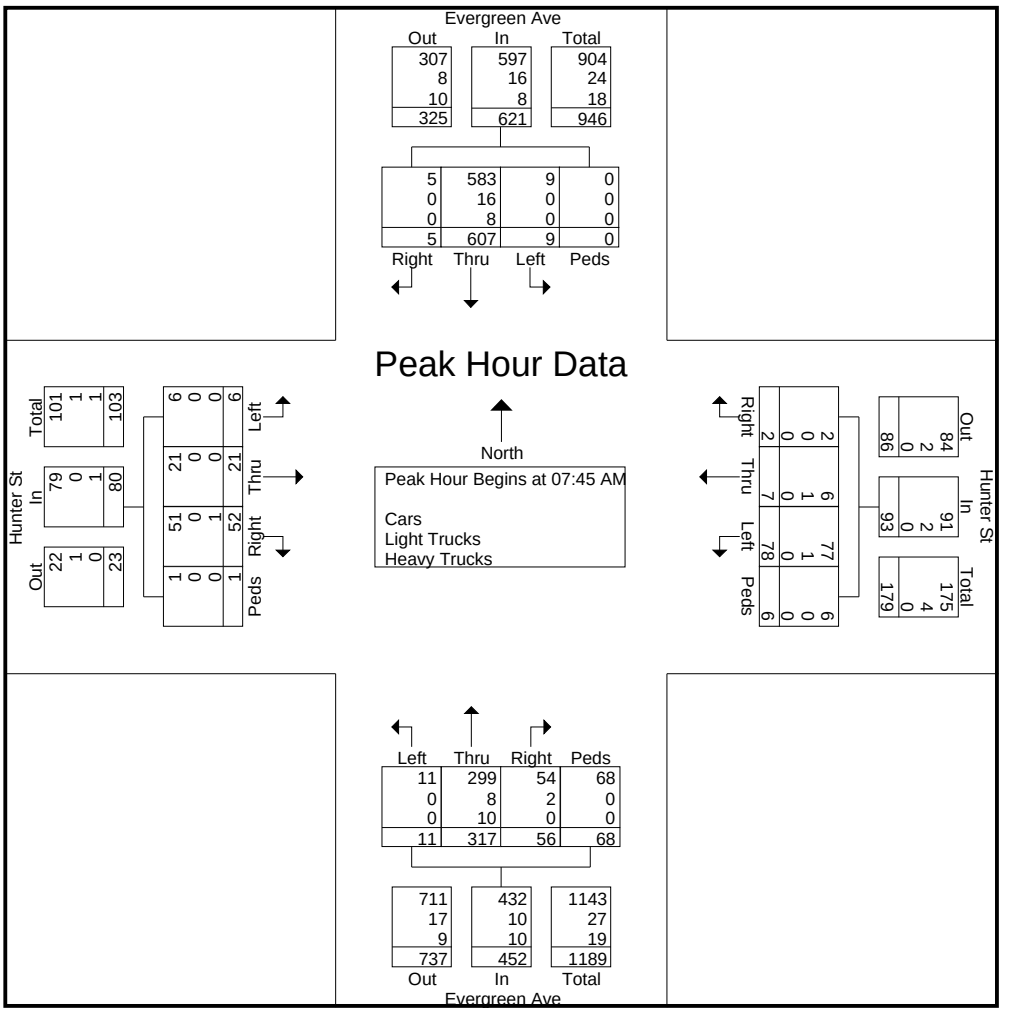
City of Woodbury, Gloucester Co, NJ
Wed/Cloudy/AK

File Name : 05_evergreen_hunter
Site Code : 00000005
Start Date : 9/13/2017
Page No : 2

	Evergreen Ave Southbound					Hunter St Westbound					Evergreen Ave Northbound					Hunter St 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 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	**2**	152	1	0	155	**1**	1	19	1	22	15	74	**3**	0	92	12	4	0	**1**	17	286
08:00 AM	0	144	**4**	0	148	0	0	11	1	12	8	61	3	5	77	**21**	**6**	0	0	**27**	264
08:15 AM	2	**171**	2	0	**175**	0	**4**	**28**	**2**	**34**	14	69	3	**34**	120	7	6	0	0	13	342
08:30 AM	1	140	2	0	143	1	2	20	2	25	**19**	**113**	2	29	**163**	12	5	**6**	0	23	**354**
Total Volume	5	607	9	0	621	2	7	78	6	93	56	317	11	68	452	52	21	6	1	80	1246
% App. Total	0.8	97.7	1.4	0		2.2	7.5	83.9	6.5		12.4	70.1	2.4	15		65	26.2	7.5	1.2		
PHF	.625	.887	.563	.000	.887	.500	.438	.696	.750	.684	.737	.701	.917	.500	.693	.619	.875	.250	.250	.741	.880
Cars	5	583	9	0	597	2	6	77	6	91	54	299	11	68	432	51	21	6	1	79	1199
% Cars	100	96.0	100	0	96.1	100	85.7	98.7	100	97.8	96.4	94.3	100	100	95.6	98.1	100	100	100	98.8	96.2
Light Trucks																					
% Light Trucks	0	2.6	0	0	2.6	0	14.3	1.3	0	2.2	3.6	2.5	0	0	2.2	0	0	0	0	0	2.2
Heavy Trucks	0	8	0	0	8	0	0	0	0	0	0	10	0	0	10	1	0	0	0	1	19
% Heavy Trucks	0	1.3	0	0	1.3	0	0	0	0	0	0	3.2	0	0	2.2	1.9	0	0	0	1.3	1.5



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File Name : 05_evergreen_hunter
Site Code : 00000005
Start Date : 9/13/2017
Page No : 3

	Evergreen Ave Southbound					Hunter St Westbound					Evergreen Ave Northbound					Hunter St 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 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	**1**	115	**1**	**1**	118	**6**	**5**	16	0	27	11	151	**8**	0	170	**7**	3	2	0	12	327
05:15 PM	1	101	1	0	103	5	2	**22**	0	**29**	14	154	6	0	174	4	1	1	0	6	312
05:30 PM	0	100	1	0	101	5	3	12	0	20	19	133	0	0	152	3	**6**	**3**	**3**	**15**	288
05:45 PM	0	**127**	1	0	**128**	6	0	18	0	24	**21**	**169**	6	**2**	**198**	3	1	3	0	7	**357**
Total Volume	2	443	4	1	450	22	10	68	0	100	65	607	20	2	694	17	11	9	3	40	1284
% App. Total	0.4	98.4	0.9	0.2		22	10	68	0		9.4	87.5	2.9	0.3		42.5	27.5	22.5	7.5		
PHF	.500	.872	1.00	.250	.879	.917	.500	.773	.000	.862	.774	.898	.625	.250	.876	.607	.458	.750	.250	.667	.899
Cars	2	437	4	1	444	22	10	67	0	99	65	599	20	2	686	17	11	9	3	40	1269
% Cars	100	98.6	100	100	98.7	100	100	98.5	0	99.0	100	98.7	100	100	98.8	100	100	100	100	100	98.8
Light Trucks																					
% Light Trucks	0	0.7	0	0	0.7	0	0	1.5	0	1.0	0	1.2	0	0	1.0	0	0	0	0	0	0.9
Heavy Trucks	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	4
% Heavy Trucks	0	0.7	0	0	0.7	0	0	0	0	0	0	0.2	0	0	0.1	0	0	0	0	0	0.3

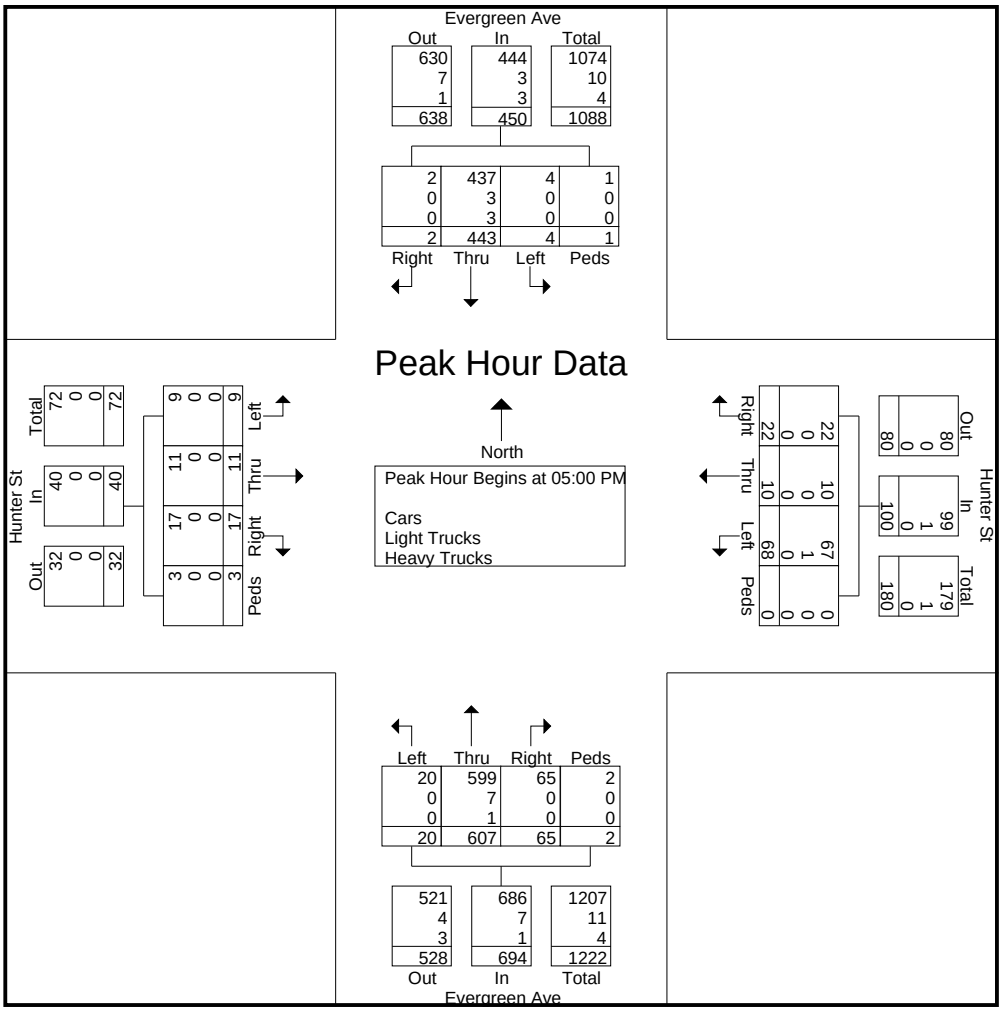
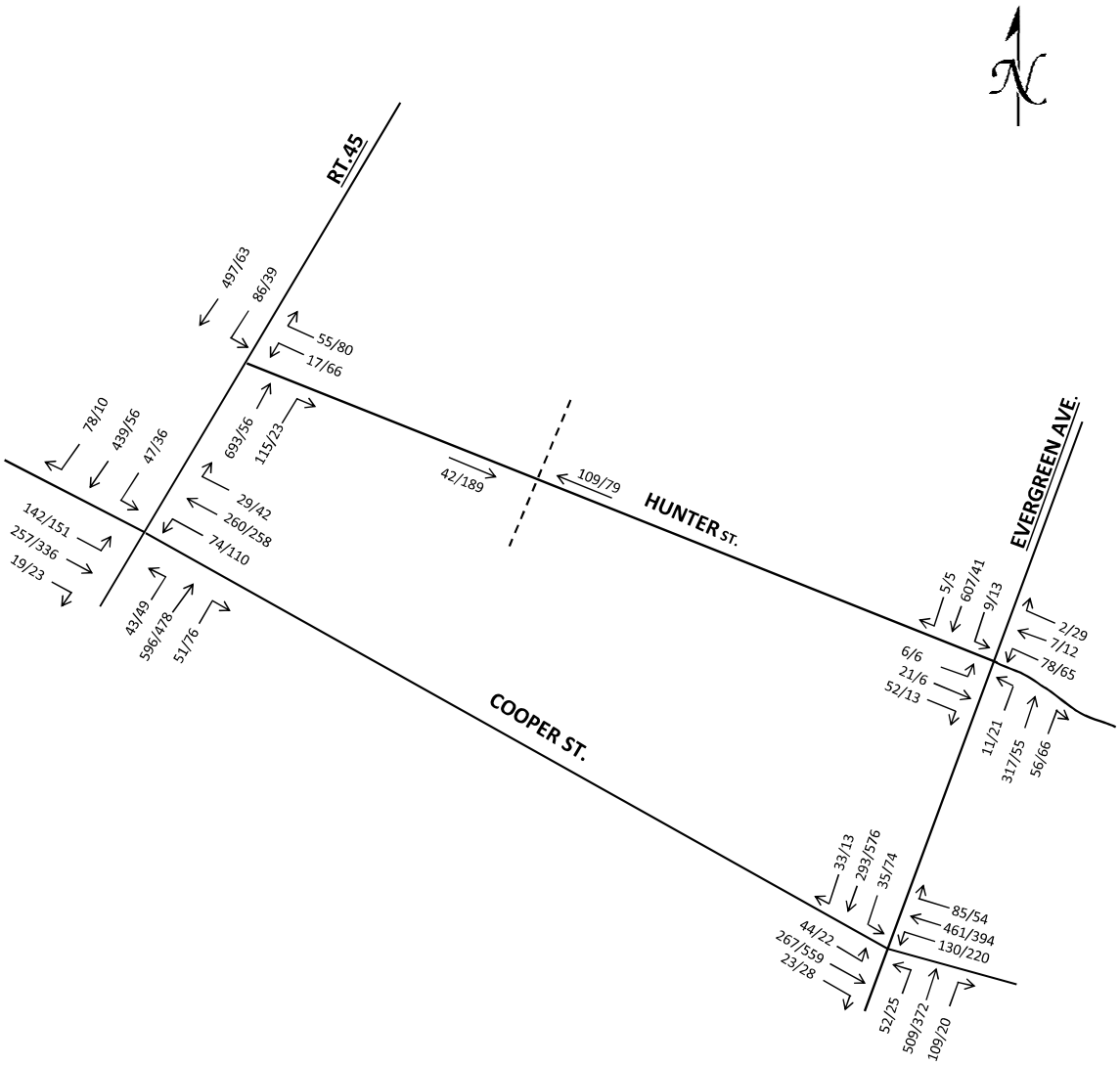


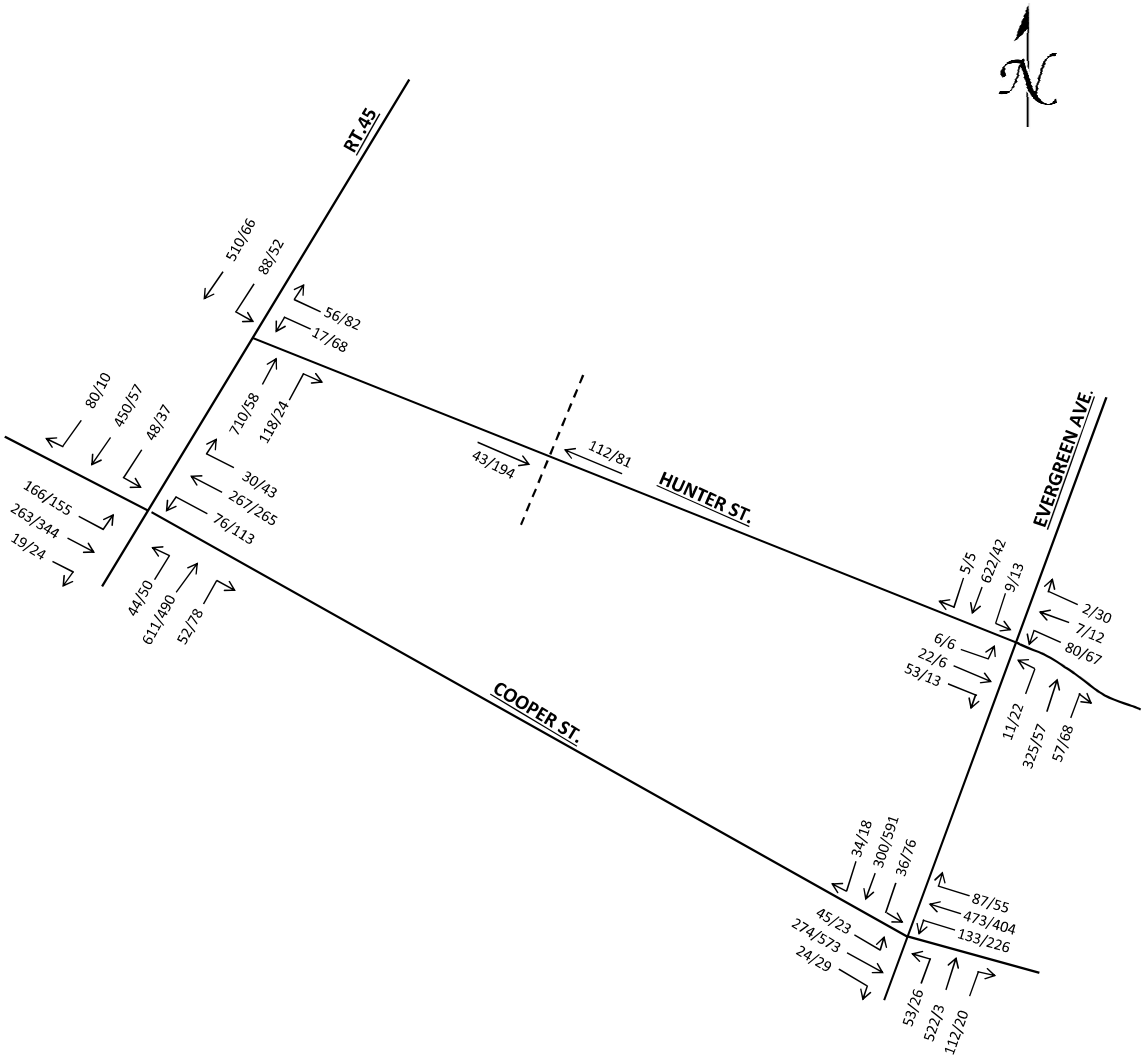
FIGURE 1
EXISTING YEAR 2017
TRAFFIC VOLUMES



AM/PM PEAK HOUR

HUNTER STREET BRIDGE
WOODBURY CITY, GLOUCESTER COUNTY

FIGURE 2
BUILD YEAR 2022
NO-BUILD CONDITION
TRAFFIC VOLUMES

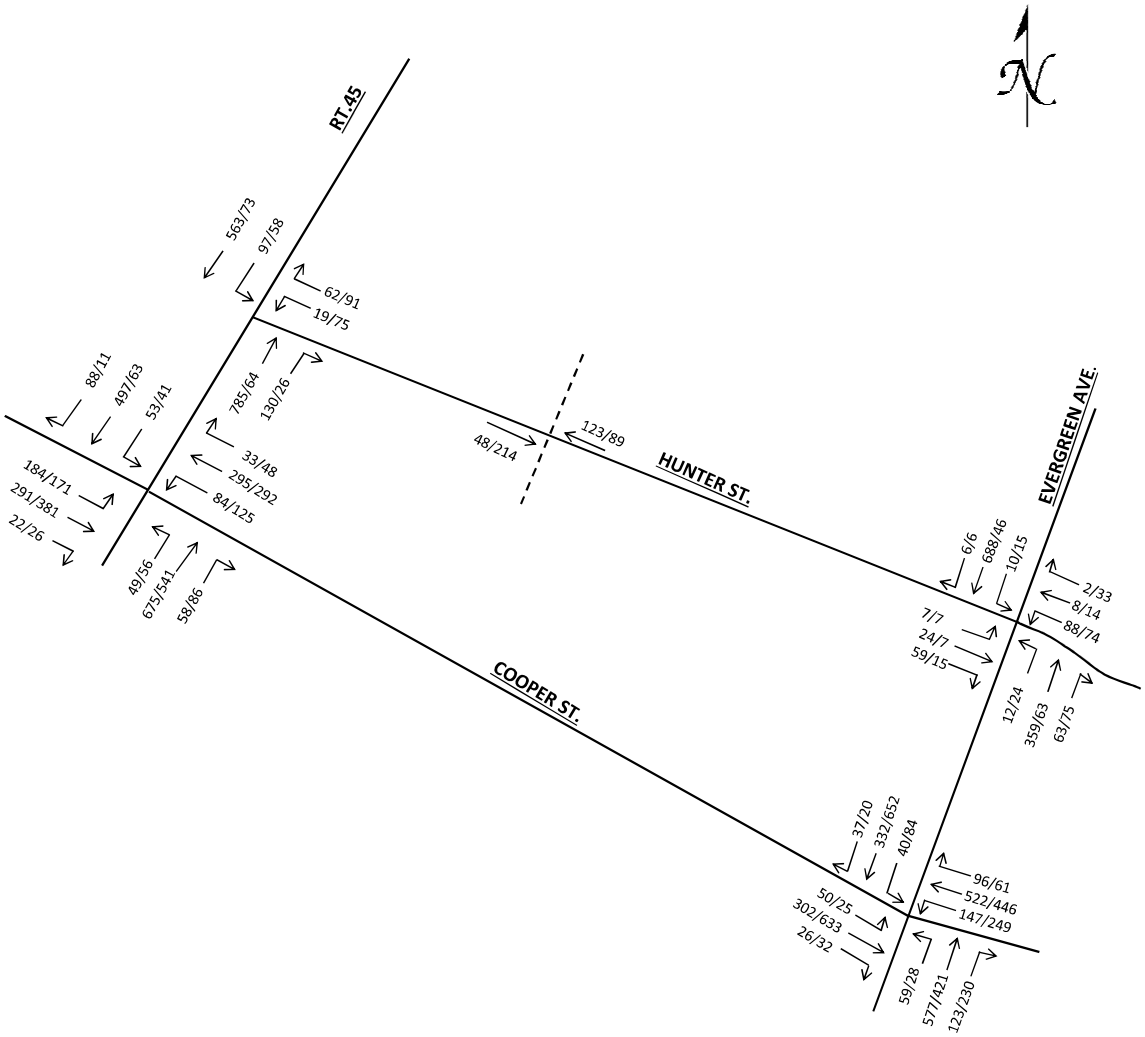


AM / PM PEAK HOUR

HUNTER STREET BRIDGE
WOODBURY CITY, GLOUCESTER COUNTY

McCORMICK TAYLOR

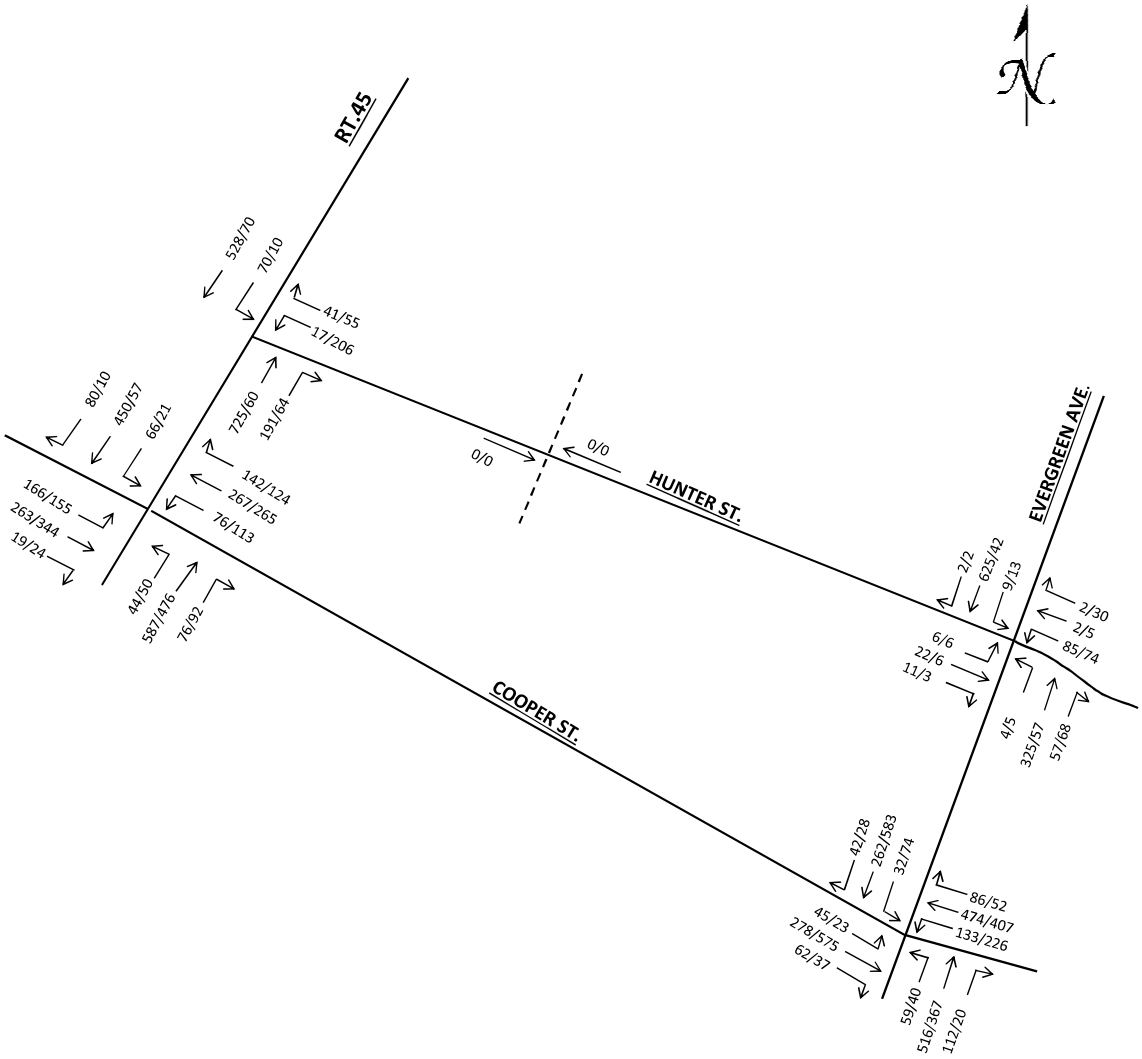
FIGURE 3
DESIGN YEAR 2040
NO-BUILD CONDITION
TRAFFIC VOLUMES



AM / PM PEAK HOUR

HUNTER STREET BRIDGE
WOODBURY CITY, GLOUCESTER COUNTY

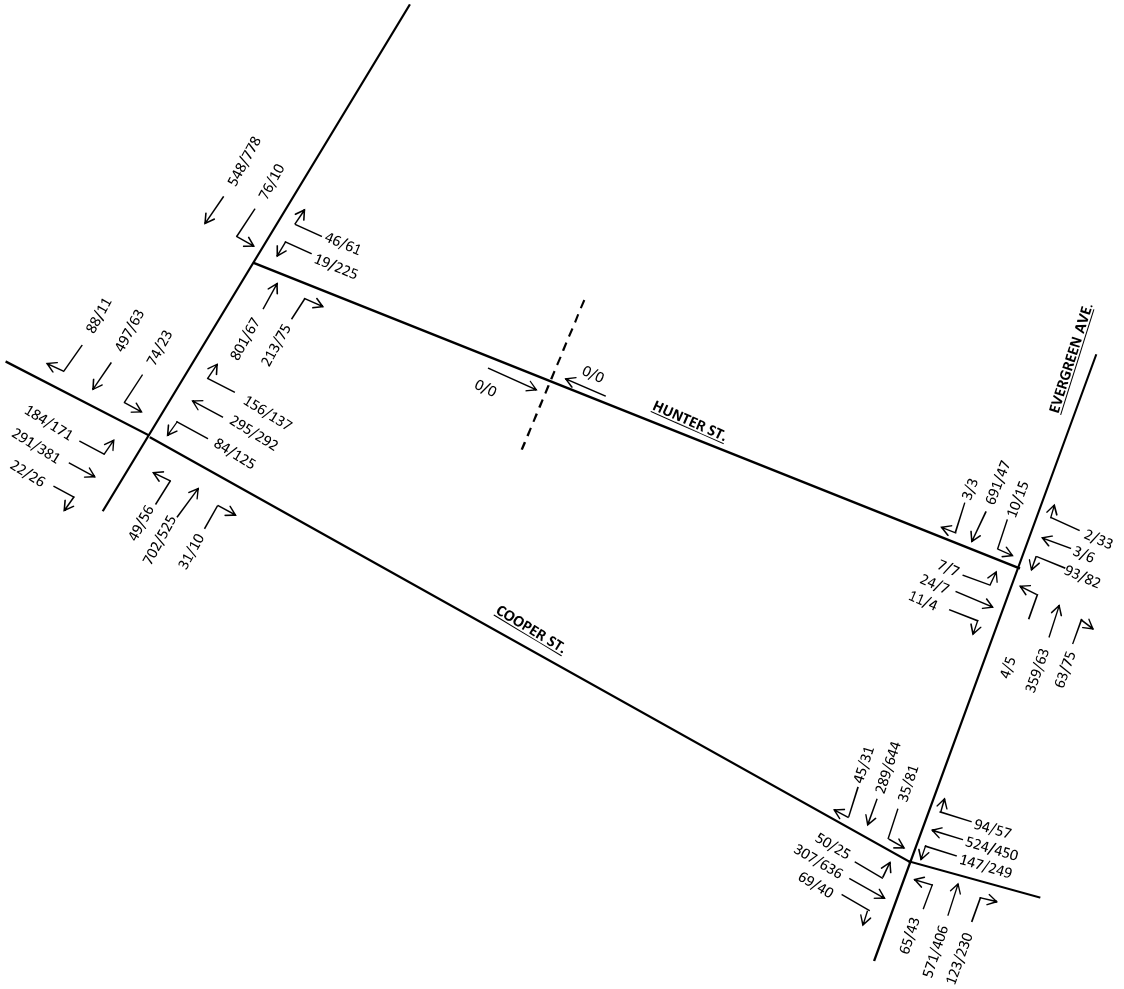
FIGURE 4
BUILD YEAR 2022
DETOUR
TRAFFIC VOLUMES



AM / PM PEAK HOUR

HUNTER STREET BRIDGE
WOODBURY CITY, GLOUCESTER COUNTY

FIGURE 5
DESIGN YEAR 2040
DETOUR
TRAFFIC VOLUMES



AM / PM PEAK HOUR

HUNTER STREET BRIDGE
WOODBURY CITY, GLOUCESTER COUNTY

Appendix G

Aerial Plan and Photographs

NAD 1983

Hunter Street

Euclid Street

Conrail RR

Laurel Street

N. Maple Street

DELAWARE VALLEY REGIONAL PLANNING COMMISSION

EXISTING CONDITIONS

GLOUCESTER COUNTY LCD STUDY - HUNTER STREET BRIDGE

WOODBURY CITY GLOUCESTER COUNTY

Hunter Street Bridge over Conrail

	**Photo No: 1**
Location:	South elevation, looking north.
Description:	General view. Note: Stone masonry retaining wall along west side of railroad track.
	**Photo No: 2**
Location:	North elevation, looking south.
Description:	General view. Note: Gas line attached to bridge fascia.

Hunter Street Bridge over Conrail

	**Photo No: 3**
Location:	South fascia, looking northwest from Laurel Street.
Description:	General view.
	**Photo No: 4**
Location:	North fascia, looking southwest.
Description:	General view. Note: Gas line attached to bridge fascia.

Photo No: 5

Location:	Hunter Street east approach roadway, looking west from Laurel Street.
Description:	General view. Note: Utility manhole in street and murals painted on bridge girders.

Photo No: 6

Location:	Hunter Street west approach roadway, looking east.
Description:	General view.

	**Photo No: 7**
Location:	Top of deck, looking west.
Description:	General view.
	**Photo No: 8**
Location:	East abutment deck joint, looking south.
Description:	General view.

Photo No: 9

Location:	West abutment deck joint, looking south.
Description:	General view. Note: Asphalt patching adjacent to abutment backwall.

Photo No: 10

Location:	Underside of bridge, looking west.
Description:	General view. Note: Large spalls with exposed corroded rebars on underside of deck, spalled encasement of floor beam with exposed rusted bottom flange, corroded and broken lateral bracing.

Photo No: 11

Location:	Underside of bridge, looking east.
Description:	General view. Note: Large spalls with exposed corroded rebars on underside of deck, spalled encasement of floor beam with exposed rusted bottom flange, and corroded lateral bracing.

Photo No: 12

Location:	West abutment, looking west.
Description:	General view. Note: Graffiti and areas of missing mortar in stone masonry.

Photo No: 13

Location:	East abutment, looking northeast.
Description:	General view. Note: Graffiti and areas of missing mortar in stone masonry.

Photo No: 14

Location:	Hunter Street bridge, looking northwest.
Description:	Aerial utilities running parallel to railroad on west side of track.

Photo No: 15

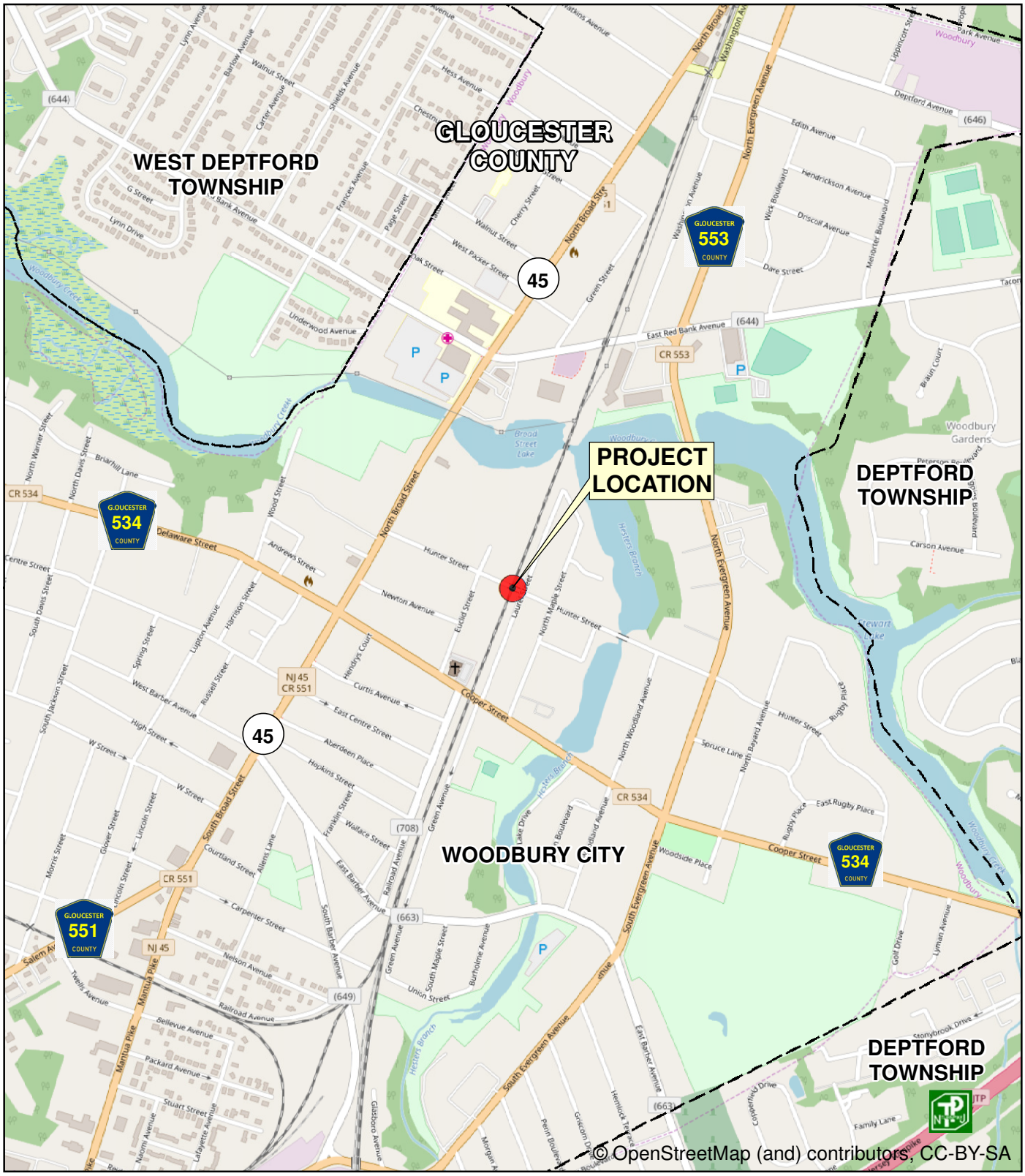
Location:	South side of bridge, looking east from railroad track.
Description:	AT&T buried fiber optic cable marker.

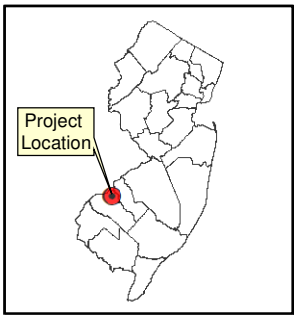
Photo No: 16

Location:	East end of bridge, looking north from Laurel Street.
Description:	Aerial utilities along Laurel Street.

Appendix H

Project Location Map





Project Location Map

Hunter Street Bridge over Conrail

Woodbury City, Gloucester County

New Jersey

Legend

- Project Location
- County Boundary
- Municipality Boundaries

N

W E

S

0 250 500 1,000

Feet

McCORMICK TAYLOR

Appendix I

Environmental Screening and Constraints Map

NEW JERSEY DEPARTMENT OF TRANSPORTATION
Bureau of Landscape Architecture and Environmental Solutions
ENVIRONMENTAL AND LANDSCAPE SCREENING
November 21, 2018

Request Date:	N/A
Request made by:	McCormick Taylor
Project Name:	Hunter Street Bridge over Conrail
Project Description:	Concept development alternatives include bridge repair, rehabilitation, replacement, or removal
County and Municipality:	Gloucester County, City of Woodbury

Project Purpose	
☐ Reduce Congestion	☒ Improve Vehicular/Driver Safety
☐ System Linkage	☐ Economic Development
☒ Improve Bike/Ped. Capacity or Safety	☒ Change to Current Design Standards
☒ Other (Describe): Alternatives to improve substandard under clearance and other structural deficiencies	

ENVIRONMENTAL CONSTRAINTS/OPPORTUNITIES:

Cultural Resources	**Yes / No**
Are there any 50+ year old structures in the project study area?	Yes
Are there known buildings or structures on or eligible for the State and /or National Register of Historic Places in the project study area?	Yes
Is there involvement with a historic bridge or culvert?	Yes
Is the project located in a known or potential Historic District?	Yes
Are there any undisturbed areas, old foundations or building rubble in the project study area?	No
Are there any known archaeological sites or potential underground cultural resources within the project study area?	No

Enhancement Opportunities: See **Landscape Architecture** below

Comments:
A Cultural Resources Screening was completed by subconsultant RGA, Inc. on 2/5/18.

The subject bridge is located within two historic districts: The Newton Historic District (listed in NJ Register of Historic Places on 2/19/88) and the Woodbury Historic District (eligible for the National Register of Historic Places (NRHP) on 7/13/83). The 1914 bridge is not individually eligible for the NRHP per the NJDOT Historic Bridge Survey, but is considered a contributing element to the Woodbury Historic District since it was constructed during the period of significance of the surrounding historic properties (ca. 1715-1941) and contributes to their historic character. In addition, there are other previously unevaluated properties 50 years or older in the anticipated Area of Potential Effect, including the railroad line itself.

No old foundations/building rubble are apparent in the project's anticipated Area of Potential Effect.

A review of the NJSM site files indicated that there are no known archaeological sites located within the project area. A review of the NJHPO's ArcGIS Explorer indicates that the project area does not fall within an archaeological site grid. The project area is considered to have low potential for archaeological resources.

Section 4(f) Properties	**Yes / No**
Are there any recreational facilities within the project study area?	No
Is there publicly owned open space in the project study area?	No
Is there a Wildlife Refuge or Wildlife Management Area in the project study area?	No
Is there a school or school athletic fields in the project study area?	No
Is there a community park or parkland within the project study area?	No
Is there a historic bridge or historic site in the project area?	Yes

Enhancement Opportunities: See **Landscape Architecture** below

Comments:

The project may qualify for a *Programmatic Section 4(f) Evaluation for Use of Historic Bridges*, which applies to the "use" of certain historic bridge structures to be replaced or rehabilitated with Federal (FHWA) funds. Per the FHWA *Section 4(f) Policy Paper* (7/20/12), this programmatic Section 4(f) evaluation may be applied to any historic bridge, either contributing to a historic district or individually eligible for the NRHP. However, this programmatic Section 4(f) evaluation would be limited to the bridge replacement or rehabilitation only.

If the project requires the "use" (i.e., ROW fee takes, permanent easements, or adverse temporary easements or proximity impacts) of surrounding historic properties, and results in No Adverse Effect via Section 106/SHPO consultation, a Section 4(f) *de minimis* Impact Determination would likely be applicable.

If the project results in an Adverse Effect to surrounding historic properties, an Individual Section 4(f) Evaluation may be required.

Air/Noise	**Yes / No**
Are there sensitive receptors (i.e. residences, schools, hospitals) within 300 feet of the project?	Yes
Will the project change the vertical or horizontal alignment of the roadway?	Possible
Does the project provide for a significant increase in vehicle operating speeds or roadway capacity?	No
Is the project in a non-attainment area for Carbon Monoxide?	No
Is an intersection Carbon monoxide analysis required?	No
Is the project in a non-attainment area for PM2.5?	No
Is a PM2.5 hot-spot analysis required?	No
Is the project in a non-attainment area for PM10?	No
Is a PM10 hot-spot analysis required?	No

Mitigation Opportunities: N/A

Comments:

The Hunter Street Bridge over Conrail connects extensive residential areas with the downtown commercial area to the west of the bridge. The project area is highly developed and includes multiple residential properties within 300 feet of the project, as well as the Gloucester County Justice Complex.

The project need includes addressing the substandard under clearance over the railroad and providing for a bridge cartway that meets current design standards. No additional travel lanes are proposed and the project will not result in an increase in vehicle operating speeds or roadway capacity. The project will not result in a substantial change to the horizontal alignment of the roadway; however, a replacement alternative would likely require a substantial change to the vertical geometry of the bridge and thus the approach roadways.

The project is located in an attainment area for CO, PM 2.5, and PM 10, according to the USEPA. This project type (safety improvements, widening narrow pavements, and bridge reconstruction with no new travel lanes) is listed in ***Table 2*** of the Transportation Conformity Rule, and thus is exempt from the conformity requirements of the Clean Air Act (as amended).

The project qualifies as a Type III project per the NJDOT *Traffic Noise Management Policy* and is not anticipated to result in significant noise-related impacts. Therefore, a noise study is not required.

Standard measures for the abatement of temporary construction noise and air quality impacts (e.g., dust, emissions) should be included in the project's final plans and specifications.

Ecology	Yes / No
Are there any wetlands, floodplains, sole source aquifer, stream crossings, riparian zones, or wildlife habitat in the project study area?	No
Is there any potential for rare, threatened or endangered species or their habitats within the project study area *or* within a mile downstream of the project study area (where streams are present)?	No
Is there any potential or known vernal pool habitat within the project study area?	No
Is there potential need for wildlife crossings in the project area (e.g., pipes, small tunnels, fencing)?	No
Are there any trout maintenance or trout production streams within the project study area?	No
Are there any Category 1 waters in the project area?	No
Is the project located in a geologic formation(s) associated with acid producing soils?	Yes
Are there any potential stormwater management mitigation areas in or upstream of the project area?	No
Do Stormwater Management facilities need to be created? If so, are there potential locations within the project limits?	No
Are there any Wild and Scenic Rivers in the project study area?	No
Does Essential Fish Habitat exist in the project study area?	No
Are there any other environmentally-sensitive areas that are possible project design constraints?	No

Comments:

The project area is extensively developed and consists mostly of commercial businesses on the west side of the bridge and residential properties on the east side of the bridge. Thinly wooded areas line both sides of the Conrail railroad ROW adjacent to the Hunter Street Bridge.

Based on field observations, NJ GeoWeb Landscape Project, and USFWS IPaC System data, there are no streams, wetlands, or T&E species/habitat in the project area. There are degraded ditches along the east side of the railroad tracks that contain some hydrophytic vegetation (e.g., *Phragmites*), but soils are substantially disturbed with no hydric soil indicators present and hydrology is limited to ponding from stormwater runoff. Per the 1989 Federal Manual, these areas are likely not regulated wetlands.

<u>Acidic Soils</u>

The Woodbury Formation (Kwb) underlies the project area, which is associated with potential acid-producing soils. During geotechnical investigations, soils should be tested for marcasite and pyrite, as well as pH, to determine if acid soils are, in fact, present. If so, the management and disposal of acid soils will be a consideration during SESC Plan certification with the County Soil Conservation District.

<u>Drainage and Stormwater Management</u>

There are two drainage pipes visible in the block retaining wall on the west side of the railroad tracks, which lead up the western slope to inlets on either side of the extreme western bridge approach roadway. The pipe on the southwest side is visibly non-functional due to collapsed terracotta pipe in an eroded area further up the slope. In any case, these drainage features do not discharge to any streams or wetlands and the project will likely not require any NJDEP permits.

Impacts to existing drainage systems will be minimal. There will be no increase in runoff to the drainage system that discharges to the railroad ROW. The bridge is not at a low point in the roadway profile and most runoff is collected before the bridge; thus, the spread of stormwater into the travel lanes on the bridge will be minimal.

Compliance with the NJDEP Stormwater Management Rules (NJAC 7:8) is not anticipated since the project will result in less than one acre disturbance and less than one-quarter acre new impervious surface.

Potential environmental permits/approvals and interagency coordination		Comments:
☐	US Coast Guard	
☐	USACOE Section 10	
☐	USACOE Section 404	
☐	NJDEP Freshwater Wetlands	
☐	NJDEP Water Quality Certification	
☐	NJDEP Flood Hazard Area	
☐	NJDEP CAFRA	
☐	NJDEP Coastal Wetlands	
☐	NJDEP Waterfront Development	
☐	NJDEP Tidelands Conveyance	
☐	NJPDES Construction Activity Stormwater GP	
☐	NJDEP Stormwater Management	
☐	PL 2001 Chapter 10 Reforestation	
☐	Pinelands Commission	
☐	D&R Canal Commission	
☐	Meadowlands Commission	
☐	Essential Fish Habitat	
☐	Category One waters	
☐	USEPA Sole Source Aquifer	
☐	Highland Rules/Preservation Area	
☐	Delaware River Port Authority	

Comments: The project will not require environmental permits, pending verification of non-wetland conditions in the degraded ditches along the east side of the railroad tracks.

Landscape Architecture	Yes / No
Is there deforestation taking place in accordance with the No Net Loss Reforestation Act (NNL P.L. 2001 Chapter 10 Reforestation)?	No
Does existing vegetation need management (e.g., tree trimming, hazardous tree removal, clearing)?	Yes
Will planting need to be included (e.g., commitments, street trees, reforestation)?	No
Are there Context Sensitive Solutions opportunities (e.g., streetscapes, screenings)?	Yes
Will vegetative Soil Erosion and Sediment Control Measures need to be included?	Yes
Are there Aesthetic Enhancements that need to be addressed?	Yes
Are any structures proposed (e.g., bridge, retaining walls)?	Yes
Do Stormwater Management facilities need to be created?	No

Mitigation Opportunities:

Comments:

Limited tree removal and/or trimming would be required adjacent to the existing structure.

Depending on the alternative ultimately selected, the project might disturb over 5,000 SF and require Soil Erosion and Sediment Control Plan Certification by the County Soil Conservation District.

Context Sensitive Solutions / Aesthetic Enhancements

The project should consider aesthetic enhancements to replicate or restore the “quilt” murals along the interior of the bridge parapets. Since the bridge is considered a contributing element to the Woodbury Historic District, certain architectural characteristics may need to be replicated in the design of a new or rehabilitated bridge.

Proposed Structures

The bridge replacement alternative, if chosen as the PPA, would propose a new bridge in place of the current one.

Socioeconomics	**Yes / No**
Will the project affect farmland or community facilities?	Yes
Based on the proposed improvements for this project, will there be possible displacement of businesses or residences?	No
Will project affect access to community facilities, bus stop shelters, playgrounds, parks or gardens?	No
Can the project improve bike/ped facilities?	Yes
Are there any observable safety (e.g. ADA compliant) issues or concerns in the project study area?	Yes
Does project have potential for socioeconomic impacts? If **YES** provide US Census data in comments.	Yes
Does project have potential for Environmental Justice involvement? If **YES** provide US Census data in comments.	Yes

Comments:

Community Facilities and Services

A route for mobile public services (e.g., buses, emergency medical services, etc.) would be impacted in the short-term due to closure of the Hunter Street Bridge for construction. Temporary detours for local traffic and temporary closure of the railroad will be necessary during construction. However, surrounding roadways that would be used for the detours are larger than Hunter Street and can accommodate the temporary higher traffic flows.

Safety Issues/Concerns

Existing safety issues include substandard under-clearance and lateral clearance of the Hunter Street Bridge over the railroad. In addition, the bridge cartway is narrower than the approach roadways on both sides, which creates a "choke point" and the existing concrete-encased through girders create substandard sight distances posing safety concerns for both motorists and pedestrians.

Socioeconomic Impacts

The bridge serves to connect a residential area of Woodbury with the downtown commercial area The bridge also serves as an access point for the Gloucester County Justice Complex. The bridge provides a frequent pedestrian passage for children walking to Woodbury Junior/Senior High School (west of bridge) and Evergreen Avenue Elementary School (east of bridge). The nearest pedestrian/bike/automobile crossing of the railroad is an at-grade railroad crossing on Cooper Street, which could pose increased safety concerns for pedestrians, especially children, elderly, disabled persons, and cyclists. Since the bridge removal alternative could isolate parts of the residential community, the project will consider maintaining the existing bridge for non-motor vehicle use.

Environmental Justice

The US EPA EJSCREEN reported that 33% of the population (13,344) within a mile radius of the project site identified as a minority. Persons identifying as black and Hispanic made up 21% and 9% of the population, respectively. Persons age 65+ make up 15% of the community. Approximately 8% of the population are considered to have limited English proficiency.

Hazardous Waste	**Yes / No**
Are there any known or suspected hazardous waste sites (UST, landfills, known NJDEP Case, ECRA Case), within the project study area?	No
Are there active or abandoned industries, service stations or repair shops within the project study area?	No
Is there evidence of potential contamination (monitoring wells, stained soils, etc.)?	No
Are railroads or railyards located in the project study area?	Yes
Enhancement Opportunities: N/A	
Comments: A limited Hazardous Waste Screening did not identify any known or suspected hazardous waste sites, active or abandoned industries, service stations, or repair shops within the project study area. However, the railroad bedding and train discharges create the potential for involvement with contaminated materials.	

Environmental Screening Summary:

- The project area is located in two historic districts, the Newton Historic District and Woodbury Historic District. The Hunter Street Bridge over Conrail is not individually eligible for the NRHP; however, it is considered a contributing element to the Woodbury Historic District.
- Bridge rehabilitation or replacement alternatives would qualify for a Programmatic Section 4(f); and "use" of other historic properties should qualify for a Section 4(f) *de minimis* impact determination.
- The project might disturb over 5,000 SF and require Soil Erosion and Sediment Control Plan Certification by the County Soil Conservation District.
- Bridge rehabilitation or replacement alternatives should explore Context Sensitive Solutions regarding the painted murals on the interior of the bridge and the historic architecture context of the bridge.
- The bridge alternatives should carefully consider socioeconomic impacts including potential isolation of residential areas from nearby commercial areas of Woodbury, as well as temporary impacts to the community during construction.
- There is potential for involvement with contaminated or regulated material associated with the railroad bedding materials.

Prepared & Recommended By:

Rachel Bruce	11/21/18	8567930800
Environmental Screening Coordinator	Date	Phone
Walter Marks	11/21/18	8567930800
Environmental Manager	Date	Phone
N/A		
Landscape Screening Coordinator	Date	Phone
N/A		
Landscape Team Leader	Date	Phone

ENVIRONMENTAL CONSTRAINTS MAP

Hunter Street Bridge Over Conrail

Woodbury City
Gloucester County
New Jersey

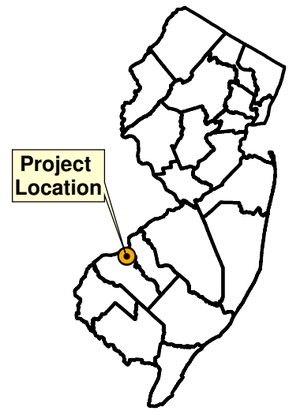
DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

Legend

- Conrail
- Project Location
- Newton Historic District
- Woodbury Historic District

N

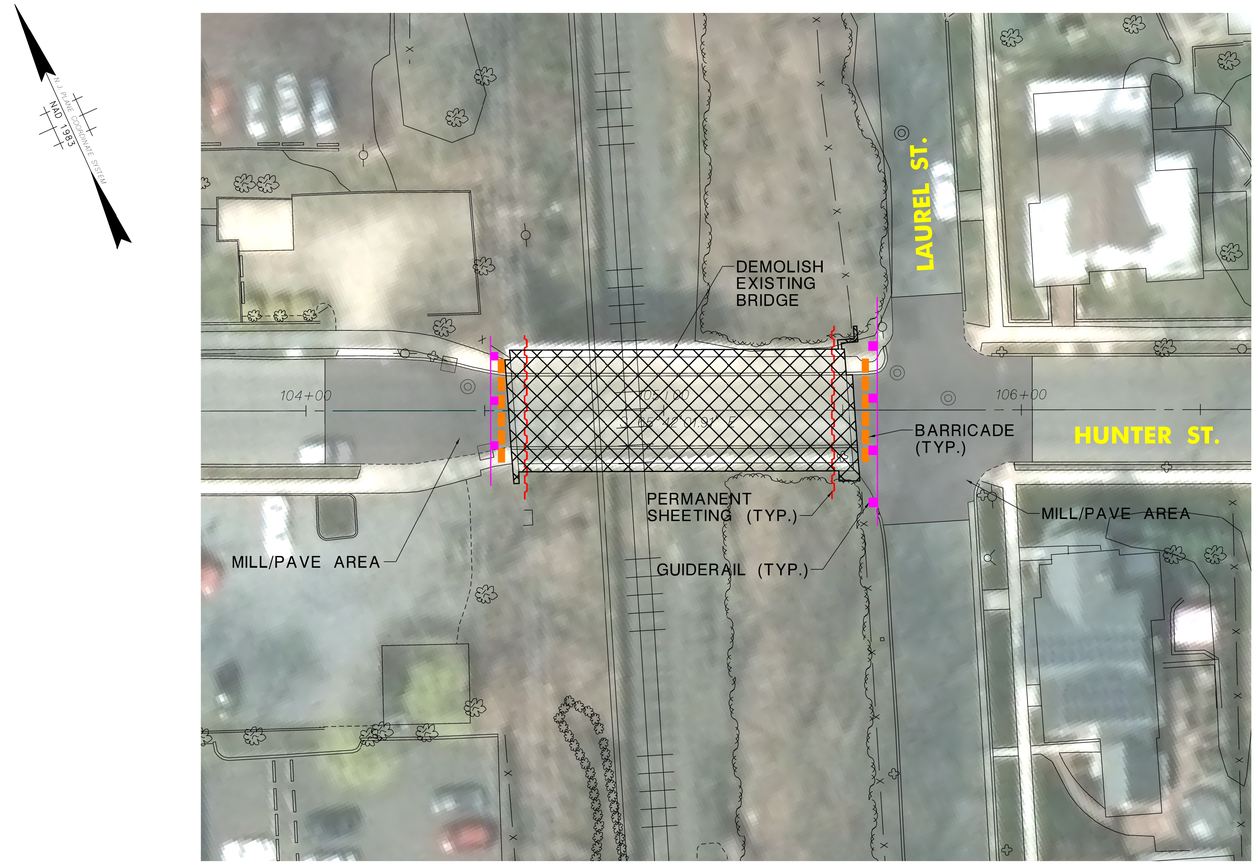
0 100 Feet



McCORMICK TAYLOR

Appendix J

Alternatives and Detour Plans



PLAN

SCALE: 1" = 20'-0"

LEGEND

- LIMITS OF DEMOLITION
- LIMITS OF MILLING/PAVING

20' 0 20' 40'

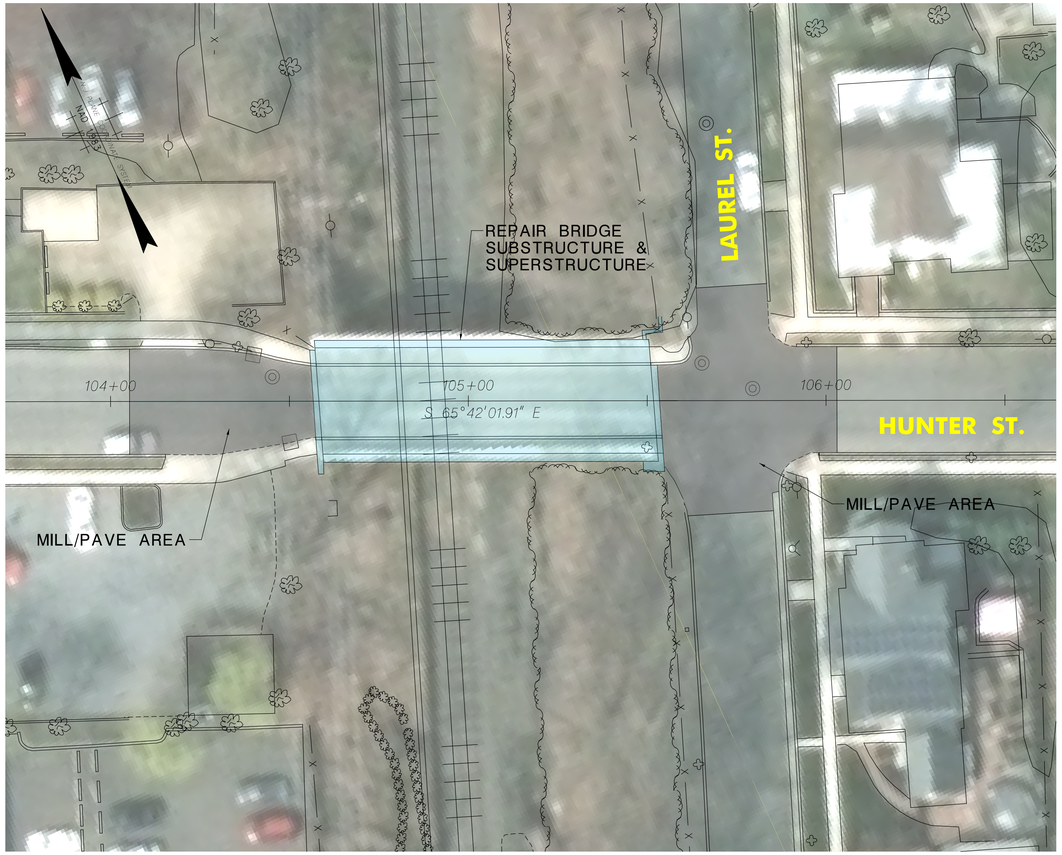
1" = 20' - 0"

DELAWARE VALLEY REGIONAL PLANNING COMMISSION

ALTERNATIVE 2 - PERMANENTLY CLOSE BRIDGE TO TRAFFIC AND DEMOLISH BRIDGE

GLOUCESTER COUNTY LCD STUDY - HUNTER STREET BRIDGE

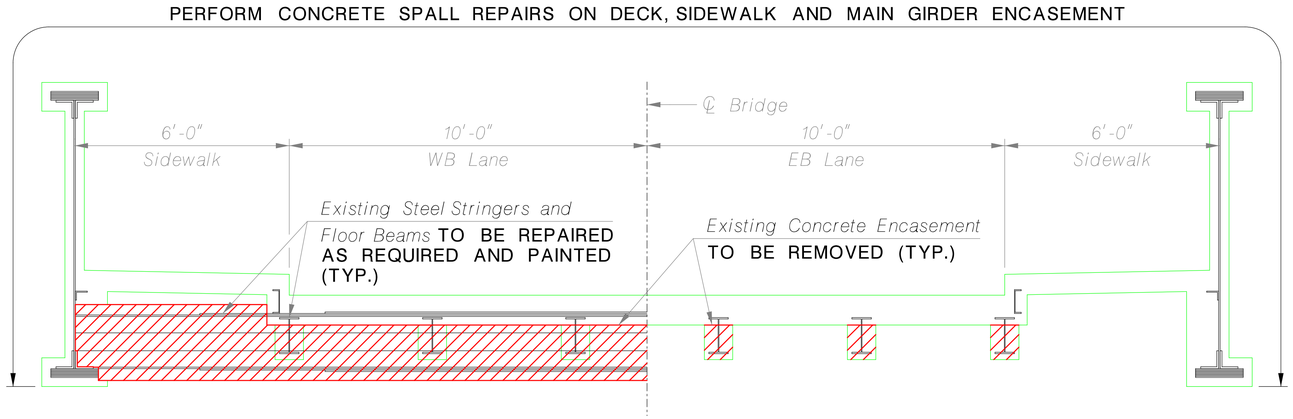
WOODBURY CITY GLOUCESTER COUNTY



PLAN

SCALE: 1" = 20'-0"

PERFORM CONCRETE SPALL REPAIRS ON DECK, SIDEWALK AND MAIN GIRDER ENCASEMENT

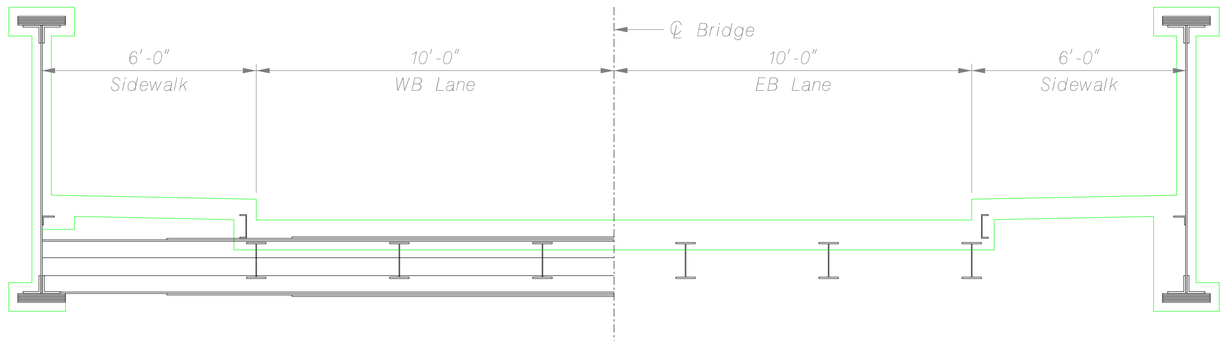


HALF SECTION AT FLOOR BEAM

HALF SECTION BETWEEN FLOOR BEAMS

EXISTING TYPICAL SECTION

NOT TO SCALE



HALF SECTION AT FLOOR BEAM

HALF SECTION BETWEEN FLOOR BEAMS

PROPOSED TYPICAL SECTION

NOT TO SCALE

LEGEND

- LIMITS OF BRIDGE REPAIRS
- LIMITS OF MILLING/PAVING
- LIMITS OF CONCRETE REMOVAL

20' 0 20' 40'

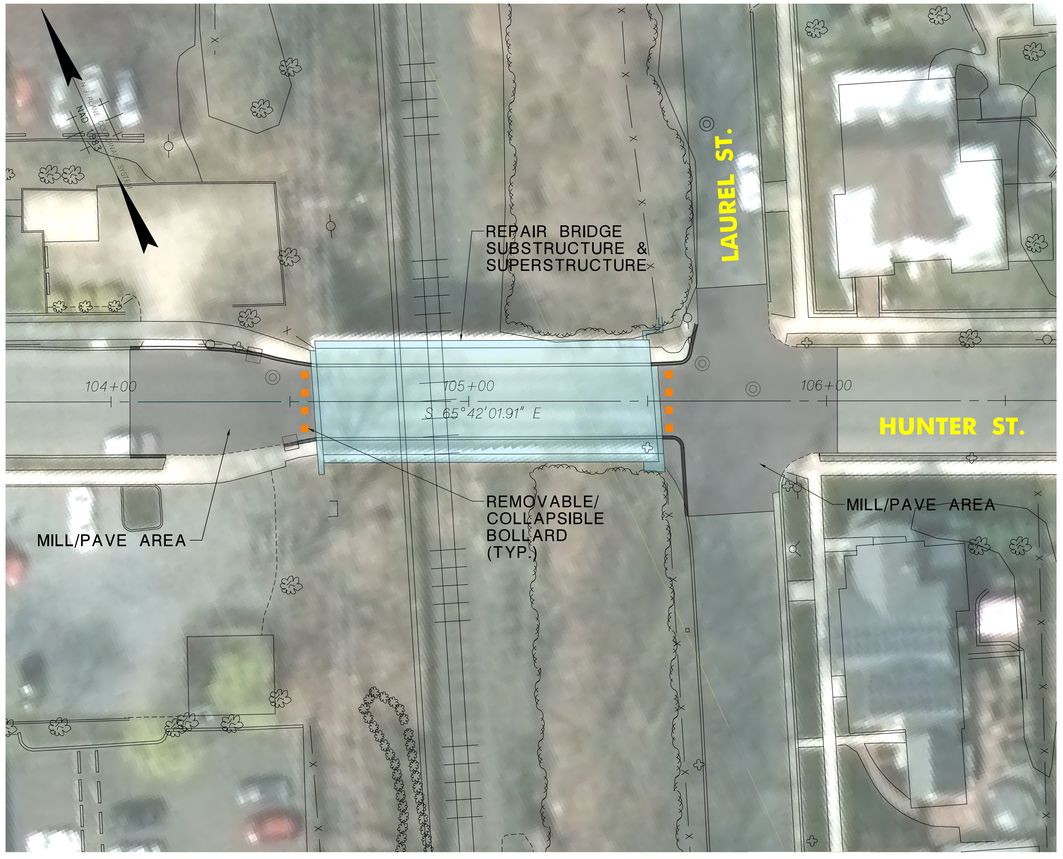
1" = 20'-0"

DELAWARE VALLEY REGIONAL PLANNING COMMISSION

ALTERNATIVE 3A - REPAIR BRIDGE

GLOUCESTER COUNTY LCD STUDY - HUNTER STREET BRIDGE

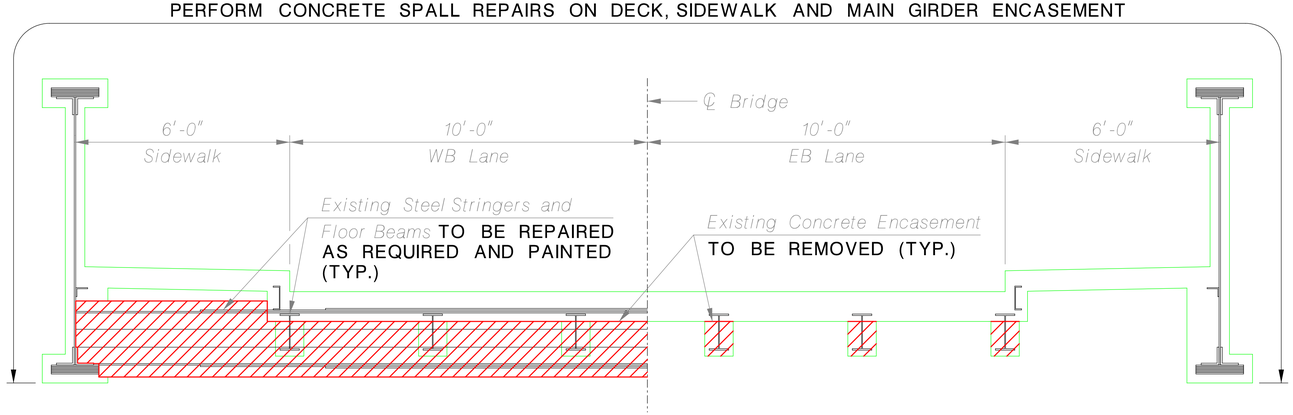
WOODBURY CITY GLOUCESTER COUNTY



PLAN

SCALE: 1" = 20'-0"

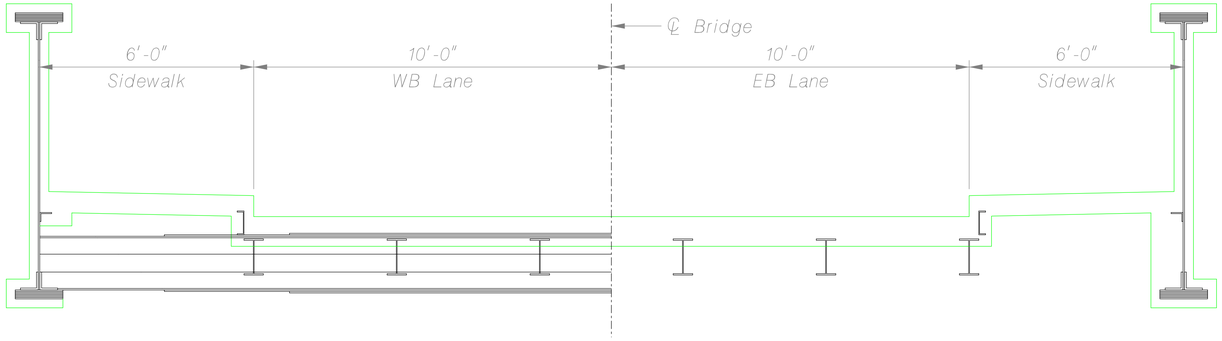
PERFORM CONCRETE SPALL REPAIRS ON DECK, SIDEWALK AND MAIN GIRDER ENCASEMENT



HALF SECTION AT FLOOR BEAM HALF SECTION BETWEEN FLOOR BEAMS

EXISTING TYPICAL SECTION

NOT TO SCALE



HALF SECTION AT FLOOR BEAM HALF SECTION BETWEEN FLOOR BEAMS

PROPOSED TYPICAL SECTION

NOT TO SCALE

LEGEND

- LIMITS OF BRIDGE REPAIRS
- LIMITS OF MILLING/PAVING
- LIMITS OF CONCRETE REMOVAL

20' 0 20' 40'

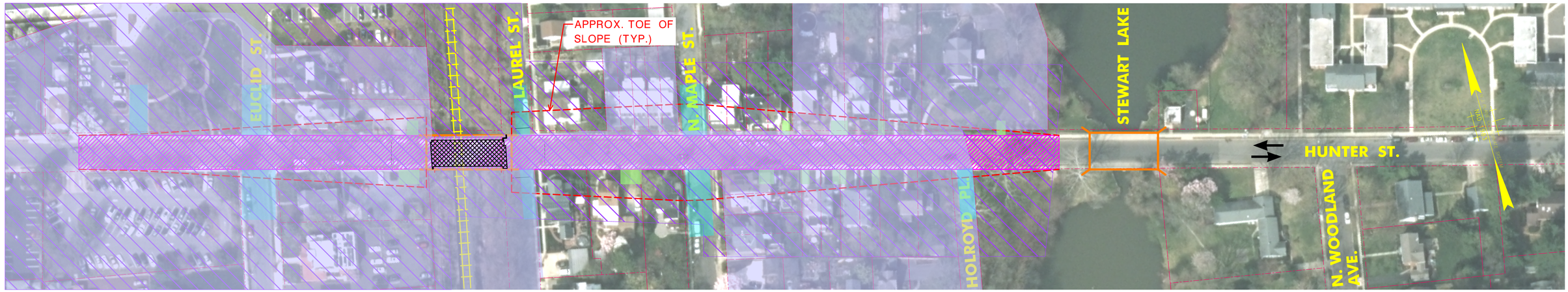
1" = 20' - 0"

DELAWARE VALLEY REGIONAL PLANNING COMMISSION

ALTERNATIVE 3B - REPAIR BRIDGE FOR PEDESTRIAN AND EMERGENCY VEHICLE USE ONLY

GLOUCESTER COUNTY LCD STUDY - HUNTER STREET BRIDGE

WOODBURY CITY GLOUCESTER COUNTY

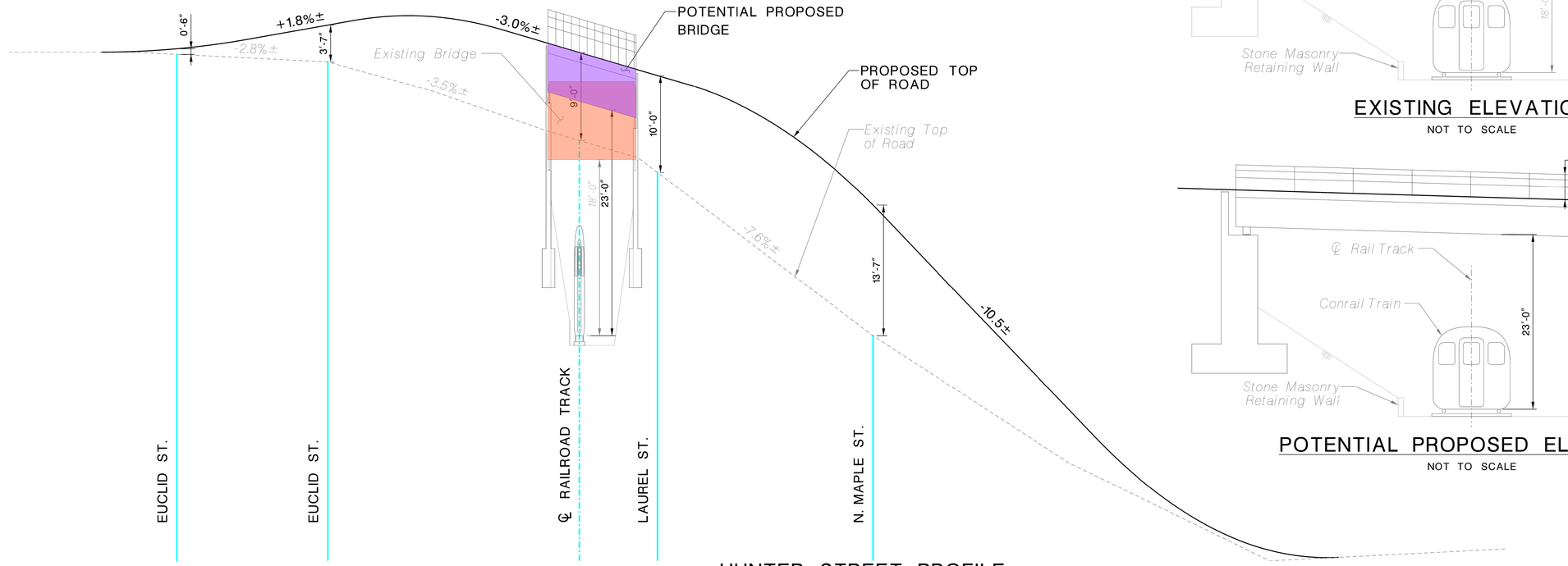


LEGEND

- APPROXIMATE AREA OF IMPACT
- ANTICIPATED INTERSECTION IMPACT
- ANTICIPATED IMPACT (11 ACCESS POINTS)
- APPROXIMATE TOE OF SLOPE (25 BUILDINGS IMPACTED)
- EXISTING PARCEL LINES
- WOODBURY HISTORIC DISTRICT
- NEWTON HISTORIC DISTRICT
- EXISTING BRIDGE OUTLINE

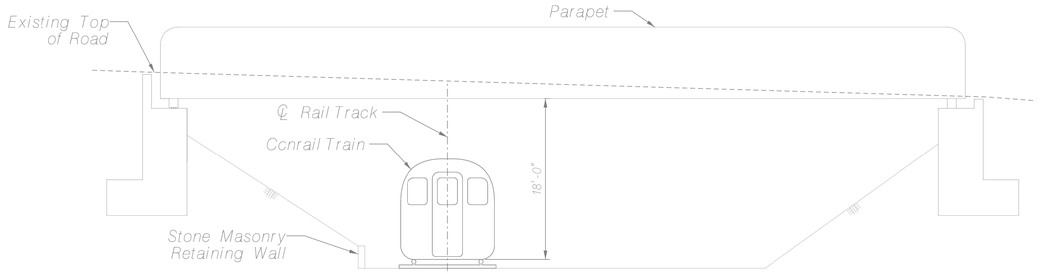
HUNTER STREET PLAN

SCALE: 1" = 60'-0"



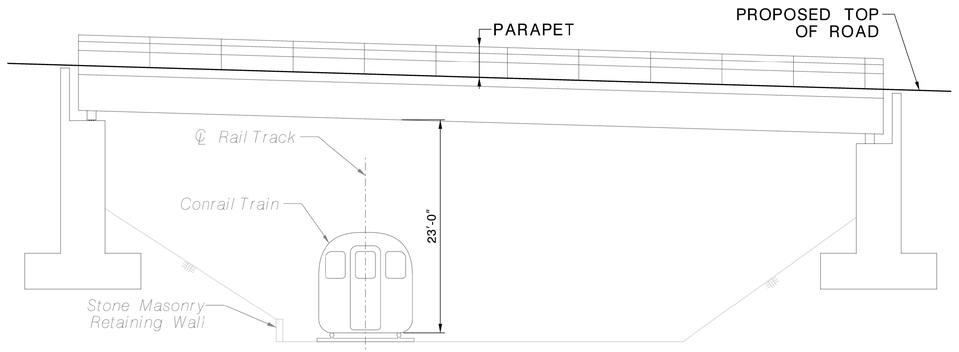
HUNTER STREET PROFILE

DESIGN SPEED = 30 MPH



EXISTING ELEVATION

NOT TO SCALE



POTENTIAL PROPOSED ELEVATION

NOT TO SCALE

60' 40' 20' 0 60' 120'

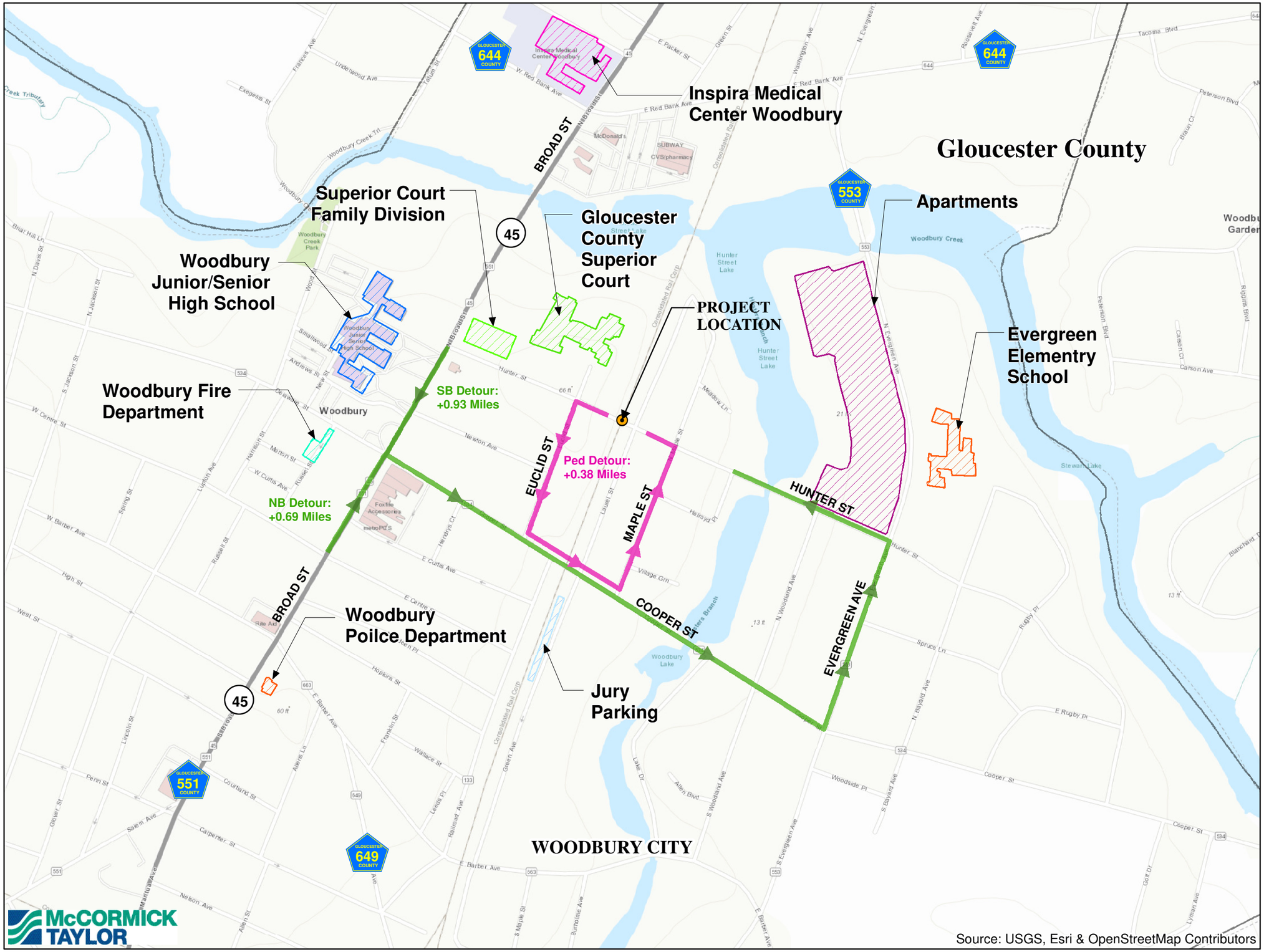
1" = 60'-0"

DELAWARE VALLEY REGIONAL PLANNING COMMISSION

ALTERNATIVE 4 - FULL BRIDGE REPLACEMENT

GLOUCESTER COUNTY LCD STUDY - HUNTER STREET BRIDGE

WOODBURY CITY GLOUCESTER COUNTY



TRAFFIC & PEDESTRIAN DETOUR MAP

Hunter Street Bridge

Local Concept Development Study

Woodbury City
Gloucester County
New Jersey

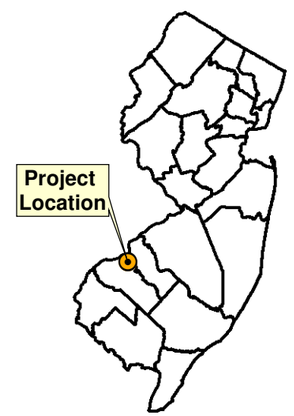
DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

Legend

- Vehicular Detour Route
- Pedestrian Detour Route
- Municipality Boundary
- County Boundary

N

0 500 Feet

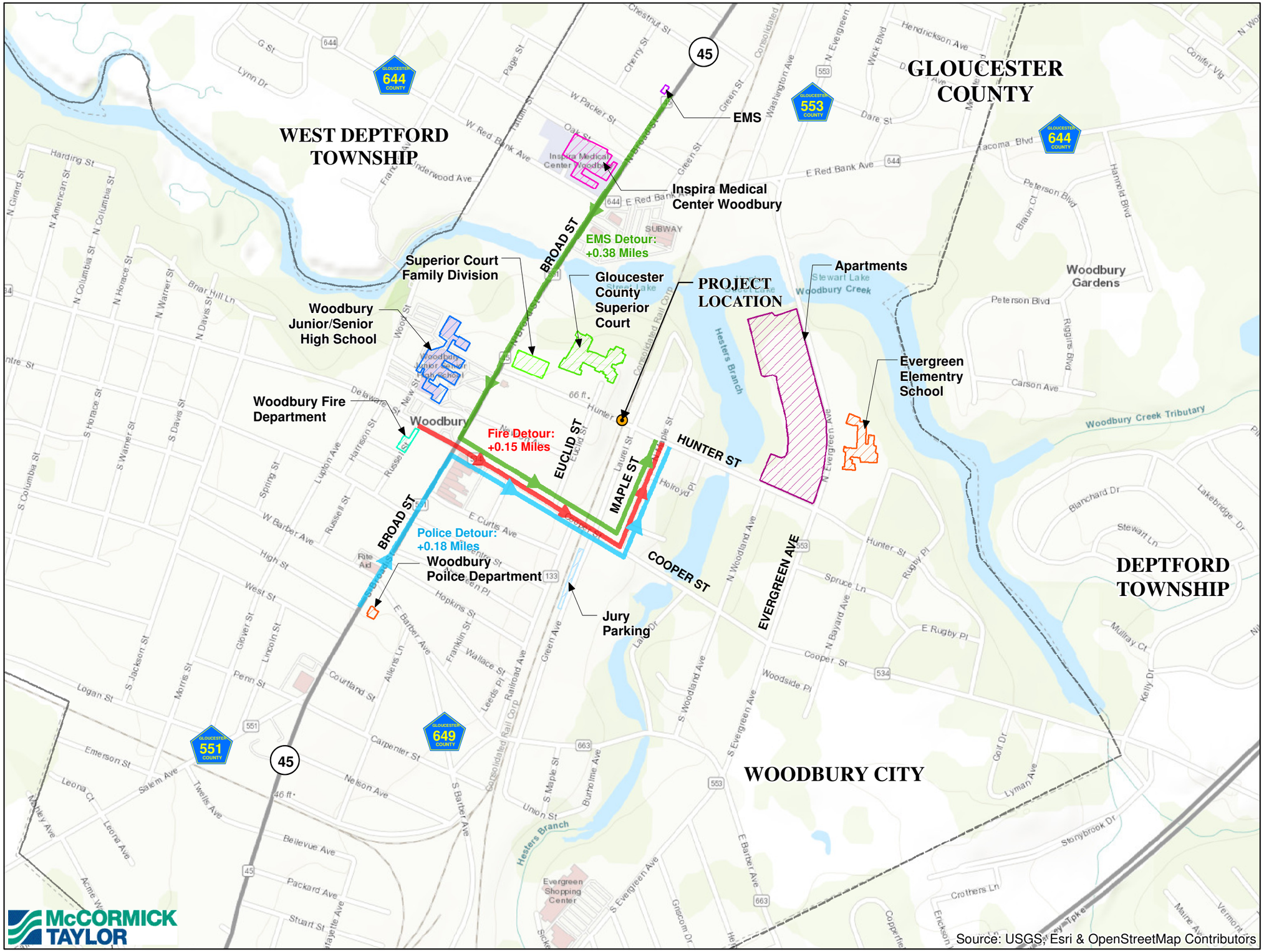


POLICE/FIRE/EMS DETOUR MAP

Hunter Street Bridge

Local Concept Development Study

Woodbury City
Gloucester County
New Jersey

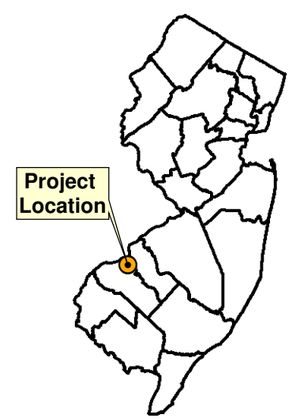


Legend

- Fire Detour Route
- EMS Detour Route
- Police Detour Route
- Municipality Boundary
- County Boundary

N

0 800 Feet



McCORMICK TAYLOR

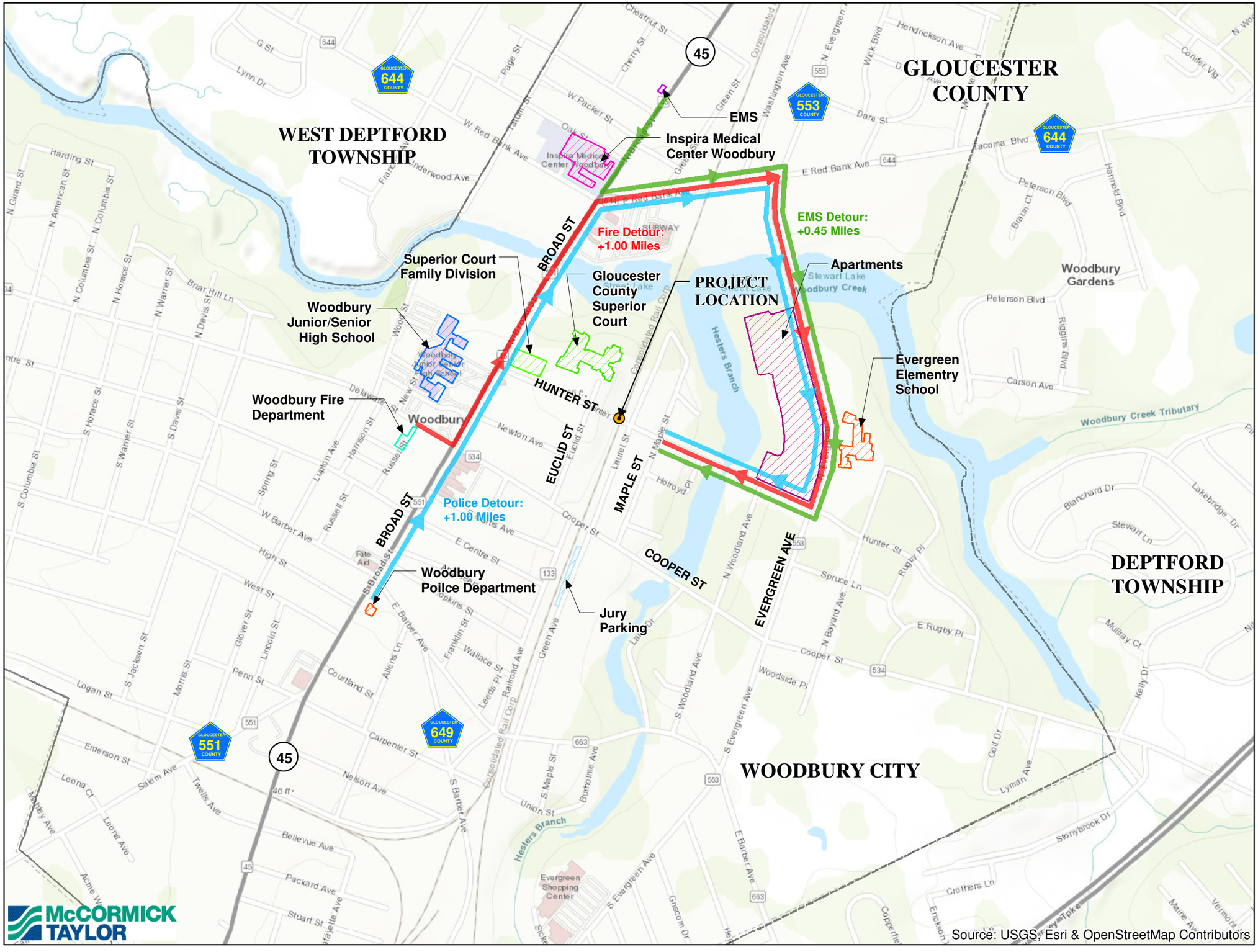
DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

ALTERNATE POLICE/FIRE/EMS DETOUR MAP

Hunter Street Bridge

Local Concept Development Study

Woodbury City
Gloucester County
New Jersey

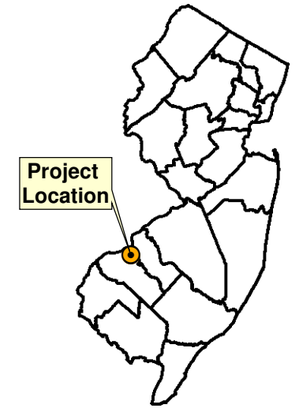


Legend

- Fire Detour Route
- EMS Detour Route
- Police Detour Route
- Municipality Boundary
- County Boundary

N

0 800 Feet



McCORMICK TAYLOR

DELAWARE VALLEY dvrpc REGIONAL PLANNING COMMISSION

Appendix K

Public Communications

Arledge, Brian T.

From: DiMaggio, Anthony
Sent: Thursday, January 24, 2019 3:11 PM
To: Arledge, Brian T.
Subject: FW: Hunter St. Bridge Meeting with City of Woodbury

From: Lubelski, Dave <dlubelsk@co.gloucester.nj.us>
Sent: Wednesday, April 25, 2018 1:50 PM
To: DiMaggio, Anthony <AMDiMaggio@mccormicktaylor.com>
Subject: FW: Hunter St. Bridge Meeting with City of Woodbury

Memo of meeting

From: Voltaggio, Vincent M.
Sent: Wednesday, April 25, 2018 1:21 PM
To: Lubelski, Dave
Subject: Hunter St. Bridge Meeting with City of Woodbury

Dave

Yesterday, I met with William Flemming, Councilman, Robert Law, Acting Administrator, Paul Brier, Township Engineer, Rich Leidy Public Works Director for the City of Woodbury. We reviewed the Hunter Street project needs statement and the condition of the bridge. We discussed some of their concerns and possible approaches to addressing them. We also discussed the various traffic patterns which may be implemented with any work or outcome of the bridge and the effects on services and residents. We also discussed the adverse impacts to the surrounding neighborhood which would be part of a bridge replacement that involved elevating the bridge 9+ feet.

Everyone agreed that further discussion was needed and that another meeting would be helpful with the committee from the City.

Very Truly Yours,

Vincent M. Voltaggio, PE
Director of Public Works &
County Engineer
Phone: 856-307-6600
Fax: 856-307-6606

Appendix L

NJDOT Communications

State of New Jersey
DEPARTMENT OF TRANSPORTATION
1035 Parkway Avenue
P.O Box 600
Trenton, New Jersey 08625

PHILIP D. MURPHY
Governor

SHEILA Y. OLIVER
Lt. Governor

DIANE GUTIERREZ-SCACCETTI
Commissioner

June 13, 2019

Vincent M. Voltaggio, P.E.
Gloucester County Engineer
Clayton Complex Offices of Government Services
1200 N. Delsea Drive
Clayton, NJ 08312-1000

RE: Local Concept Development (LCD) Report Approval
Hunter Street Bridge
Woodbury City, Gloucester County

Dear Mr. Voltaggio:

On March 4, 2019, Delaware Valley Regional Planning Commission (DVRPC) submitted to Local Aid the Concept Development report for the subject project for our review and approval. The report concluded a Preliminary Preferred Alternative (PPA) of "Repair Bridge" as the most cost effective solution. Therefore, the project does not need to advance to the Design phase.

Upon review of the report, we have determined that the PPA is acceptable and an Interagency Regional Committee meeting is not required as there will be no federal funding on this bridge moving forward.

Should you require any additional information, please contact Salim Mikhael, Manager of District 4, at (856) 486-6618.

Sincerely,

Laine Rankin, Director
Local Aid and Economic Development

Concurrence

Elkins Green, Director
Environmental Resources

cc: Nunzio Merla, FHWA
John Coscia, DVRPC

Appendix M

Cost Estimates

HUNTER STREET BRIDGE OVER CONRAIL LOCAL CONCEPT DEVELOPMENT STUDY

PRELIMINARY CONSTRUCTION COST ESTIMATE SUMMARY

				ALTERNATIVE 1 - NO-BUILD	ALTERNATIVE 2 - PERMANENTLY CLOSE BRIDGE TO TRAFFIC AND DEMOLISH BRIDGE		ALTERNATIVE 3A - REPAIR BRIDGE		ALTERNATIVE 3B - REPAIR BRIDGE FOR PEDESTRIAN AND EMERGENCY VEHICLE USE ONLY		ALTERNATIVE 4 - FULL BRIDGE REPLACEMENT
ITEM NO.	**ITEM DESCRIPTION**	**UNIT COST**	**UNITS**	**COST**	**QUANTITY**	**COST**	**QUANTITY**	**COST**	**QUANTITY**	**COST**	**COST**
159003M	BREAKAWAY BARRICADE	$500.00	U		12	$6,000					
201006P	CLEARING SITE, BRIDGE (0802I14)	$150,000.00	LS		1	$150,000					
201039P	TEMPORARY SHIELDING	$100,000.00	LS		1	$100,000	1	$100,000	1	$100,000	
202009P	EXCAVATION, UNCLASSIFIED	$40.00	CY				10	$400	10	$400	
203009P	I-9 SOIL AGGREGATE	$55.00	CY		90	$4,950					
501006P	PERMANENT SHEETING	$75.00	SF		750	$56,250					
401009P	HMA MILLING, 3" OR LESS	$10.00	SY		420	$4,200	420	$4,200	420	$4,200	
401042M	HOT MIX ASPHALT 9.5 M 64 SURFACE COURSE	$100.00	T		55	$5,500	55	$5,500	55	$5,500	
507003P	1 3/4" BY 1 3/4" PREFORMED ELASTOMERIC JOINT ASSEMBLY	$350.00	LF				32	$11,200	32	$11,200	
507005P	2 5/8" X 2 5/8" PREFORMED ELASTOMERIC JOINT ASSEMBLY	$375.00	LF				32	$12,000	32	$12,000	
551006M	REPAIR OF CONCRETE DECK, TYPE B	$150.00	SF				600	$90,000	600	$90,000	USED NJDOT
551009M	REPAIR OF CONCRETE DECK, TYPE C	$250.00	SF				120	$30,000	120	$30,000	CONCEPT
551021M	HEADER RECONSTRUCTION	$450.00	LF				64	$28,800	64	$28,800	DEVELOPMENT COST
552003M	PRESSURE INJECTION, CONCRETE CRACKS	$150.00	LF	NO BUILD			10	$1,500	10	$1,500	ESTIMATING
554015P	ANTI-GRAFFITI PROTECTION	$100.00	SY				65	$6,500	65	$6,500	CALCULATION
554016P	CONCRETE ENCASEMENT REMOVAL AND PAINTING	$3,500.00	CY				45	$157,500	45	$157,500	SPREADSHEET
555013M	CONCRETE SPALL REPAIR	$350.00	SF				130	$45,500	130	$45,500	
555035M	MASONRY REPOINTING	$35.00	SF				230	$8,050	230	$8,050	
557004M	STRUCTURAL STEEL REPAIRS, IF AND WHERE DIRECTED	$10.00	LB				2000	$20,000	2000	$20,000	
558005P	RIVET REPLACEMENT	$135.00	U				100	$13,500	100	$13,500	
601120P	12" REINFORCED CONCRETE PIPE	$200.00	LF		32	$6,400	32	$6,400	32	$6,400	
609003M	BEAM GUIDE RAIL	$35.00	LF		100	$3,500					
609039M	BEAM GUIDE RAIL ANCHORAGE	$800.00	U		4	$3,200					
610045M	BOLLARD	$1,300.00	U						8	$10,400	
804006P	TOPSOILING, 4" THICK	$4.00	SY		150	$600					
806018P	FERTILIZING AND SEEDING, TYPE F	$5.00	SY		150	$750					

BRIDGE ESTIMATE	$0		$341,350		$541,050		$551,450	
MOBILIZATION	$0	9%	$30,722	9%	$49,163	9%	$49,163	
MAINTENANCE AND PROTECTION OF TRAFFIC	$0	5%	$17,068	5%	$27,313	5%	$27,313	
CONSTRUCTION LAYOUT	$0		$7,000		$7,000		$7,000	
CONSTRUCTION ESTIMATE FOR CD	**$0**		**$396,139**		**$624,525**		**$634,925**	**$3,467,872**
CONSTRUCTION ENGINEERING	$0	12.2%	$48,329	12.2%	$76,826	12.2%	$76,826	$610,346
CONTINGENCY	$0	15%	$59,421	15%	$94,459	15%	$94,459	$143,700
UTILITIES	$0		$1,350,000		$0		$0	$3,000,000
RIGHT OF WAY	$0		$0		$0		$0	$5,000,000
TOTAL ESTIMATE	***$0***		***$1,854,000***		***$796,000***		***$807,000***	***$12,222,000***

Appendix N

Alternatives Matrix

HUNTER STREET BRIDGE OVER CONRAIL LOCAL CONCEPT DEVELOPMENT STUDY

ALTERNATIVES MATRIX

	ALTERNATIVE 1 - NO-BUILD	ALTERNATIVE 2 - PERMANENTLY CLOSE BRIDGE TO TRAFFIC AND DEMOLISH BRIDGE	ALTERNATIVE 3A - REPAIR BRIDGE	ALTERNATIVE 3B - REPAIR BRIDGE FOR PEDESTRIAN AND EMERGENCY VEHICLE USE ONLY	ALTERNATIVE 4 - FULL BRIDGE REPLACEMENT
Project Purpose and Need					
Meets Project Purpose and Need	No	Yes	No	No	Yes
Maintenance and Protection of Traffic					
Number of Lanes Provided During Construction	N/A	0	0	0	0
Detour Required/Length	N/A	Yes/0.93 Mile	Yes/0.93 Mile	Yes/0.93 Mile	Yes/0.93 Mile
Controlling Substandard Design Elements Remaining					
Sight Distance at Non-Signalized Inersection	Yes	No	Yes	Yes	No
Bridge Width	Yes	No	Yes	Yes	No
Bridge Vertical Clearance	Yes	No	Yes	Yes	No
Vertical Profile					
Profile Raise at the Bridge	0"	0"	0"	0"	9'-0"
Construction Duration					
Estimated Duration (Months)	N/A	6	6	6	24
Traffic Operations & Bicycle/Pedestrian					
Sidewalks Provided	Yes	N/A	Yes	Yes	Yes
Bicycle Compatibility on the Bridge Structure	No	N/A	No	No	Yes
Right of Way Impacts					
Required ROW (Acres)	0	0	0	0	3.2
Number of Temporary Construction Easements	0	0	0	0	0
Number of Partial Residential Property Acquisitions	0	0	0	0	0
Number of Slope Easements	0	0	0	0	4
Number of Mitigation Easements	0	0	0	0	0
Railroad Impacts					
Railroad Crossing Impacts	N/A	Yes	Yes	Yes	Yes
Access					
Potential Access Impacts During Construction	0	0	0	0	2
Potential Permanent Access Impacts	0	0	0	0	11
Safety Improvement					
ADA Ramp Upgrades	No	No	No	No	Yes
Structural Design					
Jointless Construction	No	N/A	No	No	Yes
Address Bridge Structural Deficiencies	No	Yes	Yes	Yes	Yes
Maintain Existing Horizontal Alignment	Yes	N/A	Yes	Yes	Yes
Seismic Design Addressed	No	N/A	No	No	Yes
75 yr. Bridge Life Cycle	No (25 years estimated)	N/A	No (25 years estimated)	No (25 years estimated)	Yes
Environmental Resources					
Floodplains	No	No	No	No	No
Wetlands	No	No	No	No	No
Air/Noise	No	No	No	No	No
Threatened and Endangered Species	No	No	No	No	No
Natural Heritage Priority Sites	No	No	No	No	No
Cultural Resources/Section 106	No	Yes	Yes	Yes	Yes
Socioeconomics/Environmental Justice	No	Yes	No	Yes	Yes
Hazardous Waste/Contamination	No	Yes	Yes	Yes	Yes
Potential NEPA Document (PE Phase)	No	Yes	Yes	Yes	Yes
Potential Section 4(f) (PE Phase)	No	Yes	Yes	Yes	Yes
Anticipated Environmental Permits	No	No	No	No	No
Stormwater Management					
Greater Than 1 Acre Disturbance	N/A	No	No	No	Yes
Greater Than 0.25 Acre Additional Impervious	N/A	No	No	No	No
Total Construction Cost (Including Contingency & Escalation)	N/A	$503,889	$795,810	$806,210	$4,221,918
Life Cycle Cost (Present Value)	$225,000	$0	$106,000	$106,000	$420,000
Permanent Utility Relocation Required	N/A	Yes	No	No	Yes
Utility Relocation Cost	N/A	$1,350,000	N/A	N/A	$3,000,000
Right of Way Cost	N/A	N/A	N/A	N/A	$5,000,000

Appendix O

Utility Correspondence

McCORMICK TAYLOR

February 13, 2018

Mr. Lou Marello
AT&T Corporation
440 Hamilton Avenue
Whiteplains, NY 10601

Re:
Hunter Street Bridge over Conrail
Local Concept Development Study
Delaware Valley Regional Planning Commission
City of Woodbury, Gloucester County
New Jersey

Project Designer:
McCormick Taylor
700 East Gate Dr., Suite 201
Mt. Laurel, NJ 08054
ATTN: David L. Verdia, EIT
T: (856) 793-0800
E: DLVerdia@mccormicktaylor.com

Dear Mr. Marello,

The Delaware Valley Regional Planning Commission (DVRPC) along with Gloucester County has engaged McCormick Taylor to perform a Local Concept Development (LCD) Study of the Hunter Street Bridge over Conrail in the City of Woodbury, NJ. The LCD study will evaluate the feasibility of removing, rehabilitating or replacing the bridge to improve substandard under clearance over the railroad and other structural deficiencies while minimizing the impacts to the surrounding community, including historic resources. The location of the project is shown on the enclosed location map.

The preliminary investigation disclosed that AT&T Corporation is franchised to operate within the proposed project limits and may have facilities affected by the project.

Should you have existing facilities or proposed betterments within the project limits, it is necessary for us to verify your facilities and enter into an engineering dialog with you.

Please complete the following questionnaire, provide any relevant mapping of your facilities, and return it to us by **Friday, March 9, 2018**. If you prefer to respond by FAX or e-mail, the number is (856) 793-0819 or email at DLVerdia@mccormicktaylor.com.

Questionnaire

(X) The Company 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: **steve.cumberland@att.com**

(X) 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.

(____) **The following companies are tenants on/in our facilities within the project limits:**

_____
_____
_____
_____

(X) We would like Gloucester County/DVRPC to arrange for the following work to be done for our facilities should it be necessary for them to be relocated or modified.

(____) Design/Engineering
(____) Construction – Some or All? _____
(X) Neither – the Company will perform (or arrange to have performed) all needed work.
(____) Not certain at this time.

PLEASE NOTE, AT&T HAS CABLE ON CONRAIL ROW BELOW THE HUNTER BRIDGE, NOT ON THE HUNTER STREET BRIDGE ITSELF.

Questionnaire

(X) The Company Engineer to be contacted is:

Name JAY EVERLY
Company TREC GROUP
Title PROJECT MANAGER
Address 900 OLD MARPLE RD
SPRINGFIELD PA 19064

Tel: 610-328-6465
Fax: 610-328-3716
Email: JAY@TRECGROUP.COM

(X) 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.

(____) **The following companies are tenants on/in our facilities within the project limits:**

_____
_____
_____
_____

(____) We would like Gloucester County/DVRPC to arrange for the following work to be done for our facilities should it be necessary for them to be relocated or modified.

(____) Design/Engineering
(____) Construction – Some or All? _____
(____) Neither – the Company will perform (or arrange to have performed) all needed work.
(____) Not certain at this time.

Thank you for your cooperation in this matter. Should you have any questions, feel free to contact the undersigned at 856-793-0800 (DLVerdia@mccormicktaylor.com) or Evan Rosario at (EGRosario@mccormicktaylor.com).

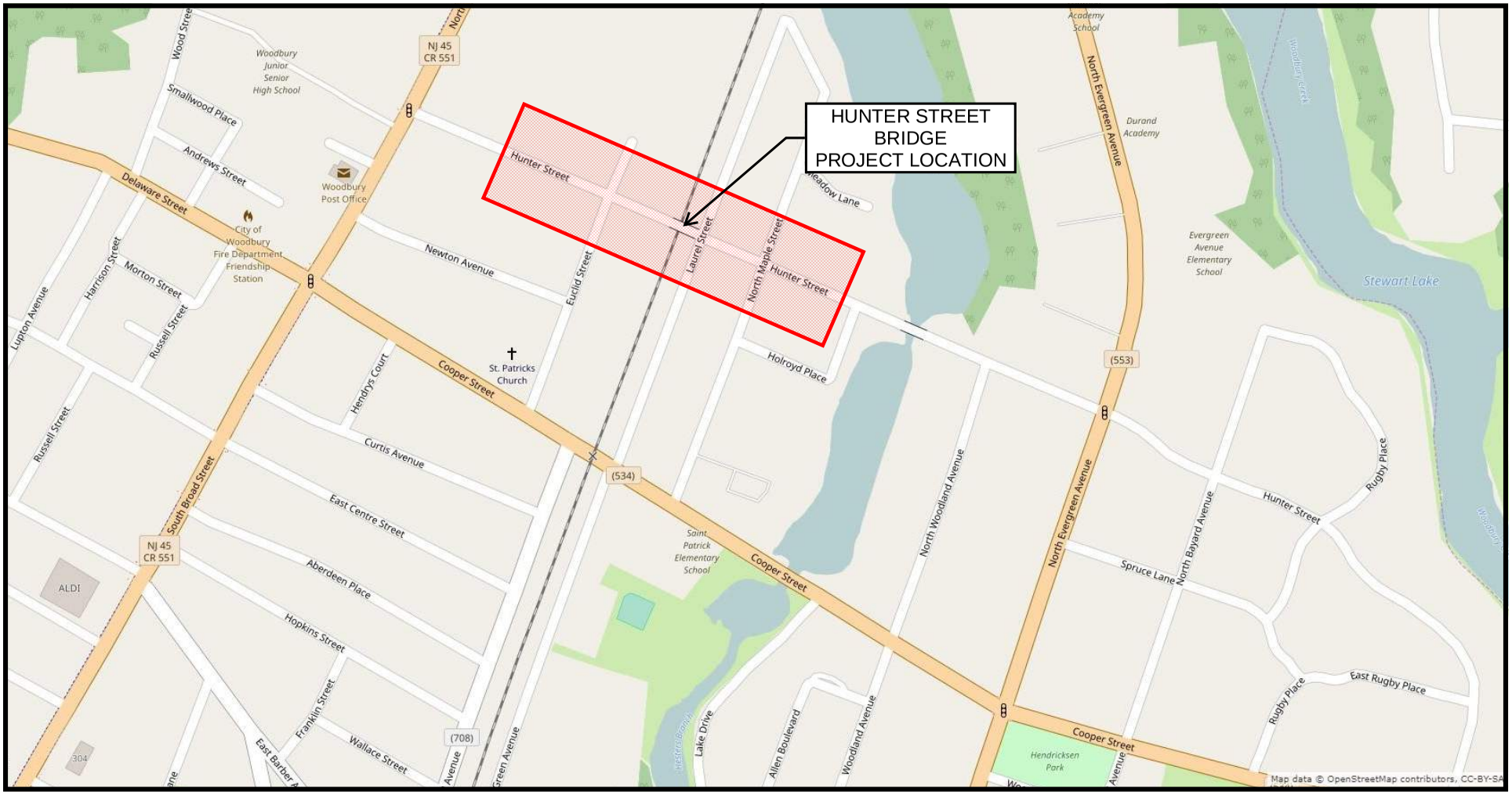
Very truly yours,

MCCORMICK TAYLOR, INC.

David L. Verdia, EIT
Highway Designer

Attachment: Project Location Map

cc:



PROJECT LOCATION MAP

HUNTER STREET BRIDGE OVER CONRAIL

WOODBURY CITY, NJ

AT&T Media Engineering
175 West Main Street
Freehold, New Jersey 07728

02/18/18

McCormick Taylor
700 East Gate Drive – Suite 201
Mt. Laurel, New Jersey 08054
ATTN: David L. Verdia, EIT

RE: Hunter Street Bridge Over CONRAIL
Woodbury City, New Jersey
Gloucester County

Dear Mr. Verdia,

Please be advised that Teleport Communications America LLC (AT&T) has no facilities within the project scope of work area.

I have attached the questionnaire indicating that AT&T Teleport has no facilities within the project area.

Please be advised that AT&T CORE does have facilities within the project area. Please contact Mr. Steve Cumberland for additional information. His contact information is:
Steve.cumberland@mcgfiber.com or (352) 775-8053

Let me know if you require additional information at this time.

Sincerely,

Dennis Herrmann
Project Manager
JoeMax Telecom, LLC
281 Browertown Road, Suite 201
Woodland Park, NJ 07424
609-331-2407
dhermann@joemaxtelecom.com

Questionnaire

(X) The Company Engineer to be contacted is:

Name DENNIS HERRMANN
Company JOEMAX TELECOM FOR TELEPORT COMMUNICATIONS AMERICA LLC
Title PROJECT MANAGER
Address 281 BROWERTOWN ROAD - SUITE 201
WOODLAND PARK N.J. 07424

Tel: 609 331-2407
Fax:
Email: DHERRMANN@JOEMAXTELECOM.COM

(____) We **DO HAVE** existing facilities within the project limits.

(X) We **DO NOT HAVE** existing facilities within the project limits.

(____) We **HAVE** PROPOSED facilities planned within the project limits.

(____) **The following companies are tenants on/in our facilities within the project limits:**

_____
_____
_____
_____

(____) We would like Gloucester County/DVRPC to arrange for the following work to be done for our facilities should it be necessary for them to be relocated or modified.

(____) Design/Engineering
(____) Construction – Some or All? _____
(____) Neither – the Company will perform (or arrange to have performed) all needed work.
(____) Not certain at this time.

McCORMICK TAYLOR

August 30, 2017

Mr. Salvatore Dimaggio
Comcast Cable Communications Management, LLC
403 South St.
Eatontown, NJ 07724

Re:
Hunter Street Bridge over Conrail
Local Concept Development Study
Delaware Valley Regional Planning Commission
City of Woodbury, Gloucester County
New Jersey

Project Designer:
McCormick Taylor
700 East Gate Dr., Suite 201
Mt. Laurel, NJ 08054
ATTN: David L. Verdia, EIT
T: (856) 793-0800
E: DLVerdia@mccormicktaylor.com

Dear Mr. Dimaggio,

The Delaware Valley Regional Planning Commission (DVRPC) along with Gloucester County has engaged McCormick Taylor to perform a Local Concept Development (LCD) Study of the Hunter Street Bridge over Conrail in the City of Woodbury, NJ. The LCD study will evaluate the feasibility of removing, rehabilitating or replacing the bridge to improve substandard under clearance over the railroad and other structural deficiencies while minimizing the impacts to the surrounding community, including historic resources. The location of the project is shown on the enclosed location map.

The preliminary investigation disclosed that Comcast Cable Communications Management, LLC is franchised to operate within the proposed project limits and may have facilities affected by the project.

Should you have existing facilities or proposed betterments within the project limits, it is necessary for us to verify your facilities and enter into an engineering dialog with you.

Please complete the following questionnaire, provide any relevant mapping of your facilities, and return it to us by **Friday, September 29, 2017**. If you prefer to respond by FAX or e-mail, the number is (856) 793-0819 or email at DLVerdia@mccormicktaylor.com.

Questionnaire

(____) The Company Engineer to be contacted is:

Name: Tim Mills
Company: Comcast
Title: Construction Coordinator
Address: 1846 N. W. Blvd.
Vineland, N.J. 08360

Tel: 856-694-6016
Fax:
Email: Tim_Mills@Cable.Comcast.com

(X) 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.

(____) **The following companies are tenants on/in our facilities within the project limits:**

_____
_____
_____
_____

(____) We would like Gloucester County/DVRPC to arrange for the following work to be done for our facilities should it be necessary for them to be relocated or modified.

(____) Design/Engineering
(____) Construction – Some or All? _____
(X) Neither – the Company will perform (or arrange to have performed) all needed work.
(____) Not certain at this time.

Thank you for your cooperation in this matter. Should you have any questions, feel free to contact the undersigned at 856-793-0800 (DLVerdia@mccormicktaylor.com) or Evan Rosario at (EGRosario@mccormicktaylor.com).

Very truly yours,

McCORMICK TAYLOR, INC.

David L. Verdia

David L. Verdia, EIT
Highway Designer

Attachment: Project Location Map

cc:

McCORMICK TAYLOR

August 30, 2017

Mr. William Kaeser
Consolidated Rail Corporation (Conrail)
1000 Howard Blvd.
Mount Laurel, NJ 08054

Re:
Hunter Street Bridge over Conrail
Local Concept Development Study
Delaware Valley Regional Planning Commission
City of Woodbury, Gloucester County
New Jersey

Project Designer:
McCormick Taylor
700 East Gate Dr., Suite 201
Mt. Laurel, NJ 08054
ATTN: David L. Verdia, EIT
T: (856) 793-0800
E: DLVerdia@mccormicktaylor.com

Dear Mr. Kaeser,

The Delaware Valley Regional Planning Commission (DVRPC) along with Gloucester County has engaged McCormick Taylor to perform a Local Concept Development (LCD) Study of the Hunter Street Bridge over Conrail in the City of Woodbury, NJ. The LCD study will evaluate the feasibility of removing, rehabilitating or replacing the bridge to improve substandard under clearance over the railroad and other structural deficiencies while minimizing the impacts to the surrounding community, including historic resources. The location of the project is shown on the enclosed location map.

The preliminary investigation disclosed that Consolidated Rail Corporation (Conrail) is franchised to operate within the proposed project limits and may have facilities affected by the project.

Should you have existing facilities or proposed betterments within the project limits, it is necessary for us to verify your facilities and enter into an engineering dialog with you.

Please complete the following questionnaire, provide any relevant mapping of your facilities, and return it to us by **Friday, September 29, 2017**. If you prefer to respond by FAX or e-email, the number is (856) 793-0819 or email at DLVerdia@mccormicktaylor.com.

Questionnaire

(X) The Company Engineer to be contacted is:

Name Vincent Milano
Company Conrail
Title Project Engineer
Address 1000 Howard Blvd.
Mt. Laurel NJ 08054

Tel: 856-231-2049
Fax:
Email: Vincent.Milano@Conrail.com

(X) 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.

(____) **The following companies are tenants on/in our facilities within the project limits:**

_____
_____
_____
_____

(X) We would like Gloucester County/DVRPC to arrange for the following work to be done for our facilities should it be necessary for them to be relocated or modified.

(____) Design/Engineering
(____) Construction – Some or All? _____
(____) Neither – the Company will perform (or arrange to have performed) all needed work.
(X) Not certain at this time.

Thank you for your cooperation in this matter. Should you have any questions, feel free to contact the undersigned at 856-793-0800 (DLVerdia@mccormicktaylor.com) or Evan Rosario at (EGRosario@mccormicktaylor.com).

Very truly yours,

McCORMICK TAYLOR, INC.

David L. Verdia, EIT
Highway Designer

Attachment: Project Location Map

cc:

Local Concept Development Study
Hunter Street over Conrail Bridge
Woodbury, Gloucester County, NJ

Conrail Coordination Meeting Report

Date: February 6, 2018
Time: 10:00 AM
Location: Conrail Office Conference Room
1000 Howard Boulevard, Suite 400
Mount Laurel, NJ 08054

Prepared by: Brian Arledge, P.E.

Attendees (see attached Sign-In Sheet):

Amy Sokalski	McCormick Taylor, Inc.	(856) 793-0800
Brian Arledge	McCormick Taylor, Inc.	(856) 793-0800
Chang "David" Chung	McCormick Taylor, Inc.	(856) 793-0800
Anthony DiMaggio	McCormick Taylor, Inc.	(856) 793-0800
Vincent Milano	Conrail	(856) 231-2049
David Lubelski	Gloucester County Engineering	(856) 307-6600

This project is currently a full scope Local Concept Development (LCD) study for the removal, rehabilitation or replacement of the Hunter St. Bridge over Conrail. The purpose of this meeting was to present conditions of the existing bridge and to discuss Conrail's potential needs, geometry restrictions and allowable track outages/work hours related to developing alternatives which will be incorporated into the Preliminary Preferred Alternative (PPA). The following items were discussed (in no particular order):

- Mr. Lubelski and Mr. DiMaggio began the meeting with an introduction to the project.
- Mr. Chung started a project presentation following the items outlined in the Project Overview (see attached).
- Mr. Milano stated that the single track corridor near this bridge is a "choke point" for Conrail as they have multi-track junctions to the south and north.
- Mr. Milano stated that Conrail requires a 23'-0" vertical clearance for new bridges. Mr. Chung replied that raising the roadway for a new bridge would have to be kept to a minimum due to nearby properties and roadway intersections. Mr. Milano directed McCormick Taylor to reference Conrail document CE-6 for guidance regarding horizontal and vertical clearance requirements. Mr. Milano noted that the existing vertical clearance could probably be maintained with a rehabilitation option.
- Mr. Chung asked Mr. Milano if the potential to add an additional railroad track exists. Mr. Milano replied that the potential exists to add a passenger track. Mr. Lubelski confirmed that potential for a future passenger track is there.

- Mr. DiMaggio asked Mr. Milano if the option of lowering the railroad track or building a new track adjacent to the existing track at a lower elevation is feasible. Mr. Milano explained that Conrail typically does not move tracks or build temporary tracks to accommodate other agency projects. Other agencies typically design their projects to accommodate Conrail facilities. Attendees recognized that the Cooper Street grade crossing south of the Hunter Street Bridge would limit how much the railroad could be lowered. Mr. Milano stated that he would send a document with guidelines for maximum percent grades of railroad tracks.
- Mr. Chung asked if work on Conrail's track would be performed by the project's contractor or Conrail's contractor. Mr. Milano explained that Conrail's labor unions perform minor work. Conrail would control major work to their facilities under a separate contract. Mr. Lubelski stated that federal funds could be used for Conrail facility modifications.
- Rehabilitation options were discussed which could get the bridge off the structural deficiency list through strengthening. However, a rehab alternate will maintain most of the existing substandard geometry related to the bridge, which will keep its functionally obsolete status. Mr. Lubelski stated that federal funds could still be used for bridge rehab that does not meet the Problem Statement, if the bridge was converted into emergency vehicle and pedestrian use only. Gloucester County would also consider limiting the bridge to 1-way traffic.
- Utilities within Conrail right-of-way were discussed. Mr. Chung stated that a fiber optic marker was observed during a field view. Mr. Milano believes that AT&T has a fiber optic line within Conrail right-of-way. Mr. Milano recommended contacting Tony Taylor at (856) 231-2425 for further information.
- Mr. Milano also advised that stormwater cannot be discharged on Conrail property. Mr. Milano also advised that a stormwater analysis would be required for a 100-year storm if discharged onto railroad property.

cc: All Attendees

Hunter Street over Conrail Bridge
Project Overview

Project Location

The Hunter Street Bridge over Conrail is located in Woodbury City, Gloucester County, NJ.

Project Limits

The structure is located along Hunter Street 2/10 mile east of Broad Street (NJ Route 45). Study limits for this project are limited to the bridge location.

Problem Statement & Need

The Hunter Street over Conrail Bridge (Bridge No. 0802I14) is a single span concrete-encased steel through girder and floor beam structure with a cast-in-place concrete deck. The bridge is structurally deficient due to the poor condition of the deck. The bridge is functionally obsolete due to the substandard deck geometry and vertical under clearance. This report is based on the latest Bridge Re-evaluation Survey Report (special inspection), dated October 16, 2017.

The overall condition of the structure is fair due to the condition of the superstructure and substructure, and the low inventory ratings. The structure is classified as structurally deficient due to the poor condition of the deck. The structure is functionally obsolete due to the substandard deck geometry and vertical under clearance.

Project Purpose

The purpose of this project is to address deficiencies of the Hunter Street over Conrail Bridge and to enhance the safety of traveling public on the Hunter Street Bridge.

Controlling Substandard Design Elements

Stopping Sight Distance

Existing Stopping Sight Distance for Hunter Street approaching Laurel Street is 0’ based on the existing horizontal sight line obstruction from the existing bridge through girders. This is substandard to the NJDOT minimum 200’ for the 30 mph design speed of Hunter Street.

Sight Distance at Non Signalized Intersection

The existing bridge through girders obstruct sight distance at the intersection of Hunter Street and Laurel Street. This is substandard to the NJDOT minimum 335’ left turn sight distance and 290’ right turn sight distance.

Bridge Sidewalk Width

Existing bridge sidewalk widths are 4’-4” and 4’-5”, which are substandard to the NJDOT criteria of 6’-0”. The project study area is not ADA compliant.

Bridge Vertical Under Clearance

Actual minimum bridge under clearance from the bottom of both through girders to the top of the east rail is 17’-11”, which is substandard to the NJDOT criteria of 23’-0”.

Potential Alternatives

It is anticipated that the following alternatives could be evaluated:

- No Build alternative
- Bridge removal with no replacement
- Rehabilitation alternative
  - Rehabilitation while maintaining substandard under-clearance
  - Rehabilitation for pedestrian and emergency vehicles with substandard under-clearance
  - Rehabilitation with lowering the track by (5'±) to meet 23' required under-clearance.
- Replacement alternative
  - In-kind replacement with substandard under-clearance
  - New bridge (steel beams, thru-girders or precast) with higher profile (5'±) to meet 23' required under-clearance.
  - New bridge (steel beams, thru-girders or precast) with higher profile and lower track to meet 23' required under-clearance.

Bridge Cross-Section: The existing pavement width on the Hunter Street Bridge is 20 feet (curb-to-curb) and the width on the approach roadways is 30 feet. For the bridge replacement alternatives, we will evaluate widening the bridge to 30 feet wide (two 15-foot lanes or two 12-foot lanes with 3-foot shoulders) to match the approach roadways.

Span Configuration: Potential span configurations to be investigated are:

- New abutments located at the same existing abutments (approximate span of 90' center-to-center bearing)
- New abutments located in front of the existing abutments (approximate span of 57'-9" center-to-center bearing)

Conrail Needs and Restrictions:

- Geometry Modifications:
  - Vertical clearance: Existing 18' vs. 23' min. required
  - Need for future Track
  - Allowable track outages/work hours
  - Others?

McCORMICK TAYLOR

Conrail Meeting

Project: Hunter St., Bridge over Conrail, 2-I-14 (Structure No. 0802I14)
Location: Conrail Office, 1000 Howard Blvd., 4th Floor, Mt. Laurel, NJ 08054
Date/Time: February 6, 2018, 10:00AM

Name	Agency	Phone	Email
Amy Sokalski	McCormick Taylor	856-793-0800	ASokalski@mccormicktaylor.com
Brian Arledge	McCormick Taylor	856-793-0800	btarledge@mccormicktaylor.com
Chang "David" Chung	McCormick Taylor	856-793-0800	chchung@mccormicktaylor.com
Anthony DiMaggio	McCormick Taylor	856-793-0800	amdimaggio@mccormicktaylor.com
Vincent Milano	Conrail	856-231-2049	Vincent.Milano@Conrail.com
David Lubelski	Glouc. C	856 307-6000	dlubelski@co.gloucester.nj.us

Arledge, Brian T.

From: Chung, Chang
Sent: Thursday, March 22, 2018 3:54 PM
To: Arledge, Brian T.
Subject: FW: Hunter St. Bridge - Conrail Meeting Request

Not sure why you were cc'ed on this email chain.
But please read this chain as it pertains to under clearance for Hunter st Bridge.

Chang H. "David" Chung |
O 856.793.0800 | F 856.793.0819 | chchung@mccormicktaylor.com
McCormick Taylor
700 East Gate Drive, Suite 201
Mount Laurel, NJ 08054
www.mccormicktaylor.com

From: Hill, Ryan M. [mailto:Ryan.Hill@Conrail.Com]
Sent: Tuesday, March 20, 2018 7:56 PM
To: Milano, Vincent <Vincent.Milano@Conrail.Com>; Timber, Luke C. <LCTimber@mccormicktaylor.com>; Chung, Chang <CHChung@mccormicktaylor.com>
Cc: DiMaggio, Anthony <AMDiMaggio@mccormicktaylor.com>; Sokalski, Amy <ASokalski@mccormicktaylor.com>
Subject: RE: Hunter St. Bridge - Conrail Meeting Request

As information, Conrail will soon be replacing its bridge over Red Bank Avenue, which is just north of this location. As a part of that project we will be raising the bridge and track profile to increase the under clearance to the road below. This raise in track profile will have to run off several hundred feet towards Hunter Street which will complicate track lowering at Hunter Street for this project.

All efforts should be made to raise Hunter Street to meet the standard clearance of 23'. Conrail will certainly entertain and discuss the options, but lowering the track may create profile issues, certainly at depths of 5'.

Hunter Street is the only clearance obstruction on this line in New Jersey that limits Conrail to deliver automobile rail cars and double stack containers to the Port of Paulsboro and other port operations under development near Repauno, NJ. We are very interested in working with you to achieve allowable clearances that will help business and industry grow within the South Jersey region.

Feel free to call me at the number below with any questions.

Thanks,

Ryan M. Hill
Director – Design & Construction
Consolidated Rail Corporation
1000 Howard Boulevard
Mt. Laurel, NJ 08054
609-760-5900

Ryan.Hill@Conrail.com

From: Milano, Vincent
Sent: Tuesday, March 20, 2018 2:21 PM
To: 'Timber, Luke C.'; Chung, Chang
Cc: DiMaggio, Anthony; Sokalski, Amy; Hill, Ryan M.
Subject: RE: Hunter St. Bridge - Conrail Meeting Request

Luke,

I have heard inches discussed in the past but not feet.

From: Timber, Luke C. [mailto:LCTimber@mccormicktaylor.com]
Sent: Tuesday, March 20, 2018 12:06 PM
To: Milano, Vincent; Chung, Chang
Cc: DiMaggio, Anthony; Sokalski, Amy; Hill, Ryan M.
Subject: RE: Hunter St. Bridge - Conrail Meeting Request

Vince,

Thank you for your input. To clarify Conrail's stance on lowering your track, Conrail would be opposed to lowering their track by any amount, whether it be a 1' or 5' change, to accommodate the desirable 23' under clearance. Could you let me know whether I've interpreted your input correctly?

Thanks
Luke

From: Milano, Vincent [mailto:Vincent.Milano@Conrail.Com]
Sent: Tuesday, March 20, 2018 11:39 AM
To: Chung, Chang <CHChung@mccormicktaylor.com>
Cc: DiMaggio, Anthony <AMDiMaggio@mccormicktaylor.com>; Sokalski, Amy <ASokalski@mccormicktaylor.com>; Hill, Ryan M. <Ryan.Hill@Conrail.Com>; Timber, Luke C. <LCTimber@mccormicktaylor.com>
Subject: RE: Hunter St. Bridge - Conrail Meeting Request

David,

Track speed is 20 mph. I'm not sure where to find rail car lengths. I suggest looking to see what AREMA codes say about it.

I would like to restate that lowering the track 5' is a non-starter from Conrail's perspective.

Thank You,

Vincent Milano

Conrail – Design and Construction
1000 Howard Boulevard
Mt. Laurel, NJ 08054
(856)231-2049
Vincent.Milano@conrail.com

From: Chung, Chang [mailto:CHChung@mccormicktaylor.com]
Sent: Thursday, March 15, 2018 11:21 AM
To: Milano, Vincent
Cc: DiMaggio, Anthony; Sokalski, Amy; Hill, Ryan M.; Timber, Luke C.
Subject: RE: Hunter St. Bridge - Conrail Meeting Request

Vince,
As discussed in our meeting, we are looking into potential vertical geometry change for the track under Hunter St. Bridge. This will give us an idea of length of the track that could be effected by dropping it by 5' which will give us the desirable 23' vertical under clearance. To do this preliminary investigation, we'd need to know the design speed of the train in the project area and approximate length of the longest car that would be using that track. Could you provide these two information?
Thanks.

Chang H. "David" Chung |
O 856.793.0800 | F 856.793.0819 | chchung@mccormicktaylor.com
McCormick Taylor
700 East Gate Drive, Suite 201
Mount Laurel, NJ 08054
www.mccormicktaylor.com

From: Milano, Vincent [mailto:Vincent.Milano@Conrail.Com]
Sent: Tuesday, February 6, 2018 11:38 AM
To: Chung, Chang <CHChung@mccormicktaylor.com>
Cc: DiMaggio, Anthony <AMDiMaggio@mccormicktaylor.com>; Sokalski, Amy <ASokalski@mccormicktaylor.com>; Hill, Ryan M. <Ryan.Hill@Conrail.Com>
Subject: RE: Hunter St. Bridge - Conrail Meeting Request

David,

As discussed at the meeting attached are some Conrail specs that may be helpful. The MW4 should discuss maximum vertical track grades and other Conrail Track design criteria.

I will try to get the other info we discussed soon.

Thank You,

Vincent Milano
Conrail – Design and Construction
1000 Howard Boulevard
Mt. Laurel, NJ 08054
(856)231-2049
Vincent.Milano@conrail.com

From: Hill, Ryan M.
Sent: Monday, January 08, 2018 10:14 AM
To: 'Chung, Chang'; Milano, Vincent
Cc: Kaeser, William; DiMaggio, Anthony; Sokalski, Amy
Subject: RE: Hunter St. Bridge - Conrail Meeting Request

Yes. We will have it at Conrail's offices.

1000 Howard Blvd., 4th Floor, Mt. Laurel, NJ 08054

Thanks. Please send out an outlook invite.

Ryan

From: Chung, Chang [mailto:CHChung@mccormicktaylor.com]
Sent: Monday, January 08, 2018 9:51 AM
To: Milano, Vincent; Hill, Ryan M.
Cc: Kaeser, William; DiMaggio, Anthony; Sokalski, Amy
Subject: RE: Hunter St. Bridge - Conrail Meeting Request

Thanks for the confirmation, guys!
Just a quick questions, before I send out an meeting request for 2/6. Gloucester County wanted to know whether Conrail can host the meeting at Conrail's office? Is that something you can accommodate?
Let me know.
Thanks.

Chang H. "David" Chung |
O 856.793.0800 | F 856.793.0819 | chchung@mccormicktaylor.com
McCormick Taylor
700 East Gate Drive, Suite 201
Mount Laurel, NJ 08054
www.mccormicktaylor.com

From: Milano, Vincent [mailto:Vincent.Milano@Conrail.Com]
Sent: Friday, January 5, 2018 3:17 PM
To: Chung, Chang <CHChung@mccormicktaylor.com>; Hill, Ryan M. <Ryan.Hill@Conrail.Com>
Cc: Kaeser, William <William.Kaeser@Conrail.com>; DiMaggio, Anthony <AMDiMaggio@mccormicktaylor.com>; Sokalski, Amy <ASokalski@mccormicktaylor.com>
Subject: RE: Hunter St. Bridge - Conrail Meeting Request

That works for me.

From: Chung, Chang [mailto:CHChung@mccormicktaylor.com]
Sent: Friday, January 05, 2018 2:43 PM
To: Hill, Ryan M.; Milano, Vincent
Cc: Kaeser, William; DiMaggio, Anthony; Sokalski, Amy
Subject: RE: Hunter St. Bridge - Conrail Meeting Request

Thanks for the updates, guys!
Looks like Jan. is a bit difficult for everyone's schedule.

Does 2/6/18, Tues. @ 10AM work for everyone to meet at our office located on 700 East Gate Drive, Suite 201, Mt. Laurel, NJ? If the Conrail team would prefer to meet at Conrail office, that's fine with us too. We are located pretty close to each other.

Please let me know. Once I confirm this date from you guys, I'll send out a meeting request to remind everyone. Thanks.

Chang H. "David" Chung |
O 856.793.0800 | F 856.793.0819 | chchung@mccormicktaylor.com
McCormick Taylor
700 East Gate Drive, Suite 201
Mount Laurel, NJ 08054
www.mccormicktaylor.com

From: Hill, Ryan M. [mailto:Ryan.Hill@Conrail.Com]
Sent: Thursday, January 4, 2018 12:18 PM
To: Chung, Chang <CHChung@mccormicktaylor.com>; Milano, Vincent <Vincent.Milano@Conrail.Com>
Cc: Kaeser, William <William.Kaeser@Conrail.com>; DiMaggio, Anthony <AMDiMaggio@mccormicktaylor.com>; Sokalski, Amy <ASokalski@mccormicktaylor.com>
Subject: RE: Hunter St. Bridge - Conrail Meeting Request

I am NOT available Jan 16, 25 or Feb 7.

From: Chung, Chang [mailto:CHChung@mccormicktaylor.com]
Sent: Thursday, January 04, 2018 12:13 PM
To: Milano, Vincent
Cc: Hill, Ryan M.; Kaeser, William; DiMaggio, Anthony; Sokalski, Amy
Subject: RE: Hunter St. Bridge - Conrail Meeting Request

Thanks for the update, Vince.
I'll check with my team for the following dates and get back to you with some openings that can work with you and your team:

Jan: 16, 23, 25, 26, 28, 29, 3
Feb: 5, 6, 7, 9, 12, 13, 15, 16

Let me know if any of the above dates do not work for you guys.
Thanks.

Chang H. "David" Chung |
O 856.793.0800 | F 856.793.0819 | chchung@mccormicktaylor.com
McCormick Taylor
700 East Gate Drive, Suite 201
Mount Laurel, NJ 08054
www.mccormicktaylor.com

From: Milano, Vincent [mailto:Vincent.Milano@Conrail.Com]
Sent: Thursday, January 4, 2018 9:15 AM
To: Chung, Chang <CHChung@mccormicktaylor.com>

Cc: Hill, Ryan M. <Ryan.Hill@Conrail.Com>; Kaeser, William <William.Kaeser@Conrail.com>; DiMaggio, Anthony <AMDiMaggio@mccormicktaylor.com>; Sokalski, Amy <ASokalski@mccormicktaylor.com>
Subject: RE: Hunter St. Bridge - Conrail Meeting Request

Chang,

I am unavailable the following dates during January; Jan 5, 12, 15 – 19, and 31. I currently have no conflicts in February.

Thank You,

Vincent Milano
Conrail – Design and Construction
1000 Howard Boulevard
Mt. Laurel, NJ 08054
(856)231-2049
Vincent.Milano@conrail.com

From: Chung, Chang [mailto:CHChung@mccormicktaylor.com]
Sent: Wednesday, January 03, 2018 5:36 PM
To: Milano, Vincent
Cc: Hill, Ryan M.; Kaeser, William; DiMaggio, Anthony; Sokalski, Amy
Subject: FW: Hunter St. Bridge - Conrail Meeting Request
Importance: High

Vincent,
I thought I'd do a quick follow up to see whether you and your team had any available dates in Jan or early Feb. to go over a bridge project that is in Concept Development phase. See e-mail below. Please let us know of some of your availability.
Thanks.

Chang H. "David" Chung |
O 856.793.0800 | F 856.793.0819 | chchung@mccormicktaylor.com
McCormick Taylor
700 East Gate Drive, Suite 201
Mount Laurel, NJ 08054
www.mccormicktaylor.com

From: Chung, Chang
Sent: Friday, December 8, 2017 10:48 AM
To: 'vincent.milano@conrail.com' <vincent.milano@conrail.com>
Cc: Sokalski, Amy <ASokalski@mccormicktaylor.com>; DiMaggio, Anthony (AMDiMaggio@mccormicktaylor.com) <AMDiMaggio@mccormicktaylor.com>
Subject: FW: Hunter St. Bridge - Conrail Meeting Request

Vincent,
The Delaware Valley Regional Planning Commission (DVRPC) along with Gloucester County (Project Sponsor) is performing a Local Concept Development (LCD) Study of the Hunter Street Bridge over Conrail, 2-I-14 (Structure No. 0802I14). This bridge is located in City of Woodbury in Gloucester County. See attached aerial location map and link for google map location: https://goo.gl/maps/a3Nubp3YWSv

McCormick Taylor has been hired by DVRPC & Gloucester County to perform the LCD study which will evaluate the feasibility of removing, rehabilitating or replacing the bridge to improve substandard under clearance over the railroad and other structural deficiencies while minimizing impacts to the surrounding community, including historic resources.

Our team has performed field inspection and initial survey of the Hunter St. Bridge to verify existing conditions. We'd like to set up a meeting with your Conrail team to go over your potential needs, geometry modifications, allowable track outages/work hours, etc. so that your needs and constraints can be incorporated into development of the Preliminary Preferred Alternative (PPA) that can be advanced to Preliminary Engineering.

Please provide us with some available dates in January of 2018, so that we can arrange a meeting to go over the project.

If you have any questions or require further information, please do not hesitate to call our office.
Thanks.

Chang H. "David" Chung |
O 856.793.0800 | F 856.793.0819 | chchung@mccormicktaylor.com

McCormick Taylor
700 East Gate Drive, Suite 201
Mount Laurel, NJ 08054
www.mccormicktaylor.com

McCORMICK TAYLOR

August 30, 2017

Mr. Ted Bamford
Gloucester County Utilities Authority
2 Paradise Rd.
West Deptford, NJ 08066

Re:
Hunter Street Bridge over Conrail
Local Concept Development Study
Delaware Valley Regional Planning Commission
City of Woodbury, Gloucester County
New Jersey

Project Designer:
McCormick Taylor
700 East Gate Dr., Suite 201
Mt. Laurel, NJ 08054
ATTN: David L. Verdia, EIT
T: (856) 793-0800
E: DLVerdia@mccormicktaylor.com

Dear Mr. Bamford,

The Delaware Valley Regional Planning Commission (DVRPC) along with Gloucester County has engaged McCormick Taylor to perform a Local Concept Development (LCD) Study of the Hunter Street Bridge over Conrail in the City of Woodbury, NJ. The LCD study will evaluate the feasibility of removing, rehabilitating or replacing the bridge to improve substandard under clearance over the railroad and other structural deficiencies while minimizing the impacts to the surrounding community, including historic resources. The location of the project is shown on the enclosed location map.

The preliminary investigation disclosed that Gloucester County Utilities Authority is franchised to operate within the proposed project limits and may have facilities affected by the project.

Should you have existing facilities or proposed betterments within the project limits, it is necessary for us to verify your facilities and enter into an engineering dialog with you.

Please complete the following questionnaire, provide any relevant mapping of your facilities, and return it to us by **Friday, September 29, 2017**. If you prefer to respond by FAX or e-email, the number is (856) 793-0819 or email at DLVerdia@mccormicktaylor.com.

Questionnaire

(____) The Company Engineer to be contacted is:

Name _____
Company _____
Title _____
Address _____
_____
_____
_____

Tel: _____
Fax: _____
Email: _____

(____) We **DO HAVE** existing facilities within the project limits.

(X) We **DO NOT HAVE** existing facilities within the project limits.

(____) We **HAVE** PROPOSED facilities planned within the project limits.

(____) **The following companies are tenants on/in our facilities within the project limits:**

_____
_____
_____
_____

(____) We would like Gloucester County/DVRPC to arrange for the following work to be done for our facilities should it be necessary for them to be relocated or modified.

(_____) Design/Engineering
(_____) Construction – Some or All? _____
(_____) Neither – the Company will perform (or arrange to have performed) all needed work.
(_____) Not certain at this time.

Thank you for your cooperation in this matter. Should you have any questions, feel free to contact the undersigned at 856-793-0800 (DLVerdia@mccormicktaylor.com) or Evan Rosario at (EGRosario@mccormicktaylor.com).

Very truly yours,

McCORMICK TAYLOR, INC.

David L. Verdia, EIT
Highway Designer

Attachment: Project Location Map

cc:

McCORMICK TAYLOR

August 30, 2017

Mr. Frank Antisell
Verizon-NJ, Inc.
6000 Hadley Rd.
South Plainfield, NJ 07080

Re:
Hunter Street Bridge over Conrail
Local Concept Development Study
Delaware Valley Regional Planning Commission
City of Woodbury, Gloucester County
New Jersey

Project Designer:
McCormick Taylor
700 East Gate Dr., Suite 201
Mt. Laurel, NJ 08054
ATTN: David L. Verdia, EIT
T: (856) 793-0800
E: DLVerdia@mccormicktaylor.com

Dear Mr. Antisell,

The Delaware Valley Regional Planning Commission (DVRPC) along with Gloucester County has engaged McCormick Taylor to perform a Local Concept Development (LCD) Study of the Hunter Street Bridge over Conrail in the City of Woodbury, NJ. The LCD study will evaluate the feasibility of removing, rehabilitating or replacing the bridge to improve substandard under clearance over the railroad and other structural deficiencies while minimizing the impacts to the surrounding community, including historic resources. The location of the project is shown on the enclosed location map.

The preliminary investigation disclosed that Verizon-NJ, Inc. is franchised to operate within the proposed project limits and may have facilities affected by the project.

Should you have existing facilities or proposed betterments within the project limits, it is necessary for us to verify your facilities and enter into an engineering dialog with you.

Please complete the following questionnaire, provide any relevant mapping of your facilities, and return it to us by **Friday, September 29, 2017**. If you prefer to respond by FAX or e-mail, the number is (856) 793-0819 or email at DLVerdia@mccormicktaylor.com.

Questionnaire

(X) The Company Engineer to be contacted is:

Name Thomas Reber
Company Verizon
Title Engineer
Address 10 Tansboro Rd
Berlin, NJ 08009

Tel: 856-306-8606
Fax:
Email: thomas.j.reber@verizon.com

(X) 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.

(X) **The following companies are tenants on/in our facilities within the project limits:**

unsure at this time

(X) We would like Gloucester County/DVRPC to arrange for the following work to be done for our facilities should it be necessary for them to be relocated or modified.

(____) Design/Engineering
(X) Construction – Some or All? Some - TBD
(____) Neither – the Company will perform (or arrange to have performed) all needed work.
(____) Not certain at this time.

Thank you for your cooperation in this matter. Should you have any questions, feel free to contact the undersigned at 856-793-0800 (DLVerdia@mccormicktaylor.com) or Evan Rosario at (EGRosario@mccormicktaylor.com).

Very truly yours,

McCORMICK TAYLOR, INC.

David L. Verdia, EIT
Highway Designer

Attachment: Project Location Map

cc:

McCORMICK TAYLOR

FAXED 9/20/17

August 30, 2017

Mr. Richard Leidy
Woodbury Department of Public Works
651 South Evergreen Ave
Woodbury, NJ 08096

Re:
Hunter Street Bridge over Conrail
Local Concept Development Study
Delaware Valley Regional Planning Commission
City of Woodbury, Gloucester County
New Jersey

Project Designer:
McCormick Taylor
700 East Gate Dr., Suite 201
Mt. Laurel, NJ 08054
ATTN: David L. Verdia, EIT
T: (856) 793-0800
E: DLVerdia@mccormicktaylor.com

Dear Mr. Leidy,

The Delaware Valley Regional Planning Commission (DVRPC) along with Gloucester County has engaged McCormick Taylor to perform a Local Concept Development (LCD) Study of the Hunter Street Bridge over Conrail in the City of Woodbury, NJ. The LCD study will evaluate the feasibility of removing, rehabilitating or replacing the bridge to improve substandard under clearance over the railroad and other structural deficiencies while minimizing the impacts to the surrounding community, including historic resources. The location of the project is shown on the enclosed location map.

The preliminary investigation disclosed that Woodbury Department of Public Works is franchised to operate within the proposed project limits and may have facilities affected by the project.

Should you have existing facilities or proposed betterments within the project limits, it is necessary for us to verify your facilities and enter into an engineering dialog with you.

Please complete the following questionnaire, provide any relevant mapping of your facilities, and return it to us by **Friday, September 29, 2017**. If you prefer to respond by FAX or e-mail, the number is (856) 793-0819 or email at DLVerdia@mccormicktaylor.com.

Questionnaire

(____) The Company Engineer to be contacted is:

Name PAUL BREIER
Company FEDERICI + AKIN, PA
Title CONSULTING ENGINEERS
Address 307 GREENTREE ROAD
JEWELL, NJ 08080

Tel: 856-589-1400
Fax: 856-582-7976
Email: pbreier@federiciandakin.com

(✓) 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.

(____) **The following companies are tenants on/in our facilities within the project limits:**

_____
_____
_____
_____

(✓) We would like Gloucester County/DVRPC to arrange for the following work to be done for our facilities should it be necessary for them to be relocated or modified.

(✓) Design/Engineering
(✓) Construction – Some or All? _____
(____) Neither – the Company will perform (or arrange to have performed) all needed work.
(____) Not certain at this time.

Thank you for your cooperation in this matter. Should you have any questions, feel free to contact the undersigned at 856-793-0800 (DLVerdia@mccormicktaylor.com) or Evan Rosario at (EGRosario@mccormicktaylor.com).

Very truly yours,

McCORMICK TAYLOR, INC.

David L. Verdia, EIT
Highway Designer

Attachment: Project Location Map

cc:

McCORMICK TAYLOR

August 30, 2017

Mr. Len Pannucci
Public Service Electric & Gas (PSE&G)
4000 Hadley Rd.
South Plainfield, NJ 07080

Re:
Hunter Street Bridge over Conrail
Local Concept Development Study
Delaware Valley Regional Planning Commission
City of Woodbury, Gloucester County
New Jersey

Project Designer:
McCormick Taylor
700 East Gate Dr., Suite 201
Mt. Laurel, NJ 08054
ATTN: David L. Verdia, EIT
T: (856) 793-0800
E: DLVerdia@mccormicktaylor.com

Dear Mr. Pannucci,

The Delaware Valley Regional Planning Commission (DVRPC) along with Gloucester County has engaged McCormick Taylor to perform a Local Concept Development (LCD) Study of the Hunter Street Bridge over Conrail in the City of Woodbury, NJ. The LCD study will evaluate the feasibility of removing, rehabilitating or replacing the bridge to improve substandard under clearance over the railroad and other structural deficiencies while minimizing the impacts to the surrounding community, including historic resources. The location of the project is shown on the enclosed location map.

The preliminary investigation disclosed that Public Service Electric & Gas (PSE&G) is franchised to operate within the proposed project limits and may have facilities affected by the project.

Should you have existing facilities or proposed betterments within the project limits, it is necessary for us to verify your facilities and enter into an engineering dialog with you.

Please complete the following questionnaire, provide any relevant mapping of your facilities, and return it to us by **Friday, September 29, 2017**. If you prefer to respond by FAX or e-mail, the number is (856) 793-0819 or email at DLVerdia@mccormicktaylor.com.

Questionnaire

(✓) The Company Engineer to be contacted is:

Name See Attached Letter
Company _____
Title _____
Address _____
_____
_____
_____

Tel: _____
Fax: _____
Email: _____

(✓) We **DO HAVE** existing Electric facilities within the project limits.

(____) We **DO NOT HAVE** existing facilities within the project limits.

(____) We **HAVE** PROPOSED facilities planned within the project limits.

(____) **The following companies are tenants on/in our facilities within the project limits:**

_____
_____
_____
_____

(✓) We would like Gloucester County/DVRPC to arrange for the following work to be done for our facilities should it be necessary for them to be relocated or modified.

(____) Design/Engineering
(____) Construction – Some or All? _____
(____) Neither – the Company will perform (or arrange to have performed) all needed work.
(✓) Not certain at this time.

Thank you for your cooperation in this matter. Should you have any questions, feel free to contact the undersigned at 856-793-0800 (DLVerdia@mccormicktaylor.com) or Evan Rosario at (EGRosario@mccormicktaylor.com).

Very truly yours,

MCCORMICK TAYLOR, INC.

David L. Verdia, EIT
Highway Designer

Attachment: Project Location Map

cc:

Public Service Electric and Gas Company
Delivery Projects and Construction
4000 Hadley Road, South Plainfield, NJ 07080

PSE&G

September 5, 2017

Mr. David L. Verdia
Engineer
McCormick Taylor
700 East gate Drive, Suite 201
Mt. Laurel, NJ 08054

RE: Hunter Street Bridge over Conrail
Delaware Valley Regional Planning Commission
City of Woodbury, Gloucester County

Dear Mr. Verdia:

I have received your letter and location map relative to the above referenced project. A cursory review of our records indicates we have ***Electric*** facilities within the project limits as evident by the enclosed GIS one-line drawing(s). This drawing(s) is being provided for your design purposes only; the actual location and/or depth of any facilities depicted on this drawing must be verified in the field by excavating test holes or by survey where applicable.

Please be advised, our current operating guidelines preclude us from performing any additional facility record research, mark-ups, layout or design until a signed executed agreement has been received. In the interim, please continue to forward all correspondence, information requests and contractual documents to my attention.

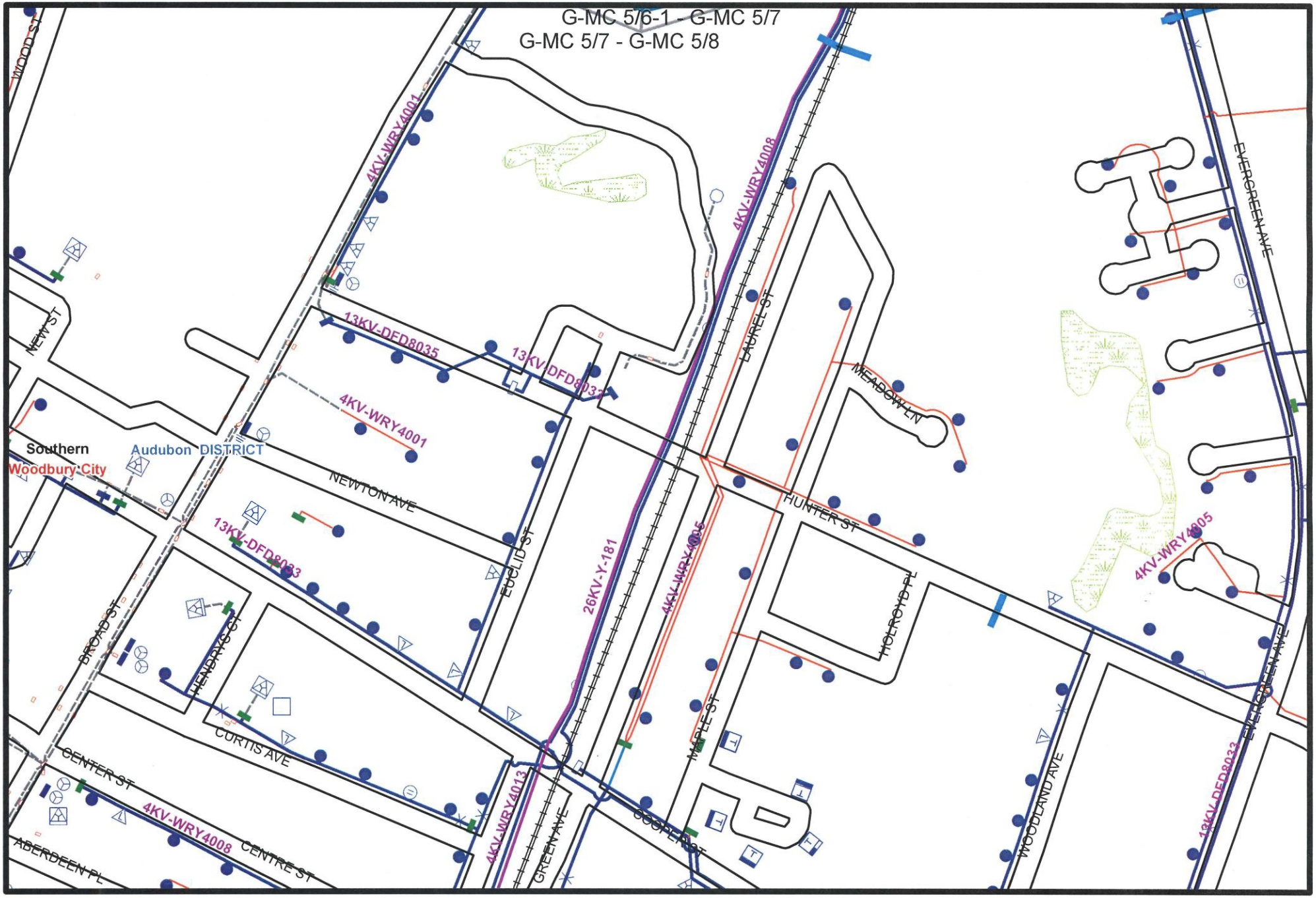
Should you have any questions or concerns, please feel free to contact me directly at the above address, by phone at (908) 412-2228, or via e-mail at len.pannucci@pseg.com.

Sincerely,

L.A. Pannucci, PMP
Program Manager-3rd Party Relocation
Delivery Projects & Construction

enclosure
c: Armando Rosario,Sr Eng Plant Supv-Southern(MC 117)
Stephen Payne, Project Manager, DPC (MC 430)
File

DVRPC-Hunter Street Bridge over Conrail, Woodbury (Electric)



PSE&G

Delivery Projects & Construction
4000 Hadley Road
South Plainfield, NJ 07080

9/5/2017

0 140 280 560 840 1,120 Feet

N
W E
S

McCORMICK TAYLOR

August 30, 2017

Mr. Len Pannucci
Public Service Electric & Gas (PSE&G)
4000 Hadley Rd.
South Plainfield, NJ 07080

Re:
Hunter Street Bridge over Conrail
Local Concept Development Study
Delaware Valley Regional Planning Commission
City of Woodbury, Gloucester County
New Jersey

Project Designer:
McCormick Taylor
700 East Gate Dr., Suite 201
Mt. Laurel, NJ 08054
ATTN: David L. Verdia, EIT
T: (856) 793-0800
E: DLVerdia@mccormicktaylor.com

Dear Mr. Pannucci,

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The preliminary investigation disclosed that Public Service Electric & Gas (PSE&G) is franchised to operate within the proposed project limits and may have facilities affected by the project.

Should you have existing facilities or proposed betterments within the project limits, it is necessary for us to verify your facilities and enter into an engineering dialog with you.

Please complete the following questionnaire, provide any relevant mapping of your facilities, and return it to us by **Friday, September 29, 2017**. If you prefer to respond by FAX or e-mail, the number is (856) 793-0819 or email at DLVerdia@mccormicktaylor.com.

Questionnaire

(✓) The Company Engineer to be contacted is:

Name See Attached Letter
Company _____
Title _____
Address _____
_____
_____
_____

Tel: _____
Fax: _____
Email: _____

(✓) We **DO HAVE** existing GAS facilities within the project limits.

(____) We **DO NOT HAVE** existing facilities within the project limits.

(____) We **HAVE** PROPOSED facilities planned within the project limits.

(____) **The following companies are tenants on/in our facilities within the project limits:**

_____
_____
_____
_____

(✓) We would like Gloucester County/DVRPC to arrange for the following work to be done for our facilities should it be necessary for them to be relocated or modified.

(____) Design/Engineering
(____) Construction – Some or All? _____
(✓) Neither – the Company will perform (or arrange to have performed) all needed work.
(____) Not certain at this time.

Thank you for your cooperation in this matter. Should you have any questions, feel free to contact the undersigned at 856-793-0800 (DLVerdia@mccormicktaylor.com) or Evan Rosario at (EGRosario@mccormicktaylor.com).

Very truly yours,

MCCORMICK TAYLOR, INC.

David L. Verdia, EIT
Highway Designer

Attachment: Project Location Map

cc:

Public Service Electric and Gas Company
Delivery Projects and Construction
4000 Hadley Road, South Plainfield, NJ 07080

September 5, 2017

Mr. David L. Verdia
Engineer
McCormick Taylor
700 East gate Drive, Suite 201
Mt. Laurel, NJ 08054

RE: Hunter Street Bridge over Conrail
Delaware Valley Regional Planning Commission
City of Woodbury, Gloucester County

Dear Mr. Verdia:

I have received your letter and location map relative to the above referenced project. A cursory review of our records indicates we have ***Gas*** facilities within the project limits as evident by the enclosed GIS one-line drawing(s). This drawing(s) is being provided for your design purposes only; the actual location and/or depth of any facilities depicted on this drawing must be verified in the field by excavating test holes or by survey where applicable. Please be advised, test holes specifically excavated for the purpose of locating gas facilities must be performed by an Operator Qualified contractor. These standards were developed and adopted to comply with minimum pipeline safety regulations and specifically, 49 CFR Part 192, Subpart N.

Please be advised, our current operating guidelines preclude us from performing any additional facility record research, mark-ups, layout or design until a signed executed agreement has been received. In the interim, please continue to forward all correspondence, information requests and contractual documents to my attention.

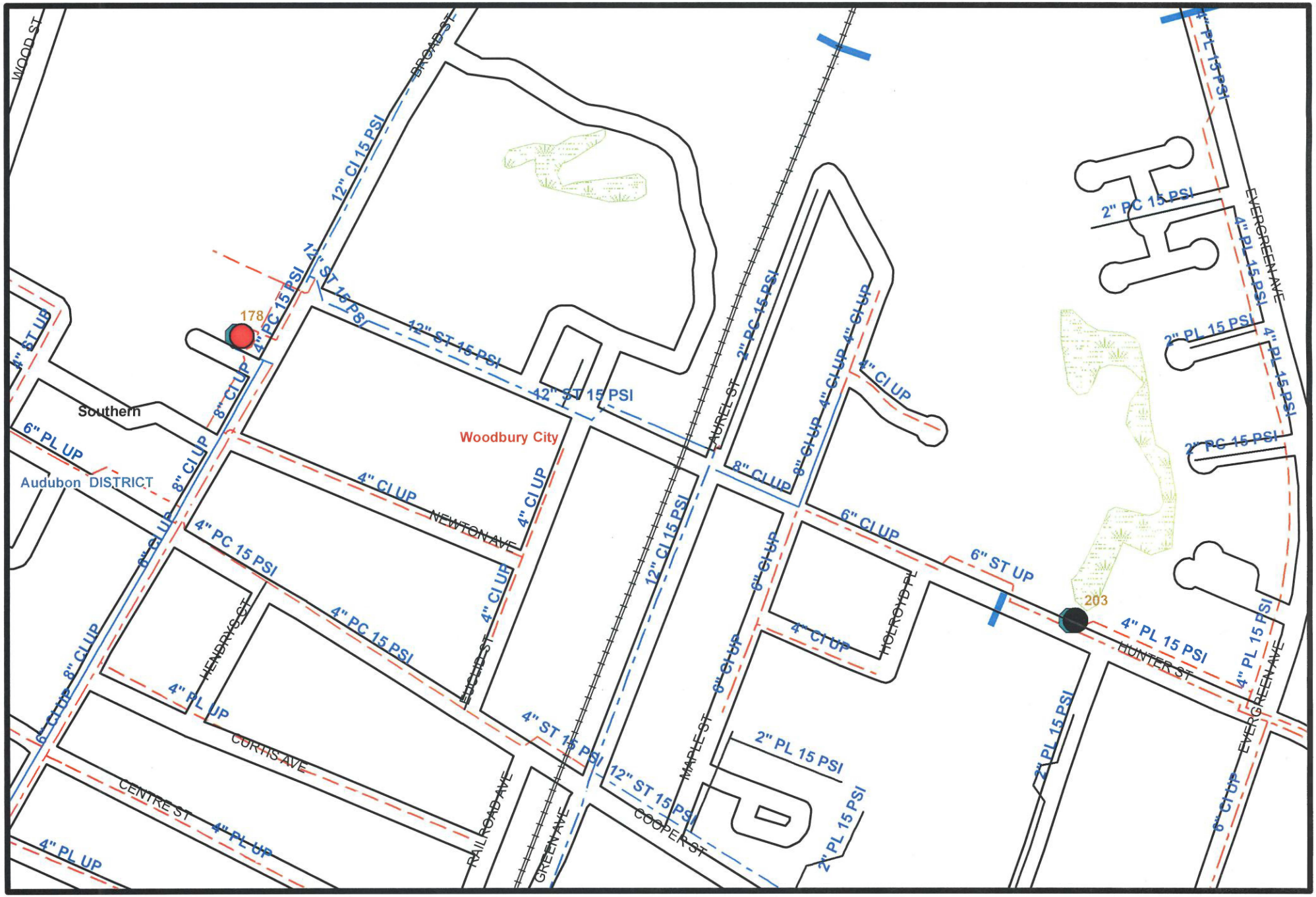
Should you have any questions or concerns, please feel free to contact me directly at the above address, by phone at (908) 412-2228, or via e-mail at len.pannucci@pseg.com.

Sincerely,

L.A. Pannucci, PMP
Program Manager-3rd Party Relocation
Delivery Projects & Construction

enclosure
c: Jim Venito, Sr. Dist Supv-Audubon Gas (MC114)
Frank Coriano, Project Manager-DPC (430)
File

DVRPC-Hunter Street Bridge over Conrail, Woodbury (Gas)



PSE&G

Delivery Projects & Construction
4000 Hadley Road
South Plainfield, NJ 07080

9/5/2017

0 140 280 560 840 1,120 Feet

N
W E
S

Appendix P

Utility Risk Assessment Plan

City of Woodbury | *Gloucester County*

UTILITY RISK AREAS

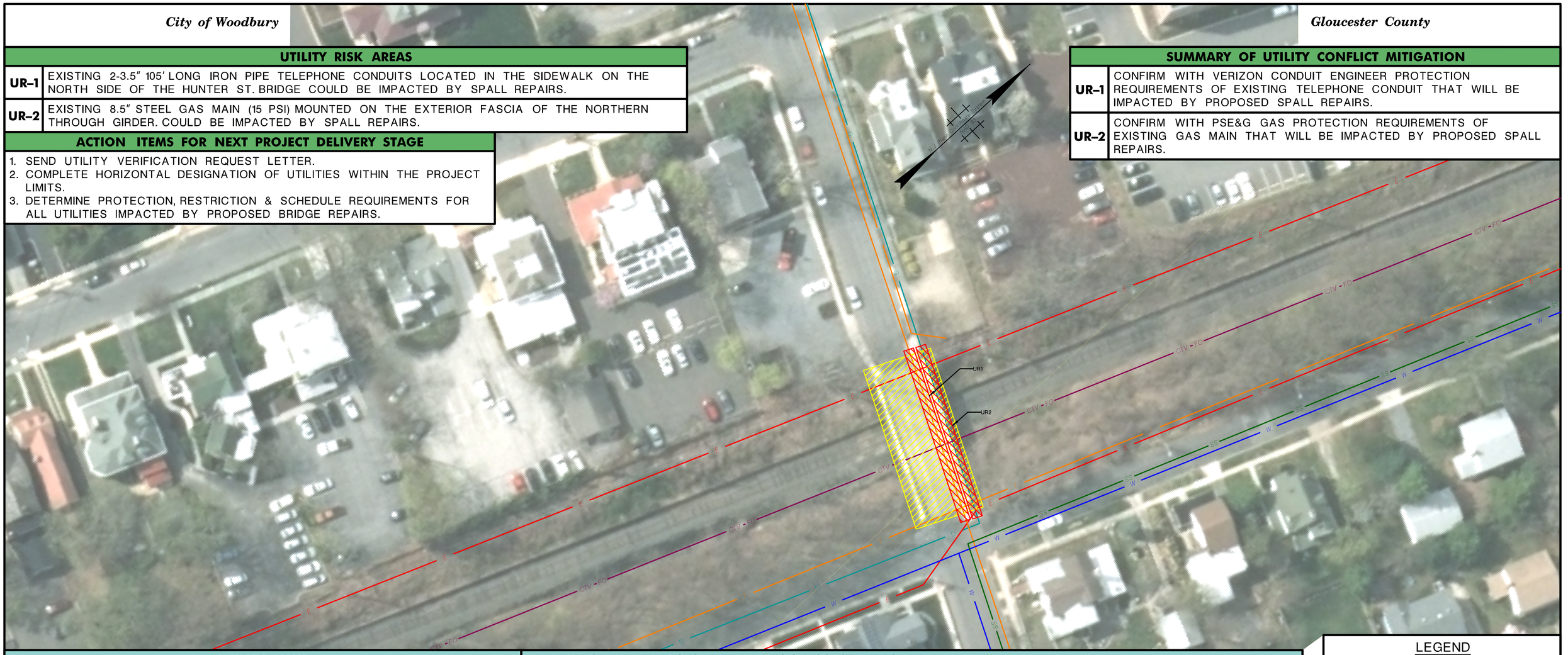
UR–1	EXISTING 2-3.5″ 105′ LONG IRON PIPE TELEPHONE CONDUITS LOCATED IN THE SIDEWALK ON THE NORTH SIDE OF THE HUNTER ST. BRIDGE COULD BE IMPACTED BY SPALL REPAIRS.
UR–2	EXISTING 8.5″ STEEL GAS MAIN (15 PSI) MOUNTED ON THE EXTERIOR FASCIA OF THE NORTHERN THROUGH GIRDER. COULD BE IMPACTED BY SPALL REPAIRS.

ACTION ITEMS FOR NEXT PROJECT DELIVERY STAGE

1. SEND UTILITY VERIFICATION REQUEST LETTER.
2. COMPLETE HORIZONTAL DESIGNATION OF UTILITIES WITHIN THE PROJECT LIMITS.
3. DETERMINE PROTECTION, RESTRICTION & SCHEDULE REQUIREMENTS FOR ALL UTILITIES IMPACTED BY PROPOSED BRIDGE REPAIRS.

SUMMARY OF UTILITY CONFLICT MITIGATION

UR–1	CONFIRM WITH VERIZON CONDUIT ENGINEER PROTECTION REQUIREMENTS OF EXISTING TELEPHONE CONDUIT THAT WILL BE IMPACTED BY PROPOSED SPALL REPAIRS.
UR–2	CONFIRM WITH PSE&G GAS PROTECTION REQUIREMENTS OF EXISTING GAS MAIN THAT WILL BE IMPACTED BY PROPOSED SPALL REPAIRS.



UTILITY RISKS

DIRECT UTILITY RISKS (UTILITY DESIGN CONSTRAINTS)

1. LOADING IMPOSED ON UTILITIES FROM PERMANENT OR TEMPORARY (STAGED) ROADWAY EXCAVATION/GRADING AFFECTING DEPTH OF BURIAL.
2. STRUCTURE FOUNDATION PLACEMENT AND REQUIRED EXCAVATION AND SHEETING.
3. TEMPORARY OR PERMANENT SHEETING REPLACEMENT.
4. BRIDGE REPLACEMENT.
5. LIGHTING CONFLICTS WITH AERIAL FACILITIES.
6. HIGH VOLTAGE PROXIMITY CLEARANCE REQUIREMENTS.
7. DRAINAGE INFRASTRUCTURE CONFLICTS.

INDIRECT UTILITY RISKS (UTILITY DESIGN CONSTRAINTS)

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. UTILITY MATERIAL MAY NOT WITHSTAND ADJACENT CONSTRUCTION ACTIVITIES. SUCH MATERIALS MAY INCLUDE TRANSITE DUCTS, WOOD DUCTS, CLAY PIPE, CAST IRON PIPE, BRICK PIPE/ MANHOLE, FIBER OPTIC.
3. SEASONAL RESTRICTIONS MAY BE REQUIRED BY UTILITY OWNERS FOR SHUT DOWNS AND INTERRUPTION OF SERVICE.
4. TEMPORARY REDUCED DEPTH OF BURIAL EXPOSING EXISTING UNDERGROUND UTILITIES TO CONSTRUCTION TRAFFIC OPERATIONS.
5. COMPACTION VIBRATION OUTSIDE THE IMMEDIATE CONSTRUCTION AREA COULD DAMAGE EXISTING FACILITIES.

INDIRECT UTILITY RISKS (UTILITY DESIGN CONSTRAINTS)

6. UTILITY TIE-IN METHODS AND PROCEDURES MAY BE EXTENSIVE OR DIFFICULT IN THE PROJECT LOCATION AREA.
7. CUT-OVER/TIE-IN RESTRICTION PROCEDURES FOR SOME UTILITIES REQUIRE A TEMPORARY OUTAGE TO THE CUSTOMER. SOME CUSTOMERS CANNOT WITHSTAND TEMPORARY OUTAGE.
8. LIMITED ROW MAY RESTRICT EQUIPMENT OPERATIONS.
9. AERIAL EASEMENTS MAY BE NEEDED TO ACCOMODATE POLE CROSS ARMS, OR OTHER ENCROACHMENTS WHERE EXISTING ROW IS LIMITED.
10. PLACEMENT OF GUY WIRES MAY REQUIRE ACCOMODATION OR ROW EASEMENTS.
11. CONSTRUCTION EQUIPMENT REQUIREMENTS FOR ACCESS, OPERATION, STORAGE AND SERVICING.
12. NON-COMPLIANCE WITH REGULATORY PROVISIONS OF THE UTILITY ACCOMODATION POLICY (NJAC 16:25), THE HIGHWAY OCCUPANCY PERMIT (NJAC 16:41) OR ANY OTHER STATE OR FEDERAL REGULATIONS INVOLVING UTILITIES.

PERMITS

PERMITS RELATED TO UTILITIES

1. LICENSE TO CROSS
2. ROAD OPENING PERMITS (COVERED UNDER NJDOT PROJECTS)
3. HIGHWAY OCCUPANCY PERMIT

SPECIAL PERMITS (AS A RESULT OF MODIFIED UTILITIES)

1. NONE ANTICIPATED

LEGEND

- WORK AREA
- E — EXISTING AERIAL ELECTRIC
- CTV - FO — EXISTING FIBER CTV
- T — EXISTING TELEPHONE
- SS — EXISTING SANITARY SEWER
- W — EXISTING WATER MAIN
- G — EXISTING GAS MAIN
- EXISTING UTILITY POLE

DELAWARE VALLEY REGIONAL PLANNING COMMISSION

Hunter Street Bridge over Conrail
Concept Development

UTILITY RISK ASSESSMENT PLAN

City of Woodbury — *Gloucester County*

McCORMICK TAYLOR

Scale 1”=60’
December 2018

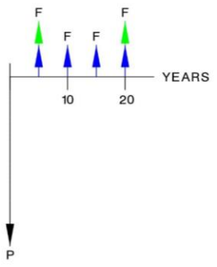
Appendix Q

Life Cycle Cost Analyses

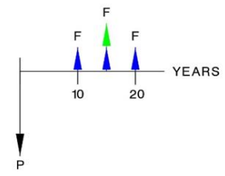
Hunter Street Bridge Life Cycle Cost

	No Build			Repair Bridge			Full Bridge Replacement		
Year n	Cost (n=0) C	Future Cost F=C*(1+i)^n	Present Value PV=F/(1+c)^n	Cost (n=0) C	Future Cost F=C*(1+i)^n	Present Value PV=F/(1+c)^n	Cost (n=0) C	Future Cost F=C*(1+i)^n	Present Value PV=F/(1+c)^n
5	$ 90,000	$ 104,335	$ 79,830	$ -	$ -	$ -	$ -	$ -	$ -
10	$ 60,000	$ 80,635	$ 47,206	$ 40,000	$ 53,757	$ 31,471	$ 50,000	$ 67,196	$ 39,338
15	$ 60,000	$ 93,478	$ 41,872	$ 70,000	$ 109,058	$ 48,851	$ 30,000	$ 46,739	$ 20,936
20	$ 90,000	$ 162,550	$ 55,711	$ 40,000	$ 72,244	$ 24,760	$ 50,000	$ 90,306	$ 30,950
25		REPLACEMENT			REPLACEMENT		$ 180,000	$ 376,880	$ 98,831
30							$ 80,000	$ 194,181	$ 38,961
35							$ -	$ -	$ -
40							$ 50,000	$ 163,102	$ 19,158
45							$ 30,000	$ 113,448	$ 10,196
50							$ 440,000	$ 1,928,919	$ 132,645
55							$ -	$ -	$ -
60							$ 80,000	$ 471,328	$ 18,975
65							$ -	$ -	$ -
70							$ 50,000	$ 395,891	$ 9,330
75								REPLACEMENT	
	$ 300,000	$ 441,000	**$ 225,000**	$ 150,000	$ 236,000	**$ 106,000**	$ 1,040,000	$ 3,848,000	**$ 420,000**

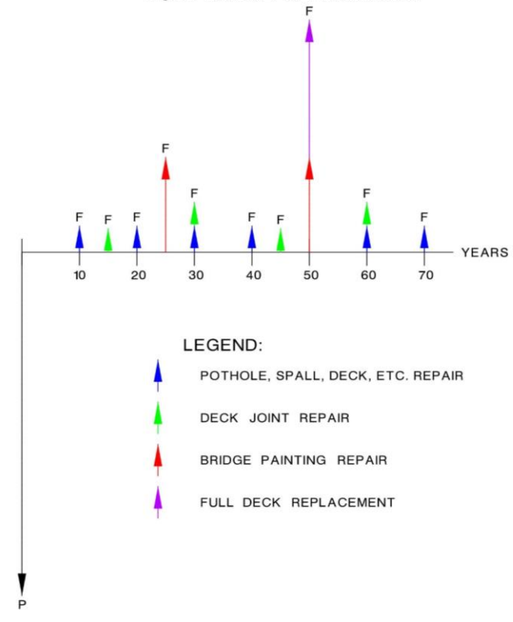
CASH FLOW DIAGRAM FOR NO BUILD



CASH FLOW DIAGRAM FOR REPAIR BRIDGE



CASH FLOW DIAGRAM FOR FULL BRIDGE REPLACEMENT



No Build

	Frequency	Cost	First Occurrence
Pothole, Spall, Deck, Etc. Repairs	5 Years	$ 60,000	5 Years After Construction
Deck Joint Repairs	15 Years	$ 30,000	5 Years After Construction

Repair Bridge

	Frequency	Cost	First Occurrence
Pothole, Spall, Deck, Etc. Repairs	5 Years	$ 40,000	10 Years After Construction
Deck Joint Repairs	15 Years	$ 30,000	15 Years After Construction

Full Bridge Repair Intervals

	Frequency	Cost	First Occurrence
Pothole, Spall, Deck, Etc. Repairs	10 Years	$ 50,000	10 Years After Construction
Deck Joint Repairs	15 Years	$ 30,000	15 Years After Construction
Full Deck Replacement	50 Years	$ 260,000	50 Years After Construction
Bridge Painting	25 Years	$ 180,000	25 Years After Construction

Cost of Capital, c=	5.5%
Inflation Rate, i=	3%

Appendix R

CD Public Involvement Action Plan

Gloucester County Local Concept Development Study
Draft Public Involvement Action Plan
August 2017

I. Introduction/Project Background

The Hunter Street Bridge, located in Woodbury, Gloucester County, NJ, has been deemed structurally deficient due to poor condition of the bridge's deck and functionally obsolete due to its substandard deck geometry and vertical under-clearance, according to NJDOT's 17th Cycle Inspection Report completed in the summer of 2014. In its current condition, the bridge poses safety concerns for the local residential and business community.

This Public Involvement Action Plan (PIAP) has been developed in accordance with NJDOT's Capital Project Delivery process and is aligned with the public participation methodology of the Delaware Valley Regional Planning Commission (DVRPC). Stakeholder feedback resulting from the PIAP will contribute to the overarching 2017 Gloucester County Local Concept Development (LCD) Study to evaluate the feasibility of removing, rehabilitating or replacing the Hunter Street Bridge over Conrail, 2-1-14.

As part of data collection and analysis of existing conditions and in coordination with the Project team, McCormick Taylor will identify and engage key stakeholders to facilitate applicable feedback. Proposed key stakeholders include, but are not limited to: Conrail; local police; fire and EMS providers; the Woodbury Public School District; local officials; New Jersey Historic Preservation Office (NJHPO); and adjacent residents and businesses.

As a result of data collection and analysis, a Preliminary Preferred Alternative (PPA) will be evaluated and presented to stakeholders at the completion of the LCD Study. The LCD Study is expected to take approximately 20 months to complete, although this time frame may be altered by the project team. Early public involvement will garner stakeholder support for the PPA.

II. Public Involvement Action Plan (PIAP)

PIAP strategies and audiences identified during concept development may be incorporated into subsequent transportation improvement project phases including Preliminary Engineering, Final Design and Construction. All public involvement activities will adhere to Title VI and Environmental Justice (EJ) statutes and Federal Transportation Legislation.

A. Plan Development

This task involves the development of public involvement strategies, coordination with members of the project team and staff, and identification of an initial list of key stakeholders.

A comprehensive list of key stakeholders has been added as a compendium to this document.

Community Outreach Strategies include:

- Plan Development
- Stakeholder Coordination
- Public Information Centers
- Resolution of Support
- Public Outreach Summary

Development of collateral materials such as project information handouts, presentations, display boards, mailings, surveys, meeting notices, and other media will be completed based on need and approval through the project team.

B. Stakeholder Coordination

Elected Officials Briefings

In an effort to facilitate a convenient exchange with officials, it is anticipated two (2) briefings will be arranged with elected officials. Each briefing will be held in advance of each Public Information Center to provide officials with the latest information regarding the project prior to meeting with the public.

For this effort, additional coordination by phone, mail and e-mail will occur on an as-needed basis.

Stakeholder Coordination

Project outreach activities will involve coordination with local stakeholders, including: local officials such as police, fire, emergency services personnel; school district officials; area businesses/employers; and Conrail. It is anticipated stakeholders will be notified of the Public Information Centers. In addition, separate stakeholder coordination with Conrail is anticipated for this effort.

As part of this task, McCormick Taylor will develop a stakeholder mailing list to provide direct mail notices of meetings or events to stakeholders. Comments and input received from stakeholders, as well as any concerns or issues resolved as part of stakeholder coordination, will be summarized in the Public Outreach Summary document.

C. Public Information Center

It is anticipated up to two (2) Public Information Centers will be held to present project information clearly and concisely to officials, stakeholders and the public at key milestones of the project development process. The first PIC will be held at the beginning of the project

development process, and will introduce the project to the public, provide a summary anticipated activities, and next steps. A second PIC will be held later in the process, to present project activities to date, and next steps. PICs will be held at a known public location, and include plans displays, handouts and comment forms. It is anticipated the PIC locations will be ADA compliant, and the PICs will be held late-afternoon/early evening to accommodate local work schedules. Outreach will also be tailored to underserved low-income or minority households, as well as those with low literacy and/or limited English proficiency. This process will begin by gaining an understanding of the constituency and how these populations access information.

Project materials presented at Public Information Centers will be approved through the project team prior to the meetings. Comment cards/forms will be collected, compiled and summarized for project team review.

D. Resolution of Support

At the end of the LCD process, McCormick Taylor will work with NJDOT to request a Resolution of Support for the PPA from the City of Woodbury. The project team will introduce the requirements for obtaining Resolutions of Support for the PPA early in the process and provide sample language for City officials to consider when drafting resolutions.

E. Public Outreach Summary

McCormick Taylor will prepare a summary document for inclusion in the LCD. This summary will include a list of participating stakeholders, a summary of all comments and feedback provided, describe outreach activities, and an assessment of the results.

Proposed PIAP Activity Schedule

PIAP Activity	Start	Finish
Coordinate with local officials	8/30/17	9/26/17
Local officials briefing No. 1	9/13/17	10/10/17
Stakeholder meeting No. 1	10/11/17	10/24/17
Public Information Center No. 1	11/29/17	12/26/17
Obtain stakeholder input on developed alternatives	5/16/18	5/29/18
Local officials briefing No. 2	7/18/18	8/14/18
Public Information Center No. 2	8/15/18	9/25/18
Prepare public outreach summary	8/15/18	8/29/18
Obtain Resolutions of Support	10/10/18	11/20/18

McCORMICK TAYLOR